Nass, Alan T - DNR

From: Mottl, Robert J. <Robert.Mottl@aecom.com>
Sent: Tuesday, March 06, 2012 1:45 PM
To: Jon Peterson
Cc: Nass, Alan T - DNR; Enoch, Melissa L - DNR; Schuette_AM
Subject: RE: Wery Property Phase II SAP

Sounds good Jon, Thanks for your review. I will get an HASP together soon and forward to you.

-Bob-

-----Original Message-----
From: Jon Peterson [mailto:Peterson.Jon@epamail.epa.gov]
Sent: Tuesday, March 06, 2012 1:11 PM
To: Mottl, Robert J.
Cc: Nass, Alan T - DNR; Enoch, Melissa L - DNR; Schuette_AM
Subject: Re: Wery Property Phase II SAP

Thank you for your phone message clarifying the rationale for the analytes you chose for testing at the Wery property. As I understand it, your intention is to advance seven soil borings to a depth of approximately 5 feet below the apparent shallow groundwater table (groundwater table anticipated at approximately 5 feet below grade) at the locations indicated on Figure 2 in the attachments to the SAP.
Install a temporary groundwater monitoring well to a depth of approximately 10 feet below ground surface (bgs) at the seven boring locations. Collect up to fourteen soil samples (two per boring) and submit them for laboratory analysis. Collect up to eight groundwater samples (one per temporary monitoring well location plus one duplicate) and submit them for laboratory analysis. Analyze selected soil and groundwater samples for VOCs, PAHs, cadmium, chromium, lead and the nitrogen related compounds nitrate/nitrite and ammonia nitrogen.

I approve the Sampling and Analysis Plan and await receipt of your Site-specific Health and Safety Plan as well as any comments that Alan Nass may have on this sampling plan.

Jon Peterson

From: "Mottl, Robert J." <Robert.Mottl@aecom.com>
To: Jon Peterson/R5/USEPA/US@EPA
Cc: "Enoch, Melissa L - DNR" <Melissa.Enoch@wisconsin.gov>,
"Nass, Alan T - DNR" <Alan.Nass@wisconsin.gov>, Schuette_AM
<Schuette_AM@co.brown.wi.us>
Date: 03/05/2012 04:39 PM
Subject:Wery Property Phase II SAP

Jon,

Attached is a copy of the Sampling and Analysis Plan (SAP) for the Wery property in Pulaski, one of the petroleum fund projects under the EPA Brownfields Grant for Brown County, Wisconsin. With your review and approval, we will implement the proposed Phase II tasks. Under separate email cover, AECOM will also send you a copy of our site specific health and safety plan (HASP) for your files. The HASP should be available shortly.

If there is anyone one on this distribution list who would like a hard copy of this SAP, please let me know.

Thank you.

Bob Mottl
Senior Geologist
Environment
D 920.406.3147 M 920.660.3373
email: Robert.Mottl@aecom.com

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********** ATTACHMENT NOT DELIVERED
****

[attachment "R60139760-SAP-PH-II-ESA-RPT-WERY.pdf" deleted by Jon Peterson/R5/USEPA/US]

AECOM Environment

Prepared for:
Brown County
Brown County, WI

Prepared by:
AECOM
Green Bay, WI
60139760
March 2012

Sampling and Analysis Plan for Phase II Environmental Site Assessment

Wery Property
162 West Pulaski Street
Village of Pulaski
Brown County, Wisconsin

AECOM

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920.468.1978 tel
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March 5, 2012

Mr. Jon Peterson
USEPA - Region 5
Brownfields & NPL Reuse Section
77 West Jackson Boulevard
Mail Code SE-4J
Chicago, Illinois 60604-3507

Subject: Sampling and Analysis Plan for Phase II Environmental Site Assessment, Wery Property, 162 West Pulaski Street, Pulaski, Brown County, Wisconsin -- AECOM Project No. 60139760 Task 0900

Dear Mr. Peterson,

AECOM Technical Services, Inc. (AECOM), on behalf of Brown County Planning Commission (BCPC), is pleased to submit this Sampling and Analysis Plan (SAP) for a Phase II Environmental Site Assessment (ESA) of the Wery Property, 162 West Pulaski Street, Pulaski, Brown County, Wisconsin. This SAP is submitted under the 2008 Brown County US EPA Brownfield Assessment Grant. The subject property occupies approximately 0.75 acres and is comprised of three parcels, (Parcels VP-400, VP-11, and VP-11-2). The subject property is currently owned by Mr. Grant Wery and is developed with a commercial greenhouse and florist shop named Wery's Flowers and Things.

In January 2011, the Village of Pulaski provided an "Application for Brown County Assessment Grants for Hazardous Substances and Petroleum Products," to the BCPC requesting use of US Environmental Protection Agency Brownfield grant funds to assist with site assessment. In a January 17, 2011, letter, the BCPC approved the request and is assisting with funding site assessment tasks under the EPA grant. In a February 22, 2011, letter, the Wisconsin Department of Natural Resources (WDNR) issued a letter notifying the parties that this site is eligible for federal Brownfield grant monies under the petroleum fund program. A Phase I ESA was completed on June 6, 2011, and submitted to the EPA and WDNR. A site-specific health and safety plan will be submitted under separate cover.

If you have any questions regarding the attached document, please contact us.

Respectfully,

AECOM Technical Services, Inc.

Robert J. Mottl, P.G.
Senior Project Geologist

James W. Kauer, P.G.
Associate Hydrogeologist

Cc: Mr. Aaron Schuette
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305 East Walnut Street, Room 320
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Ms. Melissa Enoch, Brownfields Specialist
Bureau for Remediation & Redevelopment
Wisconsin Department of Natural Resources
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1.0 Introduction

The Brown County Planning Commission (BCPC), under a US Environmental Protection Agency (EPA) Brownfields Assessment Grant - Petroleum Substances, has prepared this Sampling and Analysis Plan (SAP) for the investigation of recognized environmental conditions (RECs) identified at the property known as the Wery Property, Village of Pulaski, Brown County, Wisconsin. The RECs were identified in a Phase I Environmental Site Assessment (ESA) report dated June 2, 2011, prepared for the Village of Pulaski (Village) who was considering acquiring the property at that time.

On February 22, 2011, the Wisconsin Department of Natural Resources (WDNR) provided email confirmation that the site is eligible to use petroleum substance assessment grant funding. In brief, the Phase I ESA identified potential sources of impacts including a former farm implement dealer on-site with a trench floor drain, an adjoining property (former Karcz Ford), and agrichemical handling on-site (primarily nitrogen containing compounds). Based on information obtained as a result of completing a Phase I ESA, it is anticipated that the potential exists for volatile organic compounds (VOCs), polynuclear aromatic hydrocarbons (PAHs), the metals cadmium, chromium, and lead, and agrichemicals (primarily nitrogen compounds).

The scope of work identified in this SAP is intended to address the identified RECs to facilitate redevelopment of the site. This SAP presents the sample locations, sample types, analytical testing, rationale for the proposed investigation program, and field procedures to be used at the subject site.

This plan is to be used jointly with the Quality Assurance Project Plan (QAPP) developed by AECOM Technical Services, Inc. (AECOM), dated June 12, 2009, and a Site-Specific Health & Safety Plan. A copy of the QAPP is on file at the EPA and the Health & Safety Plan will be submitted under separate cover. These documents provide the procedures and protocols to be used to conduct the work described in this SAP.

The following sections include a description of the project background and identified RECs, description of the project scope and objectives, and description of the planned investigative procedures.

2.0 Project Background

2.1 Site Description and Background

The subject property occupies approximately 0.75 acres and is located along the south side of West Pulaski Street, Village of Pulaski, Brown County, Wisconsin. The property is located in the northeast 1/4 of the northeast 1/4 of Section 1, Township 25 North, and Range 19 East. The location of the property is illustrated on a Site Location Map (based on a United States Geological Survey [USGS] topographic map) and Site Diagram (based on a 2005 aerial photograph) presented as Figures 1 and 2, respectively.

The subject property is located in an urban area on the south side of West Pulaski Street in the Village of Pulaski, Brown County, Wisconsin. Commercial and residential properties were observed to be located adjacent, north, west, and south of the subject property.

The subject property is developed as a commercial use property and is occupied by Wery's Flowers and Things greenhouse and florist shop. The commercial structures consist of eight separate buildings totaling approximately 20,200 square feet which are used as greenhouse growing, supply storage, and office space. Additional site details are provided in Section 2.3 - Summary of Phase II ESA Results. According to Mr. Grant Wery, the current property owner, gas, electric, water, and sewer at the subject property are provided by local utility companies.

2.2 Geology and Hydrogeology

The United States Department of the Interior, USGS Water Resources of Wisconsin Menominee-Oconto-Peshtigo River Basin, Hydrologic Investigations Atlas HA-470, Sheet 1 of 4, indicates that the subject property consists of ground moraine that overly sedimentary bedrock (Hamilton, Oakes, 1973).

The United States Department of Agriculture, Soil Conservation Service publication entitled Soil Survey of Brown County, Wisconsin, maps surface soils beneath the subject property as Solona loam. The Solona loam is described as being located in depressions and drainageways on glacial till plains. Solona soils have high available water capacity and moderate permeability.

Regional groundwater flow direction is likely to the east, toward Green Bay (Water Resources of Wisconsin, Menominee-Oconto-Peshtigo River Basin, Hydrogeologic Investigations, Atlas HA-470, Sheet 2 of 4). Existing ditches, underground utilities (i.e., sanitary/storm sewer piping systems), and other natural and manmade features may influence local groundwater flow direction. Site-specific groundwater flow direction cannot be determined without installation of monitoring wells.

The USGS 7.5-minute series topographic map (Pulaski, Wisconsin, quadrangle dated 1974) shows that the subject property is located in an urban area in the Village of Pulaski, is relatively flat, and at an elevation of approximately +800 feet above mean sea level. Based on review of these topographic maps, it is expected that surface water at the subject property, and properties adjacent to and in the vicinity of the subject property, discharges onto paved village streets and ultimately into municipal storm sewer drains.

2.3 Summary of Phase I ESA Results

AECOM was retained by the BCPC to perform a Phase I ESA of the commercial property located at 162 West Pulaski Street, Village of Pulaski, Brown County, Wisconsin (subject property). The Phase I ESA was conducted as part of ongoing due diligence associated with the subject property.

The Phase I ESA was conducted in general accordance with the American Society for Testing and Materials (ASTM) Standard E1527-05 entitled *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*. The purpose of the Phase I ESA was to identify, to the extent feasible, RECs and historical RECs in connection with the subject property.

ASTM Standard E1527-05 defines a REC as the following:

> "The presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property. The term includes hazardous substances or petroleum products even under conditions in compliance with laws. The term is not intended to include *de minimis* conditions that generally do not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. Conditions determined to be *de minimis* are not recognized environmental conditions."

The ASTM Standard E1527-05 defines a historical REC as the following:

> "Environmental condition which in the past would have been considered a recognized environmental condition, but may or may not be considered a recognized environmental condition currently."

The subject property occupies approximately 0.75 acres and is comprised of three parcels, (Parcels VP-400, VP-11, and VP-11-2). The subject property is currently owned by Mr. Grant Wery and is developed with a commercial greenhouse and florist shop named Wery's Flowers and Things.

The subject property is developed as commercial property with eight separate buildings totaling approximately 20,200 square feet. The six southernmost buildings on the subject property are wood and/or metal frame greenhouse buildings with transparent plastic sheeting exteriors. The greenhouse structures are apparently built on gravel or crushed aggregate. The two northernmost subject property buildings consist of a storage unit and a main florist shop building. According to aerial photo records, the northern-most building appears to have been present since the 1930s or before. The storage unit is similar in construction to the greenhouse units, and the main shop building is a wood frame building on a concrete slab foundation. The main shop building is used for additional storage space, office space, and employee workspace. There is a single-stall parking garage located on the east side of the main building. A trench drain, which appears to have been filled with concrete, extends north and south along the eastern portion of this building's concrete floor slab. The subject property exterior consists of walkways and outdoor storage areas. The subject property was occupied by a farm implement dealership prior to its use a greenhouse and florist shop.

AECOM performed the Phase I ESA in conformance with the scope and limitations of ASTM Practice E1527-05, of Wery's Flowers and Things, 162 West Pulaski Street, Pulaski, Wisconsin. Any exceptions to, or deletions from, this practice were described in Section 1.4 of the Phase I report.

This phase I ESA revealed no evidence of RECs in connection with the subject property except for the following:

- The subject property has historically been used as a farm implement dealership/service business. Based on the former property use, the potential exists for petroleum products or hazardous materials to have impacted the subsurface of the subject property.
- A trench-style drain, which has apparently been filled with concrete, was observed in the main florist shop building at the subject property. This drain reportedly existed while the building operated as the implement dealership. Due to the possibility for petroleum products or other hazardous substances to have been discharged to this drain as a result of former operations the potential exists for the subsurface of the subject property to have been impacted by petroleum products or hazardous materials originating from the drain system.
- A recent Phase II ESA of the Former Karcz Ford Dealership, located west and adjacent to the subject property, identified a potential UST on the former Karcz property. A soil boring advanced east of the suspected tank feature and nearest to the subject property resulted in groundwater impacts slightly above Wisconsin Administrative Code (WAC) NR 140 Enforcement Standards (ES) for select PAH compounds. Therefore, the potential exists for petroleum or hazardous substances originating from the west adjacent property to have impacted the subsurface at the subject property.
- Nitrogen-containing fertilizers and small amounts of pesticides and herbicides are primarily stored in two rooms located at the north end of an enclosed walkway, connecting separate greenhouse buildings. Based on the storage, handling, and application of the agrichemicals at the subject property, the potential exists for agrichemicals (primarily nitrogen compounds) to have impacted the subsurface of the subject property.
- A single stall garage was located on the east end of the main shop building. Faint hydrocarbon odors were detected inside the garage. According to Mr. Keith Chambers, the garage probably was present when the implement dealership operated at the property. Based on this information, the potential exists for petroleum products or hazardous materials to have impacted the subsurface of the subject property.

  Based on this information, the potential exists for storage, usage, or a release of petroleum products or hazardous materials within or adjacent to the structures.

Further assessment would be needed to determine if these RECs have impacted the site. The following sections describe a proposed scope of services for a Phase II assessment.

2.4 Proposed Scope of Services

The proposed scope of work is summarized below and described in more detail in Section 4.0.

- Advance seven soil borings to a depth of approximately 5 feet below the apparent shallow groundwater table (groundwater table anticipated at approximately 5 feet below grade) at the locations indicated on Figure 2 in the attachments.
- Install a temporary groundwater monitoring well to a depth of approximately 10 feet below ground surface (bgs) at the seven boring locations.
- Collect up to fourteen soil samples (two per boring) and submit them for laboratory analysis.

- Collect up to eight groundwater samples (one per temporary monitoring well location plus one duplicate) and submit them for laboratory analysis.
- Analyze selected soil and groundwater samples for VOCs, PAHs, cadmium, chromium, lead and the nitrogen related compounds nitrate/nitrite and ammonia nitrogen.
- Prepare a Phase II ESA report that describes the assessment conducted and presents the results of the analyses.

If evidence of subsurface impact is identified during exploration activities, additional borings and soil/ groundwater samples may be warranted to assess the approximate extent of impacts. Also if contamination exceeding regulatory limits is detected, the report will include a discussion of possible remedial actions and an evaluation of the need for engineering or institutional controls, which can help limit environmental risk and reduce public exposure to contaminant migration via direct contact, ingestion, or vapor inhalation. Engineering controls could include items such as site capping (pavement, gravel, or vegetative cover) or physically restricting site access using fencing. Institutional controls can include such things as zoning changes, groundwater ordinances, well installation restrictions, building or excavation permits, restrictive covenants, and/or easements. These controls would be evaluated consistent with uniform standards and procedures of Chapters NR 700 - NR 750, Wisconsin Administrative Code, both WDNR and EPA guidance documents, and federal/state green remediation criteria. At this time, we propose to limit agrichemical testing to the nitrogen compounds mentioned above as it appears these would have been the most used agrichemical compounds. If field evidence of impacts other than nitrogen compounds such unusual discoloration or odor are observed, AECOM will communicate with WDNR and EPA to consider what other pesticide compounds should be analyzed for. The Wisconsin Department of Agriculture, Trade, and Consumer Protection, under the Agrichemical Clean-up Program (ACCP) allows holding of pesticide soil samples for up to 6 months if the samples are frozen prior to chemical analysis.

3.0 Project Scope and Objectives

3.1 Data Quality Objectives

The Data Quality Objective (DQO) Process is a series of planning steps based on the Scientific Method, designed to help ensure that the type, quality, and quantity of environmental data used in decision-making are appropriate for the intended application.

The DQO process allows decision-makers to define their data requirements and acceptable levels of decision before any data are collected. DQO are based on the seven-step process described in EPA Quality Assurance Guidance for Conducting Brownfields Site Assessments document (EPA 540-R-98-038, September 1998). The general elements of the DQO are presented in various sections of this SAP; however, for clarity, each step of the DQO process is discussed in the following subsections.

3.1.1 State the Problem

The first step in the DQO process is to state the problem that has prompted the Brownfield investigation. Brown County and the current property owner support redevelopment of the subject site. The present environmental condition of the site, as well as the scope and cost of remediation (if necessary) will play a key role in the County's economic and redevelopment plans. Defining the extent and characterizing the significance of environmental conditions in the subsurface is critical in evaluating the "financial requirements" for site redevelopment.

3.1.2 Identify the Decision

The previously conducted Phase I ESA identified the potential for subsurface impacts to be present on the property. To encourage and facilitate site redevelopment, it will be necessary to answer the following questions:

- If detected, how extensive is the potential contamination?
- Are the contaminant concentrations significant with respect to human health and the environment?
- Based on environmental conditions, is the site developable and, if so, what type of redevelopment would be appropriate?
- What, if any, remediation is required to facilitate redevelopment of the site including possible soil management?
- What Institutional Controls (ICs) will be necessary to protect public health from exposure to the contaminants identified?

3.1.3 Identify Inputs to the Decision

To determine if and how extensively the site is impacted, it is necessary to collect soil and groundwater samples from the site, especially within areas where RECs were identified. Tables 1 through 7 included in the QAPP provide the method and control limits for the type of analyses to be

conducted on the investigative samples. The investigative data will be compared to state-established health protective levels, as presented in the Appendix of this SAP.

To determine potentially feasible remediation options, it is necessary that an investigation adequately quantify the nature and extent of contamination. Once the data are received from the borings proposed in this SAP, it may be necessary to conduct additional investigation to quantify the extent of contamination. If field indications of VOC impacts such as elevated photoionization detector (PID) readings or staining are identified during the field sampling, additional borings may be advanced while the sampling crew is on site.

3.1.4 Define the Boundaries of the Study

The site includes the area identified on Figure 2. The entire site depicted is included as part of the Brownfield investigation. The Brownfield investigation will evaluate subsurface soil and shallow groundwater conditions.

3.1.5 Develop a Decision Rule

A decision flow chart has been developed specifically as described in the QAPP (see Table 8). This chart is designed as guidance for the overall project.

3.1.6 Specify Limits on Decision Errors

The overall goal of the Brownfield Investigation is to determine the nature, degree, and extent of environmental contamination that may have resulted from one or more of the RECs, or potential environmental issues identified during the Phase I ESA, and to facilitate redevelopment of the subject site. This is anticipated to require a multi-phase investigative approach. The first phase of this investigation, the Phase I ESA, has already been completed and was conducted to identify RECs on the site. The Phase II as described in this plan is focused on determining if contamination is present, and if so, evaluating the extent and degree of contamination that may be present on the site as it specifically relates to the identified RECs.

Because of the limitations inherent in environmental sampling and analysis, the final results of any investigation represent only an estimate of the concentrations of site contaminants. In any investigation, there is a risk of making a decision error such that a contaminated site may be thought to be clean or, conversely, a clean site may be thought to be contaminated. On this project, either decision error could greatly affect the overall project costs. Because it would be impossible to completely avoid any decision error with 100% certainty, the project investigation scope was designed to provide a reasonable estimate of site conditions while avoiding unnecessary testing and its associated cost.

3.1.7 Optimize Design

The soil and groundwater sampling and analysis proposed herein will provide an answer to the question regarding the quality of the subsurface environment. Additional investigation, if warranted, will be recommended on an as-needed basis. Thus, time and money will not be wasted in obtaining data not within the desired area for redevelopment.

3.2 Rationale for Phase II Scope of Work

The scope for the Phase II investigation includes soil and groundwater sampling and analysis. The scope of work was developed in consideration of the RECs identified for the site as a result of the Phase I ESA. The locations of the RECs were determined based on a site reconnaissance; interviews with the site owner and local government officials; and a review of city directories, aerial photographs, historical site building plans, and available regulatory agency files, all of which were components of the Phase I ESA.

3.3 Project Schedule

The Phase II is anticipated to begin within one to two weeks after receiving EPA approval of the SAP. Site activities will begin with the site boring layout, and then the subsurface assessment. It is anticipated that two field days will be required to complete the site investigation fieldwork. The schedule for fieldwork assumes an average 10-hour field day, weather and daylight hours permitting. Adverse weather conditions may extend the projected fieldwork schedule. Laboratory testing results should be available within two to three weeks following completion of the fieldwork. Assuming limited delays and no significant unforeseen circumstances, a Phase II Site Investigation Report could be prepared and submitted within four weeks after receipt of all test results.

4.0 Investigative Procedures

4.1 General

The sampling procedures to be used in this site investigation will be consistent for the purpose of this project. The field sampling plan is incorporated into this section of the SAP document, and outlines all sample collection procedures.

Sample labeling, custody, handling, analysis scheduling, and container requirements are described in the QAPP. Site-specific general field procedures, such as sample number identification, field documentation requirements, sample location, and use of maps and drawings are described below.

4.1.1 Field Sample Number Identification

A specific sample number will be assigned to each sample prior to collection. The sample number will consist of the following items.

Site Code

The site will be identified with a two-digit code unique to that site. The two-digit code for the Wery Property site will be WP.

Location Code

Each sample will be identified with a code, which indicates the boring/well where the sample was collected. These locations are identified as B-1 through B-7 as shown on Figure 2.

Sample Type Code

Each sample will be identified with a code that indicates the type of sample as follows:

- W - Water
- S - Soil
- B - Field Blank
- D - Field Duplicate (water only)

Soil samples, which are specific to a location, will be numbered sequentially, with numbers less than 10 preceeded with a '0' (i.e., 01, 02, 03...). Water samples will be identified using the code above and a six-digit number representative of the sample collection date.

Examples of sample numbers:

- WP-B3-S03 would be a soil sample number three collected from Boring B3.
- WP-B6-W031312 would be a groundwater sample collected from Boring B6 on March 13, 2012, and WP-B6-D031312 is a duplicate of that sample.

Sample labels will be attached to each individual sample bottle. The label will include the field sample number (described above), date/time of collection, type of analysis, sampler initials, and the assigned EPA case number. Labels will be prepared with waterproof, permanent ink.

4.1.2 Field Data Collection Documentation

Field information will be recorded in a bound field notebook with pre-numbered pages and appropriate sampling logs, as described below. The following information will be documented in the field notebook:

- For each site visit: The site name and location, date, starting and ending times, weather, purpose for site visit, names of people involved in sampling activities, level of personal protection used, documentation of adherence to protocol, any changes made to planned protocol, names of visitors to the site during sampling and reason for their visit, unusual observations, and signature of the person recording the information.
- For each soil sample submitted for analytical testing: A detailed description of location, any measurements made, the time the sample was taken, physical description of sample, depth from which sample was collected, equipment used to collect the sample, volume and number of sample containers, how sample is preserved, and signature of sampler. Each field duplicate must be given its own unique sample number; the description should include a unique sample number of its duplicate.
- For each groundwater sample: The groundwater sampling information will be tabulated and include the following: well number; condition of well including depth to bottom of well and height of PVC stick-up; depth to groundwater; the calculated amount of four well volumes; the actual amount of water purged from the well; whether the well purged dry; time of sample collection; field measurements such as pH, temperature, and conductivity; and field observations such as color, odor, and turbidity. The field notebook will also reference the Chain of Custody document numbers used to track sample delivery to the laboratories.

The following information will be documented on the appropriate logs:

- AECOM Soil Boring Field Logs: For each soil boring conducted, this log will document the start and completion date, the sampling crew, type of rig used, sample numbers, sample depths, sample methods, drilling methods, brief sample descriptions, sample recovery, penetrometer results, if available, depths of strata changes, PID readings, and groundwater observations.
- Borehole Abandonment Forms: For each borehole that is not converted to a monitoring well, a borehole abandonment form will be completed. This form documents the location of the borehole, date of abandonment, method of abandonment, and requires the signature of the person conducting the work. Form 3300-5B is required by the WDNR.
- Monitoring Well Construction Form: This form will be completed for each borehole that is converted to a temporary monitoring well. The form documents the location of the well, date of well installation, well installation materials, and construction methods used, and signature verifying that the information supplied is correct. Form 4400-113A is required by the WDNR.
- Monitoring Well Development Form: This form will be completed for each temporary monitoring well constructed for this project. The form documents the well number, method used to develop the well, and observations made during well development. The form also

requires signature of the person conducting the development. Form 4400-113B is required by the WDNR.

A copy of each of the above forms is provided in the QAPP.

4.1.3 Sample Location Rationale

Proposed soil borings and monitoring wells are positioned near site features associated with RECs, potential environmental issues, and in the assumed upgradient (to address the potential for site impacts from an off-site source) and downgradient position from the site building. The following sample locations were selected to evaluate the following potential areas of impact:

- B-1 and B-2: Inside the main shop building to address the trench drain.
- B-3: Inside the storage shed near the area where agrichemicals are stored.
- B-4: Some surficial discoloration in the north end of the greenhouse walkway.
- B-5 and B-6: South end of the site near the previous implement storage area.
- B-7: Along the west property boundary to observe for impacts migrating onto the site from the adjacent former

The proposed soil boring and monitoring well locations will be identified by a unique number as illustrated on Figure 2.

4.1.4 Maps and Drawings

Figure 2 was prepared to facilitate the sampling program and depict the site boundaries and interior building layout. Actual boring placement and sample locations may be modified by the Project Manager as necessary during drilling activities to more accurately assess site conditions and contaminant distribution or to avoid underground or aboveground utilities.

4.2 Soil Borings

Soil borings will be advanced to a depth of approximately to 10 feet bgs using either a small cart mounted geoprobe rig or hand auger depending on access. The final depths of the soil borings will be based on the depth at which groundwater is encountered during boring advancement. The soil borings will extend approximately 5 feet below the apparent groundwater table.

Soil samples will be screened for VOCs in the field using a PID. Soil samples will be collected from each interval for soil classification purposes. The soil information will be documented on boring logs. Soil samples for laboratory analysis will be collected from 0 to 4 feet bgs at each location. Additional soil samples may be collected from the sample interval with the most elevated PID reading, with obvious visual or olfactory indications of contamination, and/or soil from just above the water table.

4.3 Soil Sample Handling and Processing

Soil samples will be split lengthwise into two parts. The first part will be placed into a clean glass jar, covered with aluminum foil, and capped for field headspace screening or placed in a sealable plastic bag for headspace screening. The second part will be placed into clean, glass containers for laboratory analysis. Samples to be analyzed for VOCs will be containerized first. The VOC sample portions will be preserved in the field using methanol. Samples to be analyzed by laboratory methods will be immediately placed into a cooler filled with ice for temporary field storage. Sample handling and preservation methods are also documented in Section 2.3 of the QAPP. Sample containers, preservation, and holding time requirements are summarized on Table 10 of the QAPP.

Samples will be handled with limited contact and gloved hands. New, disposable, nitrile gloves will be used to handle each sample. Samples retained for possible laboratory analysis will be packaged in a manner to reduce headspace and limit the potential for contaminant volatilization.

4.4 Temporary Groundwater Monitoring Wells

Temporary groundwater monitoring wells are proposed to be installed and sampled at locations described in Section 4.1.3 and depicted on Figure 2. The wells will be installed to evaluate groundwater quality.

The wells planned for the Phase II investigation of this site will evaluate shallow groundwater quality and, as such, will be placed so that the well screen will intersect the water table. The anticipated maximum depth of the monitoring wells is 10 to 15 feet bgs. The temporary monitoring wells will be completed with slotted PVC well screen and solid PVC riser. The slot size of the well screen will be appropriate to the soils encountered at each location. The monitoring wells will be completed at ground surface and flush-mounted protector pipes will be placed around the wells, as necessary. The typical well installation procedures and well development procedures are provided in Appendix C of the QAPP.

The temporary groundwater monitoring wells will remain installed until groundwater analytical results are received from the laboratory. At that time, based on the laboratory analytical results, the wells will either be properly abandoned or remain installed for future sampling. One round of groundwater samples is proposed for the Phase II investigation. However, additional sampling may be conducted during subsequent phases of the Brownfield investigation, depending on the results of the proposed work. The procedures that will be used for sample collection are documented in Appendix C of the QAPP.

4.5 Analytical Testing

Tables 1 through 7 of the QAPP provide a summary of the laboratory testing proposed for each sample specified above. Analyses will be conducted in accordance with standard EPA SW846 methods for organics and inorganics as specified in the QAPP. Analytical testing will be performed by Pace Analytical, a Wisconsin-certified laboratory. We anticipate that the following laboratory analyses will be completed:

- One to two soil samples per boring for VOCs, PAHs, cadmium, chromium, lead, nitrate/nitrite, and ammonia.
- Eight groundwater samples (one from each temporary well plus one duplicate) for VOCs, PAHs, cadmium, chromium, lead, nitrate/nitrite, and ammonia.

4.6 Surveying

AECOM will complete a site survey to determine the locations and elevations of soil borings and monitoring wells. Locations will be determined relative to existing landmarks and elevations relative to mean sea level.

4.7 Investigative Waste Handling

Soil and groundwater generated during boring advancement, well development, and sampling of the proposed borings/wells will be drummed if elevated PID readings or visual or olfactory observations indicate contamination is present. Any drummed soil and water generated during this investigation will be labeled and stored on site until analytical testing results have been received and subsequent arrangements can be made for their disposal.

4.8 Quality Assurance/Quality Control Sample Collection

Field and trip blanks, consisting of distilled water, will be submitted to the analytical laboratory to provide a means to assess quality of the data resulting from the groundwater field sampling program. Field blanks consisting of methanol will be submitted to the analytical laboratory in conjunction with the sampling of soil for VOCs. Field blanks are analyzed to check for procedural contamination introduced during sampling that may cause sample contamination. Field blanks will be generated at a rate of one for every ten or fewer investigative samples, with a minimum of one per day. One duplicate sample will be collected each time water samples are collected from the wells.

Trip blanks are used to assess the potential for contamination of samples due to contaminant migration during sample shipment and storage. Trip blanks will be used for VOC samples only. Trip blanks are prepared prior to the sampling event and kept with the investigative samples throughout the sampling event. They are then packaged for shipment with other samples and sent for analysis. There will be one trip blank included in each sample shipping container. At no time after their preparation are the sample containers opened before they reach the laboratory. Trip blanks for groundwater samples will consist of deionized water and be prepared by the laboratory.

4.9 Decontamination Procedures

Sample tools (spoon samplers, stainless steel spoons, etc.) will be decontaminated prior to beginning site work and between sample intervals using an Alconox™ detergent wash followed by a tap water rinse.

Equipment used for the groundwater sampling event will be disposable, if possible, and will be replaced prior to the collection of each sample. The disposable equipment includes bailers, rope, tubing, field filters, and sampling gloves. Field monitoring equipment, such as the pH meter and temperature/conductivity meter, will be rinsed with distilled water between each sample.

5.0 Health and Safety Plan

A site safety plan has been prepared for field activities on the site and will be submitted under separate cover. The plan specifies a site safety coordinator, job task delegation, emergency procedures, and directions to the nearest emergency care facility.

All field personnel conducting on-site sampling activities will have completed OSHA 1910.120, 40-hour Health and Safety Training as well as annual 8-hour refresher training updates.

The site safety coordinator will review the health and safety plan with site personnel prior to beginning work. Daily meetings will be conducted at the beginning of each day thereafter to assess unforeseen hazards and/or make modifications due to changes in site conditions. Site personnel will acknowledge participation in the safety meeting by signing and dating the health and safety plan.

6.0 References

Phase I Environmental Site Assessment, 162 West Pulaski Street, Brown County, Wisconsin, June 6, 2011.

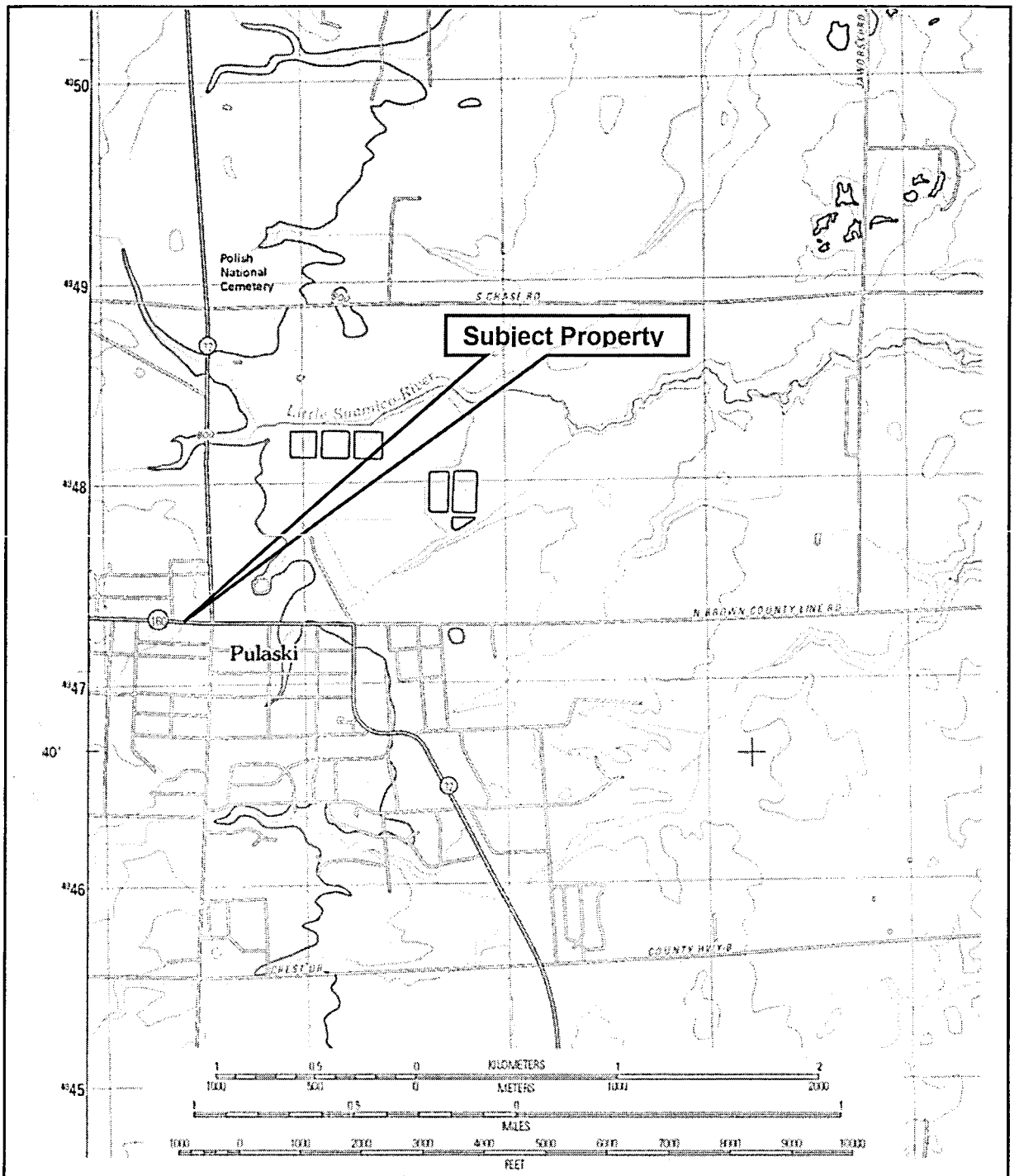
United State Department of Agriculture, Soil Conservation Service, Soil Survey of Brown County, Wisconsin, 1974.

United States Geological Survey (USGS) publication Water Resources of Wisconsin, Fox-Wolf River Basin, Hydrologic Investigations Atlas HA-321, 1968.

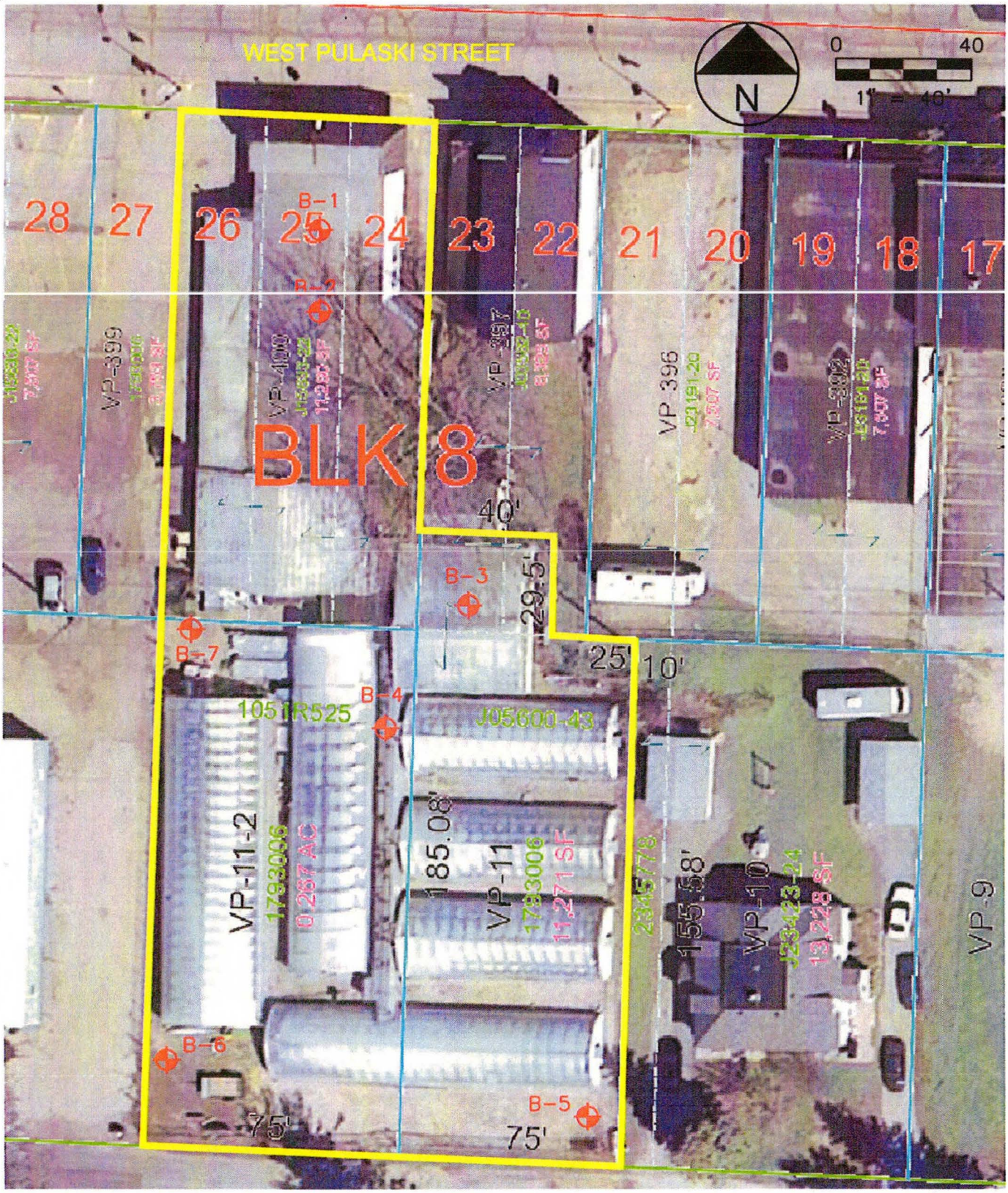
Figures

Figure 1 - Site Location Map

Figure 2 - Proposed Boring Locations



AECOM	Site Location Map Wery Property, Village of Pulaski 162 West Pulaski Street Pulaski, Wisconsin 54162	Figure Number: 1
Originated By:	Date:	Project Number:
RWS	03/03/11	60139760-0900



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PROPOSED BORING LOCATION
WERY PROPERTY, VILLAGE OF PULASKI
162 WEST PULASKI STREET
PULASKI, WISCONSIN 54162

Drawn :	DTB	2/28/2012
Checked:	RJM	2/28/2012
Approved:	RJM	2/28/2012
PROJECT NUMBER	60139760	
FIGURE NUMBER	2	

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