K P R G

ENVIRONMENTAL CONSULTATION & REMEDIATION

KPRG and Associates, Inc.

SITE INVESTIGATION WORK PLAN

FORMER ONE HOUR MARTINIZING
8711A WEST FOND DU LAC AVENUE
MILWAUKEE, WISCONSIN

BRRTS # 02-41-552219

PREPARED BY: KPRG and Associates, Inc.
14665 West Lisbon Road, Suite 2B
Brookfield, Wisconsin 53005

PREPARED FOR: Bonanza Investment Co, LLC and Betty Mutza
c/o Gallow Law, LLC
1386 State Road 83?
Hartford, WI 53027

February 13, 2024

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1.0 INTRODUCTION

1.1 Site Name and Location

The subject site is a former One Hour Martinizing Excell, Inc. (OHM) dry cleaning facility located at 8711A W Fond du Lac Avenue in Milwaukee, Wisconsin. This property is located within Milwaukee County in the N ½ of the SW ¼ of Section 28, Township 08 North, Range 21 East. A general site location map is provided on Figure 1. A site map is provided on Figure 2.

1.2 Contact Information

Responsible Party
The current property owner and responsible party is:

Bonanza Investment Co, LLC and Betty Mutza
c/o Gallo Law, LLC
1386 State Road 83
Hartford, WI 53027

Environmental Consultant
The environmental consulting contact for this project is:

Mr. Patrick Allenstein, P.G.
KPRG and Associates, Inc.
14665 West Lisbon Road, Suite 2B
Brookfield, WI 53005

1.3 Background Information

The building within which the former OHM is located is a commercial use, slab-on-grade strip mall, in which the former dry cleaner occupied one unit from 1967 to 2003. The surrounding land use is:

- North – FDL Ave, Commercial
- West – Manufacturing
- East – FDL Ave, Residential
- South – Multi-family Residential

The former dry cleaning machine, which used tetrachloroethene (PCE) as the dry cleaning solvent, was located in south portion of the cleaners. A visual inspection of the former dry cleaner could not be carried out at the time of a site inspection by KPRG and Associates, Inc. (KPRG) on December 21, 2022. Subsequently, it is unknown if the dry cleaning machine is still onsite. Dry cleaning operations are no longer occurring at this site.

In February 2009, a site scoping study for the facility was completed by Moraine Environmental, Inc. (Moraine). Three soil borings (B-1 through B-3) were drilled to a depth 20 feet below ground surface (bgs). B-1 was drilled in the parking lot just north of the front entrance to the dry cleaner suite, and borings B-2 and B-3 were drilled in the alley just south of the backdoor to the dry cleaning suite. The borings were then subsequently completed as 2-inch inner-diameter PVC monitoring wells (MW-1 through MW-3). The locations of the wells are shown on Figure 1. A copy of the report is included in Appendix A. No borings were completed within the interior of the dry cleaning unit.

Based on the boring logs, soil types identified included a dry, medium stiff, brown silty clay with fine sand and occasional gravel to approximately 10 feet bgs and a moist to wet medium stiff, brown silty clay with fine sand from 10 feet to 20 feet bgs. Two soil samples from each boring were submitted for laboratory analysis of volatile organic compounds (VOCs).

Elevated concentrations of PCE were detected in the two soil borings advanced in the rear alley of the building (B-2 and B-3). PCE concentrations ranged from 846 milligrams per kilogram (mg/kg or parts-per-billion) to a high of 5,640 mg/kg in these borings. The PCE impacts were identified in the saturated soil zone from 14 feet to 20 feet below ground surface. The observed soil impacts in the two rear borings are believed due to migrating groundwater from the source area inside the former dry cleaning building. There were no detects for PCE above the laboratory reporting limit in the two soil samples analyzed from the boring advanced in front of the building (Moraine, 2009).

As previously noted, the borings were converted into monitoring wells. PCE concentrations of 218,000 micrograms per liter (ug/l) were identified in groundwater samples collected from monitoring well MW-2 and at 82,400 ug/l in monitoring well MW-3 located in the rear alley of the building. A PCE concentration of 6.1 ug/l was observed in monitoring well MW-1, in front of the former dry cleaning building (Moraine, 2009). Groundwater flow is generally in a southerly direction, however, this is based on only three water level points so it is uncertain whether there is a southeasterly or southwesterly flow component at this time.

In April and August 2019, the Wisconsin Department of Health Services (DHS) conducted indoor air sampling within the former dry cleaner unit using 6-liter Summa canisters with regulators set to collect a sample over a 6-hour period. PCE, trichloroethene (TCE) and cis-1,2-dichloroethene (cis-DCE) were detected, however at concentrations below WDNR vapor action levels (VALs) for small commercial buildings. It is noted that no sub-slab vapor sampling was performed and that no indoor air or sub-slab vapor sampling was completed in the adjacent day care facility.

In June 2022, the WDNR, on behalf of U.S. Environmental Protection Agency (EPA), completed a Superfund Preliminary Assessment (PA) of the subject property. The purpose of this PA was to collect information concerning conditions at the Site sufficient to assess the threat posed to human health and the environment and to determine the need for additional CERCLA/SARA or other appropriate action. The scope of the PA included review of available file information, a comprehensive target survey, and a site reconnaissance. The results of the PA basically concluded that although there are documented environmental impacts associated with the former dry cleaner operations, the relative exposure risks do not rise to the level of accessing federal level CERCLA/SARA funded actions. It was noted, however, that the chlorinated VOC impacts do pose a possible threat to people via the Subsurface Intrusion Component of the Soil Exposure and Subsurface Intrusion Pathway if contaminated groundwater extends beneath regularly occupied structures (nearby residences and other shopping center units) and/or contaminant vapors migrate along underground utility trenches into structures WDNR/USEPA, 2022).

1.4 Objective of Work Plan

The objective of this Work Plan is to provide the specifications for a proposed site investigation (SI) to delineate the nature and extent of subsurface impacts highlighted in the Scoping Study. This Work Plan is submitted to fulfill requirements set forth in NR 716.09.

1.5 Organization of Work Plan

This Work Plan is structured to fulfill requirements outlined in NR 716.09. Section 2.0 provides some additional background geology/hydrogeology and a preliminary analysis of potential exposure/migration pathways as part of project scoping. Based on this initial analysis, Section 3.0 defines the proposed site sampling and analysis program. Section 4.0 identifies the quality assurance/quality control procedures and Section 5.0 provides the site management plan for investigation derived wastes. Section 6.0 outlines the proposed Site Investigation Report deliverable and a project schedule is presented in Section 7.0.

2.0 PROJECT SCOPING

2.1 Geology/Hydrogeology

The regional geology consists of unconsolidated glacial overburden which overlies the Silurian Dolomite. Depth to bedrock beneath the site is not documented, but based on regional geologic interpretations of northern Milwaukee County, the depth to bedrock is anticipated to be approximately between 50 to 150 feet below ground.

Relative to site specific conditions, a review of the boring logs for B-1 through B-3, indicates the unconsolidated material consists of a dry, medium stiff, brown silty clay with fine sand and occasional gravel to approximately 10 feet bgs underlain by moist to wet medium stiff, brown silty clay with find sand from 10 feet to 20 feet bgs, the deepest extent of the investigation.

The maximum depth of investigation for the scoping study was 20 feet bgs. Depth to groundwater was measured from approximately 12 to 14 feet bgs. There are no main surface drainages or bodies of water in the immediate vicinity of the facility. Groundwater flow is generally in a southerly direction, however, this is based on only three water level points so it is uncertain whether there is a southeasterly or southwesterly flow component at this time. The site lies on the boundary of the Menomonee River and the Milwaukee River Watersheds, each drains into Lake Michigan. The Little Menomonee River flows to the south approximately 1 mile to the west of the site and Lincoln Creek also flows to the south approximately 2 miles to the southeast of the site. It is noted that the site is located within an urbanized area and local near surface groundwater flow conditions may be affected by site grading and subsurface utilities such as sewer lines.

2.2 Nature of Contaminants

Based on the history of the property provided, the site does not to appear to have been used for industrial/manufacturing purposes. The only operations involving chemical use on-site has been dry cleaning and, as noted previously, the dry cleaning machine is not currently in operation. The site scoping study has documented a release of the chlorinated solvent PCE which is used in “wet” dry cleaning operations. No aromatic VOCs (benzene, toluene, ethyl benzene and xylene) suggestive of petroleum hydrocarbons were detected above WDNR standards in the preliminary sampling. There are no records of registered petroleum tanks (underground or above ground) or leaking underground storage tanks (USTs) associated with this site. The nature of site impacts, therefore, appears to be limited to chlorinated solvents associated with the historic dry cleaning operations, specifically PCE and associated breakdown products.

2.3 Preliminary Exposure Pathway Analysis

Direct Contact/Ingestion

The subject property currently consists of a single story, slab-on grade strip mall with blacktop parking lot over the remaining area. The current conditions act as a barrier to potential direct contact hazards associated with the currently documented impacts. Based on these conditions, the direct contact/ingestion pathway is not complete and, therefore, is not considered as a key issue for the site investigation data needs (i.e., surface soil sampling). It is noted, however, that soil impacts are an issue relative to potential migration to groundwater as discussed below. In addition, samples within the direct contact zone (0 to 4 feet bgs) may be collected based on sample collection protocol outlined in Section 3.1.

Potential Migration to Groundwater Pathway

Based on the previous work completed for the site, the depth to groundwater is approximately 12 to 14 feet bgs. The groundwater samples collected as part of the previous study indicated that this pathway is complete and that additional investigation is required. This migration pathway will be further addressed in this site investigation with the completion of delineation of unsaturated zone impacts, collection of groundwater samples from installation/sampling of monitoring wells.

Groundwater Transport Pathway

The groundwater transport pathway can be completed by either direct ingestion of impacted groundwater or via discharge of impacted groundwater to a surface water body. A brief initial analysis of each pathway is presented below.

Direct Ingestion of Impacted Groundwater

The subject property is located within the City of Milwaukee. Residents are on municipal water which is obtained from the Milwaukee Water Works (i.e., Lake Michigan). There are no municipal or private water supply wells in the area. Based on this information, the groundwater ingestion route is not expected to be a complete pathway.

Discharge of Impacted Groundwater to Surface Water

The nearest surface water receptor is Lincoln Creek located approximately one mile southeast of the site. Based on the distance from the site this pathway is not expected to complete. The extent of groundwater impacts, however, will be defined as part of the site investigation and this potential pathway will be re-examined in the site investigation report.

Surface Water Pathway

As noted above, the nearest surface water receptor is approximately one mile to the southeast of the site and it is not believed that it can be impacted by the groundwater migration pathway. A surface water and sediment sampling program is not envisioned or proposed as part of this Work Plan.

Air Migration Pathway

Based on currently available data, PCE impacts appear to be limited to subsurface soils beneath the building and paved parking lot area. Due to the presence PCE detections being from beneath the building, the air migration/vapor intrusion pathway will need to be evaluated. This will be accomplished through the collection of indoor air as well as sub-slab samples from beneath the concrete floor of the basement and the use of a vapor intrusion model. These work elements are described in detail in this Work Plan.

Underground Utilities

Utility corridors have been documented at numerous sites to be preferential pathways for contaminant migration due to the use of relatively coarse backfill within the utility trench. The approximate locations of the known major underground utilities are shown on Figure 2. Based on current information regarding the site, the water, sewer, and natural gas lines may provide a conduit for migration due to their location relative to probable groundwater flow direction. The noted locations of additional borings and wells relative to these utilities should provide sufficient information, in conjunction with utility depth information that will be obtained from the utility companies and the City of Milwaukee to allow for an evaluation of potential migration issues associated with this pathway.

3.0 SAMPLING AND ANALYSIS PROGRAM

Based on the initial evaluation of potential exposure/migration pathways provided in Section 2.0, additional soil, soil vapor, and groundwater investigation will be performed to delineate the vertical and horizontal extent of impacts. The proposed additional investigation work is discussed below followed by a summary of the analytical requirements.

3.1 Additional Soil Sampling Investigation

Seven additional geoprobe boring sampling locations (B-4 through B-10) are planned as shown on Figure 2. Five of these locations (B-4 through B-8) will be on the interior within the former dry cleaner unit. The remaining two locations (B-9 and B-10) will be on the exterior of the property in the alleyway to the east and west of previous borings B-2 and B-3. The purpose of borings will be to define the horizontal and vertical extent of unsaturated zone soil impacts. Each boring will be advanced to approximately 12 feet bgs. The depth of interior boring may be limited by the sampling method used as geoprobe hand tools may need to be used due to access limitations. The actual locations of these borings may be modified in the field based on a more thorough evaluation of utility layout. Up to four soil samples will be collected from each boring for analysis of chlorinated VOCs (CVOCs) to assist in defining subsurface impacts. At each location, at least one of the soil samples will be collected from the 0’ to 4’ depth interval for direct contact evaluation purposes. Deeper sampling intervals will be determined in the field based on visual, olfactory and photoionization detector (PID) field screens for volatile organic vapors. In addition, up to two soil samples may be collected from each of the monitoring well locations during drilling. This program as outlined will yield up to a total of 38 soil samples.

All soil samples will be analyzed for CVOCs using Method 8260B modified. In addition, a subset of three soil samples will be analyzed for total organic carbon (TOC) using Method 415.1 which may be an important parameter in calculating site specific cleanup standards for the site, if necessary.

3.2 Groundwater Investigation

The extent of potential groundwater impacts will be defined by the collection of groundwater samples through the installation of additional monitoring wells. Field methods are described below.

3.2.1 Well Installation Procedures

A total of five monitoring wells (MW-4 through MW-8) and one deeper piezometer (PZ-2) will be drilled and constructed at locations shown on Figure 2. Rational for the selection of each location are provided in Table 2.

Each monitoring wells will be drilled using the hollow-stem auger drilling method. Drilling of the shallow wells (MW-4 through MW-8) will extend to approximately 20 feet bgs. Drilling of the piezometer (PZ-2) will extend to approximately 45 feet bgs. The actual well depths will be determined based on the depth at which saturated conditions are encountered. The vertical soil profile will be sampled using a split spoon or continuous core barrel, logged and screened in the field for total organic vapors using a PID.

Once the target depth is reached, each well will be constructed of 2-inch, inner-diameter PVC (schedule 40) casing with 10-feet of 0.010 slot screen for the shallow wells and 5-feet of screen for the deep well. The longer screens are intended to straddle the water table. Each well will be completed by placing a 10/20 silica sand filter pack to approximately one foot above the top of the screen followed by approximately one foot of fine sand (100 mesh). A minimum 2-foot bentonite seal will then be placed and hydrated. The remainder of the annulus for the wells will be filled with granular bentonite. The surface completions will be flush mounts which will be anchored with concrete.

Monitoring wells will be developed using the purge and pump method. Purging will continue until a minimum of five casing volumes of water are removed or until field parameters of pH, specific conductance and temperature show stable conditions.

The monitoring well locations and elevations will be surveyed in by a Wisconsin licensed surveyor. The ground elevation will be surveyed to an accuracy of 0.1 feet and the top of casing elevation will be surveyed to an accuracy of 0.01 feet.

All proper documentation for drilling and well construction will be submitted on the required WDNR forms.

3.2.2 Groundwater Sampling Procedures

Groundwater samples will be collected on a quarterly basis for one year using the following procedures:

- The water table elevation will be measured using an electronic water level probe.

- Sampling will be conducted using low-flow sampling techniques using a bladder pump. Purging will continue until stable readings of field parameters are recorded. The field parameters measured will include pH, temperature, specific conductivity, oxidation-reduction potential (ORP) and dissolved oxygen. If the well is purged dry before parameters stabilize, the well will be allowed to recover at

which point field parameter measurements will be continued or a sample will be collected.

- Samples will be collected directly into laboratory prepared containers for off-site analysis. All groundwater samples will be analyzed for CVOCs. A subset of four groundwater samples during the second round of sampling will also be analyzed for natural attenuation parameters of TOC, sulfate, sulfide, nitrate, and dissolved gasses of ethane, ethane, and methane. Preservatives and bottle sizes are specified in Section 3.4.

One duplicate will be collected per round of sampling for quality assurance/quality control purposes (see Section 4.0). All samples will be properly preserved and placed on ice for subsequent transport to the laboratory under a completed chain-of-custody for analysis. The purge water will be properly containerized for subsequent disposal.

3.2.3 Slug Testing Procedures

A subset of three monitoring wells will be slug tested to provide estimates of aquifer hydraulic conductivity in the vicinity of each well. Slug tests will be performed using the In-Situ Mini Troll electronic transducer and data logger system. The transducer/data logger will be placed down the well. A slug of solid PVC will then be placed down the well to displace water upward in the casing. Simultaneously with the introduction of the slug, the transducer will be activated and water level measurements will be recorded as the displaced water column re-equilibrates to static, or near static conditions at which point the transducer will be turned off. The test will then be repeated by removing the slug from the well which will in turn drop the water level in the casing. The transducer will be reactivated to measure the recovering water levels.

The resulting slug test data will be subsequently analyzed using the Bouwer and Rice (1976) method. It is noted that for the shallow wells, only the "slug out" data will be analyzed since the well screen and sand pack in these wells will not be fully saturated. Data from the "slug in" tests will, therefore, be unrepresentative of actual aquifer conditions since some water will also be displaced into the unsaturated sand pack. Both "slug in" and "slug out" tests will be analyzed for the piezometer since the screen and sand pack for this well will be fully saturated.

3.3 Vapor Intrusion Investigation

Soil vapor intrusion study sampling will be completed in accordance with WDNR guidelines. The initial proposed sampling will include the former dry cleaner unit and the two adjoining units to the east and west. At the present time, the unit to the east is vacant, however, the unit to the west does include a day care facility for

which access would have to be negotiated and coordinated to off-hours not to disturb the day-time operations. In addition, at this time it is proposed to collect indoor air and sub-slab vapor samples within the basements of the four multi-family residential buildings to the south as shown on Figure 1. These buildings are "quads-unit" and at this time it is assumed that there is a single basement for common storage use. Access agreements will need to be negotiated and signed by the property owners of each building. Indoor air and sub-slab vapor samples will be collected at each location. Three rounds of sampling are proposed, one during winter months, one during anticipated high groundwater (Spring) and one during the late summer/early fall timeframe. An outdoor air sample will be collected with each indoor air sampling event. The air/vapor samples will be analyzed for CVOCs using method TO15M.

All field activities will be documented in a bound field log book. In addition, soil boring logs and borehole abandonment logs will be recorded on the appropriate WDNR forms for submittal with the subsequent Site Investigation Report. Photo documentation of field activities will also be performed.

3.4 Summary of Analytical Requirements

Table 3 summarizes the proposed analytical requirements. It includes sample container and preservative specifications, holding times, analytical methods and target detection limits to be used for this site investigation.

4.0 QUALITY ASSURANCE/QUALITY CONTROL (QA/QC) PROCEDURES

4.1 Field QA/QC Procedures

In accordance with NR 716.13(11) the following QA/QC procedures will be performed as part of field investigation activities:

- A chain-of-custody will be maintained for all samples collected for chemical analysis.
- All samples collected (soil, soil gas and groundwater) will be properly preserved and immediately placed on ice as applicable, for subsequent transport to the analytical laboratory.
- For groundwater samples, one blind duplicate sample will be collected as part of the proposed round of sampling.
- One trip blank originating from the analytical laboratory will accompany the sample bottle shipment to and from the field. The trip blank sample will be analyzed as part of the sample batch by the laboratory.
- All non-dedicated sampling equipment will be thoroughly cleaned between each use using an Alconox-water wash followed by a distilled water rinse.
- Documentation of all field activities will be kept in a bound notebook. This will include routine and non-routine maintenance and calibrations performed on instruments used during the field investigation.

4.2 Analytical Laboratory QA/QC

To ensure proper analytical laboratory QA/QC, KPRG will use a Wisconsin certified environmental laboratory. A copy of selected laboratories QA/QC program can be provided upon request.

5.0 INVESTIGATION DERIVED WASTE MANAGEMENT

Investigation derived waste (IDW) generated as part of this site investigation will be managed in accordance with WDNR General Interim Guidelines for Management of Investigative Waste (1993). Solid and liquid IDW are discussed separately below.

5.1 Solid IDW

Soils generated as part of the soil borings and well drilling programs will be containerized in 55-gallon drums and labeled as IDW (including date and origin). The drums will be stored in an area onsite as directed by the property owner. The drummed soils will be sampled, profiled and sent off-site for proper disposal at the end of site investigation activities.

5.2 Liquid IDW

Liquids generated as part of this site investigation will include decontamination water, well development water and purge water from sampling. All of these fluids will be accumulated in 55-gallon drums and labeled as IDW (including date and origin). The drums will be stored in area onsite as directed by the property owner. The drummed water will be sampled, profiled and sent off-site for proper disposal at the end of site investigation activities.

6.0 SITE INVESTIGATION REPORT

Upon receipt of all analytical data, a site investigation report will be prepared in accordance with requirements specified in NR 716.15. The report will include, but not be limited to:

- Transmittal Letter
- Executive Summary
- General Project Information (names and addresses of owners, operators and consultant and facility address)
- Background Information
- Documentation of Field Activities
- Description of Local Geology/Hydrogeology
- Summary of Analytical Results
- Calculation of SSRCLs
- Migration Pathway Analysis (this will include preliminary vapor intrusion modeling using the Johnson and Ettinger (1991) Model for Subsurface Vapor Intrusion into Buildings which is the preliminary modeling tool recommended by the Wisconsin Department of Health and Family Services).
- Supporting Visual Aids (maps, geologic cross-sections, groundwater flow map(s), areal distribution of impacts maps, etc.)
- Conclusions/Recommendations

Supporting documentation such as laboratory analytical packages and well/borehole documentation completed on the appropriate WDNR forms will be provided as appendices to the report.

7.0 PROJECT SCHEDULE

Total project duration of approximately 18 to 20 months is anticipated. The schedule allows for a four week WDNR review/approval period for this Work Plan. Concurrent with WDNR review of the Work Plan, drafts of access agreements for the vapor intrusion study and off-site drilling permits for the City right-of-way will be developed for internal review. Once the Work Plan is approved, work will commence on negotiating access for the vapor intrusion sampling and the drilling permits will be submitted to the City for the wells proposed in the City right-of-way (wells MW-7 and MW-8).

Relative to negotiating property access for the purposes of the proposed soil vapor intrusion study, KPRG has substantial experience and it is noted that obtaining this access from all parties may take several months. However, as access is obtained for a specific property, indoor air and sub-slab vapor sample scheduling will be initiated as soon as possible for that property.

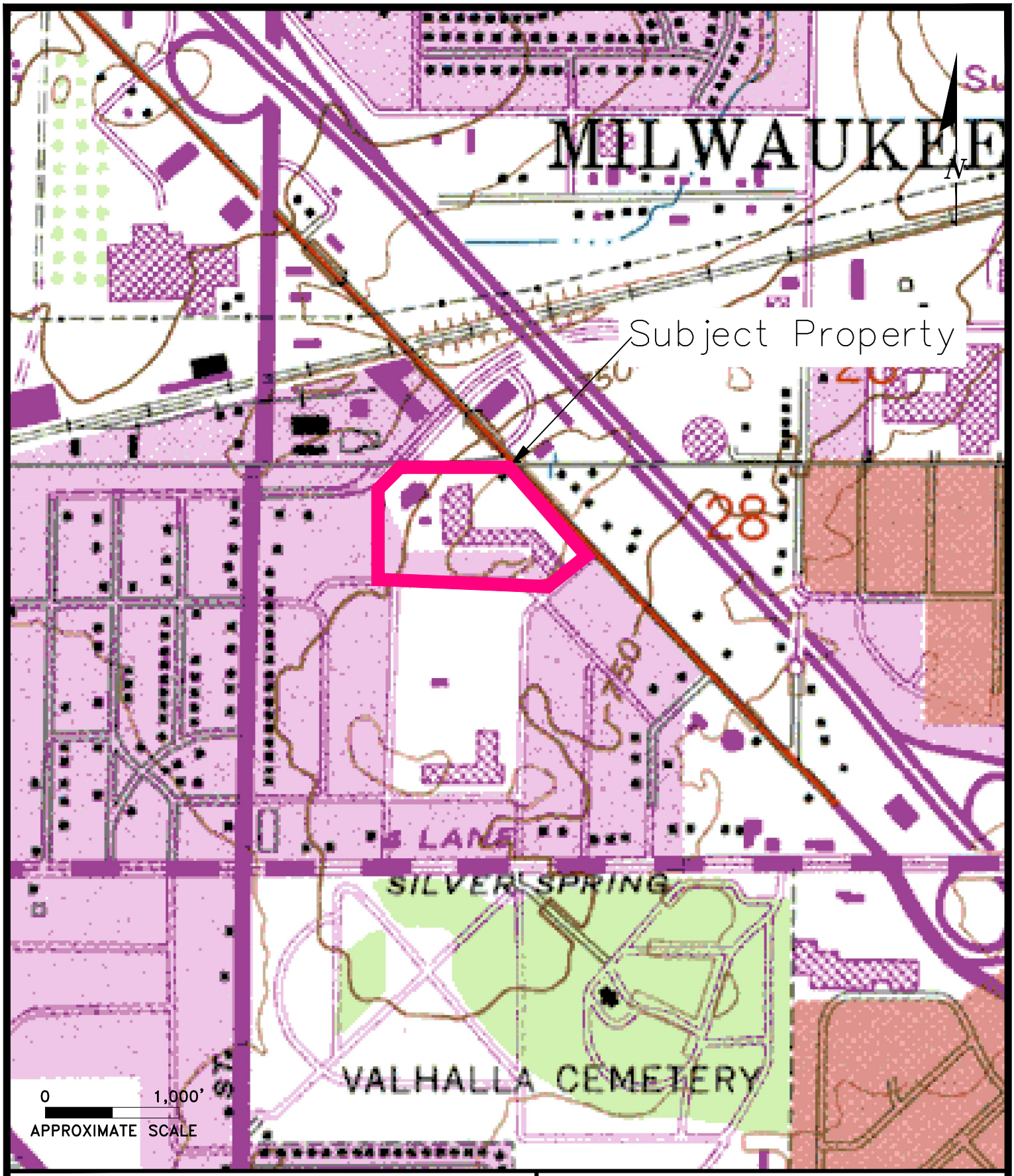
The proposed soil boring and well installation program will be completed within one month of WDNR Work Plan approval followed by four quarterly ground water sampling events.

Once all analytical data is received, a draft of the SI Report will be completed within four to six weeks. The schedule then accommodates for one week of Client review and four weeks of WDNR review of the report.

As noted above, the RAOR is required to be submitted to WDNR within 60 days of submittal of the Site Investigation Report unless otherwise specified by WDNR.

Portions of this schedule can be compressed to meet potential internal Client needs.

FIGURES



ENVIRONMENTAL CONSULTATION & REMEDIATION

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SITE LOCATION MAP

FORMER ONE HOUR MARTINIZING
8711 W. FOND DU LAC AVE MILWAUKEE, WI

Scale: 1"=1,000'	Date: February 9, 2024
KPRG Project No. 22222	FIGURE 1

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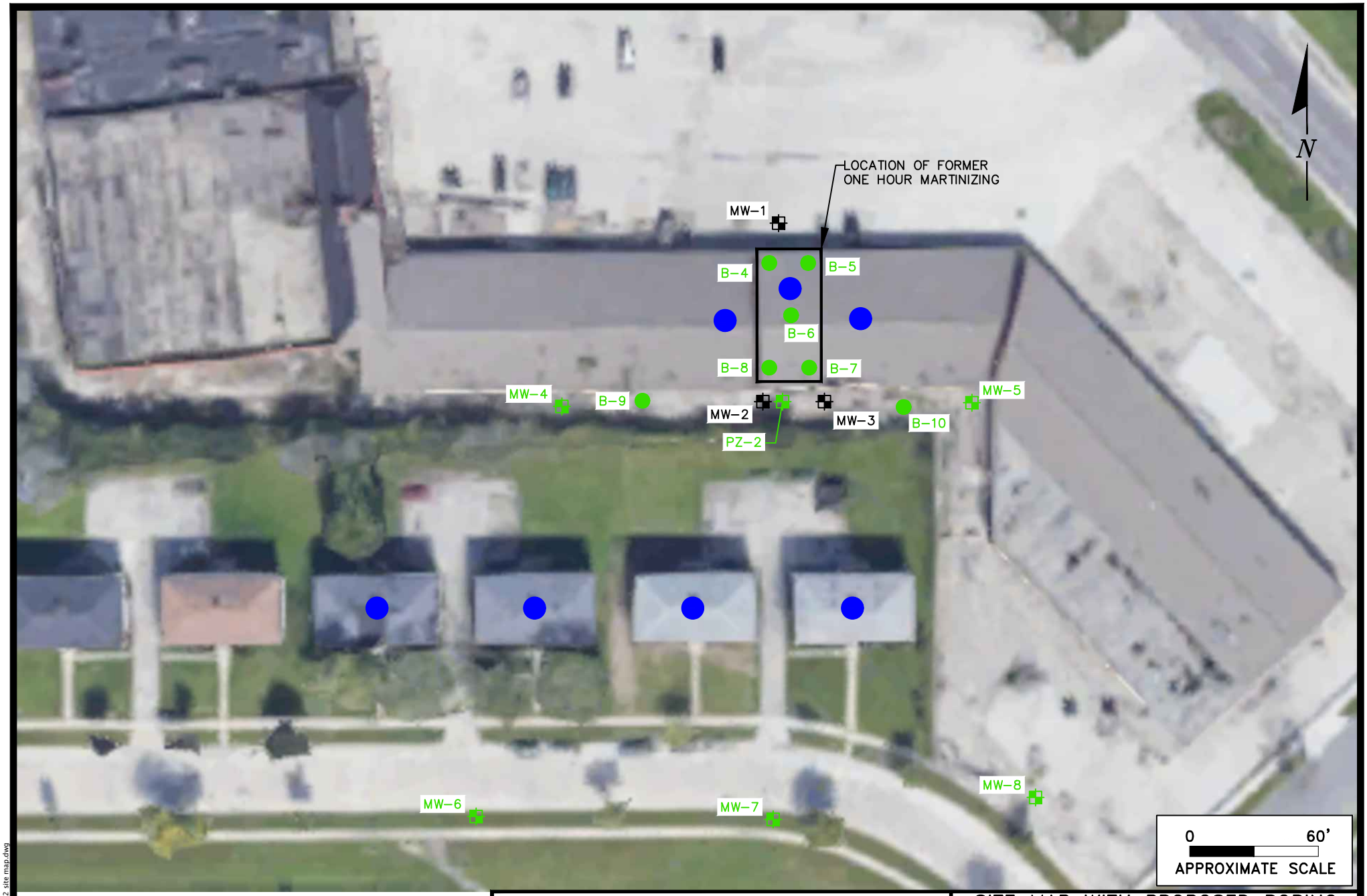

MW-4 PROPOSED MONITORING WELL LOCATION

MW-1 EXISTING MONITORING WELL LOCATION

PROPOSED VAPOR SAMPLING LOCATION

B-4 PROPOSED SOIL BORING LOCATION

ENVIRONMENTAL CONSULTATION & REMEDIATION

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SITE MAP WITH PROPOSED BORING LOCATIONS

FORMER ONE HOUR MARTINIZING
8711A W. FOND DU LAC AVE MILWAUKEE, WI

Scale: 1" = 60' | Date: February 6, 2024

KPRG Proposal No. 22222 | FIGURE 2

W:\proposals\bonanza investment\22222 site map.dwg

TABLES

Table 1. Proposed Geoprobe Boring Program Rationale

SOIL BORING	DEPTH (ft)	ANALYSES	RATIONALE
B-4	12	CVOC	Define interior soil impacts to the northwest.
B-5	12	CVOC	Define interior soil impacts to the northeast.
B-6	12	CVOC	Define central interior soil impacts.
B-7	12	CVOC	Define interior soil impacts to the southeast.
B-8	12	CVOC/TOC	Define interior soil impacts to the southwest.
B-9	12	CVOC	Define soil impacts to the west.
B-10	12	CVOC/TOC	Define soil impacts to the east.
MW-4	20	CVOC	Define groundwater impacts to the west.
MW-5	20	CVOC	Define groundwater impacts to the east.
MW-6	20	CVOC	Define groundwater impacts to the southwest.
MW-7	20	CVOC/TOC	Define groundwater impacts to the south.
MW-8	20	CVOC	Define groundwater impacts to the southeast
PZ-2	45	CVOC	Define vertical extent of groundwater impacts.

Notes:

1) Up to 28 soil samples will be collected from the above seven boring locations as discussed in Section 3.1.

2) Up to ten additional soil samples will be collected during drilling of monitoring wells to assist in definition of areal extent of impacts to the east, west, and south.

3) A subset of three soil samples will include TOC analysis. The samples will be selected in the field.

4) CVOC - Chlorinated Volatile Organic

5) TOC - Total Organic Carbon

Table 2. Proposed Monitoring Well Network and Rationale.

WELL NO.	APPROX. DEPTH (feet bgs)	SCREEN LENGTH (feet)	RATIONALE
MW-4	20	10	Monitroing well set potentially side gradient west of suspect source area.
MW-5	20	10	Monitroing well set potentially side gradient east of suspect source area.
MW-6	20	10	Monitroing well set potentially down gradient west of suspect source area.
MW-7	20	10	Monitoring well set potentially down gradient of suspect source area.
MW-8	20	10	Monitoring well set potentially down gradient east of suspect source area.
PZ-2	45	5	Piezometer clustered with shallow well MW-2 to assist in evaluating potential vertical impacts in suspect source area.

Notes:
1) Groundwater flow direction may vary but anticipated to be to the south (see Section 2.1).

Table 3. Summary of Analytical Requirements

MATRIX	ANALYTICAL PARAMETERS	NUMBER OF SAMPLES	SAMPLE BOTTLES	PRESERVATIVES	HOLDING TIME	ANALTYICAL METHOD	DETECTION LIMITS
Soil	Volatile Organic Compounds	38	1 - 2 oz. glass	Methanol, Cool to <4°C	21 days	SW-846 Method 8260B	Varies
	Total Organic Carbon	3	1 - 4 oz. glass	Cool to <4°C	28 days	SW-846 Method 9060	30 mg/kg
Soil Vapor	Volatile Organic Compounds	21	Summa Canister	None, Cool to <4°C	72-Hours	Method TO-15	Varies
Water	Volatile Organic Compounds	24	3 - 40 ml. glass vials	Hydrochloric acid, Cool to <4°C	14 days to extraction	SW-846 Method 8260B	Varies
	Nitrate	12	1- 250 ml. plastic	None, Cool to <4°C	48 hours	EPA 300.0	0.50 mg/l
	Sulfide	12	1- 125 ml. plastic	Sodium Hydroxide/Zinc Acetate	7 days	SM 4500	0.2 mg/l
	Sulfate	12	1- 250 ml. plastic	None, Cool to <4°C	28 days	EPA 300.0	2.0 mg/l
	Dissolved Gasses (ethene/ethane/methane)	12	2 - 40 ml. glass vials	Hydrochloric acid, Cool to <4°C	14 days	Modified 8015	7 ug/l
	Total Organic Carbon	12	1- 250 ml. plastic	None, Cool to <4°C	14 days	EPA 310.2	10 mg/l

Notes: 25 to 35 grams of soil must be collected for VOC analyses.
The actual number of Soil Vapor samples collected will depend upon both access and initial sample results.

APPENDIX A

Site Scoping Investigation Report