NATURAL
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Wisconsin Public Service

Completion Report

Former Oshkosh Manufactured
Gas Plant
Oshkosh, Wisconsin

WIN000509947

NRT Project No: 1312

Natural
Resource
Technology

COMPLETION REPORT
FORMER OSHKOSH MANUFACTURED GAS PLANT
OSHKOSH, WISCONSIN
USEPA ID: WIN000509947

Project No: 1312

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ACROYNMS

AOC	Administrative Order on Consent
Bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, xylenes
BaP	benzo(a)pyrene
BbF	benzo(b)fluoranthene
C3	C3 Environmental Limited
City	City of Oshkosh
CERCLA	Comprehensive Environmental Response Compensation, and Liability Act
Cm/sec	centimeters per second
COCs	constituents of concern
CQA	construction quality assurance
CSM	conceptual site model
DO	dissolved oxygen
EDI	EDI Engineering & Science, Inc.
ES	Enforcement Standard
ft/ft	feet per foot
ft3	cubic feet
ft/min	feet per minute
GCL	geocomposite liner
GIS	geographic information system
gpm	gallons per minute
Hp	horsepower
HSI	Simon Hydro-Search
LL	liquid limit
µg/L	micrograms per liter
mg/kg	milligrams per kilogram
MGP	manufactured gas plant
MCL	Maximum contaminant level
NCP	National Contingency Plan
ND	non-detectable
NGVD	national geodetic vertical datum
NRT	Natural Resource Technology, Inc.
OM&M	operation, maintenance and groundwater monitoring
ORP	oxidation/reduction potential

PAH	polynuclear aromatic hydrocarbons
PAL	Preventive Action Limit
Park	Riverside Park

ACRONYMS (CONT'D)

PID	photoionization detector
PLC	Programmable Logic Controller
ppm	parts per million
psi	pounds per square inch
PVOC	petroleum volatile organic compounds
RAOs	Remedial Action Objectives
RCLs	Residual Contaminant Levels
RCRA	Resource Conservation and Recovery Act
RI/FS	Remedial Investigation / Feasibility Study
ROD	record of decision
ROW	right-of-way
SARA	Superfund Amendments and Reauthorization Act
SOW	Statement of Work
SPT	standard penetration test
SSL	Soil Screening Levels
TCLP	toxicity characteristic leachate procedure
TCT	Twin City Testing Corporation
TOC	Total Organic Carbon
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
USCS	Unified Soil Classification System
UU	undrained unconsolidated
VOC	volatile organic compound
WDNR	Wisconsin Department of Natural Resources
WGNHS	Wisconsin Geological and Natural History Survey
WKG2	Wagner Komurka Geotechnical Group, Inc.
WPDES	Wisconsin Pollutant Discharge Elimination System
WPSC	Wisconsin Public Service Corporation
WWTP	Wastewater Treatment Plant

1 INTRODUCTION

Pursuant to the Administrative Order on Consent (AOC) and associated Statement of Work (SOW) executed between the U.S. Environmental Protection Agency (USEPA) and WPSC on May 5, 2006, a completion report is to be prepared for the former Manufactured Gas Plant (MGP) Site (Site), located in Oshkosh, Wisconsin (Figure 1) to summarize environmental investigation and remediation activities undertaken at the Site. Natural Resource Technology, Inc. (NRT), on behalf of Wisconsin Public Service Corporation (WPSC), prepared this Completion Report.

The purpose of this Completion Report is to:

- Summarize the previous work performed at the Site prior to the effective date of the AOC;
- Assess the environmental effectiveness of the remedial actions undertaken to date;
- Document whether the areas where further remedial measures and/or other response actions are necessary;
- Summarize the on-going monitoring results, and
- Determine, based on current site information, areas that pose a potential risk to human health and/or the environment, and may warrant additional investigation.

The report is divided into the following sections:

- Section 2: Pre-Remedial Upland Investigations;
- Section 3: Sediment Investigation and Results;
- Section 4: Remedial Actions Performed;
- Section 5: Post-Remedial Upland Investigations;
- Section 6: Post-Remedial Performance Monitoring Results;

- Section 7: Identified Pathways and Conclusions; and
- Section 8: References (Record File).

1.1 General Site Information

Owner:	City of Oshkosh Contact: Mr. Jackson Kinney 215 Church Avenue P.O. Box 1130 Oshkosh, WI 53903
Former MGP Operator:	Wisconsin Public Service Corporation Contact: Mr. Brian Bartoszek (920-433-2643) 700 North Adams Street, P.O. Box 19002 Green Bay, WI 54307-9002
Facility Location:	T18N, R16E, Section 24 305 Ceape Avenue Oshkosh, Wisconsin Winnebago County
USEPA ID:	WIN000509947
WDNR BRRTS #:	02 71 000256

The former MGP property encompasses approximately 7.6 acres and is bounded on the north by Ceape Avenue, on the east by Broad Street, on the west by Court Street and on the South by the Fox River (Figure 2).

1.2 History of Site Use

The Oshkosh Gas Works owned and operated the Oshkosh MGP from 1869 until 1922. In 1922, a number of existing utility companies merged to form WPSC and the MGP became a WPSC facility. Numerous companies owned portions of the former MGP property. Sanborn maps show Banderob & Chase Furniture Factory owned the eastern portion of the property between the 1890 and 1950s for furniture making and lumber storage. Based on the Sanborn maps, WPSC purchased the eastern portion of the property from Banderob & Chase between 1949 and 1957.

The former MGP facility was constructed in 1869 and initially utilized the retort coal gas production method, which involved heating the coal in an airtight chamber (retort) which produced coke and gases containing a variety of volatilized organic constituents. The process also produced tar, which was sold for roofing, wood treatment, and paving roads. The gas was passed through purifiers to remove impurities such as sulfur, carbon dioxide, cyanide, and ammonia. Dry purifiers contained lime or hydrated iron oxide mixed with wood chips. The gas was then stored in large holders on the property prior to distribution for lighting and heating.

In 1914, the production method was converted to a carbureted water gas process, which involved passing air and steam over the incandescent coal in a brick-filled vessel to form a combustible gas, which was then enriched by injecting a fine mist of oil over the bricks. The gas was then purified and stored in holders prior to distribution. The Oshkosh MGP ceased operations in 1946 when propane was introduced as a fuel. Based on MGP property site plan drawings provided by WPSC, which cover the years 1915 to 1966, former MGP-related structures (Appendix A1, Sheet C020) included the following:

- Boiler, retort, condenser, scrubber, vaporizer and purifier houses;
- Two gas holders with capacities of 200,000 cubic feet and 500,000 cubic feet;
- One aboveground oil storage tank approximately 24 feet in diameter;
- Four tar wells;
- Three tar separator tanks and one tar still;
- Two water supply wells;
- Steam plant; and
- Coal and coke storage.

Based on review of Sanborn maps, the shoreline of the Fox River has shifted considerably from 1890 to 1911 to its present day position (Appendix A1, Sheet C020). The source of the fill material is not known.

In 1985, the City of Oshkosh constructed a pump station on property purchased from WPSC on the eastern edge of the property near the WPSC electrical substation. Also installed at that time were two force mains each 36 and 16 inches in diameter, respectively, that traverse across and beneath the Fox River to the City's treatment facility located south of the former MGP. WPSC retained ownership of the central and western portions of the property and operated a natural gas regulating station located along Court Street. Gas regulation operations were housed in an aboveground building that was formerly part of the MGP operations and ceased in 2002 as part of the upland remedial action.

In December 2003, following WPSC upland remedial construction activities, the City of Oshkosh purchased the WPSC property to expand its existing park located west of Court Street along the Fox River (Figure 2). WPSC retains ownership of the electrical substation adjacent to the pump station on the eastern portion of the former property and the groundwater treatment building which houses the gradient control system equipment and control panel.

1.3 Current Site Use

The former MGP facility now known as Riverside Park has an amphitheatre, parking lot, concession buildings, restroom facilities, landscaped lawn, and paved walkways (Figure 2). The Park currently extends from the Fox River on the south to State Street on the west, to Ceape Avenue on the north, and to Broad Street right-of-way on the east. The Park footprint includes the former MGP property and about 200 feet of the southern portion of former Court Street right-of-way.

An asphalt parking lot is located on the north side of the Park, with access from Court Street and Ceape Avenue. WPSC's groundwater treatment building is located adjacent to Broad Street right-of-way and the City of Oshkosh pump station (Figure 2). At the southwest corner of Court Street and Ceape Avenue is a building owned by a law firm. East of the Park are residential homes and commercial buildings.

1.4 Overview of Site Conditions

WPSC provided a summary of Site conditions to the USEPA in October 2005. The summary included information pertaining to: (1) the upland remediation work; and, (2) on-going monitoring. In addition a list of documents pertaining to the Site was included. An overview of Site conditions is presented below.

1.4.1 Site Status Summary

1.4.1.1 Overview of Work Performed

- WPSC performed upland remediation work in 2002, including source area excavation and thermal treatment (23,500 tons), installation of a containment barrier wall and gradient control system, and construction of a surface cap.

- Operation, maintenance, and groundwater monitoring (OM&M) is in progress. WPSC submitted *2006 Annual Operation, Maintenance, and Monitoring Report* on February 7, 2007 to document OM&M activities. This Completion Report includes the 2007 OM&M activities (Section 6).

- The City purchased the property for park redevelopment in December 2003. Park construction began in 2004 and was substantially completed in June 2005.

- Assessment of groundwater quality in the bedrock aquifer was performed in 2005.

- River sediment quality assessments were performed in 1996 and 2001.

1.4.1.2 Status of Site Conditions & Monitoring

- The depth to groundwater ranges from approximately 4 to 10 feet below existing ground surface. Shallow groundwater outside of the containment zone flows south toward the Fox River. Shallow bedrock flow is to the north, away from the river.

- Post-remediation residual concentrations of BTEX, trimethylbenzenes, PAH, and cyanide are present in soil and/or groundwater, as described in the project reports of record.

- Monitoring data indicates the existing gradient control system adequately captures the shallow/water table zone. The system discharges to City WWTP at average flow rates of 5 to 10 gpm with an “up” time of more than 90 percent since start-up. The discharge complies with the WWTP limits.

- Shallow groundwater quality is close to or below the maximum contaminant level (MCL) or NR140 ES at perimeter wells (outside of the containment system). Bedrock water quality exceeds the MCL or NR140 ES adjacent to the Fox River (upgradient), and is at or below MCL or NR140 ES off-site to the east (side gradient). Bedrock water quality is at or below MCL or NR140 PAL to the north (down gradient).

- Water depths in the Fox River vary from about 6 to 7 feet adjacent to the former MGP at the sheet pile wall, increasing to as much as 30 feet near the center of the river channel. Soft sediment thickness based on poling, core samples, and borings varies from <1 foot to about 6 feet.

- Residual tar, sheens and PAH are present in sediments. Soft sediments containing MGP residuals occur near shore in thin, discrete deposits within the river channel. Underlying the soft sediment is consolidated sediments. Tar was observed within the consolidated sediments generally confined to the sand seams within the clay, and the gravel deposits.

- Total PAH concentrations in sediment samples are highest in sample T107-C (0 to 2 feet composite) at 30,710 mg/kg, located near mid-channel. Other sediment samples adjacent to the former MGP vary from ND to 12,710 mg/kg total PAHs. Samples slightly upstream of the former MGP ranged from ND to 7.6 mg/kg. Samples from near the railroad bridge and downstream ranged from ND to 17 mg/kg.

2 PRE-REMEDIAL UPLAND INVESTIGATIONS

2.1 Overview

This section summarizes pre-remedial soil and groundwater investigations performed in the upland portions of the Site. Most soil samples collected and analyzed were obtained during pre-remedial investigations. The soil quality issues were largely addressed through soil excavation and treatment, containment of MGP residuals by construction of the vertical barrier wall and earthen cap, and operation of the hydraulic gradient control system. Post-remedial soil sampling was limited to excavation side wall samples and post-treatment samples collected from the thermally-treated material prior to use as backfill.

Pre-remedial groundwater investigations focused on determining the magnitude and extent of groundwater contamination at the former MGP property. Groundwater analytical results collected during these pre-remedial investigations were compared to WDNR NR140 regulatory standards. These data, while of historical interest, are not reflective of current conditions due to the remedial work performed to-date. Potential exposure pathways that may continue to pose a risk to human health and/or the environment are discussed in Section 7.

2.2 Investigation Chronology

As outlined below, site investigation efforts began in 1985 at the former MGP by WPSC. Concentrations of BTEX, PAHs, and total cyanide in groundwater samples collected from monitoring wells OW-1, OW-2 and OW-3 suggested that these constituents were present at elevated levels in groundwater beneath the former MGP property. In November 1991, HGM Architecture, Inc. retained Twin City Testing Corporation (TCT), on behalf of the City of Oshkosh, to perform geotechnical borings on the property to the west of Court Street as part of the City of Oshkosh senior center construction. TCT encountered black oily material and odorous wood chips suggesting the presence of subsurface contamination.

WDNR requested that both the City of Oshkosh and WPSC conduct investigations of their respective properties. WPSC coordinated and conducted further investigations on both properties under a Consent Order entered into with WDNR on October 22, 1993.

WPSC performed additional soil investigations between 1985 and 1996 to evaluate the magnitude and extent of MGP contamination. In 1998, pre-design data was collected to prepare the upland remedial action alternative described in Section 4.

Detailed information regarding the soil investigation activities and results (including soil boring logs and monitoring well construction forms) is contained in the following documents:

- EDI Engineering & Science, Inc., January 1986. *Site Investigation, Former Coal Gas Manufacturing Plant, Ceape Avenue, Oshkosh, Wisconsin*;
- Simon Hydro-Search (HSI), June 23, 1994. *Phase II Investigation Report – Environmental Investigation of Former Manufactured Gas Plant Facility, Oshkosh, Wisconsin*;
- Natural Resource Technology, Inc. (NRT), October 2, 1996, Letter to James Reyburn, Wisconsin Department of Natural Resources, *Phase II Addendum Investigation Results, Former Oshkosh Manufactured Gas Plant (MGP) Site, Oshkosh, Wisconsi*n; and
- Natural Resource Technology, Inc., April 27, 2000, *Remedial Design Report, Former Manufactured Gas Plant Site, Oshkosh, Wisconsin*.

The investigations consisted of the following:

- EDI 1985 Site Investigation included an analysis of ten surface soil samples (two at five locations, SS-1 through SS-5), sampling of two soil borings (SB-1 and SB-2), installing and sampling of four monitoring wells (OW-1 through OW-4), and six ambient air samples (AS-1 through AS-6; four on-and two off the MGP property) (refer to EDI, 1986); A potable well search was performed for the area within a ¼ -mile radius of the property, including an assessment of the municipal water source; however a more recent potable well search was completed in 2005 (August 31, 2005, NRT), as discussed in Section 5;
- In 1991 and 1992, the City of Oshkosh investigations included sampling of twenty soil borings (B-1, B-2, BX-1 through BX-6, and BZ-1 through BZ-12), installing and sampling of five monitoring wells (GW-1 through GW-5) and three piezometers (P-2 through P-4) (refer to HSI, 1994) to define the extent and magnitude of affected groundwater west of the former WPSC property;

- A 1993 Phase II Investigation by HSI included sampling 19 test pits (TP-101 through TP-118, and TP-105A), four surface soil samples (SS-101 through SS-104), seven soil borings (B-101 through B-107), five HydroPunch™ soil and groundwater samples (HP-101 through HP-105), four monitoring wells (MW-101 through MW-104), and three piezometers (P-101 through P-103) (refer to HSI, 1994) to define the extent and magnitude of groundwater and soil contamination at the former MGP property;

- A 1996 Phase II Addendum Investigation by NRT included drilling of seven soil borings (SB-101 through SB-107) and sampling three piezometers (P-104 through P-106) (refer to NRT, 1996);

- A 1998 Pre-Remedial Design Investigation by NRT included installing and sampling four monitoring wells (MW-105 through MW-108) and a groundwater recovery well which was used to perform a pump test, installation of 13 geotechnical borings (SB-109 through SB-111, SB-113 through SB-119, SB-121, SB-123 and SB-124), and analysis of nine composite soil samples (refer to NRT, 2000); and

- In February 2001, as requested by WDNR (December 2000, WDNR), monitoring well MW-109 and piezometer P-107 were installed to define the affects on groundwater to the east. Based on the results of February 2001 groundwater investigation, monitoring well MW-110 and piezometer P-108 were installed in the Broad Street right-of-way to evaluate the extent of the plume east of MW-109/P-107 well nest in October 2001 (refer to NRT, November 2001).

All soil sample locations from the various investigations are shown in Appendix A1 on Plate 1. Soil analytical results are provided in Appendix A2. Monitoring well and piezometer locations from the pre-remedial investigations are shown on Figures 7 and 8 in Appendix B1. Groundwater analytical results are summarized in Table 2 and 3.

2.3 Regional Geology

Olcott (1968)[1] mapped the Oshkosh area within the Eastern Lake Plain and Moraine geographic province. Unlithified materials largely consist of silt and clay, deposited as glacial ground moraine and lake-plain sediments. The thickness of the unlithified deposits is less than 100 feet, except in a bedrock valley that is roughly parallel to, and north of, the Fox River, where thickness can reach 200 feet (Olcott 1968; Appendix E1, Figure 1). This valley slopes to the west towards a major preglacial river valley that likely

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[1] Olcott, Perry G., 1968, Water Resources of Wisconsin Fox-Wolf River Basin, Hydrologic Investigations Atlas HA-321, University of Wisconsin Geological and Natural History Survey in Cooperation with the United States Department of the Interior Geological Survey.

flowed to the southwest and discharged to the Wisconsin River. The unlithified deposits are underlain by dolomite bedrock of the Ordovician Age Sinnipee Group, also known as the Galena Platteville Formation. Dolomite thickness on the former MGP property is 42 feet. St. Peter Sandstone underlies the dolomite, and is the area's primary aquifer for high capacity potable wells (Olcott 1966).[2]

2.4 Site Geology and Hydrogeology

Surficial soil at the former MGP property consisted of 2 to 12 feet of an inconsistent mixture of fine sands, silts, and clay mixed with ash/cinder, glass, bricks, concrete, and wood. In general, the fill was between 2 and 5 feet thick near Ceape Avenue and thickened to 6 to 12 feet bgs near the river. On the south portion of the former MGP property, the fill is underlain by an organic soil layer ranging in thickness from 1 to 11 feet that decreases in thickness to the north, away from the river and is absent in the vicinity of P-109 on the north portion of the former MGP property. The fill and organic rich deposits are underlain by a lean clay, that ranges in thickness from 10 to 30 feet where present and externals to depths of 20 to 30 feet bgs and is absent on the northwest portion of the former MGP property in the vicinity of P-104 and P-109. The origin of this lean clay is likely alluvial (prior to development of the former MGP property) and clay fill material (during and subsequent to development of the former MGP property). A gravelly lean clay, interpreted as a clay-rich till, is present beneath the lean clay on the majority of the former MGP property and is thickest, 25 to 45 feet at P-104, P-109, and P-111 on the north portion of the former MGP property and north of the property, thins to the south (PW-A and SB-123), and is absent near and adjacent to the river (P-105 and T108-D). The till, where present, directly overlies the dolomite bedrock, with sporadic thin sand or gravel lenses at the bedrock interface (e.g., P-104). The dolomite bedrock interface occurs at elevations ranging 706 feet (P-107) on the southeast portion of the property to greater than 720 feet adjacent to the river on the southwest portion of the site and at 674 feet on the north portion of the former MGP property (P-109), within the bedrock valley.

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[2] Olcott, Perry G., 1966, Geology and Water Resources of Winnebago County, Wisconsin, United States Department of the Interior Geological Survey in Cooperation with The University of Wisconsin Geological and Natural History Survey.

Cross sections (Appendix E2, Plate 1 and 2) based on pre-remedial, sediment, and post-remedial geologic borings illustrate three hydrostratigraphic units:

- Shallow: Unit consists of fill and alluvium from depths of zero to 16 feet bgs.
- Intermediate: Unit consists of confining lean clay and till (gravelly lean clay) between depths of 20 and 35 feet bgs, with the exception of the north portion of the property where units extends at least 80 feet below ground surface, within the bedrock valley.
- Bedrock: Unit consists of fractured dolomite bedrock and sandy units directly overlying and in contact with the bedrock.

2.5 Soil Investigation Results

Soil samples were analyzed for MGP constituents of concern (COCs), including volatile organic compounds (VOCs); benzene, toluene, ethylbenzene and xylenes (BTEX); polynuclear aromatic hydrocarbons (PAHs); total phenols; total, amenable and weak acid dissociable cyanide; and RCRA metals. Soil analytical data are provided in Appendix A2.

2.5.1 Former MGP Property

The area with elevated PAHs generally coincided with a portion of the area where elevated benzene concentrations were present (see Figure 2 in Appendix A3).

In the central portion of the former MGP property, the contaminated area was associated with the former 500,000 ft^3 gas holder. Based on soil borings and test pits performed in this area, affected soil extended to 6 feet bgs in the vicinity of the former gas holder and was relatively localized. Field observations indicated that a sheen and strong odor (and possibly tar) was present between 4 to 6 feet bgs from the south edge of the holder to approximately 25 feet south of the former gas holder.

Soil contamination on the northwestern side of the former MGP property was located in the vicinity of the former tar wells and 200,000-ft^3 gas holder. Laboratory analytical results showed the presence of BTEX and PAHs throughout this area. Field observations indicated that tar was present in the vicinity of two of the tar wells and the gas holders. Coal tar was also observed in the fractures of the clay with sand at MW-104 (depth 10.9 to 11.4 feet).

Elevated levels of cyanide were detected during the pre-remedial investigations. Field observations indicated stained wood chips located primarily in the vicinity of the tar wells, tar separator and scattered on the north-central part of the property (Figure 3, Appendix A3). The highest concentration of total cyanide (1,727 mg/kg) was encountered in the former 25,000 gallon tar well at 1.5 feet bgs. The total cyanide concentration at TP-107, below the former tar separator, was 496 mg/kg at a depth of 4.5 feet bgs. Total cyanide concentrations from all other samples collected were less than 100 mg/kg.

2.5.2 Adjacent Properties

Soil samples collected by the City's consultant, Twin City Testing Corp. (TCT), and NRT indicated the presence of MGP residuals. These MGP residuals are mostly located along the southern end of Court Street and adjacent to the Fox River (Figure 2, Appendix A3). Laboratory analytical results indicate that BTEX and PAHs are present in soils throughout this area (southern end of Court Street and adjacent to the Fox River at GW-4, BZ-8 and BZ-1); generally below the water table, which may be related to groundwater migration and do not necessarily indicate presence of potential source areas. Coal tar was observed in the fractures of the native clay with sand at boring B-105 in Court Street from 6 to 10 feet bgs. Geotechnical soil borings installed in Court Street by NRT in 1998 indicated that fill material and hydrocarbon staining was present in soils to a depth of approximately 4 to 6 feet bgs.

2.6 Groundwater Flow

Depth to groundwater measurements were collected during pre-remedial investigation activities from the monitoring wells and piezometers and are summarized in Table 1.

2.6.1 Shallow Groundwater Flow

Pre-remedial shallow groundwater elevations ranged from 746 to 748 feet[3] (4 to 8 feet bgs). Shallow groundwater flows were south-southwest towards the Fox River (Appendix B1 Figure 7). River elevations were similar to or slightly lower than groundwater elevations. Horizontal gradients, based on

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[3] NAVD88 - Elevations in this report will be noted as feet only and are referenced to the new North American Vertical Datum of 1988 (NAVD88)

September 2001 data (Appendix B1, Figure 7), were approximately 0.007 to the south (toward the Fox River).

Hydraulic conductivity values calculated from 1993 baildown/recovery test methods ranged from 1.5×10^{-2} to 1.3×10^{-7} cm/sec. The highest hydraulic conductivity values occurred in well-graded gravel layers and in the coarse-grained fill material. Low hydraulic conductivity values occurred in the wells screened in lean clay with sand and within the fine-grained fill (HSI, 1994).

The higher velocities were influenced by higher hydraulic conductivities calculated for monitoring wells screened in fill, and the lower velocities represent wells screening the shallow lean clay. The mean flow velocity in the fill, using a geometric mean hydraulic conductivity value of 2.0×10^{-3} cm/s ranged from 20 to 50 ft/yr.

2.6.2 Bedrock Groundwater Flow

Pre- and post-remedial bedrock groundwater elevations ranged between 742 to 748 feet NAVD based on piezometers P-104 through P-108 and indicated groundwater flow is north with a slight westerly component. Horizontal hydraulic gradients have ranged from were 0.001 to 0.005 to the northwest/west (away from the Fox River).

2.6.3 Vertical Hydraulic Gradients

The shallow and bedrock groundwater flow systems are independent of each other (See Section 5). As such, vertical hydraulic gradient data presented in the pre-remedial site investigation reports are not helpful in interpreting vertical groundwater flow.

2.7 Groundwater Quality

Groundwater samples collected from the monitoring wells and piezometers from 1985 through March 2002 were analyzed for BTEX; trimethylbenzenes; total, weak acid dissociable and amenable cyanides; and PAHs. Groundwater quality data are summarized in Tables 2 and 3, and presented on Figure 9 in Appendix B1.

2.7.1 Shallow

The highest concentrations of BTEX (520 to 9,700 micrograms per liter (µg/L) benzene) and PAH (510 to 41,000 µg/L naphthalene) compounds were detected in the south central portion of the former MGP property at GW-2, MW-102 and MW-101. Concentrations decreased to the east and west (<0.13 to 2.2 µg/L benzene and <0.056 to 280 µg/L naphthalene), toward the park and the Broad Street right-of-way.

The upgradient extent of MGP-related constituents in groundwater was delineated by OW-1, where BTEX and PAHs concentrations were slightly above or at NR 140 Preventive Action Limits (PAL).

2.7.2 Intermediate

MGP-related constituents present in groundwater samples collected from piezometers screened within the intermediate silt/clay zone (P-2, P-4, P-101 and P-102) were attributed to historical activities and the alignment of historic shorelines at the former MGP property before these areas were backfilled to current surface grade (Appendix A1, Sheet C020).

2.7.3 Bedrock

MGP-related constituents in bedrock piezometers were mostly below NR140 ES with the exception of P-103, P-107, and P-108, located adjacent to the Fox River. P-103 and P-107 are screened in gravel above bedrock. P-108 is screened in silt above bedrock with a sand pack that is hydraulically connected to bedrock. All three piezometers (P-103, P-107, and P-108) are hydraulically upgradient of the former MGP operations area and other piezometers (Appendix B1, Figure 10).

2.8 Summary of Findings

The pre-remedial upland investigations identified and delineated soil and groundwater contamination associated with operation of the former manufactured gas plant. Most contamination occurred within the shallow alluvium and fill unit. Section 4 describes the remedial actions designed to treat and contain the contamination.

Results of pre-remedial investigations include the following:

- Shallow groundwater flows south-southwest toward the Fox River and bedrock groundwater flows north-northwest;

- Shallow groundwater was affected by MGP residuals on the former MGP property. The groundwater data at MW-103 and MW-108 did not indicate significant MGP residual concentrations migrating to the east;

- Historical activities and the alignment of historic shorelines influenced the intermediate groundwater quality;

- Bedrock monitoring wells near the river (P-103, P-107, and P-108) had higher concentrations of BTEX and PAH compounds than the downgradient bedrock wells north of the river (P-104 and P-106);

- Oxide box wastes consisting primarily of blue stained wood chips were visually identified near the former MGP tar separator located northwest of the former 500,000 gas holder and in surficial soils (less than one foot bgs) in various portions of the former MGP property; and

- The fill materials are primarily an inconsistent mixture of fine sands, silts and clay mixed with ash/cinder. These fill materials contain MGP residual constituents consisting primarily of BETX and PAHs. MGP residuals are also present in the fill materials within and in the vicinity of the former gas holders and tar wells.

3 SEDIMENT INVESTIGATION AND RESULTS

3.1 Investigation Chronology

Sediment investigations were performed in the Upper Fox River, adjacent to the former MGP. Detailed information of the surface water investigation activities and results are discussed in the following letter reports, listed in chronological order:

- *WPSC Oshkosh Former Manufactured Gas Plant Site Fox River Sediment Sampling Results,* (August 1994, Simon Hydro-Search, Inc.);
- *Sediment Sampling Work Plan, Former Manufactured Gas Plant Site - Oshkosh, Wisconsin* (April 1995, NRT);
- *Sediment Investigation Report, Former Manufactured Gas Plant Site - Oshkosh, Wisconsin* (October 1996, NRT);
- *Sediment Sampling and Analysis Plan (SAP) for the former Oshkosh Manufactured Gas Plant (MGP) Site, Oshkosh, Wisconsin* (June 2001, NRT); and
- *(Revised) Sediment Investigation Report Former Oshkosh Manufactured Gas Plant Site Oshkosh, Wisconsin* (August 22, 2005, NRT).

Two types of material are observed at the bottom of the Fox River: unconsolidated soft sediments and consolidated sediments. The soft sediments are composed of organic silt/clay to organic sand with debris and fine-grained material (lean clay and silt) with varying amounts of coarse-grained material (sand and gravel). Underlying the soft sediment are consolidated deposits comprised of clay and silt with thin, localized sand and fine gravel layers. These consolidated deposits were previously identified, during 1994 through 2002 sediment investigation, as gravelly lean clay till deposits. Evaluation of data during upland geology as part of the former MGP bedrock assessment activities in 2005 (Section 5), indicate these consolidated materials do not correlate to gravelly lean clay, which are interpreted as till deposits, identified north and south of the Fox River (Appendix E: Plates 1 and 2). Additionally, the sediment and bedrock assessment activities indicate some of the consolidated deposits encountered are weathered bedrock. For purposes of this completion report, the upper debris layer will be referred to as "soft sediment" and the lower consolidated material with be referred to as "consolidated sediment", which includes the lean clay, silt, localized sand and gravel layers, and the potential weathered bedrock.

3.1.1 Simon Hydro-Search, Inc. (HSI), August 1994

An initial sediment investigation was performed by HSI to evaluate the presence or absence of compounds in sediments that might be associated with the former MGP property. This investigation consisted of collecting ten sediment cores from approximately 6 to 60 feet from shore and ranging in length from 1 to 2.2 feet (Appendix C1, Figure 2). Following unsuccessful attempts to obtain sediment samples from conventional coring devices (likely due to gravel and shell or other debris), a diver collected samples using a hand-held coring device.

HSI indicated that surficial sediments consisted of dark gray to black silty sand and gravel ranging in thickness from 0.1 to 1.2 feet. Sediments beneath this layer to the bottom of the cores consisted of dark grayish brown to dark gray silt and silty clay, with varying amounts of organic material. Bivalve shells and snail shells were observed in the silty sand. Shells were also noted in the deeper organic silt sediments.

The HSI analytical data summary is provided in Appendix C1, Table 1. Appendix C2, Sheet 1 provides the sampling locations with the distribution of BTEX and total PAHs. Phenol was not detected at any sampling location.

3.1.2 Natural Resource Technology, October 1996

NRT performed a subsequent sediment investigation using a HSA drill rig and a barge in December 1995. Six transects (T101 through T106; Appendix C1, Figure 2) were extended out from shore approximately 150 feet and divided into approximately 50-foot long sections. One sediment borehole was completed per 50-foot section. Each borehole was completed to refusal.

A 2-foot split spoon sampler was used to collect continuous samples, which were containerized for field screening and laboratory analysis. Sediment samples were visually inspected for physical characteristics, including color, odor, texture, structure and presence of oily sheens or visible tar/oils. The sediments were then screened for the presence of volatile organic compounds (VOCs) using the headspace method and a PID. Select sediment core subsamples were submitted for laboratory analysis of BTEX, PAHs, total cyanide, total phenol, grain size, TOC, and oil and grease.

Sediment boring logs indicated the presence of a soft sediment layer typically one to two feet thick, consisting of broken bivalve shells, gray clay marl, wood, and organic detritus. Underlying the soft sediment was a dense clay unit (consolidated sediment). This unit extended from approximately 1to 2 feet beneath the sediment surface to the terminus of most boreholes. Borings advanced closer to the shore generally contained thicker units of clay. The clay was firm to stiff with varying plasticity and fissures and blow counts range between 40 to 80 blows or more per 12-inches of sample collection. The clay was relatively continuous and consistent across the site. Intervals of localized silt, fine sand, and fine gravel layers were present. A sandy gravel layer was observed above weathered bedrock, which may be five to ten feet in thickness (Olcott 1966) in boreholes that approached the center of the channel.

Intervals in near-shore boreholes from transects T101, T102, T104, and T105 exhibited tar, sheen, or tar-like odors. The analytical data summary is provided in Appendix C1, Tables 4-2 and 4-3. Sheet 1 (Appendix C2) provides the sampling locations along with the distribution of BTEX and total PAHs.

3.1.3 Natural Resource Technology, (2001 Sampling Activities)

The sampling activities completed in 2001 followed the procedures outlined in Sediment Sampling and Analysis Plan for the former Oshkosh MGP Site (June 2001, NRT). The 2001 sediment sampling locations are plotted in Appendix C2, Figure 3.

3.1.3.1 River Bathymetry

The hydrographic surveys indicate that the river water depth ranges from approximately 7 feet to over 37 feet within the study area. The water is deepest in an apparent scour area to the east, immediately downstream of the railroad bridge pier and shallower along the shoreline. Based on the United States Geological Survey (USGS) topographic quadrangle water elevation at the mouth of the Fox River, the water elevation, during sediment investigations, was assumed to be 746.9 feet[4]. The river bottom

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[4] NAVD - Elevations in this report will be noted as feet only and are referenced to the new North American Vertical Datum of 1988 (NAVD).

elevation ranges from approximately 710 to 740 feet (Appendix C4). Field poling measurements indicate that the river water depth ranges from approximately 6.5 to 32 feet within the study area. The deepest and shallowest portions of the water correspond to the areas identified in the hydrographic surveys (Appendix C3, Tables 1 and 2). The top of sediment elevations obtained from the hydrographic surveys are generally comparable to the elevations from the field poling measurements.

The multi-beam sonar survey of the river bottom indicates varying channel configurations likely due to changes in general flow patterns resulting from the bridge piers immediately downstream of the former MGP (Appendix C4). West (upstream) of the former MGP, there is an approximately 250-foot wide channel located in the central portion of the river. The elevation of this channel ranges from about 716 to 720 feet (Appendix C4). Along the east side of the site (just upstream of the railroad bridge), the river is shallower, up to elevation 736 feet , suggesting this is an area of sediment accumulation.

Downstream of the railroad bridge there appear to be two separate channels, which are likely related to the influence of the bridge piers on water flow. The base of the channel, located on the southern side of the river, indicates an area of sediment scouring with elevation ranges between 710 and 714 feet, while the base of the channel on the north side ranges from 720 to 724 feet (Appendix C4). Separating these two channels is a mound in the center of the river with a base elevation above 728 feet. The channels become shallower and converge into a single channel at the point where the river enters Lake Winnebago.

3.1.3.2 Sediment Thickness

Sediment thickness maps of the river bottom immediately adjacent to the former MGP were developed from the hydrographic survey results and the sediment poling results (Appendix C3, Table 1 and Appendix C4). In areas where the soft sediment is underlain by consolidated sediments composed of soft, saturated clay soils, determining sediment thickness can be somewhat arbitrary using either method. Visual observations at some of these locations confirmed that soft clays underlay the sediment as this material was smeared onto the pole (Appendix C3, Table 1).

The soft sediment layer present immediately adjacent to the former MGP is generally thin and uneven ranging from 0 to 4 feet of sediments along the eastern end of the site (Appendix C4). Boring logs indicate sediment up to 7-feet within 40 feet from the shoreline on the western end of the study area (Appendix C4, Soft Sediment and Debris Thickness map, location T101-D). Sediments are generally thin and discontinuous in the channel areas ranging from 0 to 0.5 feet (Appendix C4). In general, the near-shore sediments are less than two feet thick over much of this area although some areas had no measurable sediments. Sediment thickness increases downgradient of the railroad bridge.

3.1.3.3 Side Scan Sonar

The side scan sonar images as documented in the *Revised Sediment Investigation Report* (August 22, 2005, NRT) show the continuous presence of debris along the dock wall and adjacent steeper slope of the north side of the channel. The dock wall is well defined in the side scan sonar images with the exception of where Court Street appears to intersect the river. Historically, this was the location of a former slip extending into Court Street that was subsequently filled in (Appendix A1, Sheet C020). Since the time of the side scan sonar survey was conducted, a vertical barrier wall has been installed along the shoreline as part of the upland remedial action, as discussed in Section 4, (Appendix C2, Sheet 2).

The side scan sonar detected two probable pipeline trenches extending across the river channel from the former MGP property. In addition, a pipe or cable is particularly well defined immediately upstream of the railroad bridge. No other recognizable large scale objects were discernable within the river channel, however, other obstacles (e.g., submarine electric lines) may limit future sampling activities.

3.1.3.4 Fox River Hydraulic Characteristics

The Upper Fox River at Oshkosh is approximately 3.2 miles long as it flows out of Lake Butte des Morts into Lake Winnebago. The upstream area drained by the river at this location is approximately 5,310 square miles. The USGS has an Acoustical Velocity Meter (AVM) stream gauge system (Hydrologic Unit 04030201) located approximately 1,500 feet upstream from the former Oshkosh MGP. The AVM gauge is located on the right bank of the river, about 400 feet downstream from US Highway 45 and State Highway 26 bridge, in the SW ¼, SW ¼, Sec.24, T18N, R16E, Winnebago County, the same section in which the site is located. According to previous conversations with Mr. Peter Hughes (USGS, 1996[5]), the AVM gauge was installed at the beginning of water year 1992 (October 1991 to September 1992). The USGS information for the period of record from 1992 to 2000 is summarized on

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[5] Hughes, Peter. (U.S. Geological Survey, Madison, WI). Personal communication, April 16, 1996.

Appendix C3, Table 7. Updated USGS information will be evaluated as part of the remedial investigations/feasibility study (RI/FS). Annual discharge from the river during this time period ranges between 104 billion cubic feet (cf) to 228 billion cf, with an average discharge of 139 billion cf.

The average daily flow rate for the period of record is approximately 4,420 cubic feet per second (cfs), while the daily mean flow rates range from -6,270 cfs (November 1, 1992) to 18,600 (June 25, 1993). Negative daily flow rate values indicate that the water flow is sometimes reversed and water flows from Lake Winnebago into Lake Butte des Morts. During the period of record, reversed stream flow occurred on 89 of 3,288 days (2.7% of total days). Over 65% of these reversed flow events occurred between the months of September and November, with October having the highest reversed flow days of any month.

The U.S. Army Corps of Engineers (USACE) controls the water level in Lake Winnebago. During the navigation season (from mid-May to through mid-October; USACE 2002[6]), target water levels in Lake Winnebago are strictly controlled (a seasonal range of less than 3.5 feet) to maintain navigation in the Lower Fox River, downstream of the lake. Therefore, during relatively dry years, less water is released through the dams at Neenah-Menasha, and there is a higher chance for storm events to add sufficient water to the lake over a relatively short period of time to cause a flow reversal near the former MGP property. According to stream flow records, 59 days with negative flow (over 66%) were observed during the four water years (1995, 1998, 1999, and 2000) where the average daily discharge was less than 4,000 cfs. This suggests that decreased discharge and low water levels in Lake Winnebago result in conditions favorable for reversed stream flow near the former MGP.

Based on the bathymetry plot generated as part of the hydrographic survey (Appendix C4), the cross sectional area of the river at the downstream end of the site (i.e., just upstream of the railroad bridge) is approximately 10,800 ft^2. Using this area and the discharge data, the average daily discharge of 4,420 cfs translates to an average water velocity of 0.41 ft/sec (0.12 meters per second [m/s]). Actual water velocities will be higher than the average near the center of the river channel and lower near the shoreline.

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[6] USACE. The Lake Winnebago Facts Book Home Page. Retrieved May 16, 2002. http://huron.lre.usace.army.mil/COASTAL/lwfacts.html

Previous modeling efforts completed within the Lower Fox River (EWI Engineering Associates 1991[7]) report critical flow velocities just downstream of Lake Winnebago were generally around 0.3 ft/s (0.09 m/s). Sediment was deposited and accumulated in areas where the flow velocity was less than 0.3 ft/s (0.09 m/s), while significant sediment deposits were not present in areas where the velocity exceeded 0.3 ft/s (0.09 m/s).

3.1.3.5 River Bottom Geology

Geologic cross sections are presented on Appendix C2, Sheet 2 (cross sections A-A' through E-E'). Cross sections A-A', B-B', and D-D' run perpendicular from the shoreline into the river. Cross sections C-C' and E-E' run parallel to shore.

As shown on all of the cross sections, the surficial layer of the Fox River bottom generally consists of two types of material–soft sediments with debris and gravelly material. A soft sediment, typically found in locations approaching the center of the channel (cross section E-E'), consists of, organic silt/clay units to organic sands that overlie diamictons. These soft sediments are primarily black to dark brown silt and clay intermixed with fine sands, which exhibit no consistent layering. Also present within these soft sediments is gyttja, which consists of organic materials such as decayed vegetation, broken bivalve shells and other fine materials. Soft sediments are generally thin and discontinuous in the channel areas. In some areas, soft sediments are absent or too thin to effectively measure.

As sample locations approach the shoreline, as in cross section C-C' the surficial layer is dominated by "debris" which includes wood, brick, glass, and other fill material. In several locations, the surficial sediments exhibited odors, sheen, and trace tar to viscous coal tar, as described in Section 3.1.3.6 and summarized on Tables 1 and 2 in Appendix C3.

Underlying the soft sediments are consolidated sediments, generally comprised of clay and silt soils with thin, localized and intermixed silt, fine sand, and fine gravel layers. The clay soils range from very firm to hard or very soft. The consolidated sediment is relatively continuous and consistent across the study area near the shore as shown on cross section C-C', ranging in thickness from 12 feet (T106-B) to 29 feet

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[7] EWI, 1991. Deposit A – Technical Memo: Task 3: Sediment Transport LLBdM. Project No. 15605.00.

(T106-D). This consolidated sediment is likely to be resistant to erosion during average river flow. As shown in cross section A-A’, B-B’, and E-E’ the consolidated sediment layer decreases in thickness approaching the center of the channel and is not observed in all locations (cross section B-B’, T107-B and T107-C). In these locations, a thin layer of soft sediment may be present over gravel, grading to weathered dolomite bedrock and competent dolomite bedrock. Based on the completed cores, the top of bedrock ranges from approximately 707 feet to 718 feet (Appendix E1, Figure 7). However, these elevations are based on auger refusal using HSA drilling methods and may represent the top of weathered bedrock. The actual top of competent bedrock may be five to ten feet deeper (Olcott, 1966). The gravels encountered in the subsurface may represent a mixture of consolidated sediment and weathered bedrock and are likely hydraulically connected to the bedrock, as discussed in Section 5.

3.1.3.6 Occurrence of MGP Residuals

Sampling and poling locations were evaluated for the presence of MGP residuals based on the presence of sheen or coal tar as summarized in Appendix C3, Tables 1 and 2. Olfactory observations are also included on Tables 1 and 2 in Appendix C3. The estimated extent of MGP residuals in the soft sediments is shown in Appendix C2, Figure 4. Estimated extent of MGP residuals in consolidated sediments is shown in Appendix C2, Figure 5. The occurrence of MGP residuals is also noted in the cross sections on Sheet 2 in Appendix C2.

The extent of MGP residuals in soft sediment is sporadic over the study area. The vast majority of the MGP residuals are within 0 to 1-foot from the top of sediment. Trace tar (not readily visible with coal tar-like odor) was observed in one boring (T101-D, NRT 2005) up to 7-feet below the top of sediment.

The extent of MGP residuals in consolidated sediment is disconnected and in some locations, common to the location of soft sediment MGP residuals. However, the presence of MGP residuals within the consolidated sediment is more extensive and is often observed in locations without soft sediment MGP residuals. This is evident when comparing the occurrence of MGP residuals in soft sediments (Appendix C2, Figure 4) and consolidated sediments (Appendix C2, Figure 5). The approximate volume of MGP residuals in sediment was estimated in the revised sediment report (August 22, 2005, NRT) and will be further evaluated during future RI/FS activities.

The cross sections (Appendix C2, Sheet 2) further demonstrate that the MGP residuals found in the consolidated sediments are generally not related to affected soft sediment. Rather, the data indicate that migration occurred within consolidated sediment. In T104-E, T104-F, T104-G, T107-A, and T107-D MGP residuals were observed in a gravel and sand unit at a depth of five to ten feet below the top of the riverbed. The occurrence of tar at these locations is likely due to migration through the gravel and sand unit as opposed to deposition directly in the river channel. Potential migration pathways are further discussed in Section 5.

Estimated surface areas for the consolidated sediment with the occurrence of MGP residuals were also estimated in the revised sediment report (August 22, 2005, NRT) and will be further evaluated during future RI/FS activities.

3.1.3.7 Sediment Analytical Results

Distribution of BTEX and total PAHs in sediments is provided on Appendix C2, Sheet 1 and select sample results are provided on the cross sections (Appendix C2, Sheet 2). For screening purposes, PAH data were compared to MacDonald et al. 2000[8] Consensus Based Sediment Quality Guidelines (CBSQGs). Due to the lack of a CBSQG benchmark for ethylbenzene, the total BTEX data were compared to the EPA Ecotox Thresholds[9] for screening purposes.

Soft Sediment (BTEX and PAH)

Soft sediment analytical results are summarized on Table 4 (BTEX) and Table 5 (PAHs) in Appendix C3. The distribution of BTEX and Total PAHs in soft sediment is provided on Figure 6 in Appendix C2. BTEX concentration ranged from 0.196 to 315 mg/kg and PAH concentration ranged from 0.065 to 30,710 mg/kg in soft sediment.

Consolidated Sediment (BTEX and PAH)

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[8] MacDonald, D.D., C.G. Ingersoll, and T.A. Berger. 2000. *Development and evaluation of consensus-based sediment quality guidelines for freshwater ecosystems.* Arch. Environ. Contam. Toxicol. 39:20-31

[9] USEPA. 1996. ECO Update: Ecotox Thresholds. EPA 540/F-95/038. January, 1996.

Analytical results are summarized on Table 4 (BTEX) and Table 5 (PAHs) in Appendix C3. Only one sample (T108A (10.7-12.7)) in the underlying consolidated sediments in which BTEX concentration was detected at 1.7 mg/kg. PAH concentrations ranged from 0.35 to 30.3 mg/kg in the consolidated sediments.

Sample T104-F(33.5) was collected immediately below a gravel layer that exhibited evidence of coal tar to evaluate the vertical extent of MGP residuals. The total BTEX and PAH concentrations were relatively low, reported at 5.9 mg/kg and 7.9 mg/kg, respectively.

Samples T108-B(20.3-22.3), T108-D(28.9-29.9), and T108-E(10.5-12.5) were also collected to evaluate the vertical distribution of MGP residuals. Total BTEX concentrations ranged from non-detect (T108-E) to 1.2 mg/kg (T108-B). Total PAH concentrations ranged from 0.77 mg/kg (T108-D) to 11.8 mg/kg (T108-E).

Cyanide

Cyanide results in sediments are provided on Table 6 in Appendix C3.

Metals, PCBs, Ammonia and TOC

Sediment subsamples collected from transects T104, T107, T108, T109, and Ponar™ grab Points 53, 54 and 80 were analyzed for metals, PCBs, ammonia, and TOC. The results are presented on Table 6 in Appendix C3.

3.1.3.8 River Water Analytical Results

Analytical results for the two river water samples are summarized on Table 7 (BTEX, cyanide, ammonia, TOC, and TSS) and Table 8 (PAHs) in Appendix C3. Distribution of BTEX and total PAHs in the river water samples are provided on Sheet 1 in Appendix C2.

BTEX, total, dissociable, and amenable cyanides, and total PAHs were not detected in either river water sample. Ammonia was detected in the upstream sample between the limit of detection and the limit of quantitation. TOC and TSS were comparable in the upstream and downstream sample locations.

3.1.3.9 Preliminary Benthic Community Survey

The approach, field activities conducted, and results of the preliminary benthic community survey are provided in Appendix C5. This study was conducted to provide a baseline determination of benthic organisms adjacent to the site, as well as upstream and downstream. It was not intended to provide a species-level identification of organisms collected.

3.2 Summary of Sediment Investigations

- Previous sediment studies showed near-shore MGP residuals to be confined within 60 feet of the north shore in the upper sediment layer. The 2001 survey revealed sporadic distribution of MGP residuals that included the near-shore areas identified by (October 15, 1996, NRT) and areas in the channel extending to within 100 feet of the south bank of the Upper Fox River.

- The river depth adjacent to the former MGP property ranges from between approximately 7 to over 37 feet. The river bed exhibits relatively continuous debris along the dock wall. Other obstructions to further investigation and potential remediation include storm sewers (3), gas main (1, abandoned), electric submarine cables (at least 4), and sanitary sewer force mains (2).

- The average daily flow rate for the period of record is approximately 4,420 cfs, while the daily flow rates range from -6,270 cfs (November 1, 1992) to 18,600 (June 25, 1993). Negative daily flow rate values reflect infrequent water flow upstream out of Lake Winnebago during about 3% of the period of record. Reverse flow conditions may account for an upstream component of MGP residual distribution.

- Two types of material are observed at the bottom of the Fox River: unconsolidated soft sediments and consolidated sediments. The soft sediments are composed of organic silt/clay to organic sand with debris and fine-grained material (lean clay and silt) with varying amounts of coarse-grained material (sand and gravel). The soft sediment layer immediately adjacent to the former MGP property is thin and uneven, generally less than two feet thick over much of this area. The areas where affected soft sediments were noted, rather than underlying soils, generally have less than two feet of sediment. In some areas, soft sediments are absent or too thin to effectively measure or sample.

- Underlying the soft sediment are consolidated sediments comprised of clay and silt with thin, localized silt, fine sand, and fine gravel layers. The predominantly clay consolidated sediment range from very firm or very soft in texture and is relatively continuous and consistent across the upland areas of the former MGP property. The consolidated sediment is absent in mid channel areas.

- Where consolidated sediment is absent in the mid-channel areas the river bed consists of a gravel layer that grades to the weathered dolomite bedrock surface (based on upland geologic information). The gravels appear to be mixed with weathered bedrock and are likely hydraulically connected to the bedrock.

- Observable indications of organic constituents present in the soft sediments consisted of sheen and/or the presence of tar. These areas also correspond to elevated levels of BTEX and PAHs.

- The highest concentrations of BTEX and total PAHs are present in soft sediments at locations that exhibited tar. Total PAH concentrations ranged from below detection limit to 30,710 mg/kg (ppm). These locations were found in the middle of the channel.

- In consolidated sediment samples, total PAH concentrations ranged from non-detect to 30.3 mg/kg and BTEX concentrations ranged from non-detect to 5.9 mg/kg.

- BTEX, PAH, and cyanide results for the two river water samples were below detection limits.

- MGP residuals in the channel have likely migrated via preferential pathways from the upland portion of the site as discussed in Section 5.5.4. Primary migration pathways involving direct inputs to river sediments were addressed by upland remedial actions. Evaluation of the occurrence of MGP residuals within gravel/bedrock and potential for dissolved phase migration both north and south of the river is discussed in Section 5.6.

4 REMEDIAL ACTIONS PERFORMED

4.1 Overview

Remedial actions were performed between March and October 2002. The City of Oshkosh purchased the property from WPSC in December 2003 and built the park between 2004 and June 2005.

4.2 Remedial Action Objectives

Remedial action objectives (RAOs) for the site, as presented in the Remedial Work Plan (November 2001, NRT) are summarized as follows:

- Reduce the potential for direct contact exposure to MGP residuals;
- Prevent surficial run-off of MGP residuals from the former MGP property into the river;
- Reduce leaching of MGP residuals to groundwater; and
- Reduce migration of MGP residuals to the river.

4.3 Pre-Remedial Action Activities

4.3.1 Feasibility Study

NRT performed an FS to evaluate remediation alternatives for the property and select a response action as detailed in the *Remedial Action Options Report* (May 1998, NRT). The FS recommended limited excavation and thermal desorption coupled with capping and hydraulic containment. Hydraulic containment would be a combination of groundwater recovery with aboveground treatment and the installation of a vertical hydraulic barrier wall.

A pre-remedial design investigation and supplemental design investigation were conducted in November/December 1998 and fall 2001, respectively.

4.3.2 Design Activities

Pre-design investigative activities included the following:

- Pump Test and Groundwater Treatability: A 48 hour pump test was performed at RW-101. Pump test data is summarized in the *Remedial Design Report* (April 2000, NRT). Based on the pump test results extraction trenches were selected over a well system to achieve the desired gradient control. During the pump testing, influent and effluent groundwater samples were collected and analyzed for treatability evaluation and confirmation that the extracted groundwater met the City of Oshkosh discharge limits to the sanitary sewer system;

- Soil Treatability: Representative composite soil samples were collected from the upper unsaturated zone (approximately zero to four feet bgs) and the lower saturated zone (approximately 4 to 14 feet bgs) for soil treatability evaluations. Soil treatability data are presented on Table 6 in Appendix A2; and

- Geotechnical Laboratory Testing: Undisturbed and disturbed soil samples obtained during the geotechnical drilling program were submitted for geotechnical testing to identify preliminary engineering parameters for a containment wall and/or extraction trench, general excavation and slope stabilization. Laboratory testing included falling head triaxial back pressure permeability, index properties consisting of moisture/density, specific gravity, grain size analysis and Atterberg Limits, and unconsolidated undrained (UU) triaxial testing on selected samples of fill material and glacial till. Geotechnical laboratory test results and data is provided in the *Remedial Design Report* (April 2000, NRT). The test results indicated that the clay till is a suitable key-in-layer with hydraulic conductivity ranging from $1.6x10^{-8}$ to $5.9x10^{-9}$ cm/sec.

4.3.3 Supplemental Design Activities

In addition to the installation of the monitoring wells and piezometers installed in February/October 2001, as mentioned above in Section 2, supplemental design activities included assessment of the existing dock wall (Sheet C010, Appendix D1) and performing additional geotechnical borings (Sheet C020, Appendix A1).

4.3.3.1 Dock Wall Assessment

Test pits TP-201 through TP-205 were excavated to evaluate the subsurface conditions along the pre-existing dock wall, adjacent to the former MGP. Test pit locations are shown on Sheet C020 in Appendix A1. Conclusions of the test pit program and dock wall assessment were as follows:

- The pre-existing dock wall was unstable and beyond repair.
- Due to debris and foundations sheet piles could not be readily advanced through the fill to the desired key depth in a cost effective manner.
- A containment wall/dock wall combination was considered to be the most efficient method of both renovating the existing dock wall and providing an alignment for the containment wall that would minimize the amount of debris.
- The containment wall would need to be installed on the river side of the pre-existing dock wall.

4.3.3.2 Additional Geotechnical Borings

In September/October 2001, five geotechnical borings were advanced in the Fox River and one additional geotechnical soil boring SB-125 was advanced near the northeastern extent of the proposed vertical barrier alignment. The geotechnical borings confirmed the proposed key depth of approximately 732 feet NGVD. An additional flexible wall hydraulic conductivity test at boring T-108B (5.7×10^{-7} cm/sec) indicates similar geotechnical properties from previous investigations of the key-in-layer (clay till).

4.3.4 Remedial Design

The remedial design focused on:

- Decommissioning former MGP structures;
- Eliminating potential migration pathways;
- Excavating MGP affected soils;
- Installing a vertical barrier wall (Waterloo® sheet pile system);

- Installing hydraulic gradient control and groundwater extraction and treatment system;
- Backfilling with thermally treated soil; and
- Constructing an earthen cap.

4.3.5 Permitting and Approvals

Wisconsin Department of Natural Resources (WDNR) approved the *Remedial Work Plan* and directed WPSC to proceed with excavation and thermal treatment of contaminated soil on-site (March 2002, WDNR). WPSC obtained approval from the City of Oshkosh to temporarily use a portion of the park and parking lot west of Court Street for storing equipment and job trailers. In addition, the following permits and approvals were obtained in order to begin operations at the site:

- City of Oshkosh building permit and other municipal permits;
- Approval for temporary dewatering discharge to City of Oshkosh wastewater treatment plant;
- WDNR Chapter 30 permit;
- Army Corps of Engineers general permit;
- Storm Water discharge permit;
- Notification of demolition;
- Plan of Operation for Thermal Treatment approval letter; and
- Notification to Treat or Dispose of Petroleum Contaminated Soil (Form 4500-168).

The thermal treatment contractor was responsible for meeting air emission standards including emission rates for particulates, volatile organic compounds, and visible emissions as set forth in the facility operating permit.

4.4 Soil Remediation

Waste characterization of each former MGP structure was conducted prior to hauling contaminated debris to Valley Trial landfill in Berlin, Wisconsin. Test pits were advanced and representative samples were collected within the structures to characterize the debris and soil for off-site disposal, as shown on Sheet C040 in Appendix D1. A summary of the analytical results are on Table 1 in Appendix D2.

4.4.1 Excavation and Grading

The following structures and areas were excavated, in accordance with the *Remedial Work Plan* (November 2001, NRT) as shown on Sheet C040 in Appendix D1:

Structure Excavated	**Material Description**
500,000 cubic foot gas holder	Fill, black with rubble/concrete, odor
200,000 cubic foot gas holder	Fill, rubble, solidified coal tar
9,000 gallon tar well area*	Clay, fill, odor
25,0000 gallon tar well	Fill, coal tar
18,000 gallon tar well	Fill, coal tar
200,000 gallon tar well	Fill, coal tar
Two small unknown structures	Fill, coal tar
One tar separator	Water, coal tar, sludge
Two USTs	Sandy fill, petroleum odor

* 9,000 gallon tar well from historic plans was not encountered during exploratory excavation of the area. Surrounding soil excavated to 3 to 4 feet.

Excavation began at the 500,000 cubic foot gas holder in order to use the base as a staging area for post-treatment material. The concrete base of the large gas holder was found to be approximately five feet below existing ground surface (bgs), with no side walls intact. After soils above the gas holder base were removed and stockpiled for thermal desorption, the concrete base was used for stockpiling post-treated material.

Following the large gas holder excavation, the tar separator located west of the thermal desorption unit (TDU) concrete pad was excavated due to its proximity to the TDU, as shown on Sheet C040. The tar separator consisted of four chambers constructed of steel, concrete and wood. There was approximately five feet of tar and tar sludge at the bottom of the four chambers with approximately 1.5 feet of perched water. All material was removed from the tar well to its base at approximately 8 feet bgs and was consolidated with excavated material from other areas for thermal treatment (See Appendix D3). The separator was backfilled with imported clay. The tar separator adjacent to the 200,000 cubic foot gas holder was not encountered during exploratory excavation.

The 18,000 gallon and 25,000 gallon tar wells were excavated to the bottom of each tar well. The base was left in-place, but the sidewalls were removed to at or below elevation 747 feet. Two additional subsurface structures were encountered while excavating surrounding soils east of the tar wells, as shown on Sheet C040 in Appendix D1. One structure approximately 10 feet in diameter was identified and excavated to its base at approximately 7 feet bgs. The other structure was approximately 6 feet in diameter and was excavated to its base at approximately 6 feet bgs.

As stated in the *Remedial Work Plan* (November 2001, NRT), the MGP facility included a 200,000 gallon tar well that consisted of two chambers separated by a one-foot thick concrete wall. This tar well was visually inspected for free phase coal tar and coal tar was found. The contaminated material was excavated to the base of the tar well at approximately 20 feet bgs. Additional shallow soil from the northern and western portions of the site was excavated and aggregated with the tar well material to homogenize moisture and BTU value prior to thermal treatment. The area and approximate depth of the additional shallow soil excavation is shown on Sheet C040 in Appendix D1.

A majority of former MGP conveyance piping and storm sewers were excavated according to plan, as shown on Sheet C040 in Appendix D1. Pipe runs not encountered during the work are also indicated on Sheet C040 in Appendix D1. Where inaccessible, pipes were grouted to prevent preferential migration of groundwater. Conveyance piping, manholes and significantly contaminated surrounding soil were removed and segregated for treatment or disposal. MGP affected soil was thermally treated. Pipes were decontaminated prior to disposal at Valley Trail landfill.

Additional excavation along the north side of the TDU pad was conducted due to the presence of blue-stained soil, as shown on Sheet C040 in Appendix D1. A large concrete footing measuring approximately

10 feet by 15 feet was encountered. Soil adjacent to the foundation was removed and treated, and the foundation was left in place.

Two previously unidentified underground storage tanks (USTs) were encountered southwest of the former 500,000 ft3 gas holder, as shown on Sheet C040 in Appendix D1. The USTs appeared to be abandoned in place with sand. The USTs were removed, crushed, and hauled to Valley Trail landfill for disposal. Soil surrounding the USTs contaminated with what appeared to be gasoline residuals was excavated and treated with MGP contaminated soil.

4.4.1.1 Utility Corridor Investigation (Off-Property)

Utilities, both active and inactive, within the Court Street right-of-way were evaluated as preferential migration pathways using video inspection and test pits. An inactive storm sewer was abandoned.

Video Inspection

A video inspection of the active 8-inch sanitary sewer within Court Street right-of-way was conducted by Northern Pipe Equipment Inc. The sanitary sewer inspection began at the manhole located at the end of Court Street (manhole #1) and proceeded to manhole #3. Approximately 550 feet of sewer was inspected for cracks, leaks, and presence of coal tar. Several leaks and cracks were noted between manholes #1 and #2. A crack was also noted 127 feet north of manhole #2. No coal tar was noted during the investigations. Locations of manholes, video inspection report and video on compact disk are presented in the *Remedial Action Documentation Report* (February 2003, NRT).

WPSC notified the City of the sanitary sewer condition and requested approval to abandon the sanitary lateral 44 feet south of manhole #3. As shown on Sheet C040 in Appendix D1, a new manhole was installed 44 feet from manhole #3 and the lateral south of the new manhole was plugged with grout. Manhole #2 and #1 were abandoned and backfilled with clay and plugged with concrete.

The active 22 x 36-inch storm sewer within Court Street right-of-way was also video-inspected by Northern Pipe Equipment Inc. Video inspection began at the manhole located at Ceape Avenue and Court Street intersection (manhole #1) and preceded south towards the river outfall. Approximately 590 feet of the storm sewer was inspected for cracks, leaks, and presence of coal tar. No cracks, leaks or coal tar was noted during inspection.

Test Pits

Three test pits were excavated along Court Street to assess the presence of coal tar residuals around existing underground utilities. Locations of test pits are shown on Sheet C040 in Appendix D1. These utilities included the following:

- Inactive 12-inch storm sewer;
- Active 22 x 36-inch storm sewer;
- Previously abandoned 12-inch gas main; and
- Active 8-inch sanitary sewer.

Test Pit #1 located within Court Street approximately 70 feet south of Ceape Avenue was excavated across the utilities. The excavation was 6 feet by 35 feet and approximately 5 feet deep. Fill material (clay) around the abandoned 12-inch gas mains exhibited a slight odor, but no coal tar was present. No coal tar was present within pipe bedding around the active 8-inch sanitary sewer or active 22 x 36-inch storm sewer. The 6-inch water main located west of the 22 x 36-inch storm sewer and below the sidewalk was not encountered in Test Pit #1. As no MGP-related contaminants were found, the test pit was not extended to the water main.

Test Pit #2 located within Court Street approximately 75 feet from shoreline. The excavation was 6 feet by 35 feet and approximately 5 feet deep. Pipe bedding around active 22 x 36-inch storm sewer, 8-inch sanitary sewer and 12-inch gas main did not contain coal tar. Bedding material surrounding the 12-inch gas main exhibited a slight odor. In order to prevent the migration of contaminated groundwater or potential vapors north of the site, Test Pits #1 and #2 were backfilled with imported clay.

The third test pit was advanced in the alignment of groundwater intercept trench DS-1 (within the containment system). Within Court Street, the excavation was 6 feet wide by 40 feet long and approximately 11 feet deep. Pipe bedding around the active 22 x 36-inch storm sewer, 8-inch sanitary sewer and 12-inch gas main did not appear to contain coal tar residuals. A wooden box was encountered between the 8 and 12-inch gas mains at approximately 6 feet deep. The wooden box contained coal tar residuals and was removed.

Abandoned Storm Sewer

The inactive 12-inch storm sewer along the east side of Court Street was removed (within the containment system), as shown on Sheet C040 in Appendix D1. Removal was undertaken due to the presence of coal tar observed inside two of the three manholes. The storm sewer and surrounding soils were excavated between the two northern manholes. The excavation was approximately 150 feet long by 10 feet wide. Surrounding soils north of the southern manhole extending south to the river were observed to contain MGP contaminated material. As a result, an additional area of approximately 180 feet by 14 feet of MGP contaminated soil around the inactive storm sewer was removed for thermal treatment. Excavation depth was approximately 3.5 to 4 feet.

4.4.2 Thermal Treatment

A total of approximately 23,500 tons of soil was treated during remedial activities. Treatment verification samples were collected. Treated soil was stockpiled in 500-ton intervals pending laboratory analytical results at a frequency of one composite sample per stockpile. Post-treatment soil analytical results, along with the treatment soil standards, are listed on Table 3 in Appendix D2. Eight post-treated stockpiles exceeded one or more of the WDNR approved treatment performance standards. These stockpiles were transported to the pre-treatment or to the excavation area for consolidation with excavated material. The materials were then retreated and sampled. All treated material met the treatment soil standards prior to reuse as backfill on-site.

Post-treatment cyanide concentrations were below USEPA SSL of 40 mg/kg for migration to groundwater. Lead concentrations ranged from 400 to 1,000 mg/kg, as shown on Table 3 in Appendix D2.

Based on the arithmetic mean of all pre-treatment and post-treatment results, thermal treatment achieved 99.90 percent removal of BTEX and 99.99 percent removal of PAH in soil. This is based on results shown on Table 4 in Appendix D2, in which the approximate arithmetic mean of pre-treatment soil concentrations of total BTEX and PAHs were 114 mg/kg and 1,460 mg/kg, respectively, and the average post-treatment soil concentrations were 0.116 mg/kg and 0.173 mg/kg, respectively. Averaged over the total tonnage treated of approximately 23,500 tons, the mass of BTEX and PAHs removed by thermal treatment was approximately 5,300 pounds and 68,800 pounds, respectively. In addition, approximately 2,400 pounds of total cyanide was removed.

4.4.3 Air Monitoring

Air monitoring was performed as described in the documentation report (February 2003, NRT) through the duration of the excavation, grading and thermal treatment.

4.4.4 Material Management Summary and Conclusions

In summary, the final approximate quantities of material encountered and/or used at the site and final disposition are listed below.

Material	Disposition	Approx. Tons
Excavated Soil Thermally-treated	Used as subsurface backfill	23,500
Contaminated Debris	Sent to landfill	2,700
Other Material (demolition debris)	Sent to landfill	1,300

4.5 Containment System

The containment system installed consisted of the following components:

- Vertical barrier wall; and
- Groundwater extraction and treatment system.

4.5.1 Vertical Barrier Wall

As stated in the Remedial Work Plan (November 2001, NRT), a combination of the Waterloo® Sheet Pile System and a cement-bentonite slurry wall was recommended for the vertical barrier wall. Both systems were keyed into the clay till at the site.

4.5.1.1 Waterloo System

The Waterloo® system consists of steel sheet pile with an oversized, rolled interlock cavity to be cleaned and sealed using a cement-based grout. C3 Environmental Limited (C3) was contracted to provide construction quality assurance (CQA) during installation of the vertical barrier sheet piles, grouting within sheet pile interlocks, and slurry wall installation of sheet pile and installation of the slurry wall. A CQA report of the vertical barrier wall installation is provided in the documentation report (February 2003, NRT).

As noted in the report, the Waterloo® sheet pile wall was installed in accordance with the drawings and specifications with only minor variations relating to pile depths, gas main alignment deviation, and utility corridor alignment. As shown on Sheet C083 in Appendix D1, Section B near the location of boring T1081B, the key depth was field-adjusted to four feet below original design depth. Based on conditions noted during sheet pile driving, the lean clay was apparently deeper near T108B. During the installation, sheet piles that could not be advanced to the design key depth with the vibratory pile driver were driven with a larger vibratory pile driver. The gas main alignment deviation and utility corridor sheet pile alignments were field adjusted due to the actual location of the utilities.

4.5.1.2 Slurry Wall

A cement bentonite slurry wall was installed around the utilities within the utility corridor, as shown on Sheet C081 in Appendix D1. The slurry wall was designed to:

- Have a maximum permeability of 1x10-7 cm/sec;
- Key into lean clay with 1x10-7 cm/sec permeability at the approximate elevation of 730 feet NAVD; and
- Serve as a barrier for groundwater discharge to the river in locations adjacent to utilities.

The sheet pile wall was keyed into each end of the slurry wall, a minimum of one foot.

Prior to construction, a bench-scale test was conducted. The bench-scale test results are presented in the documentation report (February 2003, NRT). A slurry mixture of bentonite, portland cement, blast furnace slag, and potable water was selected. Field samples collected show a permeability result less than $1x10^{-8}$ cm/sec.

Huntington Chase Geoservice provided CQA during installation of the slurry wall. The slurry wall CQA documentation is presented in the documentation report (February 2003, NRT). Constructed slurry wall location and dimensions are shown on Sheets C081 and C084 in Appendix D1, respectively.

4.5.1.3 Utility Penetrations

Two storm sewer outfalls were extended through the new sheet pile dock wall. A 22 x 36-inch outfall was located south of Court Street and a 12-inch outfall was located within the utility corridor in the eastern portion of the former MGP property. The 22 x 36-inch storm sewer was extended and sealed through the vertical barrier dock wall with a 42-inch steel pipe welded to the sheet pile wall. The connection between the former outfall and extension pipe was made using a steel band around a rubber gasket encased in concrete. The 42-inch pipe was welded to three sheet piles to ensure that the pipe was completely sealed within the sheet pile. Affected sheet pile interlocks were welded continuously using a 1-inch flatbar across each joint instead of sealing with grout.

The 12-inch PVC storm sewer was extended through the portion of the dock wall within the utility corridor. The storm sewer extends through the slurry wall, which provides the primary vertical barrier for the utility corridor. For secondary containment at the vertical barrier dock wall, a 12-inch steel pipe extension was welded to the dock wall and connected to the 12-inch PVC sewer with a rubber fitting and hose clamps. The dock wall interlocks within the utility corridor were grouted and concrete was poured at the base between the old and new dockwalls as an additional barrier.

4.5.1.4 Anchor System

In addition to the sheet piles, Lunda Construction installed a continuous shallow concrete anchor system for structural support of the dock wall. The anchor system, as shown on Sheet S010 and S011 in Appendix D1, consisted of 32 concrete anchor panels and tie rods placed every 16 feet along the length of the dock wall. The concrete panels were pre-cast off-site, delivered to the site and installed according to plan. Additional bracing and penetration sealing was added as shown on the plans.

Each anchor panel was placed approximately 16 feet inland from the sheet pile dock wall. The rods penetrated the sheet pile dock wall below the 100 year flood elevation and above the typical river elevation. To prevent river water from infiltrating the tie rod penetrations, a steel sleeve was welded to the sheet pile and epoxy resin and clamped rubber sleeve were used to seal the cavity.

Field-directed structural support included an angle brace placed approximately 10 feet from the southwest corner of the dock wall, as shown on Sheet S010 in Appendix D1. The brace consisted of 1-inch diameter tie rod, two anchor plates, and a PVC pipe to sheath the rod from weathering. The PVC cavity was sealed with grout. The sheet pile penetration cavities were sealed with Resi-Weld Gel Paste. An additional angle brace was directed to be placed near in the east wing wall and encased concrete to provide additional support.

4.5.2 Groundwater Extraction and Treatment System

Key components and operational aspects of the groundwater extraction and treatment system are summarized below:

- Four interceptor trenches (DS-1 through DS-4) installed at the locations indicated on Sheet C060 in Appendix D1. Each trench has an 11.5 foot sump that is placed at least a foot into the lower clay layer at approximately 736 to 739 feet NGVD. Each trench has a 6-inch diameter clean out at the opposite end of the trench from the sump. Alignment of trench DS-4 was adjusted based on the field-determined location of the former steam plant foundation.

- Each sump contains a pneumatic pump designed to operate at approximately 7 gallons per minute (gpm). A 4-inch conduit from each sump to MH-1 contain hoses for operation of the pump including an air supply hose, water discharge hose and air bubbler hose. A gate valve was placed in the conduit near the sump for the possibility of gravity feed discharge to the sanitary sewer if acceptable in the future.

- All four 4-inch conduits were connected to manhole MH-1. A 10-inch conduit was connected from the junction box to the treatment building to contain hoses from each of the sumps.

- Aboveground treatment equipment, piping and controls were placed inside a treatment building located north of the City pump station. The building has two separate rooms including an equipment room and control room. The explosion proof equipment room includes four dewatering sump monitoring stations, multi-phase separator settling/transfer tank, two bag filter units and a compressor. The control room contains a control panel, power center and an air desiccator. A process and instrumentation diagram for the treatment system is on Sheet M010 in Appendix D1.

- An air stripper was installed in September 2003 to reduce the organic contaminant concentrations in the effluent to meet the City of Oshkosh discharge limit. The air stripper was installed after the bag filters, as shown on Sheet M010 in Appendix A1. A summary of treatment system results following installation of the air stripper, and record drawings of the air stripper was included in the Air Stripper Operation Report (January 2004, NRT).

4.6 Earthen Cap

During excavation activities, the earthen cap subgrade was continuously under construction. After thermally treated soil was confirmed, through laboratory analysis, to meet the treatment performance standards, treated soil was placed and compacted in areas of excavation. The majority of the treated soil was placed along the north, west and south side of the TDU pad. Thermally treated material was not placed within 100 feet of the river or on City property, including the Court Street right-of-way.

After post-treated soil was placed and the TDU pad was removed, approximately 600 cubic yards of additional soil was required to construct a minimum 2.5 percent slope for positive surface water drainage. Imported clay was used to complete the subgrade construction to required grades.

The property and portion of Court Street right-of-way were capped, as shown on Plate 1 in Appendix A1. The earthen cap consisted of three different layers providing an earthen cap of at least 1.5 feet in thickness. Fine-grained fill material at least 6-inches thick, consisting predominantly of clay, was placed and compacted above the subgrade. Drainage tile including 4-inch corrugated HDPE pipe and cleanouts was placed along the dock wall and east wing wall above the fine-grained fill layer to provide positive subsurface drainage above the fine-grained fill layer. Granular fill approximately 6-inches thick was placed atop of the fine-grained fill material to allow lateral drainage of infiltrated water except the access drive around the pump station and substation consisted of gravel (1-foot thick). Lastly, a 6-inch layer of topsoil was placed above the granular fill to complete the earthen cap construction.

4.7 Soil Quality Remaining

Prior to placement of the earthen cap, discrete shallow soil samples were collected at the earthen cap extent at approximately 100 linear foot intervals, as shown on Plate 1 in Appendix A1. Table 6 in Appendix D2 is a summary of the soil quality at the earthen cap extent including BTEX, PAHs, total lead and total cyanide. Remaining soil quality at the earthen cap extent, areas unexcavated including off-property for total benzene, BTEX, naphthalene and PAHs are presented on Plate 1 in Appendix A1.

4.8 Modifications to the Monitoring Well Network

During remedial construction activities, monitoring wells RW-1 (former pump test well), GW-5, OW-3, MW-101, MW-105, MW-106, MW-107, MW-108, MW-109, P-102, and P-107 were abandoned because they were either damaged during construction or were scheduled for abandonment.

Former industrial wells PW-A and PW-C were inspected for free-phase coal tar prior to abandonment. Coal tar was not found in either of the wells. Previous work had been done to remove the former pump and hydraulic oil from PW-A, as reported to the WDNR in the *Remedial Design Report* (April 2000, NRT). Both wells were abandoned in accordance with NR 812.26 and the steel casings were cut below the earthen cap subgrade.

During site restoration activities, monitoring wells OW-3R, MW-101R, MW-108R, P-102R, and P-107R were installed to replace the respective monitoring wells that were damaged from construction activities. All monitoring well abandonment forms and construction forms were included in the documentation report (February 2003, NRT).

4.9 Park Construction

In December 2003, the City of Oshkosh purchased the property from WPSC. The City’s consultant STS Consultants, Ltd. submitted a park development plan (July 2004, STS) to WDNR to summarize the proposed site modifications associated with redevelopment of the property as an expansion of Riverside Park and request for approval. The following design features were proposed in the park development plan:

- Remove the existing earthen cap and temporarily stockpile the material for reuse on the property. The former MGP property was to be regarded and the earthen cap to be replaced; however, the new environmental cap would consist of concrete or asphalt pavement, and greenspace areas would be constructed using the stockpiled earthen cap materials to create a cap consistent with existing conditions;

- Construction of an asphalt parking lot and several walkways;

- Construction of several buildings including a performance pavilion (amphitheatre), concession, and restrooms. The performance pavilion to be supported on a pile foundation;

- Riverfront improvements including pedestrian walkway, decorative fencing, and an overlook pavilion;

- Modifications to the dewatering sumps and monitoring wells to match final grades;

- Construction of low permeability trench plugs within utility trenches at the locations where trenches enter and exit the property boundaries to limit the potential for contaminants to migrate within the trench backfill beyond the areas containing contaminated soils. A plug to be installed at the new storm sewer penetration through the west wing of the vertical sheet pile barrier wall; and

- Landscaping with plantings of shade trees, flowering trees and shrubs. A geocomposite liner (GCL) to be utilized as a hydraulic barrier over the property fill material beneath landscaped areas.

Construction of Riverside Park expansion was initiated during the fall of 2004 and was substantially completed in June 2005. In June 2006, STS Consultants, Ltd, the City of Oshkosh consultant, submitted the *Riverside Park Construction Documentation Report* (June 2006, STS). A copy of the June 2006 documentation report is presented as Appendix D4. Based on the June 2006 documentation report and NRT's knowledge, the following items differed from the development plan (July 2004, STS):

- Monitoring well and GW-2 and P-2 were damaged during utility construction in 2005. These wells were subsequently replaced (GW-2R and P-2R). Copies of the boring log, well construction report and abandonment forms are provide in the June 2006 documentation report (June 2006, STS), Appendix D4;

- Trench plugs installed within utility trenches exiting the site were constructed of lean concrete on top of bentonite instead of silty clay proposed in the July 2004 development plan. Based on field notes from the City's contractor, a 72" wide by 50" deep notch was made in the vertical barrier west-wing wall and a bentonite trench plug was constructed at the storm sewer penetration;

- Approximately 5,600 tons of contaminated soil was generated during the park construction activities. Based on the landfill disposal tickets in the June 2006 documentation report (June 2006, STS), about 5,300 tons of contaminated soil was transported and disposed at a licensed landfill and remaining 300 tons of soil was reused on-site as fill below the reconstructed cap;

- GCL was utilized instead of 6-inches of compacted clay where soil cap thickness (1.5 feet) could not be obtained due to site consideration. Areas where GCL was placed are shown on the park documentation drawings in Appendix D4; and

- Non woven geotextile was installed in the tree planting areas as a warning layer above the GCL on the east and south side slopes of the pavilion seating area.

Based on the purchase agreement between the City of Oshkosh and WPSC, it is the City's responsibility to maintain the cap and dock wall at the site consistent with the remedial design approved by the WDNR and documented in the *Remedial Action Documentation Report* (February 2003, NRT). An operation and cap maintenance plan was included in the June 2006 documentation report (June 2006, STS). The cap and the dock wall are inspected by the City of Oshkosh on an annual basis during the months of May through August to assess the integrity and effectiveness. In addition to the City's inspections, WPSC continues to conduct annual inspections of the cap (asphalt, concrete and greenspace), vertical barrier wall and components, and the gradient control system components including surface covers for the monitoring wells, dewatering sumps and cleanouts, the treatment system building, and piping and equipment.

4.10 Access Agreements

As part of the sale of the property in December 2003, WPSC and the City of Oshkosh entered into a mutually acceptable access agreement that provides continual site access for WPSC personnel and authorized agents to continue remedy monitoring required by State and Federal agencies, and maintenance of the remedy components. In addition, declaration of a sediment easement was included in the sale of the property to use during future sediment RI/FS activities. However, the declaration was amended in 2006 to revise the original sediment area along the river and to add an area west of Court Street for potential sediment staging area (Appendix D5).

5 POST-REMEDIAL UPLAND INVESTIGATIONS

5.1 Overview

The post-remediation upland investigations focused on:

- Evaluation of groundwater flow and quality within shallow bedrock in the northern portion of the site;
- Assessment of bedrock groundwater quality at depth;
- Assessment of regional influences on shallow bedrock flow, including surface water elevation patterns for Lake Winnebago due its close proximity and influence on local hydrogeology, private and public water well usage and influence on groundwater flow, and site-specific geology, groundwater flow and quality, and related surface water/sediment interactions; and
- Evaluation of groundwater flow and quality within shallow bedrock south of the river.

5.2 Investigation Chronology

Bedrock groundwater investigations completed through 2007 are separated into those performed pre- and post-remediation. Pre-remedial investigations (completed through 2001) focused on determining the magnitude and extent of groundwater contamination beneath the site, as summarized in Section 2. Post-remediation investigations focused on:

- Evaluation of groundwater flow and quality within shallow bedrock in the northern portion of the site;
- Assessment of bedrock groundwater quality at depth;
- Assessment of regional influences on shallow site bedrock flow, including surface water elevation patterns for Lake Winnebago due its close proximity and influence on local hydrogeology, private and public water well usage and influence on groundwater flow, and site-specific geology, groundwater flow and quality, and related surface water/sediment interactions; and

- Evaluation of off-site groundwater flow and quality within shallow bedrock south of the river.

- In February 2001, as requested by WDNR (December 2000, WDNR), monitoring well MW-109 and piezometer P-107 were installed to define the extent of the affected groundwater to the east.

- In October 2001, utilizing February 2001 groundwater data, monitoring well MW-110 and piezometer P-108 were installed in the Broad Street right-of-way to evaluate the extent of the plume east of the MW-109/P-107 well nest.

- In 2004, three bedrock piezometers (P-109, P-110 and P-111) were installed to assess bedrock groundwater flow and quality to the north and south of the former MGP property. Soil samples were not collected from the boreholes. Groundwater samples were collected quarterly for VOC, PAH and weak acid dissociable cyanide (WAD) for the first two sampling rounds, and BTEX, trimethylbenzenes, and PAH thereafter.

Piezometer locations are shown on Figures 3 and analytical data are provided in Tables 2 and 3. Site investigation activities occurred as summarized below.

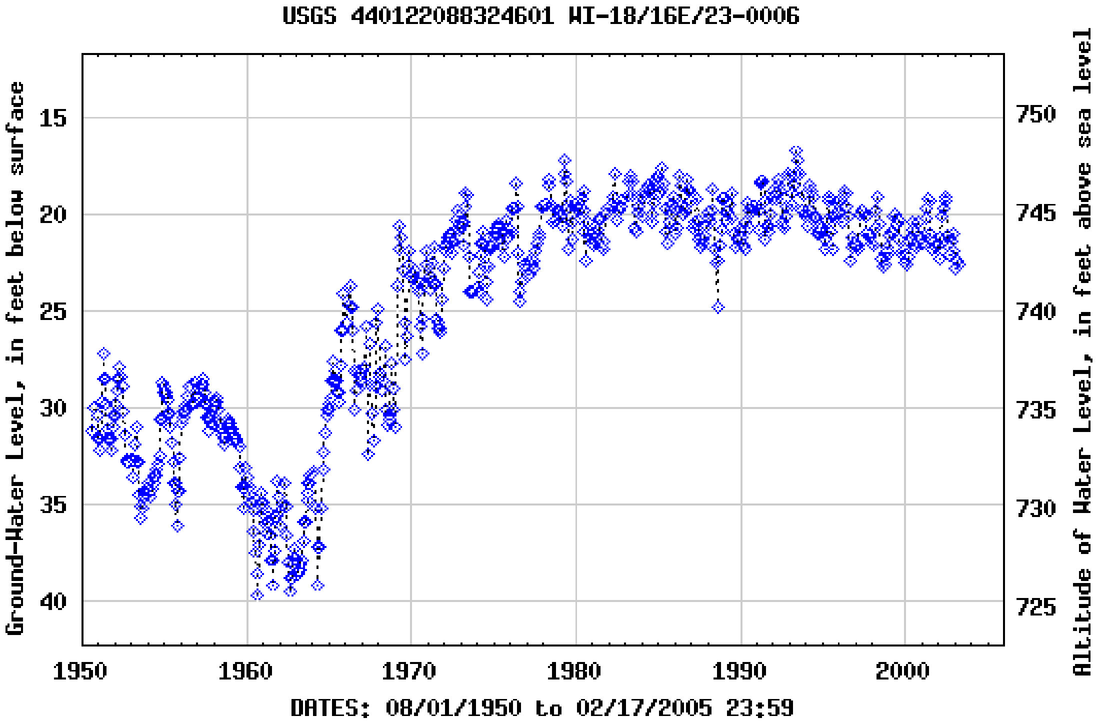
5.3 Potable Wells

To evaluate historic and current groundwater use in the area, well construction, and location information for commercial, private, and public wells located within one mile of the former MGP facility were obtained from the City of Oshkosh Public Health Department, Ms. Kathy Sylvester (WDNR), and from the WDNR Water Well Data Files. Well data are summarized on Figure 8 (Appendix E1) and specific well records are included as Appendix H in the NRT August 31, 2005 report *Operation, Maintenance and Monitoring Semi-Annual Report and Supplemental Bedrock Assessment*. Between 1954 and 1960, three high capacity wells, permitted by the City of Oshkosh, were constructed; one well located 7,500 feet northwest of the former MGP property was permitted to pump 288,000 gallons per day (gpd) and two located 4,000 feet south of the former MGP property were permitted to pump 77,000 gpd. City of Oshkosh records do not provide data on whether these wells are active. A permitted well is located approximately ¾ of a mile northwest of the former MGP property. This well (identified as BH518 by the WDNR) is permitted as a high capacity well (greater than 70 gpm) on WDNR’s website; however, it has an approved capacity of only 50 gpm and typically pumps 1,000 gpd from the dolomite bedrock, based on WDNR website data.

5.4 Regional Cone of Depression

A cone of depression within the bedrock aquifer is depicted by Olcott (1966 and 1968). The cone of depression envelopes the entire City of Oshkosh with the outer edge of the cone at an elevation of approximately 740 feet. Regional piezometric surface elevations without influence from pumping indicate an equilibrated system in the Oshkosh area would likely be at an elevation of 760 to 780 feet (Olcott, 1968). Long-term monitoring by USGS indicates that groundwater elevations in the bedrock, illustrated below, have at least partially rebounded since the period of peak pumpage (1950s through early 1960s). The current levels are at least 15 to 35 feet below expected regional piezometric elevations under natural conditions (without influence from pumping).

The hydrograph below shows historic groundwater elevations for a USGS observation well in the sandstone aquifer (elevations after 2003 were not available).



Graph showing historic groundwater elevation in a USGS observation well located 4,600 feet northwest of the Oshkosh MGP and screened in the sandstone aquifer at a depth of 200 feet (See Appendix G for reference datum)

5.5 Investigation Results

5.5.1 Refinements to Site Geological Interpretations

Several refinements to the interpretation of site geology resulted from findings of the sediment and post-remedial upland investigations. Specifically:

- At least 10 feet of lean clay separate shallow fill and the bedrock unit beneath the southwest portion of the former MGP property (Appendix E2, Plate 1 - Geologic Cross Section B-B'). BTEX and PAH concentrations in groundwater samples collected from bedrock piezometers P-103 and P-105 (Tables 3 and 4) are relatively low in this area (discussed below). These conditions suggest little or no vertical migration to bedrock through the lean clay confining layer in the southwest portion of the former MGP property.

- A high point in the dolomite bedrock surface, greater than 720 feet in elevation, occurs beneath the southwest corner of the former MGP property (Appendix E1, Figure 7 and Appendix E2, Plates 1 and 2). Bedrock elevation decreases to the north, east, and south. The lowest bedrock surface elevation encountered prior to 2004 was approximately 702 feet in elevation.

- Bedrock elevations beneath the Fox River range from less than 702 to 723 feet, with the highest elevations adjacent to the aforementioned bedrock high (SB-113), and the lowest (707 feet) with field observed presence of tar in the vicinity of P-107. Of note, bedrock elevations beneath the Fox River are interpreted from refusal of hollow-stem augers (HSA) and not on collection of core samples. These elevations may represent a weathered bedrock surface with competent bedrock present 5 to 10 feet deeper, as interpreted by regional geology references (Olcott 1966 and 1968).

- The north bank of the Fox River extended 20 to 300 feet farther north than the current shoreline from 1890 to at least 1911, during MGP operations (Appendix A1, Sheet C020). Depths of these excavated and filled channels are unknown. Based on soil borings advanced as part of the sediment investigation, hard to very hard clay is present at elevations of 715 to 735 feet indicating the historic depth of the channel ranged from approximately 25 to 35 feet bgs, except in the area of the bedrock high.

- Discontinuous coarse-grained material immediately overlying bedrock (Appendix E1, Figure 5), is hydraulically connected with bedrock, and considered part of the bedrock unit for the site. The majority of the coarse-grained material is present beneath the current riverbed and in areas that were within the river in the late 1800s and early 1900s.

- Piezometer P-111 was positioned to evaluate the base or north wall of the bedrock valley, confirmed to be present beneath the north portion of the former MGP property during the sampling of PZ-109; bedrock is present at an elevation of 684 feet at P-111, defining the north slope of the bedrock valley (Appendix E2; Plate 1). Based on regional bedrock maps, the bedrock tributary valley slopes toward the west. In addition, 19 feet of gravel is present above the bedrock interface at P-111 (Appendix E2, Plate 1).

5.5.2 Groundwater Flow

5.5.2.1 Shallow

Post-remedial shallow groundwater flow is related to performance of the groundwater remediation system, it is described in Section 6.

5.5.2.2 Bedrock

Potentiometric surface elevations from 2003 through 2007 indicate that the river is a line source for groundwater recharge to the dolomite beneath the Site. Potentiometric surface data south of the river were not available to NRT, other than in regional groundwater flow maps (Olcott 1966 and 1968). These maps depict a cone of depression north of the river, with a small portion of the cone extending south of the river. Historic groundwater elevation data indicate a cone of depression was present within the shallow bedrock of the Oshkosh area resulting from industrial pumpage of the Galena-Platteville dolomite and the underlying sandstone aquifer. As noted earlier, water levels in the Oshkosh area have begun to recover since the referenced regional map was produced in the mid 1960s.

Potentiometric surface elevation changes observed in the bedrock piezometers are attributed to changes in regional groundwater withdrawals and river elevation, rather than effects of groundwater extraction in the shallow unit. This observation is based on the continuity of the lean clay and gravelly lean clay confining units, which separates the shallow fill from the shallow bedrock unit and the similar correlation of bedrock groundwater elevations to surface water elevations (for piezometers along the river both close to and distant from the groundwater extraction zone).

5.5.3 Groundwater Quality

5.5.3.1 Shallow

Post-remedial shallow groundwater quality is described in Section 6.

5.5.3.2 Bedrock

Concentrations of MGP-related constituents are predominately decreasing (see table below) in all piezometers where exceedances historically occurred (Figure 4 and Tables 2 and 3). The extent of groundwater concentrations exceeding groundwater quality standards has been defined with the exception of the southeast portion of the former MGP property and adjacent to the 1903 Fox River shoreline (P-107R), where concentrations of Bap, BbF, chrysene, naphthalene, and benzene continue to fluctuate above NR140 ESs; although total PAH and BTEX concentrations have declined.

Well	Trend	Sample Year(s)	BaP, BbF, Chrysene	Naph-thalene	PAH, Total	Benzene	Ethyl-benzene	BTEX, Total
Shallow Bedrock Unit Piezometer (Bottom of Screen at 720 feet)								
P-103	Declining Highest in 01-04	93 – 05	PAL / ES	nd /--/PAL	0.9 - 44	PAL/ES	--	4.5 – 158
		06 – 07	nd	-- / PAL	38 – 53	ES	--	15 - 27
Bedrock Unit Piezometers (Screen Elevations 696 - 711 feet)								
P-106	Fluctuating Highest in 07	96 – 06	PAL/ES	--	nd - 16	--/PAL	--	nd – 24
		07	ES	--	16	PAL	--	3
P-104	Declining - Highest in 01 / 02	96 – 03	--/PAL/ES	nd/--	nd - 5.4	--/ES	--	nd – 190
		04 – 07	nd/PAL	nd/--	0.1 - 1.0	--	--	nd - 0.5
P-105	Declining	96 – 03	ES	--	1.1 - 19.2	ES	--	nd – 32
		04 – 07	PAL / ES	--	0.4 - 5.4	--	--	nd - 0.4
P-107 / P-107R	Fluctuating / Declining Highest in 03	92 – 04	-- / ES	-- / ES	290 - 4,880	ES	PAL/ES	213-4,561
		05 – 06	--	--	137 - 499	ES	PAL	161-401
		07	ES	ES	1,375	ES	PAL	478
P-108	Declining	98 – 02	--	PAL	9.9 - 152	ES	--	8 - 166
		03 – 07	--	--	4 - 33	--/PAL / ES	--	1.1 - 24
Deeper Bedrock Unit Piezometers (Top of Screen Below 685 feet)								
P-109	Declining, low concentrations	04 – 07	nd / PAL (05)	--	0.1 - 1.1	nd / PAL (04)	--	nd - 2.8
P-110	Declining, low concentrations	04 – 07	PAL	--	0.03 - 1.1	nd / PAL (04)	--	nd 3.5 (04)
P-111	No PAL / ES Exceedances	04 – 07	--	--	0.1 - 3.9	--	--	nd 0.7 (04)

Note: All concentrations in µg/L
--: Constituent concentrations below NR 140 PAL and ES
nd: not detected above minimum detection limit

5.5.4 Bedrock/Sediment Interface Assessment

One or more potential migration pathways may have contributed to the presence of coal tar at the bedrock interface (Appendix E1, Figure 9). A complete discussion of sediment conditions is provided in the *Revised Sediment Investigation Report*, dated August 22, 2005. An overview and assessment of the potential pathways is provided below:

- Migration of historic surface/shallow subsurface discharges from the former MGP property to the shallow and exposed bedrock areas near the river: Residual MGP tar and groundwater are now contained in the shallow unit within the existing containment system.

- Residual migration along the gravel/weathered bedrock interface: The ongoing groundwater monitoring program indicates that the highest concentrations of BTEX and PAH are at the bedrock interface near the river. As depicted on Figure 9 in Appendix E1, movement of trace tar and dissolved phase constituents by either gravity or hydraulic flow through the weathered bedrock is possible where the confining clay is thin or absent. This last pathway is discussed further below, as it relates to the bedrock/sediment interface.

The highest concentrations of BTEX and PAH compounds in bedrock have been observed beneath the southeast portion of the Site at piezometer P-107/P-107R where the lean clay is thickest along the north river bank (approximately 32 feet) and the bedrock surface is lowest (Appendix E2, Plate 2-Geologic Cross Section D-D'). Trace tar was observed in the deep sand and gravel immediately overlying bedrock at P-107. It is unlikely that tar migrated downward through the 32 feet of lean clay separating the shallow and bedrock units in this area. However, the confining layer is thin or absent beneath the river (Appendix E2, Plate 1). These observations, particularly the absence of a significant confining layer in the river channel, lead to the conclusion that the river channel is a likely historic migration pathway to bedrock, both for tar and for BTEX and PAH compounds. Furthermore, low concentrations of BTEX and PAH compounds in the inland monitoring wells (P-106 and P-104) suggest that migration in the dolomite is very slow, either because the compounds are degrading and/or because the formation has low hydraulic conductivity.

Since tar and groundwater in the shallow unit are now contained, there is little potential for the addition of new source material to the bedrock. This suggests that concentrations will not increase above current levels, and may begin to decrease. However, the rate of decrease may be slow due to the characteristically low hydraulic conductivity of the dolomite bedrock (Olcott, 1966).

5.6 Summary of Findings

A discussion of post-remedial groundwater flow and quality in the shallow zone is presented in Section 6. The following findings focus on bedrock conditions, based on geologic and groundwater quality data collected through 2007:

- Groundwater flow in the bedrock north of the river is away from the river toward a cone of depression;
- Groundwater flow in the shallow unlithified unit is separated from flow in the dolomite by a continuous layer of lean clay and gravelly lean clay, and there continues to be no evidence of significant hydraulic connection between these units in the upland portion of the site;
- MGP residual related constituent concentrations that exceeded Wisconsin groundwater standards have generally decreased in the bedrock piezometers with the exceptions of P-107R. Concentrations in this piezometer continue to fluctuate, with the highest concentrations recorded to-date observed from 2003;
- The extent of MGP residual related constituent concentrations in shallow bedrock has been defined downgradient (north) of P-103; and
- The extent of MGP residual related constituent concentrations in bedrock has not been defined downgradient of P-107R.

Primary potential migration pathways for movement of tar or dissolved phase MGP residuals to the river have been addressed. A secondary pathway via the connection between bedrock and the river bed tar may exist where the lean clay confining layer is thin or absent. Because inputs to river sediments have been addressed, concentrations of dissolved BTEX and PAH compounds in the bedrock are not expected to increase, and may decrease over time, although that decrease may occur over a long period since migration rates in the bedrock appear to be slow.

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6 POST-REMEDIAL PERFORMANCE MONITORING RESULTS

6.1 Overview

Startup of the gradient control system was conducted on October 24, 2002. NRT has documented the system's performance from October 24, 2002 to December 31, 2006 in the "Operation, Maintenance, and Monitoring Reports", dated September 19, 2003, February 9, 2004, August 30, 2004, August 31, 2005, June 8, 2006, and February 7, 2007. The following performance monitoring activities are conducted at the site:

- Groundwater monitoring is conducted annually via bailer sampling method. The groundwater-monitoring network currently consists of a total of 27 wells, as indicated on Table 6. Groundwater samples are analyzed from 10 monitoring wells and 9 piezometers for BTEX, TMB, and PAH. Four of the piezometers (P-2R, P-4, P-102R and P-101) are pending agency approval for abandonment, as discussed below, and water levels only are collected from four monitoring wells (MW-108R, GW-2R, MW-101R and OW-4);

- Quarterly water levels are collected from all monitoring wells, piezometers, dewatering sumps, and the river staff gauge;

- Field measured parameters (temperature, field conductivity, pH, dissolved oxygen (DO), and oxidation/reduction potential (ORP)) are collected annually from the 10 monitoring wells and 9 piezometers;

- Operation and maintenance of the biosparge system is conducted at least monthly by WPSC field employee and quarterly by NRT/WPSC personnel. Effluent sample is collected quarterly and a composite influent sample from all dewatering sumps is collected semi-annually from the treatment system; and

- An annual site inspection is completed to assess the condition of the remedy components.

The system's performance from January 1 to December 31, 2007 is detailed below.

6.2 Containment Performance

The objective of the containment system is to prevent outward migration of MGP affected groundwater. This is achieved by pumping groundwater within the barrier and maintaining an inward hydraulic gradient. To demonstrate gradient control, two performance measures have been identified:

- Primary Measure: Evaluation of groundwater elevation data; and
- Secondary Measure: Evaluation of contaminant (primarily benzene and naphthalene) concentration trends in the shallow groundwater monitoring wells exterior to the containment barrier.

Depth to groundwater was measured in each well prior to collection of groundwater analytical samples during the September 2007 monitoring event. Field notes from the monitoring event, as well as March, June, September and December system maintenance visits are included as Appendix F1. Shallow groundwater elevation data are summarized in Table 1 and water table elevation contours based on November 2007 data are presented on Figure 3. The groundwater flow map indicates a cone of depression centered around the dewatering sumps located in the center of the site, indicative of inward hydraulic gradients and plume containment within the vertical barrier wall.

Additionally, concentrations of benzene and naphthalene are decreasing or stable in shallow monitoring wells exterior to the containment zone (GW-4, GW-1, and MW-110; Figure 3 and Tables 2 and 3). Laboratory analytical reports are included as Appendix F2.

Benzene, toluene, ethylbenzene and xylene (BTEX) concentrations continue to be below their respective NR140 Preventive Action Limits (PALs) at all exterior monitoring wells except for benzene at GW-1, which remain below NR140 Enforcement Standard (ES). PAH concentrations in the exterior monitoring wells are below NR 140 ESs except for benzo(a)pyrene [BaP], benzo(b)fluoranthene [BbF] and chrysene at MW-110, and chrysene at GW-1. At GW-4, BaP, BbF, and chrysene were detected at concentrations above their respective PALs. Future monitoring of GW-4 will continue for evaluation of contaminant concentrations downgradient of GW-1.

6.3 Gradient Control System Performance

6.3.1 Operation and Maintenance

NRT and WPSC receive a weekly fax from the treatment system notifying that the system is working and indicating whether an alarm is activated. Should an alarm arise, an additional fax is sent to NRT and WPSC notifying which alarm is activated. Alarm conditions may include, but are not limited to, differential pressure between bag filters greater than 10 psi, high pressure of the compressor, low pressure of the compressor, high compressor temperature above the factory pre-set limit, and high building sump water level. During this reporting period, the alarms were for bag filter replacement and equipment room low temperature. The thermostat in the equipment room was not operating properly and subsequently has been replaced.

Operation and maintenance of the treatment system is completed at least monthly by a WPSC dedicated field employee and quarterly by NRT/WPSC personnel (quarterly field notes included in Appendix F1). Operation and maintenance includes:

- Monitoring influent and effluent contaminant concentrations;
- Monitoring for any dense non-aqueous phase liquid (DNAPL) and light non-aqueous phase liquid (LNAPL) in respective accumulation tanks;
- Monitoring for any sediment accumulation in the transfer tank and the multi-phase separator;
- Monitoring compressor, bag filter and air stripper pressure readings;
- Inspection and cleaning of air stripper diffusers;
- Bag filter changes;
- Compressor oil and air filter changes; and
- Monitoring all dewatering pump pressure readings and flow rates.

The groundwater extraction and treatment system operated 90 percent of the time between January 1 and December 31, 2007. Dewatering sump groundwater elevations and system operational data is summarized in Table 4. To maintain the gradient control at a reduced discharge rate, DS-2 was not operated during this reporting period and has been inactive since April 28, 2005. DS-1, DS-3 and DS-4 did not operate between sometime after September 11 and October 4, 2007, due to leaks in the air and water lines, and location of the pumps which were too close to the bottom of the sump as noted during a monthly site visit. The lines were subsequently repaired as noted in Table 4. During a site visit on October 12, 2007, DS-1 and DS-4 were not operating properly, due to leaks in the air lines. The lines and pump locations were subsequently restored and were returned to operation on October 12th. Meanwhile, pump DS-3 continued to operate and maintain gradient control during this time period (October 4 through October 12, 2007).

On November 20th during a monthly site visit, DS-1 pump was not operating. The pump was removed from the sump and DS-2 pump was placed in the DS-1 sump temporarily until the DS-1 pump could be inspected and repaired. WPSC personnel inspected DS-1 pump in December 2007. The pump appeared to be in working condition; it is assumed that the issue may have been the result of a faulty hose connection.

No free product accumulated in the DNAPL or LNAPL collection tanks during the reporting period. Based on the effluent flow meter, about 1,970,000 gallons of contaminated groundwater were extracted and treated prior to sanitary sewer discharge. As discussed in the 2005 annual report (June 2006, NRT), contaminant mass removal was not calculated during this period since the primary objective of the system is gradient control.

In June and September 2007, a composite sample was collected from each dewatering sump except DS-2 since the pump has been turned off since April 28, 2005. Effluent samples were collected once per quarter (March, June, September, and December 2007). All effluent sample results for this reporting period are below the City of Oshkosh discharge limits (Table 5). Influent and effluent samples will continue to be collected in 2008. Treatment system analytical laboratory reports are provided in Appendix F2.

6.3.2 Shallow Groundwater Quality

Monitoring wells within the containment zone sampled during the annual September 2007 event include MW-102, MW-104, GW-3, OW-3R, GW-2R, MW-103, OW-1, and MW-109R.

Of note during the September 2007 event:

- BTEX and PAH concentrations at well MW-102 are decreasing.
- Naphthalene and benzene concentrations generally were within the order of magnitude previously reported at each well within the groundwater containment zone, with the exception of MW-109R in which naphthalene and benzene concentrations were an order of magnitude lower, and the lowest concentrations since 2001.
- Contaminant concentrations detected in wells near the edge of the containment zone (MW-103 and MW-104) and upgradient (OW-1) are below NR140 ESs for all PAH and BTEX compounds except at MW-104. Concentrations of BaP, BbF, and chrysene exceeded their respective ESs at MW-104; but remain within the range of those previously reported.

6.4 Other Remedy Components Performance

WPSC is responsible for long term performance monitoring of additional remedy components including surface covers for the monitoring wells, dewatering sumps and cleanouts, the treatment system building, and piping and equipment. These features were most recently inspected in June 2007. Based on the purchase agreement between the City of Oshkosh and WPSC, it is the City's responsibility to maintain the cap and dock wall at the site consistent with the remedial design approved by the WDNR and documented in the *Remedial Action Documentation Report* (February 2003, NRT).

On June 20, 2007, NRT inspected the cap (asphalt and earthen) and dock wall in addition to the inspection of the other remedy components (i.e. monitoring wells, and dewatering sumps and cleanouts) concurrent with an operation and maintenance visit. The cap and dock wall appear to be in good condition except for soil that is exposed around piezometers P-103 and P-105. A copy of the Earthen Cap Maintenance Inspection Log is included in Appendix F3.

Also during the 2006 inspection activities, the protective covers on monitoring wells MW-104R, MW-102 and P-104 could not be properly closed; therefore, during the June 2007 site visit, new flushmounts and surface seals at these monitoring well were installed. In addition, flushmount cover bolts and well caps were replaced on several monitoring wells.

6.5 Proposed Piezometer Abandonment

As stated in the bedrock report (August 31, 2005, NRT), abandonment of P-4 and P-101 is recommended. In addition, NRT recommend abandoning P-2R and P-102R in the 2005 OM&M report (June 2006, NRT). All four piezometers (Figure 3, Appendix F4) are screened within the intermediate silt/clay zone. Collection of groundwater samples and elevation data within this intermediate silt/clay is not necessary for the following reasons:

- There were no PAL exceedences in P-101 and P-4 since March 2002 and March 2003, respectively and groundwater is adequately characterized in these areas by other wells;
- P-102R does not appear to monitor vertical migration of the contaminants of concern, because the BTEX and naphthalene concentrations in shallow well OW-3R, which is nested with this well is lower. Rather, concentrations in P-102R likely reflect historical activities and the alignment of historic shorelines at the Site, as shown on Figure 2;
- Hydraulic conductivity of the clay is significantly lower than the overlying and underlying units. There is no appreciable vertical flow through this unit and it does not provide a hydraulic connection between the overlying and underlying units; and
- Vertical extent of the affected groundwater is defined using wells screened in the bedrock beneath the intermediate zone.

6.6 Future Groundwater Monitoring

Groundwater monitoring will continue on an annual basis to evaluate water quality at the Site and to monitor performance of the remedial actions performed. In 2008, groundwater samples will be collected from all wells that do not contain free product and analyzed for BTEX, TMB and PAH with the exception of MW-108R, GW-2R, MW-101R, and OW-4 (Table 6). MW-108R, GW-2R, MW-101R, and OW-4 are within the containment system and/or in close proximity to other monitoring wells, and therefore do not provide significantly unique data. Water levels will be measured at each well prior to sampling. Water levels will continue to be collected quarterly in the shallow wells within and exterior to the containment system including MW 101R, GW-2R, MW-108R, and OW-4 (Table 6). Piezometric surface elevations will be measured in all the piezometers on an annual basis (Table 6).

WPSC/NRT will continue to inspect the cover and vertical barrier system annually and subsequently provide observations of deficiencies in the cover and barrier system to the City of Oshkosh since they are responsible for maintenance of these systems.

The treatment system will continue to be monitored and maintained monthly by a WPSC representative. Groundwater effluent samples will be collected, in conformance with the discharge permit, on a quarterly basis and analyzed for BTEX, PAHs, and total cyanide. Total suspended solids will be analyzed on a semi-annual basis (Table 6). A composite influent sample from all operating extraction trenches will be collected on a semi-annual basis and analyzed for BTEX, PAHs and total cyanide (Table 6). A record of laboratory data will be maintained by WPSC and the effluent data will be made available to the City of Oshkosh as requested, per the discharge permit.

On-going annual reporting of the treatment system operations and groundwater quality will continue in accordance with the draft Master Schedule Submitted to the USEPA on May 19, 2006 or as revised in the Site-Specific Work Plan to be submitted.

7 IDENTIFIED PATHWAYS AND CONCLUSIONS

7.1 Exposure Pathway Analysis

As discussed previously in this Completion Report, remedial actions have been performed on the former MGP facility.

Exposure pathways addressed by the remediation work performed to date include:

- Soil direct contact and migration to groundwater pathways: Protection of human health from direct contact with contaminated soil and from soil contaminant migration to groundwater have been addressed as a result of contaminated soil excavation, thermal treatment, backfilling, placement of an earthen cap, and additional direct contact barriers installed to date (i.e., pavement, buildings); and

- Groundwater to surface water pathways: Protection of human health from ingestion of groundwater to surface water/seeps has been addressed as a result of installing the sheet pile barrier wall.

These and other media/pathways identified by the multi-site CSM are discussed below with respect to remaining soil and groundwater quality at the site.

7.1.1 Surface Soil

Surface soil conditions on-property and Court Street right-of-way are protective of direct contact given the extent of contaminated soils have been thermally-treated and placed at least one-foot below ground surface. Remaining contaminated soils are either below the earthen cap or pavement, as discussed in Section 5. These actions combined with long-term performance monitoring of the remedy components are protective of human health for direct contact concerns, but rely on risk management tools for long-term protection. Institutional controls to maintain the cap were contemplated as part of remedial actions, but have not been formalized. Potential ecological receptors will be evaluated as part of the Site-Specific Work Plan.

7.1.2 Subsurface Soil

Potential human health concerns with subsurface soil conditions include construction worker exposure. As noted above and detailed in Section 5, the former Oshkosh MGP property has undergone extensive subsurface soil remediation and installation of a vertical barrier wall to contain the MGP-affected soil. Risk management tools are also required to maintain the cap and provide notification for construction workers that may be in direct contact with subsurface soils or have potential inhalation exposures.

Potential ecological receptors will be evaluated as part of the Site-Specific Work Plan.

7.1.3 Groundwater

Soil excavation/treatment followed by installation of the sheet pile barrier wall (primary remedy), and installation of the gradient control system, address protection of groundwater quality. A network of water table monitoring wells is in place both inside and outside the containment system. Bedrock groundwater quality is generally characterized, except at P-107R. As described in Section 5.3, potable wells are permitted within approximately ¾ mile from the former MGP. On-going groundwater monitoring and system operation, maintenance and monitoring minimize the potential risks due to shallow groundwater under the present groundwater use conditions, along with the results of on-going groundwater monitoring, there does not appear to be a significant exposure pathway due to groundwater. However, risk management tools may be warranted for future use scenarios.

7.1.4 Sediments

MGP residuals in the channel have likely migrated via preferential pathways from the upland portion of the site. Primary migration pathways involving direct inputs to river sediments were addressed by upland remedial actions. Further evaluation of the occurrence of MGP residuals within gravel/bedrock and potential for dissolved phase migration both north and south of the river is in progress. Potential human health exposures would be limited to recreational use. Potential ecological exposures evaluated as part of the Site-Specific Work Plan.

7.2 Summary of Additional Data Needs

Areas and media that need further assessment and/or were not fully addressed by previous work with respect to public health, welfare or the environment are summarized as follows:

1. Soil Quality (Subsurface)
    a. Risk Management Tools. Risk management tools are required for the Site to protect potential damage to the remedy components and minimize potential exposure to human health receptors. Risk management tools may be considered along Court Street and within the former MGP property.
2. Groundwater Quality
    a. Continued Monitoring. Continued monitoring of the existing monitoring well network, barrier wall, and gradient control system is warranted in the near-term to confirm containment of MGP residuals and to evaluate whether continuing pre-treatment of the groundwater is necessary prior to sanitary sewer discharge.
    b. P-107R. Continued evaluation of groundwater quality in the vicinity of P-107R to confirm bedrock flow direction.
3. Sediment RI/FS. Evaluate further assessment needs, including risk assessment if deemed appropriate, using the multi-site RI/FS Planning Documents.

The above work elements will be incorporated into a Site-Specific Work Plan, to be submitted to USEPA in accordance with the established schedule.

8 REFERENCES (RECORD FILE)

1986, January, EDI Engineering & Science, Inc., *Site Investigation, Former Coal Gas Manufacturing Plant*, *Ceape Avenue, Oshkosh, Wisconsin*, Report No. 20402.

1993 May 26, Simon Hydro-Search, Inc., *Phase II Work Plan Environmental Investigation of Manufactured Gas Plant Site, Oshkosh, Wisconsin*, Project No. 304533000.

1993 October 22, Wisconsin Department of Natural Resources, Comment letter to Wisconsin Public Service Corporation, *Phase II Work Plan Environmental Investigation of Manufactured Gas Plant Site, Oshkosh, Wisconsin*.

1993 October 25, Wisconsin Department of Natural Resources, Letter to Foley and Lardner *WPS Consent Order* for WPS's property on Ceape Avenue, Oshkosh.

1993 November 24, Simon Hydro-Search, Inc., *Summary of Field Investigation Results during Test Pit Program at Former Manufactured Gas Plant Site, Oshkosh, Wisconsin*.

1994 June 23, Simon Hydro-Search, Inc., *Phase II Investigation Report - Environmental Investigation of Former Manufactured Gas Plant Facility, Oshkosh, Wisconsin*, Project No. 304533000.

1994 August 9, Simon Hydro-Search, Inc., *WPSC Oshkosh Former Manufactured Gas Plant Site Fox River Sediment Sampling Results*, Project No. 304533000.

1994 October 24, Wisconsin Department of Natural Resources, Letter to Wisconsin Public Service Corporation Comments on *Phase II Investigation Report and Fox River Sediment Sampling Results*.

1995 September 1, Natural Resource Technology, Inc., *Sediment Sampling Work Plan-Former Manufactured Gas Plant Site - Oshkosh, Wisconsin*, and transmittal letter to James Reyburn (Wisconsin Department of Natural Resources), Project No. 1073.

1996 March 5, Natural Resource Technology, Inc., *Work Plan, Phase II Addendum Environmental Investigations of Manufactured Gas Plant Sites, Green Bay, Marinette, Oshkosh, Two Rivers Wisconsin*, Project No. 1150.

1996 May 31, Natural Resource Technology, Inc., Letter to James Reyburn, Wisconsin Department of Natural Resources, *Phase II Addendum Investigation Work Plan Comments, Former Manufactured Gas Plant Sites, Green Bay, Marinette, Oshkosh, Two Rivers, Wisconsin*, Project No. 1150.

1996 October 2, Natural Resource Technology, Inc., Letter to James Reyburn, Wisconsin Department of Natural Resources, *Phase II Addendum Investigation Results, Former Oshkosh Manufactured Gas Plant (MGP) Site, Oshkosh, Wisconsin*, Project No. 1150.

1996 October 15, Natural Resource Technology, Inc., *Sediment Investigation Report - Former Manufactured Gas Plant Site - Oshkosh, Wisconsin*, Project No. 1073.

1997 October 22, Wisconsin Department of Natural Resources, Letter to Wisconsin Public Service Corporation, *Former Manufactured Gas Plant – Oshkosh*, WI regarding review of sediment investigation report.

1998 May 21, Natural Resource Technology, Inc., *Remedial Action Options Report, Former Manufactured Gas Plant Site Oshkosh, WI*, Project No. 1312 and 1177.

1998 November 25, Natural Resource Technology, Inc., *Pre-Remedial Design Work Plan, Former Manufactured Gas Plant Site, Wisconsin Public Service Corporation, Oshkosh, Wisconsin,* Project No. 1312.

2000 April 27, Natural Resource Technology, Inc. *Remedial Design Report, Former Manufactured Gas Plant Site, Oshkosh, Wisconsin*, Project No. 1312.

2000 December 15, Wisconsin Department of Natural Resources, Letter to Wisconsin Public Service Corporation, *Review of Remedial Design Report for Wisconsin Public Service Corp, Court St. & Ceape Avenue, Oshkosh*, WDNR BRRTS Unique ID #02-71-000256

2001 May 29, Natural Resource Technology, Inc., Letter to Kathleen Sylvester (Wisconsin Department of Natural Resources), *Groundwater Monitoring Information and Sampling Plan Revisions, Former Manufactured Gas Plant Site, Court St., & Ceape Ave., Oshkosh, Wisconsin*, Project No. 1312.

2001 June 8, Wisconsin Department of Natural Resources, General agreement letter to Wisconsin Public Service Corporation, *Monitoring and Sampling Plan Revisions, Wisconsin Public Service Corp., Court St. & Ceape Ave., Oshkosh*, WDNR BRRTS Unique ID # 02-71-000256.

2001 June 15, Natural Resource Technology, Inc., *Sediment Sampling and Analysis Plan (SAP) for the Former Oshkosh Manufactured Gas Plant (MGP) Site, Oshkosh, Wisconsin*, Project No. 1312.

2001 October 11, Natural Resource Technology, Inc., *Request for Grading Permit and Dock Wall Replacement, Wisconsin Public Service Corporation, Former Coal Gas Facility, Oshkosh, Wisconsin*, BRRTS ID # 02-71-000256.

2001 November 28, Natural Resource Technology, Inc., *Remedial Work Plan, Former Wisconsin Public Service Corporation Manufactured Gas Plant Site, Court St., & Ceape Ave., Oshkosh, Wisconsin,* Project No. 1312.

2002 January 4, Natural Resource Technology, Inc., Letter to Kathleen Sylvester, Wisconsin Department of Natural Resources, *Boring Logs and Additional Historical Drawings of MGP Structures,* *Former Wisconsin Public Service Corporation (WPSC) Manufactured Gas Plant (MGP) Site, Court St., & Ceape Ave., Oshkosh, Wisconsin*, Project No. 1312.

2002 March 1, Natural Resource Technology, Inc., Transmittal, to Kathleen Sylvester, Wisconsin Department of Natural Resources, *Oshkosh MGP Site Groundwater Monitoring Data,* Project No. 1312.

2002 March 4, Natural Resource Technology, Inc., Letter to Kathleen Sylvester, Wisconsin Department of Natural Resources, *Response to Remedial Work Plan Review Comments dated February 22, 2002 Former Wisconsin Public Service Corporation (WPSC) Manufactured Gas Plant (MGP) Site, Court St. & Ceape Ave., Oshkosh, Wisconsin*, Project No. 1312.

2002 March 7, Wisconsin Department of Natural Resources, *Remedial Action Work Plan general approval letter to Wisconsin Public Service Corporation, Remedial Action Workplan for WPS-Manufactured Gas Plant site, Ceape & Court Streets, Oshkosh*, WDNR BRRTS ID #02-71-000256..

2002 December 3, Natural Resource Technology, Inc., *Sediment Investigation Report, Oshkosh Former MGP Site Remediation, Oshkosh, Wisconsin*, Project No. 1312.

2003 January 24, Wisconsin Department of Natural Resources, Sediment Investigation Report Acknowledgement of Received to Wisconsin Public Service Corporation, *Sediment Investigation Report dated December 3, 2002 WPS- Manufactured Gas Plant Site, Ceape & Court Streets, Oshkosh,* WDNR BRRTS ID #02-71-000256.

2003 February 26, Natural Resource Technology, Inc., *Remedial Action Documentation Report, Former Manufactured Gas Plant Site, Oshkosh, Wisconsin*, Project No. 1312.

2003 February 28, Wisconsin Department of Natural Resources, *Comment letter to Wisconsin Public Service Corporation, Sediment Investigation Report dated December 3, 2002 for WPS Manufactured Gas Plant Site, Court St. and Ceape Ave., Oshkosh Wisconsin*, BRRTS 02-71-000256.

2003 March 3, Wisconsin Department of Natural Resources, Acknowledgement of Receipt, *Remedial Action Documentation Report, WPS- Manufactured Gas Plant site, Ceape & Court Streets, Oshkosh,* WDNR BRRTS ID #02-71-000256.

2003 March 31, Natural Resource Technology, Inc., *Supplemental Groundwater Monitoring and Bedrock Assessment Report and Response to February 28, 2003 Correspondence, Former Manufactured Gas Plant, Court Street and Ceape Avenue, Oshkosh, Wisconsin*, BRRTS 02-71-000256.

2003 June 3, Natural Resource Technology, Inc., *Remedial Action Documentation Report Addendum, Former Wisconsin Public Service Corporation Manufactured Gas Plant Site, Court Street and Ceape Avenue, Oshkosh, Wisconsin*, BRRTS ID #02-71-000256.

2003 June 25, Natural Resource Technology, Inc., Letter to Kathy Sylvester, Wisconsin Department of Natural Resources, *Quarterly Treatment System Update, Former Wisconsin Public Service*

Corporation Manufactured Gas Plant Site, Court St. and Ceape Ave., Oshkosh, Wisconsin, BRRTS #02-71-000256.

2003 September 19, Natural Resource Technology, Inc., *Semi-Annual Operations, Maintenance and Maintenance and Optimization Report, Former Manufactured Gas Plant, Court Street and Ceape Avenue, Oshkosh, Wisconsin*, Project No. 1312.

2003 October 29, Wisconsin Department of Natural Resources, General Agreement Letter to Wisconsin Public Service Corporation, *"Review of Supplemental Groundwater Monitoring and Bedrock Assessment Report," WPS – Manufactured Gas Plant Site, Ceape & Court Streets, Oshkosh,* WDNR BRRTS ID #02-71-000256.

2004 January 20, Natural Resource Technology, Inc., *Air Stripper Operation Report, Former Manufactured Gas Plant, Court Street and Ceape Avenue, Oshkosh, Wisconsin*, Project No. 1312.

2004 February 9, Natural Resource Technology, Inc., *2003 Annual Monitoring and Semi-Annual Operations, Maintenance and Maintenance, Former Manufactured Gas Plant, Court Street and Ceape Avenue, Oshkosh, Wisconsin*, Project No. 1312.

2004 February 16, Natural Resource Technology, Inc., *Work Plan for 2004 Bedrock Assessment, Former Manufactured Gas Plant, Court Street and Ceape Avenue, Oshkosh, Wisconsin*, Project No. 1312.

2004 March 16, Wisconsin Department of Natural Resources, Letter to Wisconsin Public Service Corporation, *Review of Bedrock Assessment Work Plan dated February 16, 2004 Wisconsin Public Service Corporation, Former Manufactured Gas Plant, Court Street and Ceape Avenue, Oshkosh, Wisconsin*, Wisconsin BRRTS 02-71-000256.

2004 July 9, STS Consultants, LTD. On behalf of City of Oshkosh, Submittal to Department of Natural Resources, *Park Development Plan, Riverside Park, Oshkosh, Wisconsin,* STS Project No. 26358A.

2004 August 12, Wisconsin Department of Natural Resources, Greenspace Grant GRN-017, *Riverside Park Development Plan, Former WPS Property, Ceape Avenue & Court Street, Oshkosh*, WDNR BRRTS ID #02-71-000256.

2004 August 30, Natural Resource Technology, Inc., *Semi-Annual Operations, Maintenance and Maintenance, Former Manufactured Gas Plant, Court Street and Ceape Avenue, Oshkosh, Wisconsin*, Project No. 1312.

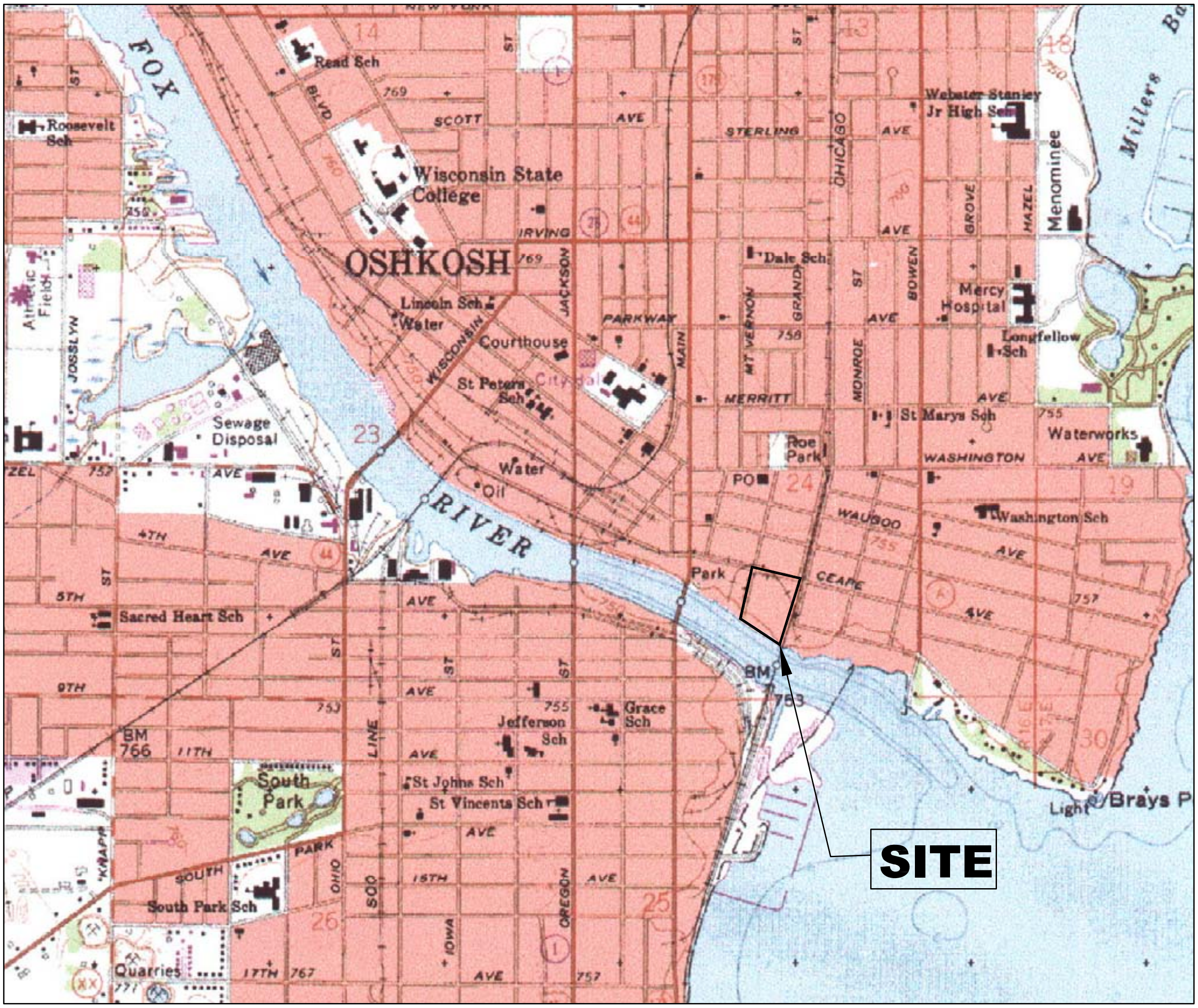
2005 August 22, Natural Resource Technology, Inc., *Sediment Investigation Report (Revised), Former Wisconsin Public Service Corporation (WPSC) Manufactured Gas Plant (MGP) Site, Court St. & Ceape Ave., Oshkosh, Wisconsin,* BRRTS ID # 02-71-000256, Project No. 1644.

2005 August 31, Natural Resource Technology, Inc., *Operation, Maintenance and Monitoring Semi-Annual Report and Supplemental Bedrock Assessment, Former Oshkosh Manufactured Gas Plant*, Project No. 1312.

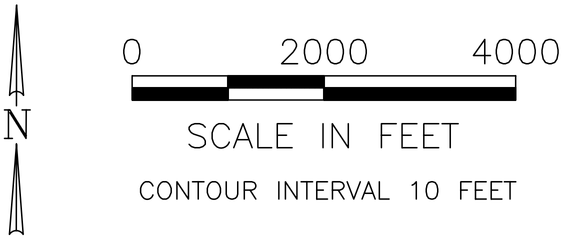
2006 June 8, Natural Resource Technology, Inc., *2005 Annual Operation, Maintenance, and Monitoring Report, Former Wisconsin Public Service Corporation Manufactured Gas Plant Site, Court St. & Ceape Ave., Oshkosh, Wisconsin,* BRRTS ID # 02-71-000256, USEPA ID # WIN000509947.

2007 February 7, Natural Resource Technology, Inc., *2006 Annual Operation, Maintenance, and Monitoring Report, Former Wisconsin Public Service Corporation Manufactured Gas Plant Site, Court St. & Ceape Ave., Oshkosh, Wisconsin*, BRRTS ID # 02-71-000256, USEPA ID # WIN000509947.

FIGURES



SOURCE: EARTHVISIONS U.S. TERRAIN SERIES,
© EARTHVISIONS, INC. 603–433–8500.
USGS 7.5 MINUTE QUADRANGLE,
OSHKOSH. DATED 1961.
PHOTOREVISED 1975.



SCALE IN FEET

CONTOUR INTERVAL 10 FEET

Natural Resource Technology

N R T

SITE LOCATION MAP

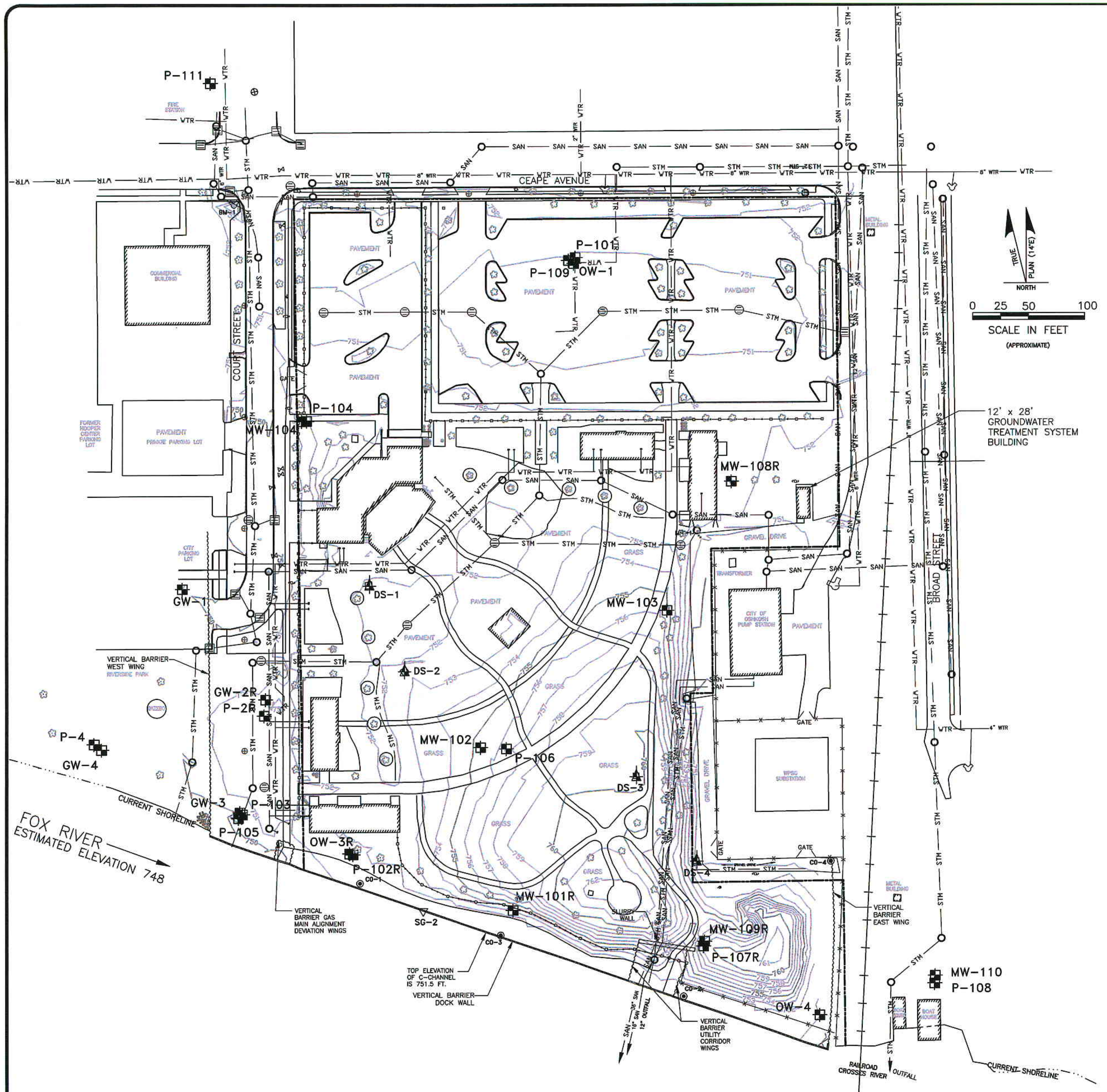
FORMER OSHKOSH MANUFACTURED GAS PLANT
WISCONSIN PUBLIC SERVICE CORPORATION
CITY OF OSHKOSH, WISCONSIN

DRAWN BY: TAS APPROVED BY: SLF DATE: 10/12/01

PROJECT NO.
1312

DRAWING NO.
1312–A02C

FIGURE NO.
1



SOURCE NOTES:

THIS DRAWING WAS DEVELOPED FROM MAP BY HYDRO-SEARCH, INC. DATED 06/03/94, PROJECT 304533000 AND A SURVEY BY WISCONSIN PUBLIC SERVICE CORPORATION DATED 01/11/99.

HISTORICAL SHORELINES TAKEN FROM SANBORN MAPS. LOCATIONS ARE APPROXIMATE.

30" STORM SEWER IN BROAD STREET TAKEN FROM SEWER SYSTEM 8TH WARD DRAWING BY CITY OF OSHKOSH WISCONSIN ENGINEERING DEPARTMENT, DATED 12-5-36, WITH 1977 UPDATE.

BROAD STREET PUMP STATION PARCEL AND FORCE MAINS DEVELOPED FROM DRAWING BY HNTB ARCHITECTS ENGINEERS PLANNERS, MILWAUKEE, WISCONSIN, PROJECT NO: 6378, DRAWING SP-2 (3 OF 32) AND PP-2, DATED 9-6-84.

LOCATIONS OF SEWER LATERALS, TAR WELLS, GAS HOLDERS, TAR STILL, TAR SEPARATORS, AND ASSOCIATIVE PIPING TAKEN FROM WPSC DRAWING NO. 140, DATED 1925.

SURVEY BY ROEHLIG LAND SURVEYING & CONSULTING LTD., OSHKOSH, WISCONSIN, DRAWING AC3771B.DWG, DATED AUGUST 17, 2001, REVISED AUGUST 28, 2001, OCTOBER 29, 2001 AND NOVEMBER 12, 2001.

SURVEY BY RA SMITH, DRAWING AC3771E.DWG REVISION DATE SEPTEMBER 25, 2002 AND OCTOBER 3, 2002.

HP GAS LINE FROM DRAWING BY FORD, BACON AND DAVIS, INC., ENGINEERS, DRAWING NO. 60013-FI-S, REVISED DATED NOVEMBER 9, 1953.

WATER LINES AND HYDRANTS, STORM AND SANITARY LINES IN CEAPE AVENUE ARE TAKEN FROM CITY OF OSHKOSH ENGINEERING DIVISION DRAWING, DATED NOVEMBER 9, 1998.

BM-1 WAS FIELD MEASURED BY NRT. BM-1 TOP OF HYDRANT OPERATING NUT, ELEVATION 754.18.

SB-125 WAS INSTALLED IN OCTOBER 2001, LOCATION IS APPROXIMATED FROM FIELD MEASUREMENTS BY NRT.

SG-2 WAS SURVEYED BY ROEHLIG LAND SURVEYING & CONSULTING LTD., OSHKOSH, WISCONSIN, DRAWING 3771E.DWG, DATED JULY 25, 2003.

TO ALIGN SHORELINE WITH WPSC AND CITY OF OSHKOSH BASE MAP ROTATED 1° TO EACH OTHER.

P-109 AND P-110 SURVEYED BY NATIONAL SURVEY & ENGINEERING, DRAWING 07-04 3771E-BLOCK.DWG, REVISED JULY 2004.

P-111 SURVEYED BY RA SMITH, DRAWING 3771E-MAIL.DWG, REVISED JANUARY 20, 2005.

PROPERTY BOUNDARY AND ADDITIONAL BUILDING AND UTILITY LOCATIONS DEVELOPED FROM DRAWING FILE: g426778xa-001-RECORD.DWG, DATED 09-20-05, PROVIDED BY STS CONSULTANTS, LTD.

LEGEND

P-101 ✚ P-4	PIEZOMETER (HSI)
✚ P-104	PIEZOMETER (NRT)
✚ MW-110	MONITORING WELL (NRT)
✚ MW-101R	REPLACEMENT MONITORING WELL (NRT)
OW-1 ✚ GW-1	MONITORING WELL (HSI)
▲ DS-1	DEWATERING SUMP
▽ SG-2	STAFF GAUGE
◉ CO-1	CLEANOUT
HDPE	HIGH DENSITY POLYETHYLENE
HSI	HYDRO-SEARCH, INC.
NRT	NATURAL RESOURCE TECHNOLOGY
⊕	CONSTRUCTION GRID POINT (CHISELED CROSS OR PK NAIL)
⊖ ▤	CATCH BASIN
◐	GUY WIRE
☼	LITE POLE
⊸	UTILITY POLE
⋈	GAS VALVE

APPROXIMATE LOCATION OF:

━━━	WPSC PROPERTY SOLD TO CITY OF OSHKOSH
〰〰	VERTICAL BARRIER
○	MANHOLE
⚲	HYDRANT
┼┼┼	RAILROAD
— SAN —	SANITARY SEWER
— STM —	STORM SEWER
— WTR —	WATER MAIN
∟	EXISTING BUILDING
○—○	DECORATIVE FENCE
—×—×—	CHAIN LINK FENCE
⌒ 760	EXISTING GROUND SURFACE CONTOURS

DRAWN BY: BJK DATE: 01/22/08
CHECKED BY: HMS DATE: 01/22/08
APPROVED BY: HMS DATE: 02/04/08
DRAWING NO: 1312-9-B04
REFERENCE: FROMSTS\REV_2_G426538J_REC_BASE.tif

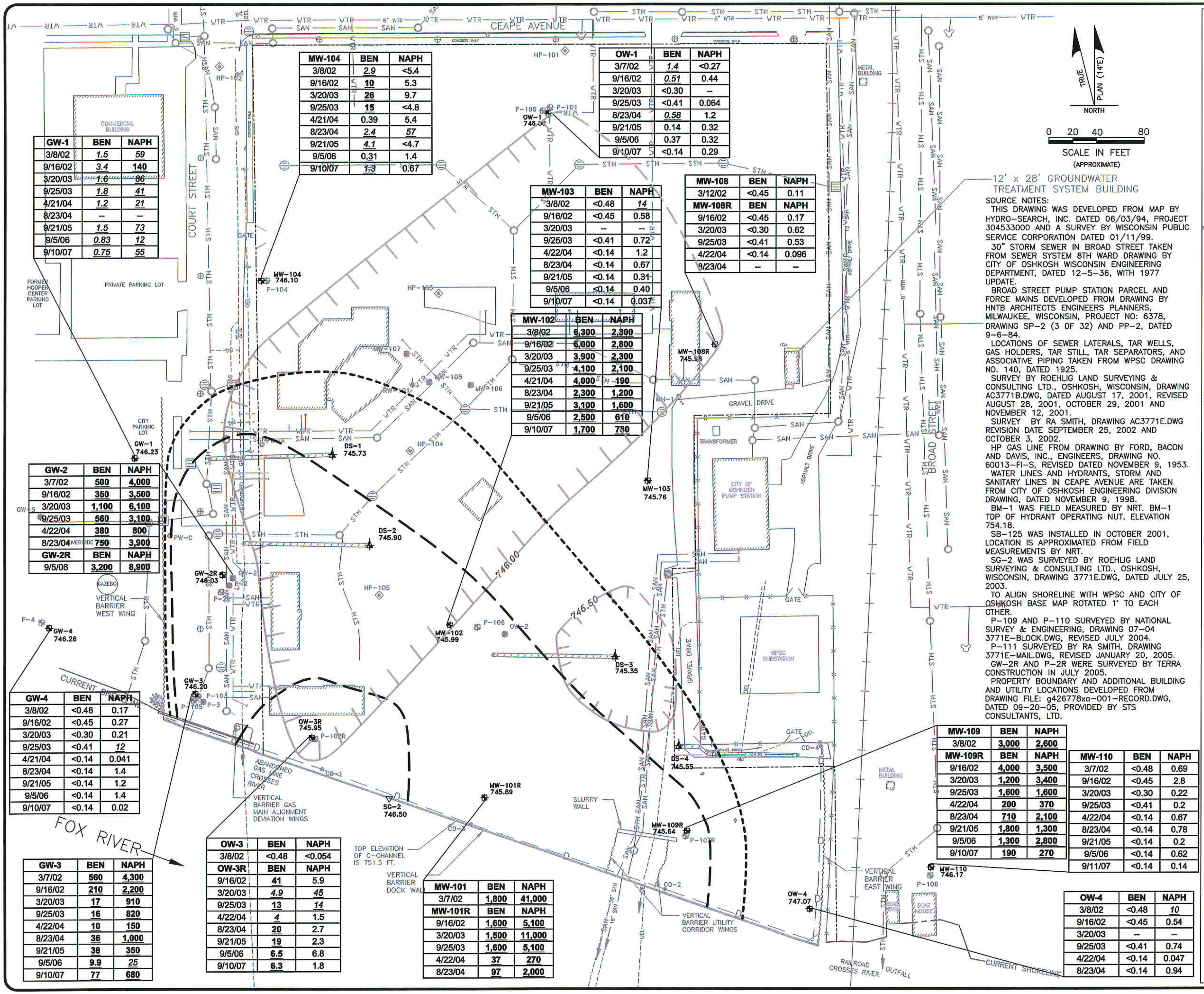
EXISTING SITE LAYOUT

COMPLETION REPORT
FORMER OSHKOSH MANUFACTURED GAS PLANT
WISCONSIN PUBLIC SERVICE CORPORATION
CITY OF OSHKOSH, WISCONSIN

NATURAL RESOURCE TECHNOLOGY

PROJECT NO.
1312/9.0

FIGURE NO.
2



MW-104	BEN	NAPH
3/8/02	2.9	<5.4
9/16/02	10	5.3
3/20/03	26	9.7
9/25/03	15	<4.8
4/21/04	0.39	5.4
8/23/04	2.4	57
9/21/05	4.1	<4.7
9/5/06	0.31	1.4
9/10/07	1.3	0.67

GW-1	BEN	NAPH
3/8/02	1.5	59
9/16/02	3.4	140
3/20/03	1.6	86
9/25/03	1.8	41
4/21/04	1.2	21
8/23/04	--	–
9/21/05	1.5	73
9/5/06	0.83	12
9/10/07	0.75	55

OW-1	BEN	NAPH
3/7/02	1.4	<0.27
9/16/02	0.51	0.44
3/20/03	<0.30	--
9/25/03	<0.41	0.064
8/23/04	0.58	1.2
9/21/05	0.14	0.32
9/5/06	0.37	0.32
9/10/07	<0.14	0.29

MW-103	BEN	NAPH
3/8/02	<0.48	14
9/16/02	<0.45	0.58
3/20/03	--	--
9/25/03	<0.41	0.72
4/22/04	<0.14	1.2
8/23/04	<0.14	0.67
9/21/05	<0.14	0.31
9/5/06	<0.14	0.40
9/10/07	<0.14	0.037

MW-108	BEN	NAPH
3/12/02	<0.45	0.11
MW-108R	BEN	NAPH
9/16/02	<0.45	0.17
3/20/03	<0.30	0.62
9/25/03	<0.41	0.53
4/22/04	<0.14	0.096
8/23/04	–	–

MW-102	BEN	NAPH
3/8/02	6,300	2,300
9/16/02	6,000	2,800
3/20/03	3,900	2,300
9/25/03	4,100	2,100
4/21/04	4,000	190
8/23/04	2,300	1,200
9/21/05	3,100	1,600
9/5/06	2,500	610
9/10/07	1,700	780

GW-2	BEN	NAPH
3/7/02	500	4,000
9/16/02	350	3,500
3/20/03	1,100	6,100
9/25/03	560	3,100
4/22/04	380	800
8/23/04	750	3,900
GW-2R	BEN	NAPH
9/5/06	3,200	8,900

GW-4	BEN	NAPH
3/8/02	<0.48	0.17
9/16/02	<0.45	0.27
3/20/03	<0.30	0.21
9/25/03	<0.41	12
4/21/04	<0.14	0.041
8/23/04	<0.14	1.4
9/21/05	<0.14	1.2
9/5/06	<0.14	1.4
9/10/07	<0.14	0.02

GW-3	BEN	NAPH
3/7/02	560	4,300
9/16/02	210	2,200
3/20/03	17	910
9/25/03	16	820
4/22/04	10	150
8/23/04	36	1,000
9/21/05	38	350
9/5/06	9.9	25
9/10/07	77	680

OW-3	BEN	NAPH
3/8/02	<0.48	<0.054
OW-3R	BEN	NAPH
9/16/02	41	5.9
3/20/03	4.9	45
9/25/03	13	14
4/22/04	4	1.5
8/23/04	20	2.7
9/21/05	19	2.3
9/5/06	6.5	6.8
9/10/07	6.3	1.8

MW-101	BEN	NAPH
3/7/02	1,800	41,000
MW-101R	BEN	NAPH
9/16/02	1,600	5,100
3/20/03	1,500	11,000
9/25/03	1,600	5,100
4/22/04	37	270
8/23/04	97	2,000

MW-109	BEN	NAPH
3/8/02	3,000	2,600
MW-109R	BEN	NAPH
9/16/02	4,000	3,500
3/20/03	1,200	3,400
9/25/03	1,600	1,600
4/22/04	200	370
8/23/04	710	2,100
9/21/05	1,800	1,300
9/5/06	1,300	2,800
9/10/07	190	270

MW-110	BEN	NAPH
3/7/02	<0.48	0.69
9/16/02	<0.45	2.8
3/20/03	<0.30	0.22
9/25/03	<0.41	0.2
4/22/04	<0.14	0.67
8/23/04	<0.14	0.78
9/21/05	<0.14	0.2
9/5/06	<0.14	0.62
9/11/07	<0.14	0.14

OW-4	BEN	NAPH
3/8/02	<0.48	10
9/16/02	<0.45	0.54
3/20/03	–	--
9/25/03	<0.41	0.74
4/22/04	<0.14	0.047
8/23/04	<0.14	0.94

SOURCE NOTES:

THIS DRAWING WAS DEVELOPED FROM MAP BY HYDRO-SEARCH, INC. DATED 06/03/94, PROJECT 304533000 AND A SURVEY BY WISCONSIN PUBLIC SERVICE CORPORATION DATED 01/11/99.

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BROAD STREET PUMP STATION PARCEL AND FORCE MAINS DEVELOPED FROM DRAWING BY HNTB ARCHITECTS ENGINEERS PLANNERS, MILWAUKEE, WISCONSIN, PROJECT NO: 6378, DRAWING SP-2 (3 OF 32) AND PP-2, DATED 9-6-84.

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SURVEY BY ROEHLIG LAND SURVEYING & CONSULTING LTD., OSHKOSH, WISCONSIN, DRAWING AC3771B.DWG, DATED AUGUST 17, 2001, REVISED AUGUST 28, 2001, OCTOBER 29, 2001 AND NOVEMBER 12, 2001.

SURVEY BY RA SMITH, DRAWING AC3771E.DWG REVISION DATE SEPTEMBER 25, 2002 AND OCTOBER 3, 2002.

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SG-2 WAS SURVEYED BY ROEHLIG LAND SURVEYING & CONSULTING LTD., OSHKOSH, WISCONSIN, DRAWING 3771E.DWG, DATED JULY 25, 2003.

TO ALIGN SHORELINE WITH WPSC AND CITY OF OSHKOSH BASE MAP ROTATED 1° TO EACH OTHER.

P-109 AND P-110 SURVEYED BY NATIONAL SURVEY & ENGINEERING, DRAWING 07-04 3771E-BLOCK.DWG, REVISED JULY 2004.

P-111 SURVEYED BY RA SMITH, DRAWING 3771E-MAIL.DWG, REVISED JANUARY 20, 2005.

GW-2R AND P-2R WERE SURVEYED BY TERRA CONSTRUCTION IN JULY 2005.

PROPERTY BOUNDARY AND ADDITIONAL BUILDING AND UTILITY LOCATIONS DEVELOPED FROM DRAWING FILE: g426778xa-001-RECORD.DWG, DATED 09-20-05, PROVIDED BY STS CONSULTANTS, LTD.

LEGEND

SAMPLE LOCATION	BEN	NAPH
SAMPLE DATE	BENZENE (μg/L)	NAPHTHALENE (μg/L)

WISCONSIN GROUNDWATER QUALITY STANDARDS (NR 140)		
	BEN	NAPH
Preventive Action Limit (PAL)	0.5	10
Enforcement Standard (ES)	5	100

DATA QUALIFIERS:

1.4	CONCENTRATION ATTAINS OR EXCEEDS AN NR 140 PREVENTIVE ACTION LIMIT
39	CONCENTRATION ATTAINS OR EXCEEDS AN NR 140 ENFORCEMENT STANDARD
nd	NOT DETECTED
ns	STANDARD HAS NOT BEEN ESTABLISHED
–	ANALYSIS WAS NOT PERFORMED
μg/L	MICROGRAMS PER LITER
<	CONSTITUENT WAS NOT IDENTIFIED ABOVE THE LIMIT OF DETECTION INDICATED

746.50	WATER TABLE ELEVATION CONTOURS, (0.50 FOOT INTERVAL), DASHED WHERE INFERRED
➡	GROUNDWATER FLOW DIRECTION
- - -	BENZENE ES (5.0 μg/L) ISOCONCENTRATION CONTOUR
— —	NAPHTHALENE ES (100 μg/L) ISOCONCENTRATION CONTOUR
MW-110 746.97	MONITORING WELL (NRT) AND WATER TABLE ELEVATION, FEET
MW-101R 746.88	REPLACEMENT MONITORING WELL (NRT) AND WATER TABLE ELEVATION, FEET
OW-1 746.00 GW-1 746.93	MONITORING WELL (HSI) AND WATER TABLE ELEVATION, FEET
DS-3 745.35	DEWATERING SUMP AND WATER TABLE ELEVATION, FEET
▽ SG-2 746.90	STAFF GAUGE AND RIVER ELEVATION, FEET
NM	NOT MEASURED
RW-101	ABANDONED RECOVERY WELL (NRT)
◈ HP-101	HYDRO-PUNCH (HSI)
P-101 P-4	PIEZOMETER (HSI)
P-104	PIEZOMETER (NRT)
P-3 OW-2	ABANDONED PIEZOMETER/ MONITORING WELL
PW-A	ABANDONED INDUSTRIAL SUPPLY WELL
CO-1	CLEANOUT
HDPE	HIGH DENSITY POLYETHYLENE
HSI	HYDRO-SEARCH, INC.
NRT	NATURAL RESOURCE TECHNOLOGY
⊕	CONSTRUCTION GRID POINT (CHISELED CROSS OR PK NAIL)
⊜ ☰	CATCH BASIN
	GUY WIRE
☼	LITE POLE
	UTILITY POLE
⋈	GAS VALVE

APPROXIMATE LOCATION OF:

—-—-—	WPSC PROPERTY SOLD TO CITY OF OSHKOSH
~~	VERTICAL BARRIER
— —D—	PERFORATED SUBSURFACE DRAIN PIPE
▨	GROUNDWATER EXTRACTION TRENCH
○	MANHOLE
—+—+—+—	RAILROAD
—×—×—	CHAIN LINK FENCE
----UEL-----	UNDERGROUND ELECTRIC LINE
----OEL----	OVERHEAD ELECTRIC LINE
----GAS----	NATURAL GAS LINE
—— SAN ——	SANITARY SEWER
—— STM ——	STORM SEWER
—— WTR ——	WATER MAIN
▨	EXISTING BUILDING

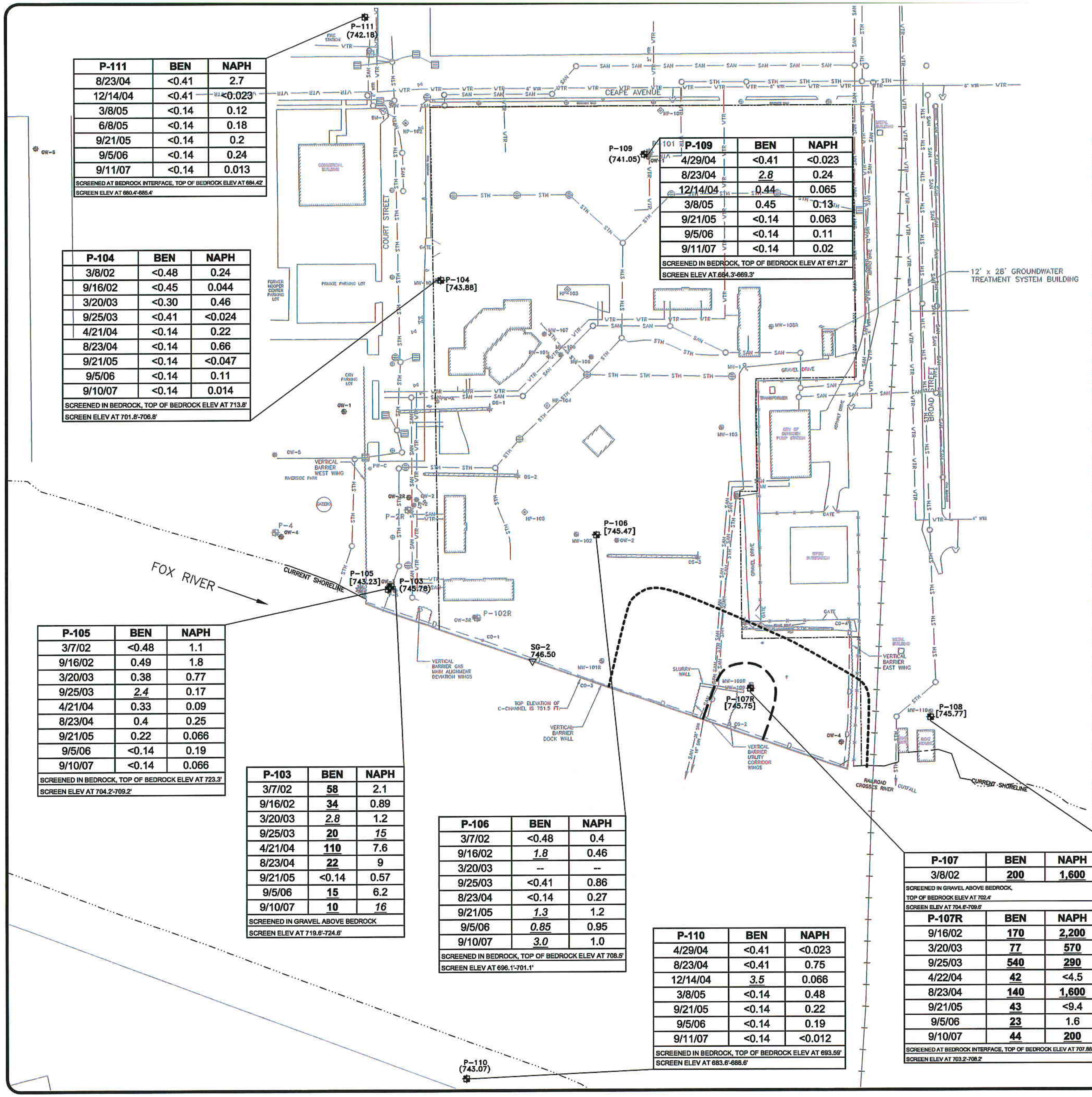
DRAWN BY: BJK DATE: 01/22/08
CHECKED BY: HMS DATE: 01/22/08
APPROVED BY: HMS DATE: 02/04/08
DRAWING NO: 1312-9-B02
REFERENCE: tbls for figs completion 071211.xls

SHALLOW GROUNDWATER ELEVATION AND ISOCONCENTRATION CONTOURS, NOVEMBER 2007 COMPLETION REPORT
FORMER OSHKOSH MANUFACTURED GAS PLANT
WISCONSIN PUBLIC SERVICE CORPORATION
CITY OF OSHKOSH, WISCONSIN

NATURAL RESOURCE TECHNOLOGY

PROJECT NO.
1312/9.0

FIGURE NO.
3



P-111	BEN	NAPH
8/23/04	<0.41	2.7
12/14/04	<0.41	<0.023
3/8/05	<0.14	0.12
6/8/05	<0.14	0.18
9/21/05	<0.14	0.2
9/5/06	<0.14	0.24
9/11/07	<0.14	0.013

SCREENED AT BEDROCK INTERFACE, TOP OF BEDROCK ELEV AT 684.42'

SCREEN ELEV AT 680.4'-685.4'

P-104	BEN	NAPH
3/8/02	<0.48	0.24
9/16/02	<0.45	0.044
3/20/03	<0.30	0.46
9/25/03	<0.41	<0.024
4/21/04	<0.14	0.22
8/23/04	<0.14	0.66
9/21/05	<0.14	<0.047
9/5/06	<0.14	0.11
9/10/07	<0.14	0.014

SCREENED IN BEDROCK, TOP OF BEDROCK ELEV AT 713.8'

SCREEN ELEV AT 701.8'-706.8'

P-109	BEN	NAPH
4/29/04	<0.41	<0.023
8/23/04	<u>*2.8*</u>	0.24
12/14/04	0.44	0.065
3/8/05	0.45	0.13
9/21/05	<0.14	0.063
9/5/06	<0.14	0.11
9/11/07	<0.14	0.02

SCREENED IN BEDROCK, TOP OF BEDROCK ELEV AT 671.27'

SCREEN ELEV AT 664.3'-669.3'

P-105	BEN	NAPH
3/7/02	<0.48	1.1
9/16/02	0.49	1.8
3/20/03	0.38	0.77
9/25/03	*2.4*	0.17
4/21/04	0.33	0.09
8/23/04	0.4	0.25
9/21/05	0.22	0.066
9/5/06	<0.14	0.19
9/10/07	<0.14	0.066

SCREENED IN BEDROCK, TOP OF BEDROCK ELEV AT 723.3'

SCREEN ELEV AT 704.2'-709.2'

P-103	BEN	NAPH
3/7/02	**58**	2.1
9/16/02	**34**	0.89
3/20/03	*2.8*	1.2
9/25/03	**20**	*15*
4/21/04	**110**	7.6
8/23/04	**22**	9
9/21/05	<0.14	0.57
9/5/06	**15**	6.2
9/10/07	**10**	*16*

SCREENED IN GRAVEL ABOVE BEDROCK

SCREEN ELEV AT 719.6'-724.6'

P-106	BEN	NAPH
3/7/02	<0.48	0.4
9/16/02	*1.8*	0.46
3/20/03	--	--
9/25/03	<0.41	0.86
8/23/04	<0.14	0.27
9/21/05	*1.3*	1.2
9/5/06	*0.85*	0.95
9/10/07	*3.0*	1.0

SCREENED IN BEDROCK, TOP OF BEDROCK ELEV AT 708.5'

SCREEN ELEV AT 696.1'-701.1'

P-110	BEN	NAPH
4/29/04	<0.41	<0.023
8/23/04	<0.41	0.75
12/14/04	*3.5*	0.066
3/8/05	<0.14	0.48
9/21/05	<0.14	0.22
9/5/06	<0.14	0.19
9/11/07	<0.14	<0.012

SCREENED IN BEDROCK, TOP OF BEDROCK ELEV AT 693.59'

SCREEN ELEV AT 683.6'-688.6'

P-107	BEN	NAPH
3/8/02	**200**	**1,600**

SCREENED IN GRAVEL ABOVE BEDROCK,
TOP OF BEDROCK ELEV AT 702.4'

SCREEN ELEV AT 704.6'-709.6'

P-107R	BEN	NAPH
9/16/02	**170**	**2,200**
3/20/03	**77**	**570**
9/25/03	**540**	**290**
4/22/04	**42**	<4.5
8/23/04	**140**	**1,600**
9/21/05	**43**	<9.4
9/5/06	**23**	1.6
9/10/07	**44**	**200**

SCREENED AT BEDROCK INTERFACE, TOP OF BEDROCK ELEV AT 707.88'

SCREEN ELEV AT 703.2'-708.2'

P-108	BEN	NAPH
3/7/02	**56**	*96*
9/16/02	**39**	*46*
3/20/03	**5.3**	5.3
9/25/03	*4*	<0.48
4/22/04	*1.4*	1.4
8/23/04	**11**	8.2
9/21/05	*1.1*	1.4
9/5/06	0.28	0.43
9/11/07	*1.6*	1.4

SCREENED IN SILT ABOVE BEDROCK, FILTER PACK EXTENDS BELOW THE SCREEN TO 697.8', TOP OF BEDROCK ELEV AT 705.9'

SCREEN ELEV AT 705.9'-710.9'

TRUE
PLAN (14°E)
NORTH

0 30 60 120
SCALE IN FEET
(APPROXIMATE)

NOTE:

1. PIEZOMETRIC SURFACE CONTOURS WERE NOT CONSTRUCTED DUE TO THE INCONSISTENT WATER LEVEL COLLECTED AT P–105 DURING THE NOVEMBER EVENT. THE OTHER 2007 QUARTERLY SAMPLE EVENTS INDICATES FLOW TO NORTHWEST, SIMILAR TO PREVIOUS FLOW INTERPRETATIONS.

SOURCE NOTES:

THIS DRAWING WAS DEVELOPED FROM MAP BY HYDRO–SEARCH, INC. DATED 06/03/94, PROJECT 304533000 AND A SURVEY BY WISCONSIN PUBLIC SERVICE CORPORATION DATED 01/11/99.

HISTORICAL SHORELINES TAKEN FROM SANBORN MAPS. LOCATIONS ARE APPROXIMATE.

30" STORM SEWER IN BROAD STREET TAKEN FROM SEWER SYSTEM 8TH WARD DRAWING BY CITY OF OSHKOSH WISCONSIN ENGINEERING DEPARTMENT, DATED 12–5–36, WITH 1977 UPDATE.

BROAD STREET PUMP STATION PARCEL AND FORCE MAINS DEVELOPED FROM DRAWING BY HNTB ARCHITECTS ENGINEERS PLANNERS, MILWAUKEE, WISCONSIN, PROJECT NO: 6378, DRAWING SP–2 (3 OF 32) AND PP–2, DATED 9–6–84.

LOCATIONS OF SEWER LATERALS, TAR WELLS, GAS HOLDERS, TAR STILL, TAR SEPARATORS, AND ASSOCIATIVE PIPING TAKEN FROM WPSC DRAWING NO. 140, DATED 1925.

SURVEY BY ROEHLIG LAND SURVEYING & CONSULTING LTD., OSHKOSH, WISCONSIN, DRAWING AC3771B.DWG, DATED AUGUST 17, 2001, REVISED AUGUST 28, 2001, OCTOBER 29, 2001 AND NOVEMBER 12, 2001.

SURVEY BY RA SMITH, DRAWING AC3771E.DWG REVISION DATE SEPTEMBER 25, 2002 AND OCTOBER 3, 2002.

HP GAS LINE FROM DRAWING BY FORD, BACON AND DAVIS, INC., ENGINEERS, DRAWING NO. 60013–FI–S, REVISED DATED NOVEMBER 9, 1953.

WATER LINES AND HYDRANTS, STORM AND SANITARY LINES IN CEAPE AVENUE ARE TAKEN FROM CITY OF OSHKOSH ENGINEERING DIVISION DRAWING, DATED NOVEMBER 9, 1998.

BM–1 WAS FIELD MEASURED BY NRT. BM–1 TOP OF HYDRANT OPERATING NUT, ELEVATION 754.18.

SB–125 WAS INSTALLED IN OCTOBER 2001, LOCATION IS APPROXIMATED FROM FIELD MEASUREMENTS BY NRT.

SG–2 WAS SURVEYED BY ROEHLIG LAND SURVEYING & CONSULTING LTD., OSHKOSH, WISCONSIN, DRAWING 3771E.DWG, DATED JULY 25, 2003.

TO ALIGN SHORELINE WITH WPSC AND CITY OF OSHKOSH BASE MAP ROTATED 1° TO EACH OTHER.

P–109 AND P–110 SURVEYED BY NATIONAL SURVEY & ENGINEERING, DRAWING 07–04 3771E–BLOCK.DWG, REVISED JULY 2004.

P–111 SURVEYED BY RA SMITH, DRAWING 3771E–MAIL.DWG, REVISED JANUARY 20, 2005.

GW–2R AND P–2R WERE SURVEYED BY TERRA CONSTRUCTION IN JULY 2005.

PROPERTY BOUNDARY AND ADDITIONAL BUILDING AND UTILITY LOCATIONS DEVELOPED FROM DRAWING FILE: g426778xa–001–RECORD.DWG, DATED 09–20–05, PROVIDED BY STS CONSULTANTS, LTD.

LEGEND

SAMPLE LOCATION	BEN	NAPH
SAMPLE DATE	BENZENE (µg/L)	NAPHTHALENE (µg/L)

WISCONSIN GROUNDWATER QUALITY STANDARDS (NR 140)		
	BEN	NAPH
Preventive Action Limit (PAL)	*0.5*	*10*
Enforcement Standard (ES)	**5**	**100**

DATA QUALIFIERS:

1.4	CONCENTRATION ATTAINS OR EXCEEDS AN NR 140 PREVENTIVE ACTION LIMIT
39	CONCENTRATION ATTAINS OR EXCEEDS AN NR 140 ENFORCEMENT STANDARD
nd	NOT DETECTED
ns	STANDARD HAS NOT BEEN ESTABLISHED
–	ANALYSIS WAS NOT PERFORMED
µg/L	MICROGRAMS PER LITER
<	CONSTITUENT WAS NOT IDENTIFIED ABOVE THE LIMIT OF DETECTION INDICATED

— — —	NAPHTHALENE ES (100 µg/L) ISONCONCENTRATION CONTOUR
- - - -	BENZENE ES (5.0 µg/L) ISOCONCENTRATION CONTOUR
P–104 [744.78]	BEDROCK UNIT PIEZOMETER (NRT) AND PIEZOMETRIC SURFACE ELEVATION, FEET
P–111 (743.40)	DEEPER BEDROCK UNIT PIEZOMETER AND PIEZOMETRIC SURFACE ELEVATION, FEET.
▽ SG–2 746.90	STAFF GAUGE AND RIVER ELEVATION, FEET
P–4 P–101	PIEZOMETER (HSI)
MW–110	MONITORING WELL (NRT)
MW–101R	REPLACEMENT MONITORING WELL (NRT)
GW–1 OW–1	MONITORING WELL (HSI)
DS–1	DEWATERING SUMP
RW–101	ABANDONED RECOVERY WELL (NRT)
P–3 OW–2	ABANDONED PIEZOMETER/ MONITORING WELL
◈ HP–101	HYDRO–PUNCH (HSI)
PW–A	ABANDONED INDUSTRIAL SUPPLY WELL
◎ C0–1	CLEANOUT
HDPE	HIGH DENSITY POLYETHYLENE
HSI	HYDRO–SEARCH, INC.
NRT	NATURAL RESOURCE TECHNOLOGY
MGP	MANUFACTURED GAS PLANT
⊕	CONSTRUCTION GRID POINT (CHISELED CROSS OR PK NAIL)
⊜ ▤	CATCH BASIN
	GUY WIRE
☼	LITE POLE
	UTILITY POLE
⋈	GAS VALVE

APPROXIMATE LOCATION OF:

—-—-—	WPSC PROPERTY SOLD TO CITY OF OSHKOSH
~~	VERTICAL BARRIER
— —D— —	PERFORATED SUBSURFACE DRAIN PIPE
▨	GROUNDWATER EXTRACTION TRENCH
○	MANHOLE
	HYDRANT
—+—+—	RAILROAD
—X—X—	CHAIN LINK FENCE
— SAN —	SANITARY SEWER
— STH —	STORM SEWER
— VTR —	WATER MAIN
	EXISTING BUILDING

BEDROCK AND SAND/GRAVEL PIEZOMETRIC SURFACE ELEVATION AND ISOCONCENTRATION CONTOUR, NOVEMBER 2007

COMPLETION REPORT
FORMER OSHKOSH MANUFACTURED GAS PLANT
WISCONSIN PUBLIC SERVICE CORPORATION
CITY OF OSHKOSH, WISCONSIN

DRAWN BY:	BJK	DATE:	01/22/08
CHECKED BY:	HMS	DATE:	01/22/08
APPROVED BY:	HMS	DATE:	02/04/08

DRAWING NO: 1312-9-B03
REFERENCE: tbls for figs completion 071211.xls

NATURAL RESOURCE TECHNOLOGY

PROJECT NO.
1312/9.0

FIGURE NO.
4

TABLES

Table 1 - Groundwater Elevation Summary
Wisconsin Public Service Corporation
Oshkosh Former Manufactured Gas Plant Site

Well	TOC Elevation (feet)^B	Ground Elevation (feet)^B	Well Depth from TOC (feet)	Well Screen Length (feet)	Top of Screen Elevation (feet)^B	Base of Screen Elevation (feet)^B	Monitoring Date	Depth to Groundwater (feet)	Groundwater Elevation (feet)^B	Field Comments
OW-1	Historical groundwater elevation data provided in previous reports						3/7/2002	5.72	747.70	
	751.57	752.04	8.5	5	748.10	743.10	9/16/2002	4.48	747.09	
							10/24/2002	--	--	
							11/7/2002	5.21	746.36	
							11/15/2002	5.45	746.12	
							11/22/2002	6.22	745.35	
							12/20/2002	4.78	746.79	
							1/20/2003	--	--	
							2/17/2003	7.94	743.63	
							3/19/2003	6.91	744.66	unable to sample - dry bailer
							4/23/2003	3.76	747.81	
							5/14/2003	3.49	748.08	
							6/25/2003	4.30	747.27	
							9/24/2003	5.18	746.39	unable to sample - dry bailer
							12/22/2003	5.15	746.42	
							4/21/2004	4.43	747.14	
							6/28/2004	1.54	750.03	
							7/26/2004	2.79	748.78	
							8/23/2004	3.24	748.33	
							12/14/2004	2.03		elevation may have changed due to park redevelopment
							3/8/2005	4.49		elevation may have changed due to park redevelopment
	750.79	750.95	7.70	5	748.10	743.10	6/8/2005	3.10	747.69	
							9/21/2005	3.62	747.17	
							10/11/2005	4.02	746.77	
							12/12/2005	3.66	747.13	
							3/7/2006	4.73	746.06	
							6/19/2006	4.08	746.71	
							9/5/2006	3.81	746.98	
							12/1/2006	3.80	746.99	
							3/26/2007	3.82	746.97	
							6/27/2007	4.04	746.75	
							9/10/2007	4.07	746.72	wet dry , no purge
							11/30/2007	4.79	746.00	
P-101	Historical groundwater elevation data provided in previous reports						3/7/2002	8.11	745.82	
	751.69	751.99	30.3	5	726.40	721.40	9/16/2002	4.80	746.89	
							10/24/2002	4.95	746.74	
							11/7/2002	--	--	
							11/15/2002	4.90	746.79	
							11/22/2002	5.25	746.44	
							12/20/2002	5.23	746.46	
							1/20/2003	--	--	
							2/17/2003	--	--	
							3/19/2003	4.72	746.97	
							4/23/2003	2.84	748.85	
							5/14/2003	1.28	750.41	
							6/25/2003	3.31	748.38	
							9/24/2003	2.09	749.60	bailed dry
							12/22/2003	--	--	Outer casing frozen
							4/21/2004	7.93	743.76	
							6/28/2004	4.42	747.27	
							7/26/2004	4.49	747.20	
							8/23/2004	5.72	745.97	
							12/14/2004	3.53		elevation may have changed due to park redevelopment
							3/8/2005	5.60		elevation may have changed due to park redevelopment
	750.87	751.09	29.5	5	726.40	721.40	6/8/2005	3.87	747.00	
							9/21/2005	3.62	747.25	
							9/5/2006	4.54	746.33	
							3/26/2007	Proposed for Abandonment		
OW-3R	751.81	752.03	13.8	10	748.01	738.01	9/16/2002	5.00	746.81	
							10/24/2002	5.03	746.78	
							11/7/2002	5.66	746.15	
							11/15/2002	6.30	745.51	
							11/22/2002	6.55	745.26	
							12/20/2002	6.74	745.07	
							1/20/2003	7.00	744.81	
							2/17/2003	7.14	744.67	
							3/19/2003	7.20	744.61	
							4/23/2003	5.58	746.23	
							5/14/2003	5.12	746.69	
	751.68	752.03	13.5	10	748.00	738.00	6/25/2003	5.39	746.29	
							9/24/2003	5.10	746.58	
							12/22/2003	5.37	746.31	
							4/21/2004	5.30	746.38	
							6/28/2004	3.95	747.73	
							7/26/2004	4.85	746.83	
							8/23/2004	5.18	746.50	
							12/14/2004	4.98		elevation may have changed due to park redevelopment
							3/8/2005	--	--	unable to locate, during park redevelopment activities
	751.72	751.9	13.7	10	748.00	738.00	6/8/2005	4.83	746.89	
							9/21/2005	5.03	746.69	
							12/12/2005	5.25	746.47	
							3/7/2006	6.25	745.47	
							6/19/2006	4.80	746.92	
							9/5/2006	5.08	746.64	
							12/1/2006	4.98	746.74	
							3/26/2007	5.68	746.04	
							6/26/2007	4.82	746.90	
							9/10/2007	4.73	746.99	
							11/30/2007	5.77	745.95	

Table 1 - Groundwater Elevation Summary
Wisconsin Public Service Corporation
Oshkosh Former Manufactured Gas Plant Site

Well	TOC Elevation (feet)^B	Ground Elevation (feet)^B	Well Depth from TOC (feet)	Well Screen Length (feet)	Top of Screen Elevation (feet)^B	Base of Screen Elevation (feet)^B	Monitoring Date	Depth to Groundwater (feet)	Groundwater Elevation (feet)^B	Field Comments
P-102R	751.65	751.95	29.7	5	726.95	721.95	9/16/2002	5.00	746.65	
							10/24/2002	4.87	746.78	
							11/7/2002	5.50	746.15	
							11/15/2002	5.75	745.90	
							11/22/2002	5.81	745.84	
	751.65	751.95	29.7	5	726.95	721.95	12/20/2002	5.94	745.71	
							1/20/2003	6.45	745.20	
							2/17/2003	6.60	745.05	
							3/19/2003	6.45	745.20	
							4/23/2003	5.41	746.24	
							5/14/2003	5.76	745.89	
							6/25/2003	5.14	746.51	
							9/24/2003	5.20	746.45	
							12/22/2003	5.35	746.30	
							4/21/2004	5.49	746.16	
							6/28/2004	3.93	747.72	
							7/26/2004	4.90	746.75	
							8/23/2004	5.06	746.59	
							12/14/2004	--	--	unable to locate, during park redevelopment activities
							3/8/2005	--	--	unable to locate, during park redevelopment activities
	751.65	751.91	29.70	5	727.00	722.00	6/8/2005	5.06	746.59	
							9/21/2005	5.25	746.40	
							9/5/2006	Proposed for Abandonment		
OW-4	Historical groundwater elevation data provided in previous reports						3/7/2002	6.45	745.94	
	750.75	751.05	6.8	5	748.97	743.97	9/16/2002	5.30	745.45	
							10/24/2002	3.85	746.90	
							11/7/2002	4.31	746.44	
							11/15/2002	4.80	745.95	
							11/22/2002	5.06	745.69	
							12/20/2002	5.28	745.47	
							1/20/2003	5.71	745.04	
							2/17/2003	6.02	744.73	
							3/19/2003	--	--	Unable to locate due to snow
							4/23/2003	4.47	746.28	
							5/14/2003	3.98	746.77	
							6/25/2003	4.19	746.56	
							9/24/2003	4.32	746.43	
							12/22/2003	4.53	746.22	
							4/21/2004	4.81	745.94	
							6/28/2004	3.08	747.67	
							7/26/2004	3.85	746.90	
							8/23/2004	4.35	746.40	
							12/14/2004	3.97	746.73	elevation based on STS June 2005 survey due to park redevelopment
							3/8/2005	4.77	745.93	elevation based on STS June 2005 survey due to park redevelopment
	750.70	751.03	6.70	5	749.00	744.00	6/8/2005	4.21	746.49	
							9/21/2005	3.17	747.53	
							10/11/2005	4.23	746.47	
							12/12/2005	4.52	746.18	
							3/7/2006	5.52	745.18	
							6/19/2006	4.13	746.57	water inside flush mount
							9/5/2006	4.42	746.28	
							12/1/2006	4.46	746.24	
							3/26/2007	5.50	745.20	
							6/26/2007	4.26	746.44	
							9/10/2007	4.48	746.22	
							11/30/2007	3.63	747.07	
GW-1	Historical groundwater elevation data provided in previous reports						3/7/2002	3.92	746.05	
	749.83	750.26	12.3	10	747.50	737.50	9/16/2002	2.88	746.95	
							10/24/2002	nm	nm	
							11/7/2002	3.04	746.79	
							11/15/2002	nm	nm	
							11/22/2002	3.31	746.52	
							12/20/2002	3.35	746.48	
							1/20/2003	4.17	745.66	
							2/17/2003	--	--	
							3/19/2003	4.15	745.68	
							4/23/2003	3.36	746.47	
							5/14/2003	2.65	747.18	
							6/25/2003	3.05	746.78	
							9/24/2003	3.20	746.63	
							12/22/2003	2.82	747.01	
							4/21/2004	3.70	746.13	
							6/28/2004	2.30	747.53	
							7/26/2004	2.96	746.87	
							8/23/2004	--	--	unable to measure beneath job trailer
							12/14/2004	--	--	unable to measure beneath job trailer
							3/8/2005	--	--	unable to measure beneath job trailer
	750.02	750.24	12.5	10	747.50	737.50	6/8/2005	3.03	746.99	
							9/21/2005	3.27	746.75	
							10/11/2005	3.17	746.85	
							12/12/2005	3.45	746.57	
							3/7/2006	4.36	745.66	
							6/19/2006	3.02	747.00	
							9/5/2006	3.30	746.72	
							12/1/2006	3.27	746.75	
							3/26/2007	4.06	745.96	
							6/26/2007	3.10	746.92	
							9/10/2007	3.09	746.93	
							11/30/2007	3.79	746.23	

Table 1 - Groundwater Elevation Summary
Wisconsin Public Service Corporation
Oshkosh Former Manufactured Gas Plant Site

Well	TOC Elevation (feet)[B]	Ground Elevation (feet)[B]	Well Depth from TOC (feet)	Well Screen Length (feet)	Top of Screen Elevation (feet)[B]	Base of Screen Elevation (feet)[B]	Monitoring Date	Depth to Groundwater (feet)	Groundwater Elevation (feet)[B]	Field Comments
GW-2	**Historical groundwater elevation data provided in previous reports**						3/7/2002	3.45	746.17	
	749.56	750.12	12.5	10	747.10	737.10	9/16/2002	2.65	746.91	
							10/24/2002	2.60	746.96	
							11/7/2002	3.15	746.41	
							11/15/2002	3.55	746.01	
							11/22/2002	3.70	745.86	
							12/20/2002	3.75	745.81	
							1/20/2003	4.39	745.17	
							2/17/2003	4.50	745.06	
							3/19/2003	4.55	745.01	Sheen
							4/23/2003	3.14	746.42	
							5/14/2003	2.53	747.03	
							6/25/2003	8.82	740.74	
							9/24/2003	2.80	746.76	black sheen, coal tar,odor
							12/22/2003	2.88	746.68	
							4/21/2004	3.22	746.34	Tar, odor, black sheen
							6/28/2004	0.50	749.06	
							7/26/2004	2.58	746.98	
							8/23/2004	2.82	746.74	
							12/14/2004	4.62		elevation may have changed due to park redevelopment
							3/8/2005	6.06		elevation may have changed due to park redevelopment
							6/8/2005	--	--	damaged casing
							Monitoring Well Abandoned			
GW-2R	751.25	ns	14.00	10	747.25	737.25	9/21/2005	4.72	746.53	
							10/11/2005	4.40	746.85	
							12/12/2005	4.74	746.51	
							3/7/2006	5.67	745.58	
							6/19/2006	4.24	745.07	Tar present
							9/5/2006	5.00	746.25	Tar present
							12/1/2006	4.49	746.76	
							3/26/2007	5.27	745.98	
							6/26/2007	4.28	746.97	
							9/10/2007	4.25	747.00	
							11/30/2007	5.22	746.03	
P-2	**Historical groundwater elevation data provided in previous reports**						3/7/2002	3.52	745.89	
	749.70	750.20	28.2	5	726.50	721.50	9/16/2002	3.00	746.70	
							10/24/2002	2.90	746.80	
							11/7/2002	3.55	746.15	
							11/15/2002	3.80	745.90	
							11/22/2002	3.84	745.86	
							12/20/2002	4.01	745.69	
							1/20/2003	4.53	745.17	
							2/17/2003	4.73	744.97	
							3/19/2003	4.58	745.12	no sample-bailer frozen in well
							4/23/2003	3.52	746.18	
							5/14/2003	2.85	746.85	
							6/25/2003	3.22	746.48	
							9/24/2003	3.30	746.40	
							12/22/2003	3.50	746.20	
							4/21/2004	3.63	746.07	odor
							6/28/2004	2.14	747.56	
							7/26/2004	3.08	746.62	
							8/23/2004	3.28	746.42	
							12/14/2004	--	--	unable to locate, during park redevelopment activities
							3/8/2005	--	--	unable to locate, during park redevelopment activities
							6/8/2005	--	--	damaged casing
							Monitoring Well Abandoned			
P-2R	751.30	ns	29.0	5	727.30	722.30	9/21/2005	--	--	
							9/5/2006	4.98	746.32	
							3/26/2007	Proposed for Abandonment		
GW-3	**Historical groundwater elevation data provided in previous reports**						3/7/2002	3.21	745.81	
	750.03	750.35	14.0	10	746.03	736.03	9/16/2002	3.10	746.93	
							10/24/2002	3.03	747.00	
							11/7/2002	3.41	746.62	
							11/15/2002	3.75	746.28	
							11/22/2002	3.81	746.22	
							12/20/2002	3.92	746.11	
							1/20/2003	4.49	745.54	
							2/17/2003	4.59	745.44	
							3/19/2003	4.50	745.53	Sheen
							4/23/2003	3.52	746.51	
							5/14/2003	3.86	746.17	
							6/25/2003	3.22	746.81	
							9/24/2003	3.80	746.23	
							12/22/2003	--	--	Outer casing frozen
							4/21/2004	3.85	746.18	
							6/28/2004	2.37	747.66	
							7/26/2004	3.59	746.44	some surface water went in well
							8/23/2004	3.46	746.57	
							12/14/2004	3.52		elevation may have changed due to park redevelopment
							3/8/2005	4.33		elevation may have changed due to park redevelopment
							6/8/2005	--	--	buried during park redevelopment
	750.23	750.29	14.20	10	746.00	736.00	9/21/2005	3.41	746.82	needs to be resurveyed
							10/11/2005	3.28	746.95	
							12/12/2005	3.59	746.64	
							3/7/2006	4.43	745.80	
							6/19/2006	3.17	747.06	Broken inner cap replaced
							9/5/2006	3.48	746.75	
							12/1/2006	3.40	746.83	
							3/26/2007	4.11	746.12	
							6/26/2007	3.14	747.09	
							9/10/2007	3.20	747.03	
							11/30/2007	4.03	746.20	

Table 1 - Groundwater Elevation Summary
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Well	TOC Elevation (feet)B	Ground Elevation (feet)B	Well Depth from TOC (feet)	Well Screen Length (feet)	Top of Screen Elevation (feet)B	Base of Screen Elevation (feet)B	Monitoring Date	Depth to Groundwater (feet)	Groundwater Elevation (feet)B	Field Comments
P-103	**Historical groundwater elevation data provided in previous reports**						3/7/2002	3.04	746.02	
	750.02	750.33	30.4	5	724.61	719.61	9/16/2002	3.28	746.74	
							10/24/2002	3.20	746.82	
							11/7/2002	3.85	746.17	
							11/15/2002	4.05	745.97	
							11/22/2002	4.13	745.89	
							12/20/2002	4.23	745.79	
							1/20/2003	4.82	745.20	
							2/17/2003	5.00	745.02	
							3/19/2003	4.87	745.15	Sheen
							4/23/2003	3.84	746.18	
							5/14/2003	3.16	746.86	
							6/25/2003	3.53	746.49	
							9/24/2003	3.60	746.42	
							12/22/2003	--	--	Outer casing frozen
							4/21/2004	3.91	746.11	
							6/28/2004	2.35	747.67	
							7/26/2004	3.41	746.61	some surface water went in well
							8/23/2004	3.53	746.49	
							12/14/2004	3.48	746.54	elevation based on STS June 2005 survey due to park redevelopment
							3/8/2005	4.30	745.72	elevation based on STS June 2005 survey due to park redevelopment
							6/8/2005	--	--	buried during park redevelopment
	750.02	750.20	30.4	5	724.60	719.60	9/21/2005	3.64	746.38	
							9/5/2006	3.75	746.27	
							3/26/2007	4.11	745.91	
							6/26/2007	3.50	746.52	
							9/10/2007	3.38	746.64	
							11/30/2007	4.24	745.78	
P-105	**Historical groundwater elevation data provided in previous reports**						3/7/2002	3.04	745.93	
	749.96	750.29	45.8	5	709.20	704.20	9/16/2002	2.80	747.16	
							10/24/2002	1.54	748.42	
							11/7/2002	3.51	746.45	
							11/15/2002	3.90	746.06	
							11/22/2002	4.04	745.92	
							12/20/2002	4.15	745.81	
							1/20/2003	4.70	745.26	
							2/17/2003	4.90	745.06	
							3/19/2003	4.72	745.24	
							4/23/2003	3.79	746.17	
							5/14/2003	3.31	746.65	
							6/25/2003	3.48	746.48	
							9/24/2003	3.51	746.45	
							12/22/2003	3.64	746.32	
							4/21/2004	3.54	746.42	
							6/28/2004	1.57	748.39	
							7/26/2004	1.23	748.73	some surface water went in well
							8/23/2004	1.25	748.71	
							12/14/2004	3.55	746.47	elevation based on STS June 2005 survey due to park redevelopment
							3/8/2005	3.82	746.20	elevation based on STS June 2005 survey due to park redevelopment
							6/8/2005	--	--	buried during park redevelopment
	750.02	750.15	45.8	5	709.20	704.20	9/21/2005	3.64	746.38	
							9/5/2006	4.09	745.93	
							3/26/2007	3.48	746.54	
							6/26/2007	3.53	746.49	
							9/10/2007	3.45	746.57	went dry
							11/30/2007	6.79	743.23	
GW-4	**Historical groundwater elevation data provided in previous reports**						5/30/2001	2.67	747.15	
	749.87	750.11	13.1	10	746.77	736.77	8/13/2001	3.00	746.87	
							9/27/2001	2.73	747.14	
							11/13/2001	3.24	746.63	
							3/7/2002	3.88	745.99	
							9/16/2002	3.00	746.87	
							10/24/2002	2.82	747.05	
							11/7/2002	3.07	746.80	
							11/15/2002	3.30	746.57	
							11/22/2002	3.31	746.56	
							12/20/2002	3.41	746.46	
							1/20/2003	4.00	745.87	
							2/17/2003	--	--	
							3/19/2003	4.15	745.72	
							4/23/2003	3.33	746.54	
							5/14/2003	2.59	747.28	
							6/25/2003	2.94	746.93	
							9/24/2003	3.12	746.75	
							12/22/2003	3.57	746.30	
							4/21/2004	3.74	746.13	
							6/28/2004	2.23	747.64	
							7/26/2004	2.80	747.07	
							8/23/2004	2.89	746.98	
							12/14/2004	3.20	746.67	
							3/8/2005	4.05	745.82	
	749.89	750.15	13.1	10	746.80	736.80	6/8/2005	2.87	747.02	
							9/21/2005	3.19	746.70	
							10/11/2005	3.10	746.79	
							12/12/2005	3.30	746.59	
							3/7/2006	4.14	745.75	
							6/19/2006	2.93	746.96	
							9/5/2006	3.14	746.75	
							12/1/2006	3.15	746.74	
							3/26/2007	3.82	746.07	
							6/26/2007	2.96	746.93	
							9/10/2007	2.96	746.93	
							11/30/2007	3.63	746.26	

Table 1 - Groundwater Elevation Summary
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Well	TOC Elevation (feet)[B]	Ground Elevation (feet)[B]	Well Depth from TOC (feet)	Well Screen Length (feet)	Top of Screen Elevation (feet)[B]	Base of Screen Elevation (feet)[B]	Monitoring Date	Depth to Groundwater (feet)	Groundwater Elevation (feet)[B]	Field Comments
P-4	Historical groundwater elevation data provided in previous reports						3/7/2002	4.22	745.85	
	749.84	750.17	28.5	5	726.33	721.33	9/16/2002	3.14	746.70	
							10/24/2002	3.05	746.79	
							11/7/2002	3.62	746.22	
							11/15/2002	3.90	745.94	
							11/22/2002	3.93	745.91	
							12/20/2002	4.05	745.79	
							1/20/2003	4.61	745.23	
							2/17/2003	--	--	
							3/19/2003	4.65	745.19	
							4/23/2003	3.61	746.23	
							5/14/2003	2.93	746.91	
							6/25/2003	3.29	746.55	
							9/24/2003	3.42	746.42	
							12/22/2003	2.90	746.94	
							4/21/2004	3.71	746.13	
							6/28/2004	2.20	747.64	
							7/26/2004	3.03	746.81	
							8/23/2004	3.30	746.54	
							12/14/2004	3.34	746.50	
							3/8/2005	4.09	745.75	
	749.80	750.11	28.50	5	726.30	721.30	6/8/2005	3.93	745.87	
							9/21/2005	3.48	746.32	
							9/5/2006	Proposed to be Abandoned		
MW-101R	752.89	753.04	14.1	10	748.79	738.79	9/16/2002	6.00	746.89	
							10/24/2002	2.92	749.97	
							11/7/2002	6.24	746.65	
							11/15/2002	6.45	746.44	
							11/22/2002	6.54	746.35	
							12/20/2002	7.19	745.70	
							1/20/2003	7.55	745.34	
							2/17/2003	7.86	745.03	
							3/19/2003	7.60	745.29	Coal Tar , Sheen
							4/23/2003	6.45	746.44	
							5/14/2003	5.75	747.14	
	752.75	753.04	14.1	10	748.79	738.79	6/25/2003	5.97	746.78	
							9/24/2003	6.15	746.60	black, odor, sheen
							12/22/2003	6.37	746.38	
							4/21/2004	6.72	746.03	
							6/28/2004	5.09	747.66	
							7/26/2004	5.80	746.95	
							8/23/2004	5.98	746.77	
							12/14/2004	6.10	746.63	elevation based on STS June 2005 survey due to park redevelopment
							3/8/2005	--	--	unable to locate, during park redevelopment activities
	752.73	752.97	14.1	10	748.80	738.80	6/8/2005	5.95	746.78	
							9/21/2005	6.23	746.50	
							10/11/2005	6.20	746.53	
							12/12/2005	6.49	746.24	
							3/7/2006	7.20	745.53	
							6/19/2006	5.96	746.77	
							9/5/2006	6.41	746.32	Tar present
							12/1/2006	6.23	746.50	
							3/26/2007	6.62	746.11	
							6/26/2007	6.09	746.64	
							9/10/2007	5.85	746.88	
							11/30/2007	6.84	745.89	
MW-102	Historical groundwater elevation data provided in previous reports						3/7/2002	7.01	746.81	
	752.69	753.31	14.4	10	748.33	738.33	9/16/2002	5.95	746.74	
							11/15/2002	7.90	744.79	
							11/22/2002	8.29	744.40	
							12/20/2002	8.23	744.46	
							1/20/2003	--	--	
							2/17/2003	--	--	
							3/19/2003	8.51	744.18	Sheen
							4/23/2003	6.51	746.18	
							5/14/2003	6.16	746.53	
							6/25/2003	6.35	746.34	
							9/24/2003	6.23	746.46	gray, odor
							12/22/2003	--	--	Outer casing frozen
							4/21/2004	6.31	746.38	
							6/28/2004	0.50	752.19	
							7/26/2004	5.89	746.80	
							8/23/2004	6.34	746.35	
							12/14/2004	8.69		elevation may have changed due to park redevelopment
							3/8/2005	--	--	unable to locate, during park redevelopment activities
	755.36	755.49	17.1	10	748.30	738.30	6/8/2005	8.41	746.95	
							9/21/2005	8.65	746.71	
							10/11/2005	8.52	746.84	
							12/12/2005	8.92	746.44	
							3/7/2006	--	--	unable to locate, well is most likely under construction debris
							6/19/2006	8.46	746.90	
							9/5/2006	8.73	746.63	
							12/1/2006	8.66	746.70	
							3/26/2007	9.38	745.98	
							6/26/2007	8.47	746.89	
							9/10/2007	8.35	747.01	
							11/30/2007	9.37	745.99	

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Well	TOC Elevation (feet)[B]	Ground Elevation (feet)[B]	Well Depth from TOC (feet)	Well Screen Length (feet)	Top of Screen Elevation (feet)[B]	Base of Screen Elevation (feet)[B]	Monitoring Date	Depth to Groundwater (feet)	Groundwater Elevation (feet)[B]	Field Comments
P-106	**Historical groundwater elevation data provided in previous reports**						3/7/2002	8.76	744.45	
	752.29	752.82	56.2	5	701.13	696.13	9/16/2002	6.75	745.54	
							11/15/2002	6.80	745.49	
							11/22/2002	6.87	745.42	
							12/20/2002	7.00	745.29	
							1/20/2003	7.61	744.68	
							2/17/2003	7.60	744.69	
							3/19/2003	--	--	Unable to locate due to snow
							4/23/2003	6.46	745.83	
							5/14/2003	5.78	746.51	
							6/25/2003	6.13	746.16	
							9/24/2003	6.30	745.99	
							12/22/2003	6.57	745.72	
							4/21/2004	5.78	746.51	
							6/28/2004	4.88	747.41	
							7/26/2004	5.07	747.22	
							8/23/2004	5.15	747.14	
							12/14/2004	10.70		elevation may have changed due to park redevelopment
							3/8/2005	--	--	unable to locate, during park redevelopment activities
	756.80	757.04	60.70	5	701.10	696.10	6/8/2005	10.72	746.08	
							9/21/2005	10.96	745.84	
							9/5/2006	10.73	746.07	
							3/26/2007	11.55	745.25	
							6/26/2007	10.76	746.04	
							9/10/2007	10.64	746.16	
							11/30/2007	11.33	745.47	
MW-103	**Historical groundwater elevation data provided in previous reports**						3/7/2002	6.51	746.50	
	749.77	750.73	12.4	10	747.36	737.36	9/16/2002	3.00	746.77	
							10/24/2002	5.00	744.77	
							11/7/2002	4.26	745.51	
							11/15/2002	4.20	745.57	
							11/22/2002	4.28	745.49	
							12/20/2002	4.37	745.40	
							1/20/2003	--	--	
							2/17/2003	--	--	
							3/19/2003	--	--	Unable to locate due to snow
							4/23/2003	3.25	746.52	
							5/14/2003	2.72	747.05	
							6/25/2003	3.25	746.52	
							9/24/2003	3.57	746.20	
							12/22/2003	3.34	746.43	
							4/21/2004	3.94	745.83	
							6/28/2004	1.99	747.78	
							7/26/2004	2.62	747.15	
							8/23/2004	3.40	746.37	
							12/14/2004	6.90		elevation may have changed due to park redevelopment
							3/8/2005	7.93		elevation may have changed due to park redevelopment
	755.21	755.59	17.80	10	747.40	737.40	6/8/2005	--	--	unaccessible
							9/21/2005	8.54	746.67	
							10/11/2005	8.56	746.65	
							12/12/2005	8.85	746.36	
							3/7/2006	9.75	745.46	
							6/19/2006	8.44	746.77	
							9/5/2006	8.76	746.45	
							12/1/2006	8.37	746.84	
							3/26/2007	8.44	746.77	
							6/26/2007	8.56	746.65	
							9/10/2007	8.19	747.02	
							11/30/2007	9.45	745.76	
MW-104	**Historical groundwater elevation data provided in previous reports**						3/7/2002	6.83	747.58	
	751.38	751.62	12.4	10	748.94	738.94	9/16/2002	4.64	746.74	
							11/7/2002	5.25	746.13	
							11/15/2002	5.55	745.83	
							11/22/2002	5.62	745.76	
							12/20/2002	5.78	745.60	
							1/20/2003	5.92	745.46	
							2/17/2003	6.23	745.15	
							3/19/2003	6.48	744.90	
							4/23/2003	5.00	746.38	
							5/14/2003	4.20	747.18	
							6/25/2003	4.72	746.66	
							9/24/2003	4.80	746.58	
							12/22/2003	4.42	746.96	
							4/21/2004	4.25	747.13	
							6/28/2004	4.47	746.91	
							7/26/2004	5.71	745.67	
							8/23/2004	6.90	744.48	
							12/14/2004	4.58		elevation may have changed due to park redevelopment
							3/8/2005	4.87		elevation may have changed due to park redevelopment
	751.29	751.60	12.4	10	748.90	738.90	6/8/2005	4.29	747.00	
							9/21/2005	4.64	746.65	
							10/11/2005	4.51	746.78	
							12/12/2005	4.52	746.77	
							3/7/2006	5.02	746.27	
							6/19/2006	4.19	747.10	
							9/5/2006	4.93	746.36	
							12/1/2006	4.45	746.84	
							3/26/2007	4.03	747.26	
							6/26/2007	4.52	746.77	
							9/10/2007	4.67	746.62	
							11/30/2007	5.19	746.10	

Table 1 - Groundwater Elevation Summary
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Well	TOC Elevation (feet)[B]	Ground Elevation (feet)[B]	Well Depth from TOC (feet)	Well Screen Length (feet)	Top of Screen Elevation (feet)[B]	Base of Screen Elevation (feet)[B]	Monitoring Date	Depth to Groundwater (feet)	Groundwater Elevation (feet)[B]	Field Comments
P-104	Historical groundwater elevation data provided in previous reports						3/7/2002	7.34	744.05	
	751.46	751.69	49.7	5	706.78	701.78	9/16/2002	7.22	744.24	
							11/7/2002	7.36	744.10	
							11/15/2002	7.65	743.81	
							11/22/2002	7.67	743.79	
							12/20/2002	7.87	743.59	
							1/20/2003	8.47	742.99	
							2/17/2003	--	--	
							3/19/2003	8.60	742.86	
							4/23/2003	7.15	744.31	
							5/14/2003	6.06	745.40	
							6/25/2003	6.53	744.93	
							9/24/2003	7.28	744.18	
							12/22/2003	6.47	744.99	
							4/21/2004	5.75	745.71	
							6/28/2004	3.35	748.11	
							7/26/2004	4.08	747.38	some surface water went in well
							8/23/2004	4.74	746.72	
							12/14/2004	6.78		elevation may have changed due to park redevelopment
							3/8/2005	7.45		elevation may have changed due to park redevelopment
	751.61	751.80	49.80	5	706.80	701.80	6/8/2005	7.00	744.61	
							9/21/2005	7.41	744.20	
							9/5/2006	7.68	743.93	
							3/26/2007	6.89	744.72	
							6/26/2007	6.89	744.72	
							9/10/2007	6.83	744.78	
							11/30/2007	7.73	743.88	
MW-108R	752.35	752.53	14.7	10	747.65	737.65	9/16/2002	5.24	747.11	
							10/24/2002	5.65	746.70	
							11/7/2002	6.31	746.04	
							11/15/2002	6.15	746.20	
							11/22/2002	6.25	746.10	
							12/20/2002	6.56	745.79	
							1/20/2003	7.01	745.34	
							2/17/2003	--	--	
							3/19/2003	7.32	745.03	
							4/23/2003	6.18	746.17	
							5/14/2003	5.59	746.76	
	752.22	752.53	14.5	10	747.70	737.70	6/25/2003	5.61	746.61	
							9/24/2003	5.76	746.46	sheen
							12/22/2003	5.50	746.72	
							4/21/2004	5.95	746.27	
							6/28/2004	3.44	748.78	
							7/26/2004	4.33	747.89	
							8/23/2004	--	--	located beneath soil pile
							12/14/2004	5.10		elevation may have changed due to park redevelopment
							3/8/2005	--	--	unable to locate, during park redevelopment activities
	751.78	751.95	14.1	10	747.70	737.70	6/8/2005	5.11	746.67	
							9/21/2005	5.18	746.60	
							10/11/2005	5.28	746.50	
							12/12/2005	5.49	746.29	
							3/7/2006	6.00	745.78	
							6/19/2006	5.06	746.72	
							9/5/2006	nm	nm	
							12/1/2006	5.35	746.43	
							3/26/2007	5.74	746.04	
							6/26/2007	5.21	746.57	
							9/10/2007	5.02	746.76	
							11/30/2007	5.80	745.98	
MW-109R	752.77	752.95	14.5	10	748.27	738.27	9/16/2002	6.03	746.74	
							10/24/2002	5.98	746.79	
							11/7/2002	6.93	745.84	
							11/15/2002	7.25	745.52	
							11/22/2002	7.32	745.45	
							12/20/2002	7.44	745.33	
							1/20/2003	7.89	744.88	
							2/17/2003	8.02	744.75	
							3/19/2003	7.88	744.89	Sheen
							4/23/2003	6.59	746.18	
							5/14/2003	6.05	746.72	
	752.65	752.95	14.5	10	748.27	738.27	6/25/2003	6.33	746.32	
							9/24/2003	6.37	746.28	Black, sheen, odor
							12/22/2003	6.51	746.14	
							4/21/2004	6.58	746.07	
							6/28/2004	4.96	747.69	
							7/26/2004	5.99	746.66	
							8/23/2004	6.39	746.26	
							12/14/2004	13.15		elevation may have changed due to park redevelopment
							3/8/2005	14.64		elevation may have changed due to park redevelopment
	759.07	759.26	20.8	10	748.30	738.30	6/8/2005	12.57	746.50	
							9/21/2005	12.47	746.60	
							12/12/2005	12.99	746.08	
							3/7/2006	13.78	745.29	
							6/19/2006	12.23	746.84	
							9/5/2006	12.84	746.23	
							12/1/2006	12.71	746.36	
							3/26/2007	13.19	745.88	
							6/26/2007	12.67	746.40	
							9/10/2007	12.40	746.67	
							11/30/2007	13.43	745.64	

Table 1 - Groundwater Elevation Summary
Wisconsin Public Service Corporation
Oshkosh Former Manufactured Gas Plant Site

Well	TOC Elevation (feet)^B	Ground Elevation (feet)^B	Well Depth from TOC (feet)	Well Screen Length (feet)	Top of Screen Elevation (feet)^B	Base of Screen Elevation (feet)^B	Monitoring Date	Depth to Groundwater (feet)	Groundwater Elevation (feet)^B	Field Comments
P-107R	752.66	752.88	48.1	5	709.60	704.60	9/16/2002	6.01	746.65	
							10/24/2002	5.90	746.76	
							11/7/2002	6.52	746.14	
							11/15/2002	6.80	745.86	
							11/22/2002	6.82	745.84	
							12/20/2002	6.99	745.67	
							1/20/2003	7.50	745.16	
							2/17/2003	7.64	745.02	
							3/19/2003	7.52	745.14	
							4/23/2003	6.44	746.22	
							5/14/2003	5.79	746.87	
							6/25/2003	6.17	746.49	
							9/24/2003	6.27	746.39	
							12/22/2003	6.44	746.22	
							4/21/2004	6.57	746.09	
							6/28/2004	5.00	747.66	
							7/26/2004	5.91	746.75	
							8/23/2004	6.18	746.48	
							12/14/2004	12.76		elevation may have changed due to park redevelopment
							3/8/2005	13.62		elevation may have changed due to park redevelopment
	758.83	759.33	54.2	5	709.60	704.60	6/8/2005	12.72	746.11	
							9/21/2005	12.69	746.14	
							9/5/2006	12.59	746.24	
							3/26/2007	12.96	745.87	
							6/26/2007	12.35	746.48	
							9/10/2007	12.19	746.64	
							11/30/2007	13.08	745.75	
MW-110	749.53	749.86	15.0	10	744.53	734.53	11/13/2001	2.94	746.59	
							3/7/2002	3.38	746.15	
							9/16/2002	2.68	746.85	
							10/24/2002	2.49	747.04	
							11/7/2002	2.72	746.81	
							11/15/2002	3.00	746.53	
							12/20/2002	3.05	746.48	
							1/20/2003	4.71	744.82	
							2/17/2003	--	--	
							3/19/2003	3.86	745.67	
							4/23/2003	2.72	746.81	
							5/14/2003	2.20	747.33	
							6/25/2003	2.62	746.91	
							9/24/2003	2.73	746.80	
							12/22/2003	2.99	746.54	
							4/21/2004	3.30	746.23	
							6/28/2004	1.91	747.62	
							7/26/2004	2.51	747.02	
							8/23/2004	2.68	746.85	
							12/14/2004	2.62	746.91	
							3/8/2005	3.60	745.93	
							6/8/2005	2.70	746.83	
							9/21/2005	2.93	746.60	
							10/11/2005	2.75	746.78	
							12/12/2005	3.26	746.27	
							3/7/2006	3.80	745.73	
							6/19/2006	2.66	746.87	
							9/5/2006	3.33	746.20	
							12/1/2006	2.64	746.89	
							3/26/2007	3.05	746.48	
							6/26/2007	2.70	746.83	
							9/10/2007	2.56	746.97	
							11/30/2007	3.36	746.17	
P-108	749.41	749.78	43.5	5	710.91	705.91	11/13/2001	3.12	746.29	
							3/7/2002	3.52	745.89	
							9/16/2002	2.70	746.71	
							10/24/2002	2.64	746.77	
							11/7/2002	3.30	746.11	
							11/15/2002	3.50	745.91	
							12/20/2002	3.72	745.69	
							1/20/2003	4.25	745.16	
							2/17/2003	--	--	
							3/19/2003	4.23	745.18	
							4/23/2003	3.21	746.20	
							5/14/2003	2.56	746.85	
							6/25/2003	2.90	746.51	
							9/24/2003	3.19	746.22	
							12/22/2003	3.11	746.30	
							4/21/2004	3.40	746.01	
							6/28/2004	1.75	747.66	
							7/26/2004	2.66	746.75	
							8/23/2004	2.91	746.50	
							12/14/2004	2.87	746.54	
							3/8/2005	3.70	745.71	
							6/8/2005	2.86	746.55	
							9/21/2005	3.07	746.34	
							9/5/2006	3.18	746.23	
							3/26/2007	3.54	745.87	
							6/26/2007	2.89	746.52	
							9/10/2007	2.76	746.65	
							11/30/2007	3.64	745.77	

Table 1 - Groundwater Elevation Summary
Wisconsin Public Service Corporation
Oshkosh Former Manufactured Gas Plant Site

Well	TOC Elevation (feet)^B	Ground Elevation (feet)^B	Well Depth from TOC (feet)	Well Screen Length (feet)	Top of Screen Elevation (feet)^B	Base of Screen Elevation (feet)^B	Monitoring Date	Depth to Groundwater (feet)	Groundwater Elevation (feet)^B	Field Comments
P-109	751.95	752.27	88.0	5	669.27	664.27	4/21/2004	29.40	722.55	
							6/28/2004	6.24	745.71	
							7/26/2004	7.45	744.50	
							8/23/2004	9.21	742.74	
	750.85	751.11	86.6	5	669.27	664.27	12/14/2004	8.65	742.20	Elevation changed; surveyed on 1/18/05
							3/8/2005	8.83	742.02	
	750.81	751.06	86.5	5	669.27	664.27	6/8/2005	7.85	742.96	
							9/21/2005	10.01	740.80	
							9/5/2006	9.05	741.76	
							3/26/2007	8.21	742.60	
							6/26/2007	7.18	743.63	
							9/10/2007	8.37	742.44	
							11/30/2007	9.76	741.05	
P-110	750.31	750.59	67.0	5.00	688.59	683.59	4/21/2004	7.36	742.95	
							6/28/2004	3.83	746.48	
							7/26/2004	3.95	746.36	
							8/23/2004	4.41	745.90	
							12/14/2004	5.75	744.56	
							3/8/2005	7.77	742.54	
							6/8/2005	6.74	743.57	
							9/21/2005	7.19	743.12	
							9/5/2006	7.25	743.06	
							3/26/2007	6.39	743.92	
							6/26/2007	5.86	744.45	
							9/10/2007	6.54	743.77	
							11/30/2007	7.24	743.07	
P-111	751.96	752.42	72.0	5.00	685.42	680.42	8/23/2004	9.24	742.72	
							12/14/2004	9.35	742.61	
							3/8/2005	9.61	742.35	
			70.00				6/8/2005	9.26	742.70	
							9/21/2005	9.97	741.99	
							9/5/2006	10.36	741.60	
							3/26/2007	8.29	743.67	
							6/26/2007	8.80	743.16	
							9/10/2007	8.56	743.40	
							11/30/2007	9.78	742.18	
RW-101	751.66	752.09	17.0	15	749.66	734.66	11/19/1998	A	A	sheen and emulsified tar
							12/1/1998	4.39	747.27	
	751.71	752.20	17.0	15	749.71	734.71	5/30/2001	3.36	748.35	
							8/13/2001	3.85	747.86	Tar present
							9/27/2001	3.00	748.71	
							11/13/2001	3.98	747.73	
							3/7/2002	4.45	747.26	
							Well Abandoned			
River Benchmark		**Ground Elevation (feet)^B**					**Monitoring Date**	**Depth to Water (feet)**	**River Elevation (feet)^B**	**Field Comments**
BM-3 PK nail	na	749.96	na				2/27/2001	4.37	745.59	River Elevation
							5/30/2001	2.61	747.35	
							8/13/2001	3.14	746.82	
							9/27/2001	3.18	746.78	
							10/11/2001	3.03	746.93	
							11/13/2001	3.56	746.40	
		ns					12/20/2002	5.19	ns	
							1/20/2003	ice	nm	
							2/17/2003	ice	nm	
SG-2	749.50	wooden fender					4/23/2003	3.00	746.50	River Elevation
	751.60	c-channel (dockwall)					5/14/2003	2.26	749.34	
							9/24/2003	8.11	743.49	
							12/22/2003	9.86	741.74	
							4/21/2004	2.14	747.36	from wooden fender
							6/28/2004	2.30	747.20	from wooden fender
							7/26/2004	4.63	746.97	
							3/8/2005	5.75	745.85	
							6/8/2005	4.68	746.92	
							9/21/2005	4.89	746.71	
							10/11/2005	4.81	746.79	
							12/12/2005	3.03	746.47	from wooden fender, ice
							3/7/2006	3.80	745.70	from wooden fender
							6/19/2006	2.65	746.85	from wooden fender
							9/5/2006	4.88	746.72	
							12/1/2006	5.02	746.58	
							3/26/2007	5.66	745.94	
							6/26/2007	4.61	746.99	
							9/10/2007	4.70	746.90	
							11/30/2007	5.10	746.50	

(KMZ/BJK 02/98)(JTB/AAS 4/01)(JTB/SAG 11/01)(BGH/HMS 11/02)(PAH/RJC 03/03)(RJC/PAH 03/03)(HMS/LJH 06/03)(JKY 09/03 HMS 11/03)(JKL/HMS 12/24/03)(JKY/HMS 07/07/04)
(HMS/JTB 041015)(HMS/PAR 3/9/05)(HMS/MJR 10/05)(RJG\HMS 07/06)(HMS/RJG 09/06)(HMS/PAR 3/07)(HMS 9/07)(RJG/KJB 12/07)

TOC: Top of Well Casing.
***:** Depth to water is estimated from soil boring log
–: Well not locatable/accessible
A: Depth to water measurement for the groundwater sampling date was not included in the Simon Hydro-Search 1994 Report
B: Elevations relative to National Vertical Geodetic Datum.

na: Not available
nm: Not measured
ns: Not surveyed

Notes:
1) New survey data by Roehlig Land Surveying on August 17, 2001. Elevations prior to 1999 indicated by breakline are relative to a different benchmark with a discrepancy of approximately +2 feet compared to Roehlig's 2001 benchmark.
2) 1985 through 1994 water level data obtained from Hydro-Search, Inc., *Phase II Investigation Report Wisconsin Public Service Corporation, Oshkosh, Wisconsin.*
3) Site resurveyed by Roehlig Land Surveying on September 25, 2002.
4) MW-110 and P-108 TOC elevations surveyed by NRT on November 11, 2002.
5) Due to construction activities, total well depths are approximate and will be evaluated following additional survey work in 2003
6) Groundwater extraction began on October 24, 2002 after initial groundwater elevations measured
7) OW-3R, MW-101R, MW-109R and MW 108R TOCs were cut and resurveyed on 6/25/03.
8) P-109, P-110 and GW-6 were surveyed by R.A. Smith and Associates on May 10, 2004. GW-6 TOC was cut on 4/29/04. PVC cut 4.94 inches.
9) Site resurveyed by STS Consultants on June 7, 2005 after park redevelopment activities completed.
10) P-2R and GW-2R surveyed by City contractor Terra Construction in July 2005.

Table 2. Groundwater Analytical Summary - BTEX (µg/L), Trimethylbenzenes (ug/L), and Cyanides (mg/L)

Completion Report
Wisconsin Public Service Corp., Former Manufactured Gas Plant Site - Oshkosh
305 Ceape Avenue, Oshkosh, Wisconsin
BRRTS# : 0271000256 **USEPA# : WIN000509947**

Sample ID	*Collection Date*	*BTEX and Trimethylbenzenes*						*Cyanides*		
		Benzene	*Ethylbenzene*	*Toluene*	*Xylenes, Total*	*1,2,4-Trimethly-benzene*	*1,3,5-Trimethly-benzene*	*Total*	*Amenable*	*Weak Acid Dissociable*
Wisconsin Groundwater Quality Standards (NR 140, February 2004)										
Preventive Action Limit (PAL)		0.5	140	200	1000	96	96	NS	NS	0.04
Enforcement Standard (ES)		5	700	1000	10000	480	480	NS	NS	0.2
GW01										
	1/29/1992	< 10	< 10	< 10	18	--	--	0.075	--	--
	3/17/1992	< 10	10	< 10	< 10	--	--	0.073	--	--
	12/20/1993	2.2	4.3	< 1	7.8	--	--	0.056	0.032	0.018
	11/18/1998	1.6	2	< 0.27	3.5	--	--	0.025	0.025	< 0.034
	2/28/2001	2.2	3.2	0.42 Q	5.1	9.4	2.7	0.018	0.01	0.053
	5/30/2001	1.8	1.6	0.29 Q	1.9	2.9	0.83	0.044	0.022	0.02
	8/13/2001	1.9	3.9	0.46 Q	4.7	11	2	0.077	0.0029 Q	0.017
	3/8/2002	1.5	2.4	< 0.47	1.7	6.2	1.9	0.035	0.035	< 0.0022
	9/16/2002	3.4	8.3	< 0.68	7.5	28	4.8	0.067	0.067	0.004 Q
	3/20/2003	1.6	4.2	< 0.58	5.8 Q	11	3.1	0.064	0.064	0.0031 Q
	9/25/2003	1.8	4.6	< 0.67	5.4	15	3.9	0.031 Q	0.023	0.0058 Q
	4/21/2004	1.2	3.1	< 0.36	2.57 Q	3.6	1.2 Q	--	--	0.018
	9/21/2005	1.5	2.3	< 0.36	2.9	9	2.5	--	--	< 0.0025 Q
	9/5/2006	0.83	0.88 Q	< 0.36	1.4	2.5	1.1 Q	--	--	--
	9/10/2007	0.7	1.1 Q	< 0.36	1.5	3.5	1.1 Q	--	--	--

Sample ID	*Collection Date*	*BTEX and Trimethylbenzenes*						*Cyanides*		
		Benzene	*Ethylbenzene*	*Toluene*	*Xylenes, Total*	*1,2,4-Trimethly-benzene*	*1,3,5-Trimethly-benzene*	*Total*	*Amenable*	*Weak Acid Dissociable*
Wisconsin Groundwater Quality Standards (NR 140, February 2004)										
Preventive Action Limit (PAL)		0.5	140	200	1000	96	96	NS	NS	0.04
Enforcement Standard (ES)		5	700	1000	10000	480	480	NS	NS	0.2
GW02										
	1/29/1992	**1200**	*410*	*370*	640	--	--	2.5	--	--
	3/17/1992	**950**	*460*	*420*	640	--	--	3.3	--	--
	12/21/1993	**520**	*320*	110	300	--	--	1.9	0.21	0.72
	3/7/2002	**500**	*220*	7.4	165	*180*	*32*	2.9	2.9	0.19
	9/16/2002	**350**	*190*	9.9	136	*140*	*21*	0.88	0.52	0.03
	3/20/2003	**1100**	*340*	< 29	230 Q	*210*	*47*	1.2	1.2	0.12
	9/25/2003	**560**	*230*	8.2 Q	170	*130*	*25*	0.6	0.59	0.015
	4/22/2004	**380**	*190*	3.8	135	*120*	*19*	--	--	0.016 Q
	8/23/2004	**750 Q**	*260 Q*	< 18	220 Q	*150 Q*	*24 Q*	--	--	0.029
GW02R										
	9/5/2006	**3200**	**980**	**1500**	*2160*	**350**	**130**	--	--	--

Sample ID	*Collection Date*	*BTEX and Trimethylbenzenes*						*Cyanides*		
		Benzene	*Ethylbenzene*	*Toluene*	*Xylenes, Total*	*1,2,4-Trimethly-benzene*	*1,3,5-Trimethly-benzene*	*Total*	*Amenable*	*Weak Acid Dissociable*
Wisconsin Groundwater Quality Standards (NR 140, February 2004)										
Preventive Action Limit (PAL)		0.5	140	200	1000	96	96	NS	NS	0.04
Enforcement Standard (ES)		5	700	1000	10000	480	480	NS	NS	0.2
GW03										
	1/29/1992	**33**	39	40	88	--	--	< 0.01	--	--
	3/12/1992	< 25	27	< 25	36	--	--	0.13	--	--
	11/18/1998	**840**	*270*	*270*	550	--	--	0.012	0.012	< 0.0034
	8/13/2001	**322**	*235*	159	472	*126*	*45*	0.046	0.025	0.005
	3/7/2002	**560 Q**	*280 Q*	*260 Q*	570 Q	*94 Q*	*38 Q*	0.04	0.04	0.0033 Q
	9/16/2002	**210**	*180*	84	350	*94*	*34*	0.16	0.03	0.008
	3/20/2003	**17**	33	7.8 Q	59	32	14	0.055	0.055	0.0016 Q
	9/25/2003	**16**	28	6.2	54	29	9.5	0.11	0.11	0.0028 Q
	4/22/2004	**10**	4.6	0.5 Q	5.6 Q	4.8	1.7	--	--	< 0.0053
	8/23/2004	**36**	33	7.8	57	28	10	--	--	< 0.0053
	9/21/2005	**38**	30	4.9	26	22	5.8	--	--	--
	9/5/2006	**9.9**	10	2.1	8.9	7.3	2.3	--	--	--
	9/10/2007	**77**	37	6.8	54	26	8.6	--	--	--

Sample ID	*Collection Date*	*BTEX and Trimethylbenzenes*						*Cyanides*		
		Benzene	*Ethylbenzene*	*Toluene*	*Xylenes, Total*	*1,2,4-Trimethly-benzene*	*1,3,5-Trimethly-benzene*	*Total*	*Amenable*	*Weak Acid Dissociable*
Wisconsin Groundwater Quality Standards (NR 140, February 2004)										
Preventive Action Limit (PAL)		0.5	140	200	1000	96	96	NS	NS	0.04
Enforcement Standard (ES)		5	700	1000	10000	480	480	NS	NS	0.2
GW04										
	3/16/1992	< 1	< 1	< 1	< 1	--	--	0.12	--	--
	12/17/1993	< 1	< 1	< 1	< 3	--	--	0.16	0.16	< 0.006
	5/30/2001	< 0.21	< 0.23	< 0.22	< 0.44	< 0.23	< 0.21	0.11	0.037	0.031
	8/13/2001	< 0.21	< 0.23	< 0.22	< 0.44	< 0.23	< 0.21	0.15	0.014	0.017
	3/8/2002	< 0.48	< 0.43	< 0.47	< 1.4	< 0.51	< 0.52	0.085	0.085	0.0027 Q
	9/16/2002	< 0.45	< 0.82	< 0.68	< 1.7	< 0.92	< 0.94	0.069	0.017	< 0.0014
	3/20/2003	< 0.3	< 0.6	< 0.58	< 1.2	< 0.66	< 0.52	0.091	0.091	0.0042 Q
	9/25/2003	< 0.41	< 0.54	< 0.67	< 1.8	< 0.97	< 0.83	0.058	0.058	0.0038 Q
	4/21/2004	< 0.14	< 0.4	< 0.36	< 0.74	< 0.39	< 0.4	--	--	< 0.0053
	8/23/2004	< 0.14	< 0.4	< 0.36	< 0.74	< 0.39	< 0.4	--	--	< 0.0053
	9/21/2005	< 0.14	< 0.4	< 0.36	< 0.74	< 0.39	< 0.4	--	--	--
	9/5/2006	< 0.14	< 0.4	< 0.36	< 0.74	< 0.39	< 0.4	--	--	--
	9/10/2007	< 0.14	< 0.4	< 0.36	< 0.74	< 0.39	< 0.4	--	--	--
GW05										
	3/16/1992	< 1	< 1	< 1	< 1	--	--	0.12	--	--
	12/20/1993	< 1	< 1	< 1	< 3	--	--	0.6	0.017	0.032
	8/13/2001	< 0.21	< 0.23	1	< 0.44	< 0.23	< 0.21	0.076	< 0.0021	0.005
	9/16/2002					Monitoring Well Abandoned				

Sample ID	*Collection Date*	*BTEX and Trimethylbenzenes*						*Cyanides*		
		Benzene	*Ethylbenzene*	*Toluene*	*Xylenes, Total*	*1,2,4-Trimethly-benzene*	*1,3,5-Trimethly-benzene*	*Total*	*Amenable*	*Weak Acid Dissociable*
Wisconsin Groundwater Quality Standards (NR 140, February 2004)										
Preventive Action Limit (PAL)		0.5	140	200	1000	96	96	NS	NS	0.04
Enforcement Standard (ES)		5	700	1000	10000	480	480	NS	NS	0.2
GW06										
	3/17/1992	< 1	< 1	< 1	< 1	--	--	0.01	--	--
	12/16/1993	< 1	< 1	< 1	< 3	--	--	< 0.006	< 0.006	< 0.006
	2/28/2001	< 0.21	< 0.23	< 0.22	< 0.44	< 0.23	< 0.21	0.001 Q	< 0.001	0.001 Q
	9/25/2003	< 0.41	< 0.54	< 0.67	< 1.8	< 0.97	< 0.83	0.0063	0.0063	0.0031 Q
	4/22/2004	0.41 Q	< 0.4	< 0.36	< 0.74	< 0.39	< 0.4	--	--	< 0.0053
	9/21/2005				Monitoring Well Abandoned					
HP101										
	12/2/1993	< 1	< 1	< 1	< 3	--	--	--	--	--
HP102										
	12/20/1993	< 1	< 1	1.4	< 3	--	--	0.13	0.13	0.025
HP103										
	12/9/1993	**150**	66	< 5	56	--	--	1.5	1.5	0.047
HP104										
	12/9/1993	**570**	**1300**	37	440	--	--	3	0.9	0.14
HP105										
	12/9/1993	< 1	1.3	2.4	4.8	--	--	0.68	0.68	0.017
MW101										
	12/29/1993	**1100**	**4000**	*320*	*4100*	--	--	0.24	0.24	0.02
	3/7/2002	**1800**	**3900**	*370*	*3500*	**920**	**220**	0.38	0.38	< 0.0022
	9/16/2002				Monitoring Well Abandoned					

Sample ID	*Collection Date*	*BTEX and Trimethylbenzenes*						*Cyanides*		
		Benzene	*Ethylbenzene*	*Toluene*	*Xylenes, Total*	*1,2,4-Trimethly-benzene*	*1,3,5-Trimethly-benzene*	*Total*	*Amenable*	*Weak Acid Dissociable*
Wisconsin Groundwater Quality Standards (NR 140, February 2004)										
Preventive Action Limit (PAL)		0.5	140	200	1000	96	96	NS	NS	0.04
Enforcement Standard (ES)		5	700	1000	10000	480	480	NS	NS	0.2
MW101R										
	9/16/2002	**1600**	**3400**	*410*	*3100*	**580**	**150**	0.25	0.05	0.007
	3/20/2003	**1500**	**3800**	130	*3200*	**560**	**150**	0.0082 Q	0.0082	< 0.0014
	9/25/2003	**1600**	**3000**	50 Q	*2590*	**460**	**120**	0.13	0.13	0.0058 Q
	4/22/2004	**37**	*200*	1.8	138	69	12	--	--	0.034
	8/23/2004	**97**	*500*	6.6 Q	450	*130*	*34*	--	--	< 0.0053
MW102										
	12/16/1993	**5400**	**5800**	*240*	*4900*	--	--	0.5	0.4	0.079
	11/20/1997	**8700**	**7300**	180	*4100*	--	--	0.51	< 0.0054	0.14
	11/18/1998	**9700**	**7900**	180	*3800*	--	--	0.3	0.3	0.017
	2/28/2001	**6590**	**5980**	139	*2730*	**1090**	**133**	0.12	0.67	0.67
	5/30/2001	**4680**	**4550**	*453*	*2900*	**1020**	**237**	0.61	0.1	0.055
	8/13/2001	**3720**	**3310**	*249*	*2150*	**758**	**147**	1.8	1.8	0.067
	3/8/2002	**6300**	**6000**	140 Q	*2420*	**930**	**140 Q**	0.67	0.66	0.0074
	9/16/2002	**6000**	**5000**	< 27	780 Q	**810**	**< 38**	0.59	0.52	0.013
	3/20/2003	**3900**	**3800**	< 14	395 Q	**730**	**< 13**	0.58	0.58	0.03
	9/25/2003	**4100**	**3400**	< 17	280	**612**	**< 21**	0.56	0.56	0.014
	4/21/2004	**4000**	**3800**	46	720	**640**	**45**	--	--	0.047
	8/23/2004	**2300**	**2200**	11 Q	303	*450*	*29*	--	--	0.03
	9/21/2005	**3100**	**2700**	24 Q	430	**490**	**64**	--	--	0.0069 Q
	9/6/2006	**2500**	**2500**	36	450	**470**	**75**	--	--	--
	9/10/2007	**1700**	**1900**	21 Q	330	*410*	*50*	--	--	--

Sample ID	*Collection Date*	*BTEX and Trimethylbenzenes*						*Cyanides*		
		Benzene	*Ethylbenzene*	*Toluene*	*Xylenes, Total*	*1,2,4-Trimethly-benzene*	*1,3,5-Trimethly-benzene*	*Total*	*Amenable*	*Weak Acid Dissociable*
Wisconsin Groundwater Quality Standards (NR 140, February 2004)										
Preventive Action Limit (PAL)		0.5	140	200	1000	96	96	NS	NS	0.04
Enforcement Standard (ES)		5	700	1000	10000	480	480	NS	NS	0.2
MW103										
	12/21/1993	*1.9*	< 1	1.4	< 3	--	--	0.71	0.26	0.14
	11/20/1997	*0.69*	0.52	< 0.22	1	--	--	0.54	< 0.0054	0.073
	11/18/1998	< 0.27	< 0.32	0.47	0.48	--	--	0.22	0.22	0.022
	2/28/2001	< 0.21	< 0.23	0.41 Q	0.9 Q	12	0.83	0.075	0.47	0.47
	5/30/2001	0.25 Q	< 0.23	0.52	1.3	21	0.57 Q	0.43	0.11	0.11
	3/8/2002	< 0.48	< 0.43	0.49 Q	0.95 Q	26	< 0.52	0.46	0.46	0.0085
	9/16/2002	< 0.45	< 0.82	< 0.68	< 1.7	< 0.92	< 0.94	0.089	0.082	0.005
	9/25/2003	< 0.41	< 0.54	< 0.67	< 1.8	< 0.97	< 0.83	0.039	0.039	0.004 Q
	4/22/2004	< 0.14	< 0.4	< 0.36	< 0.74	< 0.39	< 0.4	--	--	< 0.0053
	8/23/2004	< 0.14	< 0.4	< 0.36	< 0.74	< 0.39	< 0.4	--	--	< 0.0053
	9/21/2005	< 0.14	< 0.4	< 0.36	< 0.74	< 0.39	< 0.4	--	--	--
	9/6/2006	< 0.14	< 0.4	< 0.36	< 0.74	< 0.39	< 0.4	--	--	--
	9/10/2007	< 0.14	< 0.4	< 0.36	< 0.74	< 0.39	< 0.4	--	--	--

Sample ID	*Collection Date*	*BTEX and Trimethylbenzenes*						*Cyanides*		
		Benzene	*Ethylbenzene*	*Toluene*	*Xylenes, Total*	*1,2,4-Trimethlybenzene*	*1,3,5-Trimethlybenzene*	*Total*	*Amenable*	*Weak Acid Dissociable*
Wisconsin Groundwater Quality Standards (NR 140, February 2004)										
Preventive Action Limit (PAL)		0.5	140	200	1000	96	96	NS	NS	0.04
Enforcement Standard (ES)		5	700	1000	10000	480	480	NS	NS	0.2
MW104										
	12/28/1993	**23**	32	< 25	53	--	--	1.6	1.6	0.059
	11/20/1997	**6.7**	0.62	6.9	7.6	--	--	3.3	0.3	0.16
	11/18/1998	**12**	9.2	1.7	11.6	--	--	1	1.1	0.033
	2/28/2001	**7.6**	2.1	0.29 Q	1.5	1.6	0.48 Q	0.14	2.6	2.6
	5/30/2001	< 0.21	< 0.23	< 0.22	< 0.44	< 0.23	< 0.21	3.2	0.5	0.17
	8/13/2001	< 2.1	< 2.3	< 2.2	< 4.4	3.6 Q	< 2.1	7.1	8	0.11
	3/8/2002	*2.9*	< 0.43	< 0.47	< 1.4	0.89 Q	< 0.52	5	5	0.02
	9/16/2002	**10**	14	0.73 Q	4.6	1.9 Q	< 0.94	5.4	0.6	0.072
	3/20/2003	**26**	29	1.6 Q	9.5	5.8	< 0.52	1.2	1.2	0.032
	9/25/2003	**15**	19	1.1 Q	3.1	2.1 Q	< 0.83	6.3	6.3	0.071
	4/21/2004	0.39 Q	< 0.4	< 0.36	< 0.74	0.79 Q	< 0.4	--	--	0.55
	8/23/2004	*2.4*	4.1	< 0.36	6.2	8.4	3.6	--	--	0.029
	9/21/2005	*4.1*	12	< 0.36	1.63 Q	< 0.39	< 0.4	--	--	0.015 Q
	9/5/2006	0.31 Q	< 0.4	< 0.36	< 0.74	< 0.39	< 0.4	--	--	--
	9/10/2007	*1.3*	4	< 0.36	0.4 Q	< 0.39	< 0.4	--	--	--
MW106										
	11/19/1998	**260**	*530*	180	540	--	--	1.4	1.4	< 0.0034
	2/28/2001					Monitoring Well Abandoned				

Sample ID	*Collection Date*	*BTEX and Trimethylbenzenes*						*Cyanides*		
		Benzene	*Ethylbenzene*	*Toluene*	*Xylenes, Total*	*1,2,4-Trimethly-benzene*	*1,3,5-Trimethly-benzene*	*Total*	*Amenable*	*Weak Acid Dissociable*
Wisconsin Groundwater Quality Standards (NR 140, February 2004)										
Preventive Action Limit (PAL)		0.5	140	200	1000	96	96	NS	NS	0.04
Enforcement Standard (ES)		5	700	1000	10000	480	480	NS	NS	0.2
MW108										
	11/19/1998	< 0.26	< 0.24	< 0.21	< 0.97	--	--	0.078	0.078	0.017
	5/30/2001	< 0.19	< 0.13	< 0.11	< 0.3	< 0.12	< 0.11	0.16	0.03	0.037
	8/13/2001	< 0.21	< 0.23	< 0.22	< 0.44	< 0.23	< 0.21	0.34	0.0029 Q	0.051
	3/12/2002	< 0.45	< 0.82	< 0.68	< 1.7	< 0.94	< 0.92	0.028	0.028	0.0028 Q
	9/16/2002					Monitoring Well Abandoned				
MW108R										
	9/16/2002	< 0.45	< 0.82	< 0.68	< 1.7	< 0.92	< 0.94	0.15	0.087	0.013
	3/20/2003	< 0.3	< 0.6	< 0.58	< 1.2	< 0.66	< 0.52	0.093	0.093	0.0066
	9/25/2003	< 0.41	< 0.54	< 0.67	< 1.8	< 0.97	< 0.83	0.12	0.1	0.0043 Q
	4/22/2004	< 0.14	< 0.4	< 0.36	< 0.74	< 0.39	< 0.4	--	--	0.082
	3/7/2006	--	--	--	--	--	--	--	--	--
MW109										
	2/28/2001	**994**	**961**	73	577	*237*	*68*	0.001 Q	0.005	0.006
	5/30/2001	**153**	*162*	5.7	99	61	15	0.007	0.002	0.002
	8/13/2001	**116**	102	3.5	59	28	5.7	0.015	< 0.0021	0.003 Q
	3/8/2002	**3000**	**2100**	78	*1090*	**420**	**110**	0.0087	0.0087	< 0.0022
	9/16/2002					Monitoring Well Abandoned				

Sample ID	*Collection Date*	*BTEX and Trimethylbenzenes*						*Cyanides*		
		Benzene	*Ethylbenzene*	*Toluene*	*Xylenes, Total*	*1,2,4-Trimethly-benzene*	*1,3,5-Trimethly-benzene*	*Total*	*Amenable*	*Weak Acid Dissociable*
Wisconsin Groundwater Quality Standards (NR 140, February 2004)										
Preventive Action Limit (PAL)		0.5	140	200	1000	96	96	NS	NS	0.04
Enforcement Standard (ES)		5	700	1000	10000	480	480	NS	NS	0.2
MW109R										
	9/16/2002	**4000**	**2500**	100	*1450*	**480**	**110**	0.015	0.015	< 0.0014
	3/20/2003	**1200**	**1700**	44 Q	*1010*	**460**	**110**	0.015	0.015 Q	< 0.0014
	9/25/2003	**1600**	**800**	31	440	*170*	*46*	0.014 Q	0.014	0.0026 Q
	4/22/2004	**200**	*310*	6.9	155	*80*	*17*	--	--	< 0.0053
	8/23/2004	**710**	*550*	17	290	*110*	*26*	--	--	0.012 Q
	9/21/2005	**1800**	**830**	32	430	*130*	*37*	--	--	--
	9/5/2006	**1300**	**740**	21	340	*120*	*21*	--	--	--
	9/10/2007	**190**	*200*	4.2	90	57	10	--	--	--
MW110										
	11/13/2001	< 0.19	< 0.13	< 0.11	< 0.3	< 0.12	< 0.11	0.53	0.005	0.18
	3/7/2002	< 0.48	< 0.43	< 0.47	< 1.4	< 0.51	< 0.52	0.62	0.06	0.092
	9/16/2002	< 0.45	< 0.82	< 0.68	< 1.7	< 0.92	< 0.94	0.5	0.14	< 0.0014
	3/20/2003	< 0.3	< 0.6	< 0.58	< 1.2	< 0.66	< 0.52	0.43	0.43	0.026
	9/25/2003	< 0.41	< 0.54	< 0.67	< 1.8	< 0.97	< 0.83	0.44	0.41	0.011 Q
	4/22/2004	< 0.14	< 0.4	< 0.36	< 0.74	< 0.39	< 0.4	--	--	0.03
	8/23/2004	< 0.14	< 0.4	< 0.36	< 0.74	< 0.39	< 0.4	--	--	0.0089 Q
	9/21/2005	< 0.14	< 0.4	< 0.36	< 0.74	< 0.39	< 0.4	--	--	0.0053 Q
	9/6/2006	< 0.14	< 0.4	< 0.36	< 0.74	< 0.39	< 0.4	--	--	--
	9/11/2007	< 0.14	< 0.4	< 0.36	< 0.74	< 0.39	< 0.4	--	--	--

Sample ID	Collection Date	BTEX and Trimethylbenzenes						Cyanides		
		Benzene	Ethylbenzene	Toluene	Xylenes, Total	1,2,4-Trimethly-benzene	1,3,5-Trimethly-benzene	Total	Amenable	Weak Acid Dissociable
Wisconsin Groundwater Quality Standards (NR 140, February 2004)										
Preventive Action Limit (PAL)		0.5	140	200	1000	96	96	NS	NS	0.04
Enforcement Standard (ES)		5	700	1000	10000	480	480	NS	NS	0.2
OW01										
	5/14/1985	**890**	**1100**	**1400**	< 2000	--	--	0.41	--	--
	2/4/1992	*4.9*	20	< 2	15	--	--	0.496	0.087	--
	12/15/1993	*3.2*	13	2	23	--	--	0.63	0.63	0.043
	11/20/1997	*2*	0.91	1.1	6.3	--	--	0.68	< 0.0054	0.11
	11/18/1998	**5.6**	6	2.9	24.2	--	--	0.43	0.43	0.019
	2/28/2001	*0.8*	0.47 Q	0.62 Q	2.8	0.58 Q	0.7	0.2	0.12	2.6
	5/30/2001	< 0.21	< 0.23	0.23 Q	< 0.44	< 0.23	< 0.21	< 0.001	< 0.001	< 0.001
	3/7/2002	*1.4 Q*	< 0.43	< 0.47	1.9	1 Q	< 0.52	2.2	2.2	< 0.0022
	9/16/2002	*0.51 Q*	< 0.82	< 0.68	< 1.7	< 0.92	< 0.94	2.2	0.3	0.028
	3/20/2003	< 0.3	< 0.6	< 0.58	< 1.2	< 0.66	< 0.52	--	--	--
	9/25/2003	< 0.41	< 0.54	< 0.67	< 1.8	< 0.97	< 0.83	1.1	1.1	0.028 Q
	8/23/2004	*0.58*	< 0.4	< 0.36	< 0.74	< 0.39	< 0.4	--	--	--
	9/21/2005	0.14 Q	< 0.4	< 0.36	< 0.74	< 0.39	< 0.4	--	--	--
	9/5/2006	0.37 Q	< 0.4	0.39 Q	0.45 Q	< 0.39	< 0.4	--	--	--
	9/10/2007	< 0.14	< 0.4	0.53 Q	1.03 Q	< 0.39	< 0.4	--	--	--
OW02										
	5/14/1985	**5900**	**5900**	**6300**	**16000**	--	--	0.6	--	--
	2/4/1992	Monitoring Well Abandoned								

Sample ID	*Collection Date*	*BTEX and Trimethylbenzenes*						*Cyanides*		
		Benzene	*Ethylbenzene*	*Toluene*	*Xylenes, Total*	*1,2,4-Trimethly-benzene*	*1,3,5-Trimethly-benzene*	*Total*	*Amenable*	*Weak Acid Dissociable*
Wisconsin Groundwater Quality Standards (NR 140, February 2004)										
Preventive Action Limit (PAL)		0.5	140	200	1000	96	96	NS	NS	0.04
Enforcement Standard (ES)		5	700	1000	10000	480	480	NS	NS	0.2
OW03										
	5/14/1985	**6**	2	< 1	< 10	--	--	--	--	--
	2/4/1992	< 0.6	< 1.5	< 2	< 2.5	--	--	71.2 Q	0.309	--
	12/14/1993	*1.3*	< 1	< 1	< 3	--	--	0.9	0.9	0.05
	11/20/1997	< 0.13	< 0.2	< 0.22	< 0.23	--	--	0.48	< 0.0054	0.075
	11/18/1998	*1.5*	< 0.32	< 0.27	< 0.43	--	--	0.41	0.41	0.027
	2/28/2001	*4.7*	0.53 Q	0.54 Q	1.3 Q	0.51 Q	1.1	0.083	0.02	0.45
	5/30/2001	**22**	0.76 Q	< 0.22	0.61 Q	4.2	0.37 Q	0.42	0.09	0.054
	8/13/2001	*1.2*	0.53 Q	0.74	0.92 Q	0.35	0.93	1.2	1.2	0.13
	3/8/2002	< 0.48	< 0.43	< 0.47	< 1.4	< 0.51	< 0.52	0.94	0.09	0.026
	9/16/2002					Monitoring Well Abandoned				
OW03R										
	9/16/2002	**41**	16	7.7	14.7	9.3	2.2 Q	0.7	0.28	0.022
	3/20/2003	*4.9*	2.3	0.78 Q	3.4 Q	3.8	1.1 Q	0.68	0.68	0.046
	9/25/2003	**13**	2.8	0.87 Q	2.2 Q	3.9	< 0.83	0.69	0.69	0.016
	4/22/2004	*4*	1.5	< 0.36	0.85 Q	< 0.39	< 0.4	--	--	0.01 Q
	8/23/2004	**20**	4	0.5 Q	2.8 Q	0.53 Q	< 0.4	--	--	0.018
	9/21/2005	**19**	0.66 Q	< 0.36	1.23 Q	< 0.39	< 0.4	--	--	0.04 Q
	9/5/2006	**6.5**	< 0.4	< 0.36	< 0.74	< 0.39	< 0.4	--	--	--
	9/10/2007	**6.3**	< 0.4	< 0.36	< 0.74	< 0.39	< 0.4	--	--	--

Sample ID	*Collection Date*	*BTEX and Trimethylbenzenes*						*Cyanides*		
		Benzene	*Ethylbenzene*	*Toluene*	*Xylenes, Total*	*1,2,4-Trimethly-benzene*	*1,3,5-Trimethly-benzene*	*Total*	*Amenable*	*Weak Acid Dissociable*
Wisconsin Groundwater Quality Standards (NR 140, February 2004)										
Preventive Action Limit (PAL)		0.5	140	200	1000	96	96	NS	NS	0.04
Enforcement Standard (ES)		5	700	1000	10000	480	480	NS	NS	0.2
OW04										
	5/14/1985	< 1	< 1	< 1	< 10	--	--	0.07	--	--
	2/4/1992	< 0.6	< 1.5	< 2	< 2.5	--	--	0.149	0.016	--
	12/28/1993	< 1	< 1	< 1	< 3	--	--	0.053	0.053	0.029
	11/20/1997	< 0.13	< 0.2	< 0.22	< 0.23	--	--	0.0086	< 0.0054	< 0.0054
	11/18/1998	< 0.27	< 0.32	< 0.27	< 0.43	--	--	< 0.0047	< 0.0043	< 0.0034
	2/28/2001	< 0.21	< 0.23	< 0.22	< 0.44	< 0.23	< 0.21	0.025	0.002 Q	0.003 Q
	5/30/2001	**4640**	**4520**	*457*	*2850*	**1020**	**233**	0.086	0.069	0.018
	9/17/2001	< 0.23	< 0.23	< 0.22	< 0.44	< 0.23	< 0.21	--	--	--
	3/8/2002	< 0.48	< 0.43	< 0.47	< 1.4	< 0.51	< 0.52	0.0059 Q	0.0059 Q	< 0.0022
	9/16/2002	< 0.45	< 0.82	< 0.68	< 1.7	< 0.92	< 0.94	0.007	0.007	< 0.0014
	9/25/2003	< 0.41	< 0.54	< 0.67	< 1.8	< 0.97	< 0.83	0.022	0.022	0.0049 Q
	4/22/2004	< 0.14	< 0.4	< 0.36	< 0.74	< 0.39	< 0.4	--	--	< 0.0053
	8/23/2004	< 0.14	< 0.4	< 0.36	< 0.74	< 0.39	< 0.4	--	--	< 0.0053

Completion Report
Wisconsin Public Service Corp., Former Manufactured Gas Plant Site - Oshkosh
305 Ceape Avenue, Oshkosh, Wisconsin
BRRTS# : 0271000256 **USEPA# : WIN000509947**

Sample ID	*Collection Date*	*BTEX and Trimethylbenzenes*						*Cyanides*		
		Benzene	*Ethylbenzene*	*Toluene*	*Xylenes, Total*	*1,2,4-Trimethly-benzene*	*1,3,5-Trimethly-benzene*	*Total*	*Amenable*	*Weak Acid Dissociable*
Wisconsin Groundwater Quality Standards (NR 140, February 2004)										
Preventive Action Limit (PAL)		0.5	140	200	1000	96	96	NS	NS	0.04
Enforcement Standard (ES)		5	700	1000	10000	480	480	NS	NS	0.2
P02										
	3/16/1992	*4*	6	3	13	--	--	--	--	--
	12/21/1993	< 1	< 1	< 1	< 3	--	--	0.077	< 0.005	0.012
	2/28/2001	< 0.21	< 0.23	< 0.22	< 0.44	< 0.23	< 0.21	0.077	0.015	0.063
	5/30/2001	< 0.21	< 0.23	< 0.22	< 0.44	< 0.23	< 0.21	0.007	0.004	0.014
	8/13/2001	< 0.21	0.28 Q	< 0.22	0.56 Q	0.28 Q	< 0.21	0.036	< 0.0021	0.001 Q
	3/7/2002	< 0.48	< 0.43	< 0.47	< 1.4	< 0.51	< 0.52	0.016	0.016	< 0.0022
	9/16/2002	< 0.45	< 0.82	< 0.68	< 1.7	< 0.92	< 0.94	0.037	0.018	0.003 Q
	9/25/2003	< 0.41	< 0.54	< 0.67	< 1.8	< 0.97	< 0.83	0.028	0.028	0.0034 Q
	4/22/2004	< 0.14	< 0.4	< 0.36	< 0.74	< 0.39	< 0.4	--	--	< 0.0053
	8/23/2004	0.4 Q	3.5	0.4 Q	1.1 Q	1 Q	< 0.4	--	--	< 0.0053
P02R										
	9/5/2006	*4.4*	2.4	< 0.36	2.9	2.9	0.7 Q	--	--	--
P03										
	3/16/1992	< 200	< 200	< 200	< 200	--	--	0.027	--	--
	12/14/1993	**20**	9.4	< 2	10	--	--	0.038	0.038	< 0.006
	11/20/1997					Monitoring Well Abandoned				

Sample ID	Collection Date	BTEX and Trimethylbenzenes						Cyanides		
		Benzene	Ethylbenzene	Toluene	Xylenes, Total	1,2,4-Trimethly-benzene	1,3,5-Trimethly-benzene	Total	Amenable	Weak Acid Dissociable
Wisconsin Groundwater Quality Standards (NR 140, February 2004)										
Preventive Action Limit (PAL)		0.5	140	200	1000	96	96	NS	NS	0.04
Enforcement Standard (ES)		5	700	1000	10000	480	480	NS	NS	0.2
P04										
	3/16/1992	< 1	< 1	< 1	< 1	--	--	0.022	--	--
	12/16/1993	< 1	< 1	< 1	< 3	--	--	0.029	0.029	< 0.006
	2/28/2001	< 0.21	< 0.23	< 0.22	< 0.44	0.27 Q	< 0.21	0.007	0.017	0.018
	5/30/2001	< 0.21	< 0.23	< 0.22	< 0.44	< 0.23	< 0.21	0.013	< 0.001	0.006
	8/13/2001	< 0.21	< 0.23	< 0.22	< 0.44	< 0.23	< 0.21	0.014	< 0.0021	0.009
	3/8/2002	< 0.48	< 0.43	< 0.47	< 1.4	< 0.51	< 0.52	0.024	0.024	0.0028 Q
	9/16/2002	< 0.45	< 0.82	< 0.68	< 1.7	< 0.92	< 0.94	0.014	0.002 Q	0.006
	3/20/2003	< 0.3	< 0.6	< 0.58	< 1.2	< 0.66	< 0.52	0.017 Q	0.017	< 0.0014
	9/25/2003	< 0.41	< 0.54	< 0.67	< 1.8	< 0.97	< 0.83	0.011	0.0098	0.005 Q
	4/21/2004	< 0.14	< 0.4	< 0.36	< 0.74	< 0.39	< 0.4	--	--	< 0.0053
	8/23/2004	< 0.14	< 0.4	< 0.36	< 0.74	< 0.39	< 0.4	--	--	< 0.0053
P101										
	12/16/1993	< 1	< 1	3.1	< 3	--	--	< 0.006	< 0.006	< 0.006
	11/20/1997	< 0.13	< 0.2	< 0.22	< 0.23	--	--	0.012	0.012	< 0.0054
	11/18/1998	< 0.27	< 0.32	< 0.27	< 0.43	--	--	< 0.0047	< 0.0043	< 0.0034
	2/28/2001	< 0.21	< 0.23	< 0.22	< 0.44	< 0.23	< 0.21	< 0.001	< 0.001	< 0.001
	5/30/2001	< 0.21	< 0.23	0.23 Q	< 0.44	< 0.23	< 0.21	< 0.001	< 0.001	< 0.001
	3/7/2002	< 0.48	< 0.43	< 0.47	< 1.4	< 0.051	< 0.52	0.0021	< 0.0021	< 0.0022
	9/16/2002	< 0.45	< 0.82	< 0.68	< 1.7	< 0.92	< 0.94	< 0.0014	< 0.0014	< 0.0014
	3/20/2003	< 0.3	< 0.6	50	< 1.2	< 0.66	< 0.52	0.0041 Q	0.0041 Q	< 0.0014
	9/25/2003	< 0.41	< 0.54	< 0.67	< 1.8	< 0.97	< 0.83	0.002 Q	0.002 Q	< 0.0019
	4/29/2004	< 0.14	< 0.4	< 0.36	< 0.74	< 0.39	< 0.4	--	--	0.013 Q
	8/23/2004	0.17 Q	< 0.4	< 0.36	< 0.74	< 0.39	< 0.4	--	--	< 0.0053

Sample ID	*Collection Date*	*BTEX and Trimethylbenzenes*						*Cyanides*		
		Benzene	*Ethylbenzene*	*Toluene*	*Xylenes, Total*	*1,2,4-Trimethlybenzene*	*1,3,5-Trimethlybenzene*	*Total*	*Amenable*	*Weak Acid Dissociable*
Wisconsin Groundwater Quality Standards (NR 140, February 2004)										
Preventive Action Limit (PAL)		0.5	140	200	1000	96	96	NS	NS	0.04
Enforcement Standard (ES)		5	700	1000	10000	480	480	NS	NS	0.2
P102										
	12/14/1993	**440**	*600*	< 20	< 60	--	--	0.14	0.14	< 0.006
	11/20/1997	**18**	0.45	20	2.4	--	--	0.16	< 0.0054	0.044
	11/18/1998	**74**	95	0.6	12.1	--	--	0.092	0.092	0.02
	2/28/2001	**758**	**987**	< 5.5	70	*106*	*9 Q*	0.035	0.08	0.081
	5/30/2001	**664**	**864**	2.5 Q	59	*127*	*12*	0.057	0.034	0.014
	8/13/2001	**692**	**879**	6.3 Q	82	*128*	*13*	0.22	< 0.0021	0.005
	9/17/2001	**791**	**1020**	2.6	56	*144*	*13 Q*	--	--	--
	3/8/2002	**750 Q**	**1000 Q**	< 9.4 Q	28 Q	*120 Q*	*12 Q*	0.071 Q	0.07	0.0067
	9/16/2002					Monitoring Well Abandoned				
P102R										
	9/16/2002	**620**	**800**	3 Q	62	*100*	*10*	0.1	0.03	0.007
	3/20/2003	**350**	*500*	8.6 Q	73	71	9	0.15	0.15	0.0049
	9/25/2003	**390**	*560*	4.8 Q	70	72	6.6 Q	0.11	0.11	0.0082
	4/22/2004	**360**	*540*	2.6 Q	58	76	7.3	--	--	0.0093 Q
	8/23/2004	**470 Q**	*680 Q*	< 3.6	65 Q	*88 Q*	*8.7 Q*	--	--	0.0097 Q

Sample ID	*Collection Date*	*BTEX and Trimethylbenzenes*						*Cyanides*		
		Benzene	*Ethylbenzene*	*Toluene*	*Xylenes, Total*	*1,2,4-Trimethly-benzene*	*1,3,5-Trimethly-benzene*	*Total*	*Amenable*	*Weak Acid Dissociable*
Wisconsin Groundwater Quality Standards (NR 140, February 2004)										
Preventive Action Limit (PAL)		0.5	140	200	1000	96	96	NS	NS	0.04
Enforcement Standard (ES)		5	700	1000	10000	480	480	NS	NS	0.2
P103										
	12/14/1993	**46**	1.2	1.2	4.1	--	--	0.056	0.056	< 0.006
	11/20/1997	*4.6*	< 0.22	0.42	0.78	--	--	0.0094	< 0.0054	0.0056
	11/18/1998	**48**	0.5	< 0.27	3.26	--	--	0.011	0.011	< 0.0034
	5/30/2001	**77**	1.7	0.24 Q	3.6	6.2	0.58	0.018	0.003	0.012
	8/13/2001	**51**	0.56 Q	0.26	2.1	3.2	0.33 Q	0.07	0.034	0.009
	3/7/2002	**58**	< 0.43	< 0.47	1.3 Q	3.7	< 0.52	0.028	0.028	0.0029 Q
	9/16/2002	**34**	< 0.82	< 0.68	1.6 Q	4.8	< 0.94	0.017	0.01	0.002 Q
	3/20/2003	*2.8*	1.8 Q	1.1 Q	5.3 Q	4.5	0.84 Q	0.0048 Q	0.048	< 0.0014
	9/25/2003	**20**	15	< 0.67	9.2 Q	3.9	< 0.83	0.005 Q	0.005 Q	0.0022
	4/21/2004	**110**	20	0.49 Q	28	20	2.5	--	--	< 0.0053
	8/23/2004	**22**	7.8	< 0.36	7.4	7.7	1.1 Q	--	--	< 0.0053
	9/21/2005	< 0.14	< 0.4	< 0.36	< 0.74	0.43 Q	< 0.4	--	--	--
	9/5/2006	**15**	6.1	< 0.36	5.4	9.3	1.1 Q	--	--	--
	9/10/2007	**10**	1.6	< 0.36	3.8 Q	9.2	1.5	--	--	--

Sample ID	*Collection Date*	*BTEX and Trimethylbenzenes*						*Cyanides*		
		Benzene	*Ethylbenzene*	*Toluene*	*Xylenes, Total*	*1,2,4-Trimethlybenzene*	*1,3,5-Trimethlybenzene*	*Total*	*Amenable*	*Weak Acid Dissociable*
Wisconsin Groundwater Quality Standards (NR 140, February 2004)										
Preventive Action Limit (PAL)		0.5	140	200	1000	96	96	NS	NS	0.04
Enforcement Standard (ES)		5	700	1000	10000	480	480	NS	NS	0.2
P104										
	7/10/1996	< 0.5	< 1	< 1	< 3	--	--	0.057	0.057	0.021
	8/14/1996	*1.9*	< 1	< 1	< 3	--	--	0.071	0.055	0.011
	11/20/1997	< 0.13	< 0.2	< 0.22	0.46	--	--	0.029	< 0.0054	0.019
	11/18/1998	< 0.27	< 0.32	< 0.27	< 0.43	--	--	0.031	0.031	0.005
	2/28/2001	< 0.19	< 0.13	< 0.11	< 0.3	< 0.12	< 0.11	0.021	0.054	0.056
	5/30/2001	**6.6 Q**	< 2.3	< 2.2	< 4.4	< 2.3	< 2.1	0.066	0.035	0.022
	8/13/2001	< 0.21	< 0.23	< 0.22	< 0.44	< 0.23	< 0.21	0.11	0.092	0.024
	3/8/2002	< 0.48	< 0.43	< 0.47	< 1.4	< 0.51	< 0.52	< 0.0021	< 0.0021	0.0022 Q
	9/16/2002	< 0.45	< 0.82	< 0.68	< 1.7	< 0.92	< 0.94	0.052	0.016	< 0.0014
	3/20/2003	< 0.3	< 0.6	190	< 1.2	< 0.66	< 0.52	0.035	0.035	0.003 Q
	9/25/2003	< 0.41	< 0.54	3.1	< 1.8	< 0.97	< 0.83	0.043 Q	0.043	0.0057 Q
	4/21/2004	< 0.14	< 0.4	0.51 Q	< 0.74	< 0.39	< 0.4	--	--	0.0067 Q
	8/23/2004	< 0.14	< 0.4	< 0.36	< 0.74	< 0.39	< 0.4	--	--	< 0.0053
	9/21/2005	< 0.14	< 0.4	< 0.36	< 0.74	< 0.39	< 0.4	--	--	--
	9/5/2006	< 0.14	< 0.4	< 0.36	< 0.74	< 0.39	< 0.4	--	--	--
	9/10/2007	< 0.14	< 0.4	< 0.36	< 0.74	< 0.39	< 0.4	--	--	--

Sample ID	*Collection Date*	*BTEX and Trimethylbenzenes*						*Cyanides*		
		Benzene	*Ethylbenzene*	*Toluene*	*Xylenes, Total*	*1,2,4-Trimethly-benzene*	*1,3,5-Trimethly-benzene*	*Total*	*Amenable*	*Weak Acid Dissociable*
Wisconsin Groundwater Quality Standards (NR 140, February 2004)										
Preventive Action Limit (PAL)		0.5	140	200	1000	96	96	NS	NS	0.04
Enforcement Standard (ES)		5	700	1000	10000	480	480	NS	NS	0.2
P105										
	7/10/1996	**18**	< 1	1.8	12	--	--	0.012	0.012	< 0.005
	8/14/1996	*3.9*	< 1	< 1	< 3	--	--	0.0077	0.0077	< 0.005
	11/20/1997	0.33	0.56	0.26	0.8	--	--	< 0.0054	< 0.0054	< 0.0054
	11/18/1998	0.31	< 0.32	< 0.27	< 0.43	--	--	< 0.0047	< 0.0043	< 0.0034
	5/30/2001	0.35 Q	< 0.13	< 0.11	< 0.3	< 0.12	< 0.11	< 0.001	< 0.001	0.007
	8/13/2001	*0.73*	< 0.23	0.56	< 0.44	0.46 Q	< 0.21	0.0078	< 0.0021	0.004
	3/7/2002	< 0.48	< 0.43	< 0.47	< 1.4	< 0.51	< 0.52	0.0035 Q	0.0035 Q	< 0.0022
	9/16/2002	0.49	< 0.82	< 0.68	< 1.7	< 0.92	< 0.94	0.012	0.008	< 0.0014
	3/20/2003	0.38 Q	< 0.6	< 0.58	< 1.2	< 0.66	< 0.52	0.0057 Q	0.0057	< 0.0014
	9/25/2003	*2.4*	< 0.54	< 0.67	< 1.8	< 0.97	< 0.83	0.0054	0.0054	0.0028 Q
	4/21/2004	0.33 Q	< 0.4	< 0.36	< 0.74	< 0.39	< 0.4	--	--	< 0.0053
	8/23/2004	0.4 Q	< 0.4	< 0.36	< 0.74	< 0.39	< 0.4	--	--	< 0.0053
	9/21/2005	0.22 Q	< 0.4	< 0.36	< 0.74	< 0.39	< 0.4	--	--	--
	9/5/2006	< 0.14	< 0.4	< 0.36	< 0.74	< 0.39	< 0.4	--	--	--
	9/10/2007	< 0.14	< 0.4	< 0.36	< 0.74	< 0.39	< 0.4	--	--	--

Sample ID	*Collection Date*	*BTEX and Trimethylbenzenes*						*Cyanides*		
		Benzene	*Ethylbenzene*	*Toluene*	*Xylenes, Total*	*1,2,4-Trimethlybenzene*	*1,3,5-Trimethlybenzene*	*Total*	*Amenable*	*Weak Acid Dissociable*
Wisconsin Groundwater Quality Standards (NR 140, February 2004)										
Preventive Action Limit (PAL)		0.5	140	200	1000	96	96	NS	NS	0.04
Enforcement Standard (ES)		5	700	1000	10000	480	480	NS	NS	0.2
P106										
	7/9/1996	*3.1*	3.4	< 2	17	--	--	0.011	< 0.005	< 0.005
	8/14/1996	*1.6*	< 1	< 1	4.7	--	--	0.012	0.012	< 0.005
	11/20/1997	0.27	< 0.2	< 0.22	0.89	--	--	0.012	< 0.0054	0.0071
	11/18/1998	< 0.27	< 0.32	< 0.27	< 0.43	--	--	< 0.0047	< 0.0043	< 0.0034
	2/28/2001	< 0.19	< 0.13	0.52	< 0.3	< 0.12	< 0.11	0.002 Q	0.006	0.008
	5/30/2001	0.24 Q	0.72 Q	0.43 Q	0.6 Q	18	1.7	0.006	0.005	0.004
	8/13/2001	< 2.1	< 2.3	< 2.2	< 4.4	2.7 Q	< 2.1	0.13	0.092	0.027
	9/17/2001	< 0.21	< 0.23	< 0.22	< 0.44	< 0.23	< 0.21	--	--	--
	3/7/2002	< 0.48	< 0.43	< 0.47	< 1.4	< 0.51	< 0.52	0.0073	0.0073	0.004 Q
	9/16/2002	*1.8*	< 0.82	< 0.68	< 1.7	< 0.092	< 0.94	0.011	0.006	< 0.0014
	9/25/2003	< 0.41	< 0.54	< 0.67	< 1.8	< 0.97	< 0.83	0.0018 Q	0.0018 Q	< 0.0019
	8/23/2004	< 0.14	< 0.4	< 0.36	< 0.74	< 0.39	< 0.4	--	--	< 0.0053
	9/21/2005	*1.3*	< 0.4	< 0.36	1.6	< 0.39	< 0.4	--	--	--
	9/6/2006	*0.85*	< 0.4	< 0.36	< 0.74	< 0.39	< 0.4	--	--	--
	9/10/2007	*3*	< 0.4	< 0.36	< 0.74	< 0.39	< 0.4	--	--	--
P107										
	2/28/2001	**136**	*423*	23	244	*147*	*35*	0.004	0.013	0.014
	5/30/2001	**218**	*669*	41	326	*299*	*60*	0.097	0.018	0.02
	8/13/2001	**155**	*422*	17	205	*194*	*37*	0.14	0.0042 Q	0.018
	3/8/2002	**200**	*570*	25	282	*180*	*42*	0.052	0.051	0.0063 Q
	9/16/2002					Monitoring Well Abandoned				

Sample ID	*Collection Date*	*BTEX and Trimethylbenzenes*						*Cyanides*		
		Benzene	*Ethylbenzene*	*Toluene*	*Xylenes, Total*	*1,2,4-Trimethly-benzene*	*1,3,5-Trimethly-benzene*	*Total*	*Amenable*	*Weak Acid Dissociable*
Wisconsin Groundwater Quality Standards (NR 140, February 2004)										
Preventive Action Limit (PAL)		0.5	140	200	1000	96	96	NS	NS	0.04
Enforcement Standard (ES)		5	700	1000	10000	480	480	NS	NS	0.2
P107R										
	9/16/2002	**170**	*590*	19	311	*250*	*53*	0.046	0.034	< 0.0014
	3/20/2003	**77**	*390*	< 12	222 Q	*180*	*38*	0.13	0.13	0.0065
	9/25/2003	**540**	**2200**	61	*1760*	**1400**	**330**	0.012 Q	0.0087	0.0034 Q
	4/22/2004	**42 Q**	58 Q	5.1 Q	108 Q	*84 Q*	*20 Q*	--	--	< 0.0053
	8/23/2004	**140**	*410*	12 Q	197 Q	*160*	*33*	--	--	< 0.0053
	9/21/2005	**43**	*220*	4.3	134	*130*	*28*	--	--	--
	9/6/2006	**23**	77	1.8	59	48	13	--	--	--
	9/10/2007	**44**	*280*	6.7 Q	147	*140*	*28*	--	--	--
P108										
	11/13/2001	**39**	41	0.72	33	27	3	0.026	< 0.001	0.01
	3/7/2002	**56**	69	1 Q	39.6	26	2.1	0.029	0.028	0.021
	9/16/2002	**39**	30	< 0.68	31.3 Q	31	2.9 Q	0.035	0.018	0.003 Q
	3/20/2003	**5.3**	1.6 Q	< 0.58	6.9 Q	12	1 Q	0.012	0.012 Q	0.0015 Q
	9/25/2003	0.3	< 0.54	< 0.67	4.2	12	0.93 Q	0.011 Q	0.011	0.0049 Q
	4/22/2004	*1.4*	1.2 Q	< 0.36	1.2	2.2	< 0.4	--	--	< 0.0053
	8/23/2004	**11**	2.6	0.47 Q	9.7	17	1.4	--	--	< 0.0053
	9/21/2005	*1.1*	< 0.4	< 0.36	< 0.74	7	0.68 Q	--	--	--
	9/6/2006	0.28 Q	< 0.4	< 0.36	0.77 Q	2.7	< 0.4	--	--	--
	9/11/2007	*1.6*	< 0.4	< 0.36	1.97 Q	11	0.96 Q	--	--	--

Sample ID	*Collection Date*	*BTEX and Trimethylbenzenes*						*Cyanides*		
		Benzene	*Ethylbenzene*	*Toluene*	*Xylenes, Total*	*1,2,4-Trimethly-benzene*	*1,3,5-Trimethly-benzene*	*Total*	*Amenable*	*Weak Acid Dissociable*
Wisconsin Groundwater Quality Standards (NR 140, February 2004)										
Preventive Action Limit (PAL)		0.5	140	200	1000	96	96	NS	NS	0.04
Enforcement Standard (ES)		5	700	1000	10000	480	480	NS	NS	0.2
P109										
	4/29/2004	< 0.41	< 0.54	< 0.67	< 1.8	< 0.97	< 0.83	--	--	< 0.0053
	8/23/2004	2.8	< 0.54	< 0.67	< 1.8	< 0.97	< 0.83	--	--	< 0.0053
	12/14/2004	0.44 Q	< 0.54	< 0.67	< 1.8	< 0.97	< 0.83	--	--	< 0.0053
	3/8/2005	0.45 Q	< 0.4	< 0.36	< 1	< 0.39	< 0.4	--	--	--
	9/21/2005	< 0.14	< 0.4	< 0.36	< 0.74	< 0.39	< 0.4	--	--	--
	9/5/2006	< 0.14	< 0.4	< 0.36	< 0.74	< 0.39	< 0.4	--	--	--
	9/11/2007	< 0.14	< 0.4	< 0.36	< 0.74	< 0.39	< 0.4	--	--	--
P110										
	4/29/2004	< 0.41	< 0.54	< 0.67	< 1.8	< 0.97	< 0.83	--	--	< 0.0053
	8/23/2004	< 0.41	< 0.54	< 0.67	< 1.8	< 0.97	< 0.83	--	--	< 0.0053
	12/14/2004	3.5	< 0.54	< 0.67	< 1.8	< 0.97	< 0.83	--	--	< 0.0053
	3/8/2005	< 0.14	< 0.4	< 0.36	< 1	< 0.39	< 0.4	--	--	--
	9/21/2005	< 0.14	< 0.4	< 0.36	< 0.74	< 0.39	< 0.4	--	--	--
	9/6/2006	< 0.14	< 0.4	< 0.36	< 0.74	< 0.39	< 0.4	--	--	--
	9/11/2007	< 0.14	< 0.4	< 0.36	< 0.74	< 0.39	< 0.4	--	--	--
P111										
	8/23/2004	< 0.41	< 0.54	0.71 Q	< 1.8	< 0.97	< 0.83	--	--	< 0.0053
	12/14/2004	< 0.41	< 0.54	< 0.67	< 1.8	< 0.97	< 0.83	--	--	< 0.0053
	3/8/2005	< 0.14	< 0.4	< 0.36	< 1	< 0.39	< 0.4	--	--	--
	6/8/2005	< 0.14	< 0.4	< 0.36	< 1	< 0.39	< 0.4	--	--	--
	9/21/2005	< 0.14	< 0.4	< 0.36	< 0.74	< 0.39	< 0.4	--	--	--
	9/5/2006	< 0.14	< 0.4	< 0.36	< 0.74	< 0.39	< 0.4	--	--	--
	9/11/2007	< 0.14	< 0.4	< 0.36	< 0.74	< 0.39	< 0.4	--	--	--

Sample ID	*Collection Date*	*BTEX and Trimethylbenzenes*						*Cyanides*		
		Benzene	*Ethylbenzene*	*Toluene*	*Xylenes, Total*	*1,2,4-Trimethly-benzene*	*1,3,5-Trimethly-benzene*	*Total*	*Amenable*	*Weak Acid Dissociable*
Wisconsin Groundwater Quality Standards (NR 140, February 2004)										
Preventive Action Limit (PAL)		0.5	140	200	1000	96	96	NS	NS	0.04
Enforcement Standard (ES)		5	700	1000	10000	480	480	NS	NS	0.2
QC01										
(OW01)	2/4/1992	*3.6*	18	< 2	12	--	--	--	--	--
(MW102)	12/16/1993	**4400**	**5400**	*200*	*4500*	--	--	0.52	0.41	0.083
(MW102)	12/17/1993	< 1	< 1	< 1	< 3	--	--	0.15	0.089	0.027
(OW01)	11/20/1997	**5.7**	0.48	5.3	6.2	--	--	2.9	0.3	0.13
(MW104)	2/28/2001	**8.4**	2.5	0.32 Q	1.6	1.6	0.49 Q	0.1	0.32	4.3
(MW109)	5/30/2001	**110**	*195*	< 11	117	*99*	*31*	0.004	< 0.001	0.004
(MW109)	8/13/2001	**116**	102	3.5	59	28	5.7	0.015	< 0.0021	0.003 Q
(P103)	3/7/2002	**55**	< 0.43	< 0.47	1.2 Q	3.7	< 0.52	0.02	0.02	< 0.0022
(GW04)	3/8/2002	< 0.48	< 0.43	< 0.47	< 1.4	< 0.51	< 0.52	0.12	0.11	0.0039
(P105)	9/16/2002	--	--	--	--	--	--	0.015	0.01	< 0.0014
(GW04)	3/20/2003	< 0.3	< 0.6	< 0.58	< 1.2	< 0.66	< 0.52	0.095	0.095	< 0.007
(GW01)	9/25/2003	*1.2 Q*	2.8	< 0.67	4.1	12	3	0.021 Q	0.021	0.0059 Q
(P04)	4/21/2004	< 0.14	< 0.4	< 0.36	< 0.74	< 0.39	< 0.4	--	--	< 0.0053
(P108)	8/23/2004	**11**	2.8	0.51 Q	10.1	18	1.6	--	--	< 0.0053
(MW110)	9/21/2005	< 0.14	< 0.4	< 0.36	< 0.74	< 0.39	< 0.4	--	--	0.0038 Q
(P104)	9/5/2006	< 0.14	< 0.4	< 0.36	< 0.74	< 0.39	< 0.4	--	--	--
(P111)	9/11/2007	< 0.14	< 0.4	< 0.36	< 0.74	< 0.39	< 0.4	--	--	--

Sample ID	*Collection Date*	*BTEX and Trimethylbenzenes*						*Cyanides*		
		Benzene	*Ethylbenzene*	*Toluene*	*Xylenes, Total*	*1,2,4-Trimethly-benzene*	*1,3,5-Trimethly-benzene*	*Total*	*Amenable*	*Weak Acid Dissociable*
Wisconsin Groundwater Quality Standards (NR 140, February 2004)										
Preventive Action Limit (PAL)		0.5	140	200	1000	96	96	NS	NS	0.04
Enforcement Standard (ES)		5	700	1000	10000	480	480	NS	NS	0.2
QC02										
(MW103)	12/21/1993	*1.4*	< 1	1.6	< 3	--	--	0.52	0.089	0.12
(P103)	11/20/1997	*4.1*	< 0.2	< 0.22	0.42	--	--	< 0.0054	< 0.0054	0.0097
(P02)	2/28/2001	< 0.21	< 0.23	< 0.22	< 0.44	< 0.23	< 0.21	0.007	0.026	0.08
(P04)	5/30/2001	< 0.21	< 0.23	< 0.22	< 0.44	< 0.23	< 0.21	0.013	0.003 Q	0.005
(GW04)	8/13/2001	< 0.21	0.53 Q	0.22	0.64 Q	0.44 Q	< 0.21	0.13	< 0.0021	0.012
(P108)	3/7/2002	**54**	62	1.1 Q	29.8 Q	12	0.83 Q	0.029	0.028	0.022
(MW109)	3/8/2002	**3000**	**2100**	78	*1090*	**420**	**110**	0.0087	0.0087	< 0.0022
(P101)	9/16/2002	< 0.45	< 0.82	< 0.68	< 1.7	< 0.92	< 0.94	0.003 Q	0.003 Q	< 0.0014
(P04)	3/20/2003	< 0.3	< 0.6	< 0.58	< 1.2	< 0.66	< 0.52	0.016	0.016	0.0029 Q
(P108)	9/25/2003	*4.3*	< 0.54	< 0.67	4.4	12	1 Q	0.011 Q	0.011	0.006 Q
(MW103)	4/22/2004	< 0.14	< 0.4	< 0.36	< 0.74	< 0.39	< 0.4	--	--	0.0073 Q
(GW04)	8/23/2004	< 0.14	< 0.4	< 0.36	< 0.74	< 0.39	< 0.4	--	--	< 0.0053
(P109)	9/21/2005	< 0.14	< 0.4	< 0.36	< 0.74	< 0.39	< 0.4	--	--	--
(P111)	9/5/2006	< 0.14	< 0.4	< 0.36	< 0.74	< 0.39	< 0.4	--	--	--
QC03										
(P103)	8/13/2001	**51**	0.54 Q	< 0.22	1.8	2.1	0.21	0.057	< 0.0021	0.011
(P107R)	9/16/2002	**170**	*610*	19	314	*260*	*54*	0.039	0.013	< 0.0014
(MW103)	9/25/2003	< 0.41	< 0.54	< 0.67	< 1.8	< 0.97	< 0.83	0.038 Q	0.028	0.0051 Q
(P110)	4/29/2004	< 0.41	< 0.54	< 0.67	< 1.8	< 0.97	< 0.83	--	--	< 0.0053
(P107R)	8/23/2004	**140**	*420*	12 Q	198	*160*	*35*	--	--	< 0.0053

Sample ID	Collection Date	BTEX and Trimethylbenzenes						Cyanides		
		Benzene	Ethylbenzene	Toluene	Xylenes, Total	1,2,4-Trimethly-benzene	1,3,5-Trimethly-benzene	Total	Amenable	Weak Acid Dissociable
Wisconsin Groundwater Quality Standards (NR 140, February 2004)										
Preventive Action Limit (PAL)		0.5	140	200	1000	96	96	NS	NS	0.04
Enforcement Standard (ES)		5	700	1000	10000	480	480	NS	NS	0.2
TB										
	10/11/2005	< 0.21	< 0.4	< 0.36	< 0.74	--	--	--	--	--
	9/5/2006	< 0.14	< 0.4	< 0.36	< 0.74	< 0.39	< 0.4	--	--	--
	12/1/2006	< 0.14	< 0.4	< 0.36	< 0.74	--	--	--	--	--
	9/10/2007	< 0.14	< 0.4	< 0.36	< 0.74	--	--	--	--	--

Notes

1) Parameters that attain or exceed the NR 140 Wisconsin Groundwater Quality Preventive Action Limit (PAL) Standard are identified in italics and underlined.
2) Parameters that attain or exceed the NR 140 Wisconsin Groundwater Quality Enforcement Standard (ES) are identified in bold and underlined.
3) Reference the laboratory analytical report for full list of compounds analyzed.
4) 1,2,4 and 1,3,5- Trimethylbenzene analytical results combined for comparison against the NR 140 PAL and ES standards.

<2.0 : Parameter not detected above the Limit of Detection indicated.
NS : NR 140 Wisconsin Groundwater Quality Standard not established for this parameter.
Q : Analyte result has been qualified, see laboratory analytical report for additional information.
--: Analysis not performed.
TB : Trip Blank for QA/QC.
QC: Quality Control duplicate sample.

Table 3. Groundwater Laboratory Analytical Results - Polynuclear Aromatic Hydrocarbon (PAH) µg/L

Completion Report

Wisconsin Public Service Corp., Former Manufactured Gas Plant Site - Oshkosh

305 Ceape Avenue, Oshkosh, Wisconsin

BRRTS# : 0271000256 **USEPA# : WIN000509947**

Sample ID	*Collection Date*	*1-Methyl naphthalene*	*2-Methyl naphthalene*	*Acenaphthene*	*Acenaphthylene*	*Anthracene*	*Benz (a) anthracene*	*Benzo (a) pyrene*	*Benzo (b) fluoranthene*	*Benzo (ghi) perylene*	*Benzo (k) fluoranthene*	*Chrysene*	*Dibenz (a,h) anthracene*	*Fluoranthene*	*Fluorene*	*Indeno (1,2,3-cd) pyrene*	*Naphthalene*	*Phenanthrene*	*Pyrene*
Wisconsin Groundwater Quality Standards (NR 140, February 2004)																			
Preventive Action Limit		NS	NS	NS	NS	600	NS	0.02	0.02	NS	NS	0.02	NS	80	80	NS	10	NS	50
Enforcement Standard		NS	NS	NS	NS	3000	NS	0.2	0.2	NS	NS	0.2	NS	400	400	NS	100	NS	250
GW01																			
	1/29/1992	--	--	42	110	23	0.41	**0.54**	**1.6**	0.66	< 0.043	**1.6**	< 0.025	< 0.53	20	0.71	**280**	19	2.1
	3/27/1992	--	--	38	< 2	29	0.29	< 0.2	**0.77**	0.28	< 0.043	**0.27**	< 0.025	< 0.53	18	< 0.04	**240**	17	2.4
	12/20/1993	--	--	< 1	< 2	3.5	< 0.05	< 0.2	< 0.05	< 0.1	< 0.05	< 0.1	< 0.1	0.34	10	< 0.1	*45*	18	< 0.2
	11/20/1997	24	6.5	< 1	< 0.93	1.5	1.4	**0.21**	**0.34**	0.14	0.26	**2.2**	< 0.14	1.1	8.4	0.19	*27*	5.7	2.9
	11/18/1998	25	< 7.2	19	< 8.2	3.5	1	**0.83**	**0.72**	< 0.42	0.36	**1.1**	0.8	2.7	8.6	1.6	*21*	17	3.5
	2/28/2001	83	24	43	< 0.15	10	3.3	< 0.013	**0.67**	2.6	< 0.11	**5.3**	< 0.068	24	20	2.2	*84*	36	9
	5/30/2001	62	10	36	< 0.15	10	< 0.11	**1.2**	**11**	0.96	< 0.11	**4.6**	< 0.068	22	18	0.53	*61*	34	7.6
	8/13/2001	65	16	44	< 0.15	9.6	< 0.11	< 0.013	**4.5**	2.3	< 0.11	< 0.059	< 0.068	7.9	20	2.9	**102**	33	7.8
	3/8/2002	62 Q	15 Q	36 Q	< 4.6 Q	6.3 Q	< 3.8 Q	< 2.4 Q	**0.29**	0.21	0.36	< 3.6 Q	0.12	< 5.6 Q	17 Q	0.19	*59 Q*	20 Q	4.2 Q
	9/16/2002	97 Q	22 Q	51 Q	1.3 Q	7.1	1 Q	**0.42 Q**	< 0.28	< 0.3	0.29 Q	**0.93 Q**	< 0.34	4.1	25 Q	< 0.28	**140 Q**	30 Q	4.3
	3/20/2003	64 Q	17 Q	37 Q	1.2	5.8	1.3	**0.63 Q**	**0.33 Q**	< 0.32	0.5 Q	**1.2**	< 0.32	4.1	14 Q	< 0.42	*86 Q*	20 Q	4.6
	9/25/2003	41 Q	6.6 Q	24 Q	< 1.9	3.4 Q	< 1.2	< 1.4	< 1.3	< 1.6	< 1.9	< 1.4	< 1.6	1.6 Q	9.1 Q	< 2.1	*41 Q*	8.7 Q	2 Q
	4/21/2004	22 Q	2.5 Q	14 Q	0.27 Q	1.7 Q	0.11	*0.061 Q*	*0.028 Q*	0.027 Q	0.03 Q	*0.08 Q*	< 0.015	< 0.92 Q	6.1 Q	0.024 Q	*21 Q*	4.9 Q	< 1.2
	9/21/2005	55 Q	13 Q	29 Q	1.2	3.4	1.1	**0.57 Q**	**0.39 Q**	< 0.39	0.39 Q	**0.86 Q**	< 0.38	2.3	10 Q	< 0.38	*73 Q*	13 Q	2.7
	9/5/2006	22 Q	2.3	18 Q	0.68	1.8 Q	0.37 Q	< 0.37 Q	< 0.31 Q	< 0.39 Q	< 0.39 Q	**0.39 Q**	< 0.38	1.3	0.24 Q	< 0.38	*12 Q*	4.8 Q	1.3
	9/10/2007	26	3.4 Q	19	0.93 Q	2.1 Q	0.44 Q	< 0.37	< 0.31 Q	< 0.39	< 0.39 Q	**0.47 Q**	< 0.38	1.5	5.3	< 0.38	*21*	3.8 Q	1.6 Q
GW02																			
	1/29/1992	--	--	470	960	140	1.9	**2.1**	**4**	1.7	0.82	**3.9**	0.7	46	*140*	0.51	**5900**	130	14
	3/17/1992	--	--	470	810	200	2.9	**2.6**	**7.5**	3.6	1.6	**6.7**	1.3	58	*130*	2.9	**7200**	150	19
	12/21/1993	--	--	< 1	< 2	14	1.9	**1.6**	< 0.05	1.4	0.12	**1.4**	< 0.1	23	*92*	0.48	**4500**	110	8.8
	3/7/2002	380 Q	560 Q	590 Q	< 280	< 240	240 Q	**210**	**170 Q**	< 180	190 Q	< 220	< 200	**750 Q**	*400 Q*	< 170	**4000**	1300	**520 Q**
	9/16/2002	370 Q	430 Q	490 Q	< 230	< 200	230 Q	**160 Q**	< 140	< 150	< 130	< 180	< 170	**560 Q**	*310 Q*	< 140	**3500**	960	**410 Q**
	3/20/2003	430 Q	300 Q	550 Q	< 190	270 Q	210 Q	**210 Q**	< 130	< 160	< 190	**190 Q**	< 160	**660**	*310 Q*	< 210	**6100**	1000	**480 Q**
	9/25/2003	300 Q	250	430 Q	69	180	220	**160**	**110**	74	110	**120**	24 Q	**540 Q**	*250*	73	**3100 Q**	790 Q	**410 Q**
	4/22/2004	84 Q	24	120 Q	22	45	64 Q	**46**	**33**	18	34	**30**	6.5	*180 Q*	68 Q	18	**800 Q**	220 Q	*140 Q*
	8/23/2004	290 Q	110	390 Q	33	120	95	**89**	**54**	41	68	**63**	< 11	*250 Q*	*200*	38	**3900 Q**	450 Q	*210*
GW02R																			
	9/5/2006	270 Q	320 Q	290 Q	20	35 Q	4.6 Q	**2.6 Q**	**1.9 Q**	< 1.9 Q	2.7 Q	**2.9 Q**	< 1.9	32	1.7 Q	< 1.9	**8900 Q**	160 Q	19

Sample ID	*Collection Date*	*1-Methyl naphthalene*	*2-Methyl naphthalene*	*Acenaphthene*	*Acenaph - thylene*	*Anthracene*	*Benz (a) anthracene*	*Benzo (a) pyrene*	*Benzo (b) fluoranthene*	*Benzo (ghi) perylene*	*Benzo (k) fluoranthene*	*Chrysene*	*Dibenz (a,h) anthracene*	*Fluoranthene*	*Fluorene*	*Indeno (1,2,3-cd) pyrene*	*Naphthalene*	*Phenanthrene*	*Pyrene*
Wisconsin Groundwater Quality Standards (NR 140, February 2004)																			
Preventive Action Limit		NS	NS	NS	NS	600	NS	0.02	0.02	NS	NS	0.02	NS	80	80	NS	10	NS	50
Enforcement Standard		NS	NS	NS	NS	3000	NS	0.2	0.2	NS	NS	0.2	NS	400	400	NS	100	NS	250
GW03																			
	1/29/1992	--	--	79	130	240	17	**21**	**63**	27	11	**31**	< 0.25	*140*	37	19	**310**	54	42
	3/12/1992	--	--	700	650	*2800*	230	**260**	**770**	380	15	**460**	140	**1800**	*400*	230	**3400**	910	**630**
	11/18/1998	2000	< 140	110	< 8.2	15	3	**2.5**	**2**	1.5	1	**2.9**	2.1	14	43	< 10	**1700**	73	11
	8/13/2001	245	402	376	< 0.15	102	61	**8.9**	**22**	13	21	**28**	< 0.068	*126*	*192*	19	**4790**	360	*87*
	3/7/2002	220	320	220	< 28	47 Q	26 Q	**22 Q**	< 17	< 18	17 Q	**24 Q**	< 20	*81 Q*	*110*	< 17	**4300 Q**	200	*60 Q*
	9/16/2002	< 220	< 220	160 Q	< 180	< 160	< 150	< 96	< 110	< 120	< 100	< 140	< 140	< 220	< 170	< 110	**2200**	< 150	< 160
	3/20/2003	120	110	160	17 Q	71	48	**39**	**25**	16 Q	26	**40**	7.4 Q	*140*	*96*	16 Q	**910 Q**	240 Q	*52*
	9/25/2003	120	110	130	9.8 Q	35	11 Q	< 7	< 6.5	< 8	< 9.5	**12 Q**	< 8	36	62	< 10	**820 Q**	110	33
	4/22/2004	66 Q	15 Q	62 Q	4.5 Q	19 Q	13 Q	**9.8 Q**	**6.7 Q**	4.2 Q	6.6 Q	**11 Q**	< 1.5 Q	34 Q	30 Q	3.6 Q	**150 Q**	85 Q	28 Q
	8/23/2004	140	120	160	< 9.7	28 Q	< 9.8	< 9.1	< 8.9	< 10	< 9.7	**8.7 Q**	< 11	32	72	< 8.5	**1000 Q**	120	30
	9/21/2005	95	13 Q	95	< 4.3	21	< 8.2	< 9.6	< 8.2 Q	< 10	< 10 Q	< 10	< 9.9	26 Q	42	< 9.9	**350 Q**	84	20 Q
	9/5/2006	26	< 5.6	110 Q	9.8 Q	31	21 Q	**20 Q**	**11 Q**	< 9.6 Q	18 Q	**24 Q**	< 9.4	74	35	< 9.4	*25 Q*	39 Q	*62*
	9/10/2007	99 Q	43 Q	170 Q	10	87 Q	30	**21**	**15 Q**	9.2	16 Q	**22**	2.7 Q	57 Q	61 Q	8.6	**680 Q**	160 Q	47 Q
GW04																			
	3/16/1992	--	--	470	960	140	1.9	**2.1**	**4**	1.7	0.82	**3.9**	0.7	46	*140*	0.51	**5900**	130	14
	12/17/1993	--	--	< 1	< 2	< 0.2	< 0.05	< 0.2	< 0.05	< 0.1	< 0.05	< 0.1	< 0.1	< 0.2	< 0.4	< 0.1	< 1	< 0.4	< 0.2
	5/30/2001	< 0.082	< 0.072	< 0.13	< 0.15	0.4	< 0.11	**0.75**	**1.4**	0.71	0.52	**3.1**	< 0.068	2.8	< 0.11	0.9	1.6	1.8	2
	8/13/2001	< 0.082	< 0.072	< 0.13	< 0.15	0.12	< 0.11	**0.29**	**0.39**	0.3	< 0.11	< 0.059	< 0.068	< 0.066	< 0.11	< 0.08	< 0.056	< 0.045	< 0.032
	3/8/2002	< 0.081	< 0.084	0.079 Q	0.13 Q	0.13 Q	0.54	**0.49**	**0.4**	0.3	0.35	**0.43**	0.11 Q	0.92	0.067 Q	0.28	0.17 Q	0.41	0.73
	9/16/2002	0.06 Q	0.068 Q	0.081	0.075	0.078	0.24	**0.21**	*0.15*	0.13	0.12	*0.16*	0.039 Q	0.33	0.053 Q	0.12	0.27	0.2	0.32
	3/20/2003	0.04 Q	0.034 Q	0.06	0.045 Q	0.052 Q	0.16	*0.16*	*0.14*	0.1	0.12	*0.15*	0.038 Q	0.29	0.027 Q	0.098	0.21	0.16	0.25
	9/25/2003	1.6	2.1 Q	0.48	< 0.076	< 0.08	< 0.048	< 0.056	< 0.052	< 0.064	< 0.076	< 0.056	< 0.064	0.076 Q	0.13 Q	< 0.084	*12 Q*	0.15 Q	0.081 Q
	4/21/2004	0.029 Q	< 0.016	0.032 Q	0.022 Q	0.022 Q	0.046	*0.049 Q*	*0.035 Q*	0.032 Q	0.033 Q	*0.04 Q*	< 0.015	0.074	< 0.016	0.026 Q	0.041 Q	0.052 Q	0.082
	8/23/2004	0.12 Q	< 0.091	0.11 Q	< 0.077	< 0.071	< 0.078	< 0.072	< 0.072	< 0.083	< 0.077	< 0.066	< 0.088	< 0.066	< 0.087	< 0.068	1.4 Q	< 0.082	< 0.065
	9/21/2005	0.11	0.074	0.08	0.15	0.13	0.46 Q	**0.39**	**0.33 Q**	0.27	0.29 Q	**0.33**	0.099	0.73 Q	0.049	0.25	1.2 Q	0.36	0.6 Q
	9/5/2006	0.042	0.061	0.066 Q	0.03	0.038 Q	0.11	*0.12 Q*	*0.1 Q*	0.079 Q	0.096 Q	*0.1*	< 0.019	0.23	0.03 Q	0.061 Q	1.4 Q	0.13 Q	0.18
	9/10/2007	0.011 Q	< 0.011	0.038	0.013 Q	0.022 Q	0.05 Q	*0.051 Q*	*0.12 Q*	0.038 Q	0.072 Q	*0.051 Q*	< 0.019	0.09	0.012 Q	0.028 Q	0.02 Q	0.053	0.085
GW05																			
	3/16/1992	--	--	0.39	< 2	< 0.5	< 0.01	< 0.02	< 0.45	< 0.07	< 0.43	< 0.05	< 0.025	< 0.53	< 0.1	< 0.04	< 2.5	< 0.2	< 0.05
	12/20/1993	--	--	< 1	< 2	< 0.2	< 0.05	< 0.2	< 0.05	< 0.1	< 0.05	< 0.1	< 0.1	< 0.2	< 0.4	< 0.1	< 1	< 0.4	< 0.2
	8/13/2001	< 0.082	< 0.072	< 0.13	< 0.15	0.19	< 0.11	**0.87**	**1.4**	0.69	< 0.11	**3.8**	< 0.068	2.8	0.18 Q	0.98	0.27	1.8	2.1
	9/16/2002									Monitoring Well Abandoned									
GW06																			
	3/17/1992	--	--	< 0.2	< 2	< 0.5	< 0.01	< 0.02	< 0.45	< 0.07	< 0.43	< 0.05	< 0.025	< 0.53	< 0.1	< 0.04	< 2.5	< 0.2	< 0.05
	12/16/1993	--	--	< 1	< 2	< 0.2	< 0.05	< 0.2	< 0.05	< 0.1	< 0.05	< 0.1	< 0.1	< 0.2	< 0.4	< 0.1	< 1	< 0.4	< 0.2
	2/28/2001	< 0.082	< 0.072	< 0.13	< 0.15	< 0.02	< 0.11	< 0.013	< 0.055	< 0.074	< 0.11	< 0.059	< 0.068	< 0.066	< 0.11	< 0.08	< 0.056	< 0.045	< 0.032
	9/25/2003	0.44 Q	0.51 Q	< 0.18	< 0.19	< 0.2	< 0.12	*0.17 Q*	**0.28 Q**	0.23 Q	< 0.19	**0.25 Q**	< 0.16	0.33 Q	< 0.17	< 0.21	2.8	0.21 Q	0.33 Q
	4/22/2004	0.093	0.042 Q	0.045 Q	< 0.018	< 0.019	0.028 Q	*0.066 Q*	*0.11 Q*	0.095 Q	0.082 Q	*0.081 Q*	0.019 Q	0.1	0.017 Q	0.073 Q	0.44	0.061	0.1
	9/21/2005									Monitoring Well Abandoned									

Sample ID	*Collection Date*	*1-Methyl naphthalene*	*2-Methyl naphthalene*	*Acenaphthene*	*Acenaph - thylene*	*Anthracene*	*Benz (a) anthracene*	*Benzo (a) pyrene*	*Benzo (b) fluoranthene*	*Benzo (ghi) perylene*	*Benzo (k) fluoranthene*	*Chrysene*	*Dibenz (a,h) anthracene*	*Fluoranthene*	*Fluorene*	*Indeno (1,2,3-cd) pyrene*	*Naphthalene*	*Phenanthrene*	*Pyrene*
Wisconsin Groundwater Quality Standards (NR 140, February 2004)																			
Preventive Action Limit		NS	NS	NS	NS	600	NS	0.02	0.02	NS	NS	0.02	NS	80	80	NS	10	NS	50
Enforcement Standard		NS	NS	NS	NS	3000	NS	0.2	0.2	NS	NS	0.2	NS	400	400	NS	100	NS	250
HP101																			
	12/3/1993	--	--	< 1	< 2	< 0.2	< 0.05	< 0.2	< 0.05	< 0.1	< 0.05	< 0.1	< 0.1	< 0.2	< 0.4	< 0.1	< 1	< 0.4	< 0.2
HP102																			
	12/12/1993	--	--	< 1	< 2	17	2.8	**1.8**	**1.2**	1.2	0.2	**2.1**	< 0.1	8.6	1.6	0.86	< 1	16	1.2
HP103																			
	12/9/1993	--	--	< 1	< 2	8.5	< 0.05	< 0.2	< 0.05	< 0.1	< 0.05	< 0.1	< 0.1	< 0.2	28	< 0.1	**900**	54	< 0.2
HP104																			
	12/9/1993	--	--	< 1	< 2	34	11	**10**	**1.1**	6.9	3.4	**13**	< 0.1	*80*	*170*	5.6	**2500**	210	12
HP105																			
	12/9/1993	--	--	< 1	< 2	0.74	1.1	**0.4**	< 0.05	< 0.1	< 0.05	**0.42**	< 0.1	1.3	1.8	< 0.1	*21*	2.6	< 0.2
MW101																			
	12/29/1993	--	--	< 160	< 320	*2700*	2400	**930**	**280**	380	280	**980**	--	**8500**	**4300**	320	**34000**	10000	**1500**
	3/7/2002	17000	22000	8900	< 3500	**4000 Q**	< 2900	< 1800	< 2100	< 2300	< 2000	< 2700	< 2600	< 4200	**3900 Q**	< 2100	**41000**	12000	**5500 Q**
	9/16/2002									Monitoring Well Abandoned									
MW101R																			
	9/16/2002	850 Q	1000 Q	< 360 Q	46	< 400	34	**21**	**8.7**	7.5	12	**30**	< 1.7	< 560 Q	< 420 Q	5.9	**5100 Q**	< 380 Q	< 400 Q
	3/20/2003	4100	4600	2500	< 570	*1200 Q*	500 Q	< 420	< 390	< 480	< 570	**670 Q**	< 480	**1000 Q**	**1200 Q**	< 630	**11000**	3300	**1500**
	9/25/2003	1200 Q	1300 Q	500 Q	100	220	120	**73**	**28**	24 Q	39	**120**	< 8	*200*	*200*	20 Q	**5100 Q**	570 Q	**260 Q**
	4/22/2004	150 Q	61 Q	63 Q	23 Q	< 22	< 14	**6.5**	**3.2**	2.3	3	< 16 Q	0.73 Q	18 Q	25 Q	1.9	**270 Q**	54 Q	25 Q
	8/23/2004	570 Q	570 Q	290 Q	86	160	100	**72**	**33**	25 Q	42	**98**	< 11	*170*	*140*	18 Q	**2000 Q**	330 Q	*200 Q*
MW102																			
	12/16/1993	--	--	< 1	< 2	< 0.2	< 0.05	< 0.2	< 0.05	< 0.1	< 0.05	< 0.1	< 0.1	< 0.2	< 0.4	< 0.1	**3100**	1.4	< 0.2
	11/20/1997	3600	270	< 0.96	< 0.89	0.18	< 0.032	< 0.063	< 0.088	< 0.11	< 0.061	< 0.021	< 0.13	1.1	< 0.075	< 0.057	**510**	2	0.92
	11/18/1998	90	110	< 9.4	27	< 0.42	< 0.28	< 0.3	< 0.3	< 0.42	< 0.18	< 0.32	< 0.4	< 0.3	2.2	< 0.5	**1700**	3.5	< 0.34
	2/28/2001	163	163	< 0.13	< 0.15	< 0.02	< 0.11	< 0.013	< 0.055	< 0.074	< 0.11	< 0.059	< 0.068	< 0.066	< 0.11	< 0.08	**3620**	3.9	< 0.032
	5/30/2001	161	189	< 0.13	< 0.15	< 0.02	< 0.11	< 0.013	< 0.055	< 0.074	< 0.11	< 0.059	< 0.068	< 0.066	< 0.11	< 0.08	**3990**	< 0.045	< 0.032
	8/13/2001	176	204	< 0.13	< 0.15	< 0.02	< 0.11	< 0.013	< 0.055	< 0.074	< 0.11	< 0.059	< 0.068	< 0.066	< 0.11	< 0.08	**5220**	< 0.045	< 0.032
	3/8/2002	< 260 Q	< 270 Q	4.1	2.1	< 0.4	< 0.38	**0.32 Q**	**0.29 Q**	< 0.3	< 0.26	< 0.36	< 0.34	< 0.56	0.76 Q	< 0.28	**2300 Q**	1.2	0.58 Q
	9/16/2002	< 270 Q	< 280 Q	4.6 Q	< 2.3	< 2	< 1.9	< 1.2	< 1.4	< 1.5	< 1.3	< 1.8	< 1.7	< 2.8	< 2.1	< 1.4	**2800 Q**	< 1.9	< 2
	3/20/2003	89	96 Q	4.9 Q	< 3.8	< 4	< 2.4	< 2.8	< 2.6	< 3.2	< 3.8	< 2.8	< 3.2	< 2.6	< 3.4	< 4.2	**2300 Q**	< 3.2	< 3.4
	9/25/2003	52	60	< 3.6	< 3.8	< 4	< 2.4	< 2.8	< 2.6	< 3.2	< 3.8	< 2.8	< 3.2	< 2.6	< 3.4	< 4.2	**2100 Q**	< 3.2	< 3.4
	4/21/2004	7.7 Q	7.5 Q	2.4 Q	0.99 Q	< 0.75	< 0.45	< 0.53 Q	< 0.49	< 0.6	< 0.72	< 0.53 Q	< 0.6	< 0.49	< 0.64 Q	< 0.79	**190 Q**	0.67 Q	< 0.64
	8/23/2004	54	34	< 3.9	< 3.9	< 3.5	< 3.9	< 3.6	< 3.6	< 4.1	< 3.9	< 3.3	< 4.4	< 3.3	< 4.4	< 3.4	**1200 Q**	< 4.1	< 3.3
	9/21/2005	71	49	2.3 Q	< 1.6	< 2.3	< 3.1	< 3.7	< 3.1 Q	< 3.9	< 3.9 Q	< 3.8	< 3.8	< 3.1	< 1.8	< 3.8	**1600 Q**	< 2.3	< 2.9
	9/6/2006	27	12	< 1.6 Q	< 1.6	< 2.3	< 3.1	< 3.7 Q	< 3.1 Q	< 3.9 Q	< 3.9 Q	< 3.8	< 3.8	< 3.1	< 1.8	< 3.8	**610 Q**	< 2.3 Q	< 2.9
	9/10/2007	44 Q	15	1.4 Q	1.1 Q	< 1.2	< 1.6	< 1.8	< 1.6 Q	< 1.9	< 1.9 Q	< 1.9	< 1.9	< 1.5	< 0.91	< 1.9	**780 Q**	1.5 Q	< 1.5

Sample ID	*Collection Date*	*1-Methyl naphthalene*	*2-Methyl naphthalene*	*Acenaphthene*	*Acenaph - thylene*	*Anthracene*	*Benz (a) anthracene*	*Benzo (a) pyrene*	*Benzo (b) fluoranthene*	*Benzo (ghi) perylene*	*Benzo (k) fluoranthene*	*Chrysene*	*Dibenz (a,h) anthracene*	*Fluoranthene*	*Fluorene*	*Indeno (1,2,3-cd) pyrene*	*Naphthalene*	*Phenanthrene*	*Pyrene*
Wisconsin Groundwater Quality Standards (NR 140, February 2004)																			
Preventive Action Limit		NS	NS	NS	NS	600	NS	0.02	0.02	NS	NS	0.02	NS	80	80	NS	10	NS	50
Enforcement Standard		NS	NS	NS	NS	3000	NS	0.2	0.2	NS	NS	0.2	NS	400	400	NS	100	NS	250
MW103																			
	12/21/1993	--	--	< 1	< 2	< 0.2	< 0.05	< 0.2	< 0.05	< 0.1	< 0.05	< 0.1	< 0.1	< 0.2	< 0.4	< 0.1	< 1	< 0.4	< 0.2
	11/20/1997	< 0.58	< 0.65	< 0.96	< 0.89	< 0.02	< 0.032	< 0.063	< 0.088	< 0.11	< 0.061	< 0.021	< 0.13	< 0.06	< 0.075	< 0.057	< 0.31	< 0.025	< 0.064
	11/18/1998	2.7	< 0.36	0.51	< 0.41	< 0.021	0.031	< 0.015	< 0.015	0.038	< 0.009	*0.04*	0.034	0.049	0.17	0.095	6.3	0.1	0.071
	2/28/2001	4.8	< 0.072	0.99	< 0.15	< 0.02	< 0.11	< 0.013	< 0.055	< 0.074	< 0.11	**0.76**	< 0.068	< 0.066	< 0.11	< 0.08	*10*	< 0.045	< 0.032
	5/30/2001	3.6	< 0.072	< 0.13	< 0.15	< 0.02	< 0.11	< 0.013	< 0.055	< 0.074	< 0.11	< 0.059	< 0.068	< 0.066	< 0.11	< 0.08	6.5	< 0.045	0.28
	3/8/2002	4.7 Q	0.29	< 0.9 Q	0.057 Q	0.038 Q	0.2	*0.17*	*0.11*	0.12	0.12	*0.17*	0.035 Q	0.19	0.086	0.09	*14 Q*	0.1	0.26
	9/16/2002	0.57	< 0.056 Q	0.34	0.066 Q	0.054 Q	0.18	*0.17*	*0.12*	0.13	0.11	*0.17*	< 0.034	0.2	0.069 Q	0.095	0.58 Q	0.13	0.29
	9/25/2003	0.9	< 0.068	0.27	< 0.076	< 0.08	0.11 Q	*0.091 Q*	*0.062 Q*	0.067	< 0.076	*0.12 Q*	< 0.064	0.14 Q	< 0.068	< 0.084	0.72	0.097 Q	0.91
	4/22/2004	0.15 Q	< 0.08	0.097 Q	< 0.09	< 0.094	0.15 Q	*0.16 Q*	*0.1 Q*	0.11 Q	0.11 Q	*0.17 Q*	< 0.075	0.2 Q	< 0.08	< 0.099 Q	1.2	0.15 Q	0.26 Q
	8/23/2004	0.079 Q	0.092 Q	0.07 Q	< 0.039	< 0.035	< 0.039	< 0.036	< 0.036	< 0.041	< 0.039	< 0.033	< 0.044	< 0.033	< 0.044	< 0.034	0.67 Q	< 0.041	< 0.033
	9/21/2005	0.052	0.028 Q	0.03	0.023 Q	0.023 Q	0.044 Q	*0.035 Q*	*0.029 Q*	0.027 Q	0.024 Q	*0.036 Q*	< 0.019	0.046 Q	0.022 Q	0.023 Q	0.31	0.056	0.054
	9/6/2006	0.033 Q	0.024 Q	0.039 Q	0.014 Q	0.014 Q	0.03 Q	*0.039 Q*	*0.026 Q*	0.028 Q	0.031 Q	*0.034 Q*	< 0.019	0.052	0.018 Q	0.019 Q	0.4 Q	0.04 Q	0.051
	9/10/2007	0.028 Q	0.012 Q	0.028	0.056	0.048	0.16	*0.17*	*0.15*	0.12	0.11	*0.16*	0.033 Q	0.21	0.026 Q	0.096	0.037 Q	0.099	0.25
MW104																			
	12/28/1993	--	--	< 1	< 2	9.9	2.3	**1.3**	**1.3**	1.2	0.53	**1.4**	< 0.1	16	31	1.1	*83*	48	5.6
	11/20/1997	30	10	< 0.99	< 0.92	3.6	2.3	**1.7**	**0.62**	1.1	1.1	**1.2**	< 0.13	12	7.8	0.87	*12*	11	7.2
	11/18/1998	35	< 7.2	19	16	4.7	1.4	**1.4**	**1.3**	1.1	0.69	**1.3**	1.3	7.4	12	3.4	*15*	24	5.5
	2/28/2001	8	10	14	5.1	6.5	4.1	**0.93**	**0.39**	1.1	1.8	**0.44**	< 0.068	15	9.7	1.3	0.91	13	11
	5/30/2001	15	< 0.072	25	< 0.15	10	7	*0.19*	**1.1**	1.4	0.46	**4**	< 0.068	20	20	1.9	2	28	14
	8/13/2001	15	< 0.72	35	10	27	41	**5.9**	**6.6**	3.9	5	**7.1**	< 0.068	57	25	5.4	6.7	73	37
	3/8/2002	11 Q	< 5.6	16	12 Q	12 Q	13	**13**	**9.2**	6.2 Q	8.9	**10 Q**	< 3.4	40	16	6.7 Q	< 5.4	38	27
	9/16/2002	27 Q	< 0.56	35 Q	21 Q	12 Q	11 Q	**8.6**	**5.9**	4.1	6.1	**7**	0.71 Q	40 Q	29 Q	4.2	5.3 Q	46 Q	27 Q
	3/20/2003	33	< 1.7	39	20	5.5 Q	7.2	**6.7**	**4.5**	3.5 Q	5.2 Q	**6**	< 1.6	27	28	3.5 Q	9.7	23	18
	9/25/2003	24	< 3.4	44	21	7.7 Q	8.4	**5.9 Q**	**3.9 Q**	3.4 Q	5.3 Q	**7.9 Q**	< 3.2	29	29	< 4.2	< 4.8	9.9 Q	24
	4/21/2004	3.4 Q	< 0.32	4.4 Q	4.8 Q	1.1 Q	1.7	**3.88 Q**	**2**	2.2	1.6	**1.3 Q**	0.62 Q	4	1.8	2	5.4	0.91 Q	2.9
	8/23/2004	19	3.1 Q	27	14	7.3	6.9	**6 Q**	**4.6 Q**	3.5 Q	5.3 Q	**6.2**	< 2.2	28	13	3 Q	*57 Q*	25	23
	9/21/2005	2.1 Q	< 1.1	19	15	4.3	14	**12**	**9 Q**	6.1 Q	9.2 Q	**11**	< 1.9	45	10	6 Q	< 4.7	10	29
	9/5/2006	< 1	< 1.1	4.2 Q	18	4.9	33	**33 Q**	**23 Q**	16 Q	25 Q	**25**	3.9 Q	60 Q	1.4 Q	14	1.4 Q	3.6 Q	44
	9/10/2007	0.47 Q	< 0.24	3.3	18 Q	3.8	23 Q	**25 Q**	**16 Q**	13 Q	21 Q	**21 Q**	4.6	41 Q	1.3	12 Q	0.67 Q	1.7	33 Q
MW106																			
	11/19/1998	130	160	45	43	< 4.2	1.2	**0.89**	**0.83**	0.62	0.32	**1**	0.42	3.3	< 12	1.1	**710**	29	4.2
	2/28/2001									Monitoring Well Abandoned									
MW108																			
	11/19/1998	< 0.36	< 0.36	< 0.47	< 0.41	< 0.021	0.018	< 0.015	< 0.015	0.025	< 0.009	< 0.016	0.022	0.05	< 0.058	< 0.025	< 0.42	0.32	0.059
	5/30/2001	< 0.082	< 0.072	< 0.13	< 0.15	< 0.02	< 0.11	< 0.013	< 0.055	< 0.074	< 0.11	< 0.059	< 0.068	< 0.066	< 0.11	< 0.08	< 0.056	< 0.045	< 0.032
	8/13/2001	< 0.082	< 0.072	< 0.13	< 0.15	0.09	0.73	**1.1**	**0.41**	0.26	0.94	**0.57**	< 0.068	0.81	< 0.11	0.31	0.15 Q	0.41	0.74
	3/12/2002	0.041 Q	0.049 Q	0.019 Q	< 0.023	< 0.02	0.058 Q	*0.065*	*0.056*	0.05	0.054	*0.061*	< 0.017	0.1	< 0.021	0.042 Q	0.11	0.041 Q	0.092
	9/16/2002									Monitoring Well Abandoned									

Sample ID	*Collection Date*	*1-Methyl naphthalene*	*2-Methyl naphthalene*	*Acenaphthene*	*Acenaph - thylene*	*Anthracene*	*Benz (a) anthracene*	*Benzo (a) pyrene*	*Benzo (b) fluoranthene*	*Benzo (ghi) perylene*	*Benzo (k) fluoranthene*	*Chrysene*	*Dibenz (a,h) anthracene*	*Fluoranthene*	*Fluorene*	*Indeno (1,2,3-cd) pyrene*	*Naphthalene*	*Phenanthrene*	*Pyrene*
Wisconsin Groundwater Quality Standards (NR 140, February 2004)																			
Preventive Action Limit		NS	NS	NS	NS	600	NS	0.02	0.02	NS	NS	0.02	NS	80	80	NS	10	NS	50
Enforcement Standard		NS	NS	NS	NS	3000	NS	0.2	0.2	NS	NS	0.2	NS	400	400	NS	100	NS	250
MW108R																			
	9/16/2002	0.15 Q	0.12 Q	0.14 Q	0.25	0.23	0.64	**0.59**	**0.35**	0.36	0.28	**0.43**	0.09 Q	0.71	0.12 Q	0.28	0.17 Q	0.46	0.85
	3/20/2003	0.2	0.15	0.12	0.14	0.15	0.39	**0.45**	**0.3**	0.32	0.3	**0.37**	0.1	0.57 Q	0.067	0.25	0.62 Q	0.43	0.62 Q
	9/25/2003	0.44	0.29	0.25	0.1 Q	0.084	0.19	*0.18*	*0.1*	0.12	0.11 Q	*0.18*	0.039 Q	0.24	0.11 Q	0.094 Q	0.53	0.24	0.3
	4/22/2004	0.062	0.049 Q	0.058	0.092	0.1	0.25	**0.28 Q**	*0.17 Q*	0.18 Q	0.16 Q	**0.24 Q**	0.059 Q	0.3	0.045 Q	0.13 Q	0.096	0.25	0.45
	3/7/2006	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW109																			
	2/28/2001	78	40	38	< 0.15	17	21	**7.6**	**4**	4.7	3	**9.3**	< 0.068	26	29	4.5	**329**	44	27
	5/30/2001	1020	576	795	< 0.75	464	< 0.57	**4.6**	**52**	43	< 0.57	**352**	< 0.34	**581**	**497**	46	**2490**	1170	**833**
	8/13/2001	211	126	107	43	15	< 0.11	< 0.013	< 0.055	5.7	< 0.11	< 0.059	< 0.068	11	37	9.8	**1020**	47	21
	3/8/2002	460 Q	< 280	< 180	< 230	< 200	< 190	< 120	< 140	< 150	< 130	< 180	< 170	< 280	< 210	< 140	**2600**	< 190	< 200
	9/16/2002	Monitoring Well Abandoned																	
MW109R																			
	9/16/2002	580 Q	430 Q	200 Q	< 180	< 160	< 150	< 96	< 110	< 120	< 100	< 140	< 140	< 220	< 170	< 110	**3500**	< 150	< 160
	3/20/2003	690 Q	410 Q	260 Q	52	67	27	**23**	**9.5 Q**	8.3 Q	13 Q	**34**	< 8	52	*110*	< 10	**3400 Q**	210	*85*
	9/25/2003	300 Q	170	110	21 Q	19 Q	6.2 Q	< 7	< 6.5	< 8	< 9.5	**7.9 Q**	< 8	11 Q	42	< 10	**1600 Q**	59	19 Q
	4/22/2004	120 Q	46 Q	47 Q	< 23 Q	< 24 Q	< 14 Q	< 17 Q	**6.1**	5.3	5.4	< 17 Q	1.9	< 16 Q	< 20 Q	4.5	**370 Q**	32 Q	< 20 Q
	8/23/2004	390 Q	160	110	18 Q	14 Q	< 9.8	< 9.1	< 8.9	< 10	< 9.7	< 8.2	< 11	< 8.2	32 Q	< 8.5	**2100 Q**	44	13 Q
	9/21/2005	220 Q	120	86	13 Q	11 Q	< 7.8	< 9.2	< 7.8 Q	< 9.6	< 9.7 Q	< 9.5	< 9.4	8.4 Q	28	< 9.4	**1300 Q**	36	12 Q
	9/5/2006	530 Q	150	230 Q	27	27	< 7.8	< 9.2 Q	< 7.8 Q	< 9.6 Q	< 9.7 Q	< 9.5	< 9.4	14 Q	72	< 9.4	**2800 Q**	95 Q	21 Q
	9/10/2007	89 Q	< 11 Q	47 Q	8.6	8.9	4.9	**8.3**	**6.1 Q**	5.1	3.8 Q	**4.6**	1.4	7.2	< 9.1 Q	4	**270 Q**	21 Q	< 15 Q
MW110																			
	11/13/2001	< 0.25	< 0.22	< 0.4	< 0.46	< 0.06	< 0.34	< 0.04	< 0.17	< 0.22	< 0.34	< 0.18	< 0.21	< 0.2	< 0.34	< 0.24	< 0.17	< 0.14	< 0.097
	3/7/2002	< 0.22	< 0.22	< 0.14	< 0.18	0.2 Q	0.79	**0.79**	**0.76**	0.57	0.61	**0.77**	0.17 Q	2.1	< 0.17	0.48	0.69 Q	0.57	1.6
	9/16/2002	0.41 Q	0.36 Q	< 0.18	< 0.23	0.2 Q	0.84	**0.88**	**0.72**	0.55	0.52	**0.72**	< 0.17	1.7	< 0.21	0.49	2.8	0.47 Q	1.5
	3/20/2003	0.082	0.092	0.067	0.089	0.12	0.49	**0.59 Q**	**0.46 Q**	0.39	0.39	**0.5**	0.12	1.1 Q	0.066	0.36	0.22	0.3	0.98 Q
	9/25/2003	< 0.09	< 0.085	< 0.09	0.12 Q	0.13 Q	0.75 Q	**0.71 Q**	**0.58 Q**	0.5 Q	0.55 Q	**0.7 Q**	0.14 Q	1.3 Q	< 0.085	0.41 Q	0.2 Q	0.35 Q	1.2 Q
	4/22/2004	0.095	0.063	0.086	0.05 Q	0.068	0.18	**0.22 Q**	*0.18 Q*	0.15 Q	0.16 Q	**0.21 Q**	0.043 Q	0.36	0.038 Q	0.12 Q	0.67 Q	0.17	0.37
	8/23/2004	0.13	0.13	0.095	< 0.019	0.018 Q	0.038 Q	*0.034 Q*	*0.026 Q*	0.024 Q	0.029 Q	*0.034 Q*	< 0.022	0.11	0.031 Q	0.019 Q	0.78 Q	0.042 Q	0.13
	9/21/2005	0.036	0.074	0.12	0.11	0.13	0.48 Q	**0.48 Q**	**0.46 Q**	0.41	0.41 Q	**0.41**	0.12	0.93 Q	0.036	0.36	0.2	0.3	0.86 Q
	9/6/2006	< 0.2	< 0.22	0.25 Q	0.25 Q	0.39 Q	1.5	**2 Q**	**1.4 Q**	1.5 Q	1.7 Q	**1.7**	< 0.38	3.5	< 0.18	1.1 Q	0.62 Q	1.2 Q	3.1
	9/11/2007	0.022 Q	0.034 Q	0.075	0.1	0.14	0.52 Q	**0.63 Q**	**0.64 Q**	0.49 Q	0.46 Q	**0.55 Q**	0.12	1.2 Q	0.041	0.41	0.14	0.33	0.98 Q

Sample ID	*Collection Date*	*1-Methyl naphthalene*	*2-Methyl naphthalene*	*Acenaphthene*	*Acenaph - thylene*	*Anthracene*	*Benz (a) anthracene*	*Benzo (a) pyrene*	*Benzo (b) fluoranthene*	*Benzo (ghi) perylene*	*Benzo (k) fluoranthene*	*Chrysene*	*Dibenz (a,h) anthracene*	*Fluoranthene*	*Fluorene*	*Indeno (1,2,3-cd) pyrene*	*Naphthalene*	*Phenanthrene*	*Pyrene*
Wisconsin Groundwater Quality Standards (NR 140, February 2004)																			
Preventive Action Limit		NS	NS	NS	NS	600	NS	0.02	0.02	NS	NS	0.02	NS	80	80	NS	10	NS	50
Enforcement Standard		NS	NS	NS	NS	3000	NS	0.2	0.2	NS	NS	0.2	NS	400	400	NS	100	NS	250
OW01																			
	5/14/1985	--	--	< 1	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	1	< 1	< 10	< 1	6	2
	2/4/1992	--	--	71	71	2.1	0.45	< 0.82	**0.52**	nd	0.9	**1.2**	< 0.7	7.5	21	2.1	4.5	7.6	5.1
	12/15/1993	--	--	< 1	< 2	1.6	0.46	< 0.2	< 0.05	< 0.1	< 0.05	*0.1*	< 0.1	2	17	< 0.1	*14*	5	< 0.2
	11/20/1997	6.9	1.6	< 0.96	< 0.89	0.3	0.1	< 0.063	< 0.088	< 0.11	< 0.061	< 0.021	< 0.13	1.4	1.9	< 0.057	< 0.31	0.81	0.66
	11/18/1998	34	< 7.2	15	< 8.2	< 0.42	< 0.28	< 0.3	< 0.3	< 0.42	< 0.18	< 0.32	< 0.4	0.36	4.3	< 0.5	< 8.4	8.3	0.72
	2/28/2001	5.8	< 0.072	8.6	< 0.15	1.1	< 0.11	< 0.013	< 0.055	< 0.074	< 0.11	< 0.059	< 0.068	< 0.066	3.4	< 0.08	0.33	< 0.045	1.3
	5/30/2001	< 0.083	< 0.072	0.5	< 0.15	0.12	< 0.11	< 0.013	< 0.055	< 0.074	< 0.11	< 0.06	< 0.069	< 0.067	< 0.11	< 0.081	< 0.056	< 0.046	< 0.032
	3/7/2002	2.5	2.5	2.3	< 0.23	< 0.2	< 0.19	< 0.12	< 0.14	< 0.15	< 0.13	< 0.18	< 0.17	< 0.28	0.96	< 0.14	< 0.27	0.35 Q	0.27 Q
	9/16/2002	0.25	< 0.056	0.44	0.098 Q	0.11 Q	0.13	*0.1*	*0.1*	0.092 Q	0.094	*0.13*	0.034 Q	0.17 Q	0.26	0.068 Q	0.44 Q	0.19	0.34
	9/29/2003	0.031 Q	0.029 Q	0.05 Q	0.047 Q	0.034 Q	0.081	*0.074*	*0.066*	0.066	0.049 Q	*0.077 Q*	0.028 Q	0.082	0.025 Q	0.063 Q	0.064 Q	0.095	0.14
	8/23/2004	0.56	< 0.1	0.74	< 0.088	0.084 Q	< 0.089	< 0.083	< 0.082	< 0.094	< 0.088	< 0.075	< 0.1	0.12 Q	0.18 Q	< 0.078	1.2	0.12 Q	0.19 Q
	9/21/2005	0.1	0.096 Q	0.21	0.18	0.15	0.74	**0.73**	**0.65 Q**	0.61	0.52 Q	**0.56**	0.18 Q	0.94	0.06 Q	0.51	0.32 Q	0.48	1
	9/5/2006	0.24	0.1 Q	2.6 Q	0.13	0.16 Q	0.17 Q	*0.17 Q*	*0.1 Q*	0.12 Q	0.14 Q	**0.28 Q**	< 0.091	0.56	0.63	< 0.091	0.32 Q	0.18 Q	1.5
	9/10/2007	0.65	< 0.12	2.4	0.13 Q	0.13 Q	< 0.17	< 0.2	< 0.17	< 0.21	< 0.21	< 0.2	< 0.2	0.18 Q	0.62	< 0.2	0.29 Q	< 0.12	0.43 Q
OW02																			
	5/14/1985	--	--	< 1	11	10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	18	< 1	< 10	**5500**	40	20
	2/4/1992	Monitoring Well Abandoned																	
OW03																			
	5/14/1985	--	--	< 1	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 1	< 1	< 10	*72*	17	< 1
	2/4/1992	--	--	< 0.52	< 1.4	< 0.062	< 0.44	< 0.82	< 0.19	< 0.82	< 0.76	< 0.19	< 0.7	18	< 0.062	< 0.38	4	< 0.19	< 0.72
	12/14/1993	--	--	< 1	< 2	< 0.2	< 0.05	< 0.2	< 0.05	< 0.1	< 0.05	< 0.1	< 0.1	< 0.2	< 0.4	< 0.1	< 1	< 0.4	< 0.2
	11/20/1997	< 0.61	< 0.68	< 1	< 0.93	0.14	0.5	**0.67**	**0.35**	0.82	0.35	**0.38**	< 0.14	1	0.1	0.54	< 0.33	0.25	0.81
	11/18/1998	< 0.36	< 0.36	0.52	< 0.41	< 0.021	0.015	*0.025*	*0.026*	0.032	0.013	0.017	< 0.02	0.092	0.23	0.079	< 0.42	0.05	0.078
	2/28/2001	< 0.082	< 0.072	< 0.13	< 0.15	0.31	< 0.11	**0.34**	**0.4**	0.61	3.4	< 0.059	< 0.068	1.4	< 0.11	0.38	0.33	< 0.045	0.75
	5/30/2001	0.29	0.25	< 0.13	< 0.15	0.08	< 0.11	< 0.013	< 0.055	< 0.074	< 0.11	< 0.059	< 0.068	< 0.066	< 0.11	< 0.08	1.3	< 0.045	< 0.032
	8/13/2001	< 0.084	< 0.073	< 0.13	< 0.15	< 0.02	< 0.12	< 0.013	< 0.056	< 0.075	< 0.12	< 0.061	< 0.069	< 0.067	< 0.12	< 0.068	< 0.057	< 0.046	< 0.033
	3/8/2002	< 0.054	< 0.056	0.34 Q	0.13 Q	0.11	0.28	**0.28**	**0.23**	0.2	0.19	*0.17*	0.072 Q	0.54	0.28	0.18	< 0.054	0.078 Q	0.55
	9/16/2002	Monitoring Well Abandoned																	
OW03R																			
	9/16/2002	26 Q	11 Q	14 Q	5.7	2.7	1.4	**1.1**	**0.54 Q**	0.5 Q	0.57 Q	**1.3**	< 0.34	2.6	7.9	0.38 Q	5.9 Q	7.9	3.3
	3/20/2003	26	17	13	2.4 Q	2.4 Q	< 1.2	< 1.4	< 1.3	< 1.6	< 1.9	**1.4**	< 1.6	1.7 Q	6.1	< 2.1	*45*	9.2	2.3 Q
	9/25/2003	24	1.9 Q	9.9	3.5 Q	2.5 Q	< 1.2	< 1.4	< 1.3	< 1.6	< 1.9	< 1.4	< 1.6	< 1.3	5.8	< 2.1	*14*	7.3	1.8 Q
	4/22/2004	14 Q	0.26 Q	6.6	2.8	2	2.4	**2.6**	**1**	0.85 Q	1.3	**2.2**	0.29 Q	2.3	4.2	0.71 Q	1.5	6.6	3.4
	8/23/2004	5.5	< 0.45	2.8	1.1 Q	0.96 Q	< 0.39	< 0.36	< 0.36	< 0.41	< 0.39	**0.35 Q**	< 0.44	0.61 Q	1.7	< 0.34	2.7 Q	3.2	0.79 Q
	9/21/2005	26 Q	0.28 Q	13 Q	4.4	3.5	3.5	**3.2**	**1.7 Q**	1.3	1.7 Q	**2.7**	0.52 Q	3.7	8	1.1 Q	2.3 Q	12 Q	4.9
	9/5/2006	12 Q	0.69 Q	12 Q	4.3	2.3	3.4	**3.5 Q**	**1.4 Q**	1.2 Q	1.9 Q	**2.8**	< 0.38	3.8	< 0.18	0.88 Q	6.8 Q	4.7 Q	4.6
	9/10/2007	12 Q	0.4 Q	17 Q	6	4.2	6.7	**6.5**	**3.6 Q**	2.6	3.1 Q	**5.7**	0.73 Q	6.8	9.3 Q	2.1	1.8	6.1	9.3

Sample ID	*Collection Date*	*1-Methyl naphthalene*	*2-Methyl naphthalene*	*Acenaphthene*	*Acenaph - thylene*	*Anthracene*	*Benz (a) anthracene*	*Benzo (a) pyrene*	*Benzo (b) fluoranthene*	*Benzo (ghi) perylene*	*Benzo (k) fluoranthene*	*Chrysene*	*Dibenz (a,h) anthracene*	*Fluoranthene*	*Fluorene*	*Indeno (1,2,3-cd) pyrene*	*Naphthalene*	*Phenanthrene*	*Pyrene*
Wisconsin Groundwater Quality Standards (NR 140, February 2004)																			
Preventive Action Limit		NS	NS	NS	NS	600	NS	0.02	0.02	NS	NS	0.02	NS	80	80	NS	10	NS	50
Enforcement Standard		NS	NS	NS	NS	3000	NS	0.2	0.2	NS	NS	0.2	NS	400	400	NS	100	NS	250
OW04																			
	5/14/1985	--	--	< 1	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 1	< 1	< 10	< 1	< 1	< 1
	2/4/1992	--	--	< 0.56	< 1.4	< 0.062	8.7	< 0.82	< 0.19	< 0.82	6.7	< 0.19	< 0.7	< 0.19	< 0.062	< 0.38	5.4	< 0.19	< 0.76
	12/28/1993	--	--	< 1	< 2	< 0.2	0.62	**0.45**	**0.46**	0.17	0.15	**0.41**	< 0.1	1.1	< 0.4	0.41	< 1	0.88	0.47
	11/20/1997	< 0.64	< 0.72	< 1.1	< 0.98	0.08	0.31	**0.34**	**0.21**	0.77	0.46	**0.3**	< 0.14	1.2	< 0.082	0.44	< 0.34	0.21	1.3
	11/18/1998	< 0.36	< 0.36	< 0.47	< 0.41	0.097	< 0.014	**0.33**	*0.08*	0.29	0.025	**0.23**	0.28	0.34	< 0.058	0.15	< 0.42	0.12	0.39
	2/28/2001	0.4	0.46	0.26	< 0.16	0.83	< 0.12	**3.1**	**2.8**	2.6	0.55	**3.3**	< 0.071	6.5	1.2	2.7	2.9	2.6	5.4
	5/30/2001	< 0.082	< 0.072	< 0.13	< 0.15	< 0.02	0.63	**0.5**	**0.22**	0.19 Q	< 0.11	**0.24**	< 0.068	0.41	< 0.11	0.2 Q	< 0.056	< 0.045	0.41
	3/8/2002	2.2 Q	3.1 Q	0.7 Q	0.33	0.23	1 Q	**1.2 Q**	**0.84 Q**	0.77 Q	0.92 Q	**0.95 Q**	0.22	1.3 Q	0.16	0.72 Q	*10 Q*	0.7 Q	1.4 Q
	9/16/2002	0.14 Q	0.16 Q	0.2	0.28	0.2 Q	0.64	**0.7**	**0.52**	0.49	0.51	**0.56**	0.17 Q	0.94	0.093 Q	0.4	0.54 Q	0.41	1
	9/25/2003	< 0.18	< 0.17	0.34 Q	0.74	0.46 Q	1.8	**1.9**	**1.3**	1.2	1.4	**1.8**	0.33 Q	2.7	< 0.17	1	0.74 Q	0.86	3.1
	4/22/2004	0.19	0.094	0.31	0.1	0.097	0.17	**0.23 Q**	*0.17 Q*	0.13 Q	0.16 Q	*0.19 Q*	0.046 Q	0.29	0.12	0.12 Q	0.047 Q	0.14	0.35
	8/23/2004	0.23 Q	0.24 Q	0.26 Q	0.25 Q	0.18 Q	0.53	**0.6**	**0.43**	0.39	0.43	**0.45**	0.11 Q	0.7	< 0.11	0.32	0.94 Q	0.31 Q	0.88
P02																			
	3/16/1992	--	--	< 0.2	< 2	8.1	< 0.01	**0.24**	**2.6**	< 0.07	0.53	< 0.05	0.28	15	8.1	< 0.04	**300**	17	0.37
	12/21/1993	--	--	< 1	< 2	4.1	0.49	< 0.2	*0.05*	< 0.1	< 0.05	**0.24**	< 0.1	6.7	3.8	< 0.1	*28*	20	2.3
	2/28/2001	0.47	< 0.072	1.8	< 0.15	0.52	0.55	< 0.013	**0.25**	0.1 Q	< 0.11	**0.23**	< 0.068	1.8	1	< 0.08	3.1	1.3	0.99
	5/30/2001	0.29	< 0.072	1.2	< 0.15	0.42	0.19 Q	**0.34**	**0.49**	0.28	0.16 Q	**0.38**	< 0.068	1.8	< 0.11	0.32	0.5	0.57	1.2
	8/13/2001	0.41	< 0.072	1.7	< 0.15	0.5	0.49	**0.26**	**0.37**	0.21 Q	< 0.11	**0.31**	< 0.068	1.9	0.49	0.16 Q	1.1	0.57	1.4
	3/7/2002	0.39	0.18	1.1 Q	0.3	0.46	0.66 Q	**0.67 Q**	**0.46 Q**	0.39	0.5 Q	**0.5 Q**	0.15	1.7 Q	0.35	0.4	1.2 Q	0.68 Q	1 Q
	9/16/2002	1.2 Q	0.66 Q	3	0.88 Q	3.2	2.6	**2.2**	**1.4**	1.1	1.2	**1.6**	0.38 Q	6	2	1.1	2.4	5.3	4.1
	9/25/2003	0.83	0.61	1.2	0.23 Q	0.69	0.56	**0.44**	**0.33 Q**	0.25 Q	0.31 Q	**0.43**	< 0.13	1.4	0.54	0.22 Q	2.6	1	1.1
	4/22/2004	1.2 Q	1.1 Q	2.7 Q	0.83 Q	3.7	2.6	**2.2 Q**	**1.3**	0.86 Q	1.2 Q	**1.6 Q**	0.31 Q	6.4	2.3	0.89 Q	3.4	7.3 Q	4.6
	8/23/2004	2.1	1.3 Q	2.2	0.39 Q	2.3	1.3 Q	**1.1 Q**	**0.76 Q**	0.68 Q	1.1 Q	**1.2**	< 0.44	3.5	1.4 Q	0.55 Q	*12 Q*	4.7	3
P02R																			
	9/5/2006	< 0.1	< 0.11	0.22 Q	0.34	0.28 Q	0.38 Q	**0.39 Q**	**0.22 Q**	< 0.19 Q	0.36 Q	**0.33 Q**	< 0.19	1.5	0.12 Q	< 0.19	0.28 Q	0.72 Q	2.8
P03																			
	3/16/1992	--	--	160	63	110	4	**4.2**	**14**	5.5	2.8	**6.5**	1.7	61	33	3.5	**820**	35	13
	12/14/1993	--	--	< 1	< 2	5.2	0.13	< 0.2	< 0.05	< 0.1	< 0.05	*0.13*	< 0.1	7.6	16	< 0.1	*52*	20	1.9
	11/20/1997									Monitoring Well Abandoned									

Sample ID	*Collection Date*	*1-Methyl naphthalene*	*2-Methyl naphthalene*	*Acenaphthene*	*Acenaph - thylene*	*Anthracene*	*Benz (a) anthracene*	*Benzo (a) pyrene*	*Benzo (b) fluoranthene*	*Benzo (ghi) perylene*	*Benzo (k) fluoranthene*	*Chrysene*	*Dibenz (a,h) anthracene*	*Fluoranthene*	*Fluorene*	*Indeno (1,2,3-cd) pyrene*	*Naphthalene*	*Phenanthrene*	*Pyrene*
Wisconsin Groundwater Quality Standards (NR 140, February 2004)																			
Preventive Action Limit		NS	NS	NS	NS	600	NS	0.02	0.02	NS	NS	0.02	NS	80	80	NS	10	NS	50
Enforcement Standard		NS	NS	NS	NS	3000	NS	0.2	0.2	NS	NS	0.2	NS	400	400	NS	100	NS	250
P04																			
	3/16/1992	--	--	< 0.2	< 2	< 0.5	0.07	*0.11*	< 0.45	< 0.07	< 0.43	*0.15*	0.05	< 0.53	< 0.1	< 0.04	1	< 0.2	0.17
	12/16/1993	--	--	< 1	< 2	< 0.2	< 0.05	< 0.2	< 0.05	< 0.1	< 0.05	< 0.1	< 0.1	< 0.2	< 0.4	< 0.1	< 1	< 0.4	< 0.2
	2/28/2001	< 0.082	< 0.072	< 0.13	< 0.15	< 0.02	< 0.11	< 0.013	< 0.055	< 0.074	< 0.11	< 0.059	< 0.068	< 0.066	< 0.11	< 0.08	< 0.056	< 0.045	< 0.032
	5/30/2001	< 0.082	< 0.072	< 0.13	< 0.15	< 0.02	< 0.11	< 0.013	< 0.055	< 0.074	< 0.11	< 0.059	< 0.068	< 0.066	< 0.11	< 0.08	< 0.056	< 0.045	< 0.032
	3/8/2002	< 0.027	< 0.028	0.033 Q	< 0.023	< 0.02	< 0.012	< 0.012	< 0.014	< 0.015	< 0.013	< 0.018	< 0.017	< 0.028	< 0.021	< 0.014	0.12	< 0.019	< 0.02
	9/16/2002	0.029 Q	< 0.028	0.053 Q	< 0.023	< 0.02	< 0.019	< 0.012	< 0.014	< 0.015	< 0.013	< 0.018	< 0.017	0.028 Q	0.022 Q	< 0.014	0.083 Q	0.054 Q	0.026 Q
	3/20/2003	0.064	0.047 Q	0.11	0.027 Q	0.046 Q	0.086	*0.075*	*0.062*	0.039 Q	0.052 Q	*0.052 Q*	< 0.016	0.18	0.054	0.042 Q	0.3	0.2	0.14
	9/25/2003	0.088	0.053 Q	0.054 Q	< 0.019	< 0.02	< 0.012	< 0.014	< 0.013	0.017 Q	< 0.019	< 0.014	0.02 Q	0.017 Q	< 0.017	< 0.021	0.46	0.033 Q	0.017 Q
	4/21/2004	0.034 Q	< 0.016	0.036 Q	< 0.018	< 0.019	< 0.011	< 0.013	< 0.012	< 0.015	< 0.018	< 0.013	< 0.015	0.013 Q	< 0.016	< 0.02	0.037 Q	0.016 Q	< 0.016
	8/23/2004	0.031 Q	0.03 Q	0.025 Q	< 0.019	< 0.018	< 0.02	< 0.018	< 0.018	< 0.021	< 0.019	< 0.016	< 0.022	< 0.016	< 0.022	< 0.017	0.19 Q	< 0.02	< 0.016
P101																			
	12/16/1993	--	--	< 1	< 2	< 0.2	< 0.05	< 0.2	< 0.05	< 0.1	< 0.05	< 0.1	< 0.1	< 0.2	< 0.4	< 0.1	< 1	< 0.4	< 0.2
	11/20/1997	< 0.75	< 0.84	< 1.2	< 1.2	< 0.026	< 0.042	< 0.082	< 0.11	< 0.14	< 0.079	< 0.027	< 0.17	< 0.078	< 0.098	< 0.074	< 0.4	< 0.032	< 0.083
	11/18/1998	< 0.36	< 0.36	< 0.47	< 0.41	< 0.021	< 0.014	< 0.015	< 0.015	< 0.021	< 0.009	< 0.016	< 0.02	< 0.015	< 0.058	< 0.025	< 0.42	< 0.046	< 0.017
	2/28/2001	< 0.082	< 0.072	< 0.13	< 0.15	< 0.02	< 0.11	< 0.013	< 0.055	< 0.074	< 0.11	< 0.059	< 0.068	< 0.066	< 0.11	< 0.08	< 0.056	< 0.045	< 0.032
	5/30/2001	< 0.082	< 0.072	< 0.13	< 0.15	< 0.02	< 0.11	< 0.013	< 0.055	< 0.074	< 0.11	< 0.059	< 0.068	< 0.066	< 0.11	< 0.08	0.08 Q	< 0.045	< 0.032
	3/8/2002	0.04 Q	0.049 Q	0.027 Q	< 0.024	< 0.021	0.032 Q	*0.023 Q*	0.019 Q	0.075	0.014 Q	*0.069*	< 0.018	< 0.029	< 0.022	< 0.014	0.15	0.075	0.068
	9/16/2002	0.044 Q	0.049 Q	< 0.018	< 0.023	< 0.02	0.021 Q	< 0.012	< 0.014	< 0.015	< 0.013	< 0.018	< 0.017	< 0.028	< 0.021	< 0.014	0.86 Q	0.065	0.027 Q
	3/20/2003	0.046 Q	0.038 Q	< 0.036	< 0.038	< 0.04	< 0.024	< 0.028	< 0.026	< 0.032	< 0.038	< 0.028	< 0.032	< 0.026	< 0.034	< 0.042	0.43	0.048 Q	< 0.034
	9/25/2003	0.029 Q	0.023 Q	0.039 Q	< 0.019	< 0.02	< 0.012	< 0.014	< 0.013	0.017 Q	< 0.019	< 0.014	< 0.016	< 0.013	< 0.017	< 0.021	0.06 Q	0.026 Q	< 0.017
	4/29/2004	< 0.017	0.023 Q	< 0.017	< 0.018	< 0.019	< 0.011	< 0.013	< 0.012	< 0.015	< 0.018	< 0.013	< 0.015	< 0.012	< 0.016	< 0.02	0.061 Q	< 0.015	< 0.016
	8/23/2004	0.046 Q	< 0.045	< 0.039	< 0.039	< 0.035	< 0.039	< 0.036	< 0.036	< 0.041	< 0.039	< 0.033	< 0.044	< 0.033	< 0.044	< 0.034	0.55 Q	0.041 Q	< 0.033
P102																			
	12/14/1993	--	--	< 1	< 2	1.8	< 0.05	< 0.2	< 0.05	< 0.1	< 0.05	< 0.1	< 0.1	< 0.2	27	< 0.1	**2300**	21	< 0.2
	11/20/1997	< 0.63	< 0.7	< 1	< 0.96	< 0.022	< 0.035	< 0.068	< 0.095	< 0.12	< 0.066	< 0.023	< 0.14	< 0.065	< 0.081	< 0.062	< 0.33	< 0.027	< 0.069
	11/18/1998	5.2	3.7	4.2	< 0.41	0.089	< 0.014	< 0.015	*0.02*	< 0.021	< 0.009	*0.02*	< 0.02	0.025	0.73	0.031	6.9	0.73	0.026
	2/28/2001	290	349	197	< 0.15	1.1	< 0.11	< 0.013	< 0.055	< 0.074	< 0.11	< 0.059	< 0.068	< 0.066	28	< 0.08	**2510**	11	< 0.032
	5/30/2001	261	329	201	< 0.15	2.9	< 0.11	< 0.013	< 0.055	< 0.074	< 0.11	< 0.059	< 0.068	< 0.066	34	< 0.08	< 0.056	6.6	< 0.032
	8/13/2001	297	401	251	< 0.15	< 0.02	< 0.11	< 0.013	< 0.055	< 0.074	< 0.11	< 0.059	< 0.068	< 0.066	< 0.11	< 0.08	**2700**	< 0.045	< 0.032
	3/8/2002	240 Q	200 Q	150 Q	1.3 Q	1.4	< 0.38	< 0.24	< 0.28	< 0.3	< 0.26	< 0.36	< 0.34	< 0.56	25 Q	< 0.24	**120 Q**	13 Q	< 0.4
	9/16/2002									Monitoring Well Abandoned									
P102R																			
	9/16/2002	230 Q	270 Q	130 Q	1.6	0.95 Q	< 0.38	< 0.24	< 0.28	< 0.3	< 0.26	< 0.36	< 0.34	< 0.56	< 84 Q	< 0.28	**1700 Q**	7.6	< 0.4
	3/20/2003	160 Q	140 Q	82 Q	1.3	0.44 Q	< 0.24	< 0.28	< 0.26	< 0.32	< 0.38	< 0.28	< 0.32	< 0.26	< 14 Q	< 0.42	**390 Q**	3.3	< 0.34
	10/14/2003	96 Q	89 Q	< 36 Q	0.68 Q	< 0.4	< 0.24	< 0.28	< 0.26	< 0.32 Q	< 0.38	< 0.28	< 0.32 Q	< 0.26	7.3	< 0.42 Q	**290 Q**	2.2	< 0.34
	4/22/2004	200 Q	200 Q	92 Q	1.3 Q	0.38 Q	< 0.17	< 0.2	< 0.18	< 0.23 Q	< 0.27	< 0.2	< 0.23	< 0.18	< 30	< 0.3	**710 Q**	3.2	< 0.24
	8/23/2004	77 Q	68 Q	49 Q	< 1.9	< 1.8	< 2	< 1.8	< 1.8	< 2.1	< 1.9	< 1.6	< 2.2	< 1.6	7.6	< 1.7	**500 Q**	3.5 Q	< 1.6

Sample ID	Collection Date	1-Methyl naphthalene	2-Methyl naphthalene	Acenaphthene	Acenaph - thylene	Anthracene	Benz (a) anthracene	Benzo (a) pyrene	Benzo (b) fluoranthene	Benzo (ghi) perylene	Benzo (k) fluoranthene	Chrysene	Dibenz (a,h) anthracene	Fluoranthene	Fluorene	Indeno (1,2,3-cd) pyrene	Naphthalene	Phenanthrene	Pyrene
Wisconsin Groundwater Quality Standards (NR 140, February 2004)																			
Preventive Action Limit		NS	NS	NS	NS	600	NS	0.02	0.02	NS	NS	0.02	NS	80	80	NS	10	NS	50
Enforcement Standard		NS	NS	NS	NS	3000	NS	0.2	0.2	NS	NS	0.2	NS	400	400	NS	100	NS	250
P103																			
	12/14/1993	--	--	< 1	< 2	< 0.2	< 0.05	< 0.2	< 0.05	< 0.1	< 0.05	< 0.1	< 0.01	< 0.2	0.97	< 0.01	< 1	0.74	< 0.2
	11/20/1997	< 0.61	< 0.68	< 1	< 0.93	< 0.021	0.069	*0.11*	< 0.092	< 0.12	0.14	*0.088*	< 0.14	0.24	< 0.079	< 0.06	< 0.33	0.071	0.15
	11/18/1998	3.1	< 0.36	1.7	< 0.41	0.027	0.024	< 0.015	*0.028*	0.022	< 0.009	*0.024*	< 0.02	0.049	0.26	< 0.025	0.52	0.14	0.037
	5/30/2001	11	< 0.072	5.2	< 0.15	0.07	< 0.11	< 0.013	< 0.055	< 0.074	< 0.11	< 0.06	< 0.069	< 0.067	0.85	< 0.081	1.4	0.18	< 0.032
	8/13/2001	8.6	< 0.072	5	< 0.15	0.06 Q	< 0.11	< 0.013	< 0.055	< 0.074	< 0.11	< 0.059	< 0.068	< 0.066	0.72	< 0.08	1.3	0.22	< 0.032
	3/7/2002	8.1	< 0.56	4.1	< 0.46	< 0.4	< 0.38	< 0.24	< 0.28	< 0.3	< 0.26	< 0.36	< 0.34	< 0.56	0.57 Q	< 0.28	2.1	< 0.38	< 0.4
	9/16/2002	7.6	< 0.7	3.8	< 0.57	< 0.5	0.48 Q	**0.46 Q**	**0.36 Q**	< 0.38	< 0.33	< 0.45	< 0.42	0.82 Q	< 0.53	< 0.35	0.89 Q	< 0.47	0.84 Q
	3/20/2003	10	< 0.42	6.9	1.7	1.4 Q	3.3	**3.5**	**3.2**	2.6	2.6	**3.7**	0.78 Q	6.4	1.4	2.2	1.2 Q	2.9	6
	9/25/2003	13 Q	2.1	5.2	< 0.38	< 0.4	< 0.24	< 0.28	< 0.26	< 0.32	< 0.38	< 0.28	< 0.32	0.34 Q	0.83 Q	< 0.42	*15 Q*	0.43 Q	0.36 Q
	4/21/2004	11 Q	2 Q	4.6 Q	0.23 Q	0.16	0.27	**0.29 Q**	**0.21**	0.19	0.18	**0.25 Q**	0.06	0.41	0.74 Q	0.16	7.6 Q	0.48 Q	0.48
	8/23/2004	12 Q	1.9	5	< 0.39	< 0.35	< 0.39	< 0.36	< 0.36	< 0.41	< 0.39	< 0.33	< 0.44	< 0.33	0.73 Q	< 0.34	9 Q	< 0.41	< 0.33
	9/21/2005	1.2	0.15 Q	0.76	0.14 Q	0.099 Q	0.35	**0.38**	**0.35 Q**	0.31 Q	0.34 Q	**0.41**	< 0.11	0.54	0.068 Q	0.26 Q	0.57 Q	0.29	0.59
	9/5/2006	17 Q	7 Q	6.9 Q	0.15	0.058	< 0.016	< 0.018 Q	< 0.016 Q	< 0.019 Q	< 0.019 Q	< 0.019	< 0.019	0.03 Q	0.02 Q	< 0.019	6.2 Q	0.32 Q	0.023 Q
	9/10/2007	18 Q	9.6 Q	7.8	0.22 Q	< 0.23	< 0.31	< 0.37	< 0.31 Q	< 0.39	< 0.39 Q	< 0.38	< 0.38	< 0.31	0.99	< 0.38	*16 Q*	0.41 Q	< 0.29
P104																			
	7/10/1996	< 1	< 1	< 1	< 2	< 0.2	< 0.05	< 0.024	< 0.05	< 0.2	< 0.05	< 0.1	< 0.1	< 0.2	< 0.4	< 0.1	< 1	< 0.4	< 0.2
	8/14/1996	< 1	< 1	< 1	< 2	< 0.2	0.1	< 0.024	< 0.05	< 0.2	< 0.05	< 0.1	< 0.1	< 0.2	< 0.4	< 0.1	< 1	< 0.4	< 0.2
	11/20/1997	< 0.58	< 0.65	< 0.96	< 0.89	< 0.02	< 0.032	< 0.063	< 0.088	< 0.11	< 0.061	< 0.021	< 0.13	< 0.06	< 0.075	< 0.057	< 0.31	< 0.025	< 0.064
	11/18/1998	< 0.36	< 0.36	< 0.47	< 0.41	0.027	0.03	< 0.015	< 0.015	0.03	< 0.009	*0.034*	0.025	0.055	< 0.058	0.066	< 0.42	< 0.046	0.067
	2/28/2001	< 0.082	< 0.072	< 0.13	< 0.15	< 0.02	< 0.11	< 0.013	< 0.055	< 0.074	< 0.11	*0.1 Q*	< 0.068	< 0.066	< 0.11	< 0.08	0.35	< 0.045	< 0.032
	5/30/2001	< 0.082	< 0.072	< 0.13	< 0.15	< 0.02	< 0.11	< 0.013	< 0.055	< 0.074	< 0.11	< 0.059	< 0.068	< 0.066	< 0.11	< 0.08	< 0.056	< 0.045	< 0.032
	8/13/2001	< 0.25	< 0.22	< 0.4	< 0.46	< 0.06	< 0.34	< 0.04	< 0.17	< 0.22	< 0.34	< 0.18	< 0.21	< 0.2	< 0.34	< 0.24	< 0.17	< 0.14	< 0.097
	3/8/2002	< 0.09	< 0.093	< 0.06	< 0.077	< 0.067	0.34	**0.43**	**0.49**	0.32	0.37	**0.46**	0.11 Q	1.1	< 0.07	0.29	0.24 Q	0.5	0.71
	9/16/2002	< 0.027	< 0.028	< 0.018	0.057 Q	0.032 Q	0.099	*0.085*	*0.058*	0.052	0.046	*0.077*	< 0.017	0.11	< 0.021	0.045	0.044 Q	0.066	0.13
	3/20/2003	0.097 Q	0.1 Q	0.077 Q	0.048 Q	< 0.04	0.064 Q	*0.072 Q*	*0.069 Q*	0.052 Q	0.053 Q	*0.066 Q*	< 0.032	0.13 Q	0.05 Q	0.046 Q	0.46 Q	0.12	0.12
	9/29/2003	< 0.018	< 0.017	0.022 Q	0.026 Q	< 0.02	0.042	*0.038 Q*	*0.039 Q*	0.035 Q	0.03 Q	*0.042 Q*	< 0.016	0.053	< 0.017	0.03 Q	< 0.024	0.029 Q	0.063
	4/21/2004	0.023 Q	< 0.016	< 0.017	< 0.018 Q	< 0.019	< 0.011	< 0.013 Q	< 0.012	< 0.015	< 0.018	< 0.013	< 0.015	0.015 Q	< 0.016 Q	< 0.02	0.22	< 0.015 Q	< 0.016
	8/23/2004	0.11	0.13	0.059 Q	< 0.019	< 0.018	< 0.02	< 0.018	< 0.018	< 0.021	< 0.019	< 0.016	< 0.022	0.02 Q	< 0.022	< 0.017	0.66 Q	0.032 Q	0.023 Q
	9/21/2005	0.012 Q	0.018 Q	< 0.0082	0.022 Q	0.012 Q	0.029 Q	*0.034 Q*	*0.031 Q*	0.026 Q	0.026 Q	*0.027 Q*	< 0.019	0.035 Q	< 0.0091	0.023 Q	< 0.047	0.023 Q	0.035 Q
	9/5/2006	0.1	0.043	0.073 Q	< 0.0081	< 0.012	< 0.016	< 0.018 Q	< 0.016 Q	< 0.019 Q	< 0.019 Q	< 0.019	< 0.019	0.019 Q	0.025 Q	< 0.019	0.11 Q	0.052 Q	0.015 Q
	9/10/2007	< 0.01	< 0.011	< 0.0082	0.0087 Q	< 0.012	0.017 Q	< 0.018	< 0.016	< 0.019	< 0.019	*0.02 Q*	< 0.019	0.023 Q	< 0.0091	< 0.019	0.014 Q	0.021 Q	0.02 Q

Sample ID	*Collection Date*	*1-Methyl naphthalene*	*2-Methyl naphthalene*	*Acenaphthene*	*Acenaph - thylene*	*Anthracene*	*Benz (a) anthracene*	*Benzo (a) pyrene*	*Benzo (b) fluoranthene*	*Benzo (ghi) perylene*	*Benzo (k) fluoranthene*	*Chrysene*	*Dibenz (a,h) anthracene*	*Fluoranthene*	*Fluorene*	*Indeno (1,2,3-cd) pyrene*	*Naphthalene*	*Phenanthrene*	*Pyrene*
Wisconsin Groundwater Quality Standards (NR 140, February 2004)																			
Preventive Action Limit		NS	NS	NS	NS	600	NS	0.02	0.02	NS	NS	0.02	NS	80	80	NS	10	NS	50
Enforcement Standard		NS	NS	NS	NS	3000	NS	0.2	0.2	NS	NS	0.2	NS	400	400	NS	100	NS	250
P105																			
	7/10/1996	< 1	< 1	< 1	< 2	1.7	1.8	**1.2**	**0.35**	1.2	0.37	**0.72**	< 0.1	7.8	< 0.4	0.72	< 1	2	0.59
	8/14/1996	< 1	< 1	< 1	< 2	< 0.2	0.57	**0.31**	**2.5**	< 0.2	< 0.05	*0.15*	< 0.1	0.7	< 0.4	< 0.1	< 1	< 0.4	2.2
	11/20/1997	< 0.61	< 0.68	< 1	< 0.93	0.22	0.25	*0.12*	*0.11*	< 0.12	0.12	**0.3**	< 0.14	1	< 0.079	< 0.06	< 0.33	0.35	0.51
	11/18/1998	< 0.36	< 0.36	< 0.47	< 0.41	< 0.021	< 0.014	< 0.015	< 0.015	0.043	0.0093	*0.095*	0.051	0.28	< 0.058	0.14	< 0.42	0.1	0.41
	5/30/2001	< 0.082	< 0.072	< 0.13	< 0.15	0.25	2	**0.68**	**0.24**	0.2 Q	0.17 Q	**0.37**	< 0.068	2.2	< 0.11	0.26 Q	0.22	0.23	1.9
	8/13/2001	< 0.082	< 0.072	< 0.13	< 0.15	0.2	< 0.11	**0.49**	< 0.055	0.14 Q	< 0.11	**0.41**	< 0.068	1.3	< 0.11	0.23 Q	0.16 Q	0.24	1.5
	3/7/2002	0.077 Q	0.097	0.14	0.51 Q	0.22	0.8 Q	**0.7 Q**	**0.42**	0.35	0.4	**0.74 Q**	0.17	1 Q	0.5 Q	0.29	1.1 Q	0.19	1.3 Q
	9/16/2002	0.29 Q	0.25 Q	0.42 Q	0.73	0.51	1.8	**1.6**	**1.1**	1.2	1.1	**1.4**	0.34 Q	2.1	0.23 Q	0.97	1.8	0.99	2.4
	3/20/2003	0.15 Q	< 0.14	0.28 Q	0.48	0.35 Q	1.1	**1.2**	**0.92**	0.79	0.73	**1.1**	0.27 Q	1.7	0.14 Q	0.63	0.77	0.61	1.9
	9/25/2003	0.14 Q	< 0.085	0.29 Q	0.52	0.26 Q	0.88	**0.71**	**0.44**	0.49	0.45	**0.87**	0.17 Q	1	0.12 Q	0.36	0.17 Q	0.35	1.4
	4/21/2004	0.12 Q	0.038 Q	0.2 Q	0.41 Q	0.2	0.53	**0.57 Q**	**0.27**	0.26	0.27	**0.47 Q**	0.11	0.56	0.059 Q	0.23	0.09 Q	0.18 Q	0.87
	8/23/2004	< 0.02	< 0.023	< 0.019	0.02 Q	< 0.018	0.03 Q	*0.027 Q*	< 0.018	< 0.021	< 0.019	*0.026 Q*	< 0.022	0.024 Q	< 0.022	< 0.017	0.25 Q	< 0.02	0.039 Q
	9/21/2005	0.024 Q	0.026 Q	0.039	0.022 Q	0.02 Q	0.033 Q	*0.026 Q*	*0.02 Q*	0.028 Q	< 0.019 Q	*0.029 Q*	< 0.019	0.042 Q	0.01 Q	< 0.019	0.066 Q	0.044	0.053
	9/5/2006	0.075 Q	0.084 Q	0.17 Q	0.44	0.28	0.76	**0.81 Q**	**0.41 Q**	0.45 Q	0.51 Q	**0.79**	0.12 Q	0.92	0.096 Q	0.32	0.19 Q	0.38 Q	1.1
	9/10/2007	0.053 Q	< 0.056	0.12 Q	0.6	0.3	0.94	**0.87**	**0.63 Q**	0.48	0.47 Q	**0.99**	0.15 Q	1.1	0.17	0.34	0.066 Q	0.24	1.4
P106																			
	7/9/1996	< 1	< 1	< 1	< 2	< 0.2	< 0.05	< 0.024	< 0.05	< 0.2	< 0.05	< 0.1	< 0.1	< 0.2	< 0.4	< 0.1	< 1	< 0.4	< 0.2
	8/14/1996	< 1	< 1	< 1	< 2	1.8	0.73	**0.27**	**0.29**	< 0.2	< 0.05	**0.23**	< 0.1	3.2	1.6	< 0.1	< 1	< 0.4	1.9
	11/20/1997	7.5	1.9	< 1	< 0.93	0.53	0.23	*0.12*	< 0.092	< 0.12	< 0.064	*0.089*	< 0.14	0.51	1.2	< 0.06	1.2	1.4	1.2
	11/18/1998	0.57	< 0.36	1.5	< 0.41	0.29	0.018	< 0.015	< 0.015	0.023	0.0097	*0.073*	0.039	0.23	0.078	0.083	< 0.42	0.62	0.34
	2/28/2001	< 0.25	< 0.22	< 0.4	< 0.46	< 0.06	< 0.34	< 0.04	< 0.17	< 0.22	< 0.34	**0.3 Q**	< 0.21	< 0.2	< 0.34	< 0.24	0.41 Q	< 0.14	< 0.097
	5/31/2001	< 0.25	< 0.22	< 0.4	< 0.46	< 0.06	< 0.34	< 0.04	< 0.17	< 0.22	< 0.34	< 0.18	< 0.21	< 0.2	< 0.34	< 0.24	< 0.17	< 0.14	< 0.097
	8/13/2001	< 0.082	< 0.072	< 0.13	< 0.15	< 0.02	< 0.11	< 0.013	< 0.055	< 0.074	< 0.11	< 0.059	< 0.068	< 0.066	< 0.11	< 0.08	< 0.056	< 0.045	< 0.032
	3/7/2002	0.15	0.14	0.18	0.035 Q	0.16	0.021 Q	< 0.012	< 0.014	< 0.015	< 0.013	*0.021 Q*	< 0.017	0.13	0.039 Q	< 0.014	0.4	0.091	0.21
	9/16/2002	0.13 Q	0.14 Q	0.14	0.14 Q	0.16	0.2	*0.15*	*0.092*	0.11	0.096	*0.2*	0.036 Q	0.23	0.072 Q	0.082 Q	0.46 Q	0.46	0.31
	9/25/2003	< 0.14	< 0.14	< 0.14	0.93	0.29 Q	1.3	**0.94**	**0.37**	0.33 Q	0.46 Q	**1.3**	< 0.13	1.1	< 0.14	0.25 Q	0.86	< 0.13	2.1
	8/23/2004	0.097	0.051 Q	0.075	0.063 Q	0.028 Q	0.037 Q	*0.041 Q*	*0.026 Q*	0.029 Q	0.025 Q	*0.035 Q*	< 0.022	0.035 Q	0.035 Q	0.022 Q	0.27 Q	0.075	0.061
	9/21/2005	0.27	0.35	0.031	0.087	0.1	0.13	*0.097*	*0.073 Q*	0.068	0.056 Q	*0.13*	0.05 Q	0.082	0.13	0.063 Q	1.2 Q	0.54 Q	0.078
	9/6/2006	0.2	0.2	0.048 Q	0.074	0.048	0.041 Q	*0.039 Q*	*0.033 Q*	0.033 Q	0.027 Q	*0.048 Q*	< 0.019	0.051 Q	0.13 Q	0.025 Q	0.95 Q	0.2 Q	0.039 Q
	9/10/2007	0.38	0.31 Q	0.17 Q	0.48	0.7	1.2	**1.1**	**1.1**	0.79	0.69 Q	**1.3**	0.24 Q	2.1	0.55	0.66 Q	1	1.6	2
P107																			
	2/28/2001	269	249	89	49	4.5	< 0.11	< 0.013	< 0.055	< 0.074	< 0.11	< 0.059	< 0.068	< 0.066	25	< 0.08	**1160**	10	2.4
	5/30/2001	535	384	187	< 0.15	< 0.02	< 0.11	< 0.013	< 0.055	< 0.074	< 0.11	< 0.059	< 0.068	< 0.066	66	< 0.08	**3230**	53	4.1
	8/13/2001	468	363	193	< 0.15	7.9	< 0.11	< 0.013	< 0.55	< 0.074	< 0.11	< 0.059	< 0.068	6.1	76	< 0.08	**2650**	53	6.6
	3/8/2002	530	370	160	< 58	< 50	< 48	< 30	< 35	< 38	< 32	< 45	< 42	< 70	< 52	< 35	**1600 Q**	< 48	< 50
	9/16/2002									Monitoring Well Abandoned									

Sample ID	Collection Date	1-Methyl naphthalene	2-Methyl naphthalene	Acenaphthene	Acenaph - thylene	Anthracene	Benz (a) anthracene	Benzo (a) pyrene	Benzo (b) fluoranthene	Benzo (ghi) perylene	Benzo (k) fluoranthene	Chrysene	Dibenz (a,h) anthracene	Fluoranthene	Fluorene	Indeno (1,2,3-cd) pyrene	Naphthalene	Phenanthrene	Pyrene
Wisconsin Groundwater Quality Standards (NR 140, February 2004)																			
Preventive Action Limit		NS	NS	NS	NS	600	NS	0.02	0.02	NS	NS	0.02	NS	80	80	NS	10	NS	50
Enforcement Standard		NS	NS	NS	NS	3000	NS	0.2	0.2	NS	NS	0.2	NS	400	400	NS	100	NS	250
P107R																			
	9/16/2002	550 Q	500 Q	170 Q	< 180	< 160	< 150	< 96	< 110	< 120	< 100	< 140	< 140	< 220	< 170	< 110	**2200**	< 150	< 160
	3/20/2003	630 Q	450 Q	220 Q	23	42	23	**16**	**7.2**	6.1	8.9	**23**	3.4 Q	34	*88 Q*	4.6 Q	**570 Q**	130 Q	47
	9/25/2003	610 Q	440 Q	240 Q	39 Q	79 Q	51 Q	**28 Q**	**13 Q**	10 Q	13 Q	**47 Q**	5.8 Q	66 Q	*92 Q*	8.3 Q	**290 Q**	230 Q	*96 Q*
	4/22/2004	140 Q	9.3 Q	75 Q	4.7 Q	7.2 Q	< 2.3 Q	< 2.6 Q	**0.41 Q**	0.33 Q	0.43 Q	< 2.6	0.17 Q	3.2 Q	18 Q	0.25 Q	< 4.5	26 Q	5 Q
	8/23/2004	440 Q	190 Q	150 Q	9.2 Q	14	< 3.9	< 3.6	< 3.6	< 4.1	< 3.9	< 3.3	< 4.4	4.7 Q	40	< 3.4	**1600 Q**	49	7.7 Q
	9/21/2005	260 Q	7.9	120 Q	7.4	10	< 3.1	< 3.7	< 3.1 Q	< 3.9	< 3.9 Q	< 3.8	< 3.8	3.8 Q	40	< 3.8	< 9.4	45	4.5 Q
	9/6/2006	37	< 1.1	32 Q	3.2	7.1	< 1.6	< 1.8 Q	< 1.6 Q	< 1.9 Q	< 1.9 Q	< 1.9	< 1.9	3.4 Q	26	< 1.9	1.6 Q	22 Q	4.6 Q
	9/10/2007	470 Q	280 Q	180 Q	14	28	9	**6.1**	**3.5 Q**	2.5 Q	3.3 Q	**10**	< 1.9	16	48 Q	< 1.9	**200 Q**	82 Q	23
P108																			
	11/13/2001	43	< 0.072	10	< 0.15	0.37	< 0.11	< 0.013	< 0.055	< 0.074	< 0.11	< 0.059	< 0.068	< 0.066	8.7	< 0.08	*87*	2.7	< 0.032
	3/7/2002	39	< 8.4	12 Q	< 6.9	< 6	< 5.7	< 3.6	< 4.2	< 4.5	< 3.9	< 5.4	< 5.1	< 8.4	< 6.3	< 4.2	*96*	< 5.7	< 6
	9/16/2002	39	3.1 Q	12	< 2.3	< 2	< 1.9	< 1.2	< 1.4	< 1.5	< 1.3	< 1.8	< 1.7	< 2.8	< 2.1	< 1.4	*46*	< 1.9	< 2
	3/20/2003	8.7 Q	0.98 Q	3.6 Q	0.12	0.052 Q	< 0.012	< 0.014	< 0.013	< 0.016	< 0.019	< 0.014	< 0.016	0.015 Q	0.79 Q	< 0.021	5.3	0.24	< 0.017
	9/25/2003	5.8 Q	0.43 Q	3.2 Q	< 0.38	< 0.4	< 0.24	< 0.28	< 0.26	< 0.32	< 0.38	< 0.28	< 0.32	< 0.26	0.42 Q	< 0.42	< 0.48	< 0.32	< 0.34
	4/22/2004	1.4	0.12 Q	0.57	< 0.09	< 0.094	< 0.057	< 0.066	< 0.061	< 0.075	< 0.09	< 0.066	< 0.075	0.064 Q	0.1 Q	< 0.099	1.4	0.099 Q	< 0.08
	8/23/2004	17 Q	1.1 Q	5.6 Q	< 0.39	< 0.35	< 0.39	< 0.36	< 0.36	< 0.41	< 0.39	< 0.33	< 0.44	< 0.33 Q	0.88 Q	< 0.34	8.2 Q	0.51 Q	< 0.33
	9/21/2005	12 Q	1.1	4.2	< 0.16	< 0.23	< 0.31	< 0.37	< 0.31 Q	< 0.39	< 0.39 Q	< 0.38	< 0.38	< 0.31	0.64	< 0.38	1.4 Q	0.31 Q	< 0.29
	9/6/2006	4.4 Q	0.28	2.2 Q	0.077	0.037 Q	< 0.016	< 0.018 Q	< 0.016 Q	< 0.019 Q	< 0.019 Q	< 0.019	< 0.019	< 0.015	0.32	< 0.019	0.43 Q	0.13 Q	< 0.015
	9/11/2007	17 Q	1.7 Q	5.4 Q	0.18	0.13	< 0.016	< 0.018	< 0.016 Q	< 0.019	< 0.019 Q	< 0.019	< 0.019	< 0.015	0.94 Q	< 0.019	1.4 Q	< 0.91 Q	< 0.015
P109																			
	4/29/2004	< 0.017	< 0.016	< 0.017	< 0.018	< 0.019	< 0.011	< 0.013	< 0.012	< 0.015	< 0.018	< 0.013	< 0.015	< 0.012	< 0.016	< 0.02	< 0.023	< 0.015	< 0.016
	8/23/2004	0.064 Q	0.05 Q	0.023 Q	< 0.019	< 0.018	< 0.02	< 0.018	< 0.018	< 0.021	< 0.019	< 0.016	< 0.022	< 0.016 Q	< 0.022 Q	< 0.017	0.24 Q	< 0.02 Q	< 0.016 Q
	12/14/2004	0.024 Q	0.032 Q	< 0.019	< 0.019	< 0.018	< 0.02	< 0.018	< 0.018	< 0.021	< 0.019	< 0.016	< 0.022	0.021 Q	< 0.022	< 0.017	0.065 Q	0.034 Q	0.026 Q
	3/8/2005	0.025 Q	< 0.023	< 0.019	< 0.019	< 0.018	0.031 Q	*0.039 Q*	*0.031 Q*	0.041 Q	0.03 Q	*0.037 Q*	< 0.022	0.067	< 0.022	0.026 Q	0.13	0.068	0.078
	9/21/2005	0.11	0.022 Q	0.039	0.014 Q	< 0.012	0.017 Q	*0.02 Q*	0.019 Q	< 0.019	< 0.019 Q	< 0.019	< 0.019	0.032 Q	0.02 Q	< 0.019	0.063 Q	0.043	0.032 Q
	9/5/2006	0.072	0.022 Q	0.077 Q	< 0.011	< 0.015	< 0.02	< 0.024 Q	< 0.02 Q	< 0.025 Q	< 0.025 Q	< 0.025	< 0.025	< 0.02	0.018 Q	< 0.025	0.11 Q	0.026 Q	< 0.019
	9/11/2007	< 0.01	< 0.011	< 0.0082	< 0.0081	< 0.012	< 0.016	< 0.018	< 0.016 Q	< 0.019	< 0.019 Q	< 0.019	< 0.019	0.016 Q	< 0.0091	< 0.019	0.02 Q	0.011 Q	0.022 Q
P110																			
	4/29/2004	0.022 Q	0.04 Q	< 0.017	< 0.018	< 0.019	< 0.011	< 0.013	< 0.012	< 0.015	< 0.018	< 0.013	< 0.015	< 0.012	< 0.016	< 0.02	< 0.023	< 0.015	< 0.016
	8/23/2004	0.17 Q	0.095 Q	0.05 Q	< 0.019	< 0.018	< 0.02	< 0.018	< 0.018	< 0.021	< 0.019	< 0.016	< 0.022	< 0.016	< 0.022	< 0.017	0.75 Q	< 0.02	< 0.016
	12/14/2004	< 0.02	0.03 Q	< 0.019	< 0.019	< 0.018	0.027 Q	*0.027 Q*	*0.021 Q*	< 0.021	0.019 Q	*0.024 Q*	< 0.022	0.034 Q	< 0.022	< 0.017	0.066 Q	0.036 Q	0.046 Q
	3/8/2005	0.071	0.032 Q	< 0.019	< 0.019	< 0.018	< 0.02	0.019 Q	*0.022 Q*	0.022 Q	0.022 Q	*0.031 Q*	< 0.022	0.061	< 0.022	< 0.017	0.48 Q	0.056 Q	0.056
	9/21/2005	0.029 Q	0.062	< 0.0082	< 0.0081	< 0.012	0.023 Q	*0.022 Q*	*0.022 Q*	< 0.019	0.021 Q	*0.022 Q*	< 0.019	0.034 Q	< 0.0091	< 0.019	0.22	0.018 Q	0.031 Q
	9/6/2006	0.081	0.037 Q	0.04 Q	0.0086 Q	0.017 Q	0.054	*0.11 Q*	*0.14 Q*	0.12 Q	0.11 Q	*0.1*	0.025 Q	0.24	0.02 Q	0.088	0.19 Q	0.12 Q	0.16
	9/11/2007	< 0.01	< 0.011	< 0.0082	< 0.0081	< 0.012	< 0.016	*0.021 Q*	*0.032 Q*	0.026 Q	< 0.019	*0.031 Q*	< 0.019	0.042 Q	< 0.0091	< 0.019	< 0.012	0.032 Q	0.039 Q

Sample ID	Collection Date	1-Methyl naphthalene	2-Methyl naphthalene	Acenaphthene	Acenaph - thylene	Anthracene	Benz (a) anthracene	Benzo (a) pyrene	Benzo (b) fluoranthene	Benzo (ghi) perylene	Benzo (k) fluoranthene	Chrysene	Dibenz (a,h) anthracene	Fluoranthene	Fluorene	Indeno (1,2,3-cd) pyrene	Naphthalene	Phenanthrene	Pyrene
Wisconsin Groundwater Quality Standards (NR 140, February 2004)																			
Preventive Action Limit		NS	NS	NS	NS	600	NS	0.02	0.02	NS	NS	0.02	NS	80	80	NS	10	NS	50
Enforcement Standard		NS	NS	NS	NS	3000	NS	0.2	0.2	NS	NS	0.2	NS	400	400	NS	100	NS	250
P111																			
	8/23/2004	0.7 Q	0.27 Q	0.15 Q	< 0.02	< 0.018	< 0.02	< 0.018	< 0.018	< 0.021	< 0.02	< 0.017	< 0.022	< 0.017 Q	0.048 Q	< 0.017	2.7 Q	0.024 Q	< 0.017 Q
	12/14/2004	0.022 Q	0.028 Q	< 0.02	< 0.02	< 0.018	< 0.02	< 0.018	< 0.018	< 0.021	< 0.02	< 0.017	< 0.022	< 0.017	< 0.022	< 0.017	< 0.023	< 0.021	< 0.017
	3/8/2005	< 0.02	< 0.023	< 0.019	< 0.019	< 0.018	< 0.02	< 0.018	< 0.018	< 0.021	< 0.019	< 0.016	< 0.022	< 0.016	< 0.022	< 0.017	0.12	< 0.02	< 0.016
	9/21/2005	0.021 Q	0.042	< 0.0082	< 0.0081	< 0.012	< 0.016	< 0.018	< 0.016 Q	< 0.019	< 0.019 Q	< 0.019	< 0.019	< 0.015	< 0.0091	< 0.019	0.2 Q	< 0.011	< 0.015
	9/5/2006	0.094	0.051	0.058 Q	< 0.0081	< 0.012	< 0.016	< 0.018 Q	< 0.016 Q	< 0.019 Q	< 0.019 Q	< 0.019	< 0.019	< 0.015	0.017 Q	< 0.019	0.24 Q	0.022 Q	< 0.015
	9/11/2007	< 0.01	< 0.011	< 0.0082	< 0.0081	< 0.012	< 0.016	< 0.018	< 0.016	< 0.019	< 0.019	< 0.019	< 0.019	< 0.015	< 0.0091	< 0.019	0.013 Q	< 0.011	< 0.015
QC01																			
(MW102)	12/16/1993	--	--	< 1	< 2	< 0.2	< 0.05	< 0.2	< 0.05	< 0.1	< 0.05	< 0.1	< 0.1	< 0.2	< 0.4	< 0.1	**3400**	1.4	< 0.2
(MW102)	12/17/1993	--	--	< 1	< 2	< 0.2	< 0.05	< 0.2	< 0.05	< 0.1	< 0.05	< 0.1	< 0.1	< 0.2	< 0.4	< 0.1	< 1	< 0.4	< 0.2
(OW01)	11/20/1997	36	12	< 0.96	< 0.89	3.5	1.3	**1.1**	**0.41**	0.62	0.58	**0.84**	< 0.13	9.9	6.7	0.58	*18*	11	5.5
(MW104)	2/28/2001	16	< 0.072	27	9.2	13	7.6	**0.34**	**0.83**	2.5	1.2	**4.7**	< 0.068	39	16	2.5	4	36	23
(MW109)	5/30/2001	682	362	492	< 0.75	259	< 0.57	**50**	**38**	42	< 0.57	**102**	< 0.34	*370*	**731**	23	**1770**	681	**466**
(P103)	3/7/2002	11 Q	0.32	5.7 Q	0.14	0.063 Q	0.039 Q	*0.033 Q*	*0.023 Q*	0.019 Q	0.024 Q	*0.031 Q*	< 0.017	0.085 Q	< 1.1	0.016 Q	< 1.3	0.19	0.072
(P105)	9/16/2002	0.3 Q	0.23 Q	0.22 Q	0.54	0.36	1.2	**1.2**	**0.7**	0.75	0.59	**0.85**	0.2 Q	1.4	0.13 Q	0.61	1.2	0.55	1.6
(GW04)	3/20/2003	< 0.036	< 0.034	0.063 Q	0.088 Q	0.11 Q	0.33	**0.35**	**0.29**	0.22	0.27	**0.33**	0.067 Q	0.65	0.041 Q	0.19	0.061 Q	0.28	0.56
(GW01)	9/25/2003	75 Q	18 Q	34 Q	0.85 Q	< 8	0.6 Q	*0.19 Q*	*0.11 Q*	0.067 Q	0.11 Q	**0.49 Q**	< 0.032	< 5.2	13 Q	0.057 Q	*87 Q*	15 Q	< 6.8
(P04)	4/21/2004	0.11 Q	0.089	0.03 Q	< 0.018	< 0.019	< 0.011	< 0.013	< 0.012	< 0.015	< 0.018	< 0.013	< 0.015	< 0.012	< 0.016	< 0.02	4 Q	< 0.015	< 0.016
(P108)	8/23/2004	7.4 Q	0.57 Q	2.6 Q	< 0.39	< 0.35	< 0.39	< 0.36	< 0.36	< 0.41	< 0.39	< 0.33	< 0.44	< 0.33	< 0.44	< 0.34	5 Q	< 0.41	< 0.33
(MW110)	9/21/2005	< 0.081	0.095 Q	0.15 Q	0.18 Q	0.19 Q	0.89	**1.1**	**0.99 Q**	0.81	0.79 Q	**0.89**	0.17 Q	2	0.075 Q	0.66	0.43 Q	0.58	1.7
(P104)	9/5/2006	0.087	0.035 Q	0.062 Q	< 0.0081	< 0.012 Q	< 0.016	< 0.018 Q	< 0.016 Q	< 0.019 Q	< 0.019 Q	< 0.019	< 0.019	0.016 Q	0.02 Q	< 0.019	0.088 Q	0.035 Q	< 0.015
(P111)	9/11/2007	0.01 Q	< 0.011	< 0.0082	0.0086 Q	< 0.012	< 0.016	< 0.018	< 0.016	< 0.019	< 0.019	< 0.019	< 0.019	0.022 Q	< 0.0091	< 0.019	0.02 Q	0.024 Q	0.024 Q
QC02																			
(MW103)	12/21/1993	--	--	< 1	< 2	< 0.2	< 0.05	< 0.2	< 0.05	< 0.1	< 0.05	< 0.1	< 0.1	< 0.2	< 0.4	< 0.1	< 1	< 0.4	< 0.2
(P103)	11/20/1997	< 0.6	< 0.67	< 0.99	< 0.92	< 0.021	< 0.033	< 0.065	< 0.091	< 0.11	< 0.063	*0.086*	< 0.13	0.32	< 0.077	< 0.059	< 0.32	0.043	0.17
(P02)	2/28/2001	0.44	< 0.072	2.1	< 0.15	0.49	0.47	< 0.013	*0.16 Q*	0.15 Q	0.12 Q	**0.27**	< 0.068	1.7	0.92	< 0.08	3	1.2	0.98
(P04)	5/30/2001	< 0.082	< 0.072	< 0.13	< 0.15	< 0.02	< 0.11	< 0.013	< 0.055	< 0.074	< 0.11	< 0.059	< 0.068	< 0.066	< 0.11	< 0.08	< 0.056	< 0.045	< 0.032
(GW04)	8/13/2001	< 0.082	< 0.072	< 0.13	< 0.15	< 0.02	< 0.11	< 0.013	**0.21**	< 0.074	< 0.11	< 0.059	< 0.068	< 0.066	< 0.11	< 0.08	0.16 Q	0.19	< 0.032
(P108)	3/7/2002	34	< 8.4	10 Q	< 6.9	< 6	< 5.7	< 3.6	< 4.2	< 4.5	< 3.9	< 5.4	< 5.1	< 8.4	< 6.3	< 4.2	*85*	< 5.7	< 6
(P101)	9/16/2002	0.12 Q	0.12 Q	0.045 Q	< 0.046	< 0.04	< 0.038	< 0.024	< 0.028	< 0.03	< 0.026	< 0.036	< 0.034	< 0.056	< 0.042	< 0.028	0.74	0.08 Q	< 0.04
(P04)	3/20/2003	0.049 Q	0.037 Q	0.076	0.024 Q	0.029 Q	0.06	*0.052*	*0.04 Q*	0.029 Q	0.042 Q	*0.042 Q*	< 0.016	0.13	0.034 Q	0.029 Q	0.28	0.12	0.098
(P108)	9/25/2003	7.9 Q	0.63 Q	3.5 Q	0.11 Q	0.049 Q	0.021 Q	< 0.014	< 0.013	< 0.016	< 0.019	*0.022 Q*	< 0.016	0.022 Q	0.36 Q	< 0.021	0.31 Q	0.23 Q	0.037 Q
(MW103)	4/22/2004	0.068	0.027 Q	0.066	0.074	0.066	0.23	**0.26 Q**	*0.17 Q*	0.18 Q	0.16 Q	**0.25 Q**	0.046 Q	0.27	0.025 Q	0.13 Q	0.19	0.15	0.42
(GW04)	8/23/2004	0.028 Q	< 0.023	0.024 Q	< 0.019	< 0.018	< 0.02	< 0.018	< 0.018	< 0.021	< 0.019	0.016 Q	< 0.022	0.024 Q	< 0.022	< 0.017	0.11 Q	0.024 Q	0.033 Q
(P109)	9/21/2005	0.015 Q	0.02 Q	< 0.0082	0.016 Q	< 0.012	< 0.016	< 0.018	0.019 Q	< 0.019	< 0.019 Q	< 0.019	< 0.019	0.026 Q	< 0.0091	< 0.019	< 0.047 Q	0.024 Q	0.029 Q
(P111)	9/5/2006	0.074	0.044 Q	0.048 Q	< 0.0081	< 0.012 Q	< 0.016	< 0.018 Q	< 0.016 Q	< 0.019 Q	< 0.019 Q	< 0.019	< 0.019	< 0.015	0.015 Q	< 0.019	0.18 Q	0.022 Q	< 0.015

Sample ID	Collection Date	1-Methyl naphthalene	2-Methyl naphthalene	Acenaphthene	Acenaph - thylene	Anthracene	Benz (a) anthracene	Benzo (a) pyrene	Benzo (b) fluoranthene	Benzo (ghi) perylene	Benzo (k) fluoranthene	Chrysene	Dibenz (a,h) anthracene	Fluoranthene	Fluorene	Indeno (1,2,3-cd) pyrene	Naphthalene	Phenanthrene	Pyrene
Wisconsin Groundwater Quality Standards (NR 140, February 2004)																			
Preventive Action Limit		NS	NS	NS	NS	600	NS	0.02	0.02	NS	NS	0.02	NS	80	80	NS	10	NS	50
Enforcement Standard		NS	NS	NS	NS	3000	NS	0.2	0.2	NS	NS	0.2	NS	400	400	NS	100	NS	250
QC03																			
(P103)	8/13/2001	8.4	< 0.072	4.6	< 0.15	< 0.02	0.15 Q	< 0.013	< 0.055	< 0.074	< 0.11	*0.1 Q*	< 0.068	< 0.066	0.78	< 0.08	1.1	0.19	< 0.032
(OW04)	3/8/2002	0.074	0.028	0.062 Q	0.048 Q	0.042 Q	0.15	*0.13*	*0.12*	0.09	0.099	*0.11*	0.03 Q	0.25	0.033 Q	0.08	0.15	0.15	0.21
(P107R)	9/16/2002	790 Q	770 Q	310 Q	< 230	< 200	< 190	< 120	< 140	< 150	< 130	< 180	< 170	< 280	< 210	< 140	**2700**	310 Q	< 200
(GW02)	3/20/2003	380 Q	< 340	520 Q	< 380	< 400	< 240	< 280	< 260	< 320	< 380	**310 Q**	< 320	**650 Q**	< 340	< 420	**4200**	960 Q	**470 Q**
(MW103)	9/25/2003	0.98 Q	< 0.068	0.29 Q	< 0.076	< 0.08	0.053 Q	< 0.056	< 0.056	< 0.064	< 0.076	< 0.056	< 0.064	0.059	< 0.068	< 0.084	0.62 Q	< 0.064	0.085 Q
(P110)	4/29/2004	< 0.017	< 0.016	< 0.017	< 0.018	< 0.019	< 0.011	< 0.013	< 0.012	< 0.015	< 0.018	< 0.013	< 0.015	< 0.012	< 0.016	< 0.02	< 0.023	< 0.015	< 0.016
(P107R)	8/23/2004	220 Q	76 Q	85 Q	7.1 Q	14 Q	5	**3.4**	**1.4**	1.2 Q	1.6	**4.7**	< 0.44	7.4 Q	27 Q	0.85 Q	**790 Q**	< 51	13 Q

Notes

1) Parameters that attain or exceed the NR 140 Wisconsin Groundwater Quality Preventive Action Limit (PAL) Standard are identified in italics and underlined.
2) Parameters that attain or exceed the NR 140 Wisconsin Groundwater Quality Enforcement Standard (ES) are identified in bold and underlined.

<2.0 : Parameter not detected above the Limit of Detection indicated.
NS : NR 140 Wisconsin Groundwater Quality Standard has not been established for this parameter.
TB : Trip Blank for QA/QC.
QC: Quality Control duplicate sample.
Q: Analyte result has been qualified, see laboratory analytical report for additional information.
--: Analysis not performed.

Table 4 - Dewatering Sump Groundwater Elevation Summary and System Operational Data
Wisconsin Public Service Corporation
Oshkosh Former Manufactured Gas Plant Site

Sump	TOS[A] Elevation (feet)[B]	Sump Depth from TOS (feet)	Monitoring Date	Depth to Groundwater (feet)	Groundwater Elevation (feet)[B]	Flowrate (gpm)	Operation Notes	Not in Operation (days)
DS-1	750.95	11.5	11/7/2002	5.71	745.24	3	11/11/02 system off 11/12/02 system on due to maintenance	1
			11/18/2002	6.63	744.32	2		
			12/20/2002	7.81	743.14	2	12/7/02 shutdown due to DNAPL tank high level alarm-no DNAPL in tank only water. 12/12/03 turned on.	5
			1/20/2003	6.88	744.07	4	Dislodged an obstruction from pump.	
			2/17/2003	7.65	743.30	2		
			3/19/2003	8.18	742.77	2		
			4/23/2003	4.96	745.99	2	Shutdown system 4/9/03 to reprogram CPU, started system 4/23/03.	14
			5/16/2003	4.65	746.30	3		
			6/16/2003	4.70	746.25	3		
			6/25/2003	4.75	746.20	3	system shut down when arrived on site, sump alarm due to significant condensation within treatment room	1
			7/21/2003	nm	nm	4	7/4/03 system shut down due to significant condensation within treatment room.	1
			8/18/2003	6.50	744.45	5		
			9/24/2003	4.71	746.24	0	DS-1 running at pump and valve, however computer control panel shows gpm rate at 0	1
			10/2/2003	nm	nm	0	Turned pump off; pump not working properly.	
			10/3/2003	nm	nm	0	Turned off 10/2/03	
			10/14/2003	nm	nm	0	Pump removed for Annual Maintenance; part wore out cover under warranty.	
			11/20/2003	5.25	745.70	0*	Pump replaced at this visit and restarted. Counter not working at control panel, but counter at the pump working correctly.	50
			12/14/2003	nm	nm	nm	Air stripper discharge overflow, building sump alarm. System off.	
			12/16/2003	nm	nm	nm	Emptied sump and fixed air stripper discharge. System on	2
			12/22/2003	4.83	746.12	2		

Table 4 - Dewatering Sump Groundwater Elevation Summary and System Operational Data
Wisconsin Public Service Corporation
Oshkosh Former Manufactured Gas Plant Site

Sump	TOS^A Elevation (feet)^B	Sump Depth from TOS (feet)	Monitoring Date	Depth to Groundwater (feet)	Groundwater Elevation (feet)^B	Flowrate (gpm)	Operation Notes	Not in Operation (days)
DS-1 con't	750.95	11.5	3/29/2004	nm	nm	0*	Cycle counter not working properly and removed for repair.	
			4/21/2004	5.90	745.05	nm	Counters on pump removed 3/04. Flow not recorded at control panel.	
			6/9/2004	nm	nm	nm	Air stripper discharge overflow, building sump alarm. System off. CPU needs reprogramming	
			6/23/2004	nm	nm	3**	Counters and CPU replaced and system started (manual count 000212)	14
			6/28/2004	3.32	747.63	0	(manual count 002268)	
			7/4/2004	nm	nm	nm	Air stripper discharge overflow, building sump alarm. System off. System turned on 7/6/04	2
			7/26/2004	4.42	746.53	0*	Flow rate slower than 1 gpm. (manual count 217617)	
			7/29/2004	4.82	746.13	0*	Flow rate slower than 1 gpm. (manual count 244994)	
			8/6/2004	5.14	745.81	0*	(manual counter 311768)	
			8/23/2004	4.73	746.22	nm	(manual counter 423106)	
			8/31/2004	nm	nm	0	System shut down due to City park redevelopment activities caused a shortage to the panel	
			9/9/2004	nm	nm	nm	System on; shortage repaired	9
			12/15/2004	4.49	746.51	0	New top of sump elevation based on STS June 2005 survey. Pump not working properly. Took pump off-line for repairs.	16
			1/24/2005	6.33	744.67	**	New top of sump elevation based on STS June 2005 survey	
			2/24/2005	nm	nm	nm	Installed repair pump	55
			3/8/2005	5.34	745.66	**	New top of sump elevation from City work; elevation based on STS June 2005 survey	
			4/2/2005	nm	nm	nm	Shutdown system bag filter alarm. Bag changed on 4/4/05	2
			4/20/2005	nm	nm	nm	Reroute manifold	1
			5/20/2005	nm	nm	nm	Shutdown system bag filter alarm. Bag changed on 5/23/05	3

Table 4 - Dewatering Sump Groundwater Elevation Summary and System Operational Data
Wisconsin Public Service Corporation
Oshkosh Former Manufactured Gas Plant Site

Sump	TOS[A] Elevation (feet)[B]	Sump Depth from TOS (feet)	Monitoring Date	Depth to Groundwater (feet)	Groundwater Elevation (feet)[B]	Flowrate (gpm)	Operation Notes	Not in Operation (days)
DS-1 con't	751.00	11.5	6/8/2005	4.23	746.77	**		
			6/10/2005	nm	nm	nm	Shutdown system sump alarm due to condensation. Sump emptied on 6/13/05	3
			7/7/2005	nm	nm	nm	Shutdown system bag filter alarm. Bag changed on 7/11/05	4
			9/14/2005	nm	nm	nm	Shutdown due to phase failure system running on 9/28/05	14
			10/11/2005	4.42	746.58	**	Annual cleaning	
			12/12/2005	4.74	746.26	3.5	flow reading from new rotometer	
			12/25/2005	nm	nm	nm	Shutdown system bag filter alarm. Bag changed on 1/3/06	6
			1/3/2006	nm	nm	nm	Changed bag filters	3
			1/27/2006	nm	nm	nm	Shutdown system bag filter alarm. Bag changed on 1/30/06	3
			3/7/2006	5.68	745.32	2.5	flow reading from rotometer	
			5/28/2006	nm	nm	nm	Shutdown system bag filter alarm. Bag changed on 5/31/06	3
			6/19/2006	4.34	746.66	nm	cycle # 807543	
			9/5/2006	4.7	746.30	nm		
			12/1/2006	nm	nm	nm		
			12/22/2006	nm	nm	nm	Shutdown system bag filter alarm. Bag changed on 1/9/07	9

Table 4 - Dewatering Sump Groundwater Elevation Summary and System Operational Data
Wisconsin Public Service Corporation
Oshkosh Former Manufactured Gas Plant Site

Sump	TOS[A] Elevation (feet)[B]	Sump Depth from TOS (feet)	Monitoring Date	Depth to Groundwater (feet)	Groundwater Elevation (feet)[B]	Flowrate (gpm)	Operation Notes	Not in Operation (days)
DS-1 con't	751.00	11.5	1/9/2007	nm	nm	nm	Bag changed today.	9
			3/11/2007	nm	nm	nm	Low temperature alarm in equipment room. Thermostat not working properly. Turned thermostat off on 3/16/07 until replacement	5
			3/26/2007	5.17	-5.17	nm	(manual counter #159342)	
			6/3/2007	nm	nm	nm	Phase Fail possiblly from bad weather. Operating 6/4/07	1
			6/26/2007	4.37	-4.37	nm	(manual counter #159342)	
			9/11/2007	4.26	-4.26	nm		
			10/1/2007	nm	nm	nm	Air bubbles noticed in oil/water separtor.	20
			10/4/2007	nm	nm	nm	System not working properly; air bubbles in oil/water separator. System running; had to adjust fittings and location of pump	3
			10/12/2007	nm	nm	nm	System not working properly; air bubbles. System running; set too low and air leaks	8
			11/20/07	nm	nm	nm	DS-1 pump not working properly. DS-2 pump was installed in DS-1 sump to continue pumping while WPSC personnel inspect DS-1 pump.	10
			11/30/2007	5.27	-5.27	nm		

Table 4 - Dewatering Sump Groundwater Elevation Summary and System Operational Data
Wisconsin Public Service Corporation
Oshkosh Former Manufactured Gas Plant Site

Sump	TOS^A Elevation (feet)^B	Sump Depth from TOS (feet)	Monitoring Date	Depth to Groundwater (feet)	Groundwater Elevation (feet)^B	Flowrate (gpm)	Operation Notes	Not in Operation (days)
DS-2	752.06	11.5	11/7/2002	6.80	745.26	4	11/11/02 system off 11/12/02 system on due to maintenance	1
			11/18/2002	7.72	744.34	3		
			12/20/2002	8.01	744.05	1	12/7/02 shutdown due to DNAPL tank high level alarm-no DNAPL in tank only water. 12/12/03 turned on.	5
			1/20/2003	8.10	743.96	2		
			2/17/2003	8.12	743.94	1		
			3/19/2003	8.21	743.85	2		
			4/23/2003	6.05	746.01	2	Shutdown system 4/9/03 to reprogram CPU, started system 4/23/03.	14
			5/16/2003	6.71	745.35	0	Turned off 5/7/03	
			6/16/2003	5.78	746.28	0	Turned off 5/7/03	
			6/25/2003	5.84	746.22	0	Turned off 5/7/03	15
			8/18/2003	8.70	743.36	0	Turned off 5/7/03	
			9/24/2003	5.80	746.26	0	Turned off 5/7/03	
			10/2/2003	nm	nm	6	Turned pump on since DS-1 not running.	94
			10/3/2003	nm	nm	2		
			10/14/2003	nm	nm	4		
			11/20/2003	6.58	745.48	0	Pump removed and replaced for Annual Maintenance. Pump off.	
			12/14/2003	nm	nm	nm	Air stripper discharge overflow, building sump alarm. System off.	
			12/16/2003	nm	nm	nm	Emptied sump and fixed air stripper discharge. System on	2
			12/22/2003	5.88	746.18	0	Pump turned off	41
			1/6/2004	nm	nm	nm	Pump turned on since DS-4 pump in for repairs	15
			3/29/2004	nm	nm	0*	Cycle counter not working properly and removed for repair	
			4/21/2004	5.58	746.48	nm	Counters on pump removed 3/04. Flow not recorded at control panel.	

Table 4 - Dewatering Sump Groundwater Elevation Summary and System Operational Data
Wisconsin Public Service Corporation
Oshkosh Former Manufactured Gas Plant Site

Sump	TOS^A Elevation (feet)^B	Sump Depth from TOS (feet)	Monitoring Date	Depth to Groundwater (feet)	Groundwater Elevation (feet)^B	Flowrate (gpm)	Operation Notes	Not in Operation (days)
DS-2 con't	752.06	11.5	6/9/2004	nm	nm	nm	Air stripper discharge overflow, building sump alarm. System off. CPU needs reprogramming	
			6/23/2004	nm	nm	1**	Counters and CPU replaced and system started (manual count 975062)	14
			6/28/2004	4.39	747.67	1	(manual count 980390)	
			7/4/2004	nm	nm	nm	Air stripper discharge overflow, building sump alarm. System off. System turned on 7/6/04	2
			7/26/2004	5.45	746.61	0	Flow rate slower than 1 gpm. (manual count 47562)	
			7/29/2004	5.58	746.48	0*	Flow rate slower than 1 gpm. (manual count 0055484)	
			8/6/2004	5.52	746.54	0*	Flow rate slower than 1 gpm. (manual count 0055916)	
			8/23/2004	5.80	746.26	nm	(manual count 088347)	
			8/31/2004	nm	nm	0	System shut down due to City park redevelopment activities caused a shortage to the panel	
			9/9/2004	nm	nm	nm	System on; shortage repaired	9
			12/15/2004	5.52	746.56	**	New top of sump elevation from City work; elevation based on STS June 2005 survey	
			1/3/2005	nm	nm	nm	Air in water line. Pump turned off for inspection.	
			1/24/2005	5.85	746.21	**	Pump pulled and actuator rod broken. In for repairs; elevation based on STS June 2005 survey	
			2/24/2005	nm	nm	nm	Installed repair pump	52
			3/8/2005	6.42	745.64	**	Elevation based on STS June 2005 survey	
			4/2/2005	nm	nm	nm	Shutdown system bag filter alarm. Bag changed on 4/4/05	2
			4/20/2005	nm	nm	nm	Reroute manifold	1
			4/28/2005	nm	nm	nm	Turned pump off	
	752.08	11.5	6/8/2005	5.20	746.88	**	Pump off	41
			10/11/2005	5.37	746.71	**	Pump off, annual cleaning	125
			12/12/2005	5.67	746.41	nm	pump off	62
			12/31/2005	nm	nm	nm	pump off	19

Table 4 - Dewatering Sump Groundwater Elevation Summary and System Operational Data
Wisconsin Public Service Corporation
Oshkosh Former Manufactured Gas Plant Site

Sump	TOS^A Elevation (feet)^B	Sump Depth from TOS (feet)	Monitoring Date	Depth to Groundwater (feet)	Groundwater Elevation (feet)^B	Flowrate (gpm)	Operation Notes	Not in Operation (days)
DS-2 con't	752.08	11.5	1/27/2006	nm	nm	nm	Shutdown system bag filter alarm. Bag changed on 1/30/06	27
			3/7/2006	6.63	745.45	nm	pump off	39
			5/28/2006	nm	nm	nm	Shutdown system bag filter alarm. Bag changed on 5/31/06	82
			6/19/2006	5.26	746.82	nm	cycle # 524663	22
			9/5/2006	5.61	746.47	nm		78
			12/1/2006	nm	nm	nm		87
			3/26/2007	6.17	745.91	nm	(manual counter #524664)	115
			6/27/2007	5.22	746.86	nm	(manual counter #524665)	93
			9/11/2007	5.29	746.79	nm		76
			11/30/2007	6.18	745.90	nm		80
DS-3	749.57	11.5	11/7/2002	4.06	745.51	4	11/11/02 system off 11/12/02 system on due to maintenance	1
			11/18/2002	4.77	744.80	3		
			12/20/2002	5.50	744.07	3	12/7/02 shutdown due to DNAPL tank high level alarm-no DNAPL in tank only water. 12/12/03 turned on.	5

Table 4 - Dewatering Sump Groundwater Elevation Summary and System Operational Data
Wisconsin Public Service Corporation
Oshkosh Former Manufactured Gas Plant Site

Sump	TOS[A] Elevation (feet)[B]	Sump Depth from TOS (feet)	Monitoring Date	Depth to Groundwater (feet)	Groundwater Elevation (feet)[B]	Flowrate (gpm)	Operation Notes	Not in Operation (days)
DS-3 con't	749.57	11.5	1/20/2003	6.02	743.55	5		
			2/17/2003	6.30	743.27	2		
			3/19/2003	5.91	743.66	4		
			4/23/2003	3.64	745.93	3	Shutdown system 4/9/03 to reprogram CPU, started system 4/23/03.	14
			5/16/2003	3.08	746.49	3	Reduced flow 5/7/03	
			6/16/2003	3.25	746.32	3		
			6/25/2003	3.35	746.22	3	system shut down when arrived on site, sump alarm due to significant condensation within treatment room	1
			7/21/2003	nm	nm	0	7/4/03 system shut down due to significant condensation within treatment room.	1
			8/18/2003	6.00	743.57	0		
			9/24/2003	3.35	746.22	0		1
			10/2/2003	nm	nm	0	OWS high water alarm on due to bacterial growth at OWS outlet; noted pump has air in water line may have caused the bacterial growth at outlet. Turned pump off.	
			10/3/2003	nm	nm	0	Bacterial growth removed from OWS outlet. Turned off 10/2/03	
			10/14/2003	nm	nm	0	Pump removed for Annual Maintenance; magnetic set screw missing.	
			11/20/2003	3.60	745.97	0*	Pump replaced at this visit and restarted. Counter not working at control panel, but counter at the pump working correctly.	50
			12/14/2003	nm	nm	nm	Air stripper discharge overflow, building sump alarm. System off.	
			12/16/2003	nm	nm	nm	Emptied sump and fixed air stripper discharge. System on	2
			12/22/2003	3.48	746.09	4		3
			3/29/2004	nm	nm	0*	Cycle counter not working properly and removed for	

Table 4 - Dewatering Sump Groundwater Elevation Summary and System Operational Data
Wisconsin Public Service Corporation
Oshkosh Former Manufactured Gas Plant Site

Sump	TOS^A Elevation (feet)^B	Sump Depth from TOS (feet)	Monitoring Date	Depth to Groundwater (feet)	Groundwater Elevation (feet)^B	Flowrate (gpm)	Operation Notes	Not in Operation (days)
DS-3 con't	749.57	11.5	4/21/2004	3.52	746.05	nm	Counters on pump removed 3/04. Flow not recorded at control panel.	
			6/9/2004	nm	nm	nm	Air stripper discharge overflow, building sump alarm. System off. CPU needs reprogramming	
			6/23/2004	nm	nm	0**	Counters and CPU replaced and system started (manual count 876690)	14
			6/28/2004	1.90	747.67	0	(manual count 932396)	
			7/4/2004	nm	nm	nm	Air stripper discharge overflow, building sump alarm. System off. System turned on 7/6/04	2
			7/26/2004	2.96	746.61	0	Pump not operating properly. Shut off pump. (manual count 981774)	22
			7/29/2004	2.91	746.66	0	Pump off, repairs needed. (Manual count not taken at this visit. Will be taken when pump reinstalled)	3
			8/6/2004	3.21	746.36	0	Pump restarted this visit. (manual counter 981778 after start up)	8
			8/23/2004	3.33	746.24	nm	(manual count 290334)	
			8/31/2004	nm	nm	0	System shut down due to City park redevelopment activities caused a shortage to the panel	
			9/9/2004	nm	nm	nm	System on; shortage repaired	9
			9/17/2004	nm	nm	0	Turned pump off; to be retrofitted for final park grades	
			11/4/2004	nm	nm	nm	Turned pump on	48
			12/15/2004	10.94	746.54	**	New top of sump elevation from City work; elevation based on STS June 2005 survey	

Table 4 - Dewatering Sump Groundwater Elevation Summary and System Operational Data
Wisconsin Public Service Corporation
Oshkosh Former Manufactured Gas Plant Site

Sump	TOS[A] Elevation (feet)[B]	Sump Depth from TOS (feet)	Monitoring Date	Depth to Groundwater (feet)	Groundwater Elevation (feet)[B]	Flowrate (gpm)	Operation Notes	Not in Operation (days)
DS-3 con't	749.57	11.5	1/24/2005	nm	nm	nm		
			3/8/2005	11.96	745.52	**	New top of sump elevation from City work; elevation based on STS June 2005 survey	
			3/14/2005	nm	nm	nm	Noticed pump not operation, turned pump off	
			4/2/2005	nm	nm	nm	Shutdown system bag filter alarm. Bag changed on 4/4/05	
			4/20/2005	nm	nm	nm	Reroute manifold	
			4/28/2005	nm	nm	nm	Installed repaired pump	45
			5/20/2005	nm	nm	nm	Shutdown system bag filter alarm. Bag changed on 5/23/05	3
	757.48	19.4	6/8/2005	11.09	746.39	**		
			6/10/2005	nm	nm	nm	Shutdown system sump alarm due to condensation. Sump emptied on 6/13/05	3
			7/7/2005	nm	nm	nm	Shutdown system bag filter alarm. Bag changed on 7/11/05	4
			9/14/2005	nm	nm	nm	Shutdown due to phase failure system running on 9/28/05	14
			10/11/2005	11.29	746.19	**	Annual Cleaning	
			12/12/2005	11.59	745.89	3.5	flow reading from new rotometer	
			12/25/2005	nm	nm	nm	Shutdown system bag filter alarm. Bag changed on 1/3/06	6
			1/3/2006	nm	nm	nm	Changed bag filters	3
			1/27/2006	nm	nm	nm	Shutdown system bag filter alarm. Bag changed on 1/30/06	3
			3/7/2006	13.63	743.85	3.0	flow reading from new rotometer	
			5/28/2006	nm	nm	nm	Shutdown system bag filter alarm. Bag changed on 5/31/06	3
			6/19/2006	10.92	746.56	nm	cycle # 355974	
			9/5/2006	11.74	745.74	<0.1	Y-strainer build-up-manifold disassembled and cleaned pump. Rate of 2-4 gpm after cleaning	
			10/26/2006	nm	nm	nm	Pump not working properly due to a kink in air line	
			12/1/2006	nm	nm	nm		
			12/22/2006	nm	nm	nm	Shutdown system bag filter alarm. Bag changed on 1/9/07	9

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Wisconsin Public Service Corporation
Oshkosh Former Manufactured Gas Plant Site

Sump	TOS[A] Elevation (feet)[B]	Sump Depth from TOS (feet)	Monitoring Date	Depth to Groundwater (feet)	Groundwater Elevation (feet)[B]	Flowrate (gpm)	Operation Notes	Not in Operation (days)
DS-3 con't	757.48	19.40	1/9/2007	nm	nm	nm	Bag changed today.	9
			3/11/2007	nm	nm	nm	Low temperature alarm in equipment room. Thermostat not working properly. Turned thermostat off on 3/16/07 until replacement	5
			3/26/2007	11.78	745.70	nm	manual counter not installed	
			6/3/2007	nm	nm	nm	Phase Fail possiblly from bad weather. Operating 6/4/07	1
			6/27/2007	11.17	746.31	nm	(manual count #355974)	
			9/11/2007	10.83	746.65	nm		
			10/1/2007	nm	nm	nm	Air bubbles noticed in oil/water separtor.	20
			10/4/2007	nm	nm	nm	System not working properly; air bubbles in oil/water separator. System running; had to adjust fittings and location of pump	3
			10/12/2007	nm	nm	nm	System not working properly; air bubbles. DS-3 pump working properly.	
			11/30/2007	12.13	745.35	nm		
DS-4	750.77	11.5	11/7/2002	5.10	745.67	4	11/11/02 system off 11/12/02 system on due to maintenance	1
			11/18/2002	5.43	745.34	4		
			12/20/2002	5.65	745.12	6	12/7/02 shutdown due to DNAPL tank high level alarm-no DNAPL in tank only water. 12/12/03 turned on.	5

Table 4 - Dewatering Sump Groundwater Elevation Summary and System Operational Data
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Oshkosh Former Manufactured Gas Plant Site

Sump	TOS^{A} Elevation (feet)^{B}	Sump Depth from TOS (feet)	Monitoring Date	Depth to Groundwater (feet)	Groundwater Elevation (feet)^{B}	Flowrate (gpm)	Operation Notes	Not in Operation (days)
DS-4 con't	750.77	11.5	1/20/2003	6.15	744.62	5		
			2/17/2003	--	--	5	sump buried in snow	
			3/19/2003	6.10	744.67	6		
			4/23/2003	4.79	745.98	2	Shutdown system 4/9/03 to reprogram CPU, started system 4/23/03.	14
			5/16/2003	4.23	746.54	2	Reduced flow 5/7/03	
			6/16/2003	4.41	746.36	2		
			6/25/2003	4.52	746.25	2	system shut down when arrived on site, sump alarm due to significant condensation within treatment room	1
			7/21/2003	nm	nm	2	7/4/03 system shut down due to significant condensation within treatment room.	1
			8/18/2003	4.80	745.97	2		
			9/24/2003	4.56	746.21	2		1
			10/2/2003	nm	nm	2		
			10/3/2003	nm	nm	3		
			10/14/2003	nm	nm	2		1
			11/20/2003	4.80	745.97	0*	Counter not working at control panel, but counter at the pump working correctly.	
			12/14/2003	nm	nm	nm	Air stripper discharge overflow, building sump alarm. System off.	
			12/16/2003	nm	nm	nm	Emptied sump and fixed air stripper discharge. System on	2
			12/22/2003	4.70	746.07	2		

Table 4 - Dewatering Sump Groundwater Elevation Summary and System Operational Data
Wisconsin Public Service Corporation
Oshkosh Former Manufactured Gas Plant Site

Sump	TOS^A Elevation (feet)^B	Sump Depth from TOS (feet)	Monitoring Date	Depth to Groundwater (feet)	Groundwater Elevation (feet)^B	Flowrate (gpm)	Operation Notes	Not in Operation (days)
DS-4 con't	750.77	11.5	1/6/2004	nm	nm	nm	Apparently pump not working properly, no flow. Pump turned off.	
			3/29/2004	nm	nm	0*	Cycle counter not working properly and removed for repair. Pump turned on.	83
			4/21/2004	4.71	746.06	nm	Counters on pump removed 3/04. Flow not recorded at control panel.	
			6/9/2004	nm	nm	nm	Air stripper discharge overflow, building sump alarm. System off. CPU needs reprogramming	
			6/23/2004	nm	nm	5**	Counters CPU replaced and system started (manual count 373202)	14
			6/28/2004	3.11	747.66	6	(manual count 565535)	
			7/4/2004	nm	nm	nm	Air stripper discharge overflow, building sump alarm. System off. System turned on 7/6/04	2
			7/26/2004	4.22	746.55	6	(manual count 158109)	
			7/29/2004	4.32	746.45	6	(manual count 254961)	
			8/6/2004	4.82	745.95	7	(manual count 502433)	
			8/23/2004	4.58	746.19	nm	(manual count 982156)	
			8/31/2004	nm	nm	0	System shut down due to City park redevelopment activities caused a shortage to the panel	
			9/9/2004	nm	nm	nm	System on; shortage repaired	9
			12/15/2004	4.24	746.57	**	New top of sump elevation from City work; elevation based on STS June 2005 survey	

Table 4 - Dewatering Sump Groundwater Elevation Summary and System Operational Data
Wisconsin Public Service Corporation
Oshkosh Former Manufactured Gas Plant Site

Sump	TOS^A Elevation (feet)^B	Sump Depth from TOS (feet)	Monitoring Date	Depth to Groundwater (feet)	Groundwater Elevation (feet)^B	Flowrate (gpm)	Operation Notes	Not in Operation (days)
DS-4 con't	750.77	11.5	1/3/2005	nm	nm	nm	Air in water line. Pump turned off for inspection.	
			1/24/2005	nm	nm	nm	Pump pulled and actuator rod broken. In for repairs	
			2/24/2005	nm	nm	nm	Installed repair pump	52
			3/8/2005	5.12	745.65	**	Elevation based on STS June 2005 survey	
			4/2/2005	nm	nm	nm	Shutdown system bag filter alarm. Bag changed on 4/4/05	2
			4/20/2005	nm	nm	nm	Reroute manifold	1
			5/20/2005	nm	nm	nm	Shutdown system bag filter alarm. Bag changed on 5/23/05	3
	750.81	11.5	6/8/2005	4.42	746.39	**		
			6/10/2005	nm	nm	nm	Shutdown system sump alarm due to condensation. Sump emptied on 6/13/05	3
			7/7/2005	nm	nm	nm	Shutdown system bag filter alarm. Bag changed on 7/11/05	4
			9/14/2005	nm	nm	nm	Shutdown due to phase failure system running on 9/28/05	14
			10/11/2005	4.50	746.31	**	Annual Cleaning	
			12/12/2005	4.83	745.98	2.0	flow reading from new rotometer	
			12/25/2005	nm	nm	nm	Shutdown system bag filter alarm. Bag changed on 1/3/06	6
			1/3/2006	nm	nm	nm	Changed bag filters	3
			1/27/2006	nm	nm	nm	Shutdown system bag filter alarm. Bag changed on 1/30/06	3
			3/7/2006	5.32	745.49	2.0	flow reading from rotometer	
			5/28/2006	nm	nm	nm	Shutdown system bag filter alarm. Bag changed on 5/31/06	3
			6/19/2006	4.35	746.46	nm	cycle # 662547	
			9/5/2006	4.76	746.05	<0.1	Y-strainer build-up-manifold disassembled and cleaned pump. Rate of 2-4 gpm after cleaning	
			10/26/2006	nm	nm	nm	Pump not working properly due to a kink in air line	
			12/1/2006	nm	nm	nm		
			12/22/2006	nm	nm	nm	Shutdown system bag filter alarm. Bag changed on 1/9/07	9

Table 4 - Dewatering Sump Groundwater Elevation Summary and System Operational Data
Wisconsin Public Service Corporation
Oshkosh Former Manufactured Gas Plant Site

Sump	TOS^A Elevation (feet)^B	Sump Depth from TOS (feet)	Monitoring Date	Depth to Groundwater (feet)	Groundwater Elevation (feet)^B	Flowrate (gpm)	Operation Notes	Not in Operation (days)
DS-4 con't	750.81	11.5	1/9/2007	nm	nm	nm	Bag changed today.	9
			3/11/2007	nm	nm	nm	Low temperature alarm in equipment room. Thermostat not working properly. Turned thermostat off on 3/16/07 until replacement	5
			3/26/2007	5.97	744.84	nm	manual counter not installed	
			6/3/2007	nm	nm	nm	Phase Fail possiblly from bad weather. Operating 6/4/07	1
			6/27/2007	4.51	746.30	nm	(Manual Counter #662547)	
			9/11/2007	4.20	746.61	nm		
			10/1/2007	nm	nm	nm	Air bubbles noticed in oil/water separtor.	20
			10/4/2007	nm	nm	nm	System not working properly; air bubbles in oil/water separator. System running; had to adjust fittings and location of pump	3
			10/12/2007	nm	nm	nm	System not working properly; air bubbles. Had to lift DS-4 up from bottom of sump.	8
			11/30/2007	5.26	745.55	nm		

(O:HMS 11/19/02 C-DWB 1/2/03)(JKY/HMS031205)(jky/HMS040514)(JKY/HMS07/04)(JKY/HMS-08/04)(HMS 11/04)(HMS/PAR 3/05)(RJG/HMS 07/06)(HMS/RJG 09/06)(HMS/RJG 07/07)(HMS 9/07

A: TOS - Top of Sump Cover
B: Elevations relative to National Vertical Geodetic Datum
--: Sump not locatable/accessible

na: Not available
nm: Not measured
gpm: gallons per minute

Notes:

1) New survey data was taken by Roehlig Land Surveying on September 25, 2002 due to construction activities.
2) " * " Flow rate on control panel is based on the electric counter reading. Counter and pump working at each of the sumps, but the electric counter reading in control panel not working properly causing a zero gpm reading.
3) " ** " Flow rate on control panel is based on the electric counter reading after installation. Counter not working at the sump.
4) Dewatering sumps were raised/lower during park redevelopment activities. On June 7, 2005, STS Consultants surveyed top of sumps.

Table 5 - Gradient Control System Analytical Results
Wisconsin Public Service Corporation
Oshkosh Former Manufactured Gas Plant Site

Location	Date	BTEX Parameters (µg/L)					µg/L	µg/L	mg/L		
		Benzene	Ethylbenzene	Toluene	Xylenes (total)	Total BTEX	Total PAH^{C}	Total Toxic Organics ^{A}	Total Suspended Solids (TSS)	Total Cyanide	Oil and Grease
OWWTP Limits		nl	nl	nl	nl	nl	nl	**2,130**	**340**	**1.9**	**100**
DS-1 (Dewatering Sump No. 1)	10/24/2002	140	380	38	257	815	926	1,298	<10	0.7	4.1
	11/4/2002	290	550	36	300	1,176	1,060	1,774	16	0.5	3.7*
	11/11/2002	270	900	72	610	1,852	1,419	2,523	27	1.6	3.7*
	11/18/2002	170	450	45	270	935	1,109	1,582	54	0.65	<1.2
	12/20/2002	290	800	100	640	1,830	2,368	3,682	<5	2.1	2.6
	1/20/2003	180	490	79	370	1,119	1,676	2,160	22	1.1	4.5
	2/17/2003	280	910	110	780	2,080	2,377	3,480	5.6	1.1	3.0*
	05/16/2003	330	870	70	620	1,890	1,815	2,791	12	0.31	<1.0
	12/22/2003	290	490	37	280	1,097	1,127	1,791	5.6	0.4	<0.98
	03/29/2004	170	380	34	203	787	462	950	na	8.5	na
	06/28/2004	360	1,600	81	900	2,941	1,849	3,742	na	0.9	na
	08/23/2004	190	880	21	360	1,451	234	1,263	na	0.46	na
	3/8/2005	15	20	5.80	44	85	51	59	na	0.30	na
	6/8/2005	29	79	14	84	206	19	122	na	0.73	na
	10/11/2005	120	160	16	112	408	356	569	na	0.47	na
	12/12/2005	11	180	16	120	327	22	306	na	0.73	na
	3/7/2006	340	2,900	250	1,930	5,420	1,197	4,548	na	0.77	na

Table 5 - Gradient Control System Analytical Results
Wisconsin Public Service Corporation
Oshkosh Former Manufactured Gas Plant Site

		BTEX Parameters (µg/L)					µg/L	µg/L	mg/L		
Location	Date	Benzene	Ethylbenzene	Toluene	Xylenes (total)	Total BTEX	Total PAH^{C}	Total Toxic Organics^{A}	Total Suspended Solids (TSS)	Total Cyanide	Oil and Grease
OWWTP Limits		nl	nl	nl	nl	nl	nl	**2,130**	**340**	**1.9**	**100**
DS-2 (Dewatering Sump No. 2)	10/24/2002	760	2000	340	1370	4,470	2,840	5,500	<5	3.7	5.9
	11/4/2002	890	1900	190	1190	4,170	3,814	6,278	14	1.9	7.1
	11/11/2002	1100	1700	100	870	3,770	2,778	5,349	13	1.2	4.3
	11/18/2002	1100	1900	110	990	4,100	2,821	5,427	15	1.3	5.3
	12/20/2002	1000	1900	150	1090	4,140	2,200	5,440	<5	1.9	2.9
	1/20/2003	230	910	160	760	2,060	2,769	3,688	14	1.3	3.9
	2/17/2003	320	1500	240	1370	3,430	2,377	4,340	<4	0.99	3.5*
	10/21/2003	630	1500	98	880	3,108	3,289	4,953	na	na	na
	3/29/2004	130	470	22	204	826	434	937	na	0.22	na
	6/28/2004	350	2,000	92	1,120	3,562	1,910	4,344	na	0.72	na
	8/23/2004	170	750	18	310	1,248	270	1,144	na	0.50	na
	3/8/2005	440	970	55	430	1,895	1,657	2,870	na	0.38	na
	6/8/2005	na	na	na	na	na	na	na	na	na	na

Table 5 - Gradient Control System Analytical Results
Wisconsin Public Service Corporation
Oshkosh Former Manufactured Gas Plant Site

		BTEX Parameters (µg/L)					µg/L	µg/L	mg/L		
Location	Date	Benzene	Ethylbenzene	Toluene	Xylenes (total)	Total BTEX	Total PAH^{C}	Total Toxic Organics ^{A}	Total Suspended Solids (TSS)	Total Cyanide	Oil and Grease
OWWTP Limits		nl	nl	nl	nl	nl	nl	**2,130**	**340**	**1.9**	**100**
DS-3 (Dewatering Sump No. 3)	10/24/2002	580	2,900	160	1,550	5,190	2,710	5,740	23	0.38	2.3*
	11/4/2002	780	4,600	700	3,200	9,280	2,478	8,174	28	0.25	3*
	11/11/2002	550	3,800	620	3,100	8,070	1,966	6,749	23	0.17	2.1*
	11/18/2002	680	4,800	890	4,000	10,370	2,532	8,459	18	0.3	1.6*
	12/20/2002	940	7,400	1,500	6,400	16,240	4,727	13,981	11	0.27	2.3*
	1/20/2003	890	8,200	1,700	7,900	18,690	5,271	15,636	10	0.26	5.3
	2/17/2003	910	8,900	1,900	8,600	20,310	4,396	16,310	7.2	0.17	3.8*
	5/16/2003	280	1,600	210	1,310	3,400	1,705	3,490	15	0.059	< 0.97
	12/22/2003	380	1,900	63	630	2,973	942	3,133	13	0.13	1*
	3/29/2004	110	470	12	160	752	220	739	na	0.19	na
	6/28/2004	370	2,900	120	1,600	4,990	1,788	5,162	na	0.14	na
	8/23/2004	190	760	20	320	1,290	1,083	1,886	na	0.37	na
	3/8/2005	310	1,800	46	570	2,726	1,343	3,328	na	0.19	na
	6/8/2005	200	1,500	85	790	2,575	1,406	2,963	na	0.30	na
	10/11/2005	130	1,300	44	570	2,044	1,061	2,360	na	0.52	na
	12/12/2005	120	1,100	32	420	1,672	361	1,464	na	0.57	na
	3/7/2006	490	4,500	390	2,900	8,280	2,431	7,558	na	0.38	na

Table 5 - Gradient Control System Analytical Results
Wisconsin Public Service Corporation
Oshkosh Former Manufactured Gas Plant Site

Location	Date	BTEX Parameters (µg/L)					µg/L	µg/L	mg/L		
		Benzene	Ethylbenzene	Toluene	Xylenes (total)	Total BTEX	Total PAH^{C}	Total Toxic Organics ^{A}	Total Suspended Solids (TSS)	Total Cyanide	Oil and Grease
OWWTP Limits		nl	nl	nl	nl	nl	nl	**2,130**	**340**	**1.9**	**100**
DS-4 (Dewatering Sump No. 4)	10/24/2002	4.8	12	<0.68	4.7	22	40	24	11	0.078	2.3*
	11/4/2002	16.0	25	<0.68	6.3	47	36	41	16	0.075	<1.2
	11/11/2002	22.0	38	0.81*	11.3	72	103	113	28	0.057	<1.2
	11/18/2002	48	43	1.2*	13	105	204	215	14	0.059	5.3
	12/20/2002	140	82	3.1*	30	256	84	288	<5	0.033	1.2*
	1/20/2003	180	200	17	107	504	286	564	15	0.037	1.5*
	2/17/2003	220	210	8.2	83	521	231	574	<4	0.026	< 1.2
	5/16/2003	110	350	40	280	780	960	1,269	16	0.096	< 1.0
	10/21/2003	77	100	4.4	41	222	713	726	na	na	na
	3/29/2004	4.9	6.4	<0.36	2.7	14	77	36	na	0.11	na
	6/28/2004	13	70	2.8	36	122	230	263	na	0.20	na
	8/23/2004	100	290	7.1	114	511	383	686	na	0.32	na
	3/8/2005	8.8	11	<0.36	4.1	24	34	11	na	0.085	na
	6/8/2005	56	140	3.2	58	257	68	218	na	0.16	na
	10/11/2005	18	29	<0.36	5.77	53	44	58	na	0.27	na
	12/12/2005	27	100	1.1	32.5	161	63	151	na	0.62	na
	3/7/2006	34	79	1 *	19.3	133	71	130	na	0.31	na

Table 5 - Gradient Control System Analytical Results
Wisconsin Public Service Corporation
Oshkosh Former Manufactured Gas Plant Site

		BTEX Parameters (µg/L)					µg/L	µg/L	mg/L		
Location	Date	Benzene	Ethylbenzene	Toluene	Xylenes (total)	Total BTEX	Total PAH[C]	Total Toxic Organics [A]	Total Suspended Solids (TSS)	Total Cyanide	Oil and Grease
OWWTP Limits		nl	nl	nl	nl	nl	nl	2,130	340	1.9	100
OS (effluent from multi-phase separator)	10/24/2002	na	na	na	na	--	na	na	16	na	4.8
	11/4/2002	na	na	na	na	--	na	na	22	na	2.2*
	11/11/2002	na	na	na	na	--	na	na	20	na	2.8*
	11/18/2002	na	na	na	na	--	na	na	28	na	3.9
	12/20/2002	na	na	na	na	--	na	na	30	na	4.3
	1/20/2003	na	na	na	na	--	na	na	38	na	6.7
	2/17/2003	na	na	na	na	--	na	na	4	na	3.0*
Influent	12/14/2004	3.6	12	0.65*	8.2	24	21	12	na	0.80	na
	6/26/2007	100	430	27	240	797	493	952	na	0.89	na
	9/11/2007	85	380	15	145	625	499	866	na	0.47	na
EFF (prior to air stripper installment)	10/24/2002	390	1,400	150	880	2,820	2,510	5,405	11.0	1.2	5.4
	11/4/2002	520	2,000	240	1,300	4,060	1,258	3,832	15.0	0.79	2.5*
	11/4/02[B]	456	1,770	181	1,193	3,600	1,373	3,776	11.0	0.465	na
	11/5/02[B]	502	1,410	110	851	2,873	1,368	3,382	2.4	0.481	na
	11/6/02[B]	408	1,440	103	843	2,794	1,965	3,909	4.6	0.522	na
	11/11/2002	510	1,700	210	1220	3,640	1,789	3,918	13.0	0.61	4.4
	11/18/2002	550	2,000	310	1520	4,380	1,061	3,728	22.0	0.66	4.3
	12/20/2002	560	2,700	500	2240	6,000	2,186	5,781	7.0	0.57	2.6*
	1/20/2003	530	3,500	650	3000	7,680	2,626	7,098	7.0	0.57	3.9
	02/6/03[B]	490	537	534	3490	5,051	3,404	4,513	na	0.26	na
	2/17/2003	520	3,700	690	3200	8,110	2,098	7,370	4.0	0.39	4.6
	05/16/03	220	780	99	700	1,799	1,158	2,005	16.0	0.16	1.6*
	06/5/03[B]	320	1,630	187	1,867	4,004	1,508	3,348	na	0.147	na
	06/18/03	270	1,200	170	1,070	2,710	1,396	2,808	na	0.14	na
	06/25/03	260	1,400	220	1,260	3,140	1,865	3,465	na	0.13	na
	9/5/2003[B]	23.8	34.2	5.46	117	180	24	75	na	0.07	na

Table 5 - Gradient Control System Analytical Results
Wisconsin Public Service Corporation
Oshkosh Former Manufactured Gas Plant Site

Location	Date	BTEX Parameters (µg/L)					µg/L	µg/L	mg/L		
		Benzene	Ethylbenzene	Toluene	Xylenes (total)	Total BTEX	Total PAH^{C}	Total Toxic Organics ^{A}	Total Suspended Solids (TSS)	Total Cyanide	Oil and Grease
OWWTP Limits		nl	nl	nl	nl	nl	nl	**2,130**	**340**	**1.9**	**100**
Pre-Air Stipper^{D}	10/14/2003	460	1,200	76	690	2,426	1,926	3,336	9.5	na	4.5
	10/21/2003	na	na	na	na	na	na	na	na	0.3	na
	11/20/2003	320	610	41	370	1,341	1,295	1,990	4.8	0.21	<0.99
	12/22/2003	140	430	16	188	774	130	614	14	0.17	2.2*
	6/28/2004	170	800	45	570	1,585	720	1,635	na	0.23	na
EFF Post-Air Stripper	10/14/2003	16	36	2.6	29	84	36	52	7.5	na	3.3
	10/21/2003	na	na	na	na	na	na	na	na	0.29	na
	11/20/2003	12	21	1.5	16.5	51	2.2	35	5.2	0.23	<0.99
	11/26/2003^{B}	15.1	32	<6	21.5	69	25	65	na	0.175	na
	12/22/2003	11	33	1.4*	20	65	25	55	15	0.17	1.5*
	3/29/2004	<0.14	<0.40	<0.36	<0.74	nd	1.05	<10	32	0.19	<1.0
	6/28/2004	3.4	16	0.91	15	35	31	16	31	0.27	<0.57
	8/23/2004	31	84	3.0	60	178	105	164	88	0.37	1.9*
	9/10/2004^{B}	3.6	22.5	0.582	9.47	36	10.8	23	na	0.27	na
	12/14/2004	<0.14	<0.40	<0.36	<0.74	nd	0.6	<10	29	0.62	1.5*
	3/8/2005	9.3	28	1.3	21	59	80	62	7	0.23	na
	3/30/2005 ^{B}	33.0	41	3.5	43	121	298	271	na	0.51	na
	5/31/2005 ^{B}	3.0	15	1.5	30	50	44	37	na	na	na
	6/8/2005	4.3	21	1.6	16.6	44	3.3	21	11	0.19	na
	7/14/2005^{B}	4.4	21	1.5	16.4	43	19.2	21	na	na	na
	10/11/2005	14	50	3.3	46	113	23	64	na	0.51	na
	11/4/2005^{B}	50	226	11	129	416	72	316	na	0.622	na
	12/12/2005	43	150	7.6	100	301	16	193	4.6	0.57	na
	3/7/2006	74	540	46	370	1,030	47	676	na	0.35	na
	6/19/2006	5.9	12	0.92 *	11.1	30	24	12	na	0.61	na
	9/5/2006	<0.14	<0.40	<0.36	<0.74	nd	0.2	nd	11.0	0.97	na
	9/6/2006^{B}	4.0	9.8	1	5.38	20	6.1	nd	na	**7.28**	na
	12/1/2006	1.1	3.5	<0.36	2.1	6.7	12	nd	5.8	0.51	na
	3/26/2007	1.9	7.8	0.68 Q	6.8	17	21	nd	8.0	0.50	na

Table 5 - Gradient Control System Analytical Results
Wisconsin Public Service Corporation
Oshkosh Former Manufactured Gas Plant Site

		BTEX Parameters (µg/L)					µg/L	µg/L	mg/L		
Location	Date	Benzene	Ethylbenzene	Toluene	Xylenes (total)	Total BTEX	Total PAH^C	Total Toxic Organics ^A	Total Suspended Solids (TSS)	Total Cyanide	Oil and Grease
OWWTP Limits		nl	nl	nl	nl	nl	nl	**2,130**	**340**	**1.9**	**100**
EFF con't	6/26/2007	12	45	2.9	32	92	14	57	na	0.78	na
	8/9/2007^B	23.5	22	23	<33.5	69	2.27	70	na	na	na
	9/11/2007	6.5	11	1.20 Q	22	40	2	11	35.0	0.24	na
	10/8/2007^B	49.0	198	36.00 Q	120	403	81.85	310	na	na	na
	11/30/2007	5.9	21	1.00 Q	12	40	33	32	na	0.79	na

)(HMS/JKY 7/04)(JKY/HMS 9/04)(HMS/JTB 12/04)(HMS/RHS 3/05)(HMS/PAR 6/05)(HMS/PAR 10/05)(HMS/JTB 12/05)(RJG/HMS 07/06)(HMS/PAR 09/06)(PAR/HMS 4/07)(HMS/RJG 7/07)[HMS/RJG 12/07][RJG/KJB 01/08]

Notes:

* =Analyte detected between the LOD and LOQ
nd = no detect
na = not analyzed
nl = no limit
A = Total Toxic Organics is equal to the sum of all detected concentrations over 0.01 mg/L (10 ug/L) for the compunds listed in 40 CFR part 413.02, includes the following: Benzene, Ethylbenzene, Toluene, Acenaphthene, Acenaphthylene, Anthracene, Benzo(a)anthracene, Beno(a)pyrene, Benzo(b)fluoranthene, Benzo(ghi)perylene, Benzo(k)fluoranthene, Indeno(1,2,3-cd)pyrene, Chrysene, Dibenzo(ah)anthracene, Fluoranthene, Fluorene, Naphthalene, Phenanthrene, Pyrene.
B = Sample collected by the City of Oshkosh
C = Total Polynuclear Aromatic Hydrocarbons is equal to the sum of detects only for the following compounds: Acenaphthene, Acenaphthylene, Anthracene, Benz(a)anthracene, Beno(a)pyrene, Benzo(b)fluoranthene, Benzo(ghi)perylene, Benzo(k)fluoranthene, Indeno(1,2,3-cd)pyrene, Chrysene, Dibenz(ah)anthracene, Fluoranthene, Fluorene, 1-Methylnaphalene, 2-Methylnaphalene, Naphthalene, Phenanthrene, and Pyrene.
D = Pre-Air Stripper samples are collected at the sample tap between the bag filters and the air stripper.

Table 6. Groundwater and System Monitoring Schedule (Revised December 2007)
Wisconsin Public Service Corporation - Former Oshkosh Manufactured Gas Plant Site
Oshkosh, WI

	Mar-07	Jun-07	Sep-07	Dec-07	Mar-08	Jun-08	Sep-08	Dec-08
Treatment System Monitoring								
Effluent								
BTEX (8021B)	X	X	X	X	X	X	X	X
PAH (8270-SIM)	X	X	X	X	X	X	X	X
Total Cyanide (9012A)	X	X	X	X	X	X	X	X
TSS (EPA 160.2)	X		X		X		X	
Influent (Composite from all dewatering sumps)								
BTEX (8021B)	X		X		X		X	
PAH (8270C-SIM)	X		X		X		X	
Total Cyanide (9012A)	X		X		X		X	
Dewatering Sumps								
DS-1	W	W	W	W	WF	WF	WF	WF
DS-2	W	W	W	W	WF	WF	WF	WF
DS-3	W	W	W	W	WF	WF	WF	WF
DS-4	W	W	W	W	WF	WF	WF	WF
Groundwater Monitoring								
Monitoring Wells								
OW-1	W	W	X	W	W	W	X	W
OW-4	W	W	W	W	W	W	W	W
GW-1	W	W	X	W	W	W	X	W
GW-2R	W	W	W	W	W	W	W	W
GW-3	W	W	X	W	W	W	X	W
GW-4	W	W	X	W	W	W	X	W
OW-3R	W	W	X	W	W	W	X	W
MW-101R	W	W	W	W	W	W	W	W
MW-102	W	W	X	W	W	W	X	W
MW-103	W	W	X	W	W	W	X	W
MW-104	W	W	X	W	W	W	X	W
MW-108R	W	W	W	W	W	W	W	W
MW-109R	W	W	X	W	W	W	X	W
MW-110	W	W	X	W	W	W	X	W
P-101	Proposed for Abandonment (Pending Age				Proposed for Abandonment (Pending Age			
P-102R	Proposed for Abandonment (Pending Age				Proposed for Abandonment (Pending Age			
P-2R	Proposed for Abandonment (Pending Age				Proposed for Abandonment (Pending Age			
P-4	Proposed for Abandonment (Pending Age				Proposed for Abandonment (Pending Age			
P-103	W	W	X	W			X	
P-104	W	W	X	W			X	
P-105	W	W	X	W			X	
P-106	W	W	X	W			X	
P-107R	W	W	X	W			X	
P-108	W	W	X	W			X	
P-109	W	W	X	W			X	
P-110	W	W	X	W			X	
P-111	W	W	X	W			X	
Staff Gauge	W	W	W	W	W	W	W	W
Field Parameters								
Water Quality Probe			X				X	
Water Levels	X	X	X	X	X	X	X	X

Notes:

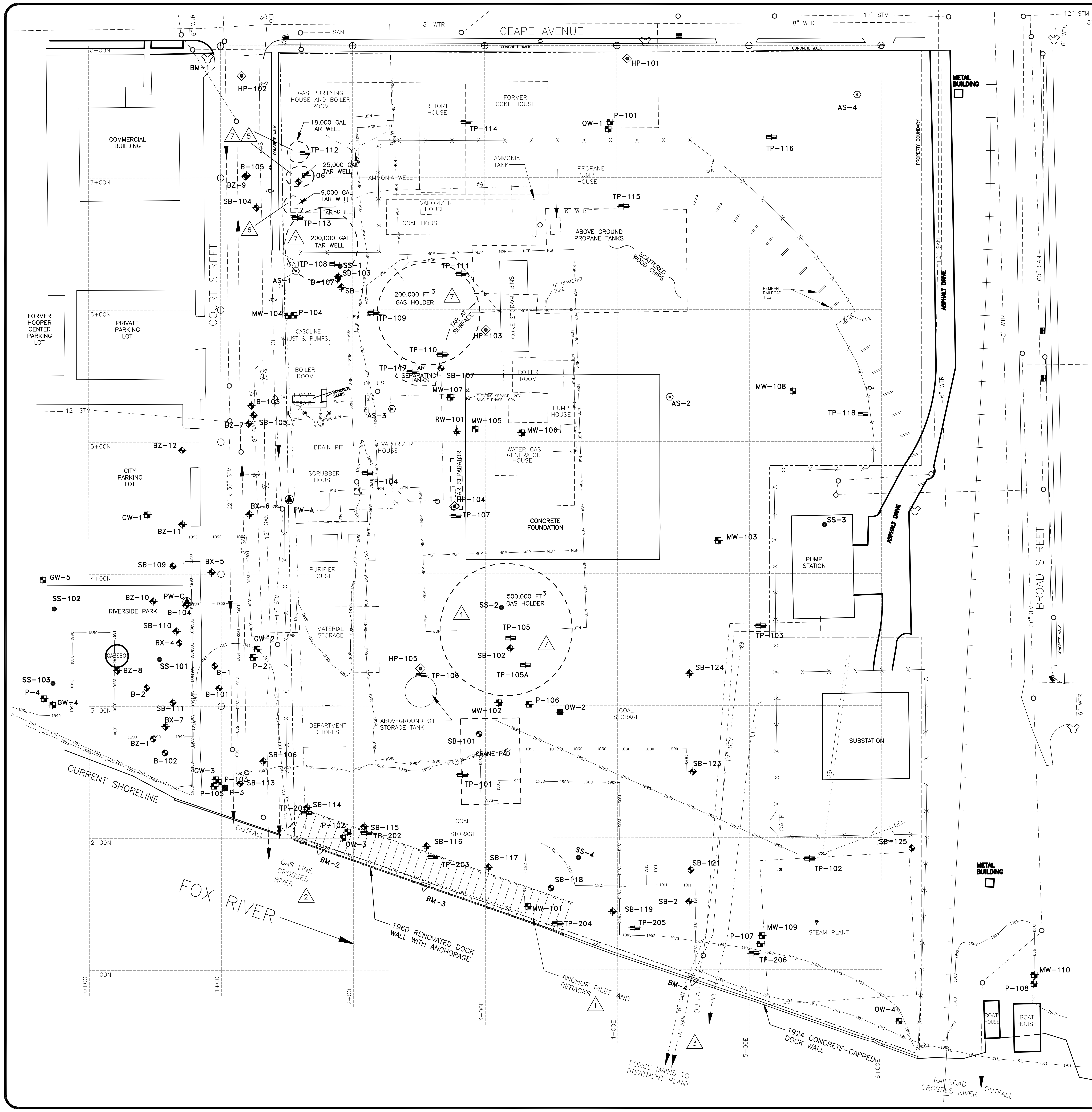
1. X - Indicates planned site visit, scheduled activity or sample collected during that visit.
2. W - Water level only.
3. Water quality probe parameters and samples will only be collected from monitoring wells that do not contain coal tar as observed during that monitoring event.
4. Water quality probe parameters include dissolved oxygen, pH, temperature, specific conductance and oxidation / reduction potential.
5. F - Measure flow rate.

APPENDIX A

SITE INVESTIGATION SOIL DOCUMENTATION

APPENDIX A1

SITE FIGURES



EARTHWORK CONTRACTOR NOTES: △

1. REFER TO PLAN & SECTIONS OF PRESENT DOCK, OSHKOSH STEAM PLANT, WISCONSIN PUBLIC SERVICE CORPORATION DRAWING D-7447 AND D-7448, DATED 10/20/1960.
2. REFER TO SOUTH SIDE NATURAL GAS CONNECTING LINES, OSHKOSH, FORD, BACON & DAVIS ENGINEERS DRAWING 60013-F1-S, LAST REVISED 11/9/53.
3. REFER TO RIVER CROSSING FORCE MAIN PLAN PROFILE, CITY OF OSHKOSH, HNTB DRAWING PP-2 LAST REVISED 11/86.
4. REFER TO 500,000 CU. FT. GAS HOLDER PLAN AND DETAILS OF FOUNDATION OSHKOSH, WILLIAM A. BAEHR CONSULTING ENGINEER, DRAWING 138C, DATED 4/16/12.
5. REFER TO REINFORCED CONCRETE COVER OVER TAR WELLS, WISCONSIN PUBLIC SERVICE DRAWING DD-2506, DATED 12/30/37.
6. REFER TO OSHKOSH GAS LIGHT CO. DRAWING.
7. REFER TO GENERAL PLAN OF GAS WORKS, OSHKOSH, DRAWING T40. LAST REVISED 1/3/40.

SOURCE NOTES:

THIS DRAWING WAS DEVELOPED FROM MAP BY HYDRO-SEARCH, INC. DATED 06/03/94, PROJECT 304533000 AND A SURVEY BY WISCONSIN PUBLIC SERVICE CORPORATION DATED 01/11/99.

THE 1903 AND 1890 SHORELINES ARE FROM SANBORN MAPS. HISTORICAL SHORELINE LOCATIONS ARE APPROXIMATE.

30" STORM SEWER IN BROAD STREET TAKEN FROM SEWER SYSTEM 8TH WARD DRAWING BY CITY OF OSHKOSH WISCONSIN ENGINEERING DEPARTMENT, DATED 12-5-36, WITH 1977 UPDATE.

BROAD STREET PUMP STATION PARCEL AND FORCE MAINS DEVELOPED FROM DRAWING BY HNTB ARCHITECTS ENGINEERS PLANNERS, MILWAUKEE, WISCONSIN, PROJECT NO: 6378, DRAWING SP-2 (3 OF 32) AND PP-2, DATED 9-6-84.

LOCATIONS OF SEWER LATERALS, TAR WELLS, GAS HOLDERS, TAR STILL, TAR SEPARATORS, AND ASSOCIATIVE PIPING TAKEN FROM WPSC DRAWING NO. 140, DATED 1925.

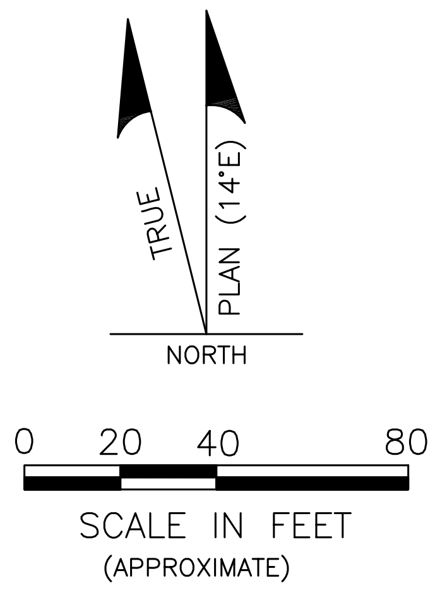
SURVEY BY ROEHLIG LAND SURVEYING & CONSULTING LTD., OSHKOSH, WISCONSIN, DRAWING AC3771B.DWG, DATED AUGUST 17, 2001, REVISED AUGUST 28, 2001, OCTOBER 29, 2001 AND NOVEMBER 12, 2001.

HP GAS LINE FROM DRAWING BY FORD, BACON AND DAVIS, INC., ENGINEERS, DRAWING NO. 60013-FI-S, REVISED DATED NOVEMBER 9, 1953.

WATER LINES AND HYDRANTS, STORM AND SANITARY LINES IN CEAPE AVENUE ARE TAKEN FROM CITY OF OSHKOSH ENGINEERING DIVISION DRAWING, DATED NOVEMBER 9, 1998.

BM-1 WAS FIELD MEASURED BY NRT. BM-2 THROUGH BM-4 WERE SURVEYED BY ROEHLIG LAND SURVEYING & CONSULTING LTD., OSHKOSH, WISCONSIN, NO. 2771A, DATED APRIL 24, 2001. BM-1 TOP OF HYDRANT OPERATING NUT, ELEVATION 754.18. BM-2 SPIKE IN WOOD RETAINING WALL PER WPSC SURVEY, ELEVATION 749.60 (749.52 WPSC). BM-3 PK NAIL SET ON TOP OF WOOD WALL, ELEVATION 749.96. BM-4 CHISELED "V" IN TOP OF RETAINING WALL, ELEVATION 749.78. ELEVATIONS BASED ON USGS DATUM.

SB-125 WAS INSTALLED IN OCTOBER 2001, LOCATION IS APPROXIMATED FROM FIELD MEASUREMENTS BY NRT.



LEGEND

⊙ AS-1	AIR SAMPLE (HSI)
MW-105	MONITORING WELL (NRT)
RW-101	RECOVERY WELL (NRT)
OW-1 MW-101 GW-1	MONITORING WELL (HSI)
P-4 P-101	PIEZOMETER (HSI)
P-104	BEDROCK PIEZOMETER (NRT)
P-3 OW-2	ABANDONED PIEZOMETER/ MONITORING WELL
TP-201	TEST PIT (NRT)
TP-115	TEST PIT (HSI)
HP-101	HYDRO-PUNCH (HSI)
PW-A	INDUSTRIAL SUPPLY WELL
▽ BM-2	BENCH MARK
HSI	HYDRO-SEARCH, INC.
⊕	CONSTRUCTION GRID POINT (CHISELED CROSS OR PK NAIL)
SB-101	SOIL BORING (NRT)
B-1 BX-4 B-101 SB-1 BZ-1	BOREHOLE (HSI)
● SS-5 SS-101	SHALLOW SOIL SAMPLE (HSI)
	CATCH BASIN
	GUY WIRE
	LITE POLE
	UTILITY POLE
	GAS VALVE
APPROXIMATE LOCATION OF:	
	PROPERTY BOUNDARY
	EXISTING SUBSURFACE MGP STRUCTURE
	EXISTING ABOVE GROUND BUILDING OR FOUNDATION
	FORMER MGP STRUCTURE LOCATION
○	MANHOLE
	HYDRANT
	RAILROAD
—X—X—	CHAIN LINK FENCE
----OEL----	OVERHEAD ELECTRIC LINE
----UEL----	UNDERGROUND ELECTRIC LINE
----GAS----	NATURAL GAS LINE
----SAN----	SANITARY SEWER LINE
----STM----	STORM SEWER LINE
----WTR----	WATER LINE
	UNDERGROUND MGP SEWER PIPING
—MGP—MGP—MGP—	UNDERGROUND MANUFACTURED GAS PIPING
—1895—1895—1895—	HISTORICAL SHORELINE WITH YEAR

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N R T

HISTORICAL SITE PLAN

REMEDIAL CONSTRUCTION
FORMER OSHKOSH MANUFACTURE GAS PLANT
WISCONSIN PUBLIC SERVICE CORPORATION
CITY OF OSHKOSH, WISCONSIN

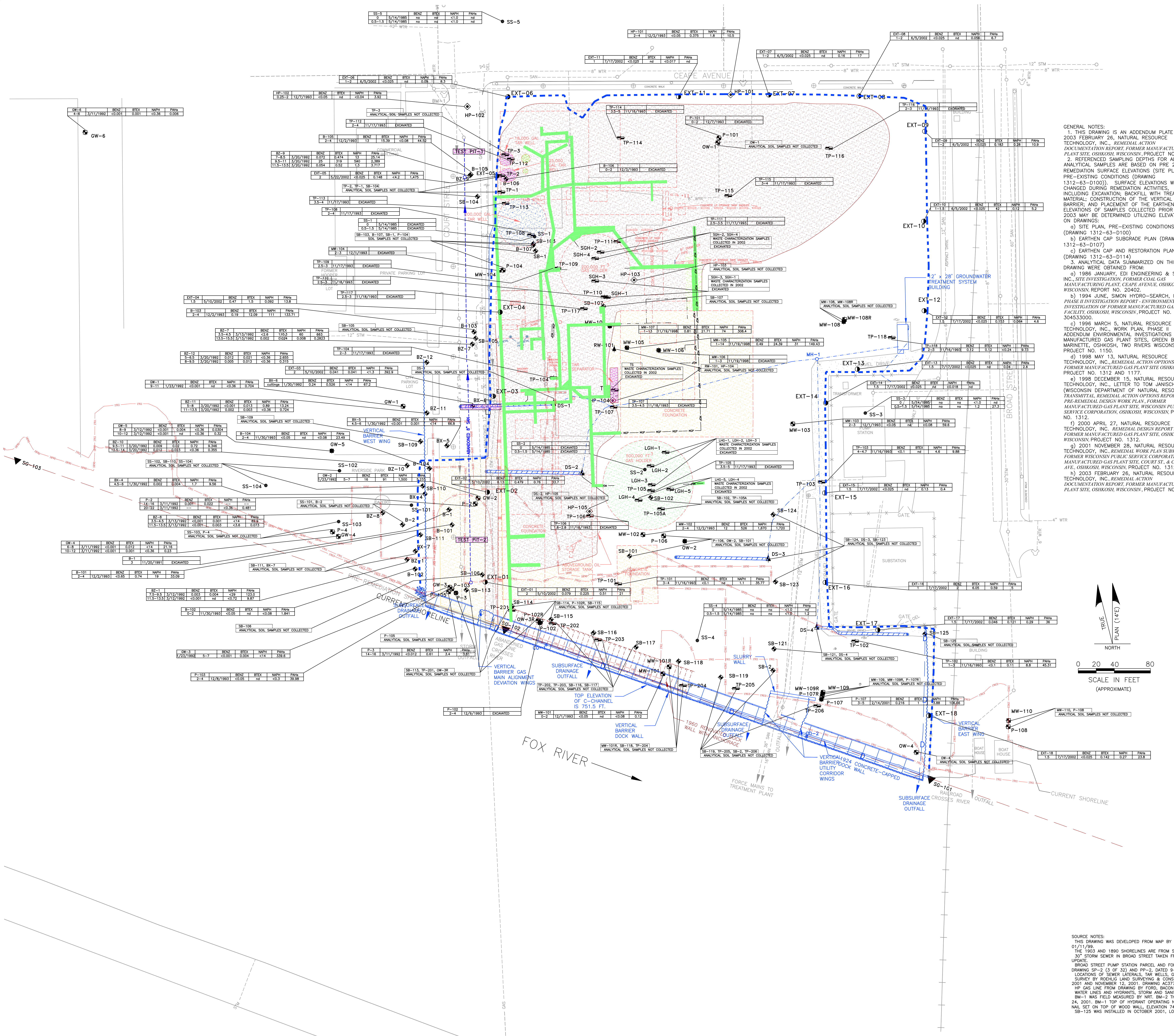
DRAWN BY: TAS/RLH	CHECKED BY: HMS	APPROVED BY: SLF
DATE: 03/08/02	DATE: 03/08/02	DATE: 03/08/02

PROJECT NO.
1312/6.3

DRAWING NO.
1312-63-D101

SHEET NO.
C020

REVISION:	DATE:	APP'D BY:
1. RECORD DRAWINGS	01/09/03	HMS
2.		
3.		
4.		
5.		
6.		
7.		



GENERAL NOTES:

1. THIS DRAWING IS AN ADDENDUM PLATE TO: 2003 FEBRUARY 26, NATURAL RESOURCE TECHNOLOGY, INC., *REMEDIAL ACTION DOCUMENTATION REPORT, FORMER MANUFACTURED GAS PLANT SITE, OSHKOSH, WISCONSIN*, PROJECT NO. 1312.

2. REFERENCED SAMPLING DEPTHS FOR ALL ANALYTICAL SAMPLES ARE BASED ON PRE 2002 REMEDIATION SURFACE ELEVATIONS (SITE PLAN, PRE-EXISTING CONDITIONS (DRAWING 1312-63-D100)). SURFACE ELEVATIONS WERE CHANGED DURING REMEDIATION ACTIVITIES, INCLUDING EXCAVATION; BACKFILL WITH TREATED MATERIAL; CONSTRUCTION OF THE VERTICAL BARRIER; AND PLACEMENT OF THE EARTHEN CAP. ELEVATIONS OF SAMPLES COLLECTED PRIOR TO 2003 MAY BE DETERMINED UTILIZING ELEVATIONS ON DRAWINGS:
   a) SITE PLAN, PRE-EXISTING CONDITIONS (DRAWING 1312-63-D100)
   b) EARTHEN CAP SUBGRADE PLAN (DRAWING 1312-63-D107)
   c) EARTHEN CAP AND RESTORATION PLAN (DRAWING 1312-63-D114)

3. ANALYTICAL DATA SUMMARIZED ON THIS DRAWING WERE OBTAINED FROM:
   a) 1986 JANUARY, EDI ENGINEERING & SCIENCE, INC., *SITE INVESTIGATION, FORMER COAL GAS MANUFACTURING PLANT, CEAPE AVENUE, OSHKOSH, WISCONSIN,* REPORT NO. 20402.
   b) 1994 JUNE, SIMON HYDRO-SEARCH, INC., *PHASE II INVESTIGATION REPORT - ENVIRONMENTAL INVESTIGATION OF FORMER MANUFACTURED GAS PLANT FACILITY, OSHKOSH, WISCONSIN*, PROJECT NO. 304533000.
   c) 1996 MARCH 5, NATURAL RESOURCE TECHNOLOGY, INC., WORK PLAN, PHASE II ADDENDUM ENVIRONMENTAL INVESTIGATIONS OF MANUFACTURED GAS PLANT SITES, GREEN BAY, MARINETTE, OSHKOSH, TWO RIVERS WISCONSIN, PROJECT NO. 1150.
   d) 1998 MAY 13, NATURAL RESOURCE TECHNOLOGY, INC., *REMEDIAL ACTION OPTIONS REPORT, FORMER MANUFACTURED GAS PLANT SITE OSHKOSH, WI*, PROJECT NO. 1312 AND 1177.
   e) 1998 DECEMBER 15, NATURAL RESOURCE TECHNOLOGY, INC., LETTER TO TOM JANISCH (WISCONSIN DEPARTMENT OF NATURAL RESOURCES), *TRANSMITTAL, REMEDIAL ACTION OPTIONS REPORT AND PRE-REMEDIAL DESIGN WORK PLAN, FORMER MANUFACTURED GAS PLANT SITE, WISCONSIN PUBLIC SERVICE CORPORATION, OSHKOSH, WISCONSIN,* PROJECT NO. 1312.
   f) 2000 APRIL 27, NATURAL RESOURCE TECHNOLOGY, INC. *REMEDIAL DESIGN REPORT, FORMER MANUFACTURED GAS PLANT SITE, OSHKOSH, WISCONSIN,* PROJECT NO. 1312.
   g) 2001 NOVEMBER 28, NATURAL RESOURCE TECHNOLOGY, INC., *REMEDIAL WORK PLAN SUBMITTAL, FORMER WISCONSIN PUBLIC SERVICE CORPORATION MANUFACTURED GAS PLANT SITE, COURT ST., & CEAPE AVE., OSHKOSH, WISCONSIN,* PROJECT NO. 1312.
   h) 2003 FEBRUARY 26, NATURAL RESOURCE TECHNOLOGY, INC., *REMEDIAL ACTION DOCUMENTATION REPORT, FORMER MANUFACTURED GAS PLANT SITE, OSHKOSH, WISCONSIN*, PROJECT NO. 1312.

LEGEND

◑ EXT-01	CAP EXTENT-SHALLOW SOIL SAMPLE
▲ RW-101	ABANDONED RECOVERY WELL
MW-108 ■ P-3 OW-2	ABANDONED PIEZOMETER/ MONITORING WELL
OW-1 P-4 ⊞ GW-1 MW-110	PIEZOMETER/MONITORING WELL
◈ HP-101	HYDRO-PUNCH
▲ DS-1	DEWATERING SUMP
SGH-1 LGH-1 TP-1	TEST PIT
B-1 B-101 BX-4 ⊕ SB-1 BZ-1	SOIL BORING
● SS-5	SHALLOW SOIL SAMPLE
▼ SG-101	STAFF GAUGE ABANDONED
HDPE	HIGH DENSITY POLYETHYLENE
HSI	HYDRO-SEARCH, INC.
⊕	CONSTRUCTION GRID POINT (CHISELED CROSS OR PK NAIL)
⊜	CATCH BASIN
	GUY WIRE
☼	LITE POLE
	UTILITY POLE
⋈	GAS VALVE

2002 REMEDIAL EXCAVATION DEPTHS (FT.)

🟨	0.5-3' EXCAVATION DEPTH
🟥	3-5' EXCAVATION DEPTH
🟩	5-7' EXCAVATION DEPTH
🟩	5-7' EXCAVATION DEPTH PIPING TRENCH
🟪	8-12' EXCAVATION DEPTH
🟦	20' EXCAVATION DEPTH
■ ■ ■ ■	APPROXIMATE EXTENT OF EARTHEN CAP PLACED IN 2002
—— ——D——	PERFORATED SUBSURFACE DRAIN PIPE PLACED IN 2002
—·—·—·—	GROUNDWATER CONVEYANCE PIPING PLACED IN 2002
▨	GROUNDWATER EXTRACTION TRENCH PLACED IN 2002
◉	CLEANOUT PLACED IN 2002
———	RAILROAD TIES PLACED IN 2002
▨	RIPRAP
⌐ - - - ¬	FORMER MGP STRUCTURE LOCATION
—— 1895 —— 1895 —— 1895 ——	HISTORICAL SHORELINE WITH YEAR

SAMPLE LOCATION		BENZ	BTEX	NAPH	PAHs
SAMPLE DEPTH (FT.)	DATE SAMPLED	BENZENE mg/kg	TOTAL BTEX mg/kg	NAPHTHALENE mg/kg	TOTAL PAHs mg/kg

BTEX – BENZENE, TOLUENE, ETHYLBENZENE, AND TOTAL XYLENES

NA OR -- = ANALYSIS NOT PERFORMED

mg/kg = MILLIGRAMS PER KILOGRAM

APPROXIMATE LOCATION OF:

—··—··—··—	UNDERGROUND MGP SEWER PIPING
—— MGP —— MGP —— MGP ——	UNDERGROUND MANUFACTURED NATURAL GAS LINE
⌐ - - - ¬	FORMER ABOVE GROUND BUILDING OR FOUNDATION AND SUBSURFACE MGP STRUCTURE
○	MANHOLE
	HYDRANT
—+—+—+—	RAILROAD
—X——X—	CHAIN LINK FENCE
----UEL-----	UNDERGROUND ELECTRIC LINE
----OEL----	OVERHEAD ELECTRIC LINE
----GAS----	GAS PIPING
----SAN----	SANITARY SEWER LINE
----STM----	STORM SEWER LINE
----WTR----	WATER LINE

SOURCE NOTES:

THIS DRAWING WAS DEVELOPED FROM MAP BY HYDRO-SEARCH, INC. DATED 06/03/94, PROJECT 304533000 AND A SURVEY BY WISCONSIN PUBLIC SERVICE CORPORATION DATED 01/11/99.

THE 1903 AND 1890 SHORELINES ARE FROM SANBORN MAPS. HISTORICAL SHORELINE LOCATIONS ARE APPROXIMATE.

30" STORM SEWER IN BROAD STREET TAKEN FROM SEWER SYSTEM 8TH WARD DRAWING BY CITY OF OSHKOSH WISCONSIN ENGINEERING DEPARTMENT, DATED 12-5-36, WITH 1977 UPDATE.

BROAD STREET PUMP STATION PARCEL AND FORCE MAINS DEVELOPED FROM DRAWING BY HNTB ARCHITECTS ENGINEERS PLANNERS, MILWAUKEE, WISCONSIN, PROJECT NO: 6378, DRAWING SP-2 (3 OF 32) AND PP-2, DATED 9-6-84.

LOCATIONS OF SEWER LATERALS, TAR WELLS, GAS HOLDERS, TAR STILL, TAR SEPARATORS, AND ASSOCIATIVE PIPING TAKEN FROM WPSC DRAWING NO. 140, DATED 1925.

SURVEY BY ROEHLIG LAND SURVEYING & CONSULTING LTD., OSHKOSH, WISCONSIN, DRAWING AC3771B.DWG, DATED AUGUST 17, 2001, REVISED AUGUST 28, 2001, OCTOBER 29, 2001 AND NOVEMBER 12, 2001. DRAWING AC3771E.DWG REVISION DATE SEPTEMBER 25, 2002 AND OCTOBER 3, 2002.

HP GAS LINE FROM DRAWING BY FORD, BACON AND DAVIS, INC., ENGINEERS, DRAWING NO. 60013-FI-S, REVISED DATED NOVEMBER 9, 1953.

WATER LINES AND HYDRANTS, STORM AND SANITARY LINES IN CEAPE AVENUE ARE TAKEN FROM CITY OF OSHKOSH ENGINEERING DIVISION DRAWING, DATED NOVEMBER 9, 1998.

BM-1 WAS FIELD MEASURED BY NRT. BM-2 THROUGH BM-4 WERE SURVEYED BY ROEHLIG LAND SURVEYING & CONSULTING LTD., OSHKOSH, WISCONSIN, NO. 2771A, DATED APRIL 24, 2001. BM-1 TOP OF HYDRANT OPERATING NUT, ELEVATION 754.18. BM-2 SPIKE IN WOOD RETAINING WALL PER WPSC SURVEY, ELEVATION 749.60 (749.52 WPSC). BM-3 PK NAIL SET ON TOP OF WOOD WALL, ELEVATION 749.96. BM-4 CHISELED "V" IN TOP OF RETAINING WALL, ELEVATION 749.78. ELEVATIONS BASED ON USGS DATUM.

SB-125 WAS INSTALLED IN OCTOBER 2001, LOCATION IS APPROXIMATED FROM FIELD MEASUREMENTS BY NRT.

REVISION:		DATE:	APP'D BY:
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7.			

Natural
Resource
Technology
N R T

SOIL ANALYTICAL SUMMARY (1985-2002 DATA)

FORMER OSHKOSH MANUFACTURED GAS PLANT
WISCONSIN PUBLIC SERVICE CORPORATION
CITY OF OSHKOSH, WISCONSIN

DRAWN BY: TAS/RLH	CHECKED BY: PAR	APPROVED BY: RJC
DATE: 05/21/03	DATE: 05/23/03	DATE: 12/03/03

PROJECT NO.
1312/7.1

DRAWING NO.
1312-71-E01C

PLATE
1

APPENDIX A2

SITE INVESTIGATION SOIL ANALYTICAL TABLES

TABLE 4-3. SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS - ORGANICS

Sample ID		SS-1	SS-1	SS-2	SS-2	SS-3	SS-3	SS-4	SS-4	SS-5	SS-5
Location		TAR WELL	TAR WELL	BIG HOLDER	BIG HOLDER	East ~~WEST~~ CENTER	East ~~WEST~~ CENTER	SOUTH CENTER	SOUTH CENTER	OFF-SITE NE CORNER	OFF-SITE NE CORNER
Depth (ft bgs)		SURFACE	0.5-1.5	SURFACE	0.5-1.5	SURFACE	0.5-1.5	SURFACE	0.5-1.5	SURFACE	0.5-1.5
Date Collected		05/14/85	05/14/85	05/14/85	05/14/85	05/14/85	05/14/85	05/14/85	05/14/85	05/14/85	05/14/85
		EXCAVATED	EXCAVATED	EXCAVATED	EX						
DETECTED PAHs	UNITS										
Acenaphthylene	mg/kg	~~ND~~	~~1.80~~	ND	ND	ND	ND	ND	ND	ND	ND
Anthracene	mg/kg	ND	~~1.40~~	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(a)anthracene	mg/kg	ND	~~10.00~~	ND	~~4.80~~	ND	4.80	ND	ND	ND	ND
Benzo(k)fluoranthene	mg/kg	ND	~~19.00~~	ND	~~8.00~~	ND	4.80	ND	ND	ND	ND
Benzo(a)pyrene	mg/kg	ND	~~12.00~~	ND	~~6.60~~	ND	5.20	ND	ND	ND	ND
Benzo(g,h,i)perylene	mg/kg	ND	~~5.90~~	ND	~~5.80~~	ND	2.60	ND	ND	ND	ND
Bis-(2-ethyl hexyl)phthalate	mg/kg	ND	~~24.00~~	ND	~~3.90~~	ND	ND	ND	ND	ND	ND
Chrysene	mg/kg	ND	~~6.30~~	ND	ND	ND	ND	ND	ND	ND	ND
Dibenzo(a,h)anthracene	mg/kg	ND	~~3.80~~	ND	~~5.60~~	ND	ND	ND	ND	ND	ND
Di-N-Butyl Phthalate	mg/kg	ND	~~ND~~	ND	ND	ND	1.10	1.30	ND	ND	ND
Fluoranthene	mg/kg	ND	~~14.00~~	ND	~~2.90~~	ND	2.40	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene	mg/kg	ND	~~2.80~~	ND	ND	ND	2.90	ND	ND	ND	ND
Naphthalene	mg/kg	ND	~~ND~~	ND	~~1.40~~	ND	1.20	ND	ND	ND	ND
Phenanthrene	mg/kg	ND	~~6.00~~	ND	~~1.20~~	ND	2.50	ND	1.20	ND	ND
Pyrene	mg/kg	ND	~~18.00~~	ND	~~3.60~~	ND	3.50	ND	ND	ND	ND
Sum of PAH Detections	mg/kg	~~0.0~~	~~125.0~~	~~0.0~~	~~43.0~~	0.0	31.0	1.3	1.2	0.0	0.0

/ : Excavated/Removed (EX)

▨ : Exceed Outdoor Worker SSLs Ingestion-Dermal (EPA supplemental guidance, Dec. 2002)

___ : Exceed Migration to Groundwater (EPA)

SIMON HYDRO-SEARCH

TABLE 4-3. SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS - ORGANICS (CONT'D.)

Sample ID		B-1	GW-1	GW-2	GW-3	BX-4	BX-5	BX-6	BZ-1	BZ-1	P-2	P-2
Location		OFF-SITE COURT ST.	OFF-SITE PKNG. LOT	OFF-SITE COURT ST.	OFF-SITE COURT ST.	OFF-SITE PARK	OFF-SITE COURT ST.	OFF-SITE COURT ST.	OFF-SITE PARK	OFF-SITE PARK	OFF-SITE COURT ST.	OFF-SITE COURT ST.
Depth (ft bgs)		APPROX. 3	9.0-11.0	5.0-7.0	5.0-7.0	4.5-6.0	4.8-6.3	CUTTINGS	7.5-9.5	11.5-13.5	14.0-16.0	20.0-22.0
Date Collected		11/20/91 EX	01/23/92	01/24/92	01/24/92	01/30/92	01/30/92	01/30/92	03/12/92	03/12/92	03/11/92	03/11/92
DETECTED VOCs	UNITS											
Benzene	mg/kg	ND	ND	16.000	ND	0.002	ND	0.240	0.003	ND	0.001	NA
n-Butylbenzene	mg/kg	~~16.000~~	ND	0.130	0.064	0.001	0.001	0.024	ND	ND	ND	NA
sec-Butylbenzene	mg/kg	ND	ND	ND	0.038	ND	ND	ND	ND	ND	ND	NA
Carbon tetrachloride	mg/kg	ND	ND	ND	ND	0.002	ND	ND	ND	ND	ND	NA
Chloroform	mg/kg	ND	ND	ND	0.002	0.004	ND	ND	ND	ND	0.001	NA
Dibromomethane	mg/kg	ND	ND	ND	0.002	0.001	ND	ND	ND	ND	ND	NA
Dichlorodifluoromethane	mg/kg	ND	ND	ND	0.002	ND	ND	0.004	ND	ND	ND	NA
1,1-Dichloroethane	mg/kg	ND	0.004	ND	0.009	0.032	0.004	0.004	ND	0.001	0.003	NA
1,2-Dichloroethane	mg/kg	ND	0.001	ND	0.003	0.002	ND	ND	ND	ND	ND	NA
cis-1,2-Dichloroethene	mg/kg	ND	ND	ND	ND	0.001	ND	ND	ND	ND	ND	NA
trans-1,2-Dichloroethene	mg/kg	ND	0.001	ND	0.003	0.003	0.001	0.001	ND	ND	ND	NA
1,3-Dichloropropane	mg/kg	ND	ND	ND	0.001	ND	ND	ND	ND	ND	ND	NA
Ethylbenzene	mg/kg	~~11.000~~	ND	16.000	ND	ND	0.001	0.160	ND	ND	0.004	NA
Isopropylbenzene	mg/kg	~~3.800~~	ND	3.000	0.011	ND	ND	0.042	ND	ND	0.001	NA
p-Isopropyltoluene	mg/kg	~~2.600~~	ND	0.220	ND	ND	ND	0.016	ND	ND	0.006	NA
Methylene chloride	mg/kg	~~5.300~~	0.008	0.130	0.048	0.120	0.029	0.058	0.006	0.009	0.010	NA
n-Propylbenzene	mg/kg	~~2.600~~	ND	0.330	0.035	ND	ND	0.013	ND	ND	ND	NA
Toluene	mg/kg	ND	ND	18.000	ND	0.001	ND	0.007	ND	0.001	0.006	NA
1,1,2,2-Tetrachloroethane	mg/kg	ND	ND	ND	0.002	ND	ND	ND	ND	ND	ND	NA
Tetrachloroethene	mg/kg	ND	ND	ND	0.001	ND	ND	ND	ND	ND	ND	NA
1,1,1-Trichloroethane	mg/kg	ND	ND	ND	ND	0.007	0.001	ND	ND	ND	ND	NA
1,1,2-Trichloroethane	mg/kg	ND	0.016	ND	0.032	0.012	0.004	0.006	ND	ND	0.002	NA
Trichloroethene	mg/kg	ND	ND	ND	ND	0.001	ND	ND	ND	ND	ND	NA
Trichlorofluoromethane	mg/kg	ND	ND	ND	ND	0.017	ND	ND	ND	ND	ND	NA
1,2,4-Trimethylbenzene	mg/kg	~~20.000~~	ND	29.000	0.039	0.001	0.003	0.410	ND	ND	0.004	NA
1,3,5-Trimethylbenzene	mg/kg	~~6.300~~	ND	12.000	0.025	ND	ND	0.020	ND	ND	0.001	NA
Xylenes	mg/kg	~~2.500~~	ND	41.000	0.004	0.001	ND	0.119	0.001	ND	0.011	NA
Sum of BETX Detections	mg/kg	~~13.500~~	0.000	91.000	0.004	0.004	0.001	0.526	0.004	0.001	0.022	NA
Sum of VOC Detections	mg/kg	~~70.100~~	0.030	119.810	0.321	0.206	0.044	0.884	0.007	0.011	0.049	NA

/ : Excavated/Removed (EX)

▨ : Exceed Outdoor Worker

—— : Exceed Migration to Groundwater

TABLE 4-3. SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS - ORGANICS (CONT'D.)

Sample ID		B-1	GW-1	GW-2	GW-3	BX-4	BX-5	BX-6	BZ-1	BZ-1	P-2	P-2
Location		OFF-SITE COURT ST.	OFF-SITE PRKG. LOT	OFF-SITE COURT ST.	OFF-SITE COURT ST.	OFF-SITE PARK	OFF-SITE COURT ST.	OFF-SITE COURT ST.	OFF-SITE PARK	OFF-SITE PARK	OFF-SITE COURT ST.	OFF-SITE COURT ST.
Depth (ft bgs)		APPROX. 3	9.0-11.0	5.0-7.0	5.0-7.0	4.5-6.0	4.8-6.3	CUTTINGS	7.5-9.5	11.5-13.5	14.0-16.0	20.0-22.0
Date Collected		11/20/91 EX	01/23/92	01/24/92	01/24/92	01/30/92	01/30/92	01/30/92	03/12/92	03/12/92	03/11/92	03/11/92
DETECTED PAHs	UNITS											
Naphthalene	mg/kg	~~93.00~~	0.001	1,500.000	ND	1.700	0.002	ND	0.001	ND	0.120	ND
Acenaphthylene	mg/kg	~~72.00~~	ND	200.000	ND	2.100	ND	ND	ND	ND	NA	ND
Acenaphthene	mg/kg	~~230.00~~	ND	490.000	15.000	1.200	ND	ND	ND	1.200	NA	ND
Fluorene	mg/kg	~~45.00~~	ND	95.000	3.600	0.280	ND	ND	ND	0.120	NA	ND
Phenanthrene	mg/kg	~~130.00~~	ND	330.000	9.500	0.300	ND	ND	ND	0.550	NA	ND
Anthracene	mg/kg	~~180.00~~	ND	850.000	110.000	1.600	18.000	21.000	33.000	2.700	NA	ND
Fluoranthene	mg/kg	~~400.00~~	0.190	440.000	62.000	0.770	13.000	11.000	24.000	1.700	NA	0.11
Pyrene	mg/kg	~~100.00~~	ND	220.000	21.000	0.220	2.700	2.700	ND	ND	NA	ND
Benzo(a)anthracene	mg/kg	~~47.00~~	0.021	93.000	9.700	0.160	2.600	2.400	3.800	0.250	NA	0.015
Chrysene	mg/kg	~~95.00~~	0.076	200.000	18.000	0.240	4.900	4.600	9.400	0.600	NA	0.042
Benzo(b)fluoranthene	mg/kg	~~140.00~~	0.170	270.000	42.000	0.420	9.400	8.700	18.000	0.970	NA	0.140
Benzo(k)fluoranthene	mg/kg	~~35.00~~	0.029	59.000	6.800	0.084	1.900	1.800	3.600	0.210	NA	0.041
Benzo(a)pyrene	mg/kg	~~60.00~~	0.032	140.000	12.000	0.180	4.100	3.900	7.300	0.360	NA	0.033
Dibenzo(a,h)anthracene	mg/kg	ND	ND	46.000	ND	0.090	1.100	1.800	3.500	0.200	NA	0.036
Benzo(ghi)perylene	mg/kg	~~120.00~~	0.086	180.000	15.000	0.240	4.300	4.200	11.000	0.590	NA	0.092
Indeno(1,2,3-cd)pyrene	mg/kg	~~32.00~~	0.100	120.000	15.000	0.120	4.800	5.100	9.400	0.420	NA	0.098
Sum of PAH Detections	mg/kg	~~1,779.00~~	0.71	5,233.00	339.60	9.70	66.80	67.20	123.00	9.87	0.12	0.61

/ : Excavated/Removed (EX)

▨ : Exceed Outdoor Worker SSLs Ingestion-Dermal

——— : Exceed Migration to Groundwater

SIMON HYDRO-SEARCH

TABLE 4-3. SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS - ORGANICS (CONT'D.)

Sample ID		P-3	GW-4	GW-4	GW-5	GW-5	GW-6	BZ-7	BZ-7	BZ-8	BZ-8
Location		OFF-SITE COURT ST.	OFF-SITE PARK	OFF-SITE PARK	OFF-SITE PRKG. LOT	OFF-SITE PRKG. LOT	OFF-SITE ALLEY	OFF-SITE COURT ST.	OFF-SITE COURT ST.	OFF-SITE PARK	OFF-SITE PARK
Depth (ft bgs)		14.0-16.0	6.0-8.0	10.0-12.0	8.0-9.0	10.0-12.0	4.0-6.0	3.5-4.5	13.5-15.5	3.5-4.5	11.5-13.5
Date Collected		03/11/92	03/11/92	03/11/92	03/12/92	03/12/92	03/12/92	03/13/92	03/13/92	03/13/92	03/13/92
DETECTED VOCs	UNITS										
Benzene	mg/kg	ND	ND	ND	ND	ND	ND	ND	0.002	ND	ND
n-Butylbenzene	mg/kg	ND	0.014	ND	ND	ND	ND	ND	ND	ND	ND
sec-Butylbenzene	mg/kg	ND	0.017	ND	ND	ND	ND	ND	ND	ND	ND
tert-Butylbenzene	mg/kg	ND	0.011	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	mg/kg	ND	ND	0.002	ND	ND	ND	ND	0.001	ND	0.001
1,1-Dichloroethane	mg/kg	ND	0.003	0.004	0.001	ND	ND	ND	0.003	0.002	0.005
1,1-Dichloroethene	mg/kg	ND	ND	ND	0.002	ND	ND	ND	0.002	0.001	ND
1,3-Dichloropropane	mg/kg	ND	0.002	0.002	0.001	ND	ND	ND	ND	ND	ND
Ethylbenzene	mg/kg	0.180	0.008	ND	0.001	ND	ND	72.000	0.008	ND	ND
Isopropylbenzene	mg/kg	0.018	ND	ND	ND	ND	ND	2.600	ND	ND	ND
Methylene chloride	mg/kg	0.022	0.007	0.006	0.007	0.004	0.009	6.000	0.013	0.004	0.013
n-Propylbenzene	mg/kg	ND	0.020	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	mg/kg	ND	ND	ND	0.001	ND	ND	ND	ND	ND	ND
Toluene	mg/kg	ND	ND	0.001	0.002	ND	0.001	5.300	0.008	0.001	0.002
1,1,1-Trichloroethane	mg/kg	ND	ND	ND	0.003	ND	ND	ND	0.001	0.001	ND
1,1,2-Trichloroethane	mg/kg	ND	0.005	0.006	0.005	0.001	ND	ND	0.002	0.002	0.004
Trichloroethene	mg/kg	ND	ND	ND	0.002	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	mg/kg	0.150	0.009	ND	ND	ND	ND	12.000	0.001	ND	ND
1,3,5-Trimethylbenzene	mg/kg	0.050	0.004	ND	ND	ND	ND	3.800	ND	ND	ND
Xylenes	mg/kg	0.430	0.004	ND	0.001	ND	ND	33.000	0.006	ND	0.001
Sum of BETX Detections	mg/kg	0.510	0.012	0.001	0.004	0.000	0.001	110.300	0.024	0.001	0.003
Sum of VOC Detections	mg/kg	0.850	0.104	0.021	0.026	0.005	0.010	134.700	0.047	0.011	0.026

TABLE 4-3. SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS - ORGANICS (CONT'D.)

Sample ID Location Depth (ft bgs) Date Collected		P-3 OFF-SITE COURT ST. 14.0-16.0 03/11/92	GW-4 OFF-SITE PARK 6.0-8.0 03/11/92	GW-4 OFF-SITE PARK 10.0-12.0 03/11/92	GW-5 OFF-SITE PRKG. LOT 8.0-9.0 03/12/92	GW-5 OFF-SITE PRKG. LOT 10.0-12.0 03/12/92	GW-6 OFF-SITE ALLEY 4.0-6.0 03/12/92	BZ-7 OFF-SITE COURT ST. 3.5-4.5 03/13/92	BZ-7 OFF-SITE COURT ST. 13.5-15.5 03/13/92	BZ-8 OFF-SITE PARK 3.5-4.5 03/13/92	BZ-8 OFF-SITE PARK 11.5-13.5 03/13/92
DETECTED PAHs	UNITS										
Naphthalene	mg/kg	12.000	ND	ND	ND	0.0010	ND	82.000	0.0080	ND	ND
Acenaphthylene	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acenaphthene	mg/kg	ND	ND	ND	ND	ND	ND	72.000	ND	ND	ND
Fluorene	mg/kg	ND	ND	ND	ND	0.0440	ND	12.000	ND	ND	ND
Phenanthrene	mg/kg	ND	ND	ND	ND	ND	ND	46.000	ND	ND	ND
Anthracene	mg/kg	ND	ND	ND	ND	ND	ND	130.000	ND	22.000	ND
Fluoranthene	mg/kg	ND	3.000	0.0730	ND	0.0550	ND	110.000	0.0960	16.000	ND
Pyrene	mg/kg	ND	ND	ND	ND	ND	ND	49.000	ND	6.200	ND
Benzo(a)anthracene	mg/kg	0.022	0.520	0.0071	ND	0.0054	ND	19.000	0.0027	2.800	ND
Chrysene	mg/kg	0.065	1.400	ND	ND	ND	ND	34.000	ND	6.200	ND
Benzo(b)fluoranthene	mg/kg	ND	2.600	ND	0.0120	ND	0.0055	51.000	0.0650	10.000	ND
Benzo(k)fluoranthene	mg/kg	ND	0.580	ND	0.0037	0.0290	ND	11.000	0.0190	2.300	ND
Benzo(a)pyrene	mg/kg	0.033	0.350	0.0210	0.0048	0.0190	ND	17.000	0.0086	4.100	0.073
Dibenzo(a,h)anthracene	mg/kg	0.050	0.710	ND	ND	0.0280	ND	8.000	ND	2.000	ND
Benzo(ghi)perylene	mg/kg	0.130	1.600	0.0760	ND	0.0680	ND	26.000	0.0510	6.300	ND
Indeno(1,2,3-cd)pyrene	mg/kg	0.110	1.300	0.0560	0.0099	0.0710	ND	18.000	0.0400	5.000	ND
Sum of PAH Detections	mg/kg	12.410	12.060	0.2331	0.0304	0.3204	0.0055	685.000	0.2903	82.900	0.073

TABLE 4-3. SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS - ORGANICS (CONT'D.)

Sample ID		BZ-9	BZ-9	BZ-9	BZ-10	BZ-10	BZ-11	BZ-11	BZ-12	BZ-12
Location		OFF-SITE COURT ST.	OFF-SITE COURT ST.	OFF-SITE COURT ST.	OFF-SITE PARK	OFF-SITE PARK	OFF-SITE PRKG. LOT	OFF-SITE PRKG. LOT	OFF-SITE PRKG. LOT	OFF-SITE PRKG. LOT
Depth (ft bgs)		7.0-8.5	9.5-11.0	11.5-13.5	9.5-11.0	12.5-14.0	5.0-8.0	11.0-13.5	5.0-6.5	8.0-9.5
Date Collected										
DETECTED VOCs	UNITS									
Benzene	mg/kg	0.072	25.000	0.054	0.009	0.012	ND	0.002	0.012	0.005
n-Butylbenzene	mg/kg	0.010	8.100	ND	0.005	ND	0.005	ND	ND	ND
Dibromamethane	mg/kg	ND	ND	ND	ND	0.001	ND	ND	ND	ND
Dichlorodifluoromethane	mg/kg	ND	ND	0.042	ND	ND	0.003	ND	0.007	0.003
1,1-Dichloroethane	mg/kg	ND	ND	ND	ND	0.002	ND	ND	ND	ND
1,1-Dichloroethene	mg/kg	0.002	ND	ND	0.002	0.002	ND	ND	ND	ND
Ethylbenzene	mg/kg	0.130	13.000	0.026	0.001	ND	0.002	ND	ND	ND
Isopropylbenzene	mg/kg	0.011	ND	ND	0.005	ND	0.008	ND	ND	ND
p-Isopropyltoluene	mg/kg	0.007	ND	ND	0.047	0.003	0.014	ND	ND	ND
Methylene chloride	mg/kg	0.003	8.300	0.018	0.006	0.005	0.004	0.006	0.008	0.01
n-Propylbenzene	mg/kg	0.006	ND	ND	0.002	ND	0.002	ND	ND	ND
Toluene	mg/kg	0.022	83.000	0.100	0.004	0.009	0.002	0.001	0.007	0.008
1,1,1-Trichloroethane	mg/kg	0.005	ND	ND	0.003	0.002	ND	ND	ND	ND
1,1,2-Trichloroethane	mg/kg	0.001	ND	ND	ND	0.002	ND	ND	ND	ND
Trichloroethene	mg/kg	0.003	ND	ND	0.001	0.002	ND	ND	ND	ND
1,2,4-Trimethylbenzene	mg/kg	0.240	75.000	0.100	0.004	ND	0.014	ND	ND	ND
1,3,5-Trimethylbenzene	mg/kg	0.068	27.000	0.033	0.002	ND	0.003	ND	ND	ND
Xylenes	mg/kg	0.250	198.000	0.340	0.006	0.002	0.009	ND	0.002	ND
Sum of BETX Detections	mg/kg	0.474	319.000	0.520	0.020	0.023	0.013	0.003	0.021	0.013
Sum of VOC Detections	mg/kg	0.830	437.400	0.713	0.097	0.042	0.066	0.009	0.036	0.026

TABLE 4-3. SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS - ORGANICS (CONT'D.)

Sample ID		BZ-9	BZ-9	BZ-9	BZ-10	BZ-10	BZ-11	BZ-11	BZ-12	BZ-12
Location		OFF-SITE COURT ST.	OFF-SITE COURT ST.	OFF-SITE COURT ST.	OFF-SITE PARK	OFF-SITE PARK	OFF-SITE PRKG. LOT	OFF-SITE PRKG. LOT	OFF-SITE PRKG. LOT	OFF-SITE PRKG. LOT
Depth (ft bgs)		7.0-8.5	9.5-11.0	11.5-13.5	9.5-11.0	12.5-14.0	5.0-8.0	11.0-13.5	5.0-6.5	8.0-9.5
Date Collected										
DETECTED PAHs	UNITS									
Naphthalene	mg/kg	~~24.000~~ 13	~~2,000.00~~ 540	1.300	0.720	ND	0.890	ND	ND	ND
Acenaphthylene	mg/kg	~~5.900~~ 5.9	230.00	ND	ND	ND	1.500	ND	ND	ND
Acenaphthene	mg/kg	3.200	170.00	ND	1.100	ND	ND	ND	ND	ND
Fluorene	mg/kg	0.820	86.00	0.110	0.200	ND	0.270	ND	ND	ND
Phenanthrene	mg/kg	ND	180.00	0.230	0.540	ND	0.500	ND	0.200	ND
Anthracene	mg/kg	1.200	405.00	0.570	0.830	ND	2.500	ND	0.400	ND
Fluoranthene	mg/kg	0.400	290.00	0.370	0.620	ND	1.500	0.200	0.800	ND
Pyrene	mg/kg	0.130	100.00	0.160	0.120	ND	0.600	ND	0.120	ND
Benzo(a)anthracene	mg/kg	0.021	36.00	0.053	0.033	0.0032	0.250	0.011	0.045	0.0044
Chrysene	mg/kg	0.063	70.00	0.140	4.600	0.1200	1.500	ND	0.390	ND
Benzo(b)fluoranthene	mg/kg	0.130	110.00	0.250	0.220	0.0650	1.300	0.210	0.320	0.1100
Benzo(k)fluoranthene	mg/kg	0.027	23.00	0.059	0.045	0.0170	0.280	0.037	0.058	0.0210
Benzo(a)pyrene	mg/kg	0.044	38.00	0.085	0.100	0.0250	0.470	0.017	0.089	0.0220
Dibenzo(a,h)anthracene	mg/kg	0.034	18.00	0.070	ND	0.0140	0.290	0.070	0.070	0.0210
Benzo(ghi)perylene	mg/kg	0.089	50.00	0.160	0.120	0.0610	0.770	0.120	0.140	0.0630
Indeno(1,2,3-cd)pyrene	mg/kg	0.084	43.00	0.160	0.098	0.0500	0.620	0.059	0.023	0.0740
Sum of PAH Detections	mg/kg	36.142	3,849.00	3.717	9.346	0.3552	13.240	0.724	2.655	0.3154

TABLE 4-3. SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS - ORGANICS (CONT'D.)

Test Pit ID		TP-101	TP-102	TP-103	TP-104	TP-105	TP-106	TP-107	TP-108	TP-109
Location		SOUTH SIDE	SOUTH SIDE	EAST SIDE	WEST - BY DRAIN PIT	OVER LARGE GAS HLDR.	OVER OIL TANK	BY TAR SEPARATOR	OVER TAR WELL	WEST SIDE
Depth (ft bgs)		3.0-4.0	1.0-3.0	4.0-4.7	2.0-3.0	3.5-5.0	1.8-2.8	3.5-4.5	2.0-4.0	2.5-3.0
Date Collected		11/16/93	11/16/93	11/16/93	11/17/93	11/17/93	11/18/93	11/18/93	11/17/93	11/17/93
					EX	EX	EX	EX	EX	EX
PARAMETERS	UNITS									
Total Phenol	mg/kg	0.11	ND	ND	~~0.94~~	~~0.33~~	ND	ND	~~0.23~~	ND
VOCs										
Benzene	mg/kg	ND	ND	ND	ND	~~1.50~~	ND	ND	~~0.44~~	ND
Ethylbenzene	mg/kg	ND	ND	ND	ND	~~31.00~~	ND	ND	~~0.75~~	ND
Toluene	mg/kg	ND	0.11	ND	~~0.13~~	~~0.77~~	ND	ND	~~0.36~~	ND
Xylenes	mg/kg	ND	ND	ND	ND	~~36.00~~	ND	ND	~~0.57~~	ND
Sum of VOC Detections	mg/kg	0.00	0.11	0.00	~~0.13~~	~~69.07~~	0.00	0.00	~~2.12~~	0.00
DETECTED PAHs										
Anthracene	mg/kg	0.580	0.740	0.170	~~0.460~~	~~0.073~~	~~0.036~~	~~0.190~~	~~7.100~~	~~7.800~~
Benzo(a)anthracene	mg/kg	4.100	4.500	0.900	~~7.300~~	~~0.240~~	~~0.600~~	~~1.100~~	~~38.000~~	~~31.000~~
Benzo(b)fluoranthene	mg/kg	0.870	2.200	0.140	~~20.000~~	~~0.051~~	~~0.110~~	~~1.800~~	~~15.000~~	~~59.000~~
Benzo(k)fluoranthene	mg/kg	1.600	1.200	0.220	~~12.000~~	~~0.030~~	~~0.038~~	~~0.350~~	~~8.400~~	~~25.000~~
Benzo(a)pyrene	mg/kg	4.800	3.100	0.760	~~31.000~~	~~0.089~~	~~0.140~~	~~3.300~~	~~21.000~~	~~82.000~~
Benzo(ghi)perylene	mg/kg	5.200	2.800	1.100	~~69.000~~	~~1.300~~	~~0.140~~	~~6.900~~	~~18.000~~	~~130.000~~
Chrysene	mg/kg	2.700	2.600	0.440	ND	~~0.110~~	~~0.087~~	~~0.610~~	~~16.000~~	~~10.000~~
Fluoranthene	mg/kg	5.200	7.900	0.170	~~22.000~~	~~0.380~~	~~0.400~~	~~0.340~~	~~68.000~~	~~84.000~~
Fluorene	mg/kg	0.210	0.370	ND	ND	ND	ND	ND	~~11.000~~	~~0.840~~
Indeno(1,2,3-cd)pyrene	mg/kg	4.100	2.400	0.820	~~14.000~~	~~0.031~~	~~0.120~~	~~5.100~~	~~16.000~~	~~86.000~~
Naphthalene	mg/kg	1.100	8.800	4.600	~~44.000~~	~~140.000~~	ND	~~1.800~~	ND	ND
Phenanthrene	mg/kg	0.910	6.100	0.110	~~7.600~~	~~0.480~~	~~0.250~~	~~0.240~~	~~39.000~~	~~44.000~~
Pyrene	mg/kg	4.400	2.600	0.450	ND	~~0.110~~	~~0.320~~	~~0.240~~	~~25.000~~	~~92.000~~
Sum of PAH Detections	mg/kg	35.770	45.310	9.880	~~227.360~~	~~142.894~~	~~2.241~~	~~21.970~~	~~282.500~~	~~651.440~~

TABLE 4-3. SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS - ORGANICS (CONT'D.)

Test Pit ID		TP-110	TP-111	TP-112	TP-113	TP-114	TP-115	TP-116	TP-117	TP-118
Location		IN SMALL GAS HLDR.	NORTH OF TP-110	NW - BY TAR WELLS	NW - BY TAR WELL	NORTH SIDE	NORTH SIDE	NORTHEAST CORNER	OVER TAR SEPARATORS	EAST SIDE
Depth (ft bgs)		2.5-3.0	2.5-3.5	2.0-3.0	3.5-4.0	3.5-5.0	3.0-4.0	2.0-3.0	2.5-3.0	2.0-3.0
Date Collected		11/18/93	11/17/93	11/17/93	11/17/93	11/16/93	11/17/93	11/16/93	11/18/93	11/16/93
		EX	EX	EX	EX	EX	EX	EX	EX	
PARAMETERS	UNITS									
Total Phenol	mg/kg	~~150.00~~	ND	ND	~~0.25~~	ND	ND	~~0.53~~	ND	ND
VOCs										
Benzene	mg/kg	~~240.00~~	ND	ND	ND	ND	ND	ND	~~0.24~~	0.12
Ethylbenzene	mg/kg	~~30.00~~	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	mg/kg	~~380.00~~	ND	~~0.23~~	ND	ND	ND	ND	~~0.13~~	ND
Xylenes	mg/kg	~~310.00~~	ND	ND	ND	ND	ND	ND	~~0.45~~	ND
Sum of VOC Detections	mg/kg	~~960.00~~	0.00	~~0.23~~	0.00	0.00	0.00	0.00	~~0.82~~	0.12
DETECTED PAHs										
Anthracene	mg/kg	~~1,110.0~~	~~0.400~~	~~6.400~~	~~15.000~~	~~0.810~~	ND	~~4.600~~	~~2.200~~	0.130
Benzo(a)anthracene	mg/kg	~~545.0~~	ND	~~15.000~~	~~28.000~~	~~2.300~~	~~34.000~~	~~10.000~~	~~8.900~~	0.640
Benzo(b)fluoranthene	mg/kg	~~200.0~~	ND	~~29.000~~	~~29.000~~	~~2.100~~	~~19.000~~	~~11.000~~	~~5.400~~	0.910
Benzo(k)fluoranthene	mg/kg	~~330.0~~	~~0.130~~	~~16.000~~	~~14.000~~	~~0.900~~	~~9.800~~	~~5.100~~	~~3.200~~	0.450
Benzo(a)pyrene	mg/kg	~~410.0~~	~~0.300~~	~~34.000~~	~~34.000~~	~~3.000~~	~~25.000~~	~~13.000~~	~~11.000~~	1.000
Benzo(ghi)perylene	mg/kg	~~170.0~~	~~0.390~~	~~27.000~~	~~33.000~~	~~2.800~~	~~22.000~~	~~14.000~~	~~7.800~~	1.400
Chrysene	mg/kg	~~470.0~~	~~0.190~~	~~4.100~~	~~28.000~~	~~2.200~~	~~18.000~~	~~11.000~~	~~7.000~~	0.670
Fluoranthene	mg/kg	~~290.0~~	~~0.520~~	~~23.000~~	~~81.000~~	~~5.400~~	~~73.000~~	~~36.000~~	~~14.000~~	1.800
Fluorene	mg/kg	~~1,630.0~~	~~0.027~~	~~21.000~~	~~11.000~~	ND	~~5.000~~	~~2.500~~	ND	ND
Indeno(1,2,3-cd)pyrene	mg/kg	~~150.0~~	~~0.320~~	~~23.000~~	~~29.000~~	~~2.400~~	~~19.000~~	~~11.000~~	~~5.100~~	1.100
Naphthalene	mg/kg	~~14,900.0~~	ND	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	mg/kg	~~4,900.0~~	~~1.400~~	~~16.000~~	~~57.000~~	~~2.300~~	~~40.000~~	~~23.000~~	~~7.000~~	0.920
Pyrene	mg/kg	~~620.0~~	ND	ND	~~47.000~~	~~2.900~~	~~54.000~~	~~22.000~~	~~5.800~~	0.710
Sum of PAH Detections	mg/kg	~~25,725.0~~	~~3.677~~	~~214.500~~	~~406.000~~	~~27.110~~	~~318.800~~	~~163.200~~	~~77.400~~	9.730

TABLE 4-3. SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS - ORGANICS (CONT'D.)

Sample ID		B-101	B-102	B-103	B-104	B-105	B-106	MW-101	MW-102	MW-103
Location		OFF-SITE COURT ST.	OFF-SITE PARK	OFF-SITE COURT ST.	OFF-SITE PARK	OFF-SITE COURT ST.	NW - BY TAR WELL	SOUTH - BY FOX RIVER	CENTER GAS HLDR	EAST CENTER
Depth (ft bgs)		2.0-4.0	0.0-2.0	2.0-4.0	2.0-4.0	2.0-4.0	0.0-2.0	0.0-2.0	2.0-4.0	2.0-3.0
Date Collected		12/02/93	11/30/93	12/02/93	11/30/93	12/02/93	12-03/93 EX	12/01/93	12/02/93	12/01/93
PARAMETER	UNITS									
Total Phenol	mg/kg	ND	ND	1.29	ND	ND	ND	ND	0.75	ND
VOCs										
Benzene	mg/kg	ND	ND	0.19	ND	13.00	ND	ND	12.00	ND
Ethylbenzene	mg/kg	0.74	ND	6.50	ND	0.63	ND	ND	260.00	ND
Toluene	mg/kg	ND	ND	1.20	ND	0.26	ND	ND	14.00	ND
Xylenes	mg/kg	ND	ND	4.20	ND	1.50	ND	ND	240.00	ND
Sum of VOC Detections	mg/kg	0.74	0.00	12.09	0.00	15.39	0.00	0.00	526.00	0.00
DETECTED PAHs										
Anthracene	mg/kg	1.400	ND	1.100	0.510	0.960	~~0.100~~	ND	3.100	1.100
Benzo(a)anthracene	mg/kg	ND	0.066	2.200	1.700	8.300	~~0.430~~	0.014	0.210	4.900
Benzo(b)fluoranthene	mg/kg	ND	0.035	0.980	1.800	3.100	~~0.440~~	ND	2.600	3.400
Benzo(k)fluoranthene	mg/kg	ND	0.031	0.530	0.940	0.900	~~0.250~~	ND	1.700	1.600
Benzo(a)pyrene	mg/kg	0.960	0.240	1.700	2.200	4.800	~~0.460~~	ND	2.800	4.300
Benzo(ghi)perylene	mg/kg	ND	0.470	1.500	2.000	5.300	~~0.560~~	ND	3.000	5.100
Chrysene	mg/kg	0.530	0.093	1.200	2.000	2.600	~~0.480~~	0.020	3.300	3.100
Fluoranthene	mg/kg	5.300	0.130	4.500	4.700	6.300	~~0.910~~	0.058	15.000	13.000
Fluorene	mg/kg	2.100	ND	1.500	0.440	0.860	ND	ND	5.100	1.100
Indeno(1,2,3-cd)pyrene	mg/kg	ND	ND	1.100	1.500	4.000	~~0.430~~	ND	ND	3.900
Naphthalene	mg/kg	19.000	ND	111.000	ND	ND	ND	ND	1,670.000	ND
Phenanthrene	mg/kg	3.800	0.680	4.800	3.400	4.100	~~0.450~~	ND	8.900	8.300
Pyrene	mg/kg	ND	0.096	1.600	2.300	3.300	~~0.590~~	0.030	4.600	9.800
Sum of PAH Detections	mg/kg	33.090	1.841	133.710	23.490	44.520	~~5.100~~	0.122	1,720.310	59.600

TABLE 4-3. SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS - ORGANICS (CONT'D.)

Sample ID		MW-104	P-101	P-102	P-103	HP-101	HP-102
Location		WEST SIDE	NORTH CENTER	SOUTHWEST CORNER	OFF-SITE COURT ST.	NORTH CENTER	OFF-SITE COURT ST.
Depth (ft bgs)		2.0-3.0	0.0-2.0	2.0-4.0	2.0-4.0	2.0-4.0	0.25-2.0
Date Collected		12/01/93	12/07/93	12/09/93	12/08/93	12/02/93	12/09/93
		EX	EX	EX			
PARAMETER	UNITS						
Total Phenol	mg/kg	ND	ND	ND	ND	ND	ND
VOCs							
Benzene	mg/kg	ND	ND	~~0.15~~	ND	ND	ND
Ethylbenzene	mg/kg	ND	ND	~~0.20~~	ND	0.120	ND
Toluene	mg/kg	ND	ND	~~0.20~~	ND	0.055	ND
Xylenes	mg/kg	ND	ND	~~0.81~~	ND	0.200	ND
Sum of VOC Detections	mg/kg	0.00	0.00	~~1.36~~	0.00	0.375	0.000
DETECTED PAHs							
Anthracene	mg/kg	~~1.200~~	~~0.220~~	~~0.210~~	1.200	0.180	0.078
Benzo(a)anthracene	mg/kg	~~2.500~~	~~1.000~~	~~5.900~~	4.300	0.750	0.410
Benzo(b)fluoranthene	mg/kg	~~1.700~~	~~1.100~~	~~3.500~~	2.300	0.620	0.290
Benzo(k)fluoranthene	mg/kg	~~1.200~~	~~0.460~~	~~1.900~~	1.200	0.290	0.130
Benzo(a)pyrene	mg/kg	~~2.600~~	~~1.200~~	~~5.700~~	3.600	0.780	0.500
Benzo(ghi)perylene	mg/kg	~~1.500~~	~~1.600~~	~~5.500~~	2.500	0.890	0.550
Chrysene	mg/kg	~~2.500~~	~~0.820~~	~~3.700~~	3.100	0.570	0.340
Fluoranthene	mg/kg	~~4.800~~	~~2.300~~	~~11.000~~	9.100	1.600	0.630
Fluorene	mg/kg	ND	~~0.120~~	~~0.230~~	0.180	0.041	ND
Indeno(1,2,3-cd)pyrene	mg/kg	~~1.700~~	~~1.200~~	~~4.600~~	2.400	0.690	0.450
Naphthalene	mg/kg	ND	~~1.800~~	ND	ND	1.800	ND
Phenanthrene	mg/kg	~~1.500~~	~~1.400~~	~~2.600~~	3.100	0.920	0.300
Pyrene	mg/kg	~~2.600~~	~~1.200~~	~~7.500~~	7.000	1.000	0.240
Sum of PAH Detections	mg/kg	~~23.800~~	~~14.620~~	~~52.340~~	39.980	10.131	3.918

Notes: ft bgs = feet below ground surface
VOCs = Volatile Organic Compounds
ND = Parameter not detected above method detection limit
mg/kg = milligrams per kilogram
PAHs = Polynuclear Aromatic Hydrocarbons
NA = Parameter not analyzed

TABLE 4-4. SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS - CYANIDE COMPOUNDS

Sample ID		SS-1	SS-1	SS-2	SS-2	SS-3	SS-3	SS-4	SS-4	SS-5	SS-5
Location		TAR WELL	TAR WELL	BIG HOLDER	BIG HOLDER	WEST CENTER	WEST CENTER	SOUTH CENTER	SOUTH CENTER	OFF-SITE NE CORNER	OFF-SITE NE CORNER
Depth (ft bgs)		SURFACE	0.5-1.5	SURFACE	0.5-1.5	SURFACE	0.5-1.5	SURFACE	0.5-1.5	SURFACE	0.5-1.5
Date Collected		05/14/85	05/14/85	05/14/85	05/14/85	05/14/85	05/14/85	05/14/85	05/14/85	05/14/85	05/14/85
		EX	EX	EX	EX						
PARAMETERS	UNITS										
Total Cyanide	mg/kg	ND	0.28	ND	1.90	0.20	0.68	ND	ND	ND	ND
Amenable Cyanide	mg/kg	ND	ND	ND	ND	0.10	0.48	ND	ND	ND	ND

Sample ID		GW-6	TP-101	TP-103	TP-107	TP-109	TP-111	TP-113	TP-114	TP-115	TP-116
Location		OFF-SITE ALLEY	SOUTH SIDE	EAST SIDE	BY TAR SEPARATOR	WEST SIDE	NORTH OF GAS HLDR.	NW - OVER TAR WELL	NORTH SIDE	NORTH SIDE	NORHTEAST CORNER
Depth (ft bgs)		4.0-6.0	3.0-4.0	4.0-4.7	4.0-4.5	2.5-3.0	2.4-3.0	1.0-1.5	3.5-5.0	3.5-6.0	1.7-2.0
Date Collected		03/12/92	11/16/93	11/16/93	11/18/93	11/17/93	11/17/93	11/17/93	11/16/93	11/17/93	11/16/93
					EX	EX	EX	EX	EX	EX	EX
PARAMETERS	UNITS										
Total Cyanide	mg/kg	ND	6.7	ND	496.0	74.4	5.9	1,726.9	6.7	20.6	ND
Amenable Cyanide	mg/kg	NA	ND	ND	ND	ND	5.8	ND	ND	17.0	ND
Weak Acid Dissociable Cyanide	mg/kg	NA	5.3	ND	2,990.0	3.2	ND	2,250.0	3.8	21.0	ND

TABLE 4-4. SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS - CYANIDE COMPOUNDS (CONT'D.)

Sample ID		SS-101	SS-101	SS-102	SS-102	SS-103	SS-103	SS-104	SS-104
Location		OFF-SITE PARK	OFF-SITE PARK	OFF-SITE PARK	OFF-SITE PARK	OFF-SITE PARK	OFF-SITE PARK	OFF-SITE PARK	OFF-SITE PARK
Depth (ft bgs)		0.0-0.3	0.3-1.5	0.0-0.3	0.3-1.5	0.0-0.3	0.3-1.5	0.0-0.3	0.3-1.5
Date Collected		11/30/93	11/30/93	11/30/93	11/30/93	11/30/93	11/30/93	11/30/93	11/30/93
PARAMETERS	UNITS								
Total Cyanide	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
Amenable Cyanide	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
Weak Acid Dissociable Cyanide	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND

Sample ID		MW-103	P-101	B-102	B-104	B-105	HP-101
Location		EAST SIDE	NORTH SIDE	OFF-SITE PARK	OFF-SITE PARK	OFF-SITE COURT ST.	NORTH SIDE
Depth (ft bgs)		2.9-4.0	2.0-4.0	6.0-6.2	4.5-5.2	1.6-2.0	4.0-4.3
Date Collected		12/01/93	12/07/93	11/31/93	11/30/93	12/02/93	12/02/93
PARAMETERS	UNITS						
Total Cyanide	mg/kg	ND	ND	3.9	ND	8.2	ND
Amenable Cyanide	mg/kg	ND	NA	3.9	ND	8.2	ND
Weak Acid Dissociable Cyanide	mg/kg	ND	NA	ND	ND	ND	ND

TABLE 4-4. SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS - CYANIDE COMPOUNDS (CONT'D.)

Sample ID		GW-1	GW-2	GW-3	BX-4	BX-5	BX-6
Location		OFF-SITE PKG LOT	OFF-SITE COURT ST	OFF-SITE COURT ST	OFF-SITE PARK	OFF-SITE COURT ST	OFF-SITE COURT ST
Depth (ft bgs)		9.0-11.0	5.0-7.0	5.0-7.0	4.5-6.0	4.8-6.3	Cuttings
Date Collected		1/23/92	1/24/92	1/24/92	1/30/92	1/30/92	1/30/92
PARAMETERS	UNITS						
Total Cyanide	mg/kg	0.69	85	1.2	2.0	3.8	3.1
Amenable Cyanide	mg/kg	NA	NA	NA	NA	NA	NA
Weak Acid Dissociable Cyanide	mg/kg	NA	NA	NA	NA	NA	NA

Notes: feet bgs = feet below ground surface
mg/kg = milligrams per kilogram
ND = Parameter not detected above method detection limits
NA = Parameter not analyzed

TABLE 4-5. SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS - METALS

Soil Sample ID		SS-1	SS-1	SS-2	SS-2	SS-3	SS-3	SS-4	SS-4	SS-5	SS-5
Sample Depth (ft bgs)		0.0-0.5	0.5-1.5	0.0-0.5	0.5-1.5	0.0-0.5	0.5-1.5	0.0-0.5	0.5-1.5	0.0-0.5	0.5-1.5
Date Sample Collected		05/14/85	05/14/85	05/14/85	05/14/85	05/14/85	05/14/85	05/14/85	05/14/85	05/14/85	05/14/85
		EX	EX	EX	EX						
PARAMETERS	UNITS										
Arsenic	mg/kg	~~1.20~~	~~0.94~~	~~0.64~~	~~1.10~~	1.60	11.30	0.54	37.00	0.90	0.72
Chromium	mg/kg	ND	ND	ND	~~4.80~~	ND	2.40	2.40	44.00	3.00	ND
Copper	mg/kg	ND	~~11.00~~	~~8.60~~	~~20.00~~	7.80	20.00	11.00	18.00	7.20	4.80
Lead	mg/kg	ND	~~40.00~~	~~110.00~~	~~170.00~~	110.00	51.00	85.00	19.00	11.00	7.80
Mercury	mg/kg	ND	~~0.06~~	ND	~~0.09~~	ND	0.06	0.04	ND	ND	ND
Nickel	mg/kg	~~2.80~~	~~4.60~~	~~3.80~~	~~3.80~~	4.80	11.00	ND	8.40	5.80	4.80
Selenium	mg/kg	~~0.03~~	~~0.04~~	ND	~~0.02~~	0.04	0.21	0.05	0.42	0.06	0.01
Silver	mg/kg	~~0.24~~	~~0.26~~	~~0.22~~	~~0.30~~	0.26	0.24	ND	ND	ND	ND
Thallium	mg/kg	~~1.70~~	~~2.10~~	~~1.60~~	~~2.40~~	2.00	ND	1.30	ND	0.86	1.40
Zinc	mg/kg	~~3.20~~	~~32.00~~	~~72.00~~	~~66.00~~	36.00	80.00	34.00	58.00	24.00	15.00

Soil Sample ID		GW-6	B-1	TP-101	TP-102	SS-101	SS-101	SS-102	SS-102	SS-103	SS-103	SS-104	SS-104
Sample Depth (ft bgs)		4.0-6.0	Approx. 3	3.0-4.0	1.0-3.0	0.0-0.3	0.3-1.5	0.0-0.3	0.3-1.5	0.0-0.3	0.3-1.5	0.0-0.3	0.3-1.5
Date Sample Collected		03/12/92	11/20/91	11/16/93	11/16/93	11/30/93	11/30/93	11/30/93	11/30/93	11/30/93	11/30/93	11/30/93	11/30/93
PARAMETERS	UNITS												
Arsenic	mg/kg	8.50	9.30	4.80	14.00	ND	ND	ND	ND	ND	ND	ND	ND
Barium	mg/kg	62.00	32.00	68	41	57.00	59.00	49.00	64.00	35.00	69.00	41.00	57.00
Cadmium	mg/kg	ND	2.00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	mg/kg	13.00	4.20	3.6	2.9	13.00	11.00	12.00	12.00	5.50	12.00	7.20	7.60
Lead	mg/kg	2.60	71.00	540.0	13.0	15.00	5.00	21.00	6.40	10.00	4.80	12.00	11.00
Mercury	mg/kg	ND	0.48	0.090	0.180	ND	ND	ND	ND	ND	ND	ND	ND

Notes: ft bgs = feet below ground surface

mg/kg = milligrams per kilogram

ND = Parameter not detected above method detection limits

Table 1 - Soil Analytical Results - Total Organic Carbon (TOC)
Phase II Investigation - Oshkosh MGP Site - WPSC

Sample Location	Sample Date	TOC (mg/kg)	Field Observations		
			ODOR	TAR	Other
SB-101 (3)	4/29/1996	31,000	yes	no	Sheen on spoon below water table
SB-101 (5)	4/29/1996	36,000	yes	no	
SB-102 (5)	4/29/1996	nd	yes-solvent	no	
SB-103 (1)	4/29/1996	3,300	no		dark staining
SB-104 (3)	4/30/1996	32,000	yes	no	some wood, black staining below 8'
SB-105 (7)	4/30/1996	68,000	yes	no	peat present
SB-106 (3)	4/30/1996	25,000	yes	below 10'	charcoal, some wood
SB-106 (13)	4/30/1996	2,800	yes	yes	

Notes:
reporting limit for TOC = 1,000 mg/kg
na = not analyzed
nd = parameter not detected

Prep. by: SAV
Checked by: DVP

Table 6 - Summary of Soil Treatability Laboratory Analyses
Remedial Design Report
Wisconsin Public Service Corporation
Oshkosh Former Manufactured Gas Plant Site

			BTEX µg/kg							Polynuclear Aromatic Hydrocarbons (PAHs) µg/kg																			
Sample ID	Sample Depth (feet)	Date Collected	Benzene	Ethylbenzene	Toluene	Total Xylenes	Xylenes, -m, -p	Xylene, -o	Total BTEX	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	1-Methylnaphthalene	2-Methylnaphthalene	Naphthalene	Phenanthrene	Pyrene	Total PAHs	Total Petroleum Hydrocarbons (mg/kg)
MW-106	1-3	11/19/1998	<25	<25	<25	<25	<25	<25	<25	83	170	110	610	1,000	880	970	620	630	250	820	110	920	110	120	200	460	960	9,023	-
MW-107	1-13	11/19/1998	810	16,000	<250	4,900	1300	3600	21,710	21,000	5,700	11,000	9,200	11,000	6,000	4,100	6,000	9,700	2,600	15,000	16,000	4,100	37,000	21,000	74,000	37,000	18,000	308,400	-
MW-105	1-14	11/19/1998	490	15,000	400	8,500	4300	4200	24,390	9,700	4,100	5,500	5,200	4,900	2,700	1,400	3,000	5,000	830	8,400	8,300	1,600	18,000	11,000	31,000	19,000	9,800	149,430	-
SE COMP UPPER	0-4	12/17/1998	320	430	380	960	390	570	2,090	6,000	11,000	28,000	48,000	50,000	44,000	35,000	27,000	43,000	11,000	92,000	24,000	33,000	9,400	6,000	23,000	79,000	78,000	647,400	-
SE COMP LOWER	4-15	12/17/1998	1,600	17,000	500	12,200	7,300	4,900	31,300	2,100	<280	1,300	1,200	1,200	770	680	780	1,300	<290	2,500	1,200	670	5,800	4,300	13,000	3,600	2,100	42,500	-
SW COMP UPPER	0-4	12/17/1998	180	230	220	530	390	140	1,160	760	1,200	5,200	13,000	18,000	16,000	15,000	9,400	14,000	4,700	25,000	1,800	13,000	1,200	1,100	2,400	15,000	19,000	175,760	-
SW COMP LOWER	4-14	12/17/1998	150	450	150	920	600	320	1,670	7,600	1,100	6,800	6,800	6,500	4,900	4,600	4,300	6,000	1,500	14,000	6,100	4,200	6,300	7,700	37,000	20,000	9,900	155,300	-
W COMP UPPER	0-4	12/18/1998	<25	34	79	198	120	78	311	220	<36	260	950	1,100	1,000	710	630	940	320	1,400	280	760	1,100	1,300	520	1,100	1,000	13,590	-
W COMP LOWER	4-12	12/18/1998	<25	<25	<25	<25	<25	<25	<25	430	<81	120	180	210	160	160	160	190	<83	240	220	160	1,200	120	280	330	210	4,370	-
E COMP UPPER	0-4	12/21/1998	1,000	2,200	1,400	5,500	2,500	3,000	10,100	<670	2,900	2,600	20,000	17,000	13,000	9,500	10,000	25,000	4,900	19,000	2,000	8,400	5,900	5,300	9,900	6,100	41,000	202,500	-
E COMP LOWER	4-14	12/21/1998	2,700	63,000	1,100	74,000	47,000	27,000	140,800	110,000	<5,600	60,000	35,000	27,000	12,000	11,000	17,000	34,000	<5,800	56,000	67,000	12,000	220,000	230,000	430,000	160,000	65,000	1,546,000	-
DSP COMP	na	12/18/1998	220	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RO COMP	na	1/19/1999	-	-	-	-			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	820

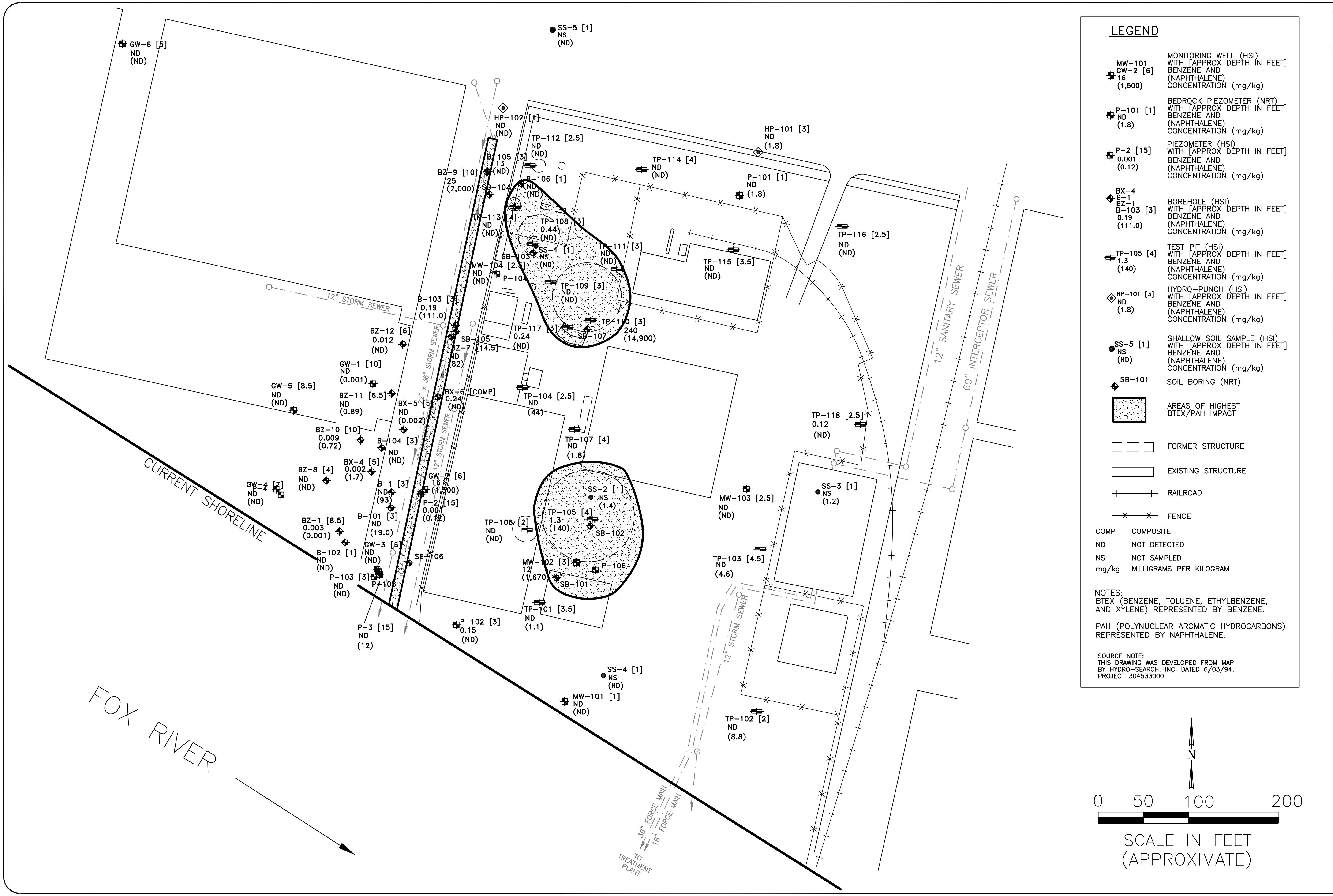
SLF/CAR/1-26-99
SLF/DVP/2-3-99

			Inorganics (mg/kg)																	
Sample ID	Sample Depth (feet)	Date Collected	Arsenic	Barium	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Silver	Zinc	Phenolics, total recoverable	Sulfide, reactive	Sulfur**	Cyanide, reactive	Cyanide, total	PCBs	Chlorine (% by weight)	TCLP, Lead (mg/l)
MW-106	1-3	11/19/1998	-	-	-	-	-	8.1	-	-	-	-	-	-	-	-	5.6	-	-	-
MW-107	1-13	11/19/1998	-	-	-	-	-	37	-	-	-	-	-	-	-	-	3.3	-	-	-
SE COMP UPPER	0-4	12/17/1998	-	-	-	-	-	250	-	-	-	-	-	-	4,100*	-	6.4	-	-	-
SE COMP LOWER	4-15	12/17/1998	-	-	-	-	-	75	-	-	-	-	-	-	860*	-	1.3	-	-	-
SW COMP UPPER	0-4	12/17/1998	-	-	-	-	-	300	-	-	-	-	-	-	1,100*	-	8.9	-	-	-
SW COMP LOWER	4-14	12/17/1998	-	-	-	-	-	300	-	-	-	-	-	-	2,200*	-	4.9	-	-	-
W COMP UPPER	0-4	12/18/1998	-	-	-	-	-	88	-	-	-	-	-	-	2,000*	-	1.3	-	-	-
W COMP LOWER	4-12	12/18/1998	-	-	-	-	-	14	-	-	-	-	-	-	1,900*	-	1.9	-	-	-
E COMP UPPER	0-4	12/21/1998	-	-	-	-	-	110	-	-	-	-	-	-	1,800	-	1.5	-	-	-
E COMP LOWER	4-14	12/21/1998	-	-	-	-	-	28	-	-	-	-	-	-	1,600	-	0.38	-	-	-
DSP COMP	na	12/18/1998	8.7	80	0.72	15	74	180	0.58	24	0.43	260	6.5	<10	-	<2.5	-	<5.7	0.053	-
RO COMP	na	1/19/1999	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.2

Notes:
*Hold time exceeded for sulfur analysis.
** Sulfur expressed as wet weight.
several compounds detected between the limit of detection and the limit of quantitation
na = parameter not applicable
- = parameter not analyzed.
TCLP = Toxicity Characteristic Leaching Procedure
W COMP UPPER & LOWER represents composite samples of SB-109, 110, 111
SW COMP UPPER & LOWER represents soil borings SB-112 through 116
SE COMP UPPER & LOWER represents soil borings SB-117 through 119
E COMP UPPER & LOWER represents soil borings SB-121, 123 and 124
DSP COMP represents a composite of SB-109 through 124
RO COMP represents a composite sample collected from drill cuttings for disposal

APPENDIX A3

REMEDIAL ACTION OPTION REPORT FIGURES



NOTES:
BTEX (BENZENE, TOLUENE, ETHYLBENZENE, AND XYLENE) REPRESENTED BY BENZENE.

PAH (POLYNUCLEAR AROMATIC HYDROCARBONS) REPRESENTED BY NAPHTHALENE.

SOURCE NOTE:
THIS DRAWING WAS DEVELOPED FROM MAP BY HYDRO-SEARCH, INC. DATED 6/03/94, PROJECT 304533000.

DRAWN BY: TAS DATE: 12/15/97
CHECKED BY: DATE:
APPROVED BY: DATE:
AUTOCAD FILE: 1177-B02.DWG

DISTRIBUTION OF BTEX AND PAH IMPACTS IN UNSATURATED SOIL

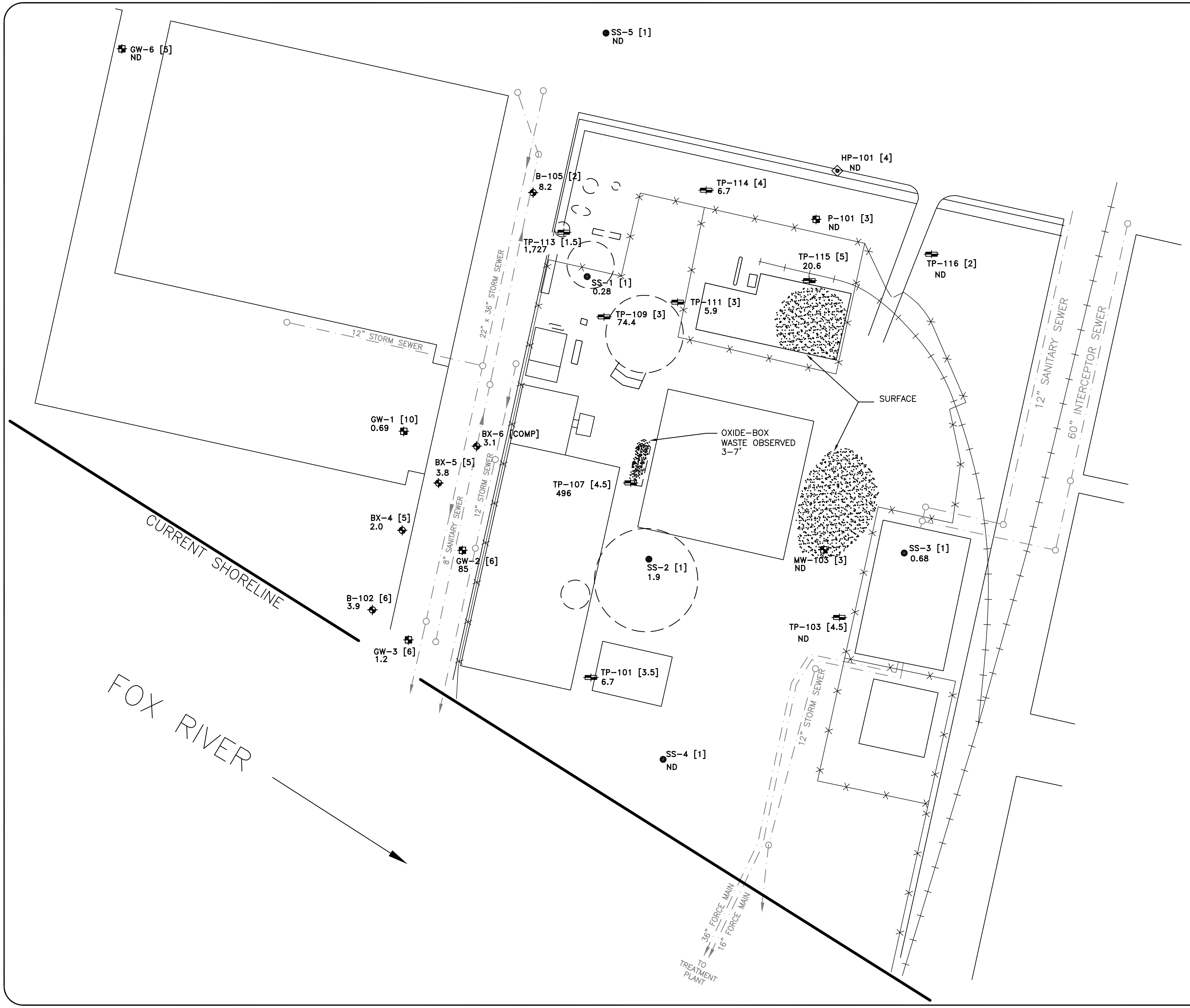
REMEDIAL ACTION OPTIONS REPORT
FORMER OSHKOSH MGP SITE – WPSC
OSHKOSH, WISCONSIN

Natural
Resource
Technology

PROJECT NO.
1177/2.3/OSHK

DRAWING NO.
1177-B02

FIGURE NO.
2

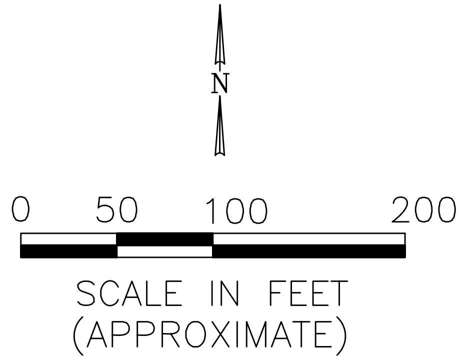


LEGEND

MW-103 GW-1 [10] 0.69	MONITORING WELL (HSI) WITH [APPROX DEPTH IN FEET] AND TOTAL CYANIDE CONCENTRATION IN SOIL (mg/kg)
P-101 [3] ND	BEDROCK PIEZOMETER (NRT) WITH [APPROX DEPTH IN FEET] AND TOTAL CYANIDE CONCENTRATION IN SOIL (mg/kg)
HP-101 [4] ND	HYDRO-PUNCH (HSI) WITH [APPROX DEPTH IN FEET] AND TOTAL CYANIDE CONCENTRATION IN SOIL (mg/kg)
TP-101 [3.5] 6.7	TEST PIT (HSI) WITH [APPROX DEPTH IN FEET] AND TOTAL CYANIDE CONCENTRATION IN SOIL (mg/kg)
BX-4 B-102 [6] 3.9	BOREHOLE (HSI) WITH [APPROX DEPTH IN FEET] AND TOTAL CYANIDE CONCENTRATION IN SOIL (mg/kg)
● SS-5 [1] ND	SHALLOW SOIL SAMPLE (HSI) WITH [APPROX DEPTH IN FEET] AND TOTAL CYANIDE CONCENTRATION IN SOIL (mg/kg)
▨	SCATTERED OXIDE-BOX WASTES OBSERVED
┌ ─ ─ ┐	FORMER STRUCTURE
▭	EXISTING STRUCTURE
─┼─┼─	RAILROAD
─×─×─	FENCE

COMP	COMPOSITE
ND	NOT DETECTED
mg/kg	MILLIGRAMS PER KILOGRAM

SOURCE NOTE:
THIS DRAWING WAS DEVELOPED FROM MAP BY HYDRO-SEARCH, INC. DATED 6/03/94, PROJECT 304533000.



DATE: 8/22/97
DRAWN BY: TAS
DATE:
CHECKED BY:
DATE:
APPROVED BY:
AUTOCAD FILE: 1177-B05.DWG

DISTRIBUTION OF CYANIDE IMPACTS IN SOIL

REMEDIAL ACTION OPTIONS REPORT
FORMER OSHKOSH MGP SITE – WPSC
OSHKOSH, WISCONSIN

Natural
Resource
Technology

PROJECT NO.
1177/2.3/OSHK

DRAWING NO.
1177-B05

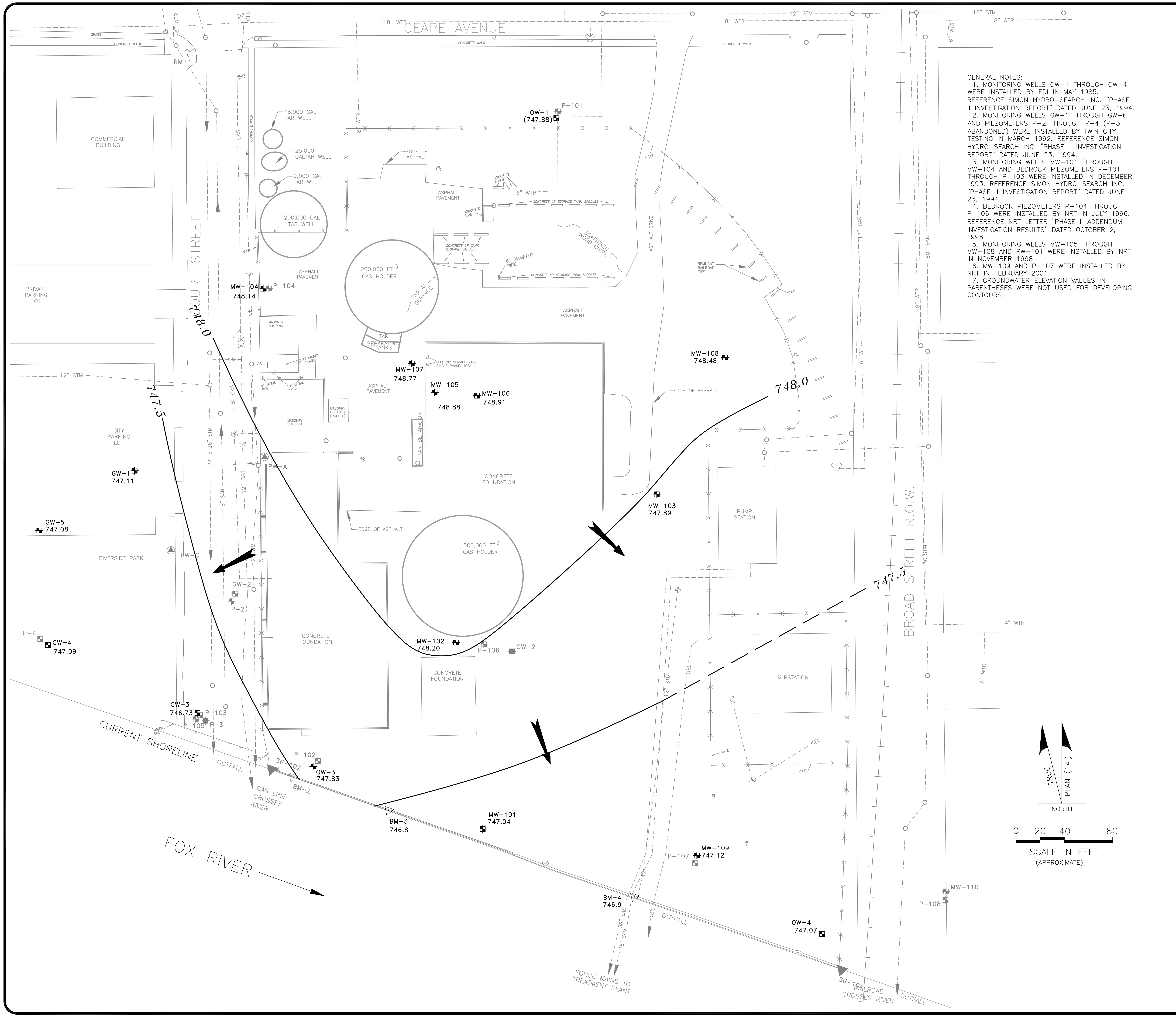
FIGURE NO.
3

APPENDIX B

SITE INVESTIGATION GROUNDWATER DOCUMENTATION

APPENDIX B1

REMEDIAL WORK PLAN FIGURES



GENERAL NOTES:

1. MONITORING WELLS OW–1 THROUGH OW–4 WERE INSTALLED BY EDI IN MAY 1985. REFERENCE SIMON HYDRO–SEARCH INC. "PHASE II INVESTIGATION REPORT" DATED JUNE 23, 1994.
2. MONITORING WELLS GW–1 THROUGH GW–6 AND PIEZOMETERS P–2 THROUGH P–4 (P–3 ABANDONED) WERE INSTALLED BY TWIN CITY TESTING IN MARCH 1992. REFERENCE SIMON HYDRO–SEARCH INC. "PHASE II INVESTIGATION REPORT" DATED JUNE 23, 1994.
3. MONITORING WELLS MW–101 THROUGH MW–104 AND BEDROCK PIEZOMETERS P–101 THROUGH P–103 WERE INSTALLED IN DECEMBER 1993. REFERENCE SIMON HYDRO–SEARCH INC. "PHASE II INVESTIGATION REPORT" DATED JUNE 23, 1994.
4. BEDROCK PIEZOMETERS P–104 THROUGH P–106 WERE INSTALLED BY NRT IN JULY 1996. REFERENCE NRT LETTER "PHASE II ADDENDUM INVESTIGATION RESULTS" DATED OCTOBER 2, 1996.
5. MONITORING WELLS MW–105 THROUGH MW–108 AND RW–101 WERE INSTALLED BY NRT IN NOVEMBER 1998.
6. MW–109 AND P–107 WERE INSTALLED BY NRT IN FEBRUARY 2001.
7. GROUNDWATER ELEVATION VALUES IN PARENTHESES WERE NOT USED FOR DEVELOPING CONTOURS.

LEGEND

747.5	WATER TABLE ELEVATION CONTOURS (FEET ABOVE MSL)
➞	SHALLOW GROUNDWATER FLOW DIRECTION
MW–109 747.12	MONITORING WELL (NRT) AND GROUNDWATER ELEVATION, FT.
▽ BM–3 746.8	BENCH MARK AND RIVER ELEVATION, FT.
P–104	BEDROCK PIEZOMETER (NRT)
OW–3 MW–101 GW–1	MONITORING WELL (HSI)
P–4 P–101	PIEZOMETER (HSI)
P–3 OW–2	ABANDONED PIEZOMETER/ MONITORING WELL
PW–A	INDUSTRIAL SUPPLY WELL
▼ SG–101	STAFF GAUGE ABANDONED (HSI)
HSI	HYDRO–SEARCH, INC.
◍	CATCH BASIN
	GUY WIRE
☼	LITE POLE
	UTILITY POLE
⋈	GAS VALVE

APPROXIMATE LOCATION OF:

○	EXISTING SUBSURFACE MGP STRUCTURE
▭	EXISTING ABOVE GROUND BUILDING OR FOUNDATION
○	MANHOLE
	HYDRANT
┼┼┼	RAILROAD
─X─	FENCE
----OEL----	OVERHEAD ELECTRIC LINE
----UEL----	UNDERGROUND ELECTRIC LINE
----GAS----	NATURAL GAS LINE
----SAN----	SANITARY SEWER LINE
----STM----	STORM SEWER LINE
----WTR----	WATER LINE

SOURCE NOTES:

THIS DRAWING WAS DEVELOPED FROM MAP BY HYDRO–SEARCH, INC. DATED 06/03/94, PROJECT 304533000 AND A SURVEY BY WISCONSIN PUBLIC SERVICE CORPORATION DATED 01/11/99.

THE 1903 AND 1890 SHORELINES ARE FROM SANBORN MAPS. HISTORICAL SHORELINE LOCATIONS ARE APPROXIMATE.

30" STORM SEWER IN BROAD STREET TAKEN FROM SEWER SYSTEM 8TH WARD DRAWING BY CITY OF OSHKOSH WISCONSIN ENGINEERING DEPARTMENT, DATED 12–5–36, WITH 1977 UPDATE.

BROAD STREET PUMP STATION PARCEL AND FORCE MAINS DEVELOPED FROM DRAWING BY HNTB ARCHITECTS ENGINEERS PLANNERS, MILWAUKEE, WISCONSIN, PROJECT NO: 6378, DRAWING SP–2 (3 OF 32) AND PP–2, DATED 9–6–84.

LOCATIONS OF SEWER LATERALS, TAR WELLS, GAS HOLDERS, TAR STILL, TAR SEPARATORS, AND ASSOCIATIVE PIPING TAKEN FROM WPSC DRAWING NO. 140, DATED 1925.

SURVEY BY ROEHLIG LAND SURVEYING & CONSULTING LTD., OSHKOSH, WISCONSIN, DRAWING AC3771B.DWG, DATED AUGUST 17, 2001, REVISED AUGUST 28, 2001 AND OCTOBER 29, 2001.

HP GAS LINE FROM DRAWING BY FORD, BACON AND DAVIS, INC., ENGINEERS, DRAWING NO. 60013–FI–S, REVISED DATED NOVEMBER 9, 1953.

WATER LINES AND HYDRANTS, STORM AND SANITARY LINES IN CEAPE AVENUE ARE TAKEN FROM CITY OF OSHKOSH ENGINEERING DIVISION DRAWING, DATED NOVEMBER 9, 1998.

BM–1 WAS FIELD MEASURED BY NRT. BM–2 THROUGH BM–4 WERE SURVEYED BY ROEHLIG LAND SURVEYING & CONSULTING LTD., OSHKOSH, WISCONSIN, NO. 2771A, DATED APRIL 24, 2001. BM–1 TOP OF HYDRANT OPERATING NUT, ELEVATION 754.18. BM–2 SPIKE IN WOOD RETAINING WALL PER WPSC SURVEY, ELEVATION 749.60 (749.52 WPSC). BM–3 PK NAIL SET ON TOP OF WOOD WALL, ELEVATION 749.96. BM–4 CHISELED "V" IN TOP OF RETAINING WALL, ELEVATION 749.78. ELEVATIONS BASED ON USGS DATUM.

SB–125 WAS INSTALLED IN OCTOBER 2001, LOCATION IS APPROXIMATED FROM FIELD MEASUREMENTS BY NRT.

PROJECT NO.
1312/5.2

DRAWING NO.
1312–D42

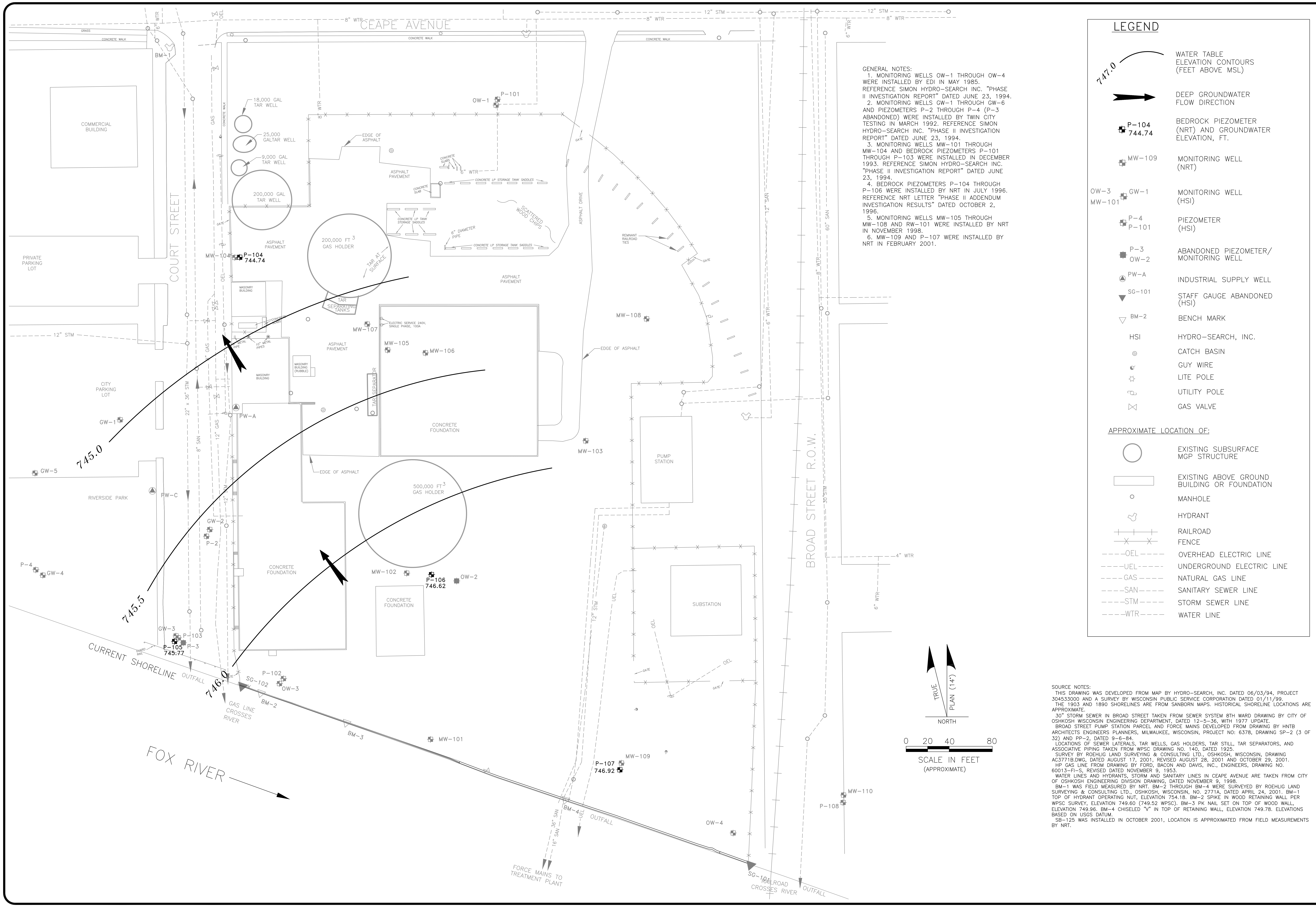
FIGURE NO.
7

WATER TABLE ELEVATION CONTOURS SEPTEMBER 2001

PROJECT STATUS REPORT
FORMER OSHKOSH MANUFACTURED GAS PLANT SITE
WISCONSIN PUBLIC SERVICE CORPORATION
CITY OF OSHKOSH, WISCONSIN

DRAWN BY: TAS DATE: 11/01/01
CHECKED BY: SLF DATE: 11/27/01
APPROVED BY: LLP DATE: 11/27/01

Natural Resource Technology
N R T



GENERAL NOTES:

1. MONITORING WELLS OW-1 THROUGH OW-4 WERE INSTALLED BY EDI IN MAY 1985. REFERENCE SIMON HYDRO-SEARCH INC. "PHASE II INVESTIGATION REPORT" DATED JUNE 23, 1994.
2. MONITORING WELLS GW-1 THROUGH GW-6 AND PIEZOMETERS P-2 THROUGH P-4 (P-3 ABANDONED) WERE INSTALLED BY TWIN CITY TESTING IN MARCH 1992. REFERENCE SIMON HYDRO-SEARCH INC. "PHASE II INVESTIGATION REPORT" DATED JUNE 23, 1994.
3. MONITORING WELLS MW-101 THROUGH MW-104 AND BEDROCK PIEZOMETERS P-101 THROUGH P-103 WERE INSTALLED IN DECEMBER 1993. REFERENCE SIMON HYDRO-SEARCH INC. "PHASE II INVESTIGATION REPORT" DATED JUNE 23, 1994.
4. BEDROCK PIEZOMETERS P-104 THROUGH P-106 WERE INSTALLED BY NRT IN JULY 1996. REFERENCE NRT LETTER "PHASE II ADDENDUM INVESTIGATION RESULTS" DATED OCTOBER 2, 1996.
5. MONITORING WELLS MW-105 THROUGH MW-108 AND RW-101 WERE INSTALLED BY NRT IN NOVEMBER 1998.
6. MW-109 AND P-107 WERE INSTALLED BY NRT IN FEBRUARY 2001.

SOURCE NOTES:

THIS DRAWING WAS DEVELOPED FROM MAP BY HYDRO-SEARCH, INC. DATED 06/03/94, PROJECT 304533000 AND A SURVEY BY WISCONSIN PUBLIC SERVICE CORPORATION DATED 01/11/99.

THE 1903 AND 1890 SHORELINES ARE FROM SANBORN MAPS. HISTORICAL SHORELINE LOCATIONS ARE APPROXIMATE.

30" STORM SEWER IN BROAD STREET TAKEN FROM SEWER SYSTEM 8TH WARD DRAWING BY CITY OF OSHKOSH WISCONSIN ENGINEERING DEPARTMENT, DATED 12-5-36, WITH 1977 UPDATE.

BROAD STREET PUMP STATION PARCEL AND FORCE MAINS DEVELOPED FROM DRAWING BY HNTB ARCHITECTS ENGINEERS PLANNERS, MILWAUKEE, WISCONSIN, PROJECT NO: 6378, DRAWING SP-2 (3 OF 32) AND PP-2, DATED 9-6-84.

LOCATIONS OF SEWER LATERALS, TAR WELLS, GAS HOLDERS, TAR STILL, TAR SEPARATORS, AND ASSOCIATIVE PIPING TAKEN FROM WPSC DRAWING NO. 140, DATED 1925.

SURVEY BY ROEHLIG LAND SURVEYING & CONSULTING LTD., OSHKOSH, WISCONSIN, DRAWING AC3771B.DWG, DATED AUGUST 17, 2001, REVISED AUGUST 28, 2001 AND OCTOBER 29, 2001.

HP GAS LINE FROM DRAWING BY FORD, BACON AND DAVIS, INC., ENGINEERS, DRAWING NO. 60013-FI-S, REVISED DATED NOVEMBER 9, 1953.

WATER LINES AND HYDRANTS, STORM AND SANITARY LINES IN CEAPE AVENUE ARE TAKEN FROM CITY OF OSHKOSH ENGINEERING DIVISION DRAWING, DATED NOVEMBER 9, 1998.

BM-1 WAS FIELD MEASURED BY NRT. BM-2 THROUGH BM-4 WERE SURVEYED BY ROEHLIG LAND SURVEYING & CONSULTING LTD., OSHKOSH, WISCONSIN, NO. 2771A, DATED APRIL 24, 2001. BM-1 TOP OF HYDRANT OPERATING NUT, ELEVATION 754.18. BM-2 SPIKE IN WOOD RETAINING WALL PER WPSC SURVEY, ELEVATION 749.60 (749.52 WPSC). BM-3 PK NAIL SET ON TOP OF WOOD WALL, ELEVATION 749.96. BM-4 CHISELED "V" IN TOP OF RETAINING WALL, ELEVATION 749.78. ELEVATIONS BASED ON USGS DATUM.

SB-125 WAS INSTALLED IN OCTOBER 2001, LOCATION IS APPROXIMATED FROM FIELD MEASUREMENTS BY NRT.

PROJECT NO.
1312/5.2

DRAWING NO.
1312-D44

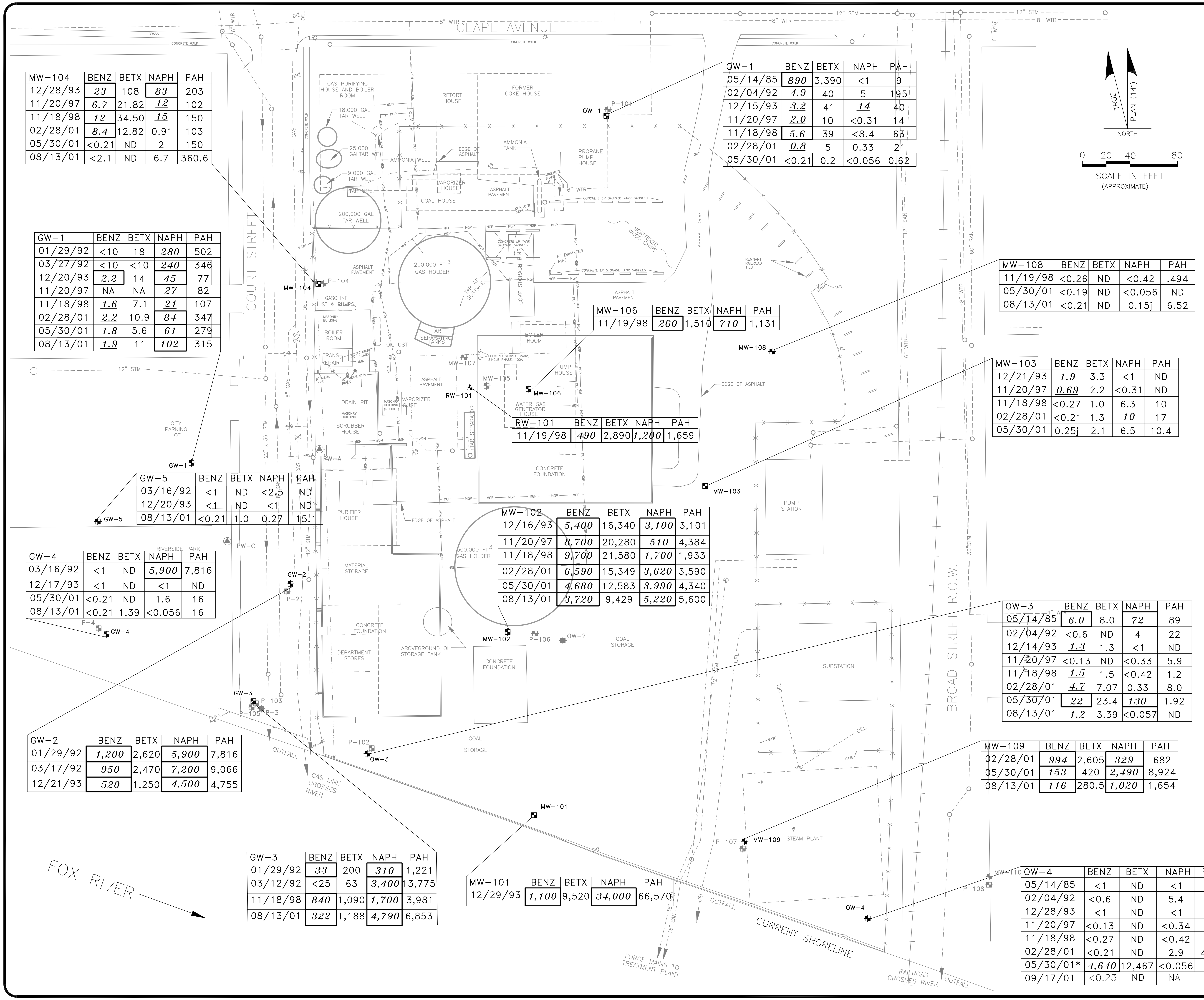
FIGURE NO.
8

PIEZOMETRIC SURFACE ELEVATION CONTOURS SEPTEMBER 2001

PROJECT STATUS REPORT
FORMER OSHKOSH MANUFACTURED GAS PLANT SITE
WISCONSIN PUBLIC SERVICE CORPORATION
CITY OF OSHKOSH, WISCONSIN

DRAWN BY: TAS DATE: 11/27/01
CHECKED BY: SLF DATE: 11/27/01
APPROVED BY: LLP DATE: 11/27/01

Natural
Resource
Technology
N R T



MW-104	BENZ	BETX	NAPH	PAH
12/28/93	23	108	83	203
11/20/97	6.7	21.82	12	102
11/18/98	12	34.50	15	150
02/28/01	8.4	12.82	0.91	103
05/30/01	<0.21	ND	2	150
08/13/01	<2.1	ND	6.7	360.6

GW-1	BENZ	BETX	NAPH	PAH
01/29/92	<10	18	280	502
03/27/92	<10	<10	240	346
12/20/93	2.2	14	45	77
11/20/97	NA	NA	27	82
11/18/98	1.6	7.1	21	107
02/28/01	2.2	10.9	84	347
05/30/01	1.8	5.6	61	279
08/13/01	1.9	11	102	315

GW-5	BENZ	BETX	NAPH	PAH
03/16/92	<1	ND	<2.5	ND
12/20/93	<1	ND	<1	ND
08/13/01	<0.21	1.0	0.27	15.1

GW-4	BENZ	BETX	NAPH	PAH
03/16/92	<1	ND	5,900	7,816
12/17/93	<1	ND	<1	ND
05/30/01	<0.21	ND	1.6	16
08/13/01	<0.21	1.39	<0.056	16

GW-2	BENZ	BETX	NAPH	PAH
01/29/92	1,200	2,620	5,900	7,816
03/17/92	950	2,470	7,200	9,066
12/21/93	520	1,250	4,500	4,755

GW-3	BENZ	BETX	NAPH	PAH
01/29/92	33	200	310	1,221
03/12/92	<25	63	3,400	13,775
11/18/98	840	1,090	1,700	3,981
08/13/01	322	1,188	4,790	6,853

MW-101	BENZ	BETX	NAPH	PAH
12/29/93	1,100	9,520	34,000	66,570

OW-1	BENZ	BETX	NAPH	PAH
05/14/85	890	3,390	<1	9
02/04/92	4.9	40	5	195
12/15/93	3.2	41	14	40
11/20/97	2.0	10	<0.31	14
11/18/98	5.6	39	<8.4	63
02/28/01	0.8	5	0.33	21
05/30/01	<0.21	0.2	<0.056	0.62

MW-106	BENZ	BETX	NAPH	PAH
11/19/98	260	1,510	710	1,131

RW-101	BENZ	BETX	NAPH	PAH
11/19/98	490	2,890	1,200	1,659

MW-102	BENZ	BETX	NAPH	PAH
12/16/93	5,400	16,340	3,100	3,101
11/20/97	8,700	20,280	510	4,384
11/18/98	9,700	21,580	1,700	1,933
02/28/01	6,590	15,349	3,620	3,590
05/30/01	4,680	12,583	3,990	4,340
08/13/01	3,720	9,429	5,220	5,600

MW-108	BENZ	BETX	NAPH	PAH
11/19/98	<0.26	ND	<0.42	.494
05/30/01	<0.19	ND	<0.056	ND
08/13/01	<0.21	ND	0.15j	6.52

MW-103	BENZ	BETX	NAPH	PAH
12/21/93	1.9	3.3	<1	ND
11/20/97	0.69	2.2	<0.31	ND
11/18/98	<0.27	1.0	6.3	10
02/28/01	<0.21	1.3	10	17
05/30/01	0.25j	2.1	6.5	10.4

OW-3	BENZ	BETX	NAPH	PAH
05/14/85	6.0	8.0	72	89
02/04/92	<0.6	ND	4	22
12/14/93	1.3	1.3	<1	ND
11/20/97	<0.13	ND	<0.33	5.9
11/18/98	1.5	1.5	<0.42	1.2
02/28/01	4.7	7.07	0.33	8.0
05/30/01	22	23.4	130	1.92
08/13/01	1.2	3.39	<0.057	ND

MW-109	BENZ	BETX	NAPH	PAH
02/28/01	994	2,605	329	682
05/30/01	153	420	2,490	8,924
08/13/01	116	280.5	1,020	1,654

OW-4	BENZ	BETX	NAPH	PAH
05/14/85	<1	ND	<1	ND
02/04/92	<0.6	ND	5.4	21
12/28/93	<1	ND	<1	5.1
11/20/97	<0.13	ND	<0.34	5.6
11/18/98	<0.27	ND	<0.42	2.3
02/28/01	<0.21	ND	2.9	43.0
05/30/01*	4,640	12,467	<0.056	2.8
09/17/01	<0.23	ND	NA	NA

LEGEND

MW-105	MONITORING WELL (NRT)
RW-101	RECOVERY WELL (NRT)
OW-3 GW-1 MW-101	MONITORING WELL (HSI)
HSI	HYDRO-SEARCH, INC.

WELL ID	BENZ	BETX	NAPH	PAH
DATE SAMPLED	BENZENE µg/L	TOTAL BETX µg/L	NAPHTHALENE µg/L	TOTAL PAH µg/L

18	CONCENTRATION EXCEEDS NR 140 ENFORCEMENT STANDARD
3.9	CONCENTRATION EXCEEDS NR 140 PREVENTIVE ACTION LIMIT
BETX	BENZENE, TOLUENE, ETHYLBENZENE, AND TOTAL XYLENES
PAH	POLYNUCLEAR AROMATIC HYDROCARBONS
NA	NOT ANALYZED
ND	NOT DETECTED
µg/L	MICROGRAMS PER LITER
j	REPORTED RESULT IS LESS THAN PRACTICAL QUANITATION LIMIT
*	PROBABLE SAMPLING OR ANALYSIS ERROR
P-4 P-101	PIEZOMETER (HSI)
P-104	BEDROCK PIEZOMETER (NRT)
P-3 OW-2	ABANDONED PIEZOMETER/ MONITORING WELL
PW-A	INDUSTRIAL SUPPLY WELL
	CATCH BASIN
	GUY WIRE
	LITE POLE
	UTILITY POLE
	GAS VALVE

APPROXIMATE LOCATION OF:

	EXISTING SUBSURFACE MGP STRUCTURE
	FORMER MGP STRUCTURE LOCATION
	EXISTING ABOVE GROUND BUILDING OR FOUNDATION
	MANHOLE
	RAILROAD
	FENCE
OEL	OVERHEAD ELECTRIC LINE
UEL	UNDERGROUND ELECTRIC LINE
GAS	NATURAL GAS LINE
SAN	SANITARY SEWER LINE
STM	STORM SEWER LINE
WTR	WATER LINE
	UNDERGROUND MGP SEWER PIPING
MGP	UNDERGROUND MANUFACTURED GAS PIPING

SOURCE NOTES:

THIS DRAWING WAS DEVELOPED FROM MAP BY HYDRO-SEARCH, INC. DATED 06/03/94, PROJECT 304533000 AND A SURVEY BY WISCONSIN PUBLIC SERVICE CORPORATION DATED 01/11/99.

THE 1903 AND 1890 SHORELINES ARE FROM SANBORN MAPS. HISTORICAL SHORELINE LOCATIONS ARE APPROXIMATE.

30" STORM SEWER IN BROAD STREET TAKEN FROM SEWER SYSTEM 8TH WARD DRAWING BY CITY OF OSHKOSH WISCONSIN ENGINEERING DEPARTMENT, DATED 12-5-36, WITH 1977 UPDATE.

BROAD STREET PUMP STATION PARCEL AND FORCE MAINS DEVELOPED FROM DRAWING BY HNTB ARCHITECTS ENGINEERS PLANNERS, MILWAUKEE, WISCONSIN, PROJECT NO: 6378, DRAWING SP-2 (3 OF 32) AND PP-2, DATED 9-6-84.

LOCATIONS OF SEWER LATERALS, TAR WELLS, GAS HOLDERS, TAR STILL, TAR SEPARATORS, AND ASSOCIATIVE PIPING TAKEN FROM WPSC DRAWING NO. 140, DATED 1925.

SURVEY BY ROEHLIG LAND SURVEYING & CONSULTING LTD., OSHKOSH, WISCONSIN, DRAWING AC3771B.DWG, DATED AUGUST 17, 2001, REVISED AUGUST 28, 2001 AND OCTOBER 29, 2001.

HP GAS LINE FROM DRAWING BY FORD, BACON AND DAVIS, INC., ENGINEERS, DRAWING NO. 60013-FI-S, REVISED DATED NOVEMBER 9, 1953.

WATER LINES AND HYDRANTS, STORM AND SANITARY LINES IN CEAPE AVENUE ARE TAKEN FROM CITY OF OSHKOSH ENGINEERING DIVISION DRAWING, DATED NOVEMBER 9, 1998.

BM-1 WAS FIELD MEASURED BY NRT. BM-2 THROUGH BM-4 WERE SURVEYED BY ROEHLIG LAND SURVEYING & CONSULTING LTD., OSHKOSH, WISCONSIN, NO. 2771A, DATED APRIL 24, 2001. BM-1 TOP OF HYDRANT OPERATING NUT, ELEVATION 754.18. BM-2 SPIKE IN WOOD RETAINING WALL PER WPSC SURVEY, ELEVATION 749.60 (749.52 WPSC). BM-3 PK NAIL SET ON TOP OF WOOD WALL, ELEVATION 749.96. BM-4 CHISELED "V" IN TOP OF RETAINING WALL, ELEVATION 749.78. ELEVATIONS BASED ON USGS DATUM.

SB-125 WAS INSTALLED IN OCTOBER 2001, LOCATION IS APPROXIMATED FROM FIELD MEASUREMENTS BY NRT.

PROJECT NO.
1312/5.2

DRAWING NO.
1312-D46

FIGURE NO.
9

DISTRIBUTION OF BETX AND PAHs IN WATER TABLE WELLS

PROJECT STATUS REPORT
FORMER OSHKOSH MANUFACTURED GAS PLANT SITE
WISCONSIN PUBLIC SERVICE CORPORATION
OSHKOSH, WISCONSIN

DRAWN BY: TAS	CHECKED BY: SLF	APPROVED BY: LLP
DATE: 11/01/01	DATE: 11/27/01	DATE: 11/27/01

Natural Resource Technology
N R T

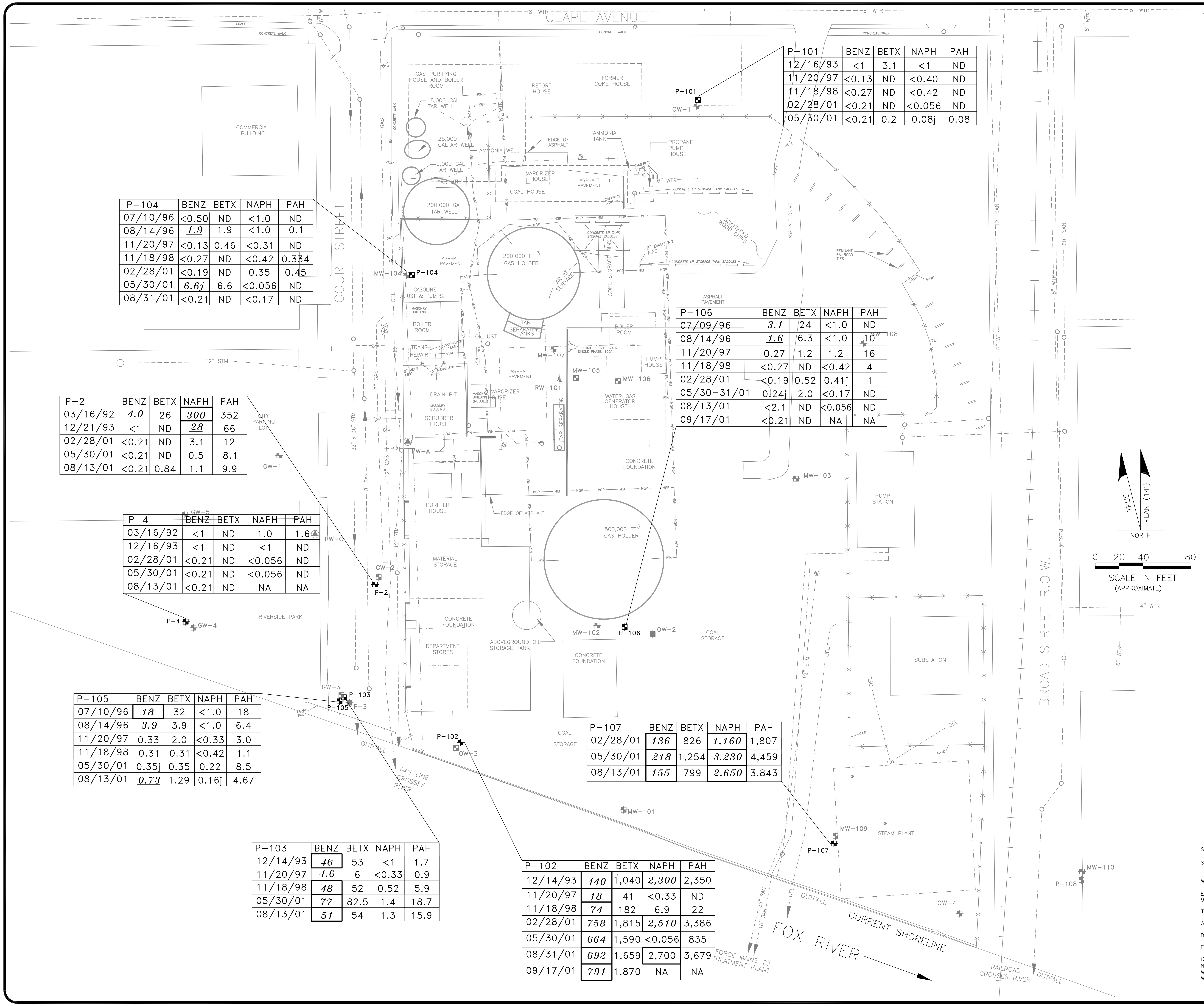
DISTRIBUTION OF BETX AND PAHs IN PIEZOMETERS

PROJECT STATUS REPORT
FORMER OSHKOSH MANUFACTURED GAS PLANT SITE
WISCONSIN PUBLIC SERVICE CORPORATION
OSHKOSH, WISCONSIN

PROJECT NO. 1312/5.2
DRAWING NO. 1312-D45
FIGURE NO. 10

DRAWN BY: TAS DATE: 11/01/01
CHECKED BY: SLF DATE: 11/27/01
APPROVED BY: LLP DATE: 11/27/01

Natural Resource Technology
NRT



P-101	BENZ	BETX	NAPH	PAH
12/16/93	<1	3.1	<1	ND
11/20/97	<0.13	ND	<0.40	ND
11/18/98	<0.27	ND	<0.42	ND
02/28/01	<0.21	ND	<0.056	ND
05/30/01	<0.21	0.2	0.08j	0.08

P-104	BENZ	BETX	NAPH	PAH
07/10/96	<0.50	ND	<1.0	ND
08/14/96	1.9	1.9	<1.0	0.1
11/20/97	<0.13	0.46	<0.31	ND
11/18/98	<0.27	ND	<0.42	0.334
02/28/01	<0.19	ND	0.35	0.45
05/30/01	6.6j	6.6	<0.056	ND
08/31/01	<0.21	ND	<0.17	ND

P-106	BENZ	BETX	NAPH	PAH
07/09/96	3.1	24	<1.0	ND
08/14/96	1.6	6.3	<1.0	10
11/20/97	0.27	1.2	1.2	16
11/18/98	<0.27	ND	<0.42	4
02/28/01	<0.19	0.52	0.41j	1
05/30-31/01	0.24j	2.0	<0.17	ND
08/13/01	<2.1	ND	<0.056	ND
09/17/01	<0.21	ND	NA	NA

P-2	BENZ	BETX	NAPH	PAH
03/16/92	4.0	26	300	352
12/21/93	<1	ND	28	66
02/28/01	<0.21	ND	3.1	12
05/30/01	<0.21	ND	0.5	8.1
08/13/01	<0.21	0.84	1.1	9.9

P-4	BENZ	BETX	NAPH	PAH
03/16/92	<1	ND	1.0	1.6
12/16/93	<1	ND	<1	ND
02/28/01	<0.21	ND	<0.056	ND
05/30/01	<0.21	ND	<0.056	ND
08/13/01	<0.21	ND	NA	NA

P-105	BENZ	BETX	NAPH	PAH
07/10/96	18	32	<1.0	18
08/14/96	3.9	3.9	<1.0	6.4
11/20/97	0.33	2.0	<0.33	3.0
11/18/98	0.31	0.31	<0.42	1.1
05/30/01	0.35j	0.35	0.22	8.5
08/13/01	0.73	1.29	0.16j	4.67

P-107	BENZ	BETX	NAPH	PAH
02/28/01	136	826	1,160	1,807
05/30/01	218	1,254	3,230	4,459
08/13/01	155	799	2,650	3,843

P-103	BENZ	BETX	NAPH	PAH
12/14/93	46	53	<1	1.7
11/20/97	4.6	6	<0.33	0.9
11/18/98	48	52	0.52	5.9
05/30/01	77	82.5	1.4	18.7
08/13/01	51	54	1.3	15.9

P-102	BENZ	BETX	NAPH	PAH
12/14/93	440	1,040	2,300	2,350
11/20/97	18	41	<0.33	ND
11/18/98	74	182	6.9	22
02/28/01	758	1,815	2,510	3,386
05/30/01	664	1,590	<0.056	835
08/31/01	692	1,659	2,700	3,679
09/17/01	791	1,870	NA	NA

LEGEND

P-4 P-101	PIEZOMETER (HSI)
P-104	BEDROCK PIEZOMETER (NRT)
HSI	HYDRO-SEARCH, INC.

WELL ID	BENZ	BETX	NAPH	PAH
DATE SAMPLED	BENZENE µg/L	TOTAL BETX µg/L	NAPHTHALENE µg/L	TOTAL PAH µg/L

18	CONCENTRATION EXCEEDS NR 140 ENFORCEMENT STANDARD
3.9	CONCENTRATION EXCEEDS NR 140 PREVENTIVE ACTION LIMIT
BETX	BENZENE, TOLUENE, ETHYLBENZENE, AND TOTAL XYLENES
PAH	POLYNUCLEAR AROMATIC HYDROCARBONS
NA	NOT ANALYZED
ND	NOT DETECTED
µg/L	MICROGRAMS PER LITER
j	REPORTED RESULT IS LESS THAN PRACTICAL QUANITATION LIMIT
MW-105	MONITORING WELL (NRT)
RW-101	RECOVERY WELL (NRT)
OW-3 MW-101 GW-1	MONITORING WELL (HSI)
P-3 OW-2	ABANDONED PIEZOMETER/ MONITORING WELL
PW-A	INDUSTRIAL SUPPLY WELL
⊜	CATCH BASIN
	GUY WIRE
☼	LITE POLE
	UTILITY POLE
⋈	GAS VALVE

APPROXIMATE LOCATION OF:

○	EXISTING SUBSURFACE MGP STRUCTURE
	FORMER MGP STRUCTURE LOCATION
▭	EXISTING ABOVE GROUND BUILDING OR FOUNDATION
○	MANHOLE
─┼─┼─	RAILROAD
─X─X─	FENCE
----OEL----	OVERHEAD ELECTRIC LINE
----UEL----	UNDERGROUND ELECTRIC LINE
----GAS----	NATURAL GAS LINE
----SAN----	SANITARY SEWER LINE
----STM----	STORM SEWER LINE
----WTR----	WATER LINE
	UNDERGROUND MGP SEWER PIPING
── MGP ── MGP ── MGP ──	UNDERGROUND MANUFACTURED GAS PIPING

SOURCE NOTES:

THIS DRAWING WAS DEVELOPED FROM MAP BY HYDRO-SEARCH, INC. DATED 06/03/94, PROJECT 304533000 AND A SURVEY BY WISCONSIN PUBLIC SERVICE CORPORATION DATED 01/11/99.

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LOCATIONS OF SEWER LATERALS, TAR WELLS, GAS HOLDERS, TAR STILL, TAR SEPARATORS, AND ASSOCIATIVE PIPING TAKEN FROM WPSC DRAWING NO. 140, DATED 1925.

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HP GAS LINE FROM DRAWING BY FORD, BACON AND DAVIS, INC., ENGINEERS, DRAWING NO. 60013-FI-S, REVISED DATED NOVEMBER 9, 1953.

WATER LINES AND HYDRANTS, STORM AND SANITARY LINES IN CEAPE AVENUE ARE TAKEN FROM CITY OF OSHKOSH ENGINEERING DIVISION DRAWING, DATED NOVEMBER 9, 1998.

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SB-125 WAS INSTALLED IN OCTOBER 2001, LOCATION IS APPROXIMATED FROM FIELD MEASUREMENTS BY NRT.

APPENDIX C

SITE INVESTIGATION SEDIMENT DOCUMENTATION

APPENDIX C1

SITE INVESTIGATION DOCUMENTATION PRIOR TO 2001

HYDRO-SEARCH, INC. A Tetra Tech Company

Table 1. Summary of Sediment Sampling Analytical Results

Sample Number:		SD-101	SD-102	SD-103	SD-104	SD-105	SD-106	SD-107	SD-108	SD-109	SD-110
Location:		East	Center	West	West	East	Center	Center	Center	East	East
Date Sampled:		4/28/94	4/27/94	4/27/94	4/27/94	4/28/94	4/27/94	4/27/94	4/27/94	4/28/94	4/28/94
Distance From Shore (feet):		12	6	50	6	15	10	26	50	60	8
Phenol	(mg/kg)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
Solids, Total	%	58.6	46.1	71.1	74.2	78.7	46.4	60.0	65.1	68.6	NA
TOC, dry wt.	%	6.61	3.00	1.57	5.00	5.70	2.83	1.43	3.60	1.36	NA
Benzene	(mg/kg)	0.32	2.3	<0.050	0.087	0.11	8.6	0.37	<0.050	0.12	NA
Ethylbenzene	(mg/kg)	0.53	13	<0.050	<0.066	<0.050	4.3	<0.15	<0.050	<0.10	NA
Toluene	(mg/kg)	0.23	1.7	<0.050	0.15	0.12	<1.3	0.23	<0.050	<0.10	NA
Xylenes, Total	(mg/kg)	0.72	7.2	<0.15	0.28	0.21	4.6	0.37	<0.15	<0.19	NA
TOTAL BETX (mg/kg)		1.8	24.2	ND	0.517	0.44	17.5	0.97	ND	0.12	NA
Detected PAHs											
Anthracene	(µg/kg)	5,300	210	<8.0	24	460	54	330	<8.0	<8.0	1,700
Benzo(a)anthracene	(µg/kg)	17,000	330	<2.0	160	840	160	980	<2.0	<2.0	6,900
Benzo(b)fluoranthene	(µg/kg)	2,100	270	<2.0	110	720	60	470	<2.0	<2.0	860
Benzo(k)fluoranthene	(µg/kg)	3,100	160	<2.0	47	260	58	110	<2.0	<2.0	200
Benzo(a)pyrene	(µg/kg)	7,600	410	<8.0	130	1,100	230	540	<8.0	<8.0	2,000
Benzo(ghi)perylene	(µg/kg)	6,000	380	<4.0	160	940	100	510	<4.0	<4.0	1,900
Chrysene	(µg/kg)	9,800	420	<4.0	130	1,100	170	460	<4.0	<4.0	1,600
Fluoranthene	(µg/kg)	8,400	1,000	<8.0	290	3,200	260	1,400	<8.0	<8.0	590
Fluorene	(µg/kg)	27,000	250	<16	<32	330	<16	500	<16	<16	3,000
Indeno(1,1,3-cd)pyrene	(µg/kg)	3,200	270	<4.0	100	730	100	360	<4.0	<4.0	1,300
Naphthalene	(µg/kg)	34,000	<160	<40	160	3,700	550	2,300	<40	<40	14,800
Phenanthrene	(µg/kg)	29,000	820	<16	140	2,000	240	1,300	<16	<16	6,800
Pyrene	(µg/kg)	8,200	490	<8.0	200	1,700	<8.0	540	<8.0	<8.0	2,300
TOTAL DETECTED PAHs (µg/kg)		160,700	5,010	ND	1,651	17,080	1,982	9,800	ND	ND	43,150

Notes:			
	mg/kg	=	Milligrams per kilogram which is equivalent to parts per million.
	µg/kg	=	Micrograms per kilogram which is equivalent to parts per billion.
	BETX	=	Benzene, ethylbenzene, toluene, and total xylenes.
	PAHs	=	Polynuclear aromatic hydrocarbons
	ND	=	Parameters not detected above method detection limits
	NA	=	Parameter not analyzed

▨ : TEC; McDonald 2000

▬ : PEC; McDonald 2000 for PAHs

— : EPA Ecotox Threshold for BTEX

Table 4-2. BETX and PAH Sediment Sample Results (μg/kg)
Former Oshkosh MGP Site - WPSC

Sample ID	Benzene	Ethyl benzene	Toluene	Xylenes (Total)	Total BETX	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a) anthracene	Benzo(b) fluoranthene	Benzo(k) fluoranthene
mdl	5	5	5	15		40	80	8	2	2	2
T101A-5 (4'-6')	33,000	120,000	74,000	97,000	324,000	92,000	<1600	22,000	31,000	6,700	8,300
T101A-9 (8'-10)	4,400	33,000	14,000	28,000	79,400	11,000	<1600	39,000	4,100	800	930
T101B-9 (8'-10')	18	210	15	110	353	<40	<80	10	8.5	<2.0	<2.0
T101C-3 (2'-4')	38	340	8.6	27	413.6	<40	<80	59	77	11	8.6
T101C-9 (8'-10')	<100	330	<100	310	640	16,000	52,000	8,200	6,400	1,300	1,200
T101C-11 (10'-12')	8.6	63	18	28	117.6	<40	<80	17	18	6.4	4.7
T102A-3 (2'-4')	7.4	63	8.3	27	105.7	<40	<80	220	170	41	42
T102B-5 (4'-6')	8.5	5	50	<15	63.5	<40	<80	<8.0	2.4	2.1	<2.0
T103A-3 (2'-4')	6.9	13	<5.0	<15	19.9	<40	<80	12	11	3.1	<2.0
T104A-3 (2'-4')	460	4,500	22	1,600	6,582	320	<80	97	73	15	14
T104A-11 (10'-12')	30	26	6.3	22	84.3	<40	<80	<8.0	<2.0	<2.0	<2.0
T104B-5 (4'-6')	13	11	6.6	<15	30.6	<40	<80	33	27	9.9	7.1
T105A-3 (2'-4')	9,900	27,000	500	5,100	42,500	2,100	<80	520	780	110	97
T105A-9 (8'-10')	900	2,900	2,600	3,700	10,100	430	<80	73	42	8.6	5.6
T105B-3 (2'-4')	9.6	11	13	<15	33.6	<40	<80	<8.0	<2.0	<2.0	<2.0
T106A-3 (2'-4')	<5.0	6.7	<5.0	<15	6.7	<40	<80	21	160	46	35
T106A-9 (8'-10')	<5.0	<5.0	<5.0	<15	0	<40	<80	<8.0	<2.0	<2.0	<2.0
T106B-3 (2'-4')	<5.0	<5.0	<5.0	<15	0	<40	<80	<8.0	<2.0	<2.0	<2.0

Notes: mdl is the Method Detection Limits

▨ : Exceed TEC, McDonald 2000

— : Exceed PEC, McDonald 2000 for PAHs

— : Exceed EPA Ecotox Threshold for BTEX

Table 4-2. BETX and PAH Sediment Sample Results (µg/kg) - continued
Former Oshkosh MGP Site - WPSC

Sample ID	Benzo(a) pyrene	Benzo(ghi) perylene	Chrysene	Dibenzo(a,h) anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd) pyrene	Naphthalene	Phenanthrene	Pyrene	Total PAHs
mdl	4	4	4	4	8	16	4	25	16	8	
T101A-5 (4'-6')	19,000	17,000	15,000	12,000	48,000	128,000	4,400	360,000	102,000	24,000	889,400 —
T101A-9 (8'-10)	2,200	2,600	2,000	<80	6,300	14,000	510	49,000	15,000	3,300	150,740 —
T101B-9 (8'-10')	<4.0	<4.0	5.4	<4.0	16	<16	<4.0	130	33	10	213
T101C-3 (2'-4')	28	26	28	<4.0	82	130	16	2,000	290	64	2,820 —
T101C-9 (8'-10')	4,600	2,900	4,700	2,300	18,000	34,000	1,500	79,000	37,000	11,000	280,100
T101C-11 (10'-12')	12	14	14	<4.0	40	36	11	280	53	29	535
T102A-3 (2'-4')	140	100	120	<4.0	380	240	52	570	650	200	2,925
T102B-5 (4'-6')	<4.0	<4.0	<4.0	<4.0	11	<16	<4.0	<25	<16	11	27
T103A-3 (2'-4')	10	11	9.7	<4.0	39	37	7.4	110	40	20	310
T104A-3 (2'-4')	58	31	60	<4.0	210	200	18	2,400	330	140	3,966
T104A-11 (10'-12')	<4.0	<4.0	<4.0	<4.0	<8.0	<16	<4.0	44	<16	<8.0	44
T104B-5 (4'-6')	28	20	26	<4.0	98	40	12	69	110	65	545
T105A-3 (2'-4')	420	250	420	260	1,900	1,400	140	5,700	2,500	1,200	17,797
T105A-9 (8'-10')	42	35	36	<4.0	160	300	16	1,600	240	290	3,278
T105B-3 (2'-4')	<4.0	<4.0	<4.0	<4.0	<8.0	<16	<4.0	<25	<16	<8.0	0
T106A-3 (2'-4')	140	110	110	<4.0	130	<16	75	54	41	100	1,022
T106A-9 (8'-10')	<4.0	<4.0	<4.0	<4.0	<8.0	<16	<4.0	<25	<16	<8.0	0
T106B-3 (2'-4')	<4.0	<4.0	<4.0	<4.0	<8.0	<16	<4.0	<25	<16	<8.0	0

Notes: mdl is the Method Detection Limits

▨ : Exceed TEC; McDonald 2000

— : Exceed PEC; McDonald 2000

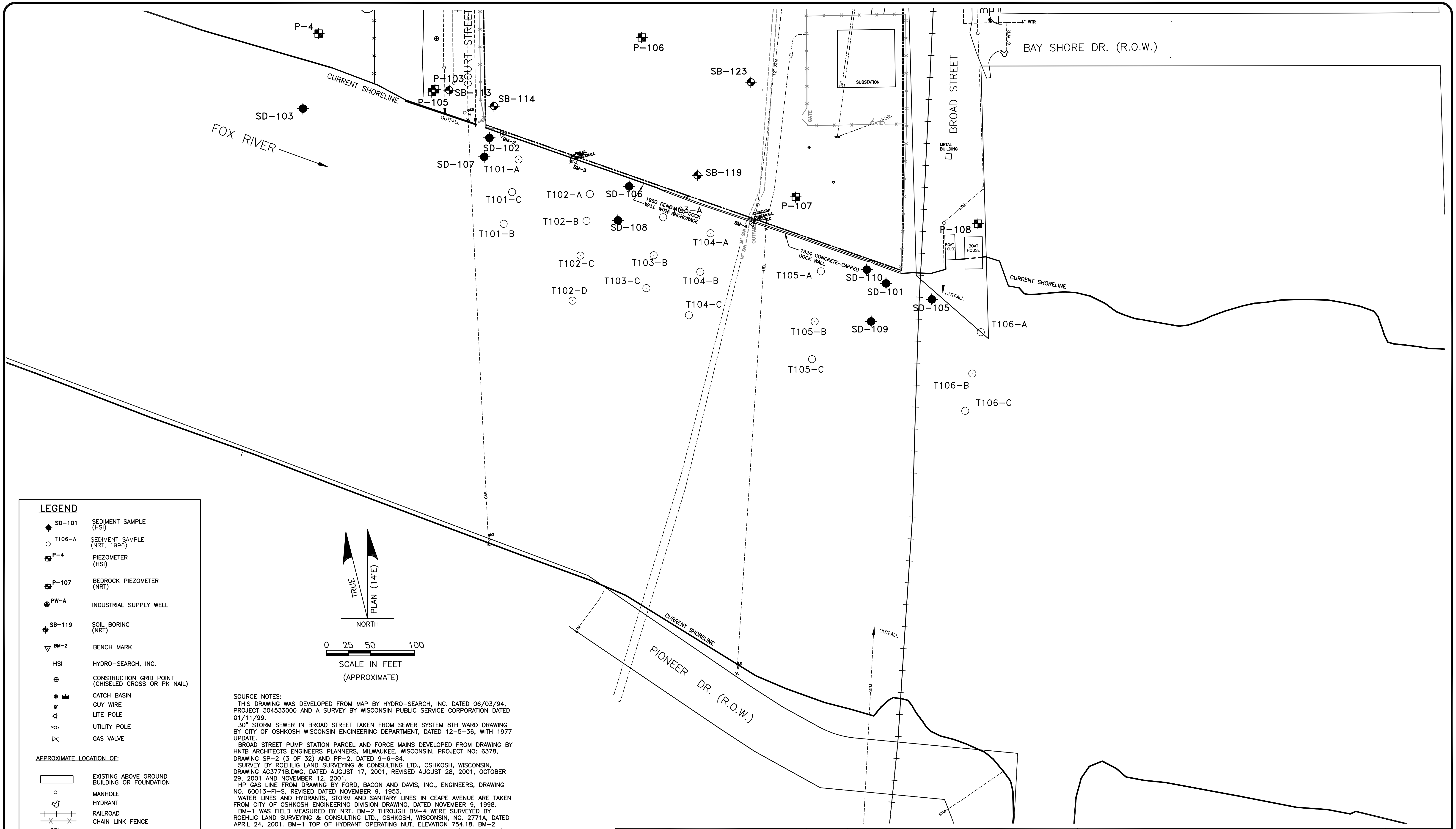
Table 4-3. Cyanide, TOC, Oil and Grease, and Grain Size Results
Sediment Sampling - Former Oshkosh MGP Site - WPSC

Sample ID	Parameter (mg/kg)					Grain Size Results				USCS Classification
	Cyanide (dissociable)	Cyanide (total)	Phenol	Total Organic Carbon	Oil & Grease	Gravel	Sand	Silt	Clay	
T101A-5 (4'-6')	<0.25	<0.25	6	na	na	na	na	na	na	-----
T101C-3 (2'-4')	<0.25	<0.25	0.19	na	na	na	na	na	na	-----
T101C-9 (8'-10')	<0.25	<0.25	<0.13	na	na	na	na	na	na	-----
T102A-3 (2'-4')	<0.25	<0.25	<0.13	na	na	na	na	na	na	-----
T103A-3 (2'-4')	<0.25	<0.25	<0.13	na	na	na	na	na	na	-----
T104A-3 (2'-4')	<0.25	<0.25	0.26	na	na	na	na	na	na	-----
T104B-5 (4'-6')	<0.25	<0.25	0.15	na	na	na	na	na	na	-----
T105A-3 (2'-4')	<0.25	<0.25	0.63	na	na	na	na	na	na	-----
T105B-3 (2'-4')	<0.25	<0.25	<0.13	na	na	na	na	na	na	-----
T106A-3 (2'-4')	<0.25	<0.25	0.15	na	na	na	na	na	na	-----
T101A-1-5 (0'-6')	na	na	na	1,600	7,900	0.0%	25.8%	29.0%	45.2%	Sandy silty clay
T102A-1&3 (0'-4')	na	na	na	1,200	<500	0.0%	47.4%	19.7%	32.9%	Sandy clay
T103A-1&3 (0'-4')	na	na	na	3,600	<500	0.0%	25.9%	27.7%	46.4%	Sandy silty clay
T104A-1&3 (0'-4')	na	na	na	<1,000	570	0.0%	52.9%	34.0%	13.1%	Silty sand
T105A-1&3 (0'-4')	na	na	na	1,600	<500	0.0%	34.5%	27.6%	37.9%	Sandy clay

Notes: na: Parameter not analyzed for in this sample.

▨ : Exceed TEC; McDonald 2000

— : Exceed PEC; McDonald 2000



SOURCE NOTES:

THIS DRAWING WAS DEVELOPED FROM MAP BY HYDRO-SEARCH, INC. DATED 06/03/94, PROJECT 304533000 AND A SURVEY BY WISCONSIN PUBLIC SERVICE CORPORATION DATED 01/11/99.

30" STORM SEWER IN BROAD STREET TAKEN FROM SEWER SYSTEM 8TH WARD DRAWING BY CITY OF OSHKOSH WISCONSIN ENGINEERING DEPARTMENT, DATED 12-5-36, WITH 1977 UPDATE.

BROAD STREET PUMP STATION PARCEL AND FORCE MAINS DEVELOPED FROM DRAWING BY HNTB ARCHITECTS ENGINEERS PLANNERS, MILWAUKEE, WISCONSIN, PROJECT NO: 6378, DRAWING SP-2 (3 OF 32) AND PP-2, DATED 9-6-84.

SURVEY BY ROEHLIG LAND SURVEYING & CONSULTING LTD., OSHKOSH, WISCONSIN, DRAWING AC3771B.DWG, DATED AUGUST 17, 2001, REVISED AUGUST 28, 2001, OCTOBER 29, 2001 AND NOVEMBER 12, 2001.

HP GAS LINE FROM DRAWING BY FORD, BACON AND DAVIS, INC., ENGINEERS, DRAWING NO. 60013-FI-S, REVISED DATED NOVEMBER 9, 1953.

WATER LINES AND HYDRANTS, STORM AND SANITARY LINES IN CEAPE AVENUE ARE TAKEN FROM CITY OF OSHKOSH ENGINEERING DIVISION DRAWING, DATED NOVEMBER 9, 1998.

BM-1 WAS FIELD MEASURED BY NRT. BM-2 THROUGH BM-4 WERE SURVEYED BY ROEHLIG LAND SURVEYING & CONSULTING LTD., OSHKOSH, WISCONSIN, NO. 2771A, DATED APRIL 24, 2001. BM-1 TOP OF HYDRANT OPERATING NUT, ELEVATION 754.18. BM-2 SPIKE IN WOOD RETAINING WALL PER WPSC SURVEY, ELEVATION 749.60 (749.52 WPSC). BM-3 PK NAIL SET ON TOP OF WOOD WALL, ELEVATION 749.96. BM-4 CHISELED "V" IN TOP OF RETAINING WALL, ELEVATION 749.78. ELEVATIONS BASED ON USGS DATUM.

SB-125 WAS INSTALLED IN OCTOBER 2001, LOCATION IS APPROXIMATED FROM FIELD MEASUREMENTS BY NRT.

TO ALIGN SHORELINE WITH WPSC AND CITY OF OSHKOSH BASE MAP ROTATED 1° TO EACH OTHER.

NATURAL RESOURCE TECHNOLOGY 1995 DATA LOCATIONS (REPORTED IN 1996) WERE ESTABLISHED USING A KNOWN LOCATION ON THE SEAWALL AND THE DISTANCE WAS ESTIMATED USING STADIA.

REVISION:		DATE:	APP'D BY:
1.	.	.	.
2.			
3.			
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Natural
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PREVIOUS SEDIMENT SAMPLING LOCATIONS

SUPPLEMENTAL SEDIMENT INVESTIGATION REPORT
FORMER OSHKOSH MANUFACTURE GAS PLANT SITE
WISCONSIN PUBLIC SERVICE CORPORATION
CITY OF OSHKOSH, WISCONSIN

DRAWN BY: TAS/RLH	CHECKED BY: JTB	APPROVED BY: RGF
DATE: 7/17/02	DATE: 7/17/02	DATE: 12/3/02

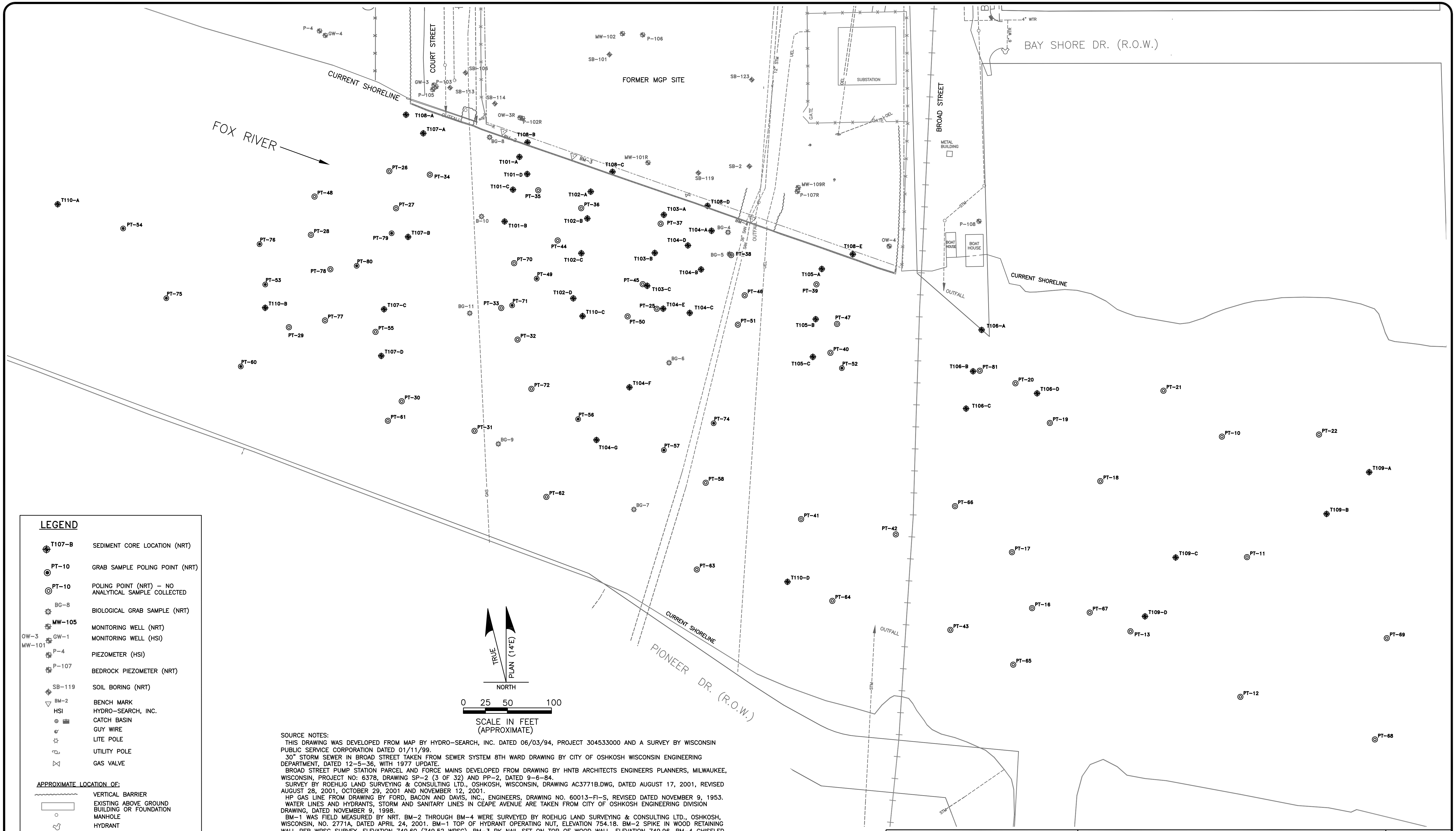
PROJECT NO.
1644/1

DRAWING NO.
1644-1-B01
(PSS)

FIGURE NO.
2

APPENDIX C2

2005 FIGURES AND SHEETS



LEGEND

T107-B	SEDIMENT CORE LOCATION (NRT)
PT-10	GRAB SAMPLE POLING POINT (NRT)
PT-10	POLING POINT (NRT) – NO ANALYTICAL SAMPLE COLLECTED
BG-8	BIOLOGICAL GRAB SAMPLE (NRT)
MW-105	MONITORING WELL (NRT)
OW-3 MW-101 GW-1	MONITORING WELL (HSI)
P-4	PIEZOMETER (HSI)
P-107	BEDROCK PIEZOMETER (NRT)
SB-119	SOIL BORING (NRT)
▽ BM-2	BENCH MARK
HSI	HYDRO-SEARCH, INC.
	CATCH BASIN
	GUY WIRE
☼	LITE POLE
	UTILITY POLE
⋈	GAS VALVE

APPROXIMATE LOCATION OF:

	VERTICAL BARRIER
▭	EXISTING ABOVE GROUND BUILDING OR FOUNDATION
○	MANHOLE
	HYDRANT
	RAILROAD
	CHAIN LINK FENCE
----OEL----	OVERHEAD ELECTRIC LINE
----UEL----	UNDERGROUND ELECTRIC LINE
----GAS----	NATURAL GAS LINE
----SAN----	SANITARY SEWER LINE
----STM----	STORM SEWER LINE
----WTR----	WATER LINE

SOURCE NOTES:

THIS DRAWING WAS DEVELOPED FROM MAP BY HYDRO–SEARCH, INC. DATED 06/03/94, PROJECT 304533000 AND A SURVEY BY WISCONSIN PUBLIC SERVICE CORPORATION DATED 01/11/99.

30" STORM SEWER IN BROAD STREET TAKEN FROM SEWER SYSTEM 8TH WARD DRAWING BY CITY OF OSHKOSH WISCONSIN ENGINEERING DEPARTMENT, DATED 12–5–36, WITH 1977 UPDATE.

BROAD STREET PUMP STATION PARCEL AND FORCE MAINS DEVELOPED FROM DRAWING BY HNTB ARCHITECTS ENGINEERS PLANNERS, MILWAUKEE, WISCONSIN, PROJECT NO: 6378, DRAWING SP–2 (3 OF 32) AND PP–2, DATED 9–6–84.

SURVEY BY ROEHLIG LAND SURVEYING & CONSULTING LTD., OSHKOSH, WISCONSIN, DRAWING AC3771B.DWG, DATED AUGUST 17, 2001, REVISED AUGUST 28, 2001, OCTOBER 29, 2001 AND NOVEMBER 12, 2001.

HP GAS LINE FROM DRAWING BY FORD, BACON AND DAVIS, INC., ENGINEERS, DRAWING NO. 60013–FI–S, REVISED DATED NOVEMBER 9, 1953.

WATER LINES AND HYDRANTS, STORM AND SANITARY LINES IN CEAPE AVENUE ARE TAKEN FROM CITY OF OSHKOSH ENGINEERING DIVISION DRAWING, DATED NOVEMBER 9, 1998.

BM–1 WAS FIELD MEASURED BY NRT. BM–2 THROUGH BM–4 WERE SURVEYED BY ROEHLIG LAND SURVEYING & CONSULTING LTD., OSHKOSH, WISCONSIN, NO. 2771A, DATED APRIL 24, 2001. BM–1 TOP OF HYDRANT OPERATING NUT, ELEVATION 754.18. BM–2 SPIKE IN WOOD RETAINING WALL PER WPSC SURVEY, ELEVATION 749.60 (749.52 WPSC). BM–3 PK NAIL SET ON TOP OF WOOD WALL, ELEVATION 749.96. BM–4 CHISELED "V" IN TOP OF RETAINING WALL, ELEVATION 749.78. ELEVATIONS BASED ON USGS DATUM.

SB–125 WAS INSTALLED IN OCTOBER 2001, LOCATION IS APPROXIMATED FROM FIELD MEASUREMENTS BY NRT.

DIGITAL FILE FROM CITY OF OSHKOSH DATED 2001.

TO ALIGN SHORELINE WITH WPSC AND CITY OF OSHKOSH BASE MAP ROTATED 1° TO EACH OTHER.

NATURAL RESOURCE TECHNOLOGY 1995 DATA LOCATIONS (REPORTED IN 1996) WERE ESTABLISHED USING A KNOWN LOCATION ON THE SEAWALL AND THE DISTANCE WAS ESTIMATED USING STADIA.

NATURAL RESOURCE TECHNOLOGY 2001 DATA LOCATIONS WERE ESTABLISHED USING A TRIMBLE GEOGRAPHIC INFORMATION SYSTEM UNIT TO ATTAIN LATITUDE AND LONGITUDE.

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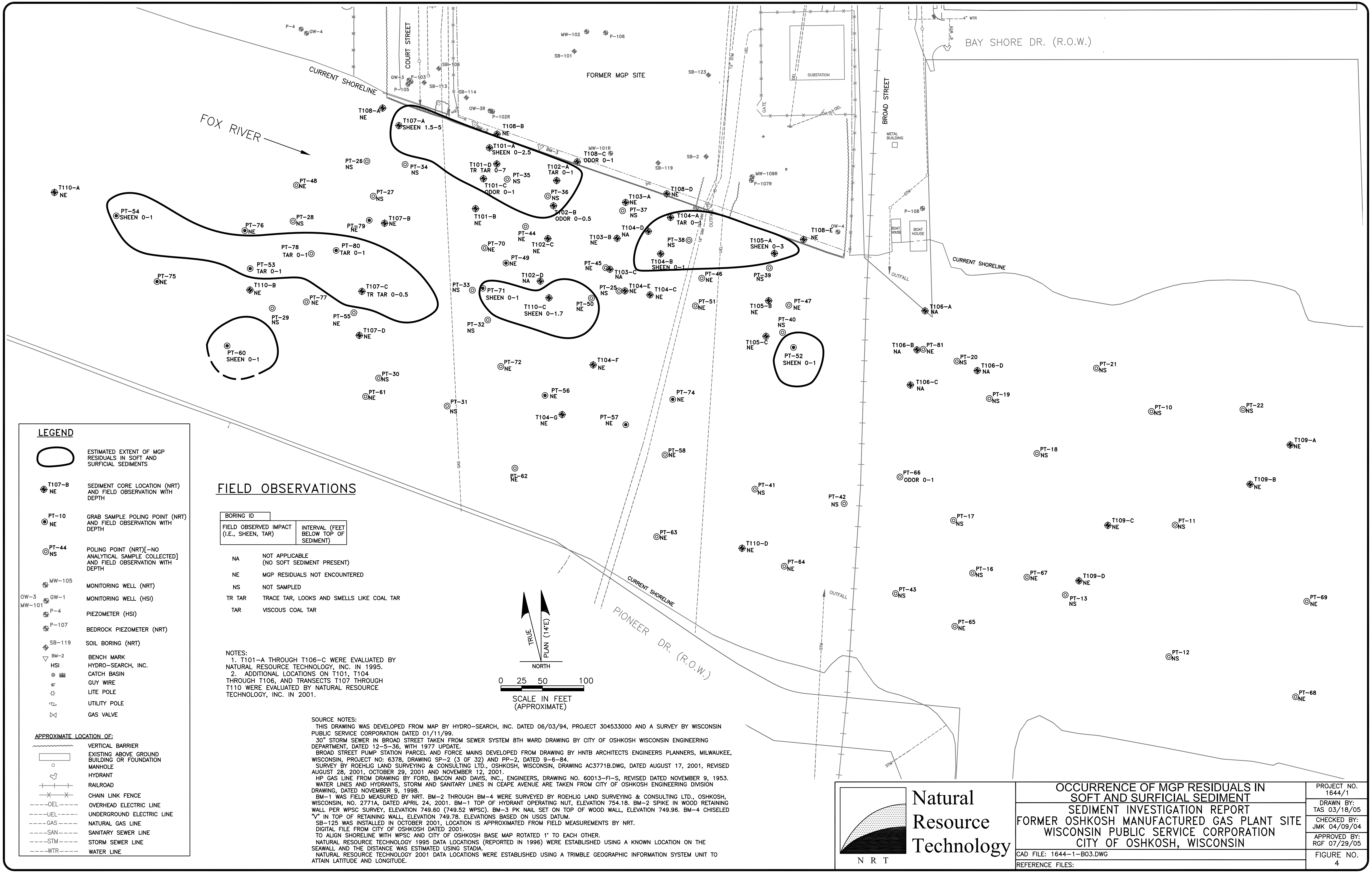
SEDIMENT SAMPLING LOCATIONS, 2001

SEDIMENT INVESTIGATION REPORT
FORMER OSHKOSH MANUFACTURED GAS PLANT SITE
WISCONSIN PUBLIC SERVICE CORPORATION
CITY OF OSHKOSH, WISCONSIN

CAD FILE: 1644–1–B02.DWG
REFERENCE FILES:

PROJECT NO. 1644/1
DRAWN BY: TAS 03/18/05
CHECKED BY: JMK 07/07/05
APPROVED BY: RGF 07/29/05
FIGURE NO. 3



FIELD OBSERVATIONS

BORING ID

FIELD OBSERVED IMPACT (I.E., SHEEN, TAR)	INTERVAL (FEET BELOW TOP OF SEDIMENT)

NA	NOT APPLICABLE (NO SOFT SEDIMENT PRESENT)
NE	MGP RESIDUALS NOT ENCOUNTERED
NS	NOT SAMPLED
TR TAR	TRACE TAR, LOOKS AND SMELLS LIKE COAL TAR
TAR	VISCOUS COAL TAR

NOTES:
1. T101-A THROUGH T106-C WERE EVALUATED BY NATURAL RESOURCE TECHNOLOGY, INC. IN 1995.
2. ADDITIONAL LOCATIONS ON T101, T104 THROUGH T106, AND TRANSECTS T107 THROUGH T110 WERE EVALUATED BY NATURAL RESOURCE TECHNOLOGY, INC. IN 2001.

SOURCE NOTES:

THIS DRAWING WAS DEVELOPED FROM MAP BY HYDRO-SEARCH, INC. DATED 06/03/94, PROJECT 304533000 AND A SURVEY BY WISCONSIN PUBLIC SERVICE CORPORATION DATED 01/11/99.

30" STORM SEWER IN BROAD STREET TAKEN FROM SEWER SYSTEM 8TH WARD DRAWING BY CITY OF OSHKOSH WISCONSIN ENGINEERING DEPARTMENT, DATED 12-5-36, WITH 1977 UPDATE.

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SURVEY BY ROEHLIG LAND SURVEYING & CONSULTING LTD., OSHKOSH, WISCONSIN, DRAWING AC3771B.DWG, DATED AUGUST 17, 2001, REVISED AUGUST 28, 2001, OCTOBER 29, 2001 AND NOVEMBER 12, 2001.

HP GAS LINE FROM DRAWING BY FORD, BACON AND DAVIS, INC., ENGINEERS, DRAWING NO. 60013-FI-S, REVISED DATED NOVEMBER 9, 1953.

WATER LINES AND HYDRANTS, STORM AND SANITARY LINES IN CEAPE AVENUE ARE TAKEN FROM CITY OF OSHKOSH ENGINEERING DIVISION DRAWING, DATED NOVEMBER 9, 1998.

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SB-125 WAS INSTALLED IN OCTOBER 2001, LOCATION IS APPROXIMATED FROM FIELD MEASUREMENTS BY NRT.

DIGITAL FILE FROM CITY OF OSHKOSH DATED 2001.

TO ALIGN SHORELINE WITH WPSC AND CITY OF OSHKOSH BASE MAP ROTATED 1° TO EACH OTHER.

NATURAL RESOURCE TECHNOLOGY 1995 DATA LOCATIONS (REPORTED IN 1996) WERE ESTABLISHED USING A KNOWN LOCATION ON THE SEAWALL AND THE DISTANCE WAS ESTIMATED USING STADIA.

NATURAL RESOURCE TECHNOLOGY 2001 DATA LOCATIONS WERE ESTABLISHED USING A TRIMBLE GEOGRAPHIC INFORMATION SYSTEM UNIT TO ATTAIN LATITUDE AND LONGITUDE.

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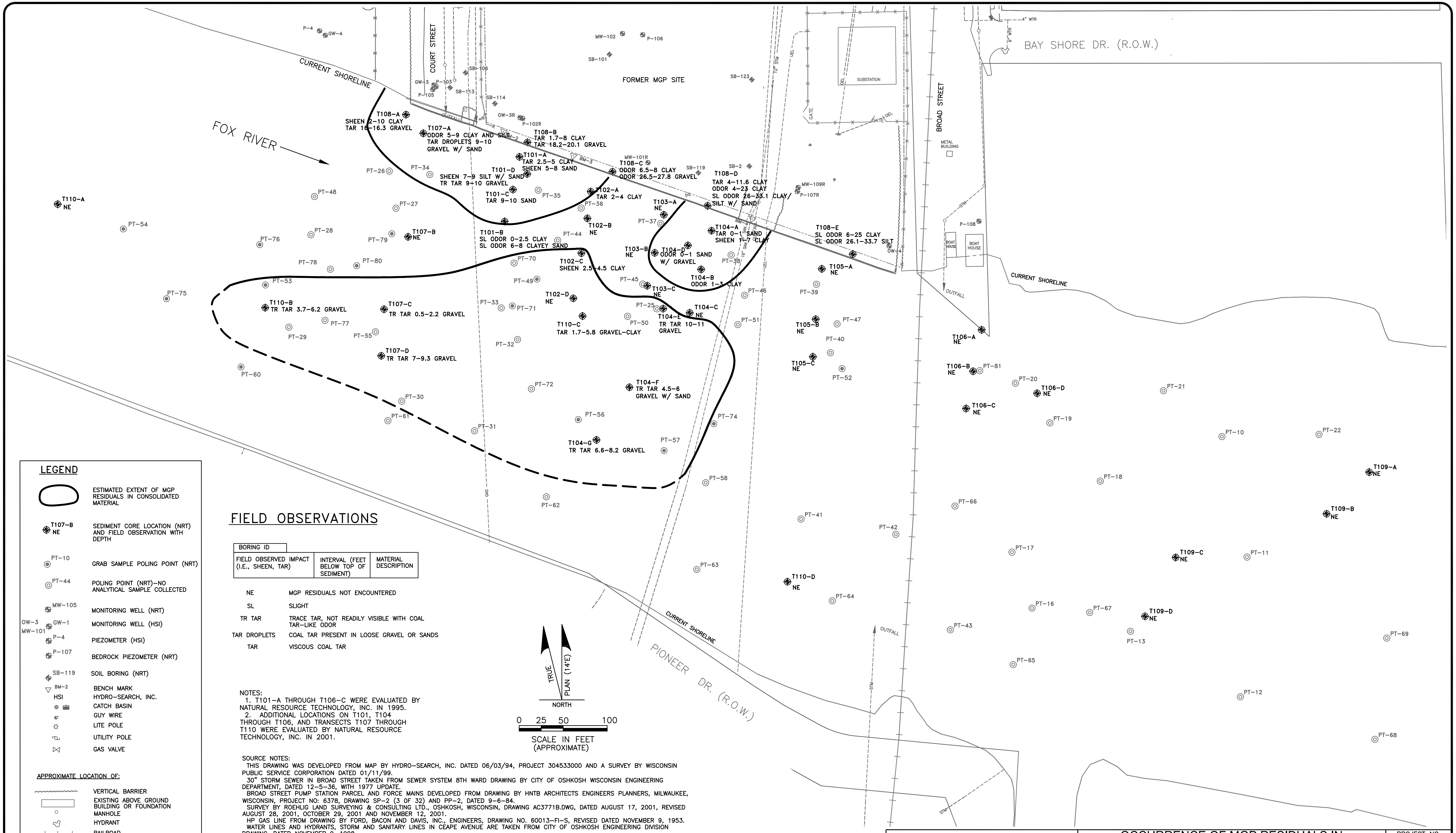
OCCURRENCE OF MGP RESIDUALS IN SOFT AND SURFICIAL SEDIMENT
SEDIMENT INVESTIGATION REPORT
FORMER OSHKOSH MANUFACTURED GAS PLANT SITE
WISCONSIN PUBLIC SERVICE CORPORATION
CITY OF OSHKOSH, WISCONSIN

CAD FILE: 1644-1-B03.DWG
REFERENCE FILES:

PROJECT NO. 1644/1
DRAWN BY: TAS 03/18/05
CHECKED BY: JMK 04/09/04
APPROVED BY: RGF 07/29/05
FIGURE NO. 4



LEGEND

	ESTIMATED EXTENT OF MGP RESIDUALS IN CONSOLIDATED MATERIAL
T107-B NE	SEDIMENT CORE LOCATION (NRT) AND FIELD OBSERVATION WITH DEPTH
PT-10	GRAB SAMPLE POLING POINT (NRT)
PT-44	POLING POINT (NRT)–NO ANALYTICAL SAMPLE COLLECTED
MW-105	MONITORING WELL (NRT)
OW-3 MW-101 GW-1	MONITORING WELL (HSI)
P-4	PIEZOMETER (HSI)
P-107	BEDROCK PIEZOMETER (NRT)
SB-119	SOIL BORING (NRT)
BM-2	BENCH MARK
HSI	HYDRO-SEARCH, INC.
	CATCH BASIN
	GUY WIRE
	LITE POLE
	UTILITY POLE
	GAS VALVE

APPROXIMATE LOCATION OF:

	VERTICAL BARRIER
	EXISTING ABOVE GROUND BUILDING OR FOUNDATION
	MANHOLE
	HYDRANT
	RAILROAD
	CHAIN LINK FENCE
----OEL----	OVERHEAD ELECTRIC LINE
----UEL----	UNDERGROUND ELECTRIC LINE
----GAS----	NATURAL GAS LINE
----SAN----	SANITARY SEWER LINE
----STM----	STORM SEWER LINE
----WTR----	WATER LINE

FIELD OBSERVATIONS

BORING ID		
FIELD OBSERVED IMPACT (I.E., SHEEN, TAR)	INTERVAL (FEET BELOW TOP OF SEDIMENT)	MATERIAL DESCRIPTION

NE	MGP RESIDUALS NOT ENCOUNTERED
SL	SLIGHT
TR TAR	TRACE TAR, NOT READILY VISIBLE WITH COAL TAR-LIKE ODOR
TAR DROPLETS	COAL TAR PRESENT IN LOOSE GRAVEL OR SANDS
TAR	VISCOUS COAL TAR

NOTES:
1. T101-A THROUGH T106-C WERE EVALUATED BY NATURAL RESOURCE TECHNOLOGY, INC. IN 1995.
2. ADDITIONAL LOCATIONS ON T101, T104 THROUGH T106, AND TRANSECTS T107 THROUGH T110 WERE EVALUATED BY NATURAL RESOURCE TECHNOLOGY, INC. IN 2001.

SOURCE NOTES:

THIS DRAWING WAS DEVELOPED FROM MAP BY HYDRO-SEARCH, INC. DATED 06/03/94, PROJECT 304533000 AND A SURVEY BY WISCONSIN PUBLIC SERVICE CORPORATION DATED 01/11/99.

30" STORM SEWER IN BROAD STREET TAKEN FROM SEWER SYSTEM 8TH WARD DRAWING BY CITY OF OSHKOSH WISCONSIN ENGINEERING DEPARTMENT, DATED 12-5-36, WITH 1977 UPDATE.

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SURVEY BY ROEHLIG LAND SURVEYING & CONSULTING LTD., OSHKOSH, WISCONSIN, DRAWING AC3771B.DWG, DATED AUGUST 17, 2001, REVISED AUGUST 28, 2001, OCTOBER 29, 2001 AND NOVEMBER 12, 2001.

HP GAS LINE FROM DRAWING BY FORD, BACON AND DAVIS, INC., ENGINEERS, DRAWING NO. 60013-FI-S, REVISED DATED NOVEMBER 9, 1953.

WATER LINES AND HYDRANTS, STORM AND SANITARY LINES IN CEAPE AVENUE ARE TAKEN FROM CITY OF OSHKOSH ENGINEERING DIVISION DRAWING, DATED NOVEMBER 9, 1998.

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SB-125 WAS INSTALLED IN OCTOBER 2001, LOCATION IS APPROXIMATED FROM FIELD MEASUREMENTS BY NRT.

DIGITAL FILE FROM CITY OF OSHKOSH DATED 2001.

TO ALIGN SHORELINE WITH WPSC AND CITY OF OSHKOSH BASE MAP ROTATED 1° TO EACH OTHER.

NATURAL RESOURCE TECHNOLOGY 1995 DATA LOCATIONS (REPORTED IN 1996) WERE ESTABLISHED USING A KNOWN LOCATION ON THE SEAWALL AND THE DISTANCE WAS ESTIMATED USING STADIA.

NATURAL RESOURCE TECHNOLOGY 2001 DATA LOCATIONS WERE ESTABLISHED USING A TRIMBLE GEOGRAPHIC INFORMATION SYSTEM UNIT TO ATTAIN LATITUDE AND LONGITUDE.

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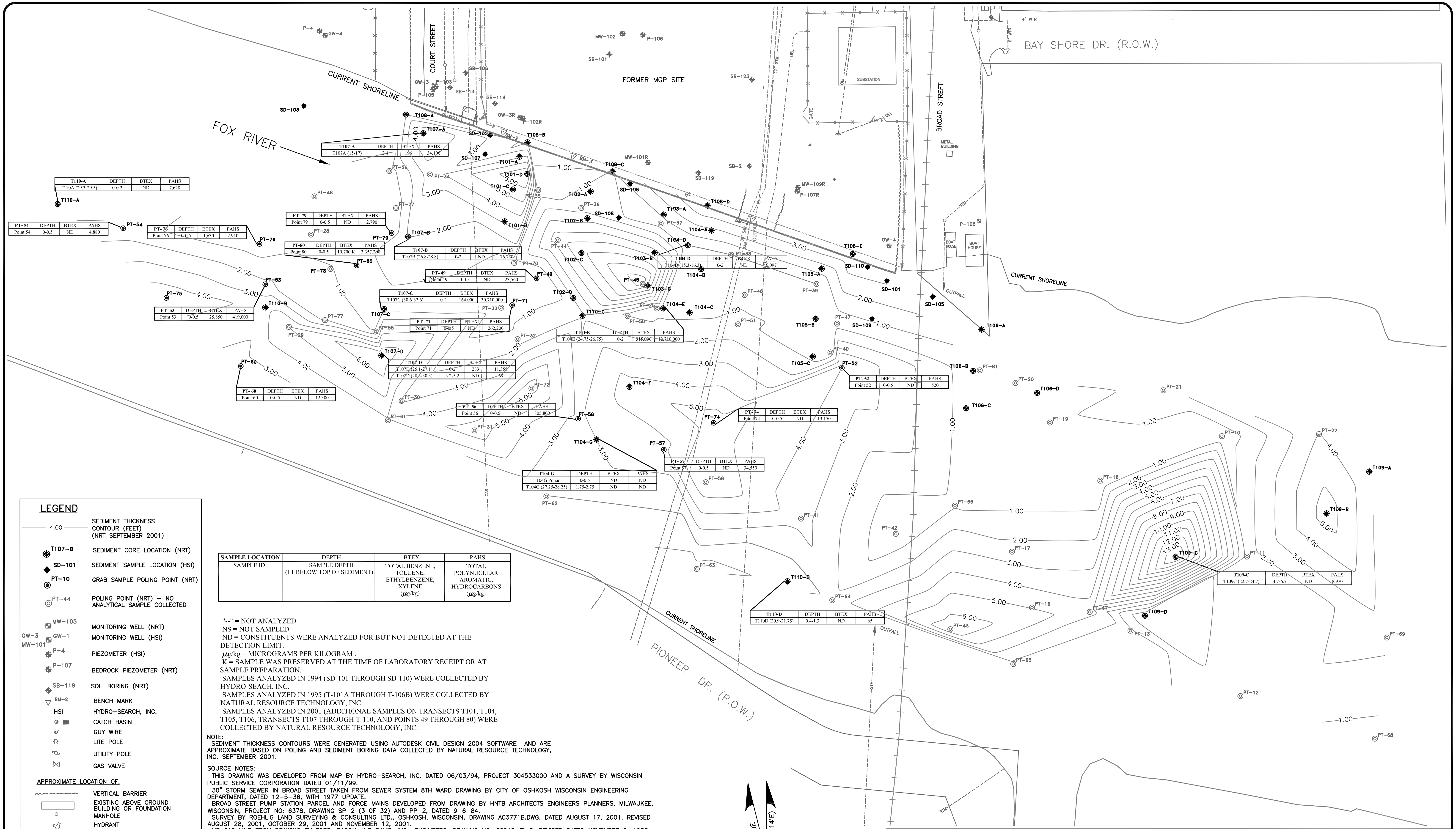
OCCURRENCE OF MGP RESIDUALS IN GLACIAL TILL MATERIAL

SEDIMENT INVESTIGATION REPORT
FORMER OSHKOSH MANUFACTURED GAS PLANT SITE
WISCONSIN PUBLIC SERVICE CORPORATION
CITY OF OSHKOSH, WISCONSIN

CAD FILE: 1644-1-B05
REFERENCE FILES:

PROJECT NO. 1644/1
DRAWN BY: TAS 03/18/05
CHECKED BY: JMK 07/07/05
APPROVED BY: RGF 07/29/05
FIGURE NO. 5



T110-A	DEPTH	BTEX	PAHS
T110A (29.3-29.5)	0-0.2	ND	7,628

T107-A	DEPTH	BTEX	PAHS
T107A (15-17)	2-4	196	34,100

PT- 54	DEPTH	BTEX	PAHS
Point 54	0-0.5	ND	4,880

PT- 76	DEPTH	BTEX	PAHS
Point 76	0-0.5	1,630	2,910

PT- 79	DEPTH	BTEX	PAHS
Point 79	0-0.5	ND	2,790

PT-80	DEPTH	BTEX	PAHS
Point 80	0-0.5	19,700 K	3,357,200

T107-B	DEPTH	BTEX	PAHS
T107B (26.8-28.8)	0-2	ND	76,750

T104-D	DEPTH	BTEX	PAHS
T104D (15.3-16.3)	0-2	ND	6,097

PT- 49	DEPTH	BTEX	PAHS
Point 49	0-0.5	ND	23,560

T107-C	DEPTH	BTEX	PAHS
T107C (30.6-32.6)	0-2	164,000	30,710,000

PT- 53	DEPTH	BTEX	PAHS
Point 53	0-0.5	25,850	419,000

PT- 71	DEPTH	BTEX	PAHS
Point 71	0-0.5	ND	262,200

T104-E	DEPTH	BTEX	PAHS
T104E (24.75-26.75)	0-2	315,000	12,710,000

T107-D	DEPTH	BTEX	PAHS
T107D (25.1-27.1)	0-2	283	11,355
T107D (28.3-30.3)	3.2-5.2	ND	69

PT- 52	DEPTH	BTEX	PAHS
Point 52	0-0.5	ND	520

PT- 60	DEPTH	BTEX	PAHS
Point 60	0-0.5	ND	12,300

PT- 56	DEPTH	BTEX	PAHS
Point 56	0-0.5	ND	805,800

PT- 74	DEPTH	BTEX	PAHS
Point 74	0-0.5	ND	13,150

PT- 57	DEPTH	BTEX	PAHS
Point 57	0-0.5	ND	34,550

T104-G	DEPTH	BTEX	PAHS
T104G Ponar	0-0.5	ND	ND
T104G (27.25-28.25)	1.75-2.75	ND	ND

T109-C	DEPTH	BTEX	PAHS
T109C (22.7-24.7)	4.7-6.7	ND	8,970

T110-D	DEPTH	BTEX	PAHS
T110D (20.9-21.75)	0.4-1.3	ND	65

SAMPLE LOCATION	DEPTH	BTEX	PAHS
SAMPLE ID	SAMPLE DEPTH (FT BELOW TOP OF SEDIMENT)	TOTAL BENZENE, TOLUENE, ETHYLBENZENE, XYLENE (μg/kg)	TOTAL POLYNUCLEAR AROMATIC, HYDROCARBONS (μg/kg)

"--" = NOT ANALYZED.
NS = NOT SAMPLED.
ND = CONSTITUENTS WERE ANALYZED FOR BUT NOT DETECTED AT THE DETECTION LIMIT.
μg/kg = MICROGRAMS PER KILOGRAM .
K = SAMPLE WAS PRESERVED AT THE TIME OF LABORATORY RECEIPT OR AT SAMPLE PREPARATION.
SAMPLES ANALYZED IN 1994 (SD-101 THROUGH SD-110) WERE COLLECTED BY HYDRO-SEACH, INC.
SAMPLES ANALYZED IN 1995 (T-101A THROUGH T-106B) WERE COLLECTED BY NATURAL RESOURCE TECHNOLOGY, INC.
SAMPLES ANALYZED IN 2001 (ADDITIONAL SAMPLES ON TRANSECTS T101, T104, T105, T106, TRANSECTS T107 THROUGH T-110, AND POINTS 49 THROUGH 80) WERE COLLECTED BY NATURAL RESOURCE TECHNOLOGY, INC.

NOTE:
SEDIMENT THICKNESS CONTOURS WERE GENERATED USING AUTODESK CIVIL DESIGN 2004 SOFTWARE AND ARE APPROXIMATE BASED ON POLING AND SEDIMENT BORING DATA COLLECTED BY NATURAL RESOURCE TECHNOLOGY, INC. SEPTEMBER 2001.

SOURCE NOTES:
THIS DRAWING WAS DEVELOPED FROM MAP BY HYDRO-SEARCH, INC. DATED 06/03/94, PROJECT 304533000 AND A SURVEY BY WISCONSIN PUBLIC SERVICE CORPORATION DATED 01/11/99.
30" STORM SEWER IN BROAD STREET TAKEN FROM SEWER SYSTEM 8TH WARD DRAWING BY CITY OF OSHKOSH WISCONSIN ENGINEERING DEPARTMENT, DATED 12-5-36, WITH 1977 UPDATE.
BROAD STREET PUMP STATION PARCEL AND FORCE MAINS DEVELOPED FROM DRAWING BY HNTB ARCHITECTS ENGINEERS PLANNERS, MILWAUKEE, WISCONSIN, PROJECT NO: 6378, DRAWING SP-2 (3 OF 32) AND PP-2, DATED 9-6-84.
SURVEY BY ROEHLIG LAND SURVEYING & CONSULTING LTD., OSHKOSH, WISCONSIN, DRAWING AC3771B.DWG, DATED AUGUST 17, 2001, REVISED AUGUST 28, 2001, OCTOBER 29, 2001 AND NOVEMBER 12, 2001.
HP GAS LINE FROM DRAWING BY FORD, BACON AND DAVIS, INC., ENGINEERS, DRAWING NO. 60013-FI-S, REVISED DATED NOVEMBER 9, 1953.
WATER LINES AND HYDRANTS, STORM AND SANITARY LINES IN CEAPE AVENUE ARE TAKEN FROM CITY OF OSHKOSH ENGINEERING DIVISION DRAWING, DATED NOVEMBER 9, 1998.
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SB-125 WAS INSTALLED IN OCTOBER 2001, LOCATION IS APPROXIMATED FROM FIELD MEASUREMENTS BY NRT.
DIGITAL FILE FROM CITY OF OSHKOSH DATED 2001.
TO ALIGN SHORELINE WITH WPSC AND CITY OF OSHKOSH BASE MAP ROTATED 1° TO EACH OTHER.
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NATURAL RESOURCE TECHNOLOGY 2001 DATA LOCATIONS WERE ESTABLISHED USING A TRIMBLE GEOGRAPHIC INFORMATION SYSTEM UNIT TO ATTAIN LATITUDE AND LONGITUDE.

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TOTAL BTEX AND TOTAL PAHS DISTRIBUTION IN SOFT SEDIMENT

SEDIMENT INVESTIGATION REPORT
FORMER OSHKOSH MANUFACTURED GAS PLANT SITE
WISCONSIN PUBLIC SERVICE CORPORATION
CITY OF OSHKOSH, WISCONSIN

CAD FILE: 1644-1-B04.DWG
REFERENCE FILES:

PROJECT NO. 1644/1
DRAWN BY: TAS 03/18/05
CHECKED BY: JMK 07/07/05
APPROVED BY: RGF 07/29/05
FIGURE NO. 6

Ecological Benchmark	BTEX (µg/kg)	Total PAHS (µg/kg)
TEC ^{1}	NS	1,610
PEC ^{1}	NS	22,800
EPA Ecotox ^{2}	4,352*	NS

TEC = Threshold Effect Concentration
PEC = Probable Effect Concentration
EPA Ecotox = Ecotox Threshold
NS = No Standard Established
Constituents that exceed the TEC are highlighted in yellow
Constituents that exceed the PEC or EPA Ecotox are highlighted in blue
*BTEX benchmark was calculated by combining the benchmarks reported for each component.
Concentrations have not been normalized to 1% TOC

References:

1. MacDonald, D.D., C.G. Ingersoll, and T.A. Berger, 2000. *Development and Evaluation of consensus-based sediment quality guidelines for freshwater ecosystems.* Arch. Environ.Contam. Toxicol. 39:20-31.
2. EPA Office of Solid Waste and Emergency Response, January, 1996, ECO Update: Ecotox Thresholds, EPA540/F-95/038.

LEGEND

WS-101	RIVER WATER SAMPLE APPROXIMATE LOCATION (NRT)
T107-B	SEDIMENT CORE LOCATION (NRT)
SD-101	SEDIMENT SAMPLE LOCATION (HSI)
PT-10	GRAB SAMPLE POLING POINT (NRT)
PT-10	POLING POINT (NRT) – NO ANALYTICAL SAMPLE COLLECTED
BG-8	BIOLOGICAL GRAB SAMPLE (NRT)
MW-105	MONITORING WELL (NRT)
OW-3 MW-101 GW-1	MONITORING WELL (HSI)
P-4	PIEZOMETER (HSI)
P-107	BEDROCK PIEZOMETER (NRT)
PW-A	INDUSTRIAL SUPPLY WELL
SB-119	SOIL BORING (NRT)
BM-2	BENCH MARK
HSI	HYDRO-SEARCH, INC.
	CATCH BASIN
	GUY WIRE
	LITE POLE
	UTILITY POLE
	GAS VALVE

APPROXIMATE LOCATION OF:

	VERTICAL BARRIER
	EXISTING ABOVE GROUND BUILDING OR FOUNDATION
	MANHOLE
	HYDRANT
	RAILROAD
	CHAIN LINK FENCE
----OEL----	OVERHEAD ELECTRIC LINE
----UEL----	UNDERGROUND ELECTRIC LINE
----GAS----	NATURAL GAS LINE
----SAN----	SANITARY SEWER LINE
----STM----	STORM SEWER LINE
----WTR----	WATER LINE

SAMPLE LOCATION	DEPTH	BTEX	PAHS
SAMPLE ID	SAMPLE DEPTH (FT BELOW TOP OF SEDIMENT)	TOTAL BENZENE, TOLUENE, ETHYLBENZENE, XYLENE (μg/kg)	TOTAL POLYNUCLEAR AROMATIC, HYDROCARBONS (μg/kg)

"--" = NOT ANALYZED.
NS = NOT SAMPLED.
ND = CONSTITUENTS WERE ANALYZED FOR BUT NOT DETECTED AT THE DETECTION LIMIT.
μg/kg = MICROGRAMS PER KILOGRAM .
K = SAMPLE WAS PRESERVED AT THE TIME OF LABORATORY RECEIPT OR AT SAMPLE PREPARATION.
SAMPLES ANALYZED IN 1994 (SD-101 THROUGH SD-110) WERE COLLECTED BY HYDRO-SEACH, INC.
SAMPLES ANALYZED IN 1995 (T-101A THROUGH T-106B) WERE COLLECTED BY NATURAL RESOURCE TECHNOLOGY, INC.
SAMPLES ANALYZED IN 2001 (SELECT SAMPLES FROM T-104D THROUGH T-110D AND POINTS 49 THROUGH 80) WERE COLLECTED BY NATURAL RESOURCE TECHNOLOGY, INC.

SOURCE NOTES:

THIS DRAWING WAS DEVELOPED FROM MAP BY HYDRO–SEARCH, INC. DATED 06/03/94, PROJECT 304533000 AND A SURVEY BY WISCONSIN PUBLIC SERVICE CORPORATION DATED 01/11/99.

30" STORM SEWER IN BROAD STREET TAKEN FROM SEWER SYSTEM 8TH WARD DRAWING BY CITY OF OSHKOSH WISCONSIN ENGINEERING DEPARTMENT, DATED 12–5–36, WITH 1977 UPDATE.

BROAD STREET PUMP STATION PARCEL AND FORCE MAINS DEVELOPED FROM DRAWING BY HNTB ARCHITECTS ENGINEERS PLANNERS, MILWAUKEE, WISCONSIN, PROJECT NO: 6378, DRAWING SP–2 (3 OF 32) AND PP–2, DATED 9–6–84.

SURVEY BY ROEHLIG LAND SURVEYING & CONSULTING LTD., OSHKOSH, WISCONSIN, DRAWING AC3771B.DWG, DATED AUGUST 17, 2001, REVISED AUGUST 28, 2001, OCTOBER 29, 2001 AND NOVEMBER 12, 2001.

HP GAS LINE FROM DRAWING BY FORD, BACON AND DAVIS, INC., ENGINEERS, DRAWING NO. 60013–FI–S, REVISED DATED NOVEMBER 9, 1953.

WATER LINES AND HYDRANTS, STORM AND SANITARY LINES IN CEAPE AVENUE ARE TAKEN FROM CITY OF OSHKOSH ENGINEERING DIVISION DRAWING, DATED NOVEMBER 9, 1998.

BM–1 WAS FIELD MEASURED BY NRT. BM–2 THROUGH BM–4 WERE SURVEYED BY ROEHLIG LAND SURVEYING & CONSULTING LTD., OSHKOSH, WISCONSIN, NO. 2771A, DATED APRIL 24, 2001. BM–1 TOP OF HYDRANT OPERATING NUT, ELEVATION 754.18. BM–2 SPIKE IN WOOD RETAINING WALL PER WPSC SURVEY, ELEVATION 749.60 (749.52 WPSC). BM–3 PK NAIL SET ON TOP OF WOOD WALL, ELEVATION 749.96. BM–4 CHISELED "V" IN TOP OF RETAINING WALL, ELEVATION 749.78. ELEVATIONS BASED ON USGS DATUM.

SB–125 WAS INSTALLED IN OCTOBER 2001, LOCATION IS APPROXIMATED FROM FIELD MEASUREMENTS BY NRT.

DIGITAL FILE FROM CITY OF OSHKOSH DATED 2001.

TO ALIGN SHORELINE WITH WPSC AND CITY OF OSHKOSH BASE MAP ROTATED 1° TO EACH OTHER.

NATURAL RESOURCE TECHNOLOGY 1995 DATA LOCATIONS WERE ESTABLISHED USING A KNOWN LOCATION ON THE SEAWALL AND THE DISTANCE WAS ESTIMATED USING STADIA.

NATURAL RESOURCE TECHNOLOGY 2001 DATA LOCATIONS WERE ESTABLISHED USING A TRIMBLE GEOGRAPHIC INFORMATION SYSTEM UNIT TO ATTAIN LATITUDE AND LONGITUDE.

NATURAL RESOURCE TECHNOLOGY 1995 DATA LOCATIONS (REPORTED IN 1996) WERE ESTABLISHED USING A KNOWN LOCATION ON THE SEAWALL AND THE DISTANCE WAS ESTIMATED USING STADIA.

NATURAL RESOURCE TECHNOLOGY 2001 DATA LOCATIONS WERE ESTABLISHED USING A TRIMBLE GEOGRAPHIC INFORMATION SYSTEM UNIT TO ATTAIN LATITUDE AND LONGITUDE.

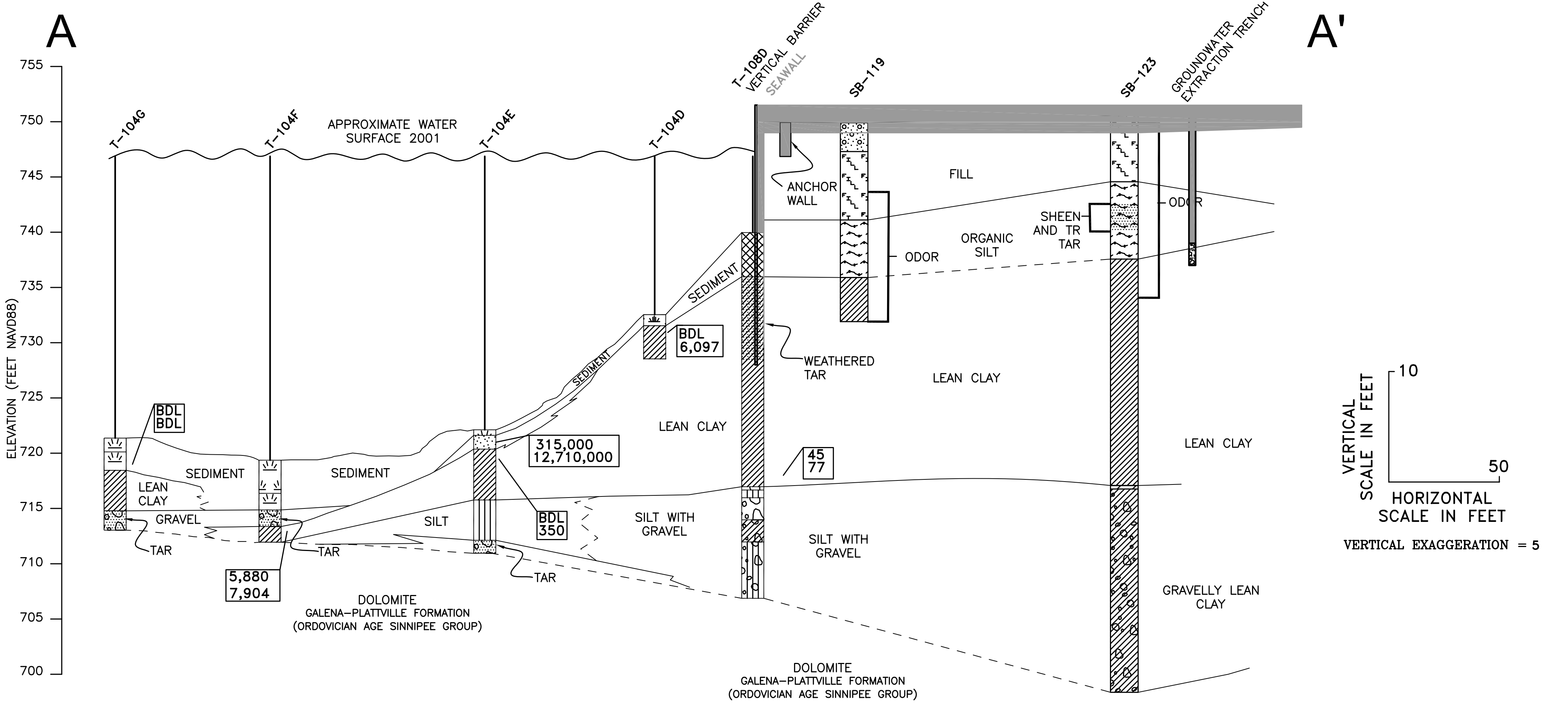
NATURAL
RESOURCE
TECHNOLOGY

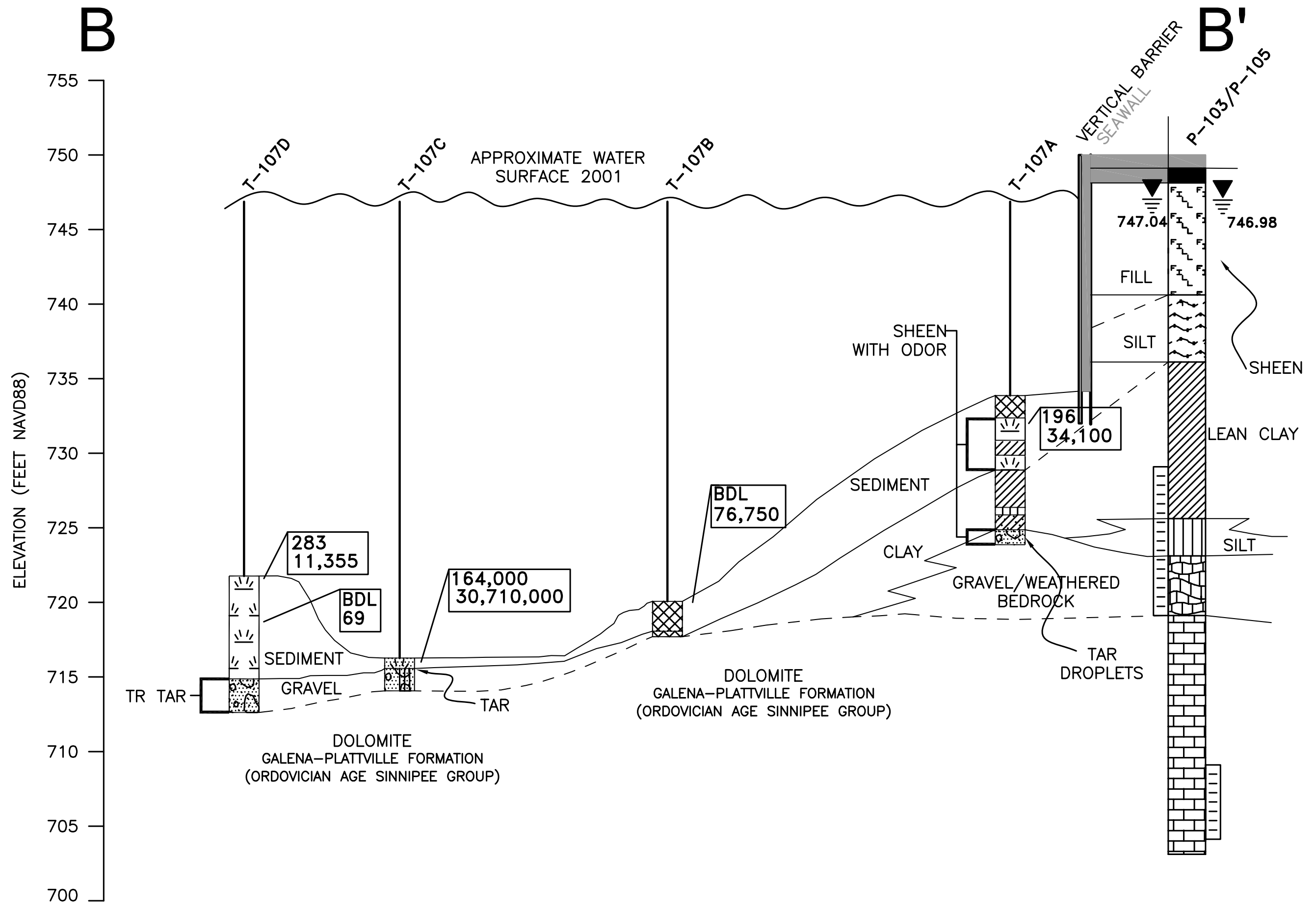
PROJECT NO.
1312/9.0
DRAWN BY:
BJK 01/15/08
CHECKED BY:
BGH 01/16/08
APPROVED BY:
HMS 01/21/08

DISTRIBUTION OF TOTAL BTEX AND TOTAL PAHS

SEDIMENT INVESTIGATION REPORT
FORMER OSHKOSH MANUFACTURED GAS PLANT SITE
WISCONSIN PUBLIC SERVICE CORPORATION
CITY OF OSHKOSH, WISCONSIN

DRAWING NO: 1312–9–D01C
REFERENCE: .
SHEET NO.
1





LEGEND

▩	DEBRIS (WOOD, BRICK, GLASS ETC.)	▤	PEAT
☐	SOFT SEDIMENT (ORGANIC SILT/SAND)	⁘	CONCRETE
░	TAR/OIL NOTED DURING SOIL SAMPLING/DESCRIPTION	⁚	POORLY GRADED SAND
■	REMEDIAL EXCAVATION AND FILL AREA	▨	LEAN CLAY
≋	THERMALLY TREATED MATERIAL	▨	GRAVELLY LEAN CLAY
▢	BORING NOT LOGGED	○	GRAVEL
▨	SANDY LEAN CLAY	⁘	SAND WITH GRAVEL
≈	ORGANIC SILT	⁘	SANDY GRAVEL
▦	BEDROCK	▥	GRAVEL WITH SILT
▦	WEATHERED BEDROCK	▥	SILT
■	ASPHALT	▥	SILTY SAND
▤	WOOD	☐	FILL
		☐	TOPSOIL

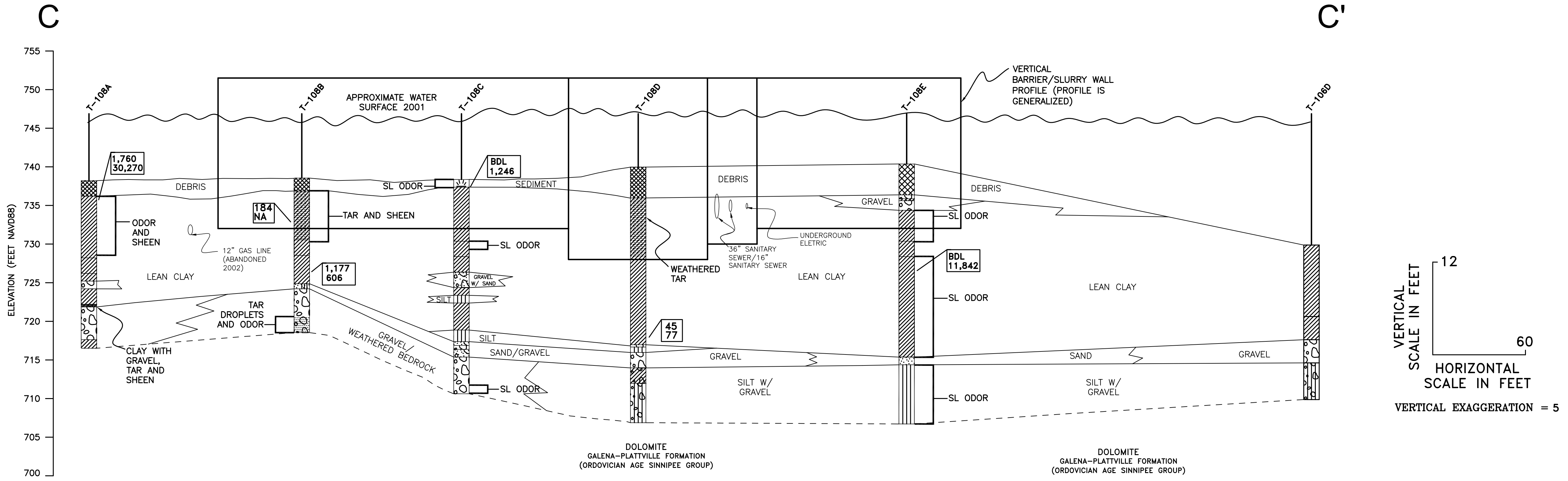
▼	WATER TABLE ELEVATION ON 5/30/01
▯	SCREENED INTERVAL

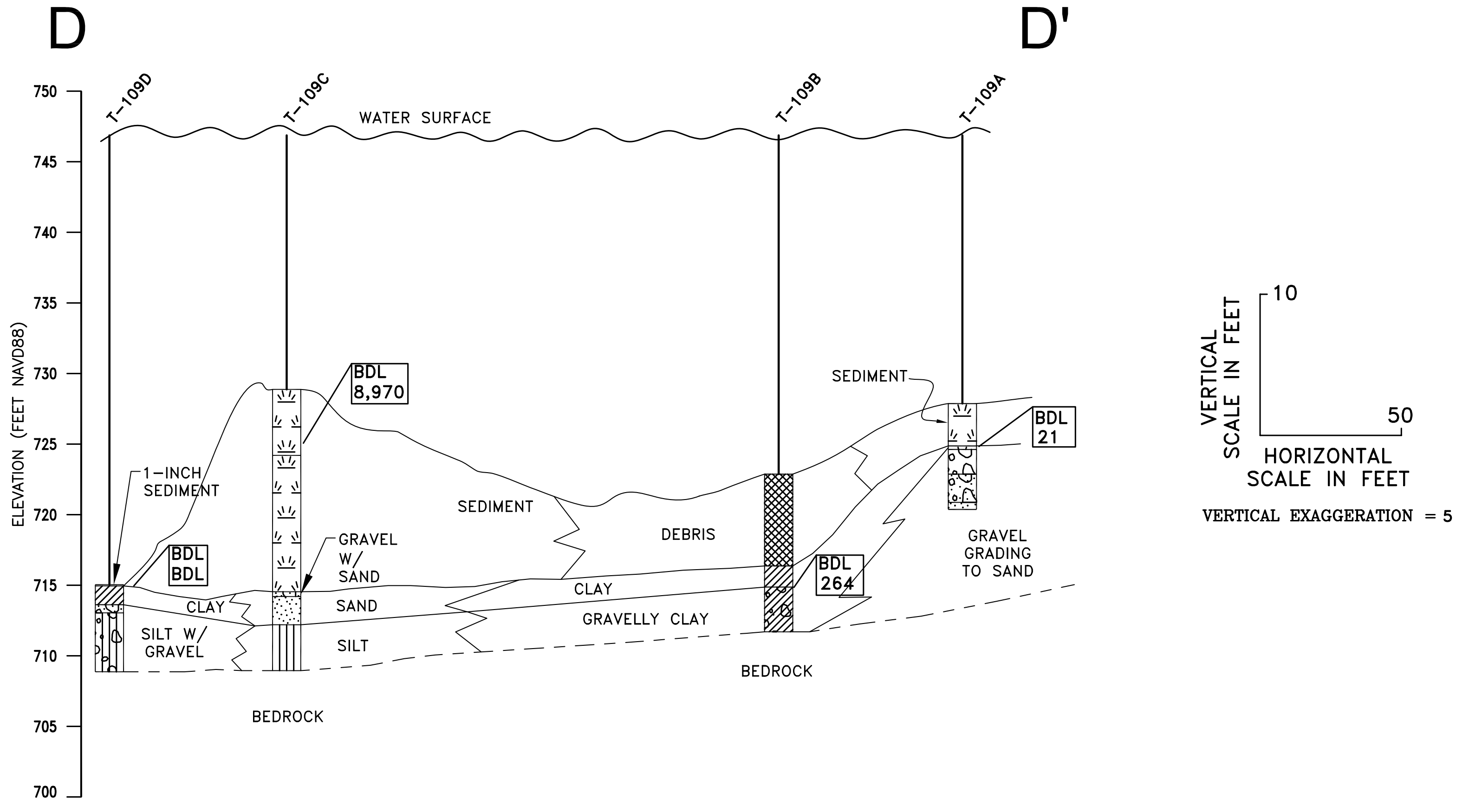
TOTAL BTEX (μg/kg)
TOTAL PAHS (μg/kg)

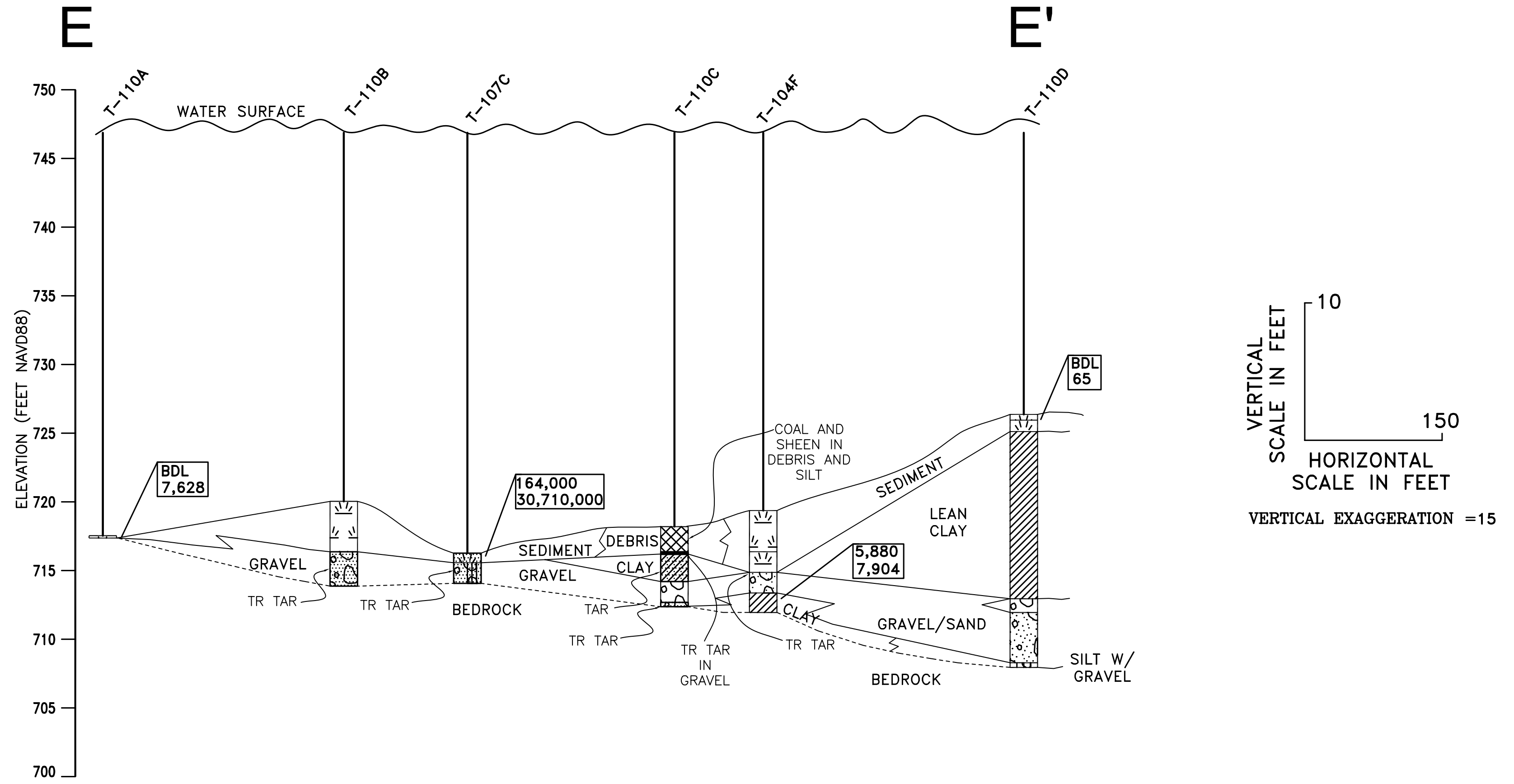
μg/kg	MICROGRAMS PER KILOGRAM
BDL	BELOW DETECTION LEVEL
NA	NOT ANALYZED
SL	SLIGHT
TR TAR	TRACE TAR, LOOKS AND SMELLS LIKE COAL TAR
TAR	VISCOUS COAL TAR
TAR DROPLETS	COAL TAR PRESENT IN LOOSE GRAVEL OR SANDS
NAVD88	NORTH AMERICAN VERTICAL DATUM OF 1988

NOTES:

1. SUBSURFACE CONDITIONS INTERPOLATED BETWEEN WELL/BORING LOCATIONS.
2. BORINGS DRILLED USING HOLLOW STEM AUGER, MUD ROTARY AND ROTO-SONIC METHODS.
3. DEBRIS REPRESENTS MATERIAL WHICH HAS MIGRATED DOWNSTREAM WITH RIVER FLOW.
4. ALL SAMPLES TAKEN FROM 2 FOOT INTERVALS.
5. LOG FOR SB-123 STATES "WEATHERED BEDROCK" FROM 33.8' TO 37.5'. SYMBOL CHANGED FOR CROSS SECTION IN CONSIDERATION OF REGIONAL GEOLOGY AND SIMILAR GRAVELLY LEAN CLAY PRESENT IN BOREHOLE P-109.







Natural
Resource
Technology
N R T

GEOLOGIC CROSS SECTIONS

SEDIMENT INVESTIGATION REPORT
FORMER OSHKOSH MANUFACTURED GAS PLANT SITE
WISCONSIN PUBLIC SERVICE CORPORATION
CITY OF OSHKOSH, WISCONSIN

CAD FILE: 1644-1-D02.DWG
REFERENCE FILES:

PROJECT NO. 1644/1
DRAWN BY: TAS 03/23/05
CHECKED BY: JMK 07/07/05
APPROVED BY: RGF 07/29/05
SHEET NO. 2

APPENDIX C3

2005 TABLES

Table 1 - Sediment Poling and Ponar Grab Sampling Locations and Field Observations
Sediment Investigation Report
Former Oshkosh MGP Site - WPSC

Sample ID	Depth to Sediment (feet)	Top of Sediment Elevation (feet - msl) ^A	Approximate Thickness of Soft Sediment (feet)	Depth (from top of sed. surface) (feet)	Soil or Rock Descriptions	Odor Noted	Sheen Noted	Tar Noted
Poling Sample Locations								
Point 10	19.9	727.0	0.3	NA	NA	NS	NS	NS
Point 11	25.0	721.9	1.5	NA	NA	NS	NS	NS
Point 12	25.1	721.8	1.6	NA	NA	NS	NS	NS
Point 13	31.3	715.6	NA	NA	NA	NS	NS	NS
Point 16	>30	NA	>30	NA	NA	NS	NS	NS
Point 17	>30	NA	>30	NA	NA	NS	NS	NS
Point 18	24.0	722.9	0.0	NA	Rock & Gravel	NS	NS	NS
Point 19	19.3	727.6	0.8	NA	NA	NS	NS	NS
Point 20	15.8	731.2	0.6	NA	Gravel	NS	NS	NS
Point 21	15.4	731.5	1.6	NA	Gravel	NS	NS	NS
Point 22	13.1	733.8	4.0	NA	Silt & Clay	NS	NS	NS
Point 25	24.8	722.2	0.3	NA	Gravel	NS	NS	NS
Point 26	19.6	727.3	0.5	NA	Sand	NS	NS	NS
Point 27	27.7	719.2	0.5	NA	NA	NS	NS	NS
Point 28	28.9	718.0	0.3	NA	NA	NS	NS	NS
Point 29	26.5	720.4	5.0	NA	NA	NS	NS	NS
Point 30	21.6	725.3	2.9	NA	NA	NS	NS	NS
Point 31	23.8	723.2	5.5	NA	NA	NS	NS	NS
Point 32	27.9	719.0	1.4	NA	NA	NS	NS	NS
Point 33	27.1	719.8	0.1	NA	NA	NS	NS	NS
Point 34	20.3	726.7	3.5	NA	NA	NS	NS	NS
Point 35	16.0	730.9	0.3	NA	Rock	NS	NS	NS
Point 36	15.3	731.7	1.6	NA	Rock & Sand	NS	NS	NS
Point 37	15.0	731.9	0.5	NA	Sand	NS	NS	NS
Point 38	12.6	734.3	0.0	NA	Rock	NS	NS	NS
Point 39	14.0	732.9	0.0	NA	Rock	NS	NS	NS
Point 40	23.1	723.8	0.3	NA	Rock	NS	NS	NS

Table 1 - Sediment Poling and Ponar Grab Sampling Locations and Field Observations
Sediment Investigation Report
Former Oshkosh MGP Site - WPSC

Sample ID	Depth to Sediment (feet)	Top of Sediment Elevation (feet - msl) [A]	Approximate Thickness of Soft Sediment (feet)	Depth (from top of sed. surface) (feet)	Soil or Rock Descriptions	Odor Noted	Sheen Noted	Tar Noted
Poling Sample Locations								
Point 41	27.9	719.0	3.4	NA	NA	NS	NS	NS
Point 42	25.3	721.7	0.1	NA	NA	NS	NS	NS
Point 43	26.1	720.8	6.7	NA	Red Clay	NS	NS	NS
Point 68	24.0	722.9	4.5	NA	Organic Material	No	NS	NS
Point 69	20.3	726.6	8.7	NA	Organic Material	No	NS	NS
Poling and Ponar grab Locations								
Point 44	22.9	724.0	0.7	<1	Organic Material	No	No	No
Point 45	23.8	723.1	0.4	<1	Organic Material	No	No	No
Point 46	19.9	727.0	0.3	<1	Rock/Gravel	No	No	No
Point 47	17.2	729.7	0.0	<1	Organic Material with Sand (B)	No	No	No
Point 48	26.9	720.0	0.9	<1	Organic Material (B)	No	No	No
Point 49	27.4	719.5	1.2	<1	Organic Material	No	No	No
Point 50	26.3	720.6	4.0	<1	Organic Material	No	No	Yes
Point 51	24.9	722.0	2.1	<1	Rock	No	No	No
Point 52	25.0	721.9	1.3	<1	Sand with Gyttja (B)	No	Yes	No
Point 53	29.4	717.5	0.9	<1	Organic Material	Yes	Yes	Yes
Point 54	27.8	719.2	2.7	<1	Organic Material	No	Yes (HC)	No
Point 55	27.3	719.6	3.7	<1	Organic Material	No	No	No
Point 56	26.0	720.9	6.0	<1	Bark	No	No	No
Point 57	26.0	720.9	2.5	<1	Organic Material	No	No	No
Point 58	24.6	722.3	4.0	<1	Organic Material	No	No	No
Point 60	20.8	726.1	2.0	<1	Organic Material	No	Yes	No
Point 61	20.4	726.5	0.6	<1	Organic Material	No	No	No
Point 62	16.2	730.7	2.3	<1	Organic Material	No	No	No
Point 63	14.3	732.6	2.9	<1	Organic Material	No	No	No
Point 64	18.7	728.2	0.8	<1	Rock with Sand	No	No	No
Point 65	22.9	724.0	4.4	<1	Organic Material	No	No	No
Point 66	31.9	715.0	0.6	<1	Rock with Sand	Yes	No	No

Table 1 - Sediment Poling and Ponar Grab Sampling Locations and Field Observations
Sediment Investigation Report
Former Oshkosh MGP Site - WPSC

Sample ID	Depth to Sediment (feet)	Top of Sediment Elevation (feet - msl) ^A	Approximate Thickness of Soft Sediment (feet)	Depth (from top of sed. surface) (feet)	Soil or Rock Descriptions	Odor Noted	Sheen Noted	Tar Noted
Poling and Ponar grab Locations								
Point 67	32.0	714.9	2.3	<1	Organic Material	No	No	No
Point 70	26.8	720.2	0.7	<1	Organic Material	No	No	No
Point 71	27.0	719.9	0.5	<1	Organic Material (B)	No	Yes	No
Point 72	25.0	721.9	6.5	<1	Organic Material	No	No	No
Point 74	26.0	720.9	5.5	<1	Organic Material	No	No	No
Point 75	27.9	719.0	4.6	<1	Organic Material	No	No	No
Point 76	29.0	717.9	0.3	<1	Rock with Organic Material	No	No	No
Point 77	26.4	720.5	1.6	<1	Organic Material	No	No	No
Point 78	29.7	717.2	1.1	<1	Rock with Organic Material	Yes	Yes	Yes
Point 79	27.0	719.9	0.3	<1	Organic Material	No	No	No
Point 80	29.4	717.5	0.4	<1	Organic Material	Yes	Yes	Yes
Point 81	17.3	729.6	0.2	<1	Shell Fragments	No	No	No

Notes:

1. Points 10 through 81 were sampled September 20 through 27, 2001.

A: msl is Mean Sea Level - Water at mouth of Fox River is 746.9 feet msl from USGS topo quadrangle - Assumed for river over entire site.
B: Small pieces of coal present in sediments
(HC): Hydrocarbon - odor or sheen may be petroleum based (oil/grease from boat motors - industry rather than from MGP operations).
NA: Not Applicable
NS: Not Sampled
Organic Mater = Strongly decomposed plant remains, shells and fine particles.

Table 2 - Sediment Borehole Sampling Locations and Field Observations
Sediment Investigation Report
Former Oshkosh MGP Site - WPSC

Sample ID	Depth to Sediment (feet)	Top of Sediment Elevation (feet - msl) [A]	Approximate Borehole Depth (feet)	Approximate Bottomof Borehole Elevation (feet - msl) [A]	Depth (from top of sed. surface) (feet)	Soil or Rock Descriptions	Odor Noted	Sheen Noted	Tar Noted
T-101D[B]	13.5	733.4	10.0	723.4	0-1	Sand & Gravel	Yes	No	Yes
					1-7	Clay	No	No	Yes
					7-9	Silt with Sand	Yes	Yes	no
					9-10	Gravel	No	No	Yes
T-104D[B]	14.3	732.6	4.0	728.6	0-1	Sand & Gravel	Yes	No	No
					1-4	Clay	No	No	No
T-104E[B]	24.8	722.2	10.5	711.7	0-0.5	Gyttja	No	No	No
					0.5-1.5	Sand	No	No	No
					1.5-6.5	Clay	No	No	No
					6.5-9.5	Silt	No	No	No
					9.5-10.5	Gravel	Yes	No	Yes
T-104F[B]	27.5	719.4	7.0	712.4	0-5	Organic Material	No	No	No
					5-6	Gravel with Sand	No	No	Yes
					6-7	Clay	No	No	No
T-104G[B]	25.5	721.4	8.0	713.4	0-3	Organic Material	No	No	No
					3-7	Clay	No	No	No
					7-8	Gravel	No	No	Yes
T-106D[B]	16.9	730.0	21.0	709.0	0-13	Clay	No	No	No
					13-16	Gravel	No	No	No
					16-21	Silt with Gravel	No	No	No
T-107A[B]	13.0	733.9	10.0	723.9	0-1.5	Debris	No	No	No
					1.5-7.5	Clay	Yes	Yes	No
					7.5-8.0	Silt	Yes	No	No
					8-9	Clay	Yes	No	No
					9-10	Gravel with Sand	Yes	Yes	Yes
T-107B[B]	26.8	720.1	2.25	717.9	0-2.25	Debris/Organic Material	No	No	No
T-107C[B]	30.6	716.3	2.25	714.1	0-1	Organic Material	No	No	Yes
					1-2.25	Gravel with silt	No	No	Yes

Table 2 - Sediment Borehole Sampling Locations and Field Observations
Sediment Investigation Report
Former Oshkosh MGP Site - WPSC

Sample ID	Depth to Sediment (feet)	Top of Sediment Elevation (feet - msl) [A]	Approximate Borehole Depth (feet)	Approximate Bottomof Borehole Elevation (feet - msl) [A]	Depth (from top of sed. surface) (feet)	Soil or Rock Descriptions	Odor Noted	Sheen Noted	Tar Noted
T-107D[B]	25.1	721.8	9.0	712.8	0-2	Gyttja	No	No	No
					2-7	Sandy Silt	No	No	No
					7-9	Gravel with Sand	Yes	No	Yes
T-108A[B]	8.7	738.2	20.7	717.5	0-2	Debris	No	No	No
					2-12	Clay	Yes	Yes	No
					12-13	Clay	Yes	Yes	Yes
					13-14	Gravel	No	No	No
					14-16	Clay	No	No	No
					16-20	Gravel with Sand	No	No	Yes
					20-20.66	Clay	No	No	No
T-108B[B]	8.3	738.6	20.0	718.6	0-1	Debris/Organic Material	No	No	No
					1-8	Clay	No	Yes	Yes
					8-12	Gravel/Clay	No	No	No
					12-15	Sand with Silt	No	No	No
					13-20	Gravel	Yes	no	Yes
T-108C[B]	28.7	718.2	27.5	690.7	0-1	Organic Material	Yes	No	No
					1-12	Clay	Yes	No	No
					12-14	Gravel with Sand	No	No	No
					14-15	Clay	No	No	No
					15-17	Silt with Clay	No	No	No
					17-19	Clay	No	No	No
					19-20.5	Sandy Silt with Gravel	No	No	No
					20.5-21	Sand with Gravel	No	No	No
					21-21.5	Gravel	No	No	No
					21.5-22.5	Sand with Gravel	No	No	No
					22.5-27.5	Gravel	Yes	No	No

Table 2 - Sediment Borehole Sampling Locations and Field Observations
Sediment Investigation Report
Former Oshkosh MGP Site - WPSC

Sample ID	Depth to Sediment (feet)	Top of Sediment Elevation (feet - msl) ^{A}	Approximate Borehole Depth (feet)	Approximate Bottomof Borehole Elevation (feet - msl) ^{A}	Depth (from top of sed. surface) (feet)	Soil or Rock Descriptions	Odor Noted	Sheen Noted	Tar Noted
T-108D^{B}	31.8	715.1	33.0	682.1	0-4	Debris	No	No	No
					4-23	Clay	Yes	No	Yes
					23-24	Gravel	No	No	No
					24-27	Clay with Gravel	Yes	No	No
					27-33	Silt with Sand	Yes	No	No
T-108E^{B}	6.5	740.4	33.7	706.7	0-4	Debris	No	No	No
					4-4.5	Gravel	No	No	No
					4.5-5	Clay	No	No	No
					5-6.5	Gravel	No	No	No
					6.5-25.5	Clay	Yes	No	No
					25.5-26.5	Sand	No	No	No
					26.5-33.66	Silt	Yes	No	No
T-109A^{B}	19.0	727.9	7.5	720.4	0-3	Soft Sediment	No	No	No
					3-7	Gravel with Sand	No	No	No
					7-7.5	Sand	No	No	No
T-109B^{B}	24.0	722.9	11.2	711.7	0-6.5	Debris/Sand and gravel	No	No	No
					6.5-8	Clay	No	No	No
					8-11	Gravel and Clay	No	No	No
T-109C^{B}	18.0	728.9	19.9	709.0	0-14	Organic Material	No	No	No
					14-16	Gravel with Sand/Sand	No	No	No
					16-19.92	Silt with Clay	No	No	No
T-109D^{B}	31.8	715.1	6.0	709.1	0-1.5	Clay	No	No	No
					1.5-2	Gravel with Sand	No	No	No
					2-6	Silt with Clay and Gravel	No	No	No
T-110A^{B}	29.3	717.6	0.2	717.4	0-.5	Organic Material	No	No	No
T-110B^{B}	26.6	720.3	6.3	714.0	0-4	Organic Material	No	No	No
					4-6.3	Organic Material	Yes	No	Yes

Table 2 - Sediment Borehole Sampling Locations and Field Observations
Sediment Investigation Report
Former Oshkosh MGP Site - WPSC

Sample ID	Depth to Sediment (feet)	Top of Sediment Elevation (feet - msl) [A]	Approximate Borehole Depth (feet)	Approximate Bottomof Borehole Elevation (feet - msl) [A]	Depth (from top of sed. surface) (feet)	Soil or Rock Descriptions	Odor Noted	Sheen Noted	Tar Noted
T-110C[B]	28.6	718.3	5.8	712.5	0-2	Debris/Organic Material	Yes	Yes	No
					2-2.5	Gravel	No	No	Yes
					2.5-4	Gravel	No	No	Yes
					4-5	Gravel/Clay	No	No	No
					5-6	Gravel	No	No	No
					6-25	Clay	Yes	No	No
					25-26	Sand	No	No	No
					26-33.7	Silt	Yes	No	No
T-110D[B]	20.6	726.3	18.0	708.3	0-1	Organic Material	No	No	No
					1-13	Clay	No	No	No
					13-14	Gravel	No	No	No
					14-18	Sand/Silt with Gravel	No	No	No

Notes:

A: msl is Mean Sea Level - Water at mouth of Fox River is 746.9 feet msl from USGS topo quadrangle - Assumed for river over entire site.

B: Sample collected on September 20 through 27, 2001.

(HC): Hydrocarbon - odor or sheen may be petroleum based (oil/grease from boat motors - industry rather than from MGP operations).

NA: Not Applicable

Organic Material = Strongly decomposed plant remains, shells and fine particles.

Table 3 Fox River Flow Summary Statistics - Water Years 1992 through 2000
Sediment Investigation Report
Former Oshkosh MGP Site - WPSC

Flow Regime	Lowest	Highest	Average for WY 1992-2000
Annual Total Flow (cf)	104 Billion (1999)	228 Billion (1993)	139 Billion
Annual Mean Flow (cfs) Water Velocity (ft/sec)	3,290 (1999) 0.30	7,220 (1993) 0.67	4,420 0.41
Highest Monthly Mean (cfs) Water Velocity (ft/sec)	------ ------	13,440 (July 1993) 1.24	8,010 (April) 0.74
Lowest Monthly Mean (cfs) Water Velocity (ft/sec)	1,580 (Sept. 1998) 0.15	------ ------	2,660 (Jan) 0.25
Daily Mean (cfs) Water Velocity (ft/sec)	-6,270 (11/01/92) -0.58	18,600 (06/25/93) 1.72	4,420 0.41
Monthly Mean Streamflow (cfs) & Corresponding Velocity (ft/sec)			
Jan - 2,658 (0.25)	Apr - 8,013 (0.74)	Jul - 5,064 (0.47)	Oct - 3,264 (0.30)
Feb - 2,978 (0.28)	May - 6,133 (0.57)	Aug - 3,572 (0.33)	Nov - 4,081 (0.38)
Mar - 5,121 (0.47)	Jun - 5,403 (0.50)	Sep - 3,211 (0.30)	Dec - 3,489 (0.32)

NOTES:

1) United States Geological Survey (USGS) Acoustical Velocity Meter (AVM) stream gauge system (Hydrologic Unit 04030201) located approximately 1,500 feet upstream from the Oshkosh MGP site.
2) Water velocity calculations used a river cross-sectional area at the downstream end of the site (just upstream of the railroad bridge) of 10,800 ft^2.
3) 89 of 3,288 days had reversed flow (a negative flow value). 58 of these days (65%) occurred between September and November. October had 31 days (35%) with reversed flow - the highest of any month.
4) cf = cubic feet.
5) cfs = cubic feet per second.

Table 4 -Sediment Analytical Results - BTEX
Sediment Investigation Report
Former Oshkosh MGP Site - WPSC

Sampling Location & Depth	Depth from top of Sediment (Feet)	Sample Date	BTEX Parameters (μg/kg)					
			Benzene	Ethylbenzene	Toluene	Xylenes, -m, -p	Xylene, -o	Total BTEX
09/01 T104D (15.3-16.3)	0-2	09/25/01	<25	<25	<25	<25	<25	BDL
09/01 T104E (24.75-26.75	0-2	09/26/01	35,000	130,000	33,000	74,000	43,000	315,000
09/01 T104E (26.75-28.75	2-4	09/26/01	<25	<25	<25	<25	<25	BDL
09/01 T104F (33.5)	6-7.25	09/26/01	1,400	2,200	160	1,400	720	5,880
09/01 T104G (27.25-28.25	1.75-2.75	09/26/01	<25	<25	<25	<25	<25	BDL
09/01 T107A(15-17)	2-4	09/21/01	<25	160	<25	<25	36 Q	196
09/01 T107B (26.8-28.8)	0-2	09/24/01	<25	<25	<25	<25	<25	BDL
09/01 T107C (30.6-32.6)	0-2	09/24/01	24,000	46,000	34,000	39,000	21,000	164,000
09/01 T107D (25.1-27.1)	0-2	09/24/01	<25	77	61	91	54	283
09/01 T107D (28.3-30.3)	3.2-5.2	09/24/01	<25	<25	<25	<25	<25	BDL
09/01 T108A (10.7-12.7)	2-4	09/20/01	<50 k	1,500K	<50 k	100 Q K	160 K	1,760
09/01 T108B (12.3-14.3)	4-6	09/21/01	<25	150	<25	<25	34 Q	184
09/01 T108B (20.3-22.3)	12-14	09/21/01	360	470	47 Q	180	120	1,177
09/01 T108C (9.5-10.5)	1-2	09/24/01	<25	<25	<25	<25	<25	BDL
09/01 T108D (28.9-29.9)	22-23	09/26/01	<25	45 Q	<25	<25	<25	45
09/01T108E (10.5-12.5)	4-6	09/26/01	<25	<25	<25	<25	<25	BDL

▨ : Exceed TEC; McDonald 2000

— : Exceed EPA Ecotox Threshold

Table 4 -Sediment Analytical Results - BTEX
Sediment Investigation Report
Former Oshkosh MGP Site - WPSC

Sampling Location & Depth	Depth from top of Sediment (Feet)	Sample Date	BTEX Parameters (µg/kg)					
			Benzene	Ethylbenzene	Toluene	Xylenes, -m, -p	Xylene, -o	Total BTEX
09/01 T109A (22-22.5)	3-3.5	09/25/01	<25	<25	<25	<25	<25	BDL
09/01 T109B (32-34)	8-10	09/25/01	<25	<25	<25	<25	<25	BDL
09/01 T109C (22.7-24.7)	4.7-6.7	09/25/01	<25	<25	<25	<25	<25	BDL
09/01 T109C (37.7)	19.7	09/25/01	<25	<25	<25	<25	<25	BDL
09/01 T109D (31.8-33.8)	0.1-2.1	09/25/01	<25	<25	<25	<25	<25	BDL
09/01 T110A (29.3-29.5)	0-0.2	09/27/01	<25	<25	<25	<25	<25	BDL
09/01 T110D (20.9-21.75)	0.4-1.3	09/27/01	<25	<25	<25	<25	<25	BDL
POINT 49	less than 1	09/26/01	<25	<25	<25	<25	<25	BDL
POINT 52	less than 1	09/26/01	<25	<25	<25	<25	<25	BDL
POINT 53	less than 1	09/26/01	3,100	13,000	350	5,200	4,200	25,850
POINT 54	less than 1	09/26/01	<25	<25	<25	<25	<25	BDL
POINT 56	less than 1	09/26/01	<25	<25	<25	<25	<25	BDL
POINT 57	less than 1	09/26/01	<25	<25	<25	<25	<25	BDL
POINT 60	less than 1	09/27/01	<25	<25	<25	<25	<25	BDL
POINT 71	less than 1	09/27/01	<25	270	150 Q	<25	<25	420 ~~BDL~~
POINT 74	less than 1	09/27/01	<25	<25	<25	<25	<25	BDL
POINT 76	less than 1	09/27/01	340 Q	580	710	<25	<25	1,630
POINT 79	less than 1	09/27/01	<25	<25	<25	<25	<25	BDL
POINT 80	less than 1	09/27/01	<100 K	12,000 K	<100 K	2,900 K	4,800 K	19,700
09/01 T104G PONAR	less than 1	09/26/01	<25	<25	<25	<25	<25	BDL

o-JTB/c-AAS

Notes:
Q = The analyte has been detected between the limit of detection (LOD) and the limit of quantitation (LOQ).
The results are qualified due to the uncertainty of analyte concentrations.
K = Sample was preserved at the time of laboratory receipt or at sample preparation.
nd = analytes not detected.
< = The analyte value is less than the limit of detection (LOD).
BDL = Below the limit of detection.

▨ : Exceed TEC

— : Exceed EPA Ecoto Threshold

Table 5 -Sediment Analytical Results - Polynuclear Aromatic Hydrocarbons (PAHs)
Sediment Investigation Report
Former Oshkosh MGP Site - WPSC

Sample Location & Depth	Depth from top of Sediment (Feet)	Sample Date	POLYNUCLEAR AROMATIC HYDROCARBONS (µg/kg)																			
			1-Methylnaphthalene	2-Methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene	Total PAH's
09/01 T104D (15.3-16.3)	0-2	09/25/01	200	290	260	95	380	340	280	170	110	200	290	52	540	210	140	800	760	600	6,097
09/01 T104E (24.75-26.75)	0-2	09/26/01	1,600,000 D	1,700,000 D	1,000,000 D	180,000	730,000 D	290,000	180,000	77,000	74,000	130,000	290,000	32,000	370,000 D	650,000 D	67,000	3,300,000 D	1,400,000 D	640,000 D	12,710,000
09/01 T104E (26.75-28.75)	2-4	09/26/01	84	<16	89	<17	36 Q	<18	<17	<15	<16	<18	<18	<15	<14	57	<16	<23	84	<16	350
09/01 T104F (33.5)	6-7.25	09/26/01	1,100	1,100	380	82 Q	180	71 Q	<55	<49	<51	<58	97 Q	<49	84 Q	150 Q	<51	4,200	300	160 Q	7,904
09/01 T104G (27.25-28.25)	1.75-2.75	09/26/01	<45	<38	<52	<40	<38	<43	<40	<35	<37	<41	<43	<35	<33	<40	<37	<54	<35	<38	BDL
09/01 T107A (15-17)	2-4	09/21/01	3,400	5,800	4,100	<170	950	630	520 Q	380 Q	250 Q	420 Q	550 Q	<150	1,700	1,500	300 Q	9,700	2,700	1,200	34,100
09/01 T107B (26.8-28.8)	0-2	09/24/01	1,000	1,300	2,400	750	5,100	4,800	4,300	2,800	1,900	3,900	4,500	620	10,000	2,500	2,400	780 Q	13,000	9,600	76,750
09/01 T107C (30.6-32.6)	0-2	09/24/01	1,700,000 D	2,400,000 D	1,200,000 D	820,000	2,000,000	1,000,000 D	710,000 D	690,000	280,000	760,000	890,000 D	120,000	2,400,000 D	1,500,000 D	440,000	8,000,000 D	3,900,000 D	1,900,000 D	30,710,000
09/01 T107D (25.1-27.1)	0-2	09/24/01	420	710	430	270	580	460	410	300	170	320	390	75	1,100	530	230	1,700	1,800	880	11,355
09/01 T107D (28.3-30.3)	3.2-5.2	09/24/01	<19	<16	<22	<17	<16	<18	<17	<15	<16	<18	<18	<15	<14	<17	<16	69 Q	<15	<16	69
09/01 T108A (10.7-12.7)	2-4	09/20/01	5,100	7,600	3,400	170 Q	860	530	360	180 Q	170 Q	250 Q	520	<100	870	1,400	160 Q	4,700	3,000	1,000	30,270
09/01 T108B (20.3-22.3)	12-14	09/21/01	68	81	<22	<17	<16	<18	<17	<15	<15	<17	<18	<15	<14	<17	<15	440	17 Q	<16	606
09/01 T108C (9.5-10.5)	1-2	09/24/01	80	100	70	17 Q	71	66	55	34 Q	25 Q	41 Q	64	<13	130	46	27 Q	80	200	140	1,246
09/01 T108D (28.9-29.9)	22-23	09/26/01	<16	22 Q	<18	<14	<13	<15	<14	<12	<13	<15	<15	<12	<12	<14	<13	36 Q	19 Q	<13	77
09/01 T108E (10.5-12.5)	4-6	09/26/01	350	660	300	190	700	700	600	370	270	420	690	92	1300	380	330	490	1900	1400	11,842
09/01 T109A (22-22.5)	3-3.5	09/25/01	<20	<17	<23	<18	<17	<19	<18	<15	<16	<18	<19	<15	<15	<18	<16	<24	21 Q	<17	21
09/01 T109B (32-34)	8-10	09/25/01	<15	15 Q	<18	15 Q	24 Q	19 Q	<13	<12	<12	<14	19 Q	<12	29 Q	23 Q	<12	20 Q	69	31 Q	264
09/01 T109C (22.7-24.7)	4.7-6.7	09/25/01	900	970	620	180 Q	360	430	520	320	290	440	490	120 Q	590	310	310	450	930	740	8,970
09/01 T109C (37.7)	19.7	09/25/01	<15	<13	<18	<14	<13	<15	<14	<12	<12	<14	<15	<12	<11	<14	<12	<18	<12	<13	BDL
09/01 T109D (31.8-33.8)	0.1-2.1	09/25/01	<60	<51	<71	<53	<51	<58	<53	<47	<49	<56	<58	<47	<45	<53	<49	<73	<47	<51	BDL
09/01 T110A (29.3-29.5)	0-0.2	09/27/01	<88	78 Q	180 Q	130 Q	260	490	530	530	340	500	540	120 Q	1,100	140 Q	400	340 Q	850	1,100	7,628
09/01 T110D (20.9-21.75)	0.4-1.3	09/27/01	<47	<40	<55	<42	<40	<45	<42	<37	<39	<44	<45	<37	<35	<42	<39	65 Q	<37	<40	65

▨ : Exceed TEC; McDonald 2000

— : Exceed PEC; McDonald 2000

Table 5 -Sediment Analytical Results - Polynuclear Aromatic Hydrocarbons (PAHs)
Sediment Investigation Report
Former Oshkosh MGP Site - WPSC

Sample Location & Depth	Depth from top of Sediment (Feet)	Sample Date	POLYNUCLEAR AROMATIC HYDROCARBONS (µg/kg)																		
			1-Methylnaphthalene	2-Methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene	Total PAH's
POINT 49	less than 1	09/26/01	270 Q	240 Q	230 Q	250 Q	900	1,700	1,500	1,300	860	1,200	1,600	310	4,500	390	1,100	210 Q	3,900	3,100	23,560
POINT 52	less than 1	09/26/01	<170	<140	<200	<150	<140	<160	<150	<130	<140	<150	<160	<130	210 Q	<150	<140	<200	140 Q	170 Q	520
POINT 53	less than 1	09/26/01	57,000	73,000	34,000	4,400	15,000	8,300	5,400	2,900 Q	2,300 Q	3,600 Q	10,000	<1100	14,000	15,000	2,100 Q	100,000	52,000	20,000	419,000
POINT 54	less than 1	09/26/01	<140	130 Q	<170	<130	130 Q	420 Q	460	380	320 Q	390 Q	420 Q	120 Q	700	<130	400	<170	470	540	4,880
POINT 56	less than 1	09/26/01	2,600 Q	2,900 Q	8,700	12,000	53,000	54,000	49,000	36,000	26,000	39,000	47,000	6,900	150,000	21,000	34,000	3,700 Q	150,000	110,000	805,800
POINT 57	less than 1	09/26/01	3,200	2,100	2,100	700	1,400	1,700	1,400	1,000	640	1,100	1,500	260 Q	3,700	1,500	850	4,500	4,300	2,600	34,550
POINT 60	less than 1	09/27/01	230 Q	280 Q	160 Q	<100	130 Q	630	810	750	470	730	820	130 Q	1,900	170 Q	600	860	1,900	1,500	12,300
POINT 71	less than 1	09/27/01	21,000	27,000	19,000	3,800	14,000	12,000	9,600	5,700	4,200	6,400	12,000	1,700 Q	23,000	10,000	4,800	18,000	45,000	25,000	262,200
POINT 74	less than 1	09/27/01	1,300	1,800	620	310 Q	590	700	540	310 Q	290 Q	320 Q	710	130 Q	930	330 Q	270 Q	1,200	1,700	1,100	13,150
POINT 76	less than 1	09/27/01	390 Q	370 Q	260 Q	<180	<170	<190	<180	<160	<160	<190	<190	<160	210 Q	<180	180 Q	950	340 Q	210 Q	2,910
POINT 79	less than 1	09/27/01	<180	<150	<210	<160	<150	250 Q	290 Q	240 Q	230 Q	280 Q	280 Q	<140	440	<160	240 Q	<210	210 Q	330 Q	2,790
POINT 80	less than 1	09/27/01	490,000 D	640,000 D	300,000 D	34,000	130,000	70,000	49,000	24,000	17,000	26,000	82,000	8,200	120,000	140,000	17,000	690,000 D	370,000 D	150,000	3,357,200
09/01 T104G PONAR	less than 1	09/26/01	<110	<92	<130	<96	<92	<100	<96	<85	<88	<100	<100	<85	<81	<96	<88	<130	<85	<92	BDL

Notes:

Q = The analyte has been detected between the limit of detection (LOD) and the limit of quantitation (LOQ). The results are qualified due to the uncertainty of analyte concentrations within this range.

D = The analyte value is from a diluted analysis.

< = The analyte value is less than the limit of detection (LOD).

BDL = Below the limit of detection.

All Point sediment samples were collected with a Ponar Grab.

Table 6 -Sediment Analytical Results - Metals, Cyanide, PCBs, Ammonia, and TOC
Sediment Investigation Report
Former Oshkosh MGP Site - WPSC

Sample Location & Depth	Depth from top of Sediment (Feet)	Sampling Date	Total Metals (mg/kg)											Total PCB (µg/kg)	Nitrogen, ammonia (mg/kg)	Cyanide, total (mg/kg)	Solids, percent (%)	TOC as NPOC (mg/kg)	Iron (mg/kg)
			Arsenic	Barium	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Zinc						
09/01 T104D (15.3-16.3)	0-2	09/25/01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	84.9	38,000	--
09/01 T104E (24.75-26.75)	0-2	09/26/01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	27.2	--	--
09/01 T104E (26.75-28.75)	2-4	09/26/01	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.27	73.4	2,900	--
09/01 T104F (33.5)	6-7.25	09/26/01	2.2	24	0.071 Q	8.7	12	5.4	<0.0057	8.7	0.32 Q	<0.17	15	<42	34	<0.27	90.4	20,000	--
09/01 T104G (27.25-28.25)	1.75-2.75	09/26/01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	62.9	--	--
09/01 T107A (15-17)	2-4	09/21/01	7.1	150	0.19 Q	32	34	9.00	0.01Q	31.00	0.31 Q	<0.20	58	--	53	<0.32	75.5	39,000	--
09/01 T107B (26.8-28.8)	0-2	09/24/01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	68.6	--	--
09/01 T107C (30.6-32.6)	0-2	09/24/01	3.7	53	0.51	21	14	20	0.094	8.9	1.5 Q	<0.37	63	<190	280	0.84 Q	40.8	--	--
09/01 T107D (25.1-27.1)	0-2	09/24/01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	58.5	63,000	--
09/01 T107D (28.3-30.3)	3.2-5.2	09/24/01	3.3	34	0.12 Q	8.3	3.4	2.2	<0.007	5.9	0.39 Q	<0.20	15	--	46	<0.33	73.6	--	--
09/01 T108A(10.7-12.7)	2-4	09/20/01	2.5	52	0.10 Q	16	17	12.00	0.01Q	15.00	0.27 Q	<0.17	31	--	62	<0.28	87.7	37,000	--
09/01 T108B (12.3-14.3)	4-6	09/21/01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	85.4	--	--
09/01 T108B (20.3-22.3)	12-14	09/21/01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	75.2	--	--
09/01 T108C (9.5-10.5)	1-2	09/24/01	1.7	59	0.13 Q	18	18	7.8	0.0064 Q	17 N	0.46 Q	<0.17	31	<22	41	<0.28	86.6	37,000	--
09/01 T108D (28.9-29.9)	22-23	09/26/01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	89.3	--	--
09/01 T108E (10.5-12.5)	4-6	09/26/01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	24.80	--	--
09/01 T109A (22-22.5)	3-3.5	09/25/01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	71.3	21,000	--

▨ : Exceed TEC; McDonald 2000

— : Exceed PEC; McDonald 2000

Table 6 -Sediment Analytical Results - Metals, Cyanide, PCBs, Ammonia, and TOC
Sediment Investigation Report
Former Oshkosh MGP Site - WPSC

			Total Metals (mg/kg)																
Sample Location & Depth	Depth from top of Sediment (Feet)	Sampling Date	Arsenic	Barium	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Zinc	Total PCB (µg/kg)	Nitrogen, ammonia (mg/kg)	Cyanide, total (mg/kg)	Solids, percent (%)	TOC as NPOC (mg/kg)	Iron (mg/kg)
09/01 T109B (32-34)	8-10	09/25/01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	92.9	--	--
09/01 T109C (22.7-24.7)	4.7-6.7	09/25/01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	27.3	56,000	--
09/01 T109C (37.7)	19.7	09/25/01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	92.5	--	--
09/01 T109D (31.8-33.8)	0.1-2.1	09/25/01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	46.8	14,000	--
09/01T110A(29.3-29.5)	0-0.2	09/27/01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	31.9	--	--
09/01 T110D (20.9-21.75)	0.4-1.3	09/27/01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	16.80	--	--
POINT 49	less than 1	09/26/01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	28.8	--	--
POINT 52	less than 1	09/26/01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	59.70	--	--
POINT 53	less than 1	09/26/01	--	--	--	--	--	--	--	--	--	--	--	<390	290	--	19.4	--	22,000
POINT 54	less than 1	09/26/01	--	--	--	--	--	--	--	--	--	--	--	<390	200	--	19.5	--	--
POINT 56	less than 1	09/26/01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	32.0	--	--
POINT 57	less than 1	09/26/01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	21.0	--	--
POINT 60	less than 1	09/27/01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	77.10	--	--
POINT 71	less than 1	09/27/01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	30.4	--	--
POINT 74	less than 1	09/27/01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	17.5	--	--
POINT 76	less than 1	09/27/01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	14.0	--	--
POINT 79	less than 1	09/27/01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	16.0	--	--
POINT 80	less than 1	09/27/01	--	--	--	--	--	--	--	--	--	--	--	<300	240	--	25.7	--	25,000
09/01 T104G PONAR	less than 1	09/26/01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	26.0	--	--

(o-JTB/c-AAS U-HMS 3/29/04)

Notes:
PCB = Polychlorinated Biphenyl
Q = The analyte has been detected between the limit of detection (LOD) and the limit of quantitation (LOQ). The results are qualified due to the uncertainty of analyte concentrations within this range.
N= Spiked recovery sample not within control limits.
-- = analyte not sampled for.
< = The analyte value is less than the limit of detection (LOD).

Table 7 -Surface Water Analytical Results - BTEX, Cyanide, Ammonia, TOC and TSS
Sediment Investigation Report
Former Oshkosh MGP Site - WPSC

		BTEX (mg/L)					Cyanides (mg/L)					
Sample ID	Date	Benzene	Ethylbenzene	Toulene	Xylenes, -m, -p	Xylene, -o	Total	Dissociable	Amenable	Ammonia (mg/L)	TOC (mg/L)	TSS (mg/L)
WS-101	11/13/01	<0.45	<0.82	<0.68	<1.7	<0.77	<0.0021	<0.0021	<0.0021	<0.060	5.6 A	17
WS-102	11/13/01	<0.45	<0.82	<0.68	<1.7	<0.77	<0.0021	<0.0021	<0.0021	0.06 Q	6.8 A	18

Notes:

Total suspended solids (TSS)

Total organic carbon (TOC)

A = Analyte present in trip blank at 0.70 mg/L

Q = The analyte has been detected between the limit of detection (LOD) and the limit of quantitation (LOQ). The results are qualified due to the uncertainty of analyte concentrations within this range.

< = The analyte value is less than the limit of detection (LOD).

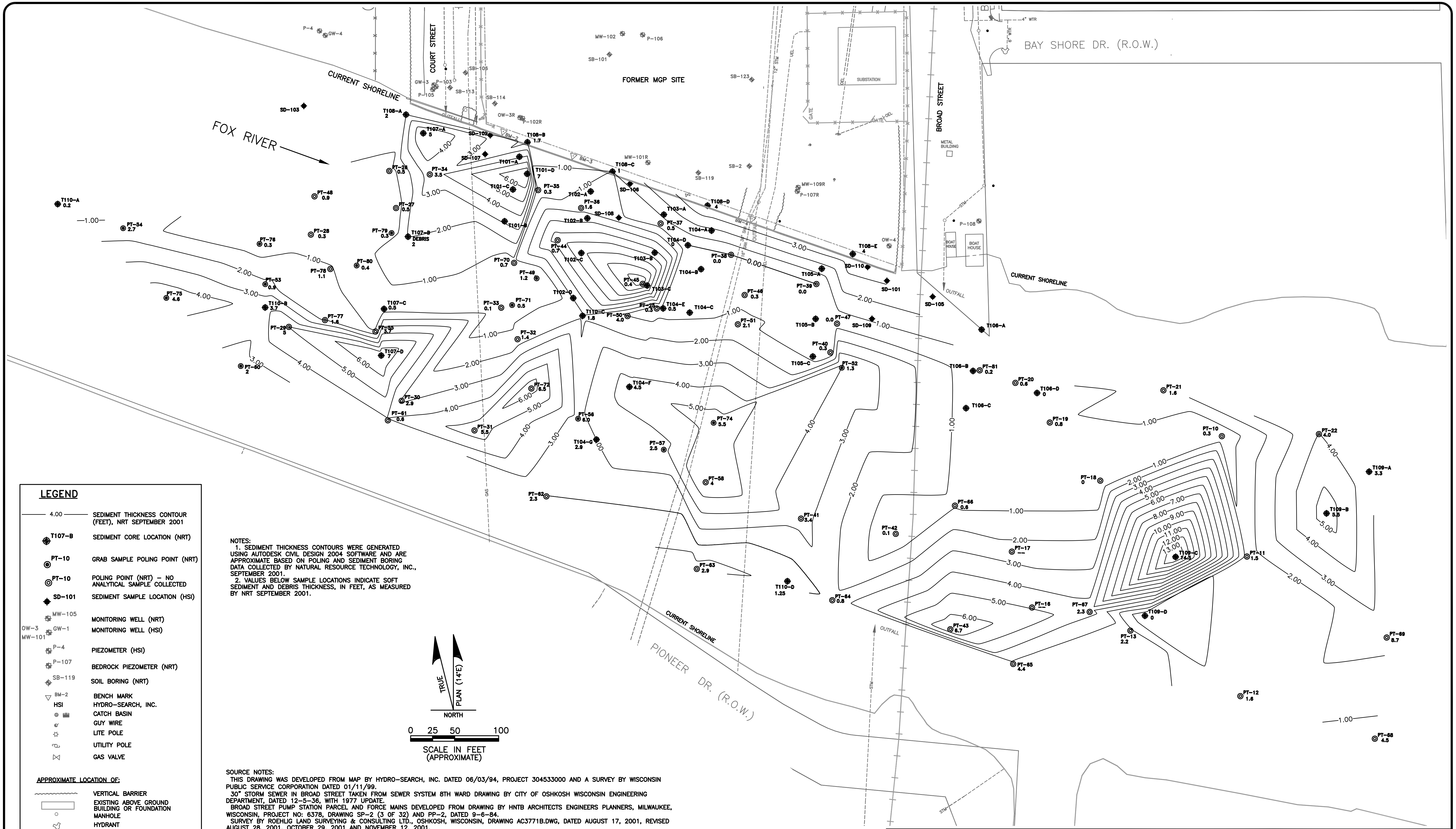
Table 8 -Surface Water Analytical Results - Polynuclear Aromatic Hydrocarbons (PAHs)
Sediment Investigation Report
Former Oshkosh MGP Site - WPSC

		Polynuclear Aromatic Hydrocarbons (ug/L)																	
Sample ID	Date	1-Methylnaphthalene	2-Methylnaphthalene	Naphthalene	Acenapthylene	Acenapthene	Fluorene	Phenanthene	Anthracene	Fluoranthene	Pyrene	Benz(a)anthracene	Chrysene	Benzo(b)flouranthene	Benzo(k)fluoranthene	Benzo(a)pyrene	Indeno(1,2,3-cd)pyrene	Dibenz(a,h)anthracene	Benzo(g,h,I)perylene
WS-101	11/13/01	<0.027	<0.028	<0.027	<0.023	<0.018	<0.021	<0.019	<0.020	<0.028	<0.020	<0.019	<0.018	<0.014	<0.013	<0.012	<0.014	<0.017	<0.015
WS-102	11/13/01	<0.027	<0.028	<0.027	<0.023	<0.018	<0.021	<0.019	<0.020	<0.028	<0.020	<0.019	<0.018	<0.014	<0.013	<0.012	<0.014	<0.017	<0.015

Notes:
< = The analyte value is less than the limit of detection (LOD).

APPENDIX C4

RIVER PROFILING



LEGEND

—— 4.00 ——	SEDIMENT THICKNESS CONTOUR (FEET), NRT SEPTEMBER 2001
T107-B	SEDIMENT CORE LOCATION (NRT)
PT-10	GRAB SAMPLE POLING POINT (NRT)
PT-10	POLING POINT (NRT) – NO ANALYTICAL SAMPLE COLLECTED
SD-101	SEDIMENT SAMPLE LOCATION (HSI)
MW-105	MONITORING WELL (NRT)
OW-3 MW-101 GW-1	MONITORING WELL (HSI)
P-4	PIEZOMETER (HSI)
P-107	BEDROCK PIEZOMETER (NRT)
SB-119	SOIL BORING (NRT)
▽ BM-2	BENCH MARK
HSI	HYDRO-SEARCH, INC.
	CATCH BASIN
	GUY WIRE
	LITE POLE
	UTILITY POLE
⋈	GAS VALVE

APPROXIMATE LOCATION OF:

	VERTICAL BARRIER
▭	EXISTING ABOVE GROUND BUILDING OR FOUNDATION
○	MANHOLE
	HYDRANT
	RAILROAD
	CHAIN LINK FENCE
----OEL----	OVERHEAD ELECTRIC LINE
----UEL----	UNDERGROUND ELECTRIC LINE
----GAS----	NATURAL GAS LINE
----SAN----	SANITARY SEWER LINE
----STM----	STORM SEWER LINE
----WTR----	WATER LINE

NOTES:

1. SEDIMENT THICKNESS CONTOURS WERE GENERATED USING AUTODESK CIVIL DESIGN 2004 SOFTWARE AND ARE APPROXIMATE BASED ON POLING AND SEDIMENT BORING DATA COLLECTED BY NATURAL RESOURCE TECHNOLOGY, INC., SEPTEMBER 2001.
2. VALUES BELOW SAMPLE LOCATIONS INDICATE SOFT SEDIMENT AND DEBRIS THICKNESS, IN FEET, AS MEASURED BY NRT SEPTEMBER 2001.

SOURCE NOTES:

THIS DRAWING WAS DEVELOPED FROM MAP BY HYDRO-SEARCH, INC. DATED 06/03/94, PROJECT 304533000 AND A SURVEY BY WISCONSIN PUBLIC SERVICE CORPORATION DATED 01/11/99.

30" STORM SEWER IN BROAD STREET TAKEN FROM SEWER SYSTEM 8TH WARD DRAWING BY CITY OF OSHKOSH WISCONSIN ENGINEERING DEPARTMENT, DATED 12-5-36, WITH 1977 UPDATE.

BROAD STREET PUMP STATION PARCEL AND FORCE MAINS DEVELOPED FROM DRAWING BY HNTB ARCHITECTS ENGINEERS PLANNERS, MILWAUKEE, WISCONSIN, PROJECT NO: 6378, DRAWING SP-2 (3 OF 32) AND PP-2, DATED 9-6-84.

SURVEY BY ROEHLIG LAND SURVEYING & CONSULTING LTD., OSHKOSH, WISCONSIN, DRAWING AC3771B.DWG, DATED AUGUST 17, 2001, REVISED AUGUST 28, 2001, OCTOBER 29, 2001 AND NOVEMBER 12, 2001.

HP GAS LINE FROM DRAWING BY FORD, BACON AND DAVIS, INC., ENGINEERS, DRAWING NO. 60013-FI-S, REVISED DATED NOVEMBER 9, 1953.

WATER LINES AND HYDRANTS, STORM AND SANITARY LINES IN CEAPE AVENUE ARE TAKEN FROM CITY OF OSHKOSH ENGINEERING DIVISION DRAWING, DATED NOVEMBER 9, 1998.

BM-1 WAS FIELD MEASURED BY NRT. BM-2 THROUGH BM-4 WERE SURVEYED BY ROEHLIG LAND SURVEYING & CONSULTING LTD., OSHKOSH, WISCONSIN, NO. 2771A, DATED APRIL 24, 2001. BM-1 TOP OF HYDRANT OPERATING NUT, ELEVATION 754.18. BM-2 SPIKE IN WOOD RETAINING WALL PER WPSC SURVEY, ELEVATION 749.60 (749.52 WPSC). BM-3 PK NAIL SET ON TOP OF WOOD WALL, ELEVATION 749.96. BM-4 CHISELED "V" IN TOP OF RETAINING WALL, ELEVATION 749.78. ELEVATIONS BASED ON USGS DATUM.

SB-125 WAS INSTALLED IN OCTOBER 2001, LOCATION IS APPROXIMATED FROM FIELD MEASUREMENTS BY NRT.

TO ALIGN SHORELINE WITH WPSC AND CITY OF OSHKOSH BASE MAP ROTATED 1° TO EACH OTHER.

Natural
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Technology
N R T

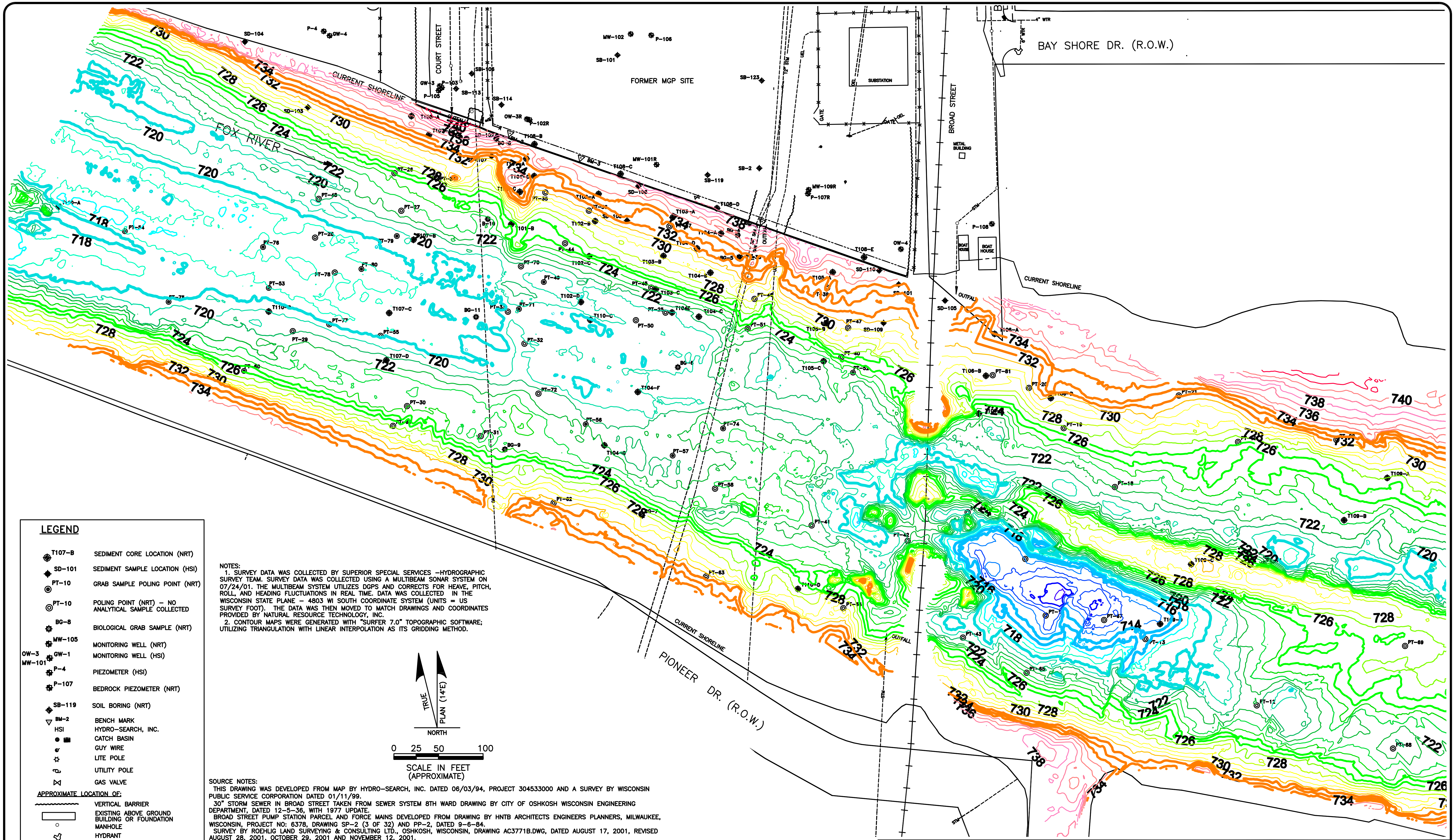
SOFT SEDIMENT AND DEBRIS THICKNESS

SEDIMENT INVESTIGATION REPORT
FORMER OSHKOSH MANUFACTURED GAS PLANT SITE
WISCONSIN PUBLIC SERVICE CORPORATION
CITY OF OSHKOSH, WISCONSIN

CAD FILE: 1644-1-APPC1.DWG
REFERENCE FILES:

PROJECT NO. 1644/1/APP
DRAWN BY: TAS 03/26/04
CHECKED BY: JMK 04/09/04
APPROVED BY: RGF 08/08/05

APPENDIX C-1



LEGEND

T107-B	SEDIMENT CORE LOCATION (NRT)
SD-101	SEDIMENT SAMPLE LOCATION (HSI)
PT-10	GRAB SAMPLE POLING POINT (NRT)
PT-10	POLING POINT (NRT) – NO ANALYTICAL SAMPLE COLLECTED
BG-8	BIOLOGICAL GRAB SAMPLE (NRT)
MW-105	MONITORING WELL (NRT)
OW-3 MW-101 GW-1	MONITORING WELL (HSI)
P-4	PIEZOMETER (HSI)
P-107	BEDROCK PIEZOMETER (NRT)
SB-119	SOIL BORING (NRT)
▽ BM-2	BENCH MARK
HSI	HYDRO-SEARCH, INC.
● ■	CATCH BASIN
	GUY WIRE
☼	LITE POLE
	UTILITY POLE
⋈	GAS VALVE

APPROXIMATE LOCATION OF:

~~	VERTICAL BARRIER
▭	EXISTING ABOVE GROUND BUILDING OR FOUNDATION
○	MANHOLE
	HYDRANT
┼──┼──┼	RAILROAD
─×──×─	CHAIN LINK FENCE
----OEL----	OVERHEAD ELECTRIC LINE
----UEL-----	UNDERGROUND ELECTRIC LINE
----GAS----	NATURAL GAS LINE
----SAN----	SANITARY SEWER LINE
----STM----	STORM SEWER LINE
----WTR----	WATER LINE

NOTES:

1. SURVEY DATA WAS COLLECTED BY SUPERIOR SPECIAL SERVICES –HYDROGRAPHIC SURVEY TEAM. SURVEY DATA WAS COLLECTED USING A MULTIBEAM SONAR SYSTEM ON 07/24/01. THE MULTIBEAM SYSTEM UTILIZES DGPS AND CORRECTS FOR HEAVE, PITCH, ROLL, AND HEADING FLUCTUATIONS IN REAL TIME. DATA WAS COLLECTED IN THE WISCONSIN STATE PLANE – 4803 WI SOUTH COORDINATE SYSTEM (UNITS = US SURVEY FOOT). THE DATA WAS THEN MOVED TO MATCH DRAWINGS AND COORDINATES PROVIDED BY NATURAL RESOURCE TECHNOLOGY, INC.
2. CONTOUR MAPS WERE GENERATED WITH "SURFER 7.0" TOPOGRAPHIC SOFTWARE; UTILIZING TRIANGULATION WITH LINEAR INTERPOLATION AS ITS GRIDDING METHOD.

SOURCE NOTES:

THIS DRAWING WAS DEVELOPED FROM MAP BY HYDRO-SEARCH, INC. DATED 06/03/94, PROJECT 304533000 AND A SURVEY BY WISCONSIN PUBLIC SERVICE CORPORATION DATED 01/11/99.

30" STORM SEWER IN BROAD STREET TAKEN FROM SEWER SYSTEM 8TH WARD DRAWING BY CITY OF OSHKOSH WISCONSIN ENGINEERING DEPARTMENT, DATED 12-5-36, WITH 1977 UPDATE.

BROAD STREET PUMP STATION PARCEL AND FORCE MAINS DEVELOPED FROM DRAWING BY HNTB ARCHITECTS ENGINEERS PLANNERS, MILWAUKEE, WISCONSIN, PROJECT NO: 6378, DRAWING SP-2 (3 OF 32) AND PP-2, DATED 9-6-84.

SURVEY BY ROEHLIG LAND SURVEYING & CONSULTING LTD., OSHKOSH, WISCONSIN, DRAWING AC3771B.DWG, DATED AUGUST 17, 2001, REVISED AUGUST 28, 2001, OCTOBER 29, 2001 AND NOVEMBER 12, 2001.

HP GAS LINE FROM DRAWING BY FORD, BACON AND DAVIS, INC., ENGINEERS, DRAWING NO. 60013-FI-S, REVISED DATED NOVEMBER 9, 1953.

WATER LINES AND HYDRANTS, STORM AND SANITARY LINES IN CEAPE AVENUE ARE TAKEN FROM CITY OF OSHKOSH ENGINEERING DIVISION DRAWING, DATED NOVEMBER 9, 1998.

BM-1 WAS FIELD MEASURED BY NRT. BM-2 THROUGH BM-4 WERE SURVEYED BY ROEHLIG LAND SURVEYING & CONSULTING LTD., OSHKOSH, WISCONSIN, NO. 2771A, DATED APRIL 24, 2001. BM-1 TOP OF HYDRANT OPERATING NUT, ELEVATION 754.18. BM-2 SPIKE IN WOOD RETAINING WALL PER WPSC SURVEY, ELEVATION 749.60 (749.52 WPSC). BM-3 PK NAIL SET ON TOP OF WOOD WALL, ELEVATION 749.96. BM-4 CHISELED "V" IN TOP OF RETAINING WALL, ELEVATION 749.78. ELEVATIONS BASED ON USGS DATUM.

SB-125 WAS INSTALLED IN OCTOBER 2001, LOCATION IS APPROXIMATED FROM FIELD MEASUREMENTS BY NRT.

DIGITAL FILE FROM CITY OF OSHKOSH DATED 2001.

TO ALIGN SHORELINE WITH WPSC AND CITY OF OSHKOSH BASE MAP ROTATED 1° TO EACH OTHER.

Natural
Resource
Technology
N R T

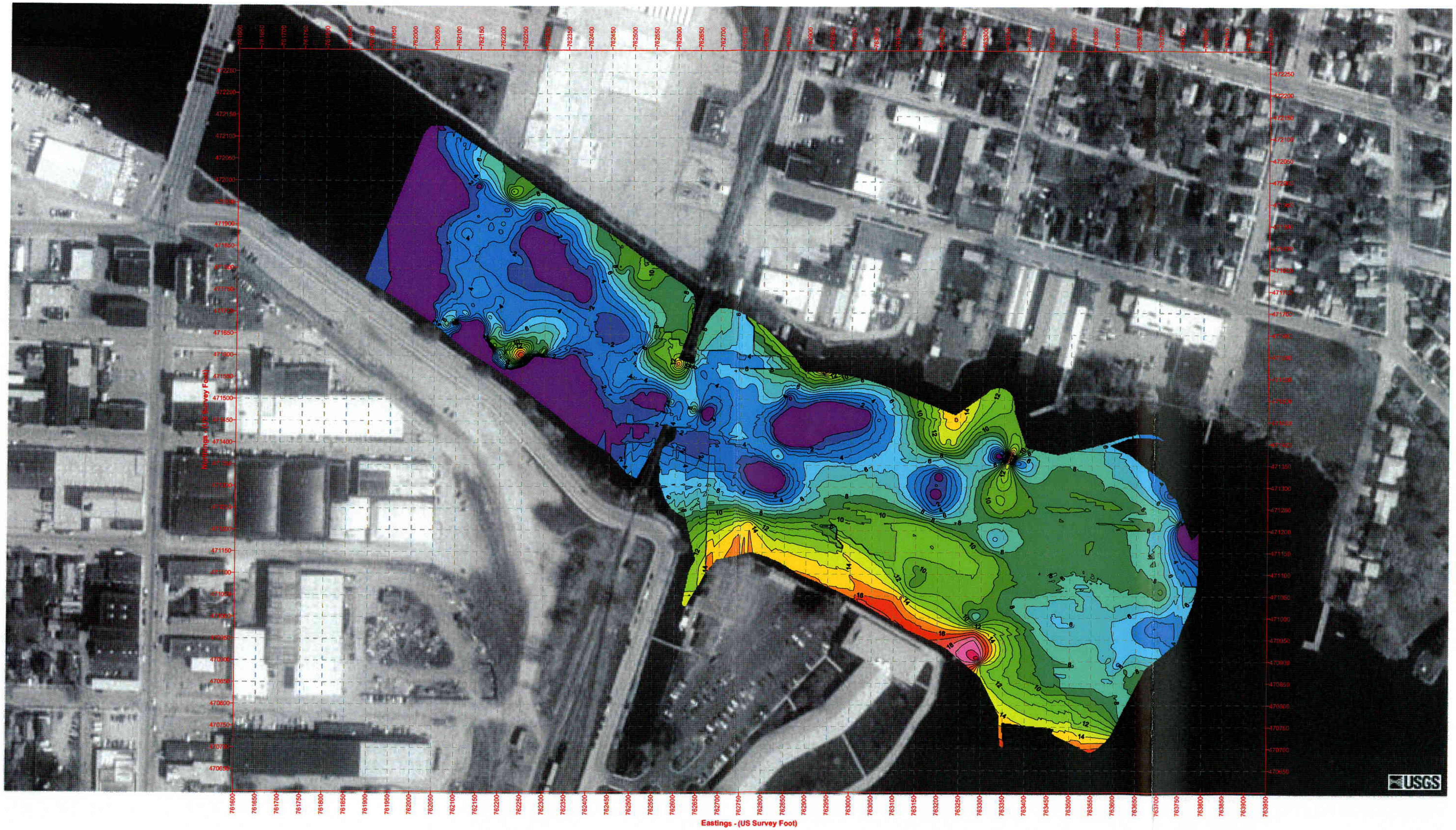
RIVER BOTTOM ELEVATION

SEDIMENT INVESTIGATION REPORT
FORMER OSHKOSH MANUFACTURED GAS PLANT SITE
WISCONSIN PUBLIC SERVICE CORPORATION
CITY OF OSHKOSH, WISCONSIN

CAD FILE: 1644-1-APPC2C.DWG
REFERENCE FILES:

PROJECT NO.
1644/1/APP
DRAWN BY:
TAS 03/26/04
CHECKED BY:
JMK 04/09/04
APPROVED BY:
RGF 08/08/05

APPENDIX
C-2



Horizontal Scale (Feet)
1" = 100'

0 100 200 300 400 500 600

Thickness Scale (Feet)

20 18 16 14 12 10 8 6 4 2 0

NOTES:
1) Survey data was collected by Superior Special Services - Hydrographic Survey Team. Survey data was collected using a sub-bottom sonar system on 07/25/01. The sub-bottom system utilized a Trimble DGPS Beacon for realtime positioning. The data was then moved to match drawings and coordinates provided by Natural Resource Technology, Inc.
2) The sub-bottom sonar system is an Edgetech SB-216S with an X-Star processor.
3) Contour maps were generated with "SURFER 7.0" topographic software; utilizing Kriging as it's gridding method.
4) Depth contours represented at 1' intervals.
5) Position of contours relative to aerial photo is approximate.

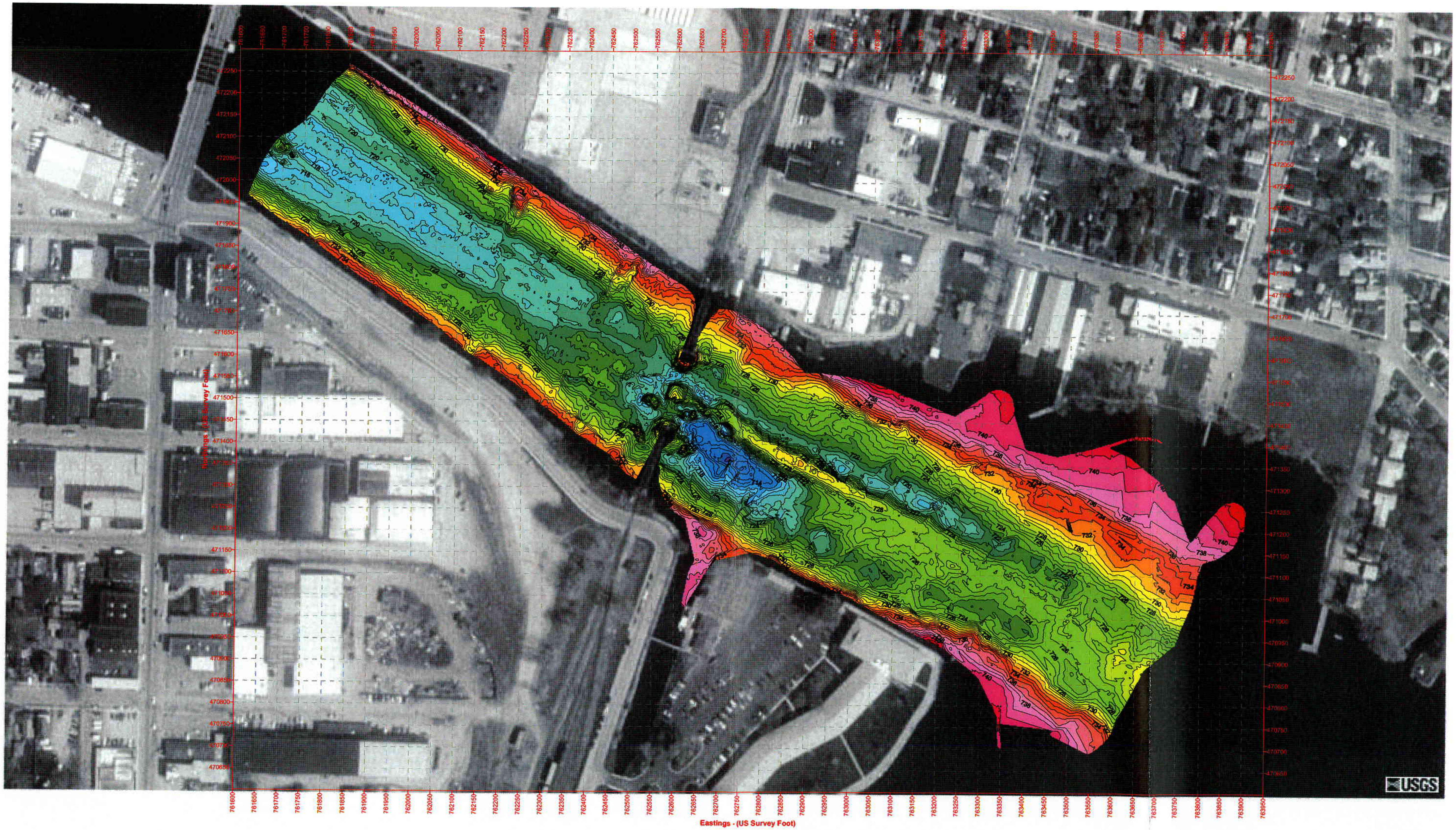
COLOR FILLED SEDIMENT THICKNESS (ISOPACH) CONTOUR MAP

FOX RIVER - OSHKOSH, WI
COLOR FILLED SEDIMENT THICKNESS
(ISOPACH) CONTOUR MAP
JULY 25, 2001

Superior Special Services, Inc.

100 W. Larsen Dr. - P.O. Box 1323
Fond du Lac, WI 54936-1323
Phone: (920)923-9000
Fax: (920)923-9010

Drafter:	Duane Peterson
File Name:	ISOPACH
Job #:	140159C.01.062
Date:	08/07/01
Drawing:	003



Horizontal Scale (Feet)
1" = 100'

0 100 200 300 400 500 600

North

Elevation Scale (Feet)

742 740 738 736 734 732 730 728 726 724 722 720 718 716 714 712 710 708

NOTES:

1) Survey data was collected by Superior Special Services - Hydrographic Survey Team. Survey data was collected using a multibeam sonar system on 07/24/01. The multibeam system utilizes DGPS and corrects for heave, pitch, roll, and heading fluctuations in real time. Data was collected in the Wisconsin State Plane - 4803 WI South coordinate system (Units = US Survey Foot). The data was then moved to match drawings and coordinates provided by Natural Resource Technology, Inc.
2) Contour maps were generated with "SURFER 7.0" topographic software; utilizing Triangulation with linear interpolation as it's gridding method.
3) Contours represented at 1' intervals.
4) Position of contours relative to aerial photo is approximate.

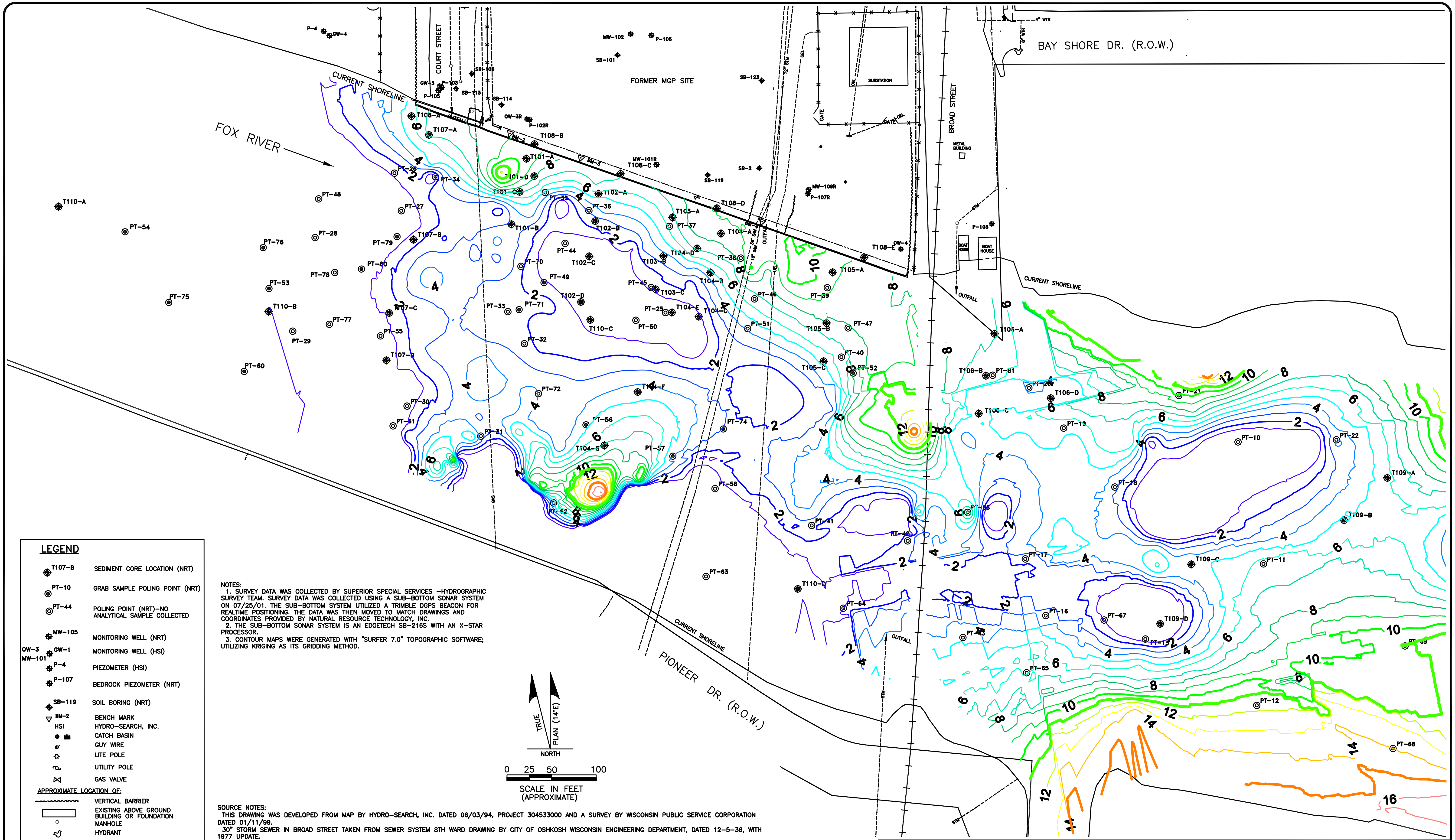
COLOR FILLED ELEVATION CONTOUR MAP

FOX RIVER - OSHKOSH, WI
COLOR FILLED CONTOUR MAP
MULTIBEAM SONAR SURVEY
JULY 24, 2001

Superior Special Services, Inc.

100 W. Larsen Dr. - P.O. Box 1323
Fond du Lac, WI 54936-1323
Phone: (920)923-9000
Fax: (920)923-9010

Drafter:	Duane Peterson
File Name:	COLORELEVATION
Job #:	140159C.01.062
Date:	08/08/01
Drawing:	002



LEGEND

T107-B	SEDIMENT CORE LOCATION (NRT)
PT-10	GRAB SAMPLE POLING POINT (NRT)
PT-44	POLING POINT (NRT)-NO ANALYTICAL SAMPLE COLLECTED
MW-105	MONITORING WELL (NRT)
OW-3 MW-101 GW-1	MONITORING WELL (HSI)
P-4	PIEZOMETER (HSI)
P-107	BEDROCK PIEZOMETER (NRT)
SB-119	SOIL BORING (NRT)
▽ BM-2	BENCH MARK
HSI	HYDRO-SEARCH, INC.
● ▬	CATCH BASIN
	GUY WIRE
☼	LITE POLE
	UTILITY POLE
⋈	GAS VALVE

APPROXIMATE LOCATION OF:

~~	VERTICAL BARRIER
▭	EXISTING ABOVE GROUND BUILDING OR FOUNDATION
○	MANHOLE
	HYDRANT
┼──┼──┼	RAILROAD
─X──X─	CHAIN LINK FENCE
----OEL----	OVERHEAD ELECTRIC LINE
----UEL-----	UNDERGROUND ELECTRIC LINE
----GAS----	NATURAL GAS LINE
----SAN----	SANITARY SEWER LINE
----STM----	STORM SEWER LINE
----WTR----	WATER LINE

NOTES:

1. SURVEY DATA WAS COLLECTED BY SUPERIOR SPECIAL SERVICES -HYDROGRAPHIC SURVEY TEAM. SURVEY DATA WAS COLLECTED USING A SUB-BOTTOM SONAR SYSTEM ON 07/25/01. THE SUB-BOTTOM SYSTEM UTILIZED A TRIMBLE DGPS BEACON FOR REALTIME POSITIONING. THE DATA WAS THEN MOVED TO MATCH DRAWINGS AND COORDINATES PROVIDED BY NATURAL RESOURCE TECHNOLOGY, INC.
2. THE SUB-BOTTOM SONAR SYSTEM IS AN EDGETECH SB-216S WITH AN X-STAR PROCESSOR.
3. CONTOUR MAPS WERE GENERATED WITH "SURFER 7.0" TOPOGRAPHIC SOFTWARE; UTILIZING KRIGING AS ITS GRIDDING METHOD.

SOURCE NOTES:

THIS DRAWING WAS DEVELOPED FROM MAP BY HYDRO-SEARCH, INC. DATED 06/03/94, PROJECT 304533000 AND A SURVEY BY WISCONSIN PUBLIC SERVICE CORPORATION DATED 01/11/99.

30" STORM SEWER IN BROAD STREET TAKEN FROM SEWER SYSTEM 8TH WARD DRAWING BY CITY OF OSHKOSH WISCONSIN ENGINEERING DEPARTMENT, DATED 12-5-36, WITH 1977 UPDATE.

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SURVEY BY ROEHLIG LAND SURVEYING & CONSULTING LTD., OSHKOSH, WISCONSIN, DRAWING AC3771B.DWG, DATED AUGUST 17, 2001, REVISED AUGUST 28, 2001, OCTOBER 29, 2001 AND NOVEMBER 12, 2001.

HP GAS LINE FROM DRAWING BY FORD, BACON AND DAVIS, INC., ENGINEERS, DRAWING NO. 60013-FI-S, REVISED DATED NOVEMBER 9, 1953.

WATER LINES AND HYDRANTS, STORM AND SANITARY LINES IN CEAPE AVENUE ARE TAKEN FROM CITY OF OSHKOSH ENGINEERING DIVISION DRAWING, DATED NOVEMBER 9, 1998.

BM-1 WAS FIELD MEASURED BY NRT. BM-2 THROUGH BM-4 WERE SURVEYED BY ROEHLIG LAND SURVEYING & CONSULTING LTD., OSHKOSH, WISCONSIN, NO. 2771A, DATED APRIL 24, 2001. BM-1 TOP OF HYDRANT OPERATING NUT, ELEVATION 754.18. BM-2 SPIKE IN WOOD RETAINING WALL PER WPSC SURVEY, ELEVATION 749.60 (749.52 WPSC). BM-3 PK NAIL SET ON TOP OF WOOD WALL, ELEVATION 749.96. BM-4 CHISELED "V" IN TOP OF RETAINING WALL, ELEVATION 749.78. ELEVATIONS BASED ON USGS DATUM.

SB-125 WAS INSTALLED IN OCTOBER 2001, LOCATION IS APPROXIMATED FROM FIELD MEASUREMENTS BY NRT.

DIGITAL FILE FROM CITY OF OSHKOSH DATED 2001.

TO ALIGN SHORELINE WITH WPSC AND CITY OF OSHKOSH BASE MAP ROTATED 1° TO EACH OTHER.

Natural
Resource
Technology
N R T

ISOPACH CONTOURS

SEDIMENT INVESTIGATION REPORT
FORMER OSHKOSH MANUFACTURED GAS PLANT SITE
WISCONSIN PUBLIC SERVICE CORPORATION
CITY OF OSHKOSH, WISCONSIN

CAD FILE: 1644-1-APPC3C.DWG
REFERENCE FILES:

PROJECT NO.
1644/1
DRAWN BY:
TAS 03/23/04
CHECKED BY:
JMK 04/09/04
APPROVED BY:
RGF 08/08/05

APPENDIX
C-3

APPENDIX C5

PRELIMINARY BENTHIC COMMUNITY SURVEY

Application of Benthic Community Surveys

Biological criteria for aquatic systems typically include an assessment of the water body's physical habitat, including the surrounding riparian zone, and the use of benthic macroinvertebrates in evaluating water quality. They provide an evaluation benchmark for direct assessment of the condition of the biota that spend either all or some portion of their life in aquatic systems by describing (either through narrative and/or using numeric criteria) the expected biological condition of a minimally impaired aquatic community. Biological criteria can be used in conjunction with traditional measurements (e.g., chemical concentrations) for planning and management frameworks to prioritize water quality problems, and to document the effectiveness of remediation. Reasons for including biological criteria as a tool for sediment investigation include the following:

- Biological communities reflect the overall ecological integrity of a river system, including the biological, chemical and physical components;
- Benthic communities integrate stress over time so they are able to measure fluctuating environmental conditions;
- Where criteria for specific ambient impacts do not exist (i.e., no standards currently exist) biological communities may be the only practical means of evaluation.

USEPA cites several advantages to using benthic macroinvertebrates for ecological surveys:

- They are good indicators of localized conditions, because many benthic macroinvertebrates have a limited migration pattern, or a sessile mode of life;
- They integrate the effects of short-term environmental variation;
- Degraded conditions can often be detected by an experienced biologist with only a cursory examination of the benthic macroinvertbrate assemblage;
- Benthic community structures are made up of species that constitute a broad range of trophic levels and pollution tolerances, thus providing information for interpreting cumulative effects, and;
- Benthic macroinvertebrates serve as a primary food source for fish, including many recreationally and commercially important species.

Approach

A preliminary benthic community study was conducted to survey the dominant macroinvertebrate groups that make up the upper Fox River community at the Oshkosh MGP site on July 9, 2001. The study was intended to be a screening level qualitative look at the dominant groups of organisms with an overview of the macroinvertebrate densities. The design of the study was to compare an upstream location (control) with two transects, that based upon previous investigation (NRT, October, 15, 1996) exhibited MGP residuals (see attached Figure for locations). Transects were located at the east end of the site (near Broad Street), the west end of the site, near Court Street and upstream of the Main Street Bridge (control). The east and west transects each had four sampling stations, with four replicate samples taken at each station. The control had three stations with four replicate samples being taken at each station.

Field Activities

Sediment samples were collected with a Ponar™ grab and then sieved through a screen with a standard 500 µm mesh size to separate the fine sediments from the macroinvertebrates. The sample was then preserved with 70% alcohol in the field for later identification and enumeration.

Each sample was then processed following the general guidelines outlined in *Rapid Bioassessment Protocols for Use in Wadeable Streams and Rivers (*EPA 1999). Each sample was sorted for approximately thirty minutes and removed organisms were identified (see Preliminary Benthic Community Structure Bench Sheets). It should be noted that for purposes of the screening survey, identifications to the Family level taxonomy was chosen over Genus/species identifications because that level of resolution met the criteria for this study. Taxonomy at the Family level provides a higher degree of precision among samples and accelerates the assessment results. This level was chosen with the caveat that Genus/species taxonomic resolutions provide better information on ecological/environmental relationships and sensitivity to impairment, but this level of resolution was more costly and therefore not needed for this survey. A few macroinvertebrates were identified to a lower taxonomic resolution due to ease in their identification.

Substrates encountered during biological grab sampling consisted of soft sediments derived from decaying organic material, or cobble and sand. Debris such as broken brick, coal pieces and degraded tree bark were also common components in the grab samples. Grab samples located at BG-6 and BG-9 contained viscous tar intermixed within the soft sediment matrix. Location BG-4 exhibited sheen when the sediment was disturbed by the grab sampler.

Results

Specimens were enumerated, and the data were used to calculate diversity by taking the average of the sum of the Simpson, Shannon, and Brillouin diversity indices for each station. The Shannon and Brillouin diversity indices are referred to as Type I diversity indices that weight rare taxa. The Simpson diversity index is a Type II diversity index that is more sensitive to changes in the more abundant taxa. The community diversity, which is an integrated measure of taxa abundance and their distribution within taxa, tends to be higher at the east and west transects than the control (Figures 1 through 3). This trend is believed to be due to the greater variety of substrates (cobble, bark, sand, organics) at the West (BG-8 through BG-11) and East Transect (BG-4 through BG-7), compared with more limited substrates (bark and organics) at the Control Transect (BG-1 through BG-3). The diversity of rare weighted taxa and common weighted taxa appears to be proportional between the Control, and West and East Transect. River impacts appear not to be selective for either rare or common (abundant) taxa.

The average abundance/m^2 is greater at the Control Transect than at the West or East transects (Figure 4). Oligochaeta (segmented worms) and chironomidae (midges) were the dominant invertebrate groups in the soft sediments. Planarians (flat worms) were dominant on the hard substrates (cobble and bark). Members of the Oligochaetes and Chironomidae are typical of disturbed habitats, and as a group are also considered pollution tolerant. More environmentally sensitive groups, including the trichoptera (caddisflies) and ephemeroptera (mayflies), were encountered in low numbers at all three transects. In addition, leptoceridae (longhorn caddisflies) occurred at the control and western transects, while an ephemerellidae (mayfly) was collected at the eastern transect. In a more amiable environment, a greater proportion of more pollution sensitive taxa would be expected (e.g., mayflies). *Hexagenia* mayfly adults were collected upstream of the site but no nymphs were found in the samples.

Figure 1. Fauna Diversity at the Control Transect.

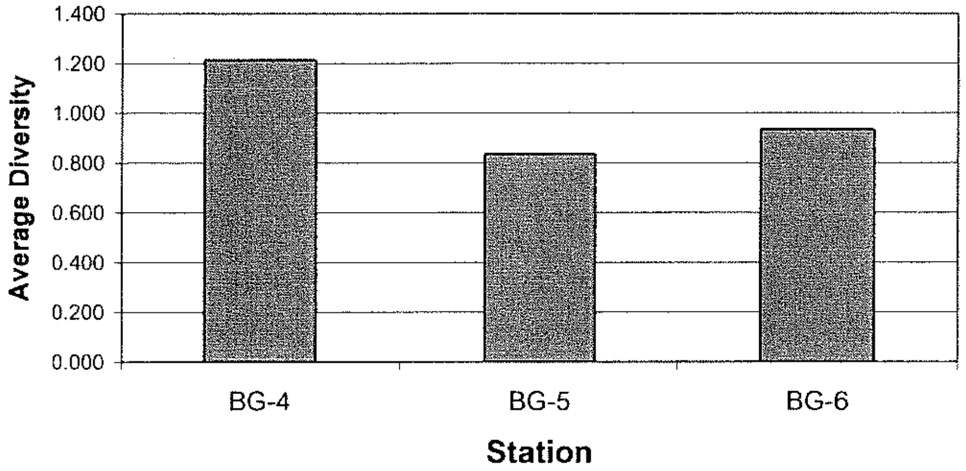


Figure 2. Fauna Diversity at the West Transect.

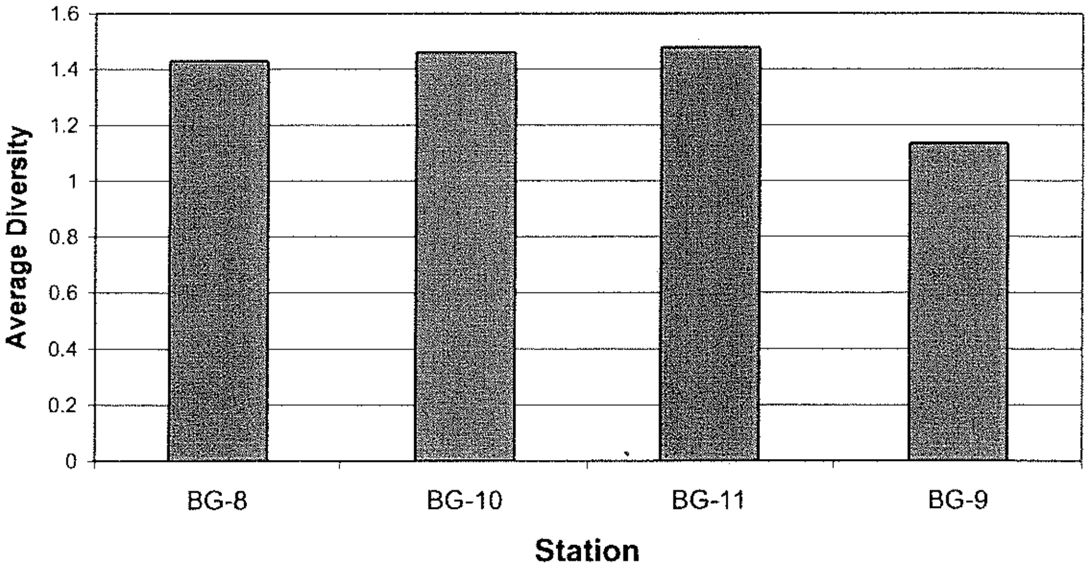


Figure 3. Fauna Diversity at the East Transect.

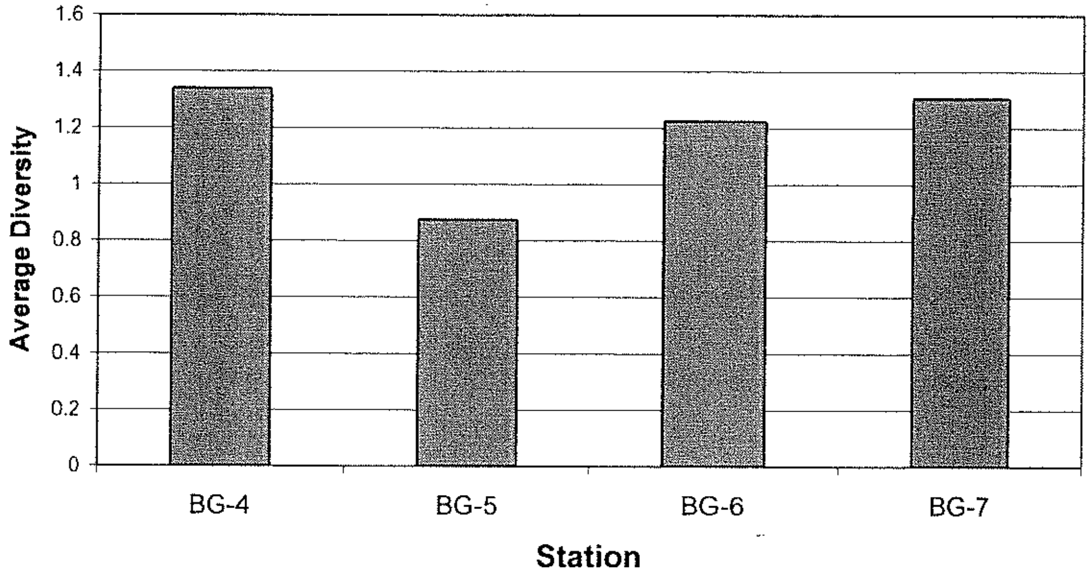
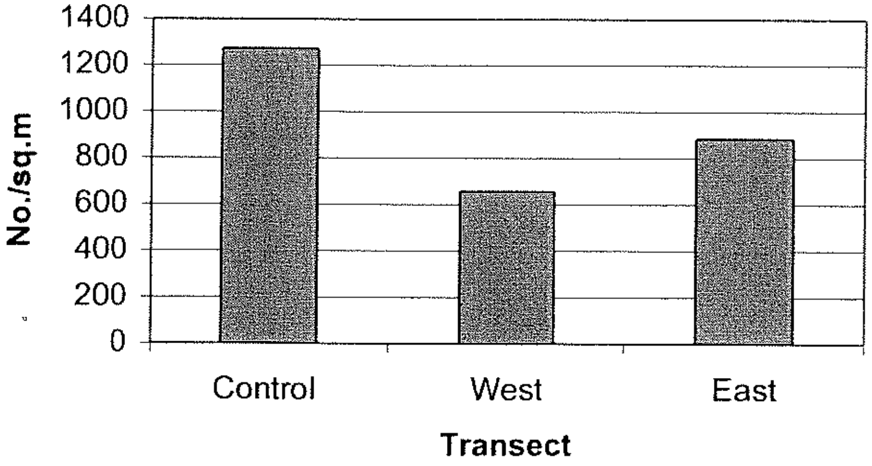


Figure 4. Average Fauna Abundance/m^2



Benthic Community Structure Survey
Fox River
Wisconsin Public Service Corporation - Oshkosh Former Manufactured Gas Plant Site

Control 1 (25 feet from north shore)
N 44° 00.852
W088°32.331

	1 of 4	2 of 4	3 of 4	4 of 4		
Depth (feet)	24	26	23	23		
Sediment	organics	organics	organics	organics		
	Fauna (No./grab)				Avg	No./m²
Phylum Platyhelminthes					0	0
Class Turbellaria					0	0
Phylum Nematoda					0	0
Phylum Annelida					0	0
Subclass Oligochaeta	18	32	24	7	20.25	872
Subclass Hirudinea		1			0.25	11
Phylum Arthropoda					0	0
Class Crustacea					0	0
Order Isopoda					0	0
Family Asellidae				1	0.25	11
Order Amphipoda					0	0
Family Gammaridae					0	0
Class Insecta					0	0
Order Ephemeroptera					0	0
Family Epherellidae					0	0
Order Trichoptera					0	0
Family Leptoceridae	1			1	0.5	22
Order Diptera					0	0
Family Ceratopogonidae			1		0.25	11
Family Culicidae		1			0.25	11
Family Chironomidae	3	9	2	3	4.25	183
Chironomus sp.	6	4	5	10	6.25	269
Phylum Mollusca					0	0
Order Gastropoda					0	0
Family Physidae					0	0
Order Bivalvia					0	0
Family Sphaeriidae					0	0
Superfamily Dreissenacea					0	0
Dreissena polymorpha	3				0.75	32
Total # of Individuals	31	47	32	22		1421
Total Taxa	5	5	4	5		

Benthic Community Structure Survey
Fox River
Wisconsin Public Service Corporation - Oshkosh Former Manufactured Gas Plant Site

Control 2 (125 feet from north shore)
N 44° 00.835
W088°32.327

	1 of 4	2 of 4	3 of 4	4 of 4		
Depth (feet)	25	25	26	25		
Sediment	organics	bark+organics	organics	organics		
	Fauna (No./grab)				Avg	No./m²
Phylum Platyhelminthes					0	0
Class Turbellaria					0	0
Phylum Nematoda					0	0
Phylum Annelida					0	0
Subclass Oligochaeta	26	12	26	25	22.25	958
Subclass Hirudinea					0	0
Phylum Arthropoda					0	0
Class Crustacea					0	0
Order Isopoda					0	0
Family Asellidae	1		1		0.5	22
Order Amphipoda					0	0
Family Gammaridae					0	0
Class Insecta					0	0
Order Ephemeroptera					0	0
Family Epherellidae					0	0
Order Trichoptera					0	0
Family Leptoceridae					0	0
Order Diptera					0	0
Family Ceratopogonidae					0	0
Family Culicidae					0	0
Family Chironomidae	4	2		4	2.5	108
Chironomus sp.	7	3	6	3	4.75	205
Phylum Mollusca					0	0
Order Gastropoda					0	0
Family Physidae					0	0
Order Bivalvia					0	0
Family Sphaeriidae					0	0
Superfamily Dreissenacea					0	0
Dreissena polymorpha					0	0
Total # of Individuals	38	17	33	32		1292
Total Taxa	4	3	3	3		

Benthic Community Structure Survey
Fox River
Wisconsin Public Service Corporation - Oshkosh Former Manufactured Gas Plant Site

Control 3 (100 feet from south shore)
N 44° 00.810
W088°32.344

	1 of 4	2 of 4	3 of 4	4 of 4		
Depth (feet)	25	24	24	24		
Sediment	bark+rock	bark+organics	organics	organics		
	Fauna (No./grab)				Avg	No./m²
Phylum Platyhelminthes					0	0
Class Turbellaria	1			4	1.25	54
Phylum Nematoda					0	0
Phylum Annelida					0	0
Subclass Oligochaeta	6		49	17	18	775
Subclass Hirudinea					0	0
Phylum Arthropoda					0	0
Class Crustacea					0	0
Order Isopoda					0	0
Family Asellidae	3		1		1	43
Order Amphipoda					0	0
Family Gammaridae					0	0
Class Insecta					0	0
Order Ephemeroptera					0	0
Family Ephemerellidae					0	0
Order Trichoptera					0	0
Family Leptoceridae					0	0
Order Diptera					0	0
Family Ceratopogonidae				1	0.25	11
Family Culicidae					0	0
Family Chironomidae		1	6	3	2.5	108
Chironomus sp.		1	9	1	2.75	118
Phylum Mollusca					0	0
Order Gastropoda					0	0
Family Physidae					0	0
Order Bivalvia					0	0
Family Sphaeriidae					0	0
Superfamily Dreissenacea					0	0
Dreissena polymorpha					0	0
Total # Number of Individuals	10	2	65	26		1109
Total Taxa	3	2	4	5		

Benthic Community Structure Survey
Fox River
Wisconsin Public Service Corporation - Oshkosh Former Manufactured Gas Plant Site

West 1 (12 feet from north shore)
N 44° 00.768
W088°32.106

	1 of 4	2 of 4	3 of 4	4 of 4		
Depth (feet)	13	11	11	11		
Sediment	organics	rock+sand	sand	sand		
	Fauna (No./grab)				Avg	No./m²
Phylum Platyhelminthes					0	0
Class Turbellaria	5	3	1	3	3	129
Phylum Nematoda					0	0
Phylum Annelida					0	0
Subclass Oligochaeta	22	2	4	7	8.75	377
Subclass Hirudinea		1			0.25	11
Phylum Arthropoda					0	0
Class Crustacea					0	0
Order Isopoda		1			0.25	11
Family Asellidae					0	0
Order Amphipoda					0	0
Family Gammaridae					0	0
Class Insecta					0	0
Order Ephemeroptera					0	0
Family Ephemerellidae					0	0
Order Trichoptera					0	0
Family Leptoceridae		1	1		0.5	22
Order Diptera					0	0
Family Ceratopogonidae					0	0
Family Culicidae					0	0
Family Chironomidae	12			1	3.25	140
Chironomus sp.	4				1	43
Phylum Mollusca					0	0
Order Gastropoda					0	0
Family Physidae					0	0
Order Bivalvia					0	0
Family Sphaeriidae					0	0
Superfamily Dreissenacea					0	0
Dreissena polymorpha	1	6			1.75	75
Total # of Individuals	44	14	6	11		807
Total Taxa	5	6	3	3		

Benthic Community Structure Survey
Fox River
Wisconsin Public Service Corporation - Oshkosh Former Manufactured Gas Plant Site

West 2 (50 feet from north shore)
N 44° 00.712
W088°32.123

	1 of 4	2 of 4	3 of 4	4 of 4		
Depth (feet)	19	23	23	23		
Sediment	bark	bark	bark	organics+bark		
	Fauna (No./grab)				Avg	No./m²
Phylum Platyhelminthes					0	0
Class Turbellaria	4	14			4.5	194
Phylum Nematoda					0	0
Phylum Annelida					0	0
Subclass Oligochaeta		2		3	1.25	54
Subclass Hirudinea				1	0.25	11
Phylum Arthropoda					0	0
Class Crustacea					0	0
Order Isopoda					0	0
Family Asellidae	3		3	3	2.25	97
Order Amphipoda					0	0
Family Gammaridae					0	0
Class Insecta					0	0
Order Ephemeroptera					0	0
Family Ephemerellidae					0	0
Order Trichoptera					0	0
Family Leptoceridae				1	0.25	11
Order Diptera					0	0
Family Ceratopogonidae					0	0
Family Culicidae					0	0
Family Chironomidae	6				1.5	65
Chironomus sp.					0	0
Phylum Mollusca					0	0
Order Gastropoda					0	0
Family Physidae					0	0
Order Bivalvia					0	0
Family Sphaeriidae					0	0
Superfamily Dreissenacea					0	0
Dreissena polymorpha	1				0.25	11
Total # of Indivduals	14	19	3	8		441
Total Taxa	4	3	1	4		

Benthic Community Structure Survey
Fox River
Wisconsin Public Service Corporation - Oshkosh Former Manufactured Gas Plant Site

West 3 (75 feet from north shore)
N 44° 00.754
W088°32.113

	1 of 4	2 of 4	3 of 4	4 of 4		
Depth (feet)	25	25	25	25		
Sediment	organics	coal+rock	organics	organics		
	Fauna (No./grab)				Avg	No./m²
Phylum Platyhelminthes					0	0
Class Turbellaria	2	10		1	3.25	140
Phylum Nematoda				1	0.25	11
Phylum Annelida					0	0
Subclass Oligochaeta	25	1	9	7	10.5	452
Subclass Hirudinea					0	0
Phylum Arthropoda					0	0
Class Crustacea					0	0
Order Isopoda					0	0
Family Asellidae					0	0
Order Amphipoda					0	0
Family Gammaridae					0	0
Class Insecta					0	0
Order Ephemeroptera					0	0
Family Ephemerellidae					0	0
Order Trichoptera					0	0
Family Leptoceridae					0	0
Order Diptera					0	0
Family Ceratopogonidae					0	0
Family Culicidae					0	0
Family Chironomidae	5	7		3	3.75	161
Chironomus sp.	6			5	2.75	118
Phylum Mollusca					0	0
Order Gastropoda					0	0
Family Physidae					0	0
Order Bivalvia					0	0
Family Sphaeriidae					0	0
Superfamily Dreissenacea					0	0
Dreissena polymorpha		6			1.5	65
Total # of Individuals	38	24	9	17		947
Total Taxa	4	4	1	5		

Benthic Community Structure Survey
Fox River
Wisconsin Public Service Corporation - Oshkosh Former Manufactured Gas Plant Site

West 4 (225 feet from north shore, mid-channel)
N 44° 00.737
W088°32.122

	1 of 4	2 of 4	3 of 4	4 of 4
Depth (feet)	29	29	29	29
Sediment	organics	organics	organics	organics

	Fauna (No./grab)				Avg	No./m²
Phylum Platyhelminthes					0	0
Class Turbellaria					0	0
Phylum Nematoda					0	0
Phylum Annelida					0	0
Subclass Oligochaeta	20	32	27	9	22	947
Subclass Hirudinea					0	0
Phylum Arthropoda					0	0
Class Crustacea					0	0
Order Isopoda					0	0
Family Asellidae	1	3	9	1	3.5	151
Order Amphipoda					0	0
Family Gammaridae					0	0
Class Insecta					0	0
Order Ephemeroptera					0	0
Family Ephemerellidae					0	0
Order Trichoptera					0	0
Family Leptoceridae	1				0.25	11
Order Diptera					0	0
Family Ceratopogonidae					0	0
Family Culicidae					0	0
Family Chironomidae	4	3	2	4	3.25	140
Chironomus sp.	4	4	5	2	3.75	161
Phylum Mollusca					0	0
Order Gastropoda					0	0
Family Physidae					0	0
Order Bivalvia					0	0
Family Sphaeriidae			1	1	0.5	22
Superfamily Dreissenacea					0	0
Dreissena polymorpha					0	0
Total # of Individuals	30	42	47	17		1432
Total Taxa	5	4	6	5		

Benthic Community Structure Survey
Fox River
Wisconsin Public Service Corporation - Oshkosh Former Manufactured Gas Plant Site

East 1 (25 feet from north shore)
N 44° 00.740
W088°32.052

	1 of 4	2 of 4	3 of 4	4 of 4		
Depth (feet)	10	10	10	10		
Sediment	coal+organics	coal+rock	coal+rock	coal+rock		
	Fauna (No./grab)				Avg	No./m²
Phylum Platyhelminthes					0	0
Class Turbellaria	1	3	4	1	2.25	97
Phylum Nematoda					0	0
Phylum Annelida					0	0
Subclass Oligochaeta	8	16	2	5	7.75	334
Subclass Hirudinea			5	1	1.5	65
Phylum Arthropoda					0	0
Class Crustacea					0	0
Order Isopoda					0	0
Family Asellidae			1		0.25	11
Order Amphipoda					0	0
Family Gammaridae	1				0.25	11
Class Insecta					0	0
Order Ephemeroptera			1		0.25	11
Family Ephemerellidae					0	0
Order Trichoptera					0	0
Family Leptoceridae					0	0
Order Diptera					0	0
Family Ceratopogonidae					0	0
Family Culicidae					0	0
Family Chironomidae	2	1	1	6	2.5	108
Chironomus sp.					0	0
Phylum Mollusca					0	0
Order Gastropoda					0	0
Family Physidae			2		0.5	22
Order Bivalvia					0	0
Family Sphaeriidae					0	0
Superfamily Dreissenacea					0	0
Dreissena polymorpha	1	1			0.5	22
Total # of Individuals	13	21	16	13		678
Total Taxa	5	4	7	4		

Benthic Community Structure Survey
Fox River
Wisconsin Public Service Corporation - Oshkosh Former Manufactured Gas Plant Site

East 2 (50 feet from north shore)
N 44° 00.736
W088°32.053

	1 of 4	2 of 4	3 of 4	4 of 4 *		
Depth (feet)	12	12	12	12		
Sediment	coal+rock	coal+rock	rock	rock		
		Fauna (No./grab)			Avg	No./m²
Phylum Platyhelminthes					0	0
Class Turbellaria	30	4	4	Yes	12.67	545
Phylum Nematoda					0	0
Phylum Annelida					0	0
Subclass Oligochaeta	1			Yes	0.33	14
Subclass Hirudinea				Yes	0	0
Phylum Arthropoda					0	0
Class Crustacea					0	0
Order Isopoda					0	0
Family Asellidae		1			0.33	14
Order Amphipoda					0	0
Family Gammaridae					0	0
Class Insecta					0	0
Order Ephemeroptera					0	0
Family Ephemerellidae					0	0
Order Trichoptera					0	0
Family Leptoceridae					0	0
Order Diptera					0	0
Family Ceratopogonidae					0	0
Family Culicidae					0	0
Family Chironomidae	15		1		5.33	230
Chironomus sp.					0	0
Phylum Mollusca					0	0
Order Gastropoda					0	0
Family Physidae					0	0
Order Bivalvia					0	0
Family Sphaeriidae	1				0.33	14
Superfamily Dreissenacea					0	0
Dreissena polymorpha	6	1	2		3	129
Total # of Individuals	55	6	9			947
Total Taxa	6	3	4			

Benthic Community Structure Survey
Fox River
Wisconsin Public Service Corporation - Oshkosh Former Manufactured Gas Plant Site

East 3 (225 feet from north shore, mid-channel)
N 44° 00.719
W088°32.075

	1 of 3	2 of 3	3 of 3
Depth (feet)	25	27	27
Sediment	organics	organics	organics

	Fauna (No./grab)			Avg	No./m²
Phylum Platyhelminthes				0	0
Class Turbellaria	2		1	1	43
Phylum Nematoda				0	0
Phylum Annelida				0	0
Subclass Oligochaeta	4	7	15	8.67	373
Subclass Hirudinea	3			1	43
Phylum Arthropoda				0	0
Class Crustacea				0	0
Order Isopoda				0	0
Family Asellidae				0	0
Order Amphipoda				0	0
Family Gammaridae				0	0
Class Insecta				0	0
Order Ephemeroptera				0	0
Family Ephemerellidae				0	0
Order Trichoptera				0	0
Family Leptoceridae				0	0
Order Diptera				0	0
Family Ceratopogonidae				0	0
Family Culicidae				0	0
Family Chironomidae	2	2	4	2.67	115
Chironomus sp.	1		3	1.33	57
Phylum Mollusca				0	0
Order Gastropoda				0	0
Family Physidae				0	0
Order Bivalvia				0	0
Family Sphaeriidae				0	0
Superfamily Dreissenacea				0	0
Dreissena polymorpha				0	0
Total # of Individuals	12	9	23		631
Total Taxa	5	2	4		

Benthic Community Structure Survey
Fox River
Wisconsin Public Service Corporation - Oshkosh Former Manufactured Gas Plant Site

East 4 (50 feet from south shore)
N 44° 00.694
W088°32.093

	1 of 4	2 of 4	3 of 4	4 of 4		
Depth (feet)	22	20	20	25		
Sediment	bark+rock	bark+rock	bark+ organics	organics		
	Fauna (No./grab)				Avg	No./m^2
Phylum Platyhelminthes					0	0
Class Turbellaria	1	39	2	8	12.5	538
Phylum Nematoda					0	0
Phylum Annelida					0	0
Subclass Oligochaeta	4	4	19	11	9.5	409
Subclass Hirudinea					0	0
Phylum Arthropoda					0	0
Class Crustacea					0	0
Order Isopoda					0	0
Family Asellidae	1	2	5	4	3	129
Order Amphipoda					0	0
Family Gammaridae		1			0.25	11
Class Insecta					0	0
Order Ephemeroptera					0	0
Family Ephemerellidae					0	0
Order Trichoptera					0	0
Family Leptoceridae					0	0
Order Diptera					0	0
Family Ceratopogonidae					0	0
Family Culicidae					0	0
Family Chironomidae		2	1	7	2.5	108
Chironomus sp.	2				0.5	22
Phylum Mollusca					0	0
Order Gastropoda					0	0
Family Physidae		1			0.25	11
Order Bivalvia					0	0
Family Sphaeriidae					0	0
Superfamily Dreissenacea					0	0
Dreissena polymorpha		3		2	1.25	54
Total # of Individuals	8	53	27	36		1281
Total Taxa	4	8	4	6		

Benthic Community Structure Survey
Fox River
Wisconsin Public Service Corporation - Oshkosh Former Manufactured Gas Plant Site

NOTES:

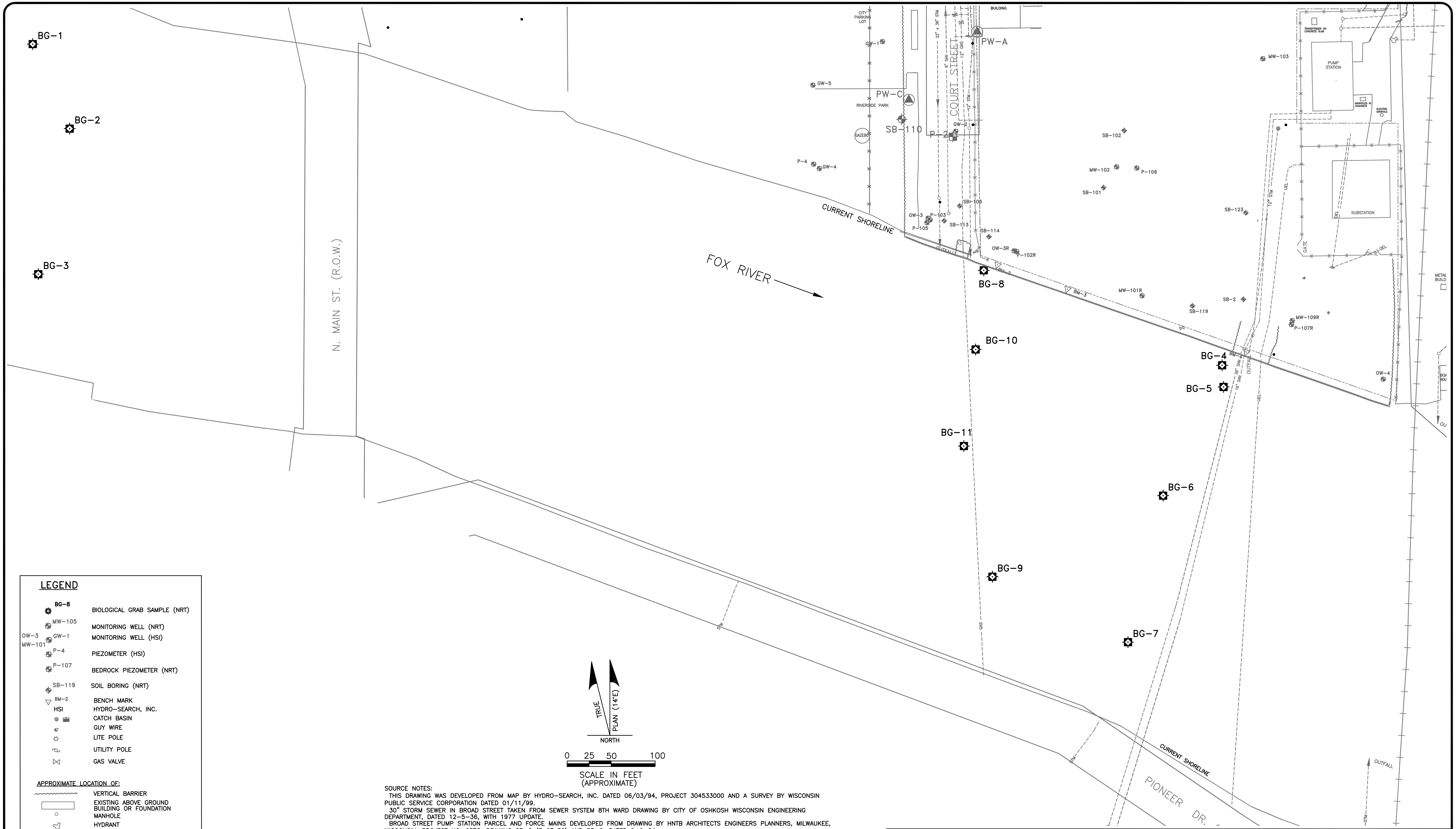
Macroinvertebrate samples collected from the Fox River, located in the City of Oshkosh, Winnebago County, WI. on July 9, 2001.

The samples were screened (0.5 mm) to separate the fine sediment from the organisms and preserved in 70% alcohol in the field.

All samples hand sorted for approximately 30 minutes each.

The East 2, replicate 4 sample was qualitative only due to rocky substrate hampering the Ponar ™ Grab.

1 of 4:	Indicates replicate number 1 of a total of 4 replicate samples for the station.
(No./grab):	The number of individuals collected per single grab sample.
Avg:	The average number of individuals collected per station.
No./m^2:	The calculated number of potential idividuals per square meter of substrate.
organics:	Substrate consisting of mainly decaying organic material (gyttja).
Depth (feet):	Depth in feet fromsurface of river to sediment surface.



LEGEND

BG-8	BIOLOGICAL GRAB SAMPLE (NRT)
MW-105	MONITORING WELL (NRT)
OW-3 MW-101 GW-1	MONITORING WELL (HSI)
P-4	PIEZOMETER (HSI)
P-107	BEDROCK PIEZOMETER (NRT)
SB-119	SOIL BORING (NRT)
▽ BM-2	BENCH MARK
HSI	HYDRO-SEARCH, INC.
⊜ ▬	CATCH BASIN
	GUY WIRE
☼	LITE POLE
	UTILITY POLE
⋈	GAS VALVE

APPROXIMATE LOCATION OF:

〰〰〰	VERTICAL BARRIER
▭	EXISTING ABOVE GROUND BUILDING OR FOUNDATION
○	MANHOLE
	HYDRANT
┼─┼─┼	RAILROAD
─×─×─	CHAIN LINK FENCE
----OEL----	OVERHEAD ELECTRIC LINE
----UEL-----	UNDERGROUND ELECTRIC LINE
----GAS----	NATURAL GAS LINE
----SAN----	SANITARY SEWER LINE
----STM----	STORM SEWER LINE
----WTR----	WATER LINE

SOURCE NOTES:

THIS DRAWING WAS DEVELOPED FROM MAP BY HYDRO-SEARCH, INC. DATED 06/03/94, PROJECT 304533000 AND A SURVEY BY WISCONSIN PUBLIC SERVICE CORPORATION DATED 01/11/99.

30" STORM SEWER IN BROAD STREET TAKEN FROM SEWER SYSTEM 8TH WARD DRAWING BY CITY OF OSHKOSH WISCONSIN ENGINEERING DEPARTMENT, DATED 12-5-36, WITH 1977 UPDATE.

BROAD STREET PUMP STATION PARCEL AND FORCE MAINS DEVELOPED FROM DRAWING BY HNTB ARCHITECTS ENGINEERS PLANNERS, MILWAUKEE, WISCONSIN, PROJECT NO: 6378, DRAWING SP-2 (3 OF 32) AND PP-2, DATED 9-6-84.

SURVEY BY ROEHLIG LAND SURVEYING & CONSULTING LTD., OSHKOSH, WISCONSIN, DRAWING AC3771B.DWG, DATED AUGUST 17, 2001, REVISED AUGUST 28, 2001, OCTOBER 29, 2001 AND NOVEMBER 12, 2001.

HP GAS LINE FROM DRAWING BY FORD, BACON AND DAVIS, INC., ENGINEERS, DRAWING NO. 60013-FI-S, REVISED DATED NOVEMBER 9, 1953.

WATER LINES AND HYDRANTS, STORM AND SANITARY LINES IN CEAPE AVENUE ARE TAKEN FROM CITY OF OSHKOSH ENGINEERING DIVISION DRAWING, DATED NOVEMBER 9, 1998.

BM-1 WAS FIELD MEASURED BY NRT. BM-2 THROUGH BM-4 WERE SURVEYED BY ROEHLIG LAND SURVEYING & CONSULTING LTD., OSHKOSH, WISCONSIN, NO. 2771A, DATED APRIL 24, 2001. BM-1 TOP OF HYDRANT OPERATING NUT, ELEVATION 754.18. BM-2 SPIKE IN WOOD RETAINING WALL PER WPSC SURVEY, ELEVATION 749.60 (749.52 WPSC). BM-3 PK NAIL SET ON TOP OF WOOD WALL, ELEVATION 749.96. BM-4 CHISELED "V" IN TOP OF RETAINING WALL, ELEVATION 749.78. ELEVATIONS BASED ON USGS DATUM.

SB-125 WAS INSTALLED IN OCTOBER 2001, LOCATION IS APPROXIMATED FROM FIELD MEASUREMENTS BY NRT.

DIGITAL FILE FROM CITY OF OSHKOSH DATED 2001.

TO ALIGN SHORELINE WITH WPSC AND CITY OF OSHKOSH BASE MAP ROTATED 1° TO EACH OTHER.

Natural
Resource
Technology
N R T

PRELIMINARY SURVEY OF BENTHIC COMMUNITY

SEDIMENT INVESTIGATION REPORT
FORMER OSHKOSH MANUFACTURED GAS PLANT SITE
WISCONSIN PUBLIC SERVICE CORPORATION
CITY OF OSHKOSH, WISCONSIN

CAD FILE: 1644-1-APPB1.DWG
REFERENCE FILES:

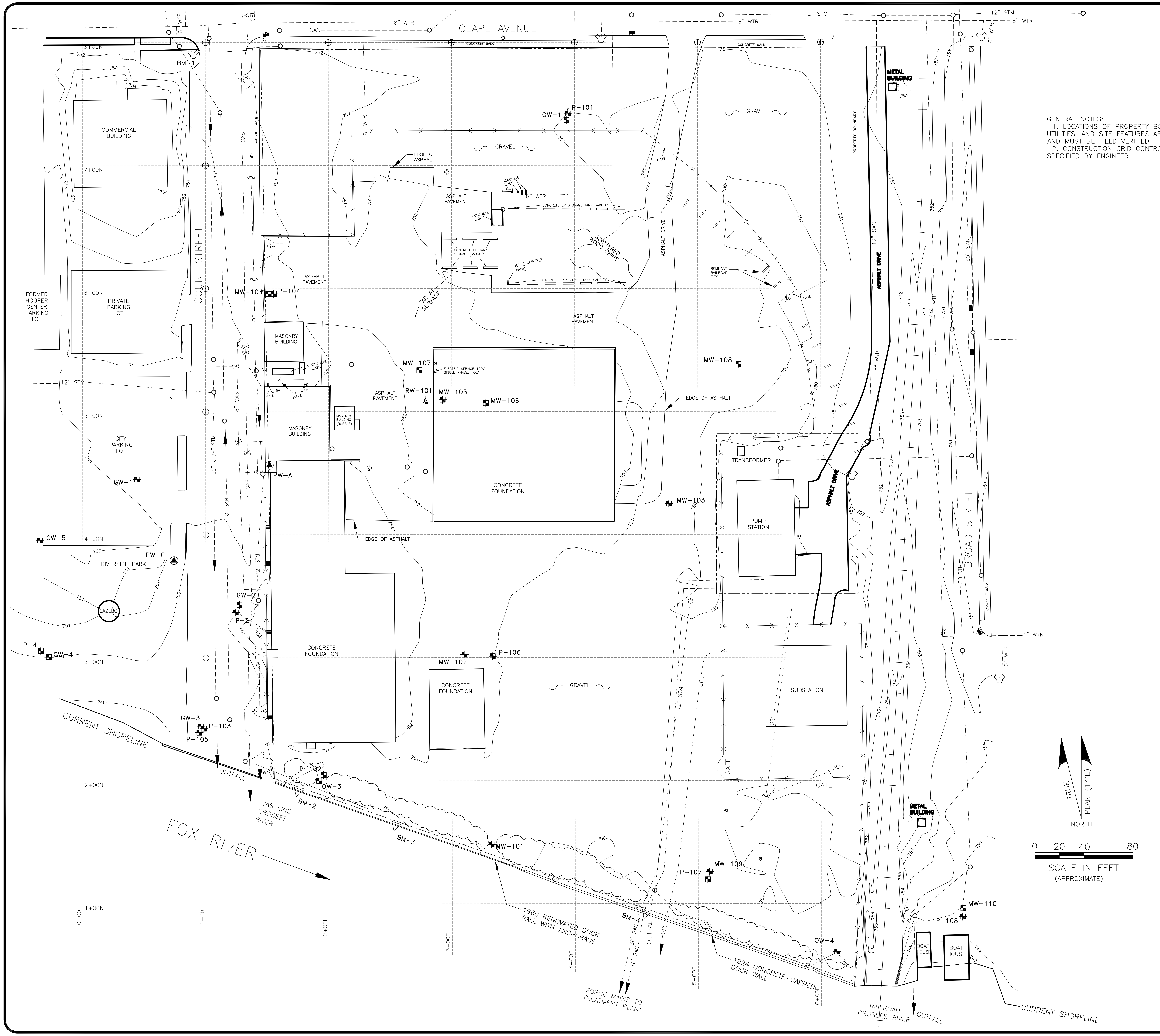
PROJECT NO. 1644/1/APP
DRAWN BY: TAS 03/26/04
CHECKED BY: JMK 04/09/04
APPROVED BY: JTB 08/02/05
APPENDIX B-1

APPENDIX D

REMEDIAL ACTION DOCUMENTATION

APPENDIX D1

REMEDIAL ACTION
DOCUMENTATION FIGURES



GENERAL NOTES:
1. LOCATIONS OF PROPERTY BOUNDARIES, UTILITIES, AND SITE FEATURES ARE APPROXIMATE AND MUST BE FIELD VERIFIED.
2. CONSTRUCTION GRID CONTROL POINTS TO BE SPECIFIED BY ENGINEER.

LEGEND

751	EXISTING CONTOURS
MW-105	MONITORING WELL (NRT)
OW-1 GW-1 MW-101	MONITORING WELL (HSI)
P-4 P-101	PIEZOMETER (HSI)
P-104	BEDROCK PIEZOMETER (NRT)
RW-101	RECOVERY WELL (NRT)
PW-A	INDUSTRIAL SUPPLY WELL
▽ BM-2	BENCH MARK
HSI	HYDRO-SEARCH, INC.
⊕	CONSTRUCTION GRID POINT (CHISELED CROSS OR PK NAIL)
	CATCH BASIN
	GUY WIRE
☼	LITE POLE
	UTILITY POLE
⋈	GAS VALVE

APPROXIMATE LOCATION OF:

	PROPERTY BOUNDARY
▭	EXISTING ABOVE GROUND BUILDING OR FOUNDATION
○	MANHOLE
	HYDRANT
	RAILROAD
	CHAIN LINK FENCE
---OEL---	OVERHEAD ELECTRIC LINE
---UEL---	UNDERGROUND ELECTRIC LINE
---GAS---	NATURAL GAS LINE
---SAN---	SANITARY SEWER LINE
---STM---	STORM SEWER LINE
---WTR---	WATER LINE
	TREES AND SHRUBS

SOURCE NOTES:

THIS DRAWING WAS DEVELOPED FROM MAP BY HYDRO-SEARCH, INC. DATED 06/03/94, PROJECT 304533000 AND A SURVEY BY WISCONSIN PUBLIC SERVICE CORPORATION DATED 01/11/99.

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BROAD STREET PUMP STATION PARCEL AND FORCE MAINS DEVELOPED FROM DRAWING BY HNTB ARCHITECTS ENGINEERS PLANNERS, MILWAUKEE, WISCONSIN, PROJECT NO: 6378, DRAWING SP-2 (3 OF 32) AND PP-2, DATED 9-6-84.

LOCATIONS OF SEWER LATERALS, TAR WELLS, GAS HOLDERS, TAR STILL, TAR SEPARATORS, AND ASSOCIATIVE PIPING TAKEN FROM WPSC DRAWING NO. 140, DATED 1925.

SURVEY BY ROEHLIG LAND SURVEYING & CONSULTING LTD., OSHKOSH, WISCONSIN, DRAWING AC3771B.DWG, DATED AUGUST 17, 2001, REVISED AUGUST 28, 2001, OCTOBER 29, 2001 AND NOVEMBER 12, 2001.

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SB-125 WAS INSTALLED IN OCTOBER 2001, LOCATION IS APPROXIMATED FROM FIELD MEASUREMENTS BY NRT.

PROJECT NO. 1312/6.3
DRAWING NO. 1312-63-D100
SHEET NO. C010

SITE PLAN, PRE-EXISTING CONDITIONS

REMEDIAL CONSTRUCTION
FORMER OSHKOSH MANUFACTURE GAS PLANT
WISCONSIN PUBLIC SERVICE CORPORATION
CITY OF OSHKOSH, WISCONSIN

DRAWN BY: TAS/RLH DATE: 03/08/02
CHECKED BY: HMS DATE: 03/08/02
APPROVED BY: SLF DATE: 03/08/02

Natural Resource Technology
N R T

REVISION:	DATE:	APP'D BY:
1. RECORD DRAWINGS	01/09/03	HMS
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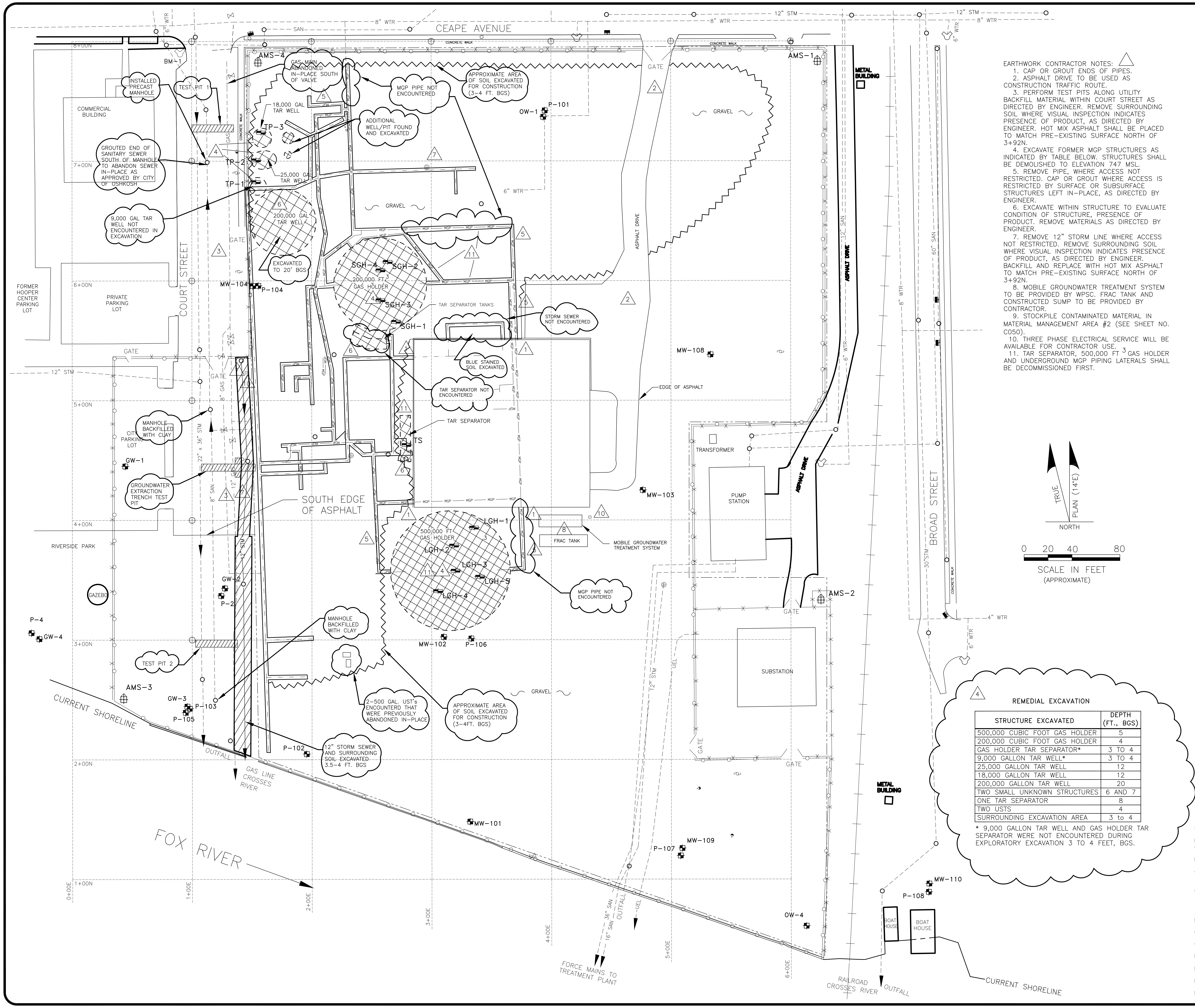

EARTHWORK CONTRACTOR NOTES: △

1. CAP OR GROUT ENDS OF PIPES.
2. ASPHALT DRIVE TO BE USED AS CONSTRUCTION TRAFFIC ROUTE.
3. PERFORM TEST PITS ALONG UTILITY BACKFILL MATERIAL WITHIN COURT STREET AS DIRECTED BY ENGINEER. REMOVE SURROUNDING SOIL WHERE VISUAL INSPECTION INDICATES PRESENCE OF PRODUCT, AS DIRECTED BY ENGINEER. HOT MIX ASPHALT SHALL BE PLACED TO MATCH PRE-EXISTING SURFACE NORTH OF 3+92N.
4. EXCAVATE FORMER MGP STRUCTURES AS INDICATED BY TABLE BELOW. STRUCTURES SHALL BE DEMOLISHED TO ELEVATION 747 MSL.
5. REMOVE PIPE, WHERE ACCESS NOT RESTRICTED. CAP OR GROUT WHERE ACCESS IS RESTRICTED BY SURFACE OR SUBSURFACE STRUCTURES LEFT IN-PLACE, AS DIRECTED BY ENGINEER.
6. EXCAVATE WITHIN STRUCTURE TO EVALUATE CONDITION OF STRUCTURE, PRESENCE OF PRODUCT. REMOVE MATERIALS AS DIRECTED BY ENGINEER.
7. REMOVE 12" STORM LINE WHERE ACCESS NOT RESTRICTED. REMOVE SURROUNDING SOIL WHERE VISUAL INSPECTION INDICATES PRESENCE OF PRODUCT, AS DIRECTED BY ENGINEER. BACKFILL AND REPLACE WITH HOT MIX ASPHALT TO MATCH PRE-EXISTING SURFACE NORTH OF 3+92N.
8. MOBILE GROUNDWATER TREATMENT SYSTEM TO BE PROVIDED BY WPSC. FRAC TANK AND CONSTRUCTED SUMP TO BE PROVIDED BY CONTRACTOR.
9. STOCKPILE CONTAMINATED MATERIAL IN MATERIAL MANAGEMENT AREA #2 (SEE SHEET NO. C050).
10. THREE PHASE ELECTRICAL SERVICE WILL BE AVAILABLE FOR CONTRACTOR USE.
11. TAR SEPARATOR, 500,000 FT ^{3} GAS HOLDER AND UNDERGROUND MGP PIPING LATERALS SHALL BE DECOMMISSIONED FIRST.

△4

REMEDIAL EXCAVATION

STRUCTURE EXCAVATED	DEPTH (FT., BGS)
500,000 CUBIC FOOT GAS HOLDER	5
200,000 CUBIC FOOT GAS HOLDER	4
GAS HOLDER TAR SEPARATOR*	3 TO 4
9,000 GALLON TAR WELL*	3 TO 4
25,000 GALLON TAR WELL	12
18,000 GALLON TAR WELL	12
200,000 GALLON TAR WELL	20
TWO SMALL UNKNOWN STRUCTURES	6 AND 7
ONE TAR SEPARATOR	8
TWO USTS	4
SURROUNDING EXCAVATION AREA	3 to 4

* 9,000 GALLON TAR WELL AND GAS HOLDER TAR SEPARATOR WERE NOT ENCOUNTERED DURING EXPLORATORY EXCAVATION 3 TO 4 FEET, BGS.

LEGEND

— MGP — MGP —	MGP UNDERGROUND UTILITY EXCAVATION LIMITS (ESTIMATED 6' DEPTH)
▨	EXCAVATION OF MGP STURCTURES
⊕ AMS-1	AIR MONITORING STATION
MW-108	MONITORING WELL (NRT)
OW-1 MW-101 GW-1	MONITORING WELL (HSI)
P-4 P-101	PIEZOMETER (HSI)
P-104	BEDROCK PIEZOMETER (NRT)
HSI	HYDRO-SEARCH, INC.
◎	CATCH BASIN
⊕	CONSTRUCTION GRID POINT (CHISELED CROSS OR PK NAIL)
	GUY WIRE
☼	LITE POLE
	UTILITY POLE
⋈	GAS VALVE
SGH-1 LGH-1 TP-1	TEST PIT

APPROXIMATE LOCATION OF:

◌	EXISTING SUBSURFACE MGP STRUCTURE
▭	EXISTING ABOVE GROUND BUILDING OR FOUNDATION
— - —	PROPERTY BOUNDARY
—o—o—	SILT FENCE
∿∿∿	SOIL EXCAVATION EXTENT
○	MANHOLE
	HYDRANT
—+—+—	RAILROAD
—×—×—	CHAIN LINK FENCE
---UEL---	UNDERGROUND ELECTRIC LINE
---GAS---	NATURAL GAS LINE
---SAN---	SANITARY SEWER LINE
---STM---	STORM SEWER LINE
---WTR---	WATER LINE
	UNDERGROUND MGP SEWER PIPING
— MGP — MGP — MGP —	UNDERGROUND MANUFACTURED GAS PIPING
BGS	BELOW GROUND SURFACE
	RECORD DRAWINGS COMMENTS AND CHANGES TO CONSTRUCTION PLANS

SOURCE NOTES:

THIS DRAWING WAS DEVELOPED FROM MAP BY HYDRO-SEARCH, INC. DATED 06/03/94, PROJECT 304533000 AND A SURVEY BY WISCONSIN PUBLIC SERVICE CORPORATION DATED 01/11/99.

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SB-125 WAS INSTALLED IN OCTOBER 2001, LOCATION IS APPROXIMATED FROM FIELD MEASUREMENTS BY NRT.

PROJECT NO. 1312/6.3
DRAWING NO. 1312-63-D103
SHEET NO. C040

EXCAVATION PLAN

REMEDIAL CONSTRUCTION
FORMER OSHKOSH MANUFACTURE GAS PLANT
WISCONSIN PUBLIC SERVICE CORPORATION
CITY OF OSHKOSH, WISCONSIN

DRAWN BY: TAS/RLH	CHECKED BY: HMS	APPROVED BY: SLF
DATE: 03/08/02	DATE: 03/08/02	DATE: 03/08/02

Natural Resource Technology
N R T

REVISION:	DATE:	APP'D BY:
1. RECORD DRAWINGS	01/09/03	HMS
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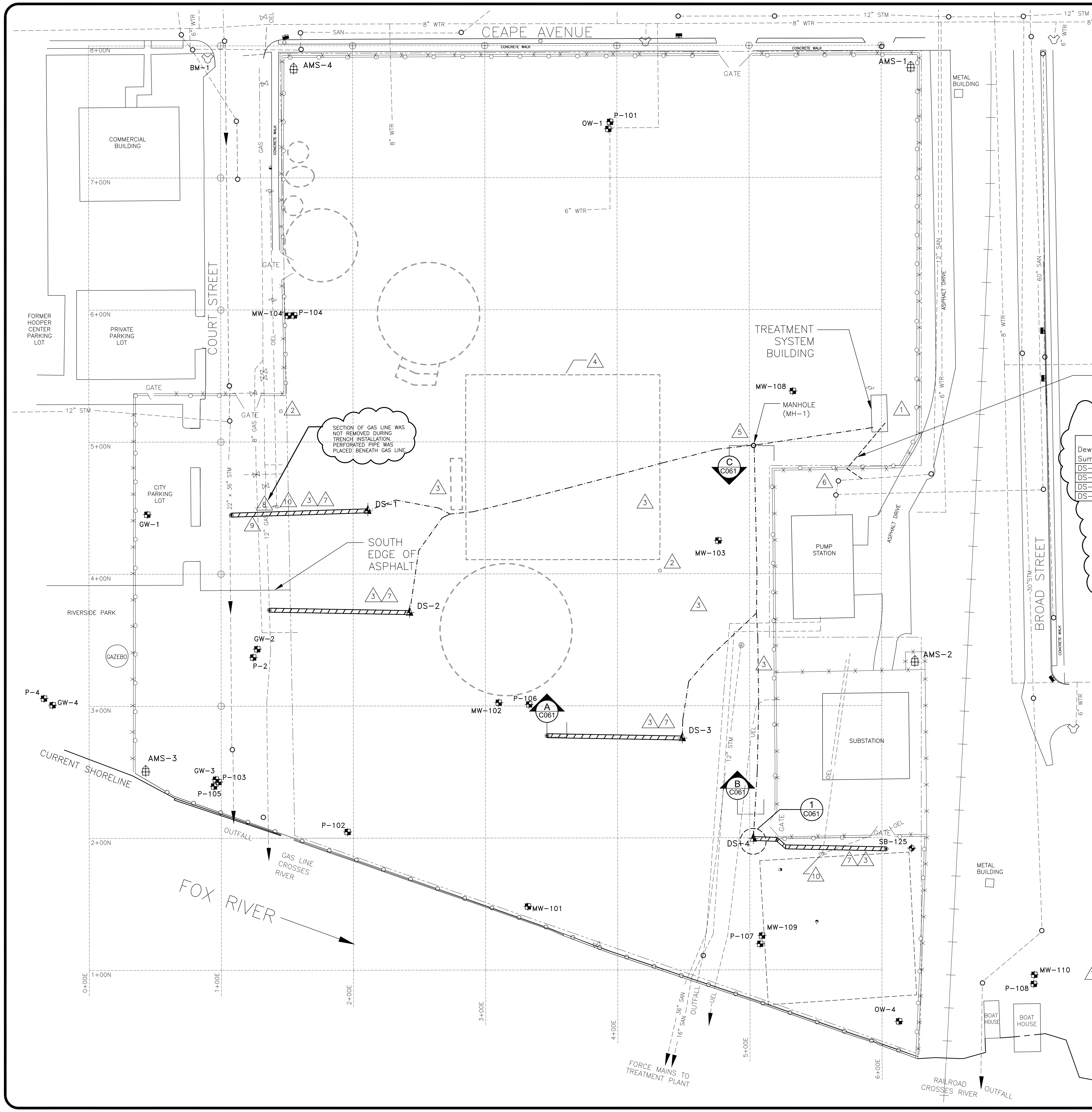


EARTHWORK CONTRACTOR NOTES:

1. PROPOSED 12' x 28' TREATMENT BUILDING TO BE INSTALLED FOLLOWING PLACEMENT OF EARTHEN CAP.
2. THREE PHASE ELECTRICAL SERVICE WILL BE AVAILABLE FOR CONTRACTOR USE.
3. EXCAVATED MATERIAL TO BE USED AS FILL BELOW EARTHEN CAP OR THERMALLY TREATED, AS DIRECTED BY ENGINEER.
4. FOUNDATION TO BE REMOVED PRIOR TO INSTALLING DS-1 AND DS-2 CONVEYANCE PIPING.
5. INSTALL CUSTOMIZED ~~42"~~ 48" DIA. HDPE MANHOLE.
6. CONNECT 4" DIA. PVC SANITARY SEWER PIPE AT A 5% SLOPE TO SANITARY MANHOLE PER CITY OF OSHKOSH SPECIFICATIONS.
7. ~~SEE TRENCH, SUMP AND CLEANOUT CONSTRUCTION SCHEDULES LISTED BELOW.~~
8. CUT SECTION OF ABANDONED GAS LINE FOR TRENCH INSTALLATION. WELD STEEL CAPS TO ENDS OF PIPE LEFT IN-PLACE.
9. ASPHALT WITHIN INTERCEPT TRENCH #1 OF COURT STREET SHALL BE SAW CUT AND DISPOSED AT CONSTRUCTION LANDFILL. HOT MIX ASPHALT SHALL BE PLACED WITHIN COURT STREET UPON COMPLETION OF WORK.
10. CONTRACTOR SHALL COORDINATE WITH COMPANY FOR POWER POLE SUPPORT PRIOR TO INSTALLATION OF DS-4 TRENCH.

7

Revised Dewatering Sump Schedule

Dewatering Sump	Top of Sump Ele. (ft, MSL)	Top of Vault Cover Ele. (ft, MSL)	Bottom of Sump (ft, MSL)
DS-1	750.95	752.38	739.45
DS-2	752.06	753.06	740.56
DS-3	749.57	750.96	738.07
DS-4	750.77	751.72	739.27

7

Revised Trench Cleanout Schedule

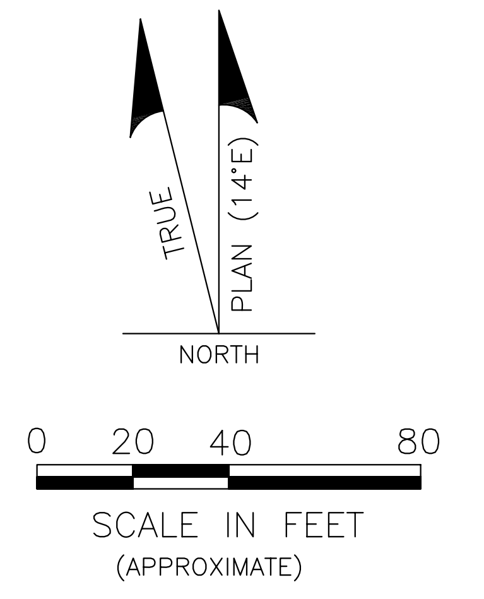
Intercept Trench/ Dewatering Sump	Top of Flushmount (ft, MSL)
IT/DS-1	750.06
IT/DS-2	750.23
IT/DS-3	753.02
IT/DS-4	751.29

LEGEND

DS-1	GROUNDWATER INTERCEPT TRENCH WITH DEWATERING SUMP AND CLEANOUT
	GROUNDWATER CONVEYANCE PIPING
AMS-1	AIR MONITORING STATION
MW-105	MONITORING WELL (NRT)
GW-1 OW-1	MONITORING WELL (HSI)
P-4 P-101	PIEZOMETER (HSI)
P-104	BEDROCK PIEZOMETER (NRT)
HSI	HYDRO-SEARCH, INC.
⊕	CONSTRUCTION GRID POINT (CHISELED CROSS OR PK NAIL)
	CATCH BASIN
	GUY WIRE
☼	LITE POLE
	UTILITY POLE
⋈	GAS VALVE

APPROXIMATE LOCATION OF:

	PROPERTY BOUNDARY
	SILT FENCE
	EXISTING SUBSURFACE MGP STRUCTURE
	BUILDING FOUNDATIONS
○	MANHOLE
	HYDRANT
	RAILROAD
—X—X—	CHAIN LINK FENCE
---OEL---	OVERHEAD ELECTRIC LINE
---UEL---	UNDERGROUND ELECTRIC LINE
---GAS---	NATURAL GAS LINE
---SAN---	SANITARY SEWER LINE
---STM---	STORM SEWER LINE
---WTR---	WATER LINE
	RECORD DRAWINGS COMMENTS AND CHANGES TO CONSTRUCTION PLANS



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SB-125 WAS INSTALLED IN OCTOBER 2001, LOCATION IS APPROXIMATED FROM FIELD MEASUREMENTS BY NRT. AS-BUILT LOCATION OF GROUNDWATER EXTRACTION TRENCHES AND TREATMENT BUILDING SURVEY BY ROEHLIG LAND SURVEYING & CONSULTING LTD., OSHKOSH, WISCONSIN, NO. 3771C, DATED JULY 1, 2002.

DEWATERING SUMPS, TRENCHES AND CLEANOUTS SURVEYED BY ROEHLIG LAND SURVEYING AND CONSULTING, LTD., OSHKOSH, WISCONSIN, NO. 3771E, DATED 05/17/02 AND 7/10/02.

7

~~Trench Construction Schedule~~

Intercept Trench/ Dewatering Sump	Representative Soil Boring Log	Approx. Top of Lean Clay (ft, BGS)	Approx. Existing Surface Elev. (ft, MSL)	Min. Trench Bottom Elev (ft, MSL)*	Max. Trench Bottom Elev. (ft, MSL)	Avg. Trench Depth (ft, BGS)	Trench Length (lin. Ft)
~~IT/DS-1~~	~~BZ-7~~	~~11.5~~	~~750.5~~	~~738.0~~	~~737.0~~	~~13.0~~	~~90~~
~~IT/DS-2~~	~~MW-102~~	~~12.5~~	~~751.5~~	~~738.0~~	~~737.0~~	~~14.0~~	~~100~~
~~IT/DS-3~~	~~OW-2~~	~~13~~	~~751~~	~~737.0~~	~~736.0~~	~~14.5~~	~~100~~
~~IT/DS-4~~	~~SB-125~~	~~10.0~~	~~751~~	~~740.0~~	~~739.0~~	~~11.5~~	~~100~~

~~* Bottom of trench shall be at least 1' into clay layer.~~

PROJECT NO.
1312/6.3

DRAWING NO.
1312-63-D105

SHEET NO.
C060

GROUNDWATER EXTRACTION SYSTEM PLAN

REMEDIAL CONSTRUCTION
FORMER OSHKOSH MANUFACTURE GAS PLANT
WISCONSIN PUBLIC SERVICE CORPORATION
CITY OF OSHKOSH, WISCONSIN

DRAWN BY: TAS/RLH
DATE: 03/08/02
CHECKED BY: HMS
DATE: 03/08/02
APPROVED BY: SLF
DATE: 03/08/02

Natural
Resource
Technology
N R T

REVISION:	DATE:	APP'D BY:
1. RECORD DRAWINGS	01/09/03	HMS
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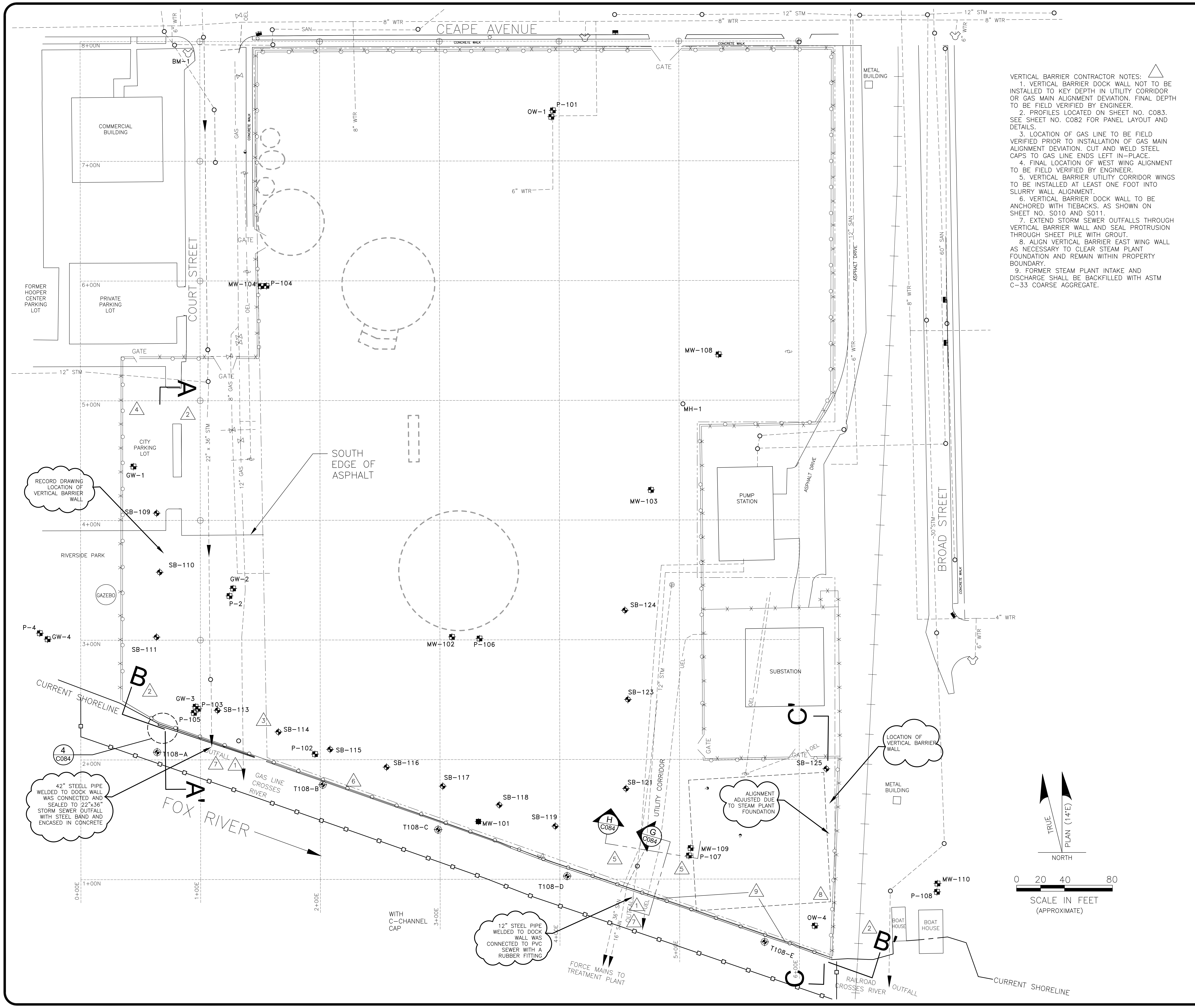

VERTICAL BARRIER CONTRACTOR NOTES: △

1. VERTICAL BARRIER DOCK WALL NOT TO BE INSTALLED TO KEY DEPTH IN UTILITY CORRIDOR OR GAS MAIN ALIGNMENT DEVIATION. FINAL DEPTH TO BE FIELD VERIFIED BY ENGINEER.
2. PROFILES LOCATED ON SHEET NO. C083. SEE SHEET NO. C082 FOR PANEL LAYOUT AND DETAILS.
3. LOCATION OF GAS LINE TO BE FIELD VERIFIED PRIOR TO INSTALLATION OF GAS MAIN ALIGNMENT DEVIATION. CUT AND WELD STEEL CAPS TO GAS LINE ENDS LEFT IN-PLACE.
4. FINAL LOCATION OF WEST WING ALIGNMENT TO BE FIELD VERIFIED BY ENGINEER.
5. VERTICAL BARRIER UTILITY CORRIDOR WINGS TO BE INSTALLED AT LEAST ONE FOOT INTO SLURRY WALL ALIGNMENT.
6. VERTICAL BARRIER DOCK WALL TO BE ANCHORED WITH TIEBACKS. AS SHOWN ON SHEET NO. S010 AND S011.
7. EXTEND STORM SEWER OUTFALLS THROUGH VERTICAL BARRIER WALL AND SEAL PROTRUSION THROUGH SHEET PILE WITH GROUT.
8. ALIGN VERTICAL BARRIER EAST WING WALL AS NECESSARY TO CLEAR STEAM PLANT FOUNDATION AND REMAIN WITHIN PROPERTY BOUNDARY.
9. FORMER STEAM PLANT INTAKE AND DISCHARGE SHALL BE BACKFILLED WITH ASTM C-33 COARSE AGGREGATE.

LEGEND

⊕ T108	SEDIMENT BORING (NRT)
◆ SB-109	SOIL BORING (NRT)
■ MW-108	MONITORING WELL (NRT)
■ GW-1 OW-1	MONITORING WELL (HSI)
■ MW-101	ABANDONED MONITORING WELL (NRT)
■ P-4 P-101	PIEZOMETER (HSI)
■ P-104	BEDROCK PIEZOMETER (NRT)
HSI	HYDRO-SEARCH, INC.
⊕	CONSTRUCTION GRID POINT (CHISELED CROSS OR PK NAIL)
◎ ■	CATCH BASIN
◐	GUY WIRE
☼	LITE POLE
○	UTILITY POLE
⋈	GAS VALVE

APPROXIMATE LOCATION OF:

—·—·—	PROPERTY BOUNDARY
—○—○—	SILT FENCE
—□—□—	SILT CURTAIN/BOOM
◌	EXISTING SUBSURFACE MGP STRUCTURE
▭	BUILDING FOUNDATIONS
○	MANHOLE
⚲	HYDRANT
—┼—┼—	RAILROAD
—×—×—	CHAIN LINK FENCE
----OEL----	OVERHEAD ELECTRIC LINE
----UEL----	UNDERGROUND ELECTRIC LINE
----GAS----	NATURAL GAS LINE
----SAN----	SANITARY SEWER LINE
----STM----	STORM SEWER LINE
----WTR----	WATER LINE
☁	RECORD DRAWINGS COMMENTS AND CHANGES TO CONSTRUCTION PLANS

SOURCE NOTES:

THIS DRAWING WAS DEVELOPED FROM MAP BY HYDRO-SEARCH, INC. DATED 06/03/94, PROJECT 304533000 AND A SURVEY BY WISCONSIN PUBLIC SERVICE CORPORATION DATED 01/11/99.

THE 1903 AND 1890 SHORELINES ARE FROM SANBORN MAPS. HISTORICAL SHORELINE LOCATIONS ARE APPROXIMATE.

30" STORM SEWER IN BROAD STREET TAKEN FROM SEWER SYSTEM 8TH WARD DRAWING BY CITY OF OSHKOSH WISCONSIN ENGINEERING DEPARTMENT, DATED 12-5-36, WITH 1977 UPDATE.

BROAD STREET PUMP STATION PARCEL AND FORCE MAINS DEVELOPED FROM DRAWING BY HNTB ARCHITECTS ENGINEERS PLANNERS, MILWAUKEE, WISCONSIN, PROJECT NO: 6378, DRAWING SP-2 (3 OF 32) AND PP-2, DATED 9-6-84.

LOCATIONS OF SEWER LATERALS, TAR WELLS, GAS HOLDERS, TAR STILL, TAR SEPARATORS, AND ASSOCIATIVE PIPING TAKEN FROM WPSC DRAWING NO. 140, DATED 1925.

SURVEY BY ROEHLIG LAND SURVEYING & CONSULTING LTD., OSHKOSH, WISCONSIN, DRAWING AC3771B.DWG, DATED AUGUST 17, 2001, REVISED AUGUST 28, 2001, OCTOBER 29, 2001 AND NOVEMBER 12, 2001.

HP GAS LINE FROM DRAWING BY FORD, BACON AND DAVIS, INC., ENGINEERS, DRAWING NO. 60013-FI-S, REVISED DATED NOVEMBER 9, 1953.

WATER LINES AND HYDRANTS, STORM AND SANITARY LINES IN CEAPE AVENUE ARE TAKEN FROM CITY OF OSHKOSH ENGINEERING DIVISION DRAWING, DATED NOVEMBER 9, 1998.

BM-1 WAS FIELD MEASURED BY NRT. BM-2 THROUGH BM-4 WERE SURVEYED BY ROEHLIG LAND SURVEYING & CONSULTING LTD., OSHKOSH, WISCONSIN, NO. 2771A, DATED APRIL 24, 2001. BM-1 TOP OF HYDRANT OPERATING NUT, ELEVATION 754.18. BM-2 SPIKE IN WOOD RETAINING WALL PER WPSC SURVEY, ELEVATION 749.60 (749.52 WPSC). BM-3 PK NAIL SET ON TOP OF WOOD WALL, ELEVATION 749.96. BM-4 CHISELED "V" IN TOP OF RETAINING WALL, ELEVATION 749.78. ELEVATIONS BASED ON USGS DATUM.

SB-125 WAS INSTALLED IN OCTOBER 2001, LOCATION IS APPROXIMATED FROM FIELD MEASUREMENTS BY NRT. LOCATION OF VERTICAL BARRIER WALL SURVEY BY ROEHLIG LAND SURVEYING & CONSULTING LTD., OSHKOSH, WISCONSIN, NO. 3771C, DATED MAY 17, 2002 AND JULY 1, 2002.

REVISION:	DATE:	APP'D BY:
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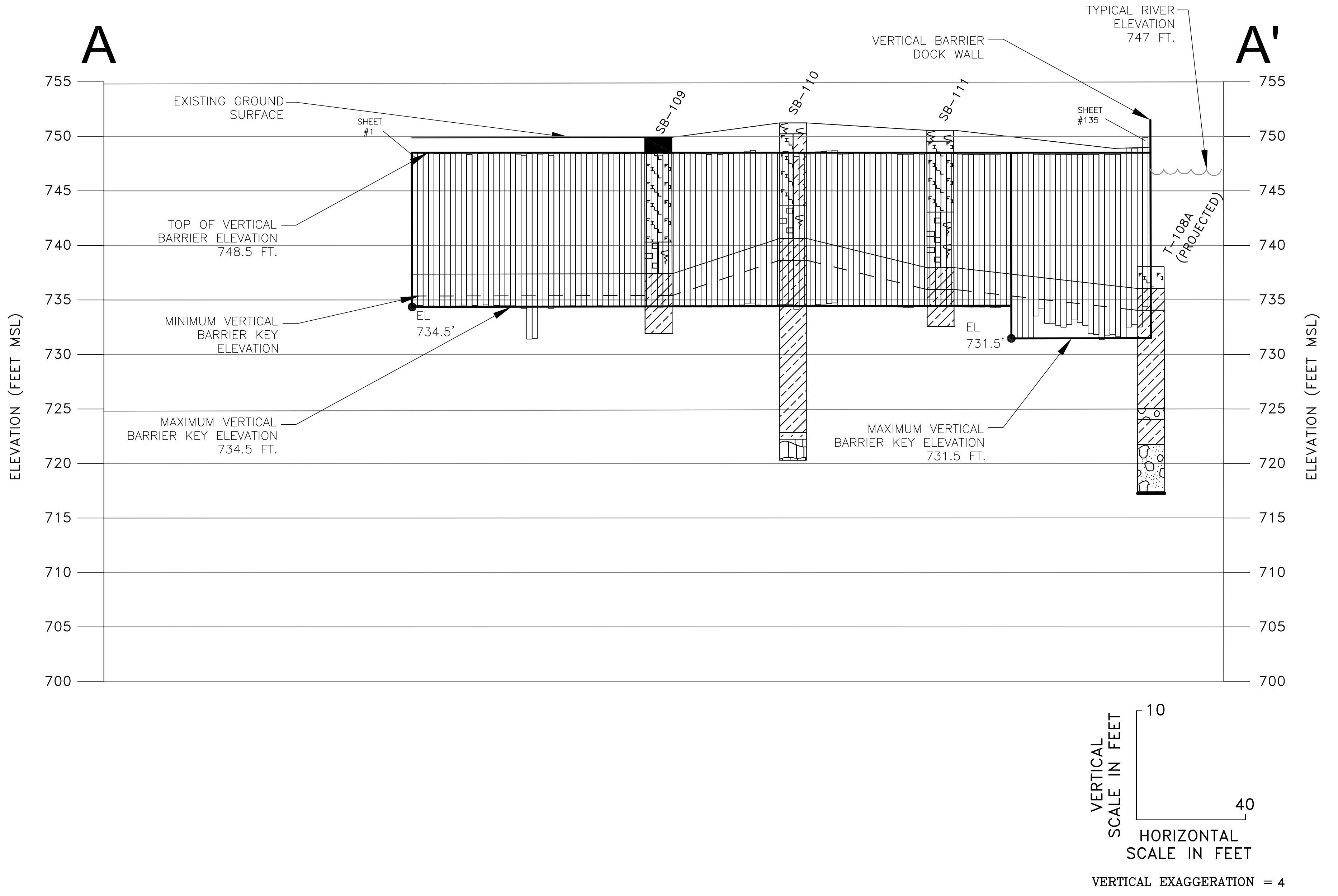
Natural Resource Technology
N R T

VERTICAL BARRIER PLAN

REMEDIAL CONSTRUCTION
FORMER OSHKOSH MANUFACTURE GAS PLANT
WISCONSIN PUBLIC SERVICE CORPORATION
CITY OF OSHKOSH, WISCONSIN

DRAWN BY: TAS/RLH DATE: 03/08/02
CHECKED BY: HMS DATE: 03/08/02
APPROVED BY: SLF DATE: 03/08/02

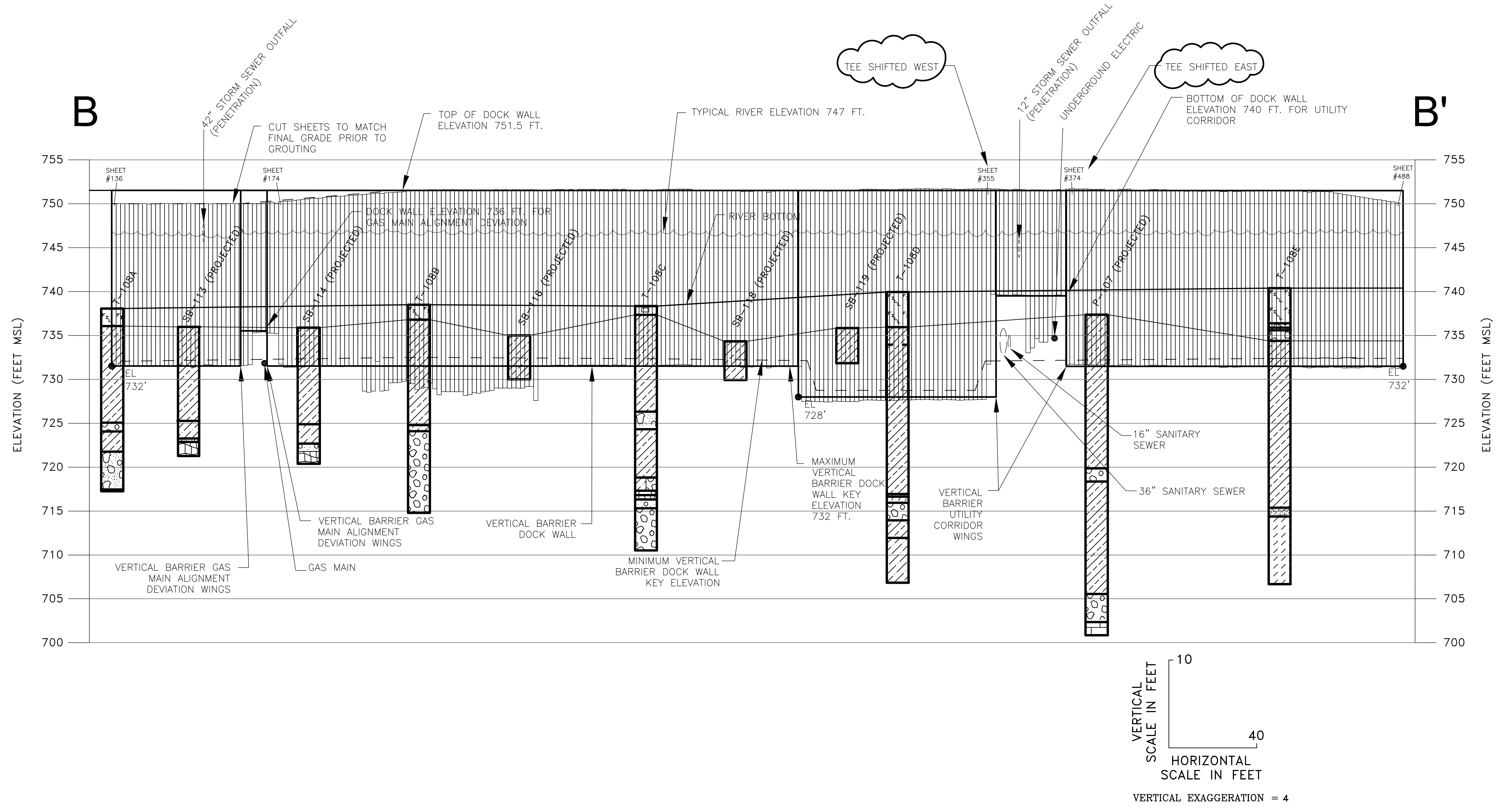
PROJECT NO. 1312/6.3
DRAWING NO. 1312-63-D110 XREF
SHEET NO. C081

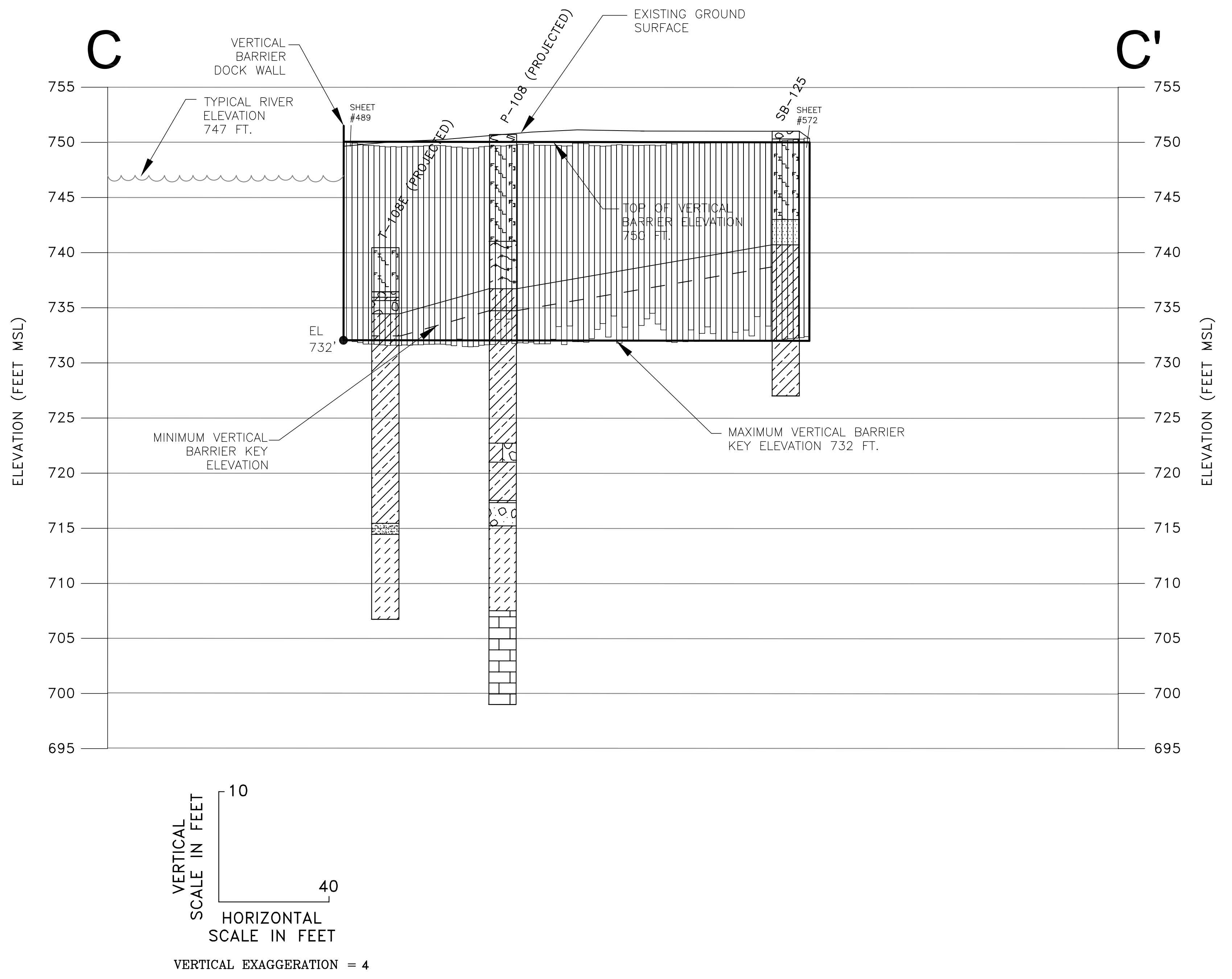


SOURCE NOTE:
RECORD DRAWING VERTICAL BARRIER INSTALLATION DEVELOPED FROM A DIGITAL FILE AS-BUILT PROFILE2.DWG PROVIDED BY C3 ENVIRONMENTAL LIMITED.

LEGEND

- PEAT
- FILL
- TOPSOIL
- SAND FILL
- SAND
- SILT
- SANDY SILT
- SAND WITH GRAVEL OR GRAVEL WITH SAND
- GRAVEL
- SANDY GRAVEL
- LEAN CLAY
- BEDROCK
- WEATHERED BEDROCK
- WOOD
- ■ ASPHALT
- RECORD DRAWINGS COMMENTS AND CHANGES TO CONSTRUCTION PLANS
- ● EL 734.5' MAXIMUM KEY ELEVATION
- VERTICAL BARRIER INSTALLATION





PROJECT NO.
1312/6.3

DRAWING NO.
1312-63-D112

SHEET NO.
C083

VERTICAL BARRIER PROFILES

REMEDIAL CONSTRUCTION
FORMER OSHKOSH MANUFACTURE GAS PLANT
WISCONSIN PUBLIC SERVICE CORPORATION
CITY OF OSHKOSH, WISCONSIN

DRAWN BY: TAS	CHECKED BY: HMS	APPROVED BY: SLF
DATE: 03/08/02	DATE: 03/08/02	DATE: 03/08/02

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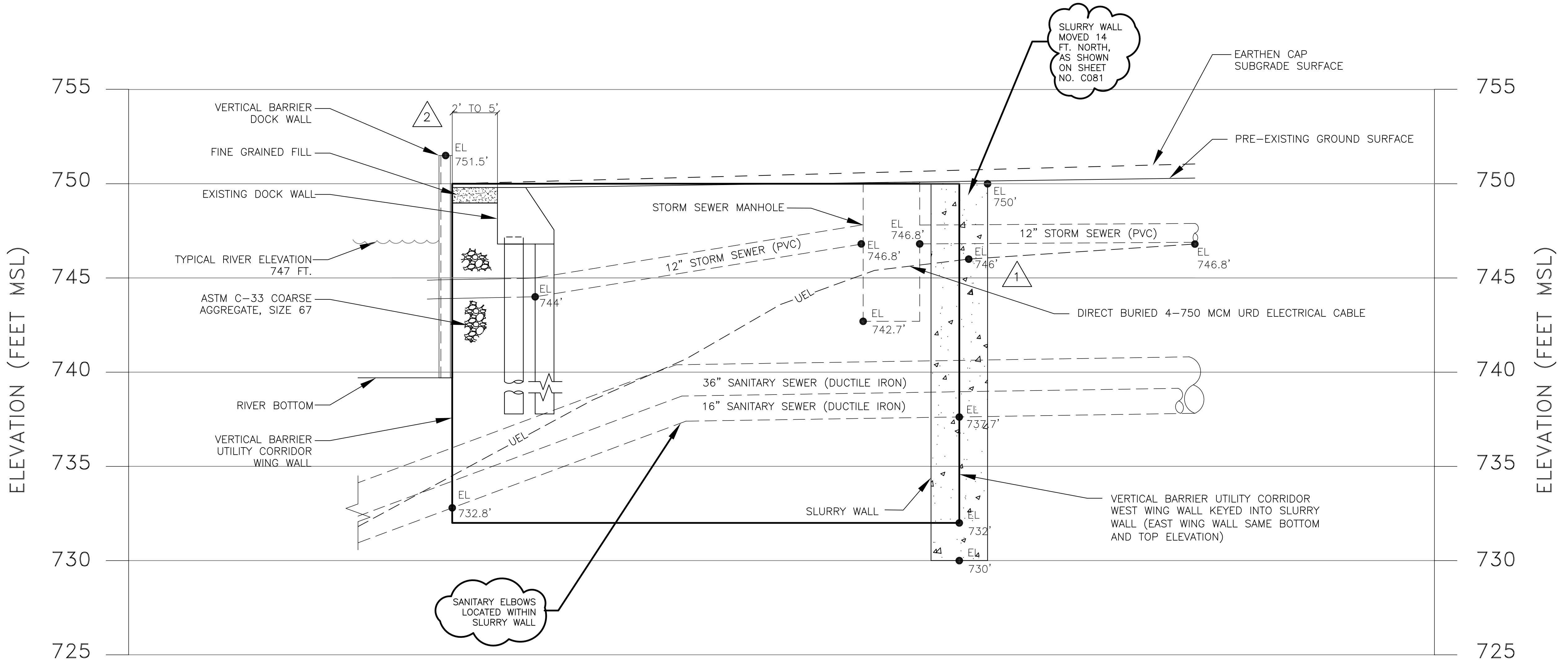


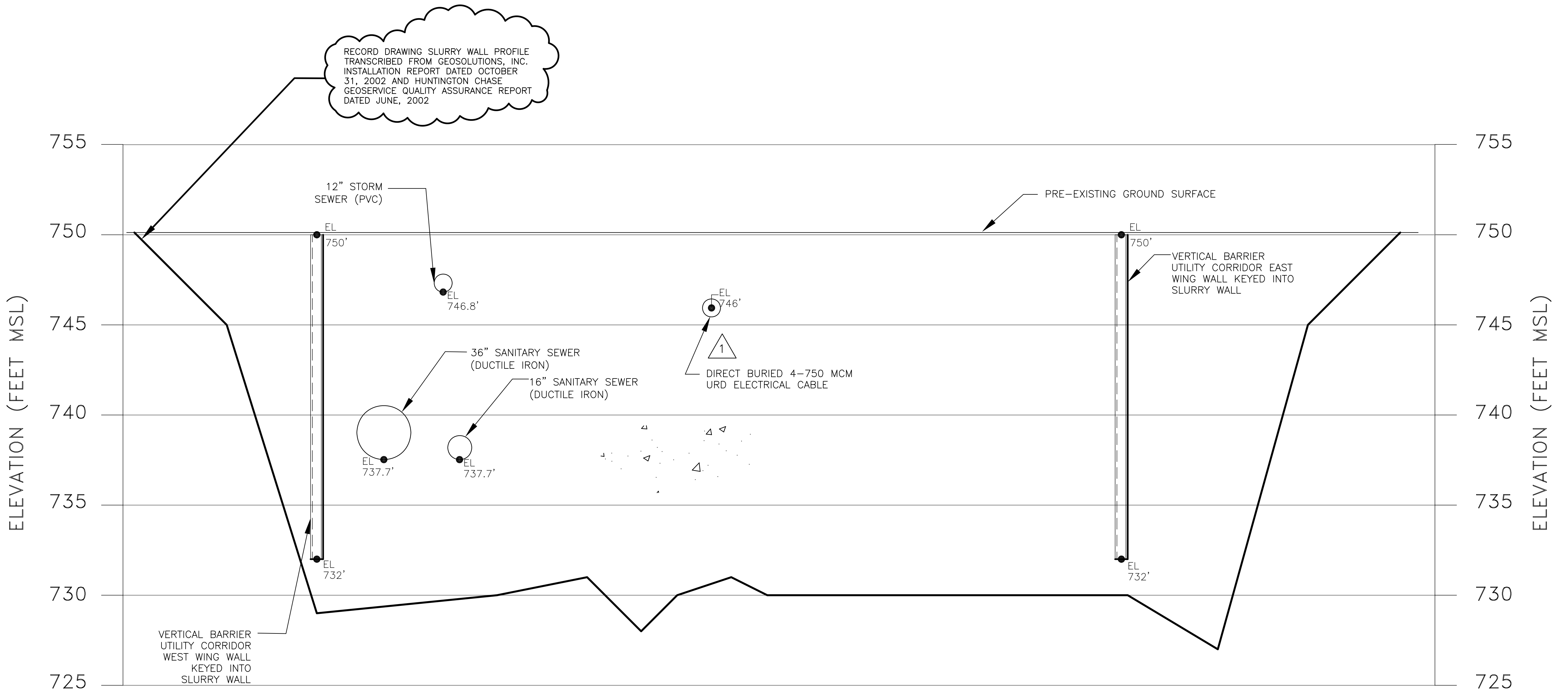
VERTICAL SCALE IN FEET 5
HORIZONTAL SCALE IN FEET 5
VERTICAL EXAGGERATION = 1

G UTILITY CORRIDOR SECTION
C081

VERTICAL BARRIER NOTES: △
1. CONTRACTOR SHALL COORDINATE PROTECTION OF ELECTRICAL CABLE JACKETING WITH COMPANY PRIOR TO INSTALLATION OF SLURRY WALL.
2. CONTRACTOR SHALL VERIFY DOCK WALL ALIGNMENT IS CLEAR OF ALL EXISTING MOORING PILES PRIOR TO DRIVING WATERLOO BARRIER WALL.

LEGEND

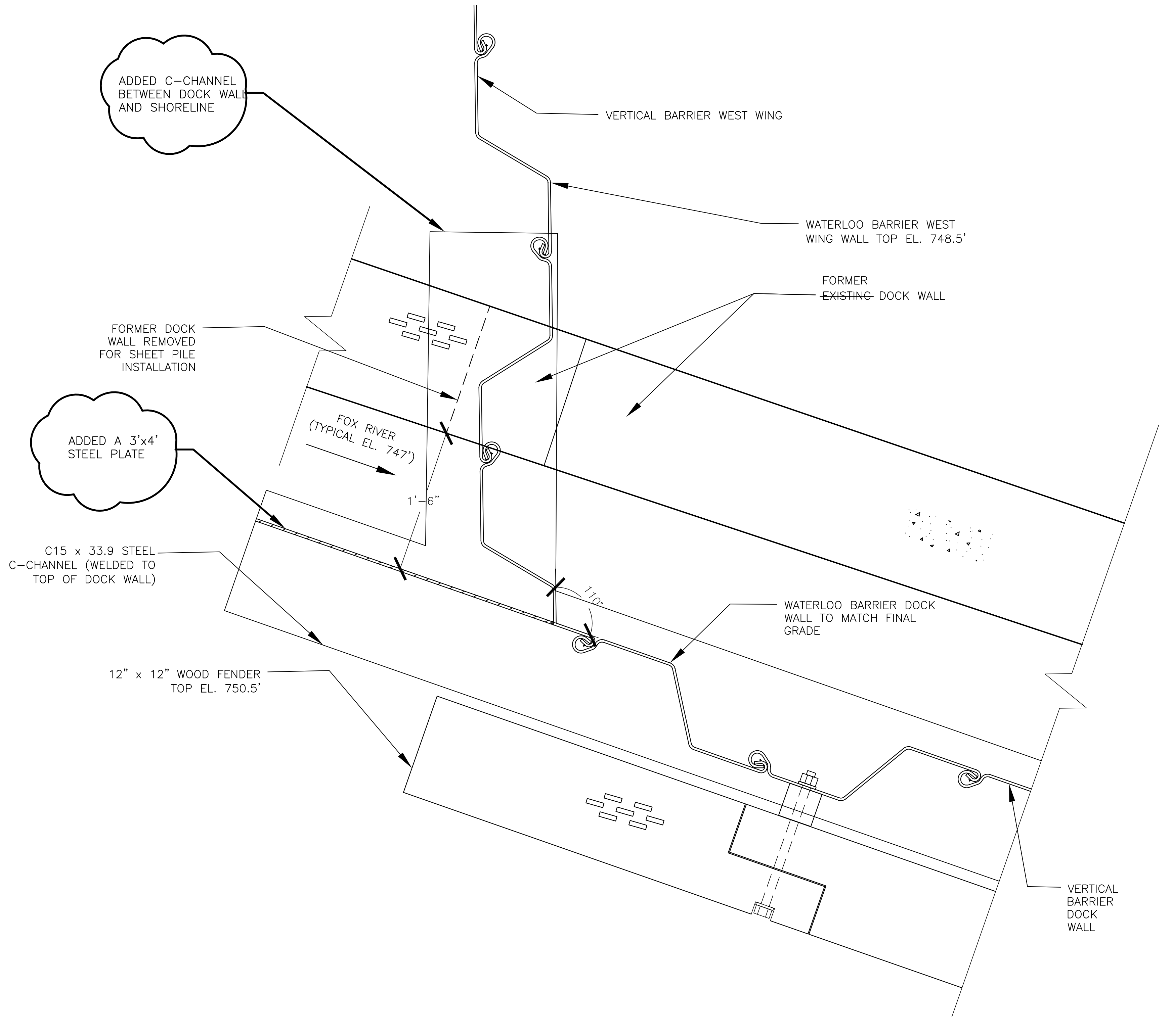
▨	CONCRETE
▨	WOOD
▨	UNEXCAVATED MATERIAL
▨	GRANULAR FILL
▨	FINE GRAINED FILL
▨	FILTER GRAVEL
▨	ASTM C-33 COARSE AGGREGATE, SIZE 67
▨	BACKFILL CONTROL LOW-STRENGTH MATERIAL
▨	THERMALLY TREATED MATERIAL
☁	RECORD DRAWINGS COMMENTS AND CHANGES TO CONSTRUCTION PLANS



NOTE:
TOP OF CLAY ELEVATION NOTED BY HUNTINGTON CHASE GEOSERVICE TO BE BETWEEN 735.5 AND 736 FT. MSL.

VERTICAL SCALE IN FEET 5
HORIZONTAL SCALE IN FEET 5
VERTICAL EXAGGERATION = 1

H SLURRY WALL SECTION
C081



4 WEST WING WALL CORNER DETAIL
C081
NOT TO SCALE

PROJECT NO. 1312/6.3
DRAWING NO. 1312-63-D113
SHEET NO. C084

VERTICAL BARRIER SECTIONS AND DETAILS

REMEDIAL CONSTRUCTION
FORMER OSHKOSH MANUFACTURE GAS PLANT
WISCONSIN PUBLIC SERVICE CORPORATION
CITY OF OSHKOSH, WISCONSIN

DRAWN BY: TAS/HMS DATE: 03/08/02
CHECKED BY: HMS DATE: 03/08/02
APPROVED BY: SLF DATE: 03/08/02

Natural Resource Technology
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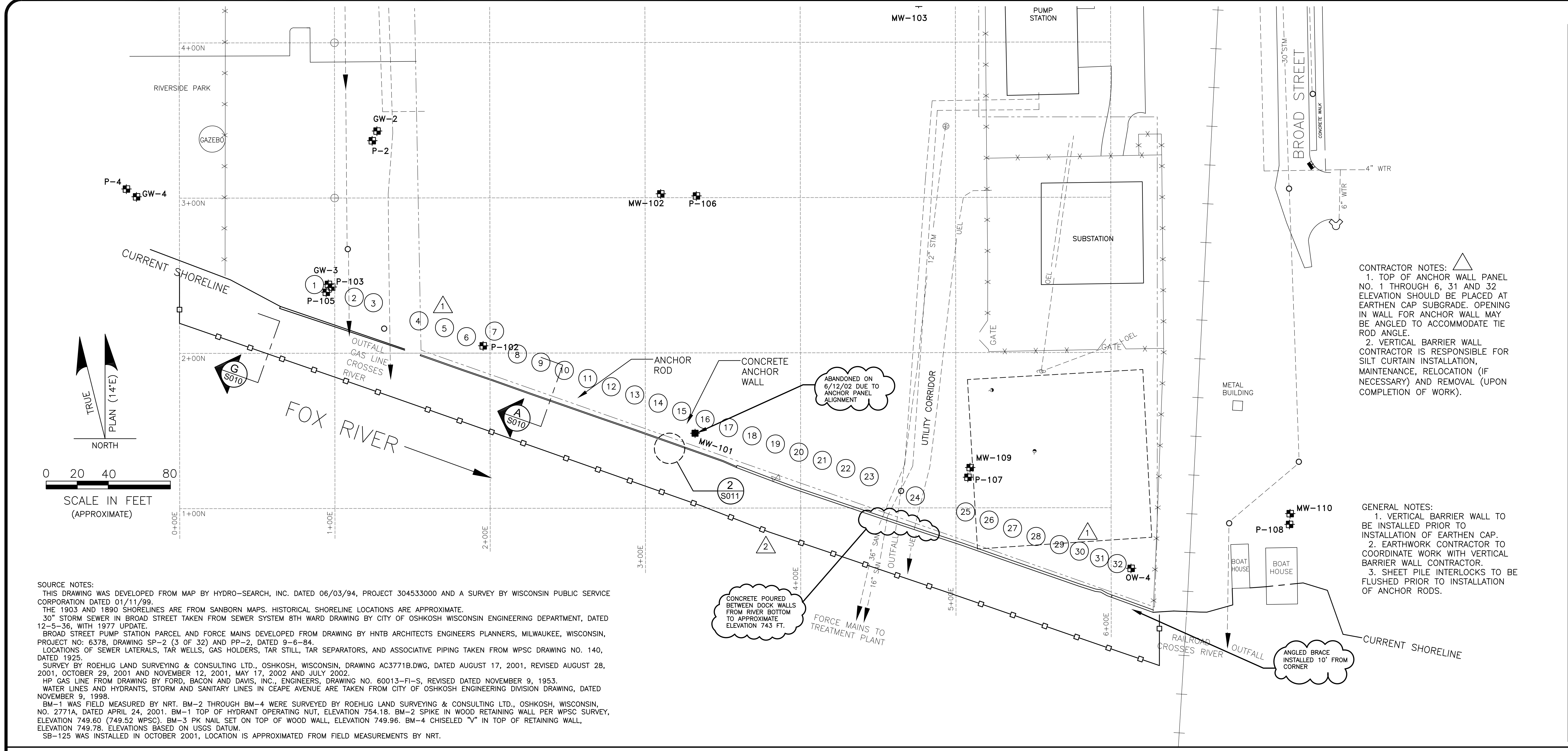

CONTRACTOR NOTES: △

1. TOP OF ANCHOR WALL PANEL NO. 1 THROUGH 6, 31 AND 32 ELEVATION SHOULD BE PLACED AT EARTHEN CAP SUBGRADE. OPENING IN WALL FOR ANCHOR WALL MAY BE ANGLED TO ACCOMMODATE TIE ROD ANGLE.

2. VERTICAL BARRIER WALL CONTRACTOR IS RESPONSIBLE FOR SILT CURTAIN INSTALLATION, MAINTENANCE, RELOCATION (IF NECESSARY) AND REMOVAL (UPON COMPLETION OF WORK).

GENERAL NOTES:

1. VERTICAL BARRIER WALL TO BE INSTALLED PRIOR TO INSTALLATION OF EARTHEN CAP.

2. EARTHWORK CONTRACTOR TO COORDINATE WORK WITH VERTICAL BARRIER WALL CONTRACTOR.

3. SHEET PILE INTERLOCKS TO BE FLUSHED PRIOR TO INSTALLATION OF ANCHOR RODS.

SOURCE NOTES:

THIS DRAWING WAS DEVELOPED FROM MAP BY HYDRO-SEARCH, INC. DATED 06/03/94, PROJECT 304533000 AND A SURVEY BY WISCONSIN PUBLIC SERVICE CORPORATION DATED 01/11/99.

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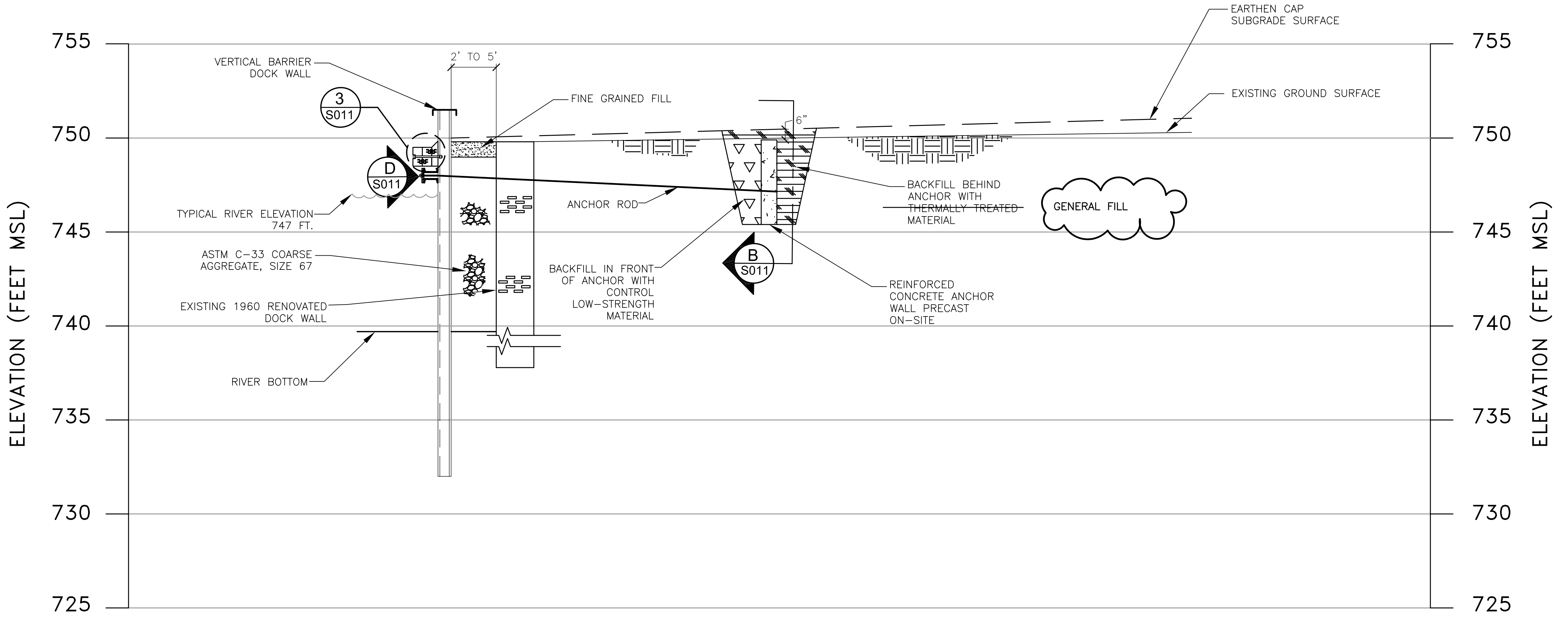
SB-125 WAS INSTALLED IN OCTOBER 2001, LOCATION IS APPROXIMATED FROM FIELD MEASUREMENTS BY NRT.

LEGEND

①	ANCHOR DESIGNATED NUMBERS
MW-105	MONITORING WELL (NRT)
GW-1 OW-1	MONITORING WELL (HSI)
MW-101	ABANDONED MONITORING WELL (NRT)
P-4 P-101	PIEZOMETER (HSI)
P-104	BEDROCK PIEZOMETER (NRT)
HSI	HYDRO-SEARCH, INC.
⊕	CONSTRUCTION GRID POINT (CHISELED CROSS OR PK NAIL)
	CATCH BASIN
	GUY WIRE
☼	LITE POLE
	UTILITY POLE
⋈	GAS VALVE

APPROXIMATE LOCATION OF:

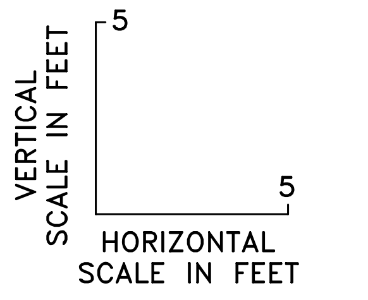
— - — - —	PROPERTY BOUNDARY
—□—□—	SILT CURTAIN/BOOM
- - - -	BUILDING FOUNDATIONS
○	MANHOLE
	HYDRANT
—+—+—	RAILROAD
—×—×—	CHAIN LINK FENCE
----OEL----	OVERHEAD ELECTRIC LINE
----UEL----	UNDERGROUND ELECTRIC LINE
----GAS----	NATURAL GAS LINE
----SAN----	SANITARY SEWER LINE
----STM----	STORM SEWER LINE
----WTR----	WATER LINE
	RECORD DRAWINGS COMMENTS AND CHANGES TO CONSTRUCTION PLANS



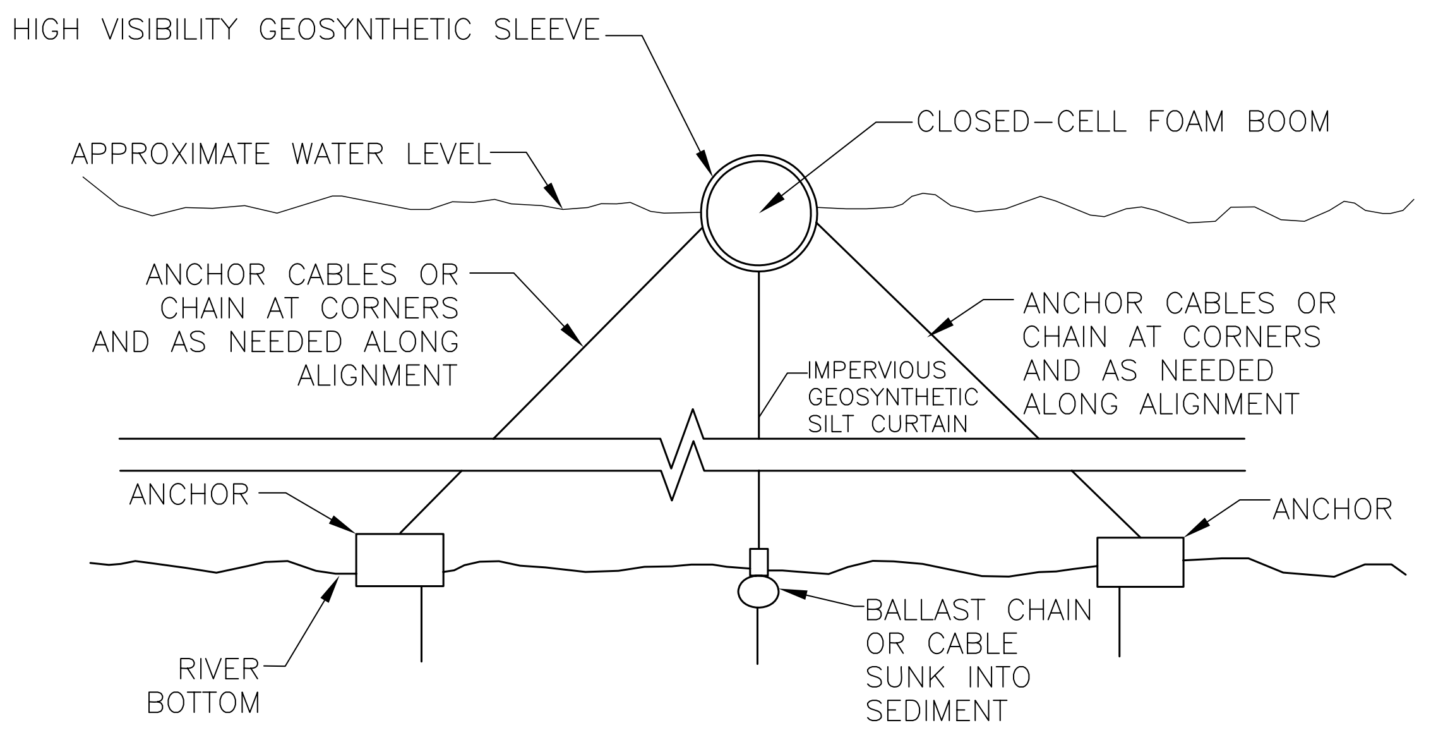
A / S010 TYPICAL ANCHOR ROD AND CONCRETE WALL SECTION

LEGEND

- CONCRETE
- WOOD
- UNEXCAVATED MATERIAL
- GRANULAR FILL
- FINE GRAINED FILL
- FILTER GRAVEL
- ASTM C-33 COARSE AGGREGATE, SIZE 67
- BACKFILL CONTROL LOW-STRENGTH MATERIAL
- THERMALLY TREATED MATERIAL



VERTICAL EXAGGERATION = 1



G / S010 SILT CURTAIN/BOOM DETAIL
NOT TO SCALE

PROJECT NO. 1312/6.3
DRAWING NO. 1312-63-D117 XREF
SHEET NO. S010

VERTICAL BARRIER ANCHOR PLAN

REMEDIAL CONSTRUCTION
FORMER OSHKOSH MANUFACTURE GAS PLANT
WISCONSIN PUBLIC SERVICE CORPORATION
CITY OF OSHKOSH, WISCONSIN

DRAWN BY: TAS DATE: 03/08/02
CHECKED BY: HMS DATE: 03/08/02
APPROVED BY: SLF DATE: 03/08/02

Natural Resource Technology

N R T

WAGNER KOMURKA GEOTECHNICAL GROUP, INC.

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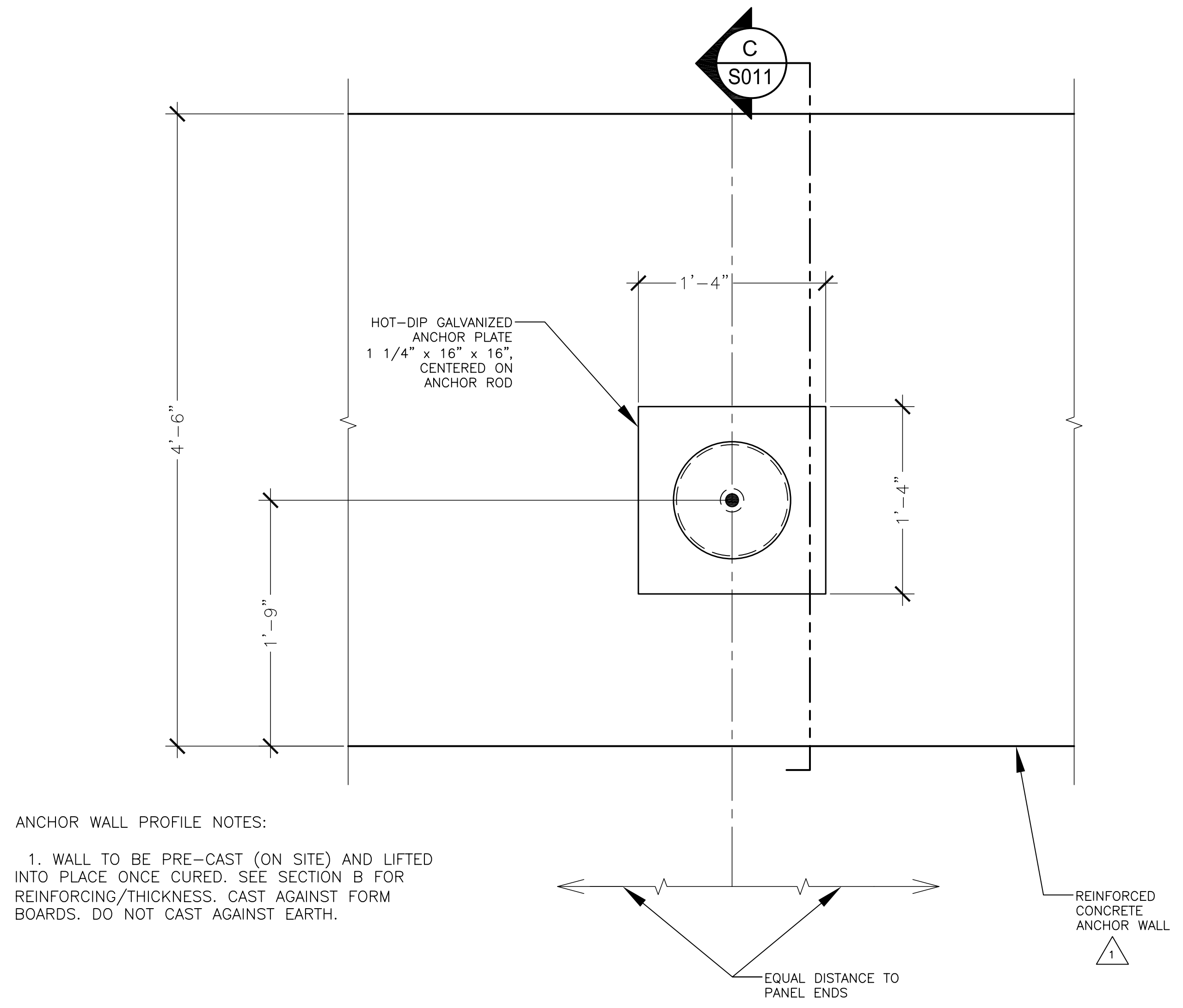
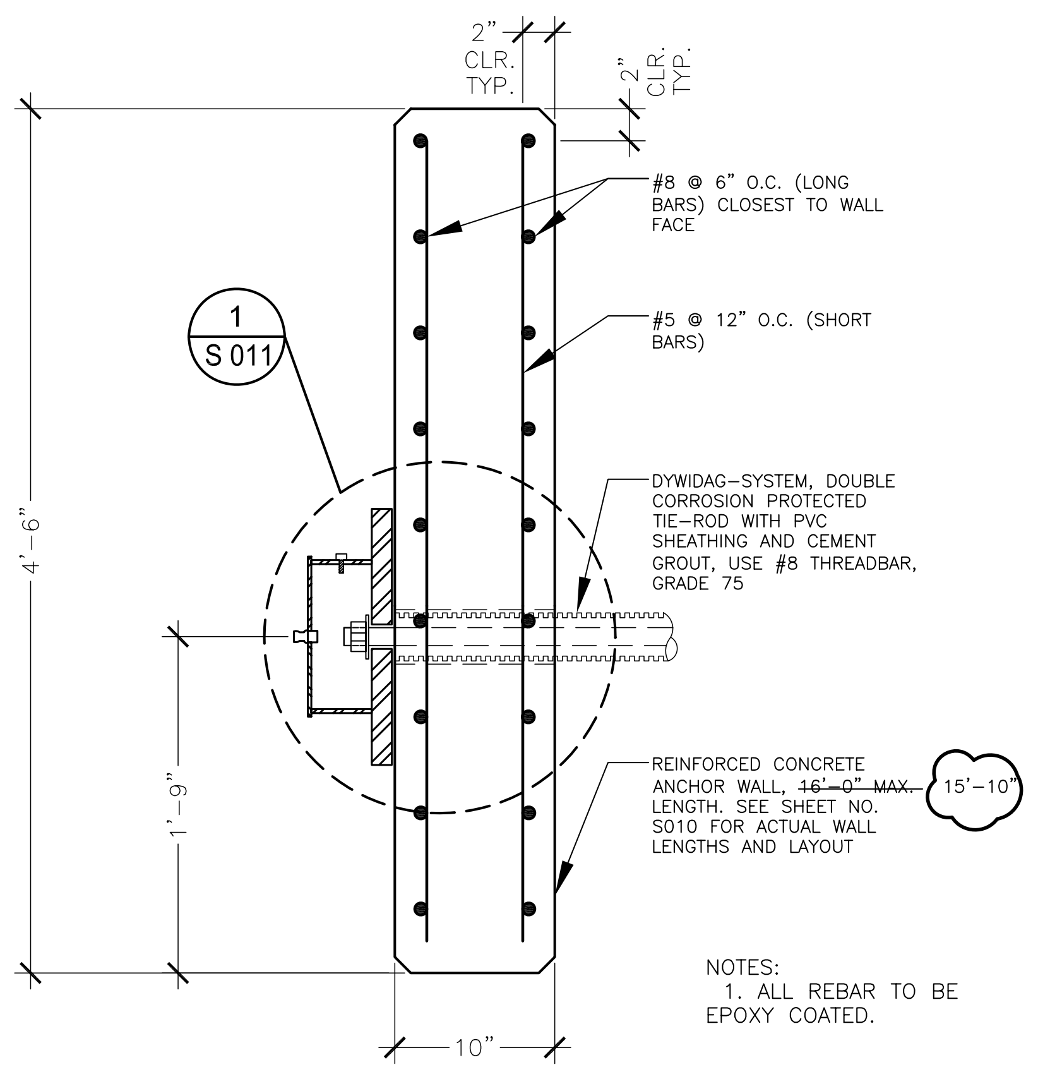


ANCHOR WALL PROFILE NOTES:

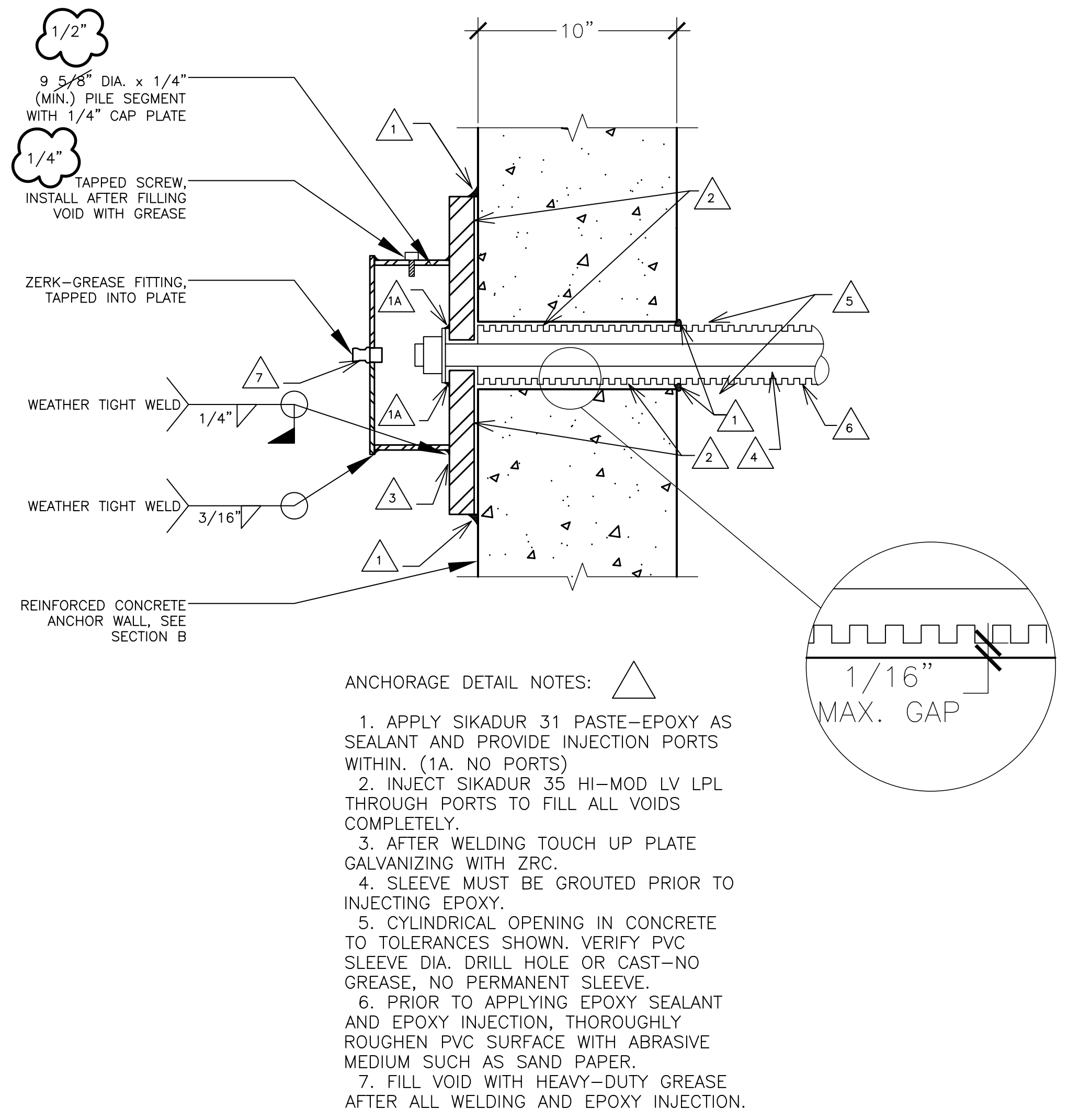
1. WALL TO BE PRE-CAST (ON SITE) AND LIFTED INTO PLACE ONCE CURED. SEE SECTION B FOR REINFORCING/THICKNESS. CAST AGAINST FORM BOARDS. DO NOT CAST AGAINST EARTH.

B
S010
ANCHOR WALL PROFILE
SCALE: 1"=1'



NOTES:
1. ALL REBAR TO BE EPOXY COATED.

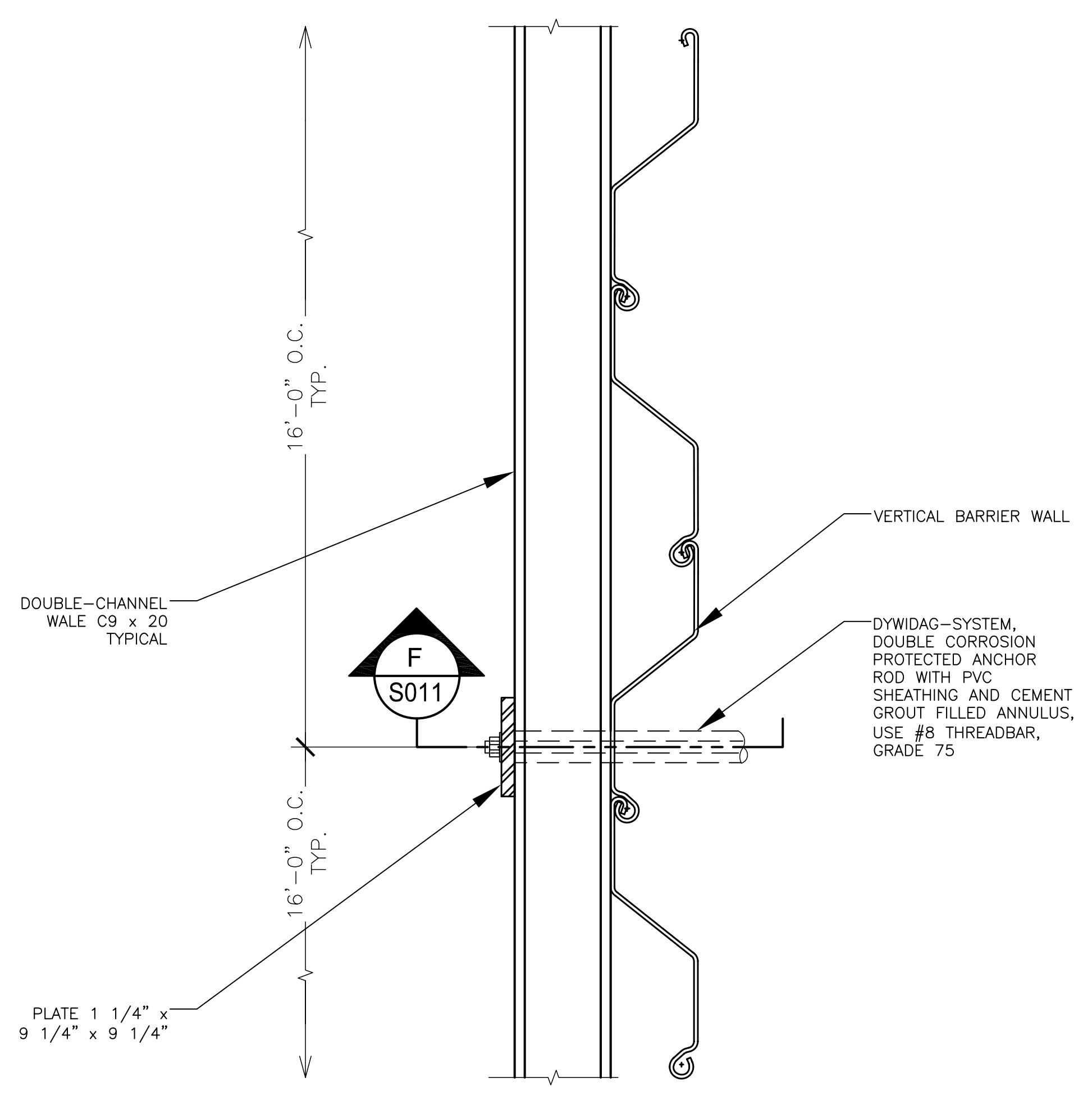
C
S011
ANCHOR WALL SECTION
SCALE: 1"=1'



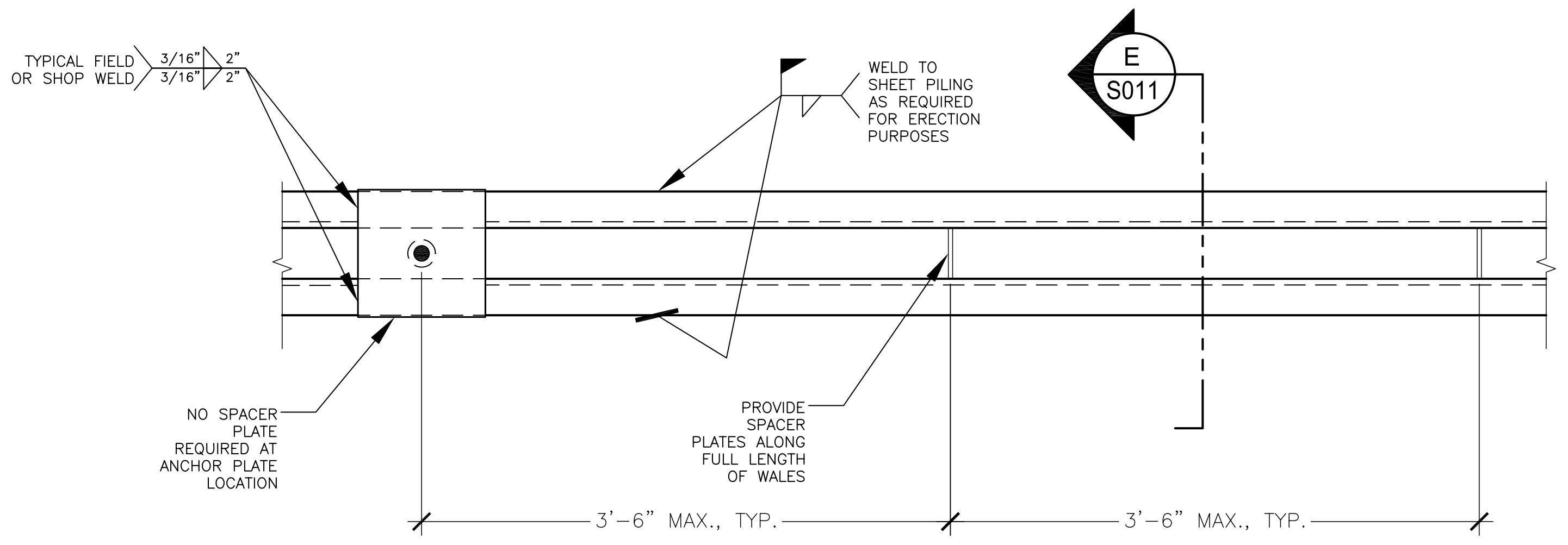
ANCHORAGE DETAIL NOTES: △

1. APPLY SIKADUR 31 PASTE-EPOXY AS SEALANT AND PROVIDE INJECTION PORTS WITHIN. (1A. NO PORTS)
2. INJECT SIKADUR 35 HI-MOD LV LPL THROUGH PORTS TO FILL ALL VOIDS COMPLETELY.
3. AFTER WELDING TOUCH UP PLATE GALVANIZING WITH ZRC.
4. SLEEVE MUST BE GROUTED PRIOR TO INJECTING EPOXY.
5. CYLINDRICAL OPENING IN CONCRETE TO TOLERANCES SHOWN. VERIFY PVC SLEEVE DIA. DRILL HOLE OR CAST-NO GREASE, NO PERMANENT SLEEVE.
6. PRIOR TO APPLYING EPOXY SEALANT AND EPOXY INJECTION, THOROUGHLY ROUGHEN PVC SURFACE WITH ABRASIVE MEDIUM SUCH AS SAND PAPER.
7. FILL VOID WITH HEAVY-DUTY GREASE AFTER ALL WELDING AND EPOXY INJECTION.

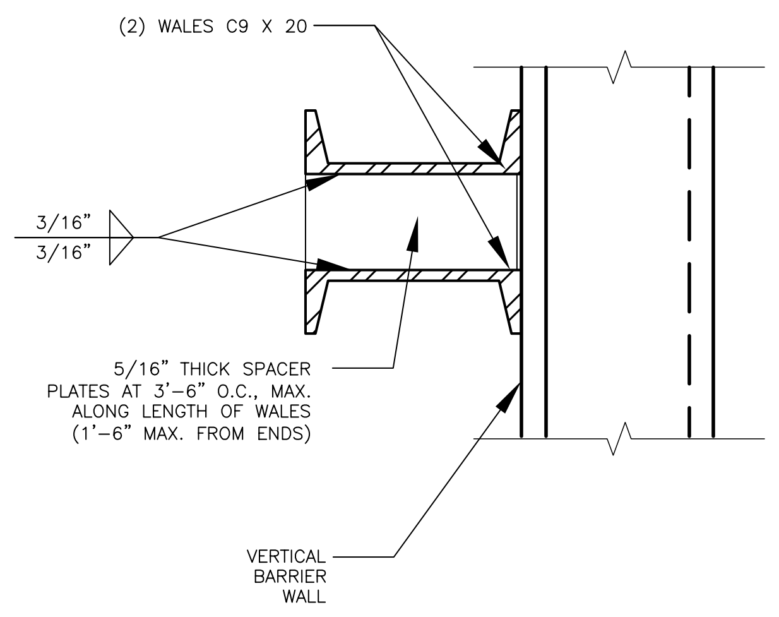
1
S011
ANCHOR WALL ANCHORAGE DETAIL
SCALE: 1 1/2"=1'



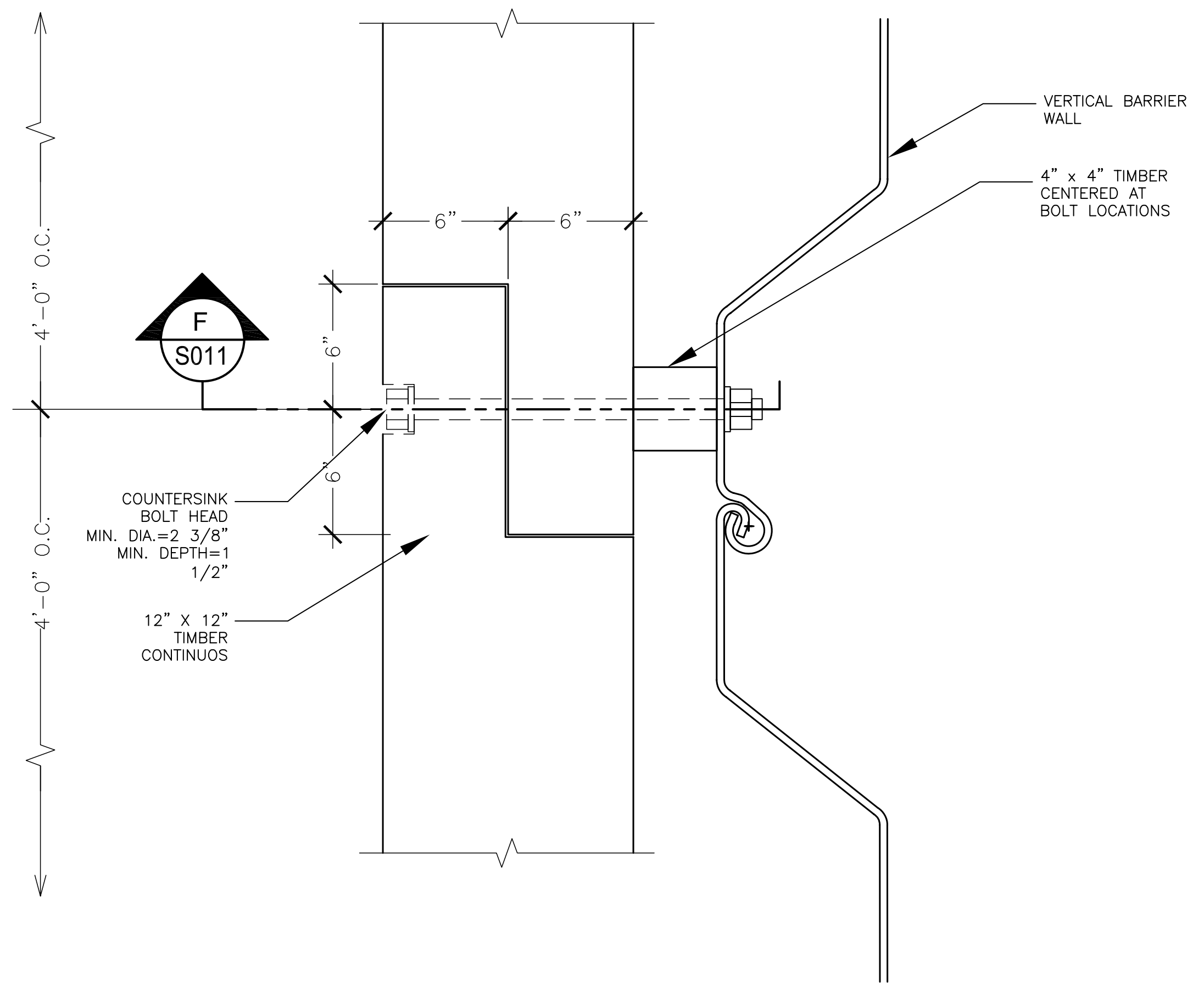
2
S010
WALE AND ANCHOR DETAIL
SCALE: 3/4"=1'



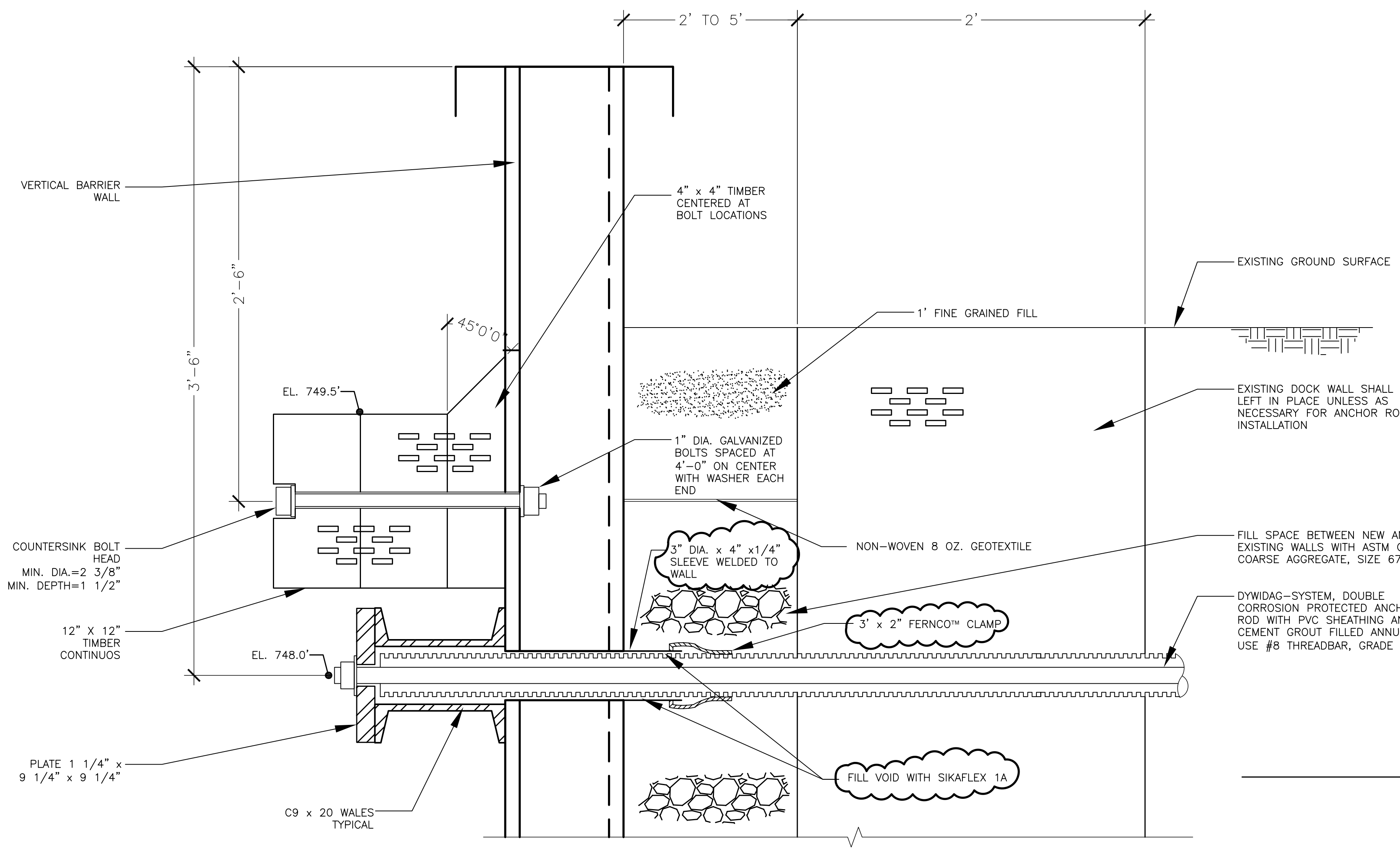
D
S010
WALES AND ANCHOR PROFILE
SCALE: 1"=1'



E
S011
WALE SPACER PLATE SECTION
SCALE: 1 1/2"=1'



3
S010
WOOD FENDER SPLICE DETAIL
SCALE: 1 1/2"=1'



LEGEND

▨	ASTM C-33 COARSE AGGREGATE, SIZE 67
░	FINE GRAINED FILL
▤	WOOD
ZRC	ZINC RICH COATING
☁	RECORD DRAWINGS COMMENTS AND CHANGES TO CONSTRUCTION PLANS

F
S011
WALE AND ANCHOR SECTION
SCALE: 1 1/2"=1'

PROJECT NO.
1312/6.3

DRAWING NO.
1312-63-D118

SHEET NO.
S011

VERTICAL BARRIER ANCHOR DETAILS

REMEDIAL CONSTRUCTION
FORMER OSHKOSH MANUFACTURE GAS PLANT
WISCONSIN PUBLIC SERVICE CORPORATION
CITY OF OSHKOSH, WISCONSIN

DRAWN BY: TAS
DATE: 03/08/02
CHECKED BY: HMS
DATE: 03/08/02
APPROVED BY: SLF
DATE: 03/08/02

Natural
Resource
Technology
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WAGNER KOMURKA
GEOTECHNICAL
GROUP, INC.

REVISION:	DATE:	APP'D BY:
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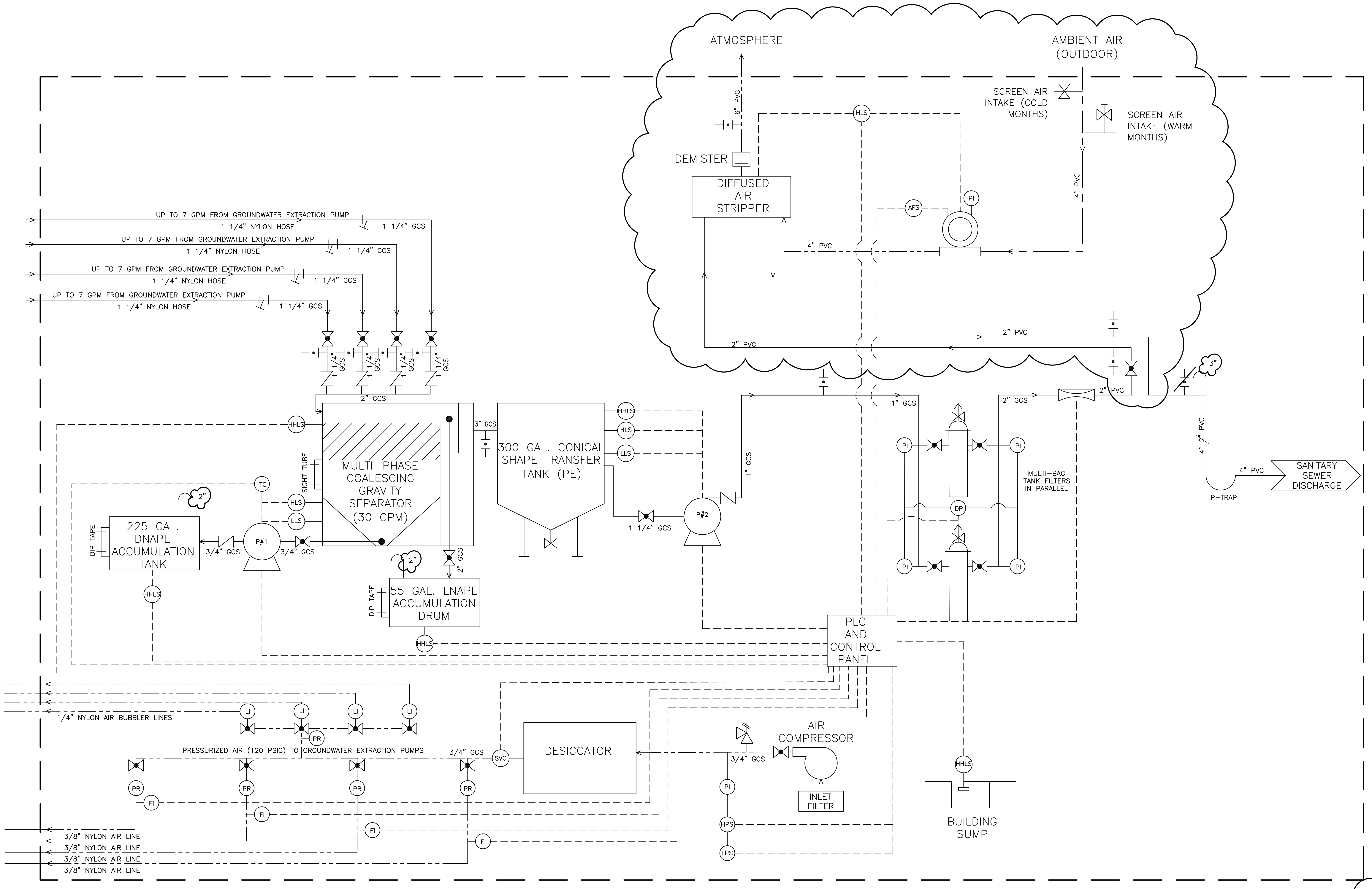


LEGEND

DP	DIFFERENTIAL PRESSURE SWITCH
HHLS	HIGH HIGH LEVEL SHUTOFF SWITCH
HLS	HIGH LEVEL SWITCH
LLS	LOW LEVEL SWITCH
HPS	HIGH PRESSURE SWITCH
LPS	LOW PRESSURE SWITCH
AFS	AIR FLOW SWITCH
PI	PRESSURE INDICATOR
FI	FLOW INDICATOR
SVC	SOLENOID VALVE (NORMALLY CLOSED)
TC	TIMER CONTROL
LI	LEVEL INDICATOR
PR	PRESSURE REGULATOR
	DEMISTER
→	FLOW DIRECTION
	PUMP
	TOTALIZING FLOWMETER
	BLOWER
	DISCHARGE
	GATE VALVE
	CHECK VALVE
	AIR VENT
	Y–STRAINER
	SAMPLE TAP
	BALL VALVE
	AIR BLEED VALVE
	PRESSURE RELIEF VALVE
- - - - - - -	LOGIC CONTROL WIRING
———————	LIQUID CONVEYANCE PIPING
——— - - ———	PRESSURIZED AIR LINE
━━ ━━	BUILDING LIMITS
—— — ——	AIR LINE
DNAPL	DENSE NON–AQUEOUS PHASE LIQUID
LNAPL	LIGHT NON–AQUEOUS PHASE LIQUID
PE	POLYETHYLENE
GCS	GALVANIZED CARBON STEEL
GPM	GALLONS PER MINUTE
P#1	DNAPL TRANSFER PUMP
P#2	WATER TRANSFER PUMP
PLC	PROGRAMMABLE LOGIC CONTROLS
PSIG	POUNDS PER SQUARE INCH GAUGE
PVC	POLYVINYL CHLORIDE
	RECORD DRAWINGS COMMENTS AND CHANGES TO CONSTRUCTION PLANS

GROUNDWATER EXTRACTION SYSTEM SEQUENCE OF OPERATIONS

1. COMPRESSOR OPERATES BY HAND/OFF/AUTO SWITCH. IN THE AUTO POSITION, COMPRESSOR WILL OPERATE ON A TIMER FROM 0 TO 24 HOURS PER DAY.

2. COMPRESSOR WILL SHUT DOWN IF ANY OF THE FOLLOWING ALARM CONDITIONS ARISE:
   A. EXTERNAL COMPRESSOR PRESSURE SWITCH INDICATES PRESSURE ABOVE 150 PSIG WHILE COMPRESSOR IS OPERATING
   B. INTERNAL THERMAL OVERLOAD SWITCH INDICATES MOTOR TEMPERATURE IS ABOVE PRE–SET LIMIT

3. AIR PRESSURIZED AIR SOLENOID VALVE (SVC) WILL CLOSE IF ANY OF THE FOLLOWING ALARM CONDITIONS ARISE:

   A. DIFFERENTIAL PRESSURE SWITCH FOR BAG FILTERS INDICATES GREATER THAN 10 PSI DIFFERENCE
   B. OIL SEPARATOR LEVEL SWITCH INDICATES HIGH HIGH LEVEL
   C. DNAPL LEVEL SWITCH IN TANK INDICATES HIGH HIGH LEVEL CONDITION
   D. LNAPL LEVEL SWITCH IN DRUM INDICATES HIGH LEVEL
   E. LEVEL SWITCH IN SUMP INDICATES HIGH HIGH WATER LEVEL
   F. LEVEL SWITCH IN TRANSFER TANK INDICATES HIGH HIGH LEVEL
   G. IN EVENT THAT THE BLOWER SHUTS DOWN.

4. AUTO DIALER WILL RELAY A MESSAGE BY EITHER VOICE, FAX, OR PAGER OVER INSTALLED PHONE LINE THAT COMPRESSOR IS SHUT DOWN AND WHICH ALARM CONDITION ABOVE AS ITEM #3 EXISTS.

5. AUTO DIALER WILL ALSO RELAY A MESSAGE BY EITHER VOICE, FAX, OR PAGER IF:
   A. TEMPERATURE IN BUILDING IS BELOW 50 DEGREES FAHRENHEIT
   B. IN EVENT THAT EITHER/BOTH P#1 AND P#2 SHUTDOWN
   C. IN EVENT THAT THERE IS A MANUAL EMERGENCY SHUT OFF
   D. IN EVENT THAT THERE IS A POWER FAILURE

6. AN ADJUSTABLE TIMER WILL ENERGIZE DNAPL TRANSFER PUMP (P#1). TIMER WILL BE ADJUSTABLE FROM A MINIMUM OF 0 MINUTES TO CONTINUOUS TO CONTROL TRANSFER OF DNAPL FROM SLUDGE COLLECTION CHAMBER IN SEPARATOR TO DNAPL TANK, WHILE MINIMIZING TRANSFER OF WATER.
   P#1 WILL SHUT OWN IF:
   A. DNAPL ACCUMULATION TANK LEVEL SWITCH INDICATES HIGH HIGH LEVEL
   B. SOLENOID VALVE IS DE–ACTIVATED

OPTIONALLY, THE SLUDGE COLLECTION CHAMBER HIGH LEVEL SWITCH AND LOW LEVEL SWITCH MAY BE USED TO ACTIVATE AND DEACTIVATE P#1, RESPECTIVELY.

7. P#2 WILL ACTIVATE WHEN TRANSFER TANK LEVEL SWITCH INDICATES HIGH LEVEL. P#2 WILL DE–ACTIVATE WHEN TRANSFER TANK LEVEL SWITCH INDICATES LOW LEVEL.

8. BLOWER OPERATES BY HAND/OFF/AUTO SWITCH. IN AUTO POSITION, BLOWER WILL OPERATE CONTINUOUSLY, UNLESS CONDITION ITEM #9 EXISTS.

9. BLOWER WILL SHUT DOWN IF ANY OF THE FOLLOWING ALARM CONDITIONS ARISE:
   A. EXTERNAL BLOWER AIR FLOW SWITCH INDICATES NO AIR FLOW WHILE BLOWER IS OPERATING.
   B. LEVEL SWITCH IN DIFFUSED AIR STRIPPER INDICATES HIGH LEVEL.
   C. 15 MINUTES AFTER SOLENOID VALVE IS DE–ACTIVATED.

10. PLC SHALL BE PROGRAMMED FOR A 15–SECOND DELAY BETWEEN THE AIR FLOW SWITCH AND BLOWER START–UP.

PROJECT NO.
1312/6.3

DRAWING NO.
1312–63–D121–R3

SHEET NO.
M010

GROUNDWATER TREATMENT SYSTEM
PIPING AND INSTRUMENTATION DIAGRAM
REMEDIAL CONSTRUCTION
FORMER OSHKOSH MANUFACTURE GAS PLANT
WISCONSIN PUBLIC SERVICE CORPORATION
CITY OF OSHKOSH, WISCONSIN

DRAWN BY: TAS
DATE: 03/08/02
CHECKED BY: HMS
DATE: 03/08/02
APPROVED BY: SLF
DATE: 03/08/02

Natural
Resource
Technology
N R T

REVISION:		DATE:	APP'D BY:
1.	RECORD DRAWINGS	01/09/03	HMS
2.	DIFFUSED AIR STRIPPER ADDITION	09/03/03	SLF
3.	REVISED RECORD DRAWINGS	12/29/03	SLF
4.			
5.			
6.			
7.			

APPENDIX D2

REMEDIAL ACTION
DOCUMENTATION TABLES

Table 1 - Summary of Waste Characterization for Treatment and Disposal
Remedial Action Documentation Report
Former Oshkosh Manufactured Gas Plant Site - WPSC

		Inorganic Results															%
Sample ID	**Date**	**Benzene (ug/kg)**	**Benzene TCLP (mg/L)**	**Barium TCLP (mg/L)**	**Chlorine (% wt.)**	**Nickel (TCLP) (mg/L)**	**British Thermal Units (BTU)**	**Flashpoint (deg. F)**	**Free Liquids (Paint Filter) (%)**	**pH (su)**	**Phenolics, total recoverable -TCLP (mg/L)**	**TPH-IR - soil (mg/kg)**	**Sulfide, reactive (mg/kg)**	**TOC as NPOC (mg/kg)**	**Arolclor 1260 (ug/kg)**	**Cresol (mg/L)**	**Total Solids**
SGH-1	3/18/2002	na	**0.91**	na	na	na	na	na	na	na	na	na	na	na	na	na	**91.4**
SGH-2	3/18/2002	na	**1.5**	na	na	na	na	na	na	na	na	na	na	na	na	na	**84.6**
SGH-3	3/19/2002	na	**0.69**	na	na	na	na	na	na	na	na	na	na	na	na	na	**88.3**
SGH-4	3/27/2002	na	**11**	**0.22**	<0.025	**0.1**	na	**>210**	NFLP	**8**	**4.6**	**3,600**	**25**	**180,000**	<290	**2.2**	**76.3**
SGH-5	5/7/2002	**340**	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
LGH-1	3/18/2002	na	**0.28**	na	na	na	na	na	na	na	na	na	na	na	na	na	**85.1**
LGH-2	3/18/2002	na	**0.15**	na	na	na	na	na	na	na	na	na	na	na	na	na	**85.1**
LGH-3	3/18/2002	na	**0.025**	na	na	na	na	na	na	na	na	na	na	na	na	na	**92.5**
LGH-4	3/18/2002	na	**0.29**	na	na	na	na	na	na	na	na	na	na	na	na	na	**95**
LGH-5	3/18/2002	na	**0.21**	na	na	na	na	na	na	na	na	na	na	na	na	na	**67.7**
TW	3/18/2002	na	**0.082**	na	na	na	na	na	na	na	na	na	na	na	na	na	**82.2**
S COMP	3/18/2002	na	**0.29**	**0.55**	**0.012**	<0.05	na	**>210**	**0.0**	**8.2**	<0.1	na	<25	na	**120**	<0.05	**78.9**
TS	3/18/2002	na	**13**	<0.2	**0.034**	<0.05	**16710**	**160**	**24**	**7.3**	**11**	**55000**	<25	na	<4,400	**6**	**79.8**
WM Acceptance Limits		nl	**0.5**	**100**	**1**	**35**	nl	>140	0	2<pH<12.5	**2000**	nl	**200**	nl	nl	**200**	nl

Notes:

(O-MJR 9/02 C-HMS 9/02)

1. na = not analyzed
2. nd = not detected
3. WM= Waste Management
4. nl=no limit
5. NFLP=no free liquid present

Table 3 - Post-treatment Soil Analytical Results
Remedial Action Documentation Report
Former Oshkosh Manufactured Gas Plant Site - WPSC

		Volatile Organic Compounds (VOC's) µg/kg					Polynuclear Aromatic Hydrocarbons (PAHs) µg/kg																				%	mg/kg	
Sample ID	Date	Benzene	Ethylbenzene	Toluene	Total Xylenes	Total BTEX	1-Methylnaphthalene	2-Methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene [c]	Benzo(a)pyrene [c]	Benzo(b)fluoranthene [c]	Benzo(ghi)perylene	Benzo(k)fluoranthene [c]	Chrysene [c]	Dibenzo(a,h)anthracene [c]	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene [c]	Naphthalene	Phenanthrene	Pyrene	Total PAHs	Total cPAHs	Total Solids	Total Lead	Total Cyanide
PST-01	4/5/2002	96	81	95	141	413	18*	33*	<17	<13	<13	<14	<13	<12	<12	<14	<14	<12	12*	<13	<12	1,100	38	<13	1,201	nd	95.2	960	<0.26
PST-02	4/6/2002	57*	120	80	192	449	<15	<13	<18	<14	<13	<15	<14	<12	<13	<14	<15	<12	<11	<14	<13	230	<12	<13	230	nd	91.4	730	0.37*
PST-03	4/6/2002	59*	<25	36*	<25	95	<16	19*	<19	<14	<14	<15	<14	<12	<13	<15	<15	<12	<12	<14	<13	310	<12	<14	329	nd	88.5	8.8	<0.28
PST-04	4/8/2002	76	<25	62	28*	166	41*	72	84	<14	46	31*	<14	32*	<13	16*	62	<12	310	<14	<13	1,200	550	120	2,564	141	88.5	490	0.37*
PST-05	4/10/2002	<25	<25	<25	<25	nd	<16	<14	<19	<14	<14	<15	<14	<13	<13	<15	<15	<13	<12	<14	<13	31*	<13	<14	31	nd	87.9	300	<0.28
PST-06	4/12/2002	<25	<25	<25	<25	nd	<15	<13	<18	<14	<13	<15	<14	<12	<13	<14	<15	<12	<11	<14	<13	44*	17*	<13	61	nd	87.8	450	0.38*
PST-07	4/12/2002	<25	<25	<25	<25	nd	16*	24*	<18	26*	35*	19*	16*	<12	<13	<15	17*	<12	31*	20*	<13	76	81	43	404	52	89.4	520	<0.28
PST-08	4/13/2002	<25	<25	<25	<25	nd	<15	<13	<18	<13	<13	<14	<13	<12	<12	<14	<14	<12	<11	<13	<12	32*	<12	<13	32	nd	93.9	730	0.33*
PST-09	4/14/2002	<25	<25	<25	<25	nd	<16	<13	<18	<14	<13	<15	<14	<12	<13	<14	<15	<12	<12	<14	<13	73	<12	<13	73	nd	89.9	510	<0.28
PST-10	4/15/2002	77	<25	<25	<25	77	19*	31*	<18	<13	<13	<15	<13	<12	<12	<14	<15	<12	<11	<13	<12	270	17*	<13	337	nd	92.9	1,000	1.9
PST-11	4/17/2002	180	<25	39*	<25	219	110	180	<34	<26	<25	<28	<26	<23	<24	<27	<28	<23	<22	<26	<24	1,300	110	<25	1,700	nd	96.6	420	<0.26
PST-12	4/18/2002	160	<25	84	<25	244	44*	71	<16	<12	22*	<14	<12	<11	<12	<13	<14	<11	<10	<12	<12	390	22*	<12	549	nd	91.5	310	0.35*
PST-13	4/19/2002	69	<25	<25	<25	69	<15	16*	<18	<14	<13	<15	<14	<12	<13	<14	<15	<12	29*	<14	<13	140	58	28*	271	nd	91.9	590	0.39*
PST-14	4/21/2002	130	<25	50*	<25	180	<16	14*	<19	<14	<14	<15	<14	<13	<13	<15	<15	<13	14*	<14	<13	250	56	<14	334	nd	87.5	330	<0.29
PST-15	4/22/2002	80	<25	<25	<25	80	<16	27*	<18	<14	<13	<15	<14	<12	<13	<14	<15	<12	17*	<14	<13	320	64	13*	441	nd	89.8	360	0.66*
PST-16	4/23/2002	200	<25	80	<25	280	70	94	<17	<13	<13	<14	<13	<12	<12	<14	<14	<12	<11	<13	<12	680	53	<13	897	nd	94.5	380	0.51*
PST-17	4/24/2002	33*	<25	<25	<25	33	<15	<13	<18	<14	<13	<15	<14	<12	<13	<14	<15	<12	<11	<14	<13	150	27*	<13	177	nd	91.8	240	<0.27
PST-18	4/26/2002	210	<25	76	<25	286	57	86	<19	24*	24*	<16	<15	<13	<13	<15	22*	<13	71	<15	<13	690	290	27*	1,291	22	85.2	310	<0.29
PST-19	4/27/2002	54*	<25	<25	<25	54	<90	<71	<64	<57	<40	<57	<44	<78	<86	<120	<87	<60	<62	<69	<140	190*	<72	<82	190	nd	88.6	280	0.69*
PST-20	4/28/2002	<25	<25	<25	<25	nd	<90	<71	<64	<56	<40	<57	<44	<77	<85	<120	<87	<60	<62	<68	<140	120*	<72	<82	120	nd	88.9	330	0.41*
PST-21	4/30/2002	<25	<25	<25	<25	nd	<16	<13	<18	<14	<13	<15	<14	<12	<13	<14	<15	<12	<12	<14	<13	27*	20*	<13	47	nd	89.7	280	0.65*
PST-22	5/1/2002	36*	<25	<25	<25	36	<58 ^{F}	<46 ^{F}	<41 ^{F}	<36 ^{F}	<26 ^{F}	<37	<28	<50	<55	<76	<56	<39	<40 ^{F}	<44 ^{F}	<90	94 ^{F*}	52 ^{F*}	<53 ^{F}	146	nd	92	400	0.53*
PST-23	5/2/2002	100	<25	35*	<25	135	<58	<45	<41	<36	<26	<36	<28	<49	<55	<75	<55	<38	<40	<44	<89	300	160	<52	460	nd	92.9	280	1
PST-24	5/3/2002	<25	<25	<25	<25	nd	<59	<46	<42	<37	<26	<37	<28	<50	<56	<77	<57	<39	<41	<45	<91	51*	<47	<54	51	nd	90.8	320	<0.28
PST-25	5/7/2002	<25	<25	<25	<25	nd	<61	<48	<43	<38	<27	<39	<30	<53	<58	<80	<59	<41	<42	<46	<95	<44	<49	<56	nd	nd	87.1	390	<0.29
PST-26	5/8/2002	<25	<25	<25	<25	nd	<18	<19	<15	<16	<14	<18	<15	<14	<18	<22	<15	<17	<15	<18	<21	23	18	<39	41	nd	87.5	370	0.14*
PST-27	5/10/2002	<25	<25	<25	<25	nd	<18	<19	<15	<16	<14	<18	<15	<14	<18	<22	<15	<17	<15	<18	<21	<18	<15	<39	nd	nd	79.5	350	<0.31
Treatment Standards		500	2,900	1,500	4,100	ns	ns	ns	ns	700	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	400	1,800	ns	50,000	10,000	--	ns	50

▒ : Exceed Outdoor Worker SSLs Ingestion-Dermal

— : Exceed Migration to Groundwater

Table 3 - Post-treatment Soil Analytical Results
Remedial Action Documentation Report
Former Oshkosh Manufactured Gas Plant Site - WPSC

		Volatile Organic Compounds (VOC's) µg/kg					Polynuclear Aromatic Hydrocarbons (PAHs) µg/kg																				%	mg/kg	
Sample ID	Date	Benzene	Ethylbenzene	Toluene	Total Xylenes	Total BTEX	1-Methylnaphthalene	2-Methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene [c]	Benzo(a)pyrene [c]	Benzo(b)fluoranthene [c]	Benzo(ghi)perylene	Benzo(k)fluoranthene [c]	Chrysene [c]	Dibenzo(a,h)anthracene [c]	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene [c]	Naphthalene	Phenanthrene	Pyrene	Total PAHs	Total cPAHs	Total Solids	Total Lead	Total Cyanide
PST-28	5/10/2002	**26***	<25	<25	<25	**26**	<18	<19	<15	<16	<14	<18	<15	<14	<18	<22	<15	<17	<15	<18	<21	**44***	<15	<39	**44**	nd	85.4	**350**	<0.29
PST-29	5/11/2002	<25	<25	<25	<25	nd	<18	<19	<15	<16	<14	<18	<15	<14	<18	<22	<15	<17	<15	<18	<21	<18	<15	<39	nd	nd	83.3	**350**	<0.30
PST-30	5/12/2002	**26***	<25	<25	<25	**26**	<18	<19	<15	<16	<14	<18	<15	<14	<18	<22	<15	<17	<15	<18	<21	**67**	<15	<39	**67**	nd	88.5	**280**	<0.28
PST-31	5/14/2002	<25	<25	<25	<25	nd	<18	<19	<15	<16	<14	<18	<15	<14	<18	<22	<15	<17	<15	<18	<21	**40***	<15	<39	**40**	nd	89	**340**	<0.28
PST-32	5/15/2002	<25	<25	<25	<25	nd	<18	<19	<15	<16	<14	<18	<15	<14	<18	<22	<15	<17	<15	<18	<21	<18	<15	<39	nd	nd	85	**260**	<0.29
PST-33	5/16/2002	<25	<25	<25	<25	nd	<18	<19	<15	<16	<14	<18	<15	<14	<18	<22	<15	<17	<15	<18	<21	<18	<15	<39	nd	nd	84.5	**290**	<0.30
PST-34	5/20/2002	**62***	<25	<25	<25	**62**	**31***	**46***	<15	**31***	**22***	<18	<15	<14	<18	<22	**28***	<17	**63**	<18	<21	**600**	**170**	**66***	**1,057**	**28**	78.4	**440**	<0.32
PST-35	5/20/2002	<25	<25	<25	<25	nd	<18	<19	<15	<16	<14	<18	<15	<14	<18	<22	<15	<17	<15	<18	<21	**64**	**17***	<39	**81**	nd	79	**320**	<0.32
PST-36	5/20/2002	<25	<25	<25	<25	nd	<18	<19	<15	<16	<14	<18	<15	<14	<18	<22	<15	<17	<15	<18	<21	<18	<15	<39	nd	nd	81.9	**230**	<0.31
PST-37	5/21/2002	<25	<25	<25	<25	nd	<18	<19	<15	<16	<14	<18	<15	<14	<18	<22	<15	<17	<15	<18	<21	**47***	<15	<39	**47**	nd	80	**310**	<0.31
PST-38	5/22/2002	<25	<25	<25	<25	nd	<18	**24***	<15	<16	<14	<18	<15	<14	<18	<22	<15	<17	<15	<18	<21	**100**	<15	<39	**124**	nd	88.7	**390**	<0.28
PST-39	5/24/2002	<25	<25	<25	<25	nd	<18	<19	<15	<16	<14	<18	<15	<14	<18	<22	<15	<17	<15	<18	<21	**25***	<15	<39	**25**	nd	88.8	**350**	**0.30***
PST-40	5/28/2002	**40***	<25	<25	<25	40	**170***	**180***	<100	<88	<77	<110	<88	<140	<88	<120	<130	<71	**160***	<120	<88	**1,400**	**490**	**180***	**2,580**	nd	84.8	**370**	<0.29
PST-41	5/28/2002	**32***	<25	<25	<25	32	<83	<95	<100	<89	<77	<110	<89	<140	<89	<120	<130	<71	<140	<120	<89	**1,000**	**300**	<140	**1,300**	nd	84	**330**	<0.30
PST-42	5/28/2002	<25	<25	<25	<25	nd	<80	<91	<97	<85	<74	<100	<85	<140	<85	<110	<130	<68	<140	<110	<85	**150***	<74	<140	**150**	nd	88	**260**	<0.28
PST-43	5/28/2002	<25	<25	<25	<25	nd	<85	<97	<100	<91	<79	<110	<91	<140	<91	<120	<130	<72	<140	<120	<91	**180***	<79	<140	**180**	nd	82.8	**280**	<0.30
PST-44	6/7/2002	<25	<25	<25	<25	nd	**20***	**30***	<20	<15	<14	<16	<15	<13	<14	<15	<16	<13	<12	<15	<14	**180**	<13	<14	**230**	nd	84	**400**	<0.30
PST-45	6/10/2002	<25	<25	<25	<25	nd	<32	<27	<37	<28	<27	<30	<28	<25	<26	<29	<30	<25	<24	<28	<26	<38	<25	<27	nd	nd	88.6	**500**	<0.28
PST-46	6/13/2002	<25	<25	<25	<25	nd	<16	<14	<19	<14	<14	<15	<14	<12	<13	<15	<15	<12	<12	<14	<13	<19	<12	<14	nd	nd	88	**300**	**0.51***
PST-47	6/14/2002	<25	<25	<25	<25	nd	<17	**14***	<19	<15	<14	<16	<15	<13	<14	<15	<16	<13	<12	<15	<14	**38***	<13	<14	**52**	nd	84.8	**340**	**0.35***
PST-48	6/17/2002	<25	<25	<25	<25	nd	**36***	**91**	<20	<15	<15	<16	<15	<13	<14	<16	<16	<13	<13	<15	<14	**54***	<13	<15	**181**	nd	82.6	**450**	<0.30
Treatment Standards		**500**	**2,900**	**1,500**	**4,100**	ns	ns	ns	ns	**700**	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	**400**	**1,800**	ns	**50,000**	**10,000**	--	ns	**50**

[(O-MJR 8/29/02 C-HMS 9/4/02)

Notes:

1. ns = no standard
2. Treatment Standards based on the Remedial Work Plan Treatment Performance Criteria
3. [c]= carcinogenic PAH, classified as B2 probable human carcinogen
4. cPAHs=carcinogenic PAHs
5. na = not analyzed
6. Detected values bolded
7. ☐=concentrations above the treatment standards. Soil was retreated.
8. * = The reported result is less than the practical quantitation limit (reference laboratory reports)
9. F = Surrogate results outside control criteria.

Table 4 - Soil Contaminant Mass Removal Summary
Remedial Action Documentation Report
Former Oshkosh Manufactured Gas Plant Site - WPSC

		BTEX	PAHs	Total CN
PRE-TREATMENT SOIL				
Average concentration	(µg/kg)	113,798	1,463,801	50,857
Contaminant Mass	(tons)	2.7	34.4	1.20
POST-TREATMENT SOIL				
Average concentration	(µg/kg)	116	173	560
Contaminant Mass	(tons)	0.0027	0.004	0.013
CONTAMINANT REMOVAL - SOIL				
Contaminant Removed	(percent)	99.90%	99.99%	98.90%
Mass Removed	**(tons)**	**2.672**	**34.395**	**1.182**
Mass Removed	**(lbs.)**	**5,343**	**68,790**	**2,364**
CONTAMINANT REMOVAL - BTEX + PAHs IN SOIL (lbs.)		**74,134**		

(O-HMS 11/20/02 C- SLF 11/21/02)

Notes:

1. Mass removal based on 23,500 tons of soil treated and arithmetic mean of pre-treatment and post-treatment BTEX, PAH, and Total Cyanide values.
2. Post samples PST-1,4,11,16,18,34,40,41 were not included in post-trreatment soil average concentration, due to re-treatment of these piles.
3. Non-detectable post treatment samples were not included in post-treatment soil average concentration.

Table 6 - Summary of Earthen Cap Extent - Shallow Soil Quality Results
Remedial Action Documentation Report
Former Oshkosh Manufactured Gas Plant Site - WPSC

			Volatile Organic Compounds (mg/kg)					Polynuclear Aromatic Hydrocarbons (PAH's) mg/kg																					%	mg/kg	
Sample ID	**Date**	**Depth (feet)**	**Benzene**	**Toluene**	**Ethylbenzene**	**Total Xylenes**	**Total BTEX**	**1-Methylnaphthalene**	**2-Methylnaphthalene**	**Acenaphthene**	**Acenaphthylene**	**Anthracene**	**Benzo(a)anthracene [c]**	**Benzo(a)pyrene [c]**	**Benzo(b)fluoranthene [c]**	**Benzo(ghi)perylene**	**Benzo(k)fluoranthene [c]**	**Chrysene [c]**	**Dibenzo(a,h)anthracene [c]**	**Fluoranthene**	**Fluorene**	**Indeno(1,2,3-cd)pyrene [c]**	**Naphthalene**	**Phenanthrene**	**Pyrene**	**Total PAHs**	**Total cPAHs**	**Total Solids**	**Total Lead**	**Total Cyanide**
EXT-01	5/10/2002	2	**0.079**	**0.027***	**0.039***	**0.080***	**0.225***	**0.170***	**0.29**	<0.07	**0.98**	**0.39**	**1.6**	**2.1**	**1.9**	**2.1**	**1.7**	**1.9**	**0.45**	**1.8**	**0.057***	**1.6**	**0.51**	**0.74**	**2.7**	**21**	**11.3**	**94**	**47**	**2^A**
EXT-02	5/10/2002	2	**0.13**	**0.043***	**0.15**	**0.156***	**0.479**	**0.220***	**0.25**	**0.14***	**1.1**	**0.6**	**2.3**	**4**	**3.2**	**3.5**	**2.7**	**2.6**	**0.8**	**2.9**	**0.3**	**3.3**	**0.76**	**1.4**	**3.6**	**33.7**	**18.9**	**86.2**	**66**	**9.8**
EXT-03	5/10/2002	2	**0.041***	<0.025	<0.025	<0.025	**0.041**	<1.1	<0.94	<1.3	**7**	**4.7**	**42**	**46**	**42**	**21**	**36**	**35**	**8**	**62**	<0.98	**30**	<1.3	**9.2**	**50**	**392.9**	**239**	**76.2**	**270**	**11**
EXT-04	5/10/2002	1.5	**0.47**	**0.46**	**0.15**	**0.42**	**1.5**	**0.039***	**0.050***	**0.099***	**0.26**	**0.18**	**0.94**	**1.8**	**1.3**	**1.7**	**1.4**	**0.92**	**0.41**	**1**	**0.037***	**2.1**	**0.092***	**0.41**	**1.1**	**13.8**	**8.9**	**91.5**	**39**	**2.4**
EXT-05	5/22/2002	2	<0.025	**0.054**	<0.025	**0.094**	**0.148**	<3.4	<2.9	<4	**38**	**13**	**170**	**170***	**110**	66	**130**	**170**	**18**	**180**	<3.1	**76**	<4.2	**24**	**310**	**1,475**	**844**	**81.8**	**88**	**3.5**
EXT-06	6/5/2002	1-2	<0.025	<0.025	<0.025	<0.025	nd	**0.018***	**0.027 ***	<0.018	**0.13**	**0.16**	**0.8**	**0.92***	**0.73**	**0.45**	**0.76**	**0.71**	**0.12**	**1**	**0.028 ***	**0.58**	**0.09**	**0.43**	**1.3**	**8.3**	**4.6**	**89.5**	**29 ***	**0.34 ***
EXT-07	6/5/2002	1-2	<0.025	<0.025	<0.025	<0.025	nd	<66	**0.061***	**0.087***	**0.14 ***	**0.49**	**1.1**	**1.5***	**1**	**0.69**	**1.5**	**1.3**	**0.13***	**2.8**	**0.13 ***	**0.87**	**0.16 ***	**1.9**	**3.1**	**17**	**7.4**	**84.5**	**200**	**0.97**
EXT-08	6/5/2002	1-2	<0.025	<0.025	<0.025	<0.025	nd	**0.022 ***	**0.026 ***	<0.019	**0.094**	**0.11**	**0.61**	**0.76**	**0.67**	**0.38**	**0.63**	**0.57**	**0.081**	**0.81**	**0.033***	**0.47**	**0.056 ***	**0.44**	**0.98**	**6.7**	**3.8**	**86.9**	**220**	**0.45***
EXT-09	6/5/2002	1-2	<0.025	**0.053***	<0.025	**0.13 ***	**0.183**	**0.31**	**0.39**	**0.035***	**0.13**	**0.22**	**0.73**	**0.97**	**0.9**	**0.54**	**0.83**	**0.81**	**0.18**	**1.4**	**0.067**	**0.65**	**0.28**	**1.1**	**1.4**	**10.9**	**5.1**	**88.5**	**160**	**1.4**
EXT-10	6/5/2002	1-1.5	<0.025	<0.025	<0.025	**0.042***	**42**	**0.096**	**0.13**	**0.021***	**0.057**	**0.1**	**0.36**	**0.42**	**0.4**	**0.26**	**0.36**	**0.39**	**0.076**	**0.75**	**0.037***	**0.25**	**0.12**	**0.57**	**0.79**	**5.2**	**2.3**	**87.3**	**63**	**0.6 ***
EXT-11	7/17/2002	1	<0.025	<0.025	<0.025	<0.025	nd	<0.014	<0.012	<0.017	<0.013	<0.012	<0.014	<0.013	<0.011	<0.012	<0.013	<0.014	<0.011	**0.014***	<0.013	<0.012	<0.017	<0.011	**0.016***	**0.0**	nd	**98.2**	**45**	**1.4**
EXT-12	7/17/2002	1.5	<0.025	**0.072***	<0.025	**0.081***	**0.153**	**0.057**	**0.078**	**0.019***	**0.049**	**0.078**	**0.34**	**0.4**	**0.5**	**0.22**	**0.39**	**0.38**	**0.068**	**0.52**	**0.027***	**0.27**	**0.064**	**0.41**	**0.72**	**4.6**	**2.3**	**91.5**	**42**	<0.11
EXT-13	7/17/2002	1.5	<0.025	<0.025	<0.025	<0.025	nd	**0.022***	**0.028***	<0.016	**0.034***	**0.036***	**0.14**	**0.21***	**0.28**	**0.13**	**0.18**	**0.27**	**0.042**	**0.36**	<0.012	**0.15**	**0.04***	**0.12**	**0.37**	**2.4**	**1.3**	**94.4**	**27**	**1.1**
EXT-14	7/17/2002	1.5	<0.025	<0.025	<0.025	<0.025	nd	<0.015	<0.013	<0.018	<0.013	<0.013	<0.015	<0.013	<0.012	<0.012	<0.014	<0.015	<0.012	<0.011	<0.013	<0.012	<0.018	<0.012	<0.013	nd	nd	**92.6**	**25**	**0.13***
EXT-15	7/17/2002	1.5	<0.025	<0.025	<0.025	<0.025	nd	**0.054**	**0.066**	<0.019	<0.015	<0.014	**0.016***	**0.016***	**0.015***	**0.016***	<0.015	**0.024***	<0.013	**0.022***	<0.015	<0.013	**0.13**	**0.058**	**0.027***	**0.4**	**0.1**	**86**	**26**	**0.13***
EXT-16	7/17/2002	1	**2**	**2.3**	**0.17**	**1.58**	**6.05**	**0.73**	**0.92**	**0.019***	**0.043***	**0.058**	**0.27**	**0.24***	**0.21**	**0.025***	**0.21**	**0.26**	**0.041**	**0.26**	**0.025***	**0.16**	**0.59**	**0.6**	**0.29**	**5**	**1.4**	**89.5**	**32**	<0.11
EXT-17	7/17/2002	1.5	**0.046***	**0.044***	<0.025	**0.031***	**0.121**	**0.38***	**0.29***	<0.17	**1.3**	**0.72**	**3.3**	**2.7***	**2.9**	**1.4**	**2**	**3.2**	**0.61**	**3.8**	**0.42**	**1.5**	**0.29***	**3.9**	**7.3**	**36**	**16.2**	**96**	**640**	**0.37**
EXT-18	7/17/2002	1.5	<0.025	**0.039***	<0.025	**0.103***	**0.142**	**0.21***	**0.25**	<0.086	**0.16**	**0.35**	**2**	**2.4**	**1.9**	**1.5**	**2**	**2.1**	**0.45**	**3.1**	**0.075***	**1.8**	**0.27***	**1.5**	**3.7**	**23.8**	**10.4**	**96.1**	**160**	**8.7**
								INTERIM AND PRELIMINARY GUIDANCE LEVELS (mg/kg)																							
Groundwater Pathway RCL			**0.0055**	**1.5**	**2.9**	**4.1**	**ns**	**23**	**20**	**38**	**1**	**3,000**	**17**	**48**	**360**	**6,800**	**870**	**37**	**38**	**500**	**100**	**680**	**0.4**	**1.8**	**8,700**	**ns**	**ns**	**--**	**ns**	**ns**
Direct Contact Pathway-Non-industrial RCL			**1.1**	**ns**	**ns**	**ns**	**ns**	**1,100**	**600**	**900**	**18**	**5,000**	**0.088**	**0.0088**	**0.088**	**1.8**	**0.88**	**8.8**	**0.0088**	**600**	**600**	**0.088**	**20**	**18**	**500**	**ns**	**ns**	**--**	**50**	**ns**
Direct Contact Pathway-Industrial RCL			**ns**	**ns**	**ns**	**ns**	**ns**	**70,000**	**40,000**	**60,000**	**360**	**300,000**	**3.9**	**0.39**	**3.9**	**39**	**39**	**390**	**0.39**	**40,000**	**40,000**	**3.9**	**110**	**390**	**30,000**	**ns**	**ns**	**--**	**500**	**ns**
US EPA Residential PRGs			**0.65**	**520**	**230**	**210**	**ns**	**ns**	**ns**	**3,700**	**ns**	**22,000**	**0.62**	**0.062**	**0.62**	**ns**	**6.2**	**62**	**0.062**	**2,300**	**2,600**	**0.62**	**56**	**ns**	**2,300**	**ns**	**ns**	**--**	**400**	**ns**
US EPA Industrial PRGs			**1.5**	**520**	**230**	**210**	**ns**	**ns**	**ns**	**38,000**	**ns**	**100,000**	**2.9**	**0.29**	**2.9**	**ns**	**29**	**290**	**0.29**	**30,000**	**33,000**	**2.9**	**190**	**ns**	**54,000**	**ns**	**ns**	**--**	**750**	**ns**

(O-MJR 8/26/02 C-HMS 9/4/02 U-HMS 10/9/02 C-MJR 10/9/02)

Notes:

1. na = not analyzed
2. nd = not detected
3. ns = no standard
4. * = The reported result is less than the practical quantitation limit
5. [c]= carcinogenic PAH, classified as B2 probable human carcinogen
6. cPAHs=carcinogenic PAHs
7. RCL = WDNR generic Residual Contaminant Level
8. PRG = US EPA Region 9 Preliminary Remediation Goals for direct contact
9. Detected values bolded

▨ : Exceed Outdoor Worker SSLs Ingestion-Dermal

— : Exceed Migration to Groundwater

APPENDIX D3

WDNR SPECIAL WASTE APPROVAL

WISCONSIN
DEPT. OF NATURAL RESOURCES

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Scott McCallum, Governor
Darrell Bazzell, Secretary

101 S. Webster St.
Box 7921
Madison, Wisconsin 53707-7921
Telephone 608-266-2621
FAX 608-267-3579
TTY 608-267-6897

COPY

April 22, 2002

APR 25 2002

Ms Connie K. Lawniczak
Wisconsin Public Service Corp.
P.O. Box 19002
Green Bay, Wi 54307-9002

Subject: WPS-Oshkosh Coal Gas Site

Dear Ms Connie Lawniczak:

This letter in part responds to Mr. Mark Thimke's April 8, 2002 letter to Mr. Bruce Urben, in which he requested assistance for WPS, to allow it to thermally treat on-site manufactured gas plant (MGP) related wastes that exceed the benzene threshold under the TCLP test.

The Department recognizes that recently, the United States Environmental Protection Agency issued a final rule that exempts MGP wastes from the TCLP test. Wisconsin has not yet adopted this federal exemption.

I took the opportunity to discuss the Oshkosh coal gas site situation with our Bureau Director Sue Bangert, Policy Section Chief John Melby, and Hazardous Waste Team Leader Pat Chabot. After our discussion, we agreed that since the Department intends to adopt the federal rule exemption, we would not require WPS to handle the MGP waste exceeding TCLP for benzene as a hazardous waste in the interim. We agreed that it made sense to allow this contaminated media to be thermally treated on-site along with other media not exceeding the TCLP limit. The Department's Coal Gas Team had a conference call last Thursday and they too were supportive of this decision.

In the coming weeks, the Department may prepare more formal guidance for both staff and the utilities on this matter. Please call me at 920-492-5870 if you would like to discuss this issue further.

Sincerely,

Len Polczinski

Len Polczinski, Region Program Manager
NER-WA Program

cc. Bruce Urben
Sue Bangert/John Melby/Pat Chabot
Mark A. Thimke Foley Lardner 777 East Wisconsin Ave., Suite 3900 Milwaukee 53202-5367
Spiros Fafalios 23713 W. Paul Rd. Suite D Pewaukee, WI 53072
Jennifer Pelczar - Oshkosh

APPENDIX D4

RIVERSIDE PARK CONSTRUCTION DOCUMENTATION REPORT

STS CONSULTANTS

STS Consultants, Ltd.
558 North Main Street
Oshkosh, Wisconsin 54901

voice 920-235-0270
fax 920-235-0321
web www.stsconsultants.com

JUN 15 2006

June 9, 2006

Ms. Kathleen Sylvester
Wisconsin Department of Natural Resources
625 East County Trunk Y, Suite 700
Oshkosh, Wisconsin 54901

Re: Riverside Park Construction Documentation Report, City of Oshkosh, Wisconsin
– STS Project No. 4-26678XA

Dear Ms. Sylvester:

STS Consultants, Ltd. (STS) is pleased to present this construction documentation report (CDR) for the Riverside Park redevelopment in the City of Oshkosh, Wisconsin (site). This CDR was prepared in general accordance with the Park Development Plan (PDP) submitted by STS, on behalf of the City of Oshkosh, in July 2004. This CDR provides the Wisconsin Department of Natural Resources (WDNR) a record of site modifications associated with the park redevelopment. This CDR includes:

- Site record drawings
- Record of monitoring well and groundwater collection trench system modifications
- Record of environmental cap installation and modifications
- Description of trench plugs and trench liner
- Record of disposal for contaminated soil and groundwater
- Record of environmental site monitoring

As-Built Conditions
The following site record drawings were created and are attached to the report:

- R-0: Cover Sheet – Site location and drawing index
- R-1: Record Topographic Survey – Post-construction surveyed site conditions
- R-2: Record Paving Plan – Pavement sections and locations of pavements and heavy duty pavement
- R-3: Record Grades & Cap Thickness Plan – Surveyed grades, cap thickness labels, and location of geocomposite liner (GCL) and geotextile warning layer.
- R-4: Record Water Utility Plan – Phase I existing water main and structure layout with descriptions.
- R-5: Record Sanitary Sewer Plan – Phase I existing sanitary sewer and structure layout with descriptions.
- R-6: Record Storm Sewer Plan – Phase I existing storm sewer and structure layout with descriptions.
- R-7: Record Cross Sections (A-A' & B-B') – Cross sectional views of surface and subsurface materials/structures through two representative angles of the development.
- R-8: Record Planting Detail – Detail sections of the parking island planter and river walk area plantings.

- R-9: Record Electrical Plan – Location and descriptions of existing Phase I electrical layout.

These record drawings document the as-built conditions and identify site modifications required to complete the redevelopment. Deviations from the July 2004 PDP are presented in more detail below.

Groundwater Collection System

Monitoring wells and components of the groundwater collection trench system were protected during construction and adjusted to final design grades of the park. Final design grades were generally higher than anticipated, therefore ultimate modifications to the groundwater collection system components varied from those identified in the July 2004 PDP. Components associated with DS-1, DS-3, and DS-4 were raised between approximately 0.4 to 10 feet. Components associated with DS-2 were not adjusted, as the final design grades generally matched the original elevations of those structures.

Two monitoring well were damaged and subsequently replaced during utility construction. Monitoring wells P-2 and GW-2 were replaced with P-2R and GW-2R, respectively. Monitoring well abandonment, construction, and development forms are attached. The groundwater collection system and replacement wells are presented on sheet R-1 of the record drawings.

Engineered Environmental Caps

Engineered environmental caps were installed to limit human direct contact with and reduce surface water infiltration through residual contaminated soil on the site. The caps were constructed with a combination of new asphalt and concrete pavement and reused soil barrier material. Where asphalt and concrete were not placed, the soil cap generally consisted of 6 inches of clay under 6 inches of sand, all overlaid by 6 inches of topsoil. Where the soil cap thickness could not be obtained due to other site considerations, a GCL with specified permeability of less than $1x10^{-7}$ centimeters per second, was installed to replace the desired 6 inches of clay material. Field density tests were performed on the asphalt and soil caps, and the compaction summary sheets are attached. Record Drawing R-3 identifies two locations where a GCL was utilized in place of 6-inches of compacted clay. In both instances, the GCL was tied 2-feet into the adjoining clay layer and covered with 6-inches of granular fill and 6-inches of topsoil. In addition to the locations identified on the record drawings, a GCL was also used as a temporary cover for a stockpile of excess soil generated during the redevelopment. In this location, the GCL was covered with 18 inches of topsoil and vegetated with grass. The City is assessing final disposal options for the excess soil.

Utility Construction

The site redevelopment included installation of water main, storm sewer, and sanitary sewer systems. Soil generated during utility trench excavations was either replaced within the utility trenches as backfill or used as general fill for grading the hillside seating area of the park. Low permeability plugs were installed within utility trenches that exited the site or penetrated the existing vertical sheet pile barrier wall. Trench plugs installed within utility trenches exiting the site were constructed of lean concrete on top of bentonite instead of re-compacted silty clay as described in the July 2004 PDP. The trench plug installed within the sole utility trench that penetrated the vertical sheet pile barrier wall was constructed of bentonite. Utility details are presented on sheets R-4 through R-6 of the record drawings.

Tree Planting

Initial redevelopment plans included the importation of amended soil for use in the tree planters. However, on site topsoil was used instead to reduce planting costs and satisfy the cut/fill balance of the site. As indicated on Record Drawing R-8, a GCL was placed in the planting trenches below 36 inches of topsoil to establish a hydraulic barrier over the solid waste. The GCL was interconnected with a drain tile system that utilized perforated pipe below the plantings and a solid pipe below paved areas.

A 6-ounce, non-woven geotextile was installed in the tree planting areas as a warning layer above the GCL and underlying contaminated soil. The geotextile was overlapped 18 inches and placed on the east and south slopes of the hillside seating area from top to toe of the slope. The extent of geotextile warning layer placement is presented on Record Drawing R-3.

Excess Soil
Approximately 5,628 tons of excess residual contaminated soil was generated during the site redevelopment. The excess material, which was unable to be reused on the site, was transported to the Waste Management (WM) Valley Trail Recycle and Disposal Facility in Berlin, Wisconsin for disposal. The WM load tickets are enclosed.

Riverfront Improvements
Riverfront improvements were not anticipated as part of the Phase I construction. However, additional funding made it possible to construct the pedestrian walkway, decorative fencing, and restroom facilities. The pedestrian walkway was constructed of brick and concrete sloped at a two percent grade toward the Fox River. The GCL associated with the engineered environmental cap was installed up to the pedestrian walkway to maintain a continuous impervious barrier to the river. The GCL was overlapped 18 inches and granular bentonite was installed between the overlapped layers. A cross-section detail of the pedestrian walkway and decorative fence is presented on Record Drawing R-8.

The restrooms along the river walkway were constructed on concrete-filled piles. Impacted soil encountered within the piles was removed (prior to filling the piles with concrete) and managed as a special solid waste. The piles were constructed below the environmental cap to limit the infiltration of groundwater. A plan view of the restrooms and pedestrian walkway is presented on Record Drawing R-1.

The purchase agreement between WPSC and the City established a Sediment Project Easement along the Fox River, the extent of which is presented on Record Drawing R-1. The easement will allow access to the Fox River for future dredging activities and can be used to stage dredged piles.

Site Dewatering
Although not anticipated during the development of the July 2004 PDP, site dewatering was required during the site redevelopment. Water encountered during the redevelopment (primarily within excavated utility trenches) was pumped into temporary holding tanks to reduce total suspended solids and capture free product prior to discharging to the City's Waste Water Treatment Plant. The City granted approval for the discharge in a letter (attached) dated August 30, 2004.

Free product was not observed in the temporary holding tanks during site dewatering and discharge activities. Solids which settled at the bottom of the temporary tanks were either transported to the WM Valley Trail facility for disposal or placed beneath engineered environmental caps on the site.

Air Monitoring
Ambient air monitoring was completed during the redevelopment to assess the presence of volatile hazardous substances within the interior and at the perimeter of the site. Air monitoring was completed each morning and afternoon by screening the site with a photoionization detector (PID). PID readings in the ambient air did not exceed the target thresholds of 50 and 10 PID units established in the July 2004 PDP for the interior areas and at the perimeter of the site, respectively.

Dust Control

Dust suppression was completed during excavation activities to reduce particulate hazardous substances generated within the interior and at the perimeter of the site. Impacted soil was maintained moist by spraying with water in general accordance with BMPs defined in the "Wisconsin Construction Site Best Management Practices Handbook", and as described in the Erosion Control Plan.

Operation and Cap Maintenance Plan

Engineered caps were installed at the redevelopment Riverside Park to reduce the potential for human direct contact and to limit surface water infiltration through residual soil contamination consisting of polynuclear aromatic hydrocarbons (PAHs); benzene, toluene, ethylbenzene, and xylene (BTEX); total cyanide; arsenic; and lead. The impacted soil was capped with a combination of asphalt and concrete pavement, brick pavers buildings, and vegetated soil barriers constructed of clay or GCL overlain by granular material and/or topsoil. The engineered caps shall be observed by the property owner on an annual basis during the months of May through August to assess their integrity and effectiveness. The property owner shall maintain the caps by:

- Sealing and/or patching cracks observed in asphalt and concrete pavement;
- Repairing and/or replacing damaged and disturbed brick pavers;
- Repairing building foundations and soil caps in green space areas that have the potential to compromise the effectiveness of the caps.

The property owner shall keep documentation of the annual inspections and maintenance items completed.

Closing

We appreciate your assistance with making Riverside Park a successful development for the City of Oshkosh. If you have any questions regarding this submittal, please contact us.

Sincerely,

STS CONSULTANTS, LTD.

Suzanne M. Murawski/mmh
Suzanne M. Murawski, P.E.
Senior Project Engineer

Paul J. Killian/mmh
Paul J. Killian, P.E.
Principal Engineer

Attachments
- Monitoring Well Abandonment, Construction, and Development Forms
- City of Oshkosh POTW Discharge Approval Letter
- Waste Management Valley Trial Recycle and Disposal Facility Load Tickets
- Compaction Summary Reports
- Site Record Drawing Set

CC: Ms. Kristi Bales
City of Oshkosh
215 Church Avenue
Oshkosh, Wisconsin 54903-1130

Mr. Brian F. Bartoszek
WPS
700 North Adams Street
Green Bay, Wisconsin 54307-9002

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT

Form 3300-5P 2/2000 Page 1 of 2

Notice: Please complete Form 3300-5P and return it to the appropriate DNR office and bureau. Completion of this report is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file this form may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. NOTE: See the instructions for more information.

Route to: ☐ Drinking Water ☐ Watershed/Wastewater ☐ Waste Management ☐ Remediation/Redevelopment ☐ Other

(1) GENERAL INFORMATION

WI Unique Well No.
DNR Well ID No.
County: Winnebago
Common Well Name: P-2
Gov't Lot (if applicable)
___ 1/4 of ___ 1/4 of Sec. ___ ; T. ___ N; R. ___ ☐ E ☐ W
Grid Location
___ ft. ☐ N. ☐ S., ___ ft. ☐ E. ☐ W.
Local Grid Origin ☐ (estimated: ☐) or Well Location ☐
Lat. ___ ° ___ ' ___ . ___ " Long ___ ° ___ ' ___ . ___ " or
St. Plane ___ ft. N. ___ ft. E. S C N ☐☐☐ Zone
Reason For Abandonment: Broken
WI Unique Well No. of Replacement Well

(2) FACILITY / OWNER INFORMATION

Facility Name: River Side Park
Facility ID
License/Permit/Monitoring No.
Street Address of Well: Cape Ave
City, Village, or Town: Oshkosh, WI
Present Well Owner
Original Owner
Street Address or Route of Owner
City, State, Zip Code

(3) WELL/DRILLHOLE/BOREHOLE INFORMATION

Original Construction Date: ?
☐ Monitoring Well
☐ Water Well
☒ Borehole / Drillhole

If a Well Construction Report is available, please attach.

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

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) (From groundsurface): 29'
Casing Diameter (in.): 2"
Casing Depth (ft.)
Lower Drillhole Diameter (in.)
Was Well Annular Space Grouted? ☐ Yes ☐ No ☐ Unknown
If Yes, To What Depth? ___ Feet
Depth to Water (Feet): 5.5

(4) PUMP, LINER, SCREEN, CASING, & SEALING MATERIAL

Pump & Piping Removed?	☐ Yes	☐ No	☒ Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	☒ Not Applicable
Screen Removed?	☒ Yes	☐ No	☐ Not Applicable
Casing Left in Place?	☐ Yes	☒ No	
Was Casing Cut Off Below Surface?	☒ Yes	☐ No	
Did Sealing Material Rise to Surface?	☒ Yes	☐ No	
Did Material Settle After 24 Hours?	☐ Yes	☒ No	
If Yes, Was Hole Retopped?	☒ Yes	☐ No	

Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☒ Conductor Pipe-Pumped
☐ Screened & Poured (Bentonite Chips) ☐ Other (Explain)

Sealing Materials
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry (11 lb./gal. wt.)
☐ Bentonite-Sand Slurry " "
☐ Bentonite Chips

For monitoring wells and monitoring well boreholes only
☐ Bentonite Chips
☐ Granular Bentonite
☐ Bentonite - Cement Grout
☐ Bentonite - Sand Slurry

(5)

Material Used To Fill Well/Drillhole	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume	(Circle One)	Mix Ratio or Mud Weight
T.S	Surface	1.0			
Bent -Cement Grout	1.0	29'	6:1		

(6) Comments:

(7) Name of Person or Firm Doing Sealing Work
Badger State Drilling Co., Inc.
Date of Abandonment: 6-30-05
Signature of Person Doing Work
Date Signed: 7/6/05
Street or Route
360 Business Park Cr.
Telephone Number
(608) 877-9770
City, State, Zip Code
Stoughton, WI 53589

FOR DNR OR COUNTY USE ONLY
Date Received
Noted By
Comments

DNR/COUNTY

BADGER STATE DRILLING CO., INC.
STOUGHTON, WISCONSIN

FIELD BORING LOG

Sheet 1 Of 1

FOR Riverside Park Terra

Job No. 3889

LOCATION Oshkosh, WI ELEV.

Boring No. P-2 R

GROUND WATER

While drilling 6.0
Before casing removal
After casing removal
Time after drilling
Depth to water
Depth to cave-in

Start 6-30-05
Unit D120
Chief K.M

Casing/Probe 2"
Weight 140
Drop 30

Sample No.	Moisture	Blows on Sampler 0/6	Blows on Sampler 6/12	Sample Recovery	Total Blows	VISUAL FIELD CLASSIFICATION AND REMARKS	Unconfined Strength	Boulders	Blows on Casing Size	Blows on Probe Size	Drilling Method
						6" TS			4¼		HSA
1	M	3 4	4 5	8	8	Br F Loose Silty Sandy Clay	[illegible]				SS
2	M	2 5	4 2	15	9						
3	W	1 6	5 4	10	11	Br wood					
4	W	2 1	6 1	1	7	Black wood					
5	W	1 0	0 0	18	0	Black F. V. Loose Silty Sand w/ Clay					
6	W	0 0	0 0	12	0	Br F. organic V. Loose Silt					
7	W	14 10	9 4	18	19	Br gray (V. 11) Hard clay w/ s+m gravel	4.5				
8	W	9 20	6 23	14	36		4.5				
9	W	14 25	20 31	18	45	-5.5 -5.5	4.5				
10	W	10 25	18 27	16	43		4.5				
11	W	14 23	15 31	18	38		4.5				
12	W	8 20	13 29	24	33		4.5				
13	W	6 18	9 18	24	26		4.5				
14	W	6 9	8 14	24	17						
15	W	29 x	50/5 x	12	79	Gry F. V. dense Silt w/ sand + Some gravel					

E.O.B 30.0 5' Screen

Set well 29.0

⑥ Filter 22

⑦ Fine 2.1

⑩ Chips 1.0

① Flush

① Concrete

PJ207

State of Wisconsin
Department of Natural Resources

Route to: Solid Waste ☐ Haz. Waste ☐ Wastewater ☐
Env. Response & Repair ☐ Underground Tanks ☐ Other ☐ ______

MONITORING WELL CONSTRUCTION

Form 4400-113A Rev. 4-90

Facility/Project Name: Riverside Park

Local Grid Location of Well: ______ ft. ☐ N. ☐ S. ______ ft. ☐ E. ☐ W.

Well Name: P-2R

Facility License, Permit or Monitoring Number: Oshkosh, WI

Grid Origin Location: Lat. ______ Long. ______ or

Wis. Unique Well Number / DNR Well Number: [illegible]

Type of Well: Water Table Observation Well ☐ 11 Piezometer ☒ 12

St. Plane ______ ft. N, ______ ft. E.

Date Well Installed: 6/30/05 (m m d d y y)

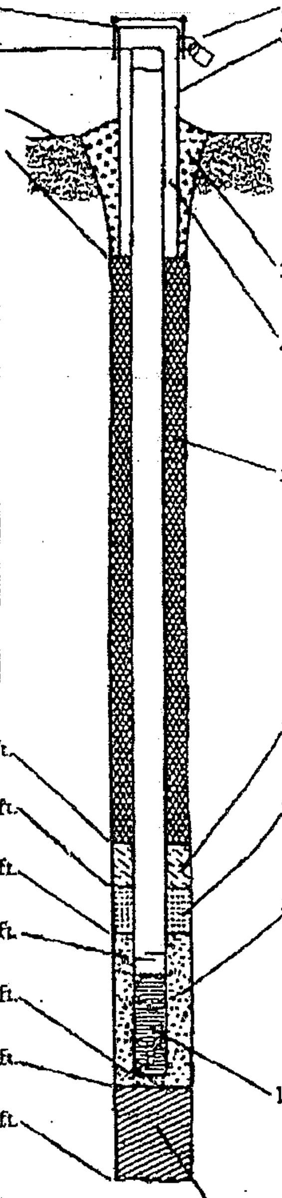
Distance Well Is From Waste/Source Boundary ______ ft.

Section Location of Waste/Source: ___1/4 of ___ 1/4 of Sec. ___, T. ___ N, R. ___ ☐ E. ☐ W.

Well Installed By: (Person's Name and Firm) K. McCumber BSD

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

Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☐ Not Known



A. Protective pipe, top elevation Flush ft. MSL
B. Well casing, top elevation ______ ft. MSL
C. Land surface elevation ______ ft. MSL
D. Surface seal, bottom ______ ft. MSL or ______ ft.

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

13. Sieve analysis attached? ☐ Yes ☐ No

14. Drilling method used: Rotary ☐ 50
Hollow Stem Auger ☒ 41
Other ☐ ______

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

16. Drilling additives used? ☐ Yes ☒ No

Describe ______

17. Source of water (attach analysis): ______

E. Bentonite seal, top ______ ft. MSL or 10 ft.
F. Fine sand, top ______ ft. MSL or 21.0 ft.
G. Filter pack, top ______ ft. MSL or 22.0 ft.
H. Screen joint, top ______ ft. MSL or 24.0 ft.
I. Well bottom ______ ft. MSL or 29.0 ft.
J. Filter pack, bottom ______ ft. MSL or 30.0 ft.
K. Borehole, bottom ______ ft. MSL or 30.0 ft.
L. Borehole, diameter 8 in.
M. O.D. well casing 2.38 in.
N. I.D. well casing 2.0 in.

1. Cap and lock? ☒ Yes ☐ No

2. Protective cover pipe:
a. Inside diameter: 9.0 in.
b. Length: 1.0 ft.
c. Material: Steel ☒ 04
Other ☐ ______
d. Additional protection? ☐ Yes ☐ No
If yes, describe: ______

3. Surface seal: Bentonite ☐ 30
Concrete ☒ 01
Other ☐ ______

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

5. Annular space seal: a. Granular Bentonite ☐ 33
b. ______ Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 35
c. ______ Lbs/gal mud weight . . . . . Bentonite slurry ☐ 31
d. ______ % Bentonite . . . . . . Bentonite-cement grout ☐ 50
e. ______ Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 01
Tremie pumped ☐ 02
Gravity ☐ 08

6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐ 1/4 in. ☒ 3/8 in. ☐ 1/2 in. Bentonite pellets ☐ 32
c. ______ Other ☐

7. Fine sand material: Manufacturer, product name & mesh size
a. Ohio 40-60
b. Volume added ______ ft^3

8. Filter pack material: Manufacturer, product name and mesh size
a. Ohio [illegible]
b. Volume added ______ ft^3

9. Well casing: Flush threaded PVC schedule 40 ☒ 23
Flush threaded PVC schedule 80 ☐ 24
Other ☐ ______

10. Screen material: Sch 40 PVC
a. Screen type: Factory cut ☒ 11
Continuous slot ☐ 01
Other ☐ ______
b. Manufacturer Monoflex
c. Slot size: 0.010 in.
d. Slotted length: 5.0 ft.

11. Backfill material (below filter pack): None ☒ 14
Other ☐ ______

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

Signature: ______ Firm: Badger State Drilling, Inc

Please complete both sides of this form and return to the appropriate DNR office listed at the top of this form as required by chs. 144, 147 and 160, Wis. Stats., and ch. NR 141, Wis. Ad. Code. In accordance with ch. 144, Wis Stats., failure to file this form may result in a forfeiture of not less than $10, nor more than $5000 for each day of violation. In accordance with ch. 147, Wis. Stats., failure to file this form may result in a forfeiture of not more than $10,000 for each day of violation. NOTE: Shaded areas are for DNR use only. See instructions for more information including where the completed form should be sent.

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT
Form 4400-113B Rev. 4-90

Route to: Solid Waste ☐ Haz. Waste ☐ Wastewater ☐
Env. Response & Repair ☐ Underground Tanks ☐ Other ☐

Facility/Project Name: Riverside Park
County Name: Winnebago
Well Name: R-2R
Facility License, Permit or Monitoring Number:
County Code:
WI Unique Well Number:
DNR Well Number:

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

2. Well development method
   - surged with bailer and bailed ☒ 41
   - surged with bailer and pumped ☐ 61
   - surged with block and bailed ☐ 42
   - surged with block and pumped ☐ 62
   - surged with block, bailed and pumped ☐ 70
   - compressed air ☐ 20
   - bailed only ☐ 10
   - pumped only ☐ 51
   - pumped slowly ☐ 50
   - Other ☐

3. Time spent developing well: 90 min.

4. Depth of well (from top of well casisng): 28.9 ft.

5. Inside diameter of well: 2.0 in.

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

7. Volume of water removed from well: 60.0 gal.

8. Volume of water added (if any): ___ gal.

9. Source of water added:

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

		Before Development	After Development
11. Depth to Water (from top of well casing)	a.	7.0 ft.	0.0 ft.
Date	b.	2/1/05 (m m d d y y)	2/1/05 (m m d d y y)
Time	c.	8:30 ☒ a.m. ☐ p.m.	10:00 ☐ a.m. ☐ p.m.
12. Sediment in well bottom		0.0 inches	0.0 inches
13. Water clarity		Clear ☐ 10 Turbid ☒ 15 (Describe) Br	Clear ☐ 20 Turbid ☒ 25 (Describe) Br

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

	Before Development	After Development
14. Total suspended solids	___ mg/l	___ mg/l
15. COD	___ mg/l	___ mg/l

16. Additional comments on development:

Bailed Dry 3 Times

Well developed by: Person's Name and Firm

Name: K. McLumber
Firm: BSD

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

Signature:
Print Initials: MAB
Firm: Badger State Drilling, Inc.

NOTE: Shaded areas are for DNR use only. See instructions for more information including a list of county codes.

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT

Form 3300-5P 2/2000 Page 1 of 2

Notice: Please complete Form 3300-5P and return it to the appropriate DNR office and bureau. Completion of this report is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file this form may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. NOTE: See the instructions for more information.

Route to: ☐ Drinking Water ☐ Watershed/Wastewater ☐ Waste Management ☐ Remediation/Redevelopment ☐ Other

(1) GENERAL INFORMATION

WI Unique Well No.
DNR Well ID No.
County: Winnebago
Common Well Name: GW-2
Gov't Lot (If applicable)
Grid Location: ___ 1/4 of ___ 1/4 of Sec. ___ ; T. ___ N; R. ___ ☐ E ☐ W
___ ft. ☐ N. ☐ S., ___ ft. ☐ E. ☐ W.
Local Grid Origin ☐ (estimated: ☐) or Well Location ☐
Lat. ° ' " Long ° ' " or
St. Plane ___ ft. N. ___ ft. E. S ☐ C ☐ N ☐ Zone
Reason For Abandonment: Broken
WI Unique Well No. of Replacement Well

(2) FACILITY / OWNER INFORMATION

Facility Name: Riverside Park
Facility ID
License/Permit/Monitoring No.
Street Address of Well: Ceape Ave
City, Village, or Town: Oshkosh, WI
Present Well Owner
Original Owner
Street Address or Route of Owner
City, State, Zip Code

(3) WELL/DRILLHOLE/BOREHOLE INFORMATION

Original Construction Date ?
☒ Monitoring Well
☐ Water Well
☐ Borehole / Drillhole

If a Well Construction Report is available, please attach.

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

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) (From groundsurface): 14'
Casing Diameter (in.): 2"
Casing Depth (ft.)
Lower Drillhole Diameter (in.)
Was Well Annular Space Grouted? ☐ Yes ☐ No ☐ Unknown
If Yes, To What Depth? ___ Feet
Depth to Water (Feet): 3.5

(4) PUMP, LINER, SCREEN, CASING, & SEALING MATERIAL

Pump & Piping Removed? ☐ Yes ☐ No ☒ Not Applicable
Liner(s) Removed? ☐ Yes ☐ No ☒ Not Applicable
Screen Removed? ☒ Yes ☐ No ☐ Not Applicable
Casing Left in Place? ☐ Yes ☒ No
Was Casing Cut Off Below Surface? ☒ Yes ☐ No
Did Sealing Material Rise to Surface? ☒ Yes ☐ No
Did Material Settle After 24 Hours? ☐ Yes ☐ No
If Yes, Was Hole Retopped? ☐ Yes ☐ No

Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☒ Conductor Pipe-Pumped
☐ Screened & Poured (Bentonite Chips) ☐ Other (Explain)

Sealing Materials
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry (11 lb./gal. wt.)
☐ Bentonite-Sand Slurry " "
☒ Bentonite Chips

For monitoring wells and monitoring well boreholes only
☐ Bentonite Chips
☐ Granular Bentonite
☒ Bentonite - Cement Grout
☐ Bentonite - Sand Slurry

(5)

Material Used To Fill Well/Drillhole	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume	(Circle One)	Mix Ratio or Mud Weight
T.S	Surface	.6			
Bent Cement Grout	.6	14'	6:1		

(6) Comments:

(7) Name of Person or Firm Doing Sealing Work: Badger State Drilling Co., Inc.
Date of Abandonment: 6-30-05
Signature of Person Doing Work
Date Signed: 7/6/05
Street or Route: 360 Business Park Cr.
Telephone Number: (608) 877-9770
City, State, Zip Code: Stoughton, WI 53589

FOR DNR OR COUNTY USE ONLY
Date Received
Noted By
Comments

BADGER STATE DRILLING CO., INC.
STOUGHTON, WISCONSIN

FIELD BORING LOG

Sheet 1 Of 2
Job No. 3884
Boring No. GW-2R

FOR Riverside Park Terra
LOCATION Oshkosh, WI
ELEV.

GROUND WATER
While drilling 6.0
Before casing removal
After casing removal
Time after drilling
Depth to water
Depth to cave-in

Start 6-30-05
Unit D120
Chief K.M.

Casing/Probe 2"
Weight 140
Drop 30

Sample No.	Moisture	Blows on Sampler 0/6	Blows on Sampler 6/12	Sample Recovery	Total Blows	Visual Field Classification and Remarks	Unconfined Strength	Boulders	Blows on Casing Size	Blows on Probe Size	Drilling Method
						T.S					HSA
1	M	2 6	4 2	8	10	Br F. Silty med loose Sand w/ Clay			4¼		55
2	M	4 9	4 7	12	10	Br soft Clay w/ Silt	1.75				
3	M	2 4	4 5	12	8		.75				
4	W	3 0	1 1	14	1	Black Fi V. Loose Silty Sand w/ wood					
5	W	6 1	3 3	14	4						
6	M	0 3	0 4	18	3	Br F. organic Silt V. Loose					
7	W	14 16	14 18	10	30	Br F.M Sand w/ Stm gravel Dense Br lean Hard Clay w/ Silt	4.5				

E.O.B 14.5 Setwell 14.0
10' Screen

⑩ Filter 3.0
0 Fine
① Chips 1.0
Lite
② Flush
① Concrete

PI 208

State of Wisconsin
Department of Natural Resources

Route to: Solid Waste ☐ Haz. Waste ☐ Wastewater ☐
Env. Response & Repair ☐ Underground Tanks ☐ Other ☐ ______

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 4-90

Facility/Project Name: River Side Park

Local Grid Location of Well: ______ ft. ☐ N. ☐ S. ______ ft. ☐ E. ☐ W.

Well Name: GW-2R

Facility License, Permit or Monitoring Number: Oshkosh

Grid Origin Location: Lat. ______ Long. ______ or St. Plane ______ ft. N. ______ ft. E.

Wis. Unique Well Number DNR Well Number: [illegible]

Type of Well: Water Table Observation Well ☒ 11 Piezometer ☐ 12

Section Location of Waste/Source: ___ 1/4 of ___ 1/4 of Sec. ___, T. ___ N, R. ___ ☐ E. ☐ W.

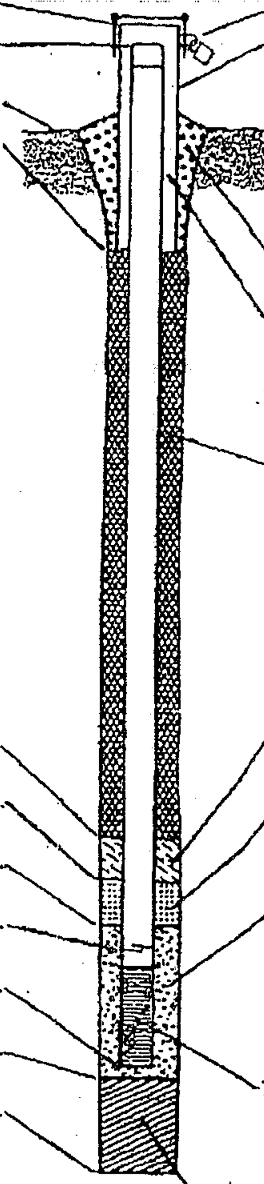
Date Well Installed: 7 6 05 (m m d d y y)

Distance Well Is From Waste/Source Boundary ______ ft.

Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☐ Not Known

Well Installed By: (Person's Name and Firm) K. McComber BSD

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



A. Protective pipe, top elevation [illegible] ft. MSL
B. Well casing, top elevation ______ ft. MSL
C. Land surface elevation ______ ft. MSL
D. Surface seal, bottom ______ ft. MSL or ______ ft.

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

E. Bentonite seal, top ______ ft. MSL or 10 ft.
F. Fine sand, top ______ ft. MSL or ______ ft.
G. Filter pack, top ______ ft. MSL or 30 ft.
H. Screen joint, top ______ ft. MSL or 40 ft.
I. Well bottom ______ ft. MSL or 140 ft.
J. Filter pack, bottom ______ ft. MSL or 150 ft.
K. Borehole, bottom ______ ft. MSL or 150 ft.
L. Borehole, diameter 8 in.
M. O.D. well casing 8.38 in.
N. I.D. well casing 2.0 in.

1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
   a. Inside diameter: 9.0 in.
   b. Length: 6.0 ft.
   c. Material: Steel ☒ 04 Other ☐ ______
   d. Additional protection? ☐ Yes ☐ No If yes, describe: ______
3. Surface seal: Bentonite ☐ 30 Concrete ☒ 01 Other ☐ ______
4. Material between well casing and protective pipe: Bentonite ☐ 30 Annular space seal ☐ Other ☐ ______
5. Annular space seal:
   a. Granular Bentonite ☐ 33
   b. ______ Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 35
   c. ______ Lbs/gal mud weight . . . . . Bentonite slurry ☐ 31
   d. ______ % Bentonite . . . . . . Bentonite-cement grout ☐ 50
   e. ______ Ft^3 volume added for any of the above
   f. How installed: Tremie ☐ 01 Tremie pumped ☐ 02 Gravity ☐ 08
6. Bentonite seal:
   a. Bentonite granules ☐ 33
   b. ☐ 1/4 in. ☒ 3/8 in. ☐ 1/2 in. Bentonite pellets ☐ 32
   c. ______ Other ☐
7. Fine sand material: Manufacturer, product name & mesh size
   a. Ohio 40-60
   b. Volume added ______ ft^3
8. Filter pack material: Manufacturer, product name and mesh size
   a. Ohio #5
   b. Volume added ______ ft^3
9. Well casing: Flush threaded PVC schedule 40 ☒ 23 Flush threaded PVC schedule 80 ☐ 24 Other ☐ ______
10. Screen material: Sch 40 PVC
   a. Screen type: Factory cut ☒ 11 Continuous slot ☐ 01 Other ☐ ______
   b. Manufacturer Monoflex
   c. Slot size: 0.010 in.
   d. Slotted length: 10.0 ft.
11. Backfill material (below filter pack): None ☒ 14 Other ☐ ______

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

Signature: ______ Firm: Badger State Drilling, Inc.

Please complete both sides of this form and return to the appropriate DNR office listed at the top of this form as required by chs. 144, 147 and 160, Wis. Stats., and ch. NR 141, Wis. Ad. Code. In accordance with ch.144, Wis Stats., failure to file this form may result in a forfeiture of not less than $10, nor more than $5000 for each day of violation. In accordance with ch. 147, Wis. Stats., failure to file this form may result in a forfeiture of not more than $10,000 for each day of violation. NOTE: Shaded areas are for DNR use only. See instructions for more information including where the completed form should be sent.

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT
Form 4400-113B Rev. 4-90

Route to: Solid Waste ☐ Haz. Waste ☐ Wastewater ☐
Env. Response & Repair ☐ Underground Tanks ☐ Other ☐ ________

Facility/Project Name: RiverSide Park
County Name: Winnebago
Well Name: TW-2R
Facility License, Permit or Monitoring Number: _ _ _ _ _ _ _ _ _
County Code: _ _
WI Unique Well Number: [illegible]
DNR Well Number:

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

2. Well development method
- surged with bailer and bailed ☑ 41
- surged with bailer and pumped ☐ 61
- surged with block and bailed ☐ 42
- surged with block and pumped ☐ 62
- surged with block, bailed and pumped ☐ 70
- compressed air ☐ 20
- bailed only ☐ 10
- pumped only ☐ 51
- pumped slowly ☐ 50
- Other ________ ☐

3. Time spent developing well: 90 min.

4. Depth of well (from top of well casisng): 13.8 ft.

5. Inside diameter of well: 2.0 in.

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

7. Volume of water removed from well: 40 gal.

8. Volume of water added (if any): _ _ _ . _ gal.

9. Source of water added: ________

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

		Before Development	After Development
11. Depth to Water (from top of well casing)	a.	10.00 ft.	8.0 ft.
Date	b.	2 / 1 / 05 (mm dd yy)	7 / 1 / 05 (mm dd yy)
Time	c.	9:30 ☑ a.m. ☐ p.m.	11:00 ☑ a.m. ☐ p.m.
12. Sediment in well bottom		0.0 inches	0.0 inches
13. Water clarity		Clear ☐ 10 Turbid ☑ 15 (Describe) Black	Clear ☐ 20 Turbid ☑ 25 (Describe) Black

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

	Before Development	After Development
14. Total suspended solids	_ _ _ _ . _ mg/l	_ _ _ _ . _ mg/l
15. COD	_ _ _ _ . _ mg/l	_ _ _ _ . _ mg/l

16. Additional comments on development:

Bailed Dry Three Times

Well developed by: Person's Name and Firm

Name: Alex Plummer

Firm: BSD

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

Signature:

Print Initials: MAB

Firm: Badger State Drilling, Inc.

NOTE: Shaded areas are for DNR use only. See instructions for more information including a list of county codes.

OSHKOSH
ON THE WATER
Inspection Services (920-236-5049) (Fax 920-236-5106) P O Box 1130 Oshkosh WI 54902-1130

August 30, 2004

Paul Timm
STS Consultants
558 N Main St.
Oshkosh, WI 54901

Re: Groundwater discharge to sanitary sewer from Wisconsin Public Service former Gas Manufacturing Plant in the City of Oshkosh.

Dear Mr. Timm,

Your request for discharge of impacted groundwater to the sanitary sewer has been reviewed and approved for the dates of August 30 through September 20, 2004. The fee for this discharge is waived because the site is a public works project. This discharge is however, regulated by the sewer use ordinance for the City of Oshkosh. The discharge must meet the limitations contained in that ordinance as discussed over the phone. Any future discharge planned for this site must be conducted under a separate letter of agreement.

If you have questions concerning this agreement, feel free to call. (236-5049)

Respectfully,

Richard Wood

Richard Wood
Plumbing Inspector / Pretreatment Control Coordinator

Cc: Steve Brand, Superintendent of Utilities

WASTE MANAGEMENT
VALLEY TRAIL RECYCLE & DISPOSAL FACILITY
PO BOX 286
BERLIN WI 54923-0286

Customer:	CITY OF OSHKOSH
Account Number:	293-0000496-2293-9
Invoice Date:	04/01/2005
Invoice Number:	0003635-2293-9
Due Date:	Due Upon Receipt
WM ezPay Account ID:	00004-67203-03006

Service Location: 293-496 City Of Oshkosh: 305 Ceape Street: Oshkosh WI 54901

Date	Ticket	Description	Quantity	U/M	Rate	Amount
03/15/05	802316	Veh#:				
		Industrial tons	17.97	TON	13.70	246.19
		Wi generator tax/fees				68.29
		Ticket total				314.48
03/15/05	802317	Veh#:				
		Industrial tons	20.25	TON	13.70	277.43
		Wi generator tax/fees				76.95
		Ticket total				354.38
03/15/05	802318	Veh#:				
		Industrial tons	21.93	TON	13.70	300.44
		Wi generator tax/fees				83.33
		Ticket total				383.77
03/15/05	802321	Veh#:				
		Industrial tons	20.56	TON	13.70	281.67
		Wi generator tax/fees				78.13
		Ticket total				359.80
03/15/05	802334	Veh#:				
		Industrial tons	19.37	TON	13.70	265.37
		Wi generator tax/fees				73.61
		Ticket total				338.98
03/15/05	802337	Veh#:				
		Industrial tons	20.72	TON	13.70	283.86
		Wi generator tax/fees				78.74
		Ticket total				362.60
03/15/05	802340	Veh#:				
		Industrial tons	19.85	TON	13.70	271.95
		Wi generator tax/fees				75.43
		Ticket total				347.38
03/15/05	802342	Veh#:				
		Industrial tons	19.38	TON	13.70	265.51
		Wi generator tax/fees				73.64
		Ticket total				339.15
03/15/05	802358	Veh#:				
		Industrial tons	19.74	TON	13.70	270.44
		Wi generator tax/fees				75.01
		Ticket total				345.45
03/15/05	802361	Veh#:				
		Industrial tons	20.64	TON	13.70	282.77
		Wi generator tax/fees				78.43
		Ticket total				361.20
03/15/05	802362	Veh#:				
		Industrial tons	21.07	TON	13.70	288.66
		Wi generator tax/fees				80.07
		Ticket total				368.73
03/15/05	802380	Veh#:				
		Industrial tons	20.92	TON	13.70	286.60
		Wi generator tax/fees				79.50
		Ticket total				366.10
03/15/05	802382	Veh#:				
		Industrial tons	21.53	TON	13.70	294.96
		Wi generator tax/fees				81.81
		Ticket total				376.77
03/15/05	802385	Veh#:				
		Industrial tons	21.01	TON	13.70	287.84
		Wi generator tax/fees				79.84
		Ticket total				367.68
03/15/05	802387	Veh#:				
		Industrial tons	21.71	TON	13.70	297.43

Service Location: 293-498 City Of Oshkosh 305 Ceape Street Oshkosh WI 54901

Date	Ticket	Description	Quantity	U/M	Rate	Amount
		Wi generator tax/fees				82.50
		Ticket total				379.93
03/15/05	802407	Veh#:				
		Industrial tons	19.46	TON	13.70	266.60
		Wi generator tax/fees				73.95
		Ticket total				340.55
03/15/05	802408	Veh#:				
		Industrial tons	21.47	TON	13.70	294.14
		Wi generator tax/fees				81.59
		Ticket total				375.73
03/15/05	802409	Veh#:				
		Industrial tons	20.50	TON	13.70	280.85
		Wi generator tax/fees				77.90
		Ticket total				358.75
03/15/05	802410	Veh#:				
		Industrial tons	24.05	TON	13.70	329.49
		Wi generator tax/fees				91.39
		Ticket total				420.88
03/21/05	802854	Veh#:				
		Industrial tons	19.53	TON	13.70	267.56
		Wi generator tax/fees				74.21
		Ticket total				341.77
03/21/05	802855	Veh#:				
		Industrial tons	20.49	TON	13.70	280.71
		Wi generator tax/fees				77.86
		Ticket total				358.57
03/21/05	802857	Veh#:				
		Industrial tons	19.94	TON	13.70	273.18
		Wi generator tax/fees				75.77
		Ticket total				348.95
03/21/05	802858	Veh#:				
		Industrial tons	16.46	TON	13.70	225.50
		Wi generator tax/fees				62.55
		Ticket total				288.05
03/21/05	802861	Veh#:				
		Industrial tons	19.46	TON	13.70	266.60
		Wi generator tax/fees				73.95
		Ticket total				340.55
03/21/05	802871	Veh#:				
		Industrial tons	18.15	TON	13.70	248.66
		Wi generator tax/fees				68.97
		Ticket total				317.63
03/21/05	802873	Veh#:				
		Industrial tons	19.26	TON	13.70	263.86
		Wi generator tax/fees				73.19
		Ticket total				337.05
03/21/05	802875	Veh#:				
		Industrial tons	20.58	TON	13.70	281.95
		Wi generator tax/fees				78.20
		Ticket total				360.15
03/21/05	802880	Veh#:				
		Industrial tons	21.00	TON	13.70	287.70
		Wi generator tax/fees				79.80
		Ticket total				367.50
03/21/05	802881	Veh#:				
		Industrial tons	15.38	TON	13.70	210.71
		Wi generator tax/fees				58.44
		Ticket total				269.15
03/21/05	802889	Veh#:				

WASTE MANAGEMENT
VALLEY TRAIL RECYCLE & DISPOSAL FACILITY
PO BOX 286
BERLIN WI 54923-0286

Account Number:	293-0000496-2293-9
Invoice Date:	04/01/2005
Invoice Number:	0003635-2293-9
Due Date:	Due Upon Receipt
WM ezPay Account ID:	00004-67203-03006

Service Location: 293-498 City Of Oshkosh: 305 Ceape Street: Oshkosh Wi 54901

Date	Ticket	Description	Quantity	U/M	Rate	Amount
		Industrial tons	18.06	TON	13.70	247.42
		Wi generator tax/fees				68.63
		Ticket total				316.05
03/21/05	802890	Veh#:				
		Industrial tons	20.87	TON	13.70	285.92
		Wi generator tax/fees				79.31
		Ticket total				365.23
03/21/05	802892	Veh#:				
		Industrial tons	19.66	TON	13.70	269.34
		Wi generator tax/fees				74.71
		Ticket total				344.05
03/21/05	802901	Veh#:				
		Industrial tons	22.21	TON	13.70	304.28
		Wi generator tax/fees				84.40
		Ticket total				388.68
03/21/05	802902	Veh#:				
		Industrial tons	15.84	TON	13.70	217.01
		Wi generator tax/fees				60.19
		Ticket total				277.20
03/21/05	802914	Veh#:				
		Industrial tons	8.51	TON	13.70	116.59
		Wi generator tax/fees				32.34
		Ticket total				148.93
03/21/05	802915	Veh#:				
		Industrial tons	18.13	TON	13.70	248.38
		Wi generator tax/fees				68.89
		Ticket total				317.27
		Total Current Charges				12,349.09

Payments Received Detail

12/09/2002 Payment - thank you	5,128.20-
Total Payments Received	**5,128.20-**

WASTE MANAGEMENT

VALLEY TRAIL RECYCLE & DISPOSAL FACILITY
PO BOX 286
BERLIN WI 54923-0286

(800) 504-1062
(920) 361-4995
(920) 361-4663 FAX

INVOICE

Customer:	CITY OF OSHKOS
Account Number:	293-0000496-2293-
Invoice Date:	05/01/200
Invoice Number:	0003667-2293-
Due Date:	Due Upon Recei
WM ezPay Account ID:	00004-67203-030

Current Invoice Amount	Total Amount Due
59,630.26	71,979.35

Please pay total amount due. Thank you for your business.

THANK YOU FOR CHOOSING WASTE MANAGEMENT!!

Account Summary

Description	Amount
Previous Balance	12,349.09
Total Credits and Adjustments	0.00
Total Payments Received	0.00
Total Current Charges	59,630.26
Total Amount Due	**71,979.35**
Total Amount Past Due	12,349.09

Service Period: APRIL DISPOSAL 2005

Description	Amount
Landfill	59,630.26
Total Current Charges	**59,630.26**

Want to pay this bill on-line? Go to www.wm.com to learn more about WMezPay and make a convenient, secure payment.

Current Due	Over 30	Over 60	Over 90	Over 120	Total Due
59,630.26	12,349.09	0.00	0.00	0.00	71,979.35

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WASTE MANAGEMENT

VALLEY TRAIL RECYCLE & DISPOSAL FACILITY
PO BOX 286
BERLIN WI 54923-0286

(800) 504-1062
(920) 361-4995
(920) 361-4663 FAX

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Payment Coupon

Please detach and enclose this portion with your payment - do not send cash.

Your Account Number
293-0000496-2293-9

Invoice Date	Your Invoice Number
05/01/2005	0003667-2293-2

Due Date	Total Due	Amount Paid
Upon Receipt	71,979.35	

Waste Management introduces WM ezPay!! Pay your WM bill on-lin at www.wm.com.

Paying by credit card? Please fill out the revers side of the Payment Coupon.

229329300000496000036670000596302600007197935 7

0000082 NM 8622 CP4 I2293L42

CITY OF OSHKOSH
305 CEAPE STREET
OSHKOSH WI 54901

Please make Check Payable To:
VALLEY TRAIL RECYCLE & DISPOSAL FACILITY
PO BOX 9001054
Louisville, KY 40290-1054

740011

FOR CHANGE OF ADDRESS OR ANY SERVICE ISSUES CONTACT NUMBER ABOVE

Printed on Recycled Pa

WASTE MANAGEMENT

VALLEY TRAIL RECYCLE & DISPOSAL FACILITY
PO BOX 286
BERLIN WI 54923-0286

Customer:	CITY OF OSHKOS
Account Number:	293-0000496-2293-
Invoice Date:	05/01/20
Invoice Number:	0003667-2293-
Due Date:	Due Upon Recei
WM ezPay Account ID:	00004-67203-030

Service Location: 293-496 City Of Oshkosh: 305 Ceape Street; Oshkosh Wi 54901

Date	Ticket	Description	Quantity	U/M	Rate	Amount
04/06/05	804545	Veh#:				
		Industrial tons	20.70	TON	13.70	283.59
		Wi generator tax/fees				78.66
		Ticket total				362.25
04/06/05	804546	Veh#:				
		Industrial tons	19.87	TON	13.70	272.22
		Wi generator tax/fees				75.51
		Ticket total				347.73
04/06/05	804550	Veh#:				
		Industrial tons	18.19	TON	13.70	249.20
		Wi generator tax/fees				69.12
		Ticket total				318.32
04/06/05	804551	Veh#:				
		Industrial tons	19.00	TON	13.70	260.30
		Wi generator tax/fees				72.20
		Ticket total				332.50
04/06/05	804553	Veh#:				
		Industrial tons	19.94	TON	13.70	273.18
		Wi generator tax/fees				75.77
		Ticket total				348.95
04/06/05	804566	Veh#:				
		Industrial tons	19.83	TON	13.70	271.67
		Wi generator tax/fees				75.35
		Ticket total				347.02
04/06/05	804569	Veh#:				
		Industrial tons	19.87	TON	13.70	272.22
		Wi generator tax/fees				75.51
		Ticket total				347.73
04/06/05	804571	Veh#:				
		Industrial tons	20.22	TON	13.70	277.01
		Wi generator tax/fees				76.84
		Ticket total				353.85
04/06/05	804573	Veh#:				
		Industrial tons	19.87	TON	13.70	272.22
		Wi generator tax/fees				75.51
		Ticket total				347.73
04/06/05	804574	Veh#:				
		Industrial tons	24.83	TON	13.70	340.17
		Wi generator tax/fees				94.35
		Ticket total				434.52
04/06/05	804581	Veh#:				
		Industrial tons	22.03	TON	13.70	301.81
		Wi generator tax/fees				83.71
		Ticket total				385.52
04/06/05	804586	Veh#:				
		Industrial tons	20.49	TON	13.70	280.71
		Wi generator tax/fees				77.86
		Ticket total				358.57
04/06/05	804593	Veh#:				
		Industrial tons	21.27	TON	13.70	291.40
		Wi generator tax/fees				80.83
		Ticket total				372.23
04/06/05	804600	Veh#:				
		Industrial tons	21.78	TON	13.70	298.39
		Wi generator tax/fees				82.76
		Ticket total				381.15
04/06/05	804605	Veh#:				
		Industrial tons	20.86	TON	13.70	285.78

WASTE MANAGEMENT

VALLEY TRAIL RECYCLE & DISPOSAL FACILITY
PO BOX 286
BERLIN WI 54923-0286

Account Number: 293-0000496-2293-
Invoice Date: 05/01/200
Invoice Number: 0003667-2293-
Due Date: Due Upon Recei
WM ezPay Account ID: 00004-67203-030

Service Location: 293-496 City Of Oshkosh: 305 Ceape Street: Oshkosh Wi 54901

Date	Ticket	Description	Quantity	U/M	Rate	Amount
		Industrial tons	19.68	TON	13.70	269.62
		Wi generator tax/fees				74.78
		Ticket total				344.40
04/06/05	804665	Veh#:				
		Industrial tons	20.49	TON	13.70	280.71
		Wi generator tax/fees				77.86
		Ticket total				358.57
04/06/05	804666	Veh#:				
		Industrial tons	19.87	TON	13.70	272.22
		Wi generator tax/fees				75.51
		Ticket total				347.73
04/06/05	804667	Veh#:				
		Industrial tons	18.43	TON	13.70	252.49
		Wi generator tax/fees				70.03
		Ticket total				322.52
04/07/05	804704	Veh#:				
		Industrial tons	20.17	TON	13.70	276.33
		Wi generator tax/fees				76.65
		Ticket total				352.98
04/07/05	804708	Veh#:				
		Industrial tons	20.22	TON	13.70	277.01
		Wi generator tax/fees				76.84
		Ticket total				353.85
04/07/05	804709	Veh#:				
		Industrial tons	20.60	TON	13.70	282.22
		Wi generator tax/fees				78.28
		Ticket total				360.50
04/07/05	804711	Veh#:				
		Industrial tons	19.94	TON	13.70	273.18
		Wi generator tax/fees				75.77
		Ticket total				348.95
04/07/05	804712	Veh#:				
		Industrial tons	18.46	TON	13.70	252.90
		Wi generator tax/fees				70.15
		Ticket total				323.05
04/07/05	804726	Veh#:				
		Industrial tons	19.39	TON	13.70	265.64
		Wi generator tax/fees				73.68
		Ticket total				339.32
04/07/05	804727	Veh#:				
		Industrial tons	19.15	TON	13.70	262.36
		Wi generator tax/fees				72.77
		Ticket total				335.13
04/07/05	804728	Veh#:				
		Industrial tons	18.28	TON	13.70	250.44
		Wi generator tax/fees				69.46
		Ticket total				319.90
04/07/05	804729	Veh#:				
		Industrial tons	18.80	TON	13.70	257.56
		Wi generator tax/fees				71.44
		Ticket total				329.00
04/07/05	804732	Veh#:				
		Industrial tons	20.12	TON	13.70	275.64
		Wi generator tax/fees				76.46
		Ticket total				352.10
04/07/05	804751	Veh#:				
		Industrial tons	20.69	TON	13.70	283.45
		Wi generator tax/fees				78.62
		Ticket total				362.07

WASTE MANAGEMENT
VALLEY TRAIL RECYCLE & DISPOSAL FACILITY
PO BOX 286
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Invoice Date: 05/01/200
Invoice Number: 0003667-2293-
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Service Location: 293-496 City Of Oshkosh: 305 Ceape Street: Oshkosh Wi 54901

Date	Ticket	Description	Quantity	U/M	Rate	Amount
		Ticket total				334.07
04/07/05	804822	Veh#:				
		Industrial tons	19.20	TON	13.70	263.04
		Wi generator tax/fees				72.96
		Ticket total				336.00
04/07/05	804823	Veh#:				
		Industrial tons	18.40	TON	13.70	252.08
		Wi generator tax/fees				69.92
		Ticket total				322.00
04/07/05	804824	Veh#:				
		Industrial tons	18.47	TON	13.70	253.04
		Wi generator tax/fees				70.19
		Ticket total				323.23
04/07/05	804828	Veh#:				
		Industrial tons	18.75	TON	13.70	256.88
		Wi generator tax/fees				71.25
		Ticket total				328.13
04/07/05	804829	Veh#:				
		Industrial tons	18.07	TON	13.70	247.56
		Wi generator tax/fees				68.67
		Ticket total				316.23
04/07/05	804837	Veh#:				
		Industrial tons	20.34	TON	13.70	278.66
		Wi generator tax/fees				77.29
		Ticket total				355.95
04/07/05	804841	Veh#:				
		Industrial tons	18.74	TON	13.70	256.74
		Wi generator tax/fees				71.21
		Ticket total				327.95
04/07/05	804842	Veh#:				
		Industrial tons	19.26	TON	13.70	263.86
		Wi generator tax/fees				73.19
		Ticket total				337.05
04/07/05	804845	Veh#:				
		Industrial tons	18.65	TON	13.70	255.51
		Wi generator tax/fees				70.87
		Ticket total				326.38
04/07/05	804849	Veh#:				
		Industrial tons	18.95	TON	13.70	259.62
		Wi generator tax/fees				72.01
		Ticket total				331.63
04/07/05	804850	Veh#:				
		Industrial tons	20.70	TON	13.70	283.59
		Wi generator tax/fees				78.66
		Ticket total				362.25
04/08/05	804886	Veh#:				
		Industrial tons	19.15	TON	13.70	262.36
		Wi generator tax/fees				72.77
		Ticket total				335.13
04/08/05	804888	Veh#:				
		Industrial tons	19.19	TON	13.70	262.90
		Wi generator tax/fees				72.92
		Ticket total				335.82
04/08/05	804912	Veh#:				
		Industrial tons	22.26	TON	13.70	304.96
		Wi generator tax/fees				84.59
		Ticket total				389.55
04/08/05	804917	Veh#:				
		Industrial tons	22.29	TON	13.70	305.37

WASTE MANAGEMENT
VALLEY TRAIL RECYCLE & DISPOSAL FACILITY
PO BOX 286
BERLIN WI 54923-0286

Account Number: 293-0000496-2293
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Invoice Number: 0003667-2293
Due Date: Due Upon Recei
WM ezPay Account ID: 00004-67203-030

Service Location: 293-496 City Of Oshkosh 305 Ceape Street Oshkosh Wi 54901

Date	Ticket	Description	Quantity	U/M	Rate	Amount
		Industrial tons	19.74	TON	13.70	270.44
		Wi generator tax/fees				75.01
		Ticket total				345.45
04/09/05	805078	Veh#:				
		Industrial tons	16.84	TON	13.70	230.71
		Wi generator tax/fees				63.99
		Ticket total				294.70
04/09/05	805080	Veh#:				
		Industrial tons	18.44	TON	13.70	252.63
		Wi generator tax/fees				70.07
		Ticket total				322.70
04/09/05	805081	Veh#:				
		Industrial tons	19.03	TON	13.70	260.71
		Wi generator tax/fees				72.31
		Ticket total				333.02
04/09/05	805083	Veh#:				
		Industrial tons	18.99	TON	13.70	260.16
		Wi generator tax/fees				72.16
		Ticket total				332.32
04/09/05	805084	Veh#:				
		Industrial tons	18.06	TON	13.70	247.42
		Wi generator tax/fees				68.63
		Ticket total				316.05
04/09/05	805086	Veh#:				
		Industrial tons	19.37	TON	13.70	265.37
		Wi generator tax/fees				73.61
		Ticket total				338.98
04/09/05	805092	Veh#:				
		Industrial tons	20.51	TON	13.70	280.99
		Wi generator tax/fees				77.94
		Ticket total				358.93
04/09/05	805094	Veh#:				
		Industrial tons	19.27	TON	13.70	264.00
		Wi generator tax/fees				73.23
		Ticket total				337.23
04/09/05	805095	Veh#:				
		Industrial tons	18.15	TON	13.70	248.66
		Wi generator tax/fees				68.97
		Ticket total				317.63
04/09/05	805098	Veh#:				
		Industrial tons	24.47	TON	13.70	335.24
		Wi generator tax/fees				92.99
		Ticket total				428.23
04/09/05	805100	Veh#:				
		Industrial tons	18.76	TON	13.70	257.01
		Wi generator tax/fees				71.29
		Ticket total				328.30
04/09/05	805101	Veh#:				
		Industrial tons	18.17	TON	13.70	248.93
		Wi generator tax/fees				69.05
		Ticket total				317.98
04/09/05	805102	Veh#:				
		Industrial tons	18.07	TON	13.70	247.56
		Wi generator tax/fees				68.67
		Ticket total				316.23
04/09/05	805105	Veh#:				
		Industrial tons	20.94	TON	13.70	286.88
		Wi generator tax/fees				79.57
		Ticket total				366.45

WASTE MANAGEMENT

VALLEY TRAIL RECYCLE & DISPOSAL FACILITY
PO BOX 286
BERLIN WI 54923-0286

Account Number: 293-0000496-2293-
Invoice Date: 05/01/200
Invoice Number: 0003667-2293-
Due Date: Due Upon Recei
WM ezPay Account ID: 00004-67203-030

Service Location: 293-496 City Of Oshkosh: 305 Ceape Street- Oshkosh Wi 54901

Date	Ticket	Description	Quantity	U/M	Rate	Amount
		Ticket total				327.07
04/09/05	805148	Veh#:				
		Industrial tons	20.96	TON	13.70	287.15
		Wi generator tax/fees				79.65
		Ticket total				366.80
04/09/05	805149	Veh#:				
		Industrial tons	20.06	TON	13.70	274.82
		Wi generator tax/fees				76.23
		Ticket total				351.05
04/09/05	805150	Veh#:				
		Industrial tons	17.64	TON	13.70	241.67
		Wi generator tax/fees				67.03
		Ticket total				308.70
04/09/05	805153	Veh#:				
		Industrial tons	19.68	TON	13.70	269.62
		Wi generator tax/fees				74.78
		Ticket total				344.40
04/09/05	805154	Veh#:				
		Industrial tons	16.10	TON	13.70	220.57
		Wi generator tax/fees				61.18
		Ticket total				281.75
04/09/05	805156	Veh#:				
		Industrial tons	21.48	TON	13.70	294.28
		Wi generator tax/fees				81.62
		Ticket total				375.90
04/09/05	805157	Veh#:				
		Industrial tons	23.28	TON	13.70	318.94
		Wi generator tax/fees				88.46
		Ticket total				407.40
04/09/05	805158	Veh#:				
		Industrial tons	21.33	TON	13.70	292.22
		Wi generator tax/fees				81.05
		Ticket total				373.27
04/09/05	805168	Veh#:				
		Industrial tons	21.71	TON	13.70	297.43
		Wi generator tax/fees				82.50
		Ticket total				379.93
04/09/05	805169	Veh#:				
		Industrial tons	19.26	TON	13.70	263.86
		Wi generator tax/fees				73.19
		Ticket total				337.05
04/12/05	805332	Veh#:				
		Industrial tons	19.04	TON	13.70	260.85
		Wi generator tax/fees				72.35
		Ticket total				333.20
04/12/05	805334	Veh#:				
		Industrial tons	20.60	TON	13.70	282.22
		Wi generator tax/fees				78.28
		Ticket total				360.50
04/12/05	805336	Veh#:				
		Industrial tons	21.84	TON	13.70	299.21
		Wi generator tax/fees				82.99
		Ticket total				382.20
04/12/05	805337	Veh#:				
		Industrial tons	20.63	TON	13.70	282.63
		Wi generator tax/fees				78.39
		Ticket total				361.02
04/12/05	805338	Veh#:				
		Industrial tons	21.44	TON	13.70	293.73

WASTE MANAGEMENT

VALLEY TRAIL RECYCLE & DISPOSAL FACILITY
PO BOX 286
BERLIN WI 54923-0286

Account Number:	293-0000496-2293
Invoice Date:	05/01/20
Invoice Number:	0003667-2293
Due Date:	Due Upon Recei
WM ezPay Account ID:	00004-67203-030

Service Location: 293-496 City Of Oshkosh- 305 Ceape Street- Oshkosh Wi 54901

Date	Ticket	Description	Quantity	U/M	Rate	Amount
		Industrial tons	21.42	TON	13.70	293.45
		Wi generator tax/fees				81.40
		Ticket total				374.85
04/12/05	805442	Veh#:				
		Industrial tons	21.69	TON	13.70	297.15
		Wi generator tax/fees				82.42
		Ticket total				379.57
04/12/05	805446	Veh#:				
		Industrial tons	21.24	TON	13.70	290.99
		Wi generator tax/fees				80.71
		Ticket total				371.70
04/12/05	805466	Veh#:				
		Industrial tons	19.81	TON	13.70	271.40
		Wi generator tax/fees				75.28
		Ticket total				346.68
04/12/05	805467	Veh#:				
		Industrial tons	21.72	TON	13.70	297.56
		Wi generator tax/fees				82.54
		Ticket total				380.10
04/12/05	805471	Veh#:				
		Industrial tons	18.57	TON	13.70	254.41
		Wi generator tax/fees				70.57
		Ticket total				324.98
04/12/05	805473	Veh#:				
		Industrial tons	21.44	TON	13.70	293.73
		Wi generator tax/fees				81.47
		Ticket total				375.20
04/20/05	806281	Veh#:				
		Industrial tons	19.61	TON	13.70	268.66
		Wi generator tax/fees				74.52
		Ticket total				343.18
04/20/05	806282	Veh#:				
		Industrial tons	15.03	TON	13.70	205.91
		Wi generator tax/fees				57.11
		Ticket total				263.02
04/20/05	806283	Veh#:				
		Industrial tons	18.58	TON	13.70	254.55
		Wi generator tax/fees				70.60
		Ticket total				325.15
04/20/05	806286	Veh#:				
		Industrial tons	21.66	TON	13.70	296.74
		Wi generator tax/fees				82.31
		Ticket total				379.05
04/20/05	806299	Veh#:				
		Industrial tons	19.86	TON	13.70	272.08
		Wi generator tax/fees				75.47
		Ticket total				347.55
04/20/05	806300	Veh#:				
		Industrial tons	15.87	TON	13.70	217.42
		Wi generator tax/fees				60.31
		Ticket total				277.73
04/20/05	806301	Veh#:				
		Industrial tons	16.24	TON	13.70	222.49
		Wi generator tax/fees				61.71
		Ticket total				284.20
04/20/05	806304	Veh#:				
		Industrial tons	22.97	TON	13.70	314.69
		Wi generator tax/fees				87.29
		Ticket total				401.98

STS Construction Services Group

Bituminous Field Compaction Summary

Project Name: Riverside Park

Project No.: 26538D

Location: Oshkosh, WI

Record No.:

Method of Field Density Measurement

☐ Field Cores ■ Nuclear Method ☐

Test No.	Date	Location	Lift No. or Elev.	Mtl. Mark	Marshall Density	"D" Theor. Density	In Place Density	Percent* Compaction	Comments
1	11/12/04	See Diagram	Binder		160.0		145.6	91.0%	
2	11/12/04	See Diagram	Binder		160.0		148.0	92.5%	242F
3	11/12/04	See Diagram	Binder		160.0		143.4	89.6%	
4	11/12/04	See Diagram	Binder		160.0		145.0	90.6%	
5	11/12/04	See Diagram	Binder		160.0		140.5	87.8%	260F
6	11/12/04	See Diagram	Binder		160.0		146.9	91.8%	280F
7	11/12/04	See Diagram	Binder		160.0		146.5	91.6%	Retest 5
8	11/12/04	See Diagram	Binder		160.0		142.0	88.8%	2.5" Thick
9	11/12/04	See Diagram	Binder		160.0		148.3	92.7%	Retest 8
10	11/12/04	See Diagram	Binder		160.0		149.9	93.7%	2" Thick
11	11/12/04	See Diagram	Binder		160.0		145.1	90.7%	
12	11/12/04	See Diagram	Binder		160.0		145.3	90.8%	
13	11/12/04	See Diagram	Binder		160.0		147.7	92.3%	250F
14	11/12/04	See Diagram	Binder		160.0		146.3	91.4%	
15	11/12/04	See Diagram	Binder		160.0		144.0	90.0%	
16	11/12/04	See Diagram	Binder		160.0		145.3	90.8%	240F
17	11/12/04	See Diagram	Binder		160.0		143.1	89.4%	
18	11/12/04	See Diagram	Binder		160.0		147.4	92.1%	
19	11/12/04	See Diagram	Binder		160.0		144.9	90.6%	2.5" Thick
20	11/12/04	See Diagram	Binder		160.0		144.9	90.6%	293F
21	11/12/04	See Diagram	Binder		160.0		145.6	91.0%	230F
22	11/12/04	See Diagram	Binder		160.0		143.2	89.5%	2.5" Thick
23	05/23/05	See Diagram	Surface		150.7		148.1	98.3%	280F
24	05/23/05	See Diagram	Surface		150.7		147.4	97.8%	
25	05/23/05	See Diagram	Surface		150.7		144.5	95.9%	

Percent Compaction Based on Marshall Density

☐ 75 Blows ☐ 50 Blows - Theoretical Density ☐ Big "D"

STS Construction Services Group

Bituminous Field Compaction Summary

Project Name: Riverside Park

Project No.: 26538D

Location: Oshkosh, WI

Record No.:

Method of Field Density Measurement

☐Field Cores ■Nuclear Method ☐

Test No.	Date	Location	Lift No. or Elev.	Mtl. Mark	Marshall Density	"D" Theor. Density	In Place Density	Percent* Compaction	Comments
51	05/24/05	See Diagram	Surface		150.7		144.3	95.8%	260F
52	05/24/05	See Diagram	Surface		150.7		143.2	95.0%	
53	05/24/05	See Diagram	Surface		150.7		145.2	96.4%	
54	05/24/05	See Diagram	Surface		150.7		144.7	96.0%	
55	05/24/05	See Diagram	Surface		150.7		142.4	94.5%	
56	05/24/05	See Diagram	Surface		150.7		143.6	95.3%	
57	05/24/05	See Diagram	Surface		150.7		145.3	96.4%	
58	05/24/05	See Diagram	Surface		150.7		142.2	94.4%	294F
59	05/24/05	See Diagram	Surface		150.7		144.7	96.0%	
60	05/24/05	See Diagram	Surface		150.7		145.3	96.4%	
61	05/24/05	See Diagram	Surface		150.7		145.7	96.7%	
62	05/24/05	See Diagram	Surface		150.7		143.5	95.2%	
63	05/24/05	See Diagram	Surface		150.7		144.6	96.0%	
64	05/24/05	See Diagram	Surface		150.7		145.9	96.8%	
65	05/24/05	See Diagram	Surface		150.7		141.7	94.0%	
66	05/24/05	See Diagram	Surface		150.7		144.1	95.6%	
67	05/24/05	See Diagram	Surface		150.7		143.2	95.0%	
68	05/24/05	See Diagram	Surface		150.7		140.8	93.4%	
69	05/24/05	See Diagram	Surface		150.7		140.2	93.0%	
70								#DIV/0!	
71								#DIV/0!	
72								#DIV/0!	
73								#DIV/0!	
74								#DIV/0!	
75								#DIV/0!	

*Percent Compaction Based on Marshall Density

☐75 Blows ☐50 Blows - Theoretical Density ☐Big "D"

STS Construction Services Group

Field Compaction Summary

Project Name: Riverside Park Redevelopment

Job No.: 26538D

Location: Oshkosh, WI

Page No.: 1A

Test No.	Date	Location	Test Elevation	Mtl. Number	Maximum Lab Dry Density	In-Place Wet Density	Water Content	In-Place Dry Density	Percent Compaction	Comments
1	11/10/04	Clay Cap See Dia		1	113.0	128.6	18.9	108.2	95.7	
2	11/10/04			1	113.0	128.1	18.3	108.3	95.8	
3	11/10/04			1	113.0	132.3	17.8	112.3	99.4	
4	11/10/04			1	113.0	131.0	19.4	109.7	97.1	
5	11/10/04			1	113.0	127.9	19.0	107.5	95.1	
6	11/10/04			1	113.0	125.0	16.0	107.8	95.4	
7	11/10/04			1	113.0	125.9	17.2	107.4	95.1	
8	11/10/04			1	113.0	137.0	15.3	118.8	105.2	
9	11/10/04			1	113.0	130.8	16.5	112.3	99.4	
10	11/10/04			1	113.0	128.2	17.4	109.2	96.6	
11	11/10/04			1	113.0	128.2	18.5	108.2	95.7	
12	11/10/04			1	113.0	131.5	14.2	115.1	101.9	
13	11/10/04			1	113.0	128.7	15.9	111.0	98.3	
14	11/10/04			1	113.0	129.6	17.4	110.4	97.7	
15	11/11/04			1	113.0	126.5	15.9	109.1	96.6	
16	11/11/04			1	113.0	128.2	17.7	108.9	96.4	
17	11/11/04			1	113.0	130.0	16.0	112.1	99.2	
18	11/11/04			1	113.0	130.0	17.2	110.9	98.2	
19	11/11/04			1	113.0	131.9	17.2	112.5	99.6	
20	11/11/04			1	113.0	128.0	17.0	109.4	96.8	
21	12/02/04			1	113.0	125.8	15.0	109.4	96.8	
22	12/02/04			1	113.0	129.3	18.1	109.5	96.9	
23	12/02/04			1	113.0	128.1	18.6	108.0	95.6	
24	12/02/04			1	113.0	129.2	16.9	110.5	97.8	
25	12/02/04			1	113.0	130.7	16.4	112.3	99.4	

Notes:

A. Contractor has selected test locations.
B. Architect/ Engineer has selected test locations.
C. STS has selected test locations and contractor has designated area and lift.
D. STS has selected test locations and Arch./Eng. has designated area and lift.
E. Underlying lifts not tested by STS.
F. Subgrade not tested by STS.

Densities shown: Lbs. per cubic foot
Water Content: Percent of dry weight
Percent Compaction: In-place dry density/lab max. dry density x 100

STS Construction Services Group

Field Compaction Summary

Project Name: Riverside Park Redevelopment

Job No.: 26538D

Location: Oshkosh, WI

Page No.: 1B

Test No.	Date	Location	Test Elevation	Mtl. Number	Maximum Lab Dry Density	In-Place Wet Density	Water Content	In-Place Dry Density	Percent Compaction	Comments
1	11/10/04	Parking Lot See Dia		1	143.5	144.6	3.9	139.2	97.0	
2	11/10/04			1	143.5	148.5	4.7	141.8	98.8	
3	11/10/04			1	143.5	141.9	3.4	137.2	95.6	
4	11/10/04			1	143.5	149.1	4.7	142.4	99.2	
5	11/10/04			1	143.5	141.3	3.0	137.2	95.6	
6	11/10/04			1	143.5	147.3	7.5	137.0	95.5	
7	11/10/04			1	143.5	147.3	5.2	140.0	97.6	
8	11/10/04			1	143.5	146.8	6.4	138.0	96.1	
9	11/10/04			1	143.5	143.1	5.1	136.2	94.9	
10	11/11/04			1	143.5	143.6	4.4	137.5	95.9	
11	11/11/04			1	143.5	145.2	3.7	140.0	97.6	
12	11/11/04			1	143.5	144.3	4.4	138.2	96.3	
13	11/11/04			1	143.5	141.2	3.8	136.0	94.8	
14	11/11/04			1	143.5	142.6	4.3	136.7	95.3	
15	11/11/04			1	143.5	145.0	4.0	139.4	97.2	
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										

Notes:

A. Contractor has selected test locations.
B. Architect/ Engineer has selected test locations.
C. STS has selected test locations and contractor has designated area and lift.
D. STS has selected test locations and Arch./Eng. has designated area and lift.
E. Underlying lifts not tested by STS.
F. Subgrade not tested by STS.

Densities shown: Lbs. per cubic foot
Water Content: Percent of dry weight
Percent Compaction: In-place dry density/lab max. dry density x 100

STS Construction Services Group

Field Compaction Summary

Project Name: Riverside Park Redevelopment

Job No.: 26538D

Location: Oshkosh, WI

Page No.: 2A

Test No.	Date	Location	Test Elevation	Mtl. Number	Maximum Lab Dry Density	In-Place Wet Density	Water Content	In-Place Dry Density	Percent Compaction	Comments
26	12/09/04	Clay Cap See Dia		1	113.0	128.6	18.9	108.2	95.7	
27	12/09/04	↓		1	113.0	128.1	18.3	108.3	95.8	
28	12/09/04	↓		1	113.0	132.3	17.8	112.3	99.4	
29	12/14/04	↓		1	113.0	131.0	19.4	109.7	97.1	
30	12/15/04	↓		1	113.0	127.9	19.0	107.5	95.1	
31										
32										
33										
34										
35										
36										
37										
38										
39										
40										
41										
42										
43										
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45										
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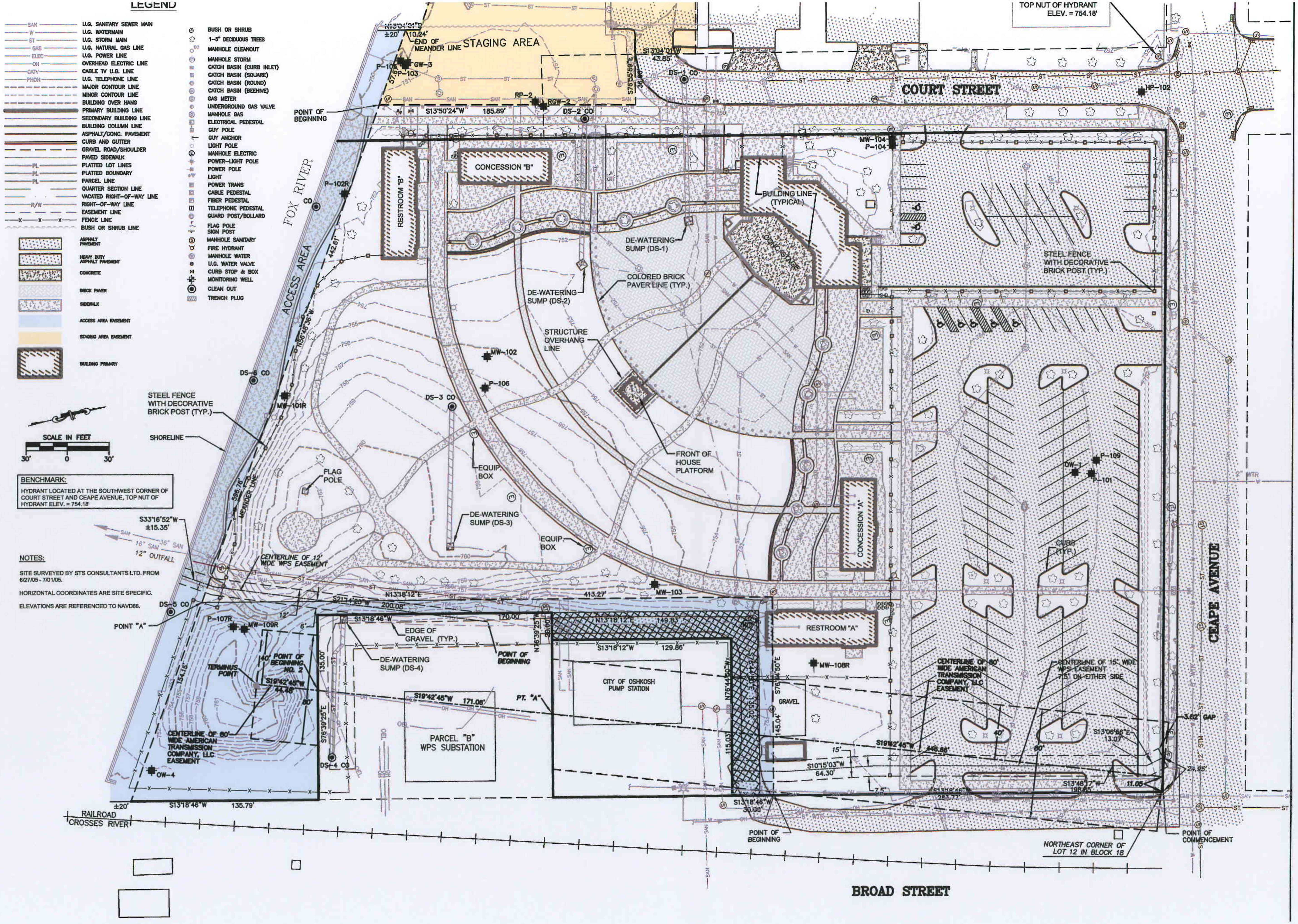
47										
48										
49										
50										

Notes:

A. Contractor has selected test locations.
B. Architect/ Engineer has selected test locations.
C. STS has selected test locations and contractor has designated area and lift.
D. STS has selected test locations and Arch./Eng. has designated area and lift.
E. Underlying lifts not tested by STS.
F. Subgrade not tested by STS.

Densities shown: Lbs. per cubic foot
Water Content: Percent of dry weight
Percent Compaction: In-place dry density/lab max. dry density x 100



BENCHMARK:

HYDRANT LOCATED AT THE SOUTHWEST CORNER OF COURT STREET AND CEAPE AVENUE, TOP NUT OF HYDRANT ELEV. = 754.18'

NOTES:

SITE SURVEYED BY STS CONSULTANTS LTD. FROM 6/27/05 - 7/01/05.

HORIZONTAL COORDINATES ARE SITE SPECIFIC.

ELEVATIONS ARE REFERENCED TO NAVD88.

STS CONSULTANTS
558 N. Main Street
Oshkosh, WI 54901
920-235-0270
www.stsconsultants.com

CITY OF OSHKOSH
215 Church Avenue
Oshkosh, Wisconsin
PH 920 236-5055
Fax 920 236-5053
www.ci.oshkosh.wi.us

PHASE I EXISTING - RECORD TOPOGRAPHIC SURVEY
RIVERSIDE PARK REDEVELOPMENT
CITY OF OSHKOSH PLANNING DEPARTMENT
WINNEBAGO COUNTY
OSHKOSH, WI

Issued

Rev	Date	Description

Designed:	.	.
Drawn:	DLF	07/13/05
Checked:	PJK	07/28/05
Approved:	.	.

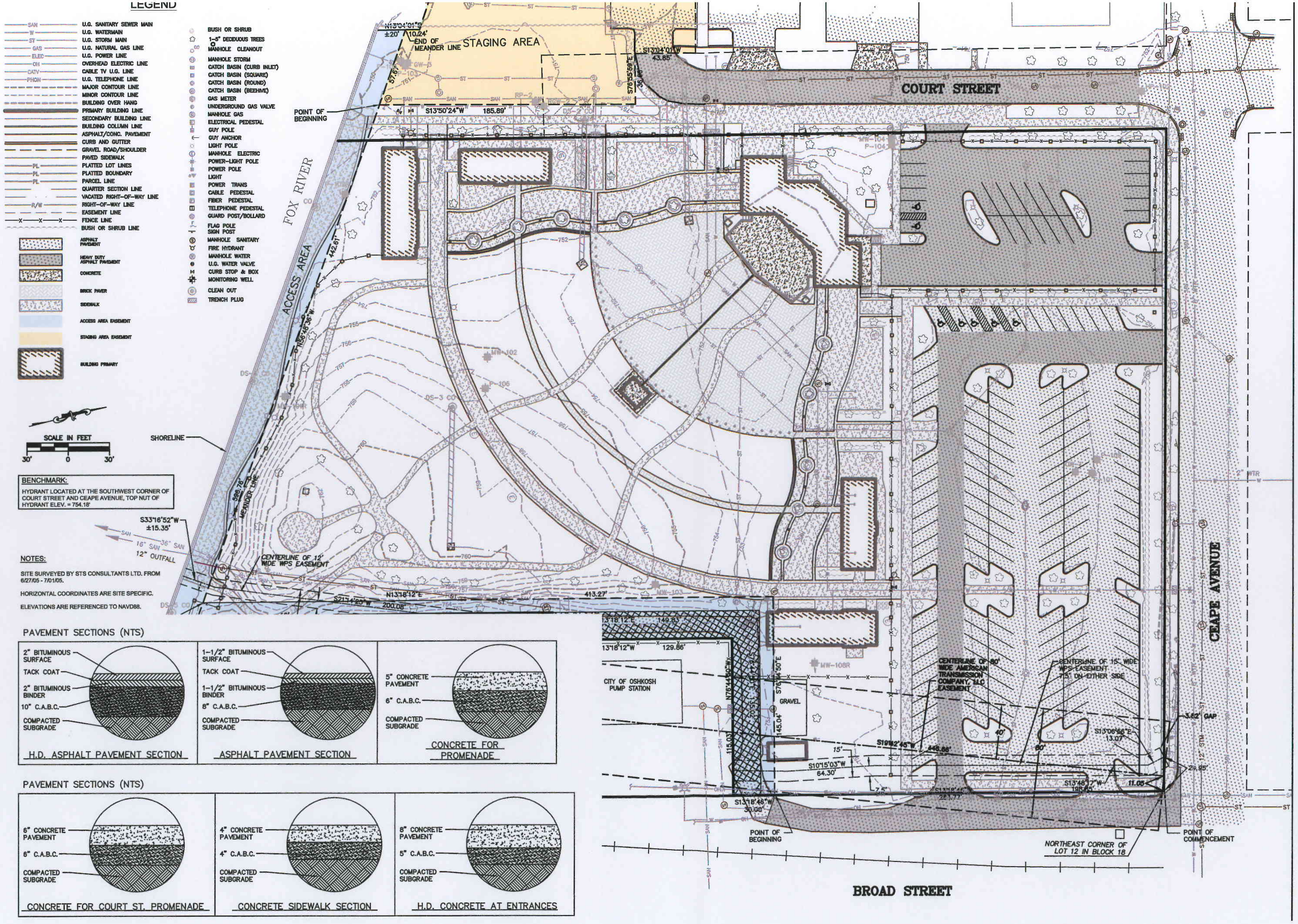
PROJECT NUMBER
426538J

SHEET REFERENCE NUMBER
R-1

LEGEND

—SAN—	U.G. SANITARY SEWER MAIN
—W—	U.G. WATERMAIN
—ST—	U.G. STORM MAIN
—GAS—	U.G. NATURAL GAS LINE
—ELEC—	U.G. POWER LINE
—OH—	OVERHEAD ELECTRIC LINE
—CATV—	CABLE TV U.G. LINE
—PHON—	U.G. TELEPHONE LINE
	MAJOR CONTOUR LINE
	MINOR CONTOUR LINE
	BUILDING OVER HANG
	PRIMARY BUILDING LINE
	SECONDARY BUILDING LINE
	BUILDING COLUMN LINE
	ASPHALT/CONC. PAVEMENT
	CURB AND GUTTER
	GRAVEL ROAD/SHOULDER
	PAVED SIDEWALK
—PL—	PLATTED LOT LINES
—PL—	PLATTED BOUNDARY
—PL—	PARCEL LINE
	QUARTER SECTION LINE
	VACATED RIGHT-OF-WAY LINE
—R/W—	RIGHT-OF-WAY LINE
	EASEMENT LINE
—x—x—x—	FENCE LINE
	BUSH OR SHRUB LINE
▨	ASPHALT PAVEMENT
▨	HEAVY DUTY ASPHALT PAVEMENT
▨	CONCRETE
▨	BRICK PAVER
▨	SIDEWALK
▨	ACCESS AREA EASEMENT
▨	STAGING AREA EASEMENT
▨	BUILDING PRIMARY

- BUSH OR SHRUB
- 1-5" DECIDUOUS TREES
- MANHOLE CLEANOUT
- MANHOLE STORM
- CATCH BASIN (CURB INLET)
- CATCH BASIN (SQUARE)
- CATCH BASIN (ROUND)
- CATCH BASIN (BEEHIVE)
- GAS METER
- UNDERGROUND GAS VALVE
- MANHOLE GAS
- ELECTRICAL PEDESTAL
- GUY POLE
- GUY ANCHOR
- LIGHT POLE
- MANHOLE ELECTRIC
- POWER-LIGHT POLE
- POWER POLE
- LIGHT
- POWER TRANS
- CABLE PEDESTAL
- FIBER PEDESTAL
- TELEPHONE PEDESTAL
- GUARD POST/BOLLARD
- FLAG POLE
- SIGN POST
- MANHOLE SANITARY
- FIRE HYDRANT
- MANHOLE WATER
- U.G. WATER VALVE
- CURB STOP & BOX
- MONITORING WELL
- CLEAN OUT
- TRENCH PLUG



BENCHMARK:

HYDRANT LOCATED AT THE SOUTHWEST CORNER OF COURT STREET AND CEAPE AVENUE, TOP NUT OF HYDRANT ELEV. = 754.18'

NOTES:

SITE SURVEYED BY STS CONSULTANTS LTD. FROM 6/27/05 - 7/01/05.

HORIZONTAL COORDINATES ARE SITE SPECIFIC.

ELEVATIONS ARE REFERENCED TO NAVD88.

PAVEMENT SECTIONS (NTS)

H.D. ASPHALT PAVEMENT SECTION

ASPHALT PAVEMENT SECTION

CONCRETE FOR PROMENADE

PAVEMENT SECTIONS (NTS)

CONCRETE FOR COURT ST. PROMENADE

CONCRETE SIDEWALK SECTION

H.D. CONCRETE AT ENTRANCES

STS CONSULTANTS
558 N. Main Street
Oshkosh, WI 54901

920-235-0270

www.stsconsultants.com

CITY OF OSHKOSH

215 Church Avenue
Oshkosh, Wisconsin

PH 920 236-5055
Fax 920 236-5053

www.ci.oshkosh.wi.us

PHASE I EXISTING - RECORD PAVING PLAN
RIVERSIDE PARK REDEVELOPMENT
CITY OF OSHKOSH PLANNING DEPARTMENT
WINNEBAGO COUNTY
OSHKOSH, WI

Issued

Rev Date
Description

Designed:	.	.
Drawn:	DLF	07/13/05
Checked:	PJK	07/28/05
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PROJECT NUMBER
426538J

SHEET REFERENCE NUMBER

R-2

LEGEND

SAN — U.G. SANITARY SEWER MAIN
W — U.G. WATERMAIN
ST — U.G. STORM MAIN
GAS — U.G. NATURAL GAS LINE
ELEC — U.G. POWER LINE
OH — OVERHEAD ELECTRIC LINE
CATV — CABLE TV U.G. LINE
PHON — U.G. TELEPHONE LINE
MAJOR CONTOUR LINE
MINOR CONTOUR LINE
BUILDING OVER HANG
PRIMARY BUILDING LINE
SECONDARY BUILDING LINE
BUILDING COLUMN LINE
ASPHALT/CONC. PAVEMENT
CURB AND GUTTER
GRAVEL ROAD/SHOULDER
PAVED SIDEWALK
PL — PLATTED LOT LINES
PL — PLATTED BOUNDARY
PL — PARCEL LINE
QUARTER SECTION LINE
VACATED RIGHT-OF-WAY LINE
R/W — RIGHT-OF-WAY LINE
EASEMENT LINE
—X—X—X— FENCE LINE
BUSH OR SHRUB LINE

🟦 ACCESS AREA EASEMENT
🟨 STAGING AREA EASEMENT
🟥 GEOSYNTHETIC COMPOSITE LINER
🟩 NON-WOVEN GEOTEXTILE WARNING LAYER
▨ BUILDING PRIMARY

2 / 10" CLAY DENSITY TEST LOCATION / CLAY LINER THICKNESS
(10") TOPSOIL COVER THICKNESS
(10") SAND DRAINAGE LAYER THICKNESS

BUSH OR SHRUB
1-5" DECIDUOUS TREES
MANHOLE CLEANOUT
MANHOLE STORM
CATCH BASIN (CURB INLET)
CATCH BASIN (SQUARE)
CATCH BASIN (ROUND)
CATCH BASIN (BEEHIVE)
GAS METER
UNDERGROUND GAS VALVE
MANHOLE GAS
ELECTRICAL PEDESTAL
GUY POLE
GUY ANCHOR
LIGHT POLE
MANHOLE ELECTRIC
POWER-LIGHT POLE
POWER POLE
LIGHT
POWER TRANS
CABLE PEDESTAL
FIBER PEDESTAL
TELEPHONE PEDESTAL
GUARD POST/BOLLARD
FLAG POLE
SIGN POST
MANHOLE SANITARY
FIRE HYDRANT
MANHOLE WATER
U.G. WATER VALVE
CURB STOP & BOX
MONITORING WELL
CLEAN OUT
TRENCH PLUG

BENCHMARK:
HYDRANT LOCATED AT THE SOUTHWEST CORNER OF COURT STREET AND CEAPE AVENUE, TOP NUT OF HYDRANT ELEV. = 754.18'

NOTES:

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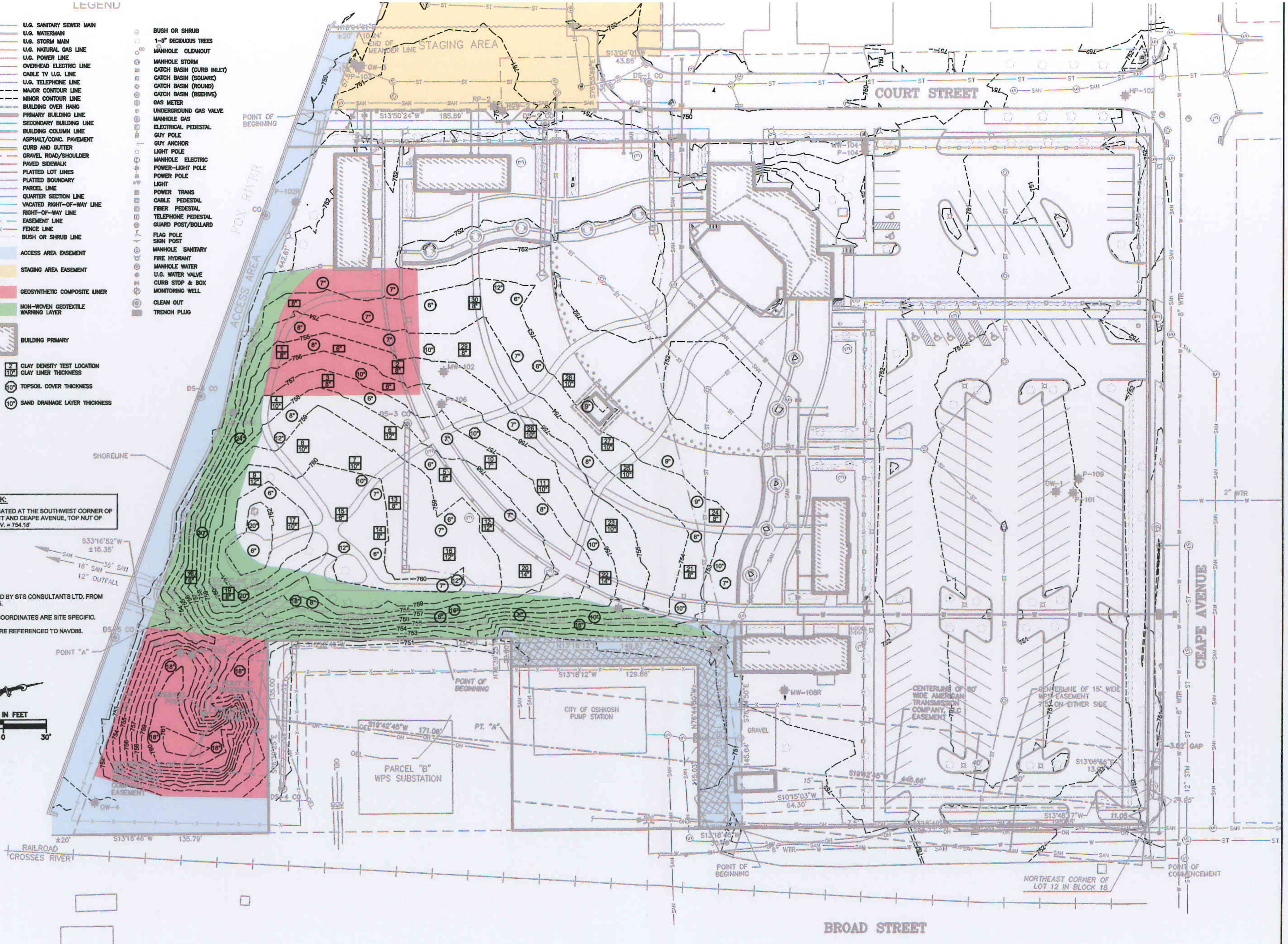
HORIZONTAL COORDINATES ARE SITE SPECIFIC.

ELEVATIONS ARE REFERENCED TO NAVD88.



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PHASE I EXISTING - RECORD GRADES & CAP THICKNESS PLAN
RIVERSIDE PARK REDEVELOPMENT
CITY OF OSHKOSH PLANNING DEPARTMENT
WINNEBAGO COUNTY
OSHKOSH, WI

Issued
Rev Date Description

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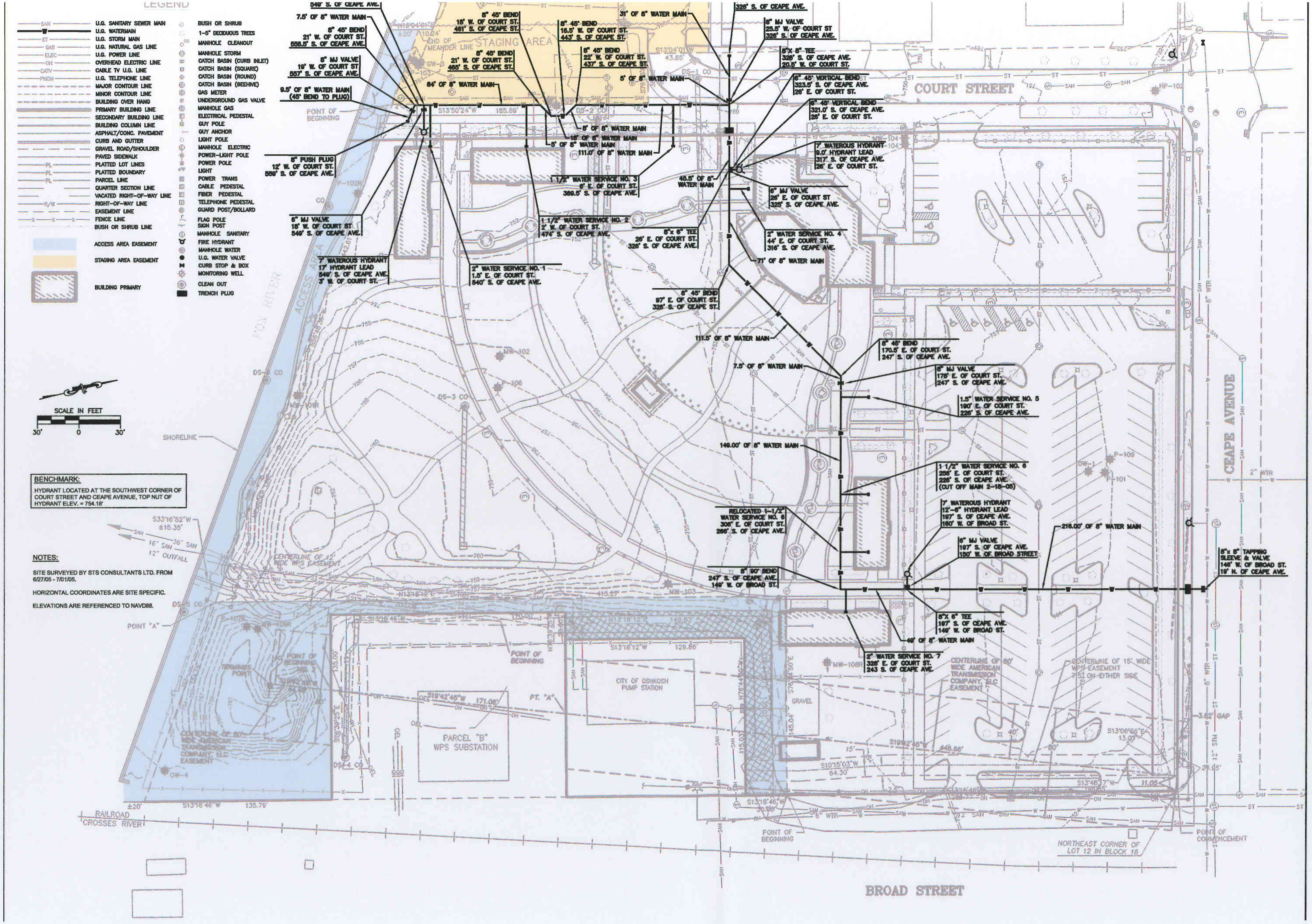
PROJECT NUMBER
426538J

SHEET REFERENCE NUMBER
R-3



BENCHMARK:

HYDRANT LOCATED AT THE SOUTHWEST CORNER OF COURT STREET AND CEAPE AVENUE, TOP NUT OF HYDRANT ELEV. = 754.18'

NOTES:

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PHASE I EXISTING - RECORD WATER UTILITY PLAN
RIVERSIDE PARK REDEVELOPMENT
CITY OF OSHKOSH PLANNING DEPARTMENT
WINNEBAGO COUNTY
OSHKOSH, WI

Issued

Rev	Date	Description

Designed:	.	.
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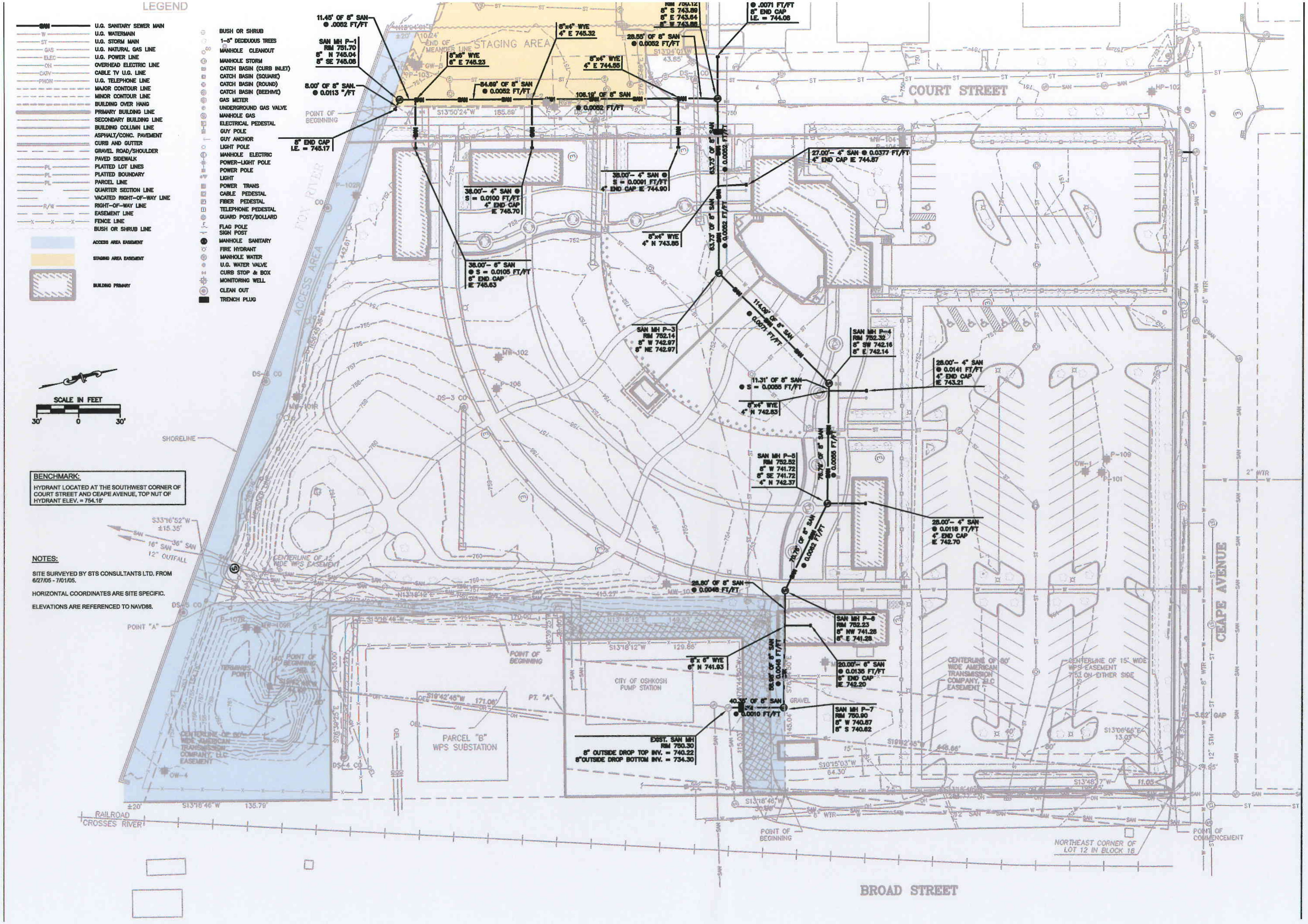
Checked:	PJK	07/28/05
Approved:	.	.

PROJECT NUMBER
426538J

SHEET REFERENCE NUMBER
R-4



BENCHMARK:

HYDRANT LOCATED AT THE SOUTHWEST CORNER OF COURT STREET AND CEAPE AVENUE, TOP NUT OF HYDRANT ELEV. = 754.18'

NOTES:

SITE SURVEYED BY STS CONSULTANTS LTD. FROM 6/27/05 - 7/01/05.

HORIZONTAL COORDINATES ARE SITE SPECIFIC.

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PHASE I EXISTING - RECORD SANITARY SEWER PLAN
RIVERSIDE PARK REDEVELOPMENT
CITY OF OSHKOSH PLANNING DEPARTMENT
WINNEBAGO COUNTY
OSHKOSH, WI

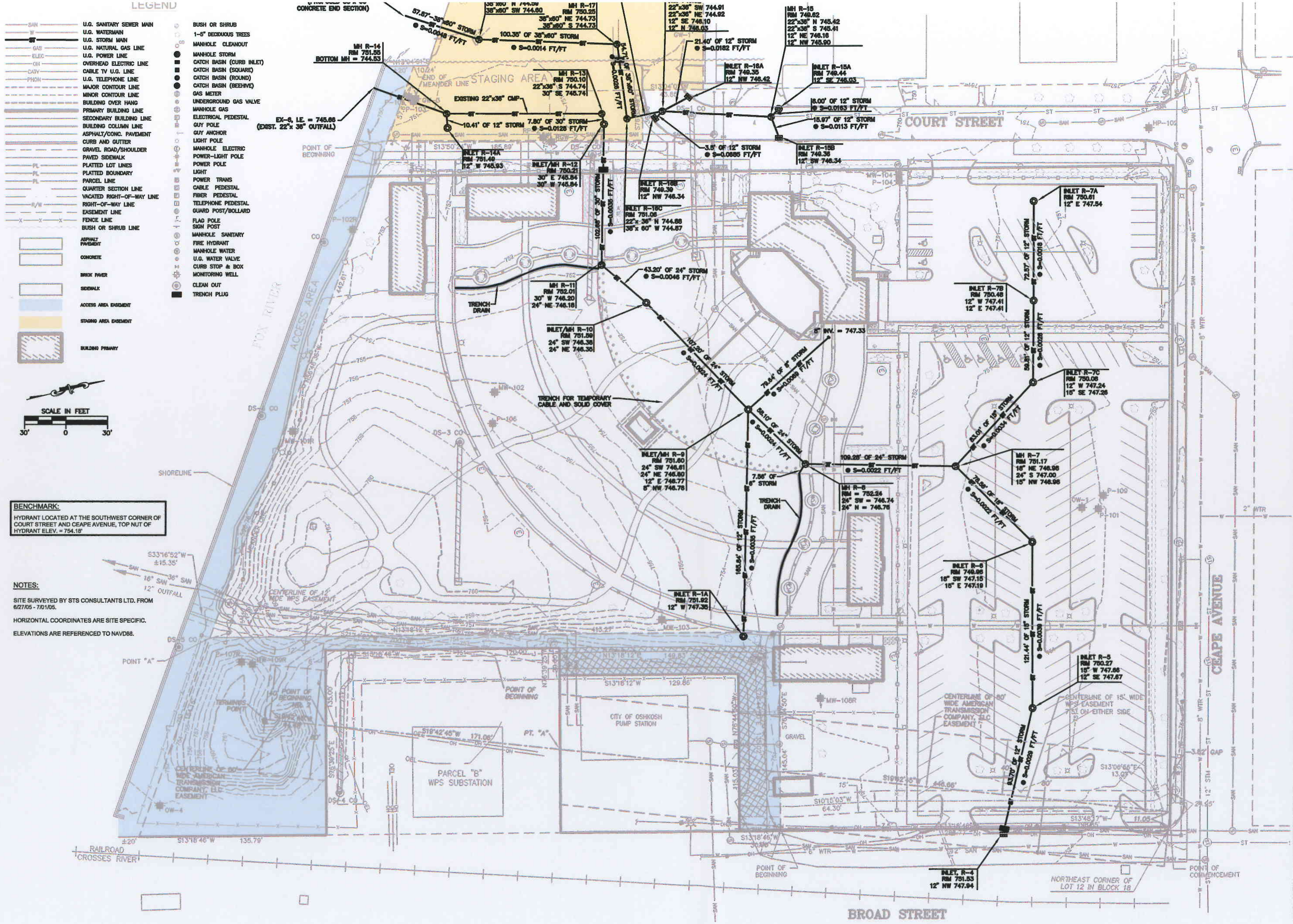
Issued

Rev Date Description

Designed: .
Drawn: DLF 07/13/05
Checked: PJK 07/28/05
Approved: .

PROJECT NUMBER
426538J

SHEET REFERENCE NUMBER
R-5



BENCHMARK:

HYDRANT LOCATED AT THE SOUTHWEST CORNER OF COURT STREET AND CEAPE AVENUE, TOP NUT OF HYDRANT ELEV. = 754.18'

NOTES:

SITE SURVEYED BY STS CONSULTANTS LTD. FROM 6/27/05 - 7/01/05.

HORIZONTAL COORDINATES ARE SITE SPECIFIC.

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PHASE I EXISTING - RECORD STORM SEWER PLAN
RIVERSIDE PARK REDEVELOPMENT
CITY OF OSHKOSH PLANNING DEPARTMENT
WINNEBAGO COUNTY
OSHKOSH, WI

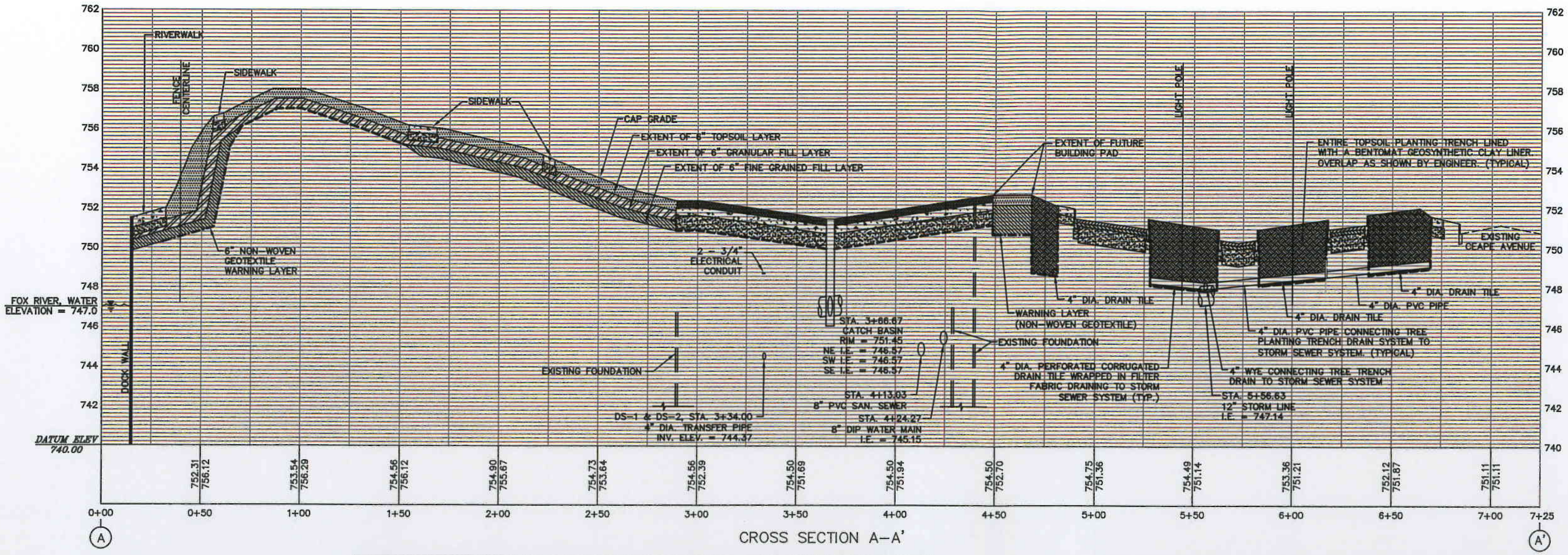
Issued

Rev Date Description

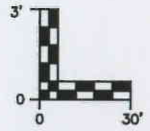
Designed:	.	.
Drawn:	DLF	07/13/05
Checked:	PJK	07/28/05
Approved:	.	.

PROJECT NUMBER
426538J

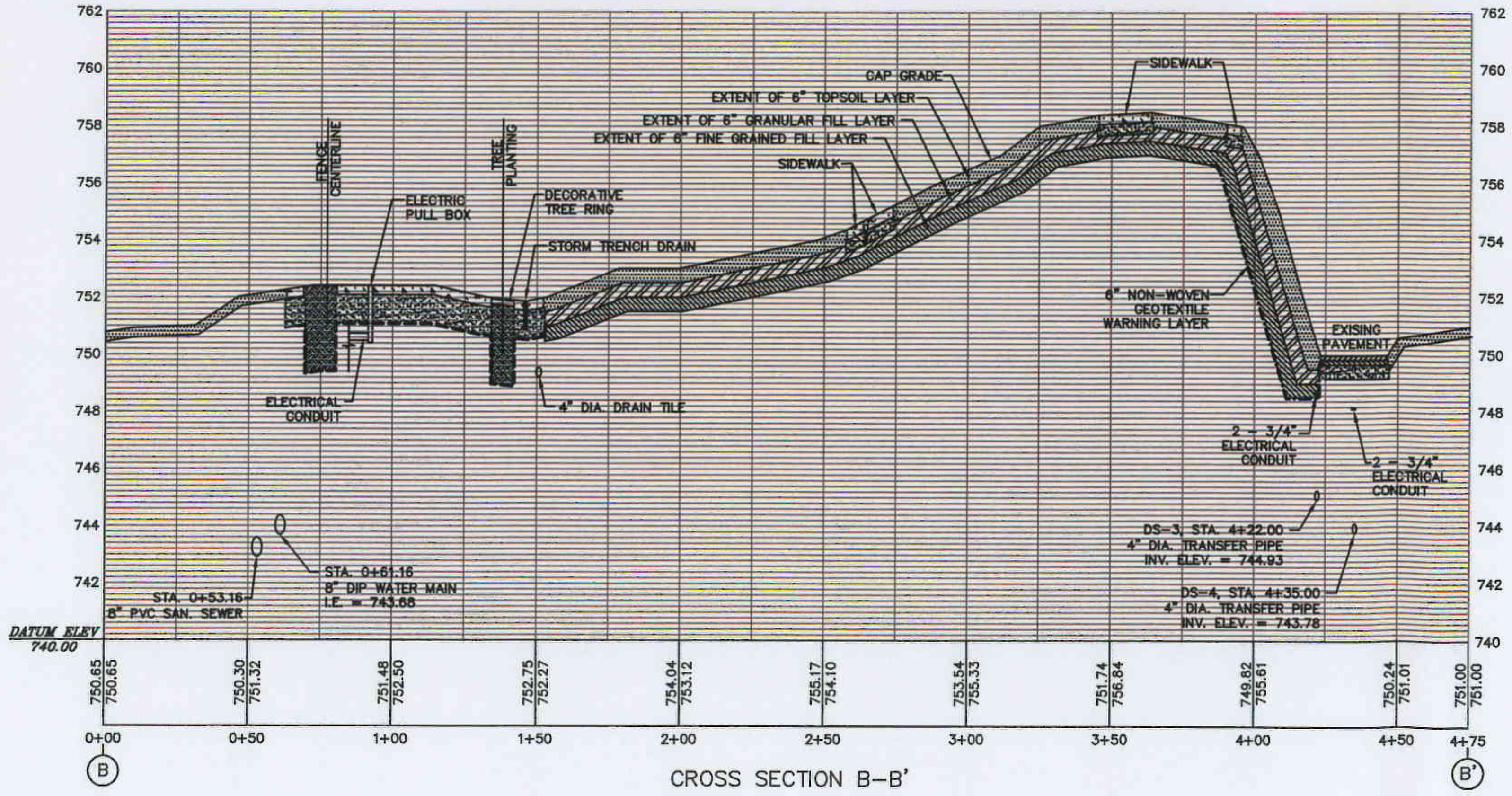
SHEET REFERENCE NUMBER
R-6



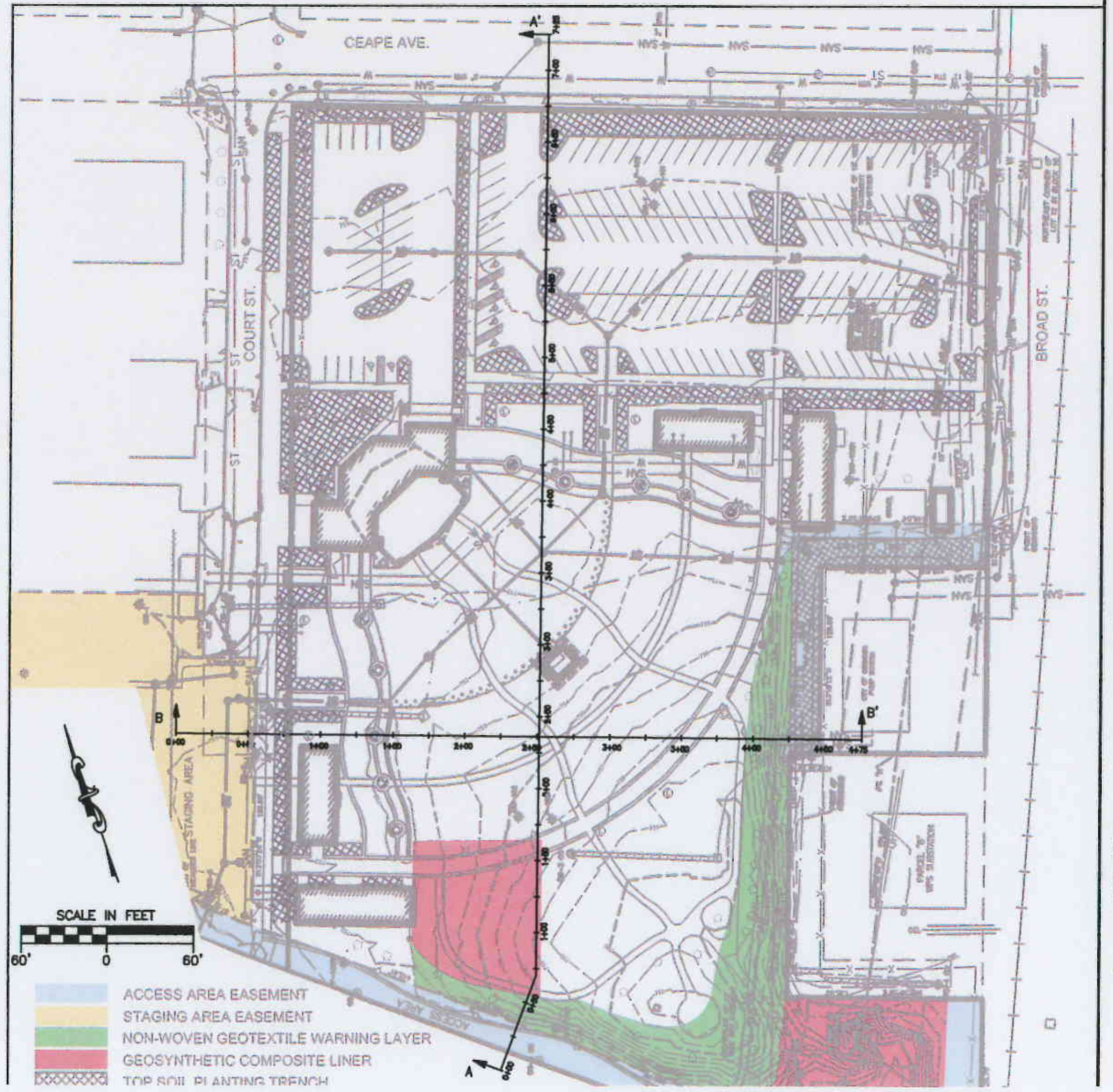
CROSS SECTION A–A'



LEGEND			
▨	CONCRETE PAVEMENT	▨	TOPSOIL LAYER
■	DECORATIVE BRICK PAVERS	▨	6" GRANULAR FILL LAYER
▨	BITUMINOUS SURFACE MATERIAL	▨	6" FINE GRAINED FILL LAYER
▨	BITUMINOUS BINDER MATERIAL	▨	CRUSHED AGGREGATE BASE COURSE
▨	PLANTING TRENCH (TOPSOIL)	- - -	GEOSYNTHETIC COMPOSITE LINER BENTOMAT OR APPROVED EQUAL



CROSS SECTION B–B'



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PHASE I EXISTING - RECORD CROSS SECTIONS (A-A' & B-B')
RIVERSIDE PARK REDEVELOPMENT
CITY OF OSHKOSH PLANNING DEPARTMENT
WINNEBAGO COUNTY
OSHKOSH, WI

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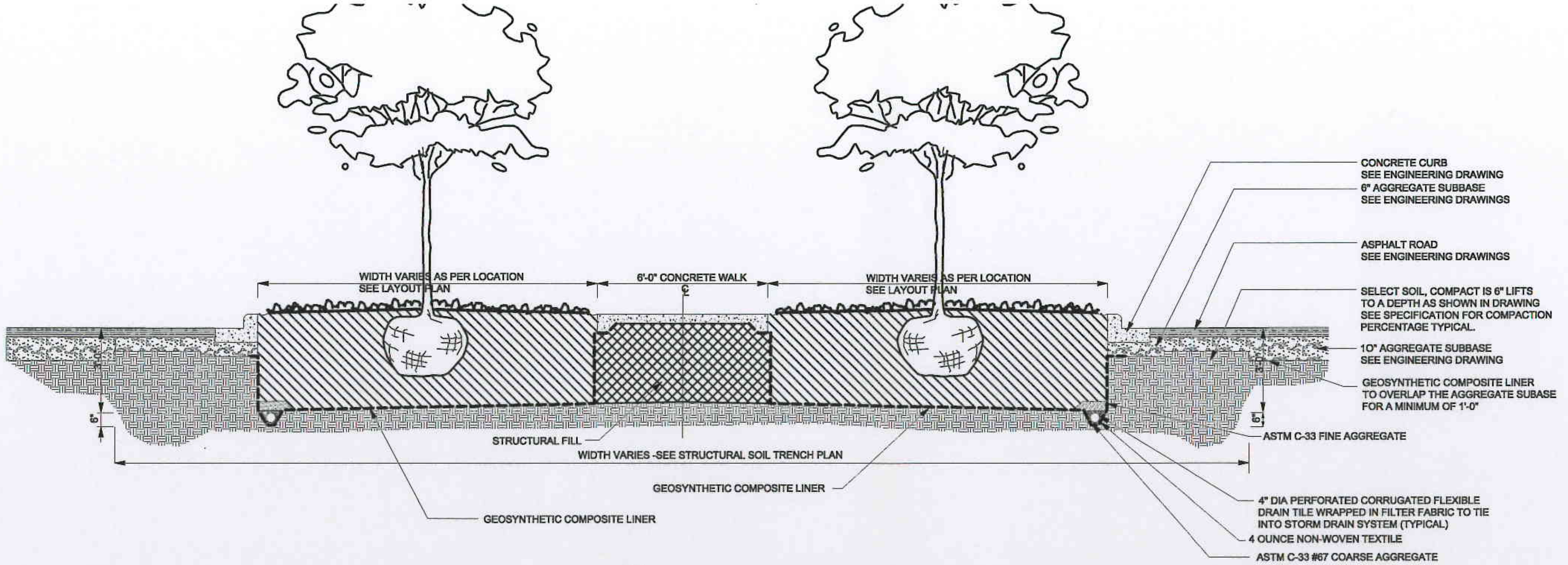
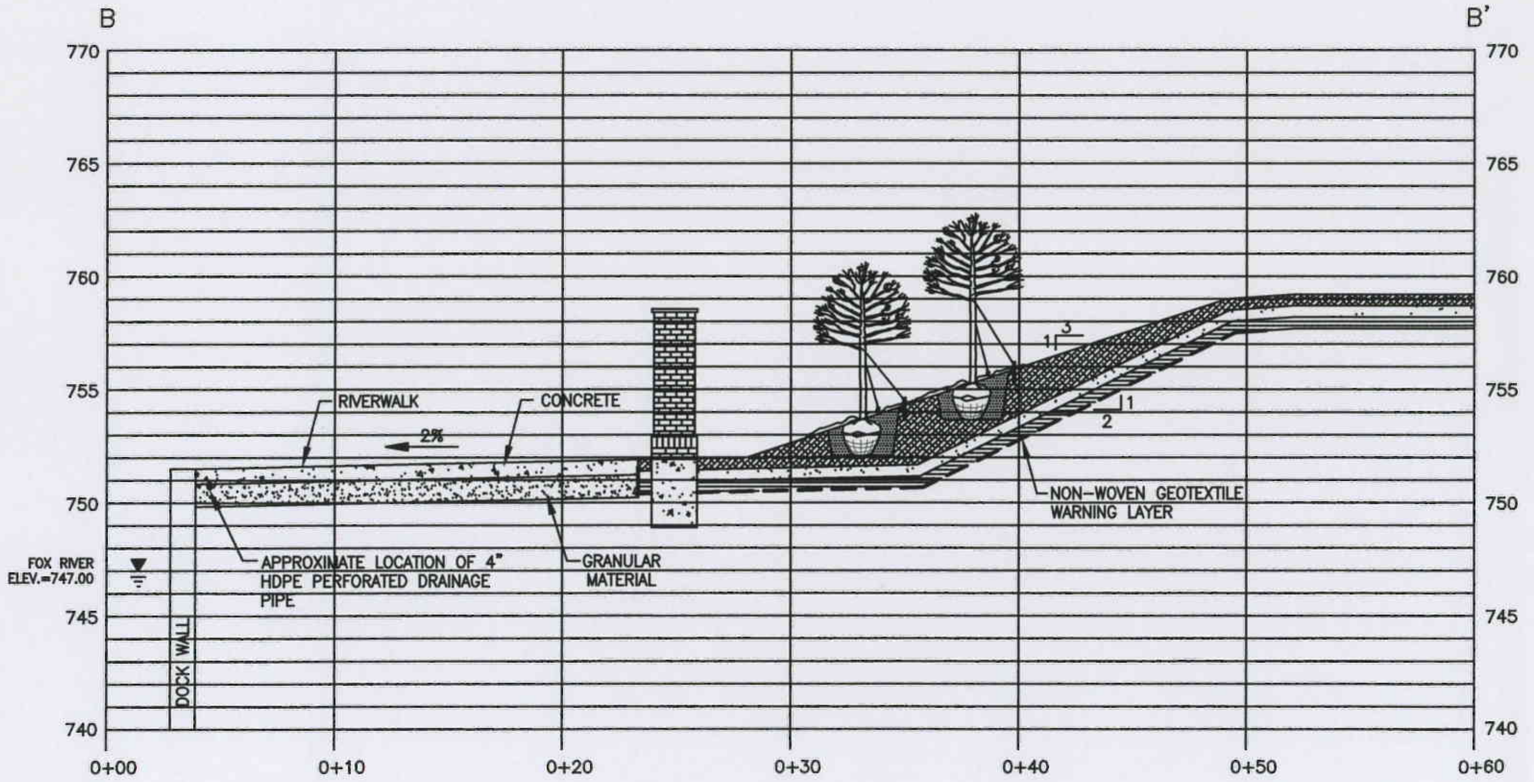
PROJECT NUMBER
426538J

SHEET REFERENCE NUMBER

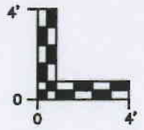
R-7



A
R-8
PARKING ISLAND PLANTER LONGITUDINAL SECTION
1"= 3'

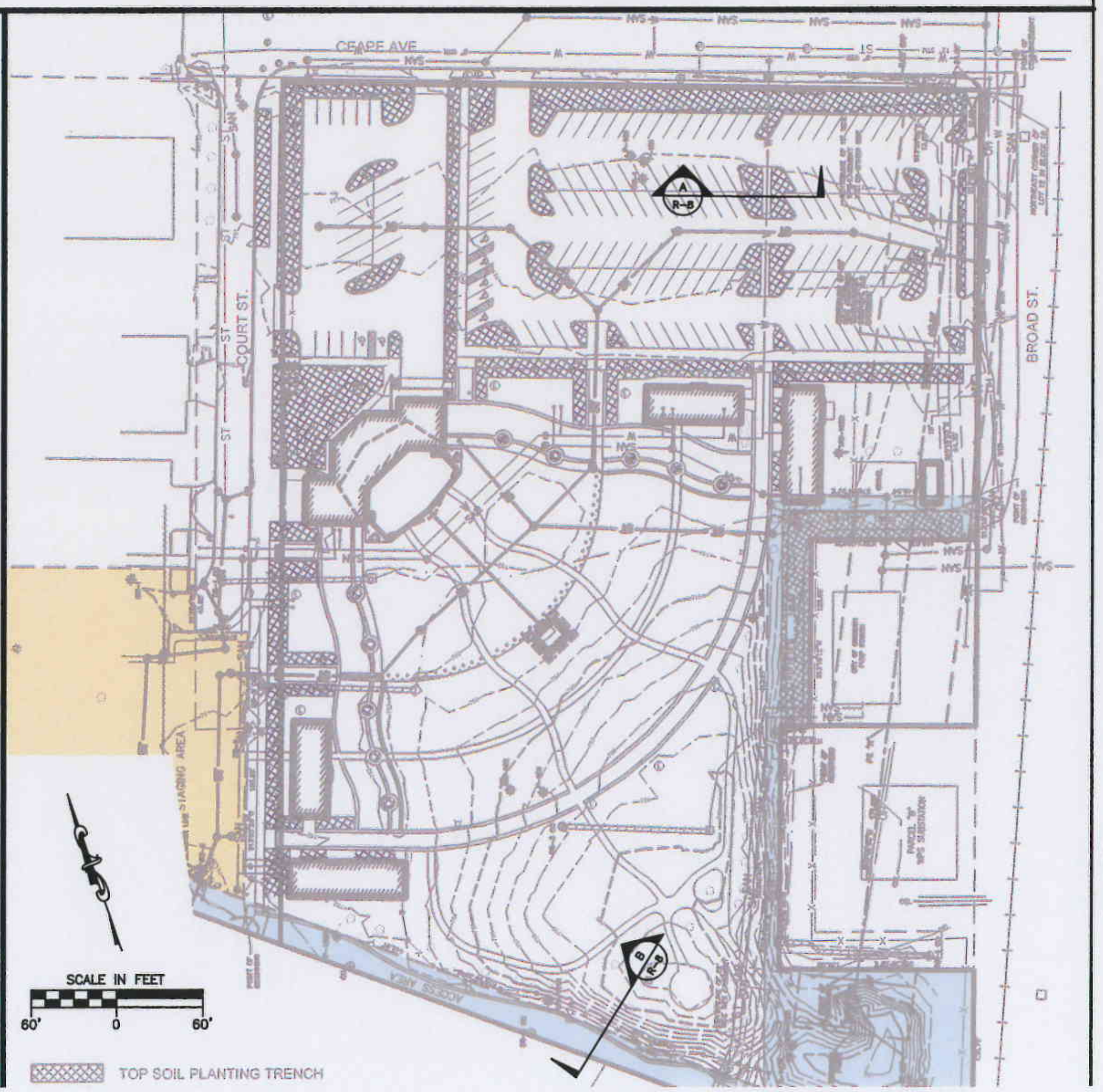


B
R-8
CROSS SECTION C–C'
1"= 4'



LEGEND

▨ DECORATIVE PAVING
▨ BASE COARSE
▨ CONCRETE
▨ TOPSOIL LAYER
▨ GRANULAR FILL LAYER
▨ FINE GRAINED FILL LAYER



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PHASE I EXISTING - RECORD PLANTING DETAIL
RIVERSIDE PARK REDEVELOPMENT
CITY OF OSHKOSH PLANNING DEPARTMENT
WINNEBAGO COUNTY
OSHKOSH, WI

Issued
Rev Date
Description

Designed: . .
Drawn: DLF 07/13/05
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PROJECT NUMBER
426538J

SHEET REFERENCE NUMBER
R-8

INFORMATION SHOWN ON PLAN SHEET AS PROVIDED BY GENERAL CONTRACTOR.
STS DID NOT OBSERVE OR DOCUMENT ANY ELECTRICAL UTILITY CONSTRUCTION.

LEGEND

——W——	U.G. WATERMAIN
——SAN——	U.G. SANITARY SEWER MAIN
——ST——	U.G. STORM MAIN
——GAS——	U.G. NATURAL GAS LINE
——ELEC——	U.G. POWER LINE
——OH——	OVERHEAD ELECTRIC LINE
——CATV——	CABLE TV U.G. LINE
——PHON——	U.G. TELEPHONE LINE
	MAJOR CONTOUR LINE
	MINOR CONTOUR LINE
	BUILDING OVER HANG
	PRIMARY BUILDING LINE
	SECONDARY BUILDING LINE
	BUILDING COLUMN LINE
	ASPHALT/CONC. PAVEMENT
	CURB AND GUTTER
	GRAVEL ROAD/SHOULDER
	PAVED SIDEWALK
——PL——	PLATTED LOT LINES
——PL——	PLATTED BOUNDARY
——PL——	PARCEL LINE
	QUARTER SECTION LINE
	VACATED RIGHT-OF-WAY LINE
——R/W——	RIGHT-OF-WAY LINE
	EASEMENT LINE
—X—X—X—	FENCE LINE
	BUSH OR SHRUB LINE
	ACCESS AREA EASEMENT
	STAGING AREA EASEMENT
	BUILDING PRIMARY

	BUSH OR SHRUB
	1-5" DECIDUOUS TREES
O^CO	MANHOLE CLEANOUT
●	MANHOLE STORM
	CATCH BASIN (CURB INLET)
	CATCH BASIN (SQUARE)
	CATCH BASIN (ROUND)
	CATCH BASIN (BEEHIVE)
	GAS METER
	UNDERGROUND GAS VALVE
	MANHOLE GAS
	ELECTRICAL PEDESTAL
	GUY POLE
	GUY ANCHOR
	LIGHT POLE
Ⓔ	MANHOLE ELECTRIC
	POWER-LIGHT POLE
	POWER POLE
	LIGHT
	POWER TRANS
	CABLE PEDESTAL
	FIBER PEDESTAL
	TELEPHONE PEDESTAL
⊕	GUARD POST/BOLLARD
F	FLAG POLE
	SIGN POST
Ⓢ	MANHOLE SANITARY
	FIRE HYDRANT
	MANHOLE WATER
	U.G. WATER VALVE
	CURB STOP & BOX
	MONITORING WELL
◉	CLEAN OUT
▨	TRENCH PLUG

NOTES:

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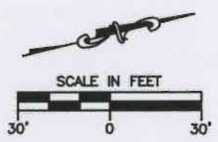
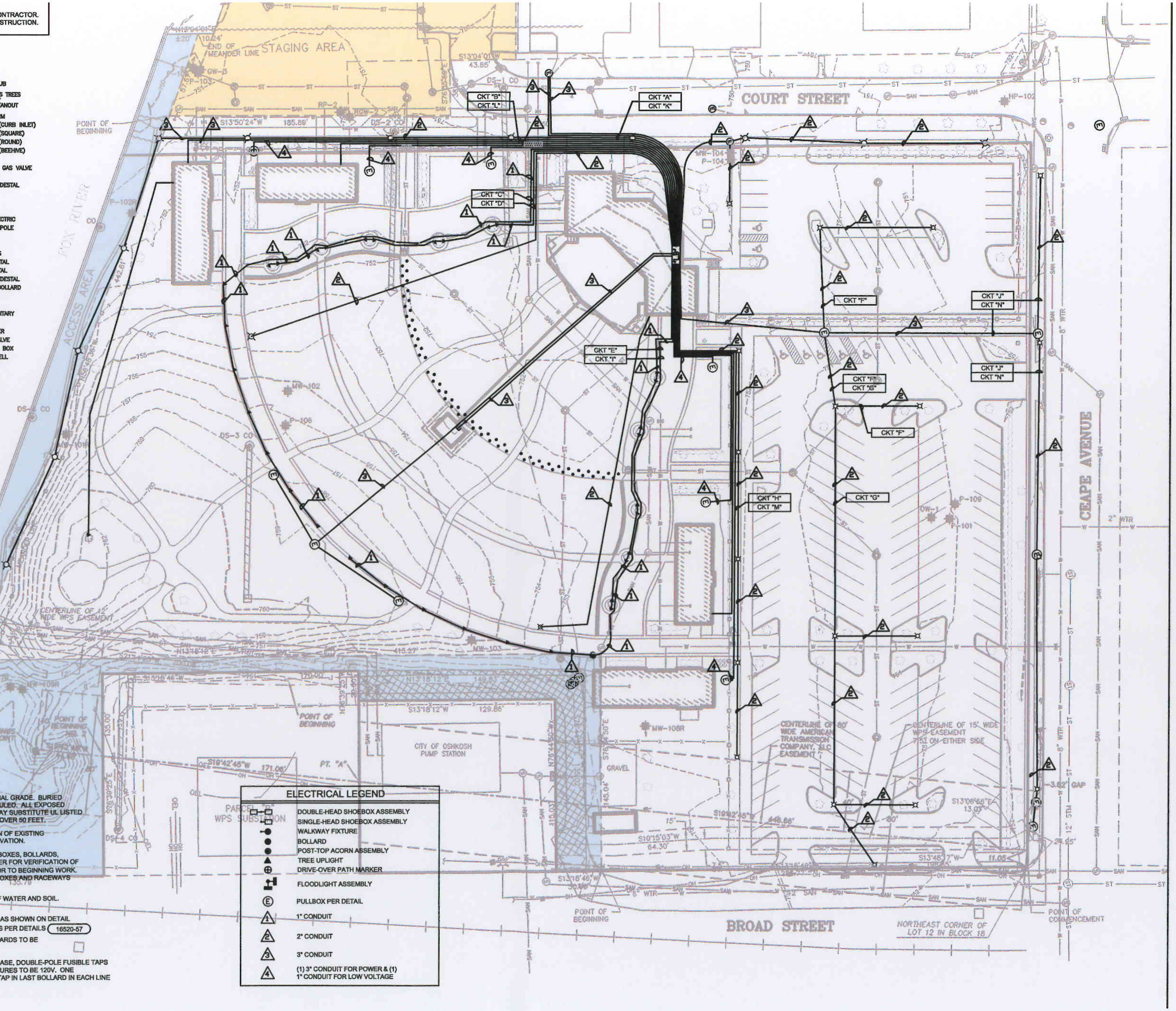
ELEVATIONS ARE REFERENCED TO NAVD88.

BENCHMARK:

HYDRANT LOCATED AT THE SOUTHWEST CORNER OF COURT STREET AND CEAPE AVENUE, TOP NUT OF HYDRANT ELEV. = 754.18'





GENERAL NOTES:

1. ALL BURIED CONDUIT TO BE MINIMUM 24" DEPTH BELOW FINAL GRADE. BURIED AND ENCASED CONDUIT TO BE SCH 40 PVC, SIZE AS SCHEDULED. ALL EXPOSED CONDUIT TO BE GALVANIZED RIGID STEEL. CONTRACTOR MAY SUBSTITUTE UL LISTED SCH 40 HDPE FOR SCH 40 PVC FOR BURIED CONDUIT RUNS OVER 50 FEET.
2. REQUEST UTILITY LOCATION SERVICES FOR IDENTIFICATION OF EXISTING UNDERGROUND PLANT PRIOR TO COMMENCING WITH EXCAVATION.
3. PLANS INDICATE APPROXIMATE LOCATIONS ONLY OF PULL BOXES, BOLLARDS, LIGHT POSTS AND LUMINAIRES. COORDINATE WITH ENGINEER FOR VERIFICATION OF ACTUAL LOCATIONS. STAKE AND/OR MARK LOCATIONS PRIOR TO BEGINNING WORK. IDENTIFY AND PREPARE LOCATIONS OF ENCASED DEVICE BOXES AND RACEWAYS PRIOR TO CONCRETE POURING.
4. ALL SPARE CONDUIT TO BE CAPPED TO PREVENT ENTRY OF WATER AND SOIL. PROVIDE PULL ROPE IN EACH SPARE.
5. HELICAL FOUNDATION BASES FOR ALL LIGHT POLES/POSTS AS SHOWN ON DETAIL (16520-59). ELECTRICAL CONNECTIONS AND FUSED TAPS PER DETAILS (16520-57) AND (16520-58). ALL WIRING IN POLES/POSTS AND BOLLARDS TO BE (2)#12 AND (1)#12 GROUND, FUSE BLOCK TO BALLAST.
6. ALL POST/POLE MOUNTED FIXTURES TO BE 208V SINGLE-PHASE, DOUBLE-POLE FUSIBLE TAPS EACH UNIT LOCATION. ALL BOLLARDS AND IN-GROUND FIXTURES TO BE 120V. ONE SINGLE-POLE TAP FOR EACH BOLLARD LUMINAIRE. EXTRA TAP IN LAST BOLLARD IN EACH LINE FOR BRANCH CIRCUIT TO DRIVE-OVER PATH MARKERS.
7. INSTALL PULLBOXES PER DETAIL (16118-15)

ELECTRICAL LEGEND

□-□	DOUBLE-HEAD SHOEBOX ASSEMBLY
-□	SINGLE-HEAD SHOEBOX ASSEMBLY
-●	WALKWAY FIXTURE
●	BOLLARD
●	POST-TOP ACORN ASSEMBLY
▲	TREE UPLIGHT
⊕	DRIVE-OVER PATH MARKER
	FLOODLIGHT ASSEMBLY
Ⓔ	PULLBOX PER DETAIL
△1	1" CONDUIT
△2	2" CONDUIT
△3	3" CONDUIT
△4	(1) 3" CONDUIT FOR POWER & (1) 1" CONDUIT FOR LOW VOLTAGE

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PHASE I EXISTING - RECORD ELECTRICAL PLAN
RIVERSIDE PARK REDEVELOPMENT
CITY OF OSHKOSH PLANNING DEPARTMENT
WINNEBAGO COUNTY
OSHKOSH, WI

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Rev Date
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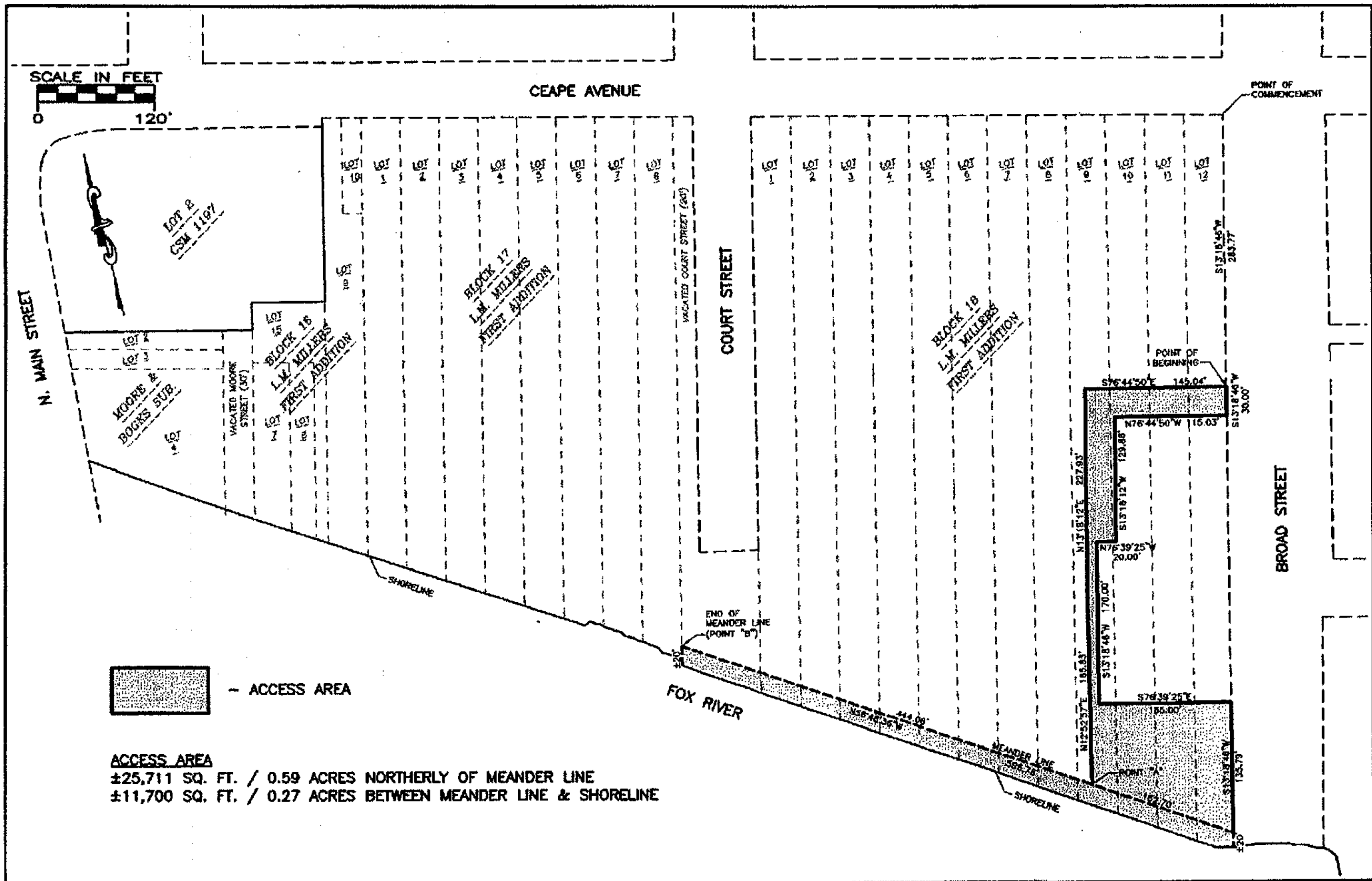
PROJECT NUMBER
426538J

SHEET REFERENCE NUMBER
R-9

APPENDIX D5

SEDIMENT EASEMENT



▨ – ACCESS AREA

ACCESS AREA
±25,711 SQ. FT. / 0.59 ACRES NORTHERLY OF MEANDER LINE
±11,700 SQ. FT. / 0.27 ACRES BETWEEN MEANDER LINE & SHORELINE

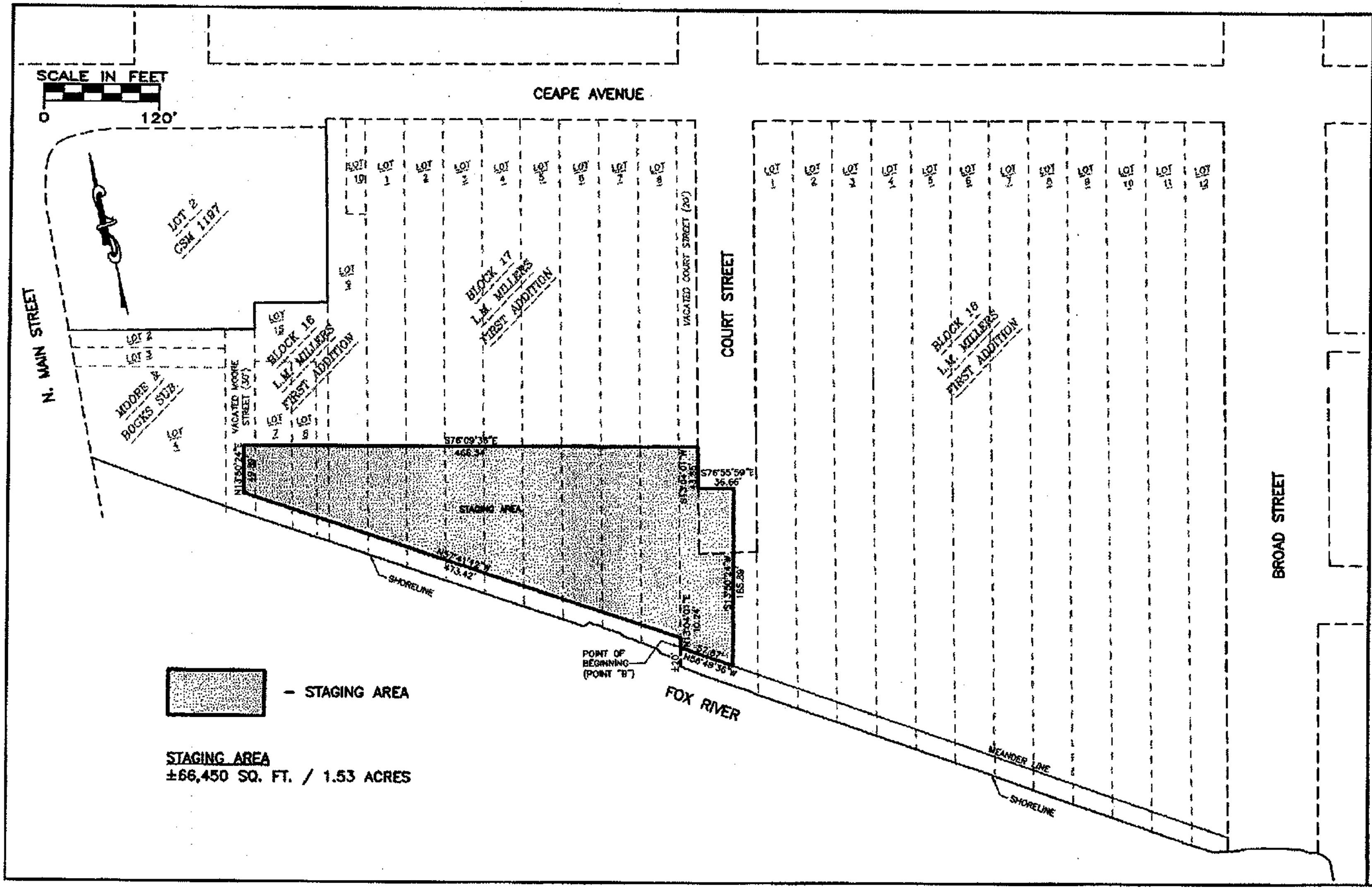
STS CONSULTANTS
1035 Kepler Drive
Green Bay, WI 54311
920-468-1978
www.stsconsultants.com

SEDIMENT AREA ACCESS EASEMENT EXHIBIT "C"

CITY OF OSHKOSH

OSHKOSH, WISCONSIN

Drawn: CDH 7/18/2005
Checked: MJO 7/19/2005
Approved:
PROJECT NUMBER 12-26538G
FIGURE NUMBER 01



STAGING AREA
±66,450 SQ. FT. / 1.53 ACRES

STS CONSULTANTS
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Green Bay, WI 54311
920-468-1978
www.stsconsultants.com

SEDIMENT STAGING AREA EASEMENT EXHIBIT "F"

CITY OF OSHKOSH

OSHKOSH, WISCONSIN

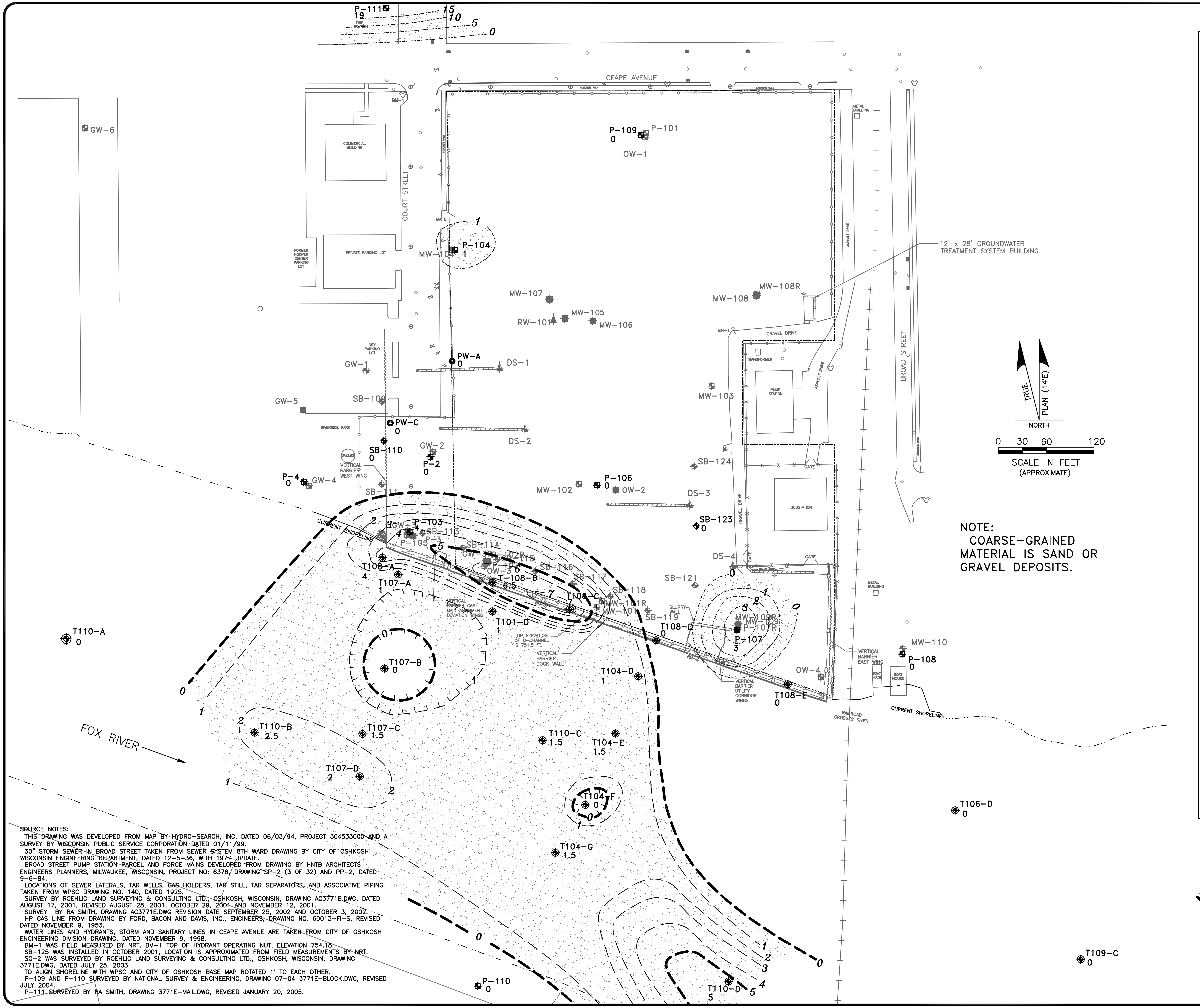
Drawn: CDH 7/18/2005
Checked: MJO 7/19/2005
Approved:
PROJECT NUMBER 12-26538G
FIGURE NUMBER 01

APPENDIX E

BEDROCK GROUNDWATER DOCUMENTATION

APPENDIX E1

BEDROCK GROUNDWATER FIGURES



NOTE:
COARSE-GRAINED MATERIAL IS SAND OR GRAVEL DEPOSITS.

LEGEND

▨	ESTIMATED AREA WITH OUT COARSE-GRAINED MATERIAL ABOVE BEDROCK
2	ISOPACH CONTOUR FOR COARSE-GRAINED MATERIAL THICKNESS ABOVE BEDROCK, FEET INTERPRETED FROM BOREHOLE LOGS
1	INFERRED FROM BOREHOLE LOGS AND REGIONAL GEOLOGIC DATA
T101-D 1	SEDIMENT SAMPLE AND COARSE-GRAIN MATERIAL THICKNESS ABOVE BEDROCK, FEET (NRT)
P-104 1	PIEZOMETER AND COARSE-GRAIN MATERIAL THICKNESS ABOVE BEDROCK, FEET (NRT)
PW-A 0	ABANDONED INDUSTRIAL SUPPLY WELL AND COARSE GRAIN MATERIAL THICKNESS ABOVE BEDROCK, FEET (NRT)
SB-123 0	SOIL BORING AND COARSE-GRAIN MATERIAL THICKNESS ABOVE BEDROCK, FEET (NRT)
P-4 0	PIEZOMETER AND COARSE-GRAIN MATERIAL THICKNESS ABOVE BEDROCK, FEET (HSI)
RW-101	ABANDONED RECOVERY WELL (NRT)
MW-110	MONITORING WELL (NRT)
MW-101R	REPLACEMENT MONITORING WELL (NRT)
OW-1 GW-1	MONITORING WELL (HSI)
DS-1	DEWATERING SUMP
P-3 OW-2	ABANDONED PIEZOMETER/ MONITORING WELL
▽ BM-2	BENCH MARK
◉	CLEANOUT
HDPE	HIGH DENSITY POLYETHYLENE
HSI	HYDRO-SEARCH, INC.
NRT	NATURAL RESOURCE TECHNOLOGY
⊕	CONSTRUCTION GRID POINT (CHISELED CROSS OR PK NAIL)
⊜	CATCH BASIN
	GUY WIRE
☼	LITE POLE
	UTILITY POLE
⋈	GAS VALVE

APPROXIMATE LOCATION OF:

—·—·—	PROPERTY BOUNDARY
—o—o—	SILT FENCE
— —D— —	PERFORATED SUBSURFACE DRAIN PIPE
▨	GROUNDWATER EXTRACTION TRENCH
○	MANHOLE
	HYDRANT
—+—+—	RAILROAD
—x—x—	CHAIN LINK FENCE

SOURCE NOTES:
THIS DRAWING WAS DEVELOPED FROM MAP BY HYDRO-SEARCH, INC. DATED 06/03/94, PROJECT 304533000 AND A SURVEY BY WISCONSIN PUBLIC SERVICE CORPORATION DATED 01/11/99.
30" STORM SEWER IN BROAD STREET TAKEN FROM SEWER SYSTEM 8TH WARD DRAWING BY CITY OF OSHKOSH WISCONSIN ENGINEERING DEPARTMENT, DATED 12-5-36, WITH 1977 UPDATE.
BROAD STREET PUMP STATION PARCEL AND FORCE MAINS DEVELOPED FROM DRAWING BY HNTB ARCHITECTS ENGINEERS PLANNERS, MILWAUKEE, WISCONSIN, PROJECT NO: 6378, DRAWING SP-2 (3 OF 32) AND PP-2, DATED 9-6-84.
LOCATIONS OF SEWER LATERALS, TAR WELLS, GAS HOLDERS, TAR STILL, TAR SEPARATORS, AND ASSOCIATIVE PIPING TAKEN FROM WPSC DRAWING NO. 140, DATED 1925.
SURVEY BY ROEHLIG LAND SURVEYING & CONSULTING LTD., OSHKOSH, WISCONSIN, DRAWING AC3771B.DWG, DATED AUGUST 17, 2001, REVISED AUGUST 28, 2001, OCTOBER 29, 2001 AND NOVEMBER 12, 2001.
SURVEY BY RA SMITH, DRAWING AC3771E.DWG REVISION DATE SEPTEMBER 25, 2002 AND OCTOBER 3, 2002.
HP GAS LINE FROM DRAWING BY FORD, BACON AND DAVIS, INC., ENGINEERS, DRAWING NO. 60013-FI-S, REVISED DATED NOVEMBER 9, 1953.
WATER LINES AND HYDRANTS, STORM AND SANITARY LINES IN CEAPE AVENUE ARE TAKEN FROM CITY OF OSHKOSH ENGINEERING DIVISION DRAWING, DATED NOVEMBER 9, 1998.
BM-1 WAS FIELD MEASURED BY NRT. BM-1 TOP OF HYDRANT OPERATING NUT, ELEVATION 754.18.
SB-125 WAS INSTALLED IN OCTOBER 2001, LOCATION IS APPROXIMATED FROM FIELD MEASUREMENTS BY NRT.
SG-2 WAS SURVEYED BY ROEHLIG LAND SURVEYING & CONSULTING LTD., OSHKOSH, WISCONSIN, DRAWING 3771E.DWG, DATED JULY 25, 2003.
TO ALIGN SHORELINE WITH WPSC AND CITY OF OSHKOSH BASE MAP ROTATED 1° TO EACH OTHER.
P-109 AND P-110 SURVEYED BY NATIONAL SURVEY & ENGINEERING, DRAWING 07-04 3771E-BLOCK.DWG, REVISED JULY 2004.
P-111 SURVEYED BY RA SMITH, DRAWING 3771E-MAIL.DWG, REVISED JANUARY 20, 2005.

DRAWN BY: TAS	DATE: 03/22/05
CHECKED BY: PAR	DATE: 09/01/05
APPROVED BY: JMK	DATE: 09/01/05
DRAWING NO: 1312-68-B05 REFERENCE: NONE	

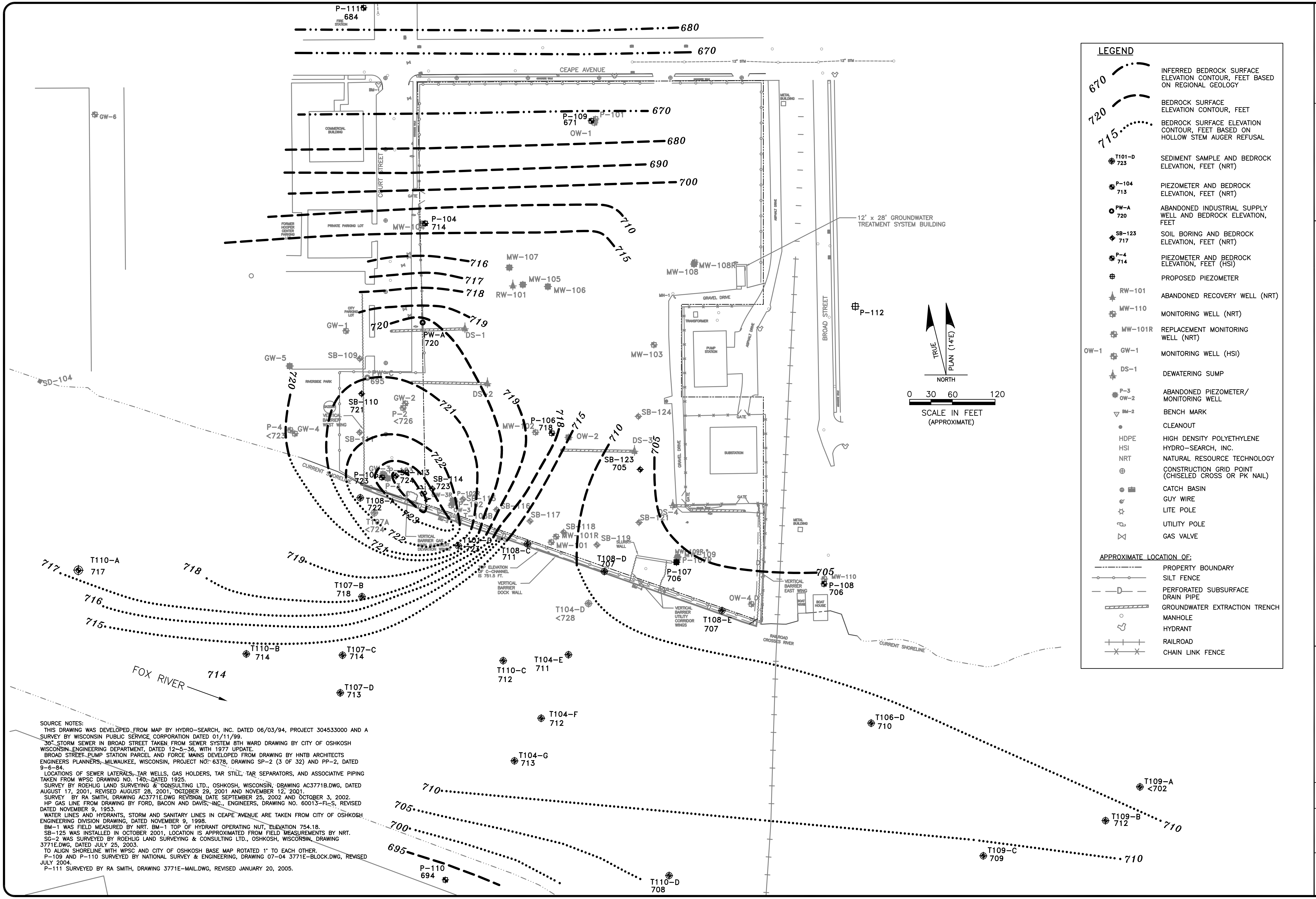
ISOPACH CONTOURS OF COARSE-GRAIN MATERIAL ABOVE BEDROCK

GROUNDWATER MONITORING AND BEDROCK AQUIFER ASSESSMENT
FORMER OSHKOSH MANUFACTURED GAS PLANT
WISCONSIN PUBLIC SERVICE CORPORATION
CITY OF OSHKOSH, WISCONSIN

NATURAL RESOURCE TECHNOLOGY

PROJECT NO.
1312/6.8

FIGURE NO.
5



LEGEND

670	INFERRED BEDROCK SURFACE ELEVATION CONTOUR, FEET BASED ON REGIONAL GEOLOGY
720	BEDROCK SURFACE ELEVATION CONTOUR, FEET
715	BEDROCK SURFACE ELEVATION CONTOUR, FEET BASED ON HOLLOW STEM AUGER REFUSAL
T101-D 723	SEDIMENT SAMPLE AND BEDROCK ELEVATION, FEET (NRT)
P-104 713	PIEZOMETER AND BEDROCK ELEVATION, FEET (NRT)
PW-A 720	ABANDONED INDUSTRIAL SUPPLY WELL AND BEDROCK ELEVATION, FEET
SB-123 717	SOIL BORING AND BEDROCK ELEVATION, FEET (NRT)
P-4 714	PIEZOMETER AND BEDROCK ELEVATION, FEET (HSI)
⊕	PROPOSED PIEZOMETER
RW-101	ABANDONED RECOVERY WELL (NRT)
MW-110	MONITORING WELL (NRT)
MW-101R	REPLACEMENT MONITORING WELL (NRT)
OW-1 GW-1	MONITORING WELL (HSI)
DS-1	DEWATERING SUMP
P-3 OW-2	ABANDONED PIEZOMETER/ MONITORING WELL
BM-2	BENCH MARK
●	CLEANOUT
HDPE	HIGH DENSITY POLYETHYLENE
HSI	HYDRO-SEARCH, INC.
NRT	NATURAL RESOURCE TECHNOLOGY
⊕	CONSTRUCTION GRID POINT (CHISELED CROSS OR PK NAIL)
●	CATCH BASIN
	GUY WIRE
☼	LITE POLE
	UTILITY POLE
⋈	GAS VALVE

APPROXIMATE LOCATION OF:

	PROPERTY BOUNDARY
	SILT FENCE
— — D — —	PERFORATED SUBSURFACE DRAIN PIPE
	GROUNDWATER EXTRACTION TRENCH
○	MANHOLE
	HYDRANT
	RAILROAD
—X—X—	CHAIN LINK FENCE

SOURCE NOTES:

THIS DRAWING WAS DEVELOPED FROM MAP BY HYDRO-SEARCH, INC. DATED 06/03/94, PROJECT 304533000 AND A SURVEY BY WISCONSIN PUBLIC SERVICE CORPORATION DATED 01/11/99.

30" STORM SEWER IN BROAD STREET TAKEN FROM SEWER SYSTEM 8TH WARD DRAWING BY CITY OF OSHKOSH WISCONSIN ENGINEERING DEPARTMENT, DATED 12-5-36, WITH 1977 UPDATE.

BROAD STREET PUMP STATION PARCEL AND FORCE MAINS DEVELOPED FROM DRAWING BY HNTB ARCHITECTS ENGINEERS PLANNERS, MILWAUKEE, WISCONSIN, PROJECT NO: 6378, DRAWING SP-2 (3 OF 32) AND PP-2, DATED 9-6-84.

LOCATIONS OF SEWER LATERALS, TAR WELLS, GAS HOLDERS, TAR STILL, TAR SEPARATORS, AND ASSOCIATIVE PIPING TAKEN FROM WPSC DRAWING NO. 140, DATED 1925.

SURVEY BY ROEHLIG LAND SURVEYING & CONSULTING LTD., OSHKOSH, WISCONSIN, DRAWING AC3771B.DWG, DATED AUGUST 17, 2001, REVISED AUGUST 28, 2001, OCTOBER 29, 2001 AND NOVEMBER 12, 2001.

SURVEY BY RA SMITH, DRAWING AC3771E.DWG REVISION DATE SEPTEMBER 25, 2002 AND OCTOBER 3, 2002.

HP GAS LINE FROM DRAWING BY FORD, BACON AND DAVIS, INC., ENGINEERS, DRAWING NO. 60013-FI-S, REVISED DATED NOVEMBER 9, 1953.

WATER LINES AND HYDRANTS, STORM AND SANITARY LINES IN CEAPE AVENUE ARE TAKEN FROM CITY OF OSHKOSH ENGINEERING DIVISION DRAWING, DATED NOVEMBER 9, 1998.

BM-1 WAS FIELD MEASURED BY NRT. BM-1 TOP OF HYDRANT OPERATING NUT, ELEVATION 754.18.

SB-125 WAS INSTALLED IN OCTOBER 2001, LOCATION IS APPROXIMATED FROM FIELD MEASUREMENTS BY NRT.

SG-2 WAS SURVEYED BY ROEHLIG LAND SURVEYING & CONSULTING LTD., OSHKOSH, WISCONSIN, DRAWING 3771E.DWG, DATED JULY 25, 2003.

TO ALIGN SHORELINE WITH WPSC AND CITY OF OSHKOSH BASE MAP ROTATED 1° TO EACH OTHER.

P-109 AND P-110 SURVEYED BY NATIONAL SURVEY & ENGINEERING, DRAWING 07-04 3771E-BLOCK.DWG, REVISED JULY 2004.

P-111 SURVEYED BY RA SMITH, DRAWING 3771E-MAIL.DWG, REVISED JANUARY 20, 2005.

DRAWN BY: TAS/RLH DATE: 09/01/05
CHECKED BY: PAR DATE: 09/01/05
APPROVED BY: JMK DATE: 09/01/05
DRAWING NO:1312-68-B04
REFERENCE: NONE

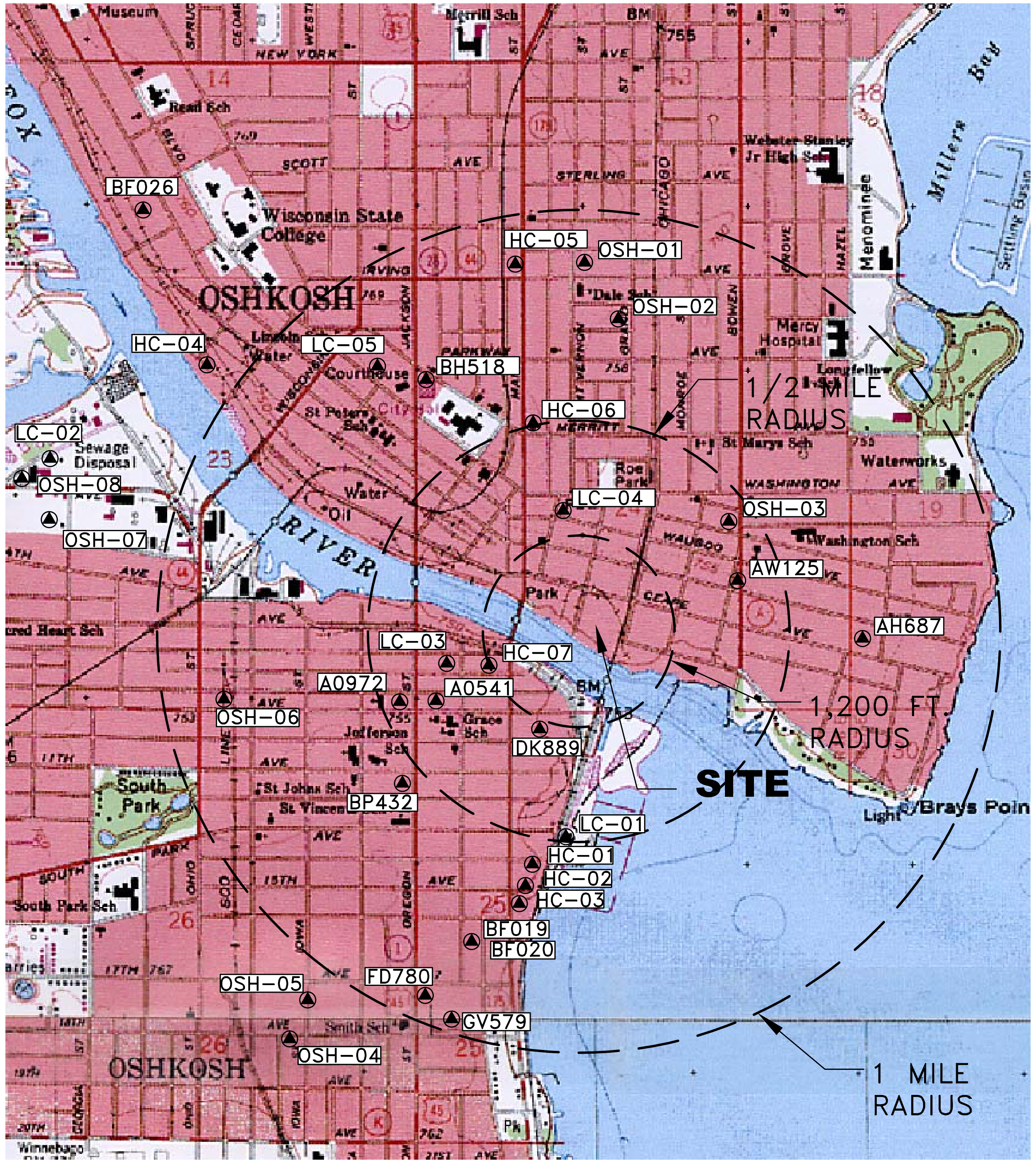
BEDROCK SURFACE ELEVATIONS

GROUNDWATER MONITORING AND BEDROCK AQUIFER ASSESSMENT
FORMER OSHKOSH MANUFACTURED GAS PLANT
WISCONSIN PUBLIC SERVICE CORPORATION
CITY OF OSHKOSH, WISCONSIN

NATURAL RESOURCE TECHNOLOGY

PROJECT NO.
1312/6.8

FIGURE NO.
7



Well ID	Address	Well Type	Total Depth (feet)	Date	Hicap Permit	Activity
DK889	50 East 10th Street	Private, non-pot	--	--	na	--
FD780	1744 Oregon	Private	--	--	na	--
GV579	150 West 18th Street	Private	120	4/28/1966	na	--
BH518	420 Jackson Street	Private	195	5/23/1979	88612	Active
BF020	1642 Doty Street	Industrial	530	1/1/1954	66808	Inactive
BF019	1642 Doty Street	Industrial	516	1/2/1960	66807	Inactive
BF026	1005 High Avenue	Private	630	1/2/1960	66816	Inactive
AW125	217 Bowen	Non-commercial	128	10/18/1988	na	--
AH687	1210 Ceape Avenue	Private-Minnow Tank	124	8/10/1988	na	--
AO972	41 West 8th Avenue	Private	496	--	--	--
AO541	856 Oregon Street	Private	--	--	--	--
BP432	1127 South Main Street	Non-commercial	516	--	--	--
OSH-	Wells are City of Oshkosh permitted wells, additional information was not provided.					
HC-	High Capacity Well locations obtained from "Geology and Water Resources of Winnebago County, Wisconsin" (Olcott, 1966)					
LC-	Low Capacity Well locations obtained from "Geology and Water Resources of Winnebago County, Wisconsin" (Olcott, 1966)					

Well ID	Lithology (feet)	Casing Depth (feet)	Approved Capacity/ Normal Pumpage	Distance (feet)	Direction	PLSS (Public Land Survey System)
DK889	--	--	--	1,250	S-SW	SW 1/4, SW 1/4, Sec. 24, T18N, R16E
FD780	--	--	--	4,750	S-SW	SW 1/4, NW 1/4, Sec. 25, T18N, R16E
GV579	--	--	--	5,000	S-SW	NW 1/4, SW 1/4, Sec. 25, T18N, R16E
BH518	Unlithified 0-95, Sinnipee 95-115, Prairie 115-195	103	50 GPM/ 1,000 GPD	3,500	NW	N 1/2, NW 1/4, Sec. 24, T18N, R16E
BF020	Unlithified 0-15, Sinnipee 15-130, Ancell 130-310, Cambrian 310-530	102	400 GPM/ 77,000 GPD	4,000	S-SW	NW 1/4, SW 1/4, Sec. 25, T18N, R16E
BF019	Unlithified 0-13, Sinnipee 13-150, Ancell 150-325, Cambrian 325-516	105	250 GPM/ 77,000 GPD	4,000	S-SW	NW 1/4, SW 1/4, Sec. 25, T18N, R16E
BF026	Unlithified 0-35, Sinnipee 35-120, Ancell 120-130, Prairie 130-285	100	500 GPM/ 288,000 GPD	7,250	NW	NW 1/4, SW 1/4, Sec. 14, T18N, R16E
AW125	Unlithified 0-86, Limestone 86-120, Sandstone 120-128	87	--	1,500	E-NE	SE 1/4, Sec. 24, T18N, R16E
AH687	Unlithified 0-104,	104	--	3000	E	SW 1/4, SE 1/4, Sec. 24, T18N, R 16E
AO972	--	--	--	2,250	W-SW	SW 1/4, SW 1/4, Sec. 24, T18N, R16E
AO541	--	--	--	2,000	W-SW	SW 1/4, SW 1/4, Sec. 25, T18N, R16E
BP432	--	--	--	3,000	SW	NE 1/4, SW 1/4, Sec. 28, T18N, R16E
OSH-	Wells are City of Oshkosh permitted wells, additional information was not provided.					
HC-	High Capacity Well locations obtained from "Geology and Water Resources of Winnebago County, Wisconsin" (Olcott, 1966)					
LC-	Low Capacity Well locations obtained from "Geology and Water Resources of Winnebago County, Wisconsin" (Olcott, 1966)					

na : not applicable
--: unknown
GPM: gallons per minute
GPD: gallons per day

LEGEND

▲ OSH-01	PERMITTED WELL LOCATION (CITY OF OSHKOSH HEALTH DEPARTMENT)
▲ DK889	WELL WITH WISCONSIN DEPARTMENT OF NATURAL RESOURCES UNIQUE WELL IDENTIFICATION NUMBER
▲ HC-01	HIGH CAPACITY WELL
▲ LC-01	LOW CAPACITY WELL

N

0 2000 4000
SCALE IN FEET
CONTOUR INTERVAL 10 FEET

SOURCE:
1. EARTHVISIONS U.S. TERRAIN SERIES, © EARTHVISIONS, INC. 603-433-8500. USGS 7.5 MINUTE QUADRANGLE, OSHKOSH. DATED 1961. PHOTOREVISED 1975.
2. WISCONSIN DEPARTMENT OF NATURAL RESOURCES PRIVATE AND HIGH CAPACITY WELL DATABASE 2003.
3. CITY OF OSHKOSH HEALTH DEPARTMENT PERMITTED WELL MAP 1995 THROUGH 1996.
4. LITHOLOGY IS SUMMARIZED DIRECTLY FROM WELL LOGS.

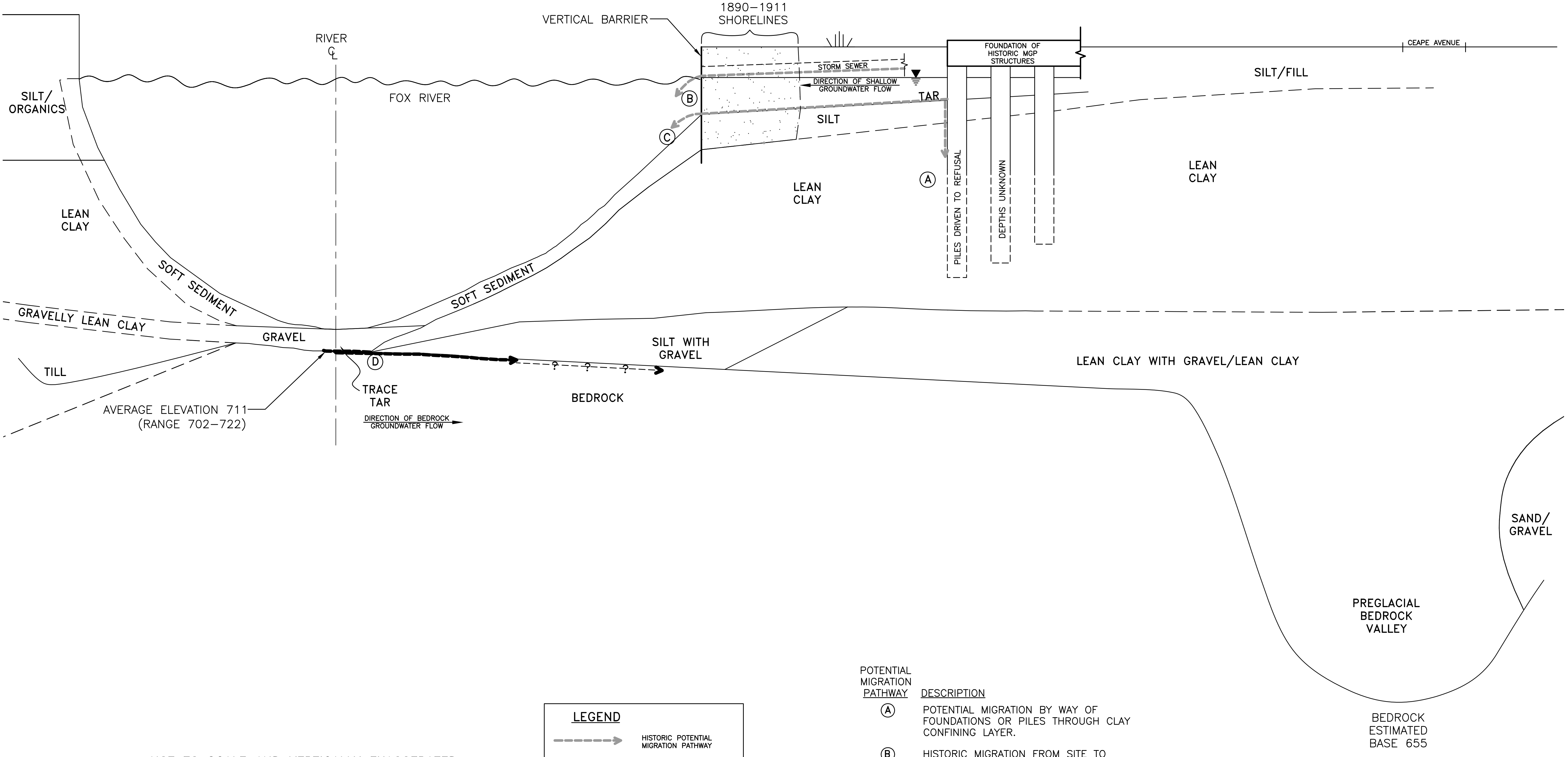
DRAWN BY: RLH/TAS DATE: 08/26/05
CHECKED BY: PAR DATE: 09/01/05
APPROVED BY: JMK DATE: 09/01/05
DRAWING NO: 1312-68-B08
REFERENCE: NONE

PRIVATE, COMMUNITY AND INDUSTRIAL
WELL INFORMATION
GROUNDWATER MONITORING AND BEDROCK AQUIFER ASSESSMENT
FORMER OSHKOSH MANUFACTURED GAS PLANT
WISCONSIN PUBLIC SERVICE CORPORATION
CITY OF OSHKOSH, WISCONSIN

NATURAL RESOURCE TECHNOLOGY

PROJECT NO.
1312/6.8

FIGURE NO.
8



NOT TO SCALE AND VERTICALLY EXAGGERATED

NOTES:
1. BASED ON CROSS SECTION A–A'.
2. LOCATIONS OF SITE FEATURES ARE APPROXIMATE AND MAY BE SUPERIMPOSED.

LEGEND

- - - -➔	HISTORIC POTENTIAL MIGRATION PATHWAY
━━━━➔	POTENTIAL COAL TAR MIGRATION PATHWAY
– ? – – ? –➔	POTENTIAL DISSOLVED PHASE MIGRATION PATHWAY
⬭	FILL WITHIN FORMER SHORELINES FROM 1890–1911

POTENTIAL MIGRATION PATHWAY	DESCRIPTION
Ⓐ	POTENTIAL MIGRATION BY WAY OF FOUNDATIONS OR PILES THROUGH CLAY CONFINING LAYER.
Ⓑ	HISTORIC MIGRATION FROM SITE TO RIVER VIA DIRECT ROUTES (INLETS, CHANNELS, PIPES, UTILITY BEDDING).
Ⓒ	HISTORIC MIGRATION WITH SHALLOW GROUNDWATER DISCHARGE FROM THE SITE.
Ⓓ	SECONDARY TO B OR C, MIGRATION BY GRAVITY OR HYDRAULIC FLOW TO LOWER ELEVATION OF BEDROCK INTERFACE THROUGH WEATHERED BEDROCK/GRAVEL.

DRAWN BY: TAS/RLH DATE: 03/22/05
CHECKED BY: PAR DATE: 09/01/05
APPROVED BY: JMK DATE: 09/01/05
DRAWING NO:1312-68-B07
REFERENCE: NONE

POTENTIAL MIGRATION PATHWAYS OF COAL TAR AND DISSOLVED PHASE MGP RESIDUALS

GROUNDWATER MONITORING AND BEDROCK AQUIFER ASSESSMENT
FORMER OSHKOSH MANUFACTURED GAS PLANT
WISCONSIN PUBLIC SERVICE CORPORATION
CITY OF OSHKOSH, WISCONSIN

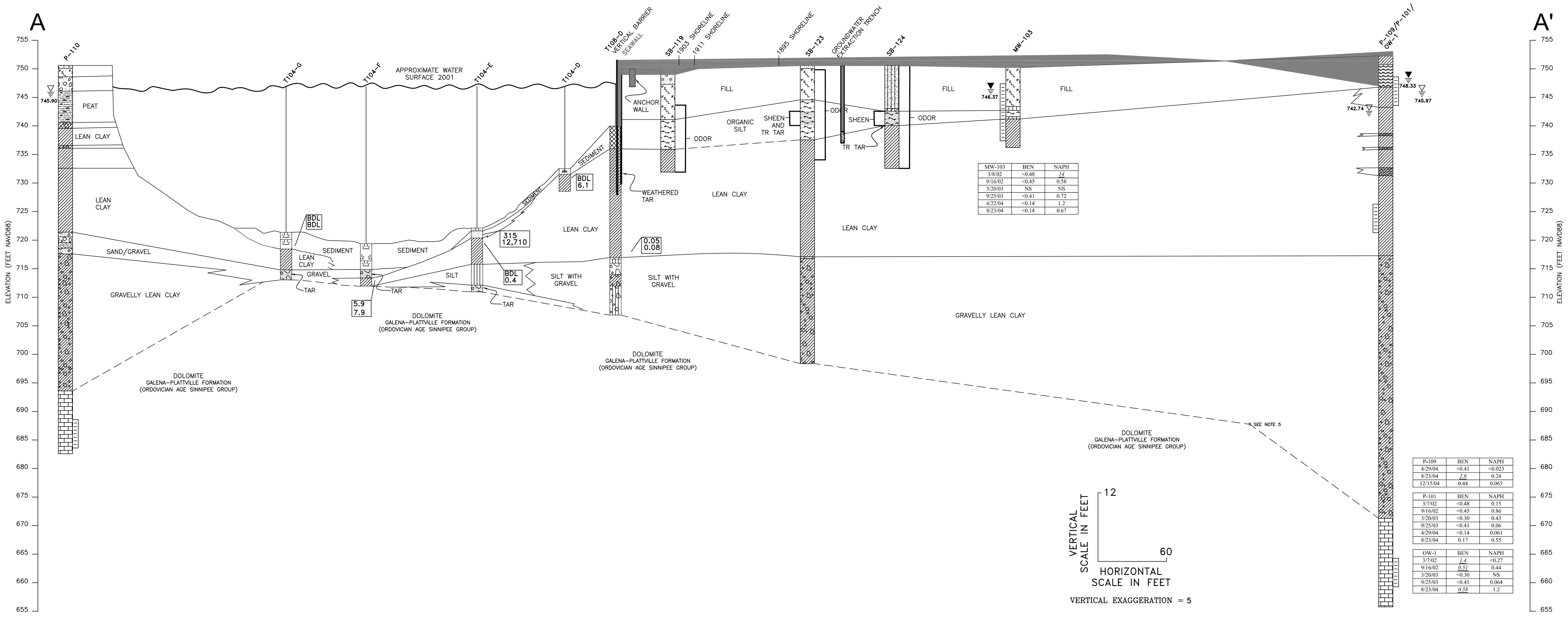
NATURAL RESOURCE TECHNOLOGY

PROJECT NO.
1312/6.8

FIGURE NO.
9

APPENDIX E2

GEOLOGICAL CROSS SECTIONS

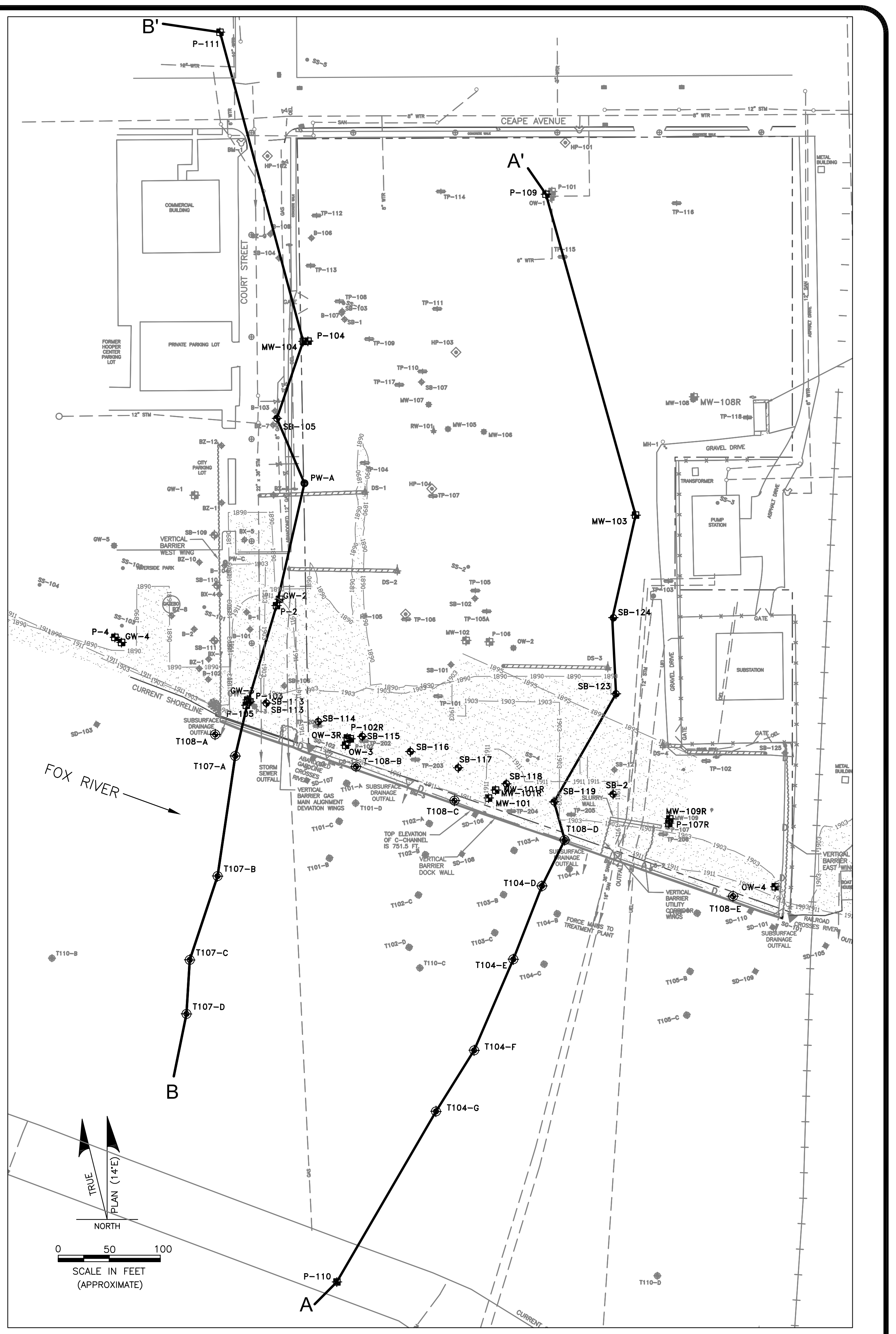


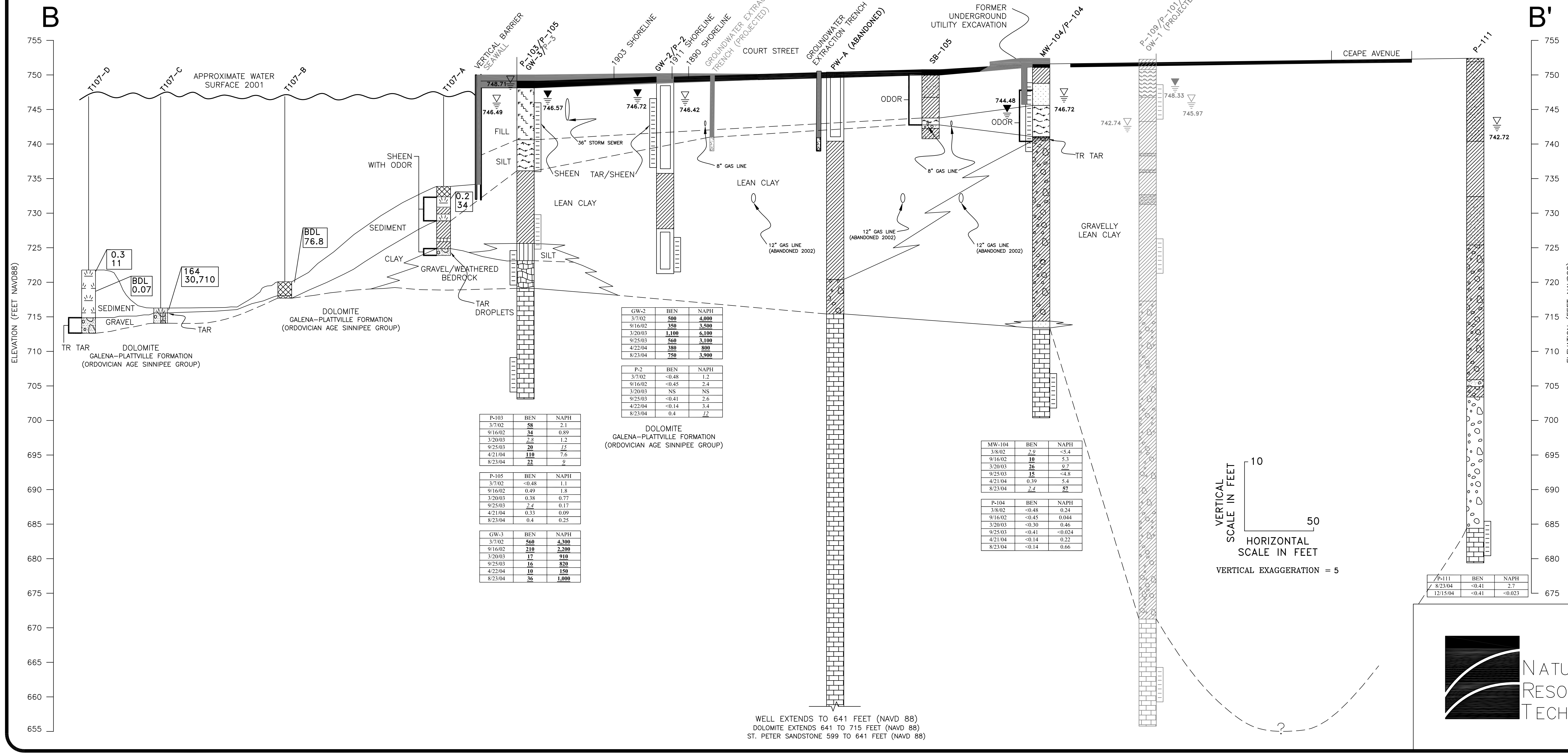
MW-103	BEN	NAPH
3/8/02	<0.48	*14*
9/16/02	<0.45	0.58
3/20/03	NS	NS
9/25/03	<0.41	0.72
4/22/04	<0.14	1.2
8/23/04	<0.14	0.67

P-109	BEN	NAPH
4/29/04	<0.41	<0.023
8/23/04	*2.8*	0.24
12/15/04	0.44	0.065

P-101	BEN	NAPH
3/7/02	<0.48	0.15
9/16/02	<0.45	0.86
3/20/03	<0.30	0.43
9/25/03	<0.41	0.06
4/29/04	<0.14	0.061
8/23/04	0.17	0.55

OW-1	BEN	NAPH
3/7/02	*1.4*	<0.27
9/16/02	*0.51*	0.44
3/20/03	<0.30	NS
9/25/03	<0.41	0.064
8/23/04	*0.58*	1.2





GW-2	BEN	NAPH
3/7/02	**500**	**4,000**
9/16/02	**350**	**3,500**
3/20/03	**1,100**	**6,100**
9/25/03	**560**	**3,100**
4/22/04	**380**	**800**
8/23/04	**750**	**3,900**

P-2	BEN	NAPH
3/7/02	<0.48	1.2
9/16/02	<0.45	2.4
3/20/03	NS	NS
9/25/03	<0.41	2.6
4/22/04	<0.14	3.4
8/23/04	0.4	*12*

P-103	BEN	NAPH
3/7/02	**58**	2.1
9/16/02	**34**	0.89
3/20/03	*2.8*	1.2
9/25/03	**20**	*15*
4/21/04	**110**	7.6
8/23/04	**22**	*9*

P-105	BEN	NAPH
3/7/02	<0.48	1.1
9/16/02	0.49	1.8
3/20/03	0.38	0.77
9/25/03	*2.4*	0.17
4/21/04	0.33	0.09
8/23/04	0.4	0.25

GW-3	BEN	NAPH
3/7/02	**560**	**4,300**
9/16/02	**210**	**2,200**
3/20/03	**17**	**910**
9/25/03	**16**	**820**
4/22/04	**10**	**150**
8/23/04	**36**	**1,000**

MW-104	BEN	NAPH
3/8/02	*2.9*	<5.4
9/16/02	**10**	5.3
3/20/03	**26**	*9.7*
9/25/03	**15**	<4.8
4/21/04	0.39	5.4
8/23/04	*2.4*	**57**

P-104	BEN	NAPH
3/8/02	<0.48	0.24
9/16/02	<0.45	0.044
3/20/03	<0.30	0.46
9/25/03	<0.41	<0.024
4/21/04	<0.14	0.22
8/23/04	<0.14	0.66

P-111	BEN	NAPH
8/23/04	<0.41	2.7
12/15/04	<0.41	<0.023

NOTES:

1. LOG FOR SB-123 STATES "WEATHERED BEDROCK" FROM 33.8' TO 37.5'. SYMBOL CHANGED FOR CROSS SECTION IN CONSIDERATION OF REGIONAL GEOLOGY AND SIMILAR GRAVELLY LEAN CLAY PRESENT IN BOREHOLE P-109.
2. BEDROCK SLOPE TO P-109 INFERRED FROM REGIONAL GEOLOGY.

TOTAL BTEX (mg/kg)
TOTAL PAH (mg/kg)

mg/kg	MILLIGRAMS PER KILOGRAM
BDL	BELOW DETECTION LEVEL
BTEX	BENZENE, TOLUENE, ETHYLBENZENE, AND XYLENES
PAH	TOTAL POLYNUCLEAR AROMATIC HYDROCARBONS

LEGEND

- ▨ DEBRIS (WOOD, BRICK, GLASS ETC.)
- ☐ SOFT SEDIMENT (ORGANIC SILT/SAND)
- ▨ TAR/OIL NOTED DURING SOIL SAMPLING/DESCRIPTION
- ▨ REMEDIAL EXCAVATION AND FILL AREA
- ▨ THERMALLY TREATED MATERIAL
- ☐ BORING NOT LOGGED
- ▨ SANDY LEAN CLAY
- ▨ ORGANIC SILT
- ▨ BEDROCK
- ▨ WEATHERED BEDROCK
- ■ ASPHALT
- ▨ WOOD
- ▨ PEAT
- ▨ CONCRETE
- ▨ POORLY GRADED SAND
- ▨ LEAN CLAY
- ▨ GRAVELLY LEAN CLAY OR LEAN CLAY WITH GRAVEL
- ▨ GRAVEL
- ▨ SAND WITH GRAVEL
- ▨ SANDY GRAVEL
- ▨ GRAVEL WITH SILT
- ▨ SILT
- ▨ SILTY SAND
- ▨ FILL
- ▨ TOPSOIL
- ▼ WATER TABLE ELEVATION AT MONITORING WELL ON 8/23/04
- ▽ PIEZOMETRIC SURFACE ELEVATION AT PIEZOMETER ON 8/23/04
- ☐ SCREENED INTERVAL

SL	SLIGHT
TR TAR	TRACE TAR, LOOKS AND SMELLS LIKE COAL TAR
TAR	VISCOUS COAL TAR
TAR DROPLETS	COAL TAR PRESENT IN LOOSE GRAVEL OR SANDS
NAVD88	NORTH AMERICAN VERTICAL DATUM OF 1988

SAMPLE LOCATION	BEN	NAPH
SAMPLE DATE	BENZENE (µg/L)	NAPHTHALENE (µg/L)
WISCONSIN GROUNDWATER QUALITY STANDARDS (NR 140)		
	BEN	**NAPH**
Preventive Action Limit (PAL)	*0.5*	*8*
Enforcement Standard (ES)	**5**	**40**

DATA QUALIFIERS:

1.4	CONCENTRATION ATTAINS OR EXCEEDS AN NR 140 PREVENTIVE ACTION LIMIT
39	CONCENTRATION ATTAINS OR EXCEEDS AN NR 140 ENFORCEMENT STANDARD
nd	NOT DETECTED
ns	STANDARD HAS NOT BEEN ESTABLISHED
–	ANALYSIS WAS NOT PERFORMED
µg/L	MICROGRAMS PER LITER
<	CONSTITUENT WAS NOT IDENTIFIED ABOVE THE LIMIT OF DETECTION INDICATED

NATURAL
RESOURCE
TECHNOLOGY

PROJECT NO.
1312/6.8

DRAWN BY:
TAS 03/23/05

CHECKED BY:
PAR 09/01/05

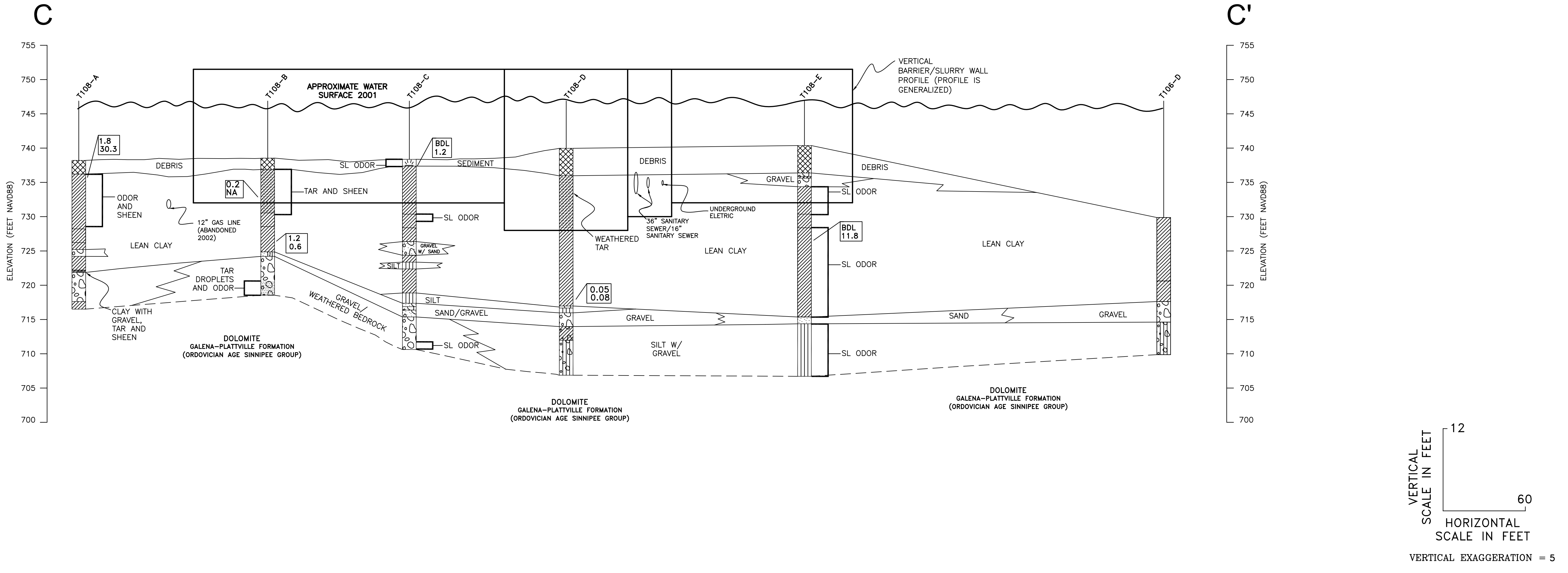
APPROVED BY:
JMK 09/01/05

GEOLOGIC CROSS SECTIONS A-A' AND B-B'

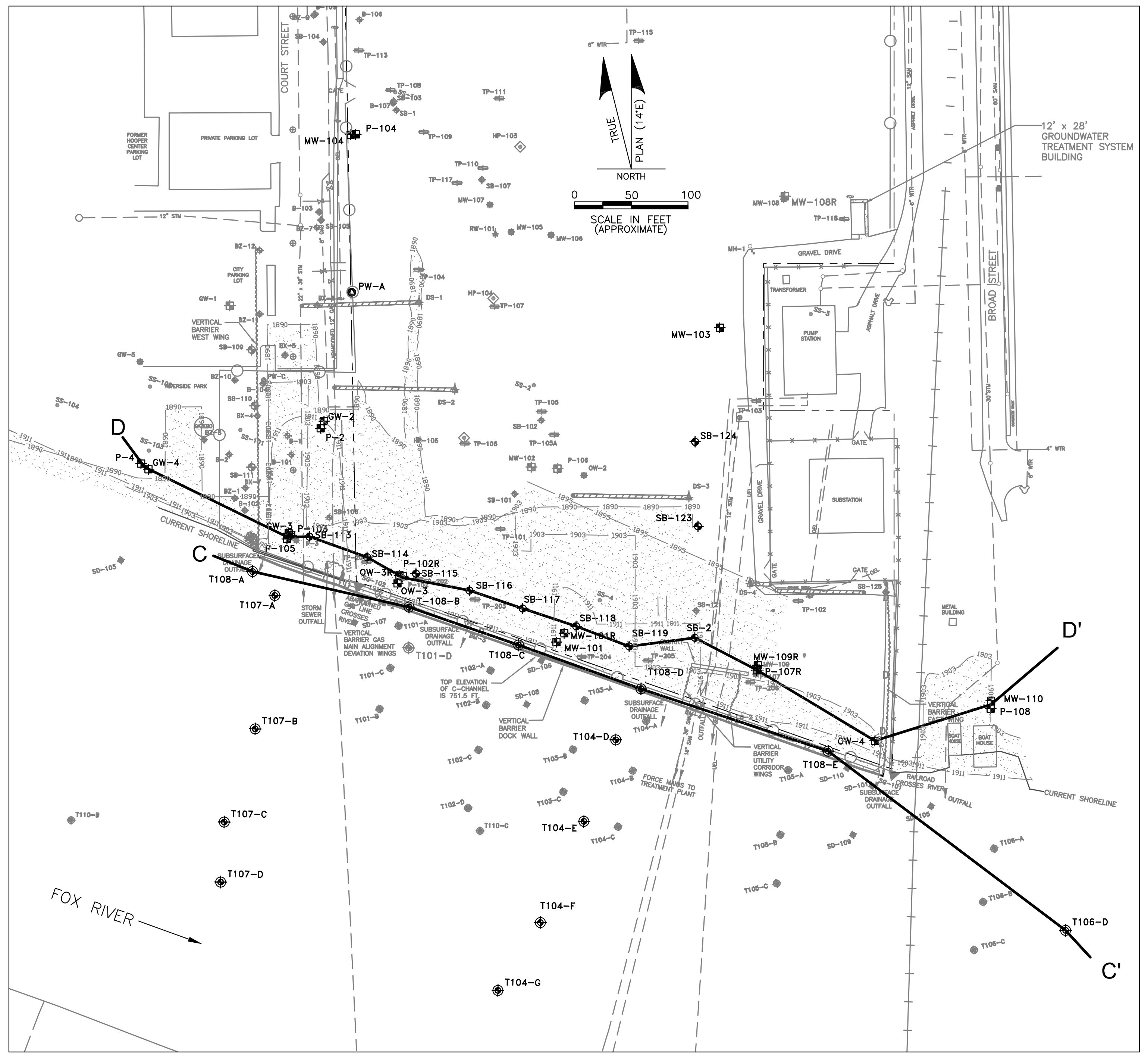
GROUNDWATER MONITORING AND BEDROCK AQUIFER ASSESSMENT
FORMER OSHKOSH MANUFACTURED GAS PLANT SITE
WISCONSIN PUBLIC SERVICE CORPORATION
CITY OF OSHKOSH, WISCONSIN

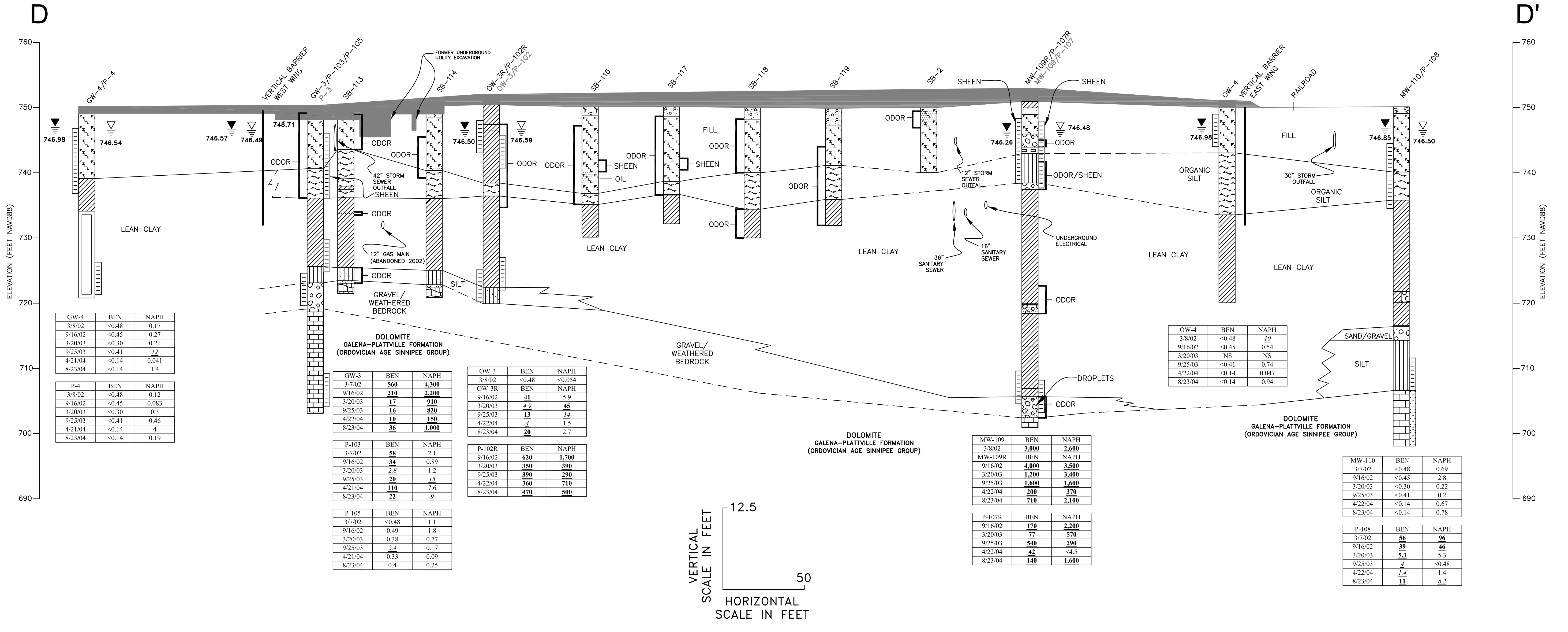
DRAWING NO: 1312-68-D01
REFERENCE: .

PLATE NO.
1



VERTICAL EXAGGERATION = 5





GW-4	BEN	NAPH
3/8/02	<0.48	0.17
9/16/02	<0.45	0.27
3/20/03	<0.30	0.21
9/25/03	<0.41	*12*
4/21/04	<0.14	0.041
8/23/04	<0.14	1.4

P-4	BEN	NAPH
3/8/02	<0.48	0.12
9/16/02	<0.45	0.083
3/20/03	<0.30	0.3
9/25/03	<0.41	0.46
4/21/04	<0.14	4
8/23/04	<0.14	0.19

GW-3	BEN	NAPH
3/7/02	**560**	**4,300**
9/16/02	**210**	**2,200**
3/20/03	**17**	**910**
9/25/03	**16**	**820**
4/22/04	**10**	**150**
8/23/04	**36**	**1,000**

P-103	BEN	NAPH
3/7/02	**58**	2.1
9/16/02	**34**	0.89
3/20/03	*2.8*	1.2
9/25/03	**20**	*15*
4/21/04	**110**	7.6
8/23/04	**22**	*9*

P-105	BEN	NAPH
3/7/02	<0.48	1.1
9/16/02	0.49	1.8
3/20/03	0.38	0.77
9/25/03	*2.4*	0.17
4/21/04	0.33	0.09
8/23/04	0.4	0.25

OW-3	BEN	NAPH
3/8/02	<0.48	<0.054
OW-3R	BEN	NAPH
9/16/02	**41**	5.9
3/20/03	*4.9*	**45**
9/25/03	**13**	*14*
4/22/04	*4*	1.5
8/23/04	**20**	2.7

P-102R	BEN	NAPH
9/16/02	**620**	**1,700**
3/20/03	**350**	**390**
9/25/03	**390**	**290**
4/22/04	**360**	**710**
8/23/04	**470**	**500**

MW-109	BEN	NAPH
3/8/02	**3,000**	**2,600**
MW-109R	BEN	NAPH
9/16/02	**4,000**	**3,500**
3/20/03	**1,200**	**3,400**
9/25/03	**1,600**	**1,600**
4/22/04	**200**	**370**
8/23/04	**710**	**2,100**

P-107R	BEN	NAPH
9/16/02	**170**	**2,200**
3/20/03	**77**	**570**
9/25/03	**540**	**290**
4/22/04	**42**	<4.5
8/23/04	**140**	**1,600**

OW-4	BEN	NAPH
3/8/02	<0.48	*10*
9/16/02	<0.45	0.54
3/20/03	NS	NS
9/25/03	<0.41	0.74
4/22/04	<0.14	0.047
8/23/04	<0.14	0.94

MW-110	BEN	NAPH
3/7/02	<0.48	0.69
9/16/02	<0.45	2.8
3/20/03	<0.30	0.22
9/25/03	<0.41	0.2
4/22/04	<0.14	0.67
8/23/04	<0.14	0.78

P-108	BEN	NAPH
3/7/02	**56**	**96**
9/16/02	**39**	**46**
3/20/03	**5.3**	5.3
9/25/03	*4*	<0.48
4/22/04	*1.4*	1.4
8/23/04	**11**	*8.2*

VERTICAL EXAGGERATION = 4

LEGEND

▨	DEBRIS (WOOD, BRICK, GLASS ETC.)	▤	PEAT	▼	WATER TABLE ELEVATION AT MONITORING WELL ON 8/23/04
☐	SOFT SEDIMENT (ORGANIC SILT/SAND)	▦	CONCRETE	▽	PIEZOMETRIC SURFACE ELEVATION AT PIEZOMETER ON 8/23/04
░	TAR/OIL NOTED DURING SOIL SAMPLING/DESCRIPTION	░	POORLY GRADED SAND	▤	SCREENED INTERVAL
■	REMEDIAL EXCAVATION AND FILL AREA	▨	LEAN CLAY	SL	SLIGHT
▤	THERMALLY TREATED MATERIAL	▨	GRAVELLY LEAN CLAY	TR TAR	TRACE TAR, LOOKS AND SMELLS LIKE COAL TAR
☐	BORING NOT LOGGED	▦	GRAVEL	TAR	VISCOUS COAL TAR
▨	SANDY LEAN CLAY	░	SAND WITH GRAVEL	TAR DROPLETS	COAL TAR PRESENT IN LOOSE GRAVEL OR SANDS
☐	ORGANIC SILT	▦	SANDY GRAVEL	NAVD88	NORTH AMERICAN VERTICAL DATUM OF 1988
▦	BEDROCK	▥	GRAVEL WITH SILT		
▦	WEATHERED BEDROCK	▥	SILT		
■	ASPHALT	▦	SILTY SAND		
▦	WOOD	☐	FILL		
		☐	TOPSOIL		

TOTAL BTEX (mg/kg)
TOTAL PAH (mg/kg)

mg/kg	MILLIGRAMS PER KILOGRAM
BDL	BELOW DETECTION LEVEL
BTEX	BENZENE, TOLUENE, ETHYLBENZENE, AND XYLENES
PAH	TOTAL POLYNUCLEAR AROMATIC HYDROCARBONS

NOTE:
HISTORIC SHORELINES NOT INDICATED ON CROSS SECTION DUE TO COMPLEXITY OF INTERSECTION WITH PARALLEL CROSS SECTION TREND.

SAMPLE LOCATION	BEN	NAPH
SAMPLE DATE	BENZENE (µg/L)	NAPHTHALENE (µg/L)
WISCONSIN GROUNDWATER QUALITY STANDARDS (NR 140)		
	BEN	**NAPH**
Preventive Action Limit (PAL)	*0.5*	*8*
Enforcement Standard (ES)	**5**	**40**

DATA QUALIFIERS:

1.4	CONCENTRATION ATTAINS OR EXCEEDS AN NR 140 PREVENTIVE ACTION LIMIT
39	CONCENTRATION ATTAINS OR EXCEEDS AN NR 140 ENFORCEMENT STANDARD
nd	NOT DETECTED
ns	STANDARD HAS NOT BEEN ESTABLISHED
--	ANALYSIS WAS NOT PERFORMED
µg/L	MICROGRAMS PER LITER
<	CONSTITUENT WAS NOT IDENTIFIED ABOVE THE LIMIT OF DETECTION INDICATED

NATURAL
RESOURCE
TECHNOLOGY

PROJECT NO. 1312/6.8
DRAWN BY: TAS 03/23/05
CHECKED BY: JMK 07/07/05
APPROVED BY: JMK 09/01/05

GEOLOGIC CROSS SECTIONS C-C' AND D-D'

GROUNDWATER MONITORING AND BEDROCK AQUIFER ASSESSMENT
FORMER OSHKOSH MANUFACTURED GAS PLANT SITE
WISCONSIN PUBLIC SERVICE CORPORATION
CITY OF OSHKOSH, WISCONSIN

DRAWING NO: 1312–68–D02
REFERENCE: .
PLATE NO. 2

APPENDIX F

PERFORMANCE MONITORING DOCUMENTATION

APPENDIX F1

FIELD NOTE SUMMARIES AND OPERATION LOGS

①

Operations Log
Wisconsin Public Service Corporation
Oshkosh Former Manufactured Gas Plant

Date of Site Visit: 3/26/07
Arrival Time: 13:45
Departure Time 14:30
Signature:

Operator:

WHEN COMPLETED FAX TO (262) 523-9001
ATTN: HEATHER SIMON, PROJECT ENGINEER

*Emergency Shut Down
1. Push emergency stop button on control panel 2. Shut air compressor ball valve 3. Shut both bag filter ball valves

OVERALL TREATMENT SYSTEM

Is system operating upon arrival? Y / N If not, why? Y

Is system operating upon departure? Y / N If not, why? Y

COMPRESSOR (DEVAIR, VATV-5063)

Compressor turns ON at 100psi and turns OFF at 150psi. – OK

Record compressor operation: ON / OFF

Record pressure: 100 / 145 inches Hg

Each Visit ✓

☑ Inspect pressure relief valve OK

☑ Drain moisture from tank OK

☐ Check Oil level; Topped off oil Y / N * If Yes, note on compressor maintenance form

☑ Inspect air filter: Good [✓ OK] Bad

Quarterly

☐ Change Oil (Mar,June,Sept,Dec) *with Devair PR-20 oil: Y / N * If Yes, note on compressor maintenance form

☐ Replace air filter (Mar,June,Sept,Dec) *with Devair filter: Y / N * If Yes, note on compressor maintenance form

☐ Check condition and alignment of belt, flywheel, and motor pulley.

☐ Ensure compressor head unloads when motor shuts down.

☐ Clean pump fins and motor of dust and dirt. * Note on compressor maintenance form

☐ Clean sediment/moisture trap of debris. * Note on compressor maintenance form

2000 Hour Maintenence

☐ Every 2000 hours, lubricate motor bearings

☐ Inspect/Replace as necessary the following:

☐ Pump Valves	Inspection (Good OK Bad) / Replaced
☐ Check Valves	Inspection (Good OK Bad) / Replaced
☐ Safety Valves	Inspection (Good OK Bad) / Replaced
☐ Pressure Gauge	Inspection (Good OK Bad) / Replaced
☐ Belts	Inspection (Good OK Bad) / Replaced

(2)

Operations Log
Wisconsin Public Service Corporation
Oshkosh Former Manufactured Gas Plant

Date of Site Visit: 3/26/07
Arrival Time: 13:45
Departure Time 14:30

Operator:
Signature: Mike Mason

DESICCATOR (HANKISON, DHW-25)

☐ Is the desiccator on? [✓ Y] / N If not, why?

☐ Check the pressure gauges (tower on reads pressure and other tower off reads below 2 psig) ok

☐ Check prefilter and afterfilter indicators are in green area * If red, then change filter

☐ Replaced prefilter / Replaced afterfilter

☐ Record relative humidity:

MULTI-PHASE SEPARATOR

Each Visit

☐ Bubbles in influent chamber? Y / N * If yes, dewatering pumps needs to be inspected.

☐ Thickness of DNAPL inside sight tube: ______ (in. approx.)

☐ Is DNAPL level switch inside sight tube operating? Y / [✓ N] Never has worked

☐ Note DNAPL tank level: [✓ Empty] 1/4 1/2 3/4* Full *If tank is 3/4 full, contact NRT for disposal.

☐ Thickness of LNAPL level inside sight tube: —

☐ Record LNAPL tank level: ok *If tank is 3/4 full, contact NRT for disposal.

Quarterly

☐ Inspect water level at oil skimming weir plate: about 1" below

☐ Condition of coalescing media: ok

DNAPL PUMP (P-1/ MOYNO 500)

☐ Is pump operating? Y / [✓ N] If not, why? ?

☐ Is packing gland leaking? Y / N * If Yes, note on maintenance form

TRANSFER PUMP (P-2 / EBARA)

☐ Is pump operating? [✓ Y] / N

TRANSFER TANK

☐ Note water level: ok

☐ Note sediment thickness: Not Much (in. approx.)

☐ Removed accumulated sediment? Y / [✓ N]

③

Operations Log
Wisconsin Public Service Corporation
Oshkosh Former Manufactured Gas Plant

Date of Site Visit: 3/26/07
Arrival Time: 13:45
Departure Time 14:30
Signature: Mike Moran

Operator:

BAG FILTERS

Record inlet pressure: 4

Record outlet pressure: 2

☐ Inspect bag filters: Good OK Bad

☐ Replaced bag filters? Y / N

AIR STRIPPER

☐ Is the air stripper operating?: [✓ Y] / N

☐ Inspect bearings: Good [✓ OK] Bad Sounds OK

☐ Vent open to OUTSIDE or [✓ INSIDE?] Top Open

☐ Greasing Interval of Bearings Based on operating conditions and operating temperature of Fan:

  ☐ Fairly Clean: Up to 120F 6-12 Mo., 120-160F 2-3 mo. 160-200F+ 1-2 Mo

  ☐ Moderate to Extremely Dirty: Up to 160F 1-2 mo. 160-200F+ 2-4 weeks

  ☐ Fairly Clean: Up to 120F 6-12 Mo., 120-160F 2-3 mo. 160-200F+ 1-2 Mo

** Temperatures 0F to 200F inclusive use Mobil Oil-Mobilclux EP#2, Shell Oil-Shell Alvania EP#2 or Chevron-Chevron SRI #2

☐ Record Pressure Reading: 19.3

☐ Troubleshooting: Capacity or Pressure Below Rating Y/N

☐ Troubleshooting: Vibration and Noise Y/N

☐ Troubleshooting: Overheated Bearings Y/N

☐ Troubleshooting: Overload on Motor Y/N

OTHER

Flow meter reading: 11330705 gallons

Inspect piping and valves for leaks:

Comments/Notes: Influent Gauge: 5457180

④

Operations Log
Wisconsin Public Service Corporation
Oshkosh Former Manufactured Gas Plant

Operator:

Date of Site Visit: 3/26/07
Arrival Time: 13:45
Departure Time 14:30
Signature: Mike Mosan

DEWATERING PUMPS (HAMMERHEAD HF43SEB)

DS-1
☐ Is the pump operating? [✓ Y] / N If not, why?__________
☐ Blow air (<15psi) through bubbler line to remove oil from outlet
☐ Complete adjacent table
☐ Annual pump cleaning (Oct)

DS-2
☐ Is the pump operating? Y / [✓ N] If not, why? Shut-off
☐ Blow air (<15psi) through bubbler line to remove oil from outlet
☐ Complete adjacent table
☐ Annual pump cleaning (Oct)

DS-3
☐ Is the pump operating? [✓ Y] / N If not, why?__________
☐ Blow air (<15psi) through bubbler line to remove oil from outlet
☐ Complete adjacent table
☐ Annual pump cleaning (Oct)

DS-4
☐ Is the pump operating? [✓ Y] / N If not, why?__________
☐ Blow air (<15psi) through bubbler line to remove oil from outlet
☐ Complete adjacent table
☐ Annual pump cleaning (Oct)

	Monitoring Station/Well			*Control Panel*		
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	Gallons
Dewatering Sumps						
DS-1	43			0	181227	54368
DS-2	0			0	861452	258436
DS-3	41			0	279769	83931
DS-4	38			0	43511	13053
				TOTAL _____		

WELL CONDITION FIELD FORM

Site : Oshkosh MGP
Project # : 1312
Task # :

Date : 3/26/07
Samplers : Mike Mason

	EVERY SAMPLING EVENT									AT LEAST ONCE A YEAR			
Location	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Pump	[illegible]	Expected Well Depth (feet)	Field Measured Well Depth (feet)	Well Base Sediment Thickness (feet)	Field Comment(s)
OW-1	G	F	G	No	F	No	No		G				Only 1 Female Catch - Poor Inner Cap
OW-4	G	G	G	No	P	No	Y		G				Inner Cap does not Seal Well
GW-1	G	G	G	Y	G	No	Y		G				ok
GW-2R	G	G	G	Y	G	No	Y		G				ok
GW-3	G	G	G	No	F	No	Y		G				Cannot Lock Cap - Broken Off
GW-4	G	G	G	Y	G	No	Y		G				ok
OW-3R	G	G	G	No	G	No	Y		G				Needs Lock
MW-101R	G	G	G	Y	G	No	Y		G				Missing 1 Big Bolt
MW-102	P	G	G	Y	G	No	Y		G				No Female Catches + only 1 Bolt
MW-103	G	G	G	No	G	No	Y		G				Only 1 Female + Bolt To Short to Catch
MW-104	P	P	G	No	G	No	Y		G				Cover Too big for hole
MW-108R	G	G	G	Y	G	No	Y		G				Missing 1 Big Bolt
P-109	G	G	No	No	F	No	No		G		(P-109)		Poor Inner Cap - Cannot Lock
MW-110	G	G	G	G	G	No	Y		G				ok

P : Poor - Potential or Evident Sample Integrity Issues (additional comments required, picture(s) desirable)
F : Fair - Future Sample Integrity May Be Compromised if Well Repair/Upgrade is Not Undertaken (additional comments required, picture(s) desirable)
G : Good (additional comments not required)
n/a : Not Applicable

WELL CONDITION FIELD FORM

Site : OshKosh MGP
Project # : 1312
Task # :

Date : 3/26/07
Samplers : Mike Mason

	EVERY SAMPLING EVENT									AT LEAST ONCE A YEAR			
Location	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Pump	[illegible]	Expected Well Depth (feet)	Field Measured Well Depth (feet)	Well Base Sediment Thickness (feet)	Other Comments
P-103	G	G	G	Y	G	No	Y		G				Missing 1 small Bolt - No Female Catch
P-104	P	P	G	No	P	No	Y		G				No Female Catches
P-105	G	G	G	Y	G	No	Y		G				ok
P-106	G	G	G	Y	G	No	Y		G				ok
P-107R	G	G	G	No	G	No	Y		G				Needs lock
P-108	G	G	G	Y	G	No	Y		G				Missing 1 big Bolt - Catch - ok
MW-109R	G	G	G	No	F	No	Y		G	(MW-109R)		Inner	Cap doesn't tighten good
P-110	G	G	G	Y	G	N/A	Y		G				Only 1 Bolt Catches - No Female
P-111	G	G	G	Y	G	N/A	Y		G				ok
DS-1	G	G	N/A	N/A	N/A	N/A	N/A		N/A				ok
DS-2	G	G							N/A				ok
DS-3	G	G							N/A				ok
DS-4	G	G							N/A				ok
Staff Gauge	N/A	N/A	N/A	N/A	N/A	N/A	N/A		N/A				ok

P : Poor - Potential or Evident Sample Integrity Issues (additional comments required, picture(s) desirable)
F : Fair - Future Sample Integrity May Be Compromised if Well Repair/Upgrade is Not Undertaken (additional comments required, picture(s) desirable)
G : Good (additional comments not required)
n/a : Not Applicable

WELL LEVEL AND FIELD PARAMETERS FIELD FORM

General Information

Site : Oshkosh MGP
Project # : 1312
Task # :
Date : 3/26/07
Samplers : Mike Mason

Water Level Indicator Serial # : Soiltest DR-760A -
~~Purge Device and Serial #~~ : Water Level Indicator
Quality Probe Type and Serial # : (No Serial #)
Calibration Check :

Location	Time (military)	Depth to Water (ft below TOC)	Product Top Depth (ft below TOC)	Product Bottom Depth (ft below TOC)	[illegible] Product Notes	Time (military)	pH (SU)	Cond (µS/cm)	Temp (°C)	ORP (mV)	D.O. (mg/L)	Field Comments
OW-1	12:10	3.82										
OW-4	11:25	5.50										
GW-1	10:25	4.06										
GW-2R	10:40	5.27										
GW-3	10:55	4.11										
GW-4	10:30	3.82										
OW-3R	11:05	5.68										
MW-101R	11:15	6.62										
MW-102	12:55	9.38										
MW-103	12:40	8.44										
MW-104	12:00	4.03										
MW-108R	12:35	5.74										
P-109	12:20	8.21			(P-109)							
MW-110	9:55	3.05										

n/a : Not Applicable

WELL LEVEL AND FIELD PARAMETERS FIELD FORM

General Information

Site : Oshkosh MGP
Project # : 1312
Task # :
Date : 3/26/07
Samplers : Mike Mason

Soiltest DR-760A
Water Level Indicator Serial # : Water Level Indicator
Purge Device and Serial # : (No Serial #)
Quality Probe Type and Serial # :
Calibration Check :

Location	Time (military)	Depth to Water (feet below TOC)	Product Top Depth (feet below TOC)	Product Bottom Depth (feet below TOC)	Product Notes	Time (military)	pH (SU)	Cond (µS/cm)	Temp (°C)	ORP (mV)	DO (mg/L)	Field Comments
P-103	10:50	4.11										
P-104	12:05	6.89										
P-105	11:00	3.48										
P-106	12:50	11.55										
P-107R	11:50	12.96										
P-108	10:00	3.54										Closest to river
MW-109R	11:45	13.19			(MW-109R)							Farthest from river of the two
P-110	9:45	6.39										
P-111	10:10	8.29										
DS-1	13:00	5.17										Counter Readings 159342
DS-2	13:05	6.17										524664
DS-3	13:10	11.78										355974
DS-4	13:15	5.97										662547
Staff Gauge	11:20	5.66										

n/a : Not Applicable

WELL LEVEL AND FIELD PARAMETERS FIELD FORM

General Information

Site : Oshkosh MGP
Project # : 1312
Task # :
Date : 6/26/07
Samplers : Mike Mason

Water Level Indicator Serial # : Soiltest DR-760A
Purge Device and Serial # :
Quality Probe Type and Serial # :
Calibration Check :

Location	Time (military)	Depth to Water (feet below TOC)	Product Top Depth (feet below TOC)	Product Bottom Depth (feet below TOC)	Product Notes	Time (military)	pH (su)	Cond (µS/cm)	Temp (°C)	ORP (mV)	DO (mg/L)	Field Comments
P-103	9:35	3.50										
P-104	10:55	6.89										
P-105	9:45	3.53										
P-106	11:40	10.76										
P-107R	10:10	12.35										Closest to river
P-108	11:55	2.89										
P-109	11:15	7.18										Farthest from river of the two
P-110	9:05	5.86										
P-111	9:10	8.80										Counter Reading
DS-1	12:15	4.37			Air-ok							189342
DS-2	12:10	5.22			No Sound							524665
DS-3	12:05	11.17			Air-ok							355974
DS-4	12:00	4.51			Air-ok							662547
Staff Gauge	10:30	4.61										

n/a : Not Applicable

X DS-1 thru DS-4 - Check for sound of air going in and out when in pits.

WELL LEVEL AND FIELD PARAMETERS FIELD FORM

General Information

Site : Oshkosh MGP
Project # : 1312
Task # :
Date : 6/26/07
Samplers : Mike Mason

Water Level Indicator Serial # : Soiltest DR-760A-Water Level Indicator (No Serial #)
Purge Device and Serial # :
Quality Probe Type and Serial # :
Calibration Check :

Location	Time (military)	Depth to Water (ft below TOC)	Product Top Depth (ft below TOC)	Product Bottom Depth (ft below TOC)	Product Notes	Time (military)	pH (SU)	Cond. (μS/cm)	Temp. (°C)	ORP (mV)	DO (mg/L)	Field Comments
OW-1	11:10	4.04										
OW-4	10:00	4.26										
GW-1	9:15	3.10										
GW-2R	10:45	4.28										
GW-3	9:30	3.14										
GW-4	9:20	2.96										
OW-3R	10:35	4.82										
MW-101R	10:25	6.09										
MW-102	11:45	8.47										
MW-103	11:35	8.56										
MW-104	11:00	4.52										
MW-108R	11:25	5.21										
MW-109R	10:20	12.67										
MW-110	11:50	2.70										

n/a : Not Applicable

①

Operations Log
Wisconsin Public Service Corporation
Oshkosh Former Manufactured Gas Plant

Date of Site Visit: 6/26/07
Arrival Time: 13:00
Departure Time 14:00
Signature: Mike Mason

Operator:

WHEN COMPLETED FAX TO (262) 523-9001
ATTN: HEATHER SIMON, PROJECT ENGINEER

*Emergency Shut Down
1. Push emergency stop button on control panel 2. Shut air compressor ball valve 3. Shut both bag filter ball valves

OVERALL TREATMENT SYSTEM

Is system operating upon arrival? Y / N If not, why? Y

Is system operating upon departure? Y / N If not, why? Y

COMPRESSOR (DEVAIR, VATV-5063)

Compressor turns ON at 100psi and turns OFF at 150psi.

Record compressor operation: ON / OFF

Record pressure: 100/147 inches Hg

Each Visit

- ☑ Inspect pressure relief valve ok
- ☑ Drain moisture from tank ok
- ☐ Check Oil level; Topped off oil Y / N * If Yes, note on compressor maintenance form
- ☑ Inspect air filter: Good [✓ OK] Bad

Quarterly

- ☐ Change Oil (Mar,June,Sept,Dec) *with Devair PR-20 oil: Y / N * If Yes, note on compressor maintenance form
- ☐ Replace air filter (Mar,June,Sept,Dec) *with Devair filter: Y / N * If Yes, note on compressor maintenance form
- ☐ Check condition and alignment of belt, flywheel, and motor pulley.
- ☐ Ensure compressor head unloads when motor shuts down.
- ☐ Clean pump fins and motor of dust and dirt. * Note on compressor maintenance form
- ☐ Clean sediment/moisture trap of debris. * Note on compressor maintenance form

2000 Hour Maintanence

- ☐ Every 2000 hours, lubricate motor bearings
- ☐ Inspect/Replace as necessary the following:
  - ☐ Pump Valves Inspection (Good OK Bad) / Replaced
  - ☐ Check Valves Inspection (Good OK Bad) / Replaced
  - ☐ Safety Valves Inspection (Good OK Bad) / Replaced
  - ☐ Pressure Gauge Inspection (Good OK Bad) / Replaced
  - ☐ Belts Inspection (Good OK Bad) / Replaced

②

Operations Log
Wisconsin Public Service Corporation
Oshkosh Former Manufactured Gas Plant

Date of Site Visit: 6/26/07
Arrival Time: 13:00
Departure Time 14:00

Operator:
Signature: Mike Mason

DESICCATOR (HANKISON, DHW-25)

☐ Is the desiccator on? [✓ Y] / N If not, why?__________

ok ☐ Check the pressure gauges (tower on reads pressure and other tower off reads below 2 psig) ON = 7 Off = 0

☐ Check prefilter and afterfilter indicators are in green area * If red, then change filter

☐ Replaced prefilter / Replaced afterfilter

☐ Record relative humidity: __________

MULTI-PHASE SEPARATOR

Each Visit

☐ Bubbles in influent chamber? Y / N * If yes, dewatering pumps needs to be inspected.

☐ Thickness of DNAPL inside sight tube: __________ (in. approx.)

☐ Is DNAPL level switch inside sight tube operating? Y [✓ N] Never has worked

☐ Note DNAPL tank level: [✓ Empty] 1/4 1/2 3/4* Full *If tank is 3/4 full, contact NRT for disposal.

☐ Thickness of LNAPL level inside sight tube: —

☐ Record LNAPL tank level: ok *If tank is 3/4 full, contact NRT for disposal.

Quarterly

☐ Inspect water level at oil skimming weir plate: 1/2" Below

☐ Condition of coalescing media: ok

DNAPL PUMP (P-1/ MOYNO 500)

☐ Is pump operating? Y / [✓ N] If not, why?__________

☐ Is packing gland leaking? Y / N * If Yes, note on maintenance form

TRANSFER PUMP (P-2 / EBARA)

☐ Is pump operating? [✓ Y] / N

TRANSFER TANK

☐ Note water level: ok

☐ Note sediment thickness: ok (in. approx.)

☐ Removed accumulated sediment? Y [✓ N]

③

Operations Log
Wisconsin Public Service Corporation
Oshkosh Former Manufactured Gas Plant

Date of Site Visit: 6/26/07
Arrival Time: 13:00
Departure Time 14:00

Operator:
Signature: Miles Mason

BAG FILTERS

Record inlet pressure: 9
Record outlet pressure: 3
☐ Inspect bag filters: Good OK Bad
☐ Replaced bag filters? Y / N

AIR STRIPPER

☐ Is the air stripper operating?: [✓ Y] / N
☐ Inspect bearings: Good [✓ OK] Bad
☐ Vent open to OUTSIDE or [✓ INSIDE?] Top Vent Open
☐ Greasing Interval of Bearings Based on operating conditions and operating temperature of Fan:
  - ☐ Fairly Clean: Up to 120F 6-12 Mo., 120-160F 2-3 mo, 160-200F+ 1-2 Mo
  - ☐ Moderate to Extremely Dirty: Up to 160F 1-2 mo, 160-200F+ 2-4 weeks
  - ☐ Fairly Clean: Up to 120F 6-12 Mo., 120-160F 2-3 mo, 160-200F+ 1-2 Mo

** Temperatures 0F to 200F inclusive use Mobil Oil-MobileJux EP#2, Shell Oil-Shell Alvania EP#2 or Chevron-Chevron SRI #2

☐ Record Pressure Reading: 21.2
☐ Troubleshooting: Capacity or Pressure Below Rating Y/N
☐ Troubleshooting: Vibration and Noise Y/N
☐ Troubleshooting: Overheated Bearings Y/N
☐ Troubleshooting: Overload on Motor Y/N

OTHER

Flow meter reading: 12006620 gallons
Inspect piping and valves for leaks:

Comments/Notes:
Influent Gauge: 614850

Operations Log
Wisconsin Public Service Corporation
Oshkosh Former Manufactured Gas Plant

Operator:

Date of Site Visit: 6/26/07
Arrival Time: 13:00
Departure Time 14:00
Signature: Miles Mason

DEWATERING PUMPS (HAMMERHEAD HF43SEB)

DS-1
☐ Is the pump operating? [✓ Y] N If not, why?
☐ Blow air (<15psi) through bubbler line to remove oil from outlet
☐ Complete adjacent table
☐ Annual pump cleaning (Oct)

DS-2
☐ Is the pump operating? Y [✓ N] If not, why? Shut off
☐ Blow air (<15psi) through bubbler line to remove oil from outlet
☐ Complete adjacent table
☐ Annual pump cleaning (Oct)

DS-3
☐ Is the pump operating? [✓ Y] N If not, why?
☐ Blow air (<15psi) through bubbler line to remove oil from outlet
☐ Complete adjacent table
☐ Annual pump cleaning (Oct)

DS-4
☐ Is the pump operating? [✓ Y] N If not, why?
☐ Blow air (<15psi) through bubbler line to remove oil from outlet
☐ Complete adjacent table
☐ Annual pump cleaning (Oct)

	Monitoring Station/Well			*Control Panel*		
Location	Pressure Regulator Setting (psi)	Bubbler Reading (in water)	Depth to Water (ft)	Flow Rate (gpm)	Cycles (Total)	Gallons
Dewatering Sumps						
DS-1	42			0	181227	54368
DS-2	0			0	861452	258436
DS-3	41			0	279769	83931
DS-4	39			0	43512	13054
			TOTAL			

④

↓ check needle for slight vibration to ensure proper pump operation

Also when doing levels in the pits, check for sound of air going in & out.

Operations Log
Wisconsin Public Service Corporation
Oshkosh Former Manufactured Gas Plant

Date of Site Visit: 9.10.7, 9.11.7
Arrival Time: 0745
Departure Time 1530

~~Operator:~~ Conducted by: Mike Mason and Rick Gruenthes
Signature:

WHEN COMPLETED FAX TO (262) 523-9001
ATTN: HEATHER SIMON, PROJECT ENGINEER

*Emergency Shut Down
1. Push emergency stop button on control panel
2. Shut air compressor ball valve
3. Shut both bag filter ball valves

OVERALL TREATMENT SYSTEM

Is system operating upon arrival? Y / N If not, why? Y

Is system operating upon departure? Y / N If not, why? Y

COMPRESSOR (DEVAIR, VATV-5063)

Compressor turns ON at 100psi and turns OFF at 150psi.

Record compressor operation: ON / OFF

Record pressure: 100/150 inches Hg

Each Visit

☑ Inspect pressure relief valve

☑ Drain moisture from tank

☐ Check Oil level; Topped off oil Mark Y / N * If Yes, note on compressor maintenance form

☑ Inspect air filter: Good [✓ OK] Bad

Mark

Quarterly

☐ Change Oil (Mar,June,Sept,Dec) *with Devair PR-20 oil: Y / N * If Yes, note on compressor maintenance form

☐ Replace air filter (Mar,June,Sept,Dec) *with Devair filter: Y / N * If Yes, note on compressor maintenance form

☐ Check condition and alignment of belt, flywheel, and motor pulley.

☐ Ensure compressor head unloads when motor shuts down.

☐ Clean pump fins and motor of dust and dirt. * Note on compressor maintenance form

☐ Clean sediment/moisture trap of debris. * Note on compressor maintenance form

2000 Hour Maintanence

☐ Every 2000 hours, lubricate motor bearings

☐ Inspect/Replace as necessary the following:

- ☐ Pump Valves Inspection (Good OK Bad) / Replaced
- ☐ Check Valves Inspection (Good OK Bad) / Replaced
- ☐ Safety Valves Inspection (Good OK Bad) / Replaced
- ☐ Pressure Gauge Inspection (Good OK Bad) / Replaced
- ☐ Belts Inspection (Good OK Bad) / Replaced

Operations Log
Wisconsin Public Service Corporation
Oshkosh Former Manufactured Gas Plant

Date of Site Visit:
Arrival Time:
Departure Time

Operator:
Signature:

DESICCATOR (HANKISON, DHW-25)

☐ Is the desiccator on? [✓ Y] / N If not, why?

☑ Check the pressure gauges (tower on reads pressure and other tower off reads below 2 psig) 8.5 , 0

☑ Check prefilter and afterfilter indicators are in green area * If red, then change filter

☐ Replaced prefilter / Replaced afterfilter

☐ Record relative humidity:

MULTI-PHASE SEPARATOR

Each Visit

☐ Bubbles in influent chamber? Y / N * If yes, dewatering pumps needs to be inspected.

☐ Thickness of DNAPL inside sight tube: (in. approx.)

☐ Is DNAPL level switch inside sight tube operating? Y / [✓ N] Never has work

☐ Note DNAPL tank level: [✓ Empty] 1/4 1/2 3/4* Full *If tank is 3/4 full, contact NRT for disposal.

☐ Thickness of LNAPL level inside sight tube: –

☐ Record LNAPL tank level: OK *If tank is 3/4 full, contact NRT for disposal.

Quarterly

☑ Inspect water level at oil skimming weir plate: OK Below

☐ Condition of coalescing media: OK

DNAPL PUMP (P-1/ MOYNO 500)

☑ Is pump operating? Y / [✓ N] If not, why?

☐ Is packing gland leaking? Y / N * If Yes, note on maintenance form

TRANSFER PUMP (P-2 / EBARA)

☑ Is pump operating? [✓ Y] / N

TRANSFER TANK

☐ Note water level: 1/2

☐ Note sediment thickness: (in. approx.)

☐ Removed accumulated sediment? Y / [✓ N]

Operations Log

Wisconsin Public Service Corporation

Oshkosh Former Manufactured Gas Plant

Date of Site Visit:

Arrival Time:

Departure Time

Operator:

Signature:

BAG FILTERS

Record inlet pressure:

Record outlet pressure:

☐ Inspect bag filters: Good OK Bad

☐ Replaced bag filters? Y / [✓ N]

AIR STRIPPER

☐ Is the air stripper operating?: [✓ Y] / N

☐ Inspect bearings: Good [✓ OK] Bad

☐ Vent open to OUTSIDE or [✓ INSIDE]? Top vent open

Mark ☐ Greasing Interval of Bearings Based on operating conditions and operating temperature of Fan:

- ☐ Fairly Clean: Up to 120F 6-12 Mo., 120-160F 2-3 mo, 160-200F+ 1-2 Mo
- ☐ Moderate to Extremely Dirty: Up to 160F 1-2 mo, 160-200F+ 2-4 weeks
- ✓ ☐ Fairly Clean: Up to 120F 6-12 Mo., 120-160F 2-3 mo, 160-200F+ 1-2 Mo

** Temperatures 0F to 200F inclusive use Mobil Oil-Mobilelux EP#2, Shell Oil-Shell Alvania EP#2 or Chevron-Chevron SRI #2

☐ Record Pressure Reading: 21.5

☐ Troubleshooting: Capacity or Pressure Below Rating Y/N

☐ Troubleshooting: Vibration and Noise Y/N

☐ Troubleshooting: Overheated Bearings Y/N

☐ Troubleshooting: Overload on Motor Y/N

OTHER

Flow meter reading: 12352000 gallons

Inspect piping and valves for leaks: OK

Comments/Notes:

Inf gauge 6450230 gals

Compressor running for 2min every 6 min.

Operations Log

Wisconsin Public Service Corporation

Oshkosh Former Manufactured Gas Plant

Date of Site Visit:

Arrival Time:

Departure Time

Operator:

Signature:

DEWATERING PUMPS (HAMMERHEAD HF43SEB)

DS-1

☐ Is the pump operating? [✓ Y] / N If not, why?

☐ Blow air (<15psi) through bubbler line to remove oil from outlet

☐ Complete adjacent table

☐ Annual pump cleaning (Oct)

DS-2

☐ Is the pump operating? Y / [✓ N] If not, why? No pump

☐ Blow air (<15psi) through bubbler line to remove oil from outlet

☐ Complete adjacent table

☐ Annual pump cleaning (Oct)

DS-3

☐ Is the pump operating? [✓ Y] / N If not, why?

☐ Blow air (<15psi) through bubbler line to remove oil from outlet

☐ Complete adjacent table

☐ Annual pump cleaning (Oct)

DS-4

☐ Is the pump operating? Y / N If not, why?

☐ Blow air (<15psi) through bubbler line to remove oil from outlet

☐ Complete adjacent table

☐ Annual pump cleaning (Oct)

	Monitoring Station/Well			*Control Panel*		
Location	Pressure Regulator Setting (psi)	Bubbler Reading (in water)	Depth to Water (ft)	Flow Rate (gpm)	Cycles (Total)	Gals
Dewatering Sumps						
DS-1	41			0	181227	54368
DS-2	0			0	861453	258436
DS-3	40			0	279770	83931
DS-4	42			6	43512	13054
				TOTAL		

General Information

Site : WPSC Oshkosh MGP Site
Project # : 1312
Task # : 8.0
Date : 9.10.7
Samplers : RJG / Mike Mason

Well Depth from TOC (feet) : –
Purge Device and Serial # : Bailer
Water Level Indicator Serial # : Heron 11846
Water Level Indicator Serial # : –
Quality Probe Type and Serial # : YSI
Calibration Check : Twice Daily

PURGE PHASE

Sample Location	Date	Time (military)	Total Well Depth (feet)	Depth to SWL (feet)	Purge Device	Purge Time (minutes)	Volume Purged (gallons)	Depth to SWL after Purge (feet)	Field Filtered Analysis	Field Comments
P-109	9.10.7	08:35	87.15	8.37	Bailer	15	~~55~~ 12	43.61	NA	going Dry 001
OW-1	9.10.7	0900	6.94	4.07	↑	0	20	Dry	NA	Went Dry, No purge 002
MW108R	9.10.7	0915	14.56	5.02	Bailer	7	6.0	11.98	AA	going Dry bailer not full 003
MW-103	9.~~48~~.7	0940	18.02	8.19	↓	9	6.8	13.10	↓	004
P 106	↓	1020	19.41	10.64		3	~~6~~ 1	19.10		Drying up 005
MW-102		1028	~~16~~.91	8.35		7	6	8.45		006
P-103		1046	29.85	3.38		22	18.5	3.42		007
GW-03	9.10.7 ~~1100~~	1100	9.70	3.20	Bailer	5	4.5	3.22	NA	008

FIELD PARAMETERS

	PRE-PURGE							POST-PURGE						
Sample Location	pH (SU)	Color	Odor	Diss. Oxygen ( )	ORP ( )	Temp ( )	Cond ( )	pH (SU)	Color	Odor	Diss. Oxygen ( )	ORP ( )	Temp ( )	Cond ( )
P-109	6.95	Clear	N	3.41	176.6	16.87	0.569	DRY						
OW-1	6.78	Brown	N	3.44	-138.9	22.35	1.452	DRY						
P 104	7.01	Gray	N	3.41	-120.0	17.36	2.797	7.12	light Gray	N	3.85	-81.6	13.28	3.075
MW 103	7.09	Gray	N	3.54	-20.1	17.40	1.445	7.38	light Gray	N	4.03	-51.9	13.38	1.866
P 106	7.34	Black	N	2.57	34.4	12.99	1.252	7.59	Black	N	3.55	-141.9	12.29	1.152
MW 102	7.23	Black Gray	N	1.46	-164.5	17.44	1.662	7.29	Black/gray	N	3.96	-135.4	16.86	1.695
P-103	7.61	Murky	N	3.54	-55.1	18.73	0.194	7.75	turbid/clear	N	2.92	-153.5	12.78	0.555
GW-03	6.46	Black Sheen	Yes	1.82	-124.1	19.22	0.807	6.86	Black Sheen	Yes	1.31	-118.4	18.93	.761

N/A - Not Applicable

SWL - Static Water Level

GROUNDWATER MONITORING INFORMATION FIELD FORM

General Information

Site : WPSC Oshkosh MGP Site
Project # : 1312
Task # : 8.0
Date : 9·10·7
Samplers : RJG/Mike Munson

Well Depth from TOC (feet) : NA
Purge Device and Serial # : Bailer
Water Level Indicator Serial # : Heron 11846
Water Level Indicator Serial # : —
Quality Probe Type and Serial # : YSI
Calibration Check : Twice Daily

PURGE PHASE										
Sample Location	Date	Time (military)	Total Well Depth (feet)	Depth to SWL (feet)	Purge Device	Purge Time (minutes)	Volume Purged (gallons)	Depth to SWL after Purge (feet)	Field Filtered Analysis	Field Comments
P105	9·10·7	1130	45.38	3.45	Bailer	10	2.9	43.41	NA	009 Well Dry No Reading
GW-4		1150	12.50	2.96	Bailer	7	6.6	3.67	NA	010
MW101R		1155	—	5.85						Water level only
SG-1		1200	—	~~2.53?~~ 4.70	~~B~~					Water level only
OW3R		1210	13.70	4.73	Bailer	6.5	6.25	11.63	NA	011
OW2R		1220	—	4.25						Water level Only
GW-1	9·10·7	1230	10.24	3.09	Bailer	5	5	3.09	NA	013 MS/MSD 012

FIELD PARAMETERS														
	PRE-PURGE							POST-PURGE						
Sample Location	pH (SU)	Color	Odor	Diss. Oxygen ( )	ORP ( )	Temp ( )	Cond. ( )	pH (SU)	Color	Odor	Diss. Oxygen ( )	ORP ( )	Temp ( )	Cond. ( )
P105	7.10	white	N	1.06	-123.3	18.45	0.725	— Too Dry						
GW-4	—	Didn't	take					6.19	Light Brown	N	2.22	-122.9	20.13	1.788
OW3R	6.45	Light Brown	N	2.85	-124.3	18.49	1.656	6.63	Light Brown	N	2.63	-114.8	24.69	1.62
GW-1	6.31	Clear	N	2.13	-55.1	22.48	1.513	6.34	Clear	N	3.60	-65.7	20.40	2.076

N/A - Not Applicable

SWL - Static Water Level

GROUNDWATER MONITORING INFORMATION FIELD FORM

General Information

Site : WPSC Oshkosh MGP Site
Project # : 1312
Task # : 8.0
Date : 9-10-7
Samplers : RJG-Mike Mason

Well Depth from TOC (feet) :
Purge Device and Serial # : Bailer
Water Level Indicator Serial # : Heron 11846
Water Level Indicator Serial # : —
Quality Probe Type and Serial # : YSI
Calibration Check : Twice Daily

PURGE PHASE

Sample Location	Date	Time (military)	Total Well Depth (feet)	Depth to SWL (feet)	Purge Device	Purge Time (minutes)	Volume Purged (gallons)	Depth to SWL after Purge (feet)	Field Filtered Analysis:	Field Comments
MW104	9.10.7	1320	12.36	4.67	7	bailer	5.4	10.29	NA	014
P104	9.10.7	1310	49.90	6.83	28	↓	24	7.72	NA	015
P.107R	9.10.7	1440	50.5	12.19	35		30	~~[illegible]~~ NA	NA	016
MW-109R	9.10.7	1435	21.05	12.4	7		6	12.4	NA	017
OW4	9.10.7	1415	—	4.48	—	~~bai~~				Water level only

FIELD PARAMETERS

	PRE-PURGE							POST-PURGE						
Sample Location	pH (SU)	Color	Odor	Diss Oxygen ( )	ORP ( )	Temp ( )	Cond ( )	pH (SU)	Color	Odor	Diss Oxygen ( )	ORP ( )	Temp ( )	Cond ( )
MW104	6.55	gray	N	2.40	188.0	18.14	2.418	6.70	clear	N	2.83	-11.1	15.43	2.38
P104	6.90	Clear	N	1.05	-130.4	16.05	0.517	7.71	clear	N	5.38	-104.6	13.28	.474
~~MW~~ P107R	7.09	cl	N	3.42	-61.4	14.14	0.493	6.67	cl	N	~~6.67~~ ~~3.42~~	-83.6	12.86	0.512
MW 109	6.79	cl	N	2.81	-62.8	13.94	1.784	6. 79	cl	N	2.60	-83.8	12.05	2.60

N/A - Not Applicable

SWL - Static Water Level

GROUNDWATER MONITORING INFORMATION FIELD FORM

General Information

Site : WPSC Oshkosh MGP Site
Project # : 1312
Task # : 8.0
Date : 9-11-7
Samplers : RJG/Mike Mason

INF 023
EFF. 024

Well Depth from TOC (feet) : NA
Purge Device and Serial # : Bailer
Water Level Indicator Serial # : Heron 118246
Water Level Indicator Serial # : —
Quality Probe Type and Serial # : YSI
Calibration Check : Twice Daily

PURGE PHASE										
Sample Location	Date	Time (military)	Total Well Depth (feet)	Depth to SWL (feet)	Purge Device	Purge Time (minutes)	Volume Purged (gallons)	Depth to SWL after Purge (feet)	Field Filtered Analysis	Field Comments
P111	9.11.7	0830	70.0	8.56	Bailer	49	43	8.63	NA	018, 019
MW110	↓	0945	12.58	2.56	↓	8	7	2.68	NA	020
P108		0930	42.96	2.76		30	28	2.94	NA	021
P110		1030	67.20	6.54	Bailer	15	~~42.5~~ 45	59.55	NA	Going Dry
DS-1		1230	—	4.26	—					Water level only
DS-2		1235	—	5.29	—					↓
DS-3	↓	1240	—	10.83	—					
DS-4	9.11.7	1245	—	4.20	—					Water level only

FIELD PARAMETERS																
	PRE-PURGE								POST-PURGE							
Sample Location	pH (SU)	Color	Odor	Diss Oxygen ( )	ORP ( )	Temp ( )	Cond ( )		pH (SU)	Color	Odor	Diss Oxygen ( )	ORP ( )	Temp ( )	Cond ( )	
P111	6.36	Clear	N	3.76	71.5	17.17	0.440		7.02	Clear	N	2.86	-108.1	13.72	0.604	
MW110	6.14	Clear	N	1.87	-100.6	19.37	0.992		6.41	Clear	N	1.95	-96.0	19.72	0.901	
P108	6.92	Clear	N	1.31	-118.3	13.09	.358		7.23	Clear	N	4.78	-133.0	12.86	0.328	
P110	6.98	clear/white	N	2.31	-47.3	16.79	1.348		—	Too	Deep	—	—	—		

N/A - Not Applicable

SWL - Static Water Level

①

Operations Log
Wisconsin Public Service Corporation
Oshkosh Former Manufactured Gas Plant

Operator:

Date of Site Visit: 11/30/07
Arrival Time: 12:00
Departure Time 13:00
Signature: Miles Olson

WHEN COMPLETED FAX TO (262) 523-9001
ATTN: HEATHER SIMON, PROJECT ENGINEER

*Emergency Shut Down
1. Push emergency stop button on control panel
2. Shut air compressor ball valve
3. Shut both bag filter ball valves

OVERALL TREATMENT SYSTEM

Is system operating upon arrival? Y / N If not, why? Y

Is system operating upon departure? Y / N If not, why? Y

COMPRESSOR (DEVAIR, VATV-5063)

Compressor turns ON at 100psi and turns OFF at 150psi.

Record compressor operation: ON / OFF

Record pressure: 100/145 inches Hg

Each Visit

☑ Inspect pressure relief valve ok

☑ Drain moisture from tank ok

☐ Check Oil level; Topped off oil Y / N * If Yes, note on compressor maintenance form

☑ Inspect air filter: Good [✓ OK] Bad

Quarterly

☐ Change Oil (Mar,June,Sept,Dec) *with Devair PR-20 oil: Y / N * If Yes, note on compressor maintenance form

☐ Replace air filter (Mar,June,Sept,Dec) *with Devair filter: Y / N * If Yes, note on compressor maintenance form

☐ Check condition and alignment of belt, flywheel, and motor pulley.

☐ Ensure compressor head unloads when motor shuts down.

☐ Clean pump fins and motor of dust and dirt. * Note on compressor maintenance form

☐ Clean sediment/moisture trap of debris. * Note on compressor maintenance form

2000 Hour Maintanence

☐ Every 2000 hours, lubricate motor bearings

☐ Inspect/Replace as necessary the following:

☐ Pump Valves Inspection (Good OK Bad) / Replaced

☐ Check Valves Inspection (Good OK Bad) / Replaced

☐ Safety Valves Inspection (Good OK Bad) / Replaced

☐ Pressure Gauge Inspection (Good OK Bad) / Replaced

☐ Belts Inspection (Good OK Bad) / Replaced

②

Operations Log
Wisconsin Public Service Corporation
Oshkosh Former Manufactured Gas Plant

Date of Site Visit: 11/30/07
Arrival Time: 12:00
Departure Time 13:00

Operator:
Signature: Mike Mason

DESICCATOR (HANKISON, DHW-25)

☐ Is the desiccator on? [✓ Y] / N If not, why?

☐ Check the pressure gauges (tower on reads pressure and other tower off reads below 2 psig) ON - 8.2 OFF - 0

☐ Check prefilter and afterfilter indicators are in green area * If red, then change filter

☐ Replaced prefilter / Replaced afterfilter

☐ Record relative humidity:

MULTI-PHASE SEPARATOR

Each Visit

☐ Bubbles in influent chamber? Y / N * If yes, dewatering pumps needs to be inspected.

☐ Thickness of DNAPL inside sight tube: ____ (in. approx.)

☐ Is DNAPL level switch inside sight tube operating? Y / [✓ N]

☐ Note DNAPL tank level: [✓ Empty] 1/4 1/2 3/4* Full *If tank is 3/4 full, contact NRT for disposal.

☐ Thickness of LNAPL level inside sight tube: —

☐ Record LNAPL tank level: OK *If tank is 3/4 full, contact NRT for disposal.

Quarterly

☐ Inspect water level at oil skimming weir plate: OK ½" Below

☐ Condition of coalescing media: OK

DNAPL PUMP (P-1/ MOYNO 500)

☐ Is pump operating? Y / [✓ N] If not, why?

☐ Is packing gland leaking? Y / N * If Yes, note on maintenance form

TRANSFER PUMP (P-2 / EBARA)

☐ Is pump operating? Y / [✓ N]

TRANSFER TANK

☐ Note water level: OK

☐ Note sediment thickness: OK (in. approx.)

☐ Removed accumulated sediment? Y / [✓ N]

③

Operations Log

Wisconsin Public Service Corporation
Oshkosh Former Manufactured Gas Plant

Date of Site Visit: 11/30/07
Arrival Time: 12:00
Departure Time 13:00

Operator:
Signature: Mike Mason

BAG FILTERS

Record inlet pressure: 8.5
Record outlet pressure: 3
☐ Inspect bag filters: Good OK Bad
☐ Replaced bag filters? Y / N

AIR STRIPPER

☐ Is the air stripper operating?: [✓ Y] N
☐ Inspect bearings: Good [✓ OK] Bad
☐ Vent open to OUTSIDE or [✓ INSIDE?] Top Open
☐ Greasing Interval of Bearings Based on operating conditions and operating temperature of Fan:
  ☐ Fairly Clean: Up to 120F 6-12 Mo., 120-160F 2-3 mo, 160-200F+ 1-2 Mo
  ☐ Moderate to Extremely Dirty: Up to 160F 1-2 mo, 160-200F+ 2-4 weeks
  ☐ Fairly Clean: Up to 120F 6-12 Mo., 120-160F 2-3 mo, 160-200F+ 1-2 Mo

** Temperatures 0F to 200F inclusive use Mobil Oil-Mobilelux EP#2, Shell Oil-Shell Alvania EP#2 or Chevron-Chevron SRI #2

☐ Record Pressure Reading: 21.8
☐ Troubleshooting: Capacity or Pressure Below Rating Y/N
☐ Troubleshooting: Vibration and Noise Y/N
☐ Troubleshooting: Overheated Bearings Y/N
☐ Troubleshooting: Overload on Motor Y/N

OTHER

Flow meter reading: 1268352 gallons
Inspect piping and valves for leaks:

Comments/Notes: Influent Gauge: Not There Taken Off

Operations Log
Wisconsin Public Service Corporation
Oshkosh Former Manufactured Gas Plant

Operator:

Date of Site Visit: 11/30/07
Arrival Time: 12:00
Departure Time 13:00
Signature: Mike Mason

DEWATERING PUMPS (HAMMERHEAD HF43SEB)

DS-1
☐ Is the pump operating? [✓ Y] N If not, why?
☐ Blow air (<15psi) through bubbler line to remove oil from outlet
☐ Complete adjacent table
☐ Annual pump cleaning (Oct)

DS-2
☐ Is the pump operating? Y [✓ N] If not, why? Shut-off
☐ Blow air (<15psi) through bubbler line to remove oil from outlet
☐ Complete adjacent table
☐ Annual pump cleaning (Oct)

DS-3
☐ Is the pump operating? [✓ Y] N If not, why?
☐ Blow air (<15psi) through bubbler line to remove oil from outlet
☐ Complete adjacent table
☐ Annual pump cleaning (Oct)

DS-4
☐ Is the pump operating? [✓ Y] N If not, why?
☐ Blow air (<15psi) through bubbler line to remove oil from outlet
☐ Complete adjacent table
☐ Annual pump cleaning (Oct)

	Monitoring Station/Well			*Control Panel*		
Location	Pressure Regulator Setting (psi)	Bubble Reading (in water)	Depth to Water (ft)	Flow Rate (gpm)	Cycles (total)	Gallons
Dewatering Sumps						
DS-1	50			0	181227	54368
DS-2	0			0	861483	258445
DS-3	42			0	279778	83933
DS-4	39			0	43513	13054
TOTAL						

②

check needle for slight vibration to ensure proper pump operation. - OK

* Also when doing levels in the pits, check for sound of air going in + out.
OK

WELL LEVEL AND FIELD PARAMETERS FIELD FORM

General Information

Site: Oshkosh MGP

Project #: 1312

Task #:

Date: 8/30/07

Samplers: Mike Mason

Water Level Indicator Serial #: Heron - #15868

Purge Device and Serial #:

Quality Probe Type and Serial #:

Calibration Check:

[illegible]	[illegible]	Depth [illegible]	Product Top Depth (ft btoc)	Product Bottom Depth (ft btoc)	Product Notes	Turb [illegible]	pH (SU)	Cond (µS/cm)	Temp (°C)	ORP (mV)	DO (mg/L)	Field Comments
P-103	9:00	4.24										
P-104	9:45	7.73										
P-105	9:10	6.79										
P-106	11:40	11.33										
P-107R	11:00	13.08										Closest to river
P-108	10:20	3.64										
P-109	10:05	9.76										Farthest from river.
P-110	8:30	7.24										
P-111	10:00	9.78										Counter Readings
DS-1	11:50	5.27			Air - ok							—
DS-2	11:55	6.18			Air - No							524666
DS-3	11:35	12.13			Air - ok							355974
DS-4	11:30	5.26			Air - ok							662547
Staff Gauge	9:30	5.10										

n/a : Not Applicable

* - DS-1 thru DS-4 - Check for sound of air going in + out when in the pit.

Natural Resource Technology

WELL LEVEL AND FIELD PARAMETERS FIELD FORM

General Information

Site: Oshkosh MGP
Project #: 1312
Task #:
Date: 11/30/07
Samplers: Mike Mason

Water Level Indicator Serial #: Heron - #15868
Purge Device and Serial #:
Quality Probe Type and Serial #:
Calibration Check:

Location	[illegible]	[illegible]	Product Top Depth [illegible]	Product Bottom Depth (ft bTOC)	[illegible]	[illegible] (min)	pH (SU)	Cond (µS/cm)	Temp (°C)	ORP (mV)	DO (mg/L)	Field Comments
P-103	9:00	4.24										
P-104	9:45	7.73										
P-105	9:10	6.79										
P-106	11:40	11.33										
P-107R	11:00	13.08										Closest to river
P-108	10:20	3.64										
P-109	10:05	9.76										Farthest from river.
P-110	8:30	7.24										
P-111	10:00	9.78										Counter Readings
DS-1	11:50	5.27			Air-ok							—
DS-2	11:55	6.18			Air-No							524666
DS-3	11:35	12.13			Air-ok							355974
DS-4	11:30	5.26			Air-ok							662547
Staff Gauge	9:30	5.10										

n/a : Not Applicable

* - DS-1 thru DS-4 - Check for sound of air going in + out when in the pit.

WELL LEVEL AND FIELD PARAMETERS FIELD FORM

General Information

Site: Oshkosh MGP
Project #: 1312
Task #:
Date: 11/30/07
Samplers: Mike Mason

Water Level Indicator Serial #: Heron - #15868
Purge Device and Serial #:
Quality Probe Type and Serial #:
Calibration Check:

Location	Time (military)	[illegible]	Product Top Depth (feet below TOC)	Product Bottom Depth (feet below TOC)	Product Notes	Time (military)	pH (SU)	Cond (uS/cm)	Temp (C)	ORP (mV)	DO (mg/L)	Field Comments
OW-1	10:10	4.79										
OW-4	11:20	5.75										
GW-1	8:40	3.79										
GW-2R	9:40	5.22										
GW-3	8:55	4.03										
GW-4	8:50	3.63										
OW-3R	9:20	5.77										
MW-101R	9:25	6.84										
MW-102	11:45	9.57										
MW-103	10:50	9.45										
MW-104	9:50	5.19										
MW-108R	10:45	5.80										
MW-109R	11:05	13.43										
MW-110	10:25	3.36										

n/a : Not Applicable

WELL CONDITION FIELD FORM

Site: Oshkosh MGP
Project #: 1312
Task #:

Date: 11/30/07
Samplers: Miles Mason

	EVERY SAMPLING EVENT									AT LEAST ONCE A YEAR			
Location	[illegible]	[illegible]	Casing	[illegible]	Cap	Corrosion	Bailed	Pump	[illegible]	Expected Well Depth (feet)	Field Measured Well Depth (feet)	Well Base Sediment Thickness (feet)	Comments
P-103	G	G	G	N	G	N	Y		G				
P-104	G	G	G	N	P	N	Y		G				
P-105	G	F	G	Y	G	N	Y		G				
P-106	G	G	G	Y	G	N	Y		G				Missing 1 - Female - Small Bolt Catch
P-107R	G	G	G	N	G	N	Y		G				
P-108	G	G	G	Y	G	N	Y		G				
P-109	G	G	G	N	G	N	N		G				
P-110	G	G	G	Y	G	N/A	Y		G				Only 1 Female Catch - Large Bolt
P-111	G	G	G	Y	G	N/A	Y		G				
DS-1	G	G	N/A	N/A	N/A	N/A	N/A		N/A				
DS-2	G	G	|	|	|	|	|		|				
DS-3	G	G	|	|	|	|	|		|				
DS-4	G	G	|	|	|	|	|		|				
Staff Gauge	N/A	N/A	X	X	X	X	X		X				

P : Poor - Potential or Evident Sample Integrity Issues (additional comments required, picture(s) desirable)
F : Fair - Future Sample Integrity May Be Compromised if Well Repair/Upgrade is Not Undertaken (additional comments required, picture(s) desirable)
G : Good (additional comments not required)
n/a : Not Applicable

WELL CONDITION FIELD FORM

Site : Oshkosh MGP

Project # : 1312

Task # :

Date : 11/30/07

Samplers : Mike Mason

	EVERY SAMPLING EVENT									AT LEAST ONCE A YEAR			
Location	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Expected Well Depth (feet)	Field Measured Well Depth (feet)	Well Base Sediment Thickness (feet)	[illegible] Comments
OW-1	G	F	N	N	G	N	N		G				Only 1 Female Catch - Small Bolt
OW-4	G	F	G	N	G	N	Y		G				Doesn't seal well - Cap to PVC
GW-1	G	G	G	Y	G	N/A	Y		G				
GW-2R	G	G	G	N	G	N	Y		G				
GW-3	G	G	G	N	G	N	Y		G				
GW-4	G	G	G	Y	G	N	Y		G				
OW-3R	G	G	G	Y	G	N	Y		G				
MW-101R	G	G	G	Y	G	N	Y		G				
MW-102	G	G	G	Y	G	N	Y		G				
MW-103	G	G	G	Y	G	N	Y		G				PVC pipe needs glueing
MW-104	G	G	G	N	G	N	Y		G				
MW-108R	G	G	G	Y	G	N	Y		G				
MW-109R	G	G	G	N	G	N	Y		G				
MW-110	G	G	G	Y	G	N	Y		G				

P : Poor - Potential or Evident Sample Integrity Issues (additional comments required, picture(s) desirable)
F : Fair - Future Sample Integrity May Be Compromised if Well Repair/Upgrade is Not Undertaken (additional comments required, picture(s) desirable)
G : Good (additional comments not required)
n/a : Not Applicable

APPENDIX F2

LABORATORY ANALYTICAL RESULTS

Pace Analytical®

1241 Bellevue Street, Suite 9
Green Bay, WI 54302
920-469-2436, Fax: 920-469-8827

Analytical Report Number: 881945

Client: NATURAL RESOURCE TECHNOLOGY
Lab Contact: Brian Basten
Project Name: WPSC - OSHKOSH
Project Number: 1312

Lab Sample Number	Field ID	Matrix	Collection Date
881945-001	032607001	WATER	03/26/07 14:20
881945-002	TRIP BLANK	WATER	03/26/07

I certify that the data contained in this Final Report has been generated and reviewed in accordance with approved methods and Laboratory Standard Operating Procedure. Exceptions, if any, are discussed in the accompanying sample comments. Release of this final report is authorized by Laboratory management, as is verified by the following signature. This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc. The sample results relate only to the analytes of interest tested.

Approval Signature

3-29-07
Date

Analytical Report Number: 881945

Client : NATURAL RESOURCE TECHNOLOGY
Project Name : WPSC - OSHKOSH
Project Number : 1312
Field ID : 032607001

Matrix Type : WATER
Collection Date : 03/26/07
Report Date : 03/29/07
Lab Sample Number : 881945-001

INORGANICS

Test	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
Cyanide, Total	0.50	0.047	0.16		5	mg/L		03/28/07	EPA 335.4	EPA 335.4
Total Suspended Solids	8.0	0.34	1.1		1	mg/L		03/28/07	EPA 160.2	EPA 160.2

BTEX

Prep Date: 03/29/07

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
Benzene	1.9	0.14	0.46		1	ug/L		03/29/07	SW846 5030B	SW846 8021B
Ethylbenzene	7.8	0.40	1.3		1	ug/L		03/29/07	SW846 5030B	SW846 8021B
Toluene	0.68	0.36	1.2		1	ug/L	Q	03/29/07	SW846 5030B	SW846 8021B
Xylene, m + p	2.5	0.74	2.5		1	ug/L		03/29/07	SW846 5030B	SW846 8021B
Xylene, o	4.3	0.36	1.2		1	ug/L		03/29/07	SW846 5030B	SW846 8021B
Surrogate		**LCL**	**UCL**							
a,a,a-Trifluorotoluene	101	80	124		1	%		03/29/07	SW846 5030B	SW846 8021B

PAH/ PNA

Prep Date: 03/28/07

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
1-Methylnaphthalene	5.8	0.20	0.68		20	ug/L		03/28/07	SW846 3510C	8270C-SIM
2-Methylnaphthalene	< 0.22	0.22	0.75		20	ug/L		03/28/07	SW846 3510C	8270C-SIM
Acenaphthene	5.4	0.16	0.54		20	ug/L		03/28/07	SW846 3510C	8270C-SIM
Acenaphthylene	1.0	0.16	0.54		20	ug/L		03/28/07	SW846 3510C	8270C-SIM
Anthracene	1.2	0.23	0.77		20	ug/L		03/28/07	SW846 3510C	8270C-SIM
Benzo(a)anthracene	< 0.31	0.31	1.0		20	ug/L		03/28/07	SW846 3510C	8270C-SIM
Benzo(a)pyrene	< 0.37	0.37	1.2		20	ug/L		03/28/07	SW846 3510C	8270C-SIM
Benzo(b)fluoranthene	< 0.31	0.31	1.0		20	ug/L	Z	03/28/07	SW846 3510C	8270C-SIM
Benzo(ghi)perylene	< 0.39	0.39	1.3		20	ug/L		03/28/07	SW846 3510C	8270C-SIM
Benzo(k)fluoranthene	< 0.39	0.39	1.3		20	ug/L	Z	03/28/07	SW846 3510C	8270C-SIM
Chrysene	< 0.38	0.38	1.3		20	ug/L		03/28/07	SW846 3510C	8270C-SIM
Dibenz(a,h)anthracene	< 0.38	0.38	1.3		20	ug/L		03/28/07	SW846 3510C	8270C-SIM
Fluoranthene	1.4	0.31	1.0		20	ug/L		03/28/07	SW846 3510C	8270C-SIM
Fluorene	3.2	0.18	0.60		20	ug/L		03/28/07	SW846 3510C	8270C-SIM
Indeno(1,2,3-cd)pyrene	< 0.38	0.38	1.3		20	ug/L		03/28/07	SW846 3510C	8270C-SIM
Naphthalene	< 0.25	0.25	0.83		20	ug/L		03/28/07	SW846 3510C	8270C-SIM
Phenanthrene	1.3	0.23	0.76		20	ug/L		03/28/07	SW846 3510C	8270C-SIM
Pyrene	1.3	0.29	0.97		20	ug/L		03/28/07	SW846 3510C	8270C-SIM
Surrogate		**LCL**	**UCL**							
Nitrobenzene-d5	0	10	150		20	%	D	03/28/07	SW846 3510C	8270C-SIM
2-Fluorobiphenyl	0	20	111		20	%	D	03/28/07	SW846 3510C	8270C-SIM
Terphenyl-d14	0	44	115		20	%	D	03/28/07	SW846 3510C	8270C-SIM

Client : NATURAL RESOURCE TECHNOLOGY
Project Name : WPSC - OSHKOSH
Project Number : 1312
Field ID : TRIP BLANK

Matrix Type : WATER
Collection Date : 03/26/07
Report Date : 03/29/07
Lab Sample Number : 881945-002

BTEX

Prep Date: 03/29/07

Analyte		Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
Benzene	<	0.14	0.14	0.46		1	ug/L		03/29/07	SW846 5030B	SW846 8021B
Ethylbenzene	<	0.40	0.40	1.3		1	ug/L		03/29/07	SW846 5030B	SW846 8021B
Toluene	<	0.36	0.36	1.2		1	ug/L		03/29/07	SW846 5030B	SW846 8021B
Xylene, m + p	<	0.74	0.74	2.5		1	ug/L		03/29/07	SW846 5030B	SW846 8021B
Xylene, o	<	0.36	0.36	1.2		1	ug/L		03/29/07	SW846 5030B	SW846 8021B
Surrogate			**LCL**	**UCL**							
a,a,a-Trifluorotoluene		101	80	124		1	%		03/29/07	SW846 5030B	SW846 8021B

Lab Number	TestGroupID	Field ID	Comment
881945-	PAH+-W	All Samples	Inadequate sample volume received to perform the method required MS/MSD.

Qualifier Codes

Flag	Applies To	Explanation
A	Inorganic	Analyte is detected in the method blank. Method blank criteria is evaluated to the laboratory method detection limit. Additionally, method blank acceptance may be based on project specific criteria or determined from analyte concentrations in the sample and are evaluated on a sample by sample basis.
B	Inorganic	The analyte has been detected between the method detection limit and the reporting limit.
B	Organic	Analyte is present in the method blank. Method blank criteria is evaluated to the laboratory method detection limit. Additionally, method blank acceptance may be based on project specific criteria or determined from analyte concentrations in the sample and are evaluated on a sample by sample basis.
C	All	Elevated detection limit.
D	All	Analyte value from diluted analysis or surrogate result not applicable due to sample dilution.
E	Inorganic	Estimated concentration due to matrix interferences. During the metals analysis the serial dilution failed to meet the established control limits of 0-10%. The sample concentration is greater than 50 times the IDL for analysis done on the ICP or 100 times the IDL for analysis done on the ICP-MS. The result was flagged with the E qualifier to indicate that a physical interference was observed.
E	Organic	Analyte concentration exceeds calibration range.
F	Inorganic	Due to potential interferences for this analysis by Inductively Coupled Plasma techniques (SW-846 Method 6010), this analyte has been confirmed by and reported from an alternate method.
F	Organic	Surrogate results outside control criteria.
G	All	The result is estimated because the concentration is less than the lowest calibration standard concentration utilized in the initial calibration. The method detection limit is less than the reporting limit specified for this project.
H	All	Preservation, extraction or analysis performed past holding time.
HF	Inorganic	This test is considered a field parameter, and the recommended holding time is 15 minutes from collection. The analysis was performed in the laboratory beyond the recommended holding time.
J	All	Concentration detected equal to or greater than the method detection limit but less than the reporting limit.
K	Organic	Detection limit may be elevated due to the presence of an unrequested analyte.
L	All	Elevated detection limit due to low sample volume.
M	Organic	Sample pH was greater than 2
N	All	Spiked sample recovery not within control limits.
O	Organic	Sample received overweight.
P	Organic	The relative percent difference between the two columns for detected concentrations was greater than 40%.
Q	All	The analyte has been detected between the limit of detection (LOD) and limit of quantitation (LOQ). The results are qualified due to the uncertainty of analyte concentrations within this range.
S	Organic	The relative percent difference between quantitation and confirmation columns exceeds internal quality control criteria. Because the result is unconfirmed, it has been reported as a non-detect with an elevated detection limit.
U	All	The analyte was not detected at or above the reporting limit.
V	All	Sample received with headspace.
W	All	A second aliquot of sample was analyzed from a container with headspace.
X	All	See Sample Narrative.
Z	Organics	This compound was separated in the check standard but it did not meet the resolution criteria as set forth in SW846.
&	All	Laboratory Control Spike recovery not within control limits.
*	All	Precision not within control limits.
+	Inorganic	The sample result is greater than four times the spike level: therefore, the percent recovery is not evaluated.
<	All	The analyte was not detected at or above the reporting limit.
1	Inorganic	Dissolved analyte or filtered analyte greater than total analyte; analyses passed QC based on precision criteria.
2	Inorganic	Dissolved analyte or filtered analyte greater than total analyte; analyses failed QC based on precision criteria.
3	Inorganic	BOD result is estimated due to the BOD blank exceeding the allowable oxygen depletion.
4	Inorganic	BOD duplicate precision not within control limits. Due to the 48 hour holding time for this test, it is not practical to reanalyze and try to correct the deficiency.
5	Inorganic	BOD result is estimated due to insufficient oxygen depletion. Due to the 48 hour holding time for this test, it is not practical to reanalyze and try to correct the deficiency.
6	Inorganic	BOD laboratory control sample not within control limits. Due to the 48 hour holding time for this test, it is not practical to reanalyze and try to correct the deficiency.
7	Inorganic	BOD result is estimated due to complete oxygen depletion. Due to the 48 hour holding time for this test, it is not practical to reanalyze and try to correct the deficiency.
8	Inorganic	Sample was received unpreserved. Sample was preserved either at the time of receipt or at the time of sample preparation.
9	Inorganic	Sample was received with insufficient preservation. Acid was added either at the time of receipt or at the time of sample preparation.

Analysis Summary by Laboratory

Test Group Name	881945-001	881945-002
BTEX	G	G
CYANIDE, TOTAL	B	
PAH/ PNA	B	
SOLIDS, TOTAL SUSPENDED	B	

Code	WI Certification
B	405132750 / DATCP: 105-444
G	405132750

Pace Analytical Services, Inc.

QC Summary

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436
Fax: 920-469-8827

SDG: 881945
Lab Section: WETCHEM
QC Batch Number: 19237
Prep Method: EPA 160.2

QC Type	Client Sample ID	Lab Sample ID
MB	WCG2178-002MB	WCG2178-002MB
LCS	WCG2178-002MBLCS	WCG2178-002MBLCS
DUP	881935-001DUP	881935-001DUP
DUP	881905-001DUP	881905-001DUP

Analytical Method: EPA 160.2

Client Sample ID	**Lab Sample ID**		**Client Sample ID**	**Lab Sample ID**
032607001	881945-001	MB		

Test Name		Method Blank Result Conc	LCS Spiked Conc	LCS Recovery			LCSD Spiked Conc	LCSD Recovery			LCS/ LCSD RPD		LCS/LCSD Control Limits			Parent Sample Number	Parent Result Conc	Lab Dup Conc	Lab Dup RPD		Lab Dup RPD Limit
				Conc	%	C		Conc	%	C	%	C	LCL %	UCL %	RPD %				%	C	%
Total Suspended Solids	<	0.24	147.0	150	102.0		---	—	---		---		80	120	10	881905-001	64.00	60	6.5		10
Total Suspended Solids	<	0.24	147.0	150	102.0		---	—	---		---		80	120	10	881935-001	4.222	4.444	5.1		10

Conc = mg/L unless otherwise noted
C = QC Code, see Qualifer Sheet
Parent Result is reported down to MDL in order to allow Validation of this worksheet
The %R and RPD results are calculated from raw data values with more significant figures than are reported on this form.

Pace Analytical Services, Inc.

QC Summary

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436
Fax: 920-469-8827

Batch: 881945
Lab Section: BNASIM
QC Batch Number: 19264
Prep Method: SW846 3510C
Analytical Method: 8270C-SIM

QC Type	Client Sample ID	Lab Sample ID
MB	svog2114-28MB	svog2114-28MB
LCS	svog2114-28LCS	svog2114-28LCS
MS	881884-001MS	881884-001MS
MSD	881884-001MSD	881884-001MSD

Client Sample ID	Lab Sample ID	MB ID	Client Sample ID	Lab Sample ID	MB ID
032607001	881945-001	MB			

Test Name		Method Blank Result Conc	LCS Spiked Conc	LCS Recovery Conc	LCS Recovery %	C	LCSD Spiked Conc	LCSD Recovery Conc	LCSD Recovery %	C	LCS/LCSD RPD %	C	LCS/LCSD Control Limits LCL %	LCS/LCSD Control Limits UCL %	LCS/LCSD Control Limits RPD %	Parent Sample Number		Parent Result Conc	MS Spiked Conc	MS Recovery Conc	MS Recovery %	C	MSD Spiked Conc	MSD Recovery Conc	MSD Recovery %	C	MS/MSD RPD %	C	MS/MSD Control Limits LCL %	MS/MSD Control Limits UCL %	MS/MSD Control Limits RPD %
1-Methylnaphthalene	<	0.011	0.20	0.1	52		—	—	—		—		41	136	28	881884-001		0.010	0.19	0.14	68		0.19	0.15	73		7.1		52	113	34
2-Methylnaphthalene	<	0.012	0.20	0.11	54		—	—	—		—		40	138	26	881884-001	<	0.011	0.19	0.13	71		0.19	0.14	77		8.2		51	123	33
Acenaphthene	<	0.0086	0.20	0.11	54		—	—	—		—		40	126	23	881884-001	<	0.0082	0.19	0.13	69		0.19	0.14	72		4.1		56	113	24
Acenaphthylene	<	0.0086	0.20	0.11	53		—	—	—		—		39	127	24	881884-001	<	0.0082	0.19	0.13	71		0.19	0.14	74		4.1		56	115	24
Anthracene	<	0.012	0.20	0.1	51		—	—	—		—		39	139	27	881884-001		0.013	0.19	0.16	76		0.19	0.17	84		9.6		55	126	20
Benzo(a)anthracene	<	0.017	0.20	0.12	61		—	—	—		—		48	146	20	881884-001	<	0.016	0.19	0.14	75		0.19	0.15	79		5.6		45	150	20
Benzo(a)pyrene	<	0.019	0.20	0.13	64		—	—	—		—		61	136	20	881884-001	<	0.019	0.19	0.12	66	N	0.19	0.15	78		16.2		72	129	20
Benzo(b)fluoranthene	<	0.017	0.20	0.13	63		—	—	—		—		51	141	20	881884-001	<	0.016	0.19	0.13	68	N	0.19	0.15	81		17.8		72	134	20
Benzo(ghi)perylene	<	0.02	0.20	0.12	59		—	—	—		—		57	136	20	881884-001	<	0.019	0.19	0.11	59	N	0.19	0.14	73		20.2		72	128	20
Benzo(k)fluoranthene	<	0.02	0.20	0.15	75		—	—	—		—		61	149	20	881884-001	<	0.02	0.19	0.14	76		0.19	0.16	85		12.0		75	129	20
Chrysene	<	0.02	0.20	0.14	70		—	—	—		—		61	150	20	881884-001	<	0.019	0.19	0.14	76		0.19	0.15	79		3.0		71	136	20
Dibenz(a,h)anthracene	<	0.02	0.20	0.11	53		—	—	—		—		46	150	20	881884-001	<	0.019	0.19	0.1	56		0.19	0.13	67		18.9		43	150	20
Fluoranthene	<	0.016	0.20	0.15	75		—	—	—		—		48	145	20	881884-001	<	0.016	0.19	0.17	88		0.19	0.17	91		2.8		58	137	20
Fluorene	<	0.0096	0.20	0.11	54		—	—	—		—		40	131	25	881884-001	<	0.0091	0.19	0.13	70		0.19	0.15	77		9.9		56	121	21
Indeno(1,2,3-cd)pyrene	<	0.02	0.20	0.12	58		—	—	—		—		54	143	20	881884-001	<	0.019	0.19	0.11	58	N	0.19	0.13	71		20.1		71	140	20
Naphthalene	<	0.013	0.20	0.11	55		—	—	—		—		45	131	30	881884-001		0.074	0.19	0.14	34	N	0.19	0.14	36	N	2.1		53	107	31
Phenanthrene	<	0.012	0.20	0.12	61		—	—	—		—		40	131	25	881884-001	<	0.011	0.19	0.15	79		0.19	0.15	81		2.7		58	138	20
Pyrene	<	0.015	0.20	0.12	62		—	—	—		—		55	135	20	881884-001	<	0.015	0.19	0.15	79		0.19	0.15	81		2.5		71	136	20
Nitrobenzene-d5		62%	—	—	50		—	—	—		—		10	150	—	881884-001		60%	—	—	65		—	—	68		—		10	150	—
2-Fluorobiphenyl		67%	—	—	51		—	—	—		—		20	111	—	881884-001		63%	—	—	65		—	—	68		—		20	111	—
Terphenyl-d14		73%	—	—	83		—	—	—		—		44	115	—	881884-001		80%	—	—	162	F	—	—	77		—		44	115	—

Conc = ug/L unless otherwise noted
C = QC Code, see Qualifer Sheet
Parent Result is reported down to MDL in order to allow Validation of this worksheet
The %R and RPD results are calculated from raw data values with more significant figures than are reported on this form.

Pace Analytical Services, Inc.

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436
Fax: 920-469-8827

QC Summary

Batch:	881945
Lab Section:	GAS
QC Batch Number:	19241
Prep Method:	SW846 5030B
Analytical Method:	SW846 8021B

QC Type	Client Sample ID	Lab Sample ID
MB	GG2177-1MB	GG2177-1MB
LCS	GG2177-1MBLCS	GG2177-1MBLCS
LCSD	GG2177-1MBLCSD	GG2177-1MBLCSD
MS	881984-012MS	881984-012MS
MSD	881984-012MSD	881984-012MSD

Client Sample ID	Lab Sample ID	MB ID	Client Sample ID	Lab Sample ID	MB ID
032607001	881945-001	MB	TRIP BLANK	881945-002	MB

Test Name	Method Blank Result Conc	LCS Spiked Conc	LCS Recovery			LCSD Spiked Conc	LCSD Recovery			LCS/ LCSD RPD		LCS/LCSD Control Limits			Parent Sample Number	Parent Result Conc	MS Spiked Conc	MS Recovery			MSD Spiked Conc	MSD Recovery			MS/ MSD RPD		MS/MSD Control Limits		
			Conc	%	C		Conc	%	C	%	C	LCL %	UCL %	RPD %				Conc	%	C		Conc	%	C	%	C	LCL %	UCL %	RPD %
Benzene	< 0.14	20.000	21.9	110		20.000	21.1	105		4.1		85	115	20	881984-012	1330.0	200.00	1570.6	120		200.00	1569.2	120		0.1		80	120	20
Ethylbenzene	< 0.4	20.00	21.6	108		20.00	21	105		3.0		85	115	20	881984-012	537.1	200.0	759	111		200.0	778.1	120		2.5		80	120	20
Toluene	< 0.36	20.00	21.9	110		20.00	21.2	106		3.4		85	115	20	881984-012	74.19	200.0	291.7	109		200.0	298.8	112		2.4		80	120	20
Xylene, m + p	< 0.74	40.000	42.6	107		40.000	41.4	103		3.0		85	115	20	881984-012	1126.2	400.00	1572.1	111		400.00	1608.2	120		2.3		78	124	20
Xylene, o	< 0.36	20.00	21.1	105		20.00	20.6	103		2.4		85	115	20	881984-012	59.39	200.0	262.7	102		200.0	274.7	108		4.5		80	120	20
a,a,a-Trifluorotoluene	100%	—	—	101		—	—	101		—		80	124	—	881984-012	97%	—	—	97		—	—	97		—		80	124	—

Conc = ug/L unless otherwise noted
C = QC Code, see Qualifer Sheet
Parent Result is reported down to MDL in order to allow Validation of this worksheet
The %R and RPD results are calculated from raw data values with more significant figures than are reported on this form.

Pace Analytical Services, Inc.

QC Summary

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436
Fax: 920-469-8827

Batch: 881945
Lab Section: WETCHEM
QC Batch Number: 19229
Prep Method: EPA 335.4
Analytical Method: EPA 335.4

QC Type	Client Sample ID	Lab Sample ID
MB	WCG2151-073MB	WCG2151-073MB
LCS	WCG2151-073MBLCS	WCG2151-073MBLCS
MS	881987-001MS	881987-001MS
MS	881884-003MS	881884-003MS
MSD	881987-001MSD	881987-001MSD
MSD	881884-003MSD	881884-003MSD

Client Sample ID	Lab Sample ID	MB ID	Client Sample ID	Lab Sample ID	MB ID
032607001	881945-001	MB			

Test Name	Method Blank Result Conc	LCS Spiked Conc	LCS Recovery			LCSD Spiked Conc	LCSD Recovery			LCS/ LCSD RPD		LCS/LCSD Control Limits			Parent Sample Number	Parent Result Conc	MS Spiked Conc	MS Recovery			MSD Spiked Conc	MSD Recovery			MS/ MSD RPD		MS/MSD Control Limits		
			Conc	%	C		Conc	%	C	%	C	LCL %	UCL %	RPD %				Conc	%	C		Conc	%	C	%	C	LCL %	UCL %	RPD %
Cyanide, Total	< 0.0094	0.10	0.11	109.2		—	—	—		—		90	110	20	881884-003	1.4	0.10	1.5	124.6	+	0.10	1.4	86.1	+	2.6		90	110	20
Cyanide, Total	< 0.0094	0.10	0.11	109.2		—	—	—		—		90	110	20	881987-001	< 0.0094	0.10	0.12	124.9	N	0.10	0.12	123.5	N	1.1		90	110	20

Conc = mg/L unless otherwise noted
C = QC Code, see Qualifer Sheet
Parent Result is reported down to MDL in order to allow Validation of this worksheet
The %R and RPD results are calculated from raw data values with more significant figures than are reported on this form.

Report Date: 3/29/2007
QC Batch Number: 19229

Sample Condition Upon Receipt

Pace Analytical

Client Name: NRT **Project #** 881945

Optional
Proj. Due Date:
Proj. Name:

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☒ Client ☐ Commercial ☐ Pace Other ______

Tracking #: ______

Custody Seal on Cooler/Box Present: ☐ yes ☒ no Seals intact: ☐ yes ☐ no

Packing Material: ☐ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other ______

Thermometer Used N/A **Type of Ice:** [✓ Wet] Blue None ☐ Samples on ice, cooling process has begun

Cooler Temperature ROT **Biological Tissue is Frozen:** Yes No

Temp should be above freezing to 6°C

Date and Initials of person examining contents: KLS 3-26-07
3-26-07

Comments:

Chain of Custody Present:	☒ Yes ☐ No ☐ N/A	1.
Chain of Custody Filled Out:	☒ Yes ☐ No ☐ N/A	2.
Chain of Custody Relinquished:	☒ Yes ☐ No ☐ N/A	3.
Sampler Name & Signature on COC:	☒ Yes ☐ No ☐ N/A	4.
Samples Arrived within Hold Time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time Analysis (<72hr):	☐ Yes ☒ No ☐ N/A	6.
Rush Turn Around Time Requested:	☐ Yes ☒ No ☐ N/A	7.
Sufficient Volume:	☒ Yes ☐ No ☐ N/A	8.
Correct Containers Used:	☒ Yes ☐ No ☐ N/A	9.
-Pace Containers Used:	☒ Yes ☐ No ☐ N/A	
Containers Intact:	☒ Yes ☐ No ☐ N/A	10.
Filtered volume received for Dissolved tests	☐ Yes ☒ No ☐ N/A	11.
Sample Labels match COC:	☒ Yes ☐ No ☐ N/A	12.
-Includes date/time/ID/Analysis Matrix: WW		
All containers needing preservation have been checked.	☐ Yes ☐ No ☒ N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐ Yes ☐ No ☒ N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	☐ Yes ☐ No	Initial when completed / Lot # of added preservative
Samples checked for dechlorination:	☐ Yes ☐ No ☒ N/A	14.
Headspace in VOA Vials (>6mm):	☐ Yes ☐ No ☐ N/A	15.
Trip Blank Present:	☒ Yes ~~☒ No~~ kD ☐ N/A	16.
Trip Blank Custody Seals Present	☒ Yes ☐ No ☐ N/A	
Pace Trip Blank Lot # (if purchased): ______		

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: ______ Date/Time: ______

Comments/ Resolution: ______

Project Manager Review: ______ **Date:** 3-27-07

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Page 1 of 1 86 12

Pace Analytical®
www.pacelabs.com

UPPER MIDWEST REGION
MN: 612-607-1700 WI: 920-469-2436

CHAIN OF CUSTODY

(Please Print Clearly)

Company Name:	Natural Resource Technology Inc.
Branch/Location:	Pewaukee, WI
Project Contact:	Heather Simon/Jody Barbeau
Phone:	262-522-1207
Project Number:	1312
Project Name:	WPSC - Oshkosh
Project State:	Wisconsin
Sampled By (Print):	Mike Mason - (WPSC)
Sampled By (Sign):	Mike Mason
PO #:	
Regulatory Program:	

COC No.

Quote #:	
Mail To Contact:	Jody Barbeau
Mail To Company:	Natural Resource Technology Inc.
Mail To Address:	23713 W. Paul Road Unit D Pewaukee, WI. 53072
Invoice To Contact:	
Invoice To Company:	Natural Resource Technology Inc.
Invoice To Address:	Same
Invoice To Phone:	

*Preservation Codes
A=None B=HCL C=H2SO4 D=HNO3 E=DI Water F=Methanol G=NaOH
H=Sodium Bisulfate Solution I=Sodium Thiosulfate J=Other

Data Package Options (billable)
☐ EPA Level III
☐ EPA Level IV

MS/MSD
☐ On your sample (billable)
☐ NOT needed on your sample

Matrix Codes
A = Air W = Water
B = Biota DW = Drinking Water
C = Charcoal GW = Ground Water
O = Oil SW = Surface Water
S = Soil WW = Waste Water
Sl = Sludge WP = Wipe

					Analyses Requested	BTEX (8021B)	PAH (8270C - SIM)	Total Cyanide (9012A)	TSS (EPA 160.2)					CLIENT COMMENTS	LAB COMMENTS (Lab Use Only)	Profile #
				FILTERED? (YES/NO)	Y/N	N	N	N	N							
				PRESERVATION (CODE)*	Pick Letter	B	A	G	A							
PACE LAB #	**CLIENT FIELD ID**	COLLECTION DATE	COLLECTION TIME	MATRIX												
001	032607001	3/26/07	14:20	WW		X	X	X	X						1-1LAG ~~[illegible]~~ 1-1L poly, 1-250 poly, 3-40oz vial	
002	trip blank*														2-40oz vial	

*Added to COC by recieving. KW

Rush Turnaround Time Requested - Prelims
(Rush TAT subject to approval/surcharge)
Date Needed: **Normal Turn**

Transmit Prelim Rush Results by (complete what you want):

Email #1:	jbarbeau@naturalrt.com
Email #2:	
Telephone:	262-523-9000
Fax:	262-523-9001

Samples on HOLD are subject to special pricing and release of liability

Relinquished By:	Date/Time:	Received By:	Date/Time:
Mike Mason	3/26/07 16:00	S Schnider	3-26-07 1600

PACE Project No. 881945

Receipt Temp = ROI °C

Sample Receipt pH
OK / Adjusted

Cooler Custody Seal
Present / Not Present
Intact / Not Intact

Version 6.0 06/14/06

C019a(27Jun2006)

Pace Analytical®

1241 Bellevue Street, Suite 9
Green Bay, WI 54302
920-469-2436, Fax: 920-469-8827

Analytical Report Number: 885345

Client: NATURAL RESOURCE TECHNOLOGY

Lab Contact: Brian Basten

Project Name: WPSC-OSHKOSH

Project Number: 1312

Lab Sample Number	Field ID	Matrix	Collection Date
885345-001	062607001	WATER	06/26/07 13:30
885345-002	062607002	WATER	06/26/07 13:20
885345-003	TRIP BLANK	WATER	06/26/07

I certify that the data contained in this Final Report has been generated and reviewed in accordance with approved methods and Laboratory Standard Operating Procedure. Exceptions, if any, are discussed in the accompanying sample comments. Release of this final report is authorized by Laboratory management, as is verified by the following signature. This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc. The sample results relate only to the analytes of interest tested.

Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

REPORT OF LABORATORY ANALYSIS

Approval Signature

7-11-07

Date

Client : NATURAL RESOURCE TECHNOLOGY
Project Name : WPSC-OSHKOSH
Project Number : 1312
Field ID : 062607001

Matrix Type : WATER
Collection Date : 06/26/07
Report Date : 07/11/07
Lab Sample Number : 885345-001

INORGANICS

Test	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date/Time	Prep Method	Anl Method
Cyanide, Total	0.89	0.030	0.09		5	mg/L		07/10/07 04:44 PM	EPA 335.4	EPA 335.4

Prep Date/Time: 07/10/07 11:28 AM **Anl By:** DAW

BTEX

Prep Date/Time: 06/28/07 12:05 PM **Anl By:** SES

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date/Time	Prep Method	Anl Method
Benzene	100	0.28	0.92		2	ug/L		06/28/07 12:05 PM	SW846 5030B	SW846 8021B
Ethylbenzene	430	0.80	2.7		2	ug/L		06/28/07 12:05 PM	SW846 5030B	SW846 8021B
Toluene	27	0.71	2.4		2	ug/L		06/28/07 12:05 PM	SW846 5030B	SW846 8021B
Xylene, m + p	110	1.5	4.9		2	ug/L		06/28/07 12:05 PM	SW846 5030B	SW846 8021B
Xylene, o	130	0.72	2.4		2	ug/L		06/28/07 12:05 PM	SW846 5030B	SW846 8021B
Surrogate		**LCL**	**UCL**							
a,a,a-Trifluorotoluene	98	80	124		1	%		06/28/07	SW846 5030B	SW846 8021B

PAH/ PNA

Prep Date/Time: 06/29/07 8:32 AM **Anl By:** RJN

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date/Time	Prep Method	Anl Method
1-Methylnaphthalene	57	20	68		2000	ug/L	QD	07/03/07 8:42 AM	SW846 3510C	8270C-SIM
2-Methylnaphthalene	23	1.1	3.7		100	ug/L		06/29/07 9:49 PM	SW846 3510C	8270C-SIM
Acenaphthene	20	0.82	2.7		100	ug/L		06/29/07 9:49 PM	SW846 3510C	8270C-SIM
Acenaphthylene	13	0.81	2.7		100	ug/L		06/29/07 9:49 PM	SW846 3510C	8270C-SIM
Anthracene	4.2	1.2	3.9		100	ug/L		06/29/07 9:49 PM	SW846 3510C	8270C-SIM
Benzo(a)anthracene	< 1.6	1.6	5.2		100	ug/L		06/29/07 9:49 PM	SW846 3510C	8270C-SIM
Benzo(a)pyrene	< 1.8	1.8	6.1		100	ug/L		06/29/07 9:49 PM	SW846 3510C	8270C-SIM
Benzo(b)fluoranthene	< 1.6	1.6	5.2		100	ug/L	Z	06/29/07 9:49 PM	SW846 3510C	8270C-SIM
Benzo(ghi)perylene	< 1.9	1.9	6.4		100	ug/L		06/29/07 9:49 PM	SW846 3510C	8270C-SIM
Benzo(k)fluoranthene	< 1.9	1.9	6.4		100	ug/L	Z	06/29/07 9:49 PM	SW846 3510C	8270C-SIM
Chrysene	< 1.9	1.9	6.3		100	ug/L		06/29/07 9:49 PM	SW846 3510C	8270C-SIM
Dibenz(a,h)anthracene	< 1.9	1.9	6.3		100	ug/L		06/29/07 9:49 PM	SW846 3510C	8270C-SIM
Fluoranthene	2.0	1.5	5.2		100	ug/L	Q	06/29/07 9:49 PM	SW846 3510C	8270C-SIM
Fluorene	9.9	0.91	3.0		100	ug/L		06/29/07 9:49 PM	SW846 3510C	8270C-SIM
Indeno(1,2,3-cd)pyrene	< 1.9	1.9	6.3		100	ug/L		06/29/07 9:49 PM	SW846 3510C	8270C-SIM
Naphthalene	350	25	83		2000	ug/L	D	07/03/07 8:42 AM	SW846 3510C	8270C-SIM
Phenanthrene	12	1.1	3.8		100	ug/L		06/29/07 9:49 PM	SW846 3510C	8270C-SIM
Pyrene	1.9	1.5	4.8		100	ug/L	Q	06/29/07 9:49 PM	SW846 3510C	8270C-SIM
Surrogate		**LCL**	**UCL**							
Nitrobenzene-d5	0.0	10	150		100	%	D	06/29/07	SW846 3510C	8270C-SIM
2-Fluorobiphenyl	0.0	20	111		100	%	D	06/29/07	SW846 3510C	8270C-SIM
Terphenyl-d14	0.0	44	115		100	%	D	06/29/07	SW846 3510C	8270C-SIM

Client : NATURAL RESOURCE TECHNOLOGY
Project Name : WPSC-OSHKOSH
Project Number : 1312
Field ID : 062607002

Matrix Type : WATER
Collection Date : 06/26/07
Report Date : 07/11/07
Lab Sample Number : 885345-002

INORGANICS

Test	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date/Time	Prep Method	Anl Method
Cyanide, Total	0.78	0.030	0.09		5	mg/L		07/10/07 04:49 PM	EPA 335.4	EPA 335.4

Prep Date/Time: 07/10/07 11:28 AM **Anl By:** DAW

BTEX

Prep Date/Time: 06/28/07 12:38 PM **Anl By:** SES

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date/Time	Prep Method	Anl Method
Benzene	12	0.14	0.46		1	ug/L		06/28/07 12:38 PM	SW846 5030B	SW846 8021B
Ethylbenzene	45	0.40	1.3		1	ug/L		06/28/07 12:38 PM	SW846 5030B	SW846 8021B
Toluene	2.9	0.36	1.2		1	ug/L		06/28/07 12:38 PM	SW846 5030B	SW846 8021B
Xylene, m + p	13	0.74	2.5		1	ug/L		06/28/07 12:38 PM	SW846 5030B	SW846 8021B
Xylene, o	19	0.36	1.2		1	ug/L		06/28/07 12:38 PM	SW846 5030B	SW846 8021B
Surrogate		**LCL**	**UCL**							
a,a,a-Trifluorotoluene	100	80	124		1	%		06/28/07	SW846 5030B	SW846 8021B

PAH/ PNA

Prep Date/Time: 06/29/07 8:32 AM **Anl By:** RJN

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date/Time	Prep Method	Anl Method
1-Methylnaphthalene	0.75	0.20	0.68		20	ug/L		06/29/07 7:49 PM	SW846 3510C	8270C-SIM
2-Methylnaphthalene	< 0.22	0.22	0.75		20	ug/L		06/29/07 7:49 PM	SW846 3510C	8270C-SIM
Acenaphthene	5.5	0.16	0.54		20	ug/L		06/29/07 7:49 PM	SW846 3510C	8270C-SIM
Acenaphthylene	0.53	0.16	0.54		20	ug/L	Q	06/29/07 7:49 PM	SW846 3510C	8270C-SIM
Anthracene	0.87	0.23	0.77		20	ug/L		06/29/07 7:49 PM	SW846 3510C	8270C-SIM
Benzo(a)anthracene	< 0.31	0.31	1.0		20	ug/L		06/29/07 7:49 PM	SW846 3510C	8270C-SIM
Benzo(a)pyrene	< 0.37	0.37	1.2		20	ug/L		06/29/07 7:49 PM	SW846 3510C	8270C-SIM
Benzo(b)fluoranthene	< 0.31	0.31	1.0		20	ug/L	Z	06/29/07 7:49 PM	SW846 3510C	8270C-SIM
Benzo(ghi)perylene	< 0.39	0.39	1.3		20	ug/L		06/29/07 7:49 PM	SW846 3510C	8270C-SIM
Benzo(k)fluoranthene	< 0.39	0.39	1.3		20	ug/L	Z	06/29/07 7:49 PM	SW846 3510C	8270C-SIM
Chrysene	< 0.38	0.38	1.3		20	ug/L		06/29/07 7:49 PM	SW846 3510C	8270C-SIM
Dibenz(a,h)anthracene	< 0.38	0.38	1.3		20	ug/L		06/29/07 7:49 PM	SW846 3510C	8270C-SIM
Fluoranthene	1.7	0.31	1.0		20	ug/L		06/29/07 7:49 PM	SW846 3510C	8270C-SIM
Fluorene	2.5	0.18	0.60		20	ug/L		06/29/07 7:49 PM	SW846 3510C	8270C-SIM
Indeno(1,2,3-cd)pyrene	< 0.38	0.38	1.3		20	ug/L		06/29/07 7:49 PM	SW846 3510C	8270C-SIM
Naphthalene	< 0.25	0.25	0.83		20	ug/L		06/29/07 7:49 PM	SW846 3510C	8270C-SIM
Phenanthrene	< 0.23	0.23	0.76		20	ug/L		06/29/07 7:49 PM	SW846 3510C	8270C-SIM
Pyrene	1.7	0.29	0.97		20	ug/L		06/29/07 7:49 PM	SW846 3510C	8270C-SIM
Surrogate		**LCL**	**UCL**							
Nitrobenzene-d5	0	10	150		20	%	D	06/29/07	SW846 3510C	8270C-SIM
2-Fluorobiphenyl	0	20	111		20	%	D	06/29/07	SW846 3510C	8270C-SIM
Terphenyl-d14	0	44	115		20	%	D	06/29/07	SW846 3510C	8270C-SIM

Client : NATURAL RESOURCE TECHNOLOGY
Project Name : WPSC-OSHKOSH
Project Number : 1312
Field ID : TRIP BLANK

Matrix Type : WATER
Collection Date : 06/26/07
Report Date : 07/11/07
Lab Sample Number : 885345-003

BTEX **Prep Date/Time:** 06/28/07 2:14 PM **Anl By:** SES

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date/Time	Prep Method	Anl Method
Benzene	< 0.14	0.14	0.46		1	ug/L		06/28/07 2:14 PM	SW846 5030B	SW846 8021B
Ethylbenzene	< 0.40	0.40	1.3		1	ug/L		06/28/07 2:14 PM	SW846 5030B	SW846 8021B
Toluene	< 0.36	0.36	1.2		1	ug/L		06/28/07 2:14 PM	SW846 5030B	SW846 8021B
Xylene, m + p	< 0.74	0.74	2.5		1	ug/L		06/28/07 2:14 PM	SW846 5030B	SW846 8021B
Xylene, o	< 0.36	0.36	1.2		1	ug/L		06/28/07 2:14 PM	SW846 5030B	SW846 8021B
Surrogate		**LCL**	**UCL**							
a,a,a-Trifluorotoluene	101	80	124		1	%		06/28/07	SW846 5030B	SW846 8021B

Qualifier Codes

Flag	Applies To	Explanation
A	Inorganic	Analyte is detected in the method blank. Method blank criteria is evaluated to the laboratory method detection limit. Additionally, method blank acceptance may be based on project specific criteria or determined from analyte concentrations in the sample and are evaluated on a sample by sample basis.
B	Inorganic	The analyte has been detected between the method detection limit and the reporting limit.
B	Organic	Analyte is present in the method blank. Method blank criteria is evaluated to the laboratory method detection limit. Additionally, method blank acceptance may be based on project specific criteria or determined from analyte concentrations in the sample and are evaluated on a sample by sample basis.
C	All	Elevated detection limit.
D	All	Analyte value from diluted analysis or surrogate result not applicable due to sample dilution.
E	Inorganic	Estimated concentration due to matrix interferences. During the metals analysis the serial dilution failed to meet the established control limits of 0-10%. The sample concentration is greater than 50 times the IDL for analysis done on the ICP or 100 times the IDL for analysis done on the ICP-MS. The result was flagged with the E qualifier to indicate that a physical interference was observed.
E	Organic	Analyte concentration exceeds calibration range.
F	Inorganic	Due to potential interferences for this analysis by Inductively Coupled Plasma techniques (SW-846 Method 6010), this analyte has been confirmed by and reported from an alternate method.
F	Organic	Surrogate results outside control criteria.
G	All	The result is estimated because the concentration is less than the lowest calibration standard concentration utilized in the initial calibration. The method detection limit is less than the reporting limit specified for this project.
H	All	Preservation, extraction or analysis performed past holding time.
HF	Inorganic	This test is considered a field parameter, and the recommended holding time is 15 minutes from collection. The analysis was performed in the laboratory beyond the recommended holding time.
J	All	Concentration detected equal to or greater than the method detection limit but less than the reporting limit.
K	Organic	Detection limit may be elevated due to the presence of an unrequested analyte.
L	All	Elevated detection limit due to low sample volume.
M	Organic	Sample pH was greater than 2
N	All	Spiked sample recovery not within control limits.
O	Organic	Sample received overweight.
P	Organic	The relative percent difference between the two columns for detected concentrations was greater than 40%.
Q	All	The analyte has been detected between the limit of detection (LOD) and limit of quantitation (LOQ). The results are qualified due to the uncertainty of analyte concentrations within this range.
S	Organic	The relative percent difference between quantitation and confirmation columns exceeds internal quality control criteria. Because the result is unconfirmed, it has been reported as a non-detect with an elevated detection limit.
U	All	The analyte was not detected at or above the reporting limit.
V	All	Sample received with headspace.
W	All	A second aliquot of sample was analyzed from a container with headspace.
X	All	See Sample Narrative.
Z	Organics	This compound was separated in the CCV standard but it did not meet the resolution criteria as set forth in SW846.
&	All	Laboratory Control Spike recovery not within control limits.
*	All	Precision not within control limits.
+	Inorganic	The sample result is greater than four times the spike level: therefore, the percent recovery is not evaluated.
<	All	The analyte was not detected at or above the reporting limit.
1	Inorganic	Dissolved analyte or filtered analyte greater than total analyte; analyses passed QC based on precision criteria.
2	Inorganic	Dissolved analyte or filtered analyte greater than total analyte; analyses failed QC based on precision criteria.
3	Inorganic	BOD result is estimated due to the BOD blank exceeding the allowable oxygen depletion.
4	Inorganic	BOD duplicate precision not within control limits. Due to the 48 hour holding time for this test, it is not practical to reanalyze and try to correct the deficiency.
5	Inorganic	BOD result is estimated due to insufficient oxygen depletion. Due to the 48 hour holding time for this test, it is not practical to reanalyze and try to correct the deficiency.
6	Inorganic	BOD laboratory control sample not within control limits. Due to the 48 hour holding time for this test, it is not practical to reanalyze and try to correct the deficiency.
7	Inorganic	BOD result is estimated due to complete oxygen depletion. Due to the 48 hour holding time for this test, it is not practical to reanalyze and try to correct the deficiency.
8	Inorganic	Sample was received unpreserved. Sample was preserved either at the time of receipt or at the time of sample preparation.
9	Inorganic	Sample was received with insufficient preservation. Acid was added either at the time of receipt or at the time of sample preparation.

Analysis Summary by Laboratory

Test Group Name	885345-001	885345-002	885345-003
BTEX	G	G	G
CYANIDE, TOTAL	B	B	
PAH/ PNA	B	B	

Code	WI Certification
B	405132750 / DATCP: 105-444
G	405132750

Pace Analytical Services, Inc.

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436
Fax: 920-469-8827

QC Summary

Batch: 885345
Lab Section: BNASIM
QC Batch Number: 22451
Prep Method: SW846 3510C
Analytical Method: 8270C-SIM

QC Type	Client Sample ID	Lab Sample ID
MB	svog2114-81MB	svog2114-81MB
LCS	svog2114-81LCS	svog2114-81LCS
MS	885348-001MS	885348-001MS
MSD	885348-001MSD	885348-001MSD

Client Sample ID	Lab Sample ID	MB ID
062607001	885345-001	MB
062607002	885345-002	MB

Test Name		Method Blank Result Conc	LCS Spiked Conc	LCS Recovery			LCSD Spiked Conc	LCSD Recovery			LCS/ LCSD RPD		LCS/LCSD Control Limits			Parent Sample Number		Parent Result Conc	MS Spiked Conc	MS Recovery			MSD Spiked Conc	MSD Recovery			MS/ MSD RPD		MS/MSD Control Limits		
				Conc	%	C		Conc	%	C	%	C	LCL %	UCL %	RPD %					Conc	%	C		Conc	%	C	%	C	LCL %	UCL %	RPD %
1-Methylnaphthalene	<	0.011	0.20	0.12	58		---	---	---		---		41	136	28	885348-001	<	0.01	0.19	0.12	64		0.19	0.092	49	N	27.4		52	113	34
2-Methylnaphthalene	<	0.012	0.20	0.12	60		---	---	---		---		40	138	26	885348-001	<	0.011	0.19	0.11	58		0.19	0.097	51		12.9		51	123	33
Acenaphthene	<	0.0086	0.20	0.12	61		---	---	---		---		40	126	23	885348-001	<	0.0082	0.19	0.11	57		0.19	0.1	53	N	7.1		56	113	24
Acenaphthylene	<	0.0086	0.20	0.12	59		---	---	---		---		39	127	24	885348-001	<	0.0081	0.19	0.11	58		0.19	0.098	52	N	10.6		56	115	24
Anthracene	<	0.012	0.20	0.12	59		---	---	---		---		39	139	27	885348-001	<	0.012	0.19	0.12	63		0.19	0.11	58		6.9		55	126	20
Benzo(a)anthracene	<	0.017	0.20	0.13	65		---	---	---		---		48	146	20	885348-001	<	0.016	0.19	0.13	69		0.19	0.12	66		4.7		45	150	20
Benzo(a)pyrene	<	0.019	0.20	0.17	84		---	---	---		---		61	136	20	885348-001	<	0.018	0.19	0.16	85		0.19	0.15	82		3.4		72	129	20
Benzo(b)fluoranthene	<	0.017	0.20	0.14	72		---	---	---		---		51	141	20	885348-001	<	0.016	0.19	0.15	81		0.19	0.14	73		10.3		72	134	20
Benzo(ghi)perylene	<	0.02	0.20	0.16	82		---	---	---		---		57	136	20	885348-001	<	0.019	0.19	0.16	84		0.19	0.16	82		1.5		72	128	20
Benzo(k)fluoranthene	<	0.02	0.20	0.18	91		---	---	---		---		61	149	20	885348-001	<	0.019	0.19	0.17	90		0.19	0.17	91		1.5		75	129	20
Chrysene	<	0.02	0.20	0.15	75		---	---	---		---		61	150	20	885348-001	<	0.019	0.19	0.15	78		0.19	0.15	80		2.4		71	136	20
Dibenz(a,h)anthracene	<	0.02	0.20	0.17	86		---	---	---		---		46	150	20	885348-001	<	0.019	0.19	0.16	86		0.19	0.16	84		1.7		43	150	20
Fluoranthene	<	0.016	0.20	0.13	66		---	---	---		---		48	145	20	885348-001	<	0.015	0.19	0.14	75		0.19	0.12	64		16.5		58	137	20
Fluorene	<	0.0096	0.20	0.11	57		---	---	---		---		40	131	25	885348-001	<	0.0091	0.19	0.11	56		0.19	0.097	51	N	9.3		56	121	21
Indeno(1,2,3-cd)pyrene	<	0.02	0.20	0.17	85		---	---	---		---		54	143	20	885348-001	<	0.019	0.19	0.16	86		0.19	0.16	86		0.3		71	140	20
Naphthalene	<	0.013	0.20	0.13	63		---	---	---		---		45	131	30	885348-001		0.013	0.19	0.13	62		0.19	0.12	55		10.9		53	107	31
Phenanthrene	<	0.012	0.20	0.11	56		---	---	---		---		40	131	25	885348-001	<	0.011	0.19	0.12	61		0.19	0.1	54	N	13.1		58	138	20
Pyrene	<	0.015	0.20	0.12	59		---	---	---		---		55	135	20	885348-001	<	0.015	0.19	0.12	61	N	0.19	0.1	54	N	11.6		71	136	20
Nitrobenzene-d5		41%	---	---	45		---	---	---		---		10	150	---	885348-001		45%	---	---	48		---	---	44		---		10	150	---
2-Fluorobiphenyl		48%	---	---	58		---	---	---		---		20	111	---	885348-001		50%	---	---	55		---	---	47		---		20	111	---
Terphenyl-d14		57%	---	---	62		---	---	---		---		44	115	---	885348-001		60%	---	---	61		---	---	64		---		44	115	---

Conc = ug/L unless otherwise noted
C = QC Code, see Qualifer Sheet
Parent Result is reported down to MDL in order to allow Validation of this worksheet
The %R and RPD results are calculated from raw data values with more significant figures than are reported on this form.

Report Date: 7/11/2007
QC Batch Number: 22451

QC Summary

Batch: 885345
Lab Section: GAS
QC Batch Number: 22343
Prep Method: SW846 5030B
Analytical Method: SW846 8021B

QC Type	Client Sample ID	Lab Sample ID
MB	GG2214-81MB	GG2214-81MB
LCS	GG2214-81MBLCS	GG2214-81MBLCS
LCSD	GG2214-81MBLCSD	GG2214-81MBLCSD
MS	062607002MS	885345-002MS
MSD	062607002MSD	885345-002MSD

Client Sample ID	Lab Sample ID	MB ID
062607001	885345-001	MB
TRIP BLANK	885345-003	MB

Client Sample ID	Lab Sample ID	MB ID
062607002	885345-002	MB

Test Name		Method Blank Result Conc	LCS Spiked Conc	LCS Recovery			LCSD Spiked Conc	LCSD Recovery			LCS/ LCSD RPD		LCS/LCSD Control Limits			Parent Sample Number		Parent Result Conc	MS Spiked Conc	MS Recovery			MSD Spiked Conc	MSD Recovery			MS/ MSD RPD		MS/MSD Control Limits		
				Conc	%	C		Conc	%	C	%	C	LCL %	UCL %	RPD %					Conc	%	C		Conc	%	C	%	C	LCL %	UCL %	RPD %
Benzene	<	0.14	20.0	21	105		20.0	21.3	107		1.3		85	115	20	885345-002		12.2	20.0	33	104		20.0	32.7	103		0.7		80	120	20
Ethylbenzene	<	0.4	20.0	21.4	107		20.0	21.6	108		1.2		85	115	20	885345-002		45.3	20.0	65	98		20.0	64.3	95		1.0		80	120	20
Toluene	<	0.36	20.0	21.2	106		20.0	21.4	107		1.3		85	115	20	885345-002		2.91	20.0	24.5	108		20.0	24.5	108		0.2		80	120	20
Xylene, m + p	<	0.74	40.0	43.3	108		40.0	43.9	110		1.4		85	115	20	885345-002		13.1	40.0	56.9	109		40.0	56.7	109		0.4		78	124	20
Xylene, o	<	0.36	20.0	21.2	106		20.0	21.5	108		1.3		85	115	20	885345-002		18.8	20.0	39.4	103		20.0	39.2	102		0.5		80	120	20
a,a,a-Trifluorotoluene		101%	—	—	100		—	—	99		—		80	124	—	885345-002		100%	—	—	98		—	—	98		—		80	124	—

Conc = ug/L unless otherwise noted
C = QC Code, see Qualifer Sheet
Parent Result is reported down to MDL in order to allow Validation of this worksheet
The %R and RPD results are calculated from raw data values with more significant figures than are reported on this form.

Report Date: 7/11/2007
QC Batch Number: 22343

Pace Analytical Services, Inc.

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436
Fax: 920-469-8827

QC Summary

Batch:	885345
Lab Section:	WETCHEM
QC Batch Number:	22699
Prep Method:	EPA 335.4
Analytical Method:	EPA 335.4

QC Type	Client Sample ID	Lab Sample ID
MB	WCG2244-035MB	WCG2244-035MB
LCS	WCG2244-035MBLCS	WCG2244-035MBLCS
MS	885407-009MS	885407-009MS
MS	885407-006MS	885407-006MS
MSD	885407-009MSD	885407-009MSD
MSD	885407-006MSD	885407-006MSD

Client Sample ID	Lab Sample ID	MB ID	Client Sample ID	Lab Sample ID	MB ID
062607001	885345-001	MB	062607002	885345-002	MB

Test Name	Method Blank Result Conc		LCS Spiked Conc	LCS Recovery			LCSD Spiked Conc	LCSD Recovery			LCS/ LCSD RPD		LCS/LCSD Control Limits			Parent Sample Number	Parent Result Conc		MS Spiked Conc	MS Recovery			MSD Spiked Conc	MSD Recovery			MS/ MSD RPD		MS/MSD Control Limits		
				Conc	%	C		Conc	%	C	%	C	LCL %	UCL %	RPD %					Conc	%	C		Conc	%	C	%	C	LCL %	UCL %	RPD %
Cyanide, Total	<	0.006	0.10	0.1	102.6		---	---	---		---		90	110	20	885407-006		0.012	0.10	0.12	111.1	N	0.10	0.13	113.5	N	2.0		90	110	20
Cyanide, Total	<	0.006	0.10	0.1	102.6		---	---	---		---		90	110	20	885407-009		0.010	0.10	0.12	114.7	N	0.10	0.12	111.1	N	2.9		90	110	20

Conc = mg/L unless otherwise noted
C = QC Code, see Qualifer Sheet
Parent Result is reported down to MDL in order to allow Validation of this worksheet
The %R and RPD results are calculated from raw data values with more significant figures than are reported on this form.

Report Date: 7/11/2007
QC Batch Number: 22699

Sample Condition Upon Receipt

Pace Analytical™

Client Name: Natural Resource **Project #** 885345

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☒ Client ☐ Commercial ☐ Pace Other ______

Tracking #: ______

Optional: Proj. Due Date: Proj. Name:

Custody Seal on Cooler/Box Present: ☐ yes ☒ no Seals intact: ☐ yes ☐ no

Packing Material: ☐ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other ______

Thermometer Used N/A **Type of Ice:** [✓ Wet] Blue None ☐ Samples on ice, cooling process has begun

Cooler Temperature ROI **Biological Tissue is Frozen:** Yes No

Temp should be above freezing to 6°C

Date and Initials of person examining contents: AG 6/26/07 cf 6/26/07

Comments:

Chain of Custody Present:	☒Yes	☐No	☐N/A	1.
Chain of Custody Filled Out:	☒Yes	☐No	☐N/A	2.
Chain of Custody Relinquished:	☒Yes	☐No	☐N/A	3.
Sampler Name & Signature on COC:	☒Yes	☐No	☐N/A	4.
Samples Arrived within Hold Time:	☒Yes	☐No	☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes	☒No	☐N/A	6.
Rush Turn Around Time Requested:	☐Yes	☒No	☐N/A	7.
Sufficient Volume:	☒Yes	☐No	☐N/A	8.
Correct Containers Used:	☒Yes	☐No	☐N/A	9.
-Pace Containers Used:	☒Yes	☐No	☐N/A	
Containers Intact:	☒Yes	☐No	☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes	☐No	☒N/A	11.
Sample Labels match COC:	AG ~~☒Yes~~	☒No	☐N/A	12. Rec'd trip blank, not listed on COC, added by lab AG 6/26/07
-Includes date/time/ID/Analysis Matrix: W				
All containers needing preservation have been checked.	☒Yes	☐No	☐N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☒Yes	☐No	☐N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	☐Yes	☐No		Initial when completed AG / Lot # of added preservative
Samples checked for dechlorination:	☐Yes	☐No	☒N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes	☒No	☐N/A	15.
Trip Blank Present:	☒Yes	☐No	☐N/A	16.
Trip Blank Custody Seals Present	☒Yes	☐No	☐N/A	
Pace Trip Blank Lot # (if purchased): ______				

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: ______ Date/Time: ______

Comments/ Resolution: Rec'd Extra volume for #001 + 002. No MS/MSD requested on the COC. cf 6/26/07 Only rec'd 1 extra per sample point, not enough for MS/MSD 6/26/07 MRR

Project Manager Review: ______ **Date:** 6-27-07

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

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CHAIN OF CUSTODY

UPPER MIDWEST REGION
MN: 612-607-1700 WI: 920-469-2436

Page 1 of 1

COC No. 024639

(Please Print Clearly)

Company Name:	Natural Resource Technology Inc.
Branch/Location:	Pewaukee, WI
Project Contact:	Heather Simon/Jody Barbeau
Phone:	262-522-1207
Project Number:	1312
Project Name:	WPSC - Oshkosh
Project State:	Wisconsin
Sampled By (Print):	Mike Mason - (WPSC)
Sampled By (Sign):	Mike Mason
PO #:	
Regulatory Program:	

Quote #:	
Mail To Contact:	Jody Barbeau
Mail To Company:	Natural Resource Technology Inc.
Mail To Address:	23713 W. Paul Road Unit D Pewaukee, WI. 53072
Invoice To Contact:	
Invoice To Company:	Natural Resource Technology Inc.
Invoice To Address:	Same
Invoice To Phone:	

*Preservation Codes
A=None B=HCL C=H2SO4 D=HNO3 E=DI Water F=Methanol G=NaOH
H=Sodium Bisulfate Solution I=Sodium Thiosulfate J=Other

Data Package Options (billable)
☐ EPA Level III
☐ EPA Level IV

MS/MSD
☐ On your sample (billable)
☐ NOT needed on your sample

Matrix Codes
A = Air W = Water
B = Biota DW = Drinking Water
C = Charcoal GW = Ground Water
O = Oil SW = Surface Water
S = Soil WW = Waste Water
SI = Sludge WP = Wipe

					Analyses Requested			
FILTERED? (YES/NO)					Y/N	N	N	N
PRESERVATION (CODE)*					Pick Letter	B	A	G
PACE LAB #	**CLIENT FIELD ID**	COLLECTION DATE	COLLECTION TIME	MATRIX		BTEX (8021B)	PAH (8270C - SIM)	Total Cyanide (9012A)
001	062607001	6/26/07	13:30	WW		X	X	X
002	062607002	6/26/07	13:20	WW		X	X	X
003	Trip Blank *Added by Lab							

CLIENT COMMENTS	LAB COMMENTS (Lab Use Only)	Profile #
	2 ltr AG, 250 ml Poly 6-4	
	↓ ↓ ↓	
	2-40 ml B	

Rush Turnaround Time Requested - Prelims
(Rush TAT subject to approval/surcharge)
Date Needed: **Normal Turn**

Transmit Prelim Rush Results by (complete what you want):

Email #1:	jbarbeau@naturalrt.com
Email #2:	
Telephone:	262-523-9000
Fax:	262-523-9001

Samples on HOLD are subject to special pricing and release of liability

Relinquished By:	Date/Time:	Received By:	Date/Time:
Mike Mason	6/26/07 15:15	R. [illegible]	6/26/07 15:15

PACE Project No. 885345

Receipt Temp = ROI °C

Sample Receipt pH
OK / Adjusted

Cooler Custody Seal
Present / ~~Not Present~~
Intact / Not Intact

Version 6.0 06/14/06

C019a(27Jun2006)

Pace Analytical®

1241 Bellevue Street, Suite 9
Green Bay, WI 54302
920-469-2436, Fax: 920-469-8827

Analytical Report Number: 888415

Client: NATURAL RESOURCE TECHNOLOGY
Lab Contact: Brian Basten
Project Name: WPSC - OSHKOSH
Project Number: 1312

Lab Sample Number	Field ID	Matrix	Collection Date
888415-001	091107 001	WATER	09/11/07 08:35
888415-002	091007 002	WATER	09/10/07 09:00
888415-003	091007 004	WATER	09/10/07 09:40
888415-004	091007 005	WATER	09/10/07 10:20
888415-005	091007 006	WATER	09/10/07 10:28
888415-006	091007 007	WATER	09/10/07 10:45
888415-007	091007 008	WATER	09/10/07 11:00
888415-008	091007 009	WATER	09/10/07 11:30
888415-009	091007 010	WATER	09/10/07 11:50
888415-010	091007 011	WATER	09/10/07 12:10
888415-011	091007 012	WATER	09/10/07 12:30
888415-012	091007 013	WATER	09/10/07 12:35
888415-013	091007 014	WATER	09/10/07 13:20
888415-014	091007 015	WATER	09/10/07 13:10
888415-015	091007 016	WATER	09/10/07 14:40
888415-016	091007 017	WATER	09/10/07 14:35
888415-017	091107 018	WATER	09/11/07 08:30
888415-018	091107 019	WATER	09/11/07 08:35
888415-019	091107 020	WATER	09/11/07 09:45
888415-020	091107 021	WATER	09/11/07 09:30
888415-021	091107 022	WATER	09/11/07 10:30
888415-022	091107 023	WATER	09/11/07 11:10
888415-023	091107 024	WATER	09/11/07 11:15
888415-024	TRIP BLANK	WATER	09/10/07

I certify that the data contained in this Final Report has been generated and reviewed in accordance with approved methods and Laboratory Standard Operating Procedure. Exceptions, if any, are discussed in the accompanying sample comments. Release of this final report is authorized by Laboratory management, as is verified by the following signature. This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc. The sample results relate only to the analytes of interest tested.

Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

REPORT OF LABORATORY ANALYSIS

ACCREDITED IN ACCORDANCE WITH nelac

Approval Signature

9-25-07
Date

Pace Analytical Services, Inc.

Analytical Report Number: 888415

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436

Client : NATURAL RESOURCE TECHNOLOGY
Project Name : WPSC - OSHKOSH
Project Number : 1312
Field ID : 091107 001

Matrix Type : WATER
Collection Date : 09/11/07
Report Date : 09/25/07
Lab Sample Number : 888415-001

PVOC

Prep Date/Time: 09/17/07 9:22 AM **Anl By:** SES

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date/Time	Prep Method	Anl Method
1,2,4-Trimethylbenzene	< 0.39	0.39	1.3		1	ug/L		09/17/07 9:22 AM	SW846 5030B	SW846 8021B
1,3,5-Trimethylbenzene	< 0.40	0.40	1.3		1	ug/L		09/17/07 9:22 AM	SW846 5030B	SW846 8021B
Benzene	< 0.14	0.14	0.46		1	ug/L		09/17/07 9:22 AM	SW846 5030B	SW846 8021B
Ethylbenzene	< 0.40	0.40	1.3		1	ug/L		09/17/07 9:22 AM	SW846 5030B	SW846 8021B
Toluene	< 0.36	0.36	1.2		1	ug/L		09/17/07 9:22 AM	SW846 5030B	SW846 8021B
Xylene, m + p	< 0.74	0.74	2.5		1	ug/L		09/17/07 9:22 AM	SW846 5030B	SW846 8021B
Xylene, o	< 0.36	0.36	1.2		1	ug/L		09/17/07 9:22 AM	SW846 5030B	SW846 8021B
Surrogate		**LCL**	**UCL**							
a,a,a-Trifluorotoluene	102	80	124		1	%		09/17/07	SW846 5030B	SW846 8021B

PAH/ PNA

Prep Date/Time: 09/14/07 7:30 AM **Anl By:** RJN

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date/Time	Prep Method	Anl Method
1-Methylnaphthalene	< 0.010	0.010	0.034		1	ug/L		09/15/07 1:50 AM	SW846 3510C	8270C-SIM
2-Methylnaphthalene	< 0.011	0.011	0.037		1	ug/L		09/15/07 1:50 AM	SW846 3510C	8270C-SIM
Acenaphthene	< 0.0082	0.0082	0.027		1	ug/L		09/15/07 1:50 AM	SW846 3510C	8270C-SIM
Acenaphthylene	< 0.0081	0.0081	0.027		1	ug/L		09/15/07 1:50 AM	SW846 3510C	8270C-SIM
Anthracene	< 0.012	0.012	0.039		1	ug/L		09/15/07 1:50 AM	SW846 3510C	8270C-SIM
Benzo(a)anthracene	< 0.016	0.016	0.052		1	ug/L		09/15/07 1:50 AM	SW846 3510C	8270C-SIM
Benzo(a)pyrene	< 0.018	0.018	0.061		1	ug/L		09/15/07 1:50 AM	SW846 3510C	8270C-SIM
Benzo(b)fluoranthene	< 0.016	0.016	0.052		1	ug/L	Z	09/15/07 1:50 AM	SW846 3510C	8270C-SIM
Benzo(ghi)perylene	< 0.019	0.019	0.064		1	ug/L		09/15/07 1:50 AM	SW846 3510C	8270C-SIM
Benzo(k)fluoranthene	< 0.019	0.019	0.064		1	ug/L	Z	09/15/07 1:50 AM	SW846 3510C	8270C-SIM
Chrysene	< 0.019	0.019	0.063		1	ug/L		09/15/07 1:50 AM	SW846 3510C	8270C-SIM
Dibenz(a,h)anthracene	< 0.019	0.019	0.063		1	ug/L		09/15/07 1:50 AM	SW846 3510C	8270C-SIM
Fluoranthene	0.016	0.015	0.052		1	ug/L	Q	09/15/07 1:50 AM	SW846 3510C	8270C-SIM
Fluorene	< 0.0091	0.0091	0.030		1	ug/L		09/15/07 1:50 AM	SW846 3510C	8270C-SIM
Indeno(1,2,3-cd)pyrene	< 0.019	0.019	0.063		1	ug/L		09/15/07 1:50 AM	SW846 3510C	8270C-SIM
Naphthalene	0.020	0.012	0.041		1	ug/L	Q	09/15/07 1:50 AM	SW846 3510C	8270C-SIM
Phenanthrene	0.011	0.011	0.038		1	ug/L	Q	09/15/07 1:50 AM	SW846 3510C	8270C-SIM
Pyrene	0.022	0.015	0.048		1	ug/L	Q	09/15/07 1:50 AM	SW846 3510C	8270C-SIM
Surrogate		**LCL**	**UCL**							
Nitrobenzene-d5	47	10	150		1	%		09/15/07	SW846 3510C	8270C-SIM
2-Fluorobiphenyl	46	20	111		1	%		09/15/07	SW846 3510C	8270C-SIM
Terphenyl-d14	78	44	115		1	%		09/15/07	SW846 3510C	8270C-SIM

Client : NATURAL RESOURCE TECHNOLOGY
Project Name : WPSC - OSHKOSH
Project Number : 1312
Field ID : 091007 002

Matrix Type : WATER
Collection Date : 09/10/07
Report Date : 09/25/07
Lab Sample Number : 888415-002

PVOC

Prep Date/Time: 09/17/07 9:47 AM **Anl By:** SES

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date/Time	Prep Method	Anl Method
1,2,4-Trimethylbenzene	< 0.39	0.39	1.3		1	ug/L		09/17/07 9:47 AM	SW846 5030B	SW846 8021B
1,3,5-Trimethylbenzene	< 0.40	0.40	1.3		1	ug/L		09/17/07 9:47 AM	SW846 5030B	SW846 8021B
Benzene	< 0.14	0.14	0.46		1	ug/L		09/17/07 9:47 AM	SW846 5030B	SW846 8021B
Ethylbenzene	< 0.40	0.40	1.3		1	ug/L		09/17/07 9:47 AM	SW846 5030B	SW846 8021B
Toluene	0.53	0.36	1.2		1	ug/L	Q	09/17/07 9:47 AM	SW846 5030B	SW846 8021B
Xylene, m + p	0.75	0.74	2.5		1	ug/L	Q	09/17/07 9:47 AM	SW846 5030B	SW846 8021B
Xylene, o	0.38	0.36	1.2		1	ug/L	Q	09/17/07 9:47 AM	SW846 5030B	SW846 8021B

Surrogate		LCL	UCL							
a,a,a-Trifluorotoluene	103	80	124		1	%		09/17/07	SW846 5030B	SW846 8021B

PAH/ PNA

Prep Date/Time: 09/14/07 7:30 AM **Anl By:** RJN

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date/Time	Prep Method	Anl Method
1-Methylnaphthalene	0.65	0.11	0.36		10	ug/L		09/17/07 4:03 PM	SW846 3510C	8270C-SIM
2-Methylnaphthalene	< 0.12	0.12	0.40		10	ug/L		09/17/07 4:03 PM	SW846 3510C	8270C-SIM
Acenaphthene	2.4	0.087	0.29		10	ug/L		09/17/07 4:03 PM	SW846 3510C	8270C-SIM
Acenaphthylene	0.13	0.087	0.29		10	ug/L	Q	09/17/07 4:03 PM	SW846 3510C	8270C-SIM
Anthracene	0.13	0.12	0.41		10	ug/L	Q	09/17/07 4:03 PM	SW846 3510C	8270C-SIM
Benzo(a)anthracene	< 0.17	0.17	0.56		10	ug/L		09/17/07 4:03 PM	SW846 3510C	8270C-SIM
Benzo(a)pyrene	< 0.20	0.20	0.65		10	ug/L		09/17/07 4:03 PM	SW846 3510C	8270C-SIM
Benzo(b)fluoranthene	< 0.17	0.17	0.56		10	ug/L		09/17/07 4:03 PM	SW846 3510C	8270C-SIM
Benzo(ghi)perylene	< 0.21	0.21	0.69		10	ug/L		09/17/07 4:03 PM	SW846 3510C	8270C-SIM
Benzo(k)fluoranthene	< 0.21	0.21	0.69		10	ug/L		09/17/07 4:03 PM	SW846 3510C	8270C-SIM
Chrysene	< 0.20	0.20	0.68		10	ug/L		09/17/07 4:03 PM	SW846 3510C	8270C-SIM
Dibenz(a,h)anthracene	< 0.20	0.20	0.67		10	ug/L		09/17/07 4:03 PM	SW846 3510C	8270C-SIM
Fluoranthene	0.18	0.17	0.55		10	ug/L	Q	09/17/07 4:03 PM	SW846 3510C	8270C-SIM
Fluorene	0.62	0.097	0.32		10	ug/L		09/17/07 4:03 PM	SW846 3510C	8270C-SIM
Indeno(1,2,3-cd)pyrene	< 0.20	0.20	0.67		10	ug/L		09/17/07 4:03 PM	SW846 3510C	8270C-SIM
Naphthalene	0.29	0.13	0.44		10	ug/L	Q	09/17/07 4:03 PM	SW846 3510C	8270C-SIM
Phenanthrene	< 0.12	0.12	0.41		10	ug/L		09/17/07 4:03 PM	SW846 3510C	8270C-SIM
Pyrene	0.43	0.16	0.52		10	ug/L	Q	09/17/07 4:03 PM	SW846 3510C	8270C-SIM

Surrogate		LCL	UCL							
Nitrobenzene-d5	0	10	150		10	%	D	09/17/07	SW846 3510C	8270C-SIM
2-Fluorobiphenyl	0	20	111		10	%	D	09/17/07	SW846 3510C	8270C-SIM
Terphenyl-d14	0	44	115		10	%	D	09/17/07	SW846 3510C	8270C-SIM

Pace Analytical Services, Inc.

Analytical Report Number: 888415

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436

Client : NATURAL RESOURCE TECHNOLOGY
Project Name : WPSC - OSHKOSH
Project Number : 1312
Field ID : 091007 004

Matrix Type : WATER
Collection Date : 09/10/07
Report Date : 09/25/07
Lab Sample Number : 888415-003

PVOC **Prep Date/Time:** 09/17/07 10:13 AM **Anl By:** SES

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date/Time	Prep Method	Anl Method
1,2,4-Trimethylbenzene	< 0.39	0.39	1.3		1	ug/L		09/17/07 10:13 AM	SW846 5030B	SW846 8021B
1,3,5-Trimethylbenzene	< 0.40	0.40	1.3		1	ug/L		09/17/07 10:13 AM	SW846 5030B	SW846 8021B
Benzene	< 0.14	0.14	0.46		1	ug/L		09/17/07 10:13 AM	SW846 5030B	SW846 8021B
Ethylbenzene	< 0.40	0.40	1.3		1	ug/L		09/17/07 10:13 AM	SW846 5030B	SW846 8021B
Toluene	< 0.36	0.36	1.2		1	ug/L		09/17/07 10:13 AM	SW846 5030B	SW846 8021B
Xylene, m + p	< 0.74	0.74	2.5		1	ug/L		09/17/07 10:13 AM	SW846 5030B	SW846 8021B
Xylene, o	< 0.36	0.36	1.2		1	ug/L		09/17/07 10:13 AM	SW846 5030B	SW846 8021B

Surrogate		LCL	UCL							
a,a,a-Trifluorotoluene	102	80	124		1	%		09/17/07	SW846 5030B	SW846 8021B

PAH/ PNA **Prep Date/Time:** 09/14/07 7:30 AM **Anl By:** RJN

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date/Time	Prep Method	Anl Method
1-Methylnaphthalene	0.028	0.010	0.034		1	ug/L	Q	09/17/07 4:51 PM	SW846 3510C	8270C-SIM
2-Methylnaphthalene	0.012	0.011	0.037		1	ug/L	Q	09/17/07 4:51 PM	SW846 3510C	8270C-SIM
Acenaphthene	0.028	0.0082	0.027		1	ug/L		09/17/07 4:51 PM	SW846 3510C	8270C-SIM
Acenaphthylene	0.056	0.0081	0.027		1	ug/L		09/17/07 4:51 PM	SW846 3510C	8270C-SIM
Anthracene	0.048	0.012	0.039		1	ug/L		09/17/07 4:51 PM	SW846 3510C	8270C-SIM
Benzo(a)anthracene	0.16	0.016	0.052		1	ug/L		09/17/07 4:51 PM	SW846 3510C	8270C-SIM
Benzo(a)pyrene	0.17	0.018	0.061		1	ug/L		09/17/07 4:51 PM	SW846 3510C	8270C-SIM
Benzo(b)fluoranthene	0.15	0.016	0.052		1	ug/L		09/17/07 4:51 PM	SW846 3510C	8270C-SIM
Benzo(ghi)perylene	0.12	0.019	0.064		1	ug/L		09/17/07 4:51 PM	SW846 3510C	8270C-SIM
Benzo(k)fluoranthene	0.11	0.019	0.064		1	ug/L		09/17/07 4:51 PM	SW846 3510C	8270C-SIM
Chrysene	0.16	0.019	0.063		1	ug/L		09/17/07 4:51 PM	SW846 3510C	8270C-SIM
Dibenz(a,h)anthracene	0.033	0.019	0.063		1	ug/L	Q	09/17/07 4:51 PM	SW846 3510C	8270C-SIM
Fluoranthene	0.21	0.015	0.052		1	ug/L		09/17/07 4:51 PM	SW846 3510C	8270C-SIM
Fluorene	0.026	0.0091	0.030		1	ug/L	Q	09/17/07 4:51 PM	SW846 3510C	8270C-SIM
Indeno(1,2,3-cd)pyrene	0.096	0.019	0.063		1	ug/L		09/17/07 4:51 PM	SW846 3510C	8270C-SIM
Naphthalene	0.037	0.012	0.041		1	ug/L	Q	09/17/07 4:51 PM	SW846 3510C	8270C-SIM
Phenanthrene	0.099	0.011	0.038		1	ug/L		09/17/07 4:51 PM	SW846 3510C	8270C-SIM
Pyrene	0.25	0.015	0.048		1	ug/L		09/17/07 4:51 PM	SW846 3510C	8270C-SIM

Surrogate		LCL	UCL							
Nitrobenzene-d5	90	10	150		1	%		09/17/07	SW846 3510C	8270C-SIM
2-Fluorobiphenyl	81	20	111		1	%		09/17/07	SW846 3510C	8270C-SIM
Terphenyl-d14	109	44	115		1	%		09/17/07	SW846 3510C	8270C-SIM

Pace Analytical Services, Inc.

Analytical Report Number: 888415

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436

Client : NATURAL RESOURCE TECHNOLOGY
Project Name : WPSC - OSHKOSH
Project Number : 1312
Field ID : 091007 005

Matrix Type : WATER
Collection Date : 09/10/07
Report Date : 09/25/07
Lab Sample Number : 888415-004

PVOC

Prep Date/Time: 09/17/07 6:00 PM **Anl By:** SES

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date/Time	Prep Method	Anl Method
1,2,4-Trimethylbenzene	< 0.39	0.39	1.3		1	ug/L		09/17/07 6:00 PM	SW846 5030B	SW846 8021B
1,3,5-Trimethylbenzene	< 0.40	0.40	1.3		1	ug/L		09/17/07 6:00 PM	SW846 5030B	SW846 8021B
Benzene	3.0	0.14	0.46		1	ug/L		09/17/07 6:00 PM	SW846 5030B	SW846 8021B
Ethylbenzene	< 0.40	0.40	1.3		1	ug/L		09/17/07 6:00 PM	SW846 5030B	SW846 8021B
Toluene	< 0.36	0.36	1.2		1	ug/L		09/17/07 6:00 PM	SW846 5030B	SW846 8021B
Xylene, m + p	< 0.74	0.74	2.5		1	ug/L		09/17/07 6:00 PM	SW846 5030B	SW846 8021B
Xylene, o	< 0.36	0.36	1.2		1	ug/L		09/17/07 6:00 PM	SW846 5030B	SW846 8021B
Surrogate		**LCL**	**UCL**							
a,a,a-Trifluorotoluene	102	80	124		1	%		09/17/07	SW846 5030B	SW846 8021B

PAH/ PNA

Prep Date/Time: 09/14/07 7:30 AM **Anl By:** RJN

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date/Time	Prep Method	Anl Method
1-Methylnaphthalene	0.38	0.11	0.37		10	ug/L		09/17/07 3:39 PM	SW846 3510C	8270C-SIM
2-Methylnaphthalene	0.31	0.12	0.40		10	ug/L	Q	09/17/07 3:39 PM	SW846 3510C	8270C-SIM
Acenaphthene	0.17	0.088	0.29		10	ug/L	Q	09/17/07 3:39 PM	SW846 3510C	8270C-SIM
Acenaphthylene	0.48	0.088	0.29		10	ug/L		09/17/07 3:39 PM	SW846 3510C	8270C-SIM
Anthracene	0.70	0.13	0.42		10	ug/L		09/17/07 3:39 PM	SW846 3510C	8270C-SIM
Benzo(a)anthracene	1.2	0.17	0.56		10	ug/L		09/17/07 3:39 PM	SW846 3510C	8270C-SIM
Benzo(a)pyrene	1.1	0.20	0.66		10	ug/L		09/17/07 3:39 PM	SW846 3510C	8270C-SIM
Benzo(b)fluoranthene	1.1	0.17	0.56		10	ug/L		09/17/07 3:39 PM	SW846 3510C	8270C-SIM
Benzo(ghi)perylene	0.79	0.21	0.70		10	ug/L		09/17/07 3:39 PM	SW846 3510C	8270C-SIM
Benzo(k)fluoranthene	0.69	0.21	0.70		10	ug/L	Q	09/17/07 3:39 PM	SW846 3510C	8270C-SIM
Chrysene	1.3	0.21	0.68		10	ug/L		09/17/07 3:39 PM	SW846 3510C	8270C-SIM
Dibenz(a,h)anthracene	0.24	0.20	0.68		10	ug/L	Q	09/17/07 3:39 PM	SW846 3510C	8270C-SIM
Fluoranthene	2.1	0.17	0.56		10	ug/L		09/17/07 3:39 PM	SW846 3510C	8270C-SIM
Fluorene	0.55	0.098	0.33		10	ug/L		09/17/07 3:39 PM	SW846 3510C	8270C-SIM
Indeno(1,2,3-cd)pyrene	0.66	0.20	0.68		10	ug/L	Q	09/17/07 3:39 PM	SW846 3510C	8270C-SIM
Naphthalene	1.0	0.13	0.45		10	ug/L		09/17/07 3:39 PM	SW846 3510C	8270C-SIM
Phenanthrene	1.6	0.12	0.41		10	ug/L		09/17/07 3:39 PM	SW846 3510C	8270C-SIM
Pyrene	2.0	0.16	0.52		10	ug/L		09/17/07 3:39 PM	SW846 3510C	8270C-SIM
Surrogate		**LCL**	**UCL**							
Nitrobenzene-d5	0	10	150		10	%	D	09/17/07	SW846 3510C	8270C-SIM
2-Fluorobiphenyl	0	20	111		10	%	D	09/17/07	SW846 3510C	8270C-SIM
Terphenyl-d14	0	44	115		10	%	D	09/17/07	SW846 3510C	8270C-SIM

Analytical Report Number: 888415

Client : NATURAL RESOURCE TECHNOLOGY
Project Name : WPSC - OSHKOSH
Project Number : 1312
Field ID : 091007 006

Matrix Type : WATER
Collection Date : 09/10/07
Report Date : 09/25/07
Lab Sample Number : 888415-005

PVOC

Prep Date/Time: 09/17/07 6:26 PM **Anl By:** SES

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date/Time	Prep Method	Anl Method
1,2,4-Trimethylbenzene	410	7.8	26		20	ug/L		09/17/07 6:26 PM	SW846 5030B	SW846 8021B
1,3,5-Trimethylbenzene	50	7.9	26		20	ug/L		09/17/07 6:26 PM	SW846 5030B	SW846 8021B
Benzene	1700	2.8	9.2		20	ug/L		09/17/07 6:26 PM	SW846 5030B	SW846 8021B
Ethylbenzene	1900	8.0	27		20	ug/L		09/17/07 6:26 PM	SW846 5030B	SW846 8021B
Toluene	21	7.1	24		20	ug/L	Q	09/17/07 6:26 PM	SW846 5030B	SW846 8021B
Xylene, m + p	60	15	49		20	ug/L		09/17/07 6:26 PM	SW846 5030B	SW846 8021B
Xylene, o	270	7.2	24		20	ug/L		09/17/07 6:26 PM	SW846 5030B	SW846 8021B
Surrogate		**LCL**	**UCL**							
a,a,a-Trifluorotoluene	100	80	124		1	%		09/17/07	SW846 5030B	SW846 8021B

PAH/ PNA

Prep Date/Time: 09/14/07 7:30 AM **Anl By:** RJN

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date/Time	Prep Method	Anl Method
1-Methylnaphthalene	44	41	140		4000	ug/L	QD	09/18/07 12:25 AM	SW846 3510C	8270C-SIM
2-Methylnaphthalene	15	1.1	3.7		100	ug/L		09/15/07 4:12 AM	SW846 3510C	8270C-SIM
Acenaphthene	1.4	0.82	2.7		100	ug/L	Q	09/15/07 4:12 AM	SW846 3510C	8270C-SIM
Acenaphthylene	1.1	0.81	2.7		100	ug/L	Q	09/15/07 4:12 AM	SW846 3510C	8270C-SIM
Anthracene	< 1.2	1.2	3.9		100	ug/L		09/15/07 4:12 AM	SW846 3510C	8270C-SIM
Benzo(a)anthracene	< 1.6	1.6	5.2		100	ug/L		09/15/07 4:12 AM	SW846 3510C	8270C-SIM
Benzo(a)pyrene	< 1.8	1.8	6.1		100	ug/L		09/15/07 4:12 AM	SW846 3510C	8270C-SIM
Benzo(b)fluoranthene	< 1.6	1.6	5.2		100	ug/L	Z	09/15/07 4:12 AM	SW846 3510C	8270C-SIM
Benzo(ghi)perylene	< 1.9	1.9	6.4		100	ug/L		09/15/07 4:12 AM	SW846 3510C	8270C-SIM
Benzo(k)fluoranthene	< 1.9	1.9	6.4		100	ug/L	Z	09/15/07 4:12 AM	SW846 3510C	8270C-SIM
Chrysene	< 1.9	1.9	6.3		100	ug/L		09/15/07 4:12 AM	SW846 3510C	8270C-SIM
Dibenz(a,h)anthracene	< 1.9	1.9	6.3		100	ug/L		09/15/07 4:12 AM	SW846 3510C	8270C-SIM
Fluoranthene	< 1.5	1.5	5.2		100	ug/L		09/15/07 4:12 AM	SW846 3510C	8270C-SIM
Fluorene	< 0.91	0.91	3.0		100	ug/L		09/15/07 4:12 AM	SW846 3510C	8270C-SIM
Indeno(1,2,3-cd)pyrene	< 1.9	1.9	6.3		100	ug/L		09/15/07 4:12 AM	SW846 3510C	8270C-SIM
Naphthalene	780	50	170		4000	ug/L	D	09/18/07 12:25 AM	SW846 3510C	8270C-SIM
Phenanthrene	1.5	1.1	3.8		100	ug/L	Q	09/15/07 4:12 AM	SW846 3510C	8270C-SIM
Pyrene	< 1.5	1.5	4.8		100	ug/L		09/15/07 4:12 AM	SW846 3510C	8270C-SIM
Surrogate		**LCL**	**UCL**							
Nitrobenzene-d5	0.0	10	150		100	%	D	09/15/07	SW846 3510C	8270C-SIM
2-Fluorobiphenyl	0.0	20	111		100	%	D	09/15/07	SW846 3510C	8270C-SIM
Terphenyl-d14	0.0	44	115		100	%	D	09/15/07	SW846 3510C	8270C-SIM

Client : NATURAL RESOURCE TECHNOLOGY
Project Name : WPSC - OSHKOSH
Project Number : 1312
Field ID : 091007 007

Matrix Type : WATER
Collection Date : 09/10/07
Report Date : 09/25/07
Lab Sample Number : 888415-006

PVOC

Prep Date/Time: 09/17/07 5:35 PM **Anl By:** SES

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date/Time	Prep Method	Anl Method
1,2,4-Trimethylbenzene	9.2	0.39	1.3		1	ug/L		09/17/07 5:35 PM	SW846 5030B	SW846 8021B
1,3,5-Trimethylbenzene	1.5	0.40	1.3		1	ug/L		09/17/07 5:35 PM	SW846 5030B	SW846 8021B
Benzene	10	0.14	0.46		1	ug/L		09/17/07 5:35 PM	SW846 5030B	SW846 8021B
Ethylbenzene	1.6	0.40	1.3		1	ug/L		09/17/07 5:35 PM	SW846 5030B	SW846 8021B
Toluene	< 0.36	0.36	1.2		1	ug/L		09/17/07 5:35 PM	SW846 5030B	SW846 8021B
Xylene, m + p	1.1	0.74	2.5		1	ug/L	Q	09/17/07 5:35 PM	SW846 5030B	SW846 8021B
Xylene, o	2.7	0.36	1.2		1	ug/L		09/17/07 5:35 PM	SW846 5030B	SW846 8021B

Surrogate		LCL	UCL							
a,a,a-Trifluorotoluene	102	80	124		1	%		09/17/07	SW846 5030B	SW846 8021B

PAH/ PNA

Prep Date/Time: 09/14/07 7:30 AM **Anl By:** RJN

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date/Time	Prep Method	Anl Method
1-Methylnaphthalene	18	1.0	3.4		100	ug/L	D	09/18/07 12:01 AM	SW846 3510C	8270C-SIM
2-Methylnaphthalene	9.6	1.1	3.7		100	ug/L	D	09/18/07 12:01 AM	SW846 3510C	8270C-SIM
Acenaphthene	7.8	0.16	0.54		20	ug/L		09/15/07 3:25 AM	SW846 3510C	8270C-SIM
Acenaphthylene	0.22	0.16	0.54		20	ug/L	Q	09/15/07 3:25 AM	SW846 3510C	8270C-SIM
Anthracene	< 0.23	0.23	0.77		20	ug/L		09/15/07 3:25 AM	SW846 3510C	8270C-SIM
Benzo(a)anthracene	< 0.31	0.31	1.0		20	ug/L		09/15/07 3:25 AM	SW846 3510C	8270C-SIM
Benzo(a)pyrene	< 0.37	0.37	1.2		20	ug/L		09/15/07 3:25 AM	SW846 3510C	8270C-SIM
Benzo(b)fluoranthene	< 0.31	0.31	1.0		20	ug/L	Z	09/15/07 3:25 AM	SW846 3510C	8270C-SIM
Benzo(ghi)perylene	< 0.39	0.39	1.3		20	ug/L		09/15/07 3:25 AM	SW846 3510C	8270C-SIM
Benzo(k)fluoranthene	< 0.39	0.39	1.3		20	ug/L	Z	09/15/07 3:25 AM	SW846 3510C	8270C-SIM
Chrysene	< 0.38	0.38	1.3		20	ug/L		09/15/07 3:25 AM	SW846 3510C	8270C-SIM
Dibenz(a,h)anthracene	< 0.38	0.38	1.3		20	ug/L		09/15/07 3:25 AM	SW846 3510C	8270C-SIM
Fluoranthene	< 0.31	0.31	1.0		20	ug/L		09/15/07 3:25 AM	SW846 3510C	8270C-SIM
Fluorene	0.99	0.18	0.60		20	ug/L		09/15/07 3:25 AM	SW846 3510C	8270C-SIM
Indeno(1,2,3-cd)pyrene	< 0.38	0.38	1.3		20	ug/L		09/15/07 3:25 AM	SW846 3510C	8270C-SIM
Naphthalene	16	1.2	4.1		100	ug/L	D	09/18/07 12:01 AM	SW846 3510C	8270C-SIM
Phenanthrene	0.41	0.23	0.76		20	ug/L	Q	09/15/07 3:25 AM	SW846 3510C	8270C-SIM
Pyrene	< 0.29	0.29	0.97		20	ug/L		09/15/07 3:25 AM	SW846 3510C	8270C-SIM

Surrogate		LCL	UCL							
Nitrobenzene-d5	0.0	10	150		20	%	D	09/15/07	SW846 3510C	8270C-SIM
2-Fluorobiphenyl	0.0	20	111		20	%	D	09/15/07	SW846 3510C	8270C-SIM
Terphenyl-d14	0.0	44	115		20	%	D	09/15/07	SW846 3510C	8270C-SIM

Analytical Report Number: 888415

Client : NATURAL RESOURCE TECHNOLOGY
Project Name : WPSC - OSHKOSH
Project Number : 1312
Field ID : 091007 008

Matrix Type : WATER
Collection Date : 09/10/07
Report Date : 09/25/07
Lab Sample Number : 888415-007

PVOC

Prep Date/Time: 09/18/07 11:28 AM **Anl By:** SES

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date/Time	Prep Method	Anl Method
1,2,4-Trimethylbenzene	26	2.0	6.5		5	ug/L		09/18/07 11:28 AM	SW846 5030B	SW846 8021B
1,3,5-Trimethylbenzene	8.6	2.0	6.6		5	ug/L		09/18/07 11:28 AM	SW846 5030B	SW846 8021B
Benzene	77	0.69	2.3		5	ug/L		09/18/07 11:28 AM	SW846 5030B	SW846 8021B
Ethylbenzene	37	2.0	6.7		5	ug/L		09/18/07 11:28 AM	SW846 5030B	SW846 8021B
Toluene	6.8	1.8	6.0		5	ug/L		09/18/07 11:28 AM	SW846 5030B	SW846 8021B
Xylene, m + p	37	3.7	12		5	ug/L		09/18/07 11:28 AM	SW846 5030B	SW846 8021B
Xylene, o	17	1.8	6.0		5	ug/L		09/18/07 11:28 AM	SW846 5030B	SW846 8021B
Surrogate		**LCL**	**UCL**							
a,a,a-Trifluorotoluene	101	80	124		1	%		09/18/07	SW846 5030B	SW846 8021B

PAH/ PNA

Prep Date/Time: 09/16/07 7:30 AM **Anl By:** RJN

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date/Time	Prep Method	Anl Method
1-Methylnaphthalene	99	27	91		2500	ug/L	D	09/18/07 12:17 PM	SW846 3510C	8270C-SIM
2-Methylnaphthalene	43	30	100		2500	ug/L	QD	09/18/07 12:17 PM	SW846 3510C	8270C-SIM
Acenaphthene	170	22	74		2500	ug/L	D	09/18/07 12:17 PM	SW846 3510C	8270C-SIM
Acenaphthylene	10	0.88	2.9		100	ug/L		09/18/07 4:00 AM	SW846 3510C	8270C-SIM
Anthracene	87	31	100		2500	ug/L	QD	09/18/07 12:17 PM	SW846 3510C	8270C-SIM
Benzo(a)anthracene	30	1.7	5.6		100	ug/L		09/18/07 4:00 AM	SW846 3510C	8270C-SIM
Benzo(a)pyrene	21	2.0	6.6		100	ug/L		09/18/07 4:00 AM	SW846 3510C	8270C-SIM
Benzo(b)fluoranthene	15	1.7	5.6		100	ug/L	Z	09/18/07 4:00 AM	SW846 3510C	8270C-SIM
Benzo(ghi)perylene	9.2	2.1	7.0		100	ug/L		09/18/07 4:00 AM	SW846 3510C	8270C-SIM
Benzo(k)fluoranthene	16	2.1	7.0		100	ug/L	Z	09/18/07 4:00 AM	SW846 3510C	8270C-SIM
Chrysene	22	2.1	6.8		100	ug/L		09/18/07 4:00 AM	SW846 3510C	8270C-SIM
Dibenz(a,h)anthracene	2.7	2.0	6.8		100	ug/L	Q	09/18/07 4:00 AM	SW846 3510C	8270C-SIM
Fluoranthene	57	42	140		2500	ug/L	QD	09/18/07 12:17 PM	SW846 3510C	8270C-SIM
Fluorene	61	24	82		2500	ug/L	QD	09/18/07 12:17 PM	SW846 3510C	8270C-SIM
Indeno(1,2,3-cd)pyrene	8.6	2.0	6.8		100	ug/L		09/18/07 4:00 AM	SW846 3510C	8270C-SIM
Naphthalene	680	33	110		2500	ug/L	D	09/18/07 12:17 PM	SW846 3510C	8270C-SIM
Phenanthrene	160	31	100		2500	ug/L	D	09/18/07 12:17 PM	SW846 3510C	8270C-SIM
Pyrene	47	39	130		2500	ug/L	QD	09/18/07 12:17 PM	SW846 3510C	8270C-SIM
Surrogate		**LCL**	**UCL**							
Nitrobenzene-d5	0	10	150		100	%	D	09/18/07	SW846 3510C	8270C-SIM
2-Fluorobiphenyl	0	20	111		100	%	D	09/18/07	SW846 3510C	8270C-SIM
Terphenyl-d14	0	44	115		100	%	D	09/18/07	SW846 3510C	8270C-SIM

Pace Analytical Services, Inc.

Analytical Report Number: 888415

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436

Client : NATURAL RESOURCE TECHNOLOGY
Project Name : WPSC - OSHKOSH
Project Number : 1312
Field ID : 091007 009

Matrix Type : WATER
Collection Date : 09/10/07
Report Date : 09/25/07
Lab Sample Number : 888415-008

PVOC

Prep Date/Time: 09/17/07 2:10 PM **Anl By:** SES

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date/Time	Prep Method	Anl Method
1,2,4-Trimethylbenzene	< 0.39	0.39	1.3		1	ug/L		09/17/07 2:10 PM	SW846 5030B	SW846 8021B
1,3,5-Trimethylbenzene	< 0.40	0.40	1.3		1	ug/L		09/17/07 2:10 PM	SW846 5030B	SW846 8021B
Benzene	< 0.14	0.14	0.46		1	ug/L		09/17/07 2:10 PM	SW846 5030B	SW846 8021B
Ethylbenzene	< 0.40	0.40	1.3		1	ug/L		09/17/07 2:10 PM	SW846 5030B	SW846 8021B
Toluene	< 0.36	0.36	1.2		1	ug/L		09/17/07 2:10 PM	SW846 5030B	SW846 8021B
Xylene, m + p	< 0.74	0.74	2.5		1	ug/L		09/17/07 2:10 PM	SW846 5030B	SW846 8021B
Xylene, o	< 0.36	0.36	1.2		1	ug/L		09/17/07 2:10 PM	SW846 5030B	SW846 8021B
Surrogate		**LCL**	**UCL**							
a,a,a-Trifluorotoluene	103	80	124		1	%		09/17/07	SW846 5030B	SW846 8021B

PAH/ PNA

Prep Date/Time: 09/16/07 7:30 AM **Anl By:** RJN

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date/Time	Prep Method	Anl Method
1-Methylnaphthalene	0.053	0.051	0.17		5	ug/L	Q	09/18/07 9:05 AM	SW846 3510C	8270C-SIM
2-Methylnaphthalene	< 0.056	0.056	0.19		5	ug/L		09/18/07 9:05 AM	SW846 3510C	8270C-SIM
Acenaphthene	0.12	0.041	0.14		5	ug/L	Q	09/18/07 9:05 AM	SW846 3510C	8270C-SIM
Acenaphthylene	0.60	0.041	0.14		5	ug/L		09/18/07 9:05 AM	SW846 3510C	8270C-SIM
Anthracene	0.30	0.058	0.19		5	ug/L		09/18/07 9:05 AM	SW846 3510C	8270C-SIM
Benzo(a)anthracene	0.94	0.078	0.26		5	ug/L		09/18/07 9:05 AM	SW846 3510C	8270C-SIM
Benzo(a)pyrene	0.87	0.092	0.31		5	ug/L		09/18/07 9:05 AM	SW846 3510C	8270C-SIM
Benzo(b)fluoranthene	0.63	0.078	0.26		5	ug/L	Z	09/18/07 9:05 AM	SW846 3510C	8270C-SIM
Benzo(ghi)perylene	0.48	0.096	0.32		5	ug/L		09/18/07 9:05 AM	SW846 3510C	8270C-SIM
Benzo(k)fluoranthene	0.47	0.097	0.32		5	ug/L	Z	09/18/07 9:05 AM	SW846 3510C	8270C-SIM
Chrysene	0.99	0.095	0.32		5	ug/L		09/18/07 9:05 AM	SW846 3510C	8270C-SIM
Dibenz(a,h)anthracene	0.15	0.094	0.31		5	ug/L	Q	09/18/07 9:05 AM	SW846 3510C	8270C-SIM
Fluoranthene	1.1	0.077	0.26		5	ug/L		09/18/07 9:05 AM	SW846 3510C	8270C-SIM
Fluorene	0.17	0.045	0.15		5	ug/L		09/18/07 9:05 AM	SW846 3510C	8270C-SIM
Indeno(1,2,3-cd)pyrene	0.34	0.094	0.31		5	ug/L		09/18/07 9:05 AM	SW846 3510C	8270C-SIM
Naphthalene	0.066	0.062	0.21		5	ug/L	Q	09/18/07 9:05 AM	SW846 3510C	8270C-SIM
Phenanthrene	0.24	0.057	0.19		5	ug/L		09/18/07 9:05 AM	SW846 3510C	8270C-SIM
Pyrene	1.4	0.073	0.24		5	ug/L		09/18/07 9:05 AM	SW846 3510C	8270C-SIM
Surrogate		**LCL**	**UCL**							
Nitrobenzene-d5	82	10	150		5	%		09/18/07	SW846 3510C	8270C-SIM
2-Fluorobiphenyl	110	20	111		5	%		09/18/07	SW846 3510C	8270C-SIM
Terphenyl-d14	105	44	115		5	%		09/18/07	SW846 3510C	8270C-SIM

Client : NATURAL RESOURCE TECHNOLOGY
Project Name : WPSC - OSHKOSH
Project Number : 1312
Field ID : 091007 010

Matrix Type : WATER
Collection Date : 09/10/07
Report Date : 09/25/07
Lab Sample Number : 888415-009

PVOC

Prep Date/Time: 09/17/07 2:35 PM **Anl By:** SES

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date/Time	Prep Method	Anl Method
1,2,4-Trimethylbenzene	< 0.39	0.39	1.3		1	ug/L		09/17/07 2:35 PM	SW846 5030B	SW846 8021B
1,3,5-Trimethylbenzene	< 0.40	0.40	1.3		1	ug/L		09/17/07 2:35 PM	SW846 5030B	SW846 8021B
Benzene	< 0.14	0.14	0.46		1	ug/L		09/17/07 2:35 PM	SW846 5030B	SW846 8021B
Ethylbenzene	< 0.40	0.40	1.3		1	ug/L		09/17/07 2:35 PM	SW846 5030B	SW846 8021B
Toluene	< 0.36	0.36	1.2		1	ug/L		09/17/07 2:35 PM	SW846 5030B	SW846 8021B
Xylene, m + p	< 0.74	0.74	2.5		1	ug/L		09/17/07 2:35 PM	SW846 5030B	SW846 8021B
Xylene, o	< 0.36	0.36	1.2		1	ug/L		09/17/07 2:35 PM	SW846 5030B	SW846 8021B
Surrogate		**LCL**	**UCL**							
a,a,a-Trifluorotoluene	102	80	124		1	%		09/17/07	SW846 5030B	SW846 8021B

PAH/ PNA

Prep Date/Time: 09/16/07 7:30 AM **Anl By:** RJN

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date/Time	Prep Method	Anl Method
1-Methylnaphthalene	0.011	0.010	0.034		1	ug/L	Q	09/18/07 8:41 AM	SW846 3510C	8270C-SIM
2-Methylnaphthalene	< 0.011	0.011	0.037		1	ug/L		09/18/07 8:41 AM	SW846 3510C	8270C-SIM
Acenaphthene	0.038	0.0082	0.027		1	ug/L		09/18/07 8:41 AM	SW846 3510C	8270C-SIM
Acenaphthylene	0.013	0.0081	0.027		1	ug/L	Q	09/18/07 8:41 AM	SW846 3510C	8270C-SIM
Anthracene	0.022	0.012	0.039		1	ug/L	Q	09/18/07 8:41 AM	SW846 3510C	8270C-SIM
Benzo(a)anthracene	0.050	0.016	0.052		1	ug/L	Q	09/18/07 8:41 AM	SW846 3510C	8270C-SIM
Benzo(a)pyrene	0.051	0.018	0.061		1	ug/L	Q	09/18/07 8:41 AM	SW846 3510C	8270C-SIM
Benzo(b)fluoranthene	0.12	0.016	0.052		1	ug/L	Z	09/18/07 8:41 AM	SW846 3510C	8270C-SIM
Benzo(ghi)perylene	0.038	0.019	0.064		1	ug/L	Q	09/18/07 8:41 AM	SW846 3510C	8270C-SIM
Benzo(k)fluoranthene	0.072	0.019	0.064		1	ug/L	Z	09/18/07 8:41 AM	SW846 3510C	8270C-SIM
Chrysene	0.051	0.019	0.063		1	ug/L	Q	09/18/07 8:41 AM	SW846 3510C	8270C-SIM
Dibenz(a,h)anthracene	< 0.019	0.019	0.063		1	ug/L		09/18/07 8:41 AM	SW846 3510C	8270C-SIM
Fluoranthene	0.090	0.015	0.052		1	ug/L		09/18/07 8:41 AM	SW846 3510C	8270C-SIM
Fluorene	0.012	0.0091	0.030		1	ug/L	Q	09/18/07 8:41 AM	SW846 3510C	8270C-SIM
Indeno(1,2,3-cd)pyrene	0.028	0.019	0.063		1	ug/L	Q	09/18/07 8:41 AM	SW846 3510C	8270C-SIM
Naphthalene	0.020	0.012	0.041		1	ug/L	Q	09/18/07 8:41 AM	SW846 3510C	8270C-SIM
Phenanthrene	0.053	0.011	0.038		1	ug/L		09/18/07 8:41 AM	SW846 3510C	8270C-SIM
Pyrene	0.085	0.015	0.048		1	ug/L		09/18/07 8:41 AM	SW846 3510C	8270C-SIM
Surrogate		**LCL**	**UCL**							
Nitrobenzene-d5	107	10	150		1	%		09/18/07	SW846 3510C	8270C-SIM
2-Fluorobiphenyl	84	20	111		1	%		09/18/07	SW846 3510C	8270C-SIM
Terphenyl-d14	108	44	115		1	%		09/18/07	SW846 3510C	8270C-SIM

Analytical Report Number: 888415

Client : NATURAL RESOURCE TECHNOLOGY
Project Name : WPSC - OSHKOSH
Project Number : 1312
Field ID : 091007 011

Matrix Type : WATER
Collection Date : 09/10/07
Report Date : 09/25/07
Lab Sample Number : 888415-010

PVOC

Prep Date/Time: 09/17/07 3:01 PM **Anl By:** SES

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date/Time	Prep Method	Anl Method
1,2,4-Trimethylbenzene	< 0.39	0.39	1.3		1	ug/L		09/17/07 3:01 PM	SW846 5030B	SW846 8021B
1,3,5-Trimethylbenzene	< 0.40	0.40	1.3		1	ug/L		09/17/07 3:01 PM	SW846 5030B	SW846 8021B
Benzene	6.3	0.14	0.46		1	ug/L		09/17/07 3:01 PM	SW846 5030B	SW846 8021B
Ethylbenzene	< 0.40	0.40	1.3		1	ug/L		09/17/07 3:01 PM	SW846 5030B	SW846 8021B
Toluene	< 0.36	0.36	1.2		1	ug/L		09/17/07 3:01 PM	SW846 5030B	SW846 8021B
Xylene, m + p	< 0.74	0.74	2.5		1	ug/L		09/17/07 3:01 PM	SW846 5030B	SW846 8021B
Xylene, o	< 0.36	0.36	1.2		1	ug/L		09/17/07 3:01 PM	SW846 5030B	SW846 8021B
Surrogate		**LCL**	**UCL**							
a,a,a-Trifluorotoluene	101	80	124		1	%		09/17/07	SW846 5030B	SW846 8021B

PAH/ PNA

Prep Date/Time: 09/16/07 7:30 AM **Anl By:** RJN

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date/Time	Prep Method	Anl Method
1-Methylnaphthalene	12	0.81	2.7		80	ug/L	D	09/18/07 10:41 AM	SW846 3510C	8270C-SIM
2-Methylnaphthalene	0.40	0.22	0.75		20	ug/L	Q	09/18/07 2:24 AM	SW846 3510C	8270C-SIM
Acenaphthene	17	0.65	2.2		80	ug/L	D	09/18/07 10:41 AM	SW846 3510C	8270C-SIM
Acenaphthylene	6.0	0.16	0.54		20	ug/L		09/18/07 2:24 AM	SW846 3510C	8270C-SIM
Anthracene	4.2	0.23	0.77		20	ug/L		09/18/07 2:24 AM	SW846 3510C	8270C-SIM
Benzo(a)anthracene	6.7	0.31	1.0		20	ug/L		09/18/07 2:24 AM	SW846 3510C	8270C-SIM
Benzo(a)pyrene	6.5	0.37	1.2		20	ug/L		09/18/07 2:24 AM	SW846 3510C	8270C-SIM
Benzo(b)fluoranthene	3.6	0.31	1.0		20	ug/L	Z	09/18/07 2:24 AM	SW846 3510C	8270C-SIM
Benzo(ghi)perylene	2.6	0.39	1.3		20	ug/L		09/18/07 2:24 AM	SW846 3510C	8270C-SIM
Benzo(k)fluoranthene	3.1	0.39	1.3		20	ug/L	Z	09/18/07 2:24 AM	SW846 3510C	8270C-SIM
Chrysene	5.7	0.38	1.3		20	ug/L		09/18/07 2:24 AM	SW846 3510C	8270C-SIM
Dibenz(a,h)anthracene	0.73	0.38	1.3		20	ug/L	Q	09/18/07 2:24 AM	SW846 3510C	8270C-SIM
Fluoranthene	6.8	0.31	1.0		20	ug/L		09/18/07 2:24 AM	SW846 3510C	8270C-SIM
Fluorene	9.3	0.72	2.4		80	ug/L	D	09/18/07 10:41 AM	SW846 3510C	8270C-SIM
Indeno(1,2,3-cd)pyrene	2.1	0.38	1.3		20	ug/L		09/18/07 2:24 AM	SW846 3510C	8270C-SIM
Naphthalene	1.8	0.25	0.83		20	ug/L		09/18/07 2:24 AM	SW846 3510C	8270C-SIM
Phenanthrene	6.1	0.23	0.76		20	ug/L		09/18/07 2:24 AM	SW846 3510C	8270C-SIM
Pyrene	9.3	0.29	0.97		20	ug/L		09/18/07 2:24 AM	SW846 3510C	8270C-SIM
Surrogate		**LCL**	**UCL**							
Nitrobenzene-d5	0	10	150		20	%	D	09/18/07	SW846 3510C	8270C-SIM
2-Fluorobiphenyl	0	20	111		20	%	D	09/18/07	SW846 3510C	8270C-SIM
Terphenyl-d14	0	44	115		20	%	D	09/18/07	SW846 3510C	8270C-SIM

Client : NATURAL RESOURCE TECHNOLOGY
Project Name : WPSC - OSHKOSH
Project Number : 1312
Field ID : 091007 012

Matrix Type : WATER
Collection Date : 09/10/07
Report Date : 09/25/07
Lab Sample Number : 888415-011

PVOC

Prep Date/Time: 09/17/07 3:27 PM **Anl By:** SES

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date/Time	Prep Method	Anl Method
1,2,4-Trimethylbenzene	3.8	0.39	1.3		1	ug/L		09/17/07 3:27 PM	SW846 5030B	SW846 8021B
1,3,5-Trimethylbenzene	1.2	0.40	1.3		1	ug/L	Q	09/17/07 3:27 PM	SW846 5030B	SW846 8021B
Benzene	0.75	0.14	0.46		1	ug/L		09/17/07 3:27 PM	SW846 5030B	SW846 8021B
Ethylbenzene	1.2	0.40	1.3		1	ug/L	Q	09/17/07 3:27 PM	SW846 5030B	SW846 8021B
Toluene	< 0.36	0.36	1.2		1	ug/L		09/17/07 3:27 PM	SW846 5030B	SW846 8021B
Xylene, m + p	< 0.74	0.74	2.5		1	ug/L		09/17/07 3:27 PM	SW846 5030B	SW846 8021B
Xylene, o	1.6	0.36	1.2		1	ug/L		09/17/07 3:27 PM	SW846 5030B	SW846 8021B
Surrogate		**LCL**	**UCL**							
a,a,a-Trifluorotoluene	102	80	124		1	%		09/17/07	SW846 5030B	SW846 8021B

PAH/ PNA

Prep Date/Time: 09/16/07 7:30 AM **Anl By:** RJN

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date/Time	Prep Method	Anl Method
1-Methylnaphthalene	49	2.0	6.8		200	ug/L	D	09/18/07 11:05 AM	SW846 3510C	8270C-SIM
2-Methylnaphthalene	7.9	2.2	7.5		200	ug/L	D	09/18/07 11:05 AM	SW846 3510C	8270C-SIM
Acenaphthene	27	1.6	5.4		200	ug/L	D	09/18/07 11:05 AM	SW846 3510C	8270C-SIM
Acenaphthylene	1.0	0.16	0.54		20	ug/L		09/18/07 2:48 AM	SW846 3510C	8270C-SIM
Anthracene	3.2	0.23	0.77		20	ug/L		09/18/07 2:48 AM	SW846 3510C	8270C-SIM
Benzo(a)anthracene	0.44	0.31	1.0		20	ug/L	Q	09/18/07 2:48 AM	SW846 3510C	8270C-SIM
Benzo(a)pyrene	< 0.37	0.37	1.2		20	ug/L		09/18/07 2:48 AM	SW846 3510C	8270C-SIM
Benzo(b)fluoranthene	< 0.31	0.31	1.0		20	ug/L	Z	09/18/07 2:48 AM	SW846 3510C	8270C-SIM
Benzo(ghi)perylene	< 0.39	0.39	1.3		20	ug/L		09/18/07 2:48 AM	SW846 3510C	8270C-SIM
Benzo(k)fluoranthene	< 0.39	0.39	1.3		20	ug/L	Z	09/18/07 2:48 AM	SW846 3510C	8270C-SIM
Chrysene	0.47	0.38	1.3		20	ug/L	Q	09/18/07 2:48 AM	SW846 3510C	8270C-SIM
Dibenz(a,h)anthracene	< 0.38	0.38	1.3		20	ug/L		09/18/07 2:48 AM	SW846 3510C	8270C-SIM
Fluoranthene	1.5	0.31	1.0		20	ug/L		09/18/07 2:48 AM	SW846 3510C	8270C-SIM
Fluorene	9.3	0.18	0.60		20	ug/L		09/18/07 2:48 AM	SW846 3510C	8270C-SIM
Indeno(1,2,3-cd)pyrene	< 0.38	0.38	1.3		20	ug/L		09/18/07 2:48 AM	SW846 3510C	8270C-SIM
Naphthalene	55	2.5	8.3		200	ug/L	D	09/18/07 11:05 AM	SW846 3510C	8270C-SIM
Phenanthrene	6.5	0.23	0.76		20	ug/L		09/18/07 2:48 AM	SW846 3510C	8270C-SIM
Pyrene	1.7	0.29	0.97		20	ug/L		09/18/07 2:48 AM	SW846 3510C	8270C-SIM
Surrogate		**LCL**	**UCL**							
Nitrobenzene-d5	0	10	150		20	%	D	09/18/07	SW846 3510C	8270C-SIM
2-Fluorobiphenyl	0	20	111		20	%	D	09/18/07	SW846 3510C	8270C-SIM
Terphenyl-d14	0	44	115		20	%	D	09/18/07	SW846 3510C	8270C-SIM

Analytical Report Number: 888415

Client : NATURAL RESOURCE TECHNOLOGY
Project Name : WPSC - OSHKOSH
Project Number : 1312
Field ID : 091007 013

Matrix Type : WATER
Collection Date : 09/10/07
Report Date : 09/25/07
Lab Sample Number : 888415-012

PVOC

Prep Date/Time: 09/17/07 3:52 PM **Anl By:** SES

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date/Time	Prep Method	Anl Method
1,2,4-Trimethylbenzene	3.5	0.39	1.3		1	ug/L		09/17/07 3:52 PM	SW846 5030B	SW846 8021B
1,3,5-Trimethylbenzene	1.1	0.40	1.3		1	ug/L	Q	09/17/07 3:52 PM	SW846 5030B	SW846 8021B
Benzene	0.70	0.14	0.46		1	ug/L		09/17/07 3:52 PM	SW846 5030B	SW846 8021B
Ethylbenzene	1.1	0.40	1.3		1	ug/L	Q	09/17/07 3:52 PM	SW846 5030B	SW846 8021B
Toluene	< 0.36	0.36	1.2		1	ug/L		09/17/07 3:52 PM	SW846 5030B	SW846 8021B
Xylene, m + p	< 0.74	0.74	2.5		1	ug/L		09/17/07 3:52 PM	SW846 5030B	SW846 8021B
Xylene, o	1.5	0.36	1.2		1	ug/L		09/17/07 3:52 PM	SW846 5030B	SW846 8021B
Surrogate		**LCL**	**UCL**							
a,a,a-Trifluorotoluene	101	80	124		1	%		09/17/07	SW846 5030B	SW846 8021B

PAH/ PNA

Prep Date/Time: 09/16/07 7:30 AM **Anl By:** RJN

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date/Time	Prep Method	Anl Method
1-Methylnaphthalene	26	1.0	3.4		100	ug/L		09/18/07 4:24 AM	SW846 3510C	8270C-SIM
2-Methylnaphthalene	3.4	1.1	3.7		100	ug/L	Q	09/18/07 4:24 AM	SW846 3510C	8270C-SIM
Acenaphthene	19	0.82	2.7		100	ug/L		09/18/07 4:24 AM	SW846 3510C	8270C-SIM
Acenaphthylene	0.93	0.81	2.7		100	ug/L	Q	09/18/07 4:24 AM	SW846 3510C	8270C-SIM
Anthracene	2.1	1.2	3.9		100	ug/L	Q	09/18/07 4:24 AM	SW846 3510C	8270C-SIM
Benzo(a)anthracene	< 1.6	1.6	5.2		100	ug/L		09/18/07 4:24 AM	SW846 3510C	8270C-SIM
Benzo(a)pyrene	< 1.8	1.8	6.1		100	ug/L		09/18/07 4:24 AM	SW846 3510C	8270C-SIM
Benzo(b)fluoranthene	< 1.6	1.6	5.2		100	ug/L		09/18/07 4:24 AM	SW846 3510C	8270C-SIM
Benzo(ghi)perylene	< 1.9	1.9	6.4		100	ug/L		09/18/07 4:24 AM	SW846 3510C	8270C-SIM
Benzo(k)fluoranthene	< 1.9	1.9	6.4		100	ug/L		09/18/07 4:24 AM	SW846 3510C	8270C-SIM
Chrysene	< 1.9	1.9	6.3		100	ug/L		09/18/07 4:24 AM	SW846 3510C	8270C-SIM
Dibenz(a,h)anthracene	< 1.9	1.9	6.3		100	ug/L		09/18/07 4:24 AM	SW846 3510C	8270C-SIM
Fluoranthene	1.6	1.5	5.2		100	ug/L	Q	09/18/07 4:24 AM	SW846 3510C	8270C-SIM
Fluorene	5.3	0.91	3.0		100	ug/L		09/18/07 4:24 AM	SW846 3510C	8270C-SIM
Indeno(1,2,3-cd)pyrene	< 1.9	1.9	6.3		100	ug/L		09/18/07 4:24 AM	SW846 3510C	8270C-SIM
Naphthalene	21	1.2	4.1		100	ug/L		09/18/07 4:24 AM	SW846 3510C	8270C-SIM
Phenanthrene	3.8	1.1	3.8		100	ug/L	Q	09/18/07 4:24 AM	SW846 3510C	8270C-SIM
Pyrene	1.6	1.5	4.8		100	ug/L	Q	09/18/07 4:24 AM	SW846 3510C	8270C-SIM
Surrogate		**LCL**	**UCL**							
Nitrobenzene-d5	0	10	150		100	%	D	09/18/07	SW846 3510C	8270C-SIM
2-Fluorobiphenyl	0	20	111		100	%	D	09/18/07	SW846 3510C	8270C-SIM
Terphenyl-d14	0	44	115		100	%	D	09/18/07	SW846 3510C	8270C-SIM

Pace Analytical Services, Inc.

Analytical Report Number: 888415

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436

Client : NATURAL RESOURCE TECHNOLOGY
Project Name : WPSC - OSHKOSH
Project Number : 1312
Field ID : 091007 014

Matrix Type : WATER
Collection Date : 09/10/07
Report Date : 09/25/07
Lab Sample Number : 888415-013

PVOC

Prep Date/Time: 09/17/07 5:09 PM **Anl By:** SES

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date/Time	Prep Method	Anl Method
1,2,4-Trimethylbenzene	< 0.39	0.39	1.3		1	ug/L		09/17/07 5:09 PM	SW846 5030B	SW846 8021B
1,3,5-Trimethylbenzene	< 0.40	0.40	1.3		1	ug/L		09/17/07 5:09 PM	SW846 5030B	SW846 8021B
Benzene	1.3	0.14	0.46		1	ug/L		09/17/07 5:09 PM	SW846 5030B	SW846 8021B
Ethylbenzene	4.0	0.40	1.3		1	ug/L		09/17/07 5:09 PM	SW846 5030B	SW846 8021B
Toluene	< 0.36	0.36	1.2		1	ug/L		09/17/07 5:09 PM	SW846 5030B	SW846 8021B
Xylene, m + p	< 0.74	0.74	2.5		1	ug/L		09/17/07 5:09 PM	SW846 5030B	SW846 8021B
Xylene, o	0.40	0.36	1.2		1	ug/L	Q	09/17/07 5:09 PM	SW846 5030B	SW846 8021B

Surrogate		LCL	UCL							
a,a,a-Trifluorotoluene	103	80	124		1	%		09/17/07	SW846 5030B	SW846 8021B

PAH/ PNA

Prep Date/Time: 09/16/07 7:30 AM **Anl By:** RJN

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date/Time	Prep Method	Anl Method
1-Methylnaphthalene	0.47	0.21	0.72		20	ug/L	Q	09/18/07 3:12 AM	SW846 3510C	8270C-SIM
2-Methylnaphthalene	< 0.24	0.24	0.79		20	ug/L		09/18/07 3:12 AM	SW846 3510C	8270C-SIM
Acenaphthene	3.3	0.17	0.58		20	ug/L		09/18/07 3:12 AM	SW846 3510C	8270C-SIM
Acenaphthylene	18	1.7	5.7		200	ug/L	D	09/18/07 11:29 AM	SW846 3510C	8270C-SIM
Anthracene	3.8	0.25	0.82		20	ug/L		09/18/07 3:12 AM	SW846 3510C	8270C-SIM
Benzo(a)anthracene	23	3.3	11		200	ug/L	D	09/18/07 11:29 AM	SW846 3510C	8270C-SIM
Benzo(a)pyrene	25	3.9	13		200	ug/L	D	09/18/07 11:29 AM	SW846 3510C	8270C-SIM
Benzo(b)fluoranthene	16	3.3	11		200	ug/L	ZD	09/18/07 11:29 AM	SW846 3510C	8270C-SIM
Benzo(ghi)perylene	13	4.1	14		200	ug/L	QD	09/18/07 11:29 AM	SW846 3510C	8270C-SIM
Benzo(k)fluoranthene	21	4.1	14		200	ug/L	ZD	09/18/07 11:29 AM	SW846 3510C	8270C-SIM
Chrysene	21	4.0	13		200	ug/L	D	09/18/07 11:29 AM	SW846 3510C	8270C-SIM
Dibenz(a,h)anthracene	4.6	0.40	1.3		20	ug/L		09/18/07 3:12 AM	SW846 3510C	8270C-SIM
Fluoranthene	41	3.3	11		200	ug/L	D	09/18/07 11:29 AM	SW846 3510C	8270C-SIM
Fluorene	1.3	0.19	0.64		20	ug/L		09/18/07 3:12 AM	SW846 3510C	8270C-SIM
Indeno(1,2,3-cd)pyrene	12	4.0	13		200	ug/L	QD	09/18/07 11:29 AM	SW846 3510C	8270C-SIM
Naphthalene	0.67	0.26	0.87		20	ug/L	Q	09/18/07 3:12 AM	SW846 3510C	8270C-SIM
Phenanthrene	1.7	0.24	0.80		20	ug/L		09/18/07 3:12 AM	SW846 3510C	8270C-SIM
Pyrene	33	3.1	10		200	ug/L	D	09/18/07 11:29 AM	SW846 3510C	8270C-SIM

Surrogate		LCL	UCL							
Nitrobenzene-d5	0	10	150		20	%	D	09/18/07	SW846 3510C	8270C-SIM
2-Fluorobiphenyl	0	20	111		20	%	D	09/18/07	SW846 3510C	8270C-SIM
Terphenyl-d14	0	44	115		20	%	D	09/18/07	SW846 3510C	8270C-SIM

Client : NATURAL RESOURCE TECHNOLOGY
Project Name : WPSC - OSHKOSH
Project Number : 1312
Field ID : 091007 015

Matrix Type : WATER
Collection Date : 09/10/07
Report Date : 09/25/07
Lab Sample Number : 888415-014

PVOC

Prep Date/Time: 09/17/07 10:45 AM **Anl By:** SES

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date/Time	Prep Method	Anl Method
1,2,4-Trimethylbenzene	< 0.39	0.39	1.3		1	ug/L		09/17/07 10:45 AM	SW846 5030B	SW846 8021B
1,3,5-Trimethylbenzene	< 0.40	0.40	1.3		1	ug/L		09/17/07 10:45 AM	SW846 5030B	SW846 8021B
Benzene	< 0.14	0.14	0.46		1	ug/L		09/17/07 10:45 AM	SW846 5030B	SW846 8021B
Ethylbenzene	< 0.40	0.40	1.3		1	ug/L		09/17/07 10:45 AM	SW846 5030B	SW846 8021B
Toluene	< 0.36	0.36	1.2		1	ug/L		09/17/07 10:45 AM	SW846 5030B	SW846 8021B
Xylene, m + p	< 0.74	0.74	2.5		1	ug/L		09/17/07 10:45 AM	SW846 5030B	SW846 8021B
Xylene, o	< 0.36	0.36	1.2		1	ug/L		09/17/07 10:45 AM	SW846 5030B	SW846 8021B
Surrogate		**LCL**	**UCL**							
a,a,a-Trifluorotoluene	102	80	124		1	%		09/17/07	SW846 5030B	SW846 8021B

PAH/ PNA

Prep Date/Time: 09/16/07 7:30 AM **Anl By:** RJN

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date/Time	Prep Method	Anl Method
1-Methylnaphthalene	< 0.010	0.010	0.034		1	ug/L		09/17/07 6:26 PM	SW846 3510C	8270C-SIM
2-Methylnaphthalene	< 0.011	0.011	0.037		1	ug/L		09/17/07 6:26 PM	SW846 3510C	8270C-SIM
Acenaphthene	< 0.0082	0.0082	0.027		1	ug/L		09/17/07 6:26 PM	SW846 3510C	8270C-SIM
Acenaphthylene	0.0087	0.0081	0.027		1	ug/L	Q	09/17/07 6:26 PM	SW846 3510C	8270C-SIM
Anthracene	< 0.012	0.012	0.039		1	ug/L		09/17/07 6:26 PM	SW846 3510C	8270C-SIM
Benzo(a)anthracene	0.017	0.016	0.052		1	ug/L	Q	09/17/07 6:26 PM	SW846 3510C	8270C-SIM
Benzo(a)pyrene	< 0.018	0.018	0.061		1	ug/L		09/17/07 6:26 PM	SW846 3510C	8270C-SIM
Benzo(b)fluoranthene	< 0.016	0.016	0.052		1	ug/L		09/17/07 6:26 PM	SW846 3510C	8270C-SIM
Benzo(ghi)perylene	< 0.019	0.019	0.064		1	ug/L		09/17/07 6:26 PM	SW846 3510C	8270C-SIM
Benzo(k)fluoranthene	< 0.019	0.019	0.064		1	ug/L		09/17/07 6:26 PM	SW846 3510C	8270C-SIM
Chrysene	0.020	0.019	0.063		1	ug/L	Q	09/17/07 6:26 PM	SW846 3510C	8270C-SIM
Dibenz(a,h)anthracene	< 0.019	0.019	0.063		1	ug/L		09/17/07 6:26 PM	SW846 3510C	8270C-SIM
Fluoranthene	0.023	0.015	0.052		1	ug/L	Q	09/17/07 6:26 PM	SW846 3510C	8270C-SIM
Fluorene	< 0.0091	0.0091	0.030		1	ug/L		09/17/07 6:26 PM	SW846 3510C	8270C-SIM
Indeno(1,2,3-cd)pyrene	< 0.019	0.019	0.063		1	ug/L		09/17/07 6:26 PM	SW846 3510C	8270C-SIM
Naphthalene	0.014	0.012	0.041		1	ug/L	Q	09/17/07 6:26 PM	SW846 3510C	8270C-SIM
Phenanthrene	0.021	0.011	0.038		1	ug/L	Q	09/17/07 6:26 PM	SW846 3510C	8270C-SIM
Pyrene	0.020	0.015	0.048		1	ug/L	Q	09/17/07 6:26 PM	SW846 3510C	8270C-SIM
Surrogate		**LCL**	**UCL**							
Nitrobenzene-d5	92	10	150		1	%		09/17/07	SW846 3510C	8270C-SIM
2-Fluorobiphenyl	82	20	111		1	%		09/17/07	SW846 3510C	8270C-SIM
Terphenyl-d14	120	44	115		1	%	F	09/17/07	SW846 3510C	8270C-SIM

Client : NATURAL RESOURCE TECHNOLOGY
Project Name : WPSC - OSHKOSH
Project Number : 1312
Field ID : 091007 016

Matrix Type : WATER
Collection Date : 09/10/07
Report Date : 09/25/07
Lab Sample Number : 888415-015

PVOC

Prep Date/Time: 09/17/07 11:10 AM **Anl By:** SES

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date/Time	Prep Method	Anl Method
1,2,4-Trimethylbenzene	140	3.9	13		10	ug/L		09/17/07 11:10 AM	SW846 5030B	SW846 8021B
1,3,5-Trimethylbenzene	28	4.0	13		10	ug/L		09/17/07 11:10 AM	SW846 5030B	SW846 8021B
Benzene	44	1.4	4.6		10	ug/L		09/17/07 11:10 AM	SW846 5030B	SW846 8021B
Ethylbenzene	280	4.0	13		10	ug/L		09/17/07 11:10 AM	SW846 5030B	SW846 8021B
Toluene	6.7	3.6	12		10	ug/L	Q	09/17/07 11:10 AM	SW846 5030B	SW846 8021B
Xylene, m + p	47	7.4	25		10	ug/L		09/17/07 11:10 AM	SW846 5030B	SW846 8021B
Xylene, o	100	3.6	12		10	ug/L		09/17/07 11:10 AM	SW846 5030B	SW846 8021B
Surrogate		**LCL**	**UCL**							
a,a,a-Trifluorotoluene	102	80	124		1	%		09/17/07	SW846 5030B	SW846 8021B

PAH/ PNA

Prep Date/Time: 09/16/07 7:30 AM **Anl By:** RJN

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date/Time	Prep Method	Anl Method
1-Methylnaphthalene	470	20	68		2000	ug/L	D	09/18/07 12:41 PM	SW846 3510C	8270C-SIM
2-Methylnaphthalene	280	22	75		2000	ug/L	D	09/18/07 12:41 PM	SW846 3510C	8270C-SIM
Acenaphthene	180	16	54		2000	ug/L	D	09/18/07 12:41 PM	SW846 3510C	8270C-SIM
Acenaphthylene	14	0.81	2.7		100	ug/L		09/18/07 4:48 AM	SW846 3510C	8270C-SIM
Anthracene	28	1.2	3.9		100	ug/L		09/18/07 4:48 AM	SW846 3510C	8270C-SIM
Benzo(a)anthracene	9.0	1.6	5.2		100	ug/L		09/18/07 4:48 AM	SW846 3510C	8270C-SIM
Benzo(a)pyrene	6.1	1.8	6.1		100	ug/L		09/18/07 4:48 AM	SW846 3510C	8270C-SIM
Benzo(b)fluoranthene	3.5	1.6	5.2		100	ug/L	QZ	09/18/07 4:48 AM	SW846 3510C	8270C-SIM
Benzo(ghi)perylene	2.5	1.9	6.4		100	ug/L	Q	09/18/07 4:48 AM	SW846 3510C	8270C-SIM
Benzo(k)fluoranthene	3.3	1.9	6.4		100	ug/L	QZ	09/18/07 4:48 AM	SW846 3510C	8270C-SIM
Chrysene	10	1.9	6.3		100	ug/L		09/18/07 4:48 AM	SW846 3510C	8270C-SIM
Dibenz(a,h)anthracene	< 1.9	1.9	6.3		100	ug/L		09/18/07 4:48 AM	SW846 3510C	8270C-SIM
Fluoranthene	16	1.5	5.2		100	ug/L		09/18/07 4:48 AM	SW846 3510C	8270C-SIM
Fluorene	48	18	60		2000	ug/L	QD	09/18/07 12:41 PM	SW846 3510C	8270C-SIM
Indeno(1,2,3-cd)pyrene	< 1.9	1.9	6.3		100	ug/L		09/18/07 4:48 AM	SW846 3510C	8270C-SIM
Naphthalene	200	25	83		2000	ug/L	D	09/18/07 12:41 PM	SW846 3510C	8270C-SIM
Phenanthrene	82	23	76		2000	ug/L	D	09/18/07 12:41 PM	SW846 3510C	8270C-SIM
Pyrene	23	1.5	4.8		100	ug/L		09/18/07 4:48 AM	SW846 3510C	8270C-SIM
Surrogate		**LCL**	**UCL**							
Nitrobenzene-d5	0	10	150		100	%	D	09/18/07	SW846 3510C	8270C-SIM
2-Fluorobiphenyl	0	20	111		100	%	D	09/18/07	SW846 3510C	8270C-SIM
Terphenyl-d14	0	44	115		100	%	D	09/18/07	SW846 3510C	8270C-SIM

Client : NATURAL RESOURCE TECHNOLOGY
Project Name : WPSC - OSHKOSH
Project Number : 1312
Field ID : 091007 017

Matrix Type : WATER
Collection Date : 09/10/07
Report Date : 09/25/07
Lab Sample Number : 888415-016

PVOC

Prep Date/Time: 09/17/07 11:36 AM **Anl By:** SES

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date/Time	Prep Method	Anl Method
1,2,4-Trimethylbenzene	57	0.39	1.3		1	ug/L		09/17/07 11:36 AM	SW846 5030B	SW846 8021B
1,3,5-Trimethylbenzene	10	0.40	1.3		1	ug/L		09/17/07 11:36 AM	SW846 5030B	SW846 8021B
Benzene	190	0.14	0.46		1	ug/L		09/17/07 11:36 AM	SW846 5030B	SW846 8021B
Ethylbenzene	200	0.40	1.3		1	ug/L		09/17/07 11:36 AM	SW846 5030B	SW846 8021B
Toluene	4.2	0.36	1.2		1	ug/L		09/17/07 11:36 AM	SW846 5030B	SW846 8021B
Xylene, m + p	27	0.74	2.5		1	ug/L		09/17/07 11:36 AM	SW846 5030B	SW846 8021B
Xylene, o	63	0.36	1.2		1	ug/L		09/17/07 11:36 AM	SW846 5030B	SW846 8021B

Surrogate		LCL	UCL							
a,a,a-Trifluorotoluene	99	80	124		1	%		09/17/07	SW846 5030B	SW846 8021B

PAH/ PNA

Prep Date/Time: 09/16/07 7:30 AM **Anl By:** RJN

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date/Time	Prep Method	Anl Method
1-Methylnaphthalene	89	10	34		1000	ug/L	D	09/18/07 11:53 AM	SW846 3510C	8270C-SIM
2-Methylnaphthalene	< 11	11	37		1000	ug/L	D	09/18/07 11:53 AM	SW846 3510C	8270C-SIM
Acenaphthene	47	8.2	27		1000	ug/L	D	09/18/07 11:53 AM	SW846 3510C	8270C-SIM
Acenaphthylene	8.6	0.16	0.54		20	ug/L		09/18/07 3:36 AM	SW846 3510C	8270C-SIM
Anthracene	8.9	0.23	0.77		20	ug/L		09/18/07 3:36 AM	SW846 3510C	8270C-SIM
Benzo(a)anthracene	4.9	0.31	1.0		20	ug/L		09/18/07 3:36 AM	SW846 3510C	8270C-SIM
Benzo(a)pyrene	8.3	0.37	1.2		20	ug/L		09/18/07 3:36 AM	SW846 3510C	8270C-SIM
Benzo(b)fluoranthene	6.1	0.31	1.0		20	ug/L	Z	09/18/07 3:36 AM	SW846 3510C	8270C-SIM
Benzo(ghi)perylene	5.1	0.39	1.3		20	ug/L		09/18/07 3:36 AM	SW846 3510C	8270C-SIM
Benzo(k)fluoranthene	3.8	0.39	1.3		20	ug/L	Z	09/18/07 3:36 AM	SW846 3510C	8270C-SIM
Chrysene	4.6	0.38	1.3		20	ug/L		09/18/07 3:36 AM	SW846 3510C	8270C-SIM
Dibenz(a,h)anthracene	1.4	0.38	1.3		20	ug/L		09/18/07 3:36 AM	SW846 3510C	8270C-SIM
Fluoranthene	7.2	0.31	1.0		20	ug/L		09/18/07 3:36 AM	SW846 3510C	8270C-SIM
Fluorene	< 9.1	9.1	30		1000	ug/L	D	09/18/07 11:53 AM	SW846 3510C	8270C-SIM
Indeno(1,2,3-cd)pyrene	4.0	0.38	1.3		20	ug/L		09/18/07 3:36 AM	SW846 3510C	8270C-SIM
Naphthalene	270	12	41		1000	ug/L	D	09/18/07 11:53 AM	SW846 3510C	8270C-SIM
Phenanthrene	21	11	38		1000	ug/L	QD	09/18/07 11:53 AM	SW846 3510C	8270C-SIM
Pyrene	< 15	15	48		1000	ug/L	D	09/18/07 11:53 AM	SW846 3510C	8270C-SIM

Surrogate		LCL	UCL							
Nitrobenzene-d5	0	10	150		20	%	D	09/18/07	SW846 3510C	8270C-SIM
2-Fluorobiphenyl	0	20	111		20	%	D	09/18/07	SW846 3510C	8270C-SIM
Terphenyl-d14	0	44	115		20	%	D	09/18/07	SW846 3510C	8270C-SIM

Client : NATURAL RESOURCE TECHNOLOGY
Project Name : WPSC - OSHKOSH
Project Number : 1312
Field ID : 091107 018

Matrix Type : WATER
Collection Date : 09/11/07
Report Date : 09/25/07
Lab Sample Number : 888415-017

PVOC

Prep Date/Time: 09/17/07 12:02 PM **Anl By:** SES

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date/Time	Prep Method	Anl Method
1,2,4-Trimethylbenzene	< 0.39	0.39	1.3		1	ug/L		09/17/07 12:02 PM	SW846 5030B	SW846 8021B
1,3,5-Trimethylbenzene	< 0.40	0.40	1.3		1	ug/L		09/17/07 12:02 PM	SW846 5030B	SW846 8021B
Benzene	< 0.14	0.14	0.46		1	ug/L		09/17/07 12:02 PM	SW846 5030B	SW846 8021B
Ethylbenzene	< 0.40	0.40	1.3		1	ug/L		09/17/07 12:02 PM	SW846 5030B	SW846 8021B
Toluene	< 0.36	0.36	1.2		1	ug/L		09/17/07 12:02 PM	SW846 5030B	SW846 8021B
Xylene, m + p	< 0.74	0.74	2.5		1	ug/L		09/17/07 12:02 PM	SW846 5030B	SW846 8021B
Xylene, o	< 0.36	0.36	1.2		1	ug/L		09/17/07 12:02 PM	SW846 5030B	SW846 8021B
Surrogate		**LCL**	**UCL**							
a,a,a-Trifluorotoluene	102	80	124		1	%		09/17/07	SW846 5030B	SW846 8021B

PAH/ PNA

Prep Date/Time: 09/16/07 7:30 AM **Anl By:** RJN

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date/Time	Prep Method	Anl Method
1-Methylnaphthalene	< 0.010	0.010	0.034		1	ug/L		09/17/07 6:50 PM	SW846 3510C	8270C-SIM
2-Methylnaphthalene	< 0.011	0.011	0.037		1	ug/L		09/17/07 6:50 PM	SW846 3510C	8270C-SIM
Acenaphthene	< 0.0082	0.0082	0.027		1	ug/L		09/17/07 6:50 PM	SW846 3510C	8270C-SIM
Acenaphthylene	< 0.0081	0.0081	0.027		1	ug/L		09/17/07 6:50 PM	SW846 3510C	8270C-SIM
Anthracene	< 0.012	0.012	0.039		1	ug/L		09/17/07 6:50 PM	SW846 3510C	8270C-SIM
Benzo(a)anthracene	< 0.016	0.016	0.052		1	ug/L		09/17/07 6:50 PM	SW846 3510C	8270C-SIM
Benzo(a)pyrene	< 0.018	0.018	0.061		1	ug/L		09/17/07 6:50 PM	SW846 3510C	8270C-SIM
Benzo(b)fluoranthene	< 0.016	0.016	0.052		1	ug/L		09/17/07 6:50 PM	SW846 3510C	8270C-SIM
Benzo(ghi)perylene	< 0.019	0.019	0.064		1	ug/L		09/17/07 6:50 PM	SW846 3510C	8270C-SIM
Benzo(k)fluoranthene	< 0.019	0.019	0.064		1	ug/L		09/17/07 6:50 PM	SW846 3510C	8270C-SIM
Chrysene	< 0.019	0.019	0.063		1	ug/L		09/17/07 6:50 PM	SW846 3510C	8270C-SIM
Dibenz(a,h)anthracene	< 0.019	0.019	0.063		1	ug/L		09/17/07 6:50 PM	SW846 3510C	8270C-SIM
Fluoranthene	< 0.015	0.015	0.052		1	ug/L		09/17/07 6:50 PM	SW846 3510C	8270C-SIM
Fluorene	< 0.0091	0.0091	0.030		1	ug/L		09/17/07 6:50 PM	SW846 3510C	8270C-SIM
Indeno(1,2,3-cd)pyrene	< 0.019	0.019	0.063		1	ug/L		09/17/07 6:50 PM	SW846 3510C	8270C-SIM
Naphthalene	0.013	0.012	0.041		1	ug/L	Q	09/17/07 6:50 PM	SW846 3510C	8270C-SIM
Phenanthrene	< 0.011	0.011	0.038		1	ug/L		09/17/07 6:50 PM	SW846 3510C	8270C-SIM
Pyrene	< 0.015	0.015	0.048		1	ug/L		09/17/07 6:50 PM	SW846 3510C	8270C-SIM
Surrogate		**LCL**	**UCL**							
Nitrobenzene-d5	95	10	150		1	%		09/17/07	SW846 3510C	8270C-SIM
2-Fluorobiphenyl	98	20	111		1	%		09/17/07	SW846 3510C	8270C-SIM
Terphenyl-d14	116	44	115		1	%	F	09/17/07	SW846 3510C	8270C-SIM

Pace Analytical Services, Inc.

Analytical Report Number: 888415

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436

Client : NATURAL RESOURCE TECHNOLOGY
Project Name : WPSC - OSHKOSH
Project Number : 1312
Field ID : 091107 019

Matrix Type : WATER
Collection Date : 09/11/07
Report Date : 09/25/07
Lab Sample Number : 888415-018

PVOC

Prep Date/Time: 09/17/07 12:27 PM **Anl By:** SES

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date/Time	Prep Method	Anl Method
1,2,4-Trimethylbenzene	< 0.39	0.39	1.3		1	ug/L		09/17/07 12:27 PM	SW846 5030B	SW846 8021B
1,3,5-Trimethylbenzene	< 0.40	0.40	1.3		1	ug/L		09/17/07 12:27 PM	SW846 5030B	SW846 8021B
Benzene	< 0.14	0.14	0.46		1	ug/L		09/17/07 12:27 PM	SW846 5030B	SW846 8021B
Ethylbenzene	< 0.40	0.40	1.3		1	ug/L		09/17/07 12:27 PM	SW846 5030B	SW846 8021B
Toluene	< 0.36	0.36	1.2		1	ug/L		09/17/07 12:27 PM	SW846 5030B	SW846 8021B
Xylene, m + p	< 0.74	0.74	2.5		1	ug/L		09/17/07 12:27 PM	SW846 5030B	SW846 8021B
Xylene, o	< 0.36	0.36	1.2		1	ug/L		09/17/07 12:27 PM	SW846 5030B	SW846 8021B
Surrogate		**LCL**	**UCL**							
a,a,a-Trifluorotoluene	102	80	124		1	%		09/17/07	SW846 5030B	SW846 8021B

PAH/ PNA

Prep Date/Time: 09/16/07 7:30 AM **Anl By:** RJN

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date/Time	Prep Method	Anl Method
1-Methylnaphthalene	0.010	0.010	0.034		1	ug/L	Q	09/17/07 7:14 PM	SW846 3510C	8270C-SIM
2-Methylnaphthalene	< 0.011	0.011	0.037		1	ug/L		09/17/07 7:14 PM	SW846 3510C	8270C-SIM
Acenaphthene	< 0.0082	0.0082	0.027		1	ug/L		09/17/07 7:14 PM	SW846 3510C	8270C-SIM
Acenaphthylene	0.0086	0.0081	0.027		1	ug/L	Q	09/17/07 7:14 PM	SW846 3510C	8270C-SIM
Anthracene	< 0.012	0.012	0.039		1	ug/L		09/17/07 7:14 PM	SW846 3510C	8270C-SIM
Benzo(a)anthracene	< 0.016	0.016	0.052		1	ug/L		09/17/07 7:14 PM	SW846 3510C	8270C-SIM
Benzo(a)pyrene	< 0.018	0.018	0.061		1	ug/L		09/17/07 7:14 PM	SW846 3510C	8270C-SIM
Benzo(b)fluoranthene	< 0.016	0.016	0.052		1	ug/L		09/17/07 7:14 PM	SW846 3510C	8270C-SIM
Benzo(ghi)perylene	< 0.019	0.019	0.064		1	ug/L		09/17/07 7:14 PM	SW846 3510C	8270C-SIM
Benzo(k)fluoranthene	< 0.019	0.019	0.064		1	ug/L		09/17/07 7:14 PM	SW846 3510C	8270C-SIM
Chrysene	< 0.019	0.019	0.063		1	ug/L		09/17/07 7:14 PM	SW846 3510C	8270C-SIM
Dibenz(a,h)anthracene	< 0.019	0.019	0.063		1	ug/L		09/17/07 7:14 PM	SW846 3510C	8270C-SIM
Fluoranthene	0.022	0.015	0.052		1	ug/L	Q	09/17/07 7:14 PM	SW846 3510C	8270C-SIM
Fluorene	< 0.0091	0.0091	0.030		1	ug/L		09/17/07 7:14 PM	SW846 3510C	8270C-SIM
Indeno(1,2,3-cd)pyrene	< 0.019	0.019	0.063		1	ug/L		09/17/07 7:14 PM	SW846 3510C	8270C-SIM
Naphthalene	0.020	0.012	0.041		1	ug/L	Q	09/17/07 7:14 PM	SW846 3510C	8270C-SIM
Phenanthrene	0.024	0.011	0.038		1	ug/L	Q	09/17/07 7:14 PM	SW846 3510C	8270C-SIM
Pyrene	0.024	0.015	0.048		1	ug/L	Q	09/17/07 7:14 PM	SW846 3510C	8270C-SIM
Surrogate		**LCL**	**UCL**							
Nitrobenzene-d5	96	10	150		1	%		09/17/07	SW846 3510C	8270C-SIM
2-Fluorobiphenyl	88	20	111		1	%		09/17/07	SW846 3510C	8270C-SIM
Terphenyl-d14	120	44	115		1	%	F	09/17/07	SW846 3510C	8270C-SIM

Analytical Report Number: 888415

Client : NATURAL RESOURCE TECHNOLOGY
Project Name : WPSC - OSHKOSH
Project Number : 1312
Field ID : 091107 020

Matrix Type : WATER
Collection Date : 09/11/07
Report Date : 09/25/07
Lab Sample Number : 888415-019

PVOC

Prep Date/Time: 09/18/07 3:44 PM **Anl By:** SES

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date/Time	Prep Method	Anl Method
1,2,4-Trimethylbenzene	< 0.39	0.39	1.3		1	ug/L		09/18/07 3:44 PM	SW846 5030B	SW846 8021B
1,3,5-Trimethylbenzene	< 0.40	0.40	1.3		1	ug/L		09/18/07 3:44 PM	SW846 5030B	SW846 8021B
Benzene	< 0.14	0.14	0.46		1	ug/L		09/18/07 3:44 PM	SW846 5030B	SW846 8021B
Ethylbenzene	< 0.40	0.40	1.3		1	ug/L		09/18/07 3:44 PM	SW846 5030B	SW846 8021B
Toluene	< 0.36	0.36	1.2		1	ug/L		09/18/07 3:44 PM	SW846 5030B	SW846 8021B
Xylene, m + p	< 0.74	0.74	2.5		1	ug/L		09/18/07 3:44 PM	SW846 5030B	SW846 8021B
Xylene, o	< 0.36	0.36	1.2		1	ug/L		09/18/07 3:44 PM	SW846 5030B	SW846 8021B

Surrogate		LCL	UCL							
a,a,a-Trifluorotoluene	101	80	124		1	%		09/18/07	SW846 5030B	SW846 8021B

PAH/ PNA

Prep Date/Time: 09/16/07 7:30 AM **Anl By:** RJN

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date/Time	Prep Method	Anl Method
1-Methylnaphthalene	0.022	0.010	0.034		1	ug/L	Q	09/17/07 7:38 PM	SW846 3510C	8270C-SIM
2-Methylnaphthalene	0.034	0.011	0.037		1	ug/L	Q	09/17/07 7:38 PM	SW846 3510C	8270C-SIM
Acenaphthene	0.075	0.0082	0.027		1	ug/L		09/17/07 7:38 PM	SW846 3510C	8270C-SIM
Acenaphthylene	0.10	0.0081	0.027		1	ug/L		09/17/07 7:38 PM	SW846 3510C	8270C-SIM
Anthracene	0.14	0.012	0.039		1	ug/L		09/17/07 7:38 PM	SW846 3510C	8270C-SIM
Benzo(a)anthracene	0.52	0.062	0.21		4	ug/L	D	09/18/07 9:53 AM	SW846 3510C	8270C-SIM
Benzo(a)pyrene	0.63	0.073	0.24		4	ug/L	D	09/18/07 9:53 AM	SW846 3510C	8270C-SIM
Benzo(b)fluoranthene	0.64	0.063	0.21		4	ug/L	ZD	09/18/07 9:53 AM	SW846 3510C	8270C-SIM
Benzo(ghi)perylene	0.49	0.077	0.26		4	ug/L	D	09/18/07 9:53 AM	SW846 3510C	8270C-SIM
Benzo(k)fluoranthene	0.46	0.019	0.064		1	ug/L	Z	09/17/07 7:38 PM	SW846 3510C	8270C-SIM
Chrysene	0.55	0.076	0.25		4	ug/L	D	09/18/07 9:53 AM	SW846 3510C	8270C-SIM
Dibenz(a,h)anthracene	0.12	0.019	0.063		1	ug/L		09/17/07 7:38 PM	SW846 3510C	8270C-SIM
Fluoranthene	1.2	0.062	0.21		4	ug/L	D	09/18/07 9:53 AM	SW846 3510C	8270C-SIM
Fluorene	0.041	0.0091	0.030		1	ug/L		09/17/07 7:38 PM	SW846 3510C	8270C-SIM
Indeno(1,2,3-cd)pyrene	0.41	0.019	0.063		1	ug/L		09/17/07 7:38 PM	SW846 3510C	8270C-SIM
Naphthalene	0.14	0.012	0.041		1	ug/L		09/17/07 7:38 PM	SW846 3510C	8270C-SIM
Phenanthrene	0.33	0.011	0.038		1	ug/L		09/17/07 7:38 PM	SW846 3510C	8270C-SIM
Pyrene	0.98	0.058	0.19		4	ug/L	D	09/18/07 9:53 AM	SW846 3510C	8270C-SIM

Surrogate		LCL	UCL							
Nitrobenzene-d5	107	10	150		1	%		09/17/07	SW846 3510C	8270C-SIM
2-Fluorobiphenyl	93	20	111		1	%		09/17/07	SW846 3510C	8270C-SIM
Terphenyl-d14	120	44	115		1	%	F	09/17/07	SW846 3510C	8270C-SIM

Client : NATURAL RESOURCE TECHNOLOGY
Project Name : WPSC - OSHKOSH
Project Number : 1312
Field ID : 091107 021

Matrix Type : WATER
Collection Date : 09/11/07
Report Date : 09/25/07
Lab Sample Number : 888415-020

PVOC

Prep Date/Time: 09/18/07 4:10 PM **Anl By:** SES

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date/Time	Prep Method	Anl Method
1,2,4-Trimethylbenzene	11	0.39	1.3		1	ug/L		09/18/07 4:10 PM	SW846 5030B	SW846 8021B
1,3,5-Trimethylbenzene	0.96	0.40	1.3		1	ug/L	Q	09/18/07 4:10 PM	SW846 5030B	SW846 8021B
Benzene	1.6	0.14	0.46		1	ug/L		09/18/07 4:10 PM	SW846 5030B	SW846 8021B
Ethylbenzene	< 0.40	0.40	1.3		1	ug/L		09/18/07 4:10 PM	SW846 5030B	SW846 8021B
Toluene	< 0.36	0.36	1.2		1	ug/L		09/18/07 4:10 PM	SW846 5030B	SW846 8021B
Xylene, m + p	0.92	0.74	2.5		1	ug/L	Q	09/18/07 4:10 PM	SW846 5030B	SW846 8021B
Xylene, o	1.5	0.36	1.2		1	ug/L		09/18/07 4:10 PM	SW846 5030B	SW846 8021B
Surrogate		**LCL**	**UCL**							
a,a,a-Trifluorotoluene	101	80	124		1	%		09/18/07	SW846 5030B	SW846 8021B

PAH/ PNA

Prep Date/Time: 09/16/07 7:30 AM **Anl By:** RJN

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date/Time	Prep Method	Anl Method
1-Methylnaphthalene	17	0.81	2.7		80	ug/L	D	09/18/07 10:17 AM	SW846 3510C	8270C-SIM
2-Methylnaphthalene	1.7	0.90	3.0		80	ug/L	QD	09/18/07 10:17 AM	SW846 3510C	8270C-SIM
Acenaphthene	5.4	0.65	2.2		80	ug/L	D	09/18/07 10:17 AM	SW846 3510C	8270C-SIM
Acenaphthylene	0.18	0.0081	0.027		1	ug/L		09/17/07 10:49 PM	SW846 3510C	8270C-SIM
Anthracene	0.13	0.012	0.039		1	ug/L		09/17/07 10:49 PM	SW846 3510C	8270C-SIM
Benzo(a)anthracene	< 0.016	0.016	0.052		1	ug/L		09/17/07 10:49 PM	SW846 3510C	8270C-SIM
Benzo(a)pyrene	< 0.018	0.018	0.061		1	ug/L		09/17/07 10:49 PM	SW846 3510C	8270C-SIM
Benzo(b)fluoranthene	< 0.016	0.016	0.052		1	ug/L	Z	09/17/07 10:49 PM	SW846 3510C	8270C-SIM
Benzo(ghi)perylene	< 0.019	0.019	0.064		1	ug/L		09/17/07 10:49 PM	SW846 3510C	8270C-SIM
Benzo(k)fluoranthene	< 0.019	0.019	0.064		1	ug/L	Z	09/17/07 10:49 PM	SW846 3510C	8270C-SIM
Chrysene	< 0.019	0.019	0.063		1	ug/L		09/17/07 10:49 PM	SW846 3510C	8270C-SIM
Dibenz(a,h)anthracene	< 0.019	0.019	0.063		1	ug/L		09/17/07 10:49 PM	SW846 3510C	8270C-SIM
Fluoranthene	< 0.015	0.015	0.052		1	ug/L		09/17/07 10:49 PM	SW846 3510C	8270C-SIM
Fluorene	0.94	0.72	2.4		80	ug/L	QD	09/18/07 10:17 AM	SW846 3510C	8270C-SIM
Indeno(1,2,3-cd)pyrene	< 0.019	0.019	0.063		1	ug/L		09/17/07 10:49 PM	SW846 3510C	8270C-SIM
Naphthalene	1.4	0.99	3.3		80	ug/L	QD	09/18/07 10:17 AM	SW846 3510C	8270C-SIM
Phenanthrene	< 0.91	0.91	3.0		80	ug/L	D	09/18/07 10:17 AM	SW846 3510C	8270C-SIM
Pyrene	< 0.015	0.015	0.048		1	ug/L		09/17/07 10:49 PM	SW846 3510C	8270C-SIM
Surrogate		**LCL**	**UCL**							
Nitrobenzene-d5	97	10	150		1	%		09/17/07	SW846 3510C	8270C-SIM
2-Fluorobiphenyl	91	20	111		1	%		09/17/07	SW846 3510C	8270C-SIM
Terphenyl-d14	116	44	115		1	%	F	09/17/07	SW846 3510C	8270C-SIM

Pace Analytical Services, Inc.

Analytical Report Number: 888415

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436

Client : NATURAL RESOURCE TECHNOLOGY
Project Name : WPSC - OSHKOSH
Project Number : 1312
Field ID : 091107 022

Matrix Type : WATER
Collection Date : 09/11/07
Report Date : 09/25/07
Lab Sample Number : 888415-021

PVOC

Prep Date/Time: 09/18/07 4:35 PM **Anl By:** SES

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date/Time	Prep Method	Anl Method
1,2,4-Trimethylbenzene	< 0.39	0.39	1.3		1	ug/L		09/18/07 4:35 PM	SW846 5030B	SW846 8021B
1,3,5-Trimethylbenzene	< 0.40	0.40	1.3		1	ug/L		09/18/07 4:35 PM	SW846 5030B	SW846 8021B
Benzene	< 0.14	0.14	0.46		1	ug/L		09/18/07 4:35 PM	SW846 5030B	SW846 8021B
Ethylbenzene	< 0.40	0.40	1.3		1	ug/L		09/18/07 4:35 PM	SW846 5030B	SW846 8021B
Toluene	< 0.36	0.36	1.2		1	ug/L		09/18/07 4:35 PM	SW846 5030B	SW846 8021B
Xylene, m + p	< 0.74	0.74	2.5		1	ug/L		09/18/07 4:35 PM	SW846 5030B	SW846 8021B
Xylene, o	< 0.36	0.36	1.2		1	ug/L		09/18/07 4:35 PM	SW846 5030B	SW846 8021B
Surrogate		**LCL**	**UCL**							
a,a,a-Trifluorotoluene	102	80	124		1	%		09/18/07	SW846 5030B	SW846 8021B

PAH/ PNA

Prep Date/Time: 09/16/07 7:30 AM **Anl By:** RJN

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date/Time	Prep Method	Anl Method
1-Methylnaphthalene	< 0.010	0.010	0.034		1	ug/L		09/17/07 11:13 PM	SW846 3510C	8270C-SIM
2-Methylnaphthalene	< 0.011	0.011	0.037		1	ug/L		09/17/07 11:13 PM	SW846 3510C	8270C-SIM
Acenaphthene	< 0.0082	0.0082	0.027		1	ug/L		09/17/07 11:13 PM	SW846 3510C	8270C-SIM
Acenaphthylene	< 0.0081	0.0081	0.027		1	ug/L		09/17/07 11:13 PM	SW846 3510C	8270C-SIM
Anthracene	< 0.012	0.012	0.039		1	ug/L		09/17/07 11:13 PM	SW846 3510C	8270C-SIM
Benzo(a)anthracene	< 0.016	0.016	0.052		1	ug/L		09/17/07 11:13 PM	SW846 3510C	8270C-SIM
Benzo(a)pyrene	0.021	0.018	0.061		1	ug/L	Q	09/17/07 11:13 PM	SW846 3510C	8270C-SIM
Benzo(b)fluoranthene	0.032	0.016	0.052		1	ug/L	Q	09/17/07 11:13 PM	SW846 3510C	8270C-SIM
Benzo(ghi)perylene	0.026	0.019	0.064		1	ug/L	Q	09/17/07 11:13 PM	SW846 3510C	8270C-SIM
Benzo(k)fluoranthene	< 0.019	0.019	0.064		1	ug/L		09/17/07 11:13 PM	SW846 3510C	8270C-SIM
Chrysene	0.031	0.019	0.063		1	ug/L	Q	09/17/07 11:13 PM	SW846 3510C	8270C-SIM
Dibenz(a,h)anthracene	< 0.019	0.019	0.063		1	ug/L		09/17/07 11:13 PM	SW846 3510C	8270C-SIM
Fluoranthene	0.042	0.015	0.052		1	ug/L	Q	09/17/07 11:13 PM	SW846 3510C	8270C-SIM
Fluorene	< 0.0091	0.0091	0.030		1	ug/L		09/17/07 11:13 PM	SW846 3510C	8270C-SIM
Indeno(1,2,3-cd)pyrene	< 0.019	0.019	0.063		1	ug/L		09/17/07 11:13 PM	SW846 3510C	8270C-SIM
Naphthalene	< 0.012	0.012	0.041		1	ug/L		09/17/07 11:13 PM	SW846 3510C	8270C-SIM
Phenanthrene	0.032	0.011	0.038		1	ug/L	Q	09/17/07 11:13 PM	SW846 3510C	8270C-SIM
Pyrene	0.039	0.015	0.048		1	ug/L	Q	09/17/07 11:13 PM	SW846 3510C	8270C-SIM
Surrogate		**LCL**	**UCL**							
Nitrobenzene-d5	99	10	150		1	%		09/17/07	SW846 3510C	8270C-SIM
2-Fluorobiphenyl	99	20	111		1	%		09/17/07	SW846 3510C	8270C-SIM
Terphenyl-d14	113	44	115		1	%		09/17/07	SW846 3510C	8270C-SIM

Client : NATURAL RESOURCE TECHNOLOGY
Project Name : WPSC - OSHKOSH
Project Number : 1312
Field ID : 091107 023

Matrix Type : WATER
Collection Date : 09/11/07
Report Date : 09/25/07
Lab Sample Number : 888415-022

INORGANICS

Test	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date/Time	Prep Method	Anl Method
Cyanide, Total	0.47	0.030	0.09		5	mg/L		09/20/07 02:13 PM	EPA 335.4	EPA 335.4

Prep Date/Time: 09/20/07 08:08 AM **Anl By:** DAW

BTEX

Prep Date/Time: 09/18/07 5:01 PM **Anl By:** SES

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date/Time	Prep Method	Anl Method
Benzene	85	0.69	2.3		5	ug/L		09/18/07 5:01 PM	SW846 5030B	SW846 8021B
Ethylbenzene	380	2.0	6.7		5	ug/L		09/18/07 5:01 PM	SW846 5030B	SW846 8021B
Toluene	15	1.8	6.0		5	ug/L		09/18/07 5:01 PM	SW846 5030B	SW846 8021B
Xylene, m + p	51	3.7	12		5	ug/L		09/18/07 5:01 PM	SW846 5030B	SW846 8021B
Xylene, o	94	1.8	6.0		5	ug/L		09/18/07 5:01 PM	SW846 5030B	SW846 8021B
Surrogate		**LCL**	**UCL**							
a,a,a-Trifluorotoluene	100	80	124		1	%		09/18/07	SW846 5030B	SW846 8021B

PAH/ PNA

Prep Date/Time: 09/16/07 7:30 AM **Anl By:** RJN

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date/Time	Prep Method	Anl Method
1-Methylnaphthalene	90	10	34		1000	ug/L	D	09/18/07 1:05 PM	SW846 3510C	8270C-SIM
2-Methylnaphthalene	2.3	1.1	3.7		100	ug/L	Q	09/18/07 5:11 AM	SW846 3510C	8270C-SIM
Acenaphthene	29	0.82	2.7		100	ug/L		09/18/07 5:11 AM	SW846 3510C	8270C-SIM
Acenaphthylene	13	0.81	2.7		100	ug/L		09/18/07 5:11 AM	SW846 3510C	8270C-SIM
Anthracene	10	1.2	3.9		100	ug/L		09/18/07 5:11 AM	SW846 3510C	8270C-SIM
Benzo(a)anthracene	2.0	1.6	5.2		100	ug/L	Q	09/18/07 5:11 AM	SW846 3510C	8270C-SIM
Benzo(a)pyrene	< 1.8	1.8	6.1		100	ug/L		09/18/07 5:11 AM	SW846 3510C	8270C-SIM
Benzo(b)fluoranthene	< 1.6	1.6	5.2		100	ug/L	Z	09/18/07 5:11 AM	SW846 3510C	8270C-SIM
Benzo(ghi)perylene	< 1.9	1.9	6.4		100	ug/L		09/18/07 5:11 AM	SW846 3510C	8270C-SIM
Benzo(k)fluoranthene	< 1.9	1.9	6.4		100	ug/L	Z	09/18/07 5:11 AM	SW846 3510C	8270C-SIM
Chrysene	2.0	1.9	6.3		100	ug/L	Q	09/18/07 5:11 AM	SW846 3510C	8270C-SIM
Dibenz(a,h)anthracene	< 1.9	1.9	6.3		100	ug/L		09/18/07 5:11 AM	SW846 3510C	8270C-SIM
Fluoranthene	7.4	1.5	5.2		100	ug/L		09/18/07 5:11 AM	SW846 3510C	8270C-SIM
Fluorene	17	0.91	3.0		100	ug/L		09/18/07 5:11 AM	SW846 3510C	8270C-SIM
Indeno(1,2,3-cd)pyrene	< 1.9	1.9	6.3		100	ug/L		09/18/07 5:11 AM	SW846 3510C	8270C-SIM
Naphthalene	300	12	41		1000	ug/L	D	09/18/07 1:05 PM	SW846 3510C	8270C-SIM
Phenanthrene	17	1.1	3.8		100	ug/L		09/18/07 5:11 AM	SW846 3510C	8270C-SIM
Pyrene	9.2	1.5	4.8		100	ug/L		09/18/07 5:11 AM	SW846 3510C	8270C-SIM
Surrogate		**LCL**	**UCL**							
Nitrobenzene-d5	0	10	150		100	%	D	09/18/07	SW846 3510C	8270C-SIM
2-Fluorobiphenyl	0	20	111		100	%	D	09/18/07	SW846 3510C	8270C-SIM
Terphenyl-d14	0	44	115		100	%	D	09/18/07	SW846 3510C	8270C-SIM

Pace Analytical Services, Inc.

Analytical Report Number: 888415

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436

Client : NATURAL RESOURCE TECHNOLOGY
Project Name : WPSC - OSHKOSH
Project Number : 1312
Field ID : 091107 024

Matrix Type : WATER
Collection Date : 09/11/07
Report Date : 09/25/07
Lab Sample Number : 888415-023

INORGANICS

Test	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date/Time	Prep Method	Anl Method
Cyanide, Total	0.24	0.0060	0.020		1	mg/L		09/20/07 01:39 PM	EPA 335.4	EPA 335.4
							Prep Date/Time:	09/20/07 08:08 AM	**Anl By:**	DAW
Total Suspended Solids	35	0.77	2.6		1	mg/L		09/18/07	SM 2540D	SM 2540D
							Prep Date/Time:	09/17/07	**Anl By:**	DEY

BTEX

Prep Date/Time: 09/17/07 12:53 PM **Anl By:** SES

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date/Time	Prep Method	Anl Method
Benzene	6.5	0.14	0.46		1	ug/L		09/17/07 12:53 PM	SW846 5030B	SW846 8021B
Ethylbenzene	11	0.40	1.3		1	ug/L		09/17/07 12:53 PM	SW846 5030B	SW846 8021B
Toluene	1.2	0.36	1.2		1	ug/L	Q	09/17/07 12:53 PM	SW846 5030B	SW846 8021B
Xylene, m + p	5.6	0.74	2.5		1	ug/L		09/17/07 12:53 PM	SW846 5030B	SW846 8021B
Xylene, o	16	0.36	1.2		1	ug/L		09/17/07 12:53 PM	SW846 5030B	SW846 8021B
Surrogate		**LCL**	**UCL**							
a,a,a-Trifluorotoluene	102	80	124		1	%		09/17/07	SW846 5030B	SW846 8021B

PAH/ PNA

Prep Date/Time: 09/16/07 7:30 AM **Anl By:** RJN

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date/Time	Prep Method	Anl Method
1-Methylnaphthalene	0.030	0.026	0.085		2.5	ug/L	Q	09/18/07 9:29 AM	SW846 3510C	8270C-SIM
2-Methylnaphthalene	< 0.028	0.028	0.094		2.5	ug/L		09/18/07 9:29 AM	SW846 3510C	8270C-SIM
Acenaphthene	< 0.021	0.021	0.069		2.5	ug/L		09/18/07 9:29 AM	SW846 3510C	8270C-SIM
Acenaphthylene	0.074	0.020	0.068		2.5	ug/L		09/18/07 9:29 AM	SW846 3510C	8270C-SIM
Anthracene	0.052	0.029	0.097		2.5	ug/L	Q	09/18/07 9:29 AM	SW846 3510C	8270C-SIM
Benzo(a)anthracene	< 0.039	0.039	0.13		2.5	ug/L		09/18/07 9:29 AM	SW846 3510C	8270C-SIM
Benzo(a)pyrene	< 0.046	0.046	0.15		2.5	ug/L		09/18/07 9:29 AM	SW846 3510C	8270C-SIM
Benzo(b)fluoranthene	< 0.039	0.039	0.13		2.5	ug/L	Z	09/18/07 9:29 AM	SW846 3510C	8270C-SIM
Benzo(ghi)perylene	< 0.049	0.049	0.16		2.5	ug/L		09/18/07 9:29 AM	SW846 3510C	8270C-SIM
Benzo(k)fluoranthene	< 0.049	0.049	0.16		2.5	ug/L	Z	09/18/07 9:29 AM	SW846 3510C	8270C-SIM
Chrysene	0.050	0.048	0.16		2.5	ug/L	Q	09/18/07 9:29 AM	SW846 3510C	8270C-SIM
Dibenz(a,h)anthracene	< 0.048	0.048	0.16		2.5	ug/L		09/18/07 9:29 AM	SW846 3510C	8270C-SIM
Fluoranthene	0.35	0.039	0.13		2.5	ug/L		09/18/07 9:29 AM	SW846 3510C	8270C-SIM
Fluorene	< 0.023	0.023	0.076		2.5	ug/L		09/18/07 9:29 AM	SW846 3510C	8270C-SIM
Indeno(1,2,3-cd)pyrene	< 0.047	0.047	0.16		2.5	ug/L		09/18/07 9:29 AM	SW846 3510C	8270C-SIM
Naphthalene	0.039	0.031	0.10		2.5	ug/L	Q	09/18/07 9:29 AM	SW846 3510C	8270C-SIM
Phenanthrene	0.034	0.029	0.095		2.5	ug/L	Q	09/18/07 9:29 AM	SW846 3510C	8270C-SIM
Pyrene	0.96	0.037	0.12		2.5	ug/L		09/18/07 9:29 AM	SW846 3510C	8270C-SIM
Surrogate		**LCL**	**UCL**							
Nitrobenzene-d5	133	10	150		2.5	%		09/18/07	SW846 3510C	8270C-SIM
2-Fluorobiphenyl	97	20	111		2.5	%		09/18/07	SW846 3510C	8270C-SIM
Terphenyl-d14	117	44	115		2.5	%	F	09/18/07	SW846 3510C	8270C-SIM

Client : NATURAL RESOURCE TECHNOLOGY
Project Name : WPSC - OSHKOSH
Project Number : 1312
Field ID : TRIP BLANK

Matrix Type : WATER
Collection Date : 09/10/07
Report Date : 09/25/07
Lab Sample Number : 888415-024

BTEX

Prep Date/Time: 09/17/07 1:19 PM **Anl By:** SES

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date/Time	Prep Method	Anl Method
Benzene	< 0.14	0.14	0.46		1	ug/L		09/17/07 1:19 PM	SW846 5030B	SW846 8021B
Ethylbenzene	< 0.40	0.40	1.3		1	ug/L		09/17/07 1:19 PM	SW846 5030B	SW846 8021B
Toluene	< 0.36	0.36	1.2		1	ug/L		09/17/07 1:19 PM	SW846 5030B	SW846 8021B
Xylene, m + p	< 0.74	0.74	2.5		1	ug/L		09/17/07 1:19 PM	SW846 5030B	SW846 8021B
Xylene, o	< 0.36	0.36	1.2		1	ug/L		09/17/07 1:19 PM	SW846 5030B	SW846 8021B
Surrogate		**LCL**	**UCL**							
a,a,a-Trifluorotoluene	102	80	124		1	%		09/17/07	SW846 5030B	SW846 8021B

Lab Number	TestGroupID	Field ID	Comment
888415-	PAH+-W	All Samples	Inadequate sample volume received to perform the method required MS/MSD.
888415-	PVOC-W	All Samples	19-22 Inadequate sample volume received to perform the method required MS/MSD.
888415-009	PAH+-W	091007 010	Completely unable to resolve detects of Benzo(b)Flouranthene and Benzo(k)Flouranthene, therefore total area is reported for both compounds.
888415-014	PAH+-W	091007 015	F -Surrogate failed high, no additional sample available for re-extraction.
888415-017	PAH+-W	091107 018	F -Surrogate failed high, no additional sample available for re-extraction.
888415-018	PAH+-W	091107 019	F -Surrogate failed high, no additional sample available for re-extraction.
888415-019	PAH+-W	091107 020	F - Surrogate was above control criteria. There was no sample volume available for reextraction and reanalysis.
888415-020	PAH+-W	091107 021	F - Surrogate was above control criteria. There was no sample volume available for reextraction and reanalysis.
888415-023	PAH+-W	091107 024	F - Surrogate was above control criteria. There was no sample volume available for reextraction and reanalysis.

Qualifier Codes

Flag	Applies To	Explanation
A	Inorganic	Analyte is detected in the method blank. Method blank criteria is evaluated to the laboratory method detection limit. Additionally, method blank acceptance may be based on project specific criteria or determined from analyte concentrations in the sample and are evaluated on a sample by sample basis.
B	Inorganic	The analyte has been detected between the method detection limit and the reporting limit.
B	Organic	Analyte is present in the method blank. Method blank criteria is evaluated to the laboratory method detection limit. Additionally, method blank acceptance may be based on project specific criteria or determined from analyte concentrations in the sample and are evaluated on a sample by sample basis.
C	All	Elevated detection limit.
D	All	Analyte value from diluted analysis or surrogate result not applicable due to sample dilution.
E	Inorganic	Estimated concentration due to matrix interferences. During the metals analysis the serial dilution failed to meet the established control limits of 0-10%. The sample concentration is greater than 50 times the IDL for analysis done on the ICP or 100 times the IDL for analysis done on the ICP-MS. The result was flagged with the E qualifier to indicate that a physical interference was observed.
E	Organic	Analyte concentration exceeds calibration range.
F	Inorganic	Due to potential interferences for this analysis by Inductively Coupled Plasma techniques (SW-846 Method 6010), this analyte has been confirmed by and reported from an alternate method.
F	Organic	Surrogate results outside control criteria.
G	All	The result is estimated because the concentration is less than the lowest calibration standard concentration utilized in the initial calibration. The method detection limit is less than the reporting limit specified for this project.
H	All	Preservation, extraction or analysis performed past holding time.
HF	Inorganic	This test is considered a field parameter, and the recommended holding time is 15 minutes from collection. The analysis was performed in the laboratory beyond the recommended holding time.
J	All	Concentration detected equal to or greater than the method detection limit but less than the reporting limit.
K	Organic	Detection limit may be elevated due to the presence of an unrequested analyte.
L	All	Elevated detection limit due to low sample volume.
M	Organic	Sample pH was greater than 2
N	All	Spiked sample recovery not within control limits.
O	Organic	Sample received overweight.
P	Organic	The relative percent difference between the two columns for detected concentrations was greater than 40%.
Q	All	The analyte has been detected between the limit of detection (LOD) and limit of quantitation (LOQ). The results are qualified due to the uncertainty of analyte concentrations within this range.
S	Organic	The relative percent difference between quantitation and confirmation columns exceeds internal quality control criteria. Because the result is unconfirmed, it has been reported as a non-detect with an elevated detection limit.
U	All	The analyte was not detected at or above the reporting limit.
V	All	Sample received with headspace.
W	All	A second aliquot of sample was analyzed from a container with headspace.
X	All	See Sample Narrative.
Z	Organics	This compound was separated in the CCV standard but it did not meet the resolution criteria as set forth in SW846.
&	All	Laboratory Control Spike recovery not within control limits.
*	All	Precision not within control limits.
+	Inorganic	The sample result is greater than four times the spike level: therefore, the percent recovery is not evaluated.
<	All	The analyte was not detected at or above the reporting limit.
1	Inorganic	Dissolved analyte or filtered analyte greater than total analyte; analyses passed QC based on precision criteria.
2	Inorganic	Dissolved analyte or filtered analyte greater than total analyte; analyses failed QC based on precision criteria.
3	Inorganic	BOD result is estimated due to the BOD blank exceeding the allowable oxygen depletion.
4	Inorganic	BOD duplicate precision not within control limits. Due to the 48 hour holding time for this test, it is not practical to reanalyze and try to correct the deficiency.
5	Inorganic	BOD result is estimated due to insufficient oxygen depletion. Due to the 48 hour holding time for this test, it is not practical to reanalyze and try to correct the deficiency.
6	Inorganic	BOD laboratory control sample not within control limits. Due to the 48 hour holding time for this test, it is not practical to reanalyze and try to correct the deficiency.
7	Inorganic	BOD result is estimated due to complete oxygen depletion. Due to the 48 hour holding time for this test, it is not practical to reanalyze and try to correct the deficiency.
8	Inorganic	Sample was received unpreserved. Sample was preserved either at the time of receipt or at the time of sample preparation.
9	Inorganic	Sample was received with insufficient preservation. Acid was added either at the time of receipt or at the time of sample preparation.

Analysis Summary by Laboratory

Test Group Name	888415-001	888415-002	888415-003	888415-004	888415-005	888415-006	888415-007	888415-008	888415-009	888415-010	888415-011	888415-012	888415-013	888415-014	888415-015	888415-016	888415-017	888415-018	888415-019	888415-020	888415-021	888415-022	888415-023	888415-024
BTEX																						G	G	G
CYANIDE, TOTAL																						B	B	
PAH/ PNA	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	
PVOC	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G			
SOLIDS, TOTAL SUSPENDED																							B	

Code	WI Certification
B	405132750 / DATCP: 105-444
G	405132750

Pace Analytical Services, Inc.

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436
Fax: 920-469-8827

QC Summary

SDG: 888415
Lab Section: WETCHEM
QC Batch Number: 24760
Prep Method: SM 2540D

QC Type	Client Sample ID	Lab Sample ID
MB	WCG2259-060MB	WCG2259-060MB
LCS	WCG2259-060MBLCS	WCG2259-060MBLCS
DUP	888507-001DUP	888507-001DUP
DUP	888354-002DUP	888354-002DUP

Analytical Method: SM 2540D

Client Sample ID	Lab Sample ID		Client Sample ID	Lab Sample ID
091107 024	888415-023	MB		

Test Name		Method Blank Result Conc	LCS Spiked Conc	LCS Recovery Conc	LCS Recovery %	C	LCSD Spiked Conc	LCSD Recovery Conc	LCSD Recovery %	C	LCS/ LCSD RPD %	C	LCS/LCSD Control Limits LCL %	UCL %	RPD %	Parent Sample Number		Parent Result Conc		Lab Dup Conc	Lab Dup RPD %	C	Lab Dup RPD Limit %
Total Suspended Solids	<	0.31	159.0	160	100.6		---	---	---		---		80	120	10	888354-002		186.0		172	7.8		10
Total Suspended Solids	<	0.31	159.0	160	100.6		---	---	---		---		80	120	10	888507-001		12.60		12.4	1.6		10

Conc = mg/L unless otherwise noted
C = QC Code, see Qualifer Sheet
Parent Result is reported down to MDL in order to allow Validation of this worksheet
The %R and RPD results are calculated from raw data values with more significant figures than are reported on this form.

QC Summary

Batch: 888415
Lab Section: BNASIM
QC Batch Number: 24694
Prep Method: SW846 3510C
Analytical Method: 8270C-SIM

QC Type	Client Sample ID	Lab Sample ID
MB	SVG2282-021MB	SVG2282-021MB
LCS	SVG2282-021MBLCS	SVG2282-021MBLCS
LCSD	SVG2282-021MBLCSD	SVG2282-021MBLCSD

Client Sample ID	Lab Sample ID	MB ID	Client Sample ID	Lab Sample ID	MB ID
091107 001	888415-001	MB	091007 002	888415-002	MB
091007 004	888415-003	MB	091007 005	888415-004	MB
091007 006	888415-005	MB	091007 007	888415-006	MB

Test Name		Method Blank Result Conc	LCS Spiked Conc	LCS Recovery Conc	LCS Recovery %	C	LCSD Spiked Conc	LCSD Recovery Conc	LCSD Recovery %	C	LCS/ LCSD RPD %	C	LCS/LCSD Control Limits LCL %	LCS/LCSD Control Limits UCL %	LCS/LCSD Control Limits RPD %	Parent Sample Number	Parent Result Conc	MS Spiked Conc	MS Recovery Conc	MS Recovery %	C	MSD Spiked Conc	MSD Recovery Conc	MSD Recovery %	C	MS/ MSD RPD %	C	MS/MSD Control Limits LCL %	MS/MSD Control Limits UCL %	MS/MSD Control Limits RPD %
1-Methylnaphthalene	<	0.011	0.20	0.12	61		0.20	0.11	53		12.5		41	136	28	—	—	—	—	—		—	—	—		—		—	—	—
2-Methylnaphthalene	<	0.012	0.20	0.1	52		0.20	0.11	55		5.7		40	138	26	—	—	—	—	—		—	—	—		—		—	—	—
Acenaphthene	<	0.0086	0.20	0.11	56		0.20	0.12	61		8.4		40	126	23	—	—	—	—	—		—	—	—		—		—	—	—
Acenaphthylene	<	0.0086	0.20	0.11	55		0.20	0.12	59		7.0		39	127	24	—	—	—	—	—		—	—	—		—		—	—	—
Anthracene	<	0.012	0.20	0.11	56		0.20	0.11	55		1.7		39	139	27	—	—	—	—	—		—	—	—		—		—	—	—
Benzo(a)anthracene	<	0.017	0.20	0.13	64		0.20	0.13	67		4.8		48	146	20	—	—	—	—	—		—	—	—		—		—	—	—
Benzo(a)pyrene	<	0.019	0.20	0.13	66		0.20	0.14	69		5.1		61	136	20	—	—	—	—	—		—	—	—		—		—	—	—
Benzo(b)fluoranthene	<	0.017	0.20	0.13	67		0.20	0.14	70		3.6		51	141	20	—	—	—	—	—		—	—	—		—		—	—	—
Benzo(ghi)perylene	<	0.02	0.20	0.13	63		0.20	0.13	67		6.1		57	136	20	—	—	—	—	—		—	—	—		—		—	—	—
Benzo(k)fluoranthene	<	0.02	0.20	0.15	74		0.20	0.15	76		3.6		61	149	20	—	—	—	—	—		—	—	—		—		—	—	—
Chrysene	<	0.02	0.20	0.14	70		0.20	0.16	79		11.7		61	150	20	—	—	—	—	—		—	—	—		—		—	—	—
Dibenz(a,h)anthracene	<	0.02	0.20	0.11	55		0.20	0.12	59		6.1		46	150	20	—	—	—	—	—		—	—	—		—		—	—	—
Fluoranthene	<	0.016	0.20	0.14	68		0.20	0.15	77		12.4		48	145	20	—	—	—	—	—		—	—	—		—		—	—	—
Fluorene	<	0.0096	0.20	0.11	55		0.20	0.12	60		8.8		40	131	25	—	—	—	—	—		—	—	—		—		—	—	—
Indeno(1,2,3-cd)pyrene	<	0.02	0.20	0.12	59		0.20	0.13	63		6.7		54	143	20	—	—	—	—	—		—	—	—		—		—	—	—
Naphthalene	<	0.013	0.20	0.1	52		0.20	0.11	54		4.7		45	131	30	—	—	—	—	—		—	—	—		—		—	—	—
Phenanthrene	<	0.012	0.20	0.12	60		0.20	0.13	65		8.8		40	131	25	—	—	—	—	—		—	—	—		—		—	—	—
Pyrene	<	0.015	0.20	0.14	71		0.20	0.16	78		9.7		55	135	20	—	—	—	—	—		—	—	—		—		—	—	—
Nitrobenzene-d5		50%	—	—	50		—	—	50		—		10	150	—	—	—	—	—	—		—	—	—		—		—	—	—
2-Fluorobiphenyl		46%	—	—	47		—	—	48		—		20	111	—	—	—	—	—	—		—	—	—		—		—	—	—
Terphenyl-d14		76%	—	—	69		—	—	75		—		44	115	—	—	—	—	—	—		—	—	—		—		—	—	—

Conc = ug/L unless otherwise noted
C = QC Code, see Qualifer Sheet
Parent Result is reported down to MDL in order to allow Validation of this worksheet
The %R and RPD results are calculated from raw data values with more significant figures than are reported on this form.

QC Summary

Batch: 888415
Lab Section: BNASIM
QC Batch Number: 24725
Prep Method: SW846 3510C
Analytical Method: 8270C-SIM

QC Type	Client Sample ID	Lab Sample ID
MB	SVG2282-023MB	SVG2282-023MB
LCS	SVG2282-023MBLCS	SVG2282-023MBLCS
LCSD	SVG2282-023MBLCSD	SVG2282-023MBLCSD

Client Sample ID	Lab Sample ID	MB ID	Client Sample ID	Lab Sample ID	MB ID
091007 008	888415-007	MB	091007 009	888415-008	MB
091007 010	888415-009	MB	091007 011	888415-010	MB
091007 012	888415-011	MB	091007 013	888415-012	MB
091007 014	888415-013	MB	091007 015	888415-014	MB
091007 016	888415-015	MB	091007 017	888415-016	MB
091107 018	888415-017	MB	091107 019	888415-018	MB
091107 020	888415-019	MB	091107 021	888415-020	MB
091107 022	888415-021	MB	091107 023	888415-022	MB
091107 024	888415-023	MB			

Test Name		Method Blank Result Conc	LCS Spiked Conc	LCS Recovery			LCSD Spiked Conc	LCSD Recovery			LCS/ LCSD RPD		LCS/LCSD Control Limits			Parent Sample Number		Parent Result Conc	MS Spiked Conc	MS Recovery			MSD Spiked Conc	MSD Recovery			MS/ MSD RPD		MS/MSD Control Limits		
				Conc	%	C		Conc	%	C	%	C	LCL %	UCL %	RPD %					Conc	%	C		Conc	%	C	%	C	LCL %	UCL %	RPD %
1-Methylnaphthalene	<	0.011	0.20	0.19	95		0.20	0.16	80		16.3		41	136	28	—		—	—	—	—		—	—	—		—		—	—	—
2-Methylnaphthalene	<	0.012	0.20	0.18	88		0.20	0.16	81		8.2		40	138	26	—		—	—	—	—		—	—	—		—		—	—	—
Acenaphthene	<	0.0086	0.20	0.18	91		0.20	0.15	76		17.2		40	126	23	—		—	—	—	—		—	—	—		—		—	—	—
Acenaphthylene	<	0.0086	0.20	0.18	88		0.20	0.15	76		14.6		39	127	24	—		—	—	—	—		—	—	—		—		—	—	—
Anthracene	<	0.012	0.20	0.18	91		0.20	0.17	83		8.5		39	139	27	—		—	—	—	—		—	—	—		—		—	—	—
Benzo(a)anthracene	<	0.017	0.20	0.22	108		0.20	0.2	102		5.3		48	146	20	—		—	—	—	—		—	—	—		—		—	—	—
Benzo(a)pyrene	<	0.019	0.20	0.22	108		0.20	0.22	111		2.5		61	136	20	—		—	—	—	—		—	—	—		—		—	—	—
Benzo(b)fluoranthene	<	0.017	0.20	0.22	111		0.20	0.24	119		6.9		51	141	20	—		—	—	—	—		—	—	—		—		—	—	—
Benzo(ghi)perylene	<	0.02	0.20	0.24	118		0.20	0.23	113		4.4		57	136	20	—		—	—	—	—		—	—	—		—		—	—	—
Benzo(k)fluoranthene	<	0.02	0.20	0.24	119		0.20	0.23	114		4.3		61	149	20	—		—	—	—	—		—	—	—		—		—	—	—
Chrysene	<	0.02	0.20	0.22	112		0.20	0.22	110		1.2		61	150	20	—		—	—	—	—		—	—	—		—		—	—	—
Dibenz(a,h)anthracene	<	0.02	0.20	0.25	123		0.20	0.24	121		2.2		46	150	20	—		—	—	—	—		—	—	—		—		—	—	—
Fluoranthene	<	0.016	0.20	0.2	101		0.20	0.19	94		8.0		48	145	20	—		—	—	—	—		—	—	—		—		—	—	—
Fluorene	<	0.0096	0.20	0.19	94		0.20	0.16	81		15.5		40	131	25	—		—	—	—	—		—	—	—		—		—	—	—
Indeno(1,2,3-cd)pyrene	<	0.02	0.20	0.24	121		0.20	0.24	119		1.7		54	143	20	—		—	—	—	—		—	—	—		—		—	—	—
Naphthalene	<	0.013	0.20	0.18	89		0.20	0.17	83		6.8		45	131	30	—		—	—	—	—		—	—	—		—		—	—	—
Phenanthrene	<	0.012	0.20	0.19	96		0.20	0.17	83		13.5		40	131	25	—		—	—	—	—		—	—	—		—		—	—	—
Pyrene	<	0.015	0.20	0.2	102		0.20	0.19	95		7.9		55	135	20	—		—	—	—	—		—	—	—		—		—	—	—

Conc = ug/L unless otherwise noted
C = QC Code, see Qualifer Sheet
Parent Result is reported down to MDL in order to allow Validation of this worksheet
The %R and RPD results are calculated from raw data values with more significant figures than are reported on this form.

Report Date: 9/25/2007
QC Batch Number: 24725

Pace Analytical Services, Inc.

QC Summary

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436
Fax: 920-469-8827

Test Name	Method Blank Result Conc	LCS Spiked Conc	LCS Recovery			LCSD Spiked Conc	LCSD Recovery			LCS/ LCSD RPD		LCS/LCSD Control Limits			Parent Sample Number	Parent Result Conc	MS Spiked Conc	MS Recovery			MSD Spiked Conc	MSD Recovery			MS/ MSD RPD		MS/MSD Control Limits		
			Conc	%	C		Conc	%	C	%	C	LCL %	UCL %	RPD %				Conc	%	C		Conc	%	C	%	C	LCL %	UCL %	RPD %
Nitrobenzene-d5	99%	---	---	98		---	---	89		---		10	150	---	---	---	---	---	---		---	---	---		---		---	---	---
2-Fluorobiphenyl	90%	---	---	87		---	---	75		---		20	111	---	---	---	---	---	---		---	---	---		---		---	---	---
Terphenyl-d14	109%	---	---	111		---	---	104		---		44	115	---	---	---	---	---	---		---	---	---		---		---	---	---

Conc = ug/L unless otherwise noted

C = QC Code, see Qualifer Sheet

Parent Result is reported down to MDL in order to allow Validation of this worksheet

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Report Date: 9/25/2007

QC Batch Number: 24725

Pace Analytical Services, Inc.

QC Summary

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436
Fax: 920-469-8827

Batch: 888415
Lab Section: GAS
QC Batch Number: 24759
Prep Method: SW846 5030B
Analytical Method: SW846 8021B

QC Type	Client Sample ID	Lab Sample ID
MB	GG2292-49MB	GG2292-49MB
LCS	GG2292-49MBLCS	GG2292-49MBLCS
LCSD	GG2292-49MBLCSD	GG2292-49MBLCSD
MS	091107 013MS	888415-012MS
MSD	091107 013MSD	888415-012MSD

Client Sample ID	Lab Sample ID	MB ID	Client Sample ID	Lab Sample ID	MB ID
091107 001	888415-001	MB	091007 002	888415-002	MB
091007 004	888415-003	MB	091007 005	888415-004	MB
091007 006	888415-005	MB	091007 007	888415-006	MB
091007 008	888415-007	MB	091007 009	888415-008	MB
091007 010	888415-009	MB	091007 011	888415-010	MB
091007 012	888415-011	MB	091007 013	888415-012	MB
091007 014	888415-013	MB	091007 015	888415-014	MB
091007 016	888415-015	MB	091007 017	888415-016	MB
091107 018	888415-017	MB	091107 019	888415-018	MB
091107 024	888415-023	MB	TRIP BLANK	888415-024	MB

Test Name		Method Blank Result Conc	LCS Spiked Conc	LCS Recovery			LCSD Spiked Conc	LCSD Recovery			LCS/ LCSD RPD		LCS/LCSD Control Limits			Parent Sample Number		Parent Result Conc	MS Spiked Conc	MS Recovery			MSD Spiked Conc	MSD Recovery			MS/ MSD RPD		MS/MSD Control Limits		
				Conc	%	C		Conc	%	C	%	C	LCL %	UCL %	RPD %					Conc	%	C		Conc	%	C	%	C	LCL %	UCL %	RPD %
1,2,4-Trimethylbenzene	<	0.39	20.0	20	100		20.0	20.1	100		0.2		82	115	20	888415-012		3.53	20.0	24.6	105		20.0	24.5	105		0.6		72	123	20
1,3,5-Trimethylbenzene	<	0.4	20.0	20.4	102		20.0	20.4	102		0.2		83	115	20	888415-012		1.14	20.0	22.6	107		20.0	22.5	107		0.4		71	124	20
Benzene	<	0.14	20.0	20.9	104		20.0	20.7	104		0.8		85	115	20	888415-012		0.703	20.0	21.9	106		20.0	22	106		0.5		80	120	20
Ethylbenzene	<	0.4	20.0	20.5	103		20.0	20.4	102		0.4		85	115	20	888415-012		1.10	20.0	22.7	108		20.0	22.7	108		0.2		80	120	20
Toluene	<	0.36	20.0	20.9	104		20.0	20.8	104		0.5		85	115	20	888415-012	<	0.36	20.0	21.5	107		20.0	21.5	108		0.2		80	120	20
Xylene, m + p	<	0.74	40.0	41.1	103		40.0	41	103		0.2		85	115	20	888415-012	<	0.74	40.0	43.2	108		40.0	43.1	108		0.4		78	124	20
Xylene, o	<	0.36	20.0	20.5	103		20.0	20.5	103		0.0		85	115	20	888415-012		1.52	20.0	22.5	105		20.0	22.5	105		0.3		80	120	20
a,a,a-Trifluorotoluene		102%	---	---	101		---	---	101		---		80	124	---	888415-012		101%	---	---	101		---	---	99		---		80	124	---

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Pace Analytical Services, Inc.

QC Summary

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436
Fax: 920-469-8827

Batch: 888415
Lab Section: GAS
QC Batch Number: 24785
Prep Method: SW846 5030B
Analytical Method: SW846 8021B

QC Type	Client Sample ID	Lab Sample ID
MB	GG2292-54MB	GG2292-54MB
LCS	GG2292-54MBLCS	GG2292-54MBLCS
LCSD	GG2292-54MBLCSD	GG2292-54MBLCSD

Client Sample ID	Lab Sample ID	MB ID	Client Sample ID	Lab Sample ID	MB ID
091107 020	888415-019	MB	091107 021	888415-020	MB
091107 022	888415-021	MB	091107 023	888415-022	MB

Test Name		Method Blank Result Conc	LCS Spiked Conc	LCS Recovery			LCSD Spiked Conc	LCSD Recovery			LCS/ LCSD RPD		LCS/LCSD Control Limits			Parent Sample Number		Parent Result Conc	MS Spiked Conc	MS Recovery			MSD Spiked Conc	MSD Recovery			MS/ MSD RPD		MS/MSD Control Limits		
				Conc	%	C		Conc	%	C	%	C	LCL %	UCL %	RPD %					Conc	%	C		Conc	%	C	%	C	LCL %	UCL %	RPD %
1,2,4-Trimethylbenzene	<	0.39	20.0	20.3	101		20.0	20.2	101		0.6		82	115	20	—		—	—	—	—		—	—	—		—		—	—	—
1,3,5-Trimethylbenzene	<	0.4	20.0	20.5	102		20.0	20.4	102		0.6		83	115	20	—		—	—	—	—		—	—	—		—		—	—	—
Benzene	<	0.14	20.0	20.4	102		20.0	20.3	101		0.7		85	115	20	—		—	—	—	—		—	—	—		—		—	—	—
Ethylbenzene	<	0.4	20.0	20.7	104		20.0	20.7	103		0.3		85	115	20	—		—	—	—	—		—	—	—		—		—	—	—
Toluene	<	0.36	20.0	20.6	103		20.0	20.5	102		0.3		85	115	20	—		—	—	—	—		—	—	—		—		—	—	—
Xylene, m + p	<	0.74	40.0	41.1	103		40.0	40.9	102		0.5		85	115	20	—		—	—	—	—		—	—	—		—		—	—	—
Xylene, o	<	0.36	20.0	20.3	102		20.0	20.2	101		0.4		85	115	20	—		—	—	—	—		—	—	—		—		—	—	—
a,a,a-Trifluorotoluene		101%	—	—	100		—	—	101		—		80	124	—	—		—	—	—	—		—	—	—		—		—	—	—

Conc = ug/L unless otherwise noted
C = QC Code, see Qualifer Sheet
Parent Result is reported down to MDL in order to allow Validation of this worksheet
The %R and RPD results are calculated from raw data values with more significant figures than are reported on this form.

Pace Analytical Services, Inc.

QC Summary

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436
Fax: 920-469-8827

Batch: 888415
Lab Section: WETCHEM
QC Batch Number: 24890
Prep Method: EPA 335.4
Analytical Method: EPA 335.4

QC Type	**Client Sample ID**	**Lab Sample ID**
MB	WCG2284-085MB	WCG2284-085MB
LCS	WCG2284-085MBLCS	WCG2284-085MBLCS
MS	888652-001MS	888652-001MS
MS	091107 023MS	888415-022MS
MSD	888652-001MSD	888652-001MSD
MSD	091107 023MSD	888415-022MSD

Client Sample ID	**Lab Sample ID**	**MB ID**	**Client Sample ID**	**Lab Sample ID**	**MB ID**
091107 023	888415-022	MB	091107 024	888415-023	MB

Test Name		Method Blank Result Conc	LCS Spiked Conc	LCS Recovery			LCSD Spiked Conc	LCSD Recovery			LCS/ LCSD RPD		LCS/LCSD Control Limits			Parent Sample Number		Parent Result Conc	MS Spiked Conc	MS Recovery			MSD Spiked Conc	MSD Recovery			MS/ MSD RPD		MS/MSD Control Limits		
				Conc	%	C		Conc	%	C	%	C	LCL %	UCL %	RPD %					Conc	%	C		Conc	%	C	%	C	LCL %	UCL %	RPD %
Cyanide, Total	<	0.006	0.10	0.1	100.7		---	---	---		---		90	110	20	888415-022		0.47	0.10	0.51	49.1	+	0.10	0.61	146.0	+	17.2		90	110	20
Cyanide, Total	<	0.006	0.10	0.1	100.7		---	---	---		---		90	110	20	888652-001	<	0.006	0.10	0.1	102.4		0.10	0.1	103.8		1.3		90	110	20

Conc = mg/L unless otherwise noted
C = QC Code, see Qualifer Sheet
Parent Result is reported down to MDL in order to allow Validation of this worksheet
The %R and RPD results are calculated from raw data values with more significant figures than are reported on this form.

Sample Condition Upon Receipt

Pace Analytical

Client Name: NRT **Project #** 888415

Optional
Proj. Due Date:
Proj. Name:

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☑ Pace Other ______

Tracking #: ______

Custody Seal on Cooler/Box Present: ☐ yes ☑ no Seals intact: ☐ yes ☐ no

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other ______

Thermometer Used —

Type of Ice: [✓ Wet] Blue None ☑ Samples on ice, cooling process has begun

Cooler Temperature ROI

Temp should be above freezing to 6°C

Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 9-13-07 cg

Comments:

Chain of Custody Present:	☑ Yes	☐ No	☐ N/A	1.
Chain of Custody Filled Out:	☑ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished:	☑ Yes	☐ No	☐ N/A	3.
Sampler Name & Signature on COC:	☑ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time:	☑ Yes	☐ No	☐ N/A	5.
Short Hold Time Analysis (<72hr):	☐ Yes	☑ No	☐ N/A	6.
Rush Turn Around Time Requested:	☐ Yes	☑ No	☐ N/A	7.
Sufficient Volume:	☐ Yes	☑ No	☐ N/A	⑧
Correct Containers Used:	☐ Yes	☑ No	☐ N/A	⑨
-Pace Containers Used:	☑ Yes	☐ No	☐ N/A	
Containers Intact:	☑ Yes	☐ No	☐ N/A	10.
Filtered volume received for Dissolved tests	☐ Yes	☐ No	☑ N/A	11.
Sample Labels match COC: -Includes date/time/ID/Analysis Matrix: GW	☑ Yes	☐ No	☐ N/A	12.
All containers needing preservation have been checked.	☑ Yes	☐ No	☐ N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☑ Yes	☐ No	☐ N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	☐ Yes	☐ No		Initial when completed cg Lot # of added preservative
Samples checked for dechlorination:	☐ Yes	☐ No	☑ N/A	14.
Headspace in VOA Vials (>6mm):	☐ Yes	☑ No	☐ N/A	15.
Trip Blank Present:	☑ Yes	☐ No	☐ N/A	16. 1-40ml HCL H2O rec'd + not on coc. Added by lab. cg 9-13-07
Trip Blank Custody Seals Present	☑ Yes	☐ No	☐ N/A	
Pace Trip Blank Lot # (if purchased): ______				

Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: ______ Date/Time: ______

Comments/ Resolution: ⑧ Only 2-Liter ag A rec'd @ #012. MS/MSD requested. Need 3 Liter ag. cg 9-13-07 (6-40ml rec'd for #012)

⑨ TSS @ #023 rec'd in Liter ag.

Project Manager Review: ______ **Date:** 9-14-07

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

(Please Print Clearly)

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CHAIN OF CUSTODY

UPPER MIDWEST REGION
MN: 612-607-1700 WI: 920-469-2436

Page 1 of 5

COC No. 029644

Company Name:	NRT
Branch/Location:	Pewaukee, WI
Project Contact:	Heather Simon
Phone:	262-523-9000
Project Number:	1312
Project Name:	Oshkosh
Project State:	WI
Sampled By (Print):	Ricky J. Guenther Jr
Sampled By (Sign):	
PO #:	
Regulatory Program:	

Quote #:	
Mail To Contact:	Jody Barbeau
Mail To Company:	NRT
Mail To Address:	23713 W. Paul Rd. Ste Pewaukee, WI 53072
Invoice To Contact:	Janet Sagerlund
Invoice To Company:	NRT
Invoice To Address:	Same
Invoice To Phone:	

*Preservation Codes
A=None B=HCL C=H2SO4 D=HNO3 E=DI Water F=Methanol G=NaOH
H=Sodium Bisulfate Solution I=Sodium Thiosulfate J=Other

Data Package Options (billable)
☐ EPA Level III
☐ EPA Level IV

MS/MSD
☒ On your sample (billable)
☐ NOT needed on your sample

Matrix Codes
A = Air W = Water
B = Biota DW = Drinking Water
C = Charcoal GW = Ground Water
O = Oil SW = Surface Water
S = Soil WW = Waste Water
Sl = Sludge WP = Wipe

				FILTERED? (YES/NO) Y/N	N	N	~~N~~		
				PRESERVATION (CODE)* Pick Letter	A	B	~~A~~		
				Analyses Requested	PAH by 8270C	BTEX/TMBs by 8021B	~~TSS~~	CLIENT COMMENTS	LAB COMMENTS (Lab Use Only)
PACE LAB #	CLIENT FIELD ID	COLLECTION DATE	COLLECTION TIME	MATRIX					
001	091107 001	9-11-7	0835	GW	1	3			1-Liter ag A 3-40ml B
002	091007 002	9-10-7	0900		1	3			
	~~003~~								
003	091007 004	9-10-7	0940		1	3			
004	091007 005		1020		1	3			
005	091007 006		1028		1	3			
006	091007 007		1045		1	3			
007	091007 008		1100		1	3			
008	091007009		1130		1	3			
009	091007010		1150		1	3			
010	091007011		1210		1	3			
011	091007012		1230		1	3			
012	091007013 MS/MSD	9-10-7	1235	GW	2	6		MS/MSD	2-Liter ag A 6-40ml B

Rush Turnaround Time Requested - Prelims
(Rush TAT subject to approval/surcharge)
Date Needed:

Transmit Prelim Rush Results by (complete what you want):
Email #1:
Email #2:
Telephone:
Fax:

Samples on HOLD are subject to special pricing and release of liability

Relinquished By:	Date/Time:	Received By:	Date/Time:
R. J. G. Jr.	9-13-07 / 0811	D. Fanning	9/13/07 0811
D. Fanning	9/13/07 1150	B Kempen	9/13/07 1150
B Kempen	9/13/07 1430	Pace	9-13-07 1430

PACE Project No. 888415

Receipt Temp = ROI °C

Sample Receipt pH
OK / Adjusted

Cooler Custody Seal
Present / ~~Not Present~~
Intact / Not Intact

Version 6.0 06/14/06

ORIGINAL

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CHAIN OF COUNSTODY

UPPER MIDWEST REGION
MN: 612-607-1700 **WI:** 920-469-2436

Page 2 of 3

COC No. 029645

Company Name:	NRT
Branch/Location:	
Project Contact:	
Phone:	
Project Number:	1312
Project Name:	
Project State:	
Sampled By (Print):	Ricky J. Gyenther Jr.
Sampled By (Sign):	
PO #:	
Regulatory Program:	

Quote #:	
Mail To Contact:	
Mail To Company:	
Mail To Address:	
Invoice To Contact:	Same
Invoice To Company:	
Invoice To Address:	
Invoice To Phone:	

*Preservation Codes
A=None B=HCL C=H2SO4 D=HNO3 E=DI Water F=Methanol G=NaOH
H=Sodium Bisulfate Solution I=Sodium Thiosulfate J=Other

Data Package Options (billable)
☐ EPA Level III
☐ EPA Level IV

MS/MSD
☒ On your sample (billable)
☐ NOT needed on your sample

Matrix Codes
A = Air
B = Biota
C = Charcoal
O = Oil
S = Soil
Sl = Sludge
W = Water
DW = Drinking Water
GW = Ground Water
SW = Surface Water
WW = Waste Water
WP = Wipe

				FILTERED? (YES/NO) Y/N	N	N		
				PRESERVATION (CODE)* Pick Letter	A	B		
				Analyses Requested	PAH	BTEX/TMBs		
PACE LAB #	**CLIENT FIELD ID**	**COLLECTION DATE**	**COLLECTION TIME**	**MATRIX**			**CLIENT COMMENTS**	**LAB COMMENTS (Lab Use Only)**
013	091007 014	9.10.7	1320	GW	1	3		1-Liter ag A 3-40ml B
014	091007 015	↓	1310	GW	1	3		
015	091007 016		1440	GW	1	3		
016	091007 017	9.10.7	1435	GW	1	3		
017	091107 018	9.11.7	0830	GW	1	3		
018	091107 019		0835	GW	1	3		
019	091107020		0945	GW	1	3		
020	091107021		0930	GW	1	3		
021	091107 022	9.11.7	1030	GW	1	3		
	~~091007013MS/MSD~~	~~9.10.7~~	~~1235~~	~~GW~~	~~2~~	~~6~~	~~MS/MSD~~	/

Profile #

Rush Turnaround Time Requested - Prelims
(Rush TAT subject to approval/surcharge)
Date Needed:

Transmit Prelim Rush Results by (complete what you want):
Email #1:
Email #2:
Telephone:
Fax:

Samples on HOLD are subject to special pricing and release of liability

Relinquished By:	Date/Time:	Received By:	Date/Time:
	9.13.07 / 0811	D. Farind	9/13/07 0811
D. Farind	9/13/07 1150	B Kempen	9/13/07 1150
B Kempen	9/13/07 1430	Pace	9-13-07 1430

PACE Project No. 888415

Receipt Temp = ROI °C

Sample Receipt pH
OK / Adjusted

Cooler Custody Seal
Present / ~~Not Present~~
Intact / Not Intact

Version 6.0 06/14/06

ORIGINAL

(Please Print Clearly)

Company Name:	NRT
Branch/Location:	Pewaukee
Project Contact:	Heather Simon
Phone:	262-523-9000
Project Number:	1312
Project Name:	Oshkosh
Project State:	WI
Sampled By (Print):	Ricky J. Guenther Jr.
Sampled By (Sign):	Jr.
PO #:	
Regulatory Program:	

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UPPER MIDWEST REGION
MN: 612-607-1700 **WI:** 920-469-2436

Page 3 of 7 38

029646
COC No.

*Preservation Codes
A=None B=HCL C=H2SO4 D=HNO3 E=DI Water F=Methanol G=NaOH
H=Sodium Bisulfate Solution I=Sodium Thiosulfate J=Other

Quote #:	
Mail To Contact:	Jody Barbeau
Mail To Company:	NRT
Mail To Address:	23713 W. Paul Rd. Ste. D Pewaukee, WI 53072
Invoice To Contact:	Janet Sgurlato
Invoice To Company:	NRT
Invoice To Address:	Same
Invoice To Phone:	

Data Package Options (billable)
☐ EPA Level III
☐ EPA Level IV

MS/MSD
☐ On your sample (billable)
☐ NOT needed on your sample

Matrix Codes
A = Air W = Water
B = Biota DW = Drinking Water
C = Charcoal GW = Ground Water
O = Oil SW = Surface Water
S = Soil WW = Waste Water
Sl = Sludge WP = Wipe

					FILTERED? (YES/NO) Y/N	N	N	N	N		
					PRESERVATION (CODE)* Pick Letter	B	A	A	G		
PACE LAB #	**CLIENT FIELD ID**	COLLECTION DATE	COLLECTION TIME	MATRIX	Analyses Requested	BTEX	PAH	TSS	Total Cyanide 9012A	**CLIENT COMMENTS**	**LAB COMMENTS (Lab Use Only)** / Profile #
022	091107 023 ~~022~~	9.11.7	1110	GW		3	1		1	Screen	1-Liter ag A 1-250ml PG 3-40ml B
023	091107 024 ~~023~~	9.11.7	1115	GW		3	1	1	1		2-Liter ag A 1-250ml PG 3-40ml B
024	Trip blank										~~1~~-40 ml B

Rush Turnaround Time Requested - Prelims
(Rush TAT subject to approval/surcharge)
Date Needed:

Transmit Prelim Rush Results by (complete what you want):

Email #1:	
Email #2:	
Telephone:	
Fax:	

- Samples on HOLD are subject to special pricing and release of liability

Relinquished By:	Date/Time:	Received By:	Date/Time:
Jr.	9.13.7 / 0811	D. Faniel	9/13/07 0811
D. Faniel	9/13/07 1150	B Kempen	9/13/07 1150
B Kempen	9/13/07 1430	Pace	9-13-07 1430

PACE Project No.
888415

Receipt Temp = ROI °C

Sample Receipt pH
OK / Adjusted

Cooler Custody Seal
Present / [✓ Not Present]
Intact / Not Intact

C019a(27Jun2006)

Version 6.0 06/14/06

ORIGINAL

Sample Control Log

Project Name: WPSC Oshkosh Former MGP Site
Project ID: 1312 / CERCLIS ID - WIN000509947
Task ID: 8.0

Analytical Laboratory: Pace
Geotechnical Laboratory: —
Field Staff ID: RJG

Month (2-digit)	Date (2-digit)	Year (2-digit)	Sample Number (3-digit)	Unique Sample ID	Sample Media	Sample Location	Sample Depth (feet)	QC Sample Information (duplicate, blank, etc...)	COC Number	Notes (turnaround time, handling notes
09	~~10~~ 11	07	001	091107001	GW	P.109	NA		029644	
09	10	07	002	091007002		OW I				
09	10	07	003	091007003		MW108R				
09	10	07	004	091007004		MW-103				
09	10	07	005	091007005		P·106				
09	10	07	006	091007006		MW·102				
09	10	07	007	091007007		P·103				
09	10	07	008	091007008		GW·03				
09	10	07	009	091007009		P·105				
09	10	07	010	091007010		GW·4				
09	10	07	011	091007011		OW.3R				
09	10	07	012	091007012		GW-1				
09	10	07	013	091007013		GW-1		MS/MSD	029644	
09	10	07	014	091007014		MW-104			029645	
09	10	07	015	091007015	GW	P·104	NA		029645	

Sample Control Log

Project Name: WPSC Oshkosh Former MGP Site

Project ID: 1312 / CERCLIS ID - WIN000509947

Task ID: 8.0

Analytical Laboratory: Pace

Geotechnical Laboratory: —

Field Staff ID: RJG

Month (2-digit)	Date (2-digit)	Year (2-digit)	Sample Number (3-digit)	Unique Sample ID	Sample Media	Sample Location	Sample Depth (feet)	QC Sample Information (duplicate, blank, etc...)	COC Number	Notes (turnaround time, handling notes
09	10	07	016	091007016	GW	P-107R	NA		029645	
09	10	07	017	091007017	GW	MW-109R				
09	11	07	018	091107018	GW	P-111				
09	11	07	019	091107019	GW	P-111		Dup		
09	11	07	020	091107020	GW	MW-110				
09	11	07	021	091107021	GW	P-108				
09	11	07	022	091107022	GW	P-110			029645	
09	11	07	023	091107023	GW	InF			029646	
09	11	07	024	091107024	GW	Effluent	NA		029646	

Pace Analytical®

1241 Bellevue Street, Suite 9
Green Bay, WI 54302
920-469-2436, Fax: 920-469-8827

Analytical Report Number: 891396

Client: NATURAL RESOURCE TECHNOLOGY

Lab Contact: Brian Basten

Project Name: WPSC-OSHKOSH

Project Number: 1312

Lab Sample Number	Field ID	Matrix	Collection Date
891396-001	113007001	WATER	11/30/07 12:30
891396-002	TRIP BLANK	WATER	11/30/07

I certify that the data contained in this Final Report has been generated and reviewed in accordance with approved methods and Laboratory Standard Operating Procedure. Exceptions, if any, are discussed in the accompanying sample comments. Release of this final report is authorized by Laboratory management, as is verified by the following signature. This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc. The sample results relate only to the analytes of interest tested.

Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

REPORT OF LABORATORY ANALYSIS

Approval Signature

12-14-07
Date

Pace Analytical Services, Inc.

Analytical Report Number: 891396

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436

Client : NATURAL RESOURCE TECHNOLOGY
Project Name : WPSC-OSHKOSH
Project Number : 1312
Field ID : 113007001

Matrix Type : WATER
Collection Date : 11/30/07
Report Date : 12/14/07
Lab Sample Number : 891396-001

INORGANICS

Test	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date/Time	Prep Method	Anl Method
Cyanide, Total	0.79	0.030	0.09		5	mg/L		12/13/07 02:45 PM	EPA 335.4	EPA 335.4

Prep Date/Time: 12/13/07 08:36 AM **Anl By:** DAW

BTEX

Prep Date/Time: 12/05/07 2:27 AM **Anl By:** PMS

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date/Time	Prep Method	Anl Method
Benzene	5.9	0.14	0.46		1	ug/L		12/05/07 2:27 AM	SW846 5030B	SW846 8021B
Ethylbenzene	21	0.40	1.3		1	ug/L		12/05/07 2:27 AM	SW846 5030B	SW846 8021B
Toluene	1.0	0.36	1.2		1	ug/L	Q	12/05/07 2:27 AM	SW846 5030B	SW846 8021B
Xylene, m + p	4.1	0.74	2.5		1	ug/L		12/05/07 2:27 AM	SW846 5030B	SW846 8021B
Xylene, o	8.3	0.36	1.2		1	ug/L		12/05/07 2:27 AM	SW846 5030B	SW846 8021B
Surrogate		**LCL**	**UCL**							
a,a,a-Trifluorotoluene	103	80	124		1	%		12/05/07	SW846 5030B	SW846 8021B

PAH/ PNA

Prep Date/Time: 12/05/07 9:00 AM **Anl By:** RJN

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date/Time	Prep Method	Anl Method
1-Methylnaphthalene	8.8	0.51	1.7		50	ug/L	D	12/06/07 4:58 PM	SW846 3510C	8270C-SIM
2-Methylnaphthalene	0.063	0.011	0.037		1	ug/L		12/05/07 8:14 PM	SW846 3510C	8270C-SIM
Acenaphthene	11	0.41	1.4		50	ug/L	D	12/06/07 4:58 PM	SW846 3510C	8270C-SIM
Acenaphthylene	2.6	0.41	1.4		50	ug/L	D	12/06/07 4:58 PM	SW846 3510C	8270C-SIM
Anthracene	1.7	0.58	1.9		50	ug/L	QD	12/06/07 4:58 PM	SW846 3510C	8270C-SIM
Benzo(a)anthracene	0.085	0.016	0.052		1	ug/L		12/05/07 8:14 PM	SW846 3510C	8270C-SIM
Benzo(a)pyrene	< 0.018	0.018	0.061		1	ug/L		12/05/07 8:14 PM	SW846 3510C	8270C-SIM
Benzo(b)fluoranthene	< 0.016	0.016	0.052		1	ug/L	Z	12/05/07 8:14 PM	SW846 3510C	8270C-SIM
Benzo(ghi)perylene	< 0.019	0.019	0.064		1	ug/L		12/05/07 8:14 PM	SW846 3510C	8270C-SIM
Benzo(k)fluoranthene	< 0.019	0.019	0.064		1	ug/L	Z	12/05/07 8:14 PM	SW846 3510C	8270C-SIM
Chrysene	0.081	0.019	0.063		1	ug/L		12/05/07 8:14 PM	SW846 3510C	8270C-SIM
Dibenz(a,h)anthracene	< 0.019	0.019	0.063		1	ug/L		12/05/07 8:14 PM	SW846 3510C	8270C-SIM
Fluoranthene	1.5	0.77	2.6		50	ug/L	QD	12/06/07 4:58 PM	SW846 3510C	8270C-SIM
Fluorene	5.8	0.45	1.5		50	ug/L	D	12/06/07 4:58 PM	SW846 3510C	8270C-SIM
Indeno(1,2,3-cd)pyrene	< 0.019	0.019	0.063		1	ug/L		12/05/07 8:14 PM	SW846 3510C	8270C-SIM
Naphthalene	0.054	0.012	0.041		1	ug/L		12/05/07 8:14 PM	SW846 3510C	8270C-SIM
Phenanthrene	0.31	0.011	0.038		1	ug/L		12/05/07 8:14 PM	SW846 3510C	8270C-SIM
Pyrene	1.5	0.73	2.4		50	ug/L	QD	12/06/07 4:58 PM	SW846 3510C	8270C-SIM
Surrogate		**LCL**	**UCL**							
Nitrobenzene-d5	96	10	150		1	%		12/05/07	SW846 3510C	8270C-SIM
2-Fluorobiphenyl	82	20	111		1	%		12/05/07	SW846 3510C	8270C-SIM
Terphenyl-d14	112	44	115		1	%		12/05/07	SW846 3510C	8270C-SIM

Client : NATURAL RESOURCE TECHNOLOGY
Project Name : WPSC-OSHKOSH
Project Number : 1312
Field ID : TRIP BLANK

Matrix Type : WATER
Collection Date : 11/30/07
Report Date : 12/14/07
Lab Sample Number : 891396-002

BTEX

Prep Date/Time: 12/05/07 2:52 AM **Anl By:** PMS

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date/Time	Prep Method	Anl Method
Benzene	< 0.14	0.14	0.46		1	ug/L		12/05/07 2:52 AM	SW846 5030B	SW846 8021B
Ethylbenzene	< 0.40	0.40	1.3		1	ug/L		12/05/07 2:52 AM	SW846 5030B	SW846 8021B
Toluene	< 0.36	0.36	1.2		1	ug/L		12/05/07 2:52 AM	SW846 5030B	SW846 8021B
Xylene, m + p	< 0.74	0.74	2.5		1	ug/L		12/05/07 2:52 AM	SW846 5030B	SW846 8021B
Xylene, o	< 0.36	0.36	1.2		1	ug/L		12/05/07 2:52 AM	SW846 5030B	SW846 8021B
Surrogate		**LCL**	**UCL**							
a,a,a-Trifluorotoluene	104	80	124		1	%		12/05/07	SW846 5030B	SW846 8021B

Lab Number	TestGroupID	Field ID	Comment
891396-	BTEX-W	All Samples	1-2 Inadequate sample volume received to perform the method required MS/MSD.
891396-	PAH+-W	All Samples	Inadequate sample volume received to perform the method required MS/MSD.

Qualifier Codes

Flag	Applies To	Explanation
A	Inorganic	Analyte is detected in the method blank. Method blank criteria is evaluated to the laboratory method detection limit. Additionally, method blank acceptance may be based on project specific criteria or determined from analyte concentrations in the sample and are evaluated on a sample by sample basis.
B	Inorganic	The analyte has been detected between the method detection limit and the reporting limit.
B	Organic	Analyte is present in the method blank. Method blank criteria is evaluated to the laboratory method detection limit. Additionally, method blank acceptance may be based on project specific criteria or determined from analyte concentrations in the sample and are evaluated on a sample by sample basis.
C	All	Elevated detection limit.
D	All	Analyte value from diluted analysis or surrogate result not applicable due to sample dilution.
E	Inorganic	Estimated concentration due to matrix interferences. During the metals analysis the serial dilution failed to meet the established control limits of 0-10%. The sample concentration is greater than 50 times the IDL for analysis done on the ICP or 100 times the IDL for analysis done on the ICP-MS. The result was flagged with the E qualifier to indicate that a physical interference was observed.
E	Organic	Analyte concentration exceeds calibration range.
F	Inorganic	Due to potential interferences for this analysis by Inductively Coupled Plasma techniques (SW-846 Method 6010), this analyte has been confirmed by and reported from an alternate method.
F	Organic	Surrogate results outside control criteria.
G	All	The result is estimated because the concentration is less than the lowest calibration standard concentration utilized in the initial calibration. The method detection limit is less than the reporting limit specified for this project.
H	All	Preservation, extraction or analysis performed past holding time.
HF	Inorganic	This test is considered a field parameter, and the recommended holding time is 15 minutes from collection. The analysis was performed in the laboratory beyond the recommended holding time.
J	All	Concentration detected equal to or greater than the method detection limit but less than the reporting limit.
K	Organic	Detection limit may be elevated due to the presence of an unrequested analyte.
L	All	Elevated detection limit due to low sample volume.
M	Organic	Sample pH was greater than 2
N	All	Spiked sample recovery not within control limits.
O	Organic	Sample received overweight.
P	Organic	The relative percent difference between the two columns for detected concentrations was greater than 40%.
Q	All	The analyte has been detected between the limit of detection (LOD) and limit of quantitation (LOQ). The results are qualified due to the uncertainty of analyte concentrations within this range.
S	Organic	The relative percent difference between quantitation and confirmation columns exceeds internal quality control criteria. Because the result is unconfirmed, it has been reported as a non-detect with an elevated detection limit.
U	All	The analyte was not detected at or above the reporting limit.
V	All	Sample received with headspace.
W	All	A second aliquot of sample was analyzed from a container with headspace.
X	All	See Sample Narrative.
Z	Organics	This compound was separated in the CCV standard but it did not meet the resolution criteria as set forth in SW846.
&	All	Laboratory Control Spike recovery not within control limits.
*	All	Precision not within control limits.
+	Inorganic	The sample result is greater than four times the spike level: therefore, the percent recovery is not evaluated.
<	All	The analyte was not detected at or above the reporting limit.
1	Inorganic	Dissolved analyte or filtered analyte greater than total analyte; analyses passed QC based on precision criteria.
2	Inorganic	Dissolved analyte or filtered analyte greater than total analyte; analyses failed QC based on precision criteria.
3	Inorganic	BOD result is estimated due to the BOD blank exceeding the allowable oxygen depletion.
4	Inorganic	BOD duplicate precision not within control limits. Due to the 48 hour holding time for this test, it is not practical to reanalyze and try to correct the deficiency.
5	Inorganic	BOD result is estimated due to insufficient oxygen depletion. Due to the 48 hour holding time for this test, it is not practical to reanalyze and try to correct the deficiency.
6	Inorganic	BOD laboratory control sample not within control limits. Due to the 48 hour holding time for this test, it is not practical to reanalyze and try to correct the deficiency.
7	Inorganic	BOD result is estimated due to complete oxygen depletion. Due to the 48 hour holding time for this test, it is not practical to reanalyze and try to correct the deficiency.
8	Inorganic	Sample was received unpreserved. Sample was preserved either at the time of receipt or at the time of sample preparation.
9	Inorganic	Sample was received with insufficient preservation. Acid was added either at the time of receipt or at the time of sample preparation.

Analysis Summary by Laboratory

Test Group Name	891396-001	891396-002
BTEX	G	G
CYANIDE, TOTAL	B	
PAH/ PNA	B	

Code	WI Certification
B	405132750 / DATCP: 105-444
G	405132750

Pace Analytical Services, Inc.

QC Summary

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436
Fax: 920-469-8827

Batch: 891396
Lab Section: BNASIM
QC Batch Number: 27150
Prep Method: SW846 3510C
Analytical Method: 8270C-SIM

QC Type	Client Sample ID	Lab Sample ID
MB	SVG2282-068MB	SVG2282-068MB
LCS	SVG2282-068MBLCS	SVG2282-068MBLCS
LCSD	SVG2282-068MBLCSD	SVG2282-068MBLCSD

Client Sample ID	Lab Sample ID	MB ID	Client Sample ID	Lab Sample ID	MB ID
113007001	891396-001	MB			

Test Name		Method Blank Result Conc	LCS Spiked Conc	LCS Recovery			LCSD Spiked Conc	LCSD Recovery			LCS/ LCSD RPD		LCS/LCSD Control Limits			Parent Sample Number	Parent Result Conc	MS Spiked Conc	MS Recovery			MSD Spiked Conc	MSD Recovery			MS/ MSD RPD		MS/MSD Control Limits		
				Conc	%	C		Conc	%	C	%	C	LCL %	UCL %	RPD %				Conc	%	C		Conc	%	C	%	C	LCL %	UCL %	RPD %
1-Methylnaphthalene	<	0.011	0.20	0.14	69		0.20	0.14	71		4.0		41	136	28	—	—	—	—	—		—	—	—		—		—	—	—
2-Methylnaphthalene	<	0.012	0.20	0.14	72		0.20	0.13	67		6.6		40	138	26	—	—	—	—	—		—	—	—		—		—	—	—
Acenaphthene	<	0.0086	0.20	0.15	73		0.20	0.14	69		5.4		40	126	23	—	—	—	—	—		—	—	—		—		—	—	—
Acenaphthylene	<	0.0086	0.20	0.14	70		0.20	0.13	66		6.0		39	127	24	—	—	—	—	—		—	—	—		—		—	—	—
Anthracene	<	0.012	0.20	0.17	84		0.20	0.15	77		8.7		39	139	27	—	—	—	—	—		—	—	—		—		—	—	—
Benzo(a)anthracene	<	0.017	0.20	0.19	96		0.20	0.2	100		4.1		48	146	20	—	—	—	—	—		—	—	—		—		—	—	—
Benzo(a)pyrene	<	0.019	0.20	0.2	100		0.20	0.19	97		2.4		61	136	20	—	—	—	—	—		—	—	—		—		—	—	—
Benzo(b)fluoranthene	<	0.017	0.20	0.19	96		0.20	0.17	85		11.7		51	141	20	—	—	—	—	—		—	—	—		—		—	—	—
Benzo(ghi)perylene	<	0.02	0.20	0.2	100		0.20	0.19	96		3.8		57	136	20	—	—	—	—	—		—	—	—		—		—	—	—
Benzo(k)fluoranthene	<	0.02	0.20	0.23	113		0.20	0.24	119		5.0		61	149	20	—	—	—	—	—		—	—	—		—		—	—	—
Chrysene	<	0.02	0.20	0.23	117		0.20	0.24	119		1.1		61	150	20	—	—	—	—	—		—	—	—		—		—	—	—
Dibenz(a,h)anthracene	<	0.02	0.20	0.2	99		0.20	0.19	97		2.2		46	150	20	—	—	—	—	—		—	—	—		—		—	—	—
Fluoranthene	<	0.016	0.20	0.16	80		0.20	0.17	87		8.2		48	145	20	—	—	—	—	—		—	—	—		—		—	—	—
Fluorene	<	0.0096	0.20	0.15	74		0.20	0.14	70		5.2		40	131	25	—	—	—	—	—		—	—	—		—		—	—	—
Indeno(1,2,3-cd)pyrene	<	0.02	0.20	0.2	101		0.20	0.19	97		4.7		54	143	20	—	—	—	—	—		—	—	—		—		—	—	—
Naphthalene	<	0.013	0.20	0.14	70		0.20	0.14	69		1.9		45	131	30	—	—	—	—	—		—	—	—		—		—	—	—
Phenanthrene	<	0.012	0.20	0.15	77		0.20	0.15	75		3.3		40	131	25	—	—	—	—	—		—	—	—		—		—	—	—
Pyrene	<	0.015	0.20	0.16	79		0.20	0.17	85		7.4		55	135	20	—	—	—	—	—		—	—	—		—		—	—	—
Nitrobenzene-d5		88%	—	—	67		—	—	64		—		10	150	—	—	—	—	—	—		—	—	—		—		—	—	—
2-Fluorobiphenyl		85%	—	—	67		—	—	66		—		20	111	—	—	—	—	—	—		—	—	—		—		—	—	—
Terphenyl-d14		102%	—	—	88		—	—	110		—		44	115	—	—	—	—	—	—		—	—	—		—		—	—	—

Conc = ug/L unless otherwise noted
C = QC Code, see Qualifer Sheet
Parent Result is reported down to MDL in order to allow Validation of this worksheet
The %R and RPD results are calculated from raw data values with more significant figures than are reported on this form.

Report Date: 12/14/2007
QC Batch Number: 27150

Pace Analytical Services, Inc.

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436
Fax: 920-469-8827

QC Summary

Batch: 891396
Lab Section: GAS
QC Batch Number: 27109
Prep Method: SW846 5030B
Analytical Method: SW846 8021B

QC Type	Client Sample ID	Lab Sample ID
MB	GG2359-7MB	GG2359-7MB
LCS	GG2359-7MBLCS	GG2359-7MBLCS
LCSD	GG2359-7MBLCSD	GG2359-7MBLCSD

Client Sample ID	Lab Sample ID	MB ID	Client Sample ID	Lab Sample ID	MB ID
113007001	891396-001	MB	TRIP BLANK	891396-002	MB

Test Name		Method Blank Result Conc	LCS Spiked Conc	LCS Recovery			LCSD Spiked Conc	LCSD Recovery			LCS/ LCSD RPD		LCS/LCSD Control Limits			Parent Sample Number		Parent Result Conc	MS Spiked Conc	MS Recovery			MSD Spiked Conc	MSD Recovery			MS/ MSD RPD		MS/MSD Control Limits		
				Conc	%	C		Conc	%	C	%	C	LCL %	UCL %	RPD %					Conc	%	C		Conc	%	C	%	C	LCL %	UCL %	RPD %
Benzene	<	0.14	20.0	21.1	106		20.0	21	105		0.7		85	115	20	—		—	—	—	—		—	—	—		—		—	—	—
Ethylbenzene	<	0.4	20.0	21.4	107		20.0	21.3	106		0.5		85	115	20	—		—	—	—	—		—	—	—		—		—	—	—
Toluene	<	0.36	20.0	21.3	106		20.0	21.2	106		0.6		85	115	20	—		—	—	—	—		—	—	—		—		—	—	—
Xylene, m + p	<	0.74	40.0	42.2	106		40.0	42.1	105		0.3		85	115	20	—		—	—	—	—		—	—	—		—		—	—	—
Xylene, o	<	0.36	20.0	21.2	106		20.0	21.1	106		0.4		85	115	20	—		—	—	—	—		—	—	—		—		—	—	—
a,a,a-Trifluorotoluene		104%	—	—	103		—	—	103		—		80	124	—	—		—	—	—	—		—	—	—		—		—	—	—

Conc = ug/L unless otherwise noted
C = QC Code, see Qualifer Sheet
Parent Result is reported down to MDL in order to allow Validation of this worksheet
The %R and RPD results are calculated from raw data values with more significant figures than are reported on this form.

Report Date: 12/14/2007
QC Batch Number: 27109

Pace Analytical
Services, Inc.

QC Summary

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436
Fax: 920-469-8827

Batch:	891396
Lab Section:	WETCHEM
QC Batch Number:	27401
Prep Method:	EPA 335.4
Analytical Method:	EPA 335.4

QC Type	**Client Sample ID**	**Lab Sample ID**
MB	WCG2368-011MB	WCG2368-011MB
LCS	WCG2368-011MBLCS	WCG2368-011MBLCS
MS	891553-005MS	891553-005MS
MS	891536-002MS	891536-002MS
MSD	891553-005MSD	891553-005MSD
MSD	891536-002MSD	891536-002MSD

Client Sample ID	**Lab Sample ID**	**MB ID**	**Client Sample ID**	**Lab Sample ID**	**MB ID**
113007001	891396-001	MB			

Test Name		Method Blank Result Conc	LCS Spiked Conc	LCS Recovery			LCSD Spiked Conc	LCSD Recovery			LCS/ LCSD RPD		LCS/LCSD Control Limits			Parent Sample Number		Parent Result Conc	MS Spiked Conc	MS Recovery			MSD Spiked Conc	MSD Recovery			MS/ MSD RPD		MS/MSD Control Limits		
				Conc	%	C		Conc	%	C	%	C	LCL %	UCL %	RPD %					Conc	%	C		Conc	%	C	%	C	LCL %	UCL %	RPD %
Cyanide, Total	<	0.006	0.10	0.11	109.4		—	—	—		—		90	110	20	891536-002	<	0.006	0.10	0.12	117.2	N	0.10	0.087	86.6	N	30.0	*	90	110	20
Cyanide, Total	<	0.006	0.10	0.11	109.4		—	—	—		—		90	110	20	891553-005	<	0.072	1.2	1.2	101.9		1.2	1.3	111.0	N	8.5		90	110	20

Conc = mg/L unless otherwise noted
C = QC Code, see Qualifer Sheet
Parent Result is reported down to MDL in order to allow Validation of this worksheet
The %R and RPD results are calculated from raw data values with more significant figures than are reported on this form.

Sample Condition Upon Receipt

Pace Analytical

Client Name: NRT, Inc.

Project # 891396

Optional
Proj. Due Date:
Proj. Name:

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☑ Client ☐ Commercial ☐ Pace Other ______

Tracking #: ______

Custody Seal on Cooler/Box Present: ☐ yes ☑ no Seals intact: ☐ yes ☐ no

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other ______

Thermometer Used —

Type of Ice: [✓ Wet] Blue None ☑ Samples on ice, cooling process has begun

Cooler Temperature RT

Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 11-30-07 cg
11/30/07

				Comments:
Chain of Custody Present:	☑Yes	☐No	☐N/A	1.
Chain of Custody Filled Out:	☑Yes	☐No	☐N/A	2.
Chain of Custody Relinquished:	☑Yes	☐No	☐N/A	3.
Sampler Name & Signature on COC:	☑Yes	☐No	☐N/A	4.
Samples Arrived within Hold Time:	☑Yes	☐No	☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes	☑No	☐N/A	6.
Rush Turn Around Time Requested:	☐Yes	☑No	☐N/A	7.
Sufficient Volume:	☑Yes	☐No	☐N/A	8.
Correct Containers Used:	☑Yes	☐No	☐N/A	9.
-Pace Containers Used:	☑Yes	☐No	☐N/A	
Containers Intact:	☑Yes	☐No	☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes	☑No	☐N/A	11.
Sample Labels match COC:	☑Yes	☐No	☐N/A	12.
-Includes date/time/ID/Analysis Matrix: WW				
All containers needing preservation have been checked.	☑Yes	☐No	☐N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☑Yes	☐No	☐N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	☐Yes	☐No		Initial when completed cg Lot # of added preservative
Samples checked for dechlorination:	☐Yes	☐No	☑N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes	☑No	☐N/A	15.
Trip Blank Present:	☑Yes	☐No	☐N/A	16. Rec'd + not on COC. Added by lab. cg 11-30-07
Trip Blank Custody Seals Present	☑Yes	☐No	☐N/A	
Pace Trip Blank Lot # (if purchased):______				

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: ______ Date/Time: ______

Comments/ Resolution: ______

Project Manager Review: ______ **Date:** 12-3-07

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

=

CHAIN OF CUSTODY

Pace Analytical®
www.pacelabs.com

UPPER MIDWEST REGION
MN: 612-607-1700 **WI:** 920-469-2436

Page 1 of 1

COC No. 4

(Please Print Clearly)

Company Name:	Natural Resource Technology Inc.
Branch/Location:	Pewaukee, WI
Project Contact:	Heather Simon/Jody Barbeau
Phone:	262-522-1207
Project Number:	1312
Project Name:	WPSC - Oshkosh
Project State:	Wisconsin
Sampled By (Print):	Mike Mason - (WPSC)
Sampled By (Sign):	Mike Mason
PO #:	
Regulatory Program:	

Quote #:	
Mail To Contact:	Jody Barbeau
Mail To Company:	Natural Resource Technology Inc.
Mail To Address:	23713 W. Paul Road Unit D Pewaukee, WI. 53072
Invoice To Contact:	
Invoice To Company:	Natural Resource Technology Inc.
Invoice To Address:	Same
Invoice To Phone:	

*Preservation Codes
A=None B=HCL C=H2SO4 D=HNO3 E=DI Water F=Methanol G=NaOH
H=Sodium Bisulfate Solution I=Sodium Thiosulfate J=Other

Data Package Options (billable)
☐ EPA Level III
☐ EPA Level IV

MS/MSD
☐ On your sample (billable)
☐ NOT needed on your sample

Matrix Codes
A = Air W = Water
B = Biota DW = Drinking Water
C = Charcoal GW = Ground Water
O = Oil SW = Surface Water
S = Soil WW = Waste Water
Sl = Sludge WP = Wipe

				FILTERED? (YES/NO)	Y / N	N	N	N	
				PRESERVATION (CODE)*	Pick Letter	B	A	G	
		COLLECTION			Analyses Requested	BTEX (8021B)	PAH (8270C - SIM)	Total Cyanide (9012A)	CLIENT COMMENTS / LAB COMMENTS (Lab Use Only) / Profile #
PACE LAB #	CLIENT FIELD ID	DATE	TIME	MATRIX					
001	~~11~~3007001	11/30/07	12:30	WW		X	X	X	1-250ml pG 1-Liter ag A 3-40ml B
002	Trip Blank								2-40ml B

*Rec'd + not on COC Added by lab. cg 11-30-07

Rush Turnaround Time Requested - Prelims
(Rush TAT subject to approval/surcharge)
Date Needed: **Normal Turn**

Transmit Prelim Rush Results by (complete what you want):

Email #1:	jbarbeau@naturalrt.com
Email #2:	
Telephone:	262-523-9000
Fax:	262-523-9001

Samples on HOLD are subject to special pricing and release of liability

Relinquished By:	Date/Time:	Received By:	Date/Time:
Mike Mason	11/30/07 14:35		11/30/07 14:35

PACE Project No. 891396

Receipt Temp = ICE °C

Sample Receipt pH
OK / Adjusted

Cooler Custody Seal
Present / [✓ Not Present]
Intact / Not Intact

Version 6.0 06/14/06

C019a(27Jun2006)

APPENDIX F3

EARTHEN CAP MAINTENANCE INSPECTION LOG

Earthen Cap Maintenance Inspection Log

Former Oshkosh Manufactured Gas Plant Site
BRRTS# 02-71-000256
USEPA# WIN000509947

Inspections to be performed Annually in Spring/Summer.

Date of Inspection	Visual Inspection/General Comments of Ground Surface	Type of Defect (erosion, bare spots, etc.) and Location of Defect Noted	Necessary Maintenance Actions (grading, backfill, plant grass, etc.) and Date City of Oshkosh Notified	Photographs taken (Y/N)
9/21/2005	Cap was inspected for damage and erosion. The cap appears to be in good condition with no apparent defects.	none	none	yes
6/19/2006	Cap was inspected for damage and erosion. The cap appears to be in good condition	Grass around SW corner of property (around P-103 and P-105) is patchy, soil is exposed between clumps of grass and weeds	Plant Grass	No
6/20/2007	Cap was inspected for damage and erosion. The cap appears to be in good condition. Grass is in good condition around site except for a section near P-103.	Grass around SW corner of property (around P-103 and P-105) is patchy, soil is exposed between clumps of grass and weeds	Plant Grass	No

Date of Inspection	Visual Inspection/General Comments of Dock Wall	Type of Defect (weld separation, damage to wooden fender, etc.) and Location of Defect Noted	Necessary Maintenance Actions (welding, etc.) and Date Performed	Photographs taken (Y/N)
9/21/2005	The dock wall appears to be in good condition	none	none	yes
6/19/2006	The dock wall appears to be in good condition	none	none	no
6/20/2007	The dock wall is in good condition, wood bumper shows no damage from land.	none	none	no

Earthen Cap Maintenance Inspection Log

Former Oshkosh Manufactured Gas Plant Site

BRRTS# 02-71-000256

USEPA# WIN000509947

Date of Inspection	Visual Inspection/General Comments of Monitoring Wells/Dewatering Sumps/Cleanouts	Type of Defect and Location of Defect Noted	Necessary Maintenance Actions and Date Performed	Photographs taken (Y/N)
6/8/2005	P2	Damaged scheduled to be replaced	6/30/05 Well replaced with P2R and in good condition	no
6/8/2005	GW2	Damaged casing, well is scheduled to be replaced	6/30/05 Well replaced with GW2R and in good condition	no
6/8/2005	P104	Sleeve damaged (female threads)	8/9/05 New concrete poured around damaged well box, well box cover will not close properly. An attempt will be made to field modify the box/box cover.	yes
6/8/2005	P105	Well is burried, could not locate	8/9/05 Well was uncovered and in good condition but remains 4" below surface grade	no
6/8/2005	P106	Cover is sitting on top of casing, a new well box needs to be installed.	8/9/05 Well repaired and in good condition	yes
6/8/2005	P109	Uneven @ surface and does not bolt down, appears cover was paved over and chipped out.	Well box needs to be replaced	yes
6/8/2005	OW1	Uneven @ surface and does not bolt down, appears cover was paved over and chipped out.	Well box needs to be replaced	yes
6/8/2005	P101	Uneven @ surface and does not bolt down, appears cover was paved over and chipped out.	Well box needs to be replaced	yes
6/8/2005	GW3	Well is burried, could not locate	8/9/05 Well was uncovered and in good condition but remains 4" below surface grade	no
6/8/2005	MW103	Well is burried, could not locate	8/9/05 Well was uncovered and in good condition	no
6/8/2005	MW102	Cover is sitting on top of conductor casing, a new well box needs to be installed with concrete.	9/21/05 Well repair looks acceptable	yes
6/8/2005	MW104	Sleeve damaged (female threads)	8/9/05 New concrete poured around damaged well box, well box cover will not close properly. An attempt will be made to field modify the box/box cover.	yes
6/8/2005	P103	Well is burried, could not locate	8/9/05 Well in good condition but remains 4" below surface grade	no
6/8/2005	DS-1 and DS-2 cleanouts	Buried beneath asphalt and concrete, respectively	Needs to be uncovered, inspected and extended to current grade.	no
9/21/2005	P101	Uneven @ surface, does not bolt down	Well box needs to be replaced	yes

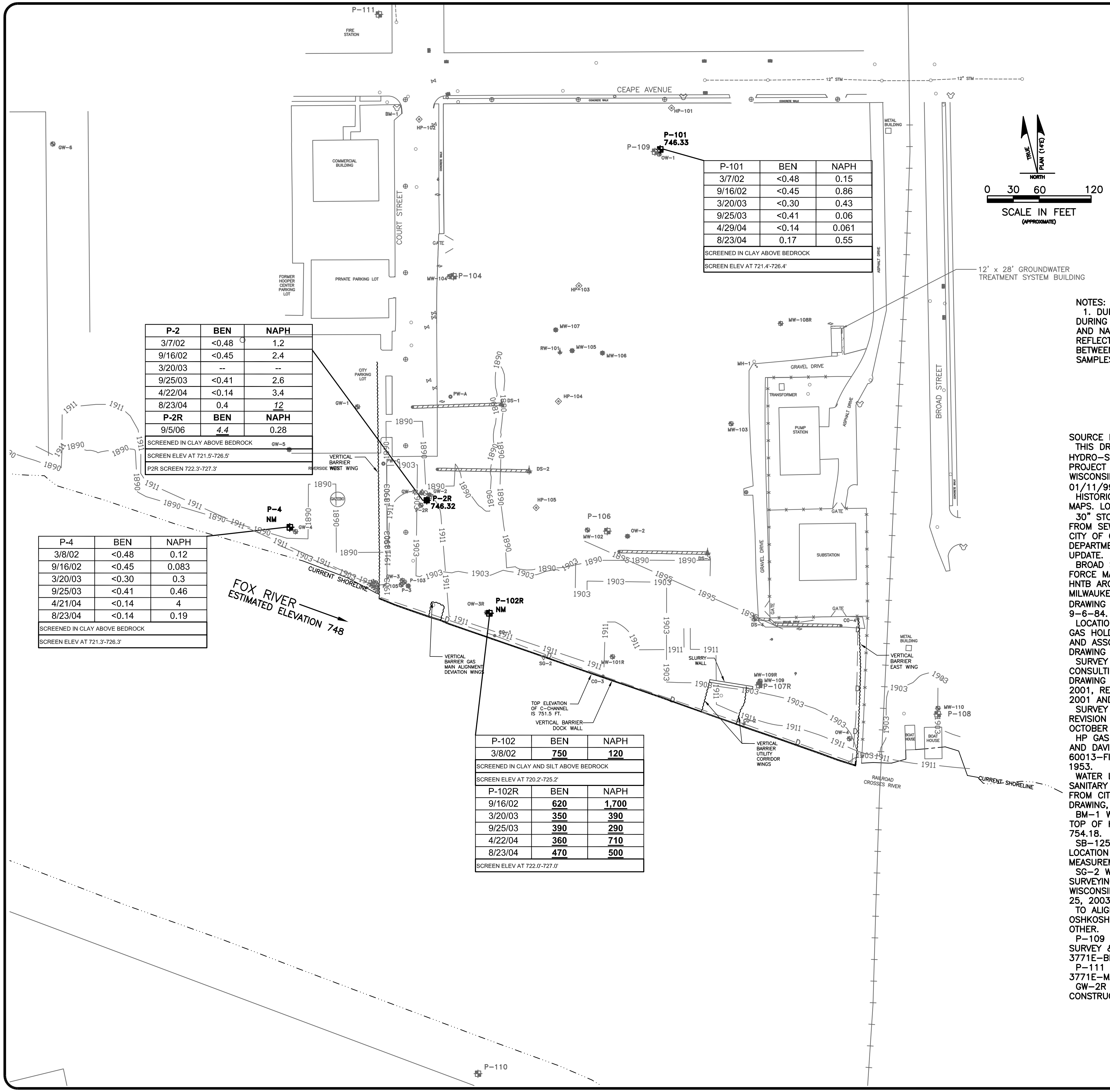
Earthen Cap Maintenance Inspection Log

Former Oshkosh Manufactured Gas Plant Site
BRRTS# 02-71-000256
USEPA# WIN000509947

Date of Inspection	Visual Inspection/General Comments of Monitoring Wells/Dewatering Sumps/Cleanouts	Type of Defect and Location of Defect Noted	Necessary Maintenance Actions and Date Performed	Photographs taken (Y/N)
9/21/2005	OW1	Uneven @ surface, does not bolt down	Well box needs to be replaced	yes
9/21/2005	P109	Uneven @ surface, does not bolt down	Well box needs to be replaced	yes
9/21/2005	P104	Sleeve damaged (female threads)	Needs to be replaced, or field modified	yes
9/21/2005	MW104	Sleeve damaged (female threads)	Needs to be replaced, or field modified	yes
9/21/2005	REMAINING WELLS	GOOD CONDITION	NONE	yes
9/21/2005	DS-1 and DS-2 cleanouts	Buried beneath asphalt and concrete, respectively	Needs to be uncovered, inspected and extended to current grade.	no
6/19/2006	MW108R	missing 3/4 inch bolt	new bolt	no
6/19/2006	OW1	missing 9/16 bolt, water and sand collected inside of flushmount	new bolt	no
6/19/2006	MW104	covered by oversized flushmount cover (3/4 bolt size) doesn’t bolt	new flushmount cover, or field modified	no
6/19/2006	MW102	both bolt anchors are missing, doesn't bolt down	new flushmount cover, or field modified	no
6/19/2006	GW3	broken inner cap	new inner cap	no
6/19/2006	MW101R	missing 3/4 inch bolt	new bolt	no
6/19/2006	OW4	water collected inside of flushmount	new flushmount gasket, or field modify	no
6/20/2007	MW-104, P104 and MW102	Flushmounts were replaced today.	none	no
6/20/2007	OW-1, MW-101R, MW-103, MW-108R, P-103, and P108	replaced missing bolts	none	no
6/20/2007	OW-1, OW-4, GW-3, P-109, and MW-109R	replaced caps	none	no
6/20/2007	all wells	all wells need locks	replace locks next visit	no

APPENDIX F4

INTERMEDIATE SILT/CLAY PIEZOMETRIC FIGURE



P-101	BEN	NAPH
3/7/02	<0.48	0.15
9/16/02	<0.45	0.86
3/20/03	<0.30	0.43
9/25/03	<0.41	0.06
4/29/04	<0.14	0.061
8/23/04	0.17	0.55
SCREENED IN CLAY ABOVE BEDROCK		
SCREEN ELEV AT 721.4'-726.4'		

P-2	BEN	NAPH
3/7/02	<0.48	1.2
9/16/02	<0.45	2.4
3/20/03	--	--
9/25/03	<0.41	2.6
4/22/04	<0.14	3.4
8/23/04	0.4	*12*
P-2R	**BEN**	**NAPH**
9/5/06	*4.4*	0.28
SCREENED IN CLAY ABOVE BEDROCK		
SCREEN ELEV AT 721.5'-726.5'		
P2R SCREEN 722.3'-727.3'		

P-4	BEN	NAPH
3/8/02	<0.48	0.12
9/16/02	<0.45	0.083
3/20/03	<0.30	0.3
9/25/03	<0.41	0.46
4/21/04	<0.14	4
8/23/04	<0.14	0.19
SCREENED IN CLAY ABOVE BEDROCK		
SCREEN ELEV AT 721.3'-726.3'		

P-102	BEN	NAPH
3/8/02	**750**	**120**
SCREENED IN CLAY AND SILT ABOVE BEDROCK		
SCREEN ELEV AT 720.2'-725.2'		
P-102R	BEN	NAPH
9/16/02	**620**	**1,700**
3/20/03	**350**	**390**
9/25/03	**390**	**290**
4/22/04	**360**	**710**
8/23/04	**470**	**500**
SCREEN ELEV AT 722.0'-727.0'		

NOTES:

1. DUPLICATE SAMPLES WERE COLLECTED DURING EACH SAMPLING EVENT. BENZENE, AND NAPHTHALENE CONCENTRATIONS SHOWN REFLECT THE HIGHER CONCENTRATION BETWEEN WELL SAMPLES AND DUPLICATE SAMPLES.

SOURCE NOTES:

THIS DRAWING WAS DEVELOPED FROM MAP BY HYDRO-SEARCH, INC. DATED 06/03/94, PROJECT 304533000 AND A SURVEY BY WISCONSIN PUBLIC SERVICE CORPORATION DATED 01/11/99.

HISTORICAL SHORELINES TAKEN FROM SANBORN MAPS. LOCATIONS ARE APPROXIMATE.

30" STORM SEWER IN BROAD STREET TAKEN FROM SEWER SYSTEM 8TH WARD DRAWING BY CITY OF OSHKOSH WISCONSIN ENGINEERING DEPARTMENT, DATED 12-5-36, WITH 1977 UPDATE.

BROAD STREET PUMP STATION PARCEL AND FORCE MAINS DEVELOPED FROM DRAWING BY HNTB ARCHITECTS ENGINEERS PLANNERS, MILWAUKEE, WISCONSIN, PROJECT NO: 6378, DRAWING SP-2 (3 OF 32) AND PP-2, DATED 9-6-84.

LOCATIONS OF SEWER LATERALS, TAR WELLS, GAS HOLDERS, TAR STILL, TAR SEPARATORS, AND ASSOCIATIVE PIPING TAKEN FROM WPSC DRAWING NO. 140, DATED 1925.

SURVEY BY ROEHLIG LAND SURVEYING & CONSULTING LTD., OSHKOSH, WISCONSIN, DRAWING AC3771B.DWG, DATED AUGUST 17, 2001, REVISED AUGUST 28, 2001, OCTOBER 29, 2001 AND NOVEMBER 12, 2001.

SURVEY BY RA SMITH, DRAWING AC3771E.DWG REVISION DATE SEPTEMBER 25, 2002 AND OCTOBER 3, 2002.

HP GAS LINE FROM DRAWING BY FORD, BACON AND DAVIS, INC., ENGINEERS, DRAWING NO. 60013-FI-S, REVISED DATED NOVEMBER 9, 1953.

WATER LINES AND HYDRANTS, STORM AND SANITARY LINES IN CEAPE AVENUE ARE TAKEN FROM CITY OF OSHKOSH ENGINEERING DIVISION DRAWING, DATED NOVEMBER 9, 1998.

BM-1 WAS FIELD MEASURED BY NRT. BM-1 TOP OF HYDRANT OPERATING NUT, ELEVATION 754.18.

SB-125 WAS INSTALLED IN OCTOBER 2001, LOCATION IS APPROXIMATED FROM FIELD MEASUREMENTS BY NRT.

SG-2 WAS SURVEYED BY ROEHLIG LAND SURVEYING & CONSULTING LTD., OSHKOSH, WISCONSIN, DRAWING 3771E.DWG, DATED JULY 25, 2003.

TO ALIGN SHORELINE WITH WPSC AND CITY OF OSHKOSH BASE MAP ROTATED 1° TO EACH OTHER.

P-109 AND P-110 SURVEYED BY NATIONAL SURVEY & ENGINEERING, DRAWING 07-04 3771E-BLOCK.DWG, REVISED JULY 2004.

P-111 SURVEYED BY RA SMITH, DRAWING 3771E-MAIL.DWG, REVISED JANUARY 20, 2005.

GW-2R AND P-2R WERE SURVEYED BY TERRA CONSTRUCTION IN JULY 2005.

LEGEND

SAMPLE LOCATION	BEN	NAPH
SAMPLE DATE	BENZENE (µg/L)	NAPHTHALENE (µg/L)
WISCONSIN GROUNDWATER QUALITY STANDARDS (NR 140)		
	BEN	**NAPH**
Preventive Action Limit (PAL)	*0.5*	*8*
Enforcement Standard (ES)	**5**	**40**

DATA QUALIFIERS:

2.8	CONCENTRATION ATTAINS OR EXCEEDS AN NR 140 PREVENTIVE ACTION LIMIT
34	CONCENTRATION ATTAINS OR EXCEEDS AN NR 140 ENFORCEMENT STANDARD
nd	NOT DETECTED
ns	STANDARD HAS NOT BEEN ESTABLISHED
--	ANALYSIS WAS NOT PERFORMED
µg/L	MICROGRAMS PER LITER
<	CONSTITUENT WAS NOT IDENTIFIED ABOVE THE LIMIT OF DETECTION INDICATED

P-101 746.33 ⊞ P-4	PIEZOMETER (HSI) AND PIEZOMETRIC SURFACE ELEVATION, FEET
⊞ P-104	PIEZOMETER (NRT)
⊞ MW-110	MONITORING WELL (NRT)
⊞ MW-101R	REPLACEMENT MONITORING WELL (NRT)
OW-1 ⊞ GW-1	MONITORING WELL (HSI)
▲ DS-1	DEWATERING SUMP
▲ RW-101	ABANDONED RECOVERY WELL (NRT)
▽ SG-2	STAFF GAUGE
■ P-3 OW-2	ABANDONED PIEZOMETER/ MONITORING WELL
◈ HP-101	HYDRO-PUNCH (HSI)
● PW-A	ABANDONED INDUSTRIAL SUPPLY WELL
◉ CO-1	CLEANOUT
HDPE	HIGH DENSITY POLYETHYLENE
HSI	HYDRO-SEARCH, INC.
NRT	NATURAL RESOURCE TECHNOLOGY
⊕	CONSTRUCTION GRID POINT (CHISELED CROSS OR PK NAIL)
⊜	CATCH BASIN
	GUY WIRE
☼	LITE POLE
	UTILITY POLE
⋈	GAS VALVE
NM	NOT MEASURED

APPROXIMATE LOCATION OF:

—— 1895 ——	HISTORIC SHORELINE WITH YEAR
—·—·—	PROPERTY BOUNDARY
~~	VERTICAL BARRIER
— —D— —	PERFORATED SUBSURFACE DRAIN PIPE
▨	GROUNDWATER EXTRACTION TRENCH
○	MANHOLE
	HYDRANT
—+—+—+—	RAILROAD
—×—×—	CHAIN LINK FENCE

DRAWN BY: BJK	DATE: 01/17/07
CHECKED BY: PAR	DATE: 01/25/07
APPROVED BY: JMK	DATE: 02/06/07

DRAWING NO: 1312-8-B06
REFERENCE: 1312 TBLS FOR FIGS 070116

INTERMEDIATE SILT/CLAY PIEZOMETRIC SURFACE ELEVATIONS, SEPTEMBER 2006

2006 ANNUAL OPERATION, MAINTENANCE AND MONITORING REPORT
FORMER OSHKOSH MANUFACTURED GAS PLANT
WISCONSIN PUBLIC SERVICE CORPORATION
CITY OF OSHKOSH, WISCONSIN

NATURAL RESOURCE TECHNOLOGY

PROJECT NO.
1312/8

FIGURE NO.
3