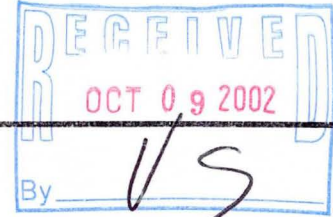


**HSI**  
**GEOTRANS**  
A TETRA TECH COMPANY



SITE INVESTIGATION REPORT  
AND  
REMEDIAL OPTION ANALYSIS  
FOR THE FORMER  
WIRE AND METAL SPECIALTIES  
4021 S. KINNICKINNIC  
ST. FRANCIS, WISCONSIN

November 13, 2000

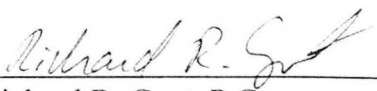
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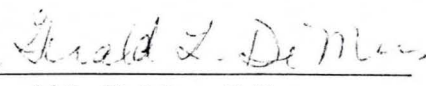
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- B. Well Construction, Development
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- D. Geotechnical Laboratory Results
- E. BiOx Pilot Study Results

CERTIFICATION

I, Gerald L. DeMers, hereby certify that I am a registered professional engineer in the State of Wisconsin, registered in accordance with the requirements of ch. A-E 4, Wis. Adm. Code; that this document has been prepared in accordance with the Rules of Professional Conduct in ch. A-E 8, Wis. Adm. Code; and that, to the best of my knowledge, all 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.

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Gerald L. DeMers, P.E. #E-21773

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P.E. Stamp

I, Richard Gnat, hereby certify that I am a Geologist 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.

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Richard Gnat

## 1.0 EXECUTIVE SUMMARY

This document summarizes the site investigation work performed to date for a parcel of property located at 4021 South Kinnickinnic Avenue, St. Francis, Wisconsin. The site has been under the direct ownership of MPL Realty since 1984. Historical uses at the site include metal and sheet metal fabrication operations beginning in the 1940s. The site is currently being leased by Badger Metal Finishing.

Based on the physical site conditions described in Section 4.0 and the various data summarized in Sections 5.1 through 5.4, the following is a summary of interpretations/conclusions:

- The shallow subsurface soils generally consist of an interfingering silt and fine sand matrix.
- There is an east-west trending lens of more clayey material, which crosses the central position of the site within the silt and fine sand matrix. The lens of more clayey material generally ranges from 2 to 6 feet in thickness.
- Depth to groundwater beneath the site generally ranges from 8 to 10 feet bgs and flows to the west-northwest.
- ✕ Soils beneath the site have been impacted by VOCs, primarily chlorinated solvents (PCE, TCE and 1,1,1-TCA). These solvents are known to have been used at the site.
- The primary soil impacts beneath the site extend from the ground surface to approximately 8 feet bgs, and located in an area extending from beneath the metal sheds to beneath the southern portion of the main manufacturing facility. The highest impacts are generally beneath the asphalt area between the metal sheds and the main building. This area coincides largely to the lens of more clayey soils defined above.
- ✕ A secondary area of solvent impacts to soil is located slightly north of the primary area of impacts beneath the west-central portion of the main building. This is in the vicinity of former degreaser operation.
- SPLP leach test data indicates that the VOCs are well sorbed onto the subsurface soil matrix with only a small percentage being mobilized into the dissolved phase.
- Ground water beneath the site has been impacted with benzene slightly above the ES. The benzene is from the upgradient Badger Tire and Auto property which was the location of a LUST removal and remediation. These residual impacts still being documented after completion of remedial activities.



- Ground water beneath portions of the site has also been impacted with PCE, TCE, 1,1,1-TCA and 1,1-DCE above the ES for these compounds. The noted concentrations, however, are not indicative of the presence of free product.
- Comparing the ground water impact concentrations to the overlying soil impacts suggests that the desorption rate is low which is consistent with SPLP test data.
- Natural biodegradation/dechlorination processes are not very active at this site with little evidence of breakdown/daughter products of the primary chlorinated constituents.

An evaluation of applicable remedial alternatives was performed. Ground water remedial alternatives included:

- No Further Action
- Monitored Natural Attenuation with Source Control
- Interceptor Trench
- Pump and Treat

Soil remedial alternative included:

- No Further Action
- Capping
- Soil Excavation/Off-Site Disposal
- Soil Vapor Extraction
- In-Situ Chemical Oxidation
- In-Situ Bioremediation

Based on the evaluation of remedial alternatives, the preferred alternative consists of in-situ chemical oxidation of soils with monitored natural attenuation of ground water.

## 2.0 INTRODUCTION

This section provides a site description followed by presentation of previous environmental studies performed at the site, and the specific objectives and scope of this most recent field investigation. Each is discussed separately below.

### 2.1 Site Location and Description

The former Wire and Metals Specialty, Inc. (WMS) site is located at 4021 S. Kinnickinnic Avenue, St. Francis, Milwaukee County, WI (Figure 2-1). The site covers an area of approximately 0.77 acres with a rectangular layout (Figure 2-2). A two-story building, approximately 15,171 square feet in size with no basement, and two metal quonset huts/sheds are located on the property. The main building was used for fabrication of metal and sheet metal parts and the sheds are primarily used for storage. The buildings are currently being leased to Badger Metal Finishing.

The exterior of the site consists of grass landscaping and asphalt. The site is surrounded on the north and east by residential and commercial developments. A filling station is located directly to the south of the site. Located to the west of the site is a railroad right-of-way, with a vacant lot beyond. The nearest residence is a single-family home with a detached garage located directly north of the site.

### 2.2 Previous Investigations

#### 2.2.1 Badger Tire and Auto Investigation

The Badger Tire and Auto (BTA) gas station is located immediately south of the WMS site, and was the location of a leaking underground storage tank (LUST). The gas station appears to have been the source of subsurface petroleum impacts that migrated northward and onto the southern portion of the WMS site. BTA implemented a site investigation and remediation. Groundwater flow

appears to have been a transport mechanism by which petroleum impacts migrated onto the site as the flow direction from the BTA site was northward.

An area approximately 50 feet wide and extending 60 feet onto the WMS site was excavated east of the existing quonset huts (See Figure 2-2) as part of the BTA remediation. Eight soil confirmation samples were collected from the portion of the excavation that extended onto the WMS site. Seven of the samples were found to contain residual petroleum impacts. Three of these samples contained benzene concentrations that exceeded the residual contaminant level (RCL) for soil established by the Wisconsin Department of Natural Resources (WDNR) NR720. The sample locations that exceeded the RCL were along the north and west sidewalls, and base of the excavation. Further excavation was apparently not possible due to structural features on the site, including the foundation of the nearest shed to the west and a concrete retaining wall to the north.

Two groundwater monitor wells (MW-7 and MW-8) were constructed as part of the BTA site investigation on the WMS site. Well MW-7 is positioned closest to the northern extent of the remedial soil excavation (See Figure 2-2). MW-8 is located in the grassy area on the northwest portion of the site. Groundwater was sampled between 1993 and 1998. Benzene concentrations detected at well MW-7 during these samplings exceeded the WDNR Enforcement Standard (ES) of 5  $\mu\text{g/l}$  established under NR 140. No exceedences were noted at well MW-8.

### 2.2.2 Previous Phase I and Phase II Environmental Site Assessments

In 1996, Key Environmental Group, Ltd. (KEY) was contracted to perform a Phase I Environmental Site Assessment (ESA) of the WMS site. Results of the Phase I identified an apparent hazardous substance spill on the property. A limited Phase II ESA was subsequently conducted at the location of the apparent spill. The sampling identified an area of volatile organic compound (VOC) impacted soils (both chlorinated and petroleum hydrocarbons) and resulted in the removal of approximately 13 tons of impacted soil to a depth of 5.5 feet below ground surface (bgs). Soil confirmation samples collected from the base of the excavation indicated the spill had been successfully

remediated. The relatively shallow depth of the soil impacts suggested that groundwater, identified by KEY as being approximately 8 to 9 feet bgs, had not likely been impacted by this spill. The WDNR issued a site closure letter for this spill site on October 29, 1998.

### 2.2.3 Updated Phase I Environmental Site Assessment

KEY was subsequently contracted by PC Innovations (January 20, 1999) to update the Phase I ESA and re-evaluate potential recognized environmental conditions associated with past or present use, storage, manufacturing, and/or disposal of hazardous substances on or near the subject site. KEY identified through interviewing key personnel that chlorinated solvents were used to clean the fabricated metal parts. The solvent material was apparently collected for off-site disposal. In addition to interviews, KEY investigated prior property, insurance, and fire department emergency response records. Prior environmental assessments and remediation projects were also studied.

The investigation concluded the site had been impacted by contaminants from on-site and off-site sources, an apparent spill of hazardous substances on the property, and the LUST site adjacent to the property. KEY verified that the hazardous substance spill had been successfully remediated. However, a potential environmental condition was identified in connection with the LUST site located immediately south of the site. Residual soil impacts remained from the LUST that contained benzene at levels above the WDNR NR720 RCL of 5.5  $\mu\text{g}/\text{kg}$ . It was KEY's opinion that the residual soil impacts were related to the contaminant migration onto the site via groundwater. KEY also identified residual groundwater impacts that existed on-site, which were apparently the result of the adjacent LUST site.

### 2.2.4 Limited Phase II Environmental Site Assessment

KEY was contracted by PC Innovations to perform a limited Phase II ESA to evaluate the potential for subsurface impacts at the subject site considering the past manufacturing use of the site and previously remediated environmental impacts at the site. The limited Phase II ESA involved

advancing four soil geoprobes, collecting and submitting selected soil samples for laboratory analysis, and evaluating the data. Groundwater was also sampled from an on-site monitor well (MW-7) that was installed during the previous LUST investigation at the BTA site.

Laboratory results indicated the presence of petroleum and chlorinated VOCs in two of the four soil samples. The petroleum-related VOCs included n-butylbenzene, ethylbenzene, p-isopropyltoluene, n-propylbenzene, toluene, trimethylbenzenes, and xylenes. The chlorinated VOCs included 1,1-dichloroethane (DCA), tetrachloroethene (PCE), 1,1,1-trichloroethane (TCA), and trichloroethene (TCE). The concentrations were either below the established WDNR NR720 RCLs based on the protection of groundwater (ethylbenzene, toluene, xylenes), or no standards existed for the compounds detected.

The groundwater sample analytical results from MW-7 indicated that petroleum (benzene only) and chlorinated VOCs were detected in this well. Concentrations of benzene and TCE exceeded NR140 Enforcement Standard (ES), and concentrations of 1,2-DCA, 1,1-dichloroethene (DCE), and 1,1,1-TCA exceeded the NR140 Preventative Action Limits (PALs). KEY concluded the chlorinated impacts found in the groundwater were generally consistent with those detected in on-site soils and known to be historically used at the site, suggesting an on-site source for these compounds.

#### 2.2.5 HSI GeoTrans Site Investigation

In July 1999 HSI GeoTrans, Inc. (HSG) was contracted to better define the nature and extent of VOC impacts to both soil and ground water at the site. The site investigation consisted of advancing 20 borings (GP-1 through GP-20) across the site and the installation and sampling of two new monitor wells (MW-101 and MW-102) to further define impacts to groundwater. Locations of the borings and monitoring wells are provided on Figure 2-3.

### Soil Sample Results

Analytical results confirmed that the primary VOC constituents in soil are chlorinated solvents. Specifically, 1,1,1-TCA, PCE and TCE were the predominant constituents, and these were present in concentrations ranging up to 5,100  $\mu\text{g}/\text{kg}$  (parts per billion), 13,100  $\mu\text{g}/\text{kg}$ , and 29,000  $\mu\text{g}/\text{kg}$ , respectively. One or more of these three compounds were present in each of the 20 boreholes across the site. Breakdown products of these compounds (dichloroethanes [DCA] and dichloroethenes [DCE]) were also present but in comparatively lower concentrations in some samples. In addition, petroleum compounds were also detected at relatively low concentrations in GP-1, GP-7, GP-15, GP-16, GP-19, and GP-20. Each of these six boreholes were located near or within the eastern shed.

RCLs for soils have been established in NR720 of the Wisconsin Administrative Code for only five VOCs: benzene, 1,2-DCA, ethylbenzene, toluene, and xylenes. Only one soil sample exceeded an established RCL. In that sample, 1,2 DCA in GP-20 (8-10 foot interval) exceeded the RCL of 4.9  $\mu\text{g}/\text{kg}$ . It should be noted that 1,2-DCA is not a breakdown product of 1,1,1-TCA, PCE, nor TCE, but it was used in the past as an additive to gasoline.

Based on the analytical results, the most heavily impacted soils were located between the main building and the metal sheds. The majority of soil impacts were in shallow soils on site (0 to 6 feet bgs), indicating that compounds are not likely attributable to the migration by groundwater from an upgradient source.

Soil samples were collected at GP-20 at depths of 0-2, 8-10, and 18-20 feet to determine the vertical extent of impacts. While this location did exhibit the highest PID readings for VOCs, it did not exhibit the highest VOC concentrations based upon laboratory results. The sample collected from 10 feet contained 40  $\mu\text{g}/\text{kg}$  1,2-DCA (the only detection of this compound at the site), and the sample from 20 feet contained 40  $\mu\text{g}/\text{kg}$  of 1,1-DCA and 160  $\mu\text{g}/\text{kg}$  of 1,1,1-TCA.

### Ground Water Sample Results

Near surface groundwater flow was in an easterly direction. Ground water samples were collected from the two new monitoring wells (MW-101 and MW-102) as well as from existing wells GW-7 and GW-8. The sampling confirmed the presence of both chlorinated and petroleum hydrocarbon VOCs. Benzene and TCE exceeded the established WDNR NR 140 ES's and 1,2-DCA, 1,1-DCE, PCE, 1,1,1-TCA and naphthalene exceeded the PALs.

### 2.3 Project Objectives and Scope

#### 2.3.1 Project Objectives

The following objectives were set for completing the site characterization work:

- Refine the definition of the lateral extent of soils impacted with chlorinated solvents.
- Refine the vertical extent of chlorinated impacts in the soil at the location found to have the greatest impacts in the previous investigation.
- Evaluate the leaching potential of residual impacts in soils using the Synthetic Precipitate Leaching Procedure (SPLP) to assist in remedial alternative analysis.
- Refine the definition of ground water flow conditions and the extent of ground water impacts on the eastern and northern portions of the site.
- Identify and recommend potential remedial alternatives, and estimate the cost and time frame for remediation.

### 2.3.2 Scope of Work

To fulfill project objectives, HSI GeoTrans developed an expanded scope of work that included additional soil sampling using the geoprobe method, additional monitor well installation, and groundwater sampling. The scope of work is summarized below.

A total of 9 additional soil borings (GP-101 through GP-109) were installed for sample collection at various locations on the site to further define the horizontal soil impacts onsite (See Figure 2-3; hand augers were used to collect two of the soil samples due to space restrictions). Boreholes were located primarily in the area between the metal sheds and the main building. Samples were also taken inside the structures including three in the main building and one in the east shed. Samples collected for VOC analysis were taken from the 0 to 2 feet bgs and 6 to 8 feet bgs interval and sent to a certified laboratory. Samples collected for SPLP analysis were taken from the 0 to 2 feet bgs interval.

A photoionization detector (PID) was used to screen for the presence of VOCs in the field to determine if additional locations should be sampled to define the extent of soil impacts.

At the location where the highest concentration of VOCs were detected in the previous investigation (GP-20), the geoprobe was used to collect three vertical profile soil samples to define the vertical extent of impacts. The samples were collected from depth ranges of approximately 0 to 2 feet bgs, 18 to 20 feet bgs, and 28 to 30 feet bgs in this borehole. All samples were analyzed in a state certified laboratory for VOCs.

Two additional groundwater monitor wells were installed, one on the eastern property boundary (MW-103), and one at the northern property boundary (MW-104). The well locations are included on Figure 2-3. The wells were completed as water table wells approximately 20 feet deep. The purpose of MW-103 was to evaluate groundwater quality at the eastern boundary of the site. The purpose of MW-104 was to evaluate groundwater quality at the northwest boundary of the site and



help define current groundwater conditions.

Groundwater samples were collected from the existing wells, MW-7, MW-8, MW-101, and MW-102, and from the two new wells, MW-103 and MW-104. The samples were analyzed for field parameters (pH, temperature, conductivity) and VOCs.

## 3.0 METHODS OF INVESTIGATION

### 3.1 Soil Sampling

Geoprobe sampling was performed by Northshore Drilling, at the direction of HSG, using both truck-mounted and ATV - mounted equipment. A 2-foot long stainless steel sampler with an acetate liner was driven to the desired sampling depth using stainless steel rods and a hydraulic ram.

Downhole geoprobe equipment and associated tools were washed prior to the start of the project and between each boring. A dedicated acetate liner was used for each soil sampling interval to minimize the potential for cross-contamination.

Two-foot samples were collected with the geoprobe on a continuous basis at each location and screened for total VOCs using a PID. The samples were logged using the United Soil Classification System (USCS). Boring logs are provided in Appendix A. Sample intervals were predetermined for each borehole based on the previous site investigation. Grab samples were collected from the predetermined interval directly into laboratory prepared containers, and sent for off-site analysis by U. S. Analytical Lab in Kimberly, Wisconsin, (a Wisconsin certified laboratory).

### 3.2 Groundwater Monitor Wells/Sampling

#### 3.2.1 Monitor Well Installation

Well MW-103 was installed in a borehole that was advanced to a depth of approximately 20 - feet bgs using a drill rig with an 4.25-inch inner-diameter hollow stem auger operated by Northshore Drilling. A well constructed of 2-inch, schedule 40 PVC pipe, with a 10-foot length 0.010 inch slot screen was installed at a depth of approximately 19.5 feet bgs. A filter pack consisting of #30 Red Flint filter sand was placed around the screen. The sand extended 1.0 - foot above the screen and an 8.0 - foot bentonite chip seal was placed and hydrated above the sand. The well was completed

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by installing a protective cap in concrete, flush with the ground. The well construction form is presented in Appendix B.

Due to inaccessibility with a standard drill rig, well MW-104 was installed in a borehole that was advanced to a depth of approximately 20 feet bgs using a geoprobe. The well was constructed of 1-inch schedule 40 PVC pipe, with a 15 foot length, 0.010 inch slot screen to a depth of approximately 18 feet bgs. A filter pack consisting of #30 Red Flint filter sand was placed around the screen. The sand extended 1.5 - feet above the screen and a 1.0 - foot bentonite seal was placed above the sand. The well was completed by installing a protective cap in concrete, flush with the ground. The well construction form is presented in Appendix B.

### 3.2.2 Well Development

After installation, the wells were developed by the pump and surge method. MW-103 was purged of approximately 45.5 gallons with a submersible grundfos pump prior to going dry. MW-104 was purged of approximately 1.25 gallons of groundwater with a peristaltic pump prior to the well going dry. Both wells purged dry. During purging activities associated with well development, the groundwater was analyzed for field parameters (pH, temperature, conductivity) at regular intervals to document stable conditions.

One 55-gallon drum was used to contain purge water. The drum was placed on the site property and labeled as purge water. The water will be properly disposed based on analytical results of the purge water. Well development/purge summary forms are presented in Appendix B.

### 3.2.3 Groundwater Sampling

Groundwater samples were collected from each well following development. Field measurements of pH, specific conductivity, and temperature were recorded. Samples were then obtained using a bailer and placed directly into laboratory prepared containers for VOCs. The samples were preserved and packaged in accordance with standard industry protocols. The samples were shipped

under chain-of-custody to the analytical laboratory.

## 4.0 GEOLOGY AND HYDROGEOLOGY

### 4.1 Geology

#### 4.1.1 Regional Geology

The surface soil in the area consists of Miami Fine Sandy Loam, underlain by glacial till to approximately 100 feet bgs. The bedrock geology is a Niagaran Series dolomite in the Silurian System.

#### 4.1.2 Site Geology

To evaluate local subsurface geology, three cross-sections were prepared from boring logs across the site. The cross-section locations are included on Figure 2-3. The cross-sections are provided on Figures 4-1 through 4-3. Based on the cross-sections, the site generally consists of one to three feet of fill (six feet tentatively logged at location GP-19) underlain generally by interfingered fine sands and silts to approximately 10 feet bgs. Within this fine sand and silt matrix, a lens of more clayey material trends east-west across the site from just north of GP-104 to slightly south of GP-7, approximately 2 to 3 feet bgs. The clay lense ranges from approximately 2 to 6 feet in thickness it is absent on the north and southern portions of the site. Below 10 feet bgs is an interlayering of fine sands, silts and silty clay.

### 4.2 Hydrogeology

#### 4.2.1 Regional Hydrogeology

The nearest surface water bodies include the Kinnickinnic River that is approximately 2.5 miles northwest of the site, and Lake Michigan which is approximately 1 mile east of the site. The depth to groundwater in the region is approximately 10 to 30 feet bgs. The near surface/shallow

groundwater flow direction is to the northeast, and the regional bedrock groundwater flow direction is to the east.

#### 4.2.2 Site Hydrogeology

Groundwater beneath the site was encountered during the installation of the monitor wells and the advancement of the geoprobe boring. The depth at which groundwater was encountered beneath the site varied across the site from 8 to 10 feet bgs. A water table map using the most recent water level data is provided on Figure 4-4. Shallow groundwater flow beneath the site is currently to the west-northwest. Subsurface conditions such as utilities, building foundations, and fill can easily affect the shallow groundwater flow direction. The previous site work indicated an easterly component of ground water flow. This suggests that there may be some seasonal fluctuations in the near surface ground water flow conditions. Based on the water table map provided, a horizontal hydraulic gradient of 0.02 ft/ft is estimated across the portion of the site showing the highest impacts (see Section 5.0). Assuming an average hydraulic conductivity of an  $1 \times 10^{-4}$  cm/sec for silty to fine sandy material (Freeze & Cherry, 1979) and a 30 percent porosity, an estimated ground water flow velocity of 6.9 ft/yr is calculated.

## 5.0 INVESTIGATION RESULTS

### 5.1 Soil Sampling Results

Analytical results for VOCs for the most recent samplings are provided in Appendix C. The soils data from the 1999 and 2000 site investigations performed by HSG are summarized on Table 5-1. The primary VOC constituents in soil are chlorinated solvents. Specifically, PCE, 1,1,1-TCA, and TCE are the predominant constituents, and these are present in concentrations ranging up to 2,800  $\mu\text{g}/\text{kg}$  (parts per billion), 49,000  $\mu\text{g}/\text{kg}$ , and 37,000  $\mu\text{g}/\text{kg}$ , respectively. One or more of these three compounds are present in each of the boreholes across the site. Breakdown products of these compounds (DCA and DCE) are also present at some locations in comparatively lower concentrations. In addition, petroleum compounds were also detected at relatively low concentrations in GP-106 and GP-108. RCLs for soils have been established in NR720 of the Wisconsin Administrative Code for only five VOCs: benzene, 1,2-DCA, ethylbenzene, toluene, and xylenes. No soil samples exceeded an RCL for these compounds.

The concentrations of PCE, TCE, and 1,1,1-TCA in soils are shown for the 0 to 4 - feet and the 4 to 8-foot depth intervals on Figures 5-1 through 5-6. Based on the analytical results, the most heavily impacted soils are located between the main building and the metal sheds. The majority of soil impacts are in shallow soils on site (0 to 4 feet bgs), indicating that compounds are not likely attributable to the migration by groundwater from an upgradient source.

Soil samples were collected at GP-101 at depths of 0-2, 18-20, and 28-30 feet to determine the vertical extent of impacts. This location was selected as it where the highest TCE concentrations in soil were identified during the previous investigations. The sample collected from a depth of 2 feet contained 37,000  $\mu\text{g}/\text{kg}$ . A sample collected from 20 feet in the same borehole contained TCE at a concentration of 160  $\mu\text{g}/\text{kg}$ , and a sample from 30 feet did not detect TCE or any other VOCs. The results from these samples indicated that chlorinated solvents have not migrated vertically at the site, and Dense, Non-Aqueous Phase Liquids (DNAPLs) are not present. The downward

migration may have been impeded by the lens of more clayey material which was mapped trending from east to west through the impacted area.

## 5.2 Synthetic Precipitate Leaching Procedure (SPLP) Results

To evaluate mobility of the residual VOCs in soils beneath the site, a set of 7 soil samples were collected from various parts of the site (ranging from high to low impact areas) and submitted for SPLP analysis. The procedure simulates precipitation percolating through volume of soil and measures the VOCs which are mobilized into the dissolved phase from the soil particles. The SPLP data are summarized on Table 5-2.

The table provides a total dry weight VOC concentration for each soil sample chosen along with the subsequent leachate analysis after the SPLP procedure. Comparing the total to the leachable concentrations for each sample indicates that the VOCs are strongly sorbed onto the subsurface soils beneath the site. (i.e., only a small percentage of the VOCs in the soil are being mobilized into the dissolved phase).

## 5.3 Groundwater Sampling Results

Analytical results for VOCs in groundwater are provided in Appendix C, and are summarized along with the previous sampling event on Table 5-3. The analytical results indicate that both petroleum fuel compounds as well as chlorinated solvents are present in groundwater beneath the site.

### 5.3.1 Petroleum Compounds

The only petroleum related compound that was detected above its ES was benzene at well location MW-102. The well is situated between the metal sheds and the main manufacturing facility however it is also downgradient of the BTA LUST excavation area. Knowing that there were some residual petroleum impacts left after the soil excavation performed by BTA, it is believed that the noted



benzene is associated with the former LUST site to the south rather than from an on-site source.

### 5.3.2 Chlorinated Solvents

Relative to chlorinated solvent impacts, well MW-7 had exceedences of the ES for 1,1-DCE, PCE, 1,1,1-TCA and TCE. In addition, well MW-102 exceeded the ES for TCE and well MW-104 slightly exceeded the ES for PCE.

While the concentrations of 1,1-DCE, PCE, 1,1,1-TCA and TCE exceed ESs for groundwater, the concentrations are not high enough to suggest that dense non-aqueous phase liquids (DNAPLs, or pools of free product) are present at the site.

### 5.4 Evaluation of Breakdown Products from Chlorinated Solvents

Chlorinated solvents that are released to the environment are acted upon by native anaerobic bacteria in a process called reductive dechlorination. In this process, chlorine atoms are sequentially stripped from the molecules of solvent. The reductive dechlorination process, showing the various breakdown products, is shown for chloroethenes as well as chloroethanes on Figure 5-10. For chloroethenes, the breakdown process is PCE - TCE - DCE - Vinyl Chloride - Ethene - Ethane. Chloroethanes can break down in a similar fashion, but it should be noted that chloroethanes can be reduced to both chloroethanes and chloroethenes, whereas chloroethenes do not degrade to chloroethanes.

At the former WMS site, PCE, TCE, and 1,1,1-TCA were all used as degreasers. This is consistent with the high residual concentrations of all three of these compounds in soil. A review of Figures 5-1 through 5-6 indicate that the highest concentrations of these three compounds occur at slightly different locations at the site.

The analytical results also indicate that relatively little reductive dechlorination has occurred in the soils at this site. No vinyl chloride has been detected, and most of the boreholes do not contain either DCE or DCA compounds. In those soil samples that do contain either DCE or DCA compounds, these comprise less than 10% of the total chlorinated compounds in each soil sample. Because little biodegradation has occurred, it is difficult to estimate the time of release of PCE, TCE, and 1,1,1-TCA.

### 5.5 Summary of Data Interpretation/Conclusions

Based on the physical site conditions described in Section 4.0 and the various data summarized in Sections 5.1 through 5.4, the following is a summary of interpretations/conclusions:

- The shallow subsurface soils generally consist of an interfingering silt and fine sand matrix.
- There is an east-west trending lens of more clayey material which crosses the central position of the site within the silt and fine sand matrix. The clay lens generally ranges from 2 to 6 feet in thickness.
- Depth to groundwater beneath the site generally ranges from 8 to 10 feet bgs and flows to the west-northwest.
- ✖ Soils beneath the site have been impacted by VOCs, primarily chlorinated solvents (PCE, TCE and 1,1,1-TCA). These solvents are known to have been used at the site.
- The primary soil impacts beneath the site extend from the ground surface to approximately 8 feet bgs, and are located in an area extending from beneath the metal sheds to beneath the southern portion of the main manufacturing facility. The highest impacts are generally beneath the asphalt area between the metal sheds and the main building. This area coincides largely with the lens of more clayey soils defined above.

- A secondary area of solvent impacts to soil is located slightly north of the primary area of impacts beneath the west-central portion of the main building. This is in the vicinity of a former degreaser operation.
- SPLP leach test data indicates that the VOCs are well sorbed onto the subsurface soil matrix with only a small percentage being mobilized into the dissolved phase.
- Ground water beneath the site has been impacted with benzene slightly above the ES. The benzene is from the upgradient BTA property which was the location of a LUST removal and remediation. These residual impacts still being documented after completion of remedial activities.
- Ground water beneath portions of the site has also been impacted with PCE, TCE, 1,1,1-TCA and 1,1-DCE above the ES for these compounds. The noted concentrations, however, are not indicative of the presence of free product.
- Comparing the ground water impact concentrations to the overlying soil impacts suggests that the desorption rate is low which is consistent with SPLP test data.
- Natural biodegradation/dechlorination processes are not very active at this site with little evidence of breakdown/daughter products of the primary chlorinated constituents.

## 6.0 EVALUATION OF REMEDIAL ALTERNATIVES

### 6.1 Overview

This section establishes Remedial Action Objectives (RAOs), provides an evaluation of remedial action alternatives and identifies the preferred remedial alternatives for the site. Remedial alternatives are included to address both soil and groundwater impacts. The alternatives below are evaluated based upon feasibility and cost as indicated in NR722.07(4). The cost estimates are for planning purposes only, and are intended to be within a range of -25% to +40%. The goals for remediation are:

- To comply with all applicable regulations regarding solid and hazardous waste disposal;
- To minimize the risk of exposure to impacted soils and groundwater by humans;
- To minimize the migration of impacts from the soil to groundwater;
- To complete the site remediation as efficiently as possible, both with respect to the timeframe for completion and the overall cost.

### 6.2 Remedial Action Objectives

Remedial action objectives (RAOs) for this project are proposed for ground water and soils. Each are discussed below.

### 6.2.1 RAOs for Ground Water

The RAOs for ground water have been established by the WDNR under NR 140. For this site the following RAOs are considered:

<u>CONSTITUENT</u>	<u>ES</u>	<u>PAL</u>
1,1 Dichloroethene	7 ug/l	0.7 ug/l
TetraChloroethane	5 ug/l	0.5 ug/l
Trichloroethene	5 ug/l	0.5 ug/l
1,1,1-Trichloroethane	68.6 ug/l	343 ug/l

It is noted that the standards provided above are established based on ground water use as a drinking water. Drinking water in St. Francis, Wisconsin is obtained from Lake Michigan therefore consumption of impacted ground water is not an issue at this site. By State regulation, however, these standards are still applicable.

### 6.2.2 RAOs for Soil

NR 720 establishes Residual Contaminant Levels (RCLs) for soils. At this time only five RCLs have been established for VOCs as follows:

<u>Constituent</u>	<u>RCL</u>
Benzene	5.5 ug/kg
1,2 Dichloroethane	4.9 ug/kg
Ethylbenzene	2,900 ug/kg
Toluene	1,500 ug/kg
Xylenes (Total)	4,100 ug/kg

At the former WMS site, only one soil sample exceeded any of the established RCLs. This was sample GP-20 from the 8 to 10 foot depth interval (40 ug/kg). It is noted however that there are no set RCLs for the primary chlorinated solvent compounds (PCE, TCE and 1,1,1-TCA) detected in unsaturated soils beneath the site. Site specific RAOs for these compounds need to be established.

Site specific soil standards based on ground water protection can be determined in accordance with NR 720 19 for subsurface releases of organic constituents using SPLP data and applying a statistical analysis to the ratio of the concentration of the in soil and that in the leachate. The statistical analysis identified uses the Student's t-test lower limit of the 95% confidence interval.

In evaluating the SPLP data presented in Table 5-2, the application of these statistics to the leach results for PCE is not appropriate since all leachate concentrations for this compound were non-detect values. Performing a statistical analysis of the PLP data for TCE and 1,1,1-TCA (using one-half the detection limit for non-detect values) shows that both data sets fail the coefficient of variance test of normality indicating that the underlying distribution is not normal. The student's t-test statistical analysis defined in NR 720 assumes a normal distribution to the data and therefore is not appropriate for the data set at this site.

In further evaluation, it was considered that outlier data may be the cause for the non-normal distribution noted above. In a more robust statistical approach, a 20 percent clipped mean (eliminating the one high and one low value) was calculated and the coefficient of variance was recalculated based on the clipped data sets. The 20-percent clipped mean data set for 1,1,1-TCA still failed the test of normality further underscoring the inappropriateness of the use of student's t-test statistics. The 20-percent clipped means data set for TCE passed the test of normality. Completing the RCL calculation specified in NR 720 yield an estimated RCL of 121 ug/kg.

The calculated TCE RCL is protective of ground water based on ground water use of consumption by humans (drinking water). The City of St. Francis obtains its drinking water from Lake Michigan

and does not use ground water. The calculated value of 121 ug/kg is therefore believed to be a conservatively low value for this site. Evaluating soil cleanup standards for chlorinated compounds in other Midwest states shows that a guideline for TCE (and PCE) in soil of 300 ug/kg has been used for protection of ground water that is not used for drinking water purposes. In light of the fact that ground water in St. Francis is not used for consumptive purpose it is proposed therefore to use 300 ug/kg as the RAO for PCE and TCE for the former WMS site. This value is also within the known range of RAO of 100 ug/kg to 1000 ug/kg used for cleanup at other sites within Wisconsin.

Relative to 1,1,1-TCA, 9600 ug/kg is the proposed RAO for soils for protection of ground water that is not used for consumptive purposes.

Using the proposed RAOs for PCE and TCE of 300 ug/kg and 9,600 ug/kg for 1,1,1-TCA, the following impacted soil volumes for remediation are estimated:

<u>Constituent</u>	<u>Estimated Volume Above Proposed RAO</u>
PCE	266 cubic yards
TCE	545 cubic yards
1,1,1-TCA	0 cubic yards

These volumes will be used for remedial option cost evaluation purposes in the remainder of this section.

### 6.3 Identification/Screening of Remedial Alternative

#### 6.3.1 Ground Water Remedial Alternatives

The following remedial alternative for ground water have been considered

- 1) No Action

- 2) Monitored Natural Attenuation
- 3) Monitored Natural Attenuation with Source Control
- 4) Active Ground Water Remediation
  - Pump and Treat
  - Interceptor Trench

Since there have been ESs exceeded in ground water beneath the site, the no action alternative is not an allowable alternative under NR 140. It will however be retained to be used as a baseline for comparison of other alternatives.

Monitored natural attenuation without source control/removal was not retained for further consideration because the documented, residually impacted soils will continue to slowly leach VOCs over an extended period of time, and natural biodegradation processes do not appear to be sufficiently active at the site.

Active ground water remedial alternatives such as pump and treat system or a property boundary interceptor trench were also considered but not retained for detailed evaluation for the following reasons:

- The extent of ground water impacts appear to be limited.
- Although some ESs are exceeded, ground water impacts are fairly low considering the overlying residual impacts documented in unsaturated zone soils.
- Remediation of the source of impacts (i.e., overlying soils) will in turn reduce noted ground water impacts.



### 6.3.2 Screening of Residually Impacted Soil Remedial Alternatives

The following remedial alternatives for soil have been considered:

- 1) No Action
- 2) Soil Excavation and Off-Site Disposal
- 3) Soil Vapor Extraction
- 4) In-Situ Chemical Oxidation
- 5) In-Situ Active Bioremediation
- 6) Bioventing
- 7) 6 – Phase Heating

The “no action” alternative, although not appropriate due to the elevated levels of residual impacts will be kept in the subsequent more detailed evaluation of alternatives as required under NR 722.07. It will be used as a baseline against which other alternatives could be evaluated.

Of the remaining alternatives, only bioventing and 6- phase heating are being screened out at this portion of the process. Bioventing was not retained for additional consideration because it is geared for treating compounds that degrade readily under aerobic conditions. The most favorable degradation of chlorinated solvents is an anaerobic process. The 6-phase heating will not be retained for additional consideration based on its know high cost making it financially inefficient for smaller impacted soil volumes such as defined for this site.

The remaining remedial alternatives will be evaluated in greater detail below.

## 6.4 Detailed Evaluation of Alternatives

### 6.4.1 No Action – Ground Water and Soil

As required under NR722.07, no action is included in the evaluation of technologies and process options as a baseline against which other alternatives could be evaluated. Under this option, no remedial action would be taken and the only mechanisms at work on the groundwater soil and impacts would be natural processes such as advection, dispersion, sorption, and biological activity. Under the no action alternative, chlorinated solvents in soils would continue to be available to leach to groundwater, and groundwater impacts could continue to migrate.

#### 6.4.1.1 Feasibility

Because there is nothing to implement, the No Action alternative is technically feasible. However, because ESs have been exceeded and the source of groundwater impacts (residually impacted soils) has not been mitigated, the No Action alternative would not be acceptable to the WDNR. Therefore, this alternative is not be administratively feasible.

#### 6.4.1.2 Cost

There are no direct costs for the No Action alternative. However, the indirect cost of this alternative is continued liability, as well as an impaired value for the sale of this property and potential liabilities for potential impacts to downgradient properties.

### 6.4.2 Monitored Natural Attenuation of Groundwater

The United States Environmental Protection Agency (U.S. EPA) defines monitored natural attenuation as (OSWER Directive 9200.4-17, 1997):

*The term "monitored natural attenuation," as used in this Directive, refers to the reliance on natural attenuation processes (within the context of a carefully controlled and monitored clean-up approach) to achieve site-specific remedial objectives within a time frame that is reasonable compared to other methods. The "natural attenuation processes" that are at work in such a remediation approach include a variety of physical, chemical, or biological processes that, under favorable conditions, act without human intervention to reduce the mass, toxicity, mobility, volume, or concentration of contaminants in soil and groundwater. These in-situ processes include, biodegradation, dispersion, dilution, sorption, volatilization, and chemical or biological stabilization, transformation, or destruction of contaminants.*

*Monitored natural attenuation is appropriate as a remedial approach only when it can be demonstrated capable of achieving a site's remedial objectives within a time frame that is reasonable compared to that offered by other methods and where it meets the applicable remedy selection program for a particular OSWER program. EPA, therefore, expects that monitored natural attenuation typically will be used in conjunction with active remediation measures (e.g., source control), or as a follow-up to active remediation measures that have already been implemented.*

#### 6.4.2.1 Feasibility

Monitored natural attenuation is a feasible alternative for the groundwater portion of the site remediation. However as previously mentioned in Section 6.3, monitored natural attenuation alone would not be acceptable to the WDNR at this site because:

- Soil impacts exist on site, and these may be continuing sources of groundwater impacts;

- Groundwater has been impacted by TCE and TCA at concentrations greater than their respective ESs; and
- The initial analytical results do not indicate that significant biological breakdown is occurring in the soil or in groundwater.

As a result, monitored natural attenuation is not a viable alternative without source control (i.e., soil remediation). Monitored natural attenuation may be a feasible alternative for groundwater at this site if soil remediation is performed. This would eliminate the source of the ground water impacts and, therefore, over time the noted impacts will dissipate under natural mechanical and biological processes.

#### 6.4.2.2 Cost

Annual Cost based on Monitoring Wells with Quarterly Sampling:

Additional Well Installation (1 well to 15 feet)	\$2,000
Laboratory analysis for VOCs (6 wells and 2 QA/QC samples)	\$3,300
Groundwater sampling	\$3,500
Data Analysis and Reporting	\$4,800
Contingency (10%)	<u>\$1,160</u>
<b>TOTAL</b>	<b>\$14,760</b>

From an economic standpoint, annual costs for monitored natural attenuation would be relatively low. Quarterly monitoring and reporting costs would likely be about \$12,760 per year (does not include one time expense for additional well installation). Semi-annual monitoring could likely occur after the first year of sampling and reduce expenses by approximately one half. Monitoring would be required for an extended period of time (greater than 10 years), as little degradation is

occurring at the site. After about two years of monitoring, however, it is possible that the WDNR would grant a site closure with a deed restriction. The deed restriction would not allow the installation of a drinking water well in the area of impacted groundwater. Because drinking water is provided by the City of St. Francis, the deed restriction would not place any practical limitations on the site.

#### 6.4.3 Soil Excavation and Off-Site Disposal

The origin of the chlorinated VOCs in soil is from solvents used at the site. If the solvents were waste; they would be classified as a "listed" waste with a waste code of "F" under federal hazardous waste rules. If the impacted soil is excavated from the ground, the soil will also be considered as a "listed" hazardous waste through the mixture rule and would, therefore, need to be treated to meet land disposal restrictions (LDR) and then subsequently landfilled as a hazardous waste in an approved Subtitle C facility. If the soils cannot be treated to meet LDR restrictions, then the soil must be incinerated.

If the soils were contaminated with clean solvents and not waste solvents, they soils impacted with PCE and TCE can be disposed of as a solid waste (as opposed to a hazardous waste) if they contain less than 14 parts per million (ppm) PCE and 10 ppm TCE. The concentrations at this site range up to 13 ppm PCE and 29 ppm TCE. While all of the soil samples taken thus far meet the standard for PCE, two "hot spots" do not meet the standard for TCE. Therefore, a portion of the soils would require in-situ treatment to reduce the concentrations of TCE (such as discussed in other alternatives below), or would require disposal at an out-of-state landfill. Based upon our experience at other sites, in-situ treatment is likely to be less costly than disposal as a hazardous waste.

For this alternative, we have assumed because the origin of the impacts can not be definitively identified that the soils are not a listed hazardous waste and they can be considered as solid waste if treated.

Excavation of soils located between the main building and the metal shed to the depth of the foundation of the main building (about 8 feet) on the north side of the excavation, and to the base of the concrete slab of the sheds on the south side of the excavation. This will likely result in the removal of the majority of the mass of contaminants. The total area is estimated to be about 90 feet by 27 feet.

Excavation of soils within the above area will continue at 1 to 1 slopes (45 degrees) downward to the extent practical. Based upon the geometry of the site and depth to groundwater, this would be to depth of about 8 feet. About 850 cubic yards of soils, or about 1350 tons, could be excavated. We estimate that about 200 tons of soil has a TCE concentration greater than 10 ppm, potentially classifying it as a characteristic hazardous waste. This soil must be treated to render it a non-hazardous (i.e., pass TCLP) prior to disposal at a local municipal waste landfill.

It should be noted that while much of the mass contaminants will be removed, some will still remain beneath the buildings. This alternative may not be acceptable to the WDNR.

#### 6.4.3.1 Feasibility

It is technically feasible to remove the impacted soils; however, soil impacts also exist beneath the main building, particularly near its southern wall. Because of the risk of undermining the foundation for the building, it may not be feasible to excavate impacted soils from this area. Leaching of chlorinated compounds from soils that are left in place may be minimized by maintaining pavement above these areas to minimize the precipitation, which percolates into the soils. The source however will continue to desorb slowly into the dissolved phase (with seasonal water table fluctuations).

#### 6.4.3.2 Cost

We have obtained quotes from haulers and landfills for implementation of this alternative. The costs associated with excavation and disposal are as follows:

Laboratory analysis for acceptance of soil at landfill	\$ 900
Soil excavation, transport and disposal at landfill (1,150 tons)	\$27,600
Excavation, treatment to make non-hazardous, transport and disposal at landfill (200 tons)	\$34,000
Construction oversight	\$ 2,400
Laboratory analysis by mobile lab	\$ 1,300
Confirmation lab analyses	\$ 650
Stone backfill for excavation (850 cubic yards)	\$11,200
Asphalt paving (27 feet by 90 feet)	\$ 4,000
Documentation Report	\$ 5,000
Contingency (10%)	<u>\$ 8,505</u>
<b>TOTAL</b>	<b>\$95,555</b>

Note: If soil need disposal as hazardous waste, additional costs of approximately \$519,750 to \$900,000 can be expected

#### 6.4.4 Soil Vapor Extraction (SVE)

SVE utilizes the volatility of the compounds to remove them from the soil matrix. A flow of air is induced through the soil pore spaces and the compounds are removed through a combination of volatilization, diffusion, and advection. For an in-situ system, a vertical or horizontal well is installed in the soil and an above-ground blower is used to create a vacuum in the well, thus drawing air from the surface through the soil and into the well. Due to the volatile nature of the compounds, they will partition from the solid soil phase into the gas phase and up into the well. The air stream carrying the volatile compounds is then treated, as necessary, to comply with air emission regulations.

##### 6.4.4.1 Feasibility

The technology is well developed and has been used at numerous sites in various types of soils. The technology does not work for compounds with low volatility nor does it work well in very tight soils.

Standard equipment as utilized and SVE systems generally operate very reliably with little oversight.

The compounds of concern at this site (PCE, TCE, 1,1,1-TCA) are sufficiently volatile for SVE to be effective. The soils at the site are primarily silty sands and fine sands (see borehole log for MW-102), and are therefore likely to have sufficient permeability for SVE to be effective.

#### 6.4.4.2 Cost

For costing purposes, the SVE system is assumed to consist of the following components:

- Three SVE extraction wells, each with a radius of influence (ROI) of about 30 feet (one located within the main building near the location of the former vapor degreaser, and the other two between the quonset huts and the main building). A 30-foot ROI is appropriate for fine sands, and the ROI for the three wells would cover the area of known soil impacts.
- One blower with a capacity of 100 standard cubic feet per minute (SCFM);
- No air emissions treatment needed as less than 100 pounds of VOCs will be emitted over the operation period of the system.

The SVE system would be operated until organic concentrations in the air effluent dropped to a level which indicated that soil concentrations had been reduced to acceptable levels. Soil gas or soil sampling can then be performed to monitor progress and document completion of remediation activities. In general, cleanup levels can be expected to be achieved for a system such as this within about one year. For cost purposes, one year of operation is assumed.



The estimated costs are about \$78,000 for construction of the system, and about \$12,000 for its operation over a one year period. In addition, there will be costs for testing to confirm closure and reporting. The total costs for the alternative are:

Design and Construction	\$78,000
Annual O&M (estimated for a minimum of 5 years)	\$60,000
Soil Testing at Completion	\$ 3,000
Documentation Report	<u>\$11,000</u>
<b>TOTAL</b>	<b>\$152,000</b>

#### 6.4.5 In-Situ Chemical Oxidation

Chemical oxidation is a new technology that introduces an oxidizing agent to react with the VOCs and break the chlorine bonds. Oxidizers include various chemicals such as permanganate and Fenton's Reagent. For this site a proprietary BiOx process is proposed/evaluated which includes the injection of a slow release oxidizing mix. The advantage of the process is the ability to allow the oxidizer to penetrate the soil and "wet" the contaminants before the oxidizing reaction occurs. In addition to carbon dioxide and oxygen off-gases, alcohols are formed which further aid the desorption of VOCs in soil.

A bench-scale treatability study was performed by BioManagement Services, Inc. on August 3, 2000, to determine the ability of the BiOx™ Process (chemical oxidation process) to destroy target contaminants in a composite soil sample collected at GP101 from 0 to 2 feet bgs. Laboratory test results indicated a 68.8 percent reduction in TCE occurred within a 24-hour period (Appendix E).

Also noted in the study, is the ability for the BiOx™ Process to persist in-situ for up to one month, thereby oxidizing contaminants beyond the level measured during the 24-hour bench scale test.

Based on our past experience with projects similar to the WMS site, we anticipate the WMS site will require up to two additional in-situ treatments with the BiOx™ Process to achieve clean-up

objectives. About one-half of the estimated 750 cubic yards of contaminated soil is expected to undergo two additional chemical-oxidation treatments to meet target levels for PCE and TCE.

The most critical issue with is-situ chemical oxidation is delivery of the oxidant to the contaminant mass. We intend to use a GeoProbe™ type of unit to install small diameter slotted PVC piping to be used as injection wells inside of the buildings. In the area between the buildings, the asphalt would be removed and landfilled, and the potassium permanganate solution applied to the ground surface.

The following work would be performed;

- ◆ Inject BiOx on a grid of approximately 10 feet.
- ◆ Make two re-applications of BiOx permanganate solution in those areas requiring additional treatment to meet cleanup objectives.
- ◆ Patch concrete holes within the buildings, and asphalt outdoors.

#### 6.4.5.1 Feasibility

The installation of injection points at the required spacing (5 to 10-foot centers) will be feasible at this site. The noted soil type is also amenable for this alternative. Because the oxidation of contaminants occurs quickly, we would expect that the filed activities would be completed in about 7 weeks.

#### 6.4.5.2 Cost

The cost of implementing this alternative are as follows:

Engineering Design/Plan Preparation	\$ 5,000
BiOx™ Application, 750 cubic yards	\$39,000
BiOx™ Application of hot spots two additional times, 375 cubic yards (x2)	\$44,000
Verification Soil Sampling (4 soil samples for VOC analysis per month for 3 months after each application)	\$15,000
Documentation Report	\$ 6,000
Contingency (105%)	<u>\$ 8,900</u>
<b>TOTAL</b>	<b>\$112,900</b>

#### 6.4.6 In-Situ Active Bioremediation

The final alternative is to utilize a proprietary mixture of microbes, nutrients and enzymes to break down the chlorinated solvents. BacTerra™ would be applied to the subsurface in a way similar to the potassium permanganate solution above. US Microbial, would perform this work. Temporary injection points would be installed inside of the buildings, and asphalt over impacted areas would be removed and replaced. Soils would be sampled subsequent to treatment.

##### 6.4.6.1 Feasibility

Preparing the site for biotreatment would require the removal of the asphalt and the potential use of injector points within the existing building. The subsurface soils would also be amenable for this application. Field work would be completed in about 4 weeks, although additional application may be necessary.

#### 6.4.6.2 Cost

A reasonable estimate to treat the site would include the installation of wells, one treatment of the entire site, and two treatments of the hot spots. The estimated costs for this alternative are:

Work Plan Prep	\$ 5,000
Well installation	\$ 6,000
Asphalt removal and disposal	\$ 2,800
Treat entire contaminated area	\$28,000
Treat hot spots two additional times	\$17,000
Oversight	\$ 6,500
Post treatment testing (three times)	\$ 9,000
Asphalt paving	\$ 4,000
Documentation report	\$ 5,000
Contingency (10%)	<u>\$ 8,330</u>
<b>TOTAL</b>	<b>\$91,630</b>

As a part of this additional site investigation, HSG requested case studies for use of BacTerra™ to treat soils contaminated with chlorinated solvents. U.S. Microbial was unable to provide documentation to support the use of their project in situations where chlorinated solvents are the only source of contamination. All documentation provided by U.S. Microbial indicated petroleum fuels must coexist with chlorinated solvents for successful remediation. Therefore active bioremediation is not a recommended alternative to pursue.

#### 6.5 Comparison of Remedial Alternatives and Proposed Site Remedy

Table 6-1 provides a summary of the remedial alternatives, their feasibility, cost and time frame for completion. In comparing the alternatives, in-situ chemical oxidation appears to be the most appropriate alternative for soil remediation because:

- It is technically feasible and a proven technology, and is capable of treating all impacted soils;
- It is administratively feasible;
- It is the most effective alternative for soil remediation.
- It can be accomplished within a relatively short time frame without interfering with other possible activities at the site (i.e., no excavation is required).

Monitored natural attenuation with the above identified source control/remediation option is the most appropriate alternative for groundwater.

## 7.0 CONCLUSIONS AND RECOMMENDATIONS

### 7.1 Conclusions

Based on the physical site conditions described in Section 4.0 and the various data summarized in Sections 5.1 through 5.4, the following is a summary of interpretations/conclusions:

- The shallow subsurface soils generally consist of an interfingered silt and fine sand matrix.
- There is an east-west trending lens of more clayey material, which crosses the central position of the site within the silt and fine sand matrix. The lens of more clayey material generally ranges from 2 to 6 feet in thickness.
- Depth to groundwater beneath the site generally ranges from 8 to 10 feet bgs and flows to the west-northwest.
- Soils beneath the site have been impacted by VOCs, primarily chlorinated solvents (PCE, TCE and 1,1,1-TCA). These solvents are known to have been used at the site.
- The primary soil impacts beneath the site extend from the ground surface to approximately 8 feet bgs, and located in an area extending from beneath the metal sheds to beneath the southern portion of the main manufacturing facility. The highest impacts are generally beneath the asphalt area between the metal sheds and the main building. This area coincides largely to the lens of more clayey soils defined above.
- A secondary area of solvent impacts to soil is located slightly north of the primary area of impacts beneath the west-central portion of the main building. This is in the vicinity of former degreaser operation.

- SPLP leach test data indicates that the VOCs are well sorbed onto the subsurface soil matrix with only a small percentage being mobilized into the dissolved phase.
- Ground water beneath the site has been impacted with benzene slightly above the ES. The benzene is from the upgradient Badger Tire and Auto property which was the location of a LUST removal and remediation. These residual impacts still being documented after completion of remedial activities.
- Ground water beneath portions of the site has also been impacted with PCE, TCE, 1,1,1-TCA and 1,1-DCE above the ES for these compounds. The noted concentrations, however, are not indicative of the presence of free product.
- Comparing the ground water impact concentrations to the overlying soil impacts suggests that the desorption rate is low which is consistent with SPLP test data.
- Natural biodegradation/dechlorination processes are not very active at this site with little evidence of breakdown/daughter products of the primary chlorinated constituents.

An evaluation of applicable remedial alternatives was performed. Ground water remedial alternatives included:

- No Further Action
- Monitored Natural Attenuation with Source Control
- Interceptor Trench
- Pump and Treat

Soil remedial alternative included:

- No Further Action
- Capping
- Soil Excavation/Off-Site Disposal
- Soil Vapor Extraction
- In-Situ Chemical Oxidation
- In-Situ Bioremediation

Based on the evaluation of remedial alternatives, the preferred alternative consists of in-situ chemical oxidation of soils with monitored natural attenuation of ground water.

## 7.2 Recommendations

The following are recommended:

- Add a monitoring well on the west boundary of the facility to complete an appropriate monitoring network for natural attenuation monitoring of ground water.
- Remediate ground water using monitored natural attenuation with source control/remediation of the overlying soils.



- Remediate impacted soils using in-site chemical oxidation using a proprietary BiOx treatment offered by Bio Management Service, Inc.

## 8.0 REFERENCES

Key Engineering Group, Ltd, Phase I Environmental Assessment, Former Wire and Metal Specialties, Inc., January 20, 1999.

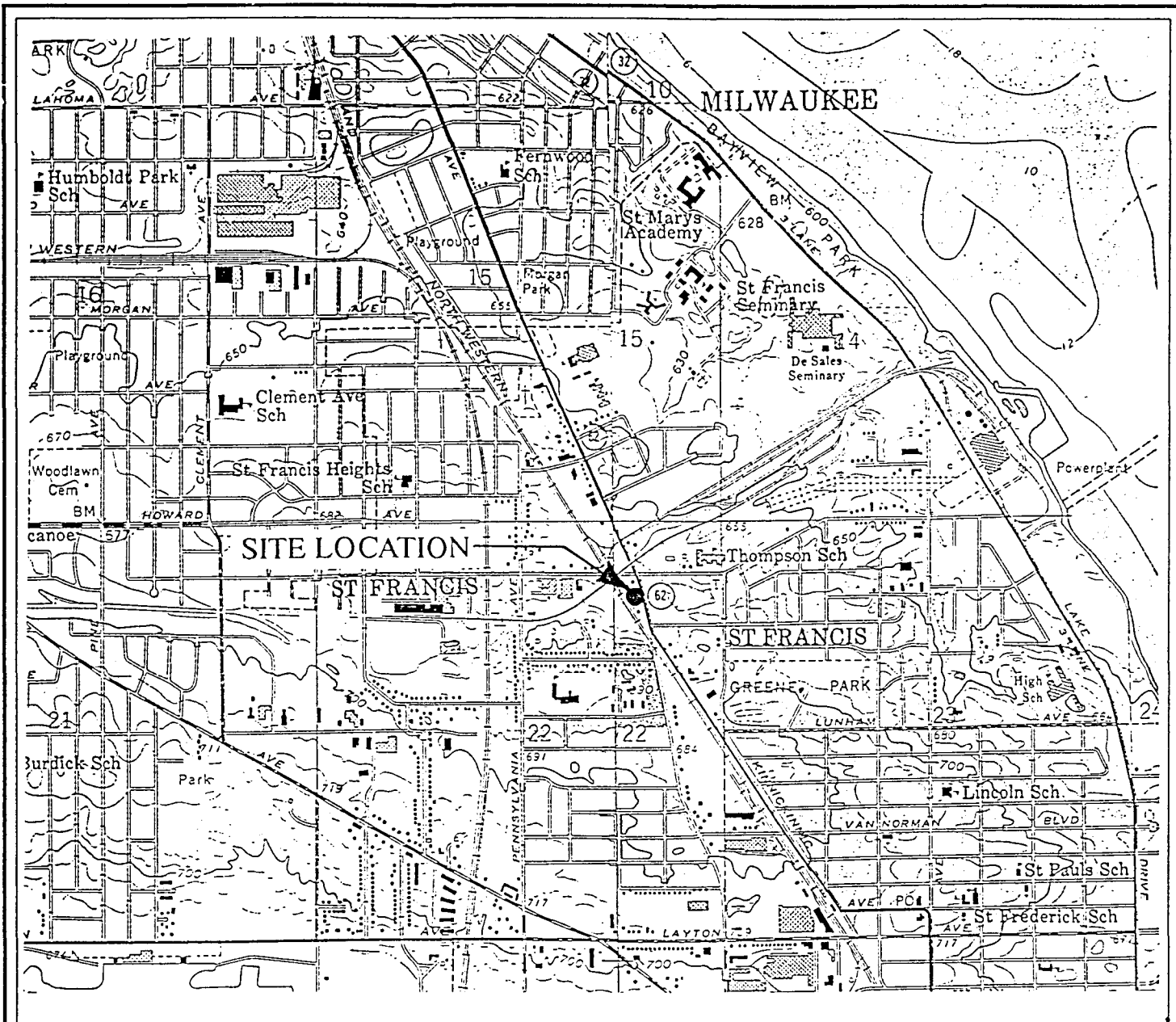
Key Environmental Services, Inc., Notification of Spill and Case Closure Report, March 26, 1998.

Key Engineering Group, Ltd., Limited Phase II Environmental Site Assessment Report, Former Wire and Metal Specialties, Inc., March 22, 1999.

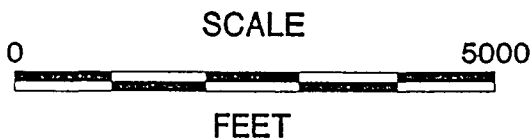
K. Singh & Associates, Inc., Monitoring Well Abandonment and Groundwater Quality Test Results on the LMPP Property, 4021 South Kinnickinnic Avenue, St. Francis, May 11, 1999.

K. Singh & Associates, Inc., Revised Investigation and Remedial Action Plan for Badger Tire and Auto, 4045 S. Kinnickinnic Ave., St. Francis, June 29, 1994.

U. S. Environmental Protection Agency, Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Groundwater, September 1998.



cad:\mpl\mpl-a9



National Geodetic Vertical Datum of 1929  
Contour Interval 10 Feet

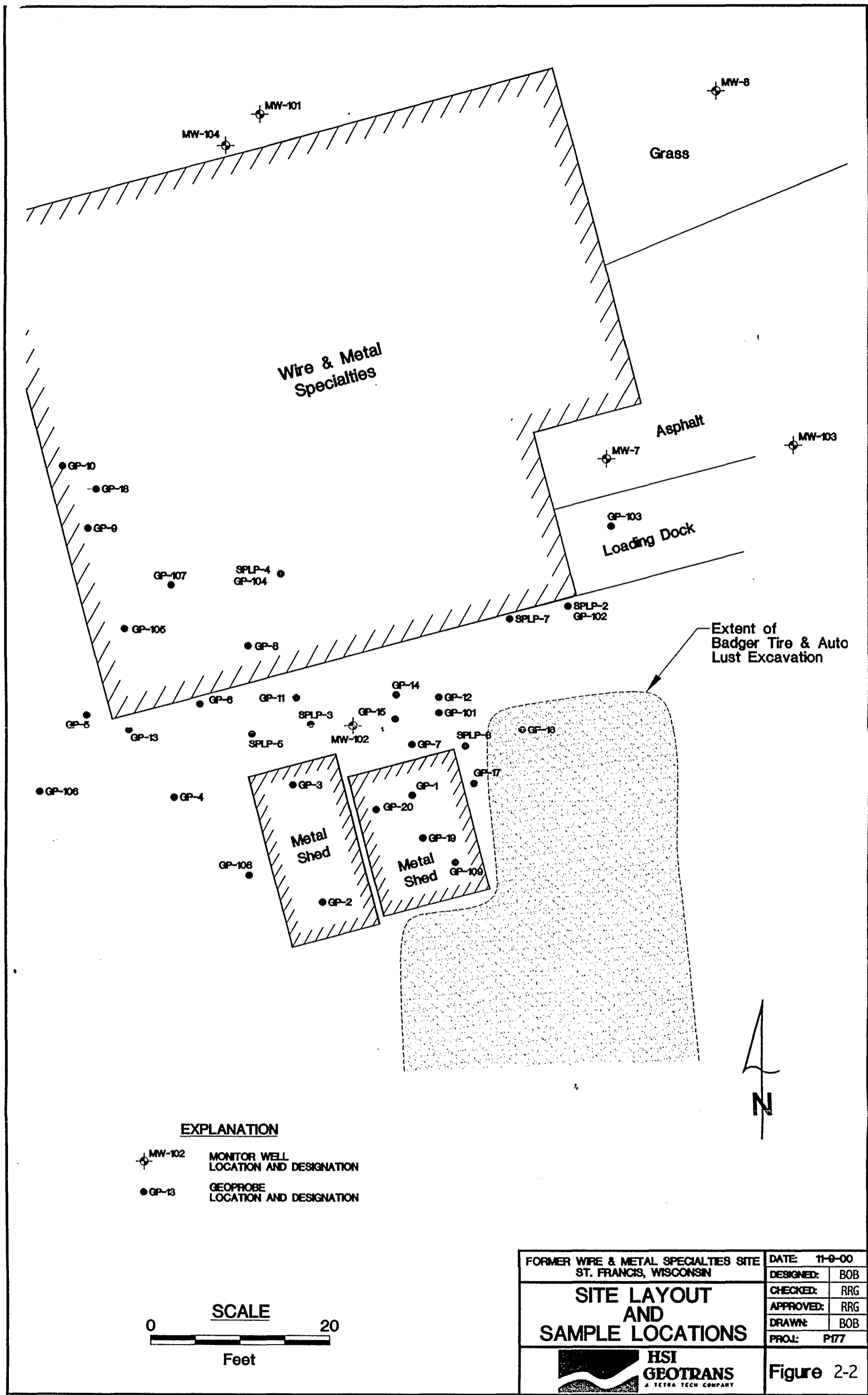


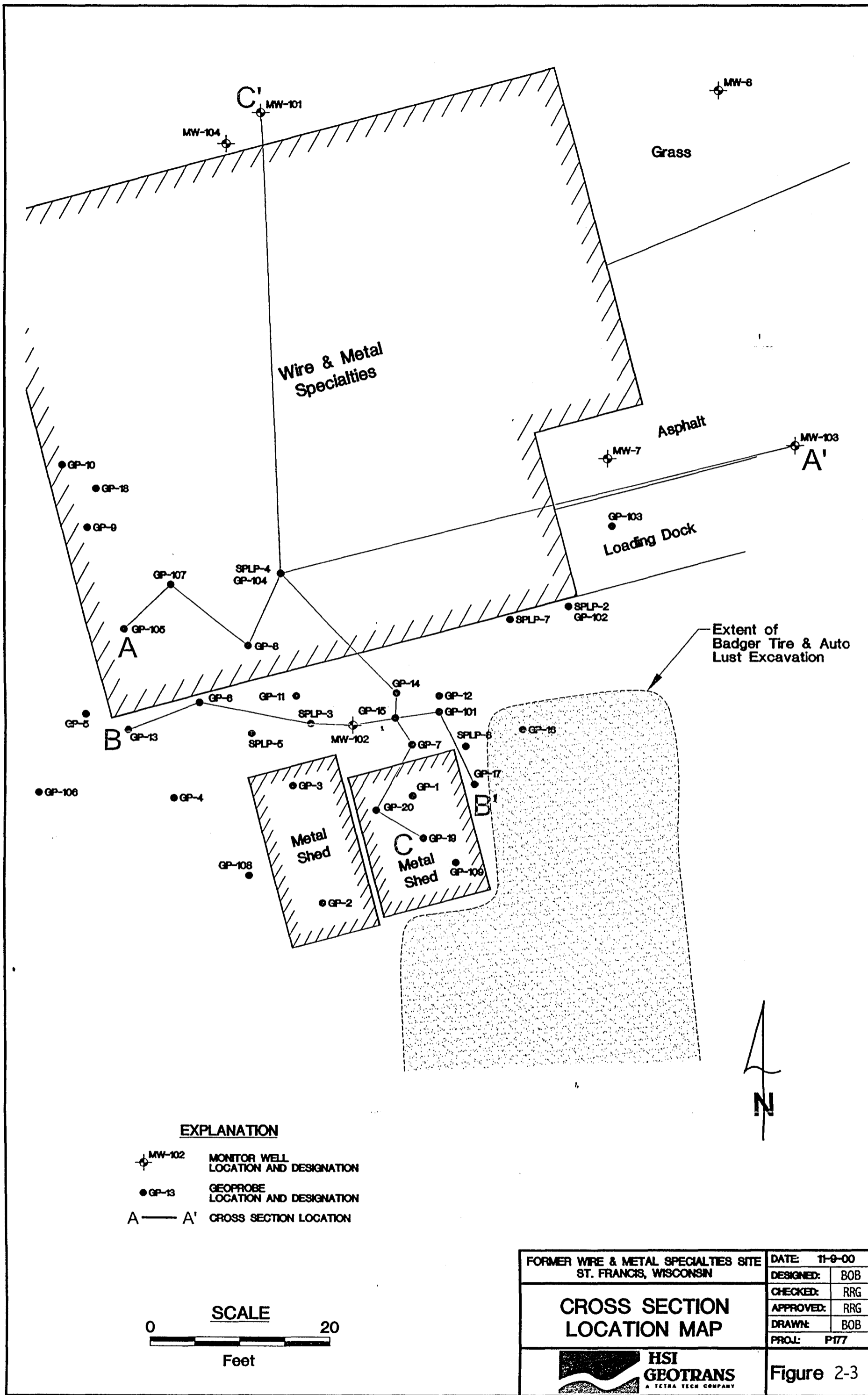
FORMER WIRE & METAL SPECIALTIES SITE ST. FRANCIS, WISCONSIN	DATE: 9/7/99
	DESIGNED: BOB
<b>SITE LOCATION and LOCAL TOPOGRAPHY</b>	CHECKED: GLD
	APPROVED: GLD
	DRAWN: BOB
	PROJ:

Base map from U.S.G.S. 7.5' South Milwaukee, Wisconsin  
topographic quadrangle map, 1959, revised 1971.





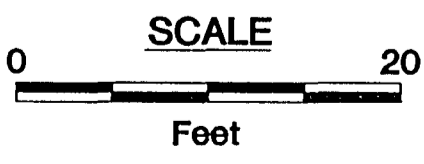
Figure 2-1




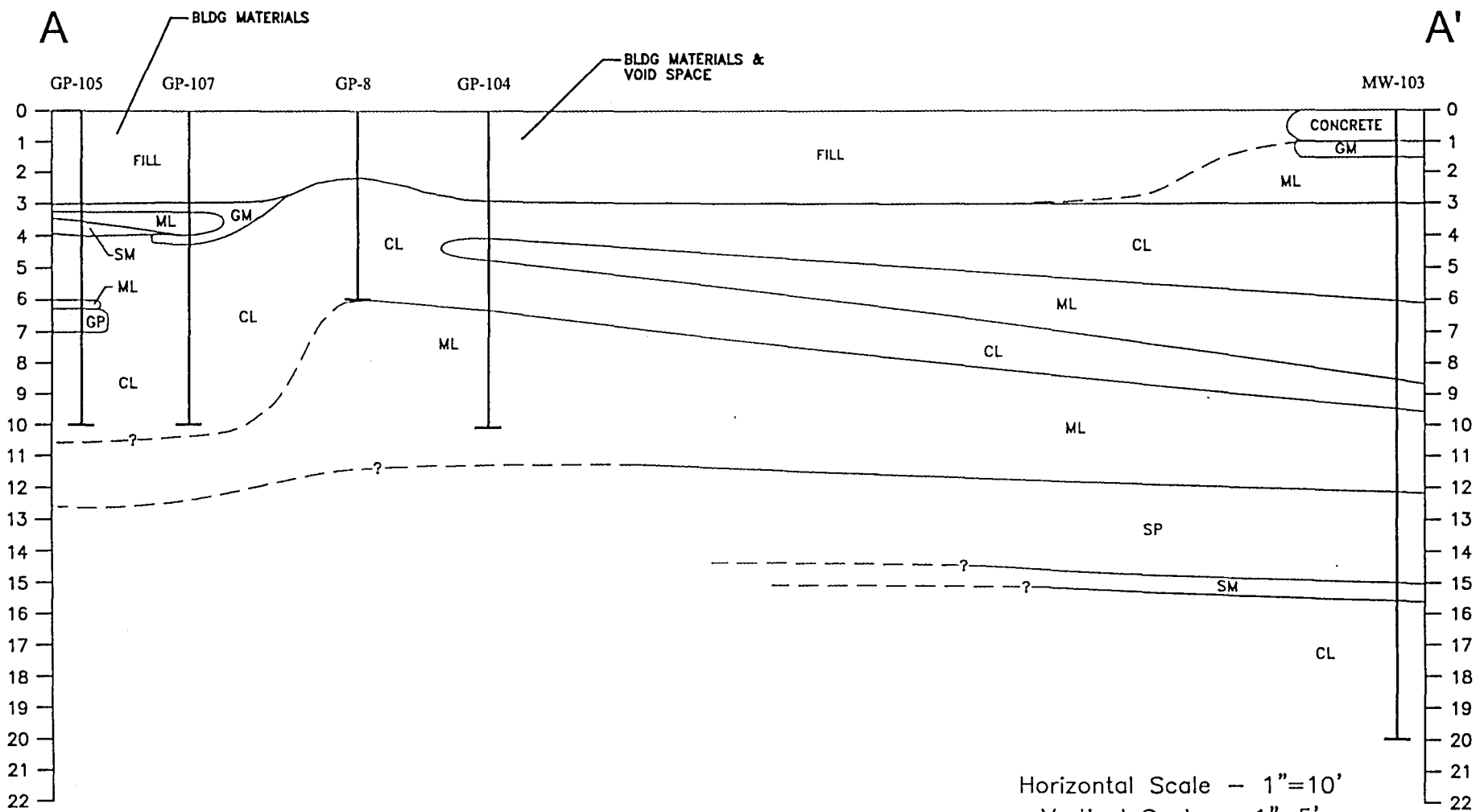


**EXPLANATION**

- 
**MW-102** MONITOR WELL LOCATION AND DESIGNATION
- 
**GP-13** GEOPROBE LOCATION AND DESIGNATION
- A — A'** CROSS SECTION LOCATION



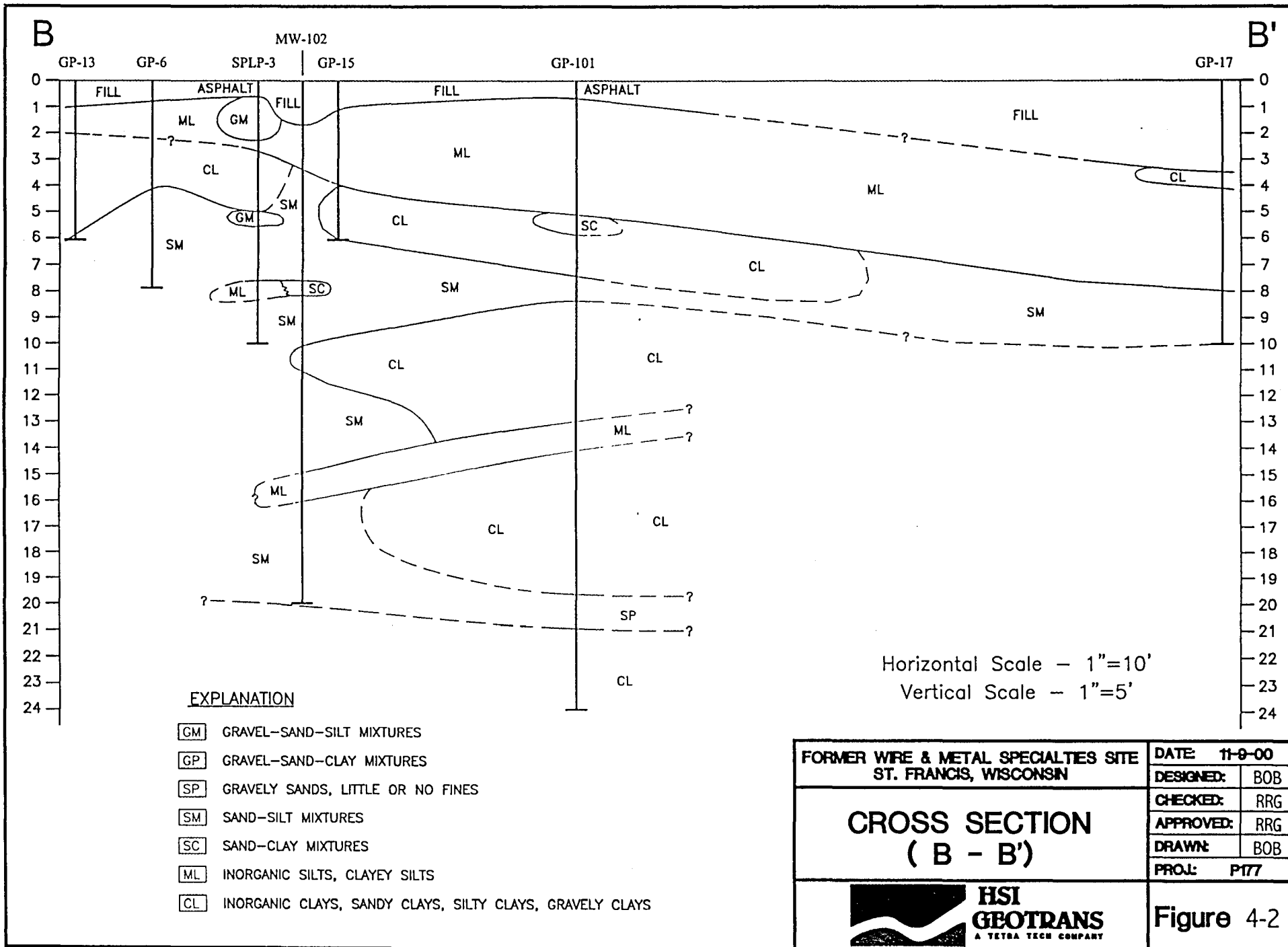
FORMER WIRE & METAL SPECIALTIES SITE ST. FRANCIS, WISCONSIN		DATE: 11-8-00
<b>CROSS SECTION LOCATION MAP</b>		DESIGNED: BOB
		CHECKED: RRG
		APPROVED: RRG
		DRAWN: BOB
		PROJ: P177
 <b>HSI GEOTRANS</b> A TETRA TECH COMPANY		Figure 2-3

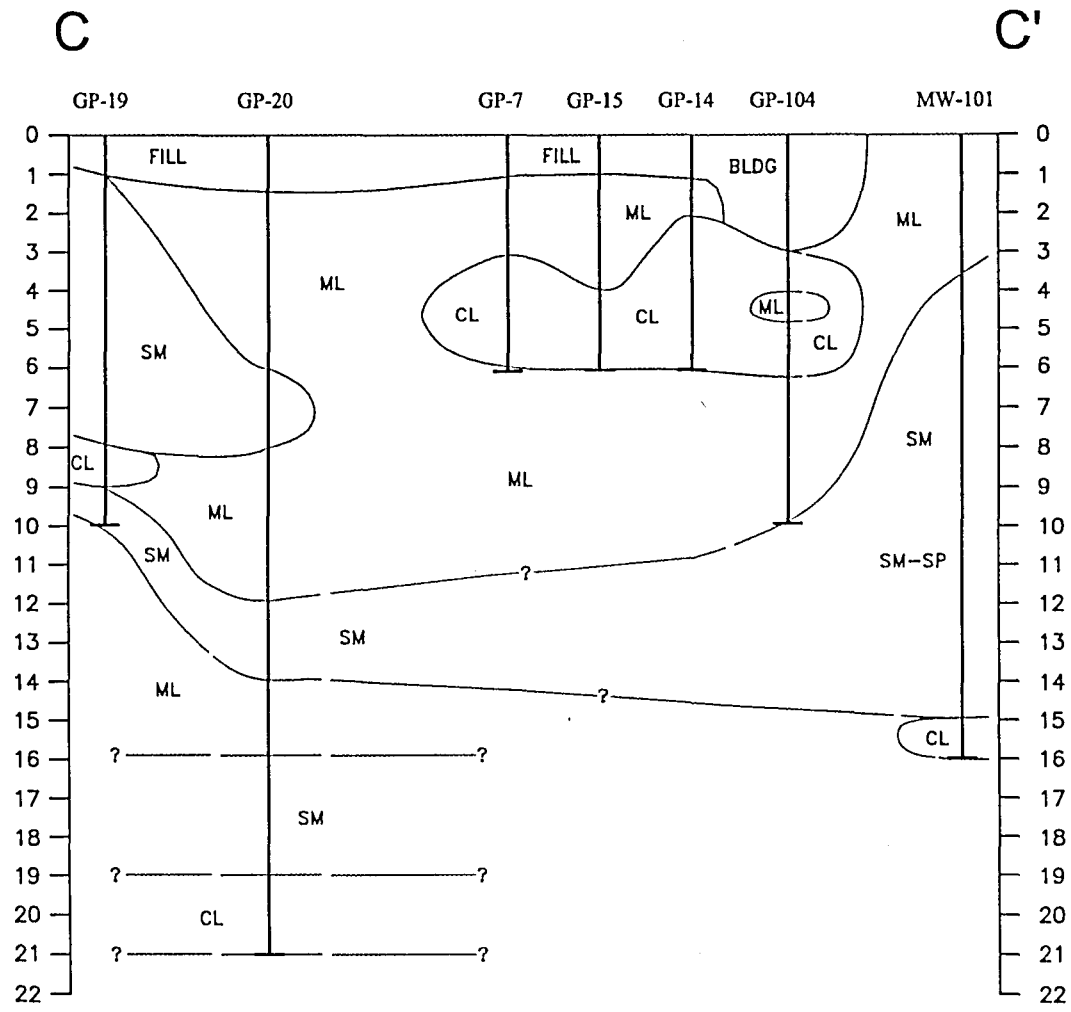


**EXPLANATION**

- GM GRAVEL-SAND-SILT MIXTURES
- GP GRAVEL-SAND-CLAY MIXTURES
- SP GRAVELY SANDS, LITTLE OR NO FINES
- SM SAND-SILT MIXTURES
- SC SAND-CLAY MIXTURES
- ML INORGANIC SILTS, CLAYEY SILTS
- CL INORGANIC CLAYS, SANDY CLAYS, SILTY CLAYS, GRAVELY CLAYS

FORMER WIRE & METAL SPECIALTIES SITE ST. FRANCIS, WISCONSIN		DATE: 11-9-00
<h2 style="margin: 0;">CROSS SECTION</h2> <h3 style="margin: 0;">(A - A')</h3>		DESIGNED: BOB
		CHECKED: RRG
		APPROVED: RRG
		DRAWN: BOB
		PROJ: P177
 <b>HSI GEOTRANS</b> <small>A TETRA TECH COMPANY</small>		<h2 style="margin: 0;">Figure 4-1</h2>






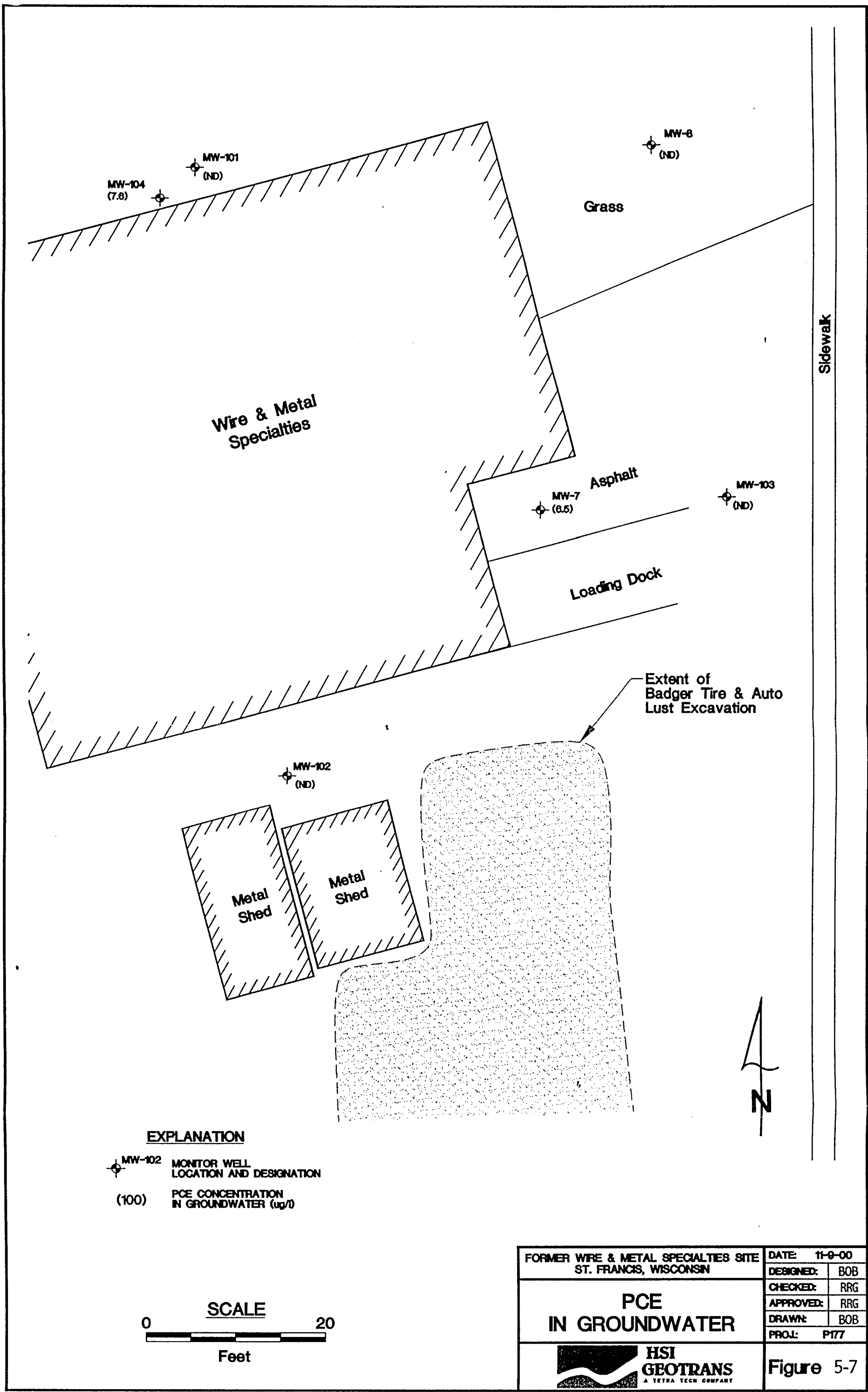
Horizontal Scale - 1"=10'  
 Vertical Scale - 1"=5'

**EXPLANATION**


- GM GRAVEL-SAND-SILT MIXTURES
- GP GRAVEL-SAND-CLAY MIXTURES
- SP GRAVELY SANDS, LITTLE OR NO FINES
- SM SAND-SILT MIXTURES
- SC SAND-CLAY MIXTURES
- ML INORGANIC SILTS, CLAYEY SILTS
- CL INORGANIC CLAYS, SANDY CLAYS, SILTY CLAYS, GRAVELY CLAYS

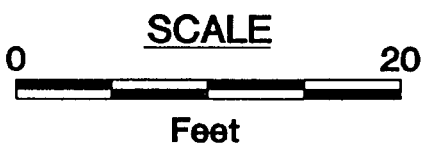
<b>FORMER WIRE &amp; METAL SPECIALTIES SITE ST. FRANCIS, WISCONSIN</b>		<b>DATE 11-9-00</b>	
<h2>CROSS SECTION (C - C')</h2>		<b>DESIGNED:</b>	BOB
		<b>CHECKED:</b>	RRG
		<b>APPROVED:</b>	RRG
		<b>DRAWN:</b>	BOB
		<b>PROJ:</b>	P177
 <b>HSI GEOTRANS</b> <small>A TETRA TECH COMPANY</small>		<h3>Figure 4-3</h3>	




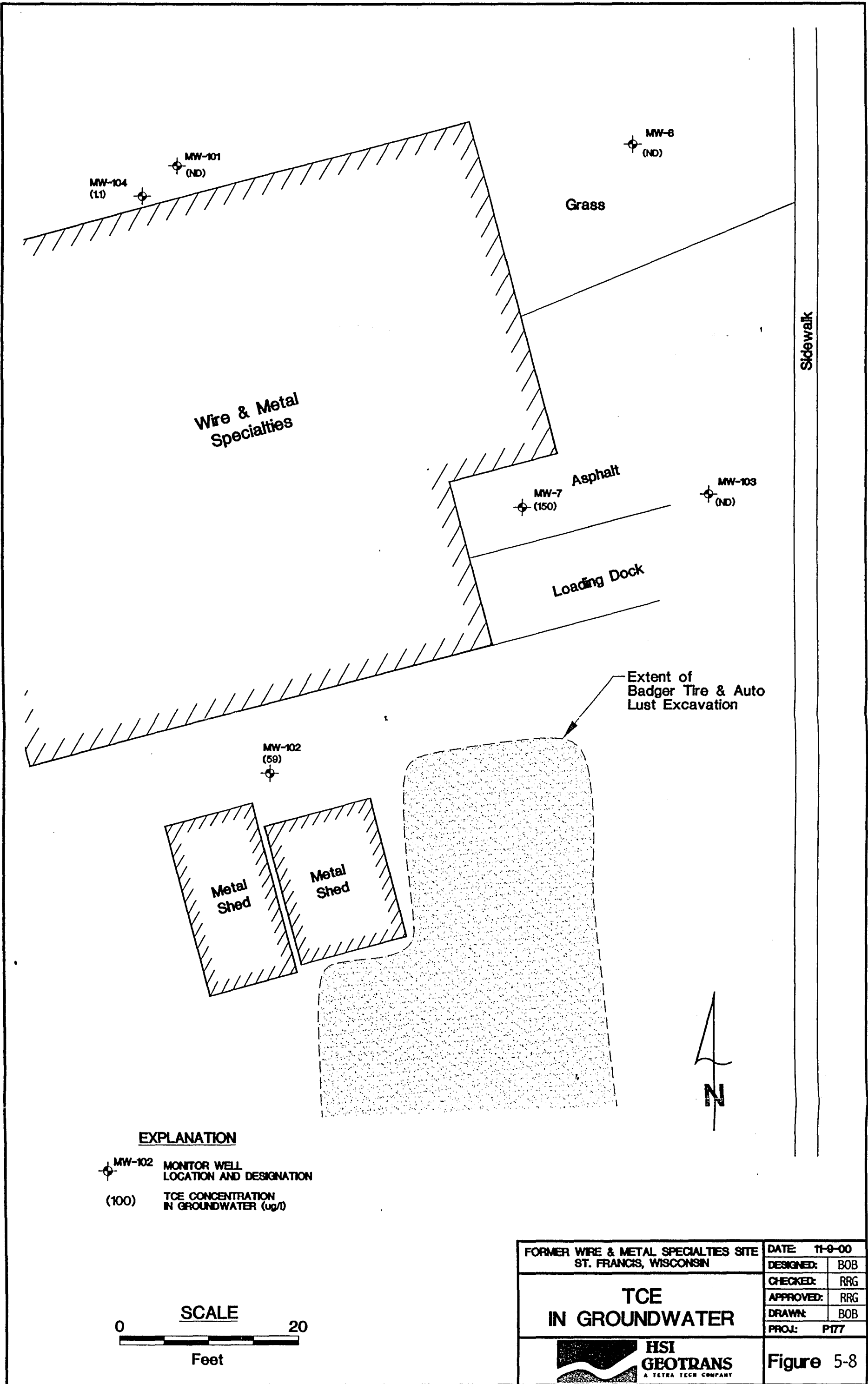


**EXPLANATION**

- 
**MW-102** MONITOR WELL LOCATION AND DESIGNATION
- (100)** PCE CONCENTRATION IN GROUNDWATER (ug/l)

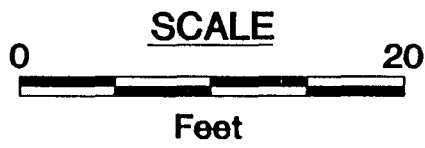


FORMER WIRE & METAL SPECIALTIES SITE ST. FRANCIS, WISCONSIN		DATE: 11-9-00
<b>PCE IN GROUNDWATER</b>		DESIGNED: BOB
		CHECKED: RRG
		APPROVED: RRG
		DRAWN: BOB
		PROJ: P177
 <b>HSI GEOTRANS</b> A TETRA TECH COMPANY		Figure 5-7

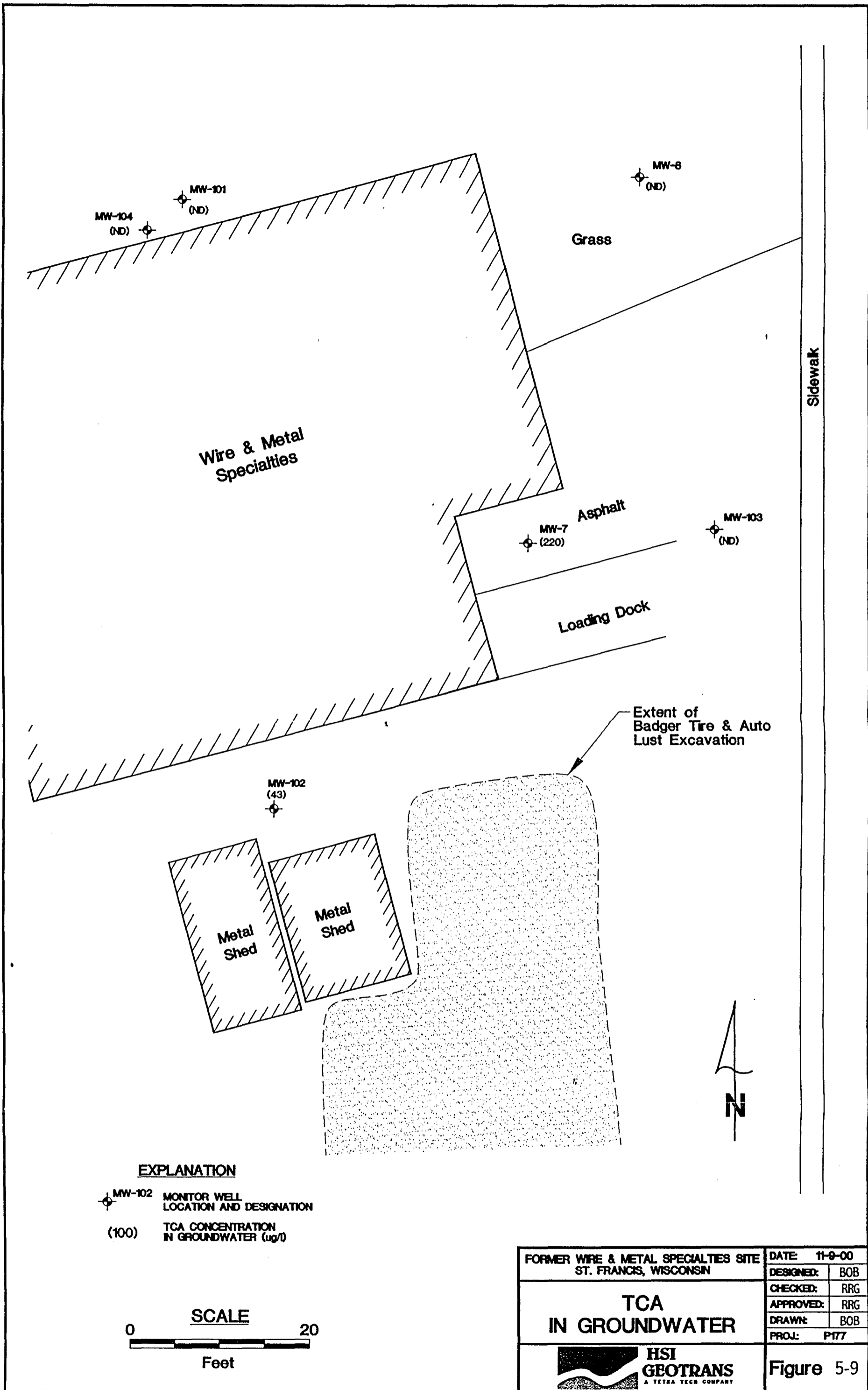


**EXPLANATION**


- MW-102 MONITOR WELL LOCATION AND DESIGNATION
- (100) TCE CONCENTRATION IN GROUNDWATER (ug/l)

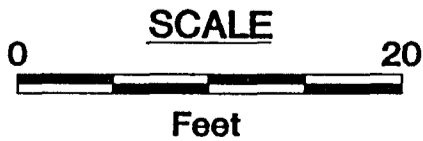



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		APPROVED: RRG
		DRAWN: BOB
		PROJ: P177
		Figure 5-8

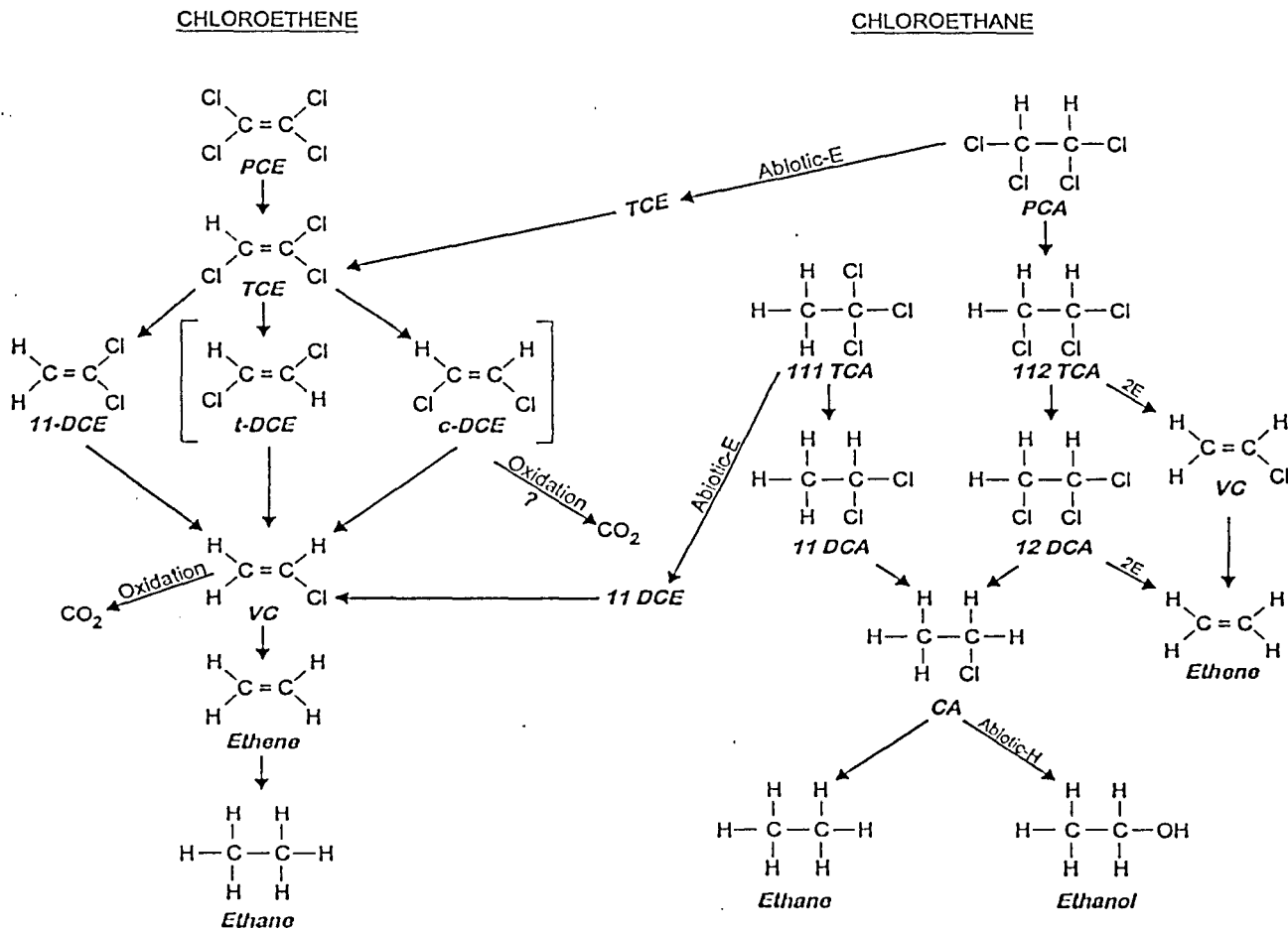


**EXPLANATION**

-  MW-102 MONITOR WELL LOCATION AND DESIGNATION
- (100) TCA CONCENTRATION IN GROUNDWATER (ug/l)



FORMER WIRE & METAL SPECIALTIES SITE ST. FRANCIS, WISCONSIN		DATE: 11-9-00
<b>TCA IN GROUNDWATER</b>		DESIGNED: BOB
		CHECKED: RRG
		APPROVED: RRG
		DRAWN: BOB
 <b>HSI GEOTRANS</b> <small>A TETRA TECH COMPANY</small>		PROJ: P177
		<b>Figure 5-9</b>



Note : Pathways shown are for anaerobic biological reductive dehalogenation unless noted otherwise.


FORMER WIRE & METAL SPECIALTIES SITE ST. FRANCIS, WISCONSIN		DATE: 9/7/99
<b>NATURAL DEGRADATION PATHWAYS FOR CHLOROETHENES AND CHLOROETHANES</b>		DESIGNED: BOB
		CHECKED: GLD
		APPROVED: GLD
		DRAWN: BOB
		PROJ:
 <b>HSI GEOTRANS</b> A TETRA TECH COMPANY		Figure 5-10

Table 5-1 Soil Analytical Results for VOCs

Sample ID	GP-1	GP-2	GP-3	GP-4	GP-5	GP-6	GP-7	GP-8	GP-9	GP-10	GP-11	GP-12	GP-13	GP-14	GP-15	GP-16	GP-17	GP-18	GP-19	GP-20	GP-20	GP-20	RCL	
Sample Depth	0-2'	0-2'	4-6'	4-6'	4-6'	2-4'	0-2'	4-6'	4-6'	4-6'	0-2'	0-2'	4-6'	0-2'	0-2'	0-2'	6-8'	4-6'	0-2'	0-2'	8-10'	18-20'		
n-Butylbenzene					<250										62									
sec-Butylbenzene					<250										31	48			66					
1,1-Dichloroethane					<250			32			130	53		220	310					120		40		
1,2-Dichloroethane					<250																40		4.9	
1,1-Dichloroethene					<250									35	56									
cis-1,2-Dichloroethene					<250	120		61			75				33						26			
Ethylbenzene					<250																37			2,900
Isopropylbenzene					<250										30									
p-Isopropyltoluene					<250																			
MTBE																								
Naphthalene					<250											170			27					
n-Propylbenzene					<250										54									
Tetrachloroethene	350			850	530	13,000	2,700	1,100		260	5,700	810	100	1,200	480		28		390	1,000				
Toluene		44			<250	83					3,300	110							60					1,500
1,1,1-Trichloroethane	230	220	1,500	360	1,000	2,500	3,200	2,100	110	240	39	5,100	420	2,000	2,500		72	39	780	620				
1,1,2-Trichloroethane					<250	32					7,200	57												
Trichloroethene	500		1,100	2,200	5,300	18,000	3,000	16,000	560	740		29,000	4,400	4,600	1,700	45	370	200	4,700	520				
Trichlorofluoromethane					<250	28 (J)													72	45 (J)				
1,2,4-Trimethylbenzene					<250										65				60	34				
1,3,5-Trimethylbenzene					<250										110				47					
M & P Xylenes	<50	<50	<50	<50	<500	<50	84	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	770				4,100
O Xylene	34				<250		41													450				
Sample Date																								

All concentrations in ug/kg

If blank, compound was not detected.

(J) indicates that results were below the method detection limit but above the instrument detection limit. The value provided therefore is an estimated concentration.

RCL - Residual Contaminant Level

TABLE 5-2 SYNTHETIC PRECIPITATE LEACHING PROCEDURE (SPLP) RESULTS

	SPLP-1		SPLP-2		SPLP-3-2'		SPLP-4		SPLP-5		SPLP-7		SPLP-8	
	Soil	Leach	Soil	Leach	Soil	Leach	Soil	Leach	Soil	Leach	Soil	Leach	Soil	Leach
	(at GP-101-2')		(at GP-102-2')				(at GP-104-3')							
1,1-Dichloroethane	74	< 6			140	< 6								
1,1-Dichloroethene					30	< 12								
Cis- 1,2 Dichloroethene					170	8(J)								
Methylene Chloride						38(J)		14(J)		44(J)				16(J)
MTBE													34	< 4
Tetrachloroethene	450	< 12			2,800	< 12	160	< 12	220	< 12	260	< 12	70	< 12
Toluene					55	< 8								
1,1,1 Trichloroethane	5,000	29	72	< 8	49,000	100	170	< 8	450	< 8	890	14(J)	290	13(J)
1,1,2 Trichloroethane					60	< 4								
Trichloroethene	37,000	150	35	< 8	5,600	140	850	13(J)	4,000	150(J)	2,200	58	1400	51
Xylenes					38	< 20								
Sample Date	6/27/00	6/27/00	6/27/00	6/27/00	6/27/00		6/28/00	6/28/00	6/27/00		6/27/00		6/27/00	

Soil Concentrations in ug/kg

Leach Concentrations in ug/l

Blanks are non-detect values for both total and leached concentrations

Table 5-3 Groundwater Analytical Results for VOCs

	MW-101	MW-102		MW-103	MW-7		MW-8		MW-104	PAL	ES
	7/16/99	7/16/99	6/30/00	6/30/00	7/16/99	6/30/00	7/16/99	6/30/00	6/30/00		
Benzene		<b>14</b>	<b>5.5</b>		<u>0.51(J)</u>					0.5	5
tert-Butylbenzene	3.5									--	--
n-Butylbenzene	25									--	--
sec-Butylbenzene	19									--	--
Chloroform							<u>1.1</u>			0.6	6
1,1-Dichloroethane		3.9	5.8		6.3	17				85	850
1,2-Dichloroethane		<u>2.5</u>	<u>0.84(J)</u>		<u>1.4</u>					0.5	5
1,1-Dichloroethene			<u>2.4</u>		<u>2</u>	<b>18</b>				0.7	7
cis-1,2-Dichloroethene		1.7	5.2		0.68(J)	4.1				7	70
trans-1,2-Dichloroethene		0.66 (J)								20	100
Ethylbenzene	27	7.3	14					0.51(J)		140	700
Isopropylbenzene	20	2.5	3							--	--
p-Isopropyltoluene	15	2.5								--	--
MTBE		8	5.4	1.9	2.1					12	60
Naphthalene	<u>28</u>									8	40
n-Propylbenzene	39	0.6 (J)	1.9							--	--
Tetrachloroethene					<u>2.2</u>	<b>6.5</b>			<b>7.6</b>	0.5	5
Toluene	0.4 (J)	0.9 (J)	0.56(J)							68.6	343
1,1,1-Trichloroethane		16	<b>43</b>		<b>120</b>	<b>220</b>				40	200
Trichloroethene		<b>140</b>	<b>59</b>		<b>110</b>	<b>150</b>			<u>1.1(J)</u>	0.5	5
1,2,4-Trimethylbenzene	310	0.56 (J)								--	--
1,3,5-Trimethylbenzene	8.1									--	--
Xylenes	<u>158.6</u>	0.92 (J)	3.5							124	620

Notes:

All concentrations in ug/l (parts per billion).

If blank, compound was not detected. See Analytical reports for detection limits.

**Bold** = Exceeds ES

Underlined = Exceeds PAL

(J) = Indicates that the analyte was detected between its limit of detection and limit of quantification

HSI GEOTRANS

**Table 6-1 Remedial Alternative Comparison**

Remedial Option	Media Addressed	Technical Feasibility	Administrative Feasibility	Cost	Time Frame to Complete
No Action	Soil and Groundwater	Yes	No	Impaired value of property	>10 years
Monitored Natural Attenuation of Groundwater	Groundwater	Yes	Yes, if implemented with source control	\$12,760/yr \$6,380/yr	from 0 to 2 years 3 - 10 years
Soil Excavation and Off-Site Disposal	Soil	Yes, but not all impacted soil removed	Yes	\$95,555 to \$900,000	4 months
Soil Vapor Extraction	Soil	Yes	Yes	\$152,000	about 1 year
In-Situ Chemical Oxidation of Soil	Soil	Yes, but not all impacted soil treated	Yes	\$112,900	4 months
In-Situ Active Bioremediation	Soil	Has had variable to poor results in the field	Yes	\$91,630	about 1 year



**APPENDIX A**  
**BACKGROUND INFORMATION**



W66 N215 Commerce Court  
Cedarburg, Wisconsin 53012  
(414) 375-4750  
(800) 645-7365  
Fax (414) 375-9680

March 22, 1999

Mr. Phil Abel  
PC Innovations  
3448 South Taylor Avenue  
Milwaukee, Wisconsin 53207

Reference: *Limited Phase II Environmental Site Assessment Report*  
Former Wire and Metal Specialties, Inc.  
4021 South Kinnickinnic Avenue  
St. Francis, Wisconsin 53235

KEY ENGINEERING GROUP, LTD.  
File No. 0812011

Dear Mr. Abel:

In accordance with your request, Key Engineering Group, Ltd. (KEY) has completed a Limited Phase II Environmental Site Assessment (Limited Phase II ESA) at the above referenced (subject) site.

*Purpose and Scope of Services*

The purpose of the Limited Phase II ESA was to evaluate the potential for subsurface impacts at the subject site considering the past manufacturing use of the subject site and previously remediated environmental impacts at the subject site due to on-site and off-site sources. These prior land uses and previous on-site environmental remediation activities were discussed in detail in a preceding Phase I Environmental Site Assessment (Phase I ESA) for the subject site dated January 20, 1999. The previous land use and environmental remediation actions at the subject site are summarized below:

- The subject site was previously occupied by Wire and Metal Specialties, Inc., which conducted sheet metal fabricating operations since the mid-1960s and was occupied prior to then by similar metal fabrication operations since the 1940s.
- Migrating contaminants from a leaking underground storage tank (LUST) located on the adjacent property to the south of the subject site impacted a southern portion of the subject site. These impacts included soil and groundwater contamination at the subject site. These site impacts were investigated and remediated by on-site excavation and off-site disposal of the contaminated soil. However, residual soil and groundwater impacts remained on the subject site following these remedial actions.
- An apparent spill of hazardous material on the subject site was investigated and remediated by excavation and removal of the contaminated soil from the subject site.

Post-excavation soil samples appeared to indicate that the soil impacts from this spill were completely remediated.

The Limited Phase II ESA involved advancing soil probes, collecting and submitting selected soil samples for laboratory analysis and evaluating the analytical data. Groundwater from an on-site groundwater monitoring well (MW-7), constructed during the preceding LUST site investigation and located closest to the remedial excavation as it extended onto the subject site, was also sampled and the sample submitted for analysis. The subject site layout and soil probe locations are depicted on Figure 1.

#### *Limited Subsurface Assessment Activities*

On March 10, 1999, four soil probes (GP-1, GP-2, GP-3 and GP-4) were advanced on the subject site at locations approved by Mr. Phil Abel of PC Innovations (client). Each of these soil probes were advanced to a depth of 11 feet below ground surface (bgs). Soil probe GP-1 was located near the northeast corner of the subject site property. Soil probe GP-2 was located a short distance north of the northern extent of the previous LUST site remedial excavation that extended onto the southern portion of the subject site. Soil probe GP-3 was located along the north side of the easterly Quonset hut. Soil probe GP-4 was located at the southwest corner of the subject site's main building.

The soil probes were advanced with a van-mounted Geoprobe<sup>®</sup> unit operated by Briohn Environmental Construction (Briohn) under the supervision of KEY. A 2-foot long stainless steel sampler with an acetate liner was driven to the desired sampling depth using stainless steel rods and a hydraulic ram.

Downhole soil probe equipment and associated tools were washed prior to the start of the project. Cleaned soil probe equipment was used for each soil sampling interval to minimize the potential for cross-contamination. The cleaning procedure after each sampling interval consisted of scrubbing the 2-foot stainless steel sampler with a brush and a soap (Alconox<sup>®</sup>) and water solution followed by one tap water rinse.

Soil samples were collected from each soil probe location and classified in accordance with the Unified Soil Classification System (USCS). Soil boring logs were completed by KEY to document the drilling method, sampling method, depth of the sample, sample recovery, the USCS classifications, olfactory senses and groundwater level observations. The soil encountered at soil probe GP-1 was light brown silty sand underlain by silty clay and clayey silt. The soils encountered by GP-2 were light brown silty clay to approximately 5 feet bgs, underlain by mostly clayey silt to 11 feet bgs. The soils encountered by GP-3 were a silty sand to approximately four feet bgs underlain by silty clay and sand. Soils encountered at GP-4 were principally sand with gravel. The completed soil boring logs are attached.

A portion of each soil sample collected from the soil probes was placed into a Ziploc<sup>®</sup> bag for field screening. The remaining portion of the sample was placed into laboratory supplied containers and stored on ice for potential laboratory analysis. One selected soil sample from each soil probe location and one collected groundwater sample from MW-7 were submitted for laboratory analysis.

Following soil and groundwater sample collection, the soil probes were abandoned with bentonite chips. Completed borehole abandonment forms are also attached.

### *Soil Field Screening*

The soil samples were field screened for volatile organic vapors using a model 580B Organic Vapor Meter (OVM) photoionization detector (PID) equipped with a 10.6 electron volt (eV) lamp, calibrated to isobutylene. The sealed bag was shaken and then slightly opened and the tip of the PID was inserted into the headspace and the highest reading was recorded. The PID readings are shown on the attached boring logs. The PID readings measured for soil samples collected from GP-1, GP-2 and GP-4 were all less than one instrument unit (i.u.). However, the upper two soil sample intervals from GP-3 detected volatile organic vapors. The uppermost GP-3 soil sample collected from 1 to 3 feet bgs measured a PID reading of 346 i.u. This soil sample also had a slight odor that was not believed to be petroleum.

### *Soil and Groundwater Sampling and Laboratory Analysis*

The selected soil samples and the collected groundwater sample were submitted for laboratory analysis to Great Lakes Analytical (GLA) (1380 Busch Parkway, Buffalo Grove, Illinois). The soil sample submitted for analysis from GP-2 was collected from 7 to 9 feet bgs, which appeared to be at or just above the groundwater interface. This groundwater interface depth was chosen considering that this soil probe was advanced north of the previous LUST excavation which reportedly impacted the subject site by means of groundwater migration to the subject site. The soil sample submitted for analysis from GP-3 was the 1 to 3 foot bgs interval that was field screened at 346 i.u. on the PID. Each of the soil samples, and the groundwater sample, were submitted for laboratory analysis for volatile organic compounds (VOCs). The soil and groundwater sample analytical results are summarized in Table 1 and 2, respectively, and on Figure 2.

Groundwater monitoring well MW-7 was purged of all groundwater within the well column (well casing and filter pack) and sampled using a clean Teflon bailer. The groundwater level in MW-7 was measured to be 10.26 feet bgs.

### *Soil and Groundwater Sample Analytical Results*

The soil sample analytical results indicated that no VOC concentrations were detected at GP-1 or GP-2. Concentrations of petroleum and chlorinated VOCs were detected at GP-3 and GP-4. The petroleum-related VOCs included n-butylbenzene, ethylbenzene, p-isopropyltoluene, n-propylbenzene, toluene, trimethylbenzenes and xylene. The chlorinated VOCs included 1,1-dichloroethane (DCA), tetrachloroethene (PCE), 1,1,1-trichloroethane (TCA) and trichloroethene (TCE).

The groundwater sample analytical results indicated that petroleum (benzene only) and chlorinated VOCs were detected at MW-7. Concentrations of benzene and TCE exceeded NR 140 enforcement standards (ESs), and concentrations of 1,2-DCA, 1,1-dichloroethene (DCE) and 1,1,1-TCA exceeded NR 140 preventive action limits (PALs).

### *Conclusions and Recommendations*

Based on the laboratory analytical results, soils south of the site building in the vicinity of the Quonset hut are impacted by elevated VOC concentrations. The presence of contaminants detected in site groundwater at MW-7 (a significant distance from the detected soil contaminants) which are generally consistent with those detected in on-site soils likely indicates that contaminants present

Mr. Phil Abel  
March 22, 1999  
Page 4

in on-site soils have leached to groundwater. The presence of on-site groundwater contaminants at concentrations exceeding NR 140 ESs which could potentially be attributed to an on-site source (contaminated soils) would likely trigger regulatory enforcement by the Wisconsin Department of Natural Resources (WDNR). At a minimum, the WDNR would likely require additional investigation of groundwater quality in the proximity of the contaminated soils to evaluate whether remedial action is warranted at the site.

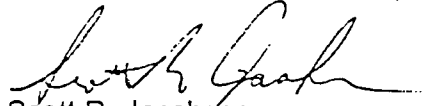
It should be noted that a component of the groundwater contamination in groundwater at MW-7 may be associated with previous remedial action activities conducted south of and on the subject site. However, the presence of contaminants in shallow site soils would likely suggest to the WDNR that the on-site groundwater contaminants are not likely solely attributable to the migration of contaminants onto the site from the south.

It is KEY's interpretation of Wisconsin's Spill Statutes that these findings are reportable to the WDNR by the owner of the subject site.

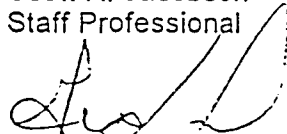
Please feel free to call us if you have any questions. KEY can assist with the WDNR reporting if desired. Thank you for the opportunity to provide you with our services.

Sincerely,

KEY ENGINEERING GROUP, LTD.



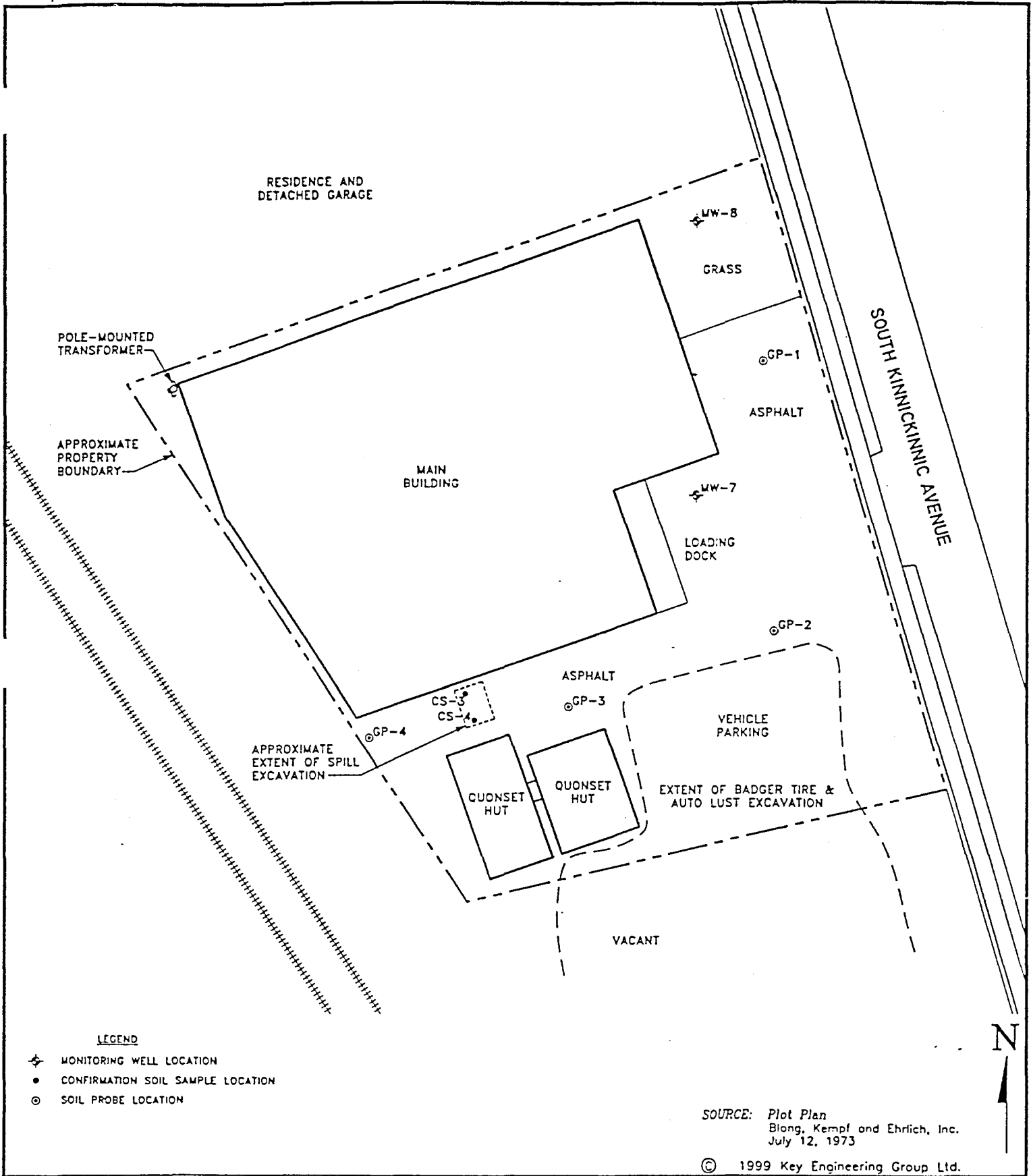
Scott R. Jacobson  
Staff Professional



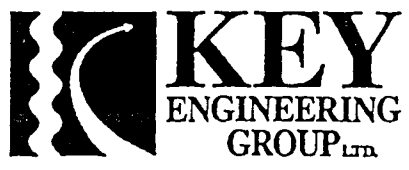
Gregory A. Konicek, P.G., CHMM  
President

SRJ/kar

Enclosures: Figure 1: Site Layout and Soil Probe Locations  
Figure 2: Summary of Soil and Groundwater Sample Analytical Results  
Table 1: Summary of Soil Sample Analytical Results  
Table 2: Summary of Groundwater Sample Analytical Results  
Soil Boring Logs  
Borehole Abandonment Forms  
Analytical Laboratory Report and Chain of Custody Documentation



<p>SCALE: 1"=40'</p>		
DRN. BY:	S.L.G.	DATE: 03/19/99
DSN. BY:	S.R.J.	FILE NO.: 0812011
CHK. BY:	S.R.J.	DWG. NO.: 08120112
REV. BY:	G.L.J.	SHEET NO.: 1



**FIGURE 1**  
**SITE LAYOUT WITH SOIL PROBE LOCATIONS**

PHASE II ENVIRONMENTAL SITE ASSESSMENT  
FORMER WIRE & METAL SPECIALTIES, INC.  
4021 SOUTH KINNICKINNIC AVENUE  
ST. FRANCIS, WISCONSIN

**SOIL NOTES**

P.I.D.: PHOTOIONIZATION DETECTOR LU.  
 LU: INSTRUMENT UNITS  
 VOCs: VOLATILE ORGANIC COMPOUNDS, ug/kg  
 n-BB: n-BUTYLENE, ug/kg  
 1,1-DCA: 1,1-DICHLOROETHANE, ug/kg  
 E: ETHYLENE, ug/kg  
 p-PT: p-ISOPROPYLTOLUENE, ug/kg  
 n-PB: n-PROPYLENE, ug/kg  
 PCE: TETRACHLOROETHENE, ug/kg  
 T: TOLUENE, ug/kg  
 1,1,1-T: 1,1,1-TRICHLOROETHANE, ug/kg  
 TCE: TRICHLOROETHENE, ug/kg  
 TMBs: TOTAL TRIMETHYLBENZENES, ug/kg  
 X: TOTAL XYLENES, ug/kg  
 ug/kg: MICROGRAMS PER KILOGRAM  
 <: LESS THAN  
 ND: NOT DETECTED ABOVE LABORATORY  
 METHOD DETECTION LIMITS

**GROUNDWATER NOTES**

R: BENZENE, ug/l  
 1,1-DCA: 1,1-DICHLOROETHANE, ug/l  
 1,2-DCA: 1,2-DICHLOROETHANE, ug/l  
 1,1-DCE: 1,1-DICHLOROETHENE, ug/l  
 cis-1,2: cis-1,2-DICHLOROETHENE, ug/l  
 trans-1,2: trans-1,2-DICHLOROETHENE, ug/l  
 PCE: TETRACHLOROETHENE, ug/l  
 1,1,1-T: 1,1,1-TRICHLOROETHANE, ug/l  
 TCE: TRICHLOROETHENE, ug/l  
 ug/l: MICROGRAMS PER LITER

GROUNDWATER	
MW-7	
DATE	3/10/99
P	10
1,1-DCA	4.1
1,2-DCA	2.3
1,1-DCE	2.2
cis-1,2	1.1
trans-1,2	2.9
PCE	2.7
1,1,1-T	120
TCE	110

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

SOIL	
GP-4	
DEPTH	3'-5'
PID	<1
PCE	150
T	34
1,1,1-T	220
TCE	1,100

SOIL	
GP-3	
DEPTH	1'-3'
PID	346
n-BB	122,000
1,1-DCA	1,900
E	1,900
p-PT	1,700
n-PB	6,900
PCE	4,200
1,1,1-T	26,000
TCE	7,500
TMBs	20,900
X	1,500

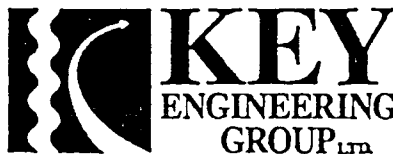
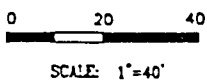
SOIL	
GP-2	
DEPTH	7'-9'
PID	<1
VOCs	ND

**LEGEND**

- ★ MONITORING WELL LOCATION
- CONFIRMATION SOIL SAMPLE LOCATION
- ⊙ SOIL PROBE LOCATION
- CONCENTRATION GREATER THAN NR 140 ENFORCEMENT STANDARD (ES)
- ⊞ CONCENTRATION GREATER THAN NR 140 PREVENTIVE ACTION LIMIT (PAL)

SOURCE: Plot Plan  
 Blong, Kempf and Ehrlich, Inc.  
 July 12, 1973

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**FIGURE 2**  
 SOIL AND GROUNDWATER  
 SAMPLE ANALYTICAL RESULTS

PHASE II ENVIRONMENTAL SITE ASSESSMENT  
 FORMER WIRE & METAL SPECIALTIES, INC.  
 4021 SOUTH KINNICKINNIC AVENUE  
 ST. FRANCIS, WISCONSIN

DRN. BY:	S.L.G.	DATE:	03/19/99
DSN. BY:	S.R.J.	FILE NO.:	0812011
CHK. BY:	S.R.J.	DWG. NO.:	08120113
REV. BY:	G.L.J.	SHEET NO.:	2

TABLE 1  
SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS  
LIMITED PHASE II ENVIRONMENTAL SITE ASSESSMENT  
FORMER WIRE AND METAL SPECIALTIES, INC.  
St. Francis, Wisconsin

PARAMETER	SAMPLE IDENTIFICATION				GRCL
	GP-1	GP-2	GP-3	GP-4	
Date Collected	3/10/99	3/10/99	3/10/99	3/10/99	
Depth (feet)	3-5	7-9	1-3	3-5	
PID (i.u.)	<1	<1	346	<1	
VOCs (ug/kg)					
n-Butylbenzene	<25	<25	22,000	<25	NE
1,1-Dichloroethane	<25	<25	1,900	<25	NE
Ethylbenzene	<25	<25	1,900	<25	2,900
p-Isopropyltoluene	<25	<25	1,700	<25	NE
n-Propylbenzene	<25	<25	6,900	<25	NE
Tetrachloroethene	<25	<25	4,200	150	NE
Toluene	<25	<25	<500	34	1,500
1,1,1-Trichloroethane	<25	<25	26,000	220	NE
Trichloroethene	<25	<25	7,500	1,100	NE
Trimethylbenzenes	<50	<50	20,900	<50	NE
Xylenes	<25	<25	1,500	<25	4,100

Notes:

< - less than

GRCL - NR 720 generic residual contaminant based on the protection of groundwater

i.u. - instrument units

NE - generic RCLs not established

PID - photoionization detector

ug/kg - micrograms per kilogram

VOCs - volatile organic compounds



TABLE 2

## SUMMARY OF GROUNDWATER SAMPLE ANALYTICAL RESULTS

## LIMITED PHASE II ENVIRONMENTAL SITE ASSESSMENT

FORMER WIRE AND METAL SPECIALTIES, INC.

St. Francis, Wisconsin

	MW-7	ES	PAL
Date	3/10/99		
Detected VOCs (ug/l)			
Benzene	<b>10</b>	5	0.5
1,1-Dichloroethane	4.1	850	85
1,2-Dichloroethane	2.3	5	0.5
1,1-Dichloroethene	2.2	7	0.7
cis-1,2-Dichloroethene	1.1	70	7
trans-1,2-Dichloroethene	2.9	100	20
Tetrachloroethene	2.7	5	0.5
1,1,1-Trichloroethane	120	200	40
Trichloroethene	<b>110</b>	5	0.5

Bold values exceed the NR 140 PAL for that substance

Bold and shaded values exceed the NR 140 ES for that substance

ES - NR 140 enforcement standard

PAL - NR 140 preventive action limit

ug/l - micrograms per liter

VOCs - volatile organic compounds

**APPENDIX B**  
**FIELD FORMS, BOREHOLE LOGS**  
**AND**  
**WELL CONSTRUCTION FORMS**

City/Project Name <i>PL Realty - Budget 14th St</i>		Local Grid Location of Well ft. <input type="checkbox"/> N. <input type="checkbox"/> E. <input type="checkbox"/> S. <input type="checkbox"/> W.		Well Name <i>MW-103</i>	
Facility License, Permit or Monitoring No.		Local Grid Origin <input type="checkbox"/> (estimated: <input type="checkbox"/> ) or Well Location <input type="checkbox"/>		Wis. Unique Well No. <i>J0779</i>   DNR Well ID No.	
Facility ID		Lat. _____ " Long. _____ " or		Date Well Installed <i>06/27/2000</i> m m d d y y v v v v	
Type of Well Well Code <i>1</i>		St. Plane _____ ft. N. _____ ft. E. S/C/N		Well Installed By: Name (first, last) and Firm	
Distance from Waste/Source _____ ft.		Section Location of Waste/Source 1/4 of _____ 1/4 of Sec. _____ T. _____ N, R. <input type="checkbox"/> E <input type="checkbox"/> W			
Enf. Stds. Apply <input type="checkbox"/>		Location of Well Relative to Waste/Source <input type="checkbox"/> u Upgradient <input type="checkbox"/> s Sidegradient <input type="checkbox"/> d Downgradient <input type="checkbox"/> n Not Known		Gov. Lot Number	

- A. Protective pipe, top elevation \_\_\_\_\_ ft. MSL
- B. Well casing, top elevation \_\_\_\_\_ ft. MSL
- C. Land surface elevation \_\_\_\_\_ ft. MSL
- D. Surface seal, bottom \_\_\_\_\_ ft. MSL or *0.5* ft.

12. USCS classification of soil near screen:  
 GP  GM  GC  GW  SW  SP   
 SM  SC  ML  MH  CL  CH   
 Bedrock

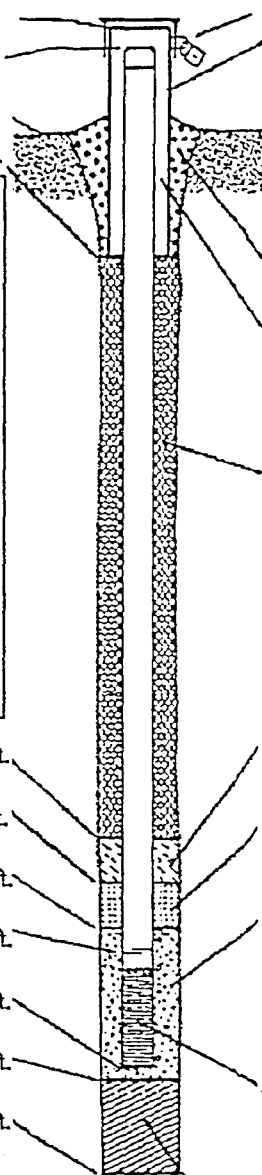
13. Sieve analysis performed?  Yes  No

14. Drilling method used: Rotary  50  
 Hollow Stem Auger  41  
 Other

15. Drilling fluid used: Water  02 Air  01  
 Drilling Mud  03 None  99

16. Drilling additives used?  Yes  No  
 Describe \_\_\_\_\_

17. Source of water (attach analysis, if required):  
 \_\_\_\_\_



- 1. Cap and lock?  Yes  No
- 2. Protective cover pipe:
  - a. Inside diameter: *NA* in.
  - b. Length: *NA* ft.
  - c. Material: Steel  04  
Other
  - d. Additional protection?  Yes  No  
If yes, describe: \_\_\_\_\_
- 3. Surface seal: Bentonite  30  
Concrete  01  
Other
- 4. Material between well casing and protective pipe: Bentonite  30  
Other  *NA*
- 5. Annular space seal:
  - a. Granular/Chipped Bentonite  33
  - b. \_\_\_\_\_ Lbs/gal mud weight ... Bentonite-sand slurry  35
  - c. \_\_\_\_\_ Lbs/gal mud weight ... Bentonite slurry  31
  - d. \_\_\_\_\_ % Bentonite ... Bentonite-cement grout  50
  - e. \_\_\_\_\_ Ft<sup>3</sup> volume added for any of the above
  - f. How installed: Tremie  01  
Tremie pumped  02  
Gravity  08
- 6. Bentonite seal:
  - a. Bentonite granules  33
  - b.  1/4 in.  3/8 in.  1/2 in. Bentonite chips  32
  - c. Other
- 7. Fine sand material: Manufacturer, product name & mesh size  
 a. \_\_\_\_\_  
 b. Volume added \_\_\_\_\_ ft<sup>3</sup>
- 8. Filter pack material: Manufacturer, product name & mesh size  
 a. *Red Flint sands + gravel - Filter sands*  
 b. Volume added *65 - 50 lb bags* ft<sup>3</sup>
- 9. Well casing: Flush threaded PVC schedule 40  23  
 Flush threaded PVC schedule 80  24  
 Other
- 10. Screen material: *Sch 40 PVC*
  - a. Screen type: Factory cut  11  
Continuous slot  01  
Other
  - b. Manufacturer \_\_\_\_\_
  - c. Slot size: *0.010* in.
  - d. Slotted length: *10.2* ft.
- 11. Backfill material (below filter pack): None  14  
Other

- E. Bentonite seal, top \_\_\_\_\_ ft. MSL or *0.5* ft.
- F. Fine sand, top \_\_\_\_\_ ft. MSL or \_\_\_\_\_ ft.
- G. Filter pack, top \_\_\_\_\_ ft. MSL or *8.5* ft.
- H. Screen joint, top \_\_\_\_\_ ft. MSL or *7.5* ft.
- I. Well bottom \_\_\_\_\_ ft. MSL or *19.5* ft.
- J. Filter pack, bottom \_\_\_\_\_ ft. MSL or *22.0* ft.
- K. Borehole, bottom \_\_\_\_\_ ft. MSL or *22.0* ft.
- L. Borehole, diameter \_\_\_\_\_ in.
- M. O.D. well casing *2.38* in.
- N. I.D. well casing *2.05* in.

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

Signature: *[Signature]* Firm: *HST Geotronics, Inc.*

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

Route to: Watershed/Wastewater  Waste Management   
Remediation/Redevelopment  Other

Facility/Project Name <i>MPL - Realty - Budget Metals</i>	County Name <i>Milwaukee</i>	Well Name <i>MW-103</i>
Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number
		DNR Well ID Number

1. Can this well be purged dry?  Yes  No

2. Well development method
- surged with bailer and bailed  41
  - surged with bailer and pumped  61
  - surged with block and bailed  42
  - surged with block and pumped  62
  - surged with block, bailed and pumped  70
  - compressed air  20
  - bailed only  10
  - pumped only  51
  - pumped slowly  50
  - Other

3. Time spent developing well 260 min.

4. Depth of well (from top of well casing) 17.0 ft.

5. Inside diameter of well 2.05 in.

6. Volume of water in filter pack and well casing 30.0 gal.

7. Volume of water removed from well 45.5 gal.

8. Volume of water added (if any) none gal.

9. Source of water added \_\_\_\_\_

10. Analysis performed on water added?  Yes  No  
(If yes, attach results)

17. Additional comments on development:

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. <u>8.98</u> ft.	<u>14.04</u> ft.
Date	b. <u>06/30/2000</u> m m d d y y y y	<u>06/30/2000</u> m m d d y y y y
Time	c. <u>11:15</u> <input checked="" type="checkbox"/> a.m. <input type="checkbox"/> p.m.	<u>15:30</u> <input checked="" type="checkbox"/> a.m. <input type="checkbox"/> p.m.
12. Sediment in well bottom	<u>0.0</u> inches	<u>0.0</u> inches
13. Water clarity	Clear <input type="checkbox"/> 10 Turbid <input checked="" type="checkbox"/> 15 (Describe) <u>brown in color</u> <u>no odor</u> <u>very silty</u>	Clear <input checked="" type="checkbox"/> 20 Turbid <input type="checkbox"/> 25 (Describe) <u>clear in color</u> <u>no odor</u>

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids NA mg/l NA mg/l

15. COD NA mg/l NA mg/l

16. Well developed by: Name (first, last) and Firm  
First Name: David Last Name: Behrman  
Firm: HST Geotrans, Inc.

Name and Address of Facility Contact / Owner / Responsible Party

First Name: \_\_\_\_\_ Last Name: \_\_\_\_\_  
Name: \_\_\_\_\_

Facility/Firm: \_\_\_\_\_

Street: \_\_\_\_\_

City/State/Zip: \_\_\_\_\_

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

Signature: David J. Behrman  
Print Name: David J. Behrman  
Firm: \_\_\_\_\_

Facility/Project Name <i>MPL Realty - Badger Metals</i>	Local Grid Location of Well ft. <input type="checkbox"/> N. <input type="checkbox"/> E. <input type="checkbox"/> S. <input type="checkbox"/> W.	Well Name <i>MW-104</i>
Facility License, Permit or Monitoring No.	Local Grid Origin (estimated: <input type="checkbox"/> ) or Well Location <input type="checkbox"/> Lat. _____ Long. _____ or _____	Wis. Unique Well No. <i>DNR Well ID No.</i>
Facility ID	St. Plane _____ ft. N. _____ ft. E. S/C/N	Date Well Installed <i>06/27/2000</i> m m d d y y v v v v
Type of Well Well Code <i>1</i>	Section Location of Waste/Source 1/4 of _____ 1/4 of Sec. _____ T. _____ N, R. _____ <input type="checkbox"/> E <input type="checkbox"/> W	Well Installed By: Name (first, last) and Firm <i>Dean Dumato</i>
Distance from Waste/Source _____ ft.	Location of Well Relative to Waste/Source u <input type="checkbox"/> Upgradient s <input type="checkbox"/> Sidegradient d <input type="checkbox"/> Downgradient n <input type="checkbox"/> Not Known	<i>North Shore Drilling</i>
Enf. Stds. Apply <input type="checkbox"/>	Gov. Lot Number _____	

A. Protective pipe, top elevation _____ ft. MSL	1. Cap and lock? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
B. Well casing, top elevation _____ ft. MSL	2. Protective cover pipe: Flush mount a. Inside diameter: _____ in. <i>4.4</i> b. Length: _____ ft. <i>14</i> c. Material: Steel <input checked="" type="checkbox"/> 04 Other <input type="checkbox"/>
C. Land surface elevation _____ ft. MSL	d. Additional protection? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, describe: _____
D. Surface seal, bottom _____ ft. MSL or <i>0.2</i> ft.	3. Surface seal: Bentonite <input type="checkbox"/> 30 Concrete <input checked="" type="checkbox"/> 01 Other <input type="checkbox"/>
12. USCS classification of soil near screen: GP <input type="checkbox"/> GM <input type="checkbox"/> GC <input type="checkbox"/> GW <input type="checkbox"/> SW <input type="checkbox"/> SP <input type="checkbox"/> SM <input checked="" type="checkbox"/> SC <input type="checkbox"/> ML <input checked="" type="checkbox"/> MH <input type="checkbox"/> CL <input checked="" type="checkbox"/> CH <input type="checkbox"/> Bedrock <input type="checkbox"/>	4. Material between well casing and protective pipe: Bentonite <input checked="" type="checkbox"/> 30 Other <input type="checkbox"/>
13. Sieve analysis performed? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	5. Annular space seal: a. Granular/Chipped Bentonite <input checked="" type="checkbox"/> 33 b. _____ Lbs/gal mud weight ... Bentonite-sand slurry <input type="checkbox"/> 35 c. _____ Lbs/gal mud weight ... Bentonite slurry <input type="checkbox"/> 31 d. _____ % Bentonite ... Bentonite-cement grout <input type="checkbox"/> 50 e. _____ Ft <sup>3</sup> volume added for any of the above f. How installed: Tremie <input type="checkbox"/> 01 Tremie pumped <input type="checkbox"/> 02 Gravity <input type="checkbox"/> 08
14. Drilling method used: Rotary <input type="checkbox"/> 50 Hollow Stem Auger <input type="checkbox"/> 41 <i>Geoprobe</i> Other <input checked="" type="checkbox"/>	6. Bentonite seal: a. Bentonite granules <input type="checkbox"/> 33 b. <input type="checkbox"/> 1/4 in. <input checked="" type="checkbox"/> 3/8 in. <input type="checkbox"/> 1/2 in. Bentonite chips <input checked="" type="checkbox"/> 32 c. _____ Other <input type="checkbox"/>
15. Drilling fluid used: Water <input type="checkbox"/> 02 Air <input type="checkbox"/> 01 Drilling Mud <input type="checkbox"/> 03 None <input checked="" type="checkbox"/> 99	7. Fine sand material: Manufacturer, product name & mesh size a. _____ b. Volume added _____ ft <sup>3</sup>
16. Drilling additives used? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Describe <i>none used</i>	8. Filter pack material: Manufacturer, product name & mesh size a. <i>Redifit sands and gravel filter sand</i> b. Volume added <i>2-50 lb bags</i> ft <sup>3</sup>
17. Source of water (attach analysis, if required): <i>none used</i>	9. Well casing: Flush threaded PVC schedule 40 <input checked="" type="checkbox"/> 23 Flush threaded PVC schedule 80 <input type="checkbox"/> 24 Other <input type="checkbox"/>
E. Bentonite seal, top _____ ft. MSL or <i>1.5</i> ft.	10. Screen material: <i>sch 40 PVC</i> a. Screen type: Factory cut <input type="checkbox"/> 11 Continuous slot <input checked="" type="checkbox"/> 01 Other <input type="checkbox"/>
F. Fine sand, top _____ ft. MSL or _____ ft.	b. Manufacturer _____ c. Slot size: <i>0.010</i> in. d. Slotted length: <i>1.5</i> ft.
G. Filter pack, top _____ ft. MSL or <i>1.5</i> ft.	11. Backfill material (below filter pack): None <input checked="" type="checkbox"/> 14 Other <input type="checkbox"/>
H. Screen joint, top _____ ft. MSL or <i>3.0</i> ft.	
I. Well bottom _____ ft. MSL or <i>14.0</i> ft.	
J. Filter pack, bottom _____ ft. MSL or <i>2.0</i> ft.	
K. Borehole, bottom _____ ft. MSL or <i>2.0</i> ft.	
L. Borehole, diameter <i>2.0</i> in.	
M. O.D. well casing <i>1.32</i> in.	
N. I.D. well casing <i>1.03</i> in.	

I hereby certify that the information on this form is true and correct to the best of my knowledge.  
Signature *David J. Bohm* Firm *HSI Geotronics*

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

Route to: Watershed/Wastewater  Waste Management   
Remediation/Redevelopment  Other

Facility/Project Name <u>MPL Realty - Badger Metals</u>	County Name <u>Milwaukee</u>	Well Name <u>MW-104</u>
Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number
		DNR Well ID Number

1. Can this well be purged dry?  Yes  No

2. Well development method
- surged with bailer and bailed  41
  - surged with bailer and pumped  61
  - surged with block and bailed  42
  - surged with block and pumped  62
  - surged with block, bailed and pumped  70
  - compressed air  20
  - bailed only  10
  - pumped only  51
  - pumped slowly  50
  - Other

3. Time spent developing well 50 min.

4. Depth of well (from top of well casing) 15.1 ft.

5. Inside diameter of well 1.03 in.

6. Volume of water in filter pack and well casing 0.9 gal.

7. Volume of water removed from well 1.3 gal.

8. Volume of water added (if any) 0.0 gal.

9. Source of water added none added

10. Analysis performed on water added?  Yes  No  
(If yes, attach results)

17. Additional comments on development:

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. <u>9.44</u> ft.	<u>dry</u> ft.
Date	b. <u>06/30/2000</u> m m d d y y y y	<u>06/30/2000</u> m m d d y y y y
Time	c. <u>12:30</u> <input type="checkbox"/> a.m. <input checked="" type="checkbox"/> p.m.	<u>13:20</u> <input type="checkbox"/> a.m. <input checked="" type="checkbox"/> p.m.
12. Sediment in well bottom	<u>0.0</u> inches	<u>0.0</u> inches
13. Water clarity	Clear <input type="checkbox"/> 10 Turbid <input checked="" type="checkbox"/> 15 (Describe) <u>brown in color</u> <u>no color</u> <u>cloudy in appearance</u>	Clear <input checked="" type="checkbox"/> 20 Turbid <input type="checkbox"/> 25 (Describe) <u>clear, no color</u> <u>no color</u>

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids NA mg/l NA mg/l

15. COD NA mg/l NA mg/l

16. Well developed by: Name (first, last) and Firm  
First Name: David Last Name: Bolmann  
Firm: HSI Geotrans

Name and Address of Facility Contact/Owner/Responsible Party

First Name: \_\_\_\_\_ Last Name: \_\_\_\_\_

Facility/Firm: \_\_\_\_\_

Street: \_\_\_\_\_

City/State/Zip: \_\_\_\_\_

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

Signature: David J. Bolmann

Print Name: David J. Bolmann

Firm: HSI Geotrans

**WELL DEVELOPMENT/PURGE SUMMARY**

Well MW-104

PROJECT: MPL Realty  
 PROJECT #: P177  
 LOCATION: St. Francis WI  
 PERSONNEL: DJB

WELL COORDINATES: \_\_\_\_\_  
 PVC RISER ELEVATION: \_\_\_\_\_  
 GROUND LEVEL ELEVATION: \_\_\_\_\_  
 CONSTRUCTED WELL DEPTH: \_\_\_\_\_  
 WELL CASING INSIDE DIAMETER: \_\_\_\_\_

INSTRUMENTS  
 TEMPERATURE: YSI model 63 #3  
 CONDUCTIVITY: \_\_\_\_\_  
 pH METER: \_\_\_\_\_  
 WATER LEVEL PROBE: submersible w.l. probe #3  
 OTHER: \_\_\_\_\_

Date	Time	Method	Water Level* (ft.msl)	Measured Well Depth (ft.msl)	Volume Purged** (gallons)	Appearance	pH (s.u.)	T (C)	Elec. Cond. (umhos/cm)		Comments
						Color / Odor / Clarity			Measured	at 25C	
6-30-00	12:30		9.44	15.12	0.0	brown / none / cloudy	7.02	23.2		845	
6-30-00	12:33				0.5	brown / none / slightly cloudy	7.03	19.8		875	went dry, pumping slower
6-30-00	12:53				0.75	brown / none / slightly cloudy	7.01	20.3		1243	
6-30-00	13:13				1.0	brown / none / clear	6.91	20.4		1330	
6-30-00	13:33		dry	15.12	1.75	brown / none / clear	6.96	19.9		1343	

\* Record both initial and final measurements when using as Well Development Summary.  
 \*\* Purge four borehole volumes, if possible, prior to sampling.

### WELL DEVELOPMENT/PURGE SUMMARY

Well MW-103

PROJECT: AMPL Realty  
 PROJECT #: P177  
 LOCATION: St. Francis, WI  
 PERSONNEL: NJB

WELL COORDINATES: \_\_\_\_\_  
 PVC RISER ELEVATION: \_\_\_\_\_  
 GROUND LEVEL ELEVATION: \_\_\_\_\_  
 CONSTRUCTED WELL DEPTH: \_\_\_\_\_  
 WELL CASING INSIDE DIAMETER: \_\_\_\_\_

INSTRUMENTS  
 TEMPERATURE: YSI Model 63 #3  
 CONDUCTIVITY: \_\_\_\_\_  
 pH METER: \_\_\_\_\_  
 WATER LEVEL PROBE: Solinst #3  
 OTHER: \_\_\_\_\_

Date	Time	Method	Water Level* (ft.msl)	Measured Well Depth (ft.msl)	Volume Purged** (gallons)	Appearance	pH (s.u.)	T (C)	Elec. Cond. (umhos/cm)		Comments
						Color / Odor / Clarity			Measured	at 25C	
6-30-00	11:15		8.48	17.02	0.0						
6-30-00	11:25		7.42		1.5	brown / none / silty	7.09	22.4		1187	
6-30-00	11:33		9.62		2.5	brown / none / silty	7.14	20.6		1190	
6-30-00	11:42		9.97		5.0	brown / none / silty	7.19	21.7		1251	
6-30-00	11:55		11.40		10.0	brown / none / silty	7.17	22.3		1280	
6-30-00	12:01		11.55		15.0	brown / none / cloudy	7.19	20.9		1272	
6-30-00	12:10		11.70		20.0	brown / none / cloudy	7.20	21.3		1148	
6-30-00	12:22		13.52		30.0	brown / none / cloudy	7.20	21.9		1204	went dry at approx. 31 gallons
6-30-00	13:07		13.89		35.0	clear / none / clear	7.19	19.4		1231	went dry at approx. 36 gallons
6-30-00	15:15		12.73		40.0	brown / none / slightly cloudy	7.18	19.6		1247	
6-30-00	15:30		14.04	17.04	45.0	clear / none / clear	7.18	19.7		1243	went dry after approx. 45.5 gallons
6-30-00	15:35										collected sample

\* Record both initial and final measurements when using as Well Development Summary.  
 \*\* Purge four borehole volumes, if possible, prior to sampling.

HSI GEOTRANS



**WELL DEVELOPMENT/PURGE SUMMARY**

Well MW-104

PROJECT: MPL Realty  
 PROJECT #: P177  
 LOCATION: 51 Francis, WI  
 PERSONNEL: DJR

WELL COORDINATES: \_\_\_\_\_  
 PVC RISER ELEVATION: \_\_\_\_\_  
 GROUND LEVEL ELEVATION: \_\_\_\_\_  
 CONSTRUCTED WELL DEPTH: \_\_\_\_\_  
 WELL CASING INSIDE DIAMETER: \_\_\_\_\_

INSTRUMENTS  
 TEMPERATURE: YSI Model 63 #3  
 CONDUCTIVITY: \_\_\_\_\_  
 pH METER: \_\_\_\_\_  
 WATER LEVEL PROBE: Selinst W.L. #3  
 OTHER: \_\_\_\_\_

Date	Time	Method	Water Level* (ft.msl)	Measured Well Depth (ft.msl)	Volume Purged** (gallons)	Appearance	pH (s.u.)	T (C)	Elec. Cond. (umhos/cm)		Comments	
						Color / Odor / Clarity			Measured	at 25C		
6-30-00	12:30		4.44	15.12	0.0	brown / none / cloudy	7.02	23.2		895		
6-30-00	12:33				0.5	brown / none / slightly cloudy	7.03	19.8		875	went dry, will try pumping slower	
6-30-00	12:40				0.75	brown / none / slightly cloudy	7.01	20.3		1243	went dry again, will pump slower	
6-30-00	13:00				1.0	clear / none / clear	6.41	20.4		1330		
6-30-00	13:30		dry	15.12	1.25	clear / none / clear	6.40	19.9		1343		
6-30-00	13:70										sample collected	
			NOTE:	This is a one inch well, so the tubing for the pump and the water level probe could not both fit in the well at the same time.								

\* Record both initial and final measurements when using as Well Development Summary.  
 \*\* Purge four borehole volumes, if possible, prior to sampling.

HSI GEOTRANS

## FIELD WATER QUALITY SAMPLING AND ANALYSIS

PROJECT: MPL Realty  
 PROJECT #: P177  
 LOCATION: 41 Francis, WI  
 PERSONNEL: BSB

INSTRUMENTS

TEMPERATURE: YSI model 63 #3  
 CONDUCTIVITY: \_\_\_\_\_  
 PH: \_\_\_\_\_  
 OTHER: \_\_\_\_\_

GENERAL:		SAMPLE POINT	MW-104	MW-8	MW-7	MW-102	MW-103
WATER TYPE			groundwater				
DATE			6-30-00				
CLOCK TIME			13:20	14:15	14:35	14:55	15:35
DEPTH TO WATER*			9.44	8.13	9.20	9.70	8.98
MEASURED WELL DEPTH			15.12	15.49	15.46	18.10	17.02
PURGE VOL/CASING VOL(g)			1.75/dry	1.5/dry	3.5/dry	5.5	45.5/dry
DEPTH SAMPLE TAKEN							
SAMPLING DEVICE			disposable 0.75 in diameter bailer	dedicated bailer			
FIELD TEMPERATURE (°C)			19.9	19.0	18.8	17.6	19.7
ELEC. COND. (µmhos/cm)	MEASURED						
	AT 25°C		1343	819	753 mS	1531	1243
PH			6.40	7.27	6.93	7.28	7.18
ALKALINITY			NM				
COLOR			clear	light brown	light brown	light brown	clear
ODOR			none	none	none	none	none
CLARITY			clear	cloudy	cloudy	cloudy	clear
SAMPLING PARAMETERS		# OF CONTAINERS & CONT. VOLUME; CONTAINER TYPE (A=AMBER GLASS; G=GLASS; P=PLASTIC); PRESERVATIVE TYPE - (L=LAB ADDED; F=FIELD ADDED) OR NEUTRAL; FILTERED (YES OR NO)					
VOCs							
LABORATORY: SENT TO:							
DATE SENT:							
SAMPLED BY:							

\*Measured from top of well riser.

# SOIL BOREHOLE LOG

SITE NAME AND LOCATION: MPL Realty - Badger Metals 4021 South Kinnickinnic Saint Francis, WI			DRILLING METHOD: <u>Geoprobe</u>		BORING NO.	
DATUM: <u>msl</u> ELEVATION:			SAMPLE METHOD: <u>Geoprobe Macro Core</u>		SHEET OF	
DRILL RIG:			SURFACE CONDITIONS:		DRILLING	
ANGLE: <u>Vertical</u> BEARING: <u>---</u>			SAMPLE HAMMER TORQUE: <u>        </u> FT.-LBS		START TIME	
DRILL RIG:			SURFACE CONDITIONS:		FINISH TIME	
ANGLE: <u>Vertical</u> BEARING: <u>---</u>			SAMPLE HAMMER TORQUE: <u>        </u> FT.-LBS		DATE	
DRILL RIG:			SURFACE CONDITIONS:		DATE	
ANGLE: <u>Vertical</u> BEARING: <u>---</u>			SAMPLE HAMMER TORQUE: <u>        </u> FT.-LBS		DATE	

DEPTH IN FEET (ELEVATION)	BLOWS/ 6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS				
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	SPEC. GRAVITY	OTHER TESTS (ppm)
0											
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											

DRILLING CONTR North Shore Drilling

LOGGED BY David Schwartz

DATE \_\_\_\_\_

# SOIL BOREHOLE LOG

SITE NAME AND LOCATION: MPL Realty - Badger Metals 4621 South Kinnickinnic Saint Francis, WI		DRILLING METHOD: <u>Geoprobe</u>		BORING NO. GP-101	
		SAMPLE METHOD: <u>Geoprobe macro core</u>		SHEET 1 OF 3	
		WATER LEVEL TIME DATE		DRILLING START TIME FINISH TIME	
DATUM: <u>msl</u>		ELEVATION:		DATE	
DRILL RIG:		SURFACE CONDITIONS:		DATE	
ANGLE: <u>Vertical</u>		BEARING: <u>---</u>			
SAMPLE HAMMER TORQUE		FT.-LBS			

DEPTH IN FEET (ELEVATION)	BLOWS/ 6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS				
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	SPEC. GRAVITY	PID (ppm)
0			0.0' - 0.5' Asphalt and stuff								
1			0.5' - 1.3' gray (10YR 5/1) sandy gravel with silt 30% sand, 10% silt, 60% gravel								12.4
2	95%		1.3' - 2.25' very dark gray (10YR 3/1) 60% silt 30% sand, 10% gravel								8.7
3			2.25' - 2.5' yellowish brown (10YR 5/4) 60% silt 30% sand, 10% clay								
4			2.5' - 4.0' very dark grayish brown (10YR 3/2) 60% silt, 30% sand, 10% clay								1.1
5			4.0' - 5.0' very dark grayish brown (10YR 3/2) 50% silt, 35% sand, 10% clay, 5% gravel								
6	95%		5.0' - 6.0' yellowish brown (10YR 5/4) 50-60% silty clay, 40-50% sand								
7			6.0' - 7.5' yellowish brown (10YR 5/4) 75-85% silty clay, 15-25% sand								0.1
8			7.5' - 8.3' yellowish brown (10YR 5/4) 40% silt 60% sand, wet								
9	90%		8.3' - 12.0' yellowish brown (10YR 5/4) 50% clay, 30% silt, 20% sand, moist								0.1
10											
11											
12											

DRILLING CONTR North Shore Drilling

LOGGED BY David Behrman

DATE

# SOIL BOREHOLE LOG

SITE NAME AND LOCATION: MPL Realty - Badger Metals 4021 South Kinnickinnic Saint Francis, WI				DRILLING METHOD: <u>Geoprobe</u>				BORING NO. GP-101	
				SAMPLE METHOD: <u>Geoprobe Macro Core</u>				SHEET 2 OF 3	
				WATER LEVEL TIME DATE		CASING DEPTH		DRILLING START TIME FINISH TIME	
DATUM: <u>msl</u>		ELEVATION:		SURFACE CONDITIONS:					
DRILL RIG:		ANGLE: <u>Vertical</u>		BEARING: <u>---</u>					
SAMPLE HAMMER TORQUE		FT.-LBS							

DEPTH IN FEET (ELEVATION)	BLOWS/ 6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS					
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	SPEC. GRAVITY	PID (PPM)	
12			12.0 - 13.0' same as previous									
13			13.0 - 13.8' yellowish brown (10/2 5/6) 50% silt, 30% sand, 20% clay, moist									0.1
14	75%		13.8' - 17.0' grayish brown (10/2 5/2) 75% clay with some silt, 25% sand, moist									0.0
15			17.0' - 18.5' gray (10/2 5/1) clay with little silt									0.0
16			18.5' - 19.8' gray (10/2 5/1) 75% clay with little silt, 25% sand, moist									0.0
17			19.8' - 20.0' grayish brown (10/2 5/2) 90% sand 10% silt, wet									0.0
18	55%											0.0
19												0.0
20			20.0 - 22.0' sluff									0.1
21			22.0 - 24.0' gray (10/2 5/1) clay									0.0
22	55%											0.0
23												0.0
24												0.0

DRILLING CONTR North Shore Drilling

LOGGED BY David Bohmann

DATE

# SOIL BOREHOLE LOG

SITE NAME AND LOCATION: MPL Realty - Badger Metals 4021 South Kinnickinnic Saint Francis, WI		DRILLING METHOD: <u>Geoprobe</u>		BORING NO. GP-101	
DATUM: <u>msl</u> ELEVATION:		SAMPLE METHOD: <u>Geoprobe macro core</u>		SHEET 2 OF 3	
DRILL RIG:		WATER LEVEL TIME DATE		DRILLING START TIME      FINISH TIME	
ANGLE: <u>Vertical</u> BEARING ---		CASING DEPTH		DATE              DATE	
SAMPLE HAMMER TORQUE		FT.-LBS		SURFACE CONDITIONS:	

DEPTH IN FEET (ELEVATION)	BLOWS/ 6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS					
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	SPEC. GRAVITY	PID (ppm) OTHER TESTS	
24			24.0 - 26.0 <u>cluff</u>									
25	50%		26.0 - 28.0 <u>gray (10% Si) clay</u>									0.0
26												
27												0.0
28			28.0' - 29.3' <u>sluff</u>									
29	40%		29.3 - 30.0' <u>gray (10% Si) clay</u>									0.0
30			E.O.B. 30.0' <u>logs</u>									

 DRILLING CONTR North Shore Drilling

 LOGGED BY David Schwann

DATE \_\_\_\_\_

# SOIL BOREHOLE LOG

SITE NAME AND LOCATION: MPL Realty - Badger Metals 4021 South Kinnickinnic Saint Francis, WI		DRILLING METHOD: <u>Geoprobe</u>		BORING NO. <u>GP-104</u>	
		SAMPLE METHOD: <u>Geoprobe Macro Core</u>		SHEET 1 OF 1	
DATUM: <u>msl</u> ELEVATION:		WATER LEVEL TIME DATE		DRILLING START TIME      FINISH TIME	
DRILL RIG:		SURFACE CONDITIONS:		DATE              DATE	
ANGLE: <u>Vertical</u> BEARING <u>---</u>		CASING DEPTH			
SAMPLE HAMMER TORQUE		FT.-LBS			

DEPTH IN FEET (ELEVATION)	BLOWS/6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS						
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	SPEC. GRAVITY	PID (ppm) OTHER TESTS		
0			1 ft of concrete and rebar comprised the floor of the building										
1			1.0-3.0 void space under the floor										
2													
3													
4			3.0'-4.0' dark yellowish brown (104R 4/4) silty clay (70%), 20% sand, 10% gravel										2.9
5	45%		4.0'-4.75' dark yellowish brown (104R 4/4) 40% silt, 30% sand, 30% clay										
6			4.75'-5.25' dark brown (104R 3/3) clay 50% silt 40% sand 10%										1.4
7			5.25'-6.25' dark yellowish brown (104R 4/4) 70% clay, 30% silt										1.2
8	45%		6.25'-7.5' dark yellowish brown (104R 3/4) 50% silt, 40% sand, 10% clay										
9			7.5'-9.0' brownish yellow (104R 4/6) 50% silt, 40% sand, 10% clay. wet at 8.5'										
10			9.0'-10.0' brownish yellow (104R 4/6)										1.4
11			E.O.B. 10.0' bgs										
12													

DRILLING CONTR North Shore Drilling

LOGGED BY David Bohmann

DATE

# SOIL BOREHOLE LOG

SITE NAME AND LOCATION: MPL Realty - Badger Metals 4021 South Kinnickinnic Saint Francis, WI		DRILLING METHOD: <u>Geoprobe</u>		BORING NO. GP-105	
		SAMPLE METHOD: <u>Geoprobe Macro Core</u>		SHEET ( OF 1 )	
		WATER LEVEL TIME DATE		DRILLING START TIME FINISH TIME	
DATUM: <u>msl</u>		ELEVATION:		CASING DEPTH	
DRILL RIG:		SURFACE CONDITIONS:			
ANGLE: <u>Vertical</u>		BEARING ---			
SAMPLE HAMMER TORQUE		FT.-LBS			

DEPTH IN FEET (ELEVATION)	BLOWS/ 6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS						
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	SPEC. GRAVITY	PID (ppm) OTHER TESTS		
0			0.0-1.0 concrete and rebar comprising the floor of the building										
1			1.0-3.0 void space under floor of building										
2			3.0-3.25' white (10YR 8/1) 70% gravel, 15% sand, 15% silt										
3			3.25'-3.5' dark yellowish brown (10YR 4/1) 60% silt 30% sand, 10% gravel										0.1
4	100%		3.5'-4.0' yellowish brown (10YR 5/6) 60% sand, 40% silt										
5			4.0'-5.5' yellowish brown (10YR 5/6) 50% clay 30% silt, 20% sand, moist at 5'										0.2
6			5.5'-6.0' black (10YR 2/1) 60% clay, 20% silt 20% sand, moist										0.0
7			6.0'-6.25' yellowish brown (10YR 5/4) 50% silt, 30% sand, 20% clay,										
8	45%		6.25'-7.0' light gray (10YR 7/5) 70% gravel, 20% sand, 10% silt										
9			7.0'-8.5' dark brown (10YR 2/3) 60% clay, 30% silt, 10% sand moist at 8'										0.0
10			8.5'-10.0' dark yellowish brown (10YR 4/4) 90% clay, 10% silt, very hard										
11													
12			E.O.S. 10.0' logs										

DRILLING CONTR North Shore Drilling

LOGGED BY David Bohmann

DATE



# SOIL BOREHOLE LOG

SITE NAME AND LOCATION: MPL Realty - Badger Metals 4021 South Kinnickinnic Saint Francis, WI		DRILLING METHOD: <u>Geoprobe</u>	BORING NO. <u>GP-107</u>
		SAMPLE METHOD: <u>Geoprobe macro core</u>	SHEET ( OF 1
		WATER LEVEL TIME DATE	DRILLING START TIME FINISH TIME
DATUM: <u>msl</u> ELEVATION:		CASING DEPTH	DATE DATE
DRILL RIG:		SURFACE CONDITIONS:	
ANGLE: <u>Vertical</u> BEARING: <u>---</u>			
SAMPLE HAMMER TORQUE		FT.-LBS	

DEPTH IN FEET (ELEVATION)	BLOWS/6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS					
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	SPEC. GRAVITY OTHER TESTS		
0			0.0'-1.0' concrete and rebar that comprise the floor of the building									
1			1.0'-3.0' void space under the floor									
2			3.0'-3.25' light gray (1042 7/2) 60% gravel, 20% sand, 20% silt									
3			3.25'-4.0' dark brown (1042 4/3) 50% silt, 20% sand, 15% clay, 10% gravel, moist									
4	95%		4.0'-4.25' light gray (1042 7/2) 60% gravel, 20% sand, 20% silt								0.0	
5			4.25'-4.75' yellowish brown (1042 5/4) 80% clay, 20% silt									
6			4.75'-5.5' yellowish brown (1042 5/4) 50% clay, 30% silt, 20% sand								0.0	
7			5.5'-7.0' very dark grayish brown (1042 3 1/2) 50% clay, 40% silt, 10% sand, moist									
8	95%		7.0'-8.0' dark yellowish brown (1042 4 1/2) 90% clay, 10% silt, hard								0.1	
9			8.0'-9.25' dark yellowish brown (1042 4 1/4) silty clay with 20% sand, wet									
10			9.25'-10.0' dark yellowish brown (1042 4/4)								0.0	
11			E.O.B. 10.0' bgs									
12												

DRILLING CONTR North Shore Drilling

LOGGED BY David Schwann

DATE

# SOIL BOREHOLE LOG

SITE NAME AND LOCATION: MPL Realty - Badger Metals 4021 South Kinnickinnic Saint Francis, WI			DRILLING METHOD: <u>Geoprobe</u>			BORING NO. SPLP-3		
			SAMPLE METHOD: <u>Geoprobe macro core</u>			SHEET 1 OF 1		
			WATER LEVEL TIME DATE			DRILLING START TIME FINISH TIME		
			CASING DEPTH			DATE DATE		
DATUM: <u>msl</u>			ELEVATION:					
DRILL RIG:			SURFACE CONDITIONS:					
ANGLE: <u>Vertical</u>			BEARING: <u>---</u>					
SAMPLE HAMMER TORQUE			FT.-LBS					

DEPTH IN FEET (ELEVATION)	BLOWS/ 6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS							
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	SPEC. GRAVITY	PID (ppm) OTHER TESTS			
0			0.0 - 0.5' asphalt and stuff											
1			0.5' - 1.5' white (104R 8/1) 50% gravel, 30% sand, 20% silt											6.9
2	85%		1.5' - 2.25' very dark grayish brown (104R 3/2) 70% gravel, 30% silt											
3			2.25' - 2.5' very dark gray (104R 3/1) 90% silt, 10% clay											2.0
4			2.5' - 5.0' dark brown (104R 4/3) 60% clay, 30% silt, 10% sand											
5			5.0' - 5.25' light gray (104R 7/1) 60% gravel, 20% sand, 20% silt											2.1
6	95%		5.25' - 7.0' very dark grayish brown (104R 3/2) 70% silt, 20% sand, 10% clay											
7			7.0' - 7.5' dark yellowish brown (104R 4/6) 60% silt, 40% sand, moist											1.4
8			7.5' - 9.0' yellowish brown (104R 5/6) 60% silt, 40% sand, moist											
9														2.3
10														
11			E.O.B. 10.0' bgs											
12														

 DRILLING CONTR North Shore Drilling

 LOGGED BY David Bohmann

DATE \_\_\_\_\_

# SOIL BOREHOLE LOG

SITE NAME AND LOCATION: MPL Realty - Badger Metals 4621 South Kinnickinnic Saint Francis, WI				DRILLING METHOD: <u>Geoprobe</u>				BORING NO. MW-103						
				SAMPLE METHOD: <u>Geoprobe macro core</u>				SHEET 1 OF 2						
DATUM: <u>msl</u>				ELEVATION:				DRILLING START TIME						
DRILL RIG:				WATER LEVEL TIME DATE				FINISH TIME DATE						
ANGLE: <u>Vertical</u>				BEARING: <u>---</u>				SURFACE CONDITIONS:						
SAMPLE HAMMER TORQUE				FT.-LBS				DATE						
DEPTH IN FEET (ELEVATION)	BLOWS/ 6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS							
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	SPEC. GRAVITY	PID (ppm) OTHER TESTS			
0			0.0-1.0' concrete and sluff											
1			1.0-1.5' white (101R 8/1) 60% gravel, 30% sand, 10% silt											0.0
2	90%		1.5-2.0' dark yellowish brown (101R 4/1) 70% silt 20% clay, 10% sand											0.1
3			2.0-3.0' very dark gray (101R 3/1) 70% silt, 30% clay											0.1
4			3.0-5.0' dark yellowish brown (101R 4/0) silty clay											0.0
5			5.0-5.8' dark yellowish brown (101R 4/0) 80% silty clay, 20% sand											0.0
6	95%		5.8-6.0' white (101R 8/1) silty clay											0.0
7			6.0-8.5' yellowish brown (101R 5/1) 65% silt, 25% clay, 10% sand, moist at 7'											0.0
8			8.5-9.5' light olive brown (2.54 5/6) 60% clay, 30% silt, 10% gravel											0.1
9			9.5-11.25' yellowish brown (101R 5/0) 60% silt, 20% sand, 20% clay, moist											0.1
10	100%		11.75-12.0' grayish brown (101R 5/2) 60% silt, 20% sand, 20% clay, moist											0.1
11														
12														

DRILLING CONTR North Shore Drilling

LOGGED BY David Schwann

DATE

# SOIL BOREHOLE LOG

SITE NAME AND LOCATION: MPL Realty - Badger Metals 4621 South Kinnickinnic Saint Francis, WI		DRILLING METHOD: <u>Geoprobe</u>		BORING NO. MW-103	
DATUM: <u>msl</u>		ELEVATION:		SHEET 2 OF 2	
DRILL RIG:		SURFACE CONDITIONS:		DRILLING START TIME      FINISH TIME	
ANGLE: <u>Vertical</u>		BEARING: <u>---</u>		DATE                  DATE	
SAMPLE HAMMER TORQUE		FT.-LBS		CASING DEPTH	

DEPTH IN FEET (ELEVATION)	BLOWS/ 6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS				
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	SPEC. GRAVITY	PID (ppm)

12			12.0-15.0' gray (10% 5%) 40% sand, 10% silt wet							0.0
13			15.0-15.5' gray (10% 5%) 60% sand, 30% silt, 10% clay, wet							
14	75%		15.5'-16.0' gray (10% 5%) 90% clay, 5% sand, 5% gravel, dry							0.0
15										
16			16.0'-20.0' gray (10% 5%) 85% clay, 10% silt, 5% sand							0.0
17										
18	25%		E.O.B. 20.0' bgs							
19										0.0
20										

DRILLING CONTR North Shore Drilling

LOGGED BY David Schumann

DATE \_\_\_\_\_

# SOIL BOREHOLE LOG

SITE NAME AND LOCATION: MPL Realty - Badger Metals 4621 South Kinnickinnic Saint Francis, WI		DRILLING METHOD: <u>Geoprobe</u>			BORING NO. MW-104	
		SAMPLE METHOD: <u>Geoprobe macro core</u>			SHEET 1 OF 2	
DATUM: <u>msl</u>		ELEVATION:		DRILLING START TIME      FINISH TIME		
DRILL RIG:		SURFACE CONDITIONS:		DATE                      DATE		
ANGLE: <u>Vertical</u>		BEARING: <u>---</u>				
SAMPLE HAMMER TORQUE		FT.-LBS				

DEPTH IN FEET (ELEVATION)	BLOWS/ 6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS					
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	SPEC. GRAVITY	OTHER TESTS (ppm)	
0			0.0 - 1.25' dark brown (104R 3/3) 65% silt, 30% sand, 5% organics (roots)									
1			1.25 - 6.0' dark yellowish brown (104R 4/6)									0.3
2	40%		60% silt, 30% sand, 10% gravel									
3			6.0 - 6.8' dark grayish brown (104R 4/2) silt with sand, 70% silt, 30% sand									0.1
4			6.8 - 8.5' dark yellowish brown (104R 4/6)									
5			60% silt, 30% sand, 10% clay									0.2
6	100%		8.5 - 9.0' dark brown (104R 3/3) 60% silt, 30% sand, 10% clay									
7			9.0 - 9.25' dark brown (104R 4/3) 60% silt, 30% sand, 10% clay, moist									
8			9.25 - 11.5' yellowish brown (104R 3/6) 50% silt, 40% sand, 10% clay, wet at 10' bgs									0.0
9			11.5 - 12.0' yellowish brown (104R 5/6)									0.0
10	85%		80% silty clay, 20% sand, 10% gravel, wet									0.0
11												
12												

DRILLING CONTR. North Shore Drilling

LOGGED BY David Schmitt

DATE

# SOIL BOREHOLE LOG

SITE NAME AND LOCATION: MPL Realty - Badger Metals 4021 South Kinnickinnic Saint Francis, WI				DRILLING METHOD: <u>Geoprobe</u>				BORING NO. MW-104	
				SAMPLE METHOD: <u>Geoprobe macro core</u>				SHEET 2 OF 2	
				WATER LEVEL TIME DATE				DRILLING START TIME FINISH TIME	
DATUM: <u>msl</u>				ELEVATION:				DATE	
DRILL RIG:				SURFACE CONDITIONS:				DATE	
ANGLE: <u>Vertical</u>				BEARING: <u>---</u>					
SAMPLE HAMMER TORQUE				FT.-LBS					

DEPTH IN FEET (ELEVATION)	BLOWS/ 6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS				
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	SPEC. GRAVITY	PID (ppm) OTHER TESTS
12			12.0 - 14.0' yellowish brown (104R 5/6) 80% silty clay, 10% sand, 10% gravel, wet								0.0
13											
14	75%		14.0 - 15.5' yellowish brown (104R 5/6) 50% sand, 50% silt with some clay, wet								0.0
15			15.5 - 16.0' yellowish brown (104R 5/6) 80% silty clay, 20% sand, wet								
16											
17			16.0 - 17.8' yellowish brown (104R 5/6) 70% sand, 30% silts and clays, wet								0.0
18	75%		17.8 - 18.25' yellowish brown (104R 5/2) 50% sand, 50% silty clay, wet								
19			18.25 - 19.0' gray (104R 5/1) clay with some silts								0.0
20			19.0 - 20.0' gray (104R 5/1) clay								

DRILLING CONTR Willing North Shore

LOGGED BY David Behmann

DATE

**APPENDIX C**  
**LABORATORY ANALYTICAL RESULTS**

# U.S. Analytical Lab

RECEIVED

JUL 19 1999

**MASTER FILE COPY**

PROJECT # P177

CC: \_\_\_\_\_

JERRY DEMERS  
 HSI GEOTRANS  
 175 N. CORPORATE DRIVE SUITE 100  
 BROOKFIELD, WI 53045

Project # P177  
 Project Name MPL REALTY  
 Invoice # E26309

Report Date 15-Jul-99

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code
Lab Code	5026309A								
Sample ID	GP-20 (0-2)								
						Sample Type	Soil		
						Sample Date	7/8/99		
<b>Inorganic</b>									
<b>General</b>									
Solids Percent	88.8	%			1	7/12/99	5021	RMB	1
<b>Organic</b>									
<b>VOC's</b>									
Benzene	< 25	ug/kg	6.2	21	1	7/12/99	8260B	CJR	1
Bromobenzene	< 25	ug/kg	4.3	14	1	7/12/99	8260B	CJR	1
Bromochloromethane	< 25	ug/kg	4.6	15	1	7/12/99	8260B	CJR	1
tert-Butylbenzene	< 25	ug/kg	6.5	22	1	7/12/99	8260B	CJR	1
sec-Butylbenzene	< 25	ug/kg	4.1	14	1	7/12/99	8260B	CJR	1
n-Butylbenzene	< 25	ug/kg	3.1	10	1	7/12/99	8260B	CJR	1
Carbon Tetrachloride	< 25	ug/kg	4	13	1	7/12/99	8260B	CJR	1
Chlorobenzene	< 25	ug/kg	5.3	18	1	7/12/99	8260B	CJR	1
Chloroethane	< 25	ug/kg	11	37	1	7/12/99	8260B	CJR	37
Chloroform	< 25	ug/kg	3.1	10	1	7/12/99	8260B	CJR	1
Chloromethane	< 25	ug/kg	6.9	23	1	7/12/99	8260B	CJR	1
2-Chlorotoluene	< 25	ug/kg	4.6	15	1	7/12/99	8260B	CJR	1
4-Chlorotoluene	< 25	ug/kg	4.4	15	1	7/12/99	8260B	CJR	1
1,2-Dibromo-3-chloropropane	< 25	ug/kg	11	37	1	7/12/99	8260B	CJR	1
Dibromochloromethane	< 25	ug/kg	5.4	18	1	7/12/99	8260B	CJR	1
1,4-Dichlorobenzene	< 25	ug/kg	4.4	15	1	7/12/99	8260B	CJR	1
1,3-Dichlorobenzene	< 25	ug/kg	4.4	15	1	7/12/99	8260B	CJR	1
1,2-Dichlorobenzene	< 25	ug/kg	3.6	12	1	7/12/99	8260B	CJR	1
Dichlorodifluoromethane	< 25	ug/kg	11	37	1	7/12/99	8260B	CJR	1
1,2-Dichloroethane	< 25	ug/kg	8.3	28	1	7/12/99	8260B	CJR	1
1,1-Dichloroethane	120	ug/kg	4.7	16	1	7/12/99	8260B	CJR	1
1,1-Dichloroethene	< 25	ug/kg	4.5	15	1	7/12/99	8260B	CJR	1
cis-1,2-Dichloroethene	26	ug/kg	5	17	1	7/12/99	8260B	CJR	1
trans-1,2-Dichloroethene	< 25	ug/kg	4.5	15	1	7/12/99	8260B	CJR	1
1,2-Dichloropropane	< 25	ug/kg	4.2	14	1	7/12/99	8260B	CJR	1
2,2-Dichloropropane	< 25	ug/kg	4	13	1	7/12/99	8260B	CJR	1
1,3-Dichloropropane	< 25	ug/kg	4.3	15	1	7/12/99	8260B	CJR	1
Di-isopropyl ether	< 25	ug/kg	3	10	1	7/12/99	8260B	CJR	1
EDB (1,2-Dibromoethane)	< 25	ug/kg	3.5	12	1	7/12/99	8260B	CJR	1
Ethylbenzene	37	ug/kg	4.4	15	1	7/12/99	8260B	CJR	1
Hexachlorobutadiene	< 25	ug/kg	7.5	25	1	7/12/99	8260B	CJR	1



# U.S. Analytical Lab

JERRY DEMERS  
 HSI GEOTRANS  
 175 N. CORPORATE DRIVE SUITE 100  
 BROOKFIELD, WI 53045

Project # P177  
 Project Name MPL REALTY  
 Invoice # E26309

Report Date 15-Jul-99

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code
Lab Code	5026309A					Sample Type	Soil		
Sample ID	GP-20 (0-2)					Sample Date	7/8/99		
Isopropylbenzene	< 25	ug/kg	5.2	17	1	7/12/99	8260B	CJR	1
p-Isopropyltoluene	< 25	ug/kg	3.1	10	1	7/12/99	8260B	CJR	1
Methylene chloride	< 25	ug/kg	11	35	1	7/12/99	8260B	CJR	1
MTBE	< 25	ug/kg	5.6	19	1	7/12/99	8260B	CJR	1
Naphthalene	< 25	ug/kg	4.2	14	1	7/12/99	8260B	CJR	1
n-Propylbenzene	< 25	ug/kg	4.5	15	1	7/12/99	8260B	CJR	1
1,1,2,2-Tetrachloroethane	< 25	ug/kg	3.4	11	1	7/12/99	8260B	CJR	1
Tetrachloroethene	1000	ug/kg	6.1	21	1	7/12/99	8260B	CJR	1
Toluene	< 25	ug/kg	5.3	18	1	7/12/99	8260B	CJR	1
1,2,4-Trichlorobenzene	< 25	ug/kg	4.4	15	1	7/12/99	8260B	CJR	1
1,2,3-Trichlorobenzene	< 25	ug/kg	4	14	1	7/12/99	8260B	CJR	1
1,1,1-Trichloroethane	620	ug/kg	6.7	22	1	7/12/99	8260B	CJR	1
1,1,2-Trichloroethane	< 25	ug/kg	3.7	12	1	7/12/99	8260B	CJR	1
Trichloroethene	520	ug/kg	4.5	15	1	7/12/99	8260B	CJR	1
Trichlorofluoromethane	45 "J"	ug/kg	14	45	1	7/12/99	8260B	CJR	2 4
1,2,4-Trimethylbenzene	34	ug/kg	4.5	15	1	7/12/99	8260B	CJR	1
1,3,5-Trimethylbenzene	< 25	ug/kg	4.1	14	1	7/12/99	8260B	CJR	1
Vinyl Chloride	< 25	ug/kg	5.6	19	1	7/12/99	8260B	CJR	1
m&p-Xylene	770	ug/kg	8.2	27	1	7/12/99	8260B	CJR	1
o-Xylene	450	ug/kg	2.5	8.4	1	7/12/99	8260B	CJR	1

Lab Code	5026309B					Sample Type	Soil		
Sample ID	GP-20 (8-10)					Sample Date	7/8/99		

Inorganic

General

Solids Percent	88.8	%			1	7/12/99	5021	RMB	1
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Organic

VOC's

Benzene	< 25	ug/kg	6.2	21	1	7/13/99	8260B	CJR	1
Bromobenzene	< 25	ug/kg	4.3	14	1	7/13/99	8260B	CJR	1
Bromochloromethane	< 25	ug/kg	4.6	15	1	7/13/99	8260B	CJR	1
tert-Butylbenzene	< 25	ug/kg	6.5	22	1	7/13/99	8260B	CJR	1
sec-Butylbenzene	< 25	ug/kg	4.1	14	1	7/13/99	8260B	CJR	1
n-Butylbenzene	< 25	ug/kg	3.1	10	1	7/13/99	8260B	CJR	1
Carbon Tetrachloride	< 25	ug/kg	4	13	1	7/13/99	8260B	CJR	1
Chlorobenzene	< 25	ug/kg	5.3	18	1	7/13/99	8260B	CJR	1

# U.S. Analytical Lab

JERRY DEMERS  
 HSI GEOTRANS  
 175 N. CORPORATE DRIVE SUITE 100  
 BROOKFIELD, WI 53045

Project # P177  
 Project Name MPL REALTY  
 Invoice # E26309

Report Date 15-Jul-99

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code	
Lab Code	5026309B					Sample Type	Soil			
Sample ID	GP-20 (8-10)					Sample Date	7/8/99			
Chloroethane	< 25	ug/kg	11	37	1	7/13/99	8260B	CJR	37	
Chloroform	< 25	ug/kg	3.1	10	1	7/13/99	8260B	CJR	1	
Chloromethane	< 25	ug/kg	6.9	23	1	7/13/99	8260B	CJR	1	
2-Chlorotoluene	< 25	ug/kg	4.6	15	1	7/13/99	8260B	CJR	1	
4-Chlorotoluene	< 25	ug/kg	4.4	15	1	7/13/99	8260B	CJR	1	
1,2-Dibromo-3-chloropropane	< 25	ug/kg	11	37	1	7/13/99	8260B	CJR	1	
Dibromochloromethane	< 25	ug/kg	5.4	18	1	7/13/99	8260B	CJR	1	
1,4-Dichlorobenzene	< 25	ug/kg	4.4	15	1	7/13/99	8260B	CJR	1	
1,3-Dichlorobenzene	< 25	ug/kg	4.4	15	1	7/13/99	8260B	CJR	1	
1,2-Dichlorobenzene	< 25	ug/kg	3.6	12	1	7/13/99	8260B	CJR	1	
Dichlorodifluoromethane	< 25	ug/kg	11	37	1	7/13/99	8260B	CJR	1	
1,2-Dichloroethane	40	ug/kg	8.3	28	1	7/13/99	8260B	CJR	1	
1,1-Dichloroethane	< 25	ug/kg	4.7	16	1	7/13/99	8260B	CJR	1	
1,1-Dichloroethene	< 25	ug/kg	4.5	15	1	7/13/99	8260B	CJR	1	
cis-1,2-Dichloroethene	< 25	ug/kg	5	17	1	7/13/99	8260B	CJR	1	
trans-1,2-Dichloroethene	< 25	ug/kg	4.5	15	1	7/13/99	8260B	CJR	1	
1,2-Dichloropropane	< 25	ug/kg	4.2	14	1	7/13/99	8260B	CJR	1	
2,2-Dichloropropane	< 25	ug/kg	4	13	1	7/13/99	8260B	CJR	1	
1,3-Dichloropropane	< 25	ug/kg	4.3	15	1	7/13/99	8260B	CJR	1	
Di-isopropyl ether	< 25	ug/kg	3	10	1	7/13/99	8260B	CJR	1	
EDB (1,2-Dibromoethane)	< 25	ug/kg	3.5	12	1	7/13/99	8260B	CJR	1	
Ethylbenzene	< 25	ug/kg	4.4	15	1	7/13/99	8260B	CJR	1	
Hexachlorobutadiene	< 25	ug/kg	7.5	25	1	7/13/99	8260B	CJR	1	
Isopropylbenzene	< 25	ug/kg	5.2	17	1	7/13/99	8260B	CJR	1	
p-Isopropyltoluene	< 25	ug/kg	3.1	10	1	7/13/99	8260B	CJR	1	
Methylene chloride	< 25	ug/kg	11	35	1	7/13/99	8260B	CJR	1	
MTBE	< 25	ug/kg	5.6	19	1	7/13/99	8260B	CJR	1	
Naphthalene	< 25	ug/kg	4.2	14	1	7/13/99	8260B	CJR	1	
n-Propylbenzene	< 25	ug/kg	4.5	15	1	7/13/99	8260B	CJR	1	
1,1,2,2-Tetrachloroethane	< 25	ug/kg	3.4	11	1	7/13/99	8260B	CJR	1	
Tetrachloroethene	< 25	ug/kg	6.1	21	1	7/13/99	8260B	CJR	1	
Toluene	< 25	ug/kg	5.3	18	1	7/13/99	8260B	CJR	1	
1,2,4-Trichlorobenzene	< 25	ug/kg	4.4	15	1	7/13/99	8260B	CJR	1	
1,2,3-Trichlorobenzene	< 25	ug/kg	4	14	1	7/13/99	8260B	CJR	1	
1,1,1-Trichloroethane	< 25	ug/kg	6.7	22	1	7/13/99	8260B	CJR	1	
1,1,2-Trichloroethane	< 25	ug/kg	3.7	12	1	7/13/99	8260B	CJR	1	
Trichloroethene	< 25	ug/kg	4.5	15	1	7/13/99	8260B	CJR	1	

# U.S. Analytical Lab

JERRY DEMERS  
 HSI GEOTRANS  
 175 N. CORPORATE DRIVE SUITE 100  
 BROOKFIELD, WI 53045

Project # P177  
 Project Name MPL REALTY  
 Invoice # E26309

Report Date 15-Jul-99

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code
Lab Code 5026309B						Sample Type Soil			
Sample ID GP-20 (8-10)						Sample Date 7/8/99			
Trichlorofluoromethane	< 25	ug/kg	14	45	1	7/13/99	8260B	CJR	2 4
1,2,4-Trimethylbenzene	< 25	ug/kg	4.5	15	1	7/13/99	8260B	CJR	1
1,3,5-Trimethylbenzene	< 25	ug/kg	4.1	14	1	7/13/99	8260B	CJR	1
Vinyl Chloride	< 25	ug/kg	5.6	19	1	7/13/99	8260B	CJR	1
m&p-Xylene	< 50	ug/kg	8.2	27	1	7/13/99	8260B	CJR	1
o-Xylene	< 25	ug/kg	2.5	8.4	1	7/13/99	8260B	CJR	1

Lab Code 5026309C						Sample Type Soil			
Sample ID SP-20 (18-20)						Sample Date 7/8/99			

**Inorganic**

**General**

Solids Percent	88.8	%				7/12/99	5021	RMB	1
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**Organic**

**VOC's**

Benzene	< 25	ug/kg	6.2	21	1	7/13/99	8260B	CJR	1
Bromobenzene	< 25	ug/kg	4.3	14	1	7/13/99	8260B	CJR	1
Bromochloromethane	< 25	ug/kg	4.6	15	1	7/13/99	8260B	CJR	1
tert-Butylbenzene	< 25	ug/kg	6.5	22	1	7/13/99	8260B	CJR	1
sec-Butylbenzene	< 25	ug/kg	4.1	14	1	7/13/99	8260B	CJR	1
n-Butylbenzene	< 25	ug/kg	3.1	10	1	7/13/99	8260B	CJR	1
Carbon Tetrachloride	< 25	ug/kg	4	13	1	7/13/99	8260B	CJR	1
Chlorobenzene	< 25	ug/kg	5.3	18	1	7/13/99	8260B	CJR	1
Chloroethane	< 25	ug/kg	11	37	1	7/13/99	8260B	CJR	3 7
Chloroform	< 25	ug/kg	3.1	10	1	7/13/99	8260B	CJR	1
Chloromethane	< 25	ug/kg	6.9	23	1	7/13/99	8260B	CJR	1
2-Chlorotoluene	< 25	ug/kg	4.6	15	1	7/13/99	8260B	CJR	1
4-Chlorotoluene	< 25	ug/kg	4.4	15	1	7/13/99	8260B	CJR	1
1,2-Dibromo-3-chloropropane	< 25	ug/kg	11	37	1	7/13/99	8260B	CJR	1
Dibromochloromethane	< 25	ug/kg	5.4	18	1	7/13/99	8260B	CJR	1
1,4-Dichlorobenzene	< 25	ug/kg	4.4	15	1	7/13/99	8260B	CJR	1
1,3-Dichlorobenzene	< 25	ug/kg	4.4	15	1	7/13/99	8260B	CJR	1
1,2-Dichlorobenzene	< 25	ug/kg	3.6	12	1	7/13/99	8260B	CJR	1
Dichlorodifluoromethane	< 25	ug/kg	11	37	1	7/13/99	8260B	CJR	1
1,2-Dichloroethane	< 25	ug/kg	8.3	28	1	7/13/99	8260B	CJR	1
1,1-Dichloroethane	40	ug/kg	4.7	16	1	7/13/99	8260B	CJR	1
1,1-Dichloroethene	< 25	ug/kg	4.5	15	1	7/13/99	8260B	CJR	1

# U.S. Analytical Lab

JERRY DEMERS  
 HSI GEOTRANS  
 175 N. CORPORATE DRIVE SUITE 100  
 BROOKFIELD, WI 53045

Project # P177  
 Project Name MPL REALTY  
 Invoice # E26309

Report Date 15-Jul-99

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code
<b>Lab Code</b> 5026309C						<b>Sample Type</b> Soil			
<b>Sample ID</b> SP-20 (18-20)						<b>Sample Date</b> 7/8/99			
cis-1,2-Dichloroethene	< 25	ug/kg	5	17	1	7/13/99	8260B	CJR	1
trans-1,2-Dichloroethene	< 25	ug/kg	4.5	15	1	7/13/99	8260B	CJR	1
1,2-Dichloropropane	< 25	ug/kg	4.2	14	1	7/13/99	8260B	CJR	1
2,2-Dichloropropane	< 25	ug/kg	4	13	1	7/13/99	8260B	CJR	1
1,3-Dichloropropane	< 25	ug/kg	4.3	15	1	7/13/99	8260B	CJR	1
Di-isopropyl ether	< 25	ug/kg	3	10	1	7/13/99	8260B	CJR	1
EDB (1,2-Dibromoethane)	< 25	ug/kg	3.5	12	1	7/13/99	8260B	CJR	1
Ethylbenzene	< 25	ug/kg	4.4	15	1	7/13/99	8260B	CJR	1
Hexachlorobutadiene	< 25	ug/kg	7.5	25	1	7/13/99	8260B	CJR	1
Isopropylbenzene	< 25	ug/kg	5.2	17	1	7/13/99	8260B	CJR	1
p-Isopropyltoluene	< 25	ug/kg	3.1	10	1	7/13/99	8260B	CJR	1
Methylene chloride	< 25	ug/kg	11	35	1	7/13/99	8260B	CJR	1
MTBE	< 25	ug/kg	5.6	19	1	7/13/99	8260B	CJR	1
Naphthalene	< 25	ug/kg	4.2	14	1	7/13/99	8260B	CJR	1
n-Propylbenzene	< 25	ug/kg	4.5	15	1	7/13/99	8260B	CJR	1
1,1,2,2-Tetrachloroethane	< 25	ug/kg	3.4	11	1	7/13/99	8260B	CJR	1
Tetrachloroethene	< 25	ug/kg	6.1	21	1	7/13/99	8260B	CJR	1
Toluene	< 25	ug/kg	5.3	18	1	7/13/99	8260B	CJR	1
1,2,4-Trichlorobenzene	< 25	ug/kg	4.4	15	1	7/13/99	8260B	CJR	1
1,2,3-Trichlorobenzene	< 25	ug/kg	4	14	1	7/13/99	8260B	CJR	1
1,1,1-Trichloroethane	160	ug/kg	6.7	22	1	7/13/99	8260B	CJR	1
1,1,2-Trichloroethane	< 25	ug/kg	3.7	12	1	7/13/99	8260B	CJR	1
Trichloroethene	< 25	ug/kg	4.5	15	1	7/13/99	8260B	CJR	1
Trichlorofluoromethane	< 25	ug/kg	14	45	1	7/13/99	8260B	CJR	2.4
1,2,4-Trimethylbenzene	< 25	ug/kg	4.5	15	1	7/13/99	8260B	CJR	1
1,3,5-Trimethylbenzene	< 25	ug/kg	4.1	14	1	7/13/99	8260B	CJR	1
Vinyl Chloride	< 25	ug/kg	5.6	19	1	7/13/99	8260B	CJR	1
m&p-Xylene	< 50	ug/kg	8.2	27	1	7/13/99	8260B	CJR	1
o-Xylene	< 25	ug/kg	2.5	8.4	1	7/13/99	8260B	CJR	1
<b>Lab Code</b> 5026309D						<b>Sample Type</b> Soil			
<b>Sample ID</b> SP-19 (0-2)						<b>Sample Date</b> 7/8/99			

Inorganic

General

Solids Percent	88.8	%			1	7/12/99	5021	RMB	1
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Organic

# U.S. Analytical Lab

JERRY DEMERS  
 HSI GEOTRANS  
 175 N. CORPORATE DRIVE SUITE 100  
 BROOKFIELD, WI 53045

Project # P177  
 Project Name MPL REALTY  
 Invoice # E26309

Report Date 15-Jul-99

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code
Lab Code	5026309D					Sample Type	Soil		
Sample ID	SP-19 (0-2)					Sample Date	7/8/99		
VOC's									
Benzene	< 25	ug/kg	6.2	21	1	7/13/99	8260B	CJR	1
Bromobenzene	< 25	ug/kg	4.3	14	1	7/13/99	8260B	CJR	1
Bromochloromethane	< 25	ug/kg	4.6	15	1	7/13/99	8260B	CJR	1
tert-Butylbenzene	< 25	ug/kg	6.5	22	1	7/13/99	8260B	CJR	1
sec-Butylbenzene	< 25	ug/kg	4.1	14	1	7/13/99	8260B	CJR	1
n-Butylbenzene	66	ug/kg	3.1	10	1	7/13/99	8260B	CJR	1
Carbon Tetrachloride	< 25	ug/kg	4	13	1	7/13/99	8260B	CJR	1
Chlorobenzene	< 25	ug/kg	5.3	18	1	7/13/99	8260B	CJR	1
Chloroethane	< 25	ug/kg	11	37	1	7/13/99	8260B	CJR	37
Chloroform	< 25	ug/kg	3.1	10	1	7/13/99	8260B	CJR	1
Chloromethane	< 25	ug/kg	6.9	23	1	7/13/99	8260B	CJR	1
2-Chlorotoluene	< 25	ug/kg	4.6	15	1	7/13/99	8260B	CJR	1
4-Chlorotoluene	< 25	ug/kg	4.4	15	1	7/13/99	8260B	CJR	1
1,2-Dibromo-3-chloropropane	< 25	ug/kg	11	37	1	7/13/99	8260B	CJR	1
Dibromochloromethane	< 25	ug/kg	5.4	18	1	7/13/99	8260B	CJR	1
1,4-Dichlorobenzene	< 25	ug/kg	4.4	15	1	7/13/99	8260B	CJR	1
1,3-Dichlorobenzene	< 25	ug/kg	4.4	15	1	7/13/99	8260B	CJR	1
1,2-Dichlorobenzene	< 25	ug/kg	3.6	12	1	7/13/99	8260B	CJR	1
Dichlorodifluoromethane	< 25	ug/kg	11	37	1	7/13/99	8260B	CJR	1
1,2-Dichloroethane	< 25	ug/kg	8.3	28	1	7/13/99	8260B	CJR	1
1,1-Dichloroethane	< 25	ug/kg	4.7	16	1	7/13/99	8260B	CJR	1
1,1-Dichloroethene	< 25	ug/kg	4.5	15	1	7/13/99	8260B	CJR	1
cis-1,2-Dichloroethene	< 25	ug/kg	5	17	1	7/13/99	8260B	CJR	1
trans-1,2-Dichloroethene	< 25	ug/kg	4.5	15	1	7/13/99	8260B	CJR	1
1,2-Dichloropropane	< 25	ug/kg	4.2	14	1	7/13/99	8260B	CJR	1
2,2-Dichloropropane	< 25	ug/kg	4	13	1	7/13/99	8260B	CJR	1
1,3-Dichloropropane	< 25	ug/kg	4.3	15	1	7/13/99	8260B	CJR	1
Di-isopropyl ether	< 25	ug/kg	3	10	1	7/13/99	8260B	CJR	1
EDB (1,2-Dibromoethane)	< 25	ug/kg	3.5	12	1	7/13/99	8260B	CJR	1
Ethylbenzene	< 25	ug/kg	4.4	15	1	7/13/99	8260B	CJR	1
Hexachlorobutadiene	< 25	ug/kg	7.5	25	1	7/13/99	8260B	CJR	1
Isopropylbenzene	< 25	ug/kg	5.2	17	1	7/13/99	8260B	CJR	1
p-Isopropyltoluene	< 25	ug/kg	3.1	10	1	7/13/99	8260B	CJR	1
Methylene chloride	< 25	ug/kg	11	35	1	7/13/99	8260B	CJR	1
MTBE	< 25	ug/kg	5.6	19	1	7/13/99	8260B	CJR	1

# U.S. Analytical Lab

JERRY DEMERS  
 HSI GEOTRANS  
 175 N. CORPORATE DRIVE SUITE 100  
 BROOKFIELD, WI 53045

Project # P177  
 Project Name MPL REALTY  
 Invoice # E26309

Report Date 15-Jul-99

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code
<b>Lab Code</b> 5026309D									
<b>Sample ID</b> SP-19 (0-2)									
						<b>Sample Type</b>	<b>Soil</b>		
						<b>Sample Date</b>	<b>7/8/99</b>		
Naphthalene	27	ug/kg	4.2	14	1	7/13/99	8260B	CJR	1
n-Propylbenzene	< 25	ug/kg	4.5	15	1	7/13/99	8260B	CJR	1
1,1,2,2-Tetrachloroethane	< 25	ug/kg	3.4	11	1	7/13/99	8260B	CJR	1
Tetrachloroethene	390	ug/kg	6.1	21	1	7/13/99	8260B	CJR	1
Toluene	60	ug/kg	5.3	18	1	7/13/99	8260B	CJR	1
1,2,4-Trichlorobenzene	< 25	ug/kg	4.4	15	1	7/13/99	8260B	CJR	1
1,2,3-Trichlorobenzene	< 25	ug/kg	4	14	1	7/13/99	8260B	CJR	1
1,1,1-Trichloroethane	780	ug/kg	6.7	22	1	7/13/99	8260B	CJR	1
1,1,2-Trichloroethane	< 25	ug/kg	3.7	12	1	7/13/99	8260B	CJR	1
Trichloroethene	4700	ug/kg	4.5	15	1	7/13/99	8260B	CJR	1
Trichlorofluoromethane	72	ug/kg	14	45	1	7/13/99	8260B	CJR	24
1,2,4-Trimethylbenzene	60	ug/kg	4.5	15	1	7/13/99	8260B	CJR	1
1,3,5-Trimethylbenzene	47	ug/kg	4.1	14	1	7/13/99	8260B	CJR	1
Vinyl Chloride	< 25	ug/kg	5.6	19	1	7/13/99	8260B	CJR	1
m&p-Xylene	< 50	ug/kg	8.2	27	1	7/13/99	8260B	CJR	1
o-Xylene	< 25	ug/kg	2.5	8.4	1	7/13/99	8260B	CJR	1

<b>Lab Code</b> 5026309E										
<b>Sample ID</b> GP-6 (2-4)										
						<b>Sample Type</b>	<b>Soil</b>			
						<b>Sample Date</b>	<b>7/8/99</b>			
<b>Inorganic</b>										
<b>General</b>										
Solids Percent	88.8	%				1	7/12/99	5021	RMB	1
<b>Organic</b>										
<b>VOC's</b>										
Benzene	< 25	ug/kg	6.2	21	1	7/13/99	8260B	CJR	1	
Bromobenzene	< 25	ug/kg	4.3	14	1	7/13/99	8260B	CJR	1	
Bromochloromethane	< 25	ug/kg	4.6	15	1	7/13/99	8260B	CJR	1	
tert-Butylbenzene	< 25	ug/kg	6.5	22	1	7/13/99	8260B	CJR	1	
sec-Butylbenzene	< 25	ug/kg	4.1	14	1	7/13/99	8260B	CJR	1	
n-Butylbenzene	< 25	ug/kg	3.1	10	1	7/13/99	8260B	CJR	1	
Carbon Tetrachloride	< 25	ug/kg	4	13	1	7/13/99	8260B	CJR	1	
Chlorobenzene	< 25	ug/kg	5.3	18	1	7/13/99	8260B	CJR	1	
Chloroethane	< 25	ug/kg	11	37	1	7/13/99	8260B	CJR	37	
Chloroform	< 25	ug/kg	3.1	10	1	7/13/99	8260B	CJR	1	
Chloromethane	< 25	ug/kg	6.9	23	1	7/13/99	8260B	CJR	1	
2-Chlorotoluene	< 25	ug/kg	4.6	15	1	7/13/99	8260B	CJR	1	

# U.S. Analytical Lab

JERRY DEMERS  
 HSI GEOTRANS  
 175 N. CORPORATE DRIVE SUITE 100  
 BROOKFIELD, WI 53045

Project # P177  
 Project Name MPL REALTY  
 Invoice # E26309

Report Date 15-Jul-99

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code	
Lab Code	5026309E					Sample Type	Soil			
Sample ID	GP-6 (2-4)					Sample Date	7/8/99			
4-Chlorotoluene	< 25	ug/kg	4.4	15	1	7/13/99	8260B	CJR	1	
1,2-Dibromo-3-chloropropane	< 25	ug/kg	11	37	1	7/13/99	8260B	CJR	1	
Dibromochloromethane	< 25	ug/kg	5.4	18	1	7/13/99	8260B	CJR	1	
1,4-Dichlorobenzene	< 25	ug/kg	4.4	15	1	7/13/99	8260B	CJR	1	
1,3-Dichlorobenzene	< 25	ug/kg	4.4	15	1	7/13/99	8260B	CJR	1	
1,2-Dichlorobenzene	< 25	ug/kg	3.6	12	1	7/13/99	8260B	CJR	1	
Dichlorodifluoromethane	< 25	ug/kg	11	37	1	7/13/99	8260B	CJR	1	
1,2-Dichloroethane	< 25	ug/kg	8.3	28	1	7/13/99	8260B	CJR	1	
1,1-Dichloroethane	< 25	ug/kg	4.7	16	1	7/13/99	8260B	CJR	1	
1,1-Dichloroethene	< 25	ug/kg	4.5	15	1	7/13/99	8260B	CJR	1	
cis-1,2-Dichloroethene	120	ug/kg	5	17	1	7/13/99	8260B	CJR	1	
trans-1,2-Dichloroethene	< 25	ug/kg	4.5	15	1	7/13/99	8260B	CJR	1	
1,2-Dichloropropane	< 25	ug/kg	4.2	14	1	7/13/99	8260B	CJR	1	
2,2-Dichloropropane	< 25	ug/kg	4	13	1	7/13/99	8260B	CJR	1	
1,3-Dichloropropane	< 25	ug/kg	4.3	15	1	7/13/99	8260B	CJR	1	
Di-isopropyl ether	< 25	ug/kg	3	10	1	7/13/99	8260B	CJR	1	
EDB (1,2-Dibromoethane)	< 25	ug/kg	3.5	12	1	7/13/99	8260B	CJR	1	
Ethylbenzene	< 25	ug/kg	4.4	15	1	7/13/99	8260B	CJR	1	
Hexachlorobutadiene	< 25	ug/kg	7.5	25	1	7/13/99	8260B	CJR	1	
Isopropylbenzene	< 25	ug/kg	5.2	17	1	7/13/99	8260B	CJR	1	
p-Isopropyltoluene	< 25	ug/kg	3.1	10	1	7/13/99	8260B	CJR	1	
Methylene chloride	< 25	ug/kg	11	35	1	7/13/99	8260B	CJR	1	
MTBE	< 25	ug/kg	5.6	19	1	7/13/99	8260B	CJR	1	
Naphthalene	< 25	ug/kg	4.2	14	1	7/13/99	8260B	CJR	1	
n-Propylbenzene	< 25	ug/kg	4.5	15	1	7/13/99	8260B	CJR	1	
1,1,2,2-Tetrachloroethane	< 25	ug/kg	3.4	11	1	7/13/99	8260B	CJR	1	
Tetrachloroethene	13000	ug/kg	6.1	21	1	7/13/99	8260B	CJR	1	
Toluene	83	ug/kg	5.3	18	1	7/13/99	8260B	CJR	1	
1,2,4-Trichlorobenzene	< 25	ug/kg	4.4	15	1	7/13/99	8260B	CJR	1	
1,2,3-Trichlorobenzene	< 25	ug/kg	4	14	1	7/13/99	8260B	CJR	1	
1,1,1-Trichloroethane	2500	ug/kg	6.7	22	1	7/13/99	8260B	CJR	1	
1,1,2-Trichloroethane	32	ug/kg	3.7	12	1	7/13/99	8260B	CJR	1	
Trichloroethene	18000	ug/kg	4.5	15	1	7/13/99	8260B	CJR	1	
Trichlorofluoromethane	28 "J"	ug/kg	14	45	1	7/13/99	8260B	CJR	2.4	
1,2,4-Trimethylbenzene	< 25	ug/kg	4.5	15	1	7/13/99	8260B	CJR	1	
1,3,5-Trimethylbenzene	< 25	ug/kg	4.1	14	1	7/13/99	8260B	CJR	1	
Vinyl Chloride	< 25	ug/kg	5.6	19	1	7/13/99	8260B	CJR	1	

# U.S. Analytical Lab

JERRY DEMERS  
 HSI GEOTRANS  
 175 N. CORPORATE DRIVE SUITE 100  
 BROOKFIELD, WI 53045

Project # P177  
 Project Name MPL REALTY  
 Invoice # E26309

Report Date 15-Jul-99

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code
Lab Code	5026309E					Sample Type	Soil		
Sample ID	GP-6 (2-4)					Sample Date	7/8/99		
m&p-Xylene	< 50	ug/kg	8.2	27	1	7/13/99	8260B	CJR	1
o-Xylene	< 25	ug/kg	2.5	8.4	1	7/13/99	8260B	CJR	1

LOD Limit of Detection

"J" Flag: Analyte detected between LOD and LOQ

LOQ Limit of Quantitation

Code	Comment
1	All laboratory QC requirements were met for this sample.
2	The duplicate RPD failed to meet acceptable QC limits.
3	The spike recovery failed to meet acceptable QC limits.
4	The check standard failed to meet acceptable QC limits.
7	The LCS spike recovery failed to meet acceptable QC limits.

Authorized Signature Kimberly A. Bohmstedt





1090 Kennedy Ave. • Kimberly, WI 54136  
(920) 5-8295 • FAX 920-739-1738 • 800-490-4902  
LAB@USOIL.COM

Chain # N° 5927

Lab I.D. # 26309

Account No.: Quote No.:

Page 1 of 1

Project #: P177  
Sampler: (signature) *D.J.M.*

Sample Integrity - To be completed by receiving lab.  
Method of Shipment: Courier Temp. of Temp. Blank. \_\_\_ °C On Ice:   
Cooler seal intact upon receipt:  Yes \_\_\_ No Labcoded By: \_\_\_\_\_

Project (Name / Location): MPL Realty / St. Francis, WI

Analysis Requested

Reports To: Jerry DeMers Invoice To:  
Company HSI Geotrans Company  
Address 175 N. Corporate Dr. Suit 100 Address  
City State Zip Brookfield, WI 53015 City State Zip  
Phone 414-792-1282 Phone

Sample Handling Request

Rush Analysis  
Date Required \_\_\_\_\_  
 Normal Turn Around

Analysis Requested											Other Analysis	
DRO (Mod/TPH)	GRO (Mod/TPH)	PVOC (EPA 8021)	BTEX (EPA 8021)	VOC (EPA 8021)	VOC (EPA 8260)	O&G (EPA 413.1)	PAH (EPA 8310)	Pb	Flash Point			PID/ FID
				X								
				X								
				X								
				X								

Lab I.D.	Sample I.D.	Collection Date	Collection Time	No. of Containers Size and Type	Description*	Preservation
5026309A	GP-20(0-2)	7-5-99	1200	1-40ml G/uss	"S"	None
	B GP-20(8-10')		1200			
	C GP-20(18-20')		1200			
	D GP-19(0-2)		1015			
	E GP-6(2-4)		1100			

**Department Use Only**  
Split Samples: Offered? \_\_\_ Yes \_\_\_ No  
Accepted? \_\_\_ Yes \_\_\_ No  
Accepted By: \_\_\_\_\_

Comments/ Special Instructions  
\*Specify groundwater "GW", Drinking Water "DW", Waste Water "WW", Soil "S", Air "A", etc.  
use soil from 5026285 for dry weight for this chain per J.D. @ 9:55 Aug 7-12-99

**Department Use Optional for Soil Samples**  
Disposition of unused portion of sample  
Lab Should:  
\_\_\_ Dispose \_\_\_ Retain for \_\_\_ days  
\_\_\_ Return \_\_\_ Other

Relinquished By: (sign) *D.J.M.* Time 0400 Date 7-9-99  
Received By: (sign) *Deo Huns* Time 12:05 Date 7-9-99  
Received in Laboratory By: *Sandra Reyes* Time: 330 Date: 7-9-99

# U.S. Analytical Lab

## Invoice

HSI GEOTRANS  
175 N. CORPORATE DRIVE SUITE 100  
BROOKFIELD, WI 53045

Client Account #	273284	Invoice #	E26309
Project #	P177	Invoice Date	7/15/99
Project Name	MPL REALTY	Quote #	
Chain of Custody	15927	Date Due	8/14/99
		Sample Date	7/8/99

Sample ID	Labcode	Sample Type	Matrix	Test Name	Price
GP-20 (0-2)	5026309A	Sample	Soil	VOC's	\$50.00
GP-20 (8-10)	5026309B	Sample	Soil	VOC's	\$50.00
SP-20 (18-20)	5026309C	Sample	Soil	VOC's	\$50.00
SP-19 (0-2)	5026309D	Sample	Soil	VOC's	\$50.00
GP-6 (2-4)	5026309E	Sample	Soil	VOC's	\$50.00

**Total Cost: \$250.00**

PLEASE REMIT PAYMENT TO:  
US OIL CO INC  
PO BOX 32  
COMBINED LOCKS, WI 54113-0032

# U.S. Analytical Lab

Project # P177  
 CC: \_\_\_\_\_

JERRY DE MERS  
 HSI GEOTRANS  
 175 N. CORPORATE DRIVE SUITE 100  
 BROOKFIELD, WI 53045

Project # P177  
 Project Name MPL REALTY  
 Invoice # E30175

Report Date 13-Jul-00

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code
Lab Code	5030175A						Sample Type	Soil	
Sample ID	GP-103-2' ✓						Sample Date	6/27/00	

Inorganic

General

Solids Percent	85.7	%			1	6/29/00	5021	SAD	1
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Organic

VOC's

Benzene	< 25	ug/kg	9.1	30	1	7/5/00	8021A	CJR	1
Bromobenzene	< 25	ug/kg	13	42	1	7/5/00	8021A	CJR	1
Bromodichloromethane	< 25	ug/kg	7.3	24	1	7/5/00	8021A	CJR	1
tert-Butylbenzene	< 25	ug/kg	10	33	1	7/5/00	8021A	CJR	1
sec-Butylbenzene	< 25	ug/kg	8.5	28	1	7/5/00	8021A	CJR	1
n-Butylbenzene	< 25	ug/kg	8.8	29	1	7/5/00	8021A	CJR	1
Carbon Tetrachloride	< 25	ug/kg	8.3	28	1	7/5/00	8021A	CJR	1
Chlorobenzene	< 25	ug/kg	8.4	28	1	7/5/00	8021A	CJR	1
Chloroethane	< 25	ug/kg	11	35	1	7/5/00	8021A	CJR	1
Chloroform	< 25	ug/kg	7.9	26	1	7/5/00	8021A	CJR	1
Chloromethane	< 25	ug/kg	5	17	1	7/5/00	8021A	CJR	1
2-Chlorotoluene	< 25	ug/kg	2.4	8.4	1	7/5/00	8021A	CJR	1
4-Chlorotoluene	< 25	ug/kg	2.3	8.5	1	7/5/00	8021A	CJR	1
2,2-DCP, cis-1,2-Dichloroethene	< 50	ug/kg	4.1	20	1	7/5/00	8021A	CJR	1
1,2-Dibromo-3-chloropropane	< 25	ug/kg	11	37	1	7/5/00	8021A	CJR	1
Dibromochloromethane	< 25	ug/kg	9.4	31	1	7/5/00	8021A	CJR	1
1,4-Dichlorobenzene	< 25	ug/kg	8.8	29	1	7/5/00	8021A	CJR	1
1,3-Dichlorobenzene	< 25	ug/kg	8.6	29	1	7/5/00	8021A	CJR	1
1,2-Dichlorobenzene	< 25	ug/kg	8.9	30	1	7/5/00	8021A	CJR	1
Dichlorodifluoromethane	< 25	ug/kg	8.3	25	1	7/5/00	8021A	CJR	3 4
1,2-Dichloroethane	< 25	ug/kg	8.6	29	1	7/5/00	8021A	CJR	1
1,1-Dichloroethane	< 25	ug/kg	7.4	25	1	7/5/00	8021A	CJR	1
1,1-Dichloroethene	< 25	ug/kg	8.3	28	1	7/5/00	8021A	CJR	1
cis-1,2-Dichloroethene	< 25	ug/kg	5.7	19	1	7/5/00	8021A	CJR	1
trans-1,2-Dichloroethene	< 25	ug/kg	7.5	25	1	7/5/00	8021A	CJR	1
1,2-Dichloropropane	< 25	ug/kg	8.9	30	1	7/5/00	8021A	CJR	1
1,3-Dichloropropane	< 25	ug/kg	11	35	1	7/5/00	8021A	CJR	1
Di-isopropyl ether	< 25	ug/kg	7.4	25	1	7/5/00	8021A	CJR	1
EDB (1,2-Dibromoethane)	< 25	ug/kg	9.3	31	1	7/5/00	8021A	CJR	1
Ethylbenzene	< 25	ug/kg	7.9	26	1	7/5/00	8021A	CJR	1
Hexachlorobutadiene	< 25	ug/kg	6.4	21	1	7/5/00	8021A	CJR	1

# U.S. Analytical Lab

JERRY DE MERS  
 HSI GEOTRANS  
 175 N. CORPORATE DRIVE SUITE 100  
 BROOKFIELD, WI 53045

Project # P177  
 Project Name MPL REALTY  
 Invoice # E30175

Report Date 13-Jul-00

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code
Lab Code	5030175A					Sample Type	Soil		
Sample ID	GP-103-2'					Sample Date	6/27/00		
Isopropylbenzene	< 25	ug/kg	10	33	1	7/5/00	8021A	CJR	1
p-Isopropyltoluene	< 25	ug/kg	9	30	1	7/5/00	8021A	CJR	1
Methylene chloride	< 25	ug/kg	13	42	1	7/5/00	8021A	CJR	1
MTBE	< 25	ug/kg	11	38	1	7/5/00	8021A	CJR	1
Naphthalene	< 25	ug/kg	11	38	1	7/5/00	8021A	CJR	1
n-Propylbenzene	< 25	ug/kg	16	53	1	7/5/00	8021A	CJR	1
1,1,2,2-Tetrachloroethane	< 25	ug/kg	24	81	1	7/5/00	8021A	CJR	1
Tetrachloroethane	< 25	ug/kg	7.6	25	1	7/5/00	8021A	CJR	1
Toluene	< 25	ug/kg	6.7	22	1	7/5/00	8021A	CJR	1
1,2,4-Trichlorobenzene	< 25	ug/kg	8.8	29	1	7/5/00	8021A	CJR	1
1,2,3-Trichlorobenzene	< 25	ug/kg	9.3	31	1	7/5/00	8021A	CJR	1
1,1,1-Trichloroethane	73	ug/kg	8.4	28	1	7/5/00	8021A	CJR	1
1,1,2-Trichloroethane	< 25	ug/kg	11	36	1	7/5/00	8021A	CJR	1
Trichloroethene	81	ug/kg	15	51	1	7/5/00	8021A	CJR	1
Trichlorofluoromethane	< 25	ug/kg	8.8	29	1	7/5/00	8021A	CJR	1
1,2,4-Trimethylbenzene	< 25	ug/kg	6.9	23	1	7/5/00	8021A	CJR	1
1,3,5-Trimethylbenzene	< 25	ug/kg	16	54	1	7/5/00	8021A	CJR	1
Vinyl Chloride	< 25	ug/kg	8.3	25	1	7/5/00	8021A	CJR	1
m&p-Xylene	< 50	ug/kg	15	48	1	7/5/00	8021A	CJR	1
o-Xylene	< 25	ug/kg	7.9	26	1	7/5/00	8021A	CJR	1

Lab Code	5030175B					Sample Type	Soil		
Sample ID	GP-101-2'					Sample Date	6/27/00		

Inorganic

General

Solids Percent 90.4 % 1 6/29/00 5021 SAD 1

Organic

VOC's

Benzene	< 25	ug/kg	9.1	30	1	6/30/00	8021A	CJR	1
Bromobenzene	< 25	ug/kg	13	42	1	6/30/00	8021A	CJR	1
Bromodichloromethane	< 25	ug/kg	7.3	24	1	6/30/00	8021A	CJR	1
tert-Butylbenzene	< 25	ug/kg	10	33	1	6/30/00	8021A	CJR	1
sec-Butylbenzene	< 25	ug/kg	8.5	28	1	6/30/00	8021A	CJR	1
n-Butylbenzene	< 25	ug/kg	8.8	29	1	6/30/00	8021A	CJR	1
Carbon Tetrachloride	< 25	ug/kg	8.3	28	1	6/30/00	8021A	CJR	1
Chlorobenzene	< 25	ug/kg	8.4	28	1	6/30/00	8021A	CJR	1

# U.S. Analytical Lab

JERRY DE MERS  
 HSI GEOTRANS  
 175 N. CORPORATE DRIVE SUITE 100  
 BROOKFIELD, WI 53045

Project # P177  
 Project Name MPL REALTY  
 Invoice # E30175

Report Date 13-Jul-00

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code
Lab Code 5030175B						Sample Type	Soil		
Sample ID GP-101-2'						Sample Date	6/27/00		
Chloroethane	< 25	ug/kg	11	35	1	6/30/00	8021A	CJR	1
Chloroform	< 25	ug/kg	7.9	26	1	6/30/00	8021A	CJR	1
Chloromethane	< 25	ug/kg	5	17	1	6/30/00	8021A	CJR	4
2-Chlorotoluene	< 25	ug/kg	2.4	8.4	1	6/30/00	8021A	CJR	1
4-Chlorotoluene	< 25	ug/kg	2.3	8.5	1	6/30/00	8021A	CJR	1
2,2-DCP, cis-1,2-Dichloroethene	< 50	ug/kg	4.1	20	1	6/30/00	8021A	CJR	1
1,2-Dibromo-3-chloropropane	< 25	ug/kg	11	37	1	6/30/00	8021A	CJR	1
Dibromochloromethane	< 25	ug/kg	9.4	31	1	6/30/00	8021A	CJR	1
1,4-Dichlorobenzene	< 25	ug/kg	8.8	29	1	6/30/00	8021A	CJR	1
1,3-Dichlorobenzene	< 25	ug/kg	8.6	29	1	6/30/00	8021A	CJR	1
1,2-Dichlorobenzene	< 25	ug/kg	8.9	30	1	6/30/00	8021A	CJR	1
Dichlorodifluoromethane	< 25	ug/kg	8.3	25	1	6/30/00	8021A	CJR	4
1,2-Dichloroethane	< 25	ug/kg	8.6	29	1	6/30/00	8021A	CJR	1
1,1-Dichloroethane	74	ug/kg	7.4	25	1	6/30/00	8021A	CJR	1
1,1-Dichloroethene	< 25	ug/kg	8.3	28	1	6/30/00	8021A	CJR	1
cis-1,2-Dichloroethene	< 25	ug/kg	5.7	19	1	6/30/00	8021A	CJR	1
trans-1,2-Dichloroethene	< 25	ug/kg	7.5	25	1	6/30/00	8021A	CJR	1
1,2-Dichloropropane	< 25	ug/kg	8.9	30	1	6/30/00	8021A	CJR	1
1,3-Dichloropropane	< 25	ug/kg	11	35	1	6/30/00	8021A	CJR	1
Di-isopropyl ether	< 25	ug/kg	7.4	25	1	6/30/00	8021A	CJR	1
EDB (1,2-Dibromoethane)	< 25	ug/kg	9.3	31	1	6/30/00	8021A	CJR	1
Ethylbenzene	< 25	ug/kg	7.9	26	1	6/30/00	8021A	CJR	1
Hexachlorobutadiene	< 25	ug/kg	6.4	21	1	6/30/00	8021A	CJR	1
Isopropylbenzene	< 25	ug/kg	10	33	1	6/30/00	8021A	CJR	1
p-Isopropyltoluene	< 25	ug/kg	9	30	1	6/30/00	8021A	CJR	1
Methylene chloride	< 25	ug/kg	13	42	1	6/30/00	8021A	CJR	1
MTBE	< 25	ug/kg	11	38	1	6/30/00	8021A	CJR	1
Naphthalene	< 25	ug/kg	11	38	1	6/30/00	8021A	CJR	1
n-Propylbenzene	< 25	ug/kg	16	53	1	6/30/00	8021A	CJR	1
1,1,2,2-Tetrachloroethane	< 25	ug/kg	24	81	1	6/30/00	8021A	CJR	1
Tetrachloroethene	450	ug/kg	7.6	25	1	6/30/00	8021A	CJR	1
Toluene	< 25	ug/kg	6.7	22	1	6/30/00	8021A	CJR	1
1,2,4-Trichlorobenzene	< 25	ug/kg	8.8	29	1	6/30/00	8021A	CJR	1
1,2,3-Trichlorobenzene	< 25	ug/kg	9.3	31	1	6/30/00	8021A	CJR	1
1,1,1-Trichloroethane	5000	ug/kg	8.4	28	1	6/30/00	8021A	CJR	1
1,1,2-Trichloroethane	< 25	ug/kg	11	36	1	6/30/00	8021A	CJR	1
Trichloroethene	37000	ug/kg	300	1100	20	7/6/00	8021A	CJR	1

# U.S. Analytical Lab

JERRY DE MERS  
 HSI GEOTRANS  
 175 N. CORPORATE DRIVE SUITE 100  
 BROOKFIELD, WI 53045

Project # P177  
 Project Name MPL REALTY  
 Invoice # E30175

Report Date 13-Jul-00

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code
Lab Code	5030175B					Sample Type	Soil		
Sample ID	GP-101-2'					Sample Date	6/27/00		
Trichlorofluoromethane	< 25	ug/kg	8.3	29	1	6/30/00	8021A	CJR	1
1,2,4-Trimethylbenzene	< 25	ug/kg	6.9	23	1	6/30/00	8021A	CJR	1
1,3,5-Trimethylbenzene	< 25	ug/kg	16	54	1	6/30/00	8021A	CJR	1
Vinyl Chloride	< 25	ug/kg	8.3	25	1	6/30/00	8021A	CJR	2
m&p-Xylene	< 50	ug/kg	15	48	1	6/30/00	8021A	CJR	1
o-Xylene	< 25	ug/kg	7.9	26	1	6/30/00	8021A	CJR	1
Lab Code	5030175C					Sample Type	Soil		
Sample ID	GP-101-20'					Sample Date	6/27/00		

**Inorganic**

**General**

Solids Percent	89.9	%			1	6/29/00	5021	SAD	1
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**Organic**

**VOC's**

Benzene	< 25	ug/kg	9.1	30	1	6/30/00	8021A	CJR	1
Bromobenzene	< 25	ug/kg	13	42	1	6/30/00	8021A	CJR	1
Bromodichloromethane	< 25	ug/kg	7.3	24	1	6/30/00	8021A	CJR	1
tert-Butylbenzene	< 25	ug/kg	10	33	1	6/30/00	8021A	CJR	1
sec-Butylbenzene	< 25	ug/kg	8.5	28	1	6/30/00	8021A	CJR	1
n-Butylbenzene	< 25	ug/kg	8.8	29	1	6/30/00	8021A	CJR	1
Carbon Tetrachloride	< 25	ug/kg	8.3	28	1	6/30/00	8021A	CJR	1
Chlorobenzene	< 25	ug/kg	8.4	28	1	6/30/00	8021A	CJR	1
Chloroethane	< 25	ug/kg	11	35	1	6/30/00	8021A	CJR	1
Chloroform	< 25	ug/kg	7.9	26	1	6/30/00	8021A	CJR	1
Chloromethane	< 25	ug/kg	5	17	1	6/30/00	8021A	CJR	4
2-Chlorotoluene	< 25	ug/kg	2.4	8.4	1	6/30/00	8021A	CJR	1
4-Chlorotoluene	< 25	ug/kg	2.3	8.5	1	6/30/00	8021A	CJR	1
2,2-DCP, cis-1,2-Dichloroethene	< 50	ug/kg	4.1	20	1	6/30/00	8021A	CJR	1
1,2-Dibromo-3-chloropropane	< 25	ug/kg	11	37	1	6/30/00	8021A	CJR	1
Dibromochloromethane	< 25	ug/kg	9.4	31	1	6/30/00	8021A	CJR	1
1,4-Dichlorobenzene	< 25	ug/kg	8.8	29	1	6/30/00	8021A	CJR	1
1,3-Dichlorobenzene	< 25	ug/kg	8.6	29	1	6/30/00	8021A	CJR	1
1,2-Dichlorobenzene	< 25	ug/kg	8.9	30	1	6/30/00	8021A	CJR	1
Dichlorodifluoromethane	< 25	ug/kg	8.3	25	1	6/30/00	8021A	CJR	4
1,2-Dichloroethane	< 25	ug/kg	8.6	29	1	6/30/00	8021A	CJR	1
1,1-Dichloroethane	< 25	ug/kg	7.4	25	1	6/30/00	8021A	CJR	1

# U.S. Analytical Lab

JERRY DE MERS  
 HSI GEOTRANS  
 175 N. CORPORATE DRIVE SUITE 100  
 BROOKFIELD, WI 53045

Project # P177  
 Project Name MPL REALTY  
 Invoice # E30175

Report Date 13-Jul-00

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code
Lab Code	5030175C					Sample Type	Soil		
Sample ID	GP-101-20'					Sample Date	6/27/00		
1,1-Dichloroethene	< 25	ug/kg	8.3	28	1	6/30/00	8021A	CJR	1
cis-1,2-Dichloroethene	< 25	ug/kg	5.7	19	1	6/30/00	8021A	CJR	1
trans-1,2-Dichloroethene	< 25	ug/kg	7.5	25	1	6/30/00	8021A	CJR	1
1,2-Dichloropropane	< 25	ug/kg	8.9	30	1	6/30/00	8021A	CJR	1
1,3-Dichloropropane	< 25	ug/kg	11	35	1	6/30/00	8021A	CJR	1
Di-isopropyl ether	< 25	ug/kg	7.4	25	1	6/30/00	8021A	CJR	1
EDB (1,2-Dibromoethane)	< 25	ug/kg	9.3	31	1	6/30/00	8021A	CJR	1
Ethylbenzene	< 25	ug/kg	7.9	26	1	6/30/00	8021A	CJR	1
Hexachlorobutadiene	< 25	ug/kg	6.4	21	1	6/30/00	8021A	CJR	1
Isopropylbenzene	34	ug/kg	10	33	1	6/30/00	8021A	CJR	1
p-Isopropyltoluene	< 25	ug/kg	9	30	1	6/30/00	8021A	CJR	1
Methylene chloride	< 25	ug/kg	13	42	1	6/30/00	8021A	CJR	1
MTBE	< 25	ug/kg	11	38	1	6/30/00	8021A	CJR	1
Naphthalene	< 25	ug/kg	11	38	1	6/30/00	8021A	CJR	1
n-Propylbenzene	< 25	ug/kg	16	53	1	6/30/00	8021A	CJR	1
1,1,2,2-Tetrachloroethane	< 25	ug/kg	24	81	1	6/30/00	8021A	CJR	1
Tetrachloroethene	< 25	ug/kg	7.6	25	1	6/30/00	8021A	CJR	1
Toluene	< 25	ug/kg	6.7	22	1	6/30/00	8021A	CJR	1
1,2,4-Trichlorobenzene	< 25	ug/kg	8.8	29	1	6/30/00	8021A	CJR	1
1,2,3-Trichlorobenzene	< 25	ug/kg	9.3	31	1	6/30/00	8021A	CJR	1
1,1,1-Trichloroethane	< 25	ug/kg	8.4	28	1	6/30/00	8021A	CJR	1
1,1,2-Trichloroethane	< 25	ug/kg	11	36	1	6/30/00	8021A	CJR	1
Trichloroethene	160	ug/kg	15	51	1	6/30/00	8021A	CJR	1
Trichlorofluoromethane	< 25	ug/kg	8.8	29	1	6/30/00	8021A	CJR	1
1,2,4-Trimethylbenzene	< 25	ug/kg	6.9	23	1	6/30/00	8021A	CJR	1
1,3,5-Trimethylbenzene	< 25	ug/kg	16	54	1	6/30/00	8021A	CJR	1
Vinyl Chloride	< 25	ug/kg	8.3	25	1	6/30/00	8021A	CJR	2
m&p-Xylene	< 50	ug/kg	15	48	1	6/30/00	8021A	CJR	1
o-Xylene	< 25	ug/kg	7.9	26	1	6/30/00	8021A	CJR	1
Lab Code	5030175D					Sample Type	Soil		
Sample ID	GP-101-30' ✓					Sample Date	6/27/00		

Inorganic

General

Solids Percent 88.1 % 1 6/29/00 5021 SAD 1

Organic

# U.S. Analytical Lab

JERRY DE MERS  
 HSI GEOTRANS  
 175 N. CORPORATE DRIVE SUITE 100  
 BROOKFIELD, WI 53045

Project # P177  
 Project Name MPL REALTY  
 Invoice # E30175

Report Date 13-Jul-00

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code	
Lab Code	5030175D					Sample Type	Soil			
Sample ID	GP-101-30'					Sample Date	6/27/00			

VOC's

Benzene	< 25	ug/kg	9.1	30	1	6/30/00	8021A	CJR	1
Bromobenzene	< 25	ug/kg	13	42	1	6/30/00	8021A	CJR	1
Bromodichloromethane	< 25	ug/kg	7.3	24	1	6/30/00	8021A	CJR	1
tert-Butylbenzene	< 25	ug/kg	10	33	1	6/30/00	8021A	CJR	1
sec-Butylbenzene	< 25	ug/kg	8.5	28	1	6/30/00	8021A	CJR	1
n-Butylbenzene	< 25	ug/kg	8.8	29	1	6/30/00	8021A	CJR	1
Carbon Tetrachloride	< 25	ug/kg	8.3	28	1	6/30/00	8021A	CJR	1
Chlorobenzene	< 25	ug/kg	8.4	28	1	6/30/00	8021A	CJR	1
Chloroethane	< 25	ug/kg	11	35	1	6/30/00	8021A	CJR	1
Chloroform	< 25	ug/kg	7.9	26	1	6/30/00	8021A	CJR	1
Chloromethane	< 25	ug/kg	5	17	1	6/30/00	8021A	CJR	4
2-Chlorotoluene	< 25	ug/kg	2.4	8.4	1	6/30/00	8021A	CJR	1
4-Chlorotoluene	< 25	ug/kg	2.3	8.5	1	6/30/00	8021A	CJR	1
2,2-DCP, cis-1,2-Dichloroethene	< 50	ug/kg	4.1	20	1	6/30/00	8021A	CJR	1
1,2-Dibromo-3-chloropropane	< 25	ug/kg	11	37	1	6/30/00	8021A	CJR	1
Dibromochloromethane	< 25	ug/kg	9.4	31	1	6/30/00	8021A	CJR	1
1,4-Dichlorobenzene	< 25	ug/kg	8.8	29	1	6/30/00	8021A	CJR	1
1,3-Dichlorobenzene	< 25	ug/kg	8.6	29	1	6/30/00	8021A	CJR	1
1,2-Dichlorobenzene	< 25	ug/kg	8.9	30	1	6/30/00	8021A	CJR	1
Dichlorodifluoromethane	< 25	ug/kg	8.3	25	1	6/30/00	8021A	CJR	4
1,2-Dichloroethane	< 25	ug/kg	8.6	29	1	6/30/00	8021A	CJR	1
1,1-Dichloroethane	< 25	ug/kg	7.4	25	1	6/30/00	8021A	CJR	1
1,1-Dichloroethene	< 25	ug/kg	8.3	28	1	6/30/00	8021A	CJR	1
cis-1,2-Dichloroethene	< 25	ug/kg	5.7	19	1	6/30/00	8021A	CJR	1
trans-1,2-Dichloroethene	< 25	ug/kg	7.5	25	1	6/30/00	8021A	CJR	1
1,2-Dichloropropane	< 25	ug/kg	8.9	30	1	6/30/00	8021A	CJR	1
1,3-Dichloropropane	< 25	ug/kg	11	35	1	6/30/00	8021A	CJR	1
Di-isopropyl ether	< 25	ug/kg	7.4	25	1	6/30/00	8021A	CJR	1
EDB (1,2-Dibromoethane)	< 25	ug/kg	9.3	31	1	6/30/00	8021A	CJR	1
Ethylbenzene	< 25	ug/kg	7.9	26	1	6/30/00	8021A	CJR	1
Hexachlorobutadiene	< 25	ug/kg	6.4	21	1	6/30/00	8021A	CJR	1
Isopropylbenzene	< 25	ug/kg	10	33	1	6/30/00	8021A	CJR	1
p-Isopropyltoluene	< 25	ug/kg	9	30	1	6/30/00	8021A	CJR	1
Methylene chloride	< 25	ug/kg	13	42	1	6/30/00	8021A	CJR	1
MTBE	< 25	ug/kg	11	38	1	6/30/00	8021A	CJR	1



# U.S. Analytical Lab

JERRY DE MERS  
 HSI GEOTRANS  
 175 N. CORPORATE DRIVE SUITE 100  
 BROOKFIELD, WI 53045

Project # P177  
 Project Name MPL REALTY  
 Invoice # E30175

Report Date 13-Jul-00

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code
Lab Code 5030175D						Sample Type Soil			
Sample ID GP-101-30'						Sample Date 6/27/00			
Naphthalene	< 25	ug/kg	11	38	1	6/30/00	8021A	CJR	1
n-Propylbenzene	< 25	ug/kg	16	53	1	6/30/00	8021A	CJR	1
1,1,2,2-Tetrachloroethane	< 25	ug/kg	24	81	1	6/30/00	8021A	CJR	1
Tetrachloroethene	< 25	ug/kg	7.6	25	1	6/30/00	8021A	CJR	1
Toluene	< 25	ug/kg	6.7	22	1	6/30/00	8021A	CJR	1
1,2,4-Trichlorobenzene	< 25	ug/kg	8.8	29	1	6/30/00	8021A	CJR	1
1,2,3-Trichlorobenzene	< 25	ug/kg	9.3	31	1	6/30/00	8021A	CJR	1
1,1,1-Trichloroethane	< 25	ug/kg	8.4	28	1	6/30/00	8021A	CJR	1
1,1,2-Trichloroethane	< 25	ug/kg	11	36	1	6/30/00	8021A	CJR	1
Trichloroethene	< 25	ug/kg	15	51	1	6/30/00	8021A	CJR	1
Trichlorofluoromethane	< 25	ug/kg	8.8	29	1	6/30/00	8021A	CJR	1
1,2,4-Trimethylbenzene	< 25	ug/kg	6.9	23	1	6/30/00	8021A	CJR	1
1,3,5-Trimethylbenzene	< 25	ug/kg	16	54	1	6/30/00	8021A	CJR	1
Vinyl Chloride	< 25	ug/kg	8.3	25	1	6/30/00	8021A	CJR	2
m&p-Xylene	< 50	ug/kg	15	48	1	6/30/00	8021A	CJR	1
o-Xylene	< 25	ug/kg	7.9	26	1	6/30/00	8021A	CJR	1

Lab Code 5030175E						Sample Type Soil			
Sample ID SPLP-1						Sample Date 6/27/00			

Inorganic

General

Solids Percent	86.6	%			1	7/5/00	5021	SAD	1
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Organic

SPLP

SPLP Benzene	< 0.006	MG/L	0.006	0.017	20	7/11/00	8260B	CJR	1
SPLP Bromobenzene	< 0.004	MG/L	0.004	0.0154	20	7/11/00	8260B	CJR	1
SPLP Bromodichloromethane	< 0.006	MG/L	0.006	0.0168	20	7/11/00	8260B	CJR	1
SPLP tert-Butylbenzene	< 0.008	MG/L	0.008	0.026	20	7/11/00	8260B	CJR	1
SPLP sec-Butylbenzene	< 0.008	MG/L	0.008	0.024	20	7/11/00	8260B	CJR	1
SPLP n-Butylbenzene	< 0.008	MG/L	0.008	0.028	20	7/11/00	8260B	CJR	1
SPLP Carbon Tetrachloride	< 0.01	MG/L	0.01	0.032	20	7/11/00	8260B	CJR	1
SPLP Chlorobenzene	< 0.006	MG/L	0.006	0.0174	20	7/11/00	8260B	CJR	1
SPLP Chloroethane	< 0.004	MG/L	0.004	0.0102	20	7/11/00	8260B	CJR	1
SPLP Chloroform	< 0.006	MG/L	0.006	0.0174	20	7/11/00	8260B	CJR	1
SPLP Chloromethane	< 0.006	MG/L	0.006	0.0192	20	7/11/00	8260B	CJR	1
SPLP 2-Chlorotoluene	< 0.006	MG/L	0.006	0.02	20	7/11/00	8260B	CJR	1

# U.S. Analytical Lab

JERRY DE MERS  
 HSI GEOTRANS  
 175 N. CORPORATE DRIVE SUITE 100  
 BROOKFIELD, WI 53045

Project # P177  
 Project Name MPL REALTY  
 Invoice # E30175

Report Date 13-Jul-00

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code	
Lab Code	5030175E					Sample Type	Soil			
Sample ID	SPLP-1					Sample Date	6/27/00			
SPLP 4-Chlorotoluene	< 0.006	MG/L	0.006	0.0182	20	7/11/00	8260B	CJR	1	
SPLP 1,2-Dibromo-3-chloropropan	< 0.01	MG/L	0.01	0.034	20	7/11/00	8260B	CJR	1	
SPLP Dibromochloromethane	< 0.006	MG/L	0.006	0.02	20	7/11/00	8260B	CJR	1	
SPLP 1,4-Dichlorobenzene	< 0.006	MG/L	0.006	0.0174	20	7/11/00	8260B	CJR	1	
SPLP 1,3-Dichlorobenzene	< 0.006	MG/L	0.006	0.022	20	7/11/00	8260B	CJR	1	
SPLP 1,2-Dichlorobenzene	< 0.006	MG/L	0.006	0.0186	20	7/11/00	8260B	CJR	1	
SPLP Dichlorodifluoromethane	< 0.01	MG/L	0.01	0.036	20	7/11/00	8260B	CJR	1	
SPLP 1,2-Dichloroethane	< 0.002	MG/L	0.002	0.0096	20	7/11/00	8260B	CJR	1	
SPLP 1,1-Dichloroethane	< 0.006	MG/L	0.006	0.022	20	7/11/00	8260B	CJR	1	
SPLP 1,1-Dichloroethene	< 0.012	MG/L	0.012	0.04	20	7/11/00	8260B	CJR	1	
SPLP cis-1,2-Dichloroethene	< 0.006	MG/L	0.006	0.022	20	7/11/00	8260B	CJR	1	
SPLP trans-1,2-Dichloroethene	< 0.01	MG/L	0.01	0.03	20	7/11/00	8260B	CJR	1	
SPLP 1,2-Dichloropropane	< 0.006	MG/L	0.006	0.0172	20	7/11/00	8260B	CJR	1	
SPLP 2,2-Dichloropropane	< 0.01	MG/L	0.01	0.036	20	7/11/00	8260B	CJR	1	
SPLP 1,3-Dichloropropane	< 0.004	MG/L	0.004	0.0152	20	7/11/00	8260B	CJR	1	
SPLP Di-isopropyl ether	< 0.004	MG/L	0.004	0.0138	20	7/11/00	8260B	CJR	1	
SPLP EDB (1,2-Dibromoethane)	< 0.004	MG/L	0.004	0.0164	20	7/11/00	8260B	CJR	1	
SPLP Ethylbenzene	< 0.006	MG/L	0.006	0.022	20	7/11/00	8260B	CJR	1	
SPLP Hexachlorobutadiene	< 0.006	MG/L	0.006	0.022	20	7/11/00	8260B	CJR	1	
SPLP Isopropylbenzene	< 0.006	MG/L	0.006	0.022	20	7/11/00	8260B	CJR	1	
SPLP p-Isopropyltoluene	< 0.006	MG/L	0.006	0.022	20	7/11/00	8260B	CJR	1	
SPLP Methylene chloride	< 0.002	MG/L	0.002	0.066	20	7/11/00	8260B	CJR	1	
SPLP MTBE	< 0.004	MG/L	0.004	0.0138	20	7/11/00	8260B	CJR	1	
SPLP Naphthalene	< 0.014	MG/L	0.014	0.048	20	7/11/00	8260B	CJR	1	
SPLP n-Propylbenzene	< 0.008	MG/L	0.008	0.024	20	7/11/00	8260B	CJR	1	
SPLP 1,1,2,2-Tetrachloroethane	< 0.006	MG/L	0.006	0.0194	20	7/11/00	8260B	CJR	1	
SPLP Tetrachloroethene	< 0.012	MG/L	0.012	0.038	20	7/11/00	8260B	CJR	1	
SPLP Toluene	< 0.008	MG/L	0.008	0.026	20	7/11/00	8260B	CJR	1	
SPLP 1,2,4-Trichlorobenzene	< 0.004	MG/L	0.004	0.0114	20	7/11/00	8260B	CJR	1	
SPLP 1,2,3-Trichlorobenzene	< 0.004	MG/L	0.004	0.0108	20	7/11/00	8260B	CJR	1	
SPLP 1,1,1-Trichloroethane	0.029	MG/L	0.008	0.024	20	7/11/00	8260B	CJR	1	
SPLP 1,1,2-Trichloroethane	< 0.004	MG/L	0.004	0.0132	20	7/11/00	8260B	CJR	1	
SPLP Trichloroethene	0.15	MG/L	0.008	0.026	20	7/11/00	8260B	CJR	1	
SPLP Trichlorofluoromethane	< 0.012	MG/L	0.012	0.038	20	7/11/00	8260B	CJR	1	
SPLP 1,2,4-Trimethylbenzene	< 0.006	MG/L	0.006	0.022	20	7/11/00	8260B	CJR	1	
SPLP 1,3,5-Trimethylbenzene	< 0.008	MG/L	0.008	0.024	20	7/11/00	8260B	CJR	1	
SPLP Vinyl Chloride	< 0.006	MG/L	0.006	0.022	20	7/11/00	8260B	CJR	1	

# U.S. Analytical Lab

JERRY DE MERS  
 HSI GEOTRANS  
 175 N. CORPORATE DRIVE SUITE 100  
 BROOKFIELD, WI 53045

Project # P177  
 Project Name MPL REALTY  
 Invoice # E30175

Report Date 13-Jul-00

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code
Lab Code 5030175E						Sample Type Soil			
Sample ID SPLP-1						Sample Date 6/27/00			
SPLP Xylene's	< 0.02	MG/L	0.02	0.068	20	7/11/00	8260B	CJR	1
Lab Code 5030175F						Sample Type Soil			
Sample ID GP-102-2' ✓						Sample Date 6/27/00			

Inorganic

General

Solids Percent	87.1	%			1	6/29/00	5021	SAD	1
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Organic

VOC's

Benzene	< 25	ug/kg	9.1	30	1	6/30/00	8021A	CJR	1
Bromobenzene	< 25	ug/kg	13	42	1	6/30/00	8021A	CJR	1
Bromodichloromethane	< 25	ug/kg	7.3	24	1	6/30/00	8021A	CJR	1
tert-Butylbenzene	< 25	ug/kg	10	33	1	6/30/00	8021A	CJR	1
sec-Butylbenzene	< 25	ug/kg	8.5	28	1	6/30/00	8021A	CJR	1
n-Butylbenzene	< 25	ug/kg	8.8	29	1	6/30/00	8021A	CJR	1
Carbon Tetrachloride	< 25	ug/kg	8.3	28	1	6/30/00	8021A	CJR	1
Chlorobenzene	< 25	ug/kg	8.4	28	1	6/30/00	8021A	CJR	1
Chloroethane	< 25	ug/kg	11	35	1	6/30/00	8021A	CJR	1
Chloroform	< 25	ug/kg	7.9	26	1	6/30/00	8021A	CJR	1
Chloromethane	< 25	ug/kg	5	17	1	6/30/00	8021A	CJR	4
2-Chlorotoluene	< 25	ug/kg	2.4	8.4	1	6/30/00	8021A	CJR	1
4-Chlorotoluene	< 25	ug/kg	2.3	8.5	1	6/30/00	8021A	CJR	1
2,2-DCP, cis-1,2-Dichloroethene	< 50	ug/kg	4.1	20	1	6/30/00	8021A	CJR	1
1,2-Dibromo-3-chloropropane	< 25	ug/kg	11	37	1	6/30/00	8021A	CJR	1
Dibromochloromethane	< 25	ug/kg	9.4	31	1	6/30/00	8021A	CJR	1
1,4-Dichlorobenzene	< 25	ug/kg	8.8	29	1	6/30/00	8021A	CJR	1
1,3-Dichlorobenzene	< 25	ug/kg	8.6	29	1	6/30/00	8021A	CJR	1
1,2-Dichlorobenzene	< 25	ug/kg	8.9	30	1	6/30/00	8021A	CJR	1
Dichlorodifluoromethane	< 25	ug/kg	8.3	25	1	6/30/00	8021A	CJR	4
1,2-Dichloroethane	< 25	ug/kg	8.6	29	1	6/30/00	8021A	CJR	1
1,1-Dichloroethane	< 25	ug/kg	7.4	25	1	6/30/00	8021A	CJR	1
1,1-Dichloroethene	< 25	ug/kg	8.3	28	1	6/30/00	8021A	CJR	1
cis-1,2-Dichloroethene	< 25	ug/kg	5.7	19	1	6/30/00	8021A	CJR	1
trans-1,2-Dichloroethene	< 25	ug/kg	7.5	25	1	6/30/00	8021A	CJR	1
1,2-Dichloropropane	< 25	ug/kg	8.9	30	1	6/30/00	8021A	CJR	1
1,3-Dichloropropane	< 25	ug/kg	11	35	1	6/30/00	8021A	CJR	1

# U.S. Analytical Lab

JERRY DE MERS  
 HSI GEOTRANS  
 175 N. CORPORATE DRIVE SUITE 100  
 BROOKFIELD, WI 53045

Project # P177  
 Project Name MPL REALTY  
 Invoice # E30175

Report Date 13-Jul-00

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code
<b>Lab Code</b> 5030175F						<b>Sample Type</b>	Soil		
<b>Sample ID</b> GP-102-2'						<b>Sample Date</b>	6/27/00		
Di-isopropyl ether	< 25	ug/kg	7.4	25	1	6/30/00	8021A	CJR	1
EDB (1,2-Dibromoethane)	< 25	ug/kg	9.3	31	1	6/30/00	8021A	CJR	1
Ethylbenzene	< 25	ug/kg	7.9	26	1	6/30/00	8021A	CJR	1
Hexachlorobutadiene	< 25	ug/kg	6.4	21	1	6/30/00	8021A	CJR	1
Isopropylbenzene	< 25	ug/kg	10	33	1	6/30/00	8021A	CJR	1
p-Isopropyltoluene	< 25	ug/kg	9	30	1	6/30/00	8021A	CJR	1
Methylene chloride	< 25	ug/kg	13	42	1	6/30/00	8021A	CJR	1
MTBE	< 25	ug/kg	11	38	1	6/30/00	8021A	CJR	1
Naphthalene	< 25	ug/kg	11	38	1	6/30/00	8021A	CJR	1
n-Propylbenzene	< 25	ug/kg	16	53	1	6/30/00	8021A	CJR	1
1,1,2,2-Tetrachloroethane	< 25	ug/kg	24	81	1	6/30/00	8021A	CJR	1
Tetrachloroethene	< 25	ug/kg	7.6	25	1	6/30/00	8021A	CJR	1
Toluene	< 25	ug/kg	6.7	22	1	6/30/00	8021A	CJR	1
1,2,4-Trichlorobenzene	< 25	ug/kg	8.8	29	1	6/30/00	8021A	CJR	1
1,2,3-Trichlorobenzene	< 25	ug/kg	9.3	31	1	6/30/00	8021A	CJR	1
1,1,1-Trichloroethane	72	ug/kg	8.4	28	1	6/30/00	8021A	CJR	1
1,1,2-Trichloroethane	< 25	ug/kg	11	36	1	6/30/00	8021A	CJR	1
Trichloroethene	35	ug/kg	15	51	1	6/30/00	8021A	CJR	1
Trichlorofluoromethane	< 25	ug/kg	8.8	29	1	6/30/00	8021A	CJR	1
1,2,4-Trimethylbenzene	< 25	ug/kg	6.9	23	1	6/30/00	8021A	CJR	1
1,3,5-Trimethylbenzene	< 25	ug/kg	16	54	1	6/30/00	8021A	CJR	1
Vinyl Chloride	< 25	ug/kg	8.3	25	1	6/30/00	8021A	CJR	2
m&p-Xylene	< 50	ug/kg	15	48	1	6/30/00	8021A	CJR	1
o-Xylene	< 25	ug/kg	7.9	26	1	6/30/00	8021A	CJR	1

<b>Lab Code</b> 5030175G						<b>Sample Type</b>	Soil		
<b>Sample ID</b> GP-109-2' ✓						<b>Sample Date</b>	6/27/00		

**Inorganic**

**General**

Solids Percent 89.0 % 1 6/29/00 5021 SAD 1

**Organic**

**VOC's**

Benzene < 25 ug/kg 9.1 30 1 6/30/00 8021A CJR 1  
 Bromobenzene < 25 ug/kg 13 42 1 6/30/00 8021A CJR 1  
 Bromodichloromethane < 25 ug/kg 7.3 24 1 6/30/00 8021A CJR 1  
 tert-Butylbenzene < 25 ug/kg 10 33 1 6/30/00 8021A CJR 1

# U.S. Analytical Lab

JERRY DE MERS  
 HSI GEOTRANS  
 175 N. CORPORATE DRIVE SUITE 100  
 BROOKFIELD, WI 53045

Project # P177  
 Project Name MPL REALTY  
 Invoice # E30175

Report Date 13-Jul-00

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code
Lab Code 5030175G						Sample Type Soil			
Sample ID GP-109-2'						Sample Date 6/27/00			
sec-Butylbenzene	< 25	ug/kg	8.5	28	1	6/30/00	8021A	CJR	1
n-Butylbenzene	< 25	ug/kg	8.8	29	1	6/30/00	8021A	CJR	1
Carbon Tetrachloride	< 25	ug/kg	8.3	28	1	6/30/00	8021A	CJR	1
Chlorobenzene	< 25	ug/kg	8.4	28	1	6/30/00	8021A	CJR	1
Chloroethane	< 25	ug/kg	11	35	1	6/30/00	8021A	CJR	1
Chloroform	< 25	ug/kg	7.9	26	1	6/30/00	8021A	CJR	1
Chloromethane	< 25	ug/kg	5	17	1	6/30/00	8021A	CJR	4
2-Chlorotoluene	< 25	ug/kg	2.4	8.4	1	6/30/00	8021A	CJR	1
4-Chlorotoluene	< 25	ug/kg	2.3	8.5	1	6/30/00	8021A	CJR	1
2,2-DCP, cis-1,2-Dichloroethene	< 50	ug/kg	4.1	20	1	6/30/00	8021A	CJR	1
1,2-Dibromo-3-chloropropane	< 25	ug/kg	11	37	1	6/30/00	8021A	CJR	1
Dibromochloromethane	< 25	ug/kg	9.4	31	1	6/30/00	8021A	CJR	1
1,4-Dichlorobenzene	< 25	ug/kg	8.8	29	1	6/30/00	8021A	CJR	1
1,3-Dichlorobenzene	< 25	ug/kg	8.6	29	1	6/30/00	8021A	CJR	1
1,2-Dichlorobenzene	< 25	ug/kg	8.9	30	1	6/30/00	8021A	CJR	1
Dichlorodifluoromethane	< 25	ug/kg	8.3	25	1	6/30/00	8021A	CJR	4
1,2-Dichloroethane	< 25	ug/kg	8.6	29	1	6/30/00	8021A	CJR	1
1,1-Dichloroethane	< 25	ug/kg	7.4	25	1	6/30/00	8021A	CJR	1
1,1-Dichloroethene	< 25	ug/kg	8.3	28	1	6/30/00	8021A	CJR	1
cis-1,2-Dichloroethene	< 25	ug/kg	5.7	19	1	6/30/00	8021A	CJR	1
trans-1,2-Dichloroethene	< 25	ug/kg	7.5	25	1	6/30/00	8021A	CJR	1
1,2-Dichloropropane	< 25	ug/kg	8.9	30	1	6/30/00	8021A	CJR	1
1,3-Dichloropropane	< 25	ug/kg	11	35	1	6/30/00	8021A	CJR	1
Di-isopropyl ether	< 25	ug/kg	7.4	25	1	6/30/00	8021A	CJR	1
EDB (1,2-Dibromoethane)	< 25	ug/kg	9.3	31	1	6/30/00	8021A	CJR	1
Ethylbenzene	< 25	ug/kg	7.9	26	1	6/30/00	8021A	CJR	1
Hexachlorobutadiene	< 25	ug/kg	6.4	21	1	6/30/00	8021A	CJR	1
Isopropylbenzene	< 25	ug/kg	10	33	1	6/30/00	8021A	CJR	1
p-Isopropyltoluene	< 25	ug/kg	9	30	1	6/30/00	8021A	CJR	1
Methylene chloride	< 25	ug/kg	13	42	1	6/30/00	8021A	CJR	1
MTBE	< 25	ug/kg	11	38	1	6/30/00	8021A	CJR	1
Naphthalene	< 25	ug/kg	11	38	1	6/30/00	8021A	CJR	1
n-Propylbenzene	< 25	ug/kg	16	53	1	6/30/00	8021A	CJR	1
1,1,2,2-Tetrachloroethane	< 25	ug/kg	24	81	1	6/30/00	8021A	CJR	1
Tetrachloroethene	< 25	ug/kg	7.6	25	1	6/30/00	8021A	CJR	1
Toluene	< 25	ug/kg	6.7	22	1	6/30/00	8021A	CJR	1
1,2,4-Trichlorobenzene	< 25	ug/kg	8.8	29	1	6/30/00	8021A	CJR	1

# U.S. Analytical Lab

JERRY DE MERS  
 HSI GEOTRANS  
 175 N. CORPORATE DRIVE SUITE 100  
 BROOKFIELD, WI 53045

Project # P177  
 Project Name MPL REALTY  
 Invoice # E30175

Report Date 13-Jul-00

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code
<b>Lab Code</b> 5030175G									
<b>Sample ID</b> GP-109-2'						<b>Sample Type</b> Soil			
						<b>Sample Date</b> 6/27/00			
1,2,3-Trichlorobenzene	< 25	ug/kg	9.3	31	1	6/30/00	8021A	CJR	1
1,1,1-Trichloroethane	58	ug/kg	8.4	28	1	6/30/00	8021A	CJR	1
1,1,2-Trichloroethane	< 25	ug/kg	11	36	1	6/30/00	8021A	CJR	1
Trichloroethene	1900	ug/kg	15	51	1	6/30/00	8021A	CJR	1
Trichlorofluoromethane	< 25	ug/kg	8.8	29	1	6/30/00	8021A	CJR	1
1,2,4-Trimethylbenzene	< 25	ug/kg	6.9	23	1	6/30/00	8021A	CJR	1
1,3,5-Trimethylbenzene	< 25	ug/kg	16	54	1	6/30/00	8021A	CJR	1
Vinyl Chloride	< 25	ug/kg	8.3	25	1	6/30/00	8021A	CJR	2
m&p-Xylene	< 50	ug/kg	15	48	1	6/30/00	8021A	CJR	1
o-Xylene	< 25	ug/kg	7.9	26	1	6/30/00	8021A	CJR	1
<b>Lab Code</b> 5030175H									
<b>Sample ID</b> GP-109-8'						<b>Sample Type</b> Soil			
						<b>Sample Date</b> 6/27/00			

**Inorganic**

General

Solids Percent 78.4 % 1 6/29/00 5021 SAD 1

**Organic**

VOC's

Benzene	< 25	ug/kg	9.1	30	1	6/30/00	8021A	CJR	1
Bromobenzene	< 25	ug/kg	13	42	1	6/30/00	8021A	CJR	1
Bromodichloromethane	< 25	ug/kg	7.3	24	1	6/30/00	8021A	CJR	1
tert-Butylbenzene	< 25	ug/kg	10	33	1	6/30/00	8021A	CJR	1
sec-Butylbenzene	< 25	ug/kg	8.5	28	1	6/30/00	8021A	CJR	1
n-Butylbenzene	< 25	ug/kg	8.8	29	1	6/30/00	8021A	CJR	1
Carbon Tetrachloride	< 25	ug/kg	8.3	28	1	6/30/00	8021A	CJR	1
Chlorobenzene	< 25	ug/kg	8.4	28	1	6/30/00	8021A	CJR	1
Chloroethane	< 25	ug/kg	11	35	1	6/30/00	8021A	CJR	1
Chloroform	< 25	ug/kg	7.9	26	1	6/30/00	8021A	CJR	1
Chloromethane	< 25	ug/kg	5	17	1	6/30/00	8021A	CJR	4
2-Chlorotoluene	< 25	ug/kg	2.4	8.4	1	6/30/00	8021A	CJR	1
4-Chlorotoluene	< 25	ug/kg	2.3	8.5	1	6/30/00	8021A	CJR	1
2,2-DCP, cis-1,2-Dichloroethene	< 50	ug/kg	4.1	20	1	6/30/00	8021A	CJR	1
1,2-Dibromo-3-chloropropane	< 25	ug/kg	11	37	1	6/30/00	8021A	CJR	1
Dibromochloromethane	< 25	ug/kg	9.4	31	1	6/30/00	8021A	CJR	1
1,4-Dichlorobenzene	< 25	ug/kg	8.8	29	1	6/30/00	8021A	CJR	1
1,3-Dichlorobenzene	< 25	ug/kg	8.6	29	1	6/30/00	8021A	CJR	1

# U.S. Analytical Lab

JERRY DE MERS  
 HSI GEOTRANS  
 175 N. CORPORATE DRIVE SUITE 100  
 BROOKFIELD, WI 53045

Project # P177  
 Project Name MPL REALTY  
 Invoice # E30175

Report Date 13-Jul-00

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code	
Lab Code	5030175H					Sample Type	Soil			
Sample ID	GP-109-8'					Sample Date	6/27/00			
1,2-Dichlorobenzene	< 25	ug/kg	8.9	30	1	6/30/00	8021A	CJR	1	
Dichlorodifluoromethane	< 25	ug/kg	8.3	25	1	6/30/00	8021A	CJR	4	
1,2-Dichloroethane	< 25	ug/kg	8.6	29	1	6/30/00	8021A	CJR	1	
1,1-Dichloroethane	< 25	ug/kg	7.4	25	1	6/30/00	8021A	CJR	1	
1,1-Dichloroethene	< 25	ug/kg	8.3	28	1	6/30/00	8021A	CJR	1	
cis-1,2-Dichloroethene	< 25	ug/kg	5.7	19	1	6/30/00	8021A	CJR	1	
trans-1,2-Dichloroethene	< 25	ug/kg	7.5	25	1	6/30/00	8021A	CJR	1	
1,2-Dichloropropane	< 25	ug/kg	8.9	30	1	6/30/00	8021A	CJR	1	
1,3-Dichloropropane	< 25	ug/kg	11	35	1	6/30/00	8021A	CJR	1	
Di-isopropyl ether	< 25	ug/kg	7.4	25	1	6/30/00	8021A	CJR	1	
EDB (1,2-Dibromoethane)	< 25	ug/kg	9.3	31	1	6/30/00	8021A	CJR	1	
Ethylbenzene	< 25	ug/kg	7.9	26	1	6/30/00	8021A	CJR	1	
Hexachlorobutadiene	< 25	ug/kg	6.4	21	1	6/30/00	8021A	CJR	1	
Isopropylbenzene	< 25	ug/kg	10	33	1	6/30/00	8021A	CJR	1	
p-Isopropyltoluene	< 25	ug/kg	9	30	1	6/30/00	8021A	CJR	1	
Methylene chloride	< 25	ug/kg	13	42	1	6/30/00	8021A	CJR	1	
MTBE	< 25	ug/kg	11	38	1	6/30/00	8021A	CJR	1	
Naphthalene	< 25	ug/kg	11	38	1	6/30/00	8021A	CJR	1	
n-Propylbenzene	< 25	ug/kg	16	53	1	6/30/00	8021A	CJR	1	
1,1,2,2-Tetrachloroethane	< 25	ug/kg	24	81	1	6/30/00	8021A	CJR	1	
Tetrachloroethene	< 25	ug/kg	7.6	25	1	6/30/00	8021A	CJR	1	
Toluene	< 25	ug/kg	6.7	22	1	6/30/00	8021A	CJR	1	
1,2,4-Trichlorobenzene	< 25	ug/kg	8.8	29	1	6/30/00	8021A	CJR	1	
1,2,3-Trichlorobenzene	< 25	ug/kg	9.3	31	1	6/30/00	8021A	CJR	1	
1,1,1-Trichloroethane	S4	ug/kg	8.4	28	1	6/30/00	8021A	CJR	1	
1,1,2-Trichloroethane	< 25	ug/kg	11	36	1	6/30/00	8021A	CJR	1	
Trichloroethene	920	ug/kg	15	51	1	6/30/00	8021A	CJR	1	
Trichlorofluoromethane	< 25	ug/kg	8.8	29	1	6/30/00	8021A	CJR	1	
1,2,4-Trimethylbenzene	< 25	ug/kg	6.9	23	1	6/30/00	8021A	CJR	1	
1,3,5-Trimethylbenzene	< 25	ug/kg	16	54	1	6/30/00	8021A	CJR	1	
Vinyl Chloride	< 25	ug/kg	8.3	25	1	6/30/00	8021A	CJR	2	
m&p-Xylene	< 50	ug/kg	15	48	1	6/30/00	8021A	CJR	1	
o-Xylene	< 25	ug/kg	7.9	26	1	6/30/00	8021A	CJR	1	

# U.S. Analytical Lab

JERRY DE MERS  
 HSI GEOTRANS  
 175 N. CORPORATE DRIVE SUITE 100  
 BROOKFIELD, WI 53045

Project # P177  
 Project Name MPL REALTY  
 Invoice # E30175

Report Date 13-Jul-00

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code
Lab Code	5030175I					Sample Type	Soil		
Sample ID	SPLP-2					Sample Date	6/27/00		

Inorganic

General

Solids Percent	86.1	%			1	7/5/00	5021	SAD	1
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Organic

SPLP

SPLP Benzene	< 0.006	MG/L	0.006	0.017	20	7/11/00	8260B	CJR	1
SPLP Bromobenzene -	< 0.004	MG/L	0.004	0.0154	20	7/11/00	8260B	CJR	1
SPLP Bromodichloromethane	< 0.006	MG/L	0.006	0.0168	20	7/11/00	8260B	CJR	1
SPLP tert-Butylbenzene	< 0.008	MG/L	0.008	0.026	20	7/11/00	8260B	CJR	1
SPLP sec-Butylbenzene	< 0.008	MG/L	0.008	0.024	20	7/11/00	8260B	CJR	1
SPLP n-Butylbenzene	< 0.008	MG/L	0.008	0.028	20	7/11/00	8260B	CJR	1
SPLP Carbon Tetrachloride	< 0.01	MG/L	0.01	0.032	20	7/11/00	8260B	CJR	1
SPLP Chlorobenzene	< 0.006	MG/L	0.006	0.0174	20	7/11/00	8260B	CJR	1
SPLP Chloroethane	< 0.004	MG/L	0.004	0.0102	20	7/11/00	8260B	CJR	1
SPLP Chloroform	< 0.006	MG/L	0.006	0.0174	20	7/11/00	8260B	CJR	1
SPLP Chloromethane	< 0.006	MG/L	0.006	0.0192	20	7/11/00	8260B	CJR	1
SPLP 2-Chlorotoluene	< 0.006	MG/L	0.006	0.02	20	7/11/00	8260B	CJR	1
SPLP 4-Chlorotoluene	< 0.006	MG/L	0.006	0.0182	20	7/11/00	8260B	CJR	1
SPLP 1,2-Dibromo-3-chloropropan	< 0.01	MG/L	0.01	0.034	20	7/11/00	8260B	CJR	1
SPLP Dibromochloromethane	< 0.006	MG/L	0.006	0.02	20	7/11/00	8260B	CJR	1
SPLP 1,4-Dichlorobenzene	< 0.006	MG/L	0.006	0.0174	20	7/11/00	8260B	CJR	1
SPLP 1,3-Dichlorobenzene	< 0.006	MG/L	0.006	0.022	20	7/11/00	8260B	CJR	1
SPLP 1,2-Dichlorobenzene	< 0.006	MG/L	0.006	0.0186	20	7/11/00	8260B	CJR	1
SPLP Dichlorodifluoromethane	< 0.01	MG/L	0.01	0.036	20	7/11/00	8260B	CJR	1
SPLP 1,2-Dichloroethane	< 0.002	MG/L	0.002	0.0096	20	7/11/00	8260B	CJR	1
SPLP 1,1-Dichloroethane	< 0.006	MG/L	0.006	0.022	20	7/11/00	8260B	CJR	1
SPLP 1,1-Dichloroethene	< 0.012	MG/L	0.012	0.04	20	7/11/00	8260B	CJR	1
SPLP cis-1,2-Dichloroethene	< 0.006	MG/L	0.006	0.022	20	7/11/00	8260B	CJR	1
SPLP trans-1,2-Dichloroethene	< 0.01	MG/L	0.01	0.03	20	7/11/00	8260B	CJR	1
SPLP 1,2-Dichloropropane	< 0.006	MG/L	0.006	0.0172	20	7/11/00	8260B	CJR	1
SPLP 2,2-Dichloropropane	< 0.01	MG/L	0.01	0.036	20	7/11/00	8260B	CJR	1
SPLP 1,3-Dichloropropane	< 0.004	MG/L	0.004	0.0152	20	7/11/00	8260B	CJR	1
SPLP Di-isopropyl ether	< 0.004	MG/L	0.004	0.0138	20	7/11/00	8260B	CJR	1
SPLP EDB (1,2-Dibromoethane)	< 0.004	MG/L	0.004	0.0164	20	7/11/00	8260B	CJR	1
SPLP Ethylbenzene	< 0.006	MG/L	0.006	0.022	20	7/11/00	8260B	CJR	1
SPLP Hexachlorobutadiene	< 0.006	MG/L	0.006	0.022	20	7/11/00	8260B	CJR	1



# U.S. Analytical Lab

JERRY DE MERS  
 HSI GEOTRANS  
 175 N. CORPORATE DRIVE SUITE 100  
 BROOKFIELD, WI 53045

Project # P177  
 Project Name MPL REALTY  
 Invoice # E30175

Report Date 13-Jul-00

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code	
Lab Code	5030175I					Sample Type	Soil			
Sample ID	SPLP-2					Sample Date	6/27/00			
SPLP Isopropylbenzene	< 0.006	MG/L	0.006	0.022	20	7/11/00	8260B	CJR	1	
SPLP p-Isopropyltoluene	< 0.006	MG/L	0.006	0.022	20	7/11/00	8260B	CJR	1	
SPLP Methylene chloride	< 0.002	MG/L	0.002	0.066	20	7/11/00	8260B	CJR	1	
SPLP MTBE	< 0.004	MG/L	0.004	0.0138	20	7/11/00	8260B	CJR	1	
SPLP Naphthalene	< 0.014	MG/L	0.014	0.048	20	7/11/00	8260B	CJR	1	
SPLP n-Propylbenzene	< 0.008	MG/L	0.008	0.024	20	7/11/00	8260B	CJR	1	
SPLP 1,1,2,2-Tetrachloroethane	< 0.006	MG/L	0.006	0.0194	20	7/11/00	8260B	CJR	1	
SPLP Tetrachloroethene	< 0.012	MG/L	0.012	0.038	20	7/11/00	8260B	CJR	1	
SPLP Toluene	< 0.008	MG/L	0.008	0.026	20	7/11/00	8260B	CJR	1	
SPLP 1,2,4-Trichlorobenzene	< 0.004	MG/L	0.004	0.0114	20	7/11/00	8260B	CJR	1	
SPLP 1,2,3-Trichlorobenzene	< 0.004	MG/L	0.004	0.0108	20	7/11/00	8260B	CJR	1	
SPLP 1,1,1-Trichloroethane	< 0.008	MG/L	0.008	0.024	20	7/11/00	8260B	CJR	1	
SPLP 1,1,2-Trichloroethane	< 0.004	MG/L	0.004	0.0132	20	7/11/00	8260B	CJR	1	
SPLP Trichloroethene	< 0.008	MG/L	0.008	0.026	20	7/11/00	8260B	CJR	1	
SPLP Trichlorofluoromethane	< 0.012	MG/L	0.012	0.038	20	7/11/00	8260B	CJR	1	
SPLP 1,2,4-Trimethylbenzene	< 0.006	MG/L	0.006	0.022	20	7/11/00	8260B	CJR	1	
SPLP 1,3,5-Trimethylbenzene	< 0.008	MG/L	0.008	0.024	20	7/11/00	8260B	CJR	1	
SPLP Vinyl Chloride	< 0.006	MG/L	0.006	0.022	20	7/11/00	8260B	CJR	1	
SPLP Xylene's	< 0.02	MG/L	0.02	0.068	20	7/11/00	8260B	CJR	1	
VOC's										
Benzene	< 5	ug/l	5	16	20	7/11/00	8260B	CJR	1	
Bromobenzene	< 4.4	ug/l	4.4	14	20	7/11/00	8260B	CJR	1	
Bromodichloromethane	< 4.2	ug/l	4.2	14	20	7/11/00	8260B	CJR	1	
tert-Butylbenzene	< 3.2	ug/l	3.2	10	20	7/11/00	8260B	CJR	1	
sec-Butylbenzene	< 4.4	ug/l	4.4	15	20	7/11/00	8260B	CJR	1	
n-Butylbenzene	< 5.8	ug/l	5.8	19	20	7/11/00	8260B	CJR	1	
Carbon Tetrachloride	< 6.6	ug/l	6.6	22	20	7/11/00	8260B	CJR	1	
Chlorobenzene	< 4.2	ug/l	4.2	14	20	7/11/00	8260B	CJR	1	
Chloroethane	< 4.8	ug/l	4.8	16	20	7/11/00	8260B	CJR	3 4 7	
Chloroform	< 6.4	ug/l	6.4	22	20	7/11/00	8260B	CJR	1	
Chloromethane	< 4.8	ug/l	4.8	16	20	7/11/00	8260B	CJR	1	
2-Chlorotoluene	< 5.6	ug/l	5.6	19	20	7/11/00	8260B	CJR	1	
4-Chlorotoluene	< 6.2	ug/l	6.2	20	20	7/11/00	8260B	CJR	1	
1,2-Dibromo-3-chloropropane	< 30	ug/l	30	100	20	7/11/00	8260B	CJR	1	
Dibromochloromethane	< 5.2	ug/l	5.2	18	20	7/11/00	8260B	CJR	1	
1,4-Dichlorobenzene	< 5.8	ug/l	5.8	20	20	7/11/00	8260B	CJR	1	

# U.S. Analytical Lab

JERRY DE MERS  
 HSI GEOTRANS  
 175 N. CORPORATE DRIVE SUITE 100  
 BROOKFIELD, WI 53045

Project # P177  
 Project Name MPL REALTY  
 Invoice # E30175

Report Date 13-Jul-00

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code	
Lab Code	50301751					Sample Type	Soil			
Sample ID	SPLP-2					Sample Date	6/27/00			
1,3-Dichlorobenzene	< 5	ug/l	5	17	20	7/11/00	8260B	CJR	1	
1,2-Dichlorobenzene	< 5	ug/l	5	17	20	7/11/00	8260B	CJR	1	
Dichlorodifluoromethane	< 5.4	ug/l	5.4	18	20	7/11/00	8260B	CJR	1	
1,2-Dichloroethane	< 7.8	ug/l	7.8	26	20	7/11/00	8260B	CJR	3 7	
1,1-Dichloroethane	< 6.8	ug/l	6.8	22	20	7/11/00	8260B	CJR	1	
1,1-Dichloroethene	< 7.2	ug/l	7.2	24	20	7/11/00	8260B	CJR	1	
cis-1,2-Dichloroethene	< 20	ug/l	20	70	20	7/11/00	8260B	CJR	1	
trans-1,2-Dichloroethene	< 4.6	ug/l	4.6	16	20	7/11/00	8260B	CJR	1	
1,2-Dichloropropane	< 5.4	ug/l	5.4	18	20	7/11/00	8260B	CJR	1	
2,2-Dichloropropane	< 9.4	ug/l	9.4	32	20	7/11/00	8260B	CJR	1	
1,3-Dichloropropane	< 10	ug/l	10	32	20	7/11/00	8260B	CJR	1	
Di-isopropyl ether	< 5.2	ug/l	5.2	17	20	7/11/00	8260B	CJR	1	
EDB (1,2-Dibromoethane)	< 12	ug/l	12	40	20	7/11/00	8260B	CJR	1	
Ethylbenzene	< 2.4	ug/l	2.4	8.2	20	7/11/00	8260B	CJR	1	
Hexachlorobutadiene	< 12	ug/l	12	38	20	7/11/00	8260B	CJR	1	
Isopropylbenzene	< 3	ug/l	3	10	20	7/11/00	8260B	CJR	1	
p-Isopropyltoluene	< 4	ug/l	4	14	20	7/11/00	8260B	CJR	1	
Methylene chloride	< 7	ug/l	7	24	20	7/11/00	8260B	CJR	3 7	
MTBE	< 11	ug/l	11	36	20	7/11/00	8260B	CJR	1	
Naphthalene	< 14	ug/l	14	46	20	7/11/00	8260B	CJR	1	
n-Propylbenzene	< 3.6	ug/l	3.6	12	20	7/11/00	8260B	CJR	1	
1,1,2,2-Tetrachloroethane	< 20	ug/l	20	66	20	7/11/00	8260B	CJR	1	
Tetrachloroethene	< 5	ug/l	5	17	20	7/11/00	8260B	CJR	1	
Toluene	< 4.4	ug/l	4.4	15	20	7/11/00	8260B	CJR	1	
1,2,4-Trichlorobenzene	< 5.6	ug/l	5.6	18	20	7/11/00	8260B	CJR	1	
1,2,3-Trichlorobenzene	< 9	ug/l	9	30	20	7/11/00	8260B	CJR	1	
1,1,1-Trichloroethane	< 5.8	ug/l	5.8	19	20	7/11/00	8260B	CJR	1	
1,1,2-Trichloroethane	< 11	ug/l	11	38	20	7/11/00	8260B	CJR	1	
Trichloroethene	< 7.2	ug/l	7.2	24	20	7/11/00	8260B	CJR	1	
Trichlorofluoromethane	< 4.6	ug/l	4.6	15	20	7/11/00	8260B	CJR	3 7	
1,2,4-Trimethylbenzene	< 4.8	ug/l	4.8	16	20	7/11/00	8260B	CJR	1	
1,3,5-Trimethylbenzene	< 5.2	ug/l	5.2	17	20	7/11/00	8260B	CJR	1	
Vinyl Chloride	< 4.6	ug/l	4.6	15	20	7/11/00	8260B	CJR	1	
m&p-Xylene	< 10	ug/l	10	34	20	7/11/00	8260B	CJR	1	
o-Xylene	< 4.4	ug/l	4.4	14	20	7/11/00	8260B	CJR	1	

# U.S. Analytical Lab

JERRY DE MERS  
 HSI GEOTRANS  
 175 N. CORPORATE DRIVE SUITE 100  
 BROOKFIELD, WI 53045

Project # P177  
 Project Name MPL REALTY  
 Invoice # E30175

Report Date 13-Jul-00

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code
Lab Code	5030175J					Sample Type	Soil		
Sample ID	SPLP-3					Sample Date	6/27/00		

Inorganic

General

Solids Percent	86.5	%			1	6/29/00	5021	SAD	1
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Organic

SPLP

SPLP Benzene	< 0.006	MG/L	0.006	0.017	20	7/11/00	8260B	CJR	1
SPLP Bromobenzene	< 0.004	MG/L	0.004	0.0154	20	7/11/00	8260B	CJR	1
SPLP Bromodichloromethane	< 0.006	MG/L	0.006	0.0168	20	7/11/00	8260B	CJR	1
SPLP tert-Butylbenzene	< 0.008	MG/L	0.008	0.026	20	7/11/00	8260B	CJR	1
SPLP sec-Butylbenzene	< 0.008	MG/L	0.008	0.024	20	7/11/00	8260B	CJR	1
SPLP n-Butylbenzene	< 0.008	MG/L	0.008	0.028	20	7/11/00	8260B	CJR	1
SPLP Carbon Tetrachloride	< 0.01	MG/L	0.01	0.032	20	7/11/00	8260B	CJR	1
SPLP Chlorobenzene	< 0.006	MG/L	0.006	0.0174	20	7/11/00	8260B	CJR	1
SPLP Chloroethane	< 0.004	MG/L	0.004	0.0102	20	7/11/00	8260B	CJR	1
SPLP Chloroform	< 0.006	MG/L	0.006	0.0174	20	7/11/00	8260B	CJR	1
SPLP Chloromethane	< 0.006	MG/L	0.006	0.0192	20	7/11/00	8260B	CJR	1
SPLP 2-Chlorotoluene	< 0.006	MG/L	0.006	0.02	20	7/11/00	8260B	CJR	1
SPLP 4-Chlorotoluene	< 0.006	MG/L	0.006	0.0182	20	7/11/00	8260B	CJR	1
SPLP 1,2-Dibromo-3-chloropropan	< 0.01	MG/L	0.01	0.034	20	7/11/00	8260B	CJR	1
SPLP Dibromochloromethane	< 0.006	MG/L	0.006	0.02	20	7/11/00	8260B	CJR	1
SPLP 1,4-Dichlorobenzene	< 0.006	MG/L	0.006	0.0174	20	7/11/00	8260B	CJR	1
SPLP 1,3-Dichlorobenzene	< 0.006	MG/L	0.006	0.022	20	7/11/00	8260B	CJR	1
SPLP 1,2-Dichlorobenzene	< 0.006	MG/L	0.006	0.0186	20	7/11/00	8260B	CJR	1
SPLP Dichlorodifluoromethane	< 0.01	MG/L	0.01	0.036	20	7/11/00	8260B	CJR	1
SPLP 1,2-Dichloroethane	< 0.002	MG/L	0.002	0.0096	20	7/11/00	8260B	CJR	1
SPLP 1,1-Dichloroethane	< 0.006	MG/L	0.006	0.022	20	7/11/00	8260B	CJR	1
SPLP 1,1-Dichloroethene	< 0.012	MG/L	0.012	0.04	20	7/11/00	8260B	CJR	1
SPLP cis-1,2-Dichloroethene	0.008 "J"	MG/L	0.006	0.022	20	7/11/00	8260B	CJR	1
SPLP trans-1,2-Dichloroethene	< 0.01	MG/L	0.01	0.03	20	7/11/00	8260B	CJR	1
SPLP 1,2-Dichloropropane	< 0.006	MG/L	0.006	0.0172	20	7/11/00	8260B	CJR	1
SPLP 2,2-Dichloropropane	< 0.01	MG/L	0.01	0.036	20	7/11/00	8260B	CJR	1
SPLP 1,3-Dichloropropane	< 0.004	MG/L	0.004	0.0152	20	7/11/00	8260B	CJR	1
SPLP Di-isopropyl ether	< 0.004	MG/L	0.004	0.0138	20	7/11/00	8260B	CJR	1
SPLP EDB (1,2-Dibromoethane)	< 0.004	MG/L	0.004	0.0164	20	7/11/00	8260B	CJR	1
SPLP Ethylbenzene	< 0.006	MG/L	0.006	0.022	20	7/11/00	8260B	CJR	1
SPLP Hexachlorobutadiene	< 0.006	MG/L	0.006	0.022	20	7/11/00	8260B	CJR	1

# U.S. Analytical Lab

JERRY DE MERS  
 HSI GEOTRANS  
 175 N. CORPORATE DRIVE SUITE 100  
 BROOKFIELD, WI 53045

Project # P177  
 Project Name MPL REALTY  
 Invoice # E30175

Report Date 13-Jul-00

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code
Lab Code	5030175J					Sample Type	Soil		
Sample ID	SPLP-3					Sample Date	6/27/00		
SPLP Isopropylbenzene	< 0.006	MG/L	0.006	0.022	20	7/11/00	8260B	CJR	1
SPLP p-Isopropyltoluene	< 0.006	MG/L	0.006	0.022	20	7/11/00	8260B	CJR	1
SPLP Methylene chloride	0.038 "J"	MG/L	0.002	0.066	20	7/11/00	8260B	CJR	1
SPLP MTBE	< 0.004	MG/L	0.004	0.0138	20	7/11/00	8260B	CJR	1
SPLP Naphthalene	< 0.014	MG/L	0.014	0.048	20	7/11/00	8260B	CJR	1
SPLP n-Propylbenzene	< 0.008	MG/L	0.008	0.024	20	7/11/00	8260B	CJR	1
SPLP 1,1,2,2-Tetrachloroethane	< 0.006	MG/L	0.006	0.0194	20	7/11/00	8260B	CJR	1
SPLP Tetrachloroethane	< 0.012	MG/L	0.012	0.038	20	7/11/00	8260B	CJR	1
SPLP Toluene	< 0.008	MG/L	0.008	0.026	20	7/11/00	8260B	CJR	1
SPLP 1,2,4-Trichlorobenzene	< 0.004	MG/L	0.004	0.0114	20	7/11/00	8260B	CJR	1
SPLP 1,2,3-Trichlorobenzene	< 0.004	MG/L	0.004	0.0108	20	7/11/00	8260B	CJR	1
SPLP 1,1,1-Trichloroethane	0.10	MG/L	0.008	0.024	20	7/11/00	8260B	CJR	1
SPLP 1,1,2-Trichloroethane	< 0.004	MG/L	0.004	0.0132	20	7/11/00	8260B	CJR	1
SPLP Trichloroethene	0.14	MG/L	0.008	0.026	20	7/11/00	8260B	CJR	1
SPLP Trichlorofluoromethane	< 0.012	MG/L	0.012	0.038	20	7/11/00	8260B	CJR	1
SPLP 1,2,4-Trimethylbenzene	< 0.006	MG/L	0.006	0.022	20	7/11/00	8260B	CJR	1
SPLP 1,3,5-Trimethylbenzene	< 0.008	MG/L	0.008	0.024	20	7/11/00	8260B	CJR	1
SPLP Vinyl Chloride	< 0.006	MG/L	0.006	0.022	20	7/11/00	8260B	CJR	1
SPLP Xylene's	< 0.02	MG/L	0.02	0.068	20	7/11/00	8260B	CJR	1
VOC's									
Benzene	< 25	ug/kg	9.1	30	1	6/30/00	8021A	CJR	1
Bromobenzene	< 25	ug/kg	13	42	1	6/30/00	8021A	CJR	1
Bromodichloromethane	< 25	ug/kg	7.3	24	1	6/30/00	8021A	CJR	1
tert-Butylbenzene	< 25	ug/kg	10	33	1	6/30/00	8021A	CJR	1
sec-Butylbenzene	< 25	ug/kg	8.5	28	1	6/30/00	8021A	CJR	1
n-Butylbenzene	< 25	ug/kg	8.8	29	1	6/30/00	8021A	CJR	1
Carbon Tetrachloride	< 25	ug/kg	8.3	28	1	6/30/00	8021A	CJR	1
Chlorobenzene	< 25	ug/kg	8.4	28	1	6/30/00	8021A	CJR	1
Chloroethane	< 25	ug/kg	11	35	1	6/30/00	8021A	CJR	1
Chloroform	< 25	ug/kg	7.9	26	1	6/30/00	8021A	CJR	1
Chloromethane	< 25	ug/kg	5	17	1	6/30/00	8021A	CJR	4
2-Chlorotoluene	< 25	ug/kg	2.4	8.4	1	6/30/00	8021A	CJR	1
4-Chlorotoluene	< 25	ug/kg	2.3	8.5	1	6/30/00	8021A	CJR	1
2,2-DCP, cis-1,2-Dichloroethene	< 50	ug/kg	4.1	20	1	6/30/00	8021A	CJR	1
1,2-Dibromo-3-chloropropane	< 25	ug/kg	11	37	1	6/30/00	8021A	CJR	1
Dibromochloromethane	< 25	ug/kg	9.4	31	1	6/30/00	8021A	CJR	1

# U.S. Analytical Lab

JERRY DE MERS  
 HSI GEOTRANS  
 175 N. CORPORATE DRIVE SUITE 100  
 BROOKFIELD, WI 53045

Project # P177  
 Project Name MPL REALTY  
 Invoice # E30175

Report Date 13-Jul-00

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code
<b>Lab Code</b> 5030175J						<b>Sample Type</b>	<b>Soil</b>		
<b>Sample ID</b> SPLP-3						<b>Sample Date</b>	6/27/00		
1,4-Dichlorobenzene	< 25	ug/kg	8.8	29	1	6/30/00	S021A	CJR	1
1,3-Dichlorobenzene	< 25	ug/kg	8.6	29	1	6/30/00	S021A	CJR	1
1,2-Dichlorobenzene	< 25	ug/kg	8.9	30	1	6/30/00	S021A	CJR	1
Dichlorodifluoromethane	< 25	ug/kg	8.3	25	1	6/30/00	S021A	CJR	4
1,2-Dichloroethane	< 25	ug/kg	8.6	29	1	6/30/00	S021A	CJR	1
1,1-Dichloroethane	140	ug/kg	7.4	25	1	6/30/00	S021A	CJR	1
1,1-Dichloroethene	30	ug/kg	8.3	28	1	6/30/00	S021A	CJR	1
cis-1,2-Dichloroethene	170	ug/kg	5.7	19	1	6/30/00	S021A	CJR	1
trans-1,2-Dichloroethene	< 25	ug/kg	7.5	25	1	6/30/00	S021A	CJR	1
1,2-Dichloropropane	< 25	ug/kg	8.9	30	1	6/30/00	S021A	CJR	1
2,2-Dichloropropane	< 9.4	ug/l	9.4	32	20	7/11/00	S260B	CJR	1
1,3-Dichloropropane	< 25	ug/kg	11	35	1	6/30/00	S021A	CJR	1
Di-isopropyl ether	< 25	ug/kg	7.4	25	1	6/30/00	S021A	CJR	1
EDB (1,2-Dibromoethane)	< 25	ug/kg	9.3	31	1	6/30/00	S021A	CJR	1
Ethylbenzene	< 25	ug/kg	7.9	26	1	6/30/00	S021A	CJR	1
Hexachlorobutadiene	< 25	ug/kg	6.4	21	1	6/30/00	S021A	CJR	1
Isopropylbenzene	< 25	ug/kg	10	33	1	6/30/00	S021A	CJR	1
p-Isopropyltoluene	< 25	ug/kg	9	30	1	6/30/00	S021A	CJR	1
Methylene chloride	< 25	ug/kg	13	42	1	6/30/00	S021A	CJR	1
MTBE	< 25	ug/kg	11	38	1	6/30/00	S021A	CJR	1
Naphthalene	< 25	ug/kg	11	38	1	6/30/00	S021A	CJR	1
n-Propylbenzene	< 25	ug/kg	16	53	1	6/30/00	S021A	CJR	1
1,1,1,2,2-Tetrachloroethane	< 25	ug/kg	24	81	1	6/30/00	S021A	CJR	1
Tetrachloroethene	2800	ug/kg	7.6	25	1	6/30/00	S021A	CJR	1
Toluene	55	ug/kg	6.7	22	1	6/30/00	S021A	CJR	1
1,2,4-Trichlorobenzene	< 25	ug/kg	8.8	29	1	6/30/00	S021A	CJR	1
1,2,3-Trichlorobenzene	< 25	ug/kg	9.3	31	1	6/30/00	S021A	CJR	1
1,1,1-Trichloroethane	49000	ug/kg	170	540	20	7/6/00	S021A	CJR	1
1,1,2-Trichloroethane	60	ug/kg	11	36	1	6/30/00	S021A	CJR	1
Trichloroethene	5600	ug/kg	15	51	1	6/30/00	S021A	CJR	1
Trichlorofluoromethane	< 25	ug/kg	8.8	29	1	6/30/00	S021A	CJR	1
1,2,4-Trimethylbenzene	< 25	ug/kg	6.9	23	1	6/30/00	S021A	CJR	1
1,3,5-Trimethylbenzene	< 25	ug/kg	16	54	1	6/30/00	S021A	CJR	1
Vinyl Chloride	< 25	ug/kg	8.3	25	1	6/30/00	S021A	CJR	2
m&p-Xylene	< 50	ug/kg	15	48	1	6/30/00	S021A	CJR	1
o-Xylene	38	ug/kg	7.9	26	1	6/30/00	S021A	CJR	1

# U.S. Analytical Lab

JERRY DE MERS  
 HSI GEOTRANS  
 175 N. CORPORATE DRIVE SUITE 100  
 BROOKFIELD, WI 53045

Project # P177  
 Project Name MPL REALTY  
 Invoice # E30175

Report Date 13-Jul-00

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code
Lab Code	5030175K						Soil		
Sample ID	SPLP-3-8'					6/27/00			
Inorganic									
General									
Solids Percent	82.9	%			1	6/29/00	5021	SAD	1
Organic									
VOC's									
Benzene	< 25	ug/kg	9.1	30	1	6/30/00	8021A	CJR	1
Bromobenzene	< 25	ug/kg	13	42	1	6/30/00	8021A	CJR	1
Bromodichloromethane	< 25	ug/kg	7.3	24	1	6/30/00	8021A	CJR	1
tert-Butylbenzene	< 25	ug/kg	10	33	1	6/30/00	8021A	CJR	1
sec-Butylbenzene	< 25	ug/kg	8.5	28	1	6/30/00	8021A	CJR	1
n-Butylbenzene	< 25	ug/kg	8.8	29	1	6/30/00	8021A	CJR	1
Carbon Tetrachloride	< 25	ug/kg	8.3	28	1	6/30/00	8021A	CJR	1
Chlorobenzene	< 25	ug/kg	8.4	28	1	6/30/00	8021A	CJR	1
Chloroethane	< 25	ug/kg	11	35	1	6/30/00	8021A	CJR	1
Chloroform	< 25	ug/kg	7.9	26	1	6/30/00	8021A	CJR	1
Chloromethane	< 25	ug/kg	5	17	1	6/30/00	8021A	CJR	4
2-Chlorotoluene	< 25	ug/kg	2.4	8.4	1	6/30/00	8021A	CJR	1
4-Chlorotoluene	< 25	ug/kg	2.3	8.5	1	6/30/00	8021A	CJR	1
2,2-DCP, cis-1,2-Dichloroethene	< 50	ug/kg	4.1	20	1	6/30/00	8021A	CJR	1
1,2-Dibromo-3-chloropropane	< 25	ug/kg	11	37	1	6/30/00	8021A	CJR	1
Dibromochloromethane	< 25	ug/kg	9.4	31	1	6/30/00	8021A	CJR	1
1,4-Dichlorobenzene	< 25	ug/kg	8.8	29	1	6/30/00	8021A	CJR	1
1,3-Dichlorobenzene	< 25	ug/kg	8.6	29	1	6/30/00	8021A	CJR	1
1,2-Dichlorobenzene	< 25	ug/kg	8.9	30	1	6/30/00	8021A	CJR	1
Dichlorodifluoromethane	< 25	ug/kg	8.3	25	1	6/30/00	8021A	CJR	4
1,2-Dichloroethane	< 25	ug/kg	8.6	29	1	6/30/00	8021A	CJR	1
1,1-Dichloroethane	120	ug/kg	7.4	25	1	6/30/00	8021A	CJR	1
1,1-Dichloroethene	< 25	ug/kg	8.3	28	1	6/30/00	8021A	CJR	1
cis-1,2-Dichloroethene	86	ug/kg	5.7	19	1	6/30/00	8021A	CJR	1
trans-1,2-Dichloroethene	< 25	ug/kg	7.5	25	1	6/30/00	8021A	CJR	1
1,2-Dichloropropane	< 25	ug/kg	8.9	30	1	6/30/00	8021A	CJR	1
1,3-Dichloropropane	< 25	ug/kg	11	35	1	6/30/00	8021A	CJR	1
Di-isopropyl ether	< 25	ug/kg	7.4	25	1	6/30/00	8021A	CJR	1
EDB (1,2-Dibromoethane)	< 25	ug/kg	9.3	31	1	6/30/00	8021A	CJR	1
Ethylbenzene	< 25	ug/kg	7.9	26	1	6/30/00	8021A	CJR	1
Hexachlorobutadiene	< 25	ug/kg	6.4	21	1	6/30/00	8021A	CJR	1

# U.S. Analytical Lab

JERRY DE MERS  
 HSI GEOTRANS  
 175 N. CORPORATE DRIVE SUITE 100  
 BROOKFIELD, WI 53045

Project # P177  
 Project Name MPL REALTY  
 Invoice # E30175

Report Date 13-Jul-00

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code	
Lab Code	5030175K					Sample Type	Soil			
Sample ID	SPLP-3-8'					Sample Date	6/27/00			
Isopropylbenzene	< 25	ug/kg	10	33	1	6/30/00	8021A	CJR	1	
p-Isopropyltoluene	< 25	ug/kg	9	30	1	6/30/00	8021A	CJR	1	
Methylene chloride	< 25	ug/kg	13	42	1	6/30/00	8021A	CJR	1	
MTBE	< 25	ug/kg	11	38	1	6/30/00	8021A	CJR	1	
Naphthalene	< 25	ug/kg	11	38	1	6/30/00	8021A	CJR	1	
n-Propylbenzene	< 25	ug/kg	16	53	1	6/30/00	8021A	CJR	1	
1,1,2,2-Tetrachloroethane	< 25	ug/kg	24	81	1	6/30/00	8021A	CJR	1	
Tetrachloroethene	210	ug/kg	7.6	25	1	6/30/00	8021A	CJR	1	
Toluene	< 25	ug/kg	6.7	22	1	6/30/00	8021A	CJR	1	
1,2,4-Trichlorobenzene	< 25	ug/kg	8.8	29	1	6/30/00	8021A	CJR	1	
1,2,3-Trichlorobenzene	< 25	ug/kg	9.3	31	1	6/30/00	8021A	CJR	1	
1,1,1-Trichloroethane	3500	ug/kg	8.4	28	1	6/30/00	8021A	CJR	1	
1,1,2-Trichloroethane	< 25	ug/kg	11	36	1	6/30/00	8021A	CJR	1	
Trichloroethene	1500	ug/kg	15	51	1	6/30/00	8021A	CJR	1	
Trichlorofluoromethane	< 25	ug/kg	8.8	29	1	6/30/00	8021A	CJR	1	
1,2,4-Trimethylbenzene	< 25	ug/kg	6.9	23	1	6/30/00	8021A	CJR	1	
1,3,5-Trimethylbenzene	< 25	ug/kg	16	54	1	6/30/00	8021A	CJR	1	
Vinyl Chloride	< 25	ug/kg	8.3	25	1	6/30/00	8021A	CJR	2	
m&p-Xylene	< 50	ug/kg	15	48	1	6/30/00	8021A	CJR	1	
o-Xylene	< 25	ug/kg	7.9	26	1	6/30/00	8021A	CJR	1	

Lab Code	5030175L					Sample Type	Soil			
Sample ID	SPLP-5					Sample Date	6/27/00			

Inorganic

General

Solids Percent	78.9	%			1	6/29/00	5021	SAD	1
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Organic

SPLP

SPLP Benzene	< 0.006	MG/L	0.006	0.017	20	7/11/00	8260B	CJR	1
SPLP Bromobenzene	< 0.004	MG/L	0.004	0.0154	20	7/11/00	8260B	CJR	1
SPLP Bromodichloromethane	< 0.006	MG/L	0.006	0.0168	20	7/11/00	8260B	CJR	1
SPLP tert-Butylbenzene	< 0.008	MG/L	0.008	0.026	20	7/11/00	8260B	CJR	1
SPLP sec-Butylbenzene	< 0.008	MG/L	0.008	0.024	20	7/11/00	8260B	CJR	1
SPLP n-Butylbenzene	< 0.008	MG/L	0.008	0.028	20	7/11/00	8260B	CJR	1
SPLP Carbon Tetrachloride	< 0.01	MG/L	0.01	0.032	20	7/11/00	8260B	CJR	1
SPLP Chlorobenzene	< 0.006	MG/L	0.006	0.0174	20	7/11/00	8260B	CJR	1

# U.S. Analytical Lab

JERRY DE MERS  
 HSI GEOTRANS  
 175 N. CORPORATE DRIVE SUITE 100  
 BROOKFIELD, WI 53045

Project # P177  
 Project Name MPL REALTY  
 Invoice # E30175

Report Date 13-Jul-00

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code	
Lab Code	5030175L					Sample Type	Soil			
Sample ID	SPLP-5					Sample Date	6/27/00			
SPLP Chloroethane	< 0.004	MG/L	0.004	0.0102	20	7/11/00	8260B	CJR	1	
SPLP Chloroform	< 0.006	MG/L	0.006	0.0174	20	7/11/00	8260B	CJR	1	
SPLP Chloromethane	< 0.006	MG/L	0.006	0.0192	20	7/11/00	8260B	CJR	1	
SPLP 2-Chlorotoluene	< 0.006	MG/L	0.006	0.02	20	7/11/00	8260B	CJR	1	
SPLP 4-Chlorotoluene	< 0.006	MG/L	0.006	0.0182	20	7/11/00	8260B	CJR	1	
SPLP 1,2-Dibromo-3-chloropropan	< 0.01	MG/L	0.01	0.034	20	7/11/00	8260B	CJR	1	
SPLP Dibromochloromethane	< 0.006	MG/L	0.006	0.02	20	7/11/00	8260B	CJR	1	
SPLP 1,4-Dichlorobenzene	< 0.006	MG/L	0.006	0.0174	20	7/11/00	8260B	CJR	1	
SPLP 1,3-Dichlorobenzene	< 0.006	MG/L	0.006	0.022	20	7/11/00	8260B	CJR	1	
SPLP 1,2-Dichlorobenzene	< 0.006	MG/L	0.006	0.0186	20	7/11/00	8260B	CJR	1	
SPLP Dichlorodifluoromethane	< 0.01	MG/L	0.01	0.036	20	7/11/00	8260B	CJR	1	
SPLP 1,2-Dichloroethane	< 0.002	MG/L	0.002	0.0096	20	7/11/00	8260B	CJR	1	
SPLP 1,1-Dichloroethane	< 0.006	MG/L	0.006	0.022	20	7/11/00	8260B	CJR	1	
SPLP 1,1-Dichloroethene	< 0.012	MG/L	0.012	0.04	20	7/11/00	8260B	CJR	1	
SPLP cis-1,2-Dichloroethene	< 0.006	MG/L	0.006	0.022	20	7/11/00	8260B	CJR	1	
SPLP trans-1,2-Dichloroethene	< 0.01	MG/L	0.01	0.03	20	7/11/00	8260B	CJR	1	
SPLP 1,2-Dichloropropane	< 0.006	MG/L	0.006	0.0172	20	7/11/00	8260B	CJR	1	
SPLP 2,2-Dichloropropane	< 0.01	MG/L	0.01	0.036	20	7/11/00	8260B	CJR	1	
SPLP 1,3-Dichloropropane	< 0.004	MG/L	0.004	0.0152	20	7/11/00	8260B	CJR	1	
SPLP Di-isopropyl ether	< 0.004	MG/L	0.004	0.0138	20	7/11/00	8260B	CJR	1	
SPLP EDB (1,2-Dibromoethane)	< 0.004	MG/L	0.004	0.0164	20	7/11/00	8260B	CJR	1	
SPLP Ethylbenzene	< 0.006	MG/L	0.006	0.022	20	7/11/00	8260B	CJR	1	
SPLP Hexachlorobutadiene	< 0.006	MG/L	0.006	0.022	20	7/11/00	8260B	CJR	1	
SPLP Isopropylbenzene	< 0.006	MG/L	0.006	0.022	20	7/11/00	8260B	CJR	1	
SPLP p-Isopropyltoluene	< 0.006	MG/L	0.006	0.022	20	7/11/00	8260B	CJR	1	
SPLP Methylene chloride	0.044 "J"	MG/L	0.002	0.066	20	7/11/00	8260B	CJR	1	
SPLP MTBE	< 0.004	MG/L	0.004	0.0138	20	7/11/00	8260B	CJR	1	
SPLP Naphthalene	< 0.014	MG/L	0.014	0.048	20	7/11/00	8260B	CJR	1	
SPLP n-Propylbenzene	< 0.008	MG/L	0.008	0.024	20	7/11/00	8260B	CJR	1	
SPLP 1,1,2,2-Tetrachloroethane	< 0.006	MG/L	0.006	0.0194	20	7/11/00	8260B	CJR	1	
SPLP Tetrachloroethene	< 0.012	MG/L	0.012	0.038	20	7/11/00	8260B	CJR	1	
SPLP Toluene	< 0.008	MG/L	0.008	0.026	20	7/11/00	8260B	CJR	1	
SPLP 1,2,4-Trichlorobenzene	< 0.004	MG/L	0.004	0.0114	20	7/11/00	8260B	CJR	1	
SPLP 1,2,3-Trichlorobenzene	< 0.004	MG/L	0.004	0.0108	20	7/11/00	8260B	CJR	1	
SPLP 1,1,1-Trichloroethane	< 0.008	MG/L	0.008	0.024	20	7/11/00	8260B	CJR	1	
SPLP 1,1,2-Trichloroethane	< 0.004	MG/L	0.004	0.0132	20	7/11/00	8260B	CJR	1	
SPLP Trichloroethene	0.15 "J"	MG/L	0.008	0.026	20	7/11/00	8260B	CJR	1	



# U.S. Analytical Lab

JERRY DE MERS  
 HSI GEOTRANS  
 175 N. CORPORATE DRIVE SUITE 100  
 BROOKFIELD, WI 53045

Project # P177  
 Project Name MPL REALTY  
 Invoice # E30175

Report Date 13-Jul-00

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code	
Lab Code	5030175L					Sample Type	Soil			
Sample ID	SPLP-5					Sample Date	6/27/00			
SPLP Trichlorofluoromethane	< 0.012	MG/L	0.012	0.038	20	7/11/00	8260B	CJR	1	
SPLP 1,2,4-Trimethylbenzene	< 0.006	MG/L	0.006	0.022	20	7/11/00	8260B	CJR	1	
SPLP 1,3,5-Trimethylbenzene	< 0.008	MG/L	0.008	0.024	20	7/11/00	8260B	CJR	1	
SPLP Vinyl Chloride	< 0.006	MG/L	0.006	0.022	20	7/11/00	8260B	CJR	1	
SPLP Xylene's	< 0.02	MG/L	0.02	0.068	20	7/11/00	8260B	CJR	1	
VOC's										
Benzene	< 25	ug/kg	9.1	30	1	6/30/00	8021A	CJR	1	
Bromobenzene	< 25	ug/kg	13	42	1	6/30/00	8021A	CJR	1	
Bromodichloromethane	< 25	ug/kg	7.3	24	1	6/30/00	8021A	CJR	1	
tert-Butylbenzene	< 25	ug/kg	10	33	1	6/30/00	8021A	CJR	1	
sec-Butylbenzene	< 25	ug/kg	8.5	28	1	6/30/00	8021A	CJR	1	
n-Butylbenzene	< 25	ug/kg	8.8	29	1	6/30/00	8021A	CJR	1	
Carbon Tetrachloride	< 25	ug/kg	8.3	28	1	6/30/00	8021A	CJR	1	
Chlorobenzene	< 25	ug/kg	8.4	28	1	6/30/00	8021A	CJR	1	
Chloroethane	< 25	ug/kg	11	35	1	6/30/00	8021A	CJR	1	
Chloroform	< 25	ug/kg	7.9	26	1	6/30/00	8021A	CJR	1	
Chloromethane	< 25	ug/kg	5	17	1	6/30/00	8021A	CJR	4	
2-Chlorotoluene	< 25	ug/kg	2.4	8.4	1	6/30/00	8021A	CJR	1	
4-Chlorotoluene	< 25	ug/kg	2.3	8.5	1	6/30/00	8021A	CJR	1	
2,2-DCP, cis-1,2-Dichloroethene	< 50	ug/kg	4.1	20	1	6/30/00	8021A	CJR	1	
1,2-Dibromo-3-chloropropane	< 25	ug/kg	11	37	1	6/30/00	8021A	CJR	1	
Dibromochloromethane	< 25	ug/kg	9.4	31	1	6/30/00	8021A	CJR	1	
1,4-Dichlorobenzene	< 25	ug/kg	8.8	29	1	6/30/00	8021A	CJR	1	
1,3-Dichlorobenzene	< 25	ug/kg	8.6	29	1	6/30/00	8021A	CJR	1	
1,2-Dichlorobenzene	< 25	ug/kg	8.9	30	1	6/30/00	8021A	CJR	1	
Dichlorodifluoromethane	< 25	ug/kg	8.3	25	1	6/30/00	8021A	CJR	4	
1,2-Dichloroethane	< 25	ug/kg	8.6	29	1	6/30/00	8021A	CJR	1	
1,1-Dichloroethane	< 25	ug/kg	7.4	25	1	6/30/00	8021A	CJR	1	
1,1-Dichloroethene	< 25	ug/kg	8.3	28	1	6/30/00	8021A	CJR	1	
cis-1,2-Dichloroethene	< 25	ug/kg	5.7	19	1	6/30/00	8021A	CJR	1	
trans-1,2-Dichloroethene	< 25	ug/kg	7.5	25	1	6/30/00	8021A	CJR	1	
1,2-Dichloropropane	< 25	ug/kg	8.9	30	1	6/30/00	8021A	CJR	1	
2,2-Dichloropropane	< 9.4	ug/l	9.4	32	20	7/11/00	8260B	CJR	1	
1,3-Dichloropropane	< 25	ug/kg	11	35	1	6/30/00	8021A	CJR	1	
Di-isopropyl ether	< 25	ug/kg	7.4	25	1	6/30/00	8021A	CJR	1	
EDB (1,2-Dibromoethane)	< 25	ug/kg	9.3	31	1	6/30/00	8021A	CJR	1	

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 Invoice # E30175

Report Date 13-Jul-00

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code
Lab Code	5030175L					Sample Type	Soil		
Sample ID	SPLP-5					Sample Date	6/27/00		
Ethylbenzene	< 25	ug/kg	7.9	26	1	6/30/00	8021A	CJR	1
Hexachlorobutadiene	< 25	ug/kg	6.4	21	1	6/30/00	8021A	CJR	1
Isopropylbenzene	< 25	ug/kg	10	33	1	6/30/00	8021A	CJR	1
p-Isopropyltoluene	< 25	ug/kg	9	30	1	6/30/00	8021A	CJR	1
Methylene chloride	< 25	ug/kg	13	42	1	6/30/00	8021A	CJR	1
MTBE	< 25	ug/kg	11	38	1	6/30/00	8021A	CJR	1
Naphthalene	< 25	ug/kg	11	38	1	6/30/00	8021A	CJR	1
n-Propylbenzene	< 25	ug/kg	16	53	1	6/30/00	8021A	CJR	1
1,1,2,2-Tetrachloroethane	< 25	ug/kg	24	81	1	6/30/00	8021A	CJR	1
Tetrachloroethene	220	ug/kg	7.6	25	1	6/30/00	8021A	CJR	1
Toluene	< 25	ug/kg	6.7	22	1	6/30/00	8021A	CJR	1
1,2,4-Trichlorobenzene	< 25	ug/kg	8.8	29	1	6/30/00	8021A	CJR	1
1,2,3-Trichlorobenzene	< 25	ug/kg	9.3	31	1	6/30/00	8021A	CJR	1
1,1,1-Trichloroethane	450	ug/kg	8.4	28	1	6/30/00	8021A	CJR	1
1,1,2-Trichloroethane	< 25	ug/kg	11	36	1	6/30/00	8021A	CJR	1
Trichloroethene	4000	ug/kg	15	51	1	6/30/00	8021A	CJR	1
Trichlorofluoromethane	< 25	ug/kg	8.8	29	1	6/30/00	8021A	CJR	1
1,2,4-Trimethylbenzene	< 25	ug/kg	6.9	23	1	6/30/00	8021A	CJR	1
1,3,5-Trimethylbenzene	< 25	ug/kg	16	54	1	6/30/00	8021A	CJR	1
Vinyl Chloride	< 25	ug/kg	8.3	25	1	6/30/00	8021A	CJR	2
m&p-Xylene	< 50	ug/kg	15	48	1	6/30/00	8021A	CJR	1
o-Xylene	< 25	ug/kg	7.9	26	1	6/30/00	8021A	CJR	1

Lab Code	5030175M					Sample Type	Soil		
Sample ID	SPLP-7					Sample Date	6/27/00		

Inorganic

General

Solids Percent 88.0 % 1 6/29/00 5021 SAD 1

Organic

SPLP

SPLP Benzene < 0.006 MG/L 0.006 0.017 20 7/12/00 8260B CJR 1  
 SPLP Bromobenzene < 0.004 MG/L 0.004 0.0154 20 7/12/00 8260B CJR 1  
 SPLP Bromodichloromethane < 0.006 MG/L 0.006 0.0168 20 7/12/00 8260B CJR 1  
 SPLP tert-Butylbenzene < 0.008 MG/L 0.008 0.026 20 7/12/00 8260B CJR 1  
 SPLP sec-Butylbenzene < 0.008 MG/L 0.008 0.024 20 7/12/00 8260B CJR 1  
 SPLP n-Butylbenzene < 0.008 MG/L 0.008 0.028 20 7/12/00 8260B CJR 1

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Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code	
Lab Code	5030175M					Sample Type	Soil			
Sample ID	SPLP-7					Sample Date	6/27/00			
SPLP Carbon Tetrachloride	< 0.01	MG/L	0.01	0.032	20	7/12/00	8260B	CJR	1	
SPLP Chlorobenzene	< 0.006	MG/L	0.006	0.0174	20	7/12/00	8260B	CJR	1	
SPLP Chloroethane	< 0.004	MG/L	0.004	0.0102	20	7/12/00	8260B	CJR	1	
SPLP Chloroform	< 0.006	MG/L	0.006	0.0174	20	7/12/00	8260B	CJR	1	
SPLP Chloromethane	< 0.006	MG/L	0.006	0.0192	20	7/12/00	8260B	CJR	1	
SPLP 2-Chlorotoluene	< 0.006	MG/L	0.006	0.02	20	7/12/00	8260B	CJR	1	
SPLP 4-Chlorotoluene	< 0.006	MG/L	0.006	0.0182	20	7/12/00	8260B	CJR	1	
SPLP 1,2-Dibromo-3-chloropropan	< 0.01	MG/L	0.01	0.034	20	7/12/00	8260B	CJR	1	
SPLP Dibromochloromethane	< 0.006	MG/L	0.006	0.02	20	7/12/00	8260B	CJR	1	
SPLP 1,4-Dichlorobenzene	< 0.006	MG/L	0.006	0.0174	20	7/12/00	8260B	CJR	1	
SPLP 1,3-Dichlorobenzene	< 0.006	MG/L	0.006	0.022	20	7/12/00	8260B	CJR	1	
SPLP 1,2-Dichlorobenzene	< 0.006	MG/L	0.006	0.0186	20	7/12/00	8260B	CJR	1	
SPLP Dichlorodifluoromethane	< 0.01	MG/L	0.01	0.036	20	7/12/00	8260B	CJR	1	
SPLP 1,2-Dichloroethane	< 0.002	MG/L	0.002	0.0096	20	7/12/00	8260B	CJR	1	
SPLP 1,1-Dichloroethane	< 0.006	MG/L	0.006	0.022	20	7/12/00	8260B	CJR	1	
SPLP 1,1-Dichloroethene	< 0.012	MG/L	0.012	0.04	20	7/12/00	8260B	CJR	1	
SPLP cis-1,2-Dichloroethene	< 0.006	MG/L	0.006	0.022	20	7/12/00	8260B	CJR	1	
SPLP trans-1,2-Dichloroethene	< 0.01	MG/L	0.01	0.03	20	7/12/00	8260B	CJR	1	
SPLP 1,2-Dichloropropane	< 0.006	MG/L	0.006	0.0172	20	7/12/00	8260B	CJR	1	
SPLP 2,2-Dichloropropane	< 0.01	MG/L	0.01	0.036	20	7/12/00	8260B	CJR	1	
SPLP 1,3-Dichloropropane	< 0.004	MG/L	0.004	0.0152	20	7/12/00	8260B	CJR	1	
SPLP Di-isopropyl ether	< 0.004	MG/L	0.004	0.0138	20	7/12/00	8260B	CJR	1	
SPLP EDB (1,2-Dibromoethane)	< 0.004	MG/L	0.004	0.0164	20	7/12/00	8260B	CJR	1	
SPLP Ethylbenzene	< 0.006	MG/L	0.006	0.022	20	7/12/00	8260B	CJR	1	
SPLP Hexachlorobutadiene	< 0.006	MG/L	0.006	0.022	20	7/12/00	8260B	CJR	1	
SPLP Isopropylbenzene	< 0.006	MG/L	0.006	0.022	20	7/12/00	8260B	CJR	1	
SPLP p-Isopropyltoluene	< 0.006	MG/L	0.006	0.022	20	7/12/00	8260B	CJR	1	
SPLP Methylene chloride	< 0.002	MG/L	0.002	0.066	20	7/12/00	8260B	CJR	32	
SPLP MTBE	< 0.004	MG/L	0.004	0.0138	20	7/12/00	8260B	CJR	1	
SPLP Naphthalene	< 0.014	MG/L	0.014	0.048	20	7/12/00	8260B	CJR	1	
SPLP n-Propylbenzene	< 0.008	MG/L	0.008	0.024	20	7/12/00	8260B	CJR	1	
SPLP 1,1,2,2-Tetrachloroethane	< 0.006	MG/L	0.006	0.0194	20	7/12/00	8260B	CJR	1	
SPLP Tetrachloroethene	< 0.012	MG/L	0.012	0.038	20	7/12/00	8260B	CJR	1	
SPLP Toluene	< 0.008	MG/L	0.008	0.026	20	7/12/00	8260B	CJR	1	
SPLP 1,2,4-Trichlorobenzene	< 0.004	MG/L	0.004	0.0114	20	7/12/00	8260B	CJR	1	
SPLP 1,2,3-Trichlorobenzene	< 0.004	MG/L	0.004	0.0108	20	7/12/00	8260B	CJR	1	
SPLP 1,1,1-Trichloroethane	0.014 "J"	MG/L	0.008	0.024	20	7/12/00	8260B	CJR	1	

# U.S. Analytical Lab

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 175 N. CORPORATE DRIVE SUITE 100  
 BROOKFIELD, WI 53045

Project # P177  
 Project Name MPL REALTY  
 Invoice # E30175

Report Date 13-Jul-00

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code
Lab Code	5030175M					Sample Type	Soil		
Sample ID	SPLP-7					Sample Date	6/27/00		
SPLP 1,1,2-Trichloroethane	< 0.004	MG/L	0.004	0.0132	20	7/12/00	8260B	CJR	1
SPLP Trichloroethene	0.058	MG/L	0.008	0.026	20	7/12/00	8260B	CJR	1
SPLP Trichlorofluoromethane	< 0.012	MG/L	0.012	0.038	20	7/12/00	8260B	CJR	1
SPLP 1,2,4-Trimethylbenzene	< 0.006	MG/L	0.006	0.022	20	7/12/00	8260B	CJR	1
SPLP 1,3,5-Trimethylbenzene	< 0.008	MG/L	0.008	0.024	20	7/12/00	8260B	CJR	1
SPLP Vinyl Chloride	< 0.006	MG/L	0.006	0.022	20	7/12/00	8260B	CJR	1
SPLP Xylene's	< 0.02	MG/L	0.02	0.068	20	7/12/00	8260B	CJR	1
VOC's									
Benzene	< 25	ug/kg	9.1	30	1	6/30/00	8021A	CJR	1
Bromobenzene	< 25	ug/kg	13	42	1	6/30/00	8021A	CJR	1
Bromodichloromethane	< 25	ug/kg	7.3	24	1	6/30/00	8021A	CJR	1
tert-Butylbenzene	< 25	ug/kg	10	33	1	6/30/00	8021A	CJR	1
sec-Butylbenzene	< 25	ug/kg	8.5	28	1	6/30/00	8021A	CJR	1
n-Butylbenzene	< 25	ug/kg	8.8	29	1	6/30/00	8021A	CJR	1
Carbon Tetrachloride	< 25	ug/kg	8.3	28	1	6/30/00	8021A	CJR	1
Chlorobenzene	< 25	ug/kg	8.4	28	1	6/30/00	8021A	CJR	1
Chloroethane	< 25	ug/kg	11	35	1	6/30/00	8021A	CJR	1
Chloroform	< 25	ug/kg	7.9	26	1	6/30/00	8021A	CJR	1
Chloromethane	< 25	ug/kg	5	17	1	6/30/00	8021A	CJR	4
2-Chlorotoluene	< 25	ug/kg	2.4	8.4	1	6/30/00	8021A	CJR	1
4-Chlorotoluene	< 25	ug/kg	2.3	8.5	1	6/30/00	8021A	CJR	1
2,2-DCP, cis-1,2-Dichloroethene	< 50	ug/kg	4.1	20	1	6/30/00	8021A	CJR	1
1,2-Dibromo-3-chloropropane	< 25	ug/kg	11	37	1	6/30/00	8021A	CJR	1
Dibromochloromethane	< 25	ug/kg	9.4	31	1	6/30/00	8021A	CJR	1
1,4-Dichlorobenzene	< 25	ug/kg	8.8	29	1	6/30/00	8021A	CJR	1
1,3-Dichlorobenzene	< 25	ug/kg	8.6	29	1	6/30/00	8021A	CJR	1
1,2-Dichlorobenzene	< 25	ug/kg	8.9	30	1	6/30/00	8021A	CJR	1
Dichlorodifluoromethane	< 25	ug/kg	8.3	25	1	6/30/00	8021A	CJR	4
1,2-Dichloroethane	< 25	ug/kg	8.6	29	1	6/30/00	8021A	CJR	1
1,1-Dichloroethane	< 25	ug/kg	7.4	25	1	6/30/00	8021A	CJR	1
1,1-Dichloroethene	< 25	ug/kg	8.3	28	1	6/30/00	8021A	CJR	1
cis-1,2-Dichloroethene	< 25	ug/kg	5.7	19	1	6/30/00	8021A	CJR	1
trans-1,2-Dichloroethene	< 25	ug/kg	7.5	25	1	6/30/00	8021A	CJR	1
1,2-Dichloropropane	< 25	ug/kg	8.9	30	1	6/30/00	8021A	CJR	1
1,3-Dichloropropane	< 25	ug/kg	11	35	1	6/30/00	8021A	CJR	1
Di-isopropyl ether	< 25	ug/kg	7.4	25	1	6/30/00	8021A	CJR	1

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Report Date 13-Jul-00

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code
Lab Code	5030175M					Sample Type	Soil		
Sample ID	SPLP-7					Sample Date	6/27/00		
EDB (1,2-Dibromoethane)	< 25	ug/kg	9.3	31	1	6/30/00	8021A	CJR	1
Ethylbenzene	< 25	ug/kg	7.9	26	1	6/30/00	8021A	CJR	1
Hexachlorobutadiene	< 25	ug/kg	6.4	21	1	6/30/00	8021A	CJR	1
Isopropylbenzene	< 25	ug/kg	10	33	1	6/30/00	8021A	CJR	1
p-Isopropyltoluene	< 25	ug/kg	9	30	1	6/30/00	8021A	CJR	1
Methylene chloride	< 25	ug/kg	13	42	1	6/30/00	8021A	CJR	1
MTBE	< 25	ug/kg	11	38	1	6/30/00	8021A	CJR	1
Naphthalene	< 25	ug/kg	11	38	1	6/30/00	8021A	CJR	1
n-Propylbenzene	< 25	ug/kg	16	53	1	6/30/00	8021A	CJR	1
1,1,2,2-Tetrachloroethane	< 25	ug/kg	24	81	1	6/30/00	8021A	CJR	1
Tetrachloroethene	260	ug/kg	7.6	25	1	6/30/00	8021A	CJR	1
Toluene	< 25	ug/kg	6.7	22	1	6/30/00	8021A	CJR	1
1,2,4-Trichlorobenzene	< 25	ug/kg	8.8	29	1	6/30/00	8021A	CJR	1
1,2,3-Trichlorobenzene	< 25	ug/kg	9.3	31	1	6/30/00	8021A	CJR	1
1,1,1-Trichloroethane	S90	ug/kg	8.4	28	1	6/30/00	8021A	CJR	1
1,1,2-Trichloroethane	< 25	ug/kg	11	36	1	6/30/00	8021A	CJR	1
Trichloroethene	2200	ug/kg	15	51	1	6/30/00	8021A	CJR	1
Trichlorofluoromethane	< 25	ug/kg	8.8	29	1	6/30/00	8021A	CJR	1
1,2,4-Trimethylbenzene	< 25	ug/kg	6.9	23	1	6/30/00	8021A	CJR	1
1,3,5-Trimethylbenzene	< 25	ug/kg	16	54	1	6/30/00	8021A	CJR	1
Vinyl Chloride	< 25	ug/kg	8.3	25	1	6/30/00	8021A	CJR	2
m&p-Xylene	< 50	ug/kg	15	48	1	6/30/00	8021A	CJR	1
o-Xylene	< 25	ug/kg	7.9	26	1	6/30/00	8021A	CJR	1

Lab Code	5030175N					Sample Type	Soil		
Sample ID	SPLP-8					Sample Date	6/27/00		

Inorganic

General

Solids Percent	87.1	%				1	6/29/00	5021	SAD	1
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Organic

SPLP

SPLP Benzene	< 0.006	MG/L	0.006	0.017	20		7/12/00	8260B	CJR	1
SPLP Bromobenzene	< 0.004	MG/L	0.004	0.0154	20		7/12/00	8260B	CJR	1
SPLP Bromodichloromethane	< 0.006	MG/L	0.006	0.0168	20		7/12/00	8260B	CJR	1
SPLP tert-Butylbenzene	< 0.008	MG/L	0.008	0.026	20		7/12/00	8260B	CJR	1
SPLP sec-Butylbenzene	< 0.008	MG/L	0.008	0.024	20		7/12/00	8260B	CJR	1

# U.S. Analytical Lab

JERRY DE MERS  
 HSI GEOTRANS  
 175 N. CORPORATE DRIVE SUITE 100  
 BROOKFIELD, WI 53045

Project # P177  
 Project Name MPL REALTY  
 Invoice # E30175

Report Date 13-Jul-00

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code	
Lab Code	5030175N					Sample Type	Soil			
Sample ID	SPLP-8					Sample Date	6/27/00			
SPLP n-Butylbenzene	< 0.008	MG/L	0.008	0.028	20	7/12/00	8260B	CJR	1	
SPLP Carbon Tetrachloride	< 0.01	MG/L	0.01	0.032	20	7/12/00	8260B	CJR	1	
SPLP Chlorobenzene	< 0.006	MG/L	0.006	0.0174	20	7/12/00	8260B	CJR	1	
SPLP Chloroethane	< 0.004	MG/L	0.004	0.0102	20	7/12/00	8260B	CJR	1	
SPLP Chloroform	< 0.006	MG/L	0.006	0.0174	20	7/12/00	8260B	CJR	1	
SPLP Chloromethane	< 0.006	MG/L	0.006	0.0192	20	7/12/00	8260B	CJR	1	
SPLP 2-Chlorotoluene	< 0.006	MG/L	0.006	0.02	20	7/12/00	8260B	CJR	1	
SPLP 4-Chlorotoluene	< 0.006	MG/L	0.006	0.0182	20	7/12/00	8260B	CJR	1	
SPLP 1,2-Dibromo-3-chloropropan	< 0.01	MG/L	0.01	0.034	20	7/12/00	8260B	CJR	1	
SPLP Dibromochloromethane	< 0.006	MG/L	0.006	0.02	20	7/12/00	8260B	CJR	1	
SPLP 1,4-Dichlorobenzene	< 0.006	MG/L	0.006	0.0174	20	7/12/00	8260B	CJR	1	
SPLP 1,3-Dichlorobenzene	< 0.006	MG/L	0.006	0.022	20	7/12/00	8260B	CJR	1	
SPLP 1,2-Dichlorobenzene	< 0.006	MG/L	0.006	0.0186	20	7/12/00	8260B	CJR	1	
SPLP Dichlorodifluoromethane	< 0.01	MG/L	0.01	0.036	20	7/12/00	8260B	CJR	1	
SPLP 1,2-Dichloroethane	< 0.002	MG/L	0.002	0.0096	20	7/12/00	8260B	CJR	1	
SPLP 1,1-Dichloroethane	< 0.006	MG/L	0.006	0.022	20	7/12/00	8260B	CJR	1	
SPLP 1,1-Dichloroethene	< 0.012	MG/L	0.012	0.04	20	7/12/00	8260B	CJR	1	
SPLP cis-1,2-Dichloroethene	< 0.006	MG/L	0.006	0.022	20	7/12/00	8260B	CJR	1	
SPLP trans-1,2-Dichloroethene	< 0.01	MG/L	0.01	0.03	20	7/12/00	8260B	CJR	1	
SPLP 1,2-Dichloropropane	< 0.006	MG/L	0.006	0.0172	20	7/12/00	8260B	CJR	1	
SPLP 2,2-Dichloropropane	< 0.01	MG/L	0.01	0.036	20	7/12/00	8260B	CJR	1	
SPLP 1,3-Dichloropropane	< 0.004	MG/L	0.004	0.0152	20	7/12/00	8260B	CJR	1	
SPLP Di-isopropyl ether	< 0.004	MG/L	0.004	0.0138	20	7/12/00	8260B	CJR	1	
SPLP EDB (1,2-Dibromoethane)	< 0.004	MG/L	0.004	0.0164	20	7/12/00	8260B	CJR	1	
SPLP Ethylbenzene	< 0.006	MG/L	0.006	0.022	20	7/12/00	8260B	CJR	1	
SPLP Hexachlorobutadiene	< 0.006	MG/L	0.006	0.022	20	7/12/00	8260B	CJR	1	
SPLP Isopropylbenzene	< 0.006	MG/L	0.006	0.022	20	7/12/00	8260B	CJR	1	
SPLP p-Isopropyltoluene	< 0.006	MG/L	0.006	0.022	20	7/12/00	8260B	CJR	1	
SPLP Methylene chloride	0.016 "J"	MG/L	0.002	0.066	20	7/12/00	8260B	CJR	32	
SPLP MTBE	< 0.004	MG/L	0.004	0.0138	20	7/12/00	8260B	CJR	1	
SPLP Naphthalene	< 0.014	MG/L	0.014	0.048	20	7/12/00	8260B	CJR	1	
SPLP n-Propylbenzene	< 0.008	MG/L	0.008	0.024	20	7/12/00	8260B	CJR	1	
SPLP 1,1,2,2-Tetrachloroethane	< 0.006	MG/L	0.006	0.0194	20	7/12/00	8260B	CJR	1	
SPLP Tetrachloroethene	< 0.012	MG/L	0.012	0.038	20	7/12/00	8260B	CJR	1	
SPLP Toluene	< 0.008	MG/L	0.008	0.026	20	7/12/00	8260B	CJR	1	
SPLP 1,2,4-Trichlorobenzene	< 0.004	MG/L	0.004	0.0114	20	7/12/00	8260B	CJR	1	
SPLP 1,2,3-Trichlorobenzene	< 0.004	MG/L	0.004	0.0108	20	7/12/00	8260B	CJR	1	

# U.S. Analytical Lab

JERRY DE MERS  
 HSI GEOTRANS  
 175 N. CORPORATE DRIVE SUITE 100  
 BROOKFIELD, WI 53045

Project # P177  
 Project Name MPL REALTY  
 Invoice # E30175

Report Date 13-Jul-00

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code
Lab Code	5030175N					Sample Type	Soil		
Sample ID	SPLP-8					Sample Date	6/27/00		
SPLP 1,1,1-Trichloroethane	0.013 "J"	MG/L	0.008	0.024	20	7/12/00	8260B	CJR	1
SPLP 1,1,2-Trichloroethane	< 0.004	MG/L	0.004	0.0132	20	7/12/00	8260B	CJR	1
SPLP Trichloroethene	0.051	MG/L	0.008	0.026	20	7/12/00	8260B	CJR	1
SPLP Trichlorofluoromethane	< 0.012	MG/L	0.012	0.038	20	7/12/00	8260B	CJR	1
SPLP 1,2,4-Trimethylbenzene	< 0.006	MG/L	0.006	0.022	20	7/12/00	8260B	CJR	1
SPLP 1,3,5-Trimethylbenzene	< 0.008	MG/L	0.008	0.024	20	7/12/00	8260B	CJR	1
SPLP Vinyl Chloride	< 0.006	MG/L	0.006	0.022	20	7/12/00	8260B	CJR	1
SPLP Xylene's	< 0.02	MG/L	0.02	0.068	20	7/12/00	8260B	CJR	1
VOC's									
Benzene	< 25	ug/kg	9.1	30	1	6/30/00	8021A	CJR	1
Bromobenzene	< 25	ug/kg	13	42	1	6/30/00	8021A	CJR	1
Bromodichloromethane	< 25	ug/kg	7.3	24	1	6/30/00	8021A	CJR	1
tert-Butylbenzene	< 25	ug/kg	10	33	1	6/30/00	8021A	CJR	1
sec-Butylbenzene	< 25	ug/kg	8.5	28	1	6/30/00	8021A	CJR	1
n-Butylbenzene	< 25	ug/kg	8.8	29	1	6/30/00	8021A	CJR	1
Carbon Tetrachloride	< 25	ug/kg	8.3	28	1	6/30/00	8021A	CJR	1
Chlorobenzene	< 25	ug/kg	8.4	28	1	6/30/00	8021A	CJR	1
Chloroethane	< 25	ug/kg	11	35	1	6/30/00	8021A	CJR	1
Chloroform	< 25	ug/kg	7.9	26	1	6/30/00	8021A	CJR	1
Chloromethane	< 25	ug/kg	5	17	1	6/30/00	8021A	CJR	4
2-Chlorotoluene	< 25	ug/kg	2.4	8.4	1	6/30/00	8021A	CJR	1
4-Chlorotoluene	< 25	ug/kg	2.3	8.5	1	6/30/00	8021A	CJR	1
2,2-DCP, cis-1,2-Dichloroethene	< 50	ug/kg	4.1	20	1	6/30/00	8021A	CJR	1
1,2-Dibromo-3-chloropropane	< 25	ug/kg	11	37	1	6/30/00	8021A	CJR	1
Dibromochloromethane	< 25	ug/kg	9.4	31	1	6/30/00	8021A	CJR	1
1,4-Dichlorobenzene	< 25	ug/kg	8.8	29	1	6/30/00	8021A	CJR	1
1,3-Dichlorobenzene	< 25	ug/kg	8.6	29	1	6/30/00	8021A	CJR	1
1,2-Dichlorobenzene	< 25	ug/kg	8.9	30	1	6/30/00	8021A	CJR	1
Dichlorodifluoromethane	< 25	ug/kg	8.3	25	1	6/30/00	8021A	CJR	4
1,2-Dichloroethane	< 25	ug/kg	8.6	29	1	6/30/00	8021A	CJR	1
1,1-Dichloroethane	< 25	ug/kg	7.4	25	1	6/30/00	8021A	CJR	1
1,1-Dichloroethene	< 25	ug/kg	8.3	28	1	6/30/00	8021A	CJR	1
cis-1,2-Dichloroethene	< 25	ug/kg	5.7	19	1	6/30/00	8021A	CJR	1
trans-1,2-Dichloroethene	< 25	ug/kg	7.5	25	1	6/30/00	8021A	CJR	1
1,2-Dichloropropane	< 25	ug/kg	8.9	30	1	6/30/00	8021A	CJR	1
1,3-Dichloropropane	< 25	ug/kg	11	35	1	6/30/00	8021A	CJR	1

# U.S. Analytical Lab

JERRY DE MERS  
 HSI GEOTRANS  
 175 N. CORPORATE DRIVE SUITE 100  
 BROOKFIELD, WI 53045

Project # P177  
 Project Name MPL REALTY  
 Invoice # E30175

Report Date 13-Jul-00

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code
Lab Code	5030175N					Sample Type	Soil		
Sample ID	SPLP-8					Sample Date	6/27/00		
Di-isopropyl ether	< 25	ug/kg	7.4	25	1	6/30/00	8021A	CJR	1
EDB (1,2-Dibromoethane)	< 25	ug/kg	9.3	31	1	6/30/00	8021A	CJR	1
Ethylbenzene	< 25	ug/kg	7.9	26	1	6/30/00	8021A	CJR	1
Hexachlorobutadiene	< 25	ug/kg	6.4	21	1	6/30/00	8021A	CJR	1
Isopropylbenzene	< 25	ug/kg	10	33	1	6/30/00	8021A	CJR	1
p-Isopropyltoluene	< 25	ug/kg	9	30	1	6/30/00	8021A	CJR	1
Methylene chloride	< 25	ug/kg	13	42	1	6/30/00	8021A	CJR	1
MTBE	34	ug/kg	11	38	1	6/30/00	8021A	CJR	1
Naphthalene	< 25	ug/kg	11	38	1	6/30/00	8021A	CJR	1
n-Propylbenzene	< 25	ug/kg	16	53	1	6/30/00	8021A	CJR	1
1,1,2,2-Tetrachloroethane	< 25	ug/kg	24	81	1	6/30/00	8021A	CJR	1
Tetrachloroethene	70	ug/kg	7.6	25	1	6/30/00	8021A	CJR	1
Toluene	< 25	ug/kg	6.7	22	1	6/30/00	8021A	CJR	1
1,2,4-Trichlorobenzene	< 25	ug/kg	8.8	29	1	6/30/00	8021A	CJR	1
1,2,3-Trichlorobenzene	< 25	ug/kg	9.3	31	1	6/30/00	8021A	CJR	1
1,1,1-Trichloroethane	290	ug/kg	8.4	28	1	6/30/00	8021A	CJR	1
1,1,2-Trichloroethane	< 25	ug/kg	11	36	1	6/30/00	8021A	CJR	1
Trichloroethene	1400	ug/kg	15	51	1	6/30/00	8021A	CJR	1
Trichlorofluoromethane	< 25	ug/kg	8.8	29	1	6/30/00	8021A	CJR	1
1,2,4-Trimethylbenzene	< 25	ug/kg	6.9	23	1	6/30/00	8021A	CJR	1
1,3,5-Trimethylbenzene	< 25	ug/kg	16	54	1	6/30/00	8021A	CJR	1
Vinyl Chloride	< 25	ug/kg	8.3	25	1	6/30/00	8021A	CJR	2
m&p-Xylene	< 50	ug/kg	15	48	1	6/30/00	8021A	CJR	1
o-Xylene	< 25	ug/kg	7.9	26	1	6/30/00	8021A	CJR	1



# U.S. Analytical Lab

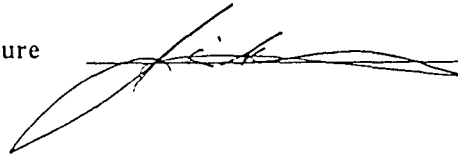
JERRY DE MERS  
HSI GEOTRANS  
175 N. CORPORATE DRIVE SUITE 100  
BROOKFIELD, WI 53045

Project # P177  
Project Name MPL REALTY  
Invoice # E30175

Report Date 13-Jul-00

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code	
LOD Limit of Detection	"J" Flag: Analyte detected between LOD and LOQ									LOQ Limit of Quantitation
	<i>Code</i>	<i>Comment</i>								
	1	All laboratory QC requirements were met for this sample.								
	2	The duplicate RPD failed to meet acceptable QC limits.								
	3	The spike recovery failed to meet acceptable QC limits.								
	4	The check standard failed to meet acceptable QC limits.								
	7	The LCS spike recovery failed to meet acceptable QC limits.								
	32	The method blank failed to meet acceptable QC limits.								

Authorized Signature





**HSI  
GEOTRANS**  
A TETRA TECH COMPANY

175 N. Corporate Drive  
Suite 100  
Brookfield, WI 53045  
Telephone (414) 792-1282  
Facsimile (414) 792-1310

# Analysis Request and Chain of Custody Record

5030175

Project No. <b>P177</b>	Client/Project Name <b>MPL Realty</b>	Project Location <b>St. Francis, WI</b>	<b>RTZ</b>
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Field Sample No./ Identification	Date and Time	Grab	Comp	Sample Container (Size/Mat'l)	Sample Type (Liquid, Sludge, Etc.)	Preservative	ANALYSIS REQUESTED	LABORATORY REMARKS
<sup>030175</sup> A GP-103-2'	11:20		X	40ml glass	Soil	none	VOC	Sampled on 6/27/00 per David B. 6/27/00
B GP-101-2'	12:15		X	40ml glass	↓	↓	VOC	
C GP-101-20'	12:25		X	40ml glass			VOC	
D GP-101-30'	12:45		X	40ml glass			VOC	
E SPLP-1	12:15		X	2oz glass			SPLP VOCs #	
F GP-102-2'	13:20		X	40ml glass			VOC	
G GP-109-2'	11:46		X	40ml glass			VOC	
H GP-109-8'	11:45		X	40ml glass			VOC	

Samplers: (Signature) <i>David B. [Signature]</i>	Relinquished by: (Signature) <i>David B. [Signature]</i>	Date: 6-28-00 Time: 8:00	Received by: (Signature) <i>[Signature]</i>	Date: 6-28-00 Time: 10:30	Intact
Affiliation	Relinquished by: (Signature) <i>[Signature]</i>	Date: 6-28-00 Time: 2:45	Received by: (Signature)	Date: Time:	Intact
	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	Intact on ice good condition

SAMPLER REMARKS: **Project Manager: Jerry Deiters**

SEAL #

Received for laboratory: (Signature) *[Signature]* Date: 6/28/00 Time: 14:45

Date Results to:

Laboratory No.



**HSI  
GEOTRANS**  
A TETRA TECH COMPANY

175 N. Corporate Drive  
Suite 100  
Brookfield, WI 53045

Telephone (414) 792-1282  
Facsimile (414) 792-1310

# Analysis Request and Chain of Custody Record

5030175

Project No. <b>P177</b>	Client/Project Name <b>MPL Realty</b>	Project Location <b>St. Francis, WI</b>
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RTE

Field Sample No./ Identification	Date and Time	Grab	Comp	Sample Container (Size/Mat'l)	Sample Type (Liquid, Sludge, Etc.)	Preservative	ANALYSIS REQUESTED	LABORATORY REMARKS
I 5030175 SPLP-2	13:20		X	40ml glass 2oz glass	Soil	none	<del>VOCs</del> cancel SPLP VOCs	Sampled on 4/27/00 per David B. 4/29/00 JAW
J SPLP-3	13:30		X	40ml glass 2oz glass	↓	↓	VOCs ; SPLP VOCs	
K SPLP-3-8'	13:35		X	40ml glass	↓	↓	VOCs	
L SPLP-5	13:50		X	40ml glass 2oz glass	↓	↓	VOCs ; SPLP VOCs	
M SPLP-7	13:25		X	40ml glass 2oz glass	↓	↓	VOCs ; SPLP VOCs	
N SPLP-8	11:30		X	40ml glass 2oz glass	↓	↓	VOCs ; SPLP VOCs	↓

Samplers: (Signature) <i>[Signature]</i>	Relinquished by: (Signature) <i>[Signature]</i>	Date: 6-28-00 Time: 8:00	Received by: (Signature) <i>[Signature]</i>	Date: 6-28-00 Time: 10:30	Intact
Affiliation	Relinquished by: (Signature) <i>[Signature]</i>	Date: 6-28-00 Time: 2:45	Received by: (Signature)	Date:	Intact
	Relinquished by: (Signature)	Date:	Received by: (Signature)	Date:	Intact

SAMPLER REMARKS: <b>Project Manager : Jerry DeMers</b>	Received for laboratory (Signature) <i>[Signature]</i>	Date: 4/28/00 Time: 14:45	Laboratory No. <b>on ice soil consolidation</b>
SEAL #	Data Results to		

# U.S. Analytical Lab

JERRY DE MERS  
 HSI GEOTRANS  
 175 N. CORPORATE DRIVE SUITE 100  
 BROOKFIELD, WI 53045

Project # P177  
 Project Name MPL REALTY - BADGER MET  
 Invoice # E30189

Report Date 13-Jul-00

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code
Lab Code	5030189A					Sample Type	Soil		
Sample ID	GP-104-3'					Sample Date	6/28/00		

Inorganic

General

Solids Percent	86.4	%				1	6/30/00	5021	VLC	1
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Organic

VOC's

Benzene	< 25	ug/kg	9.1	30	1	7/5/00	8021A	CJR	1
Bromobenzene	< 25	ug/kg	13	42	1	7/5/00	8021A	CJR	1
Bromodichloromethane	< 25	ug/kg	7.3	24	1	7/5/00	8021A	CJR	1
tert-Butylbenzene	< 25	ug/kg	10	33	1	7/5/00	8021A	CJR	1
sec-Butylbenzene	< 25	ug/kg	8.5	28	1	7/5/00	8021A	CJR	1
n-Butylbenzene	< 25	ug/kg	8.8	29	1	7/5/00	8021A	CJR	1
Carbon Tetrachloride	< 25	ug/kg	8.3	28	1	7/5/00	8021A	CJR	1
Chlorobenzene	< 25	ug/kg	8.4	28	1	7/5/00	8021A	CJR	1
Chloroethane	< 25	ug/kg	11	35	1	7/5/00	8021A	CJR	1
Chloroform	< 25	ug/kg	7.9	26	1	7/5/00	8021A	CJR	1
Chloromethane	< 25	ug/kg	5	17	1	7/5/00	8021A	CJR	1
2-Chlorotoluene	< 25	ug/kg	2.4	8.4	1	7/5/00	8021A	CJR	1
4-Chlorotoluene	< 25	ug/kg	2.3	8.5	1	7/5/00	8021A	CJR	1
2,2-DCP, cis-1,2-Dichloroethene	< 50	ug/kg	4.1	20	1	7/5/00	8021A	CJR	1
1,2-Dibromo-3-chloropropane	< 25	ug/kg	11	37	1	7/5/00	8021A	CJR	1
Dibromochloromethane	< 25	ug/kg	9.4	31	1	7/5/00	8021A	CJR	1
1,4-Dichlorobenzene	< 25	ug/kg	8.8	29	1	7/5/00	8021A	CJR	1
1,3-Dichlorobenzene	< 25	ug/kg	8.6	29	1	7/5/00	8021A	CJR	1
1,2-Dichlorobenzene	< 25	ug/kg	8.9	30	1	7/5/00	8021A	CJR	1
Dichlorodifluoromethane	< 25	ug/kg	8.3	25	1	7/5/00	8021A	CJR	3.4
1,2-Dichloroethane	< 25	ug/kg	8.6	29	1	7/5/00	8021A	CJR	1
1,1-Dichloroethane	< 25	ug/kg	7.4	25	1	7/5/00	8021A	CJR	1
1,1-Dichloroethene	< 25	ug/kg	8.3	28	1	7/5/00	8021A	CJR	1
cis-1,2-Dichloroethene	< 25	ug/kg	5.7	19	1	7/5/00	8021A	CJR	1
trans-1,2-Dichloroethene	< 25	ug/kg	7.5	25	1	7/5/00	8021A	CJR	1
1,2-Dichloropropane	< 25	ug/kg	8.9	30	1	7/5/00	8021A	CJR	1
1,3-Dichloropropane	< 25	ug/kg	11	35	1	7/5/00	8021A	CJR	1
Di-isopropyl ether	< 25	ug/kg	7.4	25	1	7/5/00	8021A	CJR	1
EDB (1,2-Dibromoethane)	< 25	ug/kg	9.3	31	1	7/5/00	8021A	CJR	1
Ethylbenzene	< 25	ug/kg	7.9	26	1	7/5/00	8021A	CJR	1
Hexachlorobutadiene	< 25	ug/kg	6.4	21	1	7/5/00	8021A	CJR	1

# U.S. Analytical Lab

JERRY DE MERS  
 HSI GEOTRANS  
 175 N. CORPORATE DRIVE SUITE 100  
 BROOKFIELD, WI 53045

Project # P177  
 Project Name MPL REALTY - BADGER MET  
 Invoice # E30189

Report Date 13-Jul-00

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code
Lab Code	5030189A					Sample Type	Soil		
Sample ID	GP-104-3'					Sample Date	6/28/00		
Isopropylbenzene	< 25	ug/kg	10	33	1	7/5/00	8021A	CJR	1
p-Isopropyltoluene	< 25	ug/kg	9	30	1	7/5/00	8021A	CJR	1
Methylene chloride	< 25	ug/kg	13	42	1	7/5/00	8021A	CJR	1
MTBE	< 25	ug/kg	11	38	1	7/5/00	8021A	CJR	1
Naphthalene	< 25	ug/kg	11	38	1	7/5/00	8021A	CJR	1
n-Propylbenzene	< 25	ug/kg	16	53	1	7/5/00	8021A	CJR	1
1,1,2,2-Tetrachloroethane	< 25	ug/kg	24	81	1	7/5/00	8021A	CJR	1
Tetrachloroethene	160	ug/kg	7.6	25	1	7/5/00	8021A	CJR	1
Toluene	< 25	ug/kg	6.7	22	1	7/5/00	8021A	CJR	1
1,2,4-Trichlorobenzene	< 25	ug/kg	8.8	29	1	7/5/00	8021A	CJR	1
1,2,3-Trichlorobenzene	< 25	ug/kg	9.3	31	1	7/5/00	8021A	CJR	1
1,1,1-Trichloroethane	170	ug/kg	8.4	28	1	7/5/00	8021A	CJR	1
1,1,2-Trichloroethane	< 25	ug/kg	11	36	1	7/5/00	8021A	CJR	1
Trichloroethene	850	ug/kg	15	51	1	7/5/00	8021A	CJR	1
Trichlorofluoromethane	< 25	ug/kg	8.8	29	1	7/5/00	8021A	CJR	1
1,2,4-Trimethylbenzene	< 25	ug/kg	6.9	23	1	7/5/00	8021A	CJR	1
1,3,5-Trimethylbenzene	< 25	ug/kg	16	54	1	7/5/00	8021A	CJR	1
Vinyl Chloride	< 25	ug/kg	8.3	25	1	7/5/00	8021A	CJR	1
m&p-Xylene	< 50	ug/kg	15	48	1	7/5/00	8021A	CJR	1
o-Xylene	< 25	ug/kg	7.9	26	1	7/5/00	8021A	CJR	1

Lab Code	5030189B					Sample Type	Soil		
Sample ID	GP-104-8'					Sample Date	6/28/00		

**Inorganic**

**General**

Solids Percent	82.5	%			1	6/30/00	5021	VLC	1
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**Organic**

**VOC's**

Benzene	< 25	ug/kg	9.1	30	1	7/6/00	8021A	CJR	1
Bromobenzene	< 25	ug/kg	13	42	1	7/6/00	8021A	CJR	1
Bromodichloromethane	< 25	ug/kg	7.3	24	1	7/6/00	8021A	CJR	1
tert-Butylbenzene	< 25	ug/kg	10	33	1	7/6/00	8021A	CJR	1
sec-Butylbenzene	< 25	ug/kg	8.5	28	1	7/6/00	8021A	CJR	1
n-Butylbenzene	< 25	ug/kg	8.8	29	1	7/6/00	8021A	CJR	1
Carbon Tetrachloride	< 25	ug/kg	8.3	28	1	7/6/00	8021A	CJR	1
Chlorobenzene	< 25	ug/kg	8.4	28	1	7/6/00	8021A	CJR	1

# U.S. Analytical Lab

JERRY DE MERS  
 HSI GEOTRANS  
 175 N. CORPORATE DRIVE SUITE 100  
 BROOKFIELD, WI 53045

Project # P177  
 Project Name MPL REALTY - BADGER MET  
 Invoice # E30189

Report Date 13-Jul-00

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code
Lab Code	5030189B		Sample Type		Soil				
Sample ID	GP-104-8'		Sample Date		6/28/00				
Chloroethane	< 25	ug/kg	11	35	1	7/6/00	8021A	CJR	1
Chloroform	< 25	ug/kg	7.9	26	1	7/6/00	8021A	CJR	1
Chloromethane	< 25	ug/kg	5	17	1	7/6/00	8021A	CJR	1
2-Chlorotoluene	< 25	ug/kg	2.4	8.4	1	7/6/00	8021A	CJR	1
4-Chlorotoluene	< 25	ug/kg	2.3	8.5	1	7/6/00	8021A	CJR	1
2,2-DCP, cis-1,2-Dichloroethene	< 50	ug/kg	4.1	20	1	7/6/00	8021A	CJR	1
1,2-Dibromo-3-chloropropane	< 25	ug/kg	11	37	1	7/6/00	8021A	CJR	1
Dibromochloromethane	< 25	ug/kg	9.4	31	1	7/6/00	8021A	CJR	1
1,4-Dichlorobenzene	< 25	ug/kg	8.8	29	1	7/6/00	8021A	CJR	1
1,3-Dichlorobenzene	< 25	ug/kg	8.6	29	1	7/6/00	8021A	CJR	1
1,2-Dichlorobenzene	< 25	ug/kg	8.9	30	1	7/6/00	8021A	CJR	1
Dichlorodifluoromethane	< 25	ug/kg	8.3	25	1	7/6/00	8021A	CJR	3 4
1,2-Dichloroethane	< 25	ug/kg	8.6	29	1	7/6/00	8021A	CJR	1
1,1-Dichloroethane	< 25	ug/kg	7.4	25	1	7/6/00	8021A	CJR	1
1,1-Dichloroethene	< 25	ug/kg	8.3	28	1	7/6/00	8021A	CJR	1
cis-1,2-Dichloroethene	32	ug/kg	5.7	19	1	7/6/00	8021A	CJR	1
trans-1,2-Dichloroethene	< 25	ug/kg	7.5	25	1	7/6/00	8021A	CJR	1
1,2-Dichloropropane	< 25	ug/kg	8.9	30	1	7/6/00	8021A	CJR	1
1,3-Dichloropropane	< 25	ug/kg	11	35	1	7/6/00	8021A	CJR	1
Di-isopropyl ether	< 25	ug/kg	7.4	25	1	7/6/00	8021A	CJR	1
EDB (1,2-Dibromoethane)	< 25	ug/kg	9.3	31	1	7/6/00	8021A	CJR	1
Ethylbenzene	< 25	ug/kg	7.9	26	1	7/6/00	8021A	CJR	1
Hexachlorobutadiene	< 25	ug/kg	6.4	21	1	7/6/00	8021A	CJR	1
Isopropylbenzene	< 25	ug/kg	10	33	1	7/6/00	8021A	CJR	1
p-Isopropyltoluene	< 25	ug/kg	9	30	1	7/6/00	8021A	CJR	1
Methylene chloride	< 25	ug/kg	13	42	1	7/6/00	8021A	CJR	1
MTBE	< 25	ug/kg	11	38	1	7/6/00	8021A	CJR	1
Naphthalene	< 25	ug/kg	11	38	1	7/6/00	8021A	CJR	1
n-Propylbenzene	< 25	ug/kg	16	53	1	7/6/00	8021A	CJR	1
1,1,2,2-Tetrachloroethane	< 25	ug/kg	24	81	1	7/6/00	8021A	CJR	1
Tetrachloroethene	100	ug/kg	7.6	25	1	7/6/00	8021A	CJR	1
Toluene	< 25	ug/kg	6.7	22	1	7/6/00	8021A	CJR	1
1,2,4-Trichlorobenzene	< 25	ug/kg	8.8	29	1	7/6/00	8021A	CJR	1
1,2,3-Trichlorobenzene	< 25	ug/kg	9.3	31	1	7/6/00	8021A	CJR	1
1,1,1-Trichloroethane	450	ug/kg	8.4	28	1	7/6/00	8021A	CJR	1
1,1,2-Trichloroethane	< 25	ug/kg	11	36	1	7/6/00	8021A	CJR	1
Trichloroethene	1900	ug/kg	15	51	1	7/6/00	8021A	CJR	1

# U.S. Analytical Lab

JERRY DE MERS  
 HSI GEOTRANS  
 175 N. CORPORATE DRIVE SUITE 100  
 BROOKFIELD, WI 53045

Project # P177  
 Project Name MPL REALTY - BADGER MET  
 Invoice # E30189

Report Date 13-Jul-00

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code
Lab Code 5030189B						Sample Type Soil			
Sample ID GP-104-8'						Sample Date 6/28/00			
Trichlorofluoromethane	< 25	ug/kg	8.8	29	1	7/6/00	8021A	CJR	1
1,2,4-Trimethylbenzene	< 25	ug/kg	6.9	23	1	7/6/00	8021A	CJR	1
1,3,5-Trimethylbenzene	< 25	ug/kg	16	54	1	7/6/00	8021A	CJR	1
Vinyl Chloride	< 25	ug/kg	8.3	25	1	7/6/00	8021A	CJR	1
m&p-Xylene	< 50	ug/kg	15	48	1	7/6/00	8021A	CJR	1
o-Xylene	< 25	ug/kg	7.9	26	1	7/6/00	8021A	CJR	1
Lab Code 5030189C						Sample Type Soil			
Sample ID SPLP-4						Sample Date 6/28/00			

Inorganic

General

Solids Percent	86.0	%			1	7/5/00	5021	SAD	1
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Organic

SPLP

SPLP Benzene	< 0.006	MG/L	0.006	0.017	20	7/12/00	8260B	CJR	1
SPLP Bromobenzene	< 0.004	MG/L	0.004	0.0154	20	7/12/00	8260B	CJR	1
SPLP Bromodichloromethane	< 0.006	MG/L	0.006	0.0168	20	7/12/00	8260B	CJR	1
SPLP tert-Butylbenzene	< 0.008	MG/L	0.008	0.026	20	7/12/00	8260B	CJR	1
SPLP sec-Butylbenzene	< 0.008	MG/L	0.008	0.024	20	7/12/00	8260B	CJR	1
SPLP n-Butylbenzene	< 0.008	MG/L	0.008	0.028	20	7/12/00	8260B	CJR	1
SPLP Carbon Tetrachloride	< 0.01	MG/L	0.01	0.032	20	7/12/00	8260B	CJR	1
SPLP Chlorobenzene	< 0.006	MG/L	0.006	0.0174	20	7/12/00	8260B	CJR	1
SPLP Chloroethane	< 0.004	MG/L	0.004	0.0102	20	7/12/00	8260B	CJR	1
SPLP Chloroform	< 0.006	MG/L	0.006	0.0174	20	7/12/00	8260B	CJR	1
SPLP Chloromethane	< 0.006	MG/L	0.006	0.0192	20	7/12/00	8260B	CJR	1
SPLP 2-Chlorotoluene	< 0.006	MG/L	0.006	0.02	20	7/12/00	8260B	CJR	1
SPLP 4-Chlorotoluene	< 0.006	MG/L	0.006	0.0182	20	7/12/00	8260B	CJR	1
SPLP 1,2-Dibromo-3-chloropropan	< 0.01	MG/L	0.01	0.034	20	7/12/00	8260B	CJR	1
SPLP Dibromochloromethane	< 0.006	MG/L	0.006	0.02	20	7/12/00	8260B	CJR	1
SPLP 1,4-Dichlorobenzene	< 0.006	MG/L	0.006	0.0174	20	7/12/00	8260B	CJR	1
SPLP 1,3-Dichlorobenzene	< 0.006	MG/L	0.006	0.022	20	7/12/00	8260B	CJR	1
SPLP 1,2-Dichlorobenzene	< 0.006	MG/L	0.006	0.0186	20	7/12/00	8260B	CJR	1
SPLP Dichlorodifluoromethane	< 0.01	MG/L	0.01	0.036	20	7/12/00	8260B	CJR	1
SPLP 1,2-Dichloroethane	< 0.002	MG/L	0.002	0.0096	20	7/12/00	8260B	CJR	1
SPLP 1,1-Dichloroethane	< 0.006	MG/L	0.006	0.022	20	7/12/00	8260B	CJR	1
SPLP 1,1-Dichloroethene	< 0.012	MG/L	0.012	0.04	20	7/12/00	8260B	CJR	1

# U.S. Analytical Lab

JERRY DE MERS  
 HSI GEOTRANS  
 175 N. CORPORATE DRIVE SUITE 100  
 BROOKFIELD, WI 53045

Project # P177  
 Project Name MPL REALTY - BADGER MET  
 Invoice # E30189

Report Date 13-Jul-00

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code
Lab Code 5030189C						Sample Type	Soil		
Sample ID SPLP-4						Sample Date	6/28/00		
SPLP cis-1,2-Dichloroethene	< 0.006	MG/L	0.006	0.022	20	7/12/00	8260B	CJR	1
SPLP trans-1,2-Dichloroethene	< 0.01	MG/L	0.01	0.03	20	7/12/00	8260B	CJR	1
SPLP 1,2-Dichloropropane	< 0.006	MG/L	0.006	0.0172	20	7/12/00	8260B	CJR	1
SPLP 2,2-Dichloropropane	< 0.01	MG/L	0.01	0.036	20	7/12/00	8260B	CJR	1
SPLP 1,3-Dichloropropane	< 0.004	MG/L	0.004	0.0152	20	7/12/00	8260B	CJR	1
SPLP Di-isopropyl ether	< 0.004	MG/L	0.004	0.0138	20	7/12/00	8260B	CJR	1
SPLP EDB (1,2-Dibromoethane)	< 0.004	MG/L	0.004	0.0164	20	7/12/00	8260B	CJR	1
SPLP Ethylbenzene	< 0.006	MG/L	0.006	0.022	20	7/12/00	8260B	CJR	1
SPLP Hexachlorobutadiene	< 0.006	MG/L	0.006	0.022	20	7/12/00	8260B	CJR	1
SPLP Isopropylbenzene	< 0.006	MG/L	0.006	0.022	20	7/12/00	8260B	CJR	1
SPLP p-Isopropyltoluene	< 0.006	MG/L	0.006	0.022	20	7/12/00	8260B	CJR	1
SPLP Methylene chloride	0.014 "J"	MG/L	0.002	0.066	20	7/12/00	8260B	CJR	32
SPLP MTBE	< 0.004	MG/L	0.004	0.0138	20	7/12/00	8260B	CJR	1
SPLP Naphthalene	< 0.014	MG/L	0.014	0.048	20	7/12/00	8260B	CJR	1
SPLP n-Propylbenzene	< 0.008	MG/L	0.008	0.024	20	7/12/00	8260B	CJR	1
SPLP 1,1,2,2-Tetrachloroethane	< 0.006	MG/L	0.006	0.0194	20	7/12/00	8260B	CJR	1
SPLP Tetrachloroethene	< 0.012	MG/L	0.012	0.038	20	7/12/00	8260B	CJR	1
SPLP Toluene	< 0.008	MG/L	0.008	0.026	20	7/12/00	8260B	CJR	1
SPLP 1,2,4-Trichlorobenzene	< 0.004	MG/L	0.004	0.0114	20	7/12/00	8260B	CJR	1
SPLP 1,2,3-Trichlorobenzene	< 0.004	MG/L	0.004	0.0108	20	7/12/00	8260B	CJR	1
SPLP 1,1,1-Trichloroethane	< 0.008	MG/L	0.008	0.024	20	7/12/00	8260B	CJR	1
SPLP 1,1,2-Trichloroethane	< 0.004	MG/L	0.004	0.0132	20	7/12/00	8260B	CJR	1
SPLP Trichloroethene	0.013 "J"	MG/L	0.008	0.026	20	7/12/00	8260B	CJR	1
SPLP Trichlorofluoromethane	< 0.012	MG/L	0.012	0.038	20	7/12/00	8260B	CJR	1
SPLP 1,2,4-Trimethylbenzene	< 0.006	MG/L	0.006	0.022	20	7/12/00	8260B	CJR	1
SPLP 1,3,5-Trimethylbenzene	< 0.008	MG/L	0.008	0.024	20	7/12/00	8260B	CJR	1
SPLP Vinyl Chloride	< 0.006	MG/L	0.006	0.022	20	7/12/00	8260B	CJR	1
SPLP Xylene's	< 0.02	MG/L	0.02	0.068	20	7/12/00	8260B	CJR	1
Lab Code 5030189D						Sample Type	Soil		
Sample ID GP-105-3'						Sample Date	6/28/00		

Inorganic

General

Solids Percent 87.5 % 1 6/30/00 5021 VLC 1

Organic

VOC's



# U.S. Analytical Lab

JERRY DE MERS  
 HSI GEOTRANS  
 175 N. CORPORATE DRIVE SUITE 100  
 BROOKFIELD, WI 53045

Project # P177  
 Project Name MPL REALTY - BADGER MET  
 Invoice # E30189

Report Date 13-Jul-00

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code
Lab Code	5030189D					Sample Type	Soil		
Sample ID	GP-105-3'					Sample Date	6/28/00		
Benzene	< 25	ug/kg	9.1	30	1	7/6/00	8021A	CJR	1
Bromobenzene	< 25	ug/kg	13	42	1	7/6/00	8021A	CJR	1
Bromodichloromethane	< 25	ug/kg	7.3	24	1	7/6/00	8021A	CJR	1
tert-Butylbenzene	< 25	ug/kg	10	33	1	7/6/00	8021A	CJR	1
sec-Butylbenzene	< 25	ug/kg	8.5	28	1	7/6/00	8021A	CJR	1
n-Butylbenzene	< 25	ug/kg	8.8	29	1	7/6/00	8021A	CJR	1
Carbon Tetrachloride	< 25	ug/kg	8.3	28	1	7/6/00	8021A	CJR	1
Chlorobenzene	< 25	ug/kg	8.4	28	1	7/6/00	8021A	CJR	1
Chloroethane	< 25	ug/kg	11	35	1	7/6/00	8021A	CJR	1
Chloroform	< 25	ug/kg	7.9	26	1	7/6/00	8021A	CJR	1
Chloromethane	< 25	ug/kg	5	17	1	7/6/00	8021A	CJR	1
2-Chlorotoluene	< 25	ug/kg	2.4	8.4	1	7/6/00	8021A	CJR	1
4-Chlorotoluene	< 25	ug/kg	2.3	8.5	1	7/6/00	8021A	CJR	1
2,2-DCP, cis-1,2-Dichloroethene	< 50	ug/kg	4.1	20	1	7/6/00	8021A	CJR	1
1,2-Dibromo-3-chloropropane	< 25	ug/kg	11	37	1	7/6/00	8021A	CJR	1
Dibromochloromethane	< 25	ug/kg	9.4	31	1	7/6/00	8021A	CJR	1
1,4-Dichlorobenzene	< 25	ug/kg	8.8	29	1	7/6/00	8021A	CJR	1
1,3-Dichlorobenzene	< 25	ug/kg	8.6	29	1	7/6/00	8021A	CJR	1
1,2-Dichlorobenzene	< 25	ug/kg	8.9	30	1	7/6/00	8021A	CJR	1
Dichlorodifluoromethane	< 25	ug/kg	8.3	25	1	7/6/00	8021A	CJR	3.4
1,2-Dichloroethane	< 25	ug/kg	8.6	29	1	7/6/00	8021A	CJR	1
1,1-Dichloroethane	< 25	ug/kg	7.4	25	1	7/6/00	8021A	CJR	1
1,1-Dichloroethene	< 25	ug/kg	8.3	28	1	7/6/00	8021A	CJR	1
cis-1,2-Dichloroethene	< 25	ug/kg	5.7	19	1	7/6/00	8021A	CJR	1
trans-1,2-Dichloroethene	< 25	ug/kg	7.5	25	1	7/6/00	8021A	CJR	1
1,2-Dichloropropane	< 25	ug/kg	8.9	30	1	7/6/00	8021A	CJR	1
1,3-Dichloropropane	< 25	ug/kg	11	35	1	7/6/00	8021A	CJR	1
Di-isopropyl ether	< 25	ug/kg	7.4	25	1	7/6/00	8021A	CJR	1
EDB (1,2-Dibromoethane)	< 25	ug/kg	9.3	31	1	7/6/00	8021A	CJR	1
Ethylbenzene	< 25	ug/kg	7.9	26	1	7/6/00	8021A	CJR	1
Hexachlorobutadiene	< 25	ug/kg	6.4	21	1	7/6/00	8021A	CJR	1
Isopropylbenzene	< 25	ug/kg	10	33	1	7/6/00	8021A	CJR	1
p-Isopropyltoluene	< 25	ug/kg	9	30	1	7/6/00	8021A	CJR	1
Methylene chloride	< 25	ug/kg	13	42	1	7/6/00	8021A	CJR	1
MTBE	< 25	ug/kg	11	38	1	7/6/00	8021A	CJR	1
Naphthalene	< 25	ug/kg	11	38	1	7/6/00	8021A	CJR	1
n-Propylbenzene	< 25	ug/kg	16	53	1	7/6/00	8021A	CJR	1

# U.S. Analytical Lab

JERRY DE MERS  
 HSI GEOTRANS  
 175 N. CORPORATE DRIVE SUITE 100  
 BROOKFIELD, WI 53045

Project # P177  
 Project Name MPL REALTY - BADGER MET  
 Invoice # E30189

Report Date 13-Jul-00

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code	
Lab Code	5030189D					Sample Type	Soil			
Sample ID	GP-105-3'					Sample Date	6/28/00			
1,1,2,2-Tetrachloroethane	< 25	ug/kg	24	81	1	7/6/00	8021A	CJR	1	
Tetrachloroethene	< 25	ug/kg	7.6	25	1	7/6/00	8021A	CJR	1	
Toluene	< 25	ug/kg	6.7	22	1	7/6/00	8021A	CJR	1	
1,2,4-Trichlorobenzene	< 25	ug/kg	8.8	29	1	7/6/00	8021A	CJR	1	
1,2,3-Trichlorobenzene	< 25	ug/kg	9.3	31	1	7/6/00	8021A	CJR	1	
1,1,1-Trichloroethane	< 25	ug/kg	8.4	28	1	7/6/00	8021A	CJR	1	
1,1,2-Trichloroethane	< 25	ug/kg	11	36	1	7/6/00	8021A	CJR	1	
Trichloroethene	35	ug/kg	15	51	1	7/6/00	8021A	CJR	1	
Trichlorofluoromethane	< 25	ug/kg	8.8	29	1	7/6/00	8021A	CJR	1	
1,2,4-Trimethylbenzene	< 25	ug/kg	6.9	23	1	7/6/00	8021A	CJR	1	
1,3,5-Trimethylbenzene	< 25	ug/kg	16	54	1	7/6/00	8021A	CJR	1	
Vinyl Chloride	< 25	ug/kg	8.3	25	1	7/6/00	8021A	CJR	1	
m&p-Xylene	< 50	ug/kg	15	48	1	7/6/00	8021A	CJR	1	
o-Xylene	< 25	ug/kg	7.9	26	1	7/6/00	8021A	CJR	1	

Lab Code	5030189E					Sample Type	Soil			
Sample ID	GP-105-8'					Sample Date	6/28/00			

Inorganic

General

Solids Percent	84.2	%			1	6/30/00	5021	VLC	1
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Organic

VOC's

Benzene	< 25	ug/kg	9.1	30	1	7/6/00	8021A	CJR	1
Bromobenzene	< 25	ug/kg	13	42	1	7/6/00	8021A	CJR	1
Bromodichloromethane	< 25	ug/kg	7.3	24	1	7/6/00	8021A	CJR	1
tert-Butylbenzene	< 25	ug/kg	10	33	1	7/6/00	8021A	CJR	1
sec-Butylbenzene	< 25	ug/kg	8.5	28	1	7/6/00	8021A	CJR	1
n-Butylbenzene	< 25	ug/kg	8.8	29	1	7/6/00	8021A	CJR	1
Carbon Tetrachloride	< 25	ug/kg	8.3	28	1	7/6/00	8021A	CJR	1
Chlorobenzene	< 25	ug/kg	8.4	28	1	7/6/00	8021A	CJR	1
Chloroethane	< 25	ug/kg	11	35	1	7/6/00	8021A	CJR	1
Chloroform	< 25	ug/kg	7.9	26	1	7/6/00	8021A	CJR	1
Chloromethane	< 25	ug/kg	5	17	1	7/6/00	8021A	CJR	1
2-Chlorotoluene	< 25	ug/kg	2.4	8.4	1	7/6/00	8021A	CJR	1
4-Chlorotoluene	< 25	ug/kg	2.3	8.5	1	7/6/00	8021A	CJR	1
2,2-DCP, cis-1,2-Dichloroethene	< 50	ug/kg	4.1	20	1	7/6/00	8021A	CJR	1

# U.S. Analytical Lab

JERRY DE MERS  
 HSI GEOTRANS  
 175 N. CORPORATE DRIVE SUITE 100  
 BROOKFIELD, WI 53045

Project # P177  
 Project Name MPL REALTY - BADGER MET  
 Invoice # E30189

Report Date 13-Jul-00

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code	
Lab Code	5030189E					Sample Type	Soil			
Sample ID	GP-105-S'					Sample Date	6/28/00			
1,2-Dibromo-3-chloropropane	< 25	ug/kg	11	37	1	7/6/00	8021A	CJR	1	
Dibromochloromethane	< 25	ug/kg	9.4	31	1	7/6/00	8021A	CJR	1	
1,4-Dichlorobenzene	< 25	ug/kg	8.8	29	1	7/6/00	8021A	CJR	1	
1,3-Dichlorobenzene	< 25	ug/kg	8.6	29	1	7/6/00	8021A	CJR	1	
1,2-Dichlorobenzene	< 25	ug/kg	8.9	30	1	7/6/00	8021A	CJR	1	
Dichlorodifluoromethane	< 25	ug/kg	8.3	25	1	7/6/00	8021A	CJR	3 4	
1,2-Dichloroethane	< 25	ug/kg	8.6	29	1	7/6/00	8021A	CJR	1	
1,1-Dichloroethane	< 25	ug/kg	7.4	25	1	7/6/00	8021A	CJR	1	
1,1-Dichloroethene	< 25	ug/kg	8.3	28	1	7/6/00	8021A	CJR	1	
cis-1,2-Dichloroethene	< 25	ug/kg	5.7	19	1	7/6/00	8021A	CJR	1	
trans-1,2-Dichloroethene	< 25	ug/kg	7.5	25	1	7/6/00	8021A	CJR	1	
1,2-Dichloropropane	< 25	ug/kg	8.9	30	1	7/6/00	8021A	CJR	1	
1,3-Dichloropropane	< 25	ug/kg	11	35	1	7/6/00	8021A	CJR	1	
Di-isopropyl ether	< 25	ug/kg	7.4	25	1	7/6/00	8021A	CJR	1	
EDB (1,2-Dibromoethane)	< 25	ug/kg	9.3	31	1	7/6/00	8021A	CJR	1	
Ethylbenzene	< 25	ug/kg	7.9	26	1	7/6/00	8021A	CJR	1	
Hexachlorobutadiene	< 25	ug/kg	6.4	21	1	7/6/00	8021A	CJR	1	
Isopropylbenzene	< 25	ug/kg	10	33	1	7/6/00	8021A	CJR	1	
p-Isopropyltoluene	< 25	ug/kg	9	30	1	7/6/00	8021A	CJR	1	
Methylene chloride	< 25	ug/kg	13	42	1	7/6/00	8021A	CJR	1	
MTBE	< 25	ug/kg	11	38	1	7/6/00	8021A	CJR	1	
Naphthalene	< 25	ug/kg	11	38	1	7/6/00	8021A	CJR	1	
n-Propylbenzene	< 25	ug/kg	16	53	1	7/6/00	8021A	CJR	1	
1,1,1,2-Tetrachloroethane	< 25	ug/kg	24	81	1	7/6/00	8021A	CJR	1	
Tetrachloroethene	< 25	ug/kg	7.6	25	1	7/6/00	8021A	CJR	1	
Toluene	< 25	ug/kg	6.7	22	1	7/6/00	8021A	CJR	1	
1,2,4-Trichlorobenzene	< 25	ug/kg	8.8	29	1	7/6/00	8021A	CJR	1	
1,2,3-Trichlorobenzene	< 25	ug/kg	9.3	31	1	7/6/00	8021A	CJR	1	
1,1,1-Trichloroethane	< 25	ug/kg	8.4	28	1	7/6/00	8021A	CJR	1	
1,1,2-Trichloroethane	< 25	ug/kg	11	36	1	7/6/00	8021A	CJR	1	
Trichloroethene	80	ug/kg	15	51	1	7/6/00	8021A	CJR	1	
Trichlorofluoromethane	< 25	ug/kg	8.8	29	1	7/6/00	8021A	CJR	1	
1,2,4-Trimethylbenzene	< 25	ug/kg	6.9	23	1	7/6/00	8021A	CJR	1	
1,3,5-Trimethylbenzene	< 25	ug/kg	16	54	1	7/6/00	8021A	CJR	1	
Vinyl Chloride	< 25	ug/kg	8.3	25	1	7/6/00	8021A	CJR	1	
m&p-Xylene	< 50	ug/kg	15	48	1	7/6/00	8021A	CJR	1	
o-Xylene	< 25	ug/kg	7.9	26	1	7/6/00	8021A	CJR	1	

# U.S. Analytical Lab

JERRY DE MERS  
 HSI GEOTRANS  
 175 N. CORPORATE DRIVE SUITE 100  
 BROOKFIELD, WI 53045

Project # P177  
 Project Name MPL REALTY - BADGER MET  
 Invoice # E30189

Report Date 13-Jul-00

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code
Lab Code	5030189F					Sample Type	Soil		
Sample ID	GP-107-3'					Sample Date	6/28/00		

## Inorganic

### General

Solids Percent	90.6	%			1	6/30/00	5021	VLC	1
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## Organic

### VOC's

Benzene	< 25	ug/kg	9.1	30	1	7/6/00	8021A	CJR	1
Bromobenzene	< 25	ug/kg	13	42	1	7/6/00	8021A	CJR	1
Bromodichloromethane	< 25	ug/kg	7.3	24	1	7/6/00	8021A	CJR	1
tert-Butylbenzene	< 25	ug/kg	10	33	1	7/6/00	8021A	CJR	1
sec-Butylbenzene	< 25	ug/kg	8.5	28	1	7/6/00	8021A	CJR	1
n-Butylbenzene	< 25	ug/kg	8.8	29	1	7/6/00	8021A	CJR	1
Carbon Tetrachloride	< 25	ug/kg	8.3	28	1	7/6/00	8021A	CJR	1
Chlorobenzene	< 25	ug/kg	8.4	28	1	7/6/00	8021A	CJR	1
Chloroethane	< 25	ug/kg	11	35	1	7/6/00	8021A	CJR	1
Chloroform	< 25	ug/kg	7.9	26	1	7/6/00	8021A	CJR	1
Chloromethane	< 25	ug/kg	5	17	1	7/6/00	8021A	CJR	1
2-Chlorotoluene	< 25	ug/kg	2.4	8.4	1	7/6/00	8021A	CJR	1
4-Chlorotoluene	< 25	ug/kg	2.3	8.5	1	7/6/00	8021A	CJR	1
2,2-DCP, cis-1,2-Dichloroethene	< 50	ug/kg	4.1	20	1	7/6/00	8021A	CJR	1
1,2-Dibromo-3-chloropropane	< 25	ug/kg	11	37	1	7/6/00	8021A	CJR	1
Dibromochloromethane	< 25	ug/kg	9.4	31	1	7/6/00	8021A	CJR	1
1,4-Dichlorobenzene	< 25	ug/kg	8.8	29	1	7/6/00	8021A	CJR	1
1,3-Dichlorobenzene	< 25	ug/kg	8.6	29	1	7/6/00	8021A	CJR	1
1,2-Dichlorobenzene	< 25	ug/kg	8.9	30	1	7/6/00	8021A	CJR	1
Dichlorodifluoromethane	< 25	ug/kg	8.3	25	1	7/6/00	8021A	CJR	3 4
1,2-Dichloroethane	< 25	ug/kg	8.6	29	1	7/6/00	8021A	CJR	1
1,1-Dichloroethane	< 25	ug/kg	7.4	25	1	7/6/00	8021A	CJR	1
1,1-Dichloroethene	< 25	ug/kg	8.3	28	1	7/6/00	8021A	CJR	1
cis-1,2-Dichloroethene	< 25	ug/kg	5.7	19	1	7/6/00	8021A	CJR	1
trans-1,2-Dichloroethene	< 25	ug/kg	7.5	25	1	7/6/00	8021A	CJR	1
1,2-Dichloropropane	< 25	ug/kg	8.9	30	1	7/6/00	8021A	CJR	1
1,3-Dichloropropane	< 25	ug/kg	11	35	1	7/6/00	8021A	CJR	1
Di-isopropyl ether	< 25	ug/kg	7.4	25	1	7/6/00	8021A	CJR	1
EDB (1,2-Dibromoethane)	< 25	ug/kg	9.3	31	1	7/6/00	8021A	CJR	1
Ethylbenzene	< 25	ug/kg	7.9	26	1	7/6/00	8021A	CJR	1
Hexachlorobutadiene	< 25	ug/kg	6.4	21	1	7/6/00	8021A	CJR	1

# U.S. Analytical Lab

JERRY DE MERS  
 HSI GEOTRANS  
 175 N. CORPORATE DRIVE SUITE 100  
 BROOKFIELD, WI 53045

Project # P177  
 Project Name MPL REALTY - BADGER MET  
 Invoice # E30189

Report Date 13-Jul-00

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code	
Lab Code	5030189F					Sample Type	Soil			
Sample ID	GP-107-3'					Sample Date	6/28/00			
Isopropylbenzene	< 25	ug/kg	10	33	1	7/6/00	8021A	CJR	1	
p-Isopropyltoluene	< 25	ug/kg	9	30	1	7/6/00	8021A	CJR	1	
Methylene chloride	< 25	ug/kg	13	42	1	7/6/00	8021A	CJR	1	
MTBE	< 25	ug/kg	11	38	1	7/6/00	8021A	CJR	1	
Naphthalene	< 25	ug/kg	11	38	1	7/6/00	8021A	CJR	1	
n-Propylbenzene	< 25	ug/kg	16	53	1	7/6/00	8021A	CJR	1	
1,1,2,2-Tetrachloroethane	< 25	ug/kg	24	81	1	7/6/00	8021A	CJR	1	
Tetrachloroethene	< 25	ug/kg	7.6	25	1	7/6/00	8021A	CJR	1	
Toluene	59	ug/kg	6.7	22	1	7/6/00	8021A	CJR	1	
1,2,4-Trichlorobenzene	< 25	ug/kg	8.8	29	1	7/6/00	8021A	CJR	1	
1,2,3-Trichlorobenzene	< 25	ug/kg	9.3	31	1	7/6/00	8021A	CJR	1	
1,1,1-Trichloroethane	32	ug/kg	8.4	28	1	7/6/00	8021A	CJR	1	
1,1,2-Trichloroethane	< 25	ug/kg	11	36	1	7/6/00	8021A	CJR	1	
Trichloroethene	43	ug/kg	15	51	1	7/6/00	8021A	CJR	1	
Trichlorofluoromethane	< 25	ug/kg	8.8	29	1	7/6/00	8021A	CJR	1	
1,2,4-Trimethylbenzene	< 25	ug/kg	6.9	23	1	7/6/00	8021A	CJR	1	
1,3,5-Trimethylbenzene	< 25	ug/kg	16	54	1	7/6/00	8021A	CJR	1	
Vinyl Chloride	< 25	ug/kg	8.3	25	1	7/6/00	8021A	CJR	1	
m&p-Xylene	< 50	ug/kg	15	48	1	7/6/00	8021A	CJR	1	
o-Xylene	< 25	ug/kg	7.9	26	1	7/6/00	8021A	CJR	1	

Lab Code	5030189G					Sample Type	Soil			
Sample ID	GP-107-8'					Sample Date	6/28/00			

Inorganic

General

Solids Percent	80.0	%			1	6/30/00	5021	VLC	1
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Organic

VOC's

Benzene	< 25	ug/kg	9.1	30	1	7/6/00	8021A	CJR	1
Bromobenzene	< 25	ug/kg	13	42	1	7/6/00	8021A	CJR	1
Bromodichloromethane	< 25	ug/kg	7.3	24	1	7/6/00	8021A	CJR	1
tert-Butylbenzene	< 25	ug/kg	10	33	1	7/6/00	8021A	CJR	1
sec-Butylbenzene	< 25	ug/kg	8.5	28	1	7/6/00	8021A	CJR	1
n-Butylbenzene	< 25	ug/kg	8.8	29	1	7/6/00	8021A	CJR	1
Carbon Tetrachloride	< 25	ug/kg	8.3	28	1	7/6/00	8021A	CJR	1
Chlorobenzene	< 25	ug/kg	8.4	28	1	7/6/00	8021A	CJR	1

# U.S. Analytical Lab

JERRY DE MERS  
 HSI GEOTRANS  
 175 N. CORPORATE DRIVE SUITE 100  
 BROOKFIELD, WI 53045

Project # P177  
 Project Name MPL REALTY - BADGER MET  
 Invoice # E30189

Report Date 13-Jul-00

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code
Lab Code	5030189G					Sample Type	Soil		
Sample ID	GP-107-8'					Sample Date	6/28/00		
Chloroethane	< 25	ug/kg	11	35	1	7/6/00	8021A	CJR	1
Chloroform	< 25	ug/kg	7.9	26	1	7/6/00	8021A	CJR	1
Chloromethane	< 25	ug/kg	5	17	1	7/6/00	8021A	CJR	1
2-Chlorotoluene	< 25	ug/kg	2.4	8.4	1	7/6/00	8021A	CJR	1
4-Chlorotoluene	< 25	ug/kg	2.3	8.5	1	7/6/00	8021A	CJR	1
2,2-DCP, cis-1,2-Dichloroethene	< 50	ug/kg	4.1	20	1	7/6/00	8021A	CJR	1
1,2-Dibromo-3-chloropropane	< 25	ug/kg	11	37	1	7/6/00	8021A	CJR	1
Dibromochloromethane	< 25	ug/kg	9.4	31	1	7/6/00	8021A	CJR	1
1,4-Dichlorobenzene	< 25	ug/kg	8.8	29	1	7/6/00	8021A	CJR	1
1,3-Dichlorobenzene	< 25	ug/kg	8.6	29	1	7/6/00	8021A	CJR	1
1,2-Dichlorobenzene	< 25	ug/kg	8.9	30	1	7/6/00	8021A	CJR	1
Dichlorodifluoromethane	< 25	ug/kg	8.3	25	1	7/6/00	8021A	CJR	3 4
1,2-Dichloroethane	< 25	ug/kg	8.6	29	1	7/6/00	8021A	CJR	1
1,1-Dichloroethane	< 25	ug/kg	7.4	25	1	7/6/00	8021A	CJR	1
1,1-Dichloroethene	< 25	ug/kg	8.3	28	1	7/6/00	8021A	CJR	1
cis-1,2-Dichloroethene	< 25	ug/kg	5.7	19	1	7/6/00	8021A	CJR	1
trans-1,2-Dichloroethene	< 25	ug/kg	7.5	25	1	7/6/00	8021A	CJR	1
1,2-Dichloropropane	< 25	ug/kg	8.9	30	1	7/6/00	8021A	CJR	1
1,3-Dichloropropane	< 25	ug/kg	11	35	1	7/6/00	8021A	CJR	1
Di-isopropyl ether	< 25	ug/kg	7.4	25	1	7/6/00	8021A	CJR	1
EDB (1,2-Dibromoethane)	< 25	ug/kg	9.3	31	1	7/6/00	8021A	CJR	1
Ethylbenzene	< 25	ug/kg	7.9	26	1	7/6/00	8021A	CJR	1
Hexachlorobutadiene	< 25	ug/kg	6.4	21	1	7/6/00	8021A	CJR	1
Isopropylbenzene	< 25	ug/kg	10	33	1	7/6/00	8021A	CJR	1
p-Isopropyltoluene	< 25	ug/kg	9	30	1	7/6/00	8021A	CJR	1
Methylene chloride	< 25	ug/kg	13	42	1	7/6/00	8021A	CJR	1
MTBE	< 25	ug/kg	11	38	1	7/6/00	8021A	CJR	1
Naphthalene	< 25	ug/kg	11	38	1	7/6/00	8021A	CJR	1
n-Propylbenzene	< 25	ug/kg	16	53	1	7/6/00	8021A	CJR	1
1,1,2,2-Tetrachloroethane	< 25	ug/kg	24	81	1	7/6/00	8021A	CJR	1
Tetrachloroethene	< 25	ug/kg	7.6	25	1	7/6/00	8021A	CJR	1
Toluene	< 25	ug/kg	6.7	22	1	7/6/00	8021A	CJR	1
1,2,4-Trichlorobenzene	< 25	ug/kg	8.8	29	1	7/6/00	8021A	CJR	1
1,2,3-Trichlorobenzene	< 25	ug/kg	9.3	31	1	7/6/00	8021A	CJR	1
1,1,1-Trichloroethane	31	ug/kg	8.4	28	1	7/6/00	8021A	CJR	1
1,1,2-Trichloroethane	< 25	ug/kg	11	36	1	7/6/00	8021A	CJR	1
Trichloroethene	68	ug/kg	15	51	1	7/6/00	8021A	CJR	1

# U.S. Analytical Lab

JERRY DE MERS  
 HSI GEOTRANS  
 175 N. CORPORATE DRIVE SUITE 100  
 BROOKFIELD, WI 53045

Project # P177  
 Project Name MPL REALTY - BADGER MET  
 Invoice # E30189

Report Date 13-Jul-00

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code
Lab Code	5030189G								
Sample ID	GP-107-8'								
						Sample Type	Soil		
						Sample Date	6/28/00		
Trichlorofluoromethane	< 25	ug/kg	8.8	29	1	7/6/00	8021A	CJR	1
1,2,4-Trimethylbenzene	< 25	ug/kg	6.9	23	1	7/6/00	8021A	CJR	1
1,3,5-Trimethylbenzene	< 25	ug/kg	16	54	1	7/6/00	8021A	CJR	1
Vinyl Chloride	< 25	ug/kg	8.3	25	1	7/6/00	8021A	CJR	1
m&p-Xylene	< 50	ug/kg	15	48	1	7/6/00	8021A	CJR	1
o-Xylene	< 25	ug/kg	7.9	26	1	7/6/00	8021A	CJR	1
Lab Code	5030189H								
Sample ID	GP-106-2'								
						Sample Type	Soil		
						Sample Date	6/28/00		

Inorganic

General

Solids Percent	75.5	%				6/30/00	5021	VLC	1
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Organic

VOC's

Benzene	< 25	ug/kg	9.1	30	1	7/6/00	8021A	CJR	1
Bromobenzene	< 25	ug/kg	13	42	1	7/6/00	8021A	CJR	1
Bromodichloromethane	< 25	ug/kg	7.3	24	1	7/6/00	8021A	CJR	1
tert-Butylbenzene	< 25	ug/kg	10	33	1	7/6/00	8021A	CJR	1
sec-Butylbenzene	36	ug/kg	8.5	28	1	7/6/00	8021A	CJR	1
n-Butylbenzene	330	ug/kg	8.8	29	1	7/6/00	8021A	CJR	1
Carbon Tetrachloride	< 25	ug/kg	8.3	28	1	7/6/00	8021A	CJR	1
Chlorobenzene	< 25	ug/kg	8.4	28	1	7/6/00	8021A	CJR	1
Chloroethane	< 25	ug/kg	11	35	1	7/6/00	8021A	CJR	1
Chloroform	< 25	ug/kg	7.9	26	1	7/6/00	8021A	CJR	1
Chloromethane	< 25	ug/kg	5	17	1	7/6/00	8021A	CJR	1
2-Chlorotoluene	< 25	ug/kg	2.4	8.4	1	7/6/00	8021A	CJR	1
4-Chlorotoluene	< 25	ug/kg	2.3	8.5	1	7/6/00	8021A	CJR	1
2,2-DCP, cis-1,2-Dichloroethene	< 50	ug/kg	4.1	20	1	7/6/00	8021A	CJR	1
1,2-Dibromo-3-chloropropane	< 25	ug/kg	11	37	1	7/6/00	8021A	CJR	1
Dibromochloromethane	< 25	ug/kg	9.4	31	1	7/6/00	8021A	CJR	1
1,4-Dichlorobenzene	< 25	ug/kg	8.8	29	1	7/6/00	8021A	CJR	1
1,3-Dichlorobenzene	< 25	ug/kg	8.6	29	1	7/6/00	8021A	CJR	1
1,2-Dichlorobenzene	< 25	ug/kg	8.9	30	1	7/6/00	8021A	CJR	1
Dichlorodifluoromethane	< 25	ug/kg	8.3	25	1	7/6/00	8021A	CJR	3.4
1,2-Dichloroethane	< 25	ug/kg	8.6	29	1	7/6/00	8021A	CJR	1
1,1-Dichloroethane	< 25	ug/kg	7.4	25	1	7/6/00	8021A	CJR	1

# U.S. Analytical Lab

JERRY DE MERS  
 HSI GEOTRANS  
 175 N. CORPORATE DRIVE SUITE 100  
 BROOKFIELD, WI 53045

Project # P177  
 Project Name MPL REALTY - BADGER MET  
 Invoice # E30189

Report Date 13-Jul-00

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code
Lab Code	5030189H					Sample Type	Soil		
Sample ID	GP-106-2'					Sample Date	6/28/00		
1,1-Dichloroethene	< 25	ug/kg	8.3	28	1	7/6/00	8021A	CJR	1
cis-1,2-Dichloroethene	< 25	ug/kg	5.7	19	1	7/6/00	8021A	CJR	1
trans-1,2-Dichloroethene	< 25	ug/kg	7.5	25	1	7/6/00	8021A	CJR	1
1,2-Dichloropropane	< 25	ug/kg	8.9	30	1	7/6/00	8021A	CJR	1
1,3-Dichloropropane	< 25	ug/kg	11	35	1	7/6/00	8021A	CJR	1
Di-isopropyl ether	< 25	ug/kg	7.4	25	1	7/6/00	8021A	CJR	1
EDB (1,2-Dibromoethane)	< 25	ug/kg	9.3	31	1	7/6/00	8021A	CJR	1
Ethylbenzene	49	ug/kg	7.9	26	1	7/6/00	8021A	CJR	1
Hexachlorobutadiene	< 25	ug/kg	6.4	21	1	7/6/00	8021A	CJR	1
Isopropylbenzene	< 25	ug/kg	10	33	1	7/6/00	8021A	CJR	1
p-Isopropyltoluene	< 25	ug/kg	9	30	1	7/6/00	8021A	CJR	1
Methylene chloride	< 25	ug/kg	13	42	1	7/6/00	8021A	CJR	1
MTBE	< 25	ug/kg	11	38	1	7/6/00	8021A	CJR	1
Naphthalene	< 25	ug/kg	11	38	1	7/6/00	8021A	CJR	1
n-Propylbenzene	< 25	ug/kg	16	53	1	7/6/00	8021A	CJR	1
1,1,2,2-Tetrachloroethane	< 25	ug/kg	24	81	1	7/6/00	8021A	CJR	1
Tetrachloroethene	290	ug/kg	7.6	25	1	7/6/00	8021A	CJR	1
Toluene	920	ug/kg	6.7	22	1	7/6/00	8021A	CJR	1
1,2,4-Trichlorobenzene	< 25	ug/kg	8.8	29	1	7/6/00	8021A	CJR	1
1,2,3-Trichlorobenzene	< 25	ug/kg	9.3	31	1	7/6/00	8021A	CJR	1
1,1,1-Trichloroethane	530	ug/kg	8.4	28	1	7/6/00	8021A	CJR	1
1,1,2-Trichloroethane	< 25	ug/kg	11	36	1	7/6/00	8021A	CJR	1
Trichloroethene	410	ug/kg	15	51	1	7/6/00	8021A	CJR	1
Trichlorofluoromethane	< 25	ug/kg	8.8	29	1	7/6/00	8021A	CJR	1
1,2,4-Trimethylbenzene	610	ug/kg	6.9	23	1	7/6/00	8021A	CJR	1
1,3,5-Trimethylbenzene	650	ug/kg	16	54	1	7/6/00	8021A	CJR	1
Vinyl Chloride	< 25	ug/kg	8.3	25	1	7/6/00	8021A	CJR	1
m&p-Xylene	600	ug/kg	15	48	1	7/6/00	8021A	CJR	1
o-Xylene	740	ug/kg	7.9	26	1	7/6/00	8021A	CJR	1
Lab Code	5030189I					Sample Type	Soil		
Sample ID	GP-108-2' ✓					Sample Date	6/28/00		

Inorganic

General

Solids Percent 91.2 % 1 6/30/00 5021 VLC 1

Organic



# U.S. Analytical Lab

JERRY DE MERS  
 HSI GEOTRANS  
 175 N. CORPORATE DRIVE SUITE 100  
 BROOKFIELD, WI 53045

Project # P177  
 Project Name MPL REALTY - BADGER MET  
 Invoice # E30189

Report Date 13-Jul-00

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code
Lab Code	5030189I						Sample Type	Soil	
Sample ID	GP-108-2'						Sample Date	6/28/00	

VOC's

Benzene	< 25	ug/kg	9.1	30	1	7/6/00	8021A	CJR	1
Bromobenzene	< 25	ug/kg	13	42	1	7/6/00	8021A	CJR	1
Bromodichloromethane	< 25	ug/kg	7.3	24	1	7/6/00	8021A	CJR	1
tert-Butylbenzene	< 25	ug/kg	10	33	1	7/6/00	8021A	CJR	1
sec-Butylbenzene	< 25	ug/kg	8.5	28	1	7/6/00	8021A	CJR	1
n-Butylbenzene	< 25	ug/kg	8.8	29	1	7/6/00	8021A	CJR	1
Carbon Tetrachloride	< 25	ug/kg	8.3	28	1	7/6/00	8021A	CJR	1
Chlorobenzene	< 25	ug/kg	8.4	28	1	7/6/00	8021A	CJR	1
Chloroethane	< 25	ug/kg	11	35	1	7/6/00	8021A	CJR	1
Chloroform	< 25	ug/kg	7.9	26	1	7/6/00	8021A	CJR	1
Chloromethane	< 25	ug/kg	5	17	1	7/6/00	8021A	CJR	1
2-Chlorotoluene	< 25	ug/kg	2.4	8.4	1	7/6/00	8021A	CJR	1
4-Chlorotoluene	< 25	ug/kg	2.3	8.5	1	7/6/00	8021A	CJR	1
2,2-DCP, cis-1,2-Dichloroethene	< 50	ug/kg	4.1	20	1	7/6/00	8021A	CJR	1
1,2-Dibromo-3-chloropropane	< 25	ug/kg	11	37	1	7/6/00	8021A	CJR	1
Dibromochloromethane	< 25	ug/kg	9.4	31	1	7/6/00	8021A	CJR	1
1,4-Dichlorobenzene	< 25	ug/kg	8.8	29	1	7/6/00	8021A	CJR	1
1,3-Dichlorobenzene	< 25	ug/kg	8.6	29	1	7/6/00	8021A	CJR	1
1,2-Dichlorobenzene	< 25	ug/kg	8.9	30	1	7/6/00	8021A	CJR	1
Dichlorodifluoromethane	< 25	ug/kg	8.3	25	1	7/6/00	8021A	CJR	3.4
1,2-Dichloroethane	< 25	ug/kg	8.6	29	1	7/6/00	8021A	CJR	1
1,1-Dichloroethane	< 25	ug/kg	7.4	25	1	7/6/00	8021A	CJR	1
1,1-Dichloroethene	< 25	ug/kg	8.3	28	1	7/6/00	8021A	CJR	1
cis-1,2-Dichloroethene	< 25	ug/kg	5.7	19	1	7/6/00	8021A	CJR	1
trans-1,2-Dichloroethene	< 25	ug/kg	7.5	25	1	7/6/00	8021A	CJR	1
1,2-Dichloropropane	< 25	ug/kg	8.9	30	1	7/6/00	8021A	CJR	1
1,3-Dichloropropane	< 25	ug/kg	11	35	1	7/6/00	8021A	CJR	1
Di-isopropyl ether	< 25	ug/kg	7.4	25	1	7/6/00	8021A	CJR	1
EDB (1,2-Dibromoethane)	< 25	ug/kg	9.3	31	1	7/6/00	8021A	CJR	1
Ethylbenzene	< 25	ug/kg	7.9	26	1	7/6/00	8021A	CJR	1
Hexachlorobutadiene	< 25	ug/kg	6.4	21	1	7/6/00	8021A	CJR	1
Isopropylbenzene	< 25	ug/kg	10	33	1	7/6/00	8021A	CJR	1
p-Isopropyltoluene	< 25	ug/kg	9	30	1	7/6/00	8021A	CJR	1
Methylene chloride	< 25	ug/kg	13	42	1	7/6/00	8021A	CJR	1
MTBE	< 25	ug/kg	11	38	1	7/6/00	8021A	CJR	1

# U.S. Analytical Lab

JERRY DE MERS  
 HSI GEOTRANS  
 175 N. CORPORATE DRIVE SUITE 100  
 BROOKFIELD, WI 53045

Project # P177  
 Project Name MPL REALTY - BADGER MET  
 Invoice # E30189

Report Date 13-Jul-00

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code
Lab Code	5030189I		Sample Type		Soil				
Sample ID	GP-108-2'		Sample Date		6/28/00				
Naphthalene	< 25	ug/kg	11	38	1	7/6/00	8021A	CJR	1
n-Propylbenzene	< 25	ug/kg	16	53	1	7/6/00	8021A	CJR	1
1,1,2,2-Tetrachloroethane	< 25	ug/kg	24	81	1	7/6/00	8021A	CJR	1
Tetrachloroethene	190	ug/kg	7.6	25	1	7/6/00	8021A	CJR	1
Toluene	85	ug/kg	6.7	22	1	7/6/00	8021A	CJR	1
1,2,4-Trichlorobenzene	< 25	ug/kg	8.8	29	1	7/6/00	8021A	CJR	1
1,2,3-Trichlorobenzene	< 25	ug/kg	9.3	31	1	7/6/00	8021A	CJR	1
1,1,1-Trichloroethane	220	ug/kg	8.4	28	1	7/6/00	8021A	CJR	1
1,1,2-Trichloroethane	< 25	ug/kg	11	36	1	7/6/00	8021A	CJR	1
Trichloroethene	100	ug/kg	15	51	1	7/6/00	8021A	CJR	1
Trichlorofluoromethane	< 25	ug/kg	8.8	29	1	7/6/00	8021A	CJR	1
1,2,4-Trimethylbenzene	< 25	ug/kg	6.9	23	1	7/6/00	8021A	CJR	1
1,3,5-Trimethylbenzene	25	ug/kg	16	54	1	7/6/00	8021A	CJR	1
Vinyl Chloride	< 25	ug/kg	8.3	25	1	7/6/00	8021A	CJR	1
m&p-Xylene	120	ug/kg	15	48	1	7/6/00	8021A	CJR	1
o-Xylene	110	ug/kg	7.9	26	1	7/6/00	8021A	CJR	1

LOD Limit of Detection

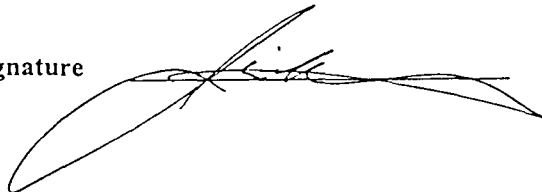
"J" Flag: Analyte detected between LOD and LOQ

LOQ Limit of Quantitation

**Code**      **Comment**

- 1      All laboratory QC requirements were met for this sample.
- 3      The spike recovery failed to meet acceptable QC limits.
- 4      The check standard failed to meet acceptable QC limits.
- 32     The method blank failed to meet acceptable QC limits.

Authorized Signature





# U.S. Analytical Lab

P177

GERRY DEMERS  
 HSI GEOTRANS  
 175 N. CORPORATE DRIVE SUITE 100  
 BROOKFIELD, WI 53045

Project # P177  
 Project Name MPL REALTY-BADGER MET  
 Invoice # E30264

Report Date 18-Jul-00

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code
Lab Code	5030264A					Sample Type	Water		
Sample ID	MW-7					Sample Date	6/30/00		

Organic  
 VOC's

Benzene	< 0.39	ug/l	0.39	1.3	1	7/15/00	8021A	CAH	10
Bromobenzene	< 0.39	ug/l	0.39	1.3	1	7/15/00	8021A	CAH	10
Bromodichloromethane	< 0.38	ug/l	0.38	1.3	1	7/15/00	8021A	CAH	10
tert-Butylbenzene	< 0.44	ug/l	0.44	1.5	1	7/15/00	8021A	CAH	10
sec-Butylbenzene	< 0.48	ug/l	0.48	1.6	1	7/15/00	8021A	CAH	10
n-Butylbenzene	< 0.43	ug/l	0.43	1.4	1	7/15/00	8021A	CAH	10
Carbon Tetrachloride	< 0.55	ug/l	0.55	1.8	1	7/15/00	8021A	CAH	10
Chlorobenzene	< 0.4	ug/l	0.4	1.3	1	7/15/00	8021A	CAH	10
Chloroethane	< 0.15	ug/l	0.15	0.48	1	7/15/00	8021A	CAH	4 10
Chloroform	< 0.38	ug/l	0.38	1.3	1	7/15/00	8021A	CAH	10
Chloromethane	< 1.1	ug/l	1.1	3.5	1	7/15/00	8021A	CAH	3 4 10
2-Chlorotoluene	< 0.47	ug/l	0.47	1.5	1	7/15/00	8021A	CAH	10
4-Chlorotoluene	< 0.44	ug/l	0.44	1.5	1	7/15/00	8021A	CAH	10
1,2-Dibromo-3-chloropropane	< 0.67	ug/l	0.67	2.2	1	7/15/00	8021A	CAH	4 10
Dibromochloromethane	< 0.5	ug/l	0.5	1.7	1	7/15/00	8021A	CAH	10
1,4-Dichlorobenzene	< 0.42	ug/l	0.42	1.4	1	7/15/00	8021A	CAH	10
1,3-Dichlorobenzene	< 0.45	ug/l	0.45	1.5	1	7/15/00	8021A	CAH	10
1,2-Dichlorobenzene	< 0.44	ug/l	0.44	1.5	1	7/15/00	8021A	CAH	10
Dichlorodifluoromethane	< 0.37	ug/l	0.37	1.2	1	7/15/00	8021A	CAH	4 10
1,2-Dichloroethane	< 0.35	ug/l	0.35	1.2	1	7/15/00	8021A	CAH	10
1,1-Dichloroethane	17	ug/l	0.35	1.2	1	7/15/00	8021A	CAH	10
1,1-Dichloroethene	18	ug/l	0.66	2.2	1	7/15/00	8021A	CAH	10
cis-1,2-Dichloroethene	4.1	ug/l	0.37	1.2	1	7/15/00	8021A	CAH	10
trans-1,2-Dichloroethene	< 0.43	ug/l	0.43	1.4	1	7/15/00	8021A	CAH	10
1,2-Dichloropropane	< 0.4	ug/l	0.4	1.3	1	7/15/00	8021A	CAH	10
2,2-Dichloropropane	< 0.59	ug/l	0.59	2	1	7/15/00	8021A	CAH	10
Di-isopropyl ether	< 0.37	ug/l	0.37	1.2	1	7/15/00	8021A	CAH	10
EDB (1,2-Dibromoethane)	< 0.65	ug/l	0.65	2.2	1	7/15/00	8021A	CAH	10
Ethylbenzene	< 0.4	ug/l	0.4	1.3	1	7/15/00	8021A	CAH	10
Hexachlorobutadiene	< 0.62	ug/l	0.62	2.1	1	7/15/00	8021A	CAH	10
Isopropylbenzene	< 0.38	ug/l	0.38	1.3	1	7/15/00	8021A	CAH	10
p-Isopropyltoluene	< 0.44	ug/l	0.44	1.5	1	7/15/00	8021A	CAH	10
Methylene chloride	< 0.57	ug/l	0.57	1.9	1	7/15/00	8021A	CAH	10
MTBE	< 0.47	ug/l	0.47	1.6	1	7/15/00	8021A	CAH	10

# U.S. Analytical Lab

GERRY DEMERS  
 HSI GEOTRANS  
 175 N. CORPORATE DRIVE SUITE 100  
 BROOKFIELD, WI 53045

Project # P177  
 Project Name MPL REALTY-BADGER MET  
 Invoice # E30264

Report Date 18-Jul-00

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code	
Lab Code	5030264A					Sample Type	Water			
Sample ID	MW-7					Sample Date	6/30/00			
Naphthalene	< 0.53	ug/l	0.53	1.8	1	7/15/00	8021A	CAH	4 10	
n-Propylbenzene	< 0.42	ug/l	0.42	1.4	1	7/15/00	8021A	CAH	10	
1,1,2,2-Tetrachloroethane	< 0.68	ug/l	0.68	2.3	1	7/15/00	8021A	CAH	10	
1,3-DCP, Tetrachloroethene	< 0.93	ug/l	0.93	3.1	1	7/15/00	8021A	CAH	10	
Tetrachloroethene	6.5	ug/l	0.34	1.1	1	7/15/00	8021A	CAH	10	
Toluene	< 0.37	ug/l	0.37	1.2	1	7/15/00	8021A	CAH	10	
1,2,4-Trichlorobenzene	< 0.6	ug/l	0.6	2	1	7/15/00	8021A	CAH	10	
1,2,3-Trichlorobenzene	< 0.49	ug/l	0.49	1.6	1	7/15/00	8021A	CAH	10	
1,1,1-Trichloroethane	220	ug/l	0.54	1.8	1	7/15/00	8021A	CAH	10	
1,1,2-Trichloroethane	< 0.46	ug/l	0.46	1.5	1	7/15/00	8021A	CAH	10	
Trichloroethene	150	ug/l	0.46	1.5	1	7/15/00	8021A	CAH	10	
Trichlorofluoromethane	< 0.62	ug/l	0.62	2.1	1	7/15/00	8021A	CAH	4 10	
1,2,4-Trimethylbenzene	< 0.4	ug/l	0.4	1.3	1	7/15/00	8021A	CAH	10	
1,3,5-Trimethylbenzene	< 0.63	ug/l	0.63	2.1	1	7/15/00	8021A	CAH	10	
Vinyl Chloride	< 0.87	ug/l	0.87	2.9	1	7/15/00	8021A	CAH	4 10	
m&p-Xylene	< 0.79	ug/l	0.79	2.6	1	7/15/00	8021A	CAH	10	
o-Xylene	< 0.64	ug/l	0.64	2.1	1	7/15/00	8021A	CAH	10	
Lab Code	5030264B					Sample Type	Water			
Sample ID	MW-8					Sample Date	6/30/00			

Organic

VOC's

Benzene	< 0.39	ug/l	0.39	1.3	1	7/15/00	8021A	CAH	10
Bromobenzene	< 0.39	ug/l	0.39	1.3	1	7/15/00	8021A	CAH	10
Bromodichloromethane	< 0.38	ug/l	0.38	1.3	1	7/15/00	8021A	CAH	10
tert-Butylbenzene	< 0.44	ug/l	0.44	1.5	1	7/15/00	8021A	CAH	10
sec-Butylbenzene	< 0.48	ug/l	0.48	1.6	1	7/15/00	8021A	CAH	10
n-Butylbenzene	< 0.43	ug/l	0.43	1.4	1	7/15/00	8021A	CAH	10
Carbon Tetrachloride	< 0.55	ug/l	0.55	1.8	1	7/15/00	8021A	CAH	10
Chlorobenzene	< 0.4	ug/l	0.4	1.3	1	7/15/00	8021A	CAH	10
Chloroethane	< 0.15	ug/l	0.15	0.48	1	7/15/00	8021A	CAH	4 10
Chloroform	< 0.38	ug/l	0.38	1.3	1	7/15/00	8021A	CAH	10
Chloromethane	< 1.1	ug/l	1.1	3.5	1	7/15/00	8021A	CAH	3 4 10
2-Chlorotoluene	< 0.47	ug/l	0.47	1.5	1	7/15/00	8021A	CAH	10
4-Chlorotoluene	< 0.44	ug/l	0.44	1.5	1	7/15/00	8021A	CAH	10
1,2-Dibromo-3-chloropropane	< 0.67	ug/l	0.67	2.2	1	7/15/00	8021A	CAH	4 10

# U.S. Analytical Lab

GERRY DEMERS  
 HSI GEOTRANS  
 175 N. CORPORATE DRIVE SUITE 100  
 BROOKFIELD, WI 53045

Project # P177  
 Project Name MPL REALTY-BADGER MET  
 Invoice # E30264

Report Date 18-Jul-00

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code	
Lab Code	5030264B					Sample Type	Water			
Sample ID	MW-8					Sample Date	6/30/00			
Dibromochloromethane	< 0.5	ug/l	0.5	1.7	1	7/15/00	8021A	CAH	10	
1,4-Dichlorobenzene	< 0.42	ug/l	0.42	1.4	1	7/15/00	8021A	CAH	10	
1,3-Dichlorobenzene	< 0.45	ug/l	0.45	1.5	1	7/15/00	8021A	CAH	10	
1,2-Dichlorobenzene	< 0.44	ug/l	0.44	1.5	1	7/15/00	8021A	CAH	10	
Dichlorodifluoromethane	< 0.37	ug/l	0.37	1.2	1	7/15/00	8021A	CAH	4 10	
1,2-Dichloroethane	< 0.35	ug/l	0.35	1.2	1	7/15/00	8021A	CAH	10	
1,1-Dichloroethane	< 0.35	ug/l	0.35	1.2	1	7/15/00	8021A	CAH	10	
1,1-Dichloroethene	< 0.66	ug/l	0.66	2.2	1	7/15/00	8021A	CAH	10	
cis-1,2-Dichloroethene	< 0.37	ug/l	0.37	1.2	1	7/15/00	8021A	CAH	10	
trans-1,2-Dichloroethene	< 0.43	ug/l	0.43	1.4	1	7/15/00	8021A	CAH	10	
1,2-Dichloropropane	< 0.4	ug/l	0.4	1.3	1	7/15/00	8021A	CAH	10	
2,2-Dichloropropane	< 0.59	ug/l	0.59	2	1	7/15/00	8021A	CAH	10	
Di-isopropyl ether	< 0.37	ug/l	0.37	1.2	1	7/15/00	8021A	CAH	10	
EDB (1,2-Dibromoethane)	< 0.65	ug/l	0.65	2.2	1	7/15/00	8021A	CAH	10	
Ethylbenzene	0.51 "J"	ug/l	0.4	1.3	1	7/15/00	8021A	CAH	10	
Hexachlorobutadiene	< 0.62	ug/l	0.62	2.1	1	7/15/00	8021A	CAH	10	
Isopropylbenzene	< 0.38	ug/l	0.38	1.3	1	7/15/00	8021A	CAH	10	
p-Isopropyltoluene	< 0.44	ug/l	0.44	1.5	1	7/15/00	8021A	CAH	10	
Methylene chloride	< 0.57	ug/l	0.57	1.9	1	7/15/00	8021A	CAH	10	
MTBE	< 0.47	ug/l	0.47	1.6	1	7/15/00	8021A	CAH	10	
Naphthalene	< 0.53	ug/l	0.53	1.8	1	7/15/00	8021A	CAH	4 10	
n-Propylbenzene	< 0.42	ug/l	0.42	1.4	1	7/15/00	8021A	CAH	10	
1,1,2,2-Tetrachloroethane	< 0.68	ug/l	0.68	2.3	1	7/15/00	8021A	CAH	10	
1,3-DCP, Tetrachloroethene	< 0.93	ug/l	0.93	3.1	1	7/15/00	8021A	CAH	10	
Tetrachloroethene	< 0.34	ug/l	0.34	1.1	1	7/15/00	8021A	CAH	10	
Toluene	< 0.37	ug/l	0.37	1.2	1	7/15/00	8021A	CAH	10	
1,2,4-Trichlorobenzene	< 0.6	ug/l	0.6	2	1	7/15/00	8021A	CAH	10	
1,2,3-Trichlorobenzene	< 0.49	ug/l	0.49	1.6	1	7/15/00	8021A	CAH	10	
1,1,1-Trichloroethane	< 0.54	ug/l	0.54	1.8	1	7/15/00	8021A	CAH	10	
1,1,2-Trichloroethane	< 0.46	ug/l	0.46	1.5	1	7/15/00	8021A	CAH	10	
Trichloroethene	< 0.46	ug/l	0.46	1.5	1	7/15/00	8021A	CAH	10	
Trichlorofluoromethane	< 0.62	ug/l	0.62	2.1	1	7/15/00	8021A	CAH	4 10	
1,2,4-Trimethylbenzene	< 0.4	ug/l	0.4	1.3	1	7/15/00	8021A	CAH	10	
1,3,5-Trimethylbenzene	< 0.63	ug/l	0.63	2.1	1	7/15/00	8021A	CAH	10	
Vinyl Chloride	< 0.87	ug/l	0.87	2.9	1	7/15/00	8021A	CAH	4 10	
m&p-Xylene	< 0.79	ug/l	0.79	2.6	1	7/15/00	8021A	CAH	10	
o-Xylene	< 0.64	ug/l	0.64	2.1	1	7/15/00	8021A	CAH	10	

# U.S. Analytical Lab

GERRY DEMERS  
 HSI GEOTRANS  
 175 N. CORPORATE DRIVE SUITE 100  
 BROOKFIELD, WI 53045

Project # P177  
 Project Name MPL REALTY-BADGER MET  
 Invoice # E30264

Report Date 18-Jul-00

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code
Lab Code	5030264C					Sample Type	Water		
Sample ID	MW-102					Sample Date	6/30/00		

Organic

VOC's

Benzene	5.5	ug/l	0.39	1.3	1	7/15/00	8021A	CAH	10
Bromobenzene	< 0.39	ug/l	0.39	1.3	1	7/15/00	8021A	CAH	10
Bromodichloromethane	< 0.38	ug/l	0.38	1.3	1	7/15/00	8021A	CAH	10
tert-Butylbenzene	< 0.44	ug/l	0.44	1.5	1	7/15/00	8021A	CAH	10
sec-Butylbenzene	< 0.48	ug/l	0.48	1.6	1	7/15/00	8021A	CAH	10
n-Butylbenzene	< 0.43	ug/l	0.43	1.4	1	7/15/00	8021A	CAH	10
Carbon Tetrachloride	< 0.55	ug/l	0.55	1.8	1	7/15/00	8021A	CAH	10
Chlorobenzene	< 0.4	ug/l	0.4	1.3	1	7/15/00	8021A	CAH	10
Chloroethane	< 0.15	ug/l	0.15	0.48	1	7/15/00	8021A	CAH	4 10
Chloroform	< 0.38	ug/l	0.38	1.3	1	7/15/00	8021A	CAH	10
Chloromethane	< 1.1	ug/l	1.1	3.5	1	7/15/00	8021A	CAH	3 4 10
2-Chlorotoluene	< 0.47	ug/l	0.47	1.5	1	7/15/00	8021A	CAH	10
4-Chlorotoluene	< 0.44	ug/l	0.44	1.5	1	7/15/00	8021A	CAH	10
1,2-Dibromo-3-chloropropane	< 0.67	ug/l	0.67	2.2	1	7/15/00	8021A	CAH	4 10
Dibromochloromethane	< 0.5	ug/l	0.5	1.7	1	7/15/00	8021A	CAH	10
1,4-Dichlorobenzene	< 0.42	ug/l	0.42	1.4	1	7/15/00	8021A	CAH	10
1,3-Dichlorobenzene	< 0.45	ug/l	0.45	1.5	1	7/15/00	8021A	CAH	10
1,2-Dichlorobenzene	< 0.44	ug/l	0.44	1.5	1	7/15/00	8021A	CAH	10
Dichlorodifluoromethane	< 0.37	ug/l	0.37	1.2	1	7/15/00	8021A	CAH	4 10
1,2-Dichloroethane	0.84 "J"	ug/l	0.35	1.2	1	7/15/00	8021A	CAH	10
1,1-Dichloroethane	5.8	ug/l	0.35	1.2	1	7/15/00	8021A	CAH	10
1,1-Dichloroethene	2.4	ug/l	0.66	2.2	1	7/15/00	8021A	CAH	10
cis-1,2-Dichloroethene	5.2	ug/l	0.37	1.2	1	7/15/00	8021A	CAH	10
trans-1,2-Dichloroethene	< 0.43	ug/l	0.43	1.4	1	7/15/00	8021A	CAH	10
1,2-Dichloropropane	< 0.4	ug/l	0.4	1.3	1	7/15/00	8021A	CAH	10
2,2-Dichloropropane	< 0.59	ug/l	0.59	2	1	7/15/00	8021A	CAH	10
Di-isopropyl ether	< 0.37	ug/l	0.37	1.2	1	7/15/00	8021A	CAH	10
EDB (1,2-Dibromoethane)	< 0.65	ug/l	0.65	2.2	1	7/15/00	8021A	CAH	10
Ethylbenzene	14	ug/l	0.4	1.3	1	7/15/00	8021A	CAH	10
Hexachlorobutadiene	< 0.62	ug/l	0.62	2.1	1	7/15/00	8021A	CAH	10
Isopropylbenzene	3	ug/l	0.38	1.3	1	7/15/00	8021A	CAH	10
p-Isopropyltoluene	< 0.44	ug/l	0.44	1.5	1	7/15/00	8021A	CAH	10
Methylene chloride	< 0.57	ug/l	0.57	1.9	1	7/15/00	8021A	CAH	10
MTBE	5.4	ug/l	0.47	1.6	1	7/15/00	8021A	CAH	10

# U.S. Analytical Lab

GERRY DEMERS  
 HSI GEOTRANS  
 175 N. CORPORATE DRIVE SUITE 100  
 BROOKFIELD, WI 53045

Project # P177  
 Project Name MPL REALTY-BADGER MET  
 Invoice # E30264

Report Date 18-Jul-00

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code
Lab Code	5030264C						Sample Type	Water	
Sample ID	MW-102						Sample Date	6/30/00	
Naphthalene	< 0.53	ug/l	0.53	1.8	1	7/15/00	8021A	CAH	4 10
n-Propylbenzene	1.9	ug/l	0.42	1.4	1	7/15/00	8021A	CAH	10
1,1,2,2-Tetrachloroethane	< 0.68	ug/l	0.68	2.3	1	7/15/00	8021A	CAH	10
1,3-DCP, Tetrachloroethene	< 0.93	ug/l	0.93	3.1	1	7/15/00	8021A	CAH	10
Tetrachloroethene	< 0.34	ug/l	0.34	1.1	1	7/15/00	8021A	CAH	10
Toluene	0.56 "J"	ug/l	0.37	1.2	1	7/15/00	8021A	CAH	10
1,2,4-Trichlorobenzene	< 0.6	ug/l	0.6	2	1	7/15/00	8021A	CAH	10
1,2,3-Trichlorobenzene	< 0.49	ug/l	0.49	1.6	1	7/15/00	8021A	CAH	10
1,1,1-Trichloroethane	43	ug/l	0.54	1.8	1	7/15/00	8021A	CAH	10
1,1,2-Trichloroethane	< 0.46	ug/l	0.46	1.5	1	7/15/00	8021A	CAH	10
Trichloroethene	59	ug/l	0.46	1.5	1	7/15/00	8021A	CAH	10
Trichlorofluoromethane	< 0.62	ug/l	0.62	2.1	1	7/15/00	8021A	CAH	4 10
1,2,4-Trimethylbenzene	< 0.4	ug/l	0.4	1.3	1	7/15/00	8021A	CAH	10
1,3,5-Trimethylbenzene	< 0.63	ug/l	0.63	2.1	1	7/15/00	8021A	CAH	10
Vinyl Chloride	< 0.87	ug/l	0.87	2.9	1	7/15/00	8021A	CAH	4 10
m&p-Xylene	3.5	ug/l	0.79	2.6	1	7/15/00	8021A	CAH	10
o-Xylene	< 0.64	ug/l	0.64	2.1	1	7/15/00	8021A	CAH	10
Lab Code	5030264D						Sample Type	Water	
Sample ID	MW-103						Sample Date	6/30/00	

## Organic

### VOC's

Benzene	< 0.39	ug/l	0.39	1.3	1	7/15/00	8021A	CAH	10
Bromobenzene	< 0.39	ug/l	0.39	1.3	1	7/15/00	8021A	CAH	10
Bromodichloromethane	< 0.38	ug/l	0.38	1.3	1	7/15/00	8021A	CAH	10
tert-Butylbenzene	< 0.44	ug/l	0.44	1.5	1	7/15/00	8021A	CAH	10
sec-Butylbenzene	< 0.48	ug/l	0.48	1.6	1	7/15/00	8021A	CAH	10
n-Butylbenzene	< 0.43	ug/l	0.43	1.4	1	7/15/00	8021A	CAH	10
Carbon Tetrachloride	< 0.55	ug/l	0.55	1.8	1	7/15/00	8021A	CAH	10
Chlorobenzene	< 0.4	ug/l	0.4	1.3	1	7/15/00	8021A	CAH	10
Chloroethane	< 0.15	ug/l	0.15	0.48	1	7/15/00	8021A	CAH	4 10
Chloroform	< 0.38	ug/l	0.38	1.3	1	7/15/00	8021A	CAH	10
Chloromethane	< 1.1	ug/l	1.1	3.5	1	7/15/00	8021A	CAH	3 4 10
2-Chlorotoluene	< 0.47	ug/l	0.47	1.5	1	7/15/00	8021A	CAH	10
4-Chlorotoluene	< 0.44	ug/l	0.44	1.5	1	7/15/00	8021A	CAH	10
1,2-Dibromo-3-chloropropane	< 0.67	ug/l	0.67	2.2	1	7/15/00	8021A	CAH	4 10



# U.S. Analytical Lab

GERRY DEMERS  
 HSI GEOTRANS  
 175 N. CORPORATE DRIVE SUITE 100  
 BROOKFIELD, WI 53045

Project # P177  
 Project Name MPL REALTY-BADGER MET  
 Invoice # E30264

Report Date 18-Jul-00

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code	
Lab Code	5030264D					Sample Type	Water			
Sample ID	MW-103					Sample Date	6/30/00			
Dibromochloromethane	< 0.5	ug/l	0.5	1.7	1	7/15/00	8021A	CAH	10	
1,4-Dichlorobenzene	< 0.42	ug/l	0.42	1.4	1	7/15/00	8021A	CAH	10	
1,3-Dichlorobenzene	< 0.45	ug/l	0.45	1.5	1	7/15/00	8021A	CAH	10	
1,2-Dichlorobenzene	< 0.44	ug/l	0.44	1.5	1	7/15/00	8021A	CAH	10	
Dichlorodifluoromethane	< 0.37	ug/l	0.37	1.2	1	7/15/00	8021A	CAH	4 10	
1,2-Dichloroethane	< 0.35	ug/l	0.35	1.2	1	7/15/00	8021A	CAH	10	
1,1-Dichloroethane	< 0.35	ug/l	0.35	1.2	1	7/15/00	8021A	CAH	10	
1,1-Dichloroethene	< 0.66	ug/l	0.66	2.2	1	7/15/00	8021A	CAH	10	
cis-1,2-Dichloroethene	< 0.37	ug/l	0.37	1.2	1	7/15/00	8021A	CAH	10	
trans-1,2-Dichloroethene	< 0.43	ug/l	0.43	1.4	1	7/15/00	8021A	CAH	10	
1,2-Dichloropropane	< 0.4	ug/l	0.4	1.3	1	7/15/00	8021A	CAH	10	
2,2-Dichloropropane	< 0.59	ug/l	0.59	2	1	7/15/00	8021A	CAH	10	
Di-isopropyl ether	< 0.37	ug/l	0.37	1.2	1	7/15/00	8021A	CAH	10	
EDB (1,2-Dibromoethane)	< 0.65	ug/l	0.65	2.2	1	7/15/00	8021A	CAH	10	
Ethylbenzene	< 0.4	ug/l	0.4	1.3	1	7/15/00	8021A	CAH	10	
Hexachlorobutadiene	< 0.62	ug/l	0.62	2.1	1	7/15/00	8021A	CAH	10	
Isopropylbenzene	< 0.38	ug/l	0.38	1.3	1	7/15/00	8021A	CAH	10	
p-Isopropyltoluene	< 0.44	ug/l	0.44	1.5	1	7/15/00	8021A	CAH	10	
Methylene chloride	< 0.57	ug/l	0.57	1.9	1	7/15/00	8021A	CAH	10	
MTBE	1.9	ug/l	0.47	1.6	1	7/15/00	8021A	CAH	10	
Naphthalene	< 0.53	ug/l	0.53	1.8	1	7/15/00	8021A	CAH	4 10	
n-Propylbenzene	< 0.42	ug/l	0.42	1.4	1	7/15/00	8021A	CAH	10	
1,1,2,2-Tetrachloroethane	< 0.68	ug/l	0.68	2.3	1	7/15/00	8021A	CAH	10	
1,3-DCP, Tetrachloroethene	< 0.93	ug/l	0.93	3.1	1	7/15/00	8021A	CAH	10	
Tetrachloroethene	< 0.34	ug/l	0.34	1.1	1	7/15/00	8021A	CAH	10	
Toluene	< 0.37	ug/l	0.37	1.2	1	7/15/00	8021A	CAH	10	
1,2,4-Trichlorobenzene	< 0.6	ug/l	0.6	2	1	7/15/00	8021A	CAH	10	
1,2,3-Trichlorobenzene	< 0.49	ug/l	0.49	1.6	1	7/15/00	8021A	CAH	10	
1,1,1-Trichloroethane	< 0.54	ug/l	0.54	1.8	1	7/15/00	8021A	CAH	10	
1,1,2-Trichloroethane	< 0.46	ug/l	0.46	1.5	1	7/15/00	8021A	CAH	10	
Trichloroethene	< 0.46	ug/l	0.46	1.5	1	7/15/00	8021A	CAH	10	
Trichlorofluoromethane	< 0.62	ug/l	0.62	2.1	1	7/15/00	8021A	CAH	4 10	
1,2,4-Trimethylbenzene	< 0.4	ug/l	0.4	1.3	1	7/15/00	8021A	CAH	10	
1,3,5-Trimethylbenzene	< 0.63	ug/l	0.63	2.1	1	7/15/00	8021A	CAH	10	
Vinyl Chloride	< 0.87	ug/l	0.87	2.9	1	7/15/00	8021A	CAH	4 10	
m&p-Xylene	< 0.79	ug/l	0.79	2.6	1	7/15/00	8021A	CAH	10	
o-Xylene	< 0.64	ug/l	0.64	2.1	1	7/15/00	8021A	CAH	10	

# U.S. Analytical Lab

GERRY DEMERS  
 HSI GEOTRANS  
 175 N. CORPORATE DRIVE SUITE 100  
 BROOKFIELD, WI 53045

Project # P177  
 Project Name MPL REALTY-BADGER MET  
 Invoice # E30264

Report Date 18-Jul-00

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code
Lab Code	5030264E					Sample Type	Water		
Sample ID	MW-104					Sample Date	6/30/00		

Organic  
 VOC's

Benzene	< 0.39	ug/l	0.39	1.3	1	7/15/00	8021A	CAH	10
Bromobenzene	< 0.39	ug/l	0.39	1.3	1	7/15/00	8021A	CAH	10
Bromodichloromethane	< 0.38	ug/l	0.38	1.3	1	7/15/00	8021A	CAH	10
tert-Butylbenzene	< 0.44	ug/l	0.44	1.5	1	7/15/00	8021A	CAH	10
sec-Butylbenzene	< 0.48	ug/l	0.48	1.6	1	7/15/00	8021A	CAH	10
n-Butylbenzene	< 0.43	ug/l	0.43	1.4	1	7/15/00	8021A	CAH	10
Carbon Tetrachloride	< 0.55	ug/l	0.55	1.8	1	7/15/00	8021A	CAH	10
Chlorobenzene	< 0.4	ug/l	0.4	1.3	1	7/15/00	8021A	CAH	10
Chloroethane	< 0.15	ug/l	0.15	0.48	1	7/15/00	8021A	CAH	4 10
Chloroform	< 0.38	ug/l	0.38	1.3	1	7/15/00	8021A	CAH	10
Chloromethane	< 1.1	ug/l	1.1	3.5	1	7/15/00	8021A	CAH	3 4 10
2-Chlorotoluene	< 0.47	ug/l	0.47	1.5	1	7/15/00	8021A	CAH	10
4-Chlorotoluene	< 0.44	ug/l	0.44	1.5	1	7/15/00	8021A	CAH	10
1,2-Dibromo-3-chloropropane	< 0.67	ug/l	0.67	2.2	1	7/15/00	8021A	CAH	4 10
Dibromochloromethane	< 0.5	ug/l	0.5	1.7	1	7/15/00	8021A	CAH	10
1,4-Dichlorobenzene	< 0.42	ug/l	0.42	1.4	1	7/15/00	8021A	CAH	10
1,3-Dichlorobenzene	< 0.45	ug/l	0.45	1.5	1	7/15/00	8021A	CAH	10
1,2-Dichlorobenzene	< 0.44	ug/l	0.44	1.5	1	7/15/00	8021A	CAH	10
Dichlorodifluoromethane	< 0.37	ug/l	0.37	1.2	1	7/15/00	8021A	CAH	4 10
1,2-Dichloroethane	< 0.35	ug/l	0.35	1.2	1	7/15/00	8021A	CAH	10
1,1-Dichloroethane	< 0.35	ug/l	0.35	1.2	1	7/15/00	8021A	CAH	10
1,1-Dichloroethene	< 0.66	ug/l	0.66	2.2	1	7/15/00	8021A	CAH	10
cis-1,2-Dichloroethene	< 0.37	ug/l	0.37	1.2	1	7/15/00	8021A	CAH	10
trans-1,2-Dichloroethene	< 0.43	ug/l	0.43	1.4	1	7/15/00	8021A	CAH	10
1,2-Dichloropropane	< 0.4	ug/l	0.4	1.3	1	7/15/00	8021A	CAH	10
2,2-Dichloropropane	< 0.59	ug/l	0.59	2	1	7/15/00	8021A	CAH	10
Di-isopropyl ether	< 0.37	ug/l	0.37	1.2	1	7/15/00	8021A	CAH	10
EDB (1,2-Dibromoethane)	< 0.65	ug/l	0.65	2.2	1	7/15/00	8021A	CAH	10
Ethylbenzene	< 0.4	ug/l	0.4	1.3	1	7/15/00	8021A	CAH	10
Hexachlorobutadiene	< 0.62	ug/l	0.62	2.1	1	7/15/00	8021A	CAH	10
Isopropylbenzene	< 0.38	ug/l	0.38	1.3	1	7/15/00	8021A	CAH	10
p-Isopropyltoluene	< 0.44	ug/l	0.44	1.5	1	7/15/00	8021A	CAH	10
Methylene chloride	< 0.57	ug/l	0.57	1.9	1	7/15/00	8021A	CAH	10
MTBE	< 0.47	ug/l	0.47	1.6	1	7/15/00	8021A	CAH	10

# U.S. Analytical Lab

GERRY DEMERS  
 HSI GEOTRANS  
 175 N. CORPORATE DRIVE SUITE 100  
 BROOKFIELD, WI 53045

Project # P177  
 Project Name MPL REALTY-BADGER MET  
 Invoice # E30264

Report Date 18-Jul-00

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code
Lab Code	5030264E					Sample Type	Water		
Sample ID	MW-104					Sample Date	6/30/00		
Naphthalene	< 0.53	ug/l	0.53	1.8	1	7/15/00	8021A	CAH	4 10
n-Propylbenzene	< 0.42	ug/l	0.42	1.4	1	7/15/00	8021A	CAH	10
1,1,2,2-Tetrachloroethane	< 0.68	ug/l	0.68	2.3	1	7/15/00	8021A	CAH	10
1,3-DCP, Tetrachloroethene	< 0.93	ug/l	0.93	3.1	1	7/15/00	8021A	CAH	10
Tetrachloroethene	7.6	ug/l	0.34	1.1	1	7/15/00	8021A	CAH	10
Toluene	< 0.37	ug/l	0.37	1.2	1	7/15/00	8021A	CAH	10
1,2,4-Trichlorobenzene	< 0.6	ug/l	0.6	2	1	7/15/00	8021A	CAH	10
1,2,3-Trichlorobenzene	< 0.49	ug/l	0.49	1.6	1	7/15/00	8021A	CAH	10
1,1,1-Trichloroethane	< 0.54	ug/l	0.54	1.8	1	7/15/00	8021A	CAH	10
1,1,2-Trichloroethane	< 0.46	ug/l	0.46	1.5	1	7/15/00	8021A	CAH	10
Trichloroethene	1.1 "J"	ug/l	0.46	1.5	1	7/15/00	8021A	CAH	10
Trichlorofluoromethane	< 0.62	ug/l	0.62	2.1	1	7/15/00	8021A	CAH	4 10
1,2,4-Trimethylbenzene	< 0.4	ug/l	0.4	1.3	1	7/15/00	8021A	CAH	10
1,3,5-Trimethylbenzene	< 0.63	ug/l	0.63	2.1	1	7/15/00	8021A	CAH	10
Vinyl Chloride	< 0.87	ug/l	0.87	2.9	1	7/15/00	8021A	CAH	4 10
m&p-Xylene	< 0.79	ug/l	0.79	2.6	1	7/15/00	8021A	CAH	10
o-Xylene	< 0.64	ug/l	0.64	2.1	1	7/15/00	8021A	CAH	10
Lab Code	5030264F					Sample Type	Water		
Sample ID	TRIP BLANK					Sample Date	6/30/00		

Organic

VOC's

Benzene	< 0.39	ug/l	0.39	1.3	1	7/14/00	8021A	CAH	1
Bromobenzene	< 0.39	ug/l	0.39	1.3	1	7/14/00	8021A	CAH	1
Bromodichloromethane	< 0.38	ug/l	0.38	1.3	1	7/14/00	8021A	CAH	1
tert-Butylbenzene	< 0.44	ug/l	0.44	1.5	1	7/14/00	8021A	CAH	1
sec-Butylbenzene	< 0.48	ug/l	0.48	1.6	1	7/14/00	8021A	CAH	1
n-Butylbenzene	< 0.43	ug/l	0.43	1.4	1	7/14/00	8021A	CAH	1
Carbon Tetrachloride	< 0.55	ug/l	0.55	1.8	1	7/14/00	8021A	CAH	1
Chlorobenzene	< 0.4	ug/l	0.4	1.3	1	7/14/00	8021A	CAH	1
Chloroethane	< 0.15	ug/l	0.15	0.48	1	7/14/00	8021A	CAH	4
Chloroform	< 0.38	ug/l	0.38	1.3	1	7/14/00	8021A	CAH	1
Chloromethane	< 1.1	ug/l	1.1	3.5	1	7/14/00	8021A	CAH	3 4
2-Chlorotoluene	< 0.47	ug/l	0.47	1.5	1	7/14/00	8021A	CAH	1
4-Chlorotoluene	< 0.44	ug/l	0.44	1.5	1	7/14/00	8021A	CAH	1
1,2-Dibromo-3-chloropropane	< 0.67	ug/l	0.67	2.2	1	7/14/00	8021A	CAH	4

# U.S. Analytical Lab

GERRY DEMERS  
 HSI GEOTRANS  
 175 N. CORPORATE DRIVE SUITE 100  
 BROOKFIELD, WI 53045

Project # P177  
 Project Name MPL REALTY-BADGER MET  
 Invoice # E30264

Report Date 18-Jul-00

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code	
Lab Code	5030264F					Sample Type	Water			
Sample ID	TRIP BLANK					Sample Date	6/30/00			
Dibromochloromethane	< 0.5	ug/l	0.5	1.7	1	7/14/00	8021A	CAH	1	
1,4-Dichlorobenzene	< 0.42	ug/l	0.42	1.4	1	7/14/00	8021A	CAH	1	
1,3-Dichlorobenzene	< 0.45	ug/l	0.45	1.5	1	7/14/00	8021A	CAH	1	
1,2-Dichlorobenzene	< 0.44	ug/l	0.44	1.5	1	7/14/00	8021A	CAH	1	
Dichlorodifluoromethane	< 0.37	ug/l	0.37	1.2	1	7/14/00	8021A	CAH	4	
1,2-Dichloroethane	< 0.35	ug/l	0.35	1.2	1	7/14/00	8021A	CAH	1	
1,1-Dichloroethane	< 0.35	ug/l	0.35	1.2	1	7/14/00	8021A	CAH	1	
1,1-Dichloroethene	< 0.66	ug/l	0.66	2.2	1	7/14/00	8021A	CAH	1	
cis-1,2-Dichloroethene	< 0.37	ug/l	0.37	1.2	1	7/14/00	8021A	CAH	1	
trans-1,2-Dichloroethene	< 0.43	ug/l	0.43	1.4	1	7/14/00	8021A	CAH	1	
1,2-Dichloropropane	< 0.4	ug/l	0.4	1.3	1	7/14/00	8021A	CAH	1	
2,2-Dichloropropane	< 0.59	ug/l	0.59	2	1	7/14/00	8021A	CAH	1	
Di-isopropyl ether	< 0.37	ug/l	0.37	1.2	1	7/14/00	8021A	CAH	1	
EDB (1,2-Dibromoethane)	< 0.65	ug/l	0.65	2.2	1	7/14/00	8021A	CAH	1	
Ethylbenzene	< 0.4	ug/l	0.4	1.3	1	7/14/00	8021A	CAH	1	
Hexachlorobutadiene	< 0.62	ug/l	0.62	2.1	1	7/14/00	8021A	CAH	1	
Isopropylbenzene	< 0.38	ug/l	0.38	1.3	1	7/14/00	8021A	CAH	1	
p-Isopropyltoluene	< 0.44	ug/l	0.44	1.5	1	7/14/00	8021A	CAH	1	
Methylene chloride	< 0.57	ug/l	0.57	1.9	1	7/14/00	8021A	CAH	1	
MTBE	< 0.47	ug/l	0.47	1.6	1	7/14/00	8021A	CAH	1	
Naphthalene	< 0.53	ug/l	0.53	1.8	1	7/14/00	8021A	CAH	4	
n-Propylbenzene	< 0.42	ug/l	0.42	1.4	1	7/14/00	8021A	CAH	1	
1,1,2,2-Tetrachloroethane	< 0.68	ug/l	0.68	2.3	1	7/14/00	8021A	CAH	1	
1,3-DCP, Tetrachloroethene	< 0.93	ug/l	0.93	3.1	1	7/14/00	8021A	CAH	1	
Tetrachloroethene	< 0.34	ug/l	0.34	1.1	1	7/14/00	8021A	CAH	1	
Toluene	< 0.37	ug/l	0.37	1.2	1	7/14/00	8021A	CAH	1	
1,2,4-Trichlorobenzene	< 0.6	ug/l	0.6	2	1	7/14/00	8021A	CAH	1	
1,2,3-Trichlorobenzene	< 0.49	ug/l	0.49	1.6	1	7/14/00	8021A	CAH	1	
1,1,1-Trichloroethane	< 0.54	ug/l	0.54	1.8	1	7/14/00	8021A	CAH	1	
1,1,2-Trichloroethane	< 0.46	ug/l	0.46	1.5	1	7/14/00	8021A	CAH	1	
Trichloroethene	< 0.46	ug/l	0.46	1.5	1	7/14/00	8021A	CAH	1	
Trichlorofluoromethane	< 0.62	ug/l	0.62	2.1	1	7/14/00	8021A	CAH	4	
1,2,4-Trimethylbenzene	< 0.4	ug/l	0.4	1.3	1	7/14/00	8021A	CAH	1	
1,3,5-Trimethylbenzene	< 0.63	ug/l	0.63	2.1	1	7/14/00	8021A	CAH	1	
Vinyl Chloride	< 0.87	ug/l	0.87	2.9	1	7/14/00	8021A	CAH	4	
m&p-Xylene	< 0.79	ug/l	0.79	2.6	1	7/14/00	8021A	CAH	1	
o-Xylene	< 0.64	ug/l	0.64	2.1	1	7/14/00	8021A	CAH	1	

# U.S. Analytical Lab

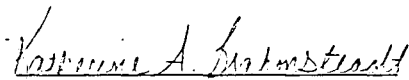
GERRY DEMERS  
HSI GEOTRANS  
175 N. CORPORATE DRIVE SUITE 100  
BROOKFIELD, WI 53045

Project # P177  
Project Name MPL REALTY-BADGER MET  
Invoice # E30264

Report Date 18-Jul-00

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code
LOD Limit of Detection			"J" Flag: Analyte detected between LOD and LOQ						LOQ Limit of Quantitation

Code	Comment
1	All laboratory QC requirements were met for this sample.
3	The spike recovery failed to meet acceptable QC limits.
4	The check standard failed to meet acceptable QC limits.
10	Sample exceeded its holding time.

Authorized Signature 



**HSI  
GEOTRANS**  
A TETRA TECH COMPANY

175 N. Corporate Drive  
Suite 100  
Brookfield, WI 53045  
Telephone (414) 792-1282  
Facsimile (414) 792-1310

Analysis Request and Chain of Custody Record

5030264

*QAM*

Project No. <b>P177</b>	Client/Project Name <b>MPL Realty - Badger Metals</b>	Project Location <b>St. Francis, WI</b>
----------------------------	--	--

Field Sample No./ Identification	Date and Time	Grab	Comp	Sample Container (Size/Mat'l)	Sample Type (Liquid, Sludge, Etc.)	Preservative	ANALYSIS REQUESTED	LABORATORY REMARKS
<i>5030264</i> A MW-7	6-30-00 14:35	X		3-40 ml / Glass	groundwater	HCl	VOCs	
B MW-8	6-30-00 14:15	X		↓	↓	↓	VOCs	
C MW-102	6-30-00 14:55	X		↓	↓	↓	VOCs	
D MW-103	6-30-00 15:35	X		↓	↓	↓	VOCs	
E MW-104	6-30-00 13:20	X		↓	↓	↓	VOCs	
F Trip Blank				2-40 ml / Glass			VOCs	

SAMPLERS: (Signature) <i>[Signature]</i>	Relinquished by: (Signature) <i>[Signature]</i>	Date: 7-10-00 Time: 8:30	Received by: (Signature) <i>[Signature]</i>	Date: 7/10/00 Time: 9:30	Intact
	Relinquished by: (Signature) <i>[Signature]</i>	Date: 7-11-00 Time: 9:30 am	Received by: (Signature) <i>[Signature]</i>	Date: Time:	Intact
	Affiliation				
	Relinquished by: (Signature) <i>[Signature]</i>	Date: 7/11/00 Time: 3:57	Received by: (Signature) <i>[Signature]</i>	Date: Time:	Intact

SAMPLER REMARKS: <i>resid w/occur in ice good condition</i>	Received for laboratory (Signature) <i>[Signature]</i>	Date: 7/11/00 Time: 15:57	Laboratory No.
SEAL #	Date/Results to		

# U.S. Analytical Lab

## Invoice

GERRY DEMERS  
HSI GEOTRANS  
175 N. CORPORATE DRIVE SUITE 100  
BROOKFIELD, WI 53045

Invoice # E30264  
Invoice Date 7/18/00  
Quote #  
Date Due 8/17/00  
Sample Date 6/30/00

Client Account # 273284  
Project # P177  
Project Name MPL REALTY-BADGER METAL  
Chain of Custody NONE

Sample ID	Labcode	Sample Type	Matrix	Test Name	Price
MW-7	5030264A	Sample	Water	VOC's	\$50.00
MW-8	5030264B	Sample	Water	VOC's	\$50.00
MW-102	5030264C	Sample	Water	VOC's	\$50.00
MW-103	5030264D	Sample	Water	VOC's	\$50.00
MW-104	5030264E	Sample	Water	VOC's	\$50.00
TRIP BLANK	5030264F	Blank	Water	VOC's	\$0.00

**Total Cost: \$250.00**

PLEASE REMIT PAYMENT TO:  
US OIL CO INC  
PO BOX 159  
COMBINED LOCKS, WI 54113-0032

**APPENDIX D**  
**GEOTECHNICAL LABORATORY RESULTS**





midwest engineering services, inc.

geotechnical • environmental • materials engineers

205 Wilmont Drive  
Waukesha, WI 53186  
414-521-2125  
FAX 414-521-2471

LETTER OF TRANSMITTAL

FILE COPY  
PROJECT # P177  
GLD

DATE: 7-23-1999

TO: HSI Geo Trans Inc.  
175 N. Corporate Dr.  
Brookfield, WI 53045  
attn: Jerry D.

SUBJECT: Laboratory Testing Services  
PROJECT: 4021 S. Kinnickinnic Ave.  
St. Francis

MES PROJECT: 7-95121-L1

Enclosed are the test results for soil samples received at MES

MES LAB NO.:	SAMPLE NO.	TEST PERFORMED
SCL99121	1 0-2 ft.	ASTM D422
SCL99122	2 2-4 ft.	ASTM D422
SCL99123	3 4-6 ft.	ASTM D422

ENCLOSURES:3

REMARKS:.

SENT BY: Jon Brett

l1trn.doc



REPORT OF GRAIN-SIZE ANALYSIS

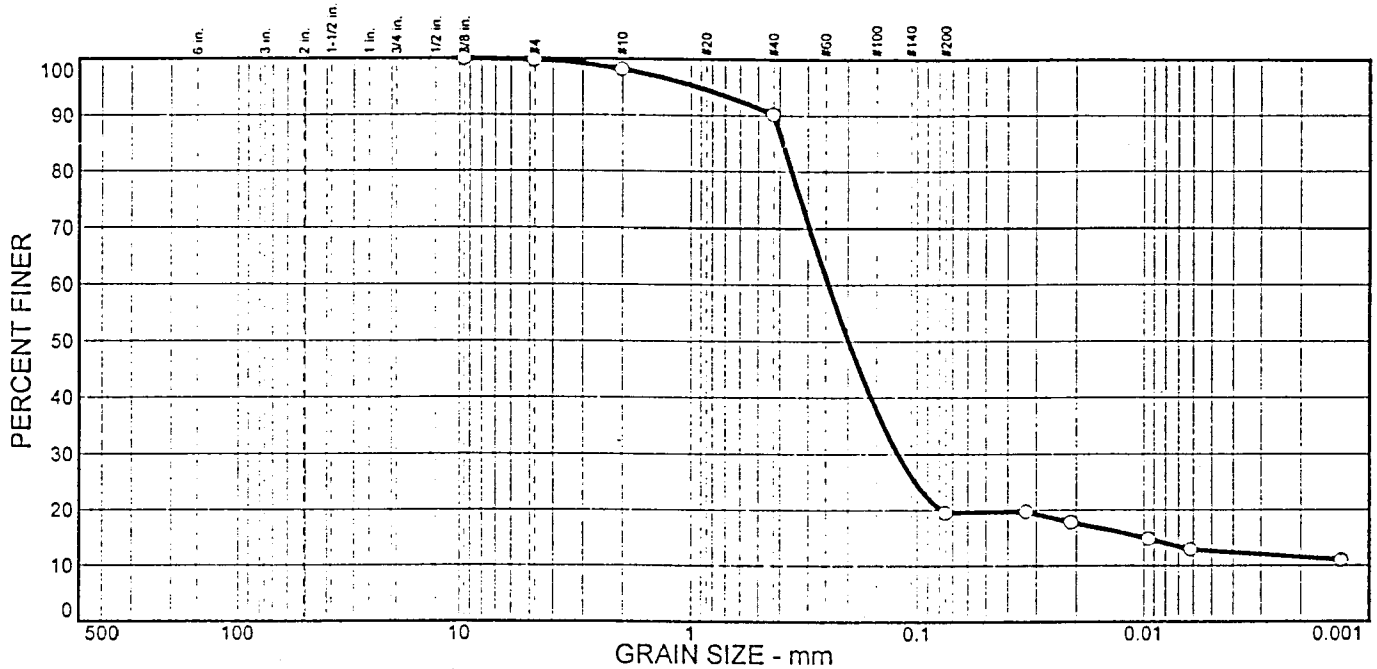
Project: 4021 S. Kinnickinic Ave., St. Francis

Project No.: 7-95121-L1

Client: HSI Geotrans

Sample No: 1 Source of Sample: St. Francis  
Location: 4021 S. Kinnickinnic Ave.

Date: 7/23/99  
Elev./Depth: 0-2 ft.



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
0.0	0.2	80.3	6.9	12.6

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/8	100.0		
#4	99.8		
#10	98.2		
#40	90.2		
#200	19.5		

**Soil Description**

Brown Silty Sand, Little Clay

**Atterberg Limits**

PL=                      LL=                      PI=

**Coefficients**

D<sub>85</sub>= 0.387              D<sub>60</sub>= 0.242              D<sub>50</sub>= 0.198  
D<sub>30</sub>= 0.121              D<sub>15</sub>= 0.0100              D<sub>10</sub>=  
C<sub>u</sub>=                      C<sub>c</sub>=

**Classification**

USCS=                      AASHTO=

**Remarks**

MES lab # M99121

\* (no specification provided)

Plate



REPORT OF GRAIN-SIZE ANALYSIS

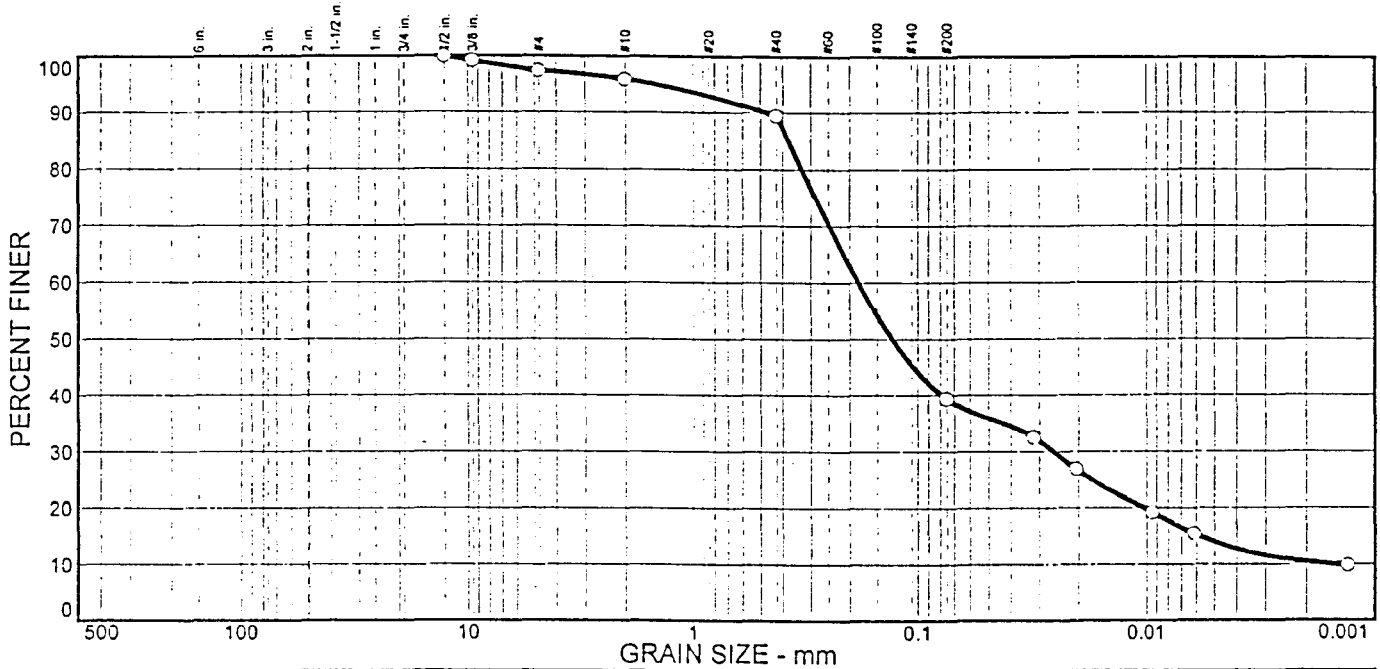
Project: 4021 S. Kinnickinnic Ave., St. Francis

Project No.: 7-95121-L1

Client: HSI Geotrans

Sample No: 2 Source of Sample: St. Francis  
Location: 4021 S. Kinnickinnic Ave.

Date: 7/23/99  
Elev./Depth: 2-4 ft.



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
0.0	2.6	58.0	25.4	14.0

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1/2	100.0		
3/8	99.2		
#4	97.4		
#10	95.9		
#40	89.4		
#200	39.4		

\* (no specification provided)

**Soil Description**

Brown Silty Sand, Little Clay

**Atterberg Limits**

PL=                      LL=                      PI=

**Coefficients**

D<sub>85</sub>= 0.376                      D<sub>60</sub>= 0.182                      D<sub>50</sub>= 0.128  
D<sub>30</sub>= 0.0259                      D<sub>15</sub>= 0.0058                      D<sub>10</sub>= 0.0015  
C<sub>u</sub>= 120.83                      C<sub>c</sub>= 2.45

**Classification**

USCS=                      AASHTO=

**Remarks**

MES lab # M199122

Plate



REPORT OF GRAIN-SIZE ANALYSIS

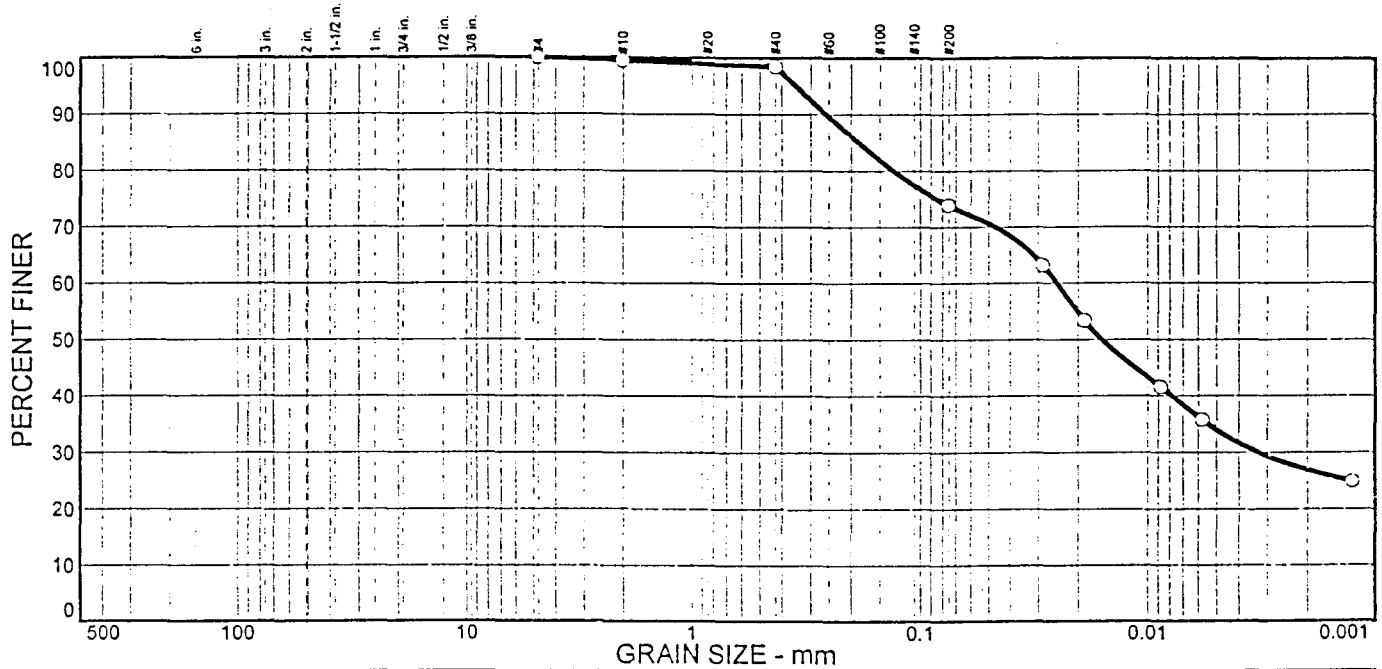
Project: 4021 S. Kinnickinnic Ave., St. Francis

Project No.: 7-95121-L1

Client: HSI Geotrans

Sample No: 3 Source of Sample: St. Francis  
Location: 4021 S. Kinnickinnic Ave.

Date: 7/23/99  
Elev./Depth: 4-6 ft.



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
0.0	0.0	26.1	39.9	34.0

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#10	99.5		
#40	98.5		
#200	73.9		

\* (no specification provided)

**Soil Description**

Brown Silty Clay, Some Sand

**Atterberg Limits**

PL=                      LL=                      PI=

**Coefficients**

D<sub>85</sub>= 0.186                      D<sub>60</sub>= 0.0247                      D<sub>50</sub>= 0.0157  
D<sub>30</sub>= 0.0033                      D<sub>15</sub>=                                      D<sub>10</sub>=  
C<sub>u</sub>=                                      C<sub>c</sub>=

**Classification**

USCS=                      AASHTO=

**Remarks**

MES lab # M99123

Plate

**BioManagement™ Services, Inc.**

16545 Oak Park Avenue

Tinley Park, IL 60477

(708) 614-1089 • Fax (708) 614-1633

Number of pages (including cover sheet) 12

Date: 8/4/00

To: JERRY DEMERS

From: AJ HOLDSWORTH

Fax No: 262-792-1310

Comments: Here are the results for the  
MPL Realty treatability (bench scale) test  
Please call with any questions.

Thank you

AJ

\*\*\*\*\*

- |   |  |
|---|--|
| <input type="checkbox"/> Per our discussion                 | <input type="checkbox"/> No original will be sent                    |
| <input type="checkbox"/> Urgent, Please deliver immediately | <input type="checkbox"/> Original will be sent via regular mail      |
| <input type="checkbox"/> Please review and fax comments     | <input type="checkbox"/> Original will be sent via overnight express |

\*\*\*\*\*

The information contained in this transmission is privileged and confidential. It is intended only for the use of the individual named above. If the reader of this message is not the intended recipient, you are hereby notified that any dissemination or copy of this communication is strictly prohibited. If you have received this communication in error, please notify us immediately by collect telephone and return the original message to us at the above address via U.S. Mail. We will reimburse you for postage. Thank you.

## BioManagement Services, Inc.

16545 Oak Park Avenue

Tinley Park, IL 60477

(708) 614-1089

Fax: (708) 614-1633

August 4, 2000

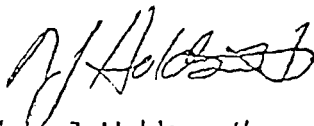
HSI Geotrans  
Mr. Jerry DeMers  
175 N. Corporate Drive  
Suite 100  
Brookfield, WI 53045

RE: BiOx<sup>®</sup> Treatability Study  
MPL Realty Site

Dear Mr. DeMers;

Enclosed are the results of the bench-scale treatability study performed on the soil samples you sent to us. A 68.8% reduction in Trichloroethene was observed within a 24 hour period, as compared to the control sample. Note that in-situ application of the BiOx<sup>®</sup> Process will result in subsequent accelerated biodegradation over time; a condition which is impossible to duplicate in the laboratory. If you have any questions regarding the information presented herein, please feel free to call me at (708) 614-1089.

Sincerely;



Andrew J. Holdsworth  
BioManagement Services, Inc.

Attachment

## **Introduction**

At the request of Jerry DeMers of HSI Geotrans, a bench scale treatability test was performed on soil delivered to BioManagement Services, Inc. (BMS) by over night mail. The soil sample was received in 500 ml jars, packed with soil to the top of the container to eliminate headspace. The sample arrived in a cooling chest, on ice and was subsequently placed into a refrigerator prior to performing the bench scale test. A bench-scale test was performed on the soil sample to determine the ability of the BiOx<sup>®</sup> Process to destroy the target contaminants.

## **Bench-Scale Test Methodology**

A bench-scale treatability test was performed on August 3, 2000. To perform the bench-scale test, the following methodology was employed:

To provide a baseline sample, 100 grams of soil was placed in a 4 oz. sample jar equipped with a teflon interseal. 11.5 g of water was then added to the sample. The jar was then sealed and refrigerated. This sample was designated as sample "C-S"; the control sample. An identical quantity of soil was placed into a second 4 oz. sample jar, and was reacted with 11.5 grams of BiOx<sup>®</sup> Reagents. The jar was then sealed and refrigerated. This sample was designated as "T-S"; the treated sample. The two containers were stored undisturbed for the 24 hour reaction period.

At the end of the 24 hour reaction period, the two samples were analyzed at Simalabs International analytical laboratory for VOC compounds in accordance with U.S. EPA Publication SW-846, Method 8260. The results of the VOC analysis are presented on the following Table.

Bench-Scale BiOx <sup>®</sup> Test Results			
MPL Realty			
Results presented in parts per billion (ppb)			
Compound	C-S	T-S	Percent Reduction
Trichloroethene	170	53	68.8
Tetrachloroethene	3	ND	100%
1,1,1-Trichloroethane	20	ND	100%

ND = Non-detect

*These are  
very high  
conc. to  
start*

Laboratory reports and the signed chain of custody are included with this report as **Attachment 1**. As indicated by the data, the soil treated with the BiOx<sup>®</sup> Reagents (T) exhibited a substantial reduction of VOC compounds when compared with the control sample (C). Contaminant destruction was achieved through chemical oxidation via the BiOx<sup>®</sup> Process.

### Conclusions

Following the methodology presented above, the bench-scale test performed for HSI Geotrans on August 3, 2000 concluded that the BiOx<sup>®</sup> Process is capable of substantial contaminant reductions in soils collected from the subject site. A 68.8% reduction of Trichloroethene was observed within a 24 hr. period, attributable to chemical oxidation of the contaminants. It should be noted that the BiOx<sup>®</sup> Process can persist in-situ for up to one month, thereby oxidizing contaminants beyond the level measured during the 24 hour bench-scale test. In addition to chemical oxidation of contaminants, In-situ application of the BiOx<sup>®</sup> Process also provides accelerated biodegradation, which continues to occur for up to several months following the initial application. Due to the bench-scale sampling methodology, it is not possible to measure this additional biodegradation factor ex-situ. The bench-scale test data proves that the BiOx<sup>®</sup> Process is capable of contaminant reduction within the site-specific soil. Based on the bench-scale test data, we recommend that an in-situ application of the BiOx<sup>®</sup> Process be performed to address the areas of concern at the subject site.



*Attachment*



INTERNATIONAL

**SIMALABS International**

Date: Friday, August 04, 2000

CLIENT: BMS, Inc.  
Project: HSI  
Lab Order: ME0008037  
Date Received: 8/3/00

**Work Order/ Sample Delivery  
Group Summary**

Lab Sample ID	Client Sample ID	Client Description	Collection Date
ME0008037-01A	C-S	Soil	03-Aug-00
ME0008037-02A	T-S	Soil	03-Aug-00



**ANALYTICAL RESULTS**

Date: Friday, August 04, 2000

Client: BMS, Inc. Client Project: HSI  
 Client Sample ID: C-S Work Order: ME0008037  
 Sample Description: Soil SIMALABS ID: ME0008037-01A  
 Sample Matrix: Soil  
 Collection Date: 08/03/00  
 Date Received: 08/03/00

Analyses	Samp Type	Result	Reporting Limit	Qual	Units	DF	Date Analyzed
<b>VOLATILE ORGANICS</b>							
		Method: SW8260B		Prep Date:		Analyst: CLR	
Acetone	A	ND	50		µg/Kg	1	08/04/00
Acrolein	A	ND	100		µg/Kg	1	08/04/00
Acrylonitrile	A	ND	100		µg/Kg	1	08/04/00
Benzene	A	ND	5		µg/Kg	1	08/04/00
Bromodichloromethane	A	ND	5		µg/Kg	1	08/04/00
Bromoform	A	ND	5		µg/Kg	1	08/04/00
Bromomethane	A	ND	10		µg/Kg	1	08/04/00
2-Butanone	A	ND	10		µg/Kg	1	08/04/00
Carbon Disulfide	A	ND	10		µg/Kg	1	08/04/00
Carbon tetrachloride	A	ND	5		µg/Kg	1	08/04/00
Chlorobenzene	A	ND	5		µg/Kg	1	08/04/00
Chloroethane	A	ND	10		µg/Kg	1	08/04/00
Chloroform	A	ND	5		µg/Kg	1	08/04/00
Chloromethane	A	ND	10		µg/Kg	1	08/04/00
Dibromochloromethane	A	ND	5		µg/Kg	1	08/04/00
1,2-Dichlorobenzene	A	ND	10		µg/Kg	1	08/04/00
1,3-Dichlorobenzene	A	ND	10		µg/Kg	1	08/04/00
1,4-Dichlorobenzene	A	ND	10		µg/Kg	1	08/04/00
1,1-Dichloroethane	A	ND	5		µg/Kg	1	08/04/00
1,2-Dichloroethane	A	ND	5		µg/Kg	1	08/04/00
1,1-Dichloroethene	A	ND	5		µg/Kg	1	08/04/00
cis-1,2-Dichloroethene	A	ND	5		µg/Kg	1	08/04/00
trans-1,2-Dichloroethene	A	ND	5		µg/Kg	1	08/04/00
1,2-Dichloropropane	A	ND	5		µg/Kg	1	08/04/00
cis-1,3-Dichloropropene	A	ND	5		µg/Kg	1	08/04/00
trans-1,3-Dichloropropene	A	ND	5		µg/Kg	1	08/04/00
Ethylbenzene	A	ND	5		µg/Kg	1	08/04/00
2-Hexanone	A	ND	5		µg/Kg	1	08/04/00
4-Methyl-2-Pentanone	A	ND	5		µg/Kg	1	08/04/00
Methyl-t-Butyl Ether	A	ND	10		µg/Kg	1	08/04/00
Methylene chloride	A	11	10		µg/Kg	1	08/04/00
Styrene	A	ND	5		µg/Kg	1	08/04/00
1,1,1,2-Tetrachloroethane	A	ND	10		µg/Kg	1	08/04/00
1,1,2,2-Tetrachloroethane	A	ND	5		µg/Kg	1	08/04/00

Samp Type: A - Analyte, S - Surrogate, I - Internal Standard  
 Qual: ND - Not Detected at the Reporting Limit  
 B - Detected in the associated Method Blank  
 \* - Exceeds Maximum Contaminant Level  
 J - Detected below Reporting Limits (Metals / Organics)  
 DF - Dilution Factor  
 S - Spike recovery outside recovery limits  
 SD - Value diluted out  
 R - RPD outside accepted recovery limits  
 E - Value above permission range  
 I - Matrix Interference



INTERNATIONAL

**ANALYTICAL RESULTS**

Date: Friday, August 04, 2000

Client: EMS, Inc. Client Project: HSI  
 Work Order: ME0008037  
 SIMALABS ID: ME000S037-01A  
 Client Sample ID: C-S  
 Sample Description: Soil  
 Sample Matrix: Soil  
 Collection Date: 08/03/00  
 Date Received: 08/03/00

Analyses	Samp Type	Result	Reporting Limit	Qual	Units	DF	Date Analyzed
Tetrachloroethene	A	3	5	J	µg/Kg	1	08/04/00
Toluene	A	ND	5		µg/Kg	1	08/04/00
1,1,1-Trichloroethane	A	20	5		µg/Kg	1	08/04/00
1,1,2-Trichloroethane	A	ND	5		µg/Kg	1	08/04/00
Trichloroethene	A	170	5		µg/Kg	1	08/04/00
Vinyl Acetate	A	ND	10		µg/Kg	1	08/04/00
Vinyl chloride	A	ND	10		µg/Kg	1	08/04/00
m,p-Xylene	A	ND	5		µg/Kg	1	08/04/00
o-Xylene	A	ND	5		µg/Kg	1	08/04/00
Surr: 4-Bromofluorobenzene	S	73	74-121		% REC	1	08/04/00
Surr: Dibromofluoromethane	S	98	80-120		% REC	1	08/04/00
Surr: 1,2-Dichloroethane-d4	S	100	80-120		% REC	1	08/04/00
Surr: Toluene-d8	S	116	81-117		% REC	1	08/04/00

Samp Type: A - Analyte, S - Surrogate, I - Internal Standard  
 Qual: ND - Not Detected at the Reporting Limit  
 B - Detected in the associated Method Blank  
 \* - Exceeds Maximum Contaminant Level  
 J - Detected below Reporting Limit (Metals / Organics)  
 DF - Dilution Factor  
 S - Spike recovery outside recovery limits  
 SD - Value diluted out  
 R - RPD outside accepted recovery limits  
 E - Value above quantitation range  
 I - Matrix Interference



**ANALYTICAL RESULTS**

Date: *Friday, August 04, 2000*

Client: BMS, Inc. Client Project: FSI  
 Client Sample ID: T-S Work Order: ME0008037  
 Sample Description: Soil SIMALABS ID: ME0008037-02A  
 Sample Matrix: Soil  
 Collection Date: 03/03/00  
 Date Received: 09/03/00

Analyses	Samp Type	Result	Reporting Limit	Qual	Units	DF	Date Analyzed
<b>VOLATILE ORGANICS</b>							
		Method: SW8260B		Prep Date:		Analyst: CLR	
Acetone	A	ND	50		µg/Kg	1	08/04/00
Acrolein	A	ND	100		µg/Kg	1	08/04/00
Acrylonitrile	A	ND	100		µg/Kg	1	08/04/00
Benzene	A	ND	5		µg/Kg	1	08/04/00
Bromodichloromethane	A	ND	5		µg/Kg	1	08/04/00
Bromoform	A	ND	5		µg/Kg	1	08/04/00
Bromomethane	A	ND	10		µg/Kg	1	08/04/00
2-Butanone	A	ND	10		µg/Kg	1	08/04/00
Carbon Disulfide	A	ND	10		µg/Kg	1	08/04/00
Carbon tetrachloride	A	ND	5		µg/Kg	1	08/04/00
Chlorobenzene	A	ND	5		µg/Kg	1	08/04/00
Chloroethane	A	ND	10		µg/Kg	1	08/04/00
Chloroform	A	ND	5		µg/Kg	1	08/04/00
Chloromethane	A	ND	10		µg/Kg	1	08/04/00
Dibromochloromethane	A	ND	5		µg/Kg	1	08/04/00
1,2-Dichlorobenzene	A	ND	10		µg/Kg	1	08/04/00
1,3-Dichlorobenzene	A	ND	10		µg/Kg	1	08/04/00
1,4-Dichlorobenzene	A	ND	10		µg/Kg	1	08/04/00
1,1-Dichloroethane	A	ND	5		µg/Kg	1	08/04/00
1,2-Dichloroethane	A	ND	5		µg/Kg	1	08/04/00
1,1-Dichloroethane	A	ND	5		µg/Kg	1	08/04/00
cis-1,2-Dichloroethane	A	ND	5		µg/Kg	1	08/04/00
trans-1,2-Dichloroethane	A	ND	5		µg/Kg	1	08/04/00
1,2-Dichloropropane	A	ND	5		µg/Kg	1	08/04/00
cis-1,3-Dichloropropene	A	ND	5		µg/Kg	1	08/04/00
trans-1,3-Dichloropropene	A	ND	5		µg/Kg	1	08/04/00
Ethylbenzene	A	ND	5		µg/Kg	1	08/04/00
2-Hexanone	A	ND	5		µg/Kg	1	08/04/00
4-Methyl-2-Pentanone	A	ND	5		µg/Kg	1	08/04/00
Methyl-t-Butyl Ether	A	ND	10		µg/Kg	1	08/04/00
Methylene chloride	A	19	10	B	µg/Kg	1	08/04/00
Styrene	A	ND	5		µg/Kg	1	08/04/00
1,1,1,2-Tetrachloroethane	A	ND	10		µg/Kg	1	08/04/00
1,1,2,2-Tetrachloroethane	A	ND	5		µg/Kg	1	08/04/00

Samp Type: A - Analyte, S - Surrogate, I - Internal Standard  
 Qual: ND - Not Detected at the Reporting Limit  
 B - Detected in the associated Method Blank  
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 DF - Dilution Factor  
 S - Spike recovery outside recovery limits  
 SD - Value diluted out  
 R - RPD outside accepted recovery limits  
 E - Value above quantitation range  
 I - Matrix Interference



**ANALYTICAL RESULTS**

Date: Friday, August 04, 2000

Client: BMS, Inc. Client Project: HSI  
 Work Order: ME0008037  
 SIMALABS ID: ME0008037-02A  
 Client Sample ID: T-S  
 Sample Description: Soil  
 Sample Matrix: Soil  
 Collection Date: 08/03/00  
 Date Received: 08/03/00

Analyses	Samp Type	Result	Reporting Limit	Qual	Units	DF	Date Analyzed
Tetrachloroethene	A	ND	5		µg/Kg	1	08/04/00
Toluene	A	ND	5		µg/Kg	1	08/04/00
1,1,1-Trichloroethane	A	ND	5		µg/Kg	1	08/04/00
1,1,2-Trichloroethane	A	ND	5		µg/Kg	1	08/04/00
Trichloroethene	A	53	5		µg/Kg	1	08/04/00
Vinyl Acetate	A	ND	10		µg/Kg	1	08/04/00
Vinyl chloride	A	ND	10		µg/Kg	1	08/04/00
m,p-Xylene	A	ND	5		µg/Kg	1	08/04/00
o-Xylene	A	ND	5		µg/Kg	1	08/04/00
Surr: 4-Bromofluorobenzene	S	91	74-121		% REC	1	08/04/00
Surr: Dibromofluoromethane	S	94	80-120		% REC	1	08/04/00
Surr: 1,2-Dichloroethane-d4	S	103	80-120		% REC	1	08/04/00
Surr: Toluene-d8	S	106	81-117		% REC	1	08/04/00

Samp Type: A - Analyte, S - Surrogate, I - Internal Standard DF - Dilution Factor  
 Qual: ND - Not Detected at the Reporting Limit S - Spike recovery outside recovery limits 1 - Matrix interference  
 B - Detected in the associated Method Blank SD - Value diluted out  
 \* - Exceeds Maximum Contaminant Level R - RPD outside accepted recovery limits  
 J - Detected below Reporting Limits (Metals / Organics) E - Value above quantitation range

### SIMALABS International

250 W. 84th Drive  
Merrillville, IN 46410  
(219) 769-3378

## COOLER INSPECTION

Thursday, August 03, 2000

Client Name: BMS, INC.

Date / Time Received: 8/3/00

Work Order Number ME0008037

Received by: AMC

Checklist completed by: William McLaughlin 8-3-00  
Signature Date

Reviewed by: AMC 8-4-00  
Initials Date

Carrier name: Client Delivered

- Shipping container/cooler in good condition? Yes  No  Not Present
- Custody seals intact on shipping container/cooler? Yes  No  Not Present
- Custody seals intact on sample bottles? Yes  No  Not Present
- Chain of custody present? Yes  No
- Chain of custody signed when relinquished and received? Yes  No
- Chain of custody agrees with sample labels? Yes  No
- Samples in proper container/bottle? Yes  No
- Samples properly preserved? Yes  No
- Sample containers intact? Yes  No
- Sufficient sample volume for indicated test? Yes  No
- All samples received within holding time? Yes  No
- Samples received on ice? Yes  No
- Container/Temp Blank temperature Temp: On Ice
- VOA vials have zero headspace? No VCA vials submitted Yes  No
- Water - pH acceptable upon receipt? No Water submitted Yes  No

Adjusted? \_\_\_\_\_ Checked by \_\_\_\_\_

ANY NO AND/OR NA (NOT APPLICABLE) RESPONSE MUST BE DETAILED IN THE COMMENT SECTION BELOW.

General Comments:

Sample ID	Client Sample ID	Comments
ME0008037-01A	C-S	
ME0008037-02A	T-S	

Client contacted: \_\_\_\_\_ Date contacted: \_\_\_\_\_ Person contacted: \_\_\_\_\_

Contacted by: \_\_\_\_\_ Regarding: \_\_\_\_\_

# SIMALABS

INTERNATIONAL

250 West 84th Drive  
Merrillville, IN 46410  
Tel: 219-769-8378 / 800-536-8379  
Fax: 219-769-1664

# RUSH

## CHAIN OF CUSTODY

Number 28048

Page 1 of 1

Client: <b>BMS</b>	Project Name: <b>HSI</b>	Project No. <b>HSI</b>
Address: <b>16545 Oak Park Avenue</b>	Location:	Purchase Order No. <b>2174</b>
<b>Tinley Park, IL 60477</b>	Turnaround Time (Circle One):	
Contact Person: <b>AS HOLDSWORTH</b>	Rush: (Please notify lab prior to delivery.) <b>24-Hours</b> 48-Hours 72-Hours	5 Days 7-10 Days
Send results: Telephone / <u>Fax</u> / <u>E-Mail</u> / (Circle one) Telephone No. _____ Fax No. <b>(708) 614-1633</b> E-Mail: _____		

Bill to Address: \_\_\_\_\_

Sampled by (PRINT):			Sampler Signature:			ANALYSIS REQUESTED										Laboratory Identification					
Sample #	Date	Time	Sample Description	# of Containers	Matrix	Filtered (Y/N)	Preserved	SVOC	8260												
C-S	8/3/00		SOIL	1		N	N	X												00803701A	
T-S	8/3/00		SOIL	1		N	N	X													✓-22A

COMMENTS:	Relinquished By (signature): <i>[Signature]</i>	Date / Time: 8/3/00	Received By (signature): <i>[Signature]</i>	Date / Time:
	Relinquished By (signature):	Date / Time:	Received By (signature):	Date / Time:
	Relinquished By (signature):	Date / Time:	Received (for Lab) By (signature): <i>[Signature]</i>	Date / Time: 8-3-00/BS

08/04/00 FRI 15:51 FAX 7086141633  
08/04/00 11:14 FAX 219 769 1664  
BMS  
SIMALABS INT'L