Site Investigation

Property Located at 317 East Main Street Chilton, Wisconsin

April 2010

Prepared For City of Chilton 42 School Street Chilton, WI 53014

THE ENVIRONMENTAL MANAGEMENT COMPANY LLC

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TABLE OF CONTENTS

Site Investigation

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1.0	Introduction	p. 1 - 3
2.0	Background Information	p. 4-5
3.0	Scope of Work	p.6-8
4.0	Results of Site Investigation	p. 9 - 12
5.0	Summary and Conclusions p	. 13 - 14

<u>Figures</u>

Figure 1	Site Location Map
Figure 2	Soil Boring and Monitoring Well Locations
Figure 3.1	Soil Contaminant Distribution
Figure 4.1	Groundwater Contaminant Distribution - PCE Contours: May 12, 2008
Figure 4.2	Groundwater Contaminant Distribution - PCE Contours: March 27 2009
Figure 4.3	Groundwater Contaminant Distribution - PCE Contours: October 27, 2009
Figure 5.1	Groundwater Elevations - May 11, 2007
Figure 5.2	Groundwater Elevations - November 9, 2007
Figure 5.3.1	Groundwater Table Elevation Contours - May 12, 2008
Figure 5.3.2	Groundwater Piezometric Surface Elevation Contours - May 12, 2008
Figure 5.4.1	Groundwater Table Elevation Contours - March 27, 2009
Figure 5.4.2	Groundwater Piezometric Surface Elevation Contours - March 27, 2009
Figure 5.5.1	Groundwater Table Elevation Contours - October 27, 2009

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3	Figure 5.5.2	Groundwater Piezometric Surface Elevation Contours - October 27, 2009
	Tables	
	Table 1	Soil Sample Analytical Results - Volatile Organic Compounds (VOC)
	Table 2	Soil Sample Analytical Results - Polyaromatic Hydrocarbons (PAH)
	Table 3	Soil Sample Analytical Results - Metals
	Table 4	Groundwater Sample Analytical Results - Volatile Organic Compounds (VOC)
	Table 5	Groundwater Elevation and Groundwater Elevation Measurements

Appendices

Appendix A	Laboratory Analytical Reports
Appendix B	Soil Boring Logs
Appendix C	Monitoring Well Construction Forms
Appendix D	Monitoring Well Development Forms

Site Investigation

Former Larsons Dry Cleaners Site Property Located at 317 East Main Street Chilton, Wisconsin

1.0 INTRODUCTION

1.1 Purpose

THE ENVIRONMENTAL MANAGEMENT COMPANY LLC (TEMCO) was retained by the City of Chilton to conduct a Site Investigation (SI) of the above referenced property (the site). The purpose of the SI is to identify and characterize existing and potential environmental impacts at the site or surrounding properties that are caused by current or past property use or condition. The SI is also designed to determine the type, level, and extent of environmental impacts cause by the property uses and conditions identified in sufficient detail to determine the need for site remediation, appropriate remedial options, and estimated remedial costs.

1.2 Client Information

City of Chilton 42 School Street Chilton, WI 53012 Contact Person: Mr. Shawn Reilly - Development Director Telephone Number: (920) 849-2451

1.3 Consulting Firm and Contractor Information

Consulting Firm

The Environmental Management Company LLC P.O. Box 856 2088 Washington Avenue Cedarburg, WI 53012

Telephone Number:	(262) 675-6000
Fax Number:	(262) 675-6170
Contact:	Jeffrey L. Hosler
e-mail:	jlhosler@temco-llc.com

Contractors

Moraine Environmental, Inc. 1402 7th Avenue Grafton, WI 53024-2330 Telephone Number: (262) 377-9060 Service Provided: Soil borings and monitoring/piezometer well installation

Synergy Environmental Lab, LLC 1990 Prospect Court Appleton, WI 54914 Telephone Number: (920) 830-2455 Service Provided: Laboratory analysis of soil and groundwater samples

McMahan Associates P.O. Box 1025 Neenah, WI 54957-1025 Telephone Number: (920) 751-4200 Service Provided: Survey of monitoring well/piezometer elevations

1.4 Site Description

The site is located at 317 East Main Street, Chilton, Wisconsin, Calumet County. The legal description is the southeast one-quarter of the northwest one-quarter of Section 18, Township 18 North, Range 20 East. The site and surrounding area are shown in Figure 1.

The site is a 0.15 acre, rectangular property located on the south side of East Main Street (Figure 2). It is bordered by East Main Street and commercial/industrial properties to the north, a restaurant and parking lot to the east, an unpaved extension of Webster Street and residential properties to the south, and a City owned unpaved lot and commercial properties to the west.

The site bears City of Chilton Alternate Parcel No. 16605. The northern approximately two-thirds of the site are occupied by a narrow, one-story, rectangular building constructed of wood frame and brick, with a flat roof and partial basement. The building occupies essentially the entire width of the lot (26 feet) in the east-west direction, and shares a common wall in the northern one-third of the building with the restaurant to the east. The enclosed area of the building is 2,878 square feet. A small, one-story wood framed entrance is attached to the south end of the building, which leads to a residential apartment that occupies the southern part of the building. The northern part of the building is occupied by currently vacant rooms which were formerly occupied by a dry cleaning business.

The partial basement is located beneath the central portion of the building, and has a concrete floor with a below grade sump. The north and south ends of the building are underlain by crawl spaces with dirt floors. Remnants of former piping system(s) were observed during the initial site reconnaissance in the partial basement, in the area where it adjoins the south crawl space. According

to the current site owner, this area is directly beneath the location of the former dry cleaning machine. It was unclear whether the piping remnants were part of the dry cleaning system or portions of the sump discharge system.

The southern one-third of the site is vacant and covered by grass and/or small trees and brush.

2.0 BACKGROUND INFORMATION

2.1 Site History

The site was developed in the late 1940's as Larson Spic and Span Cleaners (a dry cleaner store). The property and store were purchased by Clarence Scherer in 1980. Mr. Scherer operated the dry cleaning operation from 1980 until 1994 as a sole proprietor. The site was vacant until purchased by Tracy Ott in the late 1990's. Mr. Ott operated the site as a drop-off/collection store for clothing to be dry cleaned. The clothing items collected were then transported to an off-site dry cleaning operation to be cleaned. Mr. Ott did not conduct any dry cleaning operations on the site. The clothing drop-off/collection operation ceased in the early 2000's and the site has been largely vacant to the present time. The residential apartment in the southern part of the building has been periodically tenanted during the period in which Mr. Ott has owned the property.

2.2 Previous Environmental Assessment

A preliminary Phase II Environmental Site Assessment (ESA) was conducted at the site by GHD, Inc. in May 1999. Four (4) soil borings were drilled at the site: one (1) just north of the on-site building (B1); two (2) in the basement/crawlspace area beneath the central part of the building, just south of the area where the former dry cleaning machine was located (B3, B4); and one (1) boring just south of the on-site building (B2). Soil samples were collected from B1 and B2 from 12 to 14 feet below ground surface (bgs) for VOC analyses. Soil samples were collected from B3 and B4 from three (3)feet below the basement/crawlspace floor for VOC analyses. A groundwater sample was collected from each of the four (4) soil borings for VOC analyses.

- The results of the soil sample VOC analyses indicated no VOC were present in the sample collected north of the building. Low levels of PCE and cis-1,2 DCE (50 ug/kg and 35 ug/kg, respectively) were detected in the soil sample collected south of the building. High levels of PCE were detected in the soil samples collected in the basement/crawlspace area in the central area of the building.
- PCE levels of 9,900 ug/kg in the sample collected from B3 and 17,000 ug/kg in the sample collected from B4 indicated these borings were located in the source area of subsurface chlorinated solvent contamination on the site. Chlorinated daughter products of PCE (TCE and cis-1,2 DCE) were also detected in these soil samples at lower levels.

Detections of low/moderate levels of naphthalene and n-butylbenzene in the soil samples collected from B3 and B4 suggest that mineral spirits may have been used as a dry cleaning agent in the early years of the facility's operation.

The results of groundwater sample VOC analyses are generally consistent with the soil sample VOC analytical results. PCE and TCE were detected in the samples collected from B3 and B4 at levels ranging between 76 and 170 ug/l; several isomers of DCE were detected at lower levels. A high level of PCE (530 ug/l) was detected in the groundwater sample collected south of the on-site building, along with low levels of several chlorinated VOC daughter products. Trace levels of toluene, a mineral spirits component, were detected in the groundwater samples collected from all four (4) soil borings.

All of the soil and groundwater analytical data discussed in this section is included in the site figures and analytical data tables prepared by TEMCO for this SI report.

2.3 Potential Contaminant Sources

TEMCO reviewed available historical, environmental, regulatory, and municipal records for the site. No records of potential sources of contamination other than the dry cleaning equipment and operations were found, including no records of on-site petroleum storage tanks in either Wisconsin Department of Commerce or City of Chilton records. The dry cleaning machine was located near the center of the on-site building, and initial soil and groundwater contamination data developed in 1999 indicates this area is the likely source area of subsurface VOC contamination.

The Chilton well #5 site investigation report prepared by Foth Infrastructure & Environment, LLC in May 2007 identified the site as a potential source of chlorinated VOC groundwater contamination which had impacted the municipal well. The well is located approximately 1,300 feet east-northeast of the site, near the south branch of the Manitowoc River. The report also identified numerous other local commercial and industrial properties as potential sources of the contamination.

3.0 SCOPE OF WORK

The initial scope of work for the site investigation consisted of drilling, logging, and sampling eight (8) soil borings (MW-1 through MW-8) in March 2007 and constructing groundwater monitoring wells in all eight (8) borings (Figure 2). The soil borings/monitoring wells were located to determine soil conditions and soil and groundwater contaminant types and levels in the source area, in the area surrounding the on-site buildings, and in the estimated direction of groundwater flow (east - northeast).

The source area soil borings were completed at depths of 14 and 11 feet below basement/crawlspace floor level (MW-2 and MW-3, respectively). The exterior soil borings were completed to depths of 18 feet below ground surface (bgs) (MW-4) and 20 feet bgs (MW-1, MW-5, MW-6, MW-7, MW-8). The screened interval of each monitoring well was placed in the bottom 10 feet of each soil boring with the exception of MW-1 (screened interval placed 6 to 16 feet bgs) and MW-2 (screened interval placed 3.5 to 13.5 feet bgs).

Two (2) to four (4) soil samples were collected from each soil boring (MW-1 through MW-7) to provide a profile of VOC contamination with depth in the source area and surrounding area. Contamination depth profiling in porous media below the groundwater table works well with many common contaminants, including chlorinated VOC, due to the multiple orders-of-magnitude difference which typically occurs between levels of dissolved contaminants and the much higher levels of contaminants adsorbed or adhered to the soil matrix. The depth profile assists in the design of downgradient groundwater monitoring wells and piezometers, and is required to properly evaluate and select appropriate remedial options.

Selected soil samples were also analyzed for PAH compounds and RCRA metals.

The first round of groundwater monitoring was conducted in May 2007. Monitoring wells MW-1 through MW-8 were sampled for laboratory analysis of VOC. Following discussion of the soil and groundwater contamination database with the WDNR, two (2) additional downgradient monitoring wells were constructed in September 2007 (MW-9 and MW-10). These monitoring wells were located northeast of the source area (MW-9), on the north side of East Main Street, and farther downgradient (MW-10) on the south side of East Main Street (east-northeast of the source area).

The second round of groundwater monitoring was conducted in November 2007, including collection of groundwater samples from MW-1 through MW-10 for laboratory analysis of VOC. Based on the results of the November 2007 round of groundwater monitoring and discussions with WDNR, a network of piezometers was designed and constructed on the site and downgradient (east-northeast) of the source area in April 2008. The network includes the following piezometers:

- PZ-1 located approximately 30 feet west of the contaminant source area (near MW-4) and screened over the depth interval of 25 to 30 feet bgs.
- PZ-2 located approximately 100 feet east-northeast (downgradient) of the source area (near MW-7) on the east side of Adams Street and screened over the depth interval 25 to 30 feet bgs.

- PZ-3 located approximately 150 feet northeast of the source area on the south side of East Main Street and screened over the depth interval 29 to 34 feet bgs.
- PZ-4 located approximately 320 feet east-northeast of the source area on the south side of East Main Street, adjacent to monitoring well MW-1, and screened over the depth interval 35 to 40 feet bgs.

The third round of groundwater monitoring was conducted in May 2008. Monitoring wells MW-1, MW-4 through MW-10, and PZ-1 through PZ-4 were sampled for laboratory analysis of VOC. Source area monitoring wells MW-2 and MW-3 could not be sampled because the City had been denied access to the on-site building interior by the current owners.

The monitoring well and piezometer network was surveyed in June 2008. State Plane coordinates and top of casing elevations referenced to a local USGS permanent benchmark were established for each monitoring well and piezometer.

Based on the results of the soil and groundwater contamination database developed through the May 2008 groundwater monitoring event, a series of discussions occurred between the City of CHilton, WDNR, and TEMCO during the period August 2008 through December 2008. These discussions centered on the City's then current site redevelopment plans, the apparent need for and appropriate options for site remediation, and additional site investigation tasks to complete characterization of the level and extent of VOC contamination sourced from the site. During this period, the City of Chilton was considering acquisition of the site to facilitate a then current plan by the adjacent Central House Restaurant to develop a banquet center and expanded parking lot. After the owner of the Central House scrapped the redevelopment plan and sold the property, the City considered acquisition of the site to develop a City owned parking facility to aid redevelopment in the Downtown area. Unfavorable economic conditions which developed in 2007-2008 curtailed commercial redevelopment plan for the site.

During the discussions in the fall of 2008 concerning site investigation/remediation issues and site preparation activities prior to redevelopment, TEMCO prepared scopes of work and cost estimates for site preparation, remaining investigation, and proposed remediation tasks. Recommendations for additional site investigation and groundwater monitoring scopes of work are discussed in Section 4.0 of this SI report.

The fourth round of groundwater monitoring was conducted in March 2009. Monitoring wells MW-1, MW-4 through MW-10, and PZ-1 through PZ-4 were sampled for laboratory analysis of VOC.

The fifth and most recent round of groundwater monitoring was conducted in October 2009. Monitoring wells MW-1, MW-5 through MW-10, and PZ-2 through PZ-4 were sampled for laboratory analysis of VOC. Monitoring well MW-4 and piezometer PZ-1 are located in a slight depression of the ground surface, and due to recent rainfall could not be opened without drainage of surface water into the well casing.

Details concerning subsurface conditions at and downgradient of the site, and review of the analytical data developed in the site investigation are contained in Section 4.0. The findings and conclusions of the site investigation are contained in Section 5.0, along with a summary of recommendations for additional site investigation. Laboratory analytical results for soil and groundwater samples are summarized in the Tables section and laboratory analytical reports are contained in Appendix A. Site figures including soil and groundwater distribution and contaminant level contours, and groundwater elevation/flow direction for each monitoring event are included in the figures section. Soil boring logs, monitoring well/piezometer construction diagrams, and monitoring well/piezometer development forms are provided as Appendices B through D, respectively.

4.0 **RESULTS OF SITE INVESTIGATION**

4.1 Site Geology and Hydrogeology

Surface topography in the area of the site slopes gently to the southeast. The southern part of the site and surrounding area is underlain by four (4) to five (5) feet of surficial fill, consisting of gravel base beneath pavement and/or mixtures of silty clay and sand and gravel. The northern part of the site has little or no surficial fill overlaying the silty clay subsoil. Residual silty clay subsoil with varying quantities of entrained sand and gravel is uniformly present on the site and in the surrounding area to a depth varying from 13.5 to 16 feet bgs, depending on location. Soil conditions below the silty clay consist of variable mixtures and alternating layers of clayey and silty sand and gravel, with occasional layers of clean sand or sand and gravel.

Granular soil conditions were present below the silty clay to the bottom of each soil boring logged (MW-1 through MW-7), typically 20 feet bgs. Observation of drill cuttings during drilling of MW-8 through MW-10 indicated soil conditions similar to those observed and logged in borings MW-1 through MW-7. Similarly, observation of drill cuttings during drilling of piezometers PZ-1 through PZ-4 indicate that soil conditions in the area of the site at depths ranging from 20 to 40 feet bgs consist primarily of clayey and/or silty sand.

The groundwater table in the area of the site occurs in the residual silty clay layer and varies with location and season between five and ten feet bgs.

The groundwater elevation data (Table 5) collected from the ten (10) monitoring wells (MW-1 through MW-10) during the five (5) monitoring events completed show a consistent direction of groundwater flow from the source area on the site to the east-northeast. Two (2) anomalous conditions appear on the groundwater elevation/flow direction figures for the water table monitoring wells (5.1, 5.2, 5.3.1, 5.4.1, and 5.5.1):

- An apparent groundwater divide is present just west of the source area on the site. The divide trends consistently north-northwest/south-southeast, and appears to shift slightly in the east-west direction over time.
- The groundwater elevation in monitoring well MW-9 is frequently higher than a consistent easterly direction of groundwater flow would predict.

These anomalies are likely caused by one(1) or more of three (3) local features:

1) The site lies in an area surrounded by a loop of the South Branch of the Manitowoc River; the river surrounds the site to the east, north, and west. As a result, a groundwater divide may be present which separates local groundwater flow into easterly and westerly components.

2) Shallow groundwater elevations at and east of the site may be influenced by the presence of municipal utility corridors beneath East Main Street to the north of the site and Adams Street to the east.

3) Variation in shallow soil conditions combined with a mixture of paved and non-paved areas surrounding the site may produce localized groundwater elevation anomalies as the water table responds to precipitation events and seasonal change.

Groundwater elevations measured in piezometers PZ-1 through PZ-4 over three monitoring events (Figures 5.3.2, 5.4.2, and 5.5.2) show a consistent direction of groundwater flow from the site in the east-northeast direction. No anomalies in groundwater elevation measurements were noted. All four piezometers are screened in the clayey/silty sand which underlies the shallow silty clay. The average groundwater gradient between PZ-1 and PZ-4 was moderate 0.024 feet/feet during the May 12, 2008 monitoring event. A much flatter average groundwater gradient was measured during the March 27, 2009 and October 27, 2009 monitoring events, 0.0041 and 0.0031 feet/feet, respectively.

4.2 Soil Contamination

The distribution of soil contamination in the subsurface at the site and in the surrounding area is contained in Tables 1 through 3 and is shown on Figure 3.1. The figure shows all detections of soil VOC contamination, and RCRA metals contaminants detected above Direct Contact - Non-Industrial Residual Contaminant Levels (DC-NI RCL). No detections of PAH compounds above RCL for protection of groundwater or DC-NI were reported in the seven (7) soil samples analyzed for PAH compounds.

Results of the VOC analyses of soil samples indicate the area in which monitoring well MW-2 is located, which was reported to be the location of the former dry cleaning machine, is the source area of chlorinated VOC subsurface contamination. The highest levels of PCE were detected in samples collected from 0.5 feet to 1.0 feet bgs (2,000 mg/kg) and 4.5 to 5.0 feet bgs (4,100 mg/kg). The level of PCE in the soil sample collected from 13 to 14 feet bgs decreased to 193 mg/kg. PCE levels in soil samples collected from boring MW-3, north of MW-2, showed a concentration of the solvent in the sample collected from 8.5 feet to 9.0 feet bgs (3,700 mg/kg), and much lower levels above, at 4.5 to 5 feet bgs (0.311^J mg/kg) and below, at 10.5 to 11 feet bgs (70 mg/kg).

This distribution of PCE soil contamination indicates dry cleaning fluid was discharged on the ground surface near MW-2 and migrated downward through the silty clay residual soil and northward toward MW-3. The bulk of the contaminant mass remains in the silty clay (upper 10 feet of soil) in this relatively small source area.

Soil samples collected from borings to the north (B-1), west (MW-4) and south (B-3 and B-4) of the source area indicate the high levels of PCE contained in shallow soil at MW-2 and MW-3 decrease by two to three orders of magnitude a short distance from the source area. While there are no soil borings on the east side of the source area, it is reasonable to estimate that significant levels of PCE in soil may extend partially beneath the basement floor of the Central House restaurant to the east.

The presence of carbon tetrachloride in the soil sample collected from MW-5, south of the on-site building, at 9.0-10.0 feet bgs (12.2 mg/kg) suggest this solvent may have been used historically for spot removal, and that spent solvent was discharged at the ground surface "out the back door." Additional soil borings and soil sample analyses, and potentially groundwater monitoring, are needed to determine the southern extent of VOC contamination identified in soil and groundwater samples

collected at monitoring well MW-5.

Similarly, the presence of petroleum hydrocarbons which are components of mineral spirits in soil samples collected from B3 and B4 suggest the use of mineral spirits as a dry cleaning solvent in the early years of the facility's operation.

The two (2) detections of arsenic in site soil samples (MW-2, 0.5 to 1.0 feet bgs, 1.6 mg/kg and MW-1, 2.0 to 2.5 feet bgs, 5.3 mg/kg) which exceed the Direct Contact - Non-Industrial RCL are both within the range of values considered natural background arsenic levels. The only detection of lead above the DC-NI RCL (55 mg/kg) occurred in the soil sample collected from boring MW-6 at five to six feet bgs, below the direct contact zone of 0 to 4 feet bgs.

4.3 Groundwater Contamination

The distribution of VOC groundwater contamination at the site and surrounding area is shown on Figures 4.1 through 4.3. These figures also show PCE concentration contours for the three (3) most recent monitoring events.

Review of the groundwater VOC contaminant distribution data (Table 4 and Figures 4.1, 4.2, and 4.3) indicates PCE is the dominant chlorinated VOC component of groundwater contamination in the source area and in the downgradient plume. Except at the fringes of the groundwater contaminant plume, PCE levels are one (1) to three (3) orders of magnitude higher than levels of individual chlorinated VOC daughter compounds. Considering that dry cleaning operations at the site began 60+ years ago, breakdown of PCE in the subsurface is apparently occurring at relatively slow rates.

The location and shape of the groundwater contaminant plume are consistent with the east-northeast direction of groundwater flow measured consistently through the five (5) monitoring events completed. PCE levels in groundwater exceed 10⁵ ug/l in the source area and decrease to levels between the PAL and ES in groundwater samples collected from the farthest downgradient monitoring well/piezometer pair (MW-10 and PZ-4). At least one (1) additional monitoring well/piezometer pair will need to be installed east of MW-10/PZ-4 to define the downgradient edge of the groundwater contaminant plume.

In general, downgradient PCE levels in groundwater apparently peaked in the May 2008 monitoring event, declining substantially through the March and October 2009 monitoring events. It should be noted, however, that MW-9 and MW-10 were only available for four (4) monitoring events, and PZ-1 through PZ-4 were only available for three (3) monitoring events. The source area wells (MW-2 and MW-3) were available only for the initial two (2) monitoring events, although it is likely that groundwater PCE levels in the source area remained relatively constant over the relatively short (2.5 years) period of monitoring. Several additional rounds of groundwater monitoring will be needed to establish a clear trend in groundwater VOC contaminant levels in the groundwater plume.

The consistent detections of chlorinated VOC contaminants in groundwater samples collected from the four (4) piezometers (PZ-1 through PZ-4) over the three (3) most recent monitoring events indicates the contaminant plume has achieved a minimum depth of 40 feet bgs at the farthest downgradient monitoring location (PZ-4). Since all four (4) piezometers are screened in the sand

lying below the silty clay and high levels of PCE were found in groundwater samples collected from piezometers PZ-2 and PZ-3, it is apparent that groundwater contamination is present throughout the area of the contaminant plume at depths which exceed the screened intervals of the four (4) existing piezometers (25 to 40 feet bgs).

Similar to the soil VOC contamination results, groundwater samples collected from monitoring well MW-5, located just south of the on-site building, contain low levels of carbon tetrachloride and a daughter compound, chloroform. The unique occurrence of these compounds at this location on the site, combined with higher levels of PCE and daughter compounds than are present at MW-6 or MW-1 to the northwest and northeast, respectively, suggest that small quantities of spent solvent were likely discharged historically to the ground surface near MW-5. Carbon tetrachloride was historically sold and used for spot removal from garments.

Complete characterization of the level and extent of groundwater VOC contamination sourced from the site will require installation of additional downgradient monitoring wells, and piezometers screened at depths greater than 40 feet bgs.

The groundwater data collected to date also indicate that an apparent groundwater divide is frequently present on the west side of the site, just west of the source area, and trending north-northwest to south-southeast. As a result, at least one additional monitoring well/piezometer pair may need to be installed west of the MW-4/PZ-1 pair. Although it appears that the dominant downgradient direction of groundwater flow is east-northeast, the current monitoring well/piezometer network does not define the western limit of the groundwater contaminant plume.

Additionally, although monitoring well MW-9 provides some definition of the northern limit of the groundwater contaminant plume, the southern limits of the plume cannot be determined by the existing monitoring well/piezometer network. This situation was foreseen by TEMCO during development of the network, however TEMCO was advised that obtaining permission to install soil borings and monitoring wells on the K-T plant site would be problematic. This effort was therefore postponed so that additional groundwater monitoring data would be available to evaluate the need for a monitoring well/piezometer pair on the southern flank of the groundwater contaminant plume. Due to the location and size of the K-T plant site on the east side of Adams Street, characterization of the southern boundary of the groundwater contaminant plume requires placement of well(s) and piezometer(s) on this property.

SECTION 5.0 SUMMARY AND CONCLUSIONS

5.1 Soil

Soil conditions at the site and surrounding area consist of shallow silty clay layered and/or mixed with variable amounts of sand and gravel to an average depth of 15 feet bgs, soil below the silty clay mixtures consists primarily of clayey or silty sand to the maximum depth of the site investigation (40 feet bgs).

The soil contamination data developed during the site investigation indicates chlorinated VOC are the only contaminants of concern at the site and surrounding area. The primary contaminant source area is a relatively small area surrounding monitoring wells MW-2 and MW-3 (the area beneath the former dry cleaning machine). PCE levels in the upper 10 feet of soil in this area were detected as high as 4,100 mg/kg. The maximum volume of this "hot spot" soil beneath the on-site building is 300 cubic yards. Additional highly contaminated soil may be present beneath the basement floor of the Central House restaurant, which adjoins the on-site building on the east side.

A second "hot spot", likely smaller than the primary source area, is present at monitoring well MW-5. Contamination at this location is likely the result of small volume spent solvent historical discharges at the ground surface.

5.2 Groundwater

The depth of the groundwater table varies from 5 to 10 feet bgs in the site area. The direction of groundwater flow is primarily east-northeast, although an apparent groundwater divide with a north-south axis is present in the western part of the site.

Groundwater contamination beneath the site and downgradient area is dominated by PCE, with much lower levels of daughter compounds. Considering the dry cleaning operations began 60+ years ago, the groundwater contamination profile suggests RNA processes (reductive dechlorination) in the subsurface are limited by subsurface geochemical conditions in the area of the site and/or discharge of dry cleaning solvent at the site occurred primarily in the latter stages of the facility's operational period.

The groundwater contaminant plume extends from the source area east-northeast. PCE contaminant levels decrease two orders of magnitude 60 feet from the source area and five orders of magnitude at MW-10/PZ-4, 320 feet east-northeast of the source area. The downgradient extent is currently undefined, however based on the low contaminant levels at MW-10/PZ-4 the downgradient edge of the plume is likely a short distance east of the railroad tracks.

VOC groundwater contamination extends throughout the saturated zone investigated, i.e. from the water table to 40 feet bgs. Contaminant levels in groundwater samples collected from the piezometers are generally somewhat lower than levels in samples collected from nearby monitoring wells during each monitoring event.

PCE levels in groundwater apparently peaked in the May 2008 monitoring event, with substantial

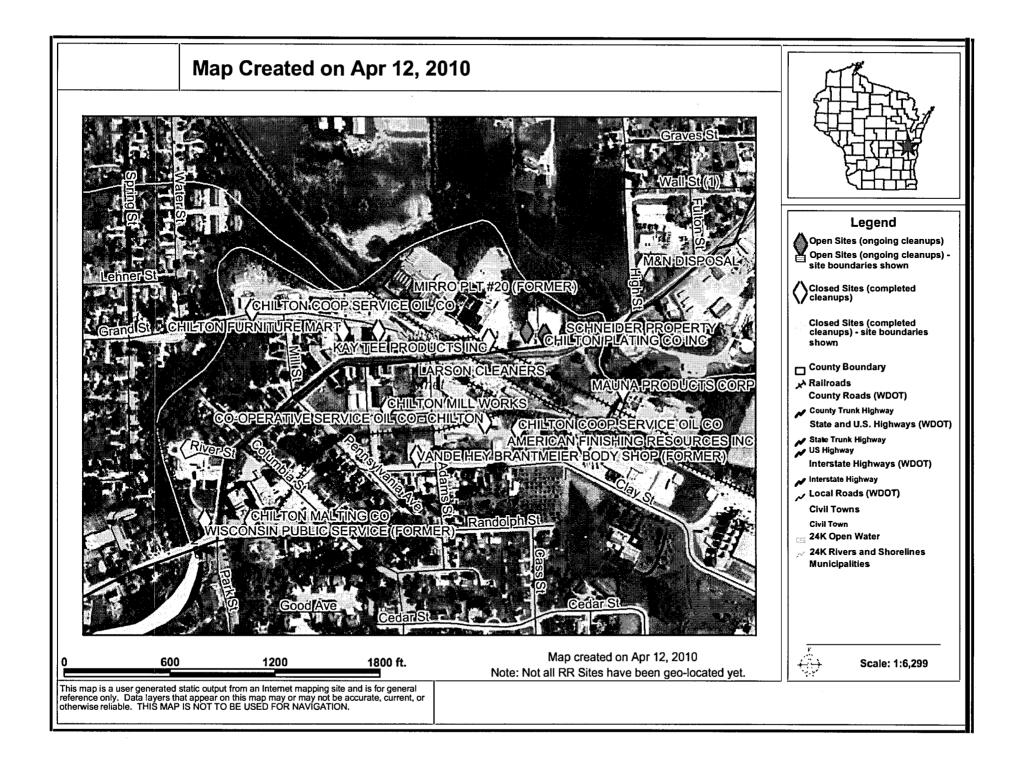
decreases in the March and October 2009 monitoring events, however additional groundwater monitoring is needed to confirm this trend.

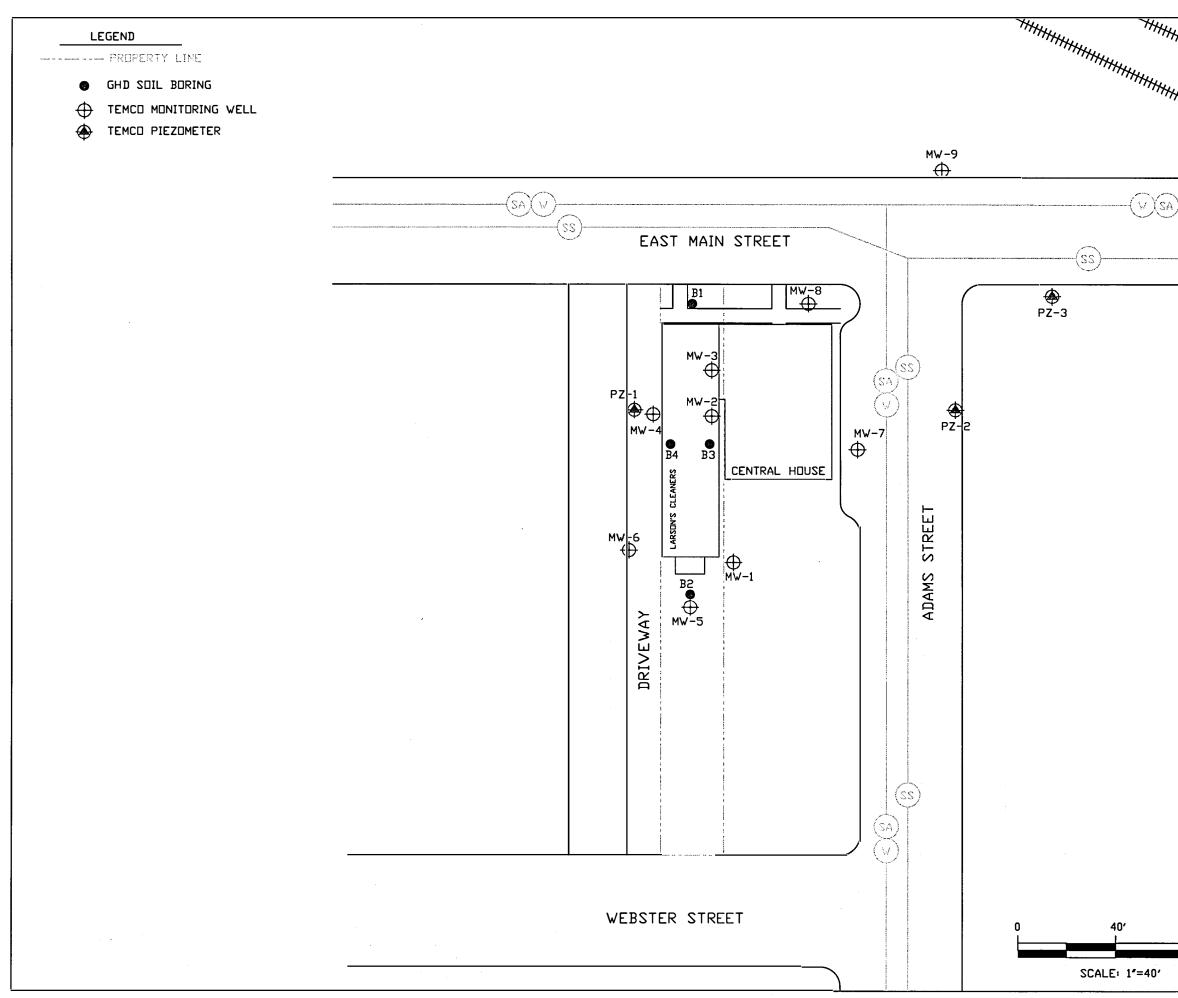
5.3 Recommendations for Additional Site Investigation

Recommendations for additional site investigation are described in Sections 4.2 and 4.3. In summary these include additional groundwater monitoring to confirm the apparent decreasing trend in VOC groundwater contamination downgradient of the source area and installation of monitoring well/piezometer pairs in the following locations to facilitate complete characterization of the level and extent of the groundwater contaminant plume:

- on the south side of East Main Street, east of MW-10/PZ-4 and the railroad tracks
- southeast of MW-7/PZ-2 on K-T plant property
- south of MW-5 on the site (including soil contamination profiling to characterize the solvent discharge area)
- west of MW-4/PZ-1

The very high levels of PCE in shallow soil and groundwater beneath the central part of the on-site building, and the presence of the Central House restaurant adjacent to the east side of the site indicate the need for VOC vapor monitoring beneath the basement floor of the Central House and in the breathing zone in appropriate areas of the restaurant basement and interior. Vapor monitoring may also be needed in the below grade area of the on-site building, and in the apartment in the southern part of the building, if the apartment is currently or will be occupied in the future.



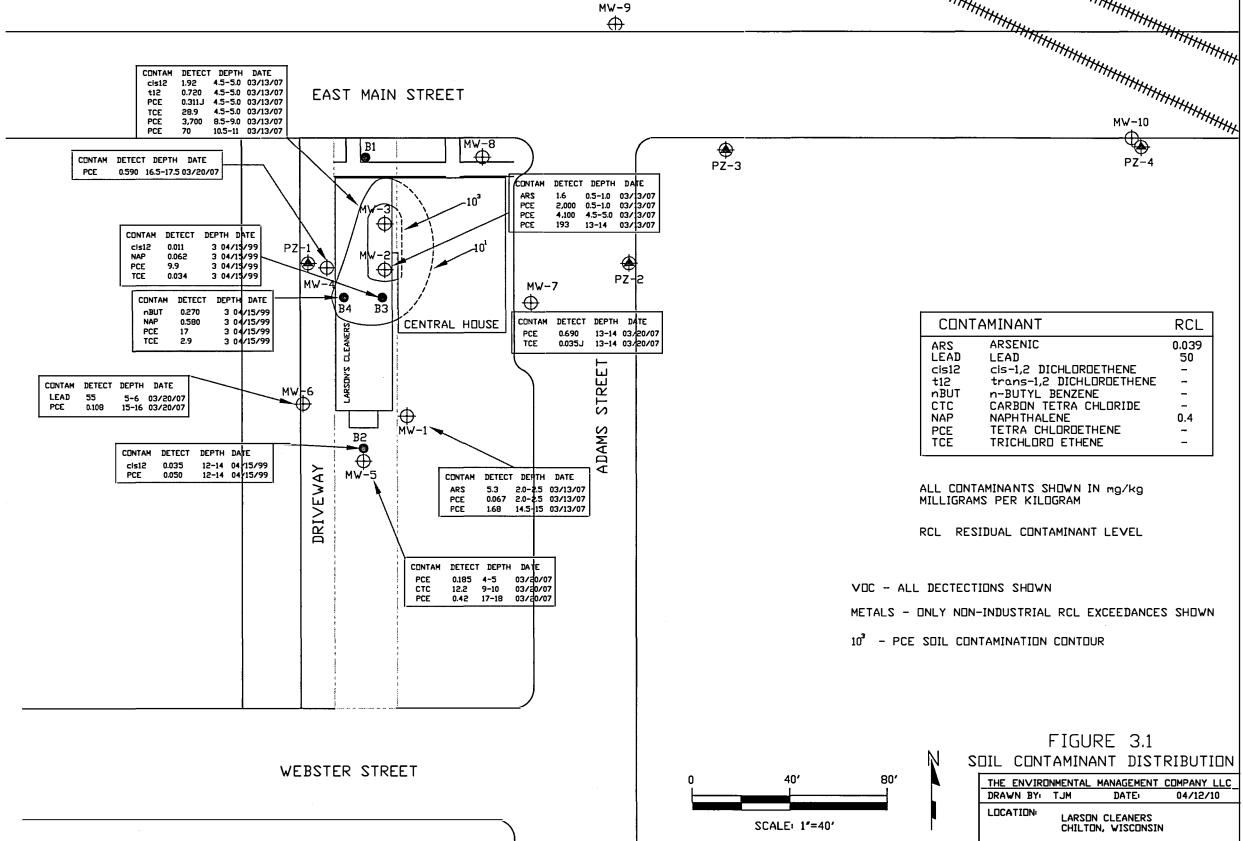


PZ-4 FIGURE 2 SOIL BORING & MONITORING WELL LOCATIONS N 80' THE ENVIRONMENTAL MANAGEMENT COMPANY LLC DRAWN BY: TJM DATE: 04/12/10 LOCATION: LARSON CLEANERS CHILTON, WISCONSIN



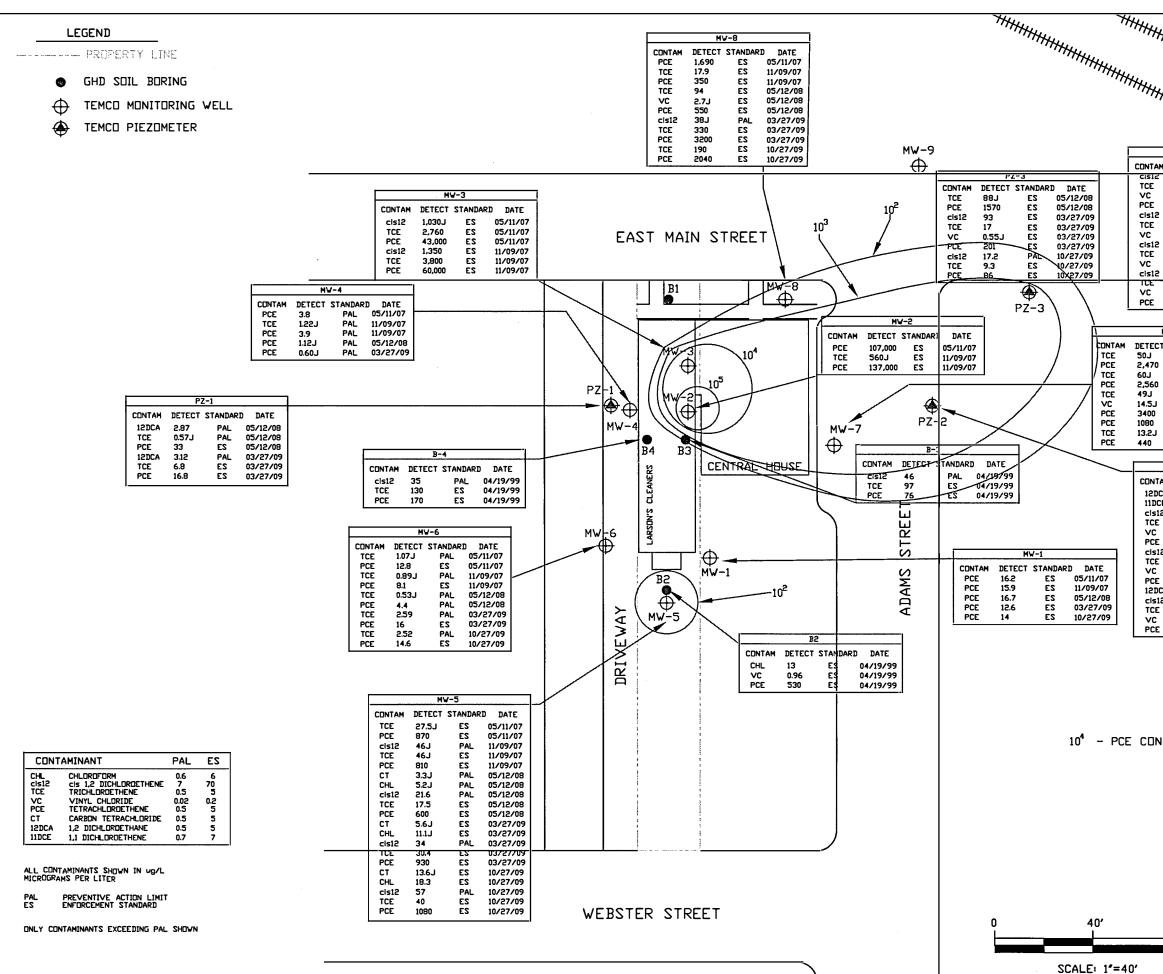
----- PROPERTY LINE

- GHD SOIL BORING
- \oplus TEMCO MONITORING WELL
- TEMCO PIEZOMETER

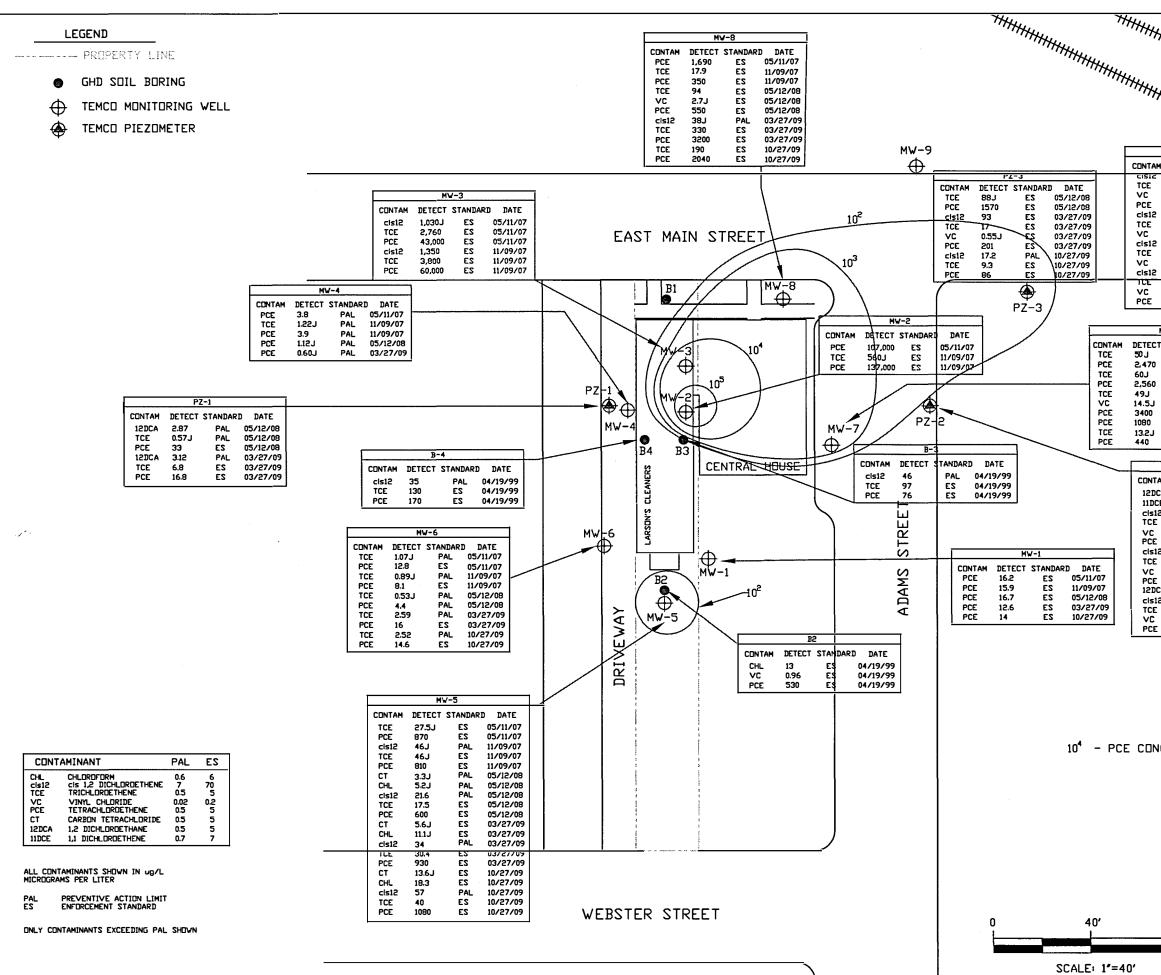


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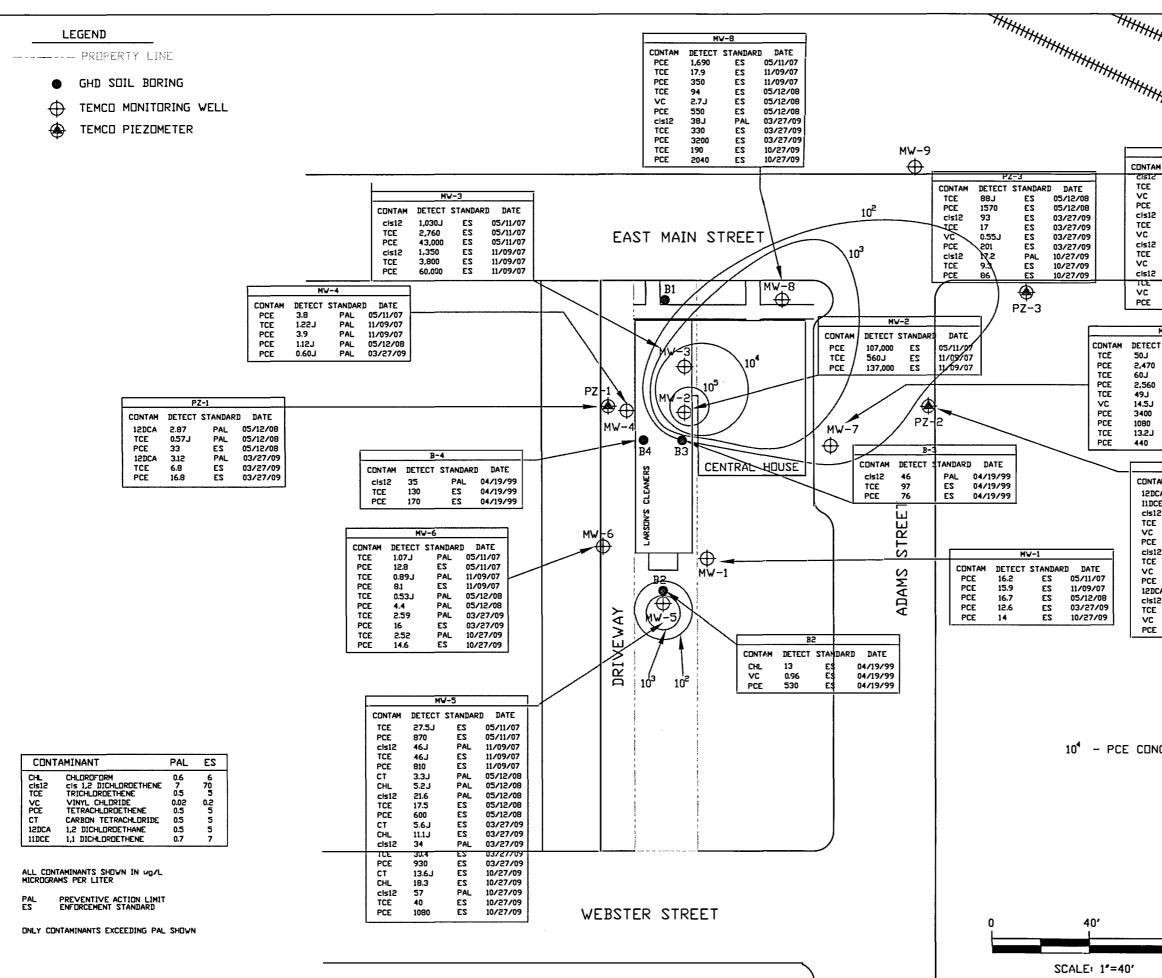
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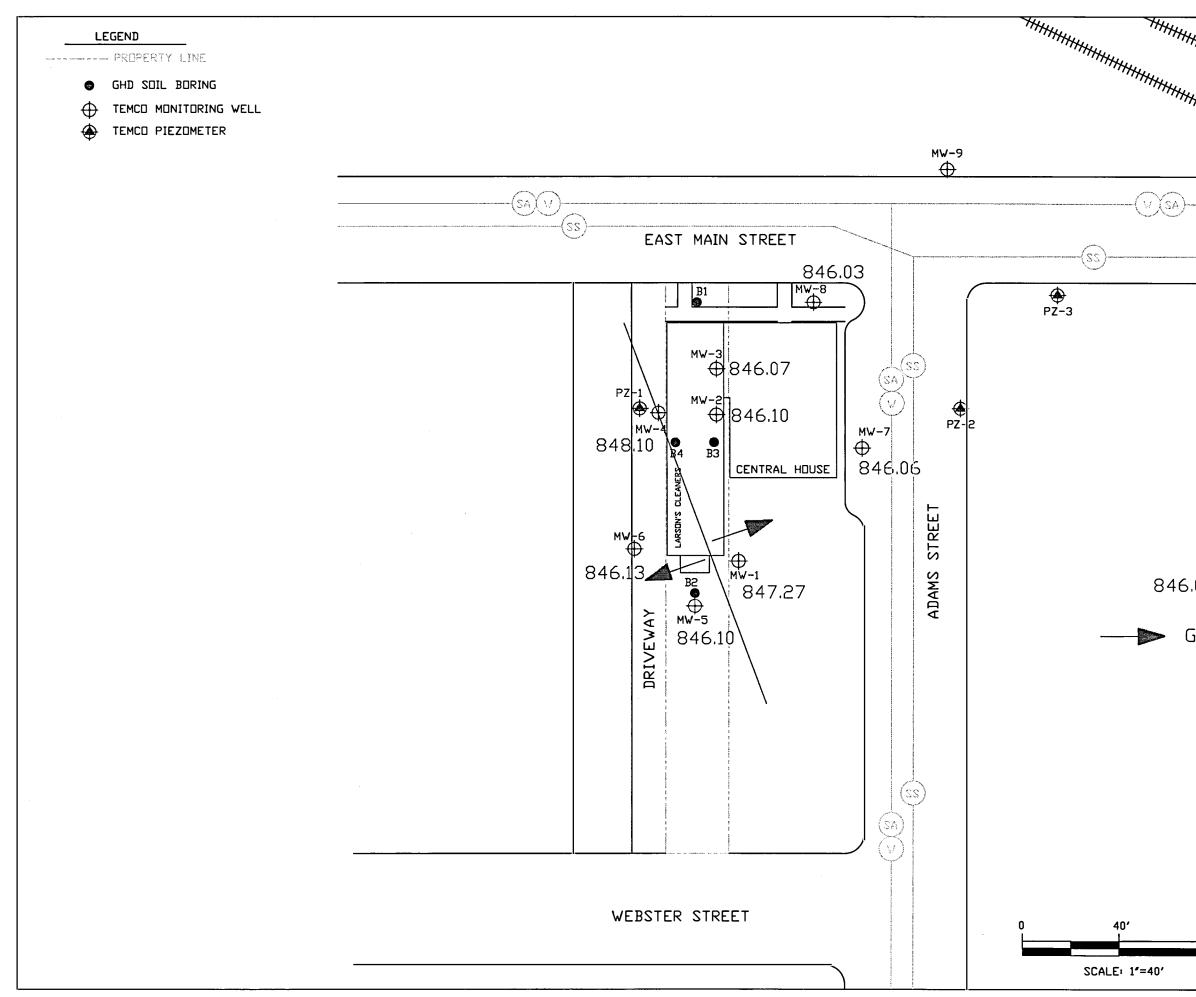
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12DCA	1.1J	PAL	05/12/0		
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cis12	15.1	PAL	05/12/0		
TCE	64 0.38J	ES	05/12/0		
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			10/ 2//	<u>·</u>	
CONC	ENTRA	TION C	ΟΝΤΟυ	RS: MAY 12, 2008	
				FIGURE 4.1	
				GROUNDWATER	
		N		CONTAMINANT DISTRIBUTION	
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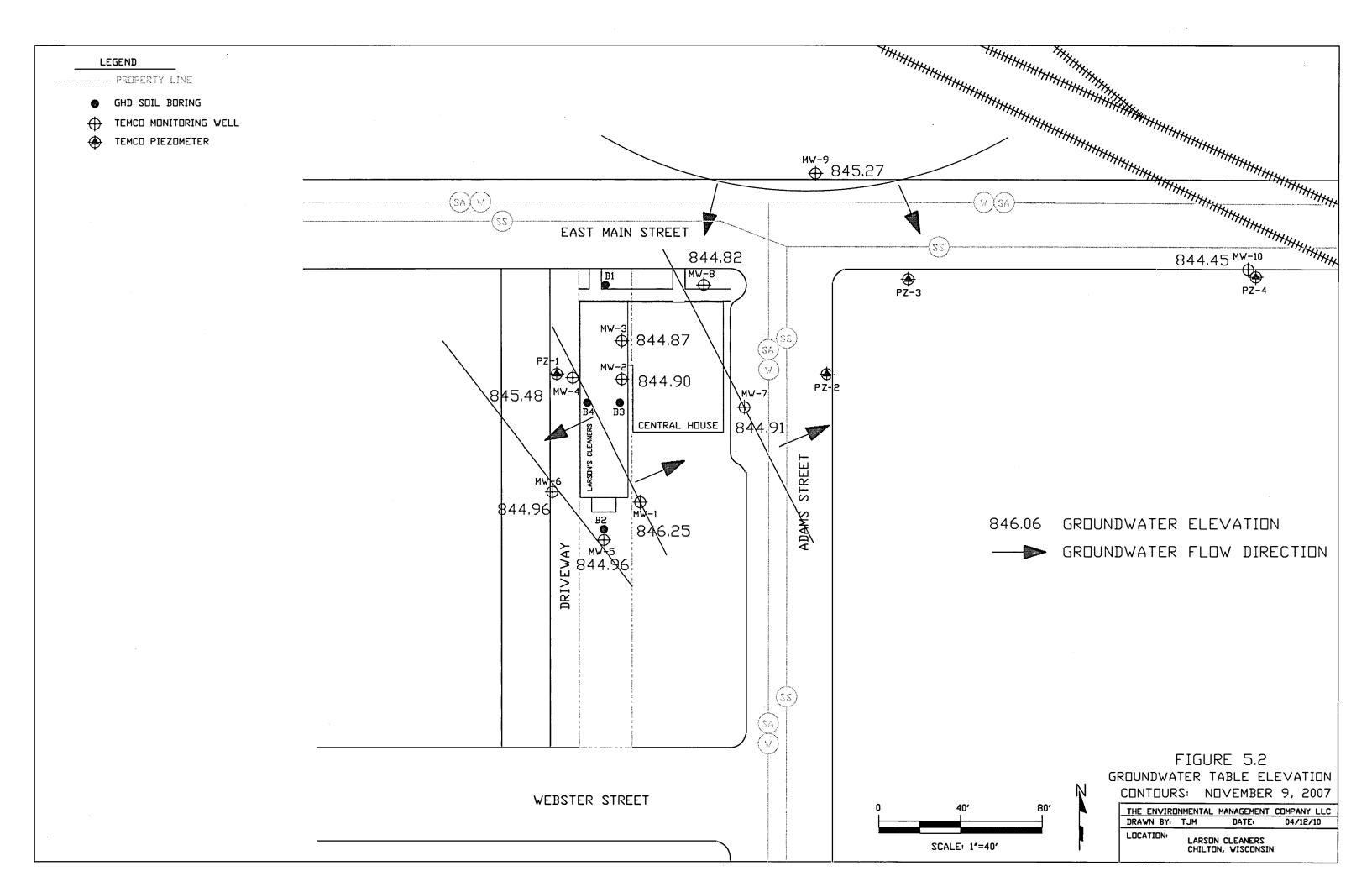
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400	ES	05/12/08		PCE 1.55J PAL 05/12/08
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PCE	71	ES	03/27/0	9
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	ENTRA	TION C	ONTOU	RS: MARCH 27, 2009
				FIGURE 4.2
				GROUNDWATER
		N		CONTAMINANT DISTRIBUTION
	00/	ľ	1	
	80'			THE ENVIRONMENTAL MANAGEMENT COMPANY LLC
				DRAWN BY: TJM DATE: 04/12/10
				LOCATION: LARSON CLEANERS
		1		CHILTON, WISCONSIN

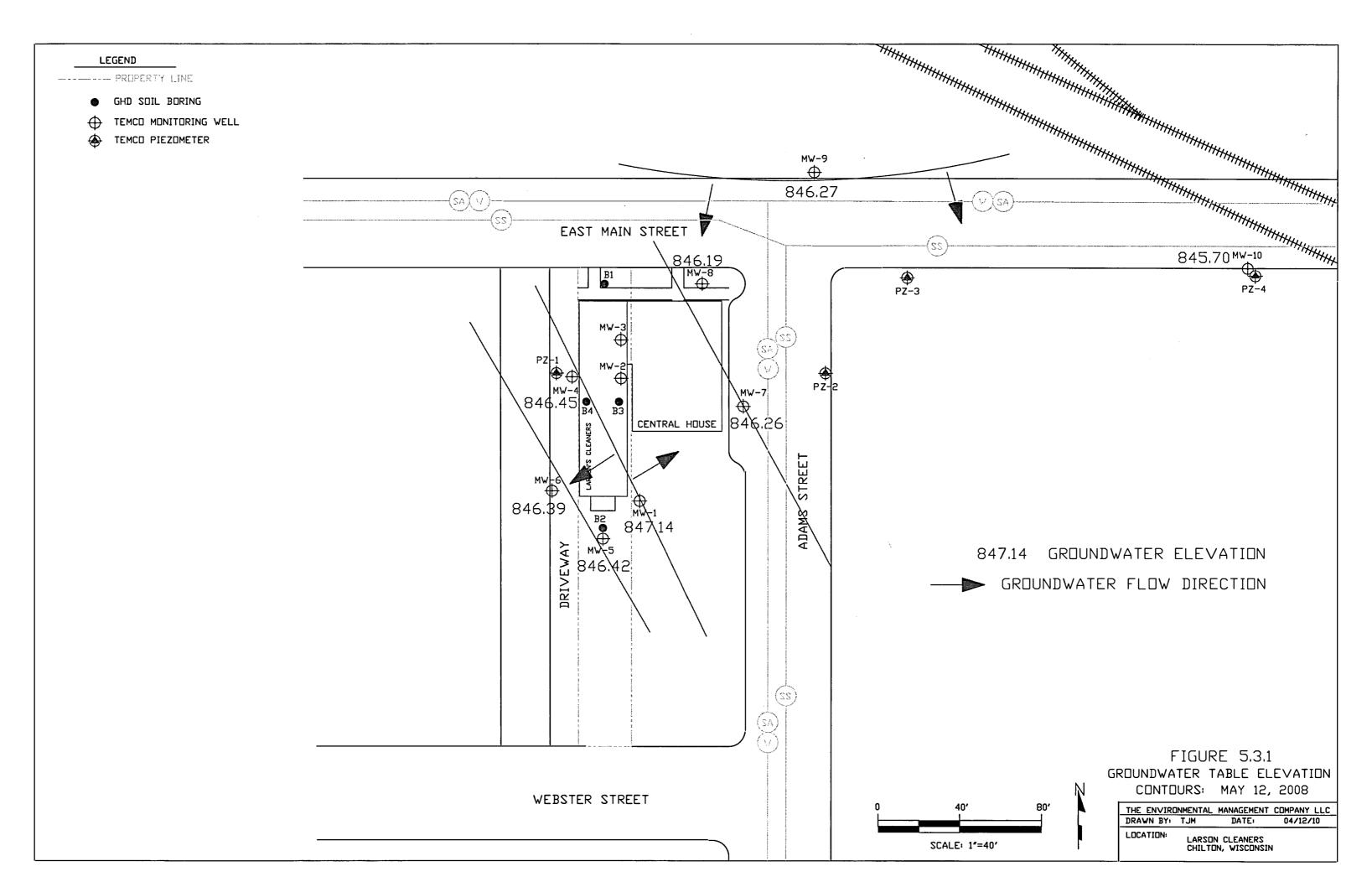


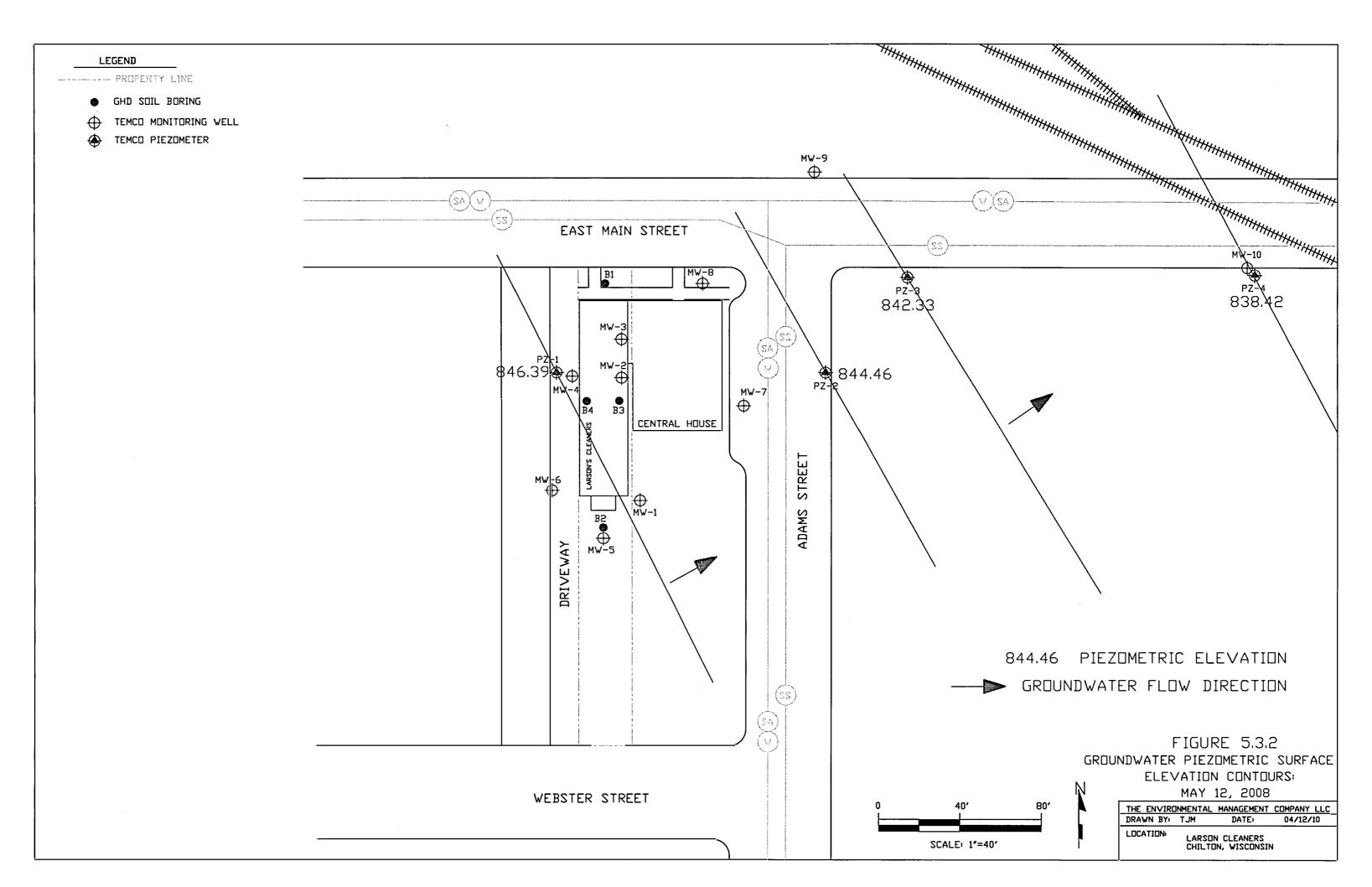
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080	ES	03/27/09	1	TCE 0.62J PAL 03/27/09
3.2J 40	ES	10/27/09		PCE 0.92J PAL 03/27/09
40	ES	10/2//09	_!	TCE 0.99J PAL 10/27/09 PCE 0.64J PAL 10/27/09
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VC	0.38J	ES	05/12/	
PCE	2900	ES	05/12/	
cis12 TCE	13.8 39	PAL ES	03/27/ 03/27/	
VC	0.26J	ES	03/27/	9
PCE 12DCA	71 0.66J	ES	03/27/ 10/27/	
cls12	21.4	PAL PAL	10/27/	
TCE	111	ES	10/27/	9
VC PCE	0.54J 45	ES ES	10/27/ 10/27/	
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	ENTRA	TION C		RS: DCTDBER 27, 2009
				FIGURE 4.3
				GROUNDWATER
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		N		CONTAMINANT DISTRIBUTION
	80'			THE ENVIRONMENTAL MANAGEMENT COMPANY LLC
		–		DRAWN BY: TJM DATE: 04/12/10
		P		LOCATION: LARSON CLEANERS
		I.		CHILTON, WISCONSIN

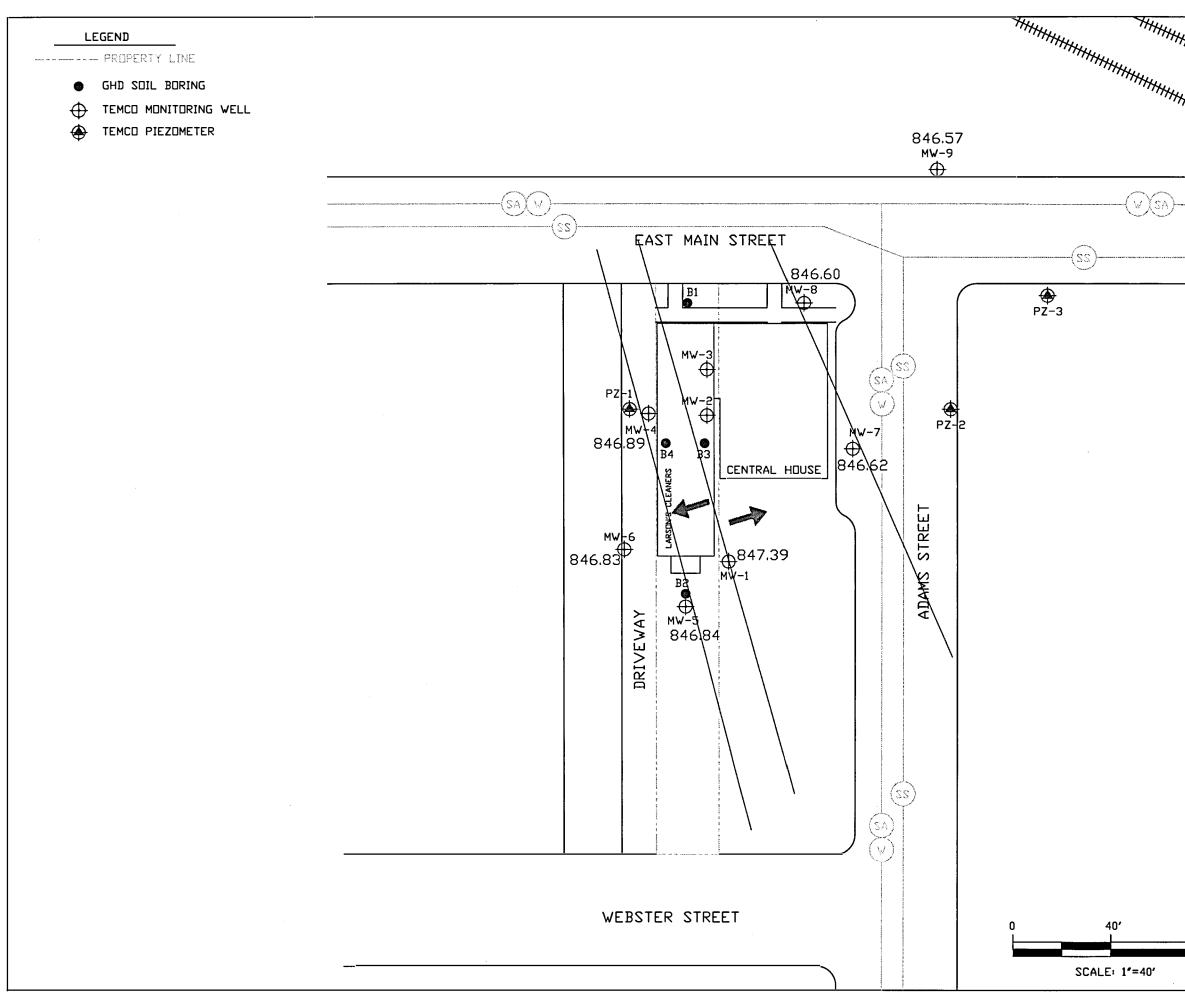


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GROUNDWATER	R FLOW DI	RECTION	
	FIGU	RE 5.1	
GR	DUNDWATER 1		ATION
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80'	THE ENVIRONMENTAL	MANAGEMENT COM	IPANY LLC
	DRAWN BY: TJM		4/12/10
P	LOCATION: LARSO CHILTI	IN CLEANERS DN, WISCONSIN	

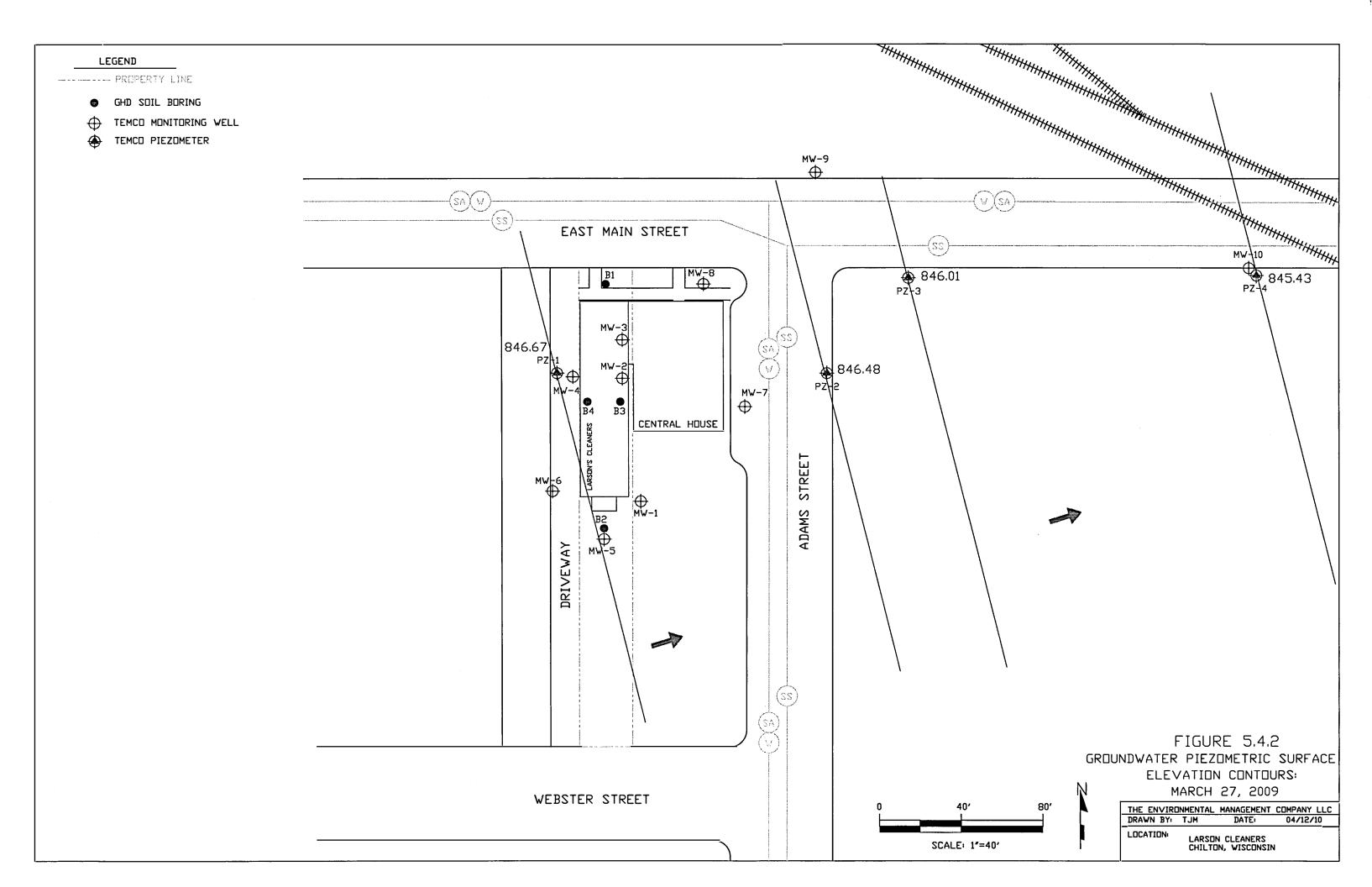


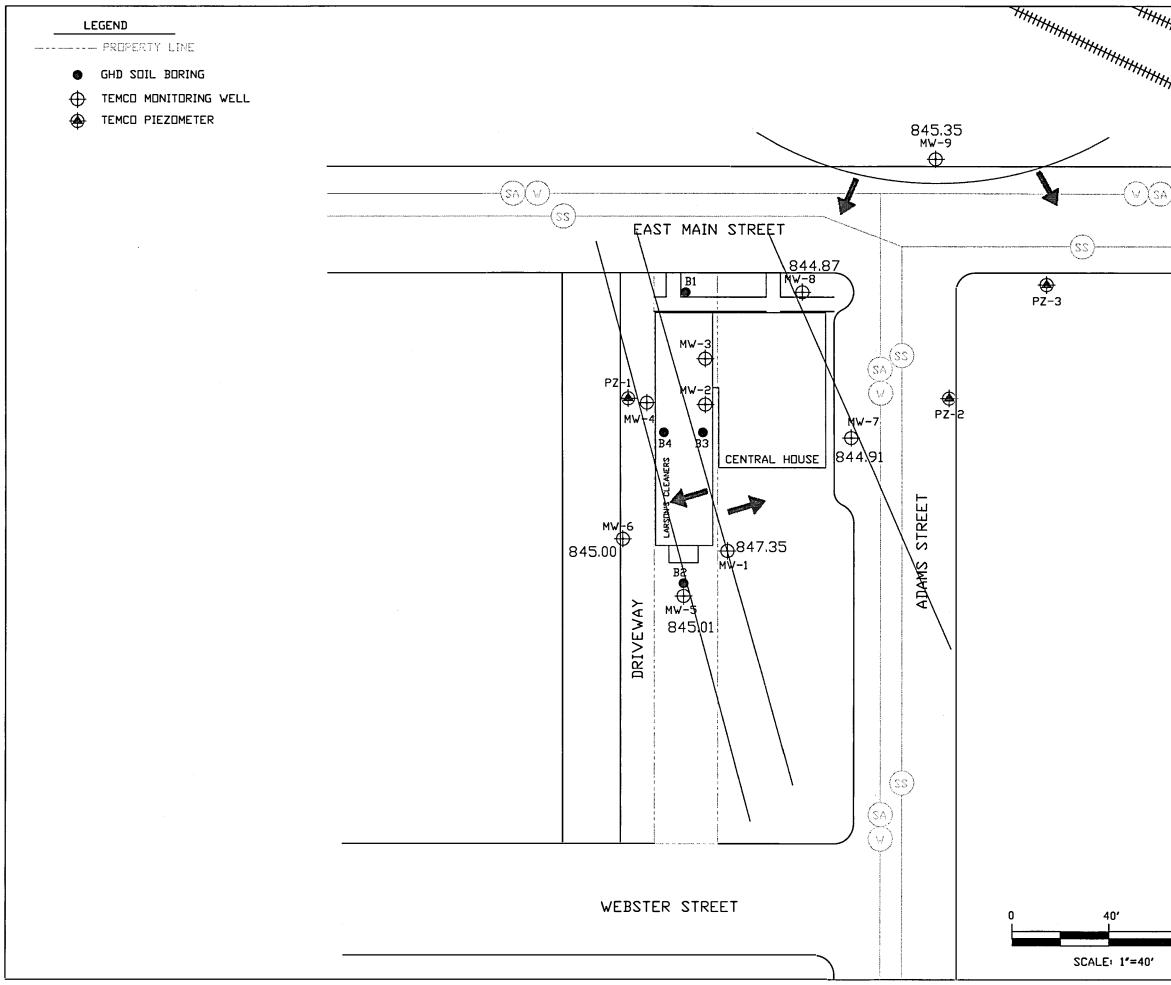






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	FIGURE	5.4.1
רנ	ROUNDWATER TABLE	
	CONTOURS: MARC	
		Π C/, CUU9
80'	THE ENVIRONMENTAL MANAG	
	DRAWN BY: TJM DAT	TE: 04/12/10
	LOCATION: LARSON CLEA CHILTON, WIS	





844.65^{MW-10} PZ-4 FIGURE 5.5.1 GROUNDWATER TABLE ELEVATION N CONTOURS: OCTOBER 27, 2009 80' THE ENVIRONMENTAL MANAGEMENT COMPANY LLC DRAWN BY: TJM DATE: 04/12/10 LOCATION LARSON CLEANERS CHILTON, WISCONSIN

