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ENGINEERING ASSOCIATES, INC.

GEOTECHNICAL, ENVIRONMENTAL & CONSTRUCTION MATERIALS CONSULTANTS

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April 5, 2010

Redevelopment Authority
City of Milwaukee
809 North Broadway, 2nd Floor
Milwaukee, WI 53202

Attention: Ms. Karen C. Dettmer
Senior Environmental Project Coordinator

Subject: Site Investigation Summary Report and
Conceptual Remedial Action Plan (“**DRAFT COPY**”)
2307-09 North 6th Street
Milwaukee, Wisconsin
FID No. 341142340
BRRTS No. 03-41-551687
Giles Project No. 1E-0709012

Dear Ms. Dettmer:

In accordance with your request and subsequent authorization, we have completed a Site Investigation Summary Report and Conceptual Remedial Action Plan on the above-referenced property located in the City of Milwaukee. The findings, conclusions, and recommendations are discussed in detail within the accompanying report.

We appreciate the opportunity to be of service on this project. If there are any questions regarding the information contained herein, or if we can be of any additional service, please contact the undersigned at your convenience.

Very truly yours,

GILES ENGINEERING ASSOCIATES, INC.

Steven C. Thuemling
Assistant Environmental Division Manager

Kevin T. Bugel, P.G., C. P.G.
Environmental Division Manager

Distribution: Redevelopment Authority of the City of Milwaukee
Attn: Ms. Karen C. Dettmer (1 “DRAFT” electronic copy)

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CONCEPTUAL REMEDIAL ACTION PLAN (“DRAFT” COPY)**

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**SITE INVESTIGATION SUMMARY REPORT AND
CONCEPTUAL REMEDIAL ACTION PLAN (“DRAFT” COPY)**

2307-09 NORTH 6TH STREET
MILWAUKEE, WISCONSIN
PROJECT NO. 1E-0709012

EXECUTIVE SUMMARY

Giles Engineering Associates, Inc. (Giles) completed a Ch. NR 716-compliant Site Investigation (SI) at 2307-09 North 6th Street in the City of Milwaukee, Milwaukee County, Wisconsin (“Site”). The SI was completed at the request of the Redevelopment Authority of the City of Milwaukee (RACM), in accordance with Giles’ proposals 1EP-070369 (REV 01), dated June 8, 2007, 1EP-080552, dated May 23, 2008, and 1EP-081016, dated October 9, 2008, and in accordance with the Giles Quality Assurance Project Plan (QAPP).

The Site is a 0.27 acre vacant parcel located at the northwest corner of West North Avenue and North 6th Street in the City of Milwaukee, Milwaukee County, Wisconsin. The central portion of the Site was formerly occupied by a two-family private residence, and the southern portion of the Site was historically occupied by a gasoline filling and service station from 1938 to 1955. Two 2,000-gallon gasoline underground storage tanks (USTs) were removed from the Site on June 19, 2008, and four 1,000-gallon waste oil USTs were removed from the Site on June 20, 2008. In addition, a hydraulic lift was removed from the Site on June 23, 2008. Obvious signs of a release including stained soil, petroleum odors, and/or volatile vapors were observed in the soil surrounding the USTs.

Seven direct-push soil borings were completed during the SI activities on October 5, 2007. Four subsequent soil borings were completed on July 29, 2008. Five of the borings were constructed as temporary groundwater wells. On July 29, 2008, five on-Site NR 141-compliant groundwater monitoring wells were installed on the Site, and two additional off-Site monitoring wells were installed on August 25, 2009,

The subsurface conditions observed generally consisted of approximately 4 to 12 feet of fill material underlain by native clayey silt, sandy silt, sand and gravel. Based on the static groundwater levels measured in the NR 141-compliant groundwater monitoring wells, the shallow groundwater table generally exists between approximately 12 and 18 feet below ground surface (bgs) at the Site. The direction of groundwater flow is generally to the southeast.

Diesel range organics (DRO) and gasoline range organics (GRO) were detected at concentrations exceeding Wisconsin Administrative Code (WAC), Ch. NR 720.09 residual contaminant levels (RCLs) in two of twelve soil samples collected from beneath the USTs during the UST removal assessment.

During the SI activities, volatile vapors were detected in soil samples collected from 10 of the 18 soil borings at levels ranging from 5 to 2,840 instrument units. Select volatile organic compounds (VOCs) were detected at concentrations exceeding the NR 720.09 RCLs in soil samples submitted from four soil borings completed as part of the SI.



EXECUTIVE SUMMARY (CONTINUED)

Polynuclear aromatic hydrocarbons (PAHs) were detected in the shallow soil profile (0 to 4 feet) at concentrations exceeding their respective Wisconsin Department of Natural Resources (WDNR) suggested generic, direct-contact RCLs for a non-industrial property in soil samples submitted from eight of the soil borings. PAHs were also reported above the WDNR suggested generic groundwater pathway RCL in soil samples submitted seven of the borings. PAHs were not detected at concentrations exceeding laboratory MDLs in the remaining soil samples submitted for laboratory analysis. The Protocol B soil results do not indicate any exceedances of State of Wisconsin Landfill Acceptance Limits.

Lead was detected at concentrations exceeding NR 720.11 direct-contact non-industrial RCL in the soil samples submitted from four of the borings; lead concentrations were below the NR 720.11 RCL in the soil samples submitted from four additional borings. Soil samples collected from borings GP-1 through GP-7 were not submitted for lead analysis. Cadmium was not detected at concentrations exceeding the NR 720.11 RCL in the submitted soil samples.

VOCs have been detected at concentrations exceeding NR 140 enforcement standards (ES) in groundwater samples collected the two monitoring events conducted at the Site. Concentrations of these VOCs have generally decreased since the first monitoring event. The natural attenuation data collected during the August 28, 2008 sampling event generally show an anaerobic, oxygen-limited groundwater condition for the plume area.

Lead was detected at concentrations exceeding the NR 140 PAL during the first groundwater sampling event, and exceeding the NR 140 ES and PAL during the second sampling event. PAHs were detected at concentrations exceeding the NR 140 ES or PAL during the first and second groundwater sampling events.

Based on the results of the SI, the extent of the VOC and PAH impacted soil at the Site has been adequately defined. The PAH impacted soil was generally found in the shallow profile in the general vicinity of the former USTs.

Review of the groundwater analytical data indicates that the impacted groundwater plume, has been defined and generally the reported concentrations decreased between the first and second groundwater sampling events.

Following the planned redevelopment of the Site, Giles recommends that WDNR case closure be achieved through placement of the Site on the GIS Registry of Closed Remediation Sites for soil and groundwater. Assessment of potential vapor intrusion should also be considered due to the concentrations of VOCs in the groundwater of the Site. The GIS Registry packet for the Site would include a plan for regular maintenance of a cap/barrier, and potentially a vapor mitigation system. Please see Section 7 of this Site Investigation Report and Conceptual Remedial Action Plan for more detailed information.



1. INTRODUCTION

Giles Engineering Associates, Inc. (Giles) completed a Site Investigation (SI) in general accordance with Chapter NR 716 (NR 716) of the Wisconsin Administrative Code (WAC) at the property ("Site") located at 2307-09 North 6th Street in the City of Milwaukee, Milwaukee County, Wisconsin. The SI was completed at the request of the Redevelopment Authority of the City of Milwaukee (RACM), in accordance with Giles' proposals 1EP-070369 (REV 01), dated June 8, 2007, 1EP-080552, dated May 23, 2008, and 1EP-081016, dated October 9, 2008, and in accordance with the Giles Quality Assurance Project Plan (QAPP).

The goal of the SI was to evaluate potential environmental impact from the historic use of the Site as a gasoline filling and service station and included to an assessment of the potential impacts from two 2,000-gallon gasoline underground storage tanks (USTs) removed from the Site on June 19, 2008, four 1,000-gallon waste oil USTs were removed from the Site on June 20, 2008, and a hydraulic lift was removed from the Site on June 23, 2008. Giles field personnel; Mr. Greg Roanhouse, conducted the environmental subsurface exploration activities on October 5, 2007, July 30, 2008, and August 25, 2009. Important information regarding this Geoenvironmental report is included in Appendix A.

2. SCOPE OF SERVICES

The following scope of services was performed as part of the SI activities and included:

- Prepared and implemented a site-specific health and safety plan in accordance with 29 CFR 1910 for field activities performed by Giles at the Site;
- Completed of a Magnetometer Survey to assess the potential presence of large ferrous bodies (i.e. USTs, piping, and/or buried drums) beneath the Site;
- Completed seven direct-push soil borings (GP-1 through GP-11) to termination depths of 20 to 24 feet below the ground surface (bgs) on the Site. Five of the seven borings (GP-1, GP-3, GP-4, GP-5, and GP-6) were constructed as temporary monitoring wells to provide a preliminary assessment of groundwater quality;
- Completed five on-Site hollow stem auger (HSA) soil borings (MW-1 through MW-5) to a common termination depth of 20 feet bgs; Ch. NR 141-compliant monitoring wells were constructed in the HSA soil borings to assess/confirm on-Site groundwater quality;
- Completed two off-Site HSA soil borings (MW-6 and MW-7) to a common termination depth of 20 feet bgs, and Ch. NR 141-compliant monitoring wells were constructed in the HSA soil borings to assess/confirm off-Site groundwater quality;



- Coordinated, observed, and documented the subsurface exploration activities including locating, logging, surveying, and abandoning the direct-push borings that were advanced as part of the SI activities;
- Subjected the soil samples collected from the soil borings to a visual evaluation, soil classification, and field screening for the presence of volatile organic vapors using a photoionization detector (PID) unit;
- Submitted 26 select soil samples collected from borings GP-1 through GP-11, MW-5, MW-6, and MW-7 (two from each boring with the exception of MW-6 and MW-7) to an analytical laboratory for the chemical analysis of volatile organic compounds (VOCs) by EPA Method 8260B, and polynuclear aromatic hydrocarbons (PAHs) by EPA Method 8310;
- Submitted 20 select soil samples collected from borings GP-1 through GP-11 and MW-1 through MW-7 (two from each boring with the exception of MW-6 and MW-7) to an analytical laboratory for the chemical analysis of lead by EPA Method 6010B;
- Submitted 18 select soil samples collected from borings GP-1 through GP-11 and MW-1 through MW-5 (two from each boring) to an analytical laboratory for the chemical analysis of cadmium by EPA Method 6010B;
- Collected groundwater samples from the temporary wells installed in borings GP-1, GP-3, GP-4, GP-5, and GP-6 and submitted them to a laboratory for the chemical analysis of VOCs by EPA Method 8260B;
- Developed the NR 141-compliant monitoring wells and surveyed their locations and top of casing elevations;
- Collected groundwater samples from the NR 141-compliant monitoring wells MW-1 through MW-7 (two sampling events for MW-1 through MW-5, and one sampling event for MW-6 and MW-7) and submitted the samples to a laboratory for the chemical analysis of VOCs by EPA Method 8260B, PAHs by EPA Method 8310, and cadmium and lead by EPA Method 6020A.
- Performed project management, peer review, and consultation with the RACM;
- Evaluated the soil and groundwater analytical results and the subsurface conditions encountered on the Site; and,
- Prepared this report documenting the SI activities, findings, conclusions, and recommendations.



2. SITE CONTACT INFORMATION

2.1. Responsible Party

The Redevelopment Authority
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2.2. Environmental Consultant

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3. SITE DESCRIPTION

3.1. Setting and Location

The Site is located in an urban setting and is located at the northwest corner of West North Avenue and North 6th Street in the City of Milwaukee, Milwaukee County, Wisconsin. The Site located at 2307-09 North 6th Street. The Site is situated in the southwest one-quarter of the southeast one-quarter, of Section 17, Township 7 North, Range 22 East. Figure 1 shows the general location of the Site.

3.2. Current Property Use and History

The Site is a 0.27 acre vacant parcel located at the northwest corner of West North Avenue and North 6th Street. The central portion of the Site was formerly occupied by a two-family private residence, and the southern portion of the Site was historically occupied by a gasoline filling and service station. The general area including the Site is provided drinking water by the City of Milwaukee Department of Public Works. The general features of the Site are shown on Figure 2.

A Phase I Environmental Site Assessment (ESA) was previously completed on the Site by Giles (Project No. 1E-0602005), dated March 3, 2006. The Phase I ESA documented that the southern portion of the Site was historically a gasoline filling and service station from 1938 to 1955, and that at least three USTs were located on the Site. The former



use of the Site as a gasoline filling and service station and the unknown disposition of the USTs historically associated with the Site constituted recognized environmental conditions (RECs) as defined by American Society for Testing and Materials (ASTM) E-1527-05.

Based upon the findings of the Phase I ESA, Giles recommended that an Initial SI and Magnetometer Survey be performed on the Site to evaluate the potential existence of large ferrous objects (i.e. USTs, piping, and/or buried drums), to evaluate the potential presence of soil and/or groundwater contamination. The Magnetometer Survey conducted by Giles on October 4, 2007 identified four magnetic anomalies indicative of USTs or drums within the central and southeastern portions of the Site. Several magnetic anomalies that correlated with man-made features, including an existing hydraulic lift, and utilities were also identified.

The results of Giles Initial SI performed revealed petroleum-impacted soil and groundwater. Based on the results of the Initial SI, Giles recommended exploratory test trenching to verify the magnetic source of anomalies, UST removal if tanks were encountered, and removal of the hydraulic lift. Giles also recommended that additional SI activities be performed to define the extent of soil and groundwater impact identified during the initial SI activities. The results of the soil and groundwater analysis from the Initial SI were presented in Giles *Initial Site Investigation Report*, dated October 26, 2007, and are also discussed in the subsequent sections of this report. The Wisconsin Department of Natural Resources (WDNR) was notified of a suspected release on May 13, 2008. Subsequently the WDNR issued a responsible party (RP) letter for the Site on June 6, 2008.

Two 2,000-gallon gasoline USTs and four 1,000-gallon waste oil USTs were removed from the Site on June 18 through 20, 2008. Obvious signs of a release including stained soil, petroleum odors, and/or volatile vapors were observed in the soil surrounding the USTs. No groundwater was observed during the excavation activities. Twelve soil samples were collected from the base of the UST excavations and submitted for laboratory analyses for diesel range organics (DRO) (waste oil USTs) and gasoline range organics (GRO). DRO and GRO were detected in soil samples collected at levels requiring reporting and further investigation. The UST Removal Assessment analytical results are summarized in Table 1. Site features and UST locations are shown on Figure 2, and the location of the collected soil samples are shown on Figure 3. The results of the UST removal activities were also presented in Giles *Underground Storage Tank Removal Assessment Report*, dated September 12, 2008.

The hydraulic lift was removed from the Site on June 23, 2008. No volatile vapors were observed in the soil at the base of the hydraulic lift. One soil sample was collected from the base of the hydraulic lift excavation and submitted for laboratory analyses for PAHs and polychlorinated biphenyls (PCBs). PCBs were not detected in the soil sample and PAHs were detected at levels below the WDNR cleanup up standards. Additionally, one



composite soil sample was submitted for the Protocol B suite of analyses for disposal characterization of soil. The hydraulic lift analytical results are summarized in Table 2. Site features, the location of the hydraulic lift, and the sampling location are shown on Figures 2 and 3.

4. SITE INVESTIGATION PROCEDURES

4.1. Soil Exploration Methods

Direct-push sampling techniques were used to obtain soil samples and evaluate the potential presence of impacted soil at the Site. Giles completed seven borings (GP-1 through GP-7) to depth of 20 to 24 feet bgs on October 5, 2007. Borings GP-1, GP-4, and GP-7 were completed along the eastern and southern property boundaries. Borings GP-2, GP-3 and GP-5 were completed near magnetic anomalies and/or the location of the USTs depicted on the Sanborn fire insurance map, and boring GP-6 was completed adjacent to an apparent hydraulic lift located in the northwest portion of the Site. On July 29, 2008, Giles completed four additional soil borings (GP-8 through GP-11) to a common termination depth of 20 feet bgs to delineate detected soil impact. The direct-push soil samples were obtained continuously for each boring using a 1.25-inch inside-diameter (ID), 4-foot macrocore and the soil samples were collected at 2-foot intervals.

Giles completed five soil borings (MW-1 through MW-5) on July 29, 2008, and two soil borings (MW-6 and MW-7) on August 25, 2009, to a common termination depth of 20 feet bgs with a conventional drill rig utilizing HSA drilling methods. Soil samples from MW-1 through MW-7 were obtained at 2-foot intervals. MW-1 through MW-7 were completed to confirm the on-Site and off-Site groundwater quality and to delineate detected impacts. The locations of the soil borings and monitoring wells are shown on Figure 3.

Soil sampling equipment decontamination procedures were performed between sampling intervals and between each boring/hand probe to limit cross-contamination. Soil samples were classified in the field in general accordance with the Unified Soil Classification System (USCS) American Society for Testing and Materials (ASTM D-2488-75). The soil classifications were documented on the *Record of Subsurface Exploration* forms (boring logs) and are included in Appendix B. The boring elevations shown on the *Record of Subsurface Exploration* forms were determined using conventional surveying techniques and were referenced to a temporary benchmark (northwest corner of storm sewer grate located near the south-central portion of the Site) with an assumed elevation of 100.0 feet.

Upon completion of soil and/or groundwater sample collection from each direct-push boring location, the open boreholes were abandoned with granular bentonite in accordance with NR 112 and NR 141. Copies of the Wisconsin Department of Natural



Resources (WDNR) Well/Drillhole/Borehole Abandonment Forms (WDNR Form 3300-5) are included in Appendix C.

4.2. Groundwater Exploration Methods

Five temporary wells were constructed in borings GP-1, GP-3, GP-4, GP-5, and GP-6 during the SI activities. The temporary wells were constructed with a 10-foot long section of 1-inch diameter polyvinyl chloride (PVC), 0.01-inch slotted screen, and a flush-jointed riser piping. The temporary wells were screened from 10 to 20 feet bgs to initially assess the groundwater environmental conditions at the Site.

Groundwater monitoring wells MW-1 through MW-7 were also installed during the SI activities. MW-1 through MW-7 were constructed of 2-inch diameter PVC and were set at a termination depth of 20 feet bgs. The monitoring wells were constructed of 15 feet of 2-inch ID, factory-cut 0.010-inch slotted schedule 40 PVC screen and five feet of riser piping. In accordance with NR 141, the monitoring wells were completed at the surface with protective flush-mount cover assemblies. The Monitoring Well Construction Forms (WDNR Form 4400-113A) are enclosed in Appendix D.

4.3. Sample Collection

4.3.1. Soil Field Screening and Soil Sample Collection

Soil headspace field screening was performed on soil samples collected from each boring sampled to provide an in-field assessment of the potential presence of volatile organic vapors at discrete intervals bgs. When organic vapors are detected, this information may be used to make adjustments in the field (i.e. vertical or horizontal vapor profiling). In addition, this information maybe used to assist in the selection of appropriate samples for laboratory analysis.

Soil samples from each sampling interval were placed in re-sealable containers, and subjected to headspace field screening for volatile vapors with a PID equipped with a 10.6 electron volt (eV) bulb. Soil samples for targeted intervals were split into two replicate sample portions. One sample portion was field screened, and the second portion was placed in laboratory-supplied containers and stored in a cooler. Headspace field screening was completed using a PID calibrated with isobutylene standard gas to a benzene equivalent. The field screening sample containers were partially filled with soil, agitated, and allowed to warm to approximately 70°F prior to the headspace field screening. The PID tip was inserted into the headspace of the re-sealable container and the maximum reading was recorded.

Based on the results of the PID field screening, field observations, and/or the specifications of the sampling plan, 26 soil samples were selected for laboratory analyses. In general, two soil sample intervals were selected from the unsaturated



zone of soil borings GP-1 through GP-11 and MW-5 through MW-7. Soil samples were submitted to TestAmerica Analytical Testing Corporation (TestAmerica) in Watertown, Wisconsin (WDNR Certification No. 128053530) for analysis of VOCs and PAHs. Twenty select soil samples collected from borings GP-1 through GP-11 and MW-1 through MW-7 were submitted to TestAmerica for analysis of lead, and 18 select soil samples from borings GP-1 through GP-11 and MW-1 through MW-5 were submitted to TestAmerica for analysis of cadmium. Additionally, one composite sample was collected on June 23, 2008 and submitted to TestAmerica for Protocol B disposal characterization suite of analyses.

For the VOC analysis approximately 25 to 35 grams of soil and 25 milliliters (mL) of methanol preservative were placed into a two-ounce sampling container provided by the laboratory and sealed with a Teflon™-lined lid. For the PAH analysis, 4-ounce (oz), laboratory-supplied glass jars were packed full of soil and sealed with Teflon™-lined lids. For the lead and cadmium analysis, approximately 50 grams of soil was placed into plastic sampling containers provided by the laboratory and sealed with a plastic lid. A 1-liter (L) glass jar was filled with soil for the Protocol B analyses. Soil samples were stored and preserved for transport in a cooler with ice. The sample collection, preservation, storage, and transportation were performed in general accordance with the QAPP, WDNR, and ASTM requirements.

4.3.2. Groundwater Sample Collection

Groundwater accumulated in temporary wells GP-1, GP-3, GP-4, GP-5, and GP-6 for one day, and groundwater samples were collected on October 8, 2007. To facilitate groundwater sample collection, Teflon™ tubing was installed in the temporary wells and groundwater samples were obtained via a peristaltic sampling pump. Groundwater samples were submitted to TestAmerica for VOC analysis.

Giles developed NR 141-compliant monitoring wells MW-1 through MW-5 on August 2, 2008, and monitoring wells MW-6 and MW-7 on September 2, 2009. The monitoring wells were developed by surging and bailing with plastic disposable bailers. Prior to developing the monitoring wells, the groundwater levels were gauged with an electronic groundwater level indicator and recorded. The Monitoring Well Development Forms (WDNR Form 4400-113B) are enclosed in Appendix E.

The NR 141-compliant monitoring wells were purged and sampled utilizing low-flow sampling techniques to minimize turbidity during the August 25, 2008 sampling event (MW-1 through MW-5) and the September 3, 2009 sampling event (MW-1 through MW-7). Groundwater samples were submitted TestAmerica for laboratory analysis of VOCs, PAHs, cadmium and lead. For the VOC laboratory analysis, groundwater was placed into three laboratory-supplied, 40-mL glass vials containing hydrochloric acid preservative. For the PAH laboratory analysis, groundwater was placed into one-liter, laboratory-supplied, amber glass jars without preservative and sealed with



Teflon-lined lids. For the cadmium and lead laboratory analysis, groundwater was field filtered and placed into laboratory-supplied, 500-mL plastic containers containing nitric acid preservative. Upon collection, the groundwater samples were placed on ice in a cooler for storage and transport. The collection, preservation, storage, and transportation of the groundwater samples were performed in general accordance with the QAPP, WDNR, and ASTM requirements.

5. INVESTIGATIVE WASTE MANAGEMENT

The soil cuttings generated during the installation of borings MW-1 through MW-5 were transported by Waste Management, Inc. (WM, Inc.) to the WM, Inc. Orchard Ridge Facility in Menomonee Falls, Wisconsin for disposal on August 25, 2008. The investigative waste was profiled and approved under the WM, Inc. Profile No. BIOEPL2008-167. Since no volatile organic vapors, VOCs, or PAHs were detected in the soil and groundwater samples collected from MW-6 and MW-7, the soil cuttings generated during the installation of these borings was thin spread on the Site. Purge water generated during initial monitoring well development and sampling activities was transported to National Tank Services of Wisconsin, Inc. for disposal. The soil and purge water disposal records are included in Appendix F.

6. SITE INVESTIGATION RESULTS

6.1. Subsurface Soil Conditions

Approximately 4 to 10 inches of asphalt material, concrete or root-mat was encountered at the ground surface of borings GP-1 through GP-11 and MW-1 through MW-5. Fill material, generally consisting of clayey silt, sand and gravel with asphalt and brick fragments was encountered to depths of 4 to 12 feet bgs. The fill material was underlain by native soil comprised of clayey silt, sandy silt, sand and gravel was encountered to the maximum depth explored of 24 feet bgs. A cross-section location plan (Figure 4), cross-section A-A' (Figure 5), and cross-section B-B' (Figure 6) are attached.

6.2. Soil Field Screening and Laboratory Analytical Results

PID headspace in-field screening results were recorded on Giles soil boring logs for each representative interval collected. Review of the soil boring logs indicates that volatile vapors were detected in soil samples collected between depths of 12 to 24 feet bgs from soil borings GP-1, GP-2, GP-3, GP-5, GP-7, GP-11 and MW-1 through MW-4 at levels ranging from 5 to 2,840 PID instrument units. Volatile vapors were also detected in soil sample collected at a depth of 2 to 4 feet bgs from soil boring GP-2 (13 PID instrument units). Volatile vapors were not detected during sampling of the remaining soil borings. The results of the volatile vapor scan are shown within the PID column on Giles soil boring logs included in Appendix B.



The UST removal assessment results indicated that GRO was detected at a concentration exceeding NR 720.09 residual contaminant levels (RCL) in one (T-1) of the four soil samples (T-1 through T-4) collected from beneath the gasoline USTs at 10 feet bgs. GRO was detected at concentrations below the NR 720.09 RCL in soil samples T-1, T-3, and T-7 through T-10. GRO was not reported above the laboratory method detection limit (MDL) in soil samples T-2, T-5, T-6, T-11, and T-12. In addition, DRO was detected at a concentration exceeding NR 720.09 RCL in one (T-8) of the eight soil samples (T-5 through T-12) collected from beneath the waste oil USTs at 10 feet bgs. DRO was detected at concentrations below the NR 720.09 RCL in soil samples T-1 through T-7, and T-9 through T-11.

The hydraulic lift removal sampling results (sample H-1 collected at a depth of 9 feet bgs) indicates that PAHs were reported at concentrations below the WDNR suggested generic groundwater pathway RCL. In addition, PCBs were not reported at concentrations exceeding the laboratory MDL in the soil sample H-1.

VOCs were reported at concentrations exceeding the NR 720.09 RCLs in the soil samples submitted from borings GP-1, GP-5, and GP-11 (14 to 16 feet bgs). In addition, VOCs were reported at concentrations exceeding the NR 746.06 Table 1 residual petroleum product indicator level in the soil samples submitted from borings GP-1, GP-5, GP-7, and GP-11 (14 to 16 feet bgs). VOCs were reported at concentrations below the NR 720.09 RCL in the soil sample submitted from borings GP-2 and GP-11 (2 to 4 feet bgs), and GP-3 and GP-10 (14 to 16 feet bgs). VOCs were not reported at concentrations exceeding the laboratory MDL in the remainder of the soil samples submitted from borings GP-1, GP-3, GP-5, and GP-7 (2 to 4 feet bgs), borings GP-4, GP-6, GP-8, GP-9, GP-10, MW-5, MW-6, and MW-7 (2 to 4 and 14 to 16 feet bgs), and boring GP-2 (14 to 16 feet bgs).

PAHs were reported at concentrations above the WDNR suggested generic direct contact non-industrial pathway RCL in the soil samples submitted from borings GP-1, GP-2, GP-3, GP-5, GP-6, GP-7, GP-11, and MW-5 (2 to 4 feet bgs). PAH levels were reported above the WDNR suggested generic groundwater pathway RCL in the soil samples submitted from borings GP-2 and GP-11 (2 to 4 feet bgs), and borings GP-1, GP-3, GP-5, GP-7 and GP-11 (14 to 16 feet bgs). PAHs were not reported at concentrations exceeding the laboratory MDL in the soil samples submitted from borings GP-4 (2 to 4 and 14 to 16 feet bgs), GP-8 and GP-9 (2 to 4 feet bgs), and GP-6 and GP-10 (14 to 16 feet bgs).

Lead was detected at concentrations exceeding NR 720.11 direct-contact non-industrial RCL in the soil samples submitted from borings MW-2 through MW-5. Lead was reported at concentrations below the NR 720.11 RCL in the soil samples submitted from borings GP-8 through GP-11 (2 to 4 feet bgs). Soil samples collected from borings GP-1 through GP-7 were not submitted for lead analysis. Cadmium was not detected at



concentrations exceeding the NR 720.11 RCL in the submitted soil samples from borings MW-1 through MW-5 and GP-8 through GP-11.

The soil analytical results for the UST Closure Assessment are summarized in Table 1; soil PAHs and PCBs analytical results for Hydraulic Lift Area are summarized in Table 2]; soil analytical results for Detected VOCs are summarized in Table 3; and, soil analytical results for PAHs, PCBs, Cadmium and Lead are summarized in Table 4. The soil analytical results are shown on Figure 7. Copies of the UST Closure, Hydraulic Lift Removal and SI soil laboratory analytical reports and Chain-of-Custody forms are included in Appendix G. The Protocol B analytical report is also included in Appendix G. The protocol B results (P-1) do not indicate any exceedances of State of Wisconsin Landfill Acceptance Limits.

6.3. Hydrogeologic Conditions

Saturated soil conditions were observed during the completion of the soil borings (with the exception of GP-11) between 12 and 18 feet bgs. Based on the static groundwater levels measured during the SI activities, the shallow groundwater table exists between approximately 11.6 and 16.9 feet bgs at the Site. The direction of groundwater flow on the Site was inferred to be in a southeast during the August 25, 2008, and September 3, 2009 sampling events. Using the September 9, 2008 static groundwater level measurements, the horizontal hydraulic gradient was calculated to range from 0.06 to 0.15 feet per foot.

Hydraulic conductivity tests were not performed as part of the SI activities. However, review of conductivity values presented in Fetter, 1988, indicates that the dominant native soil type of clayey silt would be considered "low permeability material ($<1 \times 10^{-5}$ centimeters per second [cm/sec]) per NR 746.03. In addition, the monitoring wells are able to be purged dry. Static groundwater level measurements and relative groundwater elevations are presented in Table 5. Groundwater table contour maps, generated from the August 25, 2008, and September 3, 2009 static groundwater level measurements, are included as Figures 8 and 9, respectively.

6.4. Groundwater Laboratory Analytical Results

VOC groundwater analytical results indicated that benzene, ethylbenzene, naphthalene, toluene, trimethylbenzenes and xylenes were reported at concentrations exceeding the NR 140 enforcement standard (ES) in the groundwater sample collected from the temporary well installed at the location of boring GP-1. In addition, concentrations of benzene and naphthalene exceeding the NR 140 ES were reported in the groundwater samples collected from the temporary wells installed at the location of soil borings GP-3 and GP-5, respectively. Benzene, ethylbenzene, and trimethylbenzenes exceeding the NR 140 preventive action limit (PAL) were reported in the groundwater sample collected



from the temporary well installed at the location of boring GP-5, and 1,2-Dichloroethene exceeding the NR 140 PAL was reported in the groundwater sample collected from the temporary well installed at the location of boring GP-4. VOCs were not reported at concentrations above the NR 140 PAL or ES in the groundwater sample collected from the temporary well installed at the location of boring GP-6. The temporary well groundwater analytical results are summarized in Table 6.

VOC groundwater laboratory analytical results from the NR 141-compliant monitoring wells indicate that VOCs were detected at concentrations exceeding NR 140 ES in the groundwater samples collected from MW-1, MW-2, and MW-4 during the two groundwater sampling events. Petroleum-related VOCs were also detected at concentrations exceeding NR 140 PAL in the groundwater sample submitted from MW-3 during the two groundwater sampling events. Chloromethane, a common laboratory artifact, was reported at a concentration exceeding the NR 140 ES in the groundwater samples submitted from MW-1, MW-3, and MW-4 during the first groundwater sampling event, but was detected above the laboratory MDL in the groundwater samples collected from MW-1 through MW-7 during the second groundwater sampling event. VOCs have not been detected at concentrations exceeding laboratory MDL in groundwater samples collected from MW-5, MW-6, and MW-7 during the sampling events.

Lead was detected at concentrations exceeding the NR 140 PAL in the groundwater samples submitted from MW-1 through MW-4, and below the NR 140 PAL (MW-5) during the first groundwater sampling event. During the second groundwater sampling event, lead was detected at concentrations exceeding the NR 140 ES in the groundwater sample submitted from MW-4, and above the PAL in the groundwater samples submitted from MW-1 and MW-3. Lead was not detected above laboratory MDL in the groundwater samples submitted from MW-2, MW-5, MW-6, and MW-7 during the September 3, 2009 sampling event.

PAHs was detected at concentrations exceeding the NR 140 ES in the groundwater samples submitted from MW-1 and MW-4, and above the NR 140 PAL in the groundwater samples submitted from MW-2 and MW-3 during the first groundwater sampling event. During the second groundwater sampling event, PAHs were detected at concentrations exceeding the NR 140 ES and PAL in the groundwater samples submitted from MW-2, and above the PAL in the groundwater samples submitted from MW-1 and MW-3. PAHs were not detected at concentrations exceeding NR 140 PAL in the groundwater samples submitted from MW-4 through MW-7 during the September 3, 2009 sampling event.

The groundwater analytical results are summarized in Tables 7 and 8 and are shown on Figure 10. Copies of the temporary well and NR 141-compliant monitoring well groundwater laboratory analytical reports and the Chain-of-Custody forms are included in Appendix H.



Natural attenuation data collected on August 25, 2008 indicated dissolved oxygen levels of less than 1.0 part per million within the plume region. Corresponding oxidation reduction potential measurements were less than 0 (or negative). Temperature, pH, and conductivity values (respectively) generally showed little variation. The natural attenuation field measurements summary is presented in Table 9.

7. DISCUSSION OF RESULTS

7.1. Potential Soil Gas Impacts

Giles evaluated the indoor inhalation exposure pathway for benzene in the groundwater samples collected from MW-2 to qualify if there was a potential for vapor intrusion. Giles utilized the USEPA Johnson and Ettinger (J&E) (1991) screening-level model which incorporates both convective and diffusive mechanisms for estimating the transport of contaminant vapors emanating from either subsurface soils or groundwater into indoor spaces located directly above the source of contamination.

Giles used the USEPA model to perform an initial screening of the potential for vapors to migrate from the groundwater table and/or impacted soils through the soil and potentially into the proposed building. The USEPA typically evaluates/limits the target risk for cancer at 1.0×10^{-6} or one in a million. The results for the non-carcinogen compounds are indicated by the Hazard Quotient (HQ). The HQ is a ratio, which can be used to estimate if risk to harmful effects is likely or not due to the contaminant in question, (EPA Superfund Guidance).

<i>If...</i>	<i>Then...</i>
HQ > 1.0	Harmful effects are likely due to the contaminant in question
HQ = 1.0	Contaminant <i>alone</i> is not likely to cause ecological risk
HQ < 1.0	Harmful effects are NOT likely

The table below summarizes the results of the Johnson Ettinger screening model for the highest groundwater concentrations found at the Site, or those which exceeded the TCEQ PCL for groundwater.

Johnson & Ettinger Simulation Results			
Analyte	Max Concentration	Cancer Risk of Concentration	Hazard Quotient
benzene	263 ug/l (ppb)	3.567×10^{-5}	NA

The results of this initial screening level evaluation, using the Johnson Ettinger screening model, indicated that the concentration of benzene, in the groundwater at the location of monitoring well MW-2, exceeded the USEPA cancer risk of 1×10^{-6} . Please be aware



these are only initial screening level values collected at a certain point in time. Copies of the Johnson Ettinger screening-level model results for the compounds listed in the table above are included within Appendix J.

8. CONCLUSIONS

- Based on the results of the SI, the soil of the Site is impacted with VOCs and PAHs exceeding the WDNr standards. The extent of the VOC and PAH impacts at Site has been adequately defined. It is Giles' opinion that the impacted soil is associated with the past use of the Site as a gasoline service station. According to WDNr guidelines and the WAC, the shallow (0 to 4 feet bgs) PAH impacts identified at the location of boring GP-1, GP-2, GP-3, GP-5, GP-6, GP-7, GP-11, and MW-5 have the potential to result in a direct-contact exposure risk. In addition, the deep PAH and VOC impacted soil has the potential to result in a groundwater pathway risk.
- Review of the groundwater analytical data indicates that the impacted groundwater plume, which exceeds the WDNr regulatory standards, has been defined and generally the reported concentrations decreased between the first and second groundwater sampling events. It is Giles' opinion that the impacted groundwater is associated with the past use of the Site as a gasoline service station.

9. CONCEPTUAL REMEDIAL ACTION PLAN

The Site is zoned for Local Business District (LB2). Assuming commercial (non-industrial) redevelopment of the Site, Giles recommends that remediation be achieved through the addition of a cap/barrier at the time of Site redevelopment to prevent direct-contact exposure with the impacted soil within the top four feet of the former gasoline station area. A cap might consist of asphalt or concrete pavement and a building foundation. A barrier might consist of a 2-foot soil cap underlain by a geotextile fabric. We also recommend that soil that is excavated from the impacted area during construction activities would be disposed of at a licensed special waste landfill facility.

Due to the volatile nature of the contaminants at the Site, and the existing concentrations of benzene in the groundwater of the Site at the location of MW-2, Giles recommends that soil borings should be advanced within the proposed building footprint to allow for testing of soil vapor. A contingency for sub-slab vapor mitigation maybe required should exceedances of EPA risk-based concentrations be indicated with the soil vapor sample results (and the soil gas to indoor air attenuation factor of 0.01). As an alternative to performing the soil vapor investigation, the developer could proceed directly with incorporating a vapor mitigation system into the building construction.

Following redevelopment activities, WDNr case closure would be achieved through the



placement of the Site on the GIS Registry of Closed Remediation Sites for soil and groundwater. The GIS Registry packet for the Site would include a plan for regular maintenance of the cap/barrier and vapor mitigation system (if applicable).

10. RECOMMENDATIONS

- Based on the aforementioned findings, Giles recommends completing a minimum of three additional quarterly groundwater sampling events from the monitoring well network to confirm the stability of the groundwater plume and to evaluate groundwater quality trends.
- If redevelopment and/or excavation activities are performed in the future on the Site, it is recommended that a soil management plan and special provisions (Notice to Contractor) documents be prepared. It should be assumed that soils encountered during construction activities at the locations where soil contamination was identified will require proper placement on-site or be disposed off-site as a special waste to a licensed landfill facility.
- If structures are planned to be developed on the Site, it is recommended that a soil vapor survey be performed to assess the potential need for passive or active vapor mitigation.
- Giles also recommends submitting the *Initial Site Investigation Report* to the WDNR for their case file. Should the chloromethane concentrations continue to remain below the laboratory limit of quantitation, during subsequent groundwater sampling events, Giles recommends requesting that jurisdiction of the Site be transferred from the WDNR to the Wisconsin Department of Commerce.

11. GENERAL COMMENTS

This report is an instrument of service prepared for the exclusive use by the Redevelopment Authority of the City of Milwaukee, and may not be reproduced or distributed without written authorization from Giles Engineering Associates, Inc. and the Redevelopment Authority of the City of Milwaukee. The services described in this report were performed consistent with generally accepted professional consulting principles and practices. No other warranty, expressed or implied, is made. These services were performed consistent with our agreement with our client. This report is solely for the use and information of our client or as otherwise noted. Any unauthorized use of this report is strictly prohibited and we assume no liability for any such use.

This report has been prepared to aid in the evaluation of the Site located at 2307-09 North 6th Street, in the City of Milwaukee, Milwaukee County, Wisconsin, with regard to



the potential for hazardous substance and/or petroleum hydrocarbon presence at the time of this study. The conclusions presented in this report were based on available information pertaining to various points in time and were presented by others for our use or were based on informal discussion with various agency personnel. We do not warrant the accuracy of information supplied by others.

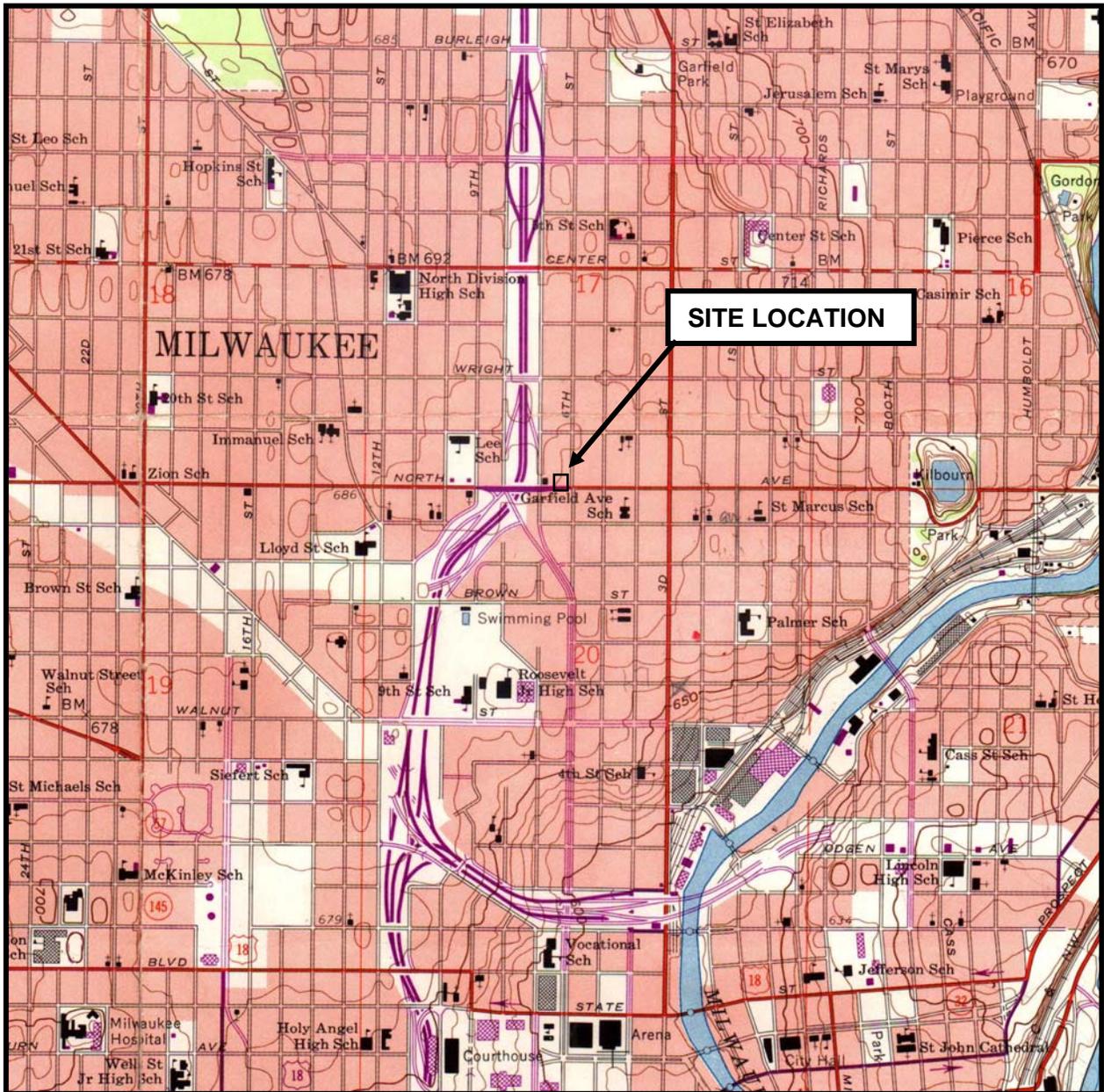
The boring logs and related information enclosed within the Appendices depict subsurface conditions only at specific locations drilled and at the particular times designated on the logs. Soil conditions at other locations may differ from conditions occurring at these boring locations. Also, the passage of time may result in a change of soil conditions at the boring locations drilled.

Soil samples collected from the subsurface exploration will be retained for a period of 30 days. If no other instruction is received, they will be disposed.

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1E-0709012 SI Report/07Env02/sct/mmj





Source: USGS Milwaukee, Wisconsin (1958, revised 1971) 7.5-minute series (topographic) quadrangle map

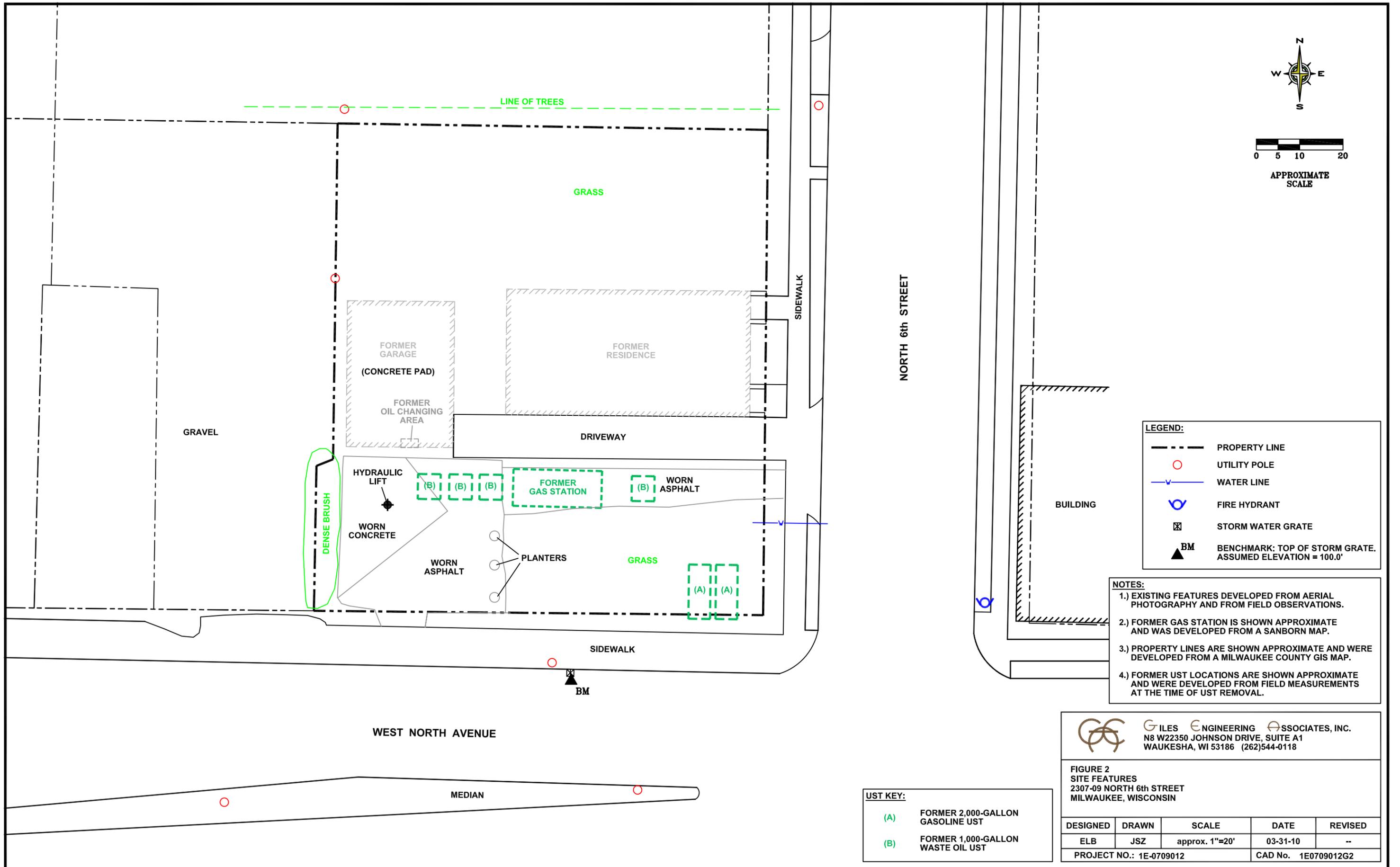
Scale: 1:24,000
 Contour Interval: 10 Feet



FIGURE 1
 SITE LOCATION MAP

2307-09 North 6th Street
 Milwaukee, Wisconsin
 Project No. 1E-0709012





LEGEND:

---	PROPERTY LINE
○	UTILITY POLE
—v—	WATER LINE
⊕	FIRE HYDRANT
⊠	STORM WATER GRATE
▲ BM	BENCHMARK: TOP OF STORM GRATE. ASSUMED ELEVATION = 100.0'

- NOTES:**
- EXISTING FEATURES DEVELOPED FROM AERIAL PHOTOGRAPHY AND FROM FIELD OBSERVATIONS.
 - FORMER GAS STATION IS SHOWN APPROXIMATE AND WAS DEVELOPED FROM A SANBORN MAP.
 - PROPERTY LINES ARE SHOWN APPROXIMATE AND WERE DEVELOPED FROM A MILWAUKEE COUNTY GIS MAP.
 - FORMER UST LOCATIONS ARE SHOWN APPROXIMATE AND WERE DEVELOPED FROM FIELD MEASUREMENTS AT THE TIME OF UST REMOVAL.

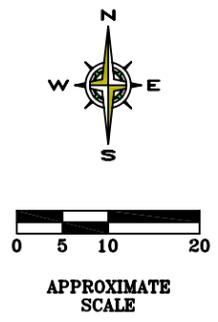
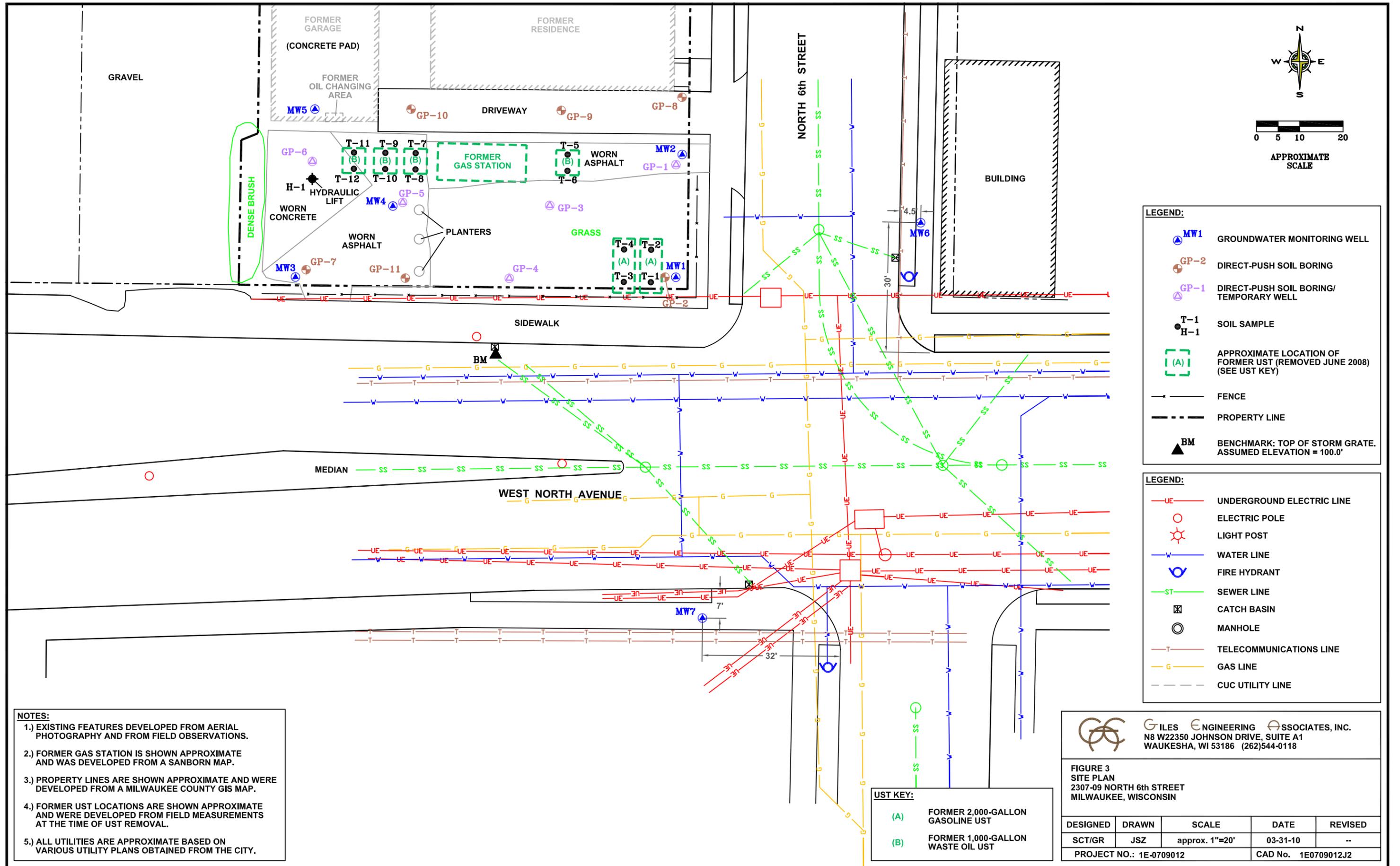
UST KEY:

(A)	FORMER 2,000-GALLON GASOLINE UST
(B)	FORMER 1,000-GALLON WASTE OIL UST

GILES ENGINEERING ASSOCIATES, INC.
 N8 W22350 JOHNSON DRIVE, SUITE A1
 WAUKESHA, WI 53186 (262)544-0118

FIGURE 2
 SITE FEATURES
 2307-09 NORTH 6th STREET
 MILWAUKEE, WISCONSIN

DESIGNED	DRAWN	SCALE	DATE	REVISED
ELB	JSZ	approx. 1"=20'	03-31-10	--
PROJECT NO.: 1E-0709012			CAD No. 1E0709012G2	



LEGEND:

- ▲ MW1 GROUNDWATER MONITORING WELL
- GP-2 DIRECT-PUSH SOIL BORING
- ▲ GP-1 DIRECT-PUSH SOIL BORING/ TEMPORARY WELL
- T-1 SOIL SAMPLE
- H-1 SOIL SAMPLE
- (A) APPROXIMATE LOCATION OF FORMER UST (REMOVED JUNE 2008) (SEE UST KEY)
- FENCE
- - - PROPERTY LINE
- ▲ BM BENCHMARK: TOP OF STORM GRATE. ASSUMED ELEVATION = 100.0'

LEGEND:

- UE — UNDERGROUND ELECTRIC LINE
- ELECTRIC POLE
- ☀ LIGHT POST
- W — WATER LINE
- ⊕ FIRE HYDRANT
- ST — SEWER LINE
- ⊠ CATCH BASIN
- ⊙ MANHOLE
- T — TELECOMMUNICATIONS LINE
- G — GAS LINE
- - - CUC UTILITY LINE

- NOTES:**
- 1.) EXISTING FEATURES DEVELOPED FROM AERIAL PHOTOGRAPHY AND FROM FIELD OBSERVATIONS.
 - 2.) FORMER GAS STATION IS SHOWN APPROXIMATE AND WAS DEVELOPED FROM A SANBORN MAP.
 - 3.) PROPERTY LINES ARE SHOWN APPROXIMATE AND WERE DEVELOPED FROM A MILWAUKEE COUNTY GIS MAP.
 - 4.) FORMER UST LOCATIONS ARE SHOWN APPROXIMATE AND WERE DEVELOPED FROM FIELD MEASUREMENTS AT THE TIME OF UST REMOVAL.
 - 5.) ALL UTILITIES ARE APPROXIMATE BASED ON VARIOUS UTILITY PLANS OBTAINED FROM THE CITY.

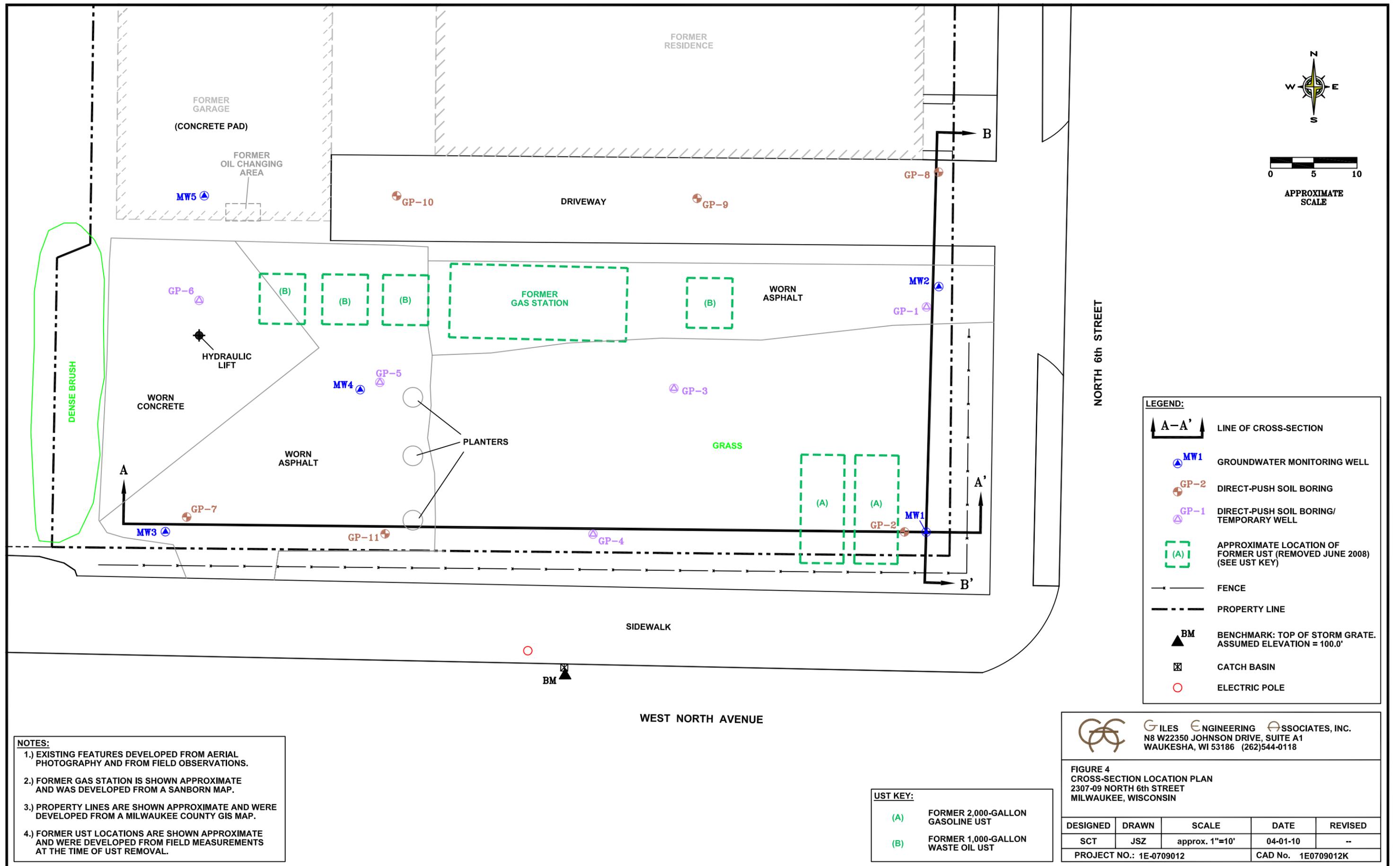
UST KEY:

- (A) FORMER 2,000-GALLON GASOLINE UST
- (B) FORMER 1,000-GALLON WASTE OIL UST

GILES ENGINEERING ASSOCIATES, INC.
 N8 W22350 JOHNSON DRIVE, SUITE A1
 WAUKESHA, WI 53186 (262)544-0118

FIGURE 3
SITE PLAN
 2307-09 NORTH 6th STREET
 MILWAUKEE, WISCONSIN

DESIGNED	DRAWN	SCALE	DATE	REVISED
SCT/GR	JSZ	approx. 1"=20'	03-31-10	--
PROJECT NO.: 1E-0709012			CAD No. 1E0709012J2	



LEGEND:

	A-A'	LINE OF CROSS-SECTION
	MW1	GROUNDWATER MONITORING WELL
	GP-2	DIRECT-PUSH SOIL BORING
	GP-1	DIRECT-PUSH SOIL BORING/ TEMPORARY WELL
	(A)	APPROXIMATE LOCATION OF FORMER UST (REMOVED JUNE 2008) (SEE UST KEY)
		FENCE
		PROPERTY LINE
	BM	BENCHMARK: TOP OF STORM GRATE. ASSUMED ELEVATION = 100.0'
		CATCH BASIN
		ELECTRIC POLE

- NOTES:**
- EXISTING FEATURES DEVELOPED FROM AERIAL PHOTOGRAPHY AND FROM FIELD OBSERVATIONS.
 - FORMER GAS STATION IS SHOWN APPROXIMATE AND WAS DEVELOPED FROM A SANBORN MAP.
 - PROPERTY LINES ARE SHOWN APPROXIMATE AND WERE DEVELOPED FROM A MILWAUKEE COUNTY GIS MAP.
 - FORMER UST LOCATIONS ARE SHOWN APPROXIMATE AND WERE DEVELOPED FROM FIELD MEASUREMENTS AT THE TIME OF UST REMOVAL.

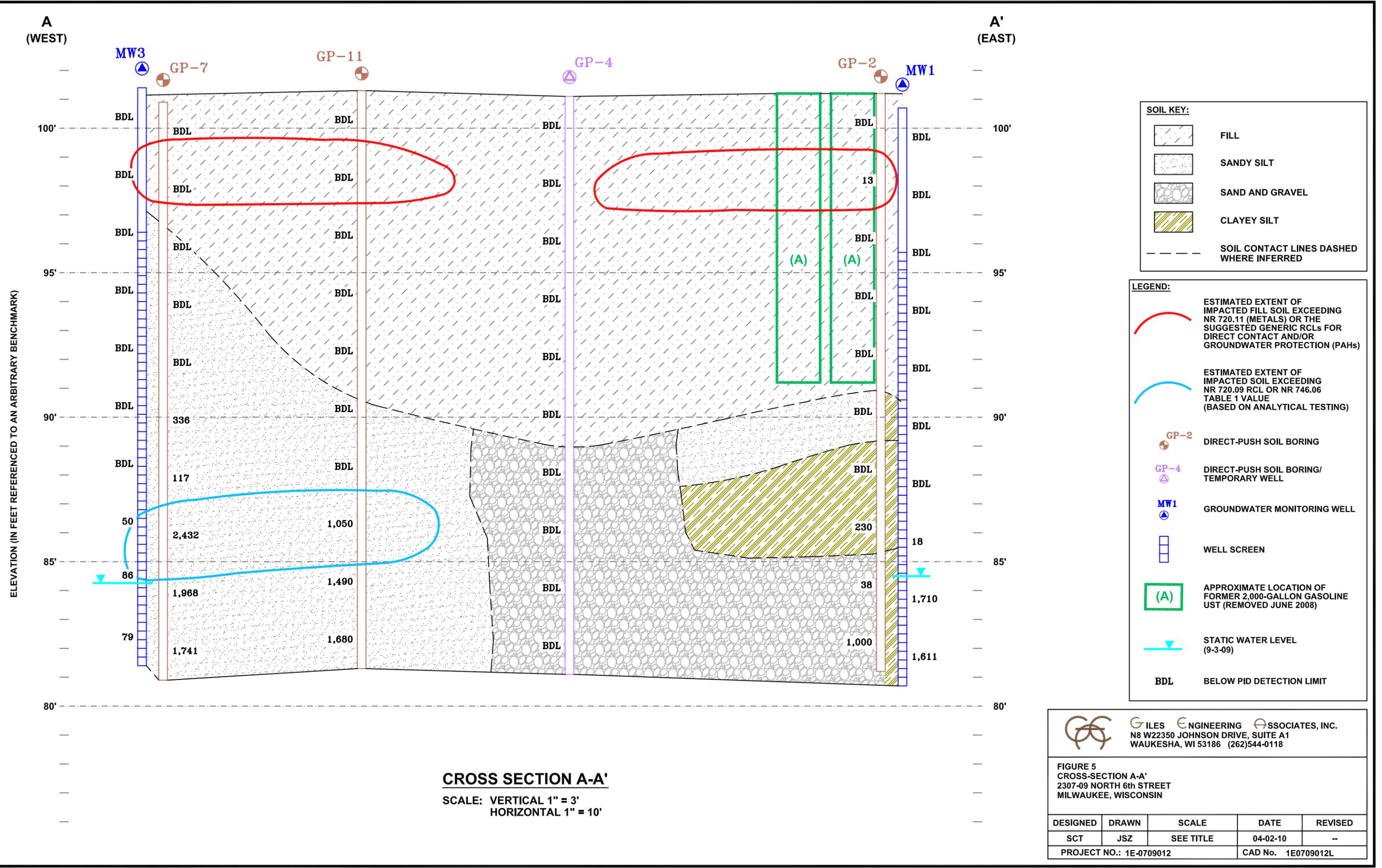
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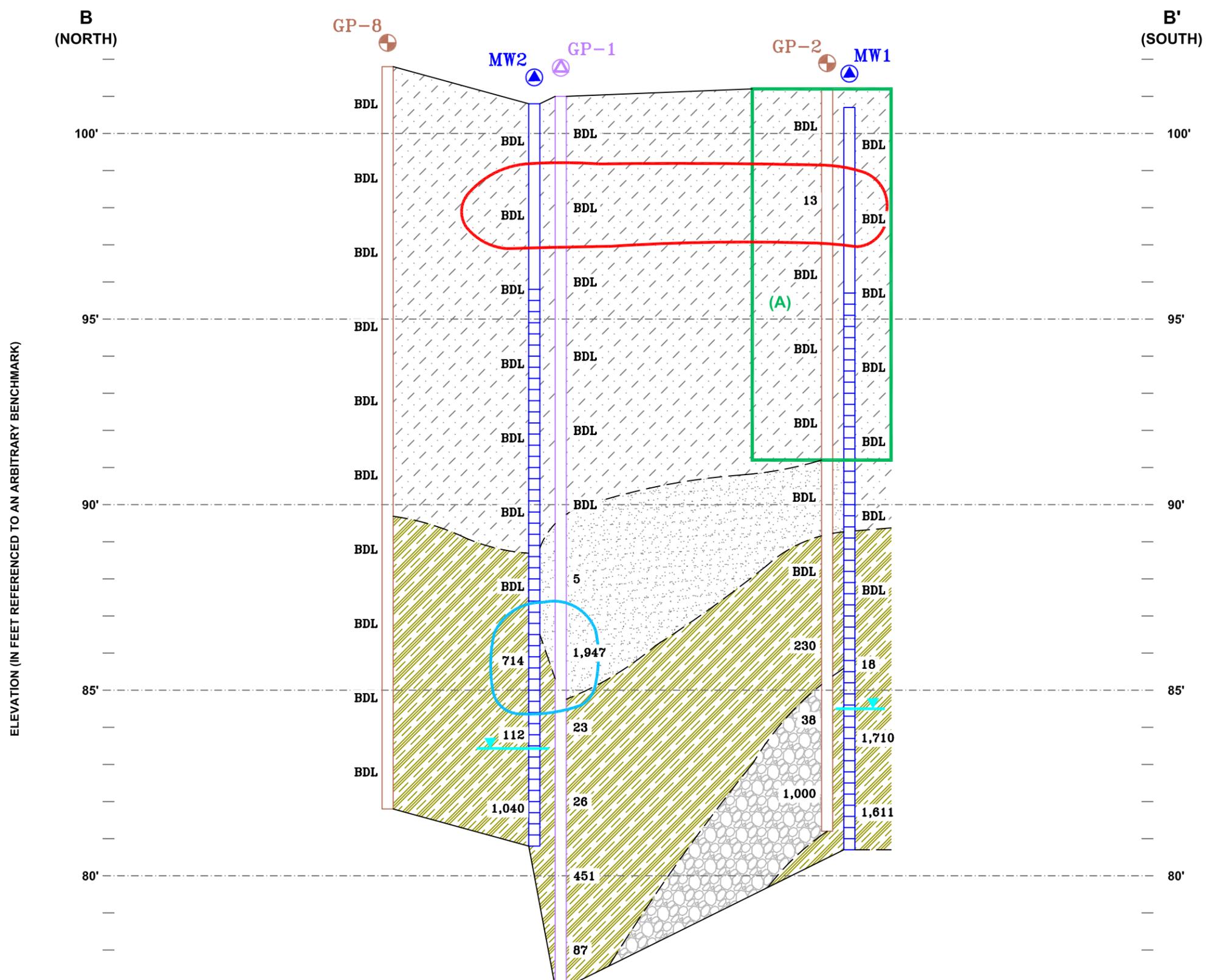
(A)	FORMER 2,000-GALLON GASOLINE UST
(B)	FORMER 1,000-GALLON WASTE OIL UST

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 N8 W22350 JOHNSON DRIVE, SUITE A1
 WAUKESHA, WI 53186 (262)544-0118

FIGURE 4
 CROSS-SECTION LOCATION PLAN
 2307-09 NORTH 6th STREET
 MILWAUKEE, WISCONSIN

DESIGNED	DRAWN	SCALE	DATE	REVISED
SCT	JSZ	approx. 1"=10'	04-01-10	--
PROJECT NO.: 1E-0709012			CAD No. 1E0709012K	





SOIL KEY:

	FILL
	SANDY SILT
	SAND AND GRAVEL
	CLAYEY SILT
	SOIL CONTACT LINES DASHED WHERE INFERRED

LEGEND:

	ESTIMATED EXTENT OF IMPACTED FILL SOIL EXCEEDING NR 720.11 (METALS) OR THE SUGGESTED GENERIC RCLs FOR DIRECT CONTACT AND/OR GROUNDWATER PROTECTION (PAHs)
	ESTIMATED EXTENT OF IMPACTED SOIL EXCEEDING NR 720.09 RCL OR NR 746.06 TABLE 1 VALUE (BASED ON ANALYTICAL TESTING)
	DIRECT-PUSH SOIL BORING
	DIRECT-PUSH SOIL BORING/ TEMPORARY WELL
	GROUNDWATER MONITORING WELL
	WELL SCREEN
	APPROXIMATE LOCATION OF FORMER 2,000-GALLON GASOLINE USTs (REMOVED JUNE 2008)
	STATIC WATER LEVEL (9-3-09)
BDL	BELOW PID DETECTION LIMIT

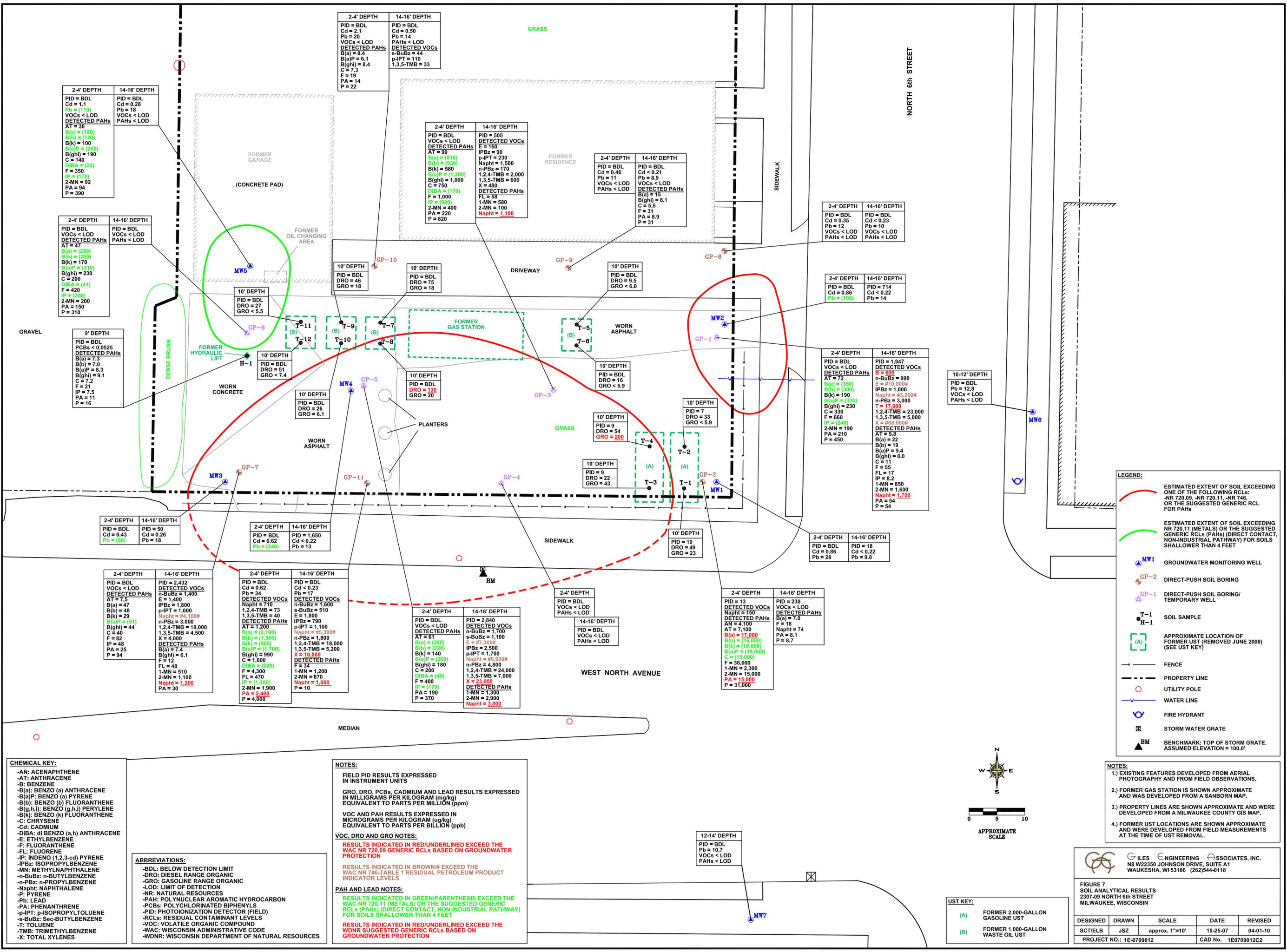
CROSS SECTION B-B'
 SCALE: VERTICAL 1" = 3'
 HORIZONTAL 1" = 10'

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 N8 W22350 JOHNSON DRIVE, SUITE A1
 WAUKESHA, WI 53186 (262)544-0118

FIGURE 6
 CROSS-SECTION B-B'
 2307-09 NORTH 6th STREET
 MILWAUKEE, WISCONSIN

DESIGNED	DRAWN	SCALE	DATE	REVISED
SCT	JSZ	SEE TITLE	04-02-10	--
PROJECT NO.: 1E-0709012			CAD No. 1E0709012M	

ELEVATION (IN FEET REFERENCED TO AN ARBITRARY BENCHMARK)



CHEMICAL KEY:

- AN: ACENAPHTHENE
- AT: ANTHRACENE
- B: BENZENE
- B(a): BENZO (a) ANTHRACENE
- B(a)P: BENZO (a) PYRENE
- B(b): BENZO (b) FLUORANTHENE
- B(g,h,i): BENZO (g,h,i) PERYLENE
- B(k): BENZO (k) FLUORANTHENE
- C: CHRYSENE
- Cd: CADMIUM
- DIB(a): DI BENZO (a,h) ANTHRACENE
- E: ETHYLBENZENE
- F: FLUORANTHENE
- FL: FLUORENE
- IP: INDENO (1,2,3-cd) PYRENE
- IPBz: ISOPROPYLBENZENE
- MN: METHYLNAPHTHALENE
- n-BuBz: n-BUTYLBENZENE
- n-PBz: n-PROPYLBENZENE
- Napht: NAPHTHALENE
- P: PYRENE
- Pb: LEAD
- PA: PHENANTHRENE
- p-IPT: p-ISOPROPYLTOLUENE
- s-BuBz: Sec-BUTYLBENZENE
- T: TOLUENE
- TMB: TRIMETHYLBENZENE
- X: TOTAL XYLENES

ABBREVIATIONS:

- BDL: BELOW DETECTION LIMIT
- DRO: DIESEL RANGE ORGANIC
- GRO: GASOLINE RANGE ORGANIC
- LOD: LIMIT OF DETECTION
- NR: NATURAL RESOURCES
- PAH: POLYNUCLEAR AROMATIC HYDROCARBON
- PCBs: POLYCHLORINATED BIPHENYLS
- PID: PHOTIOIONIZATION DETECTOR (FIELD)
- RCLs: RESIDUAL CONTAMINANT LEVELS
- VOC: VOLATILE ORGANIC COMPOUND
- WAC: WISCONSIN ADMINISTRATIVE CODE
- WDRN: WISCONSIN DEPARTMENT OF NATURAL RESOURCES

NOTES:

FIELD PID RESULTS EXPRESSED IN INSTRUMENT UNITS

GRO, DRO, PCBs, CADMIUM AND LEAD RESULTS EXPRESSED IN MILLIGRAMS PER KILOGRAM (mg/kg) EQUIVALENT TO PARTS PER MILLION (ppm)

VOC AND PAH RESULTS EXPRESSED IN MICROGRAMS PER KILOGRAM (µg/kg) EQUIVALENT TO PARTS PER BILLION (ppb)

VOC, DRO AND GRO NOTES:

RESULTS INDICATED IN RED/UNDERLINED EXCEED THE WAC NR 720.09 GENERIC RCLs BASED ON GROUNDWATER PROTECTION

RESULTS INDICATED IN BROWN/# EXCEED THE WAC NR 746-TABLE 1 RESIDUAL PETROLEUM PRODUCT INDICATOR LEVELS

PAH AND LEAD NOTES:

RESULTS INDICATED IN GREEN/PARENTHESIS EXCEED THE WAC NR 720.11 (METALS) OR THE SUGGESTED GENERIC RCLs (PAHs) (DIRECT CONTACT, NON-INDUSTRIAL PATHWAY) FOR SOILS SHALLOWER THAN 4 FEET

RESULTS INDICATED IN RED/UNDERLINED EXCEED THE WDRN SUGGESTED GENERIC RCLs BASED ON GROUNDWATER PROTECTION

LEGEND:

- ESTIMATED EXTENT OF SOIL EXCEEDING ONE OF THE FOLLOWING RCLs: NR 720.09, NR 720.11, NR 746, OR THE SUGGESTED GENERIC RCL FOR PAHs
- ESTIMATED EXTENT OF SOIL EXCEEDING NR 720.11 (METALS) OR THE SUGGESTED GENERIC RCLs (PAHs) (DIRECT CONTACT, NON-INDUSTRIAL PATHWAY) FOR SOILS SHALLOWER THAN 4 FEET
- MW1 GROUNDWATER MONITORING WELL
- GP-2 DIRECT-PUSH SOIL BORING
- GP-1 DIRECT-PUSH SOIL BORING/ TEMPORARY WELL
- T-1 SOIL SAMPLE
- H-1
- (A) APPROXIMATE LOCATION OF FORMER UST (REMOVED JUNE 2008) (SEE UST KEY)
- FENCE
- PROPERTY LINE
- UTILITY POLE
- WATER LINE
- FIRE HYDRANT
- STORM WATER GRATE
- ▲ BENCHMARK: TOP OF STORM GRATE. ASSUMED ELEVATION = 100.0'

NOTES:

- 1) EXISTING FEATURES DEVELOPED FROM AERIAL PHOTOGRAPHY AND FROM FIELD OBSERVATIONS.
- 2) FORMER GAS STATION IS SHOWN APPROXIMATE AND WAS DEVELOPED FROM A SANBORN MAP.
- 3) PROPERTY LINES ARE SHOWN APPROXIMATE AND WERE DEVELOPED FROM A MILWAUKEE COUNTY GIS MAP.
- 4) FORMER UST LOCATIONS ARE SHOWN APPROXIMATE AND WERE DEVELOPED FROM FIELD MEASUREMENTS AT THE TIME OF UST REMOVAL.

UST KEY:

- (A) FORMER 2,000-GALLON GASOLINE UST
- (B) FORMER 1,000-GALLON WASTE OIL UST

FIGURE 7
SOIL ANALYTICAL RESULTS
2307-09 NORTH 6th STREET
MILWAUKEE, WISCONSIN

DESIGNED	DRAWN	SCALE	DATE	REVISED
SCT/ELB	JSZ	approx. 1"=10'	10-25-07	04-01-10

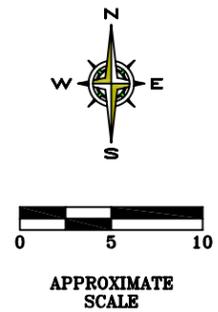
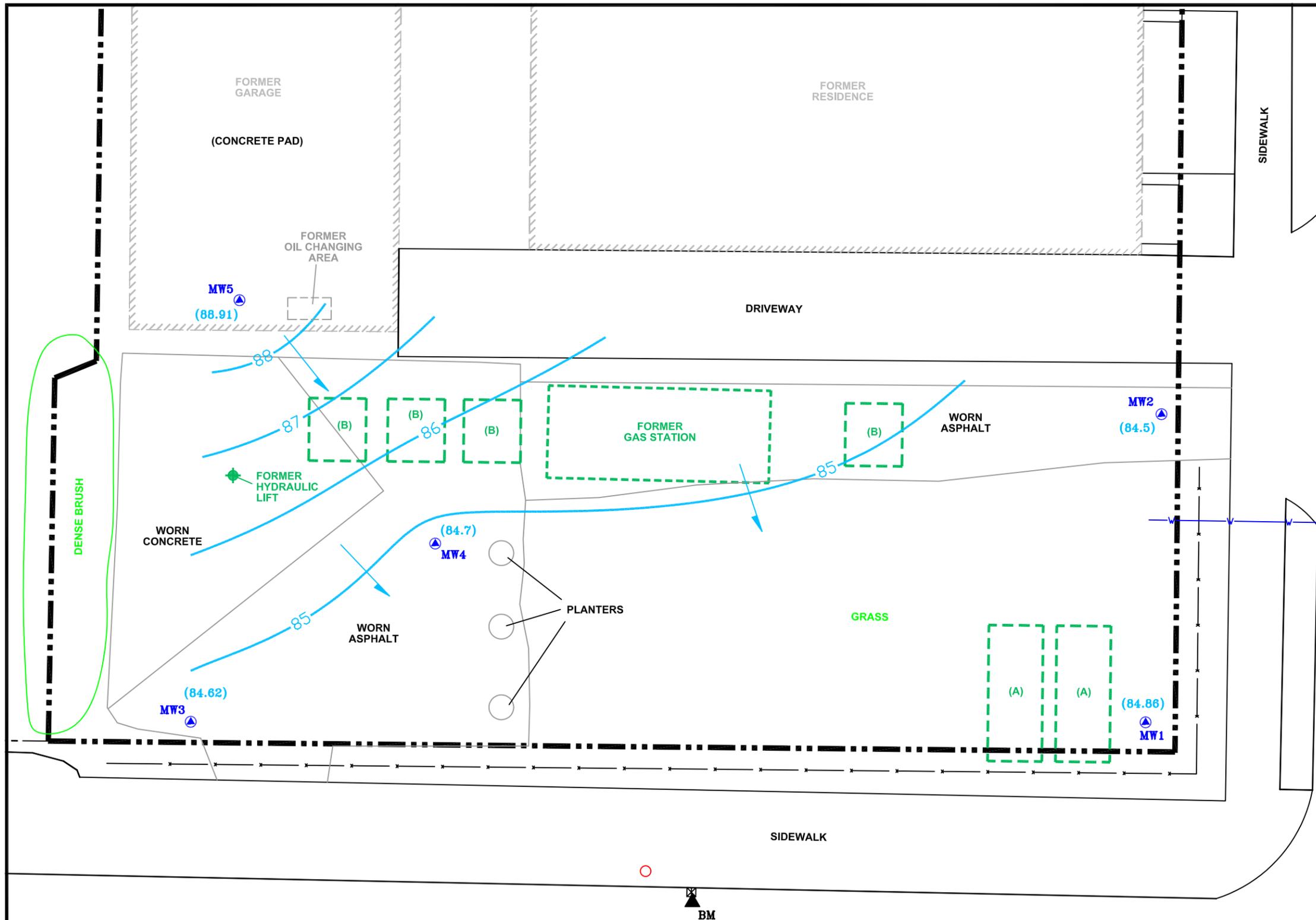
PROJECT NO.: 1E-0709012 CAD No. 1E0709012C2

GILES ENGINEERING ASSOCIATES, INC.
N8 W22350 JOHNSON DRIVE, SUITE A1
WAUKESHA, WI 53186 (262)544-0118

FIGURE 7
SOIL ANALYTICAL RESULTS
2307-09 NORTH 6th STREET
MILWAUKEE, WISCONSIN

DESIGNED	DRAWN	SCALE	DATE	REVISED
SCT/ELB	JSZ	approx. 1"=10'	10-25-07	04-01-10

PROJECT NO.: 1E-0709012 CAD No. 1E0709012C2



NORTH 6th STREET

WEST NORTH AVENUE

LEGEND:

	85 GROUNDWATER CONTOUR INTERVAL = 1.0'
	GROUNDWATER FLOW DIRECTION
	GROUNDWATER ELEVATION (IN FEET REFERENCED TO ARBITRARY BENCHMARK)
	GROUNDWATER MONITORING WELL
	APPROXIMATE LOCATION OF FORMER UST (REMOVED JUNE 2008) (SEE UST KEY)
	FENCE
	PROPERTY LINE
	UTILITY POLE
	WATER LINE
	STORM WATER GRATE
	BENCHMARK: TOP OF STORM GRATE. ASSUMED ELEVATION = 100.0'

- NOTES:**
- EXISTING FEATURES DEVELOPED FROM AERIAL PHOTOGRAPHY AND FROM FIELD OBSERVATIONS.
 - FORMER GAS STATION IS SHOWN APPROXIMATE AND WAS DEVELOPED FROM A SANBORN MAP.
 - PROPERTY LINES ARE SHOWN APPROXIMATE AND WERE DEVELOPED FROM A MILWAUKEE COUNTY GIS MAP.
 - FORMER UST LOCATIONS ARE SHOWN APPROXIMATE AND WERE DEVELOPED FROM FIELD MEASUREMENTS AT THE TIME OF UST REMOVAL.
 - UST BACKFILL NEAR MW-1 MAY BE CAUSING A PERCHED GROUNDWATER CONDITION.

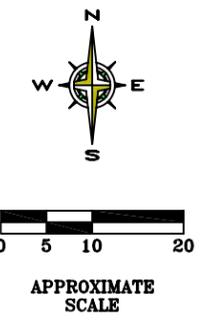
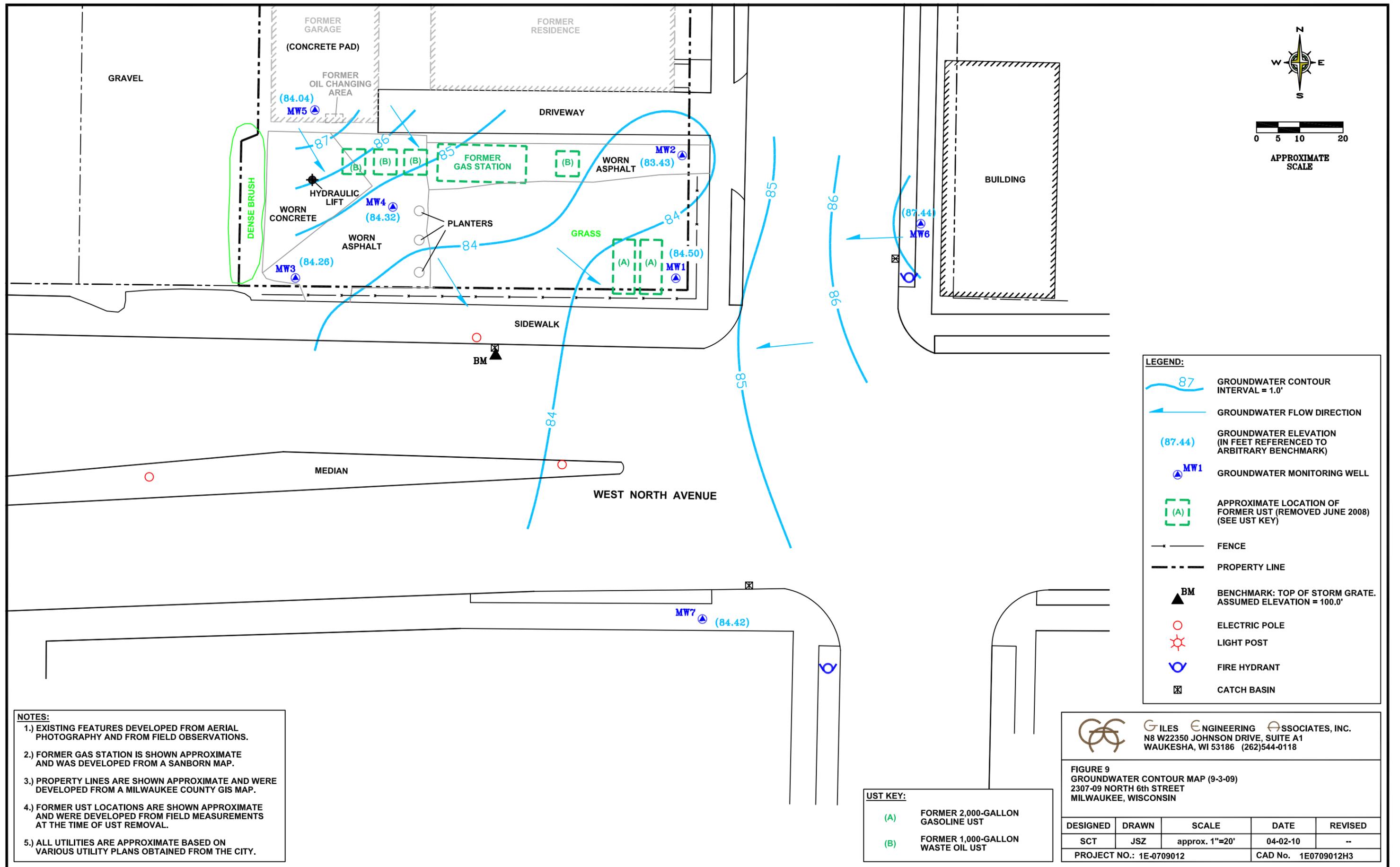
UST KEY:

	FORMER 2,000-GALLON GASOLINE UST
	FORMER 1,000-GALLON WASTE OIL UST

GILES ENGINEERING ASSOCIATES, INC.
 N8 W22350 JOHNSON DRIVE, SUITE A1
 WAUKESHA, WI 53186 (262)544-0118

FIGURE 8
 GROUNDWATER CONTOUR MAP (8-20-08)
 2307-09 NORTH 6th STREET
 MILWAUKEE, WISCONSIN

DESIGNED	DRAWN	SCALE	DATE	REVISED
ELB	JSZ	approx. 1"=10'	04-01-10	--
PROJECT NO.: 1E-0709012			CAD No. 1E0709012H	



LEGEND:

	GROUNDWATER CONTOUR INTERVAL = 1.0'
	GROUNDWATER FLOW DIRECTION
	GROUNDWATER ELEVATION (IN FEET REFERENCED TO ARBITRARY BENCHMARK)
	GROUNDWATER MONITORING WELL
	APPROXIMATE LOCATION OF FORMER UST (REMOVED JUNE 2008) (SEE UST KEY)
	FENCE
	PROPERTY LINE
	BENCHMARK: TOP OF STORM GRATE. ASSUMED ELEVATION = 100.0'
	ELECTRIC POLE
	LIGHT POST
	FIRE HYDRANT
	CATCH BASIN

- NOTES:**
- EXISTING FEATURES DEVELOPED FROM AERIAL PHOTOGRAPHY AND FROM FIELD OBSERVATIONS.
 - FORMER GAS STATION IS SHOWN APPROXIMATE AND WAS DEVELOPED FROM A SANBORN MAP.
 - PROPERTY LINES ARE SHOWN APPROXIMATE AND WERE DEVELOPED FROM A MILWAUKEE COUNTY GIS MAP.
 - FORMER UST LOCATIONS ARE SHOWN APPROXIMATE AND WERE DEVELOPED FROM FIELD MEASUREMENTS AT THE TIME OF UST REMOVAL.
 - ALL UTILITIES ARE APPROXIMATE BASED ON VARIOUS UTILITY PLANS OBTAINED FROM THE CITY.

UST KEY:

	FORMER 2,000-GALLON GASOLINE UST
	FORMER 1,000-GALLON WASTE OIL UST

GILES ENGINEERING ASSOCIATES, INC.
 N8 W22350 JOHNSON DRIVE, SUITE A1
 WAUKESHA, WI 53186 (262)544-0118

FIGURE 9
 GROUNDWATER CONTOUR MAP (9-3-09)
 2307-09 NORTH 6th STREET
 MILWAUKEE, WISCONSIN

DESIGNED	DRAWN	SCALE	DATE	REVISED
SCT	JSZ	approx. 1"=20'	04-02-10	--
PROJECT NO.: 1E-0709012			CAD No. 1E0709012H3	



UST KEY:

(A)	FORMER 2,000-GALLON GASOLINE UST
(B)	FORMER 1,000-GALLON WASTE OIL UST

LEGEND:

	ESTIMATED EXTENT OF GROUNDWATER EXCEEDING THE NR 140 ENFORCEMENT STANDARDS
	ESTIMATED EXTENT OF GROUNDWATER EXCEEDING THE NR 140 PREVENTIVE ACTION LIMITS
	GROUNDWATER MONITORING WELL
	DIRECT-PUSH SOIL BORING/ TEMPORARY WELL
	APPROXIMATE LOCATION OF FORMER UST (REMOVED JUNE 2008) (SEE UST KEY)
	FENCE
	PROPERTY LINE
	BENCHMARK: TOP OF STORM GRATE. ASSUMED ELEVATION = 100.0'
	ELECTRIC POLE
	WATER LINE
	FIRE HYDRANT
	CATCH BASIN
	MANHOLE

- NOTES:**
- EXISTING FEATURES DEVELOPED FROM AERIAL PHOTOGRAPHY AND FROM FIELD OBSERVATIONS.
 - FORMER GAS STATION IS SHOWN APPROXIMATE AND WAS DEVELOPED FROM A SANBORN MAP.
 - PROPERTY LINES ARE SHOWN APPROXIMATE AND WERE DEVELOPED FROM A MILWAUKEE COUNTY GIS MAP.
 - FORMER UST LOCATIONS ARE SHOWN APPROXIMATE AND WERE DEVELOPED FROM FIELD MEASUREMENTS AT THE TIME OF UST REMOVAL.

GILES ENGINEERING ASSOCIATES, INC.
 N8 W22350 JOHNSON DRIVE, SUITE A1
 WAUKESHA, WI 53186 (262)544-0118

FIGURE 10
 GROUNDWATER ANALYTICAL RESULTS
 2307-09 NORTH 6TH STREET
 MILWAUKEE, WISCONSIN

DESIGNED	DRAWN	SCALE	DATE	REVISED
SCT/ELB	JSZ	approx. 1"=20'	10-06-08	04-05-10
PROJECT NO.: 1E-0709012			CAD No. 1E0709012I2	

8/25/08	9/3/09
Cd < 0.12 Pb = (2.5) DETECTED VOCs n-BuBz = 18 ChlMe* = 5.3 j E = 130 IPBz = 30 Napht = (61) n-PBz = 25 T = 31 TMBs = (303) X = 390 DETECTED PAHs FL = 2.3 1-MN = 5.4 2-MN = 8.6 Napht = (74)	Pb = (4.8) DETECTED VOCs s-BuBz = 2.93 n-BuBz = 2.31 j E = 34 IPBz = 16.9 p-IPT = 8.5 Napht = 3.3 j n-PBz = 17.9 T = 2.11 TMBs = (100) X = 71.5 DETECTED PAHs FL = 0.037 j 1-MN = 1.87 2-MN = 0.022 j Napht = (1.84)

8/25/08	9/3/09
Cd < 0.12 Pb = 0.54 VOCs < LOD PAHs < LOD	Pb < 0.7 VOCs < LOD DETECTED PAHs Napht = 0.039 j

8/25/08	9/3/09
Cd < 0.12 Pb = (3.1) DETECTED VOCs B = 1,300 n-BuBz = 48 j E = (530) IPBz = 33 j Napht = (70) n-PBz = 86 j T = 2,700 TMBs = 1,410 X = (4,200) DETECTED PAHs AT = 0.13 j B(a) = 0.052 j FL = 1.6 1-MN = 20 2-MN = 38 Napht = (56) PA = 0.93 P = 0.065 j	Pb < 0.7 DETECTED VOCs B = 263 s-BuBz = 8.1 j n-BuBz = 23.9 j E = (490) IPBz = 30.9 Napht = (96) n-PBz = 90 T = (410) TMBs = 765 X = (1,818) DETECTED PAHs AN = 0.278 j AT = 0.267 j B(a) = 0.263 j B(b) = (0.198 j) C = 0.228 j F = 0.69 FL = 0.37 j 1-MN = 20.5 2-MN = 44 Napht = 57 PA = 0.79 P = 0.57

9/3/09
Pb < 0.7 VOCs < LOD DETECTED PAHs 1-MN = 0.014 j 2-MN = 0.021 j Napht = 0.038 j

8/25/08
Cd < 0.12 Pb = (5.7) DETECTED VOCs B = 29 j n-BuBz = 110 ChlMe* = 52 E = 1,200 IPBz = 140 Napht = 240 n-PBz = 440 TMBs = 3,840 X = (4,200) DETECTED PAHs AN = 1.1 j AT = 0.93 B(a) = 0.60 B(b) = 0.20 j B(k) = 0.23 B(a)P = 0.31 C = 0.33 F = 1.7 FL = 1.6 IP = 0.20 1-MN = 76 2-MN = 120 Napht = 230 PA = 3.0 P = 0.85

9/3/09
Pb = (5.3) DETECTED VOCs B = 10.2 j s-BuBz = 14.2 n-BuBz = 23.6 j E = (390) IPBz = 54 p-IPT = 5.9 j Napht = 182 n-PBz = 144 TMBs = 995 X = (1,109) DETECTED PAHs AN = 0.35 FL = 0.39 j 1-MN = 18.1 2-MN = 14.2 Napht = (43) PA = 0.199 j

8/25/08	9/3/09
Cd < 0.12 Pb = (5.4) DETECTED VOCs n-BuBz = 59 ChlMe* = 7.7 j E = (530) IPBz = 91 Napht = 230 n-PBz = 150 T = 15 j TMBs = 1,010 X = (1,100) DETECTED PAHs AT = 0.12 j F = 0.56 FL = 10 1-MN = 30 2-MN = 59 Napht = 210 PA = 1.9 P = 0.12 j	Pb = 17.1 DETECTED VOCs B = 10.8 j s-BuBz = 7.0 j E = 95 IPBz = 20.8 p-IPT = 11.3 j Napht = (75) n-PBz = 36 T = 17.5 TMBs = (236) X = 209.6 DETECTED PAHs ACP = 0.014 j 2-MN = 0.020 j Napht = 0.194

9/3/09
Pb < 0.7 VOCs < LOD DETECTED PAHs Napht = 0.026 j

CHEMICAL KEY:

- ACP: ACENAPHTHYLENE
- AN: ACENAPHTHENE
- AT: ANTHRACENE
- B: BENZENE
- B(a): BENZO (a) ANTHRACENE
- B(a)P: BENZO (a) PYRENE
- B(b): BENZO (b) FLUORANTHENE
- B(k): BENZO (k) FLUORANTHENE
- B(g,h,i): BENZO (g,h,i) PERYLENE
- C: CHRYSENE
- Cd: CADMIUM
- ChlMe: CHLOROMETHANE
- DCA: DICHLOROETHANE
- DiBa: di BENZO (a,h) ANTHRACENE
- E: ETHYLBENZENE
- F: FLUORANTHENE
- FL: FLUORENE
- IP: INDENO (1,2,3-cd) PYRENE
- IPBz: ISOPROPYLBENZENE
- n-BuBz: n-BUTYLBENZENE
- n-PBz: n-PROPYLBENZENE
- MN: METHYLNAPHTHALENE
- Napht: NAPHTHALENE
- P: PYRENE
- PA: PHENANTHRENE
- Pb: LEAD
- p-IPT: p-ISOPROPYLTOLUENE
- s-BuBz: Sec-BUTYLBENZENE
- T: TOLUENE
- TMBs: TOTAL TRIMETHYLBENZENES
- X: TOTAL XYLENES

ABBREVIATIONS:

- LOD: LIMIT OF DETECTION
- NR: NATURAL RESOURCES
- PAH: POLYNUCLEAR AROMATIC HYDROCARBON
- VOC: VOLATILE ORGANIC COMPOUND
- WAC: WISCONSIN ADMINISTRATIVE CODE

NOTES:

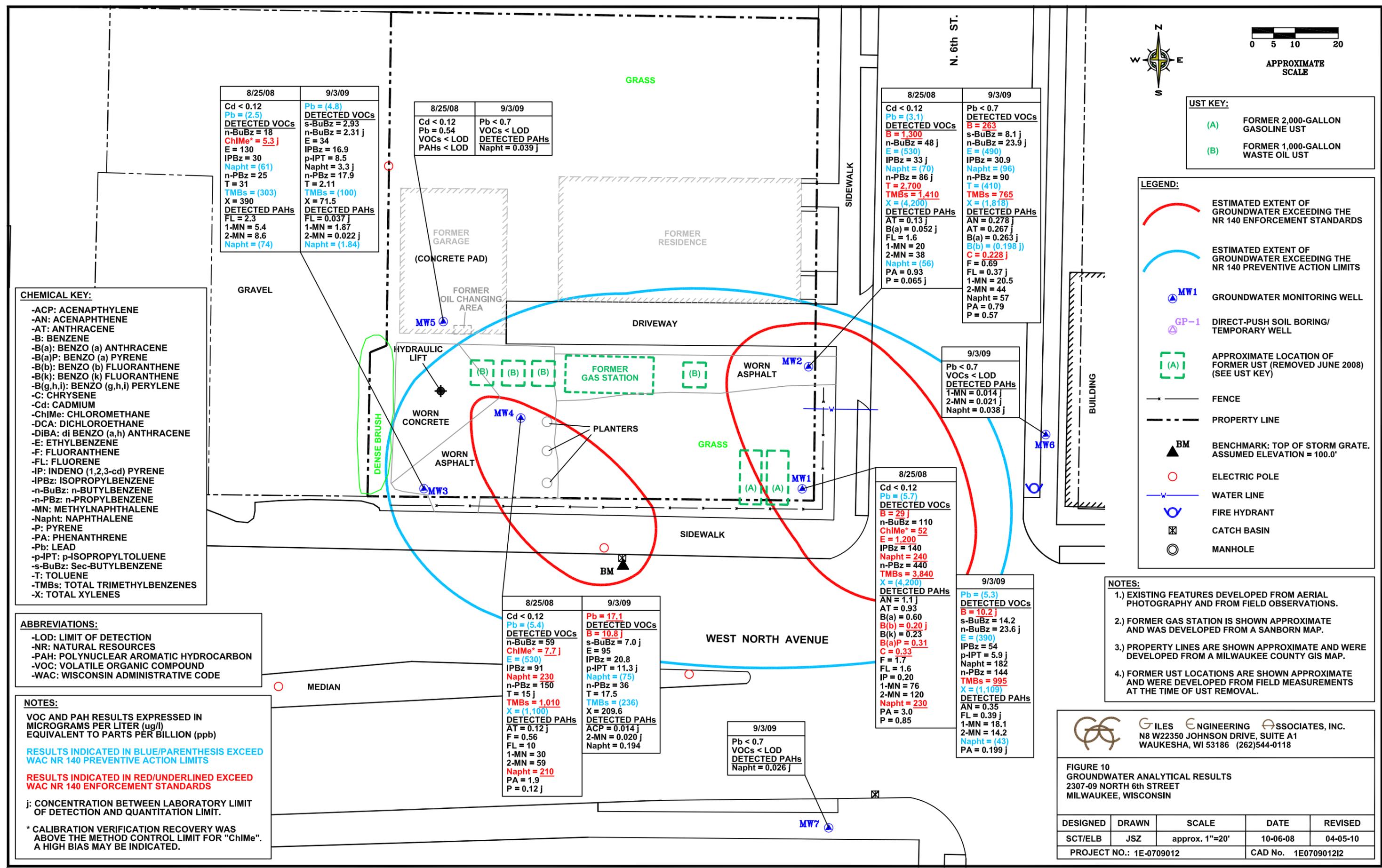
VOC AND PAH RESULTS EXPRESSED IN MICROGRAMS PER LITER (ug/l) EQUIVALENT TO PARTS PER BILLION (ppb)

RESULTS INDICATED IN BLUE/PARENTHESIS EXCEED WAC NR 140 PREVENTIVE ACTION LIMITS

RESULTS INDICATED IN RED/UNDERLINED EXCEED WAC NR 140 ENFORCEMENT STANDARDS

j: CONCENTRATION BETWEEN LABORATORY LIMIT OF DETECTION AND QUANTITATION LIMIT.

* CALIBRATION VERIFICATION RECOVERY WAS ABOVE THE METHOD CONTROL LIMIT FOR "ChlMe". A HIGH BIAS MAY BE INDICATED.



**TABLE 1
UST CLOSURE ASSESSMENT SOIL ANALYTICAL RESULTS**

**2307-09 North 6th Street
Milwaukee, Wisconsin
Project No. 1E-0709012**

Analyte	Sample Location												NR 720.09 RCLs	NR 746.06 Table 1 (Product Indicator)	NR 746.06 Table 2 (Direct Contact)
	T-1	T-2	T-3	T-4	T-5	T-6	T-7	T-8	T-9	T-10	T-11	T-12			
Sample Depth (feet)	10	10	10	10	10	10	10	10	10	10	10	10			
Sample Date	6/19/08	6/19/08	6/19/08	6/19/08	6/20/08	6/20/08	6/20/08	6/20/08	6/20/08	6/20/08	6/20/08	6/20/08			
PID (HNU)	10	7	9	9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL			
Diesel Range Organics (DRO) (mg/kg)	49	33	22	54	9.5	16	75	<u>130</u>	46	26	27	51	100	NS	NS
Gasoline Range Organics (GRO) (mg/kg)	23	<5.9	43	<u>200</u>	<6.0	<5.9	18	20	18	6.1	<5.5	<7.4	100	NS	NS

NOTES:

PID: Photoionization Detector

ug/kg: Micrograms per kilogram; equivalent to parts per billion (ppt)

mg/kg: Milligrams per kilogram; equivalent to parts per million (ppm)

NR: Natural Resources Chapter of the Wisconsin Administrative Code (WAC)

BDL: Below Detection Limit

NS: No Established Standard

RCLs: Residual Contaminant Levels

--: Not Analyzed

Results indicated in red/underlined exceed WAC NR 720.09 RCLs based on groundwater protection

TABLE 2
SOIL ANALYTICAL RESULTS (PAHs and PCBs)
FOR HYDRAULIC LIFT AREA

2307-09 North 6th Street
 Milwaukee, Wisconsin
 Project No. 1E-0709012

Analyte	Sample Location	Suggested Generic RCLs	
	S-4	Groundwater Pathway	Direct Contact, Non-industrial Pathway
Sample Depth (feet)	9		
Sample Date	6/23/08		
PID	BDL		
PAHs (ug/kg)			
Acenaphthene	<53	38,000	900,000
Acenaphthylene	<89	700	18,000
Anthracene	<5.3	3,000,000	5,000,000
Benzo (a) anthracene	7.3	17,000	88
Benzo (b) fluoranthene	7.0	360,000	88
Benzo (k) fluoranthene	<5.3	870,000	880
Benzo (a) pyrene	8.3	48,000	8.8
Benzo (g,h,i) perylene	9.1	6,800,000	1,800
Chrysene	7.2	37,000	8,800
Dibenzo (a,h) anthracene	<7.9	38,000	8.8
Fluoranthene	21	500,000	600,000
Fluorene	<11	100,000	600,000
Indeno (1,2,3-cd) pyrene	7.5	680,000	88
1-Methylnaphthalene	<32	23,000	1,100,000
2-Methylnaphthalene	<26	20,000	600,000
Naphthalene	<32	400	20,000
Phenanthrene	11	1,800	18,000
Pyrene	16	8,700,000	500,000

NOTES:

PID: Photoionization Detector

PAHs: Polynuclear Aromatic Hydrocarbons

PCBs: Polychlorinated Biphenyl's

ug/kg: Micrograms per kilograms; equivalent to parts per billion (ppb)

BDL: Below Detection Limit

RCLs: Residual Contaminant Levels

**TABLE 3
SOIL ANALYTICAL RESULTS (DETECTED VOCs)**

**2307-09 North 6th Street
Milwaukee, Wisconsin
Project No. 1E-0709012**

Analyte	Sample Location														WAC NR 720.09 RCLs	NR 746.06 Table 1 (Product Indicator)	NR 746.06 Table 2 (Direct Contact)
	GP-1		GP-2		GP-3		GP-4		GP-5		GP-6		GP-7				
Sample Depth (feet)	2-4	14-16	2-4	14-16	2-4	14-16	2-4	14-16	2-4	14-16	2-4	14-16	2-4	14-16			
Sample Date	10/5/07	10/5/07	10/5/07	10/5/07	10/5/07	10/5/07	10/5/07	10/5/07	10/5/07	10/5/07	10/5/07	10/5/07	10/5/07	10/5/07			
PID	BDL	1947	13	230	BDL	505	BDL	BDL	BDL	2840	BDL	BDL	BDL	2432			
Detected VOCs (ug/kg)																	
Benzene	<27	<u>600</u>	<26	<28	<27	<26	<26	<26	<27	<270	<27	<27	<29	<150	5.5	8,500	1,100
n-Butylbenzene	<27	990	<26	<28	<27	<26	<26	<26	<27	1,700	<27	<27	<29	1,400	NS	NS	NS
sec-Butylbenzene	<27	<560	<26	<28	<27	<26	<26	<26	<27	1,100	<27	<27	<29	<150	NS	NS	NS
Ethylbenzene	<27	# 10,000 #	<26	<28	<27	160	<26	<26	<27	# 7,300 #	<27	<27	<29	1,400	2,900	4,600	NS
Isopropylbenzene	<27	1,000	<26	<28	<27	90	<26	<26	<27	2,500	<27	<27	<29	1,800	NS	NS	NS
p-Isopropyltoluene	<27	<560	<26	<28	<27	230	<26	<26	<27	1,700	<27	<27	<29	1,600	NS	NS	NS
Naphthalene	<55	# 3,200 #	150	<56	<54	1,500	<53	<53	<55	# 5,900 #	<53	<54	<57	# 4,100 #	NS	2,700	NS
n-Propylbenzene	<27	3,000	<26	<28	<27	170	<26	<26	<27	4,800	<27	<27	<29	3,000	NS	NS	NS
Toluene	<27	<u>17,000</u>	<26	<28	<27	<26	<26	<26	<27	<270	<27	<27	<29	<150	1,500	38,000	NS
1,2,4-Trimethylbenzene	<27	23,000	<26	<28	<27	2,000	<26	<26	<27	24,000	<27	<27	<29	18,000	NS	83,000	NS
1,3,5-Trimethylbenzene	<27	5,000	<26	<28	<27	600	<26	<26	<27	7,000	<27	<27	<29	4,500	NS	11,000	NS
Xylenes	<93	# 68,000 #	<87	<96	<92	480	<90	<90	<93	<u>23,000</u>	<91	<92	<97	4,000	4,100	42,000	NS

NOTES:

PID: Photoionization Detector

BDL: Below Detection Limit

VOCs: Volatile Organic Compounds

ug/kg: Micrograms per kilogram; equivalent to parts per billion (ppt)

WAC: Wisconsin Administrative Code

NR: Natural Resources Chapter

NS: No Established Standard

RCLs: Residual Contaminant Level

Results in red/underlined exceed the WAC NR 720.09 Generic RCL based on groundwater protection

Results indicated in brown/#...# exceed the WAC NR 746-Table 1 Residual Petroleum Product Indicator Levels

Results indicated in green/parenthesis exceed the WAC NR 746.06 Table 2 Protection of Human Health from Direct Contact Screening Levels (top 4 feet of the soil)

**TABLE 3 (CONTINUED)
SOIL ANALYTICAL RESULTS (DETECTED VOCs)**

**2307-09 North 6th Street
Milwaukee, Wisconsin
Project No. 1E-0709012**

Analyte	Sample Location												WAC NR 720.09 RCLs	NR 746.06 Table 1 (Product Indicator)	NR 746.06 Table 2 (Direct Contact)
	MW-5		GP-8		GP-9		GP-10		GP-11		MW-6	MW-7			
Sample Depth (feet)	2-4	14-16	2-4	14-16	2-4	14-16	2-4	14-16	2-4	14-16	10-12	12-14			
Sample Date	7/30/08	7/30/08	7/30/08	7/30/08	7/30/08	7/30/08	7/30/08	7/30/08	7/30/08	7/30/08	8/25/09	8/25/09			
PID	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL			
Detected VOCs (ug/kg)															
Benzene	<30	<28	<27	<29	<27	<27	<29	<27	<27	<28	<20	<20	5.5	8,500	1,100
n-Butylbenzene	<30	<28	<27	<29	<27	<27	<29	<27	<27	1,600	<35	<35	NS	NS	NS
sec-Butylbenzene	<30	<28	<27	<29	<27	<27	<29	44	<27	510	<25	<25	NS	NS	NS
Ethylbenzene	<30	<28	<27	<29	<27	<27	<29	<27	<27	1,800	<16	<16	2,900	4,600	NS
Isopropylbenzene	<30	<28	<27	<29	<27	<27	<29	<27	<27	790	<30	<30	NS	NS	NS
p-Isopropyltoluene	<30	<28	<27	<29	<27	<27	<29	110	<27	1,100	<30	<30	NS	NS	NS
Naphthalene	<60	<56	<54	<58	<55	<53	<57	<53	710	# 5,300 #	<117	<117	NS	2,700	NS
n-Propylbenzene	<30	<28	<27	<29	<27	<27	<29	<27	<27	1,800	<29	<29	NS	NS	NS
Toluene	<30	<28	<27	<29	<27	<27	<29	<27	<27	<28	<23	<23	1,500	38,000	NS
1,2,4-Trimethylbenzene	<30	<28	<27	<29	<27	<27	<29	<27	73	18,000	<20	<20	NS	83,000	NS
1,3,5-Trimethylbenzene	<30	<28	<27	<29	<27	<27	<29	33	40	5,200	<24	<24	NS	11,000	NS
Xylenes	<100	<96	<92	<99	<93	<90	<98	<91	<90	10,000	<48	<48	4,100	42,000	NS

NOTES:

PID: Photoionization Detector

BDL: Below Detection Limit

VOCs: Volatile Organic Compounds

ug/kg: Micrograms per kilogram; equivalent to parts per billion (ppt)

WAC: Wisconsin Administrative Code

NR: Natural Resources Chapter

NS: No Established Standard

RCLs: Residual Contaminant Levels

Results in red/underlined exceed the WAC NR 720.09 Generic RCL based on groundwater protection

Results indicated in brown/#...# exceed the WAC NR 746-Table 1 Residual Petroleum Product Indicator Levels

Results indicated in green/parenthesis exceed the WAC NR 746.06 Table 2 Protection of Human Health from Direct Contact Screening Levels (top 4 feet of the soil)

**TABLE 4
SOIL ANALYTICAL RESULTS (PAHs, PCBs, CADMIUM AND LEAD)**

2307-09 North 6th Street
Milwaukee, Wisconsin
Project No. 1E-0709012

Analyte	Sample Location															NR 720.11 RCLs	Suggested Generic RCLs	
	GP-1		GP-2		GP-3		GP-4		GP-5		GP-6		GP-7		H-1		Direct Contact, Non-industrial Pathway	Groundwater Pathway
Sample Depth (feet)	2-4	14-16	2-4	14-16	2-4	14-16	2-4	14-16	2-4	14-16	2-4	14-16	2-4	14-16	9	Direct Contact, Non-industrial Pathway		
Sample Date	10/5/07	10/5/07	10/5/07	10/5/07	10/5/07	10/5/07	10/5/07	10/5/07	10/5/07	10/5/07	10/5/07	10/5/07	10/5/07	10/5/07	6/23/08			
PID	BDL	1,947	13	230	BDL	505	BDL	BDL	BDL	2,840	BDL	BDL	BDL	2,432	BDL			
PCBs (mg/kg)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.0525	NS	NS	NS
Cadmium (mg/kg)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8	NS	NS
Lead (mg/kg)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	50	NS	NS
PAHs (ug/kg)																		
Acenaphthene	<340	<56	4,100	<56	<270	<53	<53	<53	<270	<270	<270	<54	<57	<58	<53	NS	38,000	900,000
Acenaphthylene	<580	<95	<6,600	<96	<460	<90	<90	<90	<460	<460	<450	<92	<97	<99	<89	NS	700	18,000
Anthracene	72	9.8	7,100	<5.6	99	<5.3	<5.3	<5.3	61	<27	47	<5.4	7.5	<5.8	<5.3	NS	3,000,000	5,000,000
Benzo (a) anthracene	(350)	22	17,000	7.0	(810)	<5.3	<5.3	<5.3	(280)	<27	(250)	<5.4	47	7.4	7.3	NS	17,000	88
Benzo (b) fluoranthene	(300)	19	(16,000)	<5.6	(930)	<5.3	<5.3	<5.3	(220)	<27	(200)	<5.4	48	<5.8	7.0	NS	360,000	88
Benzo (k) fluoranthene	190	<5.6	(10,000)	<5.6	580	<5.3	<5.3	<5.3	140	<27	170	<5.4	29	<5.8	<5.3	NS	870,000	880
Benzo (a) pyrene	(330)	9.4	(19,000)	<5.6	(1,200)	<5.3	<5.3	<5.3	(260)	<27	(310)	<5.4	(51)	<5.8	8.3	NS	48,000	8.8
Benzo (g,h,i) perylene	230	8.0	<390	<5.6	1,000	<5.3	<5.3	<5.3	180	<27	230	<5.4	44	6.1	9.1	NS	6,800,000	1,800
Chrysene	330	11	(15,000)	<5.6	750	<5.3	<5.3	<5.3	200	<27	200	<5.4	40	<5.8	7.2	NS	37,000	8,800
Dibenzo (a,h) anthracene	<51	<8.3	<580	<8.5	(170)	<7.9	<7.9	<7.9	(46)	<41	(41)	<8.1	<8.6	<8.7	<7.9	NS	38,000	8.8
Fluoranthene	660	55	36,000	18	1,000	<11	<11	<11	400	<54	420	<11	82	12	21	NS	500,000	600,000
Fluorene	<68	17	<770	<11	<54	58	<11	<11	<55	<54	<53	<11	<11	48	<11	NS	100,000	600,000
Indeno (1,2,3-cd) pyrene	(240)	8.2	<390	<5.6	(990)	<5.3	<5.3	<5.3	(170)	<27	(200)	<5.4	48	<5.8	7.5	NS	680,000	88
1-Methylnaphthalene	<200	850	2,300	<34	<160	580	<32	<32	<160	1,300	<160	<33	<34	510	<32	NS	23,000	1,100,000
2-Methylnaphthalene	190	1,600	15,000	<28	400	100	<26	<26	<140	2,900	200	<27	<29	1,100	<26	NS	20,000	600,000
Naphthalene	<200	1,700	<2,300	74	<160	1,100	<32	<32	<160	3,000	<160	<33	<34	1,200	<32	NS	400	20,000
Phenanthrene	210	54	15,000	8.1	220	<5.3	<5.3	<5.3	190	<27	150	<5.4	25	30	11	NS	1,800	18,000
Pyrene	450	54	31,000	8.7	820	<5.3	<5.3	<5.3	370	<27	310	<5.4	94	<5.8	16	NS	8,700,000	500,000

NOTES:

PID: Photoionization Detector

PAHs: Polynuclear Aromatic Hydrocarbons

PCBs: Polychlorinated biphenyls

ug/kg: Micrograms per kilogram; equivalent to parts per billion (ppb)

mg/kg: Milligrams per kilogram; equivalent to parts per billion (ppm)

WDNR: Wisconsin Department of Natural Resources

BDL: Below Detection Limit

--: Not Analyzed/ Not applicable

RCLs: Residual Contaminant Levels

Results indicated in green/parenthesis exceed the NR 720.11 (metals) or the suggested generic RCLs (PAHs) (Direct Contact, Non-Industrial Pathway) for soils shallower than 4 feet

Results indicated in red/underlined exceed the WDNR suggested generic RCLs based on groundwater protection

**TABLE 4 (CONTINUED)
SOIL ANALYTICAL RESULTS (PAHs, PCBs, CADMIUM AND LEAD)**

2307-09 North 6th Street
Milwaukee, Wisconsin
Project No. 1E-0709012

Analyte	Sample Location																				NR 720.11 RCLs	Suggested Generic RCLs	
	MW-1		MW-2		MW-3		MW-4		MW-5		MW-6	MW-7	GP-8		GP-9		GP-10		GP-11			Direct Contact, Non-Industrial Pathway (Soil 0 - 4 feet)	Groundwater Pathway
Sample Depth (feet)	2-4	14-16	2-4	14-16	2-4	14-16	2-4	14-16	2-4	14-16	10-12	12-14	2-4	14-16	2-4	14-16	2-4	14-16	2-4	14-16	2-4		
Sample Date	7/30/08	7/30/08	7/30/08	7/30/08	7/30/08	7/30/08	7/30/08	7/30/08	7/30/08	7/30/08	8/25/09	8/25/09	7/30/08	7/30/08	7/30/08	7/30/08	7/30/08	7/30/08	7/30/08	7/30/08	7/30/08	7/30/08	
PID	BDL	18	BDL	714	BDL	50	BDL	1,650	BDL	BDL													
PCBs (mg/kg)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Cadmium (mg/kg)	0.86	<0.22	0.86	<0.22	0.43	0.26	0.62	<0.22	1.1	0.28	--	--	0.35	<0.23	0.46	<0.21	2.1	0.50	0.62	<0.23	8	NS	NS
Lead (mg/kg)	28	9.8	(190)	14	(58)	18	(240)	13	(110)	18	12.8	10.7	12	10	11	8.9	20	14	34	17	50	NS	NS
PAHs (ug/kg)																							
Acenaphthene	--	--	--	--	--	--	--	--	<120	<56	<19	<19	<54	<58	<55	<53	<57	<53	<670	<57	NS	38,000	900,000
Acenaphthylene	--	--	--	--	--	--	--	--	<200	<96	<11	<11	<92	<99	<93	<90	<98	<91	<1,100	<96	NS	700	18,000
Anthracene	--	--	--	--	--	--	--	--	30	<5.6	<19	<19	<5.4	<5.8	<5.5	<5.3	<5.7	<5.3	1,200	<5.7	NS	3,000,000	5,000,000
Benzo (a) anthracene	--	--	--	--	--	--	--	--	(180)	<5.6	<16	<16	<5.4	6.0	<5.5	15	8.4	<5.3	(2,100)	<5.7	NS	17,000	88
Benzo (b) fluoranthene	--	--	--	--	--	--	--	--	(140)	<5.6	<18	<18	<5.4	<5.8	<5.5	<5.3	<5.7	<5.3	(1,300)	<5.7	NS	360,000	88
Benzo (k) fluoranthene	--	--	--	--	--	--	--	--	100	<5.6	<16	<16	<5.4	<5.8	<5.5	<5.3	<5.7	<5.3	(960)	<5.7	NS	870,000	880
Benzo (a) pyrene	--	--	--	--	--	--	--	--	(200)	<5.6	<25	<25	<5.4	<5.8	<5.5	<5.3	6.1	<5.3	(1,700)	<5.7	NS	48,000	8.8
Benzo (g,h,i) perylene	--	--	--	--	--	--	--	--	190	<5.6	<19	<19	<5.4	<5.8	<5.5	8.1	8.4	<5.3	990	<5.7	NS	6,800,000	1,800
Chrysene	--	--	--	--	--	--	--	--	140	<5.6	<18	<18	<5.4	<5.8	<5.5	5.5	7.3	<5.3	1,600	<5.7	NS	37,000	8,800
Dibenzo (a,h) anthracene	--	--	--	--	--	--	--	--	(22)	<8.5	<22	<22	<8.1	<8.7	<8.2	<8.0	<8.6	<8.0	(220)	<8.5	NS	38,000	8.8
Fluoranthene	--	--	--	--	--	--	--	--	350	<11	<13	<13	<11	<12	<11	31	19	<11	4,300	34	NS	500,000	600,000
Fluorene	--	--	--	--	--	--	--	--	<24	<11	<8.3	<8.3	<11	<12	<11	<11	<11	<11	470	<11	NS	100,000	600,000
Indeno (1,2,3-cd) pyrene	--	--	--	--	--	--	--	--	(170)	<5.6	<12	<12	<5.4	<5.8	<5.5	<5.3	<5.7	<5.3	(1,200)	<5.7	NS	680,000	88
1-Methylnaphthalene	--	--	--	--	--	--	--	--	<72	<34	<15	<15	<32	<35	<33	<32	<34	<32	<400	1,200	NS	23,000	1,100,000
2-Methylnaphthalene	--	--	--	--	--	--	--	--	92	<28	<17	<17	<27	<29	<27	<27	<29	<27	1,900	870	NS	20,000	600,000
Naphthalene	--	--	--	--	--	--	--	--	<72	<34	<13	<13	<32	<35	<33	<32	<34	<32	<400	1,000	NS	400	20,000
Phenanthrene	--	--	--	--	--	--	--	--	94	<5.6	<14	<14	<5.4	<5.8	<5.5	8.9	14	<5.3	2,400	<5.7	NS	1,800	18,000
Pyrene	--	--	--	--	--	--	--	--	390	<5.6	<15	<15	<5.4	<5.8	<5.5	31	22	<5.3	4,000	10	NS	8,700,000	500,000

NOTES:
PID: Photoionization Detector
PAHs: Polynuclear Aromatic Hydrocarbons
PCBs: Polychlorinated biphenyls
ug/kg: Micrograms per kilogram; equivalent to parts per billion (ppb)
mg/kg: Milligrams per kilogram; equivalent to parts per billion (ppm)
WDNR: Wisconsin Department of Natural Resources
BDL: Below Detection Limit
--: Not Analyzed/ Not Applicable
RCLs: Residual Contaminant Levels
Results indicated in green/parenthesis exceed the NR 720.11 (metals) or the suggested generic RCLs (PAHs) (Direct Contact, Non-Industrial Pathway) for soils shallower than 4 feet
Results indicated in red/underlined exceed the WDNR suggested generic RCLs based on groundwater protection

**TABLE 5
GROUNDWATER ELEVATION SURVEY**

2307-09 North 6th Street
Milwaukee, Wisconsin
Project No. 1E-0709012

Date	MW-1		MW-2		MW-3		MW-4		MW-5		MW-6		MW-7	
	TOC Elevation = 100.42		TOC Elevation = 100.47		TOC Elevation = 101.13		TOC Elevation = 100.74		TOC Elevation = 102.91		TOC Elevation = 100.18		TOC Elevation = 99.96	
	TOS Elevation = 95.73		TOS Elevation = 95.80		TOS Elevation = 96.38		TOS Elevation = 96.10		TOS Elevation = 98.22		TOS Elevation = 89.88		TOS Elevation = 89.55	
	Depth to Water (ft)	Elevation	Depth to Water (ft)	Elevation										
08/25/08	15.56	84.86	15.97	84.50	16.51	84.62	16.04	84.70	14.00	88.91	NA	NA	NA	NA
07/20/09	14.21	86.21	15.04	85.43	15.16	85.97	13.95	86.79	11.61	91.30	NA	NA	NA	NA
09/03/09	15.92	84.50	17.04	83.43	16.87	84.26	16.42	84.32	14.87	88.04	12.74	87.44	15.54	84.42

NOTES:

TOC: Top of casing

TOS: Top of screen

ft: Feet

NA: Not Available / Not Applicable

Benchmark: Northwest corner of storm grate near the south-central portion of the Site

**TABLE 6
GROUNDWATER ANALYTICAL RESULTS-TEMPORARY WELLS
(DETECTED VOCs)**

**2307-09 North 6th Street
Milwaukee, Wisconsin
Project No. 1E-0709012**

Sample Location	GP-1	GP-3	GP-4	GP-5	GP-6	NR 140 PAL	NR 140 ES
Sample Date	10/08/07	10/05/07	10/08/07	10/08/07	10/08/07		
Detected VOC (ug/l)							
Benzene	<u>2,300</u>	<u>7.5</u>	0.32 j	(4.6)	<0.20	0.5	5
n-Butylbenzene	120 j	<0.40	<0.20	6.3	<0.20	NS	NS
sec-Butylbenzene	<0.50	<0.50	<0.25	6.0	<0.25	NS	NS
1,2-Dichloroethane	<100	<1.0	(1.6 j)	<0.50	<0.50	0.5	5
cis-1,2-Dichloroethene	<100	<1.0	<0.50	<0.50	<0.50	7	70
Ethylbenzene	<u>2,200</u>	2.3 j	<0.50	(200)	<0.50	140	700
Isopropylbenzene	130 j	0.56 j	<0.20	83	<0.20	NS	NS
p-isopropyltoluene	<40	<0.40	0.46 j	8.2	<0.20	NS	NS
Naphthalene	<u>370</u>	1.6 j	<0.25	<u>110</u>	<0.25	8	40
n-Propylbenzene	350	<1.0	<0.50	120	<0.50	NS	NS
Toluene	<u>11,000</u>	3.3	0.52 j	21	0.20 j	200	1,000
Trimethylbenzenes	<u>3,490</u>	2.44 j	0.27 j	(446)	<0.40	96	480
Total Xylenes	<u>14,000</u>	19	<0.50	930	<0.50	1,000	10,000

NOTES:

VOCs: Volatile Organic Compounds

NR: Natural Resources Chapter

WAC: Wisconsin Administrative Code

PAL: WAC NR 140 Preventive Action Limit

ES: WAC NR 140 Enforcement Standard

ug/L: Micrograms per liter; equivalent to parts per billion (ppb)

j: Result detected between laboratory method detection limit and quantitation limit

Results indicated in blue/parenthesis exceed the WAC NR 140 PAL

Results indicated in red/underlined exceed the WAC NR 140 ES

**TABLE 7
GROUNDWATER ANALYTICAL RESULTS
(CADMIUM, LEAD AND VOCs)**

2307-09 North 6th Street
Milwaukee, Wisconsin
Project No. 1E-0709012

SAMPLE LOCATION	DATE	Cadmium (Cd) (ug/L)	Lead (Pb) (ug/L)	Detected Volatile Organic Compounds (VOCs) (ug/L)											
				B	s-BuBz	n-BuBz	ChlMe	E	IPBz	p-IPT	Napht	n-PBz	T	TMBs	X
MW-1	8/25/08	<0.12	(5.7)	<u>29j</u>	<12	110	<u>52*</u>	<u>1,200</u>	140	<10	<u>240</u>	440	<25	<u>3,840</u>	<u>(4,200)</u>
	9/3/09	NA	(5.3)	<u>10.2j</u>	14.2	23.6j	<5	(390)	54	5.9j	182	144	<5.1	<u>995</u>	<u>(1,109)</u>
MW-2	8/25/08	<0.12	(3.1)	<u>1,300</u>	<20	48j	<24	(530)	33j	<16	(70)	86j	<u>2,700</u>	<u>1,410</u>	<u>(4,200)</u>
	9/3/09	NA	<0.7	<u>263</u>	8.1j	23.9j	<5	(490)	30.9	<5.7	(96)	90	(410)	<u>765</u>	<u>(1,818)</u>
MW-3	8/25/08	<0.12	(2.5)	<1.6	<2.0	18	<u>5.3j*</u>	130	30	<1.6	(61)	25	31	(303)	390
	9/3/09	NA	(4.8)	<0.41	2.93	2.31j	<0.5	34	16.9	8.5	3.3j	17.9	2.11	(100)	71.5
MW-4	8/25/08	<0.12	(5.4)	<3.2	<4.0	59	<u>7.7j*</u>	(530)	91	<3.2	<u>230</u>	150	15j	<u>1,010</u>	<u>(1,100)</u>
	9/3/09	NA	<u>17.1</u>	<u>10.8j</u>	7.0j	<15	<5	95	20.8	11.3j	(75)	36	17.5	(236)	209.6
MW-5	8/25/08	<0.12	0.54	<0.20	<0.25	<0.20	<0.30	<0.50	<0.20	<0.20	<0.25	<0.50	<0.50	<0.40	<0.50
	9/3/09	NA	<0.7	<0.41	<0.43	<1.5	<0.5	<0.87	<0.39	<0.57	<1.7	<0.33	<0.51	<2.6	<2.13
MW-6	9/3/09	NA	<0.7	<0.41	<0.43	<1.5	<0.5	<0.87	<0.39	<0.57	<1.7	<0.33	<0.51	<2.6	<2.13
MW-7	9/3/09	NA	<0.7	<0.41	<0.43	<1.5	<0.5	<0.87	<0.39	<0.57	<1.7	<0.33	<0.51	<2.6	<2.13
NR 140 PAL		0.5	1.5	0.5	NS	NS	0.3	140	NS	NS	10	NS	200	96	1,000
NR 140 ES		5	15	5	NS	NS	3	700	NS	NS	100	NS	1,000	480	10,000

NOTES:

NR: Natural Resources Chapter of the Wisconsin Administrative Code (WAC)

NS: No Established Standard

ug/L: Micrograms per liter; equivalent to parts per billion (ppb)

NA: Not Analyzed

j: Concentration measured between the laboratory detection limit and the quantitation limit

PAL: NR 140 Preventive Action Limit

ES: NR 140 Enforcement Standard

*: Calibration verification recovery was above the method control limit for this analyte. A high bias may be indicated.

Results indicated in red/underline exceed the WAC NR 140 ES

Results indicated in blue/parenthesis exceed the WAC NR 140 PAL

B: Benzene

s-BUBZ: sec-Butlybenzene

n-BuBz: n-Butylbenzene

ChlMe: Chloromethane

E: Ethylbenzene

IPBz: Isopropylbenzene

p-IPT: p-Isopropyltoluene

Napht: Naphthalene

n-PBz: n-Propylbenzene

T: Toluene

TMBs: 1,2,4 and 1,3,5-Trimethylbenzene

X: Xylenes

**TABLE 8
GROUNDWATER ANALYTICAL RESULTS
(PAHs)**

2307-09 North 6th Street
Milwaukee, Wisconsin
Project No. 1E-0709012

SAMPLE LOCATION	DATE	Detected Polynuclear Aromatic Hydrocarbons (PAHs) (ug/L)																	
		AN	ACP	AT	B(a)	B(a)P	B(b)	B(g,h,i)	B(k)	C	DiBA	F	FI	IP	1-MN	2-MN	Napht	PA	P
MW-1	8/25/08	1.1j	<0.71	0.93	0.60	<u>0.31</u>	<u>0.20j</u>	<0.12	0.23	<u>0.33</u>	<0.13	1.7	1.6	0.20	76	120	<u>230</u>	3.0	0.85
	9/3/09	0.35	<0.11	<0.1	<0.17	<0.14	<0.18	<0.18	<0.29	<0.1	<0.19	<0.13	0.39j	<0.19	18.1	14.2	(43)	0.199j	<0.12
MW-2	8/25/08	<0.35	<0.73	0.13j	0.052j	<0.034	<0.10	<0.13	<0.052	<0.043	<0.14	<0.085	1.6	<0.065	20	38	(56)	0.93	0.065j
	9/3/09	0.278j	<0.11	0.267j	0.263j	<0.14	(0.198j)	<0.18	<0.29	<u>0.228j</u>	<0.19	0.69	0.37j	<0.19	20.5	44	57	0.79	0.57
MW-3	8/25/08	<0.34	<0.70	<0.039	<0.045	<0.033	<0.10	<0.12	<0.050	<0.042	<0.13	<0.083	2.3	<0.063	5.4	8.6	(74)	<0.031	<0.045
	9/3/09	<0.009	<0.011	<0.01	<0.017	<0.014	<0.018	<0.018	<0.029	<0.01	<0.019	<0.013	0.037j	<0.019	1.87	0.022j	(1.84)	<0.015	<0.012
MW-4	8/25/08	<0.34	<0.70	0.12j	<0.045	<0.033	<0.10	<0.12	<0.050	<0.042	<0.13	0.56	10	<0.063	30	59	<u>210</u>	1.9	0.12j
	9/3/09	<0.009	0.014j	<0.01	<0.017	<0.014	<0.018	<0.018	<0.029	<0.01	<0.019	<0.013	<0.013	<0.019	0.077	0.020j	0.194	<0.015	0.014j
MW-5	8/25/08	<0.34	<0.72	<0.040	<0.046	<0.033	<0.10	<0.12	<0.051	<0.043	<0.14	<0.084	<0.065	<0.065	<0.33	<0.32	<0.42	<0.031	<0.046
	9/3/09	<0.009	<0.011	<0.01	<0.017	<0.014	<0.018	<0.018	<0.029	<0.01	<0.019	<0.013	<0.013	<0.019	<0.013	<0.019	0.039j	<0.015	<0.012
MW-6	9/3/09	<0.009	<0.011	<0.01	<0.017	<0.014	<0.018	<0.018	<0.029	<0.01	<0.019	<0.013	<0.013	<0.019	0.014j	0.021j	0.038j	<0.015	<0.012
MW-7	9/3/09	<0.009	<0.011	<0.01	<0.017	<0.014	<0.018	<0.018	<0.029	<0.01	<0.019	<0.013	<0.013	<0.019	<0.013	<0.019	0.026j	<0.015	<0.012
NR 140 PAL		NS	NS	600	NS	0.02	0.02	0.02	NS	0.02	80	80	80	NS	NS	NS	10	NS	50
NR 140 ES		NS	NS	3,000	NS	0.2	0.2	0.2	NS	0.2	400	400	400	NS	NS	NS	100	NS	250

NOTES:

NR: Natural Resources Chapter of the Wisconsin Administrative Code (WAC)

NS: No Established Standard

ug/L: Micrograms per liter; equivalent to parts per billion (ppb)

j: Concentration measured between the laboratory detection limit and the quantitation limit

PAL: NR 140 Preventive Action Limit

ES: NR 140 Enforcement Standard

Results indicated in red/underline exceed the WAC NR 140 Enforcement Standard

Results indicated in blue/parenthesis exceed the WAC NR 140 Preventive Action Limit

AN: Acenaphthene

ACP: Acenaphthylene

AT: Anthracene

B(a): Benzo (a) anthracene

B(a)P: Benzo (a) pyrene

B(b): Benzo (b) fluoranthene

B(g,h,i): Benzo (g,h,i) perylene

B(k): Benzo (k) fluoranthene

C: Chrysene

DiBA: Dibenzo (a,h) anthracene

F: Fluoranthene

FI: Fluorene

IP: Indeno (1,2,3-cd) pyrene

MN: Methylanthalene

Napht: Naphthalene

PA: Phenanthrene

P: Pyrene

**TABLE 9
NATURAL ATTENUATION FIELD MEASUREMENTS SUMMARY**

**2307-09 North 6th Street
Milwaukee, Wisconsin
Project No. 1E-0709012**

Well Number	Date Collected	Field Measurements				
		D.O. (mg/L)	ORP (mv)	Conductivity (us/cm)	PH (S.U.)	Temperature (degrees C)
MW-1	8/25/08	0.34	-61	2,216	7.51	13.24
MW-2	8/25/08	0.44	-58	2,001	7.36	13.41
MW-3	8/25/08	0.39	-39.7	2,009	7.05	18.02
MW-4	8/25/08	0.32	-83.6	1,387	7.86	13.17
MW-5	8/25/08	0.17	-54.1	2,005	7.27	14.12

NOTES:

D.O.: Dissolved Oxygen

ORP: Oxidation-Reduction Potential

mg/L: Milligrams per liter

us\cm: Microsiemens per centimeter

mv: Millivolts

C: Celsius

S.U.: Standard Units

--: Not Measured