3410652 30

STS CONSULTANTS

STS Consultants, Ltd.
11425 W. Lake Park Drive
Milwaukee, Wisconsin 53224-3025

voice 414-359-3030
fax 414-359-0822
web www.stsconsultants.com

AECOM
8.4.2010

03-41-373872

October 3, 2002

Ms. Vicki Stovall
Program Assistant
Remediation and Redevelopment Program
Wisconsin Department of Natural Resources
2300 North Martin Luther King Drive
Milwaukee, WI 53212

TAX Key 353151 2100

RE: Hazardous Substance Release Notification and NR716 Work Plan for the Property Located at Southeast Intersection of North Hubbard and East Brown Street, Milwaukee, Wisconsin – STS Project No. 5-87185EA

Dear Ms. Stovall:

On behalf of Brown Street III LLC, STS Consultants, Ltd. (STS) is submitting this Hazardous Substance Release Notification and NR716 Work Plan for a Site Investigation of the referenced property. This work plan was prepared in accordance with Chapter NR716.09 of the Wisconsin Administrative Code. We look forward to working with you in bringing this site to closure. If you have any questions or comments concerning the information contained herein, please feel free to contact us at your convenience.

Respectfully,

STS CONSULTANTS, LTD.

Mark M. Mejac

Mark M. Mejac, P.G., CGWP
Senior Hydrogeologist

Dennis R. Lawton, P.G.
Senior Hydrogeologist

Attachment

cc: Mr. Brian Columbus, Brown Street III LLC

Wisconsin Department of Natural Resources
STS Project No. 5-87185EA
October 3, 2002

Site Investigation Work Plan
Southeast Intersection of North Hubbard Street and East Brown Street
Milwaukee, Wisconsin

I. SITE INFORMATION
[NR 716.09(2)(a)(b) and (c)]

A. Site Owner: Brown Street III LLC

B. Address: 20 West Hubbard, Suite 2W, Chicago, IL 60610

C. Site Location: Southeast ¼ of the Northeast ¼ of Section 20, Township 7 North, Range 22 East, Milwaukee County, Wisconsin

D. Owner Contact: Brian Columbus
Phone: (312)245-9000
Fax: (312)245-9745

E. Consultant: STS Consultants, Ltd.
11425 West Lake Park Drive
Milwaukee, Wisconsin 53224-3025
Contact: Dennis R. Lawton, P.G.
Mark M. Mejac, P.G.
Phone: (414) 359-3030
Fax: (414) 359-0822

F. Attachments:

STS Operating Procedures
Figure 1 – Site Location Map
Figure 2 – Recommended Sampling Locations
KEY Engineering Figure 2 – Summary of Sample Analytical Results
Hazardous Substance Release Notification

G. Previous Reports:

Phase I Environmental Site Assessment (ESA) Report dated August 21, 1998, Weyco Group Buildings and Land, 234 East Reservoir Avenue, Milwaukee, Wisconsin, KEY Engineering Group Ltd.

Phase II Environmental Site Assessment (ESA) Report dated March 11, 1999, Weyco Group Buildings and Land, 234 East Reservoir Avenue and 301 East Brown Street, Milwaukee, Wisconsin, KEY Engineering Group Ltd.

Supplemental Phase II Environmental Site Assessment Report dated April 9, 1999, Weyco Group Buildings and Land, 234 East Reservoir Avenue and 301 East Brown Street, Milwaukee, Wisconsin, KEY Engineering Group Ltd.

II. SCOPING INFORMATION
[NR 716.09(2)(d)]

A. Site History:

Site Uses:

Former shoe manufacturing facility.

Record of Past Hazardous Substance Use or Environmental Pollution:

1. Former presence of an oil-fired boiler room in the basement of a former shoe manufacturing building within the northernmost portion of the subject property. No information is available concerning the location of the tank or system used to provide fuel for the former boiler.

2. Former presence of a solvent storage area along the western side of the former shoe manufacturing building within the northernmost portion of the subject facility.

B. Nature and Extent of Contamination

1. **Type and Amount:**
   Petroleum hydrocarbons and chlorinated solvents, a substantial source of which probably includes on-site fill materials (including apparent foundry sand); amount unknown.

2. **Affected Media:**
   As indicated in 1999 KEY Engineering Group Phase II ESA, relatively low concentrations of petroleum hydrocarbons have generally been detected in site soil samples; groundwater samples have not been collected.

3. **Proximity to Other Sources of Contamination:**
   Former sheet metal works facility, fuel oil underground storage tanks (USTs), and gasoline UST at the southwest intersection of East Brown Street and North Hubbard Street.

4. **Need for Access Agreement:**
   None

5. **Potential or Known Impacts to Receptors**

   No apparent threats to human health or sensitive environments are known to be present within the immediate area of the site at this time.

6. **Potential Impacts to:**

   a. Endangered Species: None identified.

   b. Sensitive Species, Habitats or Ecosystems: None identified.

   c. Wetlands: None identified.

   d. Outstanding or Exceptional Resource Waters: None identified.

   e. Historical or Archeological Sites: None identified.

C. Current and Potential Remedial Activities:

1. Interim Action:

None

2. Remedial Actions Already Performed:

None

D. Other Information That May Affect Site Investigation:

None

III. Site Description
[NR 716.09(2)(e)]

A. Topography:

Refer to attached Figure 1 for the site topographic setting. The site topography slopes slightly to the south and southwest. The site elevation is approximately 665 feet above mean sea level.

B. Site Drainage:

Surface water drainage from the subject site likely flows toward stormwater inlets located along North Hubbard Street to the west and/or East Reservoir Avenue to the south, and is directed toward the Milwaukee River.

C. Surficial Soils:

In general, surficial soils at the site are classified as Miami Clay Loam. This soil type consists of 4 to 8 inches of grayish-brown compact clay loam overlying clay loam or clay. Loam, gravel or sand is encountered at minimum depths of 2.5 feet below ground surface (bgs).

D. Site Geology:

The general geology near the site consists of approximately 100 feet of glacial ground moraine deposits (glacial till). The glacial till includes boulders, gravel, sand, silt and clay, and overlies an approximate 2,000 to 3,000 foot thick sequence of sedimentary bedrock units. Progressing downward, the bedrock consists of Devonian-age dolomite, shaly limestone and shale. The Devonian-age dolomite overlies Silurian System, Niagaran Series dolomite. Site-specific geology, based on information provided in the KEY Engineering Group Phase II ESA, generally includes clayey silt with varying amounts of gravel, brick, concrete, wood and apparent foundry sand.

E. Site Hydrogeology:

Near-surface groundwater may occur in sands and gravels of the unconsolidated glacial deposits, and flows to the southeast (toward the Milwaukee River). Local features, however, such as well buried utilities, tunnels, roadways, building foundations and fill soil

can affect the direction of local shallow groundwater flow. Regionally, groundwater flow is eastward, toward Lake Michigan. Site-specific depth to the water table, based on information provided in the KEY Engineering Group Phase II ESA, is approximately 13 feet below ground surface.

F. Potential Migration Pathways:

No specific migration pathways identified.

IV. SAMPLING PLAN
[NR 716.09(2)(F)]

A. Sampling Strategy

To further characterize soil and groundwater quality within the location of the former boiler/engine room, four hydraulic probes will be initially installed, at the locations identified as STS-1 through STS-4 on Figure 2. The purpose of this initial field investigation task is to provide soil and groundwater data to allow for proper placement of monitoring wells.

After receipt of laboratory results of collected soil and groundwater samples from hydraulic probes STS-1 through STS-4, three hollow-stem augered soil borings will be completed as permanent NR 141 WAC groundwater monitoring wells for collection of soil and groundwater samples for laboratory analysis, determining groundwater flow direction, and conducting in-situ hydraulic conductivity testing to estimate hydraulic conductivities in the vicinity of the monitoring well screens. The monitoring well locations have been selected to address both delineation of the extent of previously identified impacts (as shown on KEY Engineering Group Figure 2) and evaluation of potential source area and migration pathways. The proposed locations of the monitoring wells are shown on the attached Figure 2 and are identified as MW-1, MW-2 and MW-3. The specific locations of these three monitoring wells will be based on the laboratory results of the collected soil and groundwater samples from hydraulic probes STS-1 through STS-4.

Specific sampling and data collection and analysis activities are outlined below:

- Soil sampling – With respect to the monitoring well installation borings, soil samples will be collected at 2.5 foot intervals to 10 feet bgs, followed by 5 foot intervals to the base of each monitoring well installation boring. Soil samples will be collected at continuous intervals from the hydraulic probes, to total depths of 15 feet bgs.
- Monitoring Well Installation and Groundwater Sampling – Flush-mounted groundwater monitoring wells will be installed in conformance with WAC NR 141. The wells will be constructed to approximately 25 feet bgs with 10-foot length screens that penetrate approximately 7 feet of the saturated zone. Groundwater samples will

be collected for four consecutive quarters after the monitoring wells have been installed. The locations and elevations of the wells will be surveyed to evaluate local groundwater flow direction.

- Hydraulic Conductivity Tests – In-situ hydraulic conductivity testing will be conducted on each of the three new monitoring wells using a transducer and Hermit™ data logger. The data will be downloaded and analyzed using a computer program to estimate hydraulic conductivity values.

B. Water Level Monitoring:

Water level measurements in the three monitoring wells will be conducted during each round of groundwater sampling, using a water level indicator.

C. Soil Sampling Methods, Including Preservation and Delivery:

Split-spoon soil samples will be collected from the monitoring well installation borings in accordance with ASTM Method D1587. With respect to the hydraulic probes, soil samples are collected inside of a 2-foot polyethylene sheath inserted into the end of a drive rod. When the selected sample depth is reached, a spring release allows the soil sample to be collected inside of the sheath. A new sheath is used to collect each sample at the specified depth. Soil samples collected for laboratory analysis will be preserved as appropriate and shipped on ice under chain of custody procedures to a WDNR-certified analytical laboratory. Based on the results of in-field screening, one soil sample from each hydraulic probe and monitoring well installation boring will be retained for laboratory analysis.

D. Groundwater Sampling Methods, Including Preservation and Delivery:

Groundwater sampling will be conducted in accordance with WDNR's PUBL-DG-038 96 Groundwater Sampling Field Manual. Groundwater samples collected for laboratory analysis will be preserved as appropriate and shipped on ice under chain of custody procedures to a WDNR-certified analytical laboratory.

E. Parameters and Analytical Methods:

Soil samples will be analyzed for volatile organic compounds (VOCs) (EPA Method 8021), polycyclic aromatic hydrocarbons (PAHs) (EPA Method 8310) and total lead (EPA

Method 6010 for soil and 7421 for water) by an off-site Wisconsin certified laboratory. Groundwater samples will be analyzed for volatile organic compounds (VOCs) (EPA Method 8021), and total lead (EPA Method 6010 for soil and 7421 for water) by an off-site Wisconsin certified laboratory. In addition, groundwater samples collected from monitoring wells will be analyzed for PAHs (EPA Method 8310). Three of the soil samples retained for laboratory analysis will also be analyzed for total organic carbon (TOC) (EPA Method 415.1), to establish site-specific groundwater pathway residual contaminant levels (RCLs), as necessary. In-field testing of groundwater samples for the natural attenuation parameters dissolved oxygen, oxidation-reduction potential, pH and specific conductivity will also be conducted.

F. Description of Quality Control and Quality Assurance:

A trip blank and duplicate groundwater sample will be analyzed for every sampling round for purposes of quality assurance/quality control.

G. Procedures to Prevent Cross-Contamination

Sampling equipment for both soil and groundwater will be cleaned after each sample is collected according to STS's Standard Operating Procedures (SOPs). These procedures will be provided upon request. Disposable bailers will be used for groundwater sampling.

H. Investigative Waste Handling:

If field observations dictate, soil cuttings will be drummed and handled appropriately for possible off-site landfill disposal. Decontamination water, well development purge water, etc. will be containerized pending laboratory analytical results.

I. How will Results be Used:

After completion of four rounds of groundwater sampling, a Case Summary and Close Out Form report will be prepared for submittal to the WDNR if supported by the analytical data.

V. SITE RESTORATION
[NR 716.09(2)(h)]

Abandonment of soil borings and monitoring wells will be completed in accordance with the requirements of Chapter NR 141 WAC. Other significant site restoration activities are not anticipated.

VI. SCHEDULE
[NR 716.09(2)(h)]

It is anticipated that field work will begin by October 2002. If supported by the analytical data, the Case Summary and Close Our Form report will be completed by July 2003 (after four quarters of groundwater monitoring data have been collected and evaluated).

Wisconsin Department of Natural Resources
STS Project No. 5-87185EA
October 3, 2002

NR700 CERTIFICATIONS

"I, Mark Mejac, certify that I am a hydrogeologist as that term is defined in s.NR712.03(1), Wis. Adm. Code, and that, to the best of my knowledge, all of the information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR700 to 726, Wis. Adm. Code."

Mark M. Mejac — 10-3-02

Mark Mejac, P.G. — Date
Senior Hydrogeologist

"I, Dennis Lawton, certify that I am a hydrogeologist as that term is defined in s.NR712.03(1), Wis. Adm. Code, and that, to the best of my knowledge, all of the information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR700 to 726, Wis. Adm. Code."

10/3/02

Dennis R. Lawton, P.G. — Date
Senior Hydrogeologist

STS Operating Procedures

1.0 SOIL SAMPLING PROCEDURES

1.1 Auger Drilling

Typically, 4-1/4 or 6-1/4 inch hollow stem augers are utilized to advance boreholes during auger drilling. The augers are advanced using a truck or all-terrain vehicle (ATV) mounted auger drilling rig. Soil samples are collected at 2.5-foot intervals, using standard split-barrel sampling procedures. A copy of the American Society for Testing and Materials (ASTM) Procedure (ASTM D-1586) is appended at the end of this section. Drilling equipment is decontaminated in accordance with procedures outlined in Section 4.1. Soil cuttings generated during the drilling procedure are handled in accordance with the procedures outlined in Section 5.1.

1.2 Soil Screening

Each soil sample collected during soil probe or auger drilling methods is split to form duplicate samples, upon collection. A portion of the sample, to be utilized for screening purposes and classification is placed in an 8-ounce glass jar, covered with aluminum foil and sealed with a screw-on lid. The remainder of the sample is placed in laboratory provided jars, if the sample is to be submitted to a laboratory for analytical testing (Section 1.4).

1.2.1 PID Screening

STS utilizes an HNu Model PI-101 photoionization detector (PID) equipped with a 10.2 electron volt (eV) lamp or a MiniRae Plus (PGM-76) Professional PID equipped with a 10.6 eV lamp. Both instruments are capable of detecting certain volatile organic compounds (VOCs), including many of the volatile organic components characteristic of petroleum products and common solvents with ionization energies less than or equal to 10.6 eV.

PID screening is performed by first allowing the screening sample to warm to approximately room temperature (70° F). The sample is shaken vigorously for several seconds. This procedure breaks up the soil and increases the surface area of the soil particles exposed to the air inside of the jar. The tip of the PID probe is inserted about one inch into the jar through the aluminum foil.

The highest value read off of the meter during the first few seconds after inserting the probe tip is recorded as the PID reading for the soil sample.

Because organic compounds have varying ionization potentials, the response of the PID depends on the compounds being ionized. In addition, because the PID responds only to compounds which are present in the vapor phase, the relative volatility is also a factor in the response. As a result, when a variety of VOCs are present in the screening sample, the meter reading does not necessarily indicate the concentrations of any specific VOC, but a response to total VOCs present relative to the concentrations and ionization potential of each compound.

Prior to screening, the meter is zeroed and calibrated to an isobutylene standard per the manufacturer's specifications. All PID readings are reported in PID Instrument Units (IU). The readings are similar to parts per million, using an isobutylene equivalent to address the variability of the response factor. This nomenclature is recommended by the equipment manufacturer and required by the Wisconsin Department of Natural Resources (WDNR) field screening procedures guidance document.

1.2.2 FID Screening

The FID screening procedures are similar to the PID procedures. The sample is warmed and shaken before the FID probe is inserted into the jar. The highest reading is the FID reading recorded for the sample.

The Sensidyne flame ionization detector (FID) is a portable instrument used to measure organic vapors and gasses in the air. The air containing organic vapors is mixed with hydrogen and burned in a hydrogen flame near two high-voltage electrodes. Organic compounds in the gas stream cause an increase in electric current proportional to the concentration. The FID is calibrated with methane, but responds to nearly all volatile compounds containing carbon.

Prior to screening, the FID is calibrated to a methane standard per the manufacturer's specifications. All FID readings are reported in FID Instrument Units. The readings are in parts per million based on the methane standard.

1.3 Soil Classification

The soil samples are preliminarily classified in the field, at the time of collection. Drilling notes regarding soil types, drilling conditions, PID screening, depth to water and location of stratigraphic changes are documented on the field boring logs. The soil samples are re-classified in the STS laboratory by a geologist or engineer. Soil classification is based upon the texture and plasticity of the soil, in general accordance with the Unified Soil Classification System (USCS). An abridged version of the USCS and "STS General Notes" are appended. The "STS General Notes" sheet describes nomenclature used on the final boring logs. Additional information regarding the preparation of the final boring logs from field logs and laboratory data is described on the sheets entitled "Field and Laboratory Procedures" and "STS Standard Boring Log Procedures" which are also appended.

The soil stratification indicated on the logs was selected by the geologist/engineer based upon the field log information and sample observations. Stratification lines should be considered as approximate. The transition between soil types in-situ may be gradual in both the horizontal and vertical directions. The possible presence of foundry sand will be evaluated based on field observations.

1.4 Sample Preservation

Soil samples to be submitted for analytical testing are collected in accordance with standard WDNR protocol. Samples to be tested for polynuclear aromatic hydrocarbons (PAHs) and metals are collected in 4-ounce laboratory provided glass jars. The soil sample jar is labeled with the sample designation, sample date and time, sampler's initials and project number. The samples are preserved by packing the samples in ice and maintained at a temperature of 4° C, or less.

Soil samples to be analyzed for Diesel Range Organics (DRO) and VOCs are described in the following sections.

1.4.1 VOC Samples

For soil samples to be tested for VOCs, each soil sample is weighed immediately after collection. Approximately 25 to 35 grams of soil is placed in a pre-weighed laboratory provided 60-milliliter (ml) vial. A pre-measured amount (25-ml) of laboratory grade methanol is added to the sample. The entire soil sample is covered with the methanol. A separate soil sample is prepared for VOC

analysis and GRO analysis. Each sample is labeled with the sample designation, sample date and time, sampler's initials, project No. and preservative added. The sample is placed in a cooler on ice to maintain a temperature of 4° C or less and submitted to the laboratory the same day, if possible.

1.4.2 Other Samples

Soil samples to be tested for parameters other than those discussed in Section 3.0 will be discussed in the detail in the text of the NR716 Site Investigation Report.

1.4.3 Chain of Custody

A chain-of-custody form is completed immediately after sample collection and accompanies the samples from time of collection until received at the laboratory. Any notes regarding soil sample collection are included in the field book while in the field.

1.5 Borehole Abandonment

Each borehole or probe hole advanced at the site will be abandoned in accordance with the procedures outlined in Ch. NR141 of the Wisconsin Administrative Code.

Typically, probe holes and borings which are not converted to groundwater monitoring wells are backfilled with bentonite chips from the bottom of the boring to the surface. If surface improvements are present (i.e., concrete or asphalt), bentonite is placed up to the bottom of the improvement and the surface is repaired with a like material.

The STS representative present in the field during abandonment procedures will complete WDNR form 3300-5B. A copy of this form will be prepared for each location and submitted with the final report prepared for WDNR review.

2.0 NR141 MONITORING WELL INSTALLATION PROCEDURE

Monitoring wells are installed in general accordance with the installation procedures in Chapter NR 141 of the Wisconsin Administrative Code (WAC). This section describes the typical well installation procedure. Any deviations from this procedure will be discussed in the text of this report.

Groundwater monitoring wells are installed at locations in which a borehole has been advanced using 4-1/4 inch or 6-1/4 inch diameter hollow stem augers. The well materials are placed while the augers are in the ground, and the well material is inserted inside of the hollow stem augers. If the borehole was advanced beyond the depth the well is to be installed, the borehole is backfilled with bentonite chips prior to installing the well materials. The well consists of a two-inch diameter, 10-foot long section of Schedule 40 polyvinyl chloride (PVC) screen threaded onto an end cap. The slot size of the screened portion depends upon the characteristics of the soil, though typically 0.006-slot screen is used in clayey and silty soils and 0.010-slot screen is used in sandy soils. The screened portion is threaded onto 5 or 10 foot sections of two-inch diameter PVC pipe (unscreened) which extends to either the ground surface or to no more than 2-feet above the ground surface at locations in which a stick-up well protector is required. A cap fitted with an expandable gasket and a lock is placed on top of the well casing.

The material filling the annular space between the borehole walls and the well casing is poured inside of the augers and the augers are pulled up during placement of the fill material. Approximately 6-inches of fine grained, washed silica sand is placed below the well screen. Silica sand is placed as a filter pack, around the screened portion of the well. The grain size is selected to retain a minimum of 50% of the surrounding formation. The filter pack is placed from 6-inches below the well to approximately 2-feet above the well screen. Above the filter pack, two feet of fine-grained sand is typically placed. If the depth to groundwater prohibits the placement of two feet of filter pack and/or fine sand, the thickness of these layers are reduced to no less than 6-inches of each material above the top of the well screen. Above the fine sand, a bentonite seal is placed and consists of a minimum of 2-feet of chipped bentonite or bentonite pellets (the type of material used depends upon the depth to groundwater). Bentonite is used to fill the remaining annular space from the top of the seal to the bottom of the protector pipe which is placed at the top of the well to protect the well from damage.

At the top of the bentonite, either a flush mounted or a stick-up protector pipe is installed over the well. Typically, flush mounted protector pipes are used in areas in which a concrete or asphalt surface is present. In some instances, it is necessary to install a flush mounted protector pipe in a gravel traffic area. In these instances, a concrete pad is constructed around the pipe. The flush mounted protector pipe consists of a 10- or 12-inch diameter steel casing, 12-inches in length which is cemented flush with the surrounding concrete or asphalt improvement. The stick-up protector pipe consists of either a 5-foot or a 7-foot steel pipe inserted over the well casing that extends above the ground surface. A 5-foot pipe is used when a shallow water table is present. For PVC wells, the standard stick-up above the ground surface is approximately two feet. The steel protector pipe is installed over the PVC, with the top at 2.5 feet above the surrounding ground surface (PVC is approximately 6-inches below the top of the protector pipe). The remainder of the protector pipe is installed below ground. No fill material is placed between the well and the protector pipe, to eliminate heaving due to frost. Either bentonite or cement is used around the outside of the protector pipe, to secure it in place.

During well installation, a field boring log is completed as outlined in Section 1.4 and WDNR form 4400-113A (monitoring well construction form) are completed in the field. Copies of the boring logs (4400-133A) are provided to WDNR in the final report. Soil cuttings generated during the advancement of the borehole are handled in accordance with the procedure outlined in Section 5.1. All well material used in the well construction is new and care is taken to prevent contaminating the well material during installation.

Upon completion of the well installation activities, an elevation survey referenced to Mean Sea Level (MSL) or a local benchmark is completed. The elevation of the PVC casing and the ground surface are recorded. This survey information is used to determine the elevation of the groundwater surface and to determine groundwater flow direction at the site.

3.0 GROUNDWATER SAMPLING PROCEDURES

3.1 Well Development

Well development is conducted using either a bailer or a pump. Typically, when it is necessary to remove a large volume of water, or the water is very turbid, a pump is used. If the well is anticipated to bail dry, due to low aquifer hydraulic conductivity, a bailer is used.

Prior to developing the well, the water level is measured, using an electronic water level indicator (m-scope). The water level is measured to the nearest 0.01-foot. Each well is developed by surge and purge methods and by removing 10 well volumes of water, calculated using the formula provided in chapter NR 141, WAC. If 10 well volumes of water can not be removed from the well because it bails dry (due to the presence of low permeability soils), the well is slowly purged dry several times or until the turbidity of the water is reduced. WDNR form 4400-113B (monitoring well development form) is completed in the field, during the development activities. A copy of the form is provided to WDNR with the final project report. Handling of well development purge water is discussed in Section 5.3.

3.2 Groundwater Sampling

Typically, more than 24-hours are allowed between well development and the first groundwater sampling event. The following section provides details relating to groundwater sampling.

3.2.1 Purging

Prior to collection of groundwater samples, the water level is again measured and each well is purged. If possible, four well volumes of water are removed from the well. If the well bails dry, the stagnant water is removed from the well and water is allowed to recharge into the well. Time permitting, the well is bailed dry again and allowed to recharge prior to collection of samples.

Typically, wells are purged using a Teflon© bailer or a disposable polyethylene bailer. In some instances, when it is necessary to remove a large volume of water from the well, a pump is used to purge the well. In these instances, a small submersible pump is used to purge the well. The pump and the hosing are decontaminated prior to inserting into the well. Handling of purge water is discussed in Section 5.3.

3.2.2 Well Sampling

Typically, wells are sampled using a disposable polyethylene bailer or a Teflon© bailer. In order to minimize disturbance of the water in the well, the bailer is slowly lowered using a rope tied to the top of the bailer, to the water table. The bailer is allowed to fill from the bottom of the bailer. Once the bailer is filled, it is gently brought to the surface and emptied into sample containers.

Duplicate samples and equipment blanks are collected from each site at a minimum of 10% of the total number of samples collected. This procedure complies with WDNR quality assurance/quality control requirements. The equipment blank is collected at the site by pouring distilled water through an unused bailer and collecting it in the specific vials required by the analytical method. If metals samples, or other samples that require filtering are to be collected the equipment blank is run through filtering equipment just as the other samples are collected.

Each cooler is sent to the laboratory with a trip blank and a temperature blank. The trip blank is prepared by the laboratory by filling a VOC vial with distilled water and sealing the bottle. The bottle remains sealed and stays with the sample bottles through shipment from the laboratory until it reaches the laboratory again. The water sample contained in the trip blank is analyzed by the laboratory, to verify that the samples were not affected by contaminants during transportation. The temperature blank is used to verify that the samples reached the laboratory at a temperature of 4ºC, or less. The blank consists of a water sample in an unspecified type of container. No other analytical tests are performed on this sample.

VOC Sampling - A VOC sampling port is inserted into the bottom of the bailer, to allow for regulation of water flow from the bailer. This allows for minimization of disturbance of the sample. The water is slowly discharged directly into laboratory provided 40-ml VOC vials containing hydrochloric acid (HCl) preservative. The bottle is filled to a positive meniscus and covered with a cap fitted with a Teflon© septum. The bottle is inverted and gently tapped to verify that air bubbles are not present in the sample. Each bottle is labeled, typically with a label provided by the laboratory, with the well No., sample No., date, sampler's initials, project No. and preservatives added. After labeling, the samples are placed in a cooler with the chain of custody, on ice, for shipment to the analytical laboratory.

Lead Sampling - Water samples to be analyzed for total lead are collected from the wells as described in Section 3.2.2, however, a VOC sampling port is not necessary for discharging the water sample into the sample container, since disturbance by air is not a factor which affects sample integrity. The water is discharged from the bailer into a laboratory provided, clean plastic container, prior to filtering.

A filtering apparatus consisting of a disposable 0.045-micron filter fitted with silicon tubing is inserted into a peristaltic pump. The pump draws the water from the plastic container, up through the tubing and the filter and discharges the water out the bottom of the filtering apparatus. The filtered water sample is discharged directly into a 250-ml or 500-ml plastic laboratory provided bottle, containing nitric acid (NO_3) preservative. The bottle is filled to the neck of the bottle and capped. The bottle is inverted several times to mix the preservative into the sample and the bottle is placed in a cooler on ice for shipment to the laboratory.

3.2.3 In-Field Testing

Several in-field tests are often conducted prior to completion of sampling at each well location. These tests include testing the conductivity, pH and temperature of each sample after it is collected. The testing for pH, conductivity and temperature are usually conducted using one instrument that records all three measurements. Various brands of instruments are available and used for conducting this testing. Water color, odor and turbidity are also recorded by the technician in the field, for each sample.

The water sample to be collected for in-field testing is collected at the time of well sampling. The sample is collected after the samples to be laboratory tested are collected and placed in coolers. The field tested sample is collected using the same bailer used to collect the samples for analytical testing. The water is discharged from the bailer into an 8-ounce clear glass container. The instrument probe is inserted into the water sample and slowly swirled in the water until the instrument equilibrates. The measurements are recorded in a field book. The visual observations noted at this time are recorded in the field book.

3.2.4 Other Samples

Water samples to be tested for parameters other than those discussed in Section 3.0 will be discussed in the detail in the text of the NR716 Site Investigation Report.

3.3 Rising or Falling Head Slug Test

Field hydraulic conductivity tests are conducted for the newly installed monitoring wells and piezometers. These slug tests are conducted by bailing the wells until they are dry or nearly dry and then allowing the groundwater to recharge into the well (Rising Head). If the well does not bail dry a slug is placed in the well the well is allowed to equilibrate. Once the water level is static, the slug is removed and groundwater measurements are recorded as described earlier. Alternatively, a slug is placed in the well to displace water and the elevated groundwater level is allowed to decrease over time (Falling Head). The rise or fall of the groundwater level over time is measured with an electric water level measuring device or a data logger (if quick recharge). This data is input into a commercial computer program, AquiferTest Version 2.5 (Waterloo Hydrogeologic), which computes the hydraulic conductivity using the Bouwer and Rice method (1976).

4.0 DECONTAMINATION PROCEDURES

4.1 Drilling

To avoid cross-contamination between borings, the drilling equipment (i.e., augers and rig) is decontaminated using a high pressure hot-water washer after each boring. The down hole sampling equipment is decontaminated using a wash of Alconox© soap and clean water, followed by a rinse with clean water. Equipment is scrubbed with a brush during each step of the decontamination process to remove soil particles which may adhere to the equipment.

4.2 Soil Probes/Hydraulic Probes

To avoid cross-contamination between probe locations, the soil probe rods are decontaminated between each bore hole. The decontamination procedure consists of washing the rods with a solution of Alconox© soap and clean water, followed by a clean water rinse. The rods are scrubbed with a brush during each step of the decontamination process to remove any soil particles which may adhere to the equipment.

4.3 Groundwater Sampling

Typically, disposable bailers are used during well sampling. A new bailer is used to sample each well, therefore there is no need to decontaminate down hole equipment between locations. The in-field testing equipment (pH, conductivity and temperature meter and m-scope) are decontaminated between samples using a double rinse of distilled water. The water is containerized with the decontamination water generated during the advancement of the boring/well or purge water.

If disposable bailers are not used at the site, the Teflon© bailer is decontaminated using a wash of Alconox© soap and distilled water, followed by a double rinse using distilled water. The bailers are scrubbed with brushes during the washing process and during the first rinse to remove sediment or other particles which may adhere to the bailer.

New rope and gloves are used at each well location, therefore no decontamination of this equipment is necessary. If sample filters are used (i.e., for metals analysis), a new disposable filter and new tubing are used for each sample.

During hydraulic conductivity testing, all downhole equipment is decontaminated using the double wash procedure (Alconox© wash followed by clean water rinse). In addition, the tests are typically conducted in order from the least contaminated well location to the most contaminated well location.

5.0 WASTE HANDLING PROCEDURES (SITE INVESTIGATION)

5.1 Soil Cuttings

Typically, soil cuttings generated during the advancement of borings are containerized in 55-gallon Department of Transportation (DOT) approved barrels. Refer to the text for any project or site specific arrangements. Each barrel is labeled with the date it was filled, contents (soil cuttings) and telephone No. of the contact or owner. The barrel is sealed with a lid and ring assembly. Depending upon site usage, the barrels either remain adjacent to the boring locations or are placed in secured storage on the site, at a location approved by the owner or operator of the site.

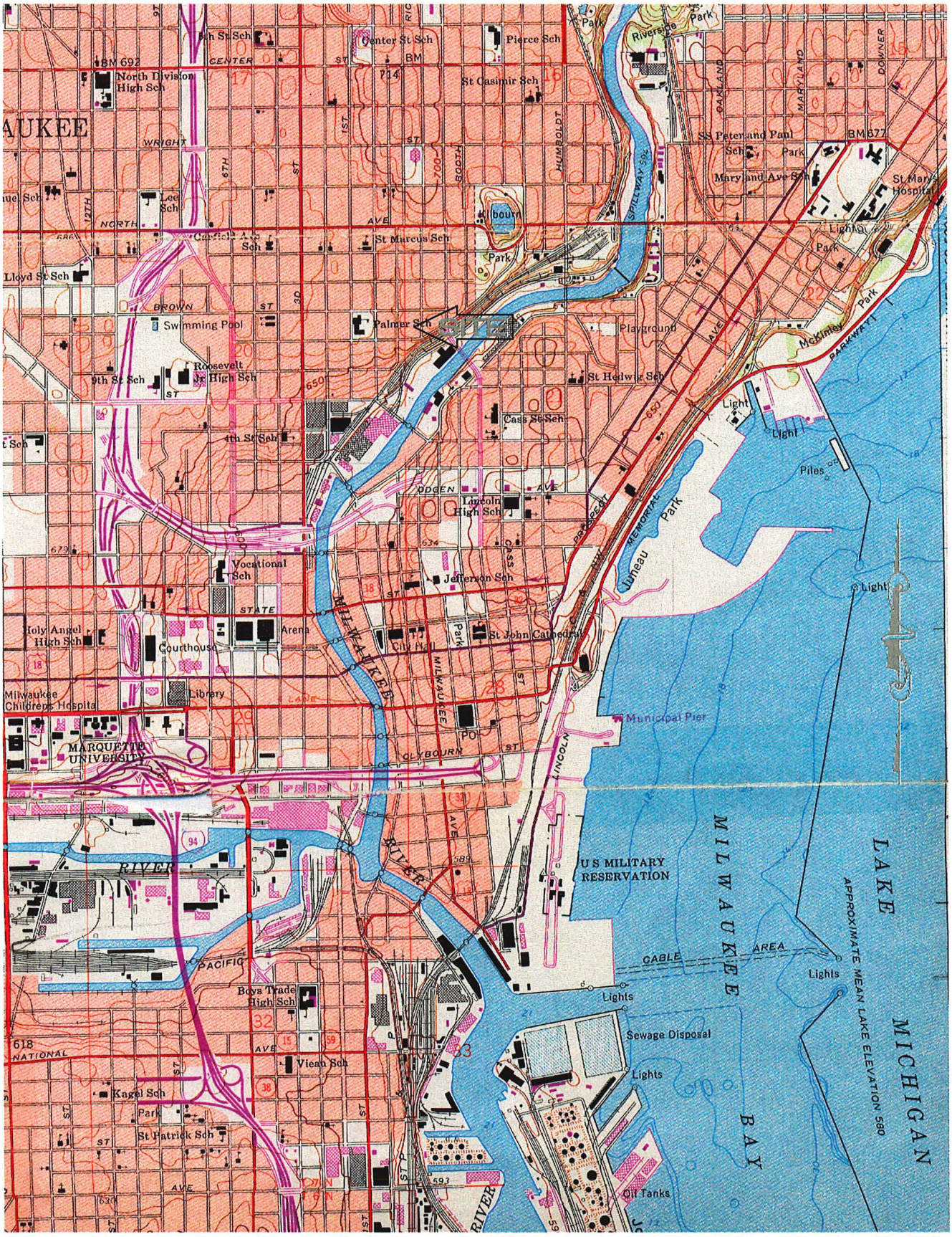
The cuttings remain on-site until disposal options are reviewed and proper disposal arrangements can be made. The cuttings are the responsibility of the owner.

5.2 Decontamination Water

Water generated during the decontamination of field equipment is containerized in 55-gallon DOT approved barrels or as specified in the text of this report. If placed in barrels, each barrel is labeled with the date it was filled, contents (decontamination water) and telephone No. of the contact or owner. The location of the barrel and disposal of the contents are handled in the same manner as described in Section 5.1.

5.3 Well Development and Purge Water

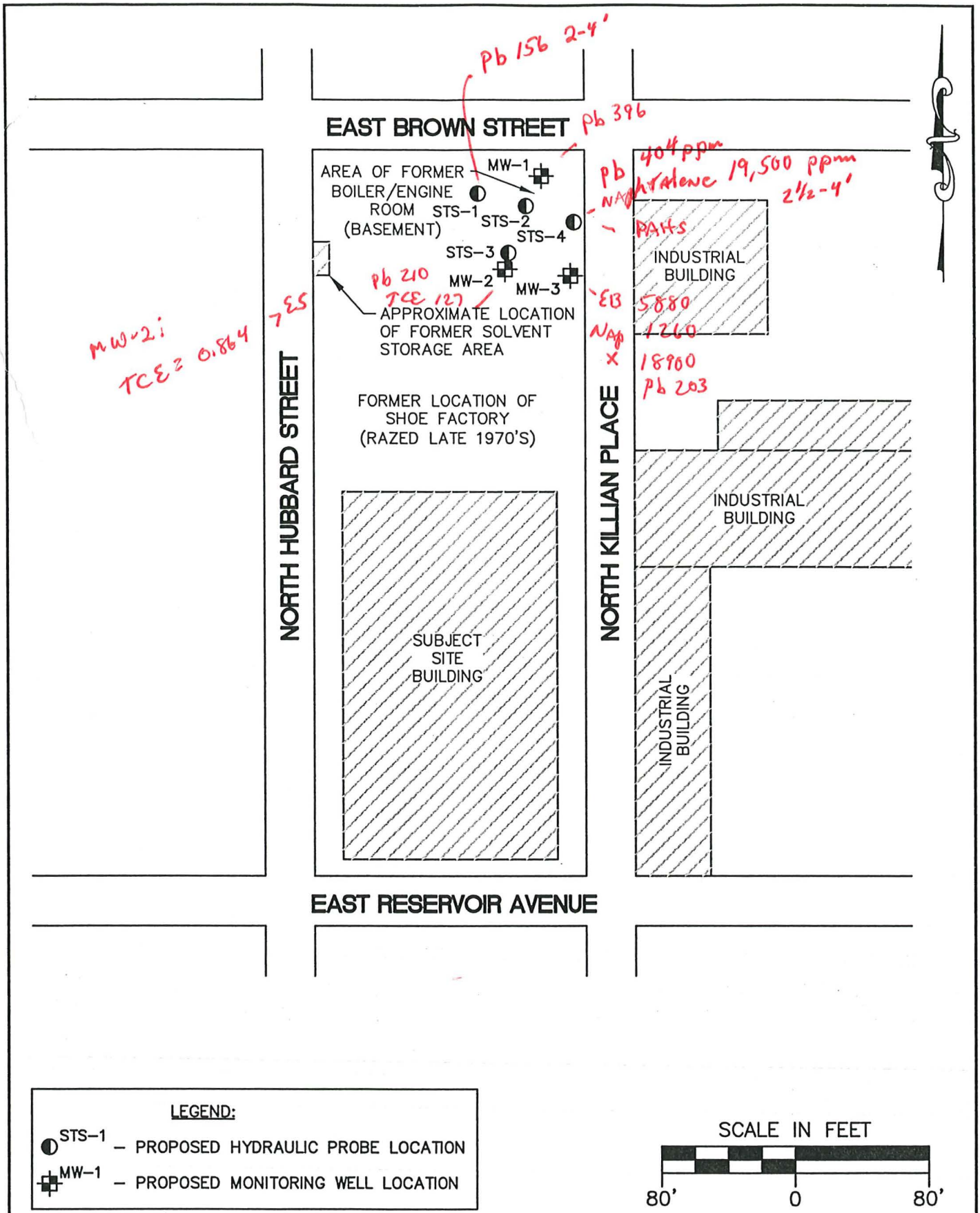
Since each project is different, handling or purge water depends upon site-specific arrangements. This water could be containerized in 55-gallon drums, discharged to the storm sewer or sanitary sewer or treated. Refer to the text for the site-specific arrangements for this waste.



STS Consultants Ltd.
Consulting Engineers
11425 W. Lake Park Dr.
Milwaukee, WI 53224
414.359.3030

FIGURE 1
SITE LOCATION MAP
SOUTHEAST INTERSECTION OF NORTH HUBBARD AND EAST BROWN STREET
MILWAUKEE, WISCONSIN

DESIGNED BY	MOM	8-7-02
DRAWN BY	CMS	8-7-02
APPROVED BY	MOM	8-7-02
CADFILE 0587185EA001	SCALE N.T.S.	
STS PROJECT NO. 0587185EA	FIGURE NO. 1	



STS Consultants Ltd.
Consulting Engineers
11425 W. Lake Park Dr.
Milwaukee, WI 53224
414.359.3030

FIGURE 2
RECOMMENDED SAMPLING LOCATIONS
SOUTHEAST INTERSECTION OF NORTH HUBBARD AND EAST BROWN STREET
MILWAUKEE, WISCONSIN

DESIGNED BY	MOM	8-7-02
DRAWN BY	CMS	8-7-02
APPROVED BY	MOM	8-7-02
CADFILE 0587185EA002	SCALE AS SHOWN	
STS PROJECT NO. 0587185EA	FIGURE NO. 2	

W:\0587185EA\dwg\0587185EA002.dwg, FIG 2, 09/25/2002 04:08:28 PM, STERR

SOIL GP-1			
DEPTH	1'-3'	7'-9'	9'-11'
PID	---	<2	---
VOCs	---	ND	---
Ba	53	---	120
Cd	1.3	---	0.9
Cr	15	---	10
Pb	47	---	292
Hg	<0.1	---	2.2
PHEN	---	7.9(J)	---

SOIL B-7		
DEPTH	3.5'-5'	8.5'-10'
PID	<5	---
Ba	19	126
Cd	0.7	1.1
Cr	5.2	12
Pb	21	165
Se	<6.2	6.7

SOIL GP-2	
DEPTH	1'-3'
Ba	70
Cd	1.8
Cr	13
Pb	71

SOIL GP-3		
DEPTH	3'-5'	9'-11'
Ba	60	17
Cd	2.9	1
Cr	2.9	13
Pb	52	18

GROUNDWATER TW-1	
DATE	2/22/99
B	0.2(J)
TCE	0.2(J)

SOIL GP-14	
DEPTH	7'-9'
PID	<5
VOCs	ND

SOIL GP-15	
DEPTH	5'-7'
PID	<5
VOCs	ND

GROUNDWATER TW-3	
DATE	3/26/99
MC	0.62(A)
PCE	2.6

SOIL B-8	
DEPTH	11'-12.5'
PID	<5
VOCs	ND

SOIL GP-4	
DEPTH	7'-9'
PID	<2
GRO	<0.6
DRO	<1.1
PCE	320

GROUNDWATER TW-2	
DATE	2/22/99
B	0.4(J)
PCE	18
T	0.7(J)
TCE	0.7

SOIL GP-16		
DEPTH	3'-5'	7'-9'
PID	<5	<5
N	90	180
T	27	<25
TCE	49	43

SOIL GP-5	
DEPTH	1'-3'
PID	<2
VOCs	ND

SOIL GP-6	
DEPTH	1'-3'
PID	<2
N	37(J)

SOIL B-13		
DEPTH	11'-12.5'	13.5'-15'
PID	<5	<5
DRO	1.9	---
VOCs	ND	---
PVOCs	---	ND

SOIL B-12		
DEPTH	11'-12.5'	13.5'-15'
PID	<5	<5
VOCs	ND	ND

SOIL GP-7	
DEPTH	1'-3'
PID	<2
VOCs	ND

SOIL GP-12	
DEPTH	11'-12'
PID	<5
GRO	9.5
DRO	<5.6
t-BB	67
E	31
IPB	45
N	97
n-PB	52
T	38
TMBs	45
X	79

SOIL GP-8	
DEPTH	11'-13'
PID	42
E	5,070
X	6,980
TMBs	43,300
s-BB	14,600
IPB	5,170
N	42,600
n-PB	7,130
p-IPT	9,090

SOIL GP-13	
DEPTH	11'-12'
PID	<5.0
GRO	<6.0
DRO	11
VOCs	ND

SOIL GP-11	
DEPTH	10'-12'
PID	<5
GRO	<6.0
DRO	<6.0
VOCs	ND

SOIL B-4	
DEPTH	3.5'-5'
PID	<5
VOCs	ND

SOIL GP-9	
DEPTH	1'-3'
PID	<2
DRO	22
N	34(J)

SOIL GP-17		
DEPTH	3'-5'	7'-9'
PID	<5	<5
VOCs	ND	---
Ba	52	---
Cr	12	---
Pb	9.5	---
Hg	0.14	---
Se	1.0	---

AREA 2 S.W.

AREA 3 SE.

TAX Key 353151210 0

TAX Key 353073110

LEGEND

- PROPOSED SOIL PROBE LOCATION
- PROPOSED MONITORING WELL LOCATION
- PROPOSED PIEZOMETER LOCATION
- SOIL PROBE LOCATION
- SOIL PROBE REFUSAL AT <5 FT. BELOW GROUND SURFACE
- GEOTECHNICAL SOIL BORING LOCATION, FEBRUARY 1999
- GEOTECHNICAL SOIL BORING LOCATION, JANUARY 2002
- CONCENTRATION GREATER THAN: NR 140 ENFORCEMENT STANDARD (ES) (GROUNDWATER) or NR 720 GENERIC RESIDUAL CONTAMINANT LEVEL (GRCL) (SOIL)
- 0.7 CONCENTRATION GREATER THAN NR 140 PREVENTIVE ACTION LIMIT (PAL) (GROUNDWATER)

SOIL NOTES

P.I.D.: PHOTOIONIZATION DETECTOR, I.U.
I.U.: INSTRUMENT UNITS
GRO: GASOLINE RANGE ORGANICS, mg/kg
DRO: DIESEL RANGE ORGANICS, mg/kg
VOCs: VOLATILE ORGANIC COMPOUNDS, ug/kg
PVOCs: PETROLEUM VOLATILE ORGANIC COMPOUNDS, ug/kg
E: ETHYLBENZENE, ug/kg
T: TOLUENE, ug/kg
X: TOTAL XYLENES, ug/kg
TMBs: TOTAL TRIMETHYLBENZENES, ug/kg
s-BB: sec-BUTYLBENZENE, ug/kg
t-BB: t-BUTYLBENZENE, ug/kg
IPB: ISOPROPYLBENZENE, ug/kg
N: NAPHTHALENE, ug/kg
n-PB: n-PROPYLBENZENE, ug/kg
p-IPT: p-ISOPROPYLTOLUENE, ug/kg
PCE: TETRACHLOROETHENE, ug/kg
TCE: TRICHLOROETHENE, ug/kg
Ba: BARIUM, mg/kg
Cd: CADMIUM, mg/kg
Cr: CHROMIUM, mg/kg
Pb: TOTAL LEAD, mg/kg
Hg: MERCURY, mg/kg
Se: SELENIUM, mg/kg
PHEN: PHENANTHRENE, mg/kg
mg/kg: MILLIGRAMS PER KILOGRAM
ug/kg: MICROGRAMS PER KILOGRAM
< : LESS THAN
-- : NOT ANALYZED
ND: NOT DETECTED ABOVE LABORATORY METHOD DETECTION LIMITS
(J): CONCENTRATION BETWEEN LIMIT OF DETECTION AND LIMIT OF QUANTITATION

GROUNDWATER NOTES

B: BENZENE, ug/l
PCE: TETRACHLOROETHENE, ug/l
T: TOLUENE, ug/l
TCE: TRICHLOROETHENE, ug/l
MC: METHYLENE CHLORIDE, ug/l
ug/l: MICROGRAMS PER LITER
(J): CONCENTRATION BETWEEN LIMIT OF DETECTION AND LIMIT OF QUANTITATION
(A): LABORATORY ARTIFACT (NOT LIKELY PRESENT IN SAMPLE)

N

0 40 80
SCALE: 1"=80'

DRN. BY:	C.S.	DATE:	01/14/02
DSN. BY:	D.K.P.	FILE NO.:	PROPOSAL
CHK. BY:	D.K.P.	DWG. NO.:	TANDEM
REV. BY:	G.L.J.	SHEET NO.:	2

KEY ENGINEERING GROUP LTD.

FIGURE 2
SUMMARY OF GROUNDWATER AND SOIL SAMPLE ANALYTICAL RESULTS

PRELIMINARY PROPOSAL FOR SITE INVESTIGATION SERVICES

EAST RESERVOIR AVENUE and BROWN STREET
MILWAUKEE, WISCONSIN

State of Wisconsin
Department of Natural Resources

Hazardous Substance Release Fax Notification
(Non-Emergency Only)

Emergency Releases / Spills must be reported via the 24-hour Hotline: 1-800-943-0003

Notice: **Hazardous substance discharges must be reported immediately** according to the "Spills Law", s. 292.11 Wis. Stats. Section NR 706.05(1)(b), Wis. Adm. Code requires that hazardous substance discharges are to be reported by one of three methods: telephoning the Department (toll free Spill Hotline number above), telefaxing a report to the Department or visiting a Department office in person. If you choose to notify the Department by telefax, you should use this form to be sure that all necessary information is included. However use of this form is not mandatory. Under s. 292.99, Wis. Stats., the penalty for violating ch. 292 Wis. Stats., shall be no less than $10 nor more than $5000 for each violation. Each day of continued violation is a separate offense. It is not the Department's intention to use any personally identifiable information from this form for any purpose other than program administration. However, information submitted on this form may also be made available to requesters under Wisconsin's Open Records Law (ss. 19.31 – 19.39, Wis. Stats.).
Confirmatory laboratory data should be included with this form, to assist the DNR in processing this Hazardous Substance Release Notification.

Complete this form. **TYPE or PRINT LEGIBLY.** FAX it to the appropriate WDNR region (see next page) **IMMEDIATELY** upon discovery of a potential release from **(check one)**:

- ☒ Underground Petroleum Storage Tank System
- ☐ Aboveground Petroleum Storage Tank System
- ☐ Dry Cleaner Facility (DERP eligibility based on: ☐ Facility owner/operator ☐ Property owner of licensed facility
- ☐ Other - Describe:

TO WDNR, ATTN: R & R Program Assistant	(Area Code) FAX Number:

1. Discharge reported by:

Name	Firm	Date FAXed to WDNR
Mark Mejac	STS Consultants, Ltd.	
Address		**(Area Code) Phone Number**
11425 W. Lake Park Drive Milwaukee, WI 53224		(414) 359-3030

2. Site Information

Name of site at which discharge occurred. Include local name of site/business, not responsible party name, unless a residence / vacant property 301 East Brown

(Southeast ~~intersection~~ corner of North Hubbard and East Brown Street) put rest of description in ( ).

Location: Include street address, not PO Box. If no street address, describe as precisely as possible, i.e., 1/4 mile NW of CTHs 60 & 123 on E side of CTH 60

Same as above in Milwaukee, WI

Municipality (City, Village, Township) Specify municipality in which the site is located, not mailing address/city

Milwaukee

County	Legal Description:
Milwaukee	SE 1/4, NE 1/4, Section 20, Tn 7, Range 22 (check) E ☐ or W ☐

3. Responsible Party (RP) and/or RP Representative

Responsible Party Name: Business or owner name that is responsible for cleanup. If more than one, list all. Attach additional pages as necessary

Brown Street III LLC

Contact Person Name (if different)	Telephone Number
Mr. Brian Columbus	(312) 245-9000

Mailing Address	City	State	ZIP Code
20 W. Hubbard, Suite 2W	Chicago	IL	60610

4. Hazardous Substance Impact Information

Identify hazardous substance discharged (check all that apply):

☐ Ammonia	☐ Gasoline-Unleaded	☐ PERC
☐ Arsenic	☐ Herbicide	☐ Pesticides

(Continued)

State of Wisconsin
Department of Natural Resources

Hazardous Substance Release Fax Notification
(Non-Emergency Only)

- [X] Chlorinated Solvents
- [ ] PAH's
- [ ] Chromium
- [ ] Cyanide
- [ ] Diesel
- [ ] Fertilizer
- [X] Fuel Oil
- [ ] Petroleum-Unknown Type
- [X] Gasoline-Lead Unknown
- [ ] Gasoline-Leaded
- [ ] Hydraulic Fuel
- [ ] Hydrocarbon-Unknown Type
- [ ] Leachate
- [ ] MTBE-Methyl Tertiary Butyl Ether
- [ ] Mercury
- [X] Metals (specify) Lead
- [ ] Milk
- [ ] Oil & Grease
- [ ] Other (specify):_____
- [ ] PCB's
- [ ] RCRA Hazardous Waste
- [ ] SVOC (Semi-volatile Organic Compound)
- [ ] Solvent
- [ ] Stoddard Solvent
- [ ] Transformer Fluid
- [ ] Unknown
- [ ] VOC's
- [ ] Waste Oil

Impacts to the environment (enter "K" for known/confirmed or "P" for potential for all that apply)

- ___ Air Contamination
- ___ Co-contamination
- ___ Concrete/Asphalt
- ___ Contained/Recovered
- ___ Contamination Within 1 Meter of Bedrock
- ___ Contaminated Private Well
- ___ Contaminated Public Well
- ___ Contamination in Fractured Bedrock
- ___ Contamination in Right of Way
- ___ Direct Contact
- ___ Expanding Plume
- ___ Fire Explosion Threat
- ___ Free Product
- X Groundwater Contamination
- ___ Off-Site Contamination
- ___ Other _____
- ___ Sanitary Sewer Contamination
- X Soil Contamination
- ___ Storm Sewer Contamination
- ___ Surface Water Contamination
- ___ Within 100 ft of Private Well
- ___ Within 1000 ft of Public Well

Contamination was discovered as a result of:

- [ ] Tank closure assessment — Date:
- [X] Site assessment — Date: 1999
- [ ] Other - Describe: _____ — Date:

Lab results:

- [ ] Lab results will be faxed upon receipt
- [X] Lab results are attached

Additional Comments: Include a brief description of immediate actions taken to halt the release and contain or cleanup hazardous substances that have been discharged.

NR716 Site Investigation in progress.

FAX numbers to report non-emergency releases in DNR's five regions are as follows:

Northeast Region (920-492-5859); Attention - RR Program Assistant:
Brown, Calumet, Door, Fond du Lac ***(except City of Waupun - see South Central Region)***, Green Lake, Kewaunee, Manitowoc, Marinette, Marquette, Menominee, Oconto, Outagamie, Shawano, Waupaca, Waushara, Winnebago Counties

Northern Region (715-365-8932); Attention - RR Program Assistant:
Ashland, Barron, Bayfield, Burnett, Douglas, Forest, Florence, Iron, Langlade, Lincoln, Oneida, Polk, Price, Rusk, Sawyer, Taylor, Vilas, Washburn Counties

South Central Region (608-275-3338); Attention - RR Program Assistant:
Columbia, Dane, Dodge, Fond du Lac ***(City of Waupun only)***, Grant, Green, Iowa, Jefferson, Lafayette, Richland, Rock, Sauk Counties

Southeast Region (414-263-8483); Attention - RR Program Assistant:
Kenosha, Milwaukee, Ozaukee, Racine, Sheboygan, Walworth, Washington, Waukesha Counties

West Central Region (715-839-6076); Attention – RR Program Assistant:
Adams, Buffalo, Chippewa, Clark, Crawford, Dunn, Eau Claire, Jackson, Juneau, LaCrosse, Marathon, Monroe, Pepin, Pierce, Portage, St. Croix, Trempealeau, Vernon, Wood Counties