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# **SITE INVESTIGATION WORK PLAN - NR 716**

Leather-Rich LLC 1205 Corporate Center Drive Oconomowoc, Wisconsin

BRRTS Nos. 02-68-581237 and 06-68-58959

March 26, 2019 File No. 20.0156045.00



## **PREPARED FOR:**

Wisconsin Department of Natural Resources and Leather-Rich LLC

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March 26, 2019 File No. 20.0156045.00

Mr. James Delwiche, Hydrogeologist Wisconsin Department of Natural Resources 141 NW Barstow Street, Suite 180 Waukesha, Wisconsin 53188-3789

Re: Site Investigation Work Plan – NR 716

Leather-Rich LLC

1250 Corporate Center Drive Oconomowoc, Wisconsin

BRRTS Nos. 02-68-581237 and 06-68-58959

Dear Mr. Delwiche:

GZA GeoEnvironmental, Inc. (GZA), on behalf of Leather-Rich Inc. (Leather-Rich), is submitting this Site Investigation Work Plan for the Leather-Rich facility located at 1250 Corporate Center Drive in Oconomowoc, Wisconsin ("Site"). This work plan was prepared based on the results of the Phase I Environmental Site Assessment prepared by Giles Engineering, Inc., dated October 24, 2017, discussions with Leather-Rich personnel during Site visits on December 13, 2018 and January 3, 2019, and discussions during the kickoff meeting on February 18, 2019, which included participants from GZA (Mr. Kevin Hedinger and Ms. Heidi Woelfel), Axley Brynelson LLP (Mr. Donald Gallo), the Wisconsin Department of Natural Resources ([WDNR] yourself and Ms. Margaret Brunette), and Leather-Rich (Ms. Cheryl Chew and Ms. Joanne Kantor). The purpose of the kickoff meeting was to gather input from the project stakeholders for the preparation of this work plan.

This work plan presents a scope of work for soil and groundwater sampling with rationale for the purpose and intent of the additional soil borings and groundwater monitoring wells to delineate the degree and extent of tetrachloroethene from historic and ongoing dry cleaning operations at the Site. This scope of work is intended to be comprehensive and fill data gaps in the soil and groundwater sampling collected during previous investigation activities. This Site was constructed in 1993, as a green-field site and for the purpose of operating as a dry cleaning facility. The building construction included features that were intended to limit the impact to the soil and groundwater in the dry cleaning area. This work plan includes details of the facility construction and layout to provide documentation and understanding, as requested in WDNR's January 3, 2019 Review of Site Investigation Report letter. Should you have any questions regarding the information contained herein, please feel free to contact us at your convenience.

Very truly yours,

GZA GeoEnvironmental, Inc.

Heidi A. Woelfel Project Manager

Kevin M. Hedinger Senior Hydrogeologist

James F. Drought, P.H. Principal Hydrogeologist

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March 26, 2019 File No. 20.0156045.00 Site Investigation Work Plan – NR 716

Page | i

1.0	INTRODUCTION						
2.0	SITE IN	IFORMATION	2				
	2.1	SITE CONTACT INFORMATION	2				
	2.1.1	Site Understanding	2				
	2.1.2	Potential Source Areas	4				
	2.1.3	Geologic and Hydrogeologic Site Conditions	5				
3.0	SITE IN	IVESTIGATION APPROACH AND SCOPE OF WORK	5				
	3.1	TASK 1 - SITE UTILITIES MAPPING	5				
	3.2	TASK 2 - GROUNDWATER MONITORING WELL INSTALLATION, WELL NETWORK SAMPLING, AND GEOTECHNICAL PARAMETER MONITORING	6				
	3.3	TASK 3 - CONTAINMENT AREA WATER SAMPLING	8				
	3.4	TASK 4 - SOIL PROFILING	8				
	3.5	TASK 5 - VAPOR ASSESSMENT CONCEPTUAL SITE MODEL	9				
	3.6	TASK 6 - SITE INVESTIGATION REPORT/REMEDIAL ACTION PLAN	10				
	3.7	TASK 7 - INVESTIGATION-DERIVED WASTE DISPOSAL	10				
FIGUR	ES						
FIGUR	E 1	SITE LOCATION MAP					
FIGUR	E 2	SITE PLAN MAP					
FIGUR	E 3	POTENTIAL SOURCE AREAS					
FIGUR	F 4	PROPOSED MONITORING WELL LOCATION MAP					

FIGURE 5 PROPOSED SOIL BORING LOCATION MAP



#### 1.0 INTRODUCTION

GZA GeoEnvironmental, Inc. (GZA), on behalf of Leather-Rich Inc. (Leather-Rich), is submitting this Site Investigation Work Plan ("Work Plan") for the Leather-Rich facility located at 1250 Corporate Center Drive in Oconomowoc, Wisconsin ("Site"). A Phase I Environmental Site Assessment (ESA) was conducted for the Site in October 2017, by Giles Engineering, Inc. (Giles). The Phase I ESA reviewed available data for the Site and identified the on-Site use of perchloroethylene (tetrachloroethene or PCE) in dry cleaning operations as a recognized environmental concern (REC); no other RECs were noted in the Phase I ESA. The recommendation in the Phase I ESA was to collect a groundwater sample from monitoring well MW-1, which was installed north of the building at the time of building construction in 1993. This well is located outside the building approximately 20 to 30 feet north and hydraulically downgradient of the dry cleaning operations that use PCE.

A groundwater sample was collected from MW-1 in October 2017, and submitted for laboratory analysis of volatile organic compounds (VOCs). The results of the sample indicated groundwater concentrations of PCE at 32.6 micrograms per liter ( $\mu$ g/l), which exceeded the Wisconsin Administration Code (WAC) NR 140 Enforcement Standard (ES) for PCE of 5  $\mu$ g/l. A groundwater sample was collected for laboratory analysis from MW-1 in 1993, and the results of this groundwater sample indicated concentrations of VOCs that were less than the laboratory method detection limits for VOCs. Therefore, a release to the environment from on-Site operations was confirmed and a release notification was submitted to the WDNR on April 9, 2018, and BRRTS No. 02-68-581237 was assigned.

In response to the results of the October 2017 groundwater sample, Giles subsequently conducted a Phase II ESA between October 2017 and July 2018 to characterize the magnitude and extent of chlorinated hydrocarbons in soil, groundwater, and air from the dry cleaning operations. This included the installation of nine WAC NR 141 variant 1-inch monitoring wells, two WAC NR 141 variant 1-inch piezometers installed with 5-foot WAC NR 141-compliant sections of pre-packed well screen, nine soil vapor borings, three sub-slab borings, and eight soil borings. The results of the Phase II ESA indicated that PCE in soils exceeded the soil Residual Contaminant Levels (RCLs) for the Soil to Groundwater exposure pathway in the upper 4 feet within the building footprint near the southwest corner of the containment area, and between 4 and 20 feet below ground surface (bgs) across the Site. PCE was identified in the groundwater with concentrations exceeding the ES across the Site and in the northern and downgradient portions of the Site. The results of the soil vapor sampling indicated that chlorinated hydrocarbons are present in the sub-slab vapors above the vapor risk screening levels (VRSLs) for PCE and trichloroethene (TCE) within the building.

On November 20, 2018, Giles submitted a Site Investigation Report (SIR) to the WDNR that provided a summary of the Site investigation (SI) activities and results. The WDNR responded to the SIR in correspondence dated January 3, 2019, indicating that additional investigation activities were necessary. On January 2, 2019, the Site was enrolled in the Voluntary Party Liability Exemption (VPLE) Program (BRRTS No. 06-68-582959).

This Work Plan is being submitted to provide a scope of work intended to complete a comprehensive evaluation of the Site soil, groundwater, and vapor conditions; to provide supplemental investigation data to the data submitted in the SIR; and to obtain Wisconsin Department of Natural Resources (WDNR) approval for the SI in accordance with the requirements of WAC NR 716. The Work Plan also provides a summary and evaluation of the Site history to obtain approval from the WDNR for the potential source areas and contaminants of concern as required by the VPLE program. GZA has reviewed Giles' SIR prepared by Giles and submitted to the WDNR in October 2018, and, based on this review and the SI requirements of the WDNR, understands that additional SI activities are necessary to complete the SI in accordance with WAC NR 716.

GZA has prepared the following NR 716 Work Plan to delineate, both horizontally and vertically, the soil and groundwater impacts identified at the Site and evaluate the potential impacts to the building from subsurface vapors to determine possible pathways and mitigation if needed. The Work Plan will also assist with the preparation of the Conceptual Site Model (CSM) and the Site's vapor intrusion (VI) assessment. Since the previous investigation activities identified vapors



beneath the concrete slab in the area of the dry cleaning operations and the Site is an active dry cleaning facility with PCE in use inside of the building, additional vapor assessment samples are not proposed to be collected during these supplemental SI activities. Completion of the SI activities and subsequent remediation of the soil and groundwater are anticipated to be conducted following the SI approval, therefore, following the remediation activities, the VI assessment will be updated based on remediated conditions to identify the need and extent of vapor sampling.

#### 2.0 SITE INFORMATION

The Site is located at the address of 1205 Corporate Center Drive within the City of Oconomowoc, within the northeast ¼, of the northwest ¼ of United States Public Land Survey Section No. 15, Township 7 North, Range 17 East, Waukesha County, Wisconsin. A Site Location Map is provided as Figure 1.

## 2.1 SITE CONTACT INFORMATION

Responsible Party: Leather-Rich, Inc.

1250 Corporate Center Drive Oconomowoc, Wisconsin 53066

Attn: Ms. Cheryl Chew

(262) 569-3100

Consultant: GZA GeoEnvironmental, Inc

20900 Swenson Drive, Ste 150 Waukesha, Wisconsin 53186

(262) 754-2560

## 2.1.1 Site Understanding

The Site is located on an approximately 4-acre parcel within a commercial business park in the City of Oconomowoc, Wisconsin. The Leather-Rich building is approximately 40,000 square feet and is situated along the southern property boundary. A parking lot is located west of the building to Executive Drive, a parking lot and grass area are located on the east side of the building along Corporate Center Drive, and a grass area is located north of the building. Surrounding properties are occupied by commercial businesses. Figure 2 is a Site Plan that shows the Site layout and features.

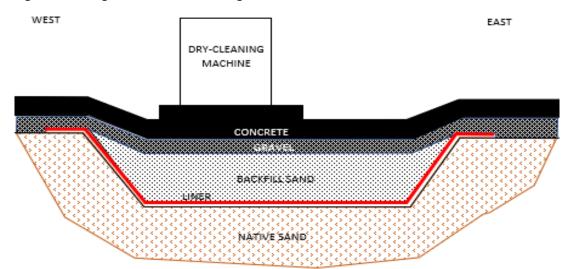
Prior to construction on this property, the Site was unimproved land used for agricultural purposes. Based on the Phase I ESA, there were no known spills reported at the Site prior to development that would require investigation activities to confirm the soil and groundwater conditions. This Site was developed as a green-field site with the intended purpose of the building to be operated as a dry cleaning facility. The facility has operated in the original building constructed in 1993, with one addition added in approximately 1997. The configuration of the operations and locations of dry cleaning have remained consistent within the building since it began operation in 1993. Based on the RECs identified in Giles' Phase I ESA Report and interviews with the current owner that constructed the original building, the only area where dry cleaning operations are or were performed is along the north wall of the building near the northeast corner.

The dry cleaning operations are performed in an area that is approximately 100 feet long by 50 feet wide, along the north wall of the building. This area is referred to as the "containment area" in this Work Plan. The dry cleaning process and storage area was constructed with a 60-mil polyethylene membrane installed as a containment area beneath the dry cleaning area to contain spills or releases. The membrane was reported to be one piece of material with no seams, installed at a depth of 2 to 3 feet below the floor elevation. The north edge of the membrane was secured to the north building foundation wall based on Site construction photos; however, the completion details of the edges along the west,



south, and east sides are not known. Photographs from the building construction do not show the completed liner installation along the west, south, and east sides of the containment area. The photographs show the liner under construction sloping from approximately 6 inches below grade to the bottom at 2 to 3 feet below grade. It is unknown if the liner is sealed along the west, south, and east sides, therefore, it is possible that liquid on top of the liner could overflow the liner on these sides.

The area above the membrane was backfilled with sand and base course gravel, and the concrete floor was placed above the gravel. The concrete floor in the containment area is recessed approximately 0.25-foot below the surrounding building floor level to the west and south to provide secondary containment in the event of a spill of dry cleaning fluids. Below is a conceptual diagram showing a cross-section through the containment area.



Conceptual Cross-Section of Containment Area and Liner System Installed During Building Construction in 1993

The dry cleaning equipment and machines in this area of the facility are installed on 4-inch raised concrete slabs. The dry cleaning machines represent a closed loop system and the PCE used in the dry cleaning operation is recovered and treated for re-use. PCE is delivered to the Site via the overhead doors located west of the process area and is wheeled to a PCE storage tank in the process area, which is located in the containment area along the north wall, behind the machine and process area.



During the January 3, 2019 Site visit, GZA reviewed building construction drawings, which included details of the



containment polyethylene membrane construction and indicated the presence of Terra-Guardian piping, which is sub-grade horizontal piping that was installed between the building floor and the polyethylene membrane to act as a vapor recovery system above the membrane. The Site contact, Ms. Cheryl Chew, identified a vertical, 2-inch polyvinyl chloride (PVC) pipe near a walk door along the north wall of the building that was reportedly connected to the horizontal sub-grade piping. At the time of the Site visit, there were approximately 4 inches of water in the vertical pipe. It could not be confirmed that this



vertical pipe was connected to the horizontal piping, and the volume and contaminant concentration of water potentially above the membrane could not be determined. Ms. Chew stated that the system of horizontal piping was never connected to a blower unit for operation.

Additional investigation of the dry cleaning area inside of the building is limited because of the presence of the membrane beneath the containment area. The investigation activities completed to-date were performed around the containment area so that the membrane was not compromised. Based on the soil and groundwater conditions identified around the containment area, the focus of this investigation will be to complete the horizontal and vertical delineation, which does not require characterizing soils beneath the containment area. Treatment in these areas can affect the area beneath the membrane, but the performance cannot be measured while the dry cleaning operations continue.

## 2.1.2 Potential Source Areas

GZA has reviewed historical information presented in Giles' Phase I ESA Report, available building construction drawings, and interviews with Ms. Chew to identify the potential source areas on-Site. For the purposes of this Work Plan, GZA was interested in identifying locations on the Site in which chemicals associated with the dry cleaning operation were handled, managed, or used. Based on this review, the following table presents the evaluation of each area of the facility and the rationale for each area as a potential source area.

Site Feature/Area	Potential Source Area (Yes or No)	Rationale
Boiler Room/Cooling Towers	No	The Boiler Room/Cooling Towers is not considered to be a potential source area for chlorinated hydrocarbons because chlorinated hydrocarbons are not used, stored, or managed in the area. The area has been used as a Boiler Room since building construction in 1993.
Carpet Cleaning Room	No	The Carpet Cleaning Room is not considered a potential source area because the carpet cleaning activities performed in this room are completed using water-based solutions and detergents; chlorinated hydrocarbon compounds are not used, stored, or managed in this area. This area was outside of the original building constructed in 1993, and was constructed in 1997.
Containment Area	Yes	The Containment Area is considered a source area because a chlorinated hydrocarbon, PCE, is used, stored, managed, and recycled in this area. This area has been used for dry cleaning since building construction in 1993.
Spray Room	Yes	The Spray Room is not considered a source area for chlorinated hydrocarbons. The liquids sprayed in this area are petroleum-based and may have impacted the subsurface.
Former Barrel Storage Area	Yes	The Former Barrel Storage Area is considered a potential source area because it may have been the drum storage location of empty drums or spent chlorinated hydrocarbon liquids prior to the construction of the drive-thru building in 1997. The Former Barrel Storage Area was outside of the original building constructed in 1993.
Loading Docks	Yes	The loading docks are being considered as potential source areas because this is the location where the chlorinated hydrocarbons were delivered and transported into the building. This area was used as a loading dock area since its construction in 1993.



Site Feature/Area	Potential Source Area (Yes or No)	Rationale
Storage/Alternation/ Repairs	No	The Storage/Alteration/Repairs area is not considered a potential source area because chlorinated hydrocarbons were not used, stored, or managed in this area. This area was used for a similar purpose since building construction in 1993.
Offices/Break Room	No	The Offices/Break Room area is not considered as a potential source area because the area has been used for administrative functions since building construction in 1993.
Service Area/Rack Room	No	The Service Area/Rack Room is not considered as a potential source area because the area was outside of original building construction in 1993, and was constructed in 1997. Since its construction, this area was used for delivery of items to the facility for cleaning.

In addition to the areas identified on the table above, the utilities that services the facility, both public and private, will be evaluated for the potential to act as a conduit to transmit soil vapors. The source areas identified in the table above are also shown on Figure 3.

## 2.1.3 Geologic and Hydrogeologic Site Conditions

Based on Giles' SI activities, the soils present at the Site consist of either topsoil for exterior borings or 4 inches of concrete underlain by gravel base-course for the interior borings. Beneath the topsoil and building fill are 2 to 4 feet of fill soils consisting of brown, silty clay and silty sand beneath which is native, brown to tan sand and gravel which coarsened downward to the maximum depth explored of 38 feet bgs. Bedrock was not encountered during SI activities, but dolomite bedrock is expected to be at a depth of 150 to 200 feet bgs.

Groundwater was encountered at the Site within the coarse-grained sand and gravel at a depth ranging from 12 to 18 feet bgs. The groundwater flow direction varies between northwest to west toward Silver Lake, located approximately 3,500 feet west of the Site at a hydraulic gradient of  $8.41 \times 10^{-4}$  feet per foot (ft/ft). The hydraulic conductivity was calculated for monitoring well MW-1 based on a slug test to be  $5.122 \times 13^{-3}$  centimeters per second (cm/sec). This hydraulic conductivity is consistent with look-up values for silty to clean sand, which was encountered at the Site. Based on an evaluation of the groundwater elevations in the nested monitoring wells and piezometers, the vertical gradients appear to be neutral to slightly downward depending on the well/piezometer nest evaluated. The calculated average vertical gradient for the nested wells MW-1/PZ-1 and MW-9/PZ-2 is  $7.077 \times 10^{-3}$  ft/ft which is a 'gaining head' aquifer.

#### 3.0 SITE INVESTIGATION APPROACH AND SCOPE OF WORK

This scope of work is based on the investigation data presented in Giles' report and assumptions regarding the subsurface conditions based on this data. The SIR submitted by Giles was not approved by the WDNR. Based on WDNR's January 3, 2019 letter, additional investigation activities are required. The additional scope of work presented in Tasks 1 through 5 will provided the Site data requested by the WDNR to characterize the soil, groundwater, and vapor conditions, as well as the Site use and potential source areas.

## 3.1 TASK 1 - SITE UTILITIES MAPPING

Site utilities will be mapped on-Site to identify potential pathways for the migration of the chlorinated hydrocarbons in groundwater and/or vapors. These utilities will include the service lines from the public utility and local service lines that



distribute the utilities throughout the facility. The chlorinated hydrocarbon plume emanating from the Site is likely migrating toward the building at 1860 Executive Drive, therefore, the underground utilities servicing this building will also be located to understand the potential preferential pathways of groundwater plume and vapor migration that may affect that building. The local services lines within the building at 1860 Executive Drive will not be mapped. Site utility locations will be identified and shown on a Site plan.

# 3.2 TASK 2 - GROUNDWATER MONITORING WELL INSTALLATION, WELL NETWORK SAMPLING, AND GEOTECHNICAL PARAMETER MONITORING

The groundwater monitoring well network (MW-1 through MW-9) installed by Giles has not adequately delineated the extent of chlorinated hydrocarbons in groundwater north and northwest of the containment area. To further characterize the extent of chlorinated hydrocarbons downgradient of the containment area, GZA proposed to install six WAC NR 141-compliant monitoring wells at locations across the Site, as shown on Figure 4. The groundwater monitoring wells will

provide data on the extent and concentration of dissolved PCE and other chlorinated hydrocarbons on the property.

GZA is not proposing to install additional piezometers or off-Site wells at this time. There are two piezometers nested with a monitoring well (MW-1/PZ-1 and MW-9/PZ-2). The analytical results of the groundwater sampling on July 17, 2018, from the monitoring well and piezometer nests indicated concentrations of chlorinated hydrocarbons less than the method detection limits and respective ESs. PZ-1 had a concentration of TCE that exceeded the Preventive Action Limit (PAL) of 5  $\mu$ g/L. The installation of additional on-Site monitoring wells will be completed to determine the need and necessity of the off-Site wells and the appropriate locations.



The PCE groundwater concentrations from Giles' sampling events in July 2018 and the location of the proposed monitoring wells are shown on Figure 4. The table below provides a summary of the rational for each monitoring well and the laboratory analytical parameters for soil and groundwater.

Proposed Monitoring Well Location	Sampling Rationale	Soil Analytical Testing	Groundwater Analytical Testing	
MW-10 (SW Corner of Containment Area)	Provide delineation of groundwater identified in MW-9 and provide additional soil sample data to delineate soil exceedances. Four soil samples will be collected from this boring for soil sample analytical testing.	VOCs (USEPA Method 8260) FOC (Select Intervals)	VOCs (USEPA Method 8260)	
MW-11 (SE Corner of Containment Area)	No previous monitoring wells were installed in this area. This well is intended to provide delineation of groundwater in this area and provide additional soil data to delineate soil exceedances. Four soil samples will be collected from this boring for soil analytical testing.	VOCs (USEPA Method 8260)	VOCs (USEPA Method 8260) Iron, Manganese, Nitrate, Sulfate, Total Organic Carbon	



Proposed Monitoring Well Location	Sampling Rationale	Soil Analytical Testing	Groundwater Analytical Testing
MW-12 (NW Corner of Building in Former Barrel Storage Area)	This location will provide an evaluation of soil and groundwater from the former barrel and dumpster storage area and will provide a downgradient monitoring well northwest of the containment area. Two soil samples will be collected from this boring; one in the direct contact interval (0 to 4 feet) and one at the groundwater interface (14 to 16 feet).	VOCs (USEPA Method 8260) FOC (Select Intervals)	VOCs (USEPA Method 8260) Iron, Manganese, Nitrate, Sulfate, Total Organic Carbon
MW-13 (NW of Containment Area Near the Property Boundary)	This location is downgradient of the containment area near the property boundary and will provide an evaluation of the chlorinated hydrocarbons in groundwater in this area. This well will also determine the need for off-Site wells and the potential effect of the groundwater on the adjacent off-Site building. In addition, this well will allow for an evaluation of the concentration degradation with distance from the source. Two soil samples will be collected from this boring; one in the direct contact interval (0 to 4 feet) and one at the groundwater interface (14 to 16 feet).	VOCs (USEPA Method 8260)	VOCs (USEPA Method 8260)
MW-14 (NE of Containment Area Near the Property Boundary)	This location is anticipated to be sidegradient of the containment area and is intended to provide delineation of the groundwater concentrations in MW-2. Two soil samples will be collected from this boring; one in the direct contact interval (0 to 4 feet) and one at the groundwater interface (14 to 16 feet).	VOCs (USEPA Method 8260)	VOCs (USEPA Method 8260)
MW-15 (Near the NE Corner of the Building)	This location is anticipated to be sidegradient of the containment area and will provide delineation of the concentrations in MW-8. Two soil samples will be collected from this boring; one in the direct contact interval (0 to 4 feet) and one at the groundwater interface (14 to 16 feet).	VOCs (USEPA Method 8260)	VOCs (USEPA Method 8260)

Each monitoring well location will have soil samples collected continuously throughout the boring depth at 2-foot intervals and will be field-screened for total VOCs using a photoionization detector (PID) equipped with a 10.6 eV lamp. The soils will also be observed for indications of impairment and classified in accordance with the Unified Soil Classification System (USCS), as specified in American Society for Testing and Materials (ASTM) D2487, Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System). Field observations and PID results will be recorded on the soil boring logs. The monitoring wells will be installed in general accordance with the requirements of WAC NR 141. The monitoring wells will be installed utilizing hollow-stem auger drilling techniques to a depth of 20 feet bgs. The monitoring wells will be construction of schedule 40 PVC, 10-foot long, 0.01-inch factory-slotted well screen and riser. The annular space around the well screens will be filled with a sand filter pack and the annular space from the sand filter pack to the surface will be sealed with bentonite.

The two monitoring wells located inside of the building will have soil samples collected from the entire soil profile, therefore, four soil samples will be collected from the 0- to 4-foot interval, the 4- to 8-foot interval, the 8- to 12-foot interval, and the 12- to 20-foot interval. The samples will be transferred into laboratory-supplied jars for the analysis of United States Environmental Protection Agency (USEPA) Method 8260 for VOCs. Select samples will also be collected for the analysis of fraction organic carbon to help with the assessment of conditions favorable for dichlorination. The monitoring wells located outside of the building will have soil samples collected from the 0- to 4-foot and the 14- to 16-





foot intervals. The soils will be transferred into laboratory-supplied jars for the analysis of VOCs. Figure 4 presents the proposed locations of the monitoring wells. Following the installation of the monitoring wells, each well will be developed to remove fine sediment from well sand filter pack to improve hydraulic communication with the surrounding geological formation. Development water and soils from the well installations will be containerized, characterized for disposal, and transported off-Site for proper disposal or treatment.

Following the installation and development of the groundwater monitoring wells, the monitoring well network will be surveyed, gauged, and sampled to provide Site-specific data. The groundwater samples will be collected from the monitoring wells in general accordance with WDNR well purging and low-flow sampling guidelines and the samples will be analyzed for VOCs by USEPA Method 8260. During low-flow sampling, each well will be monitored for geochemical parameters of dissolved oxygen (DO), oxidation reduction potential (ORP), pH, temperature, and specific conductivity until these parameters stabilize. Select samples from the network will also be collected for iron, manganese, nitrate, sulfate, and total organic carbon to provide additional geochemical information on the Site groundwater conditions. These parameters will provide a more complete understanding of the groundwater aquifer conditions at the Site. The purge water will be containerized in 55-gallon drums for subsequent testing and proper disposal. The samples will be placed in laboratory-supplied containers, preserved, labeled, placed on ice in a cooler, and sent via overnight courier under chain-of-custody documentation to a WAC NR 149-certified laboratory.

## 3.3 TASK 3 - CONTAINMENT AREA WATER SAMPLING

There is a vertical riser that extends above the floor along the north wall of the building that is reported to be connected to the existing Terra Guardian piping, which was placed on top of the membrane. Based on observations in this pipe, there is water perched on top of the liner from an unknown source. This water has not been removed previously, therefore, it may be water that has accumulated during operations from 1993 to present. There are washing machines in the containment area that use water and water-based detergents. In addition, it was reported that there was a water line leak in the boiler room area that may have caused water to migrate into the containment area, which may be the source of water perched on top of the liner. GZA believes that it is beneficial to the remediation of the Site to have this water removed, therefore, GZA proposes to collect a sample of the liquid contained above the membrane. The sample will be collected by pumping water from the vertical riser pipe with a peristaltic pump. Since the amount of water is unknown and there is limited access, the sample will be collected as a grab sample from the available water without purging. The sample will be collected in laboratory-supplied containers and submitted for VOC analyses by USEPA Method 8260. The results of the water analysis will be utilized to coordinate disposal of the water and to determine if there is a potential for chlorinated hydrocarbons in the sand backfill above the liner that may require further investigation and/or remediation.

## 3.4 TASK 4 - SOIL PROFILING

The previous investigation identified chlorinated hydrocarbons in soil at concentrations that exceed the RCLs, but did not provide delineation of the chlorinated hydrocarbon concentrations. In order to understand the horizontal and vertical distribution of chlorinated hydrocarbons in the soil profile beneath the building near the containment area, soil borings will be advanced at up to 14 different locations to a depth of 12 feet bgs; and soil samples will be collected from multiple intervals in each boring depending on the existing data. Soil samples will be collected throughout the depth of each boring for lithologic description and field screening with a PID equipped with a 10.6 eV lamp. Figure 5 presents the proposed locations of the soil borings.



Proposed Soil Boring Location	Sampling Rationale	Soil Analytical
Locations Outside, North of Building:	Characterize and delineate the chlorinated hydrocarbons in soils north of the containment area.	
SB-9 SB-10 SB-11	<ul> <li>Three of the soil borings (SB-9, SB-10, and SB-11) will have four soil samples to profile the soil column to determine the location of potential source soils.</li> </ul>	VOCs (USEPA Method 8260)
SB-12 SB-13 SB-14	<ul> <li>Three soil borings (SB-12, SB-13, and SB-14) will have one or two soil samples to fill in data gaps in the existing data to provide a vertical soil concentration profile.</li> </ul>	
Locations Inside Building, Around	Characterize and delineate the chlorinated hydrocarbons in soils north of the containment area.	
Containment Area: SB-6 SB-7 SB-8	<ul> <li>Three of the soil borings (SB-6, SB-7, and SB-8) will have four soil samples to profile the soil column to determine the location of potential source soils.</li> </ul>	VOCs (USEPA Method 8260)
SB-15 SB-16 SB-17	<ul> <li>Three soil borings (SB-15, SB-16, and SB-17) will have one or two soil samples to fill in data gaps in the existing data to provide a vertical soil concentration profile.</li> </ul>	FOC (Select Intervals)
SB-18	A soil sample was not previously collected in the loading dock area west of the building. This boring is intended to characterize the soils in this area. The potential presence of chlorinated hydrocarbons in soils in this area would be from a spill, therefore, one soil sample is proposed to be collected from the upper 4 feet of the soil column unless field screening measurement indicate impacts at 4 feet. In this case, the boring will be deepened to delineate the vertical extent.	VOCs (USEPA Method 8260)



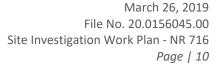
It should be noted that two of the soil boring locations near the containment area correspond to proposed monitoring well locations. The samples will be collected to assess the PCE and any daughter VOC concentrations throughout the depth of the soil profile. The proposed soil borings will be installed using a direct-push Geoprobe®, which may include the use of a hand cart or a hand auger following concrete coring if the overhead conveyors and racking cannot be removed to accommodate a trackmounted Geoprobe® rig. The overhead obstructions for drilling are provided in the photo to the left.

Each soil boring will be field-screened for total VOCs using a PID, the samples will be observed for indications of impairment, and the samples will be

classified in accordance with the USCS. The selected soil samples from each boring will then be placed into laboratory-supplied sample jars for analysis of VOCs by USEPA Method 8260. Select soil samples will also be collected for the analysis of fraction organic carbon (FOC). GZA will also attempt to insert PVC slotted piping and well installations into select borings based on Site data for use in the anticipated remedial system.

## 3.5 TASK 5 - VAPOR ASSESSMENT CONCEPTUAL SITE MODEL

Giles previously collected soil gas samples from beneath the Leather-Rich building to assess the potential for vapor migration. The results of the vapor evaluation indicated that vapors were present in the subsurface. The chemicals





present in the subsurface are still in use inside of the building during dry cleaning operations. Based on the results of this sampling, GZA is not proposing to perform further evaluation of the vapor migration on the Leather-Rich facility until the soil and groundwater are characterized. It is likely that soil and groundwater remediation will be required to satisfy the requirements of WAC NR 700; therefore, a vapor migration evaluation is proposed to be completed as part of the remediation at its conclusion. In Task 1, GZA is proposing to evaluate the utility corridors of the adjacent building northwest of the Leather-Rich building. Once the utility corridors are understood and the groundwater plume is characterized and delineated, additional vapor migration evaluation and sampling may be required for the adjacent building. At this time GZA will prepare a vapor CSM with the understanding that additional sampling may be required.

## 3.6 TASK 6 - SITE INVESTIGATION REPORT/REMEDIAL ACTION PLAN

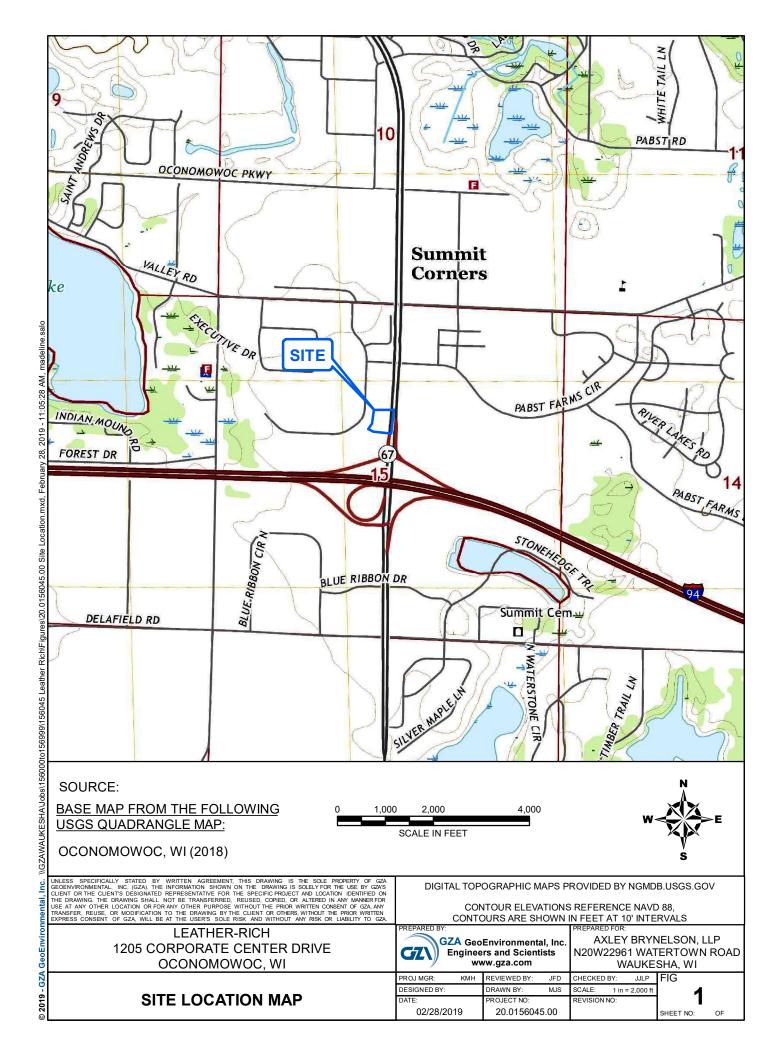
The additional soil and groundwater data collected will be assessed along with the existing data and a revised SIR will be submitted to the WDNR. The data presented in the SIR will provide the basis for the Remedial Action Plan (RAP), which will outline the conceptual remedial process proposed for the Site along with a description of the confirmatory data to be collected in support of the remedial action.

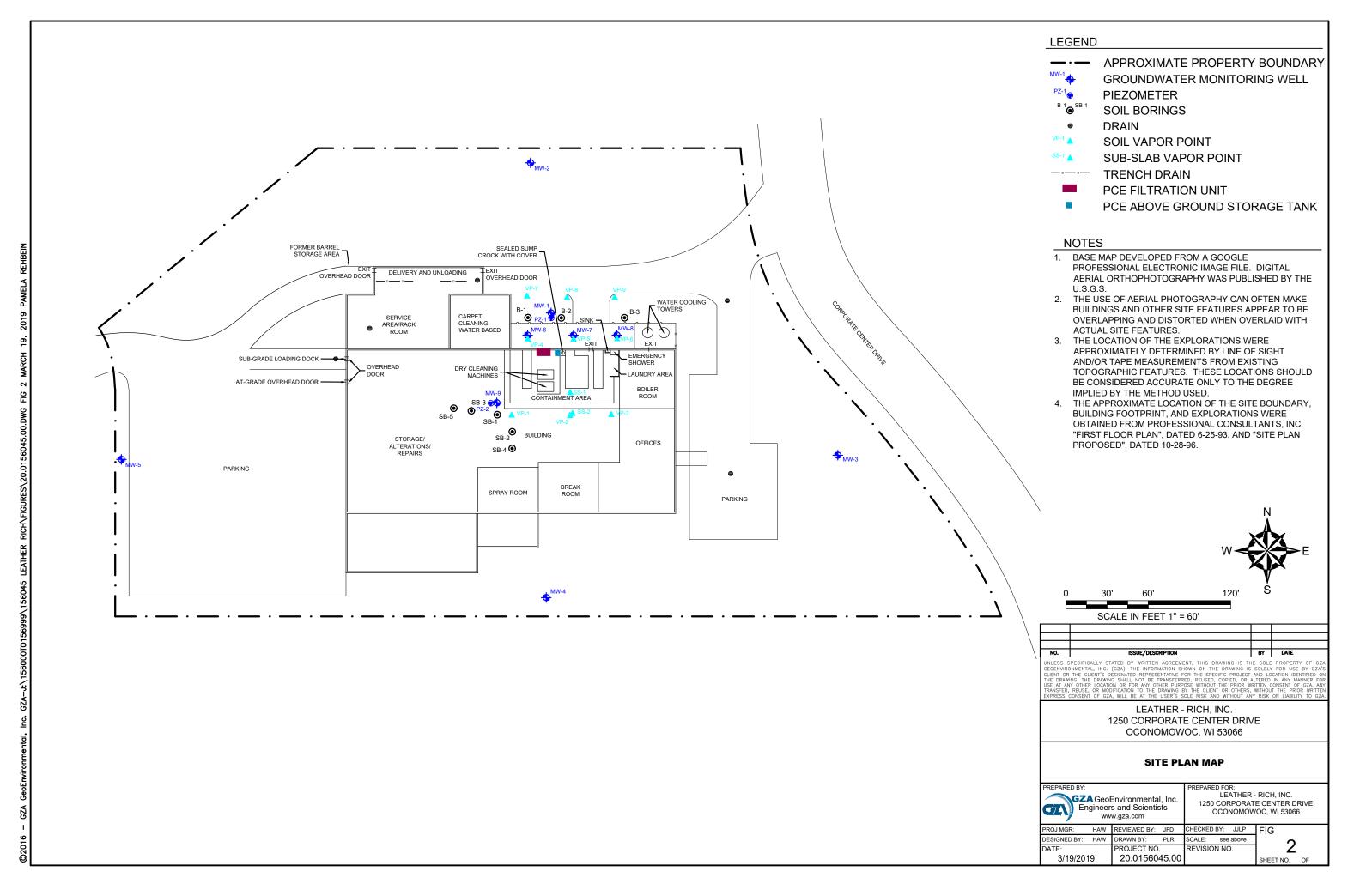
## 3.7 TASK 7 - INVESTIGATION-DERIVED WASTE DISPOSAL

Following Site assessment activities, the waste drums containing investigative-derived waste (IDW) will be evaluated for disposal options based on the chemical analysis results of soil and groundwater.



# **FIGURES**





- 1. BASE MAP DEVELOPED FROM A GOOGLE PROFESSIONAL ELECTRONIC IMAGE FILE. DIGITAL AERIAL ORTHOPHOTOGRAPHY WAS PUBLISHED BY THE U.S.G.S.
- 2. THE USE OF AERIAL PHOTOGRAPHY CAN OFTEN MAKE BUILDINGS AND OTHER SITE FEATURES APPEAR TO BE OVERLAPPING AND DISTORTED WHEN OVERLAID WITH ACTUAL SITE FEATURES.
- THE LOCATION OF THE EXPLORATIONS WERE APPROXIMATELY DETERMINED BY LINE OF SIGHT AND/OR TAPE MEASUREMENTS FROM EXISTING TOPOGRAPHIC FEATURES. THESE LOCATIONS SHOULD BE CONSIDERED ACCURATE ONLY TO THE DEGREE IMPLIED BY THE METHOD USED.
- THE APPROXIMATE LOCATION OF THE SITE BOUNDARY, BUILDING FOOTPRINT, AND EXPLORATIONS WERE OBTAINED FROM PROFESSIONAL CONSULTANTS, INC. "FIRST FLOOR PLAN", DATED 6-25-93, AND "SITE PLAN PROPOSED", DATED 10-28-96.

APPROXIMATE PROPERTY BOUNDARY

**SOIL BORINGS** 

DRAIN

TRENCH DRAIN

PCE FILTRATION UNIT

PCE ABOVE GROUND STORAGE TANK

POTENTIAL SOURCE AREA



0	25'	50'	100'
	SCALE	IN FEET 1"	= 50'

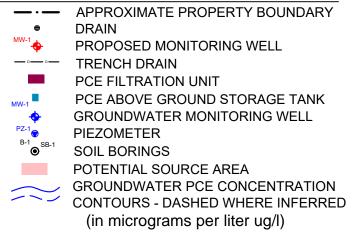
ISSUE/DESCRIPTION	BY	DATE
SPECIFICALLY STATED BY WRITTEN AGREEMENT, THIS DRAWING IS THE		

LEATHER - RICH, INC. 1250 CORPORATE CENTER DRIVE OCONOMOWOC, WI 53066

#### **POTENTIAL SOURCE AREAS**

3/19/201	9	20.01560	45.00			SHEET NO. OF	
DATE:		PROJECT NO.		REVISION NO.		<b>つ</b> ろ	
DESIGNED BY:	HAW	DRAWN BY:	PLR	SCALE:	see above	2	
PROJ MGR:	HAW	REVIEWED BY:	JFD	CHECKED I	BY: JJLP	FIG	
PREPARED BY:  GZA GeoEnvironmental, Inc. Engineers and Scientists  www.gza.com				PREPARED FOR:  LEATHER - RICH, INC.  1250 CORPORATE CENTER DRIVE  OCONOMOWOC, WI 53066			

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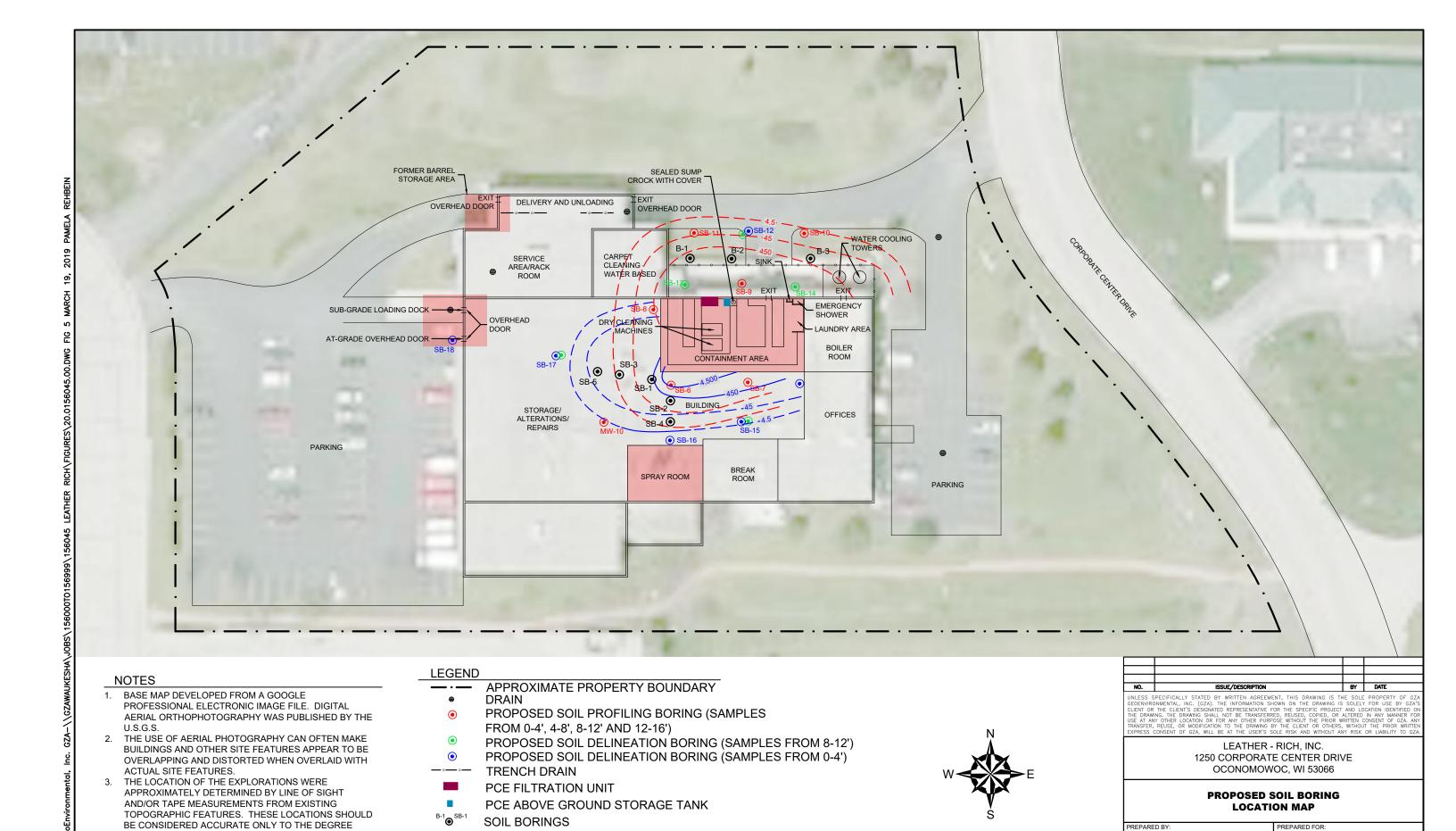


ISSUE/DESCRIPTION	BY	DATE
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## PROPOSED MONITORING WELL **LOCATION MAP**

	PREPARED BY:  GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com				PREPARED FOR:  LEATHER - RICH, INC.  1250 CORPORATE CENTER DRIVE  OCONOMOWOC, WI 53066				
	PROJ MGR: HAW DESIGNED BY: HAW		REVIEWED BY: JFD		CHECKED BY: JJLP		JJLP	FIG	
			DRAWN BY: P	LR	SCALE:	see	above		
	DATE:		PROJECT NO.		REVISIO	N NO		4	
	3/19/201	9	20.0156045	5.00				SHEET NO.	OF



POTENTIAL SOURCE AREA

DASHED WHERE INFERRED (0-4')

SOIL PCE CONCENTRATION CONTOURS -

SOIL PCE CONCENTRATION CONTOURS -

DASHED WHERE INFERRED (12-16') (micrograms per kilogram mg/kg)

IMPLIED BY THE METHOD USED.

PROPOSED", DATED 10-28-96.

THE APPROXIMATE LOCATION OF THE SITE BOUNDARY,

"FIRST FLOOR PLAN", DATED 6-25-93, AND "SITE PLAN

BUILDING FOOTPRINT, AND EXPLORATIONS WERE OBTAINED FROM PROFESSIONAL CONSULTANTS, INC.

LEATHER - RICH INC.

1250 CORPORATE CENTER DRIVE

OCONOMOWOC, WI 53066

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GZA GeoEnvironmental, Inc.

Engineers and Scientists

DRAWN BY: PLR SCALE: see above

20.0156045.00

DESIGNED BY: HAW

3/19/2019

SCALE IN FEET 1" = 50'