



August 2, 2017

Ms. Janet DiMaggio  
Wisconsin Department of Natural Resources  
3911 Fish Hatchery Road  
Madison, WI 53711



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RE: Change Order Request No. 5 for the Block System Cleaners Facility Located at 2017 Winnebago Street in Madison, Wisconsin – BRRTS No. 02-13-552132; ReadyEarth Project no. 11-0604

Dear Ms. DiMaggio:

**ReadyEarth Consulting, Inc. (ReadyEarth)** is pleased to submit this change order to the Wisconsin Department of Natural Resources (DNR) for the above-referenced site (the "site"). This letter outlines the additional activities proposed for the site as determined through our technical assistance request, and requests your approval of the proposed costs for those activities. The attached DNR linking spreadsheet presents the proposed costs for the additional site investigation (SI) activities presented in this letter.

### **Proposed Additional Activities**

The DNR committee recently provided comments (attached) to our *Technical Assistance Work Plan* dated June 29, 2017. ReadyEarth incorporated those comments into a revised scope of work and prepared this change order request. The scope includes conducting a shallow soil investigation (i.e. above the water table) within the anticipated source area; installing three new off-site piezometers and a new off-site water table observation well; conducting four rounds of quarterly groundwater sampling; conducting paired sub-slab and indoor air sampling within the 2000 Atwood building; and documenting the activities in a SI report addendum. The report will include our conclusions and recommendations for the subsequent phase of work for the site, which may include a closure request. ReadyEarth has documented the estimated costs for the additional work on the attached DNR linking spreadsheet. The following sections describe the work in detail.

### ***Item No. 1 Amendment – Work Plan Preparation and Scope Determination***

ReadyEarth attended a technical assistance meeting with the DNR and prepared a work plan of proposed activities that was reviewed by the DNR committee. ReadyEarth has also spent considerable time evaluating quotes from contractors, and site coordination

meetings in order to prepare this change order request. ReadyEarth has developed what we believe to be an appropriate scope of work that incorporates the comments from the DNR committee.

***Item No. 2 Amendment – Additional Soil Probe Investigation***

ReadyEarth will document the procedures utilized by a soil probe contractor to advance a soil probe at approximately six locations: three locations within the building footprint in the vicinity of the former Stoddard underground storage tanks (USTs); and three exterior locations adjacent to the previous sampling locations GP-1, GP-2, and MW-3. The probeholes will be advanced with typical direct push technologies. Each probehole will be advanced to approximately 12 feet below ground surface (bgs) and will likely terminate above the water table. The purpose of the probeholes is to conduct a vadose zone source evaluation and evaluate the presence/composition of fill, if any. The anticipated locations for the proposed probeholes are illustrated on the attached figure B.1.b.

ReadyEarth will collect soil samples at approximate 2-foot intervals for visual classification, field screening with a photoionization detector (PID), and potential laboratory analyses. ReadyEarth anticipates submitting samples for laboratory analyses from the 2-4 and 4-8 foot intervals of each probehole (12 samples total). ReadyEarth will submit the samples to the laboratory under standard chain-of-custody protocol for analyses of volatile organic compounds (VOCs) via the EPA 8260 method.

ReadyEarth will incorporate the PID screening results and soil classification information into boring logs and cross-sections to be included with the SI addendum report. In particular, ReadyEarth will document the presence and composition of any fill encountered and any evidence (or lack thereof) of any dense non-aqueous phase liquid (DNAPL) or other obvious contaminant source.

***Item No. 3 Amendment – Monitoring Well Installation***

ReadyEarth will document the procedures utilized by a drilling contractor to drill and install three piezometers and one water table observation well. All of the drilling will be on off-site properties, which will involve coordinating access and scheduling with off-site property owner(s). The scope and costs of the proposed drilling activities assume unconsolidated soil conditions. If bedrock is encountered, an additional change order will be necessary.

One new piezometer will be nested with the existing PZ-1 and will be screened at a terminal depth of approximately 60 feet bgs. Two additional piezometers will be nested

and installed along the downgradient flow line on an off-site property beyond Atwood Avenue. One of those piezometers will be screened at a terminal depth of approximately 48 feet bgs to evaluate the impacts detected at PZ-1. The second of those piezometers is proposed to be screened at a terminal depth of approximately 70 feet bgs to evaluate the downgradient vertical extent.

An additional water table observation well will be nested with the new piezometers across Atwood Avenue. The well will be installed at a terminal depth of approximately 18 feet bgs and will be constructed so that the screen intersects the water table

The new wells will be constructed in accordance with ch. NR 141 Wis. Adm. Code. The piezometers will include 3-foot screened sections and the water table observation well will include a 10-foot screened section. The anticipated locations of the proposed wells are illustrated on the attached figures B.1.b and B.3.a.

ReadyEarth will collect soil samples down to the water table at approximate 2-foot intervals for visual classification, field screening with a PID, and potential laboratory analyses. ReadyEarth will submit up to eleven soil samples for laboratory analyses of VOCs via the EPA 8260 method. Below the water table, ReadyEarth will collect soil samples at approximate 5-foot intervals for visual classification and PID screening.

Soil generated during the drilling and well construction activities will be staged in a roll-off box pending proper disposal. ReadyEarth will utilize the previous laboratory data in order to obtain disposal approval prior to the drilling activities so that the soil may be transported off site as efficiently as possible.

#### ***Item No. 6 Amendment – Additional Documentation***

ReadyEarth will include the results of the additional activities described in this change order into an SI addendum report. ReadyEarth will incorporate all data into updated tables and figures that will be organized in accordance with the current DNR closure request format. The SI addendum report will include copies of laboratory reports not previously submitted and other pertinent information. ReadyEarth will submit the report to the DNR subsequent to determining the final round of groundwater sampling.

#### ***Item No. 7 Amendment – Change Order/Status Letter***

ReadyEarth has prepared this change order to update the proposed scope of work (incorporation of DNR committee comments) and provide justification for the additional costs presented on the attached DNR linking spreadsheet.

***Item No. 8 Amendment – Additional Groundwater Sampling***

ReadyEarth proposes to conduct up to four additional rounds of groundwater sampling from all wells at the site (including the new wells described in this letter). Prior to each event, ReadyEarth will measure the depth to water at each of the wells in order to determine groundwater elevations. ReadyEarth will survey the additional wells relative to the existing well network and will adjust the existing survey data to the national geodetic survey datum. During the initial event, ReadyEarth will develop each of the new wells in accordance with ch. NR 141 Wis. Adm. Code. All water generated during the well development and sampling activities will be discharged to the Madison Metropolitan Sewerage District in accordance with their previous approval.

It should be noted that fewer rounds of sampling may be required for closure. ReadyEarth will use the additional groundwater sampling data to document the site conditions and support closure via natural attenuation.

ReadyEarth will utilize dedicated equipment or standard field decontamination procedures to avoid cross-contamination. ReadyEarth will submit the groundwater samples to the laboratory under standard chain-of-custody protocol for analyses of VOCs via the EPA 8260 method.

***Item No. 9 Amendment – Off-Site Sub-Slab Vapor Sampling (paired with Indoor)***

ReadyEarth will collect two sub-slab vapor samples from beneath the 2000 Atwood building and pair those sub-slab samples with indoor air samples. ReadyEarth will coordinate access to the building to install sub-slab sampling ports and collect samples.

ReadyEarth will install the new vapor probes in general accordance with DNR vapor intrusion guidance (PUB-RR-800 and RR-986). For each sub-slab vapor probe, ReadyEarth will drill a 1" diameter hole to terminate between 1" and 1½" into the concrete slab, and then drill a 5/8" diameter hole within the larger hole and through the slab into the underlying aggregate or soil. The drilled holes will be cleaned out with a shop vacuum to remove the concrete dust. ReadyEarth will attempt to vent the vacuum remotely to limit exposure of any sub-slab vapors to indoor air. A bead of non-VOC wax will be placed around the bottom portion of a sleeve and coupler (the "probe"), and the probe will be inserted into the drilled hole. The probe will be seated so that the wax seals the lower portion of the drilled hole and so that the probe is installed approximately flush with the floor. All threaded connections will be national pipe thread (NPT) and sealed with Teflon tape. The probe will be sealed with a threaded cap and Teflon tape, and the annular space between the probe and floor will be sealed with

hydraulic cement. The hydraulic cement will be allowed to set prior to sampling activities.

Following installation of the sub-slab ports, ReadyEarth will begin the collection of the indoor air samples. ReadyEarth will position a Summa canister in the vicinity of each of the two new sub-slab ports to obtain representative indoor air samples. The indoor air Summa canisters will be equipped with vacuum gauges and flow controllers to collect the air samples over an approximate 24-hour period.

ReadyEarth will collect the sub-slab vapor samples in general accordance with DNR vapor intrusion guidance (PUB-RR-800 and RR-986). ReadyEarth will remove the probe cap and thread a ball valve with a barbed fitting into the probe. The threads will be wrapped with Teflon tape with the valve in the closed position. Dedicated Nycoil tubing will be slipped onto the barbed fitting and routed to a barbed, brass "T" that routes tubing to a 6L summa canister (valve closed) and to an "upper" valve (valve open). The tubing will be connected to the Summa canister with Swagelok fittings supplied by the laboratory. The Summa canisters for the sub-slab samples will be equipped with vacuum gauges and flow controllers to collect the samples with a flow rate of less than 200 ml/min (approximately 30 to 45 minutes).

For the sub-slab vapor samples, ReadyEarth will perform shut-in tests by applying a vacuum of approximately 7" Hg (approximately 100" water) to the system with the upper valve open and the floor valve closed. ReadyEarth will monitor the vacuum gauge over approximately 2 minutes for dissipation. ReadyEarth will consider the shut-in test passed if no dissipation is observed. If dissipation is observed ReadyEarth will check the fittings and seals of the sampling apparatus and re-test until achieving a passing result.

After the shut in tests, ReadyEarth will open the floor valve and place a helium shroud over the floor valve. The helium shroud has tubing entering the top to apply helium to the system, a seal on the bottom, and an available sampling port. A helium meter will be attached to the sampling apparatus at the upper valve, and the shroud will be filled with helium. ReadyEarth will monitor the helium meter over two minutes for any detection. ReadyEarth will consider the helium shroud test passed if no helium is detected. If helium is detected, ReadyEarth will check the floor valve fitting and or add a wax seal to the concrete and re-test until achieving a passing result.

Once the system passes both the shut-in and helium shroud tests, ReadyEarth will purge the system with a PID for approximately 1 minute and record the stabilized PID reading. ReadyEarth will then close the upper valve and open the summa valve. ReadyEarth will record the start time and initial vacuum reading on the summa canister

gauge. Once the vacuum gauge reads approximately zero or at least 45 minutes has elapsed, ReadyEarth will close the summa valve and record the end time and final vacuum reading. ReadyEarth will then remove the entire sampling apparatus and reinstall the probe cap with Teflon tape.

ReadyEarth will submit the summa canisters to the laboratory under standard chain-of-custody protocol for analyses of PCE, TCE, cis-1,2-dichloroethene (DCE), trans-1,2-DCE, and vinyl chloride via the TO-15 method. The chain of custody protocol will include recording start and end times, start and end vacuum readings, unique summa canister numbers, and unique flow control numbers.

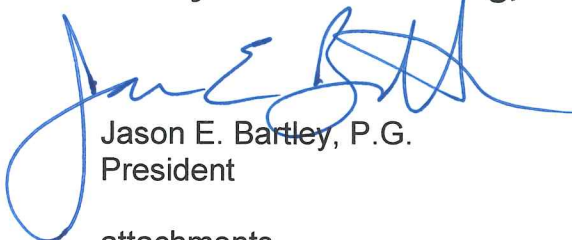
### **Estimated Project Timing**

ReadyEarth will begin the access process for the off-site wells and sub-slab vapor/air sampling immediately upon receiving authorization and approval of costs. ReadyEarth anticipates installing the wells and beginning the groundwater sampling in fall of 2017 and quarterly thereafter.

Thank you for the assistance with this project. If you have any questions or comments regarding this submittal, please call me at (262) 522-3520.

Sincerely,

***ReadyEarth Consulting, Inc.***



Jason E. Bartley, P.G.  
President

attachments

cc: Mr. Jim Friedl

11-0604s



Jason Bartley &lt;jbartley@readyearth.net&gt;

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## Block system Cleaners, Madison

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DiMaggio, Janet H - DNR <Janet.DiMaggio@wisconsin.gov>  
 To: "jbartley@ReadyEarth.net" <jbartley@readyearth.net>

Tue, Jul 25, 2017 at 11:03 AM

Good Morning Jason,

Thank you for your phone call this morning. The committee met last week, considered the submitted work plan and suggestions I made, and offered the following direction.

1. The site investigation needs to be completed.
  - a. The proposal included a nested deeper PZ near the current PZ-1 and a set of nested PZs across Atwood Ave. The committee would like a WT well added to the two proposed PZs offsite.
  - b. Four rounds of GWM.
  - c. Shallow soil sampling around and in the presumed source area is needed.
  - d. Paired subslab and indoor air vapor samples are needed for the 2000 Atwood property.
  - e. A report of the completed SI is needed.
  
2. In answer to the five questions you asked:
  - a. Is further shallow, lateral delineation required down-gradient of MW-6?
 

Yes. One new proposed well should nest with existing PZ-1, and two proposed PZs should be installed nested with a WT well down-gradient and across Atwood Ave. New wells need to be geologically logged (not blind drilled) with representative soil samples taken for analyses. All site wells need to be surveyed to the national geodetic survey datum.
  - b. If the results from the initial two sampling results from the down-gradient piezometers are below enforcement standards, can the groundwater sampling be terminated?
 

You need to request this in writing and DNR would respond after evaluating the data.
  - c. Is further source evaluation required?
 

Yes. See number 1, above. The source needs to be identified. Direct contact soil samples (preferably 2-4' bgs) are needed in suspected source area and outside of the building (by GP-1, MW-3, GP-2) to define the source and extent. These direct contact zone samples should be paired with samples in the 4-8' bgs interval.
  - d. Can the vapor mitigation systems (VMSs) operating in the west portion of the dry cleaning building and neighboring property (see figure B.4.a. SSDS-4 through 8) be discontinued?
 

Yes, it is not required by existing data. It might be a good idea to let it operate or to offer this option to existing tenants or owners or those properties.

Please note that paired subslab and indoor air vapor samples are needed for the 2000 Atwood property.
  - e. What are the factors that DNR would consider relevant to show that active remediation is not required in order to achieve closure?
 

There is potential for DNAPL at the WT in the vicinity of the source. An active remedial measure is needed as the data show high concentrations. The committee suggested consideration of SVE and a pilot test. A question arose to the nature of the subsurface materials. Please verify if there is fill or if the subsurface material are native soils.

Please let me know if you have any questions.

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Visit our survey at <http://dnr.wi.gov/customersurvey> to evaluate how I did.

**Janet DiMaggio**

Hydrogeologist, Bureau for Remediation and Redevelopment/Environmental Management Division  
Wisconsin Department of Natural Resources

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Phone: (608) 275-3295

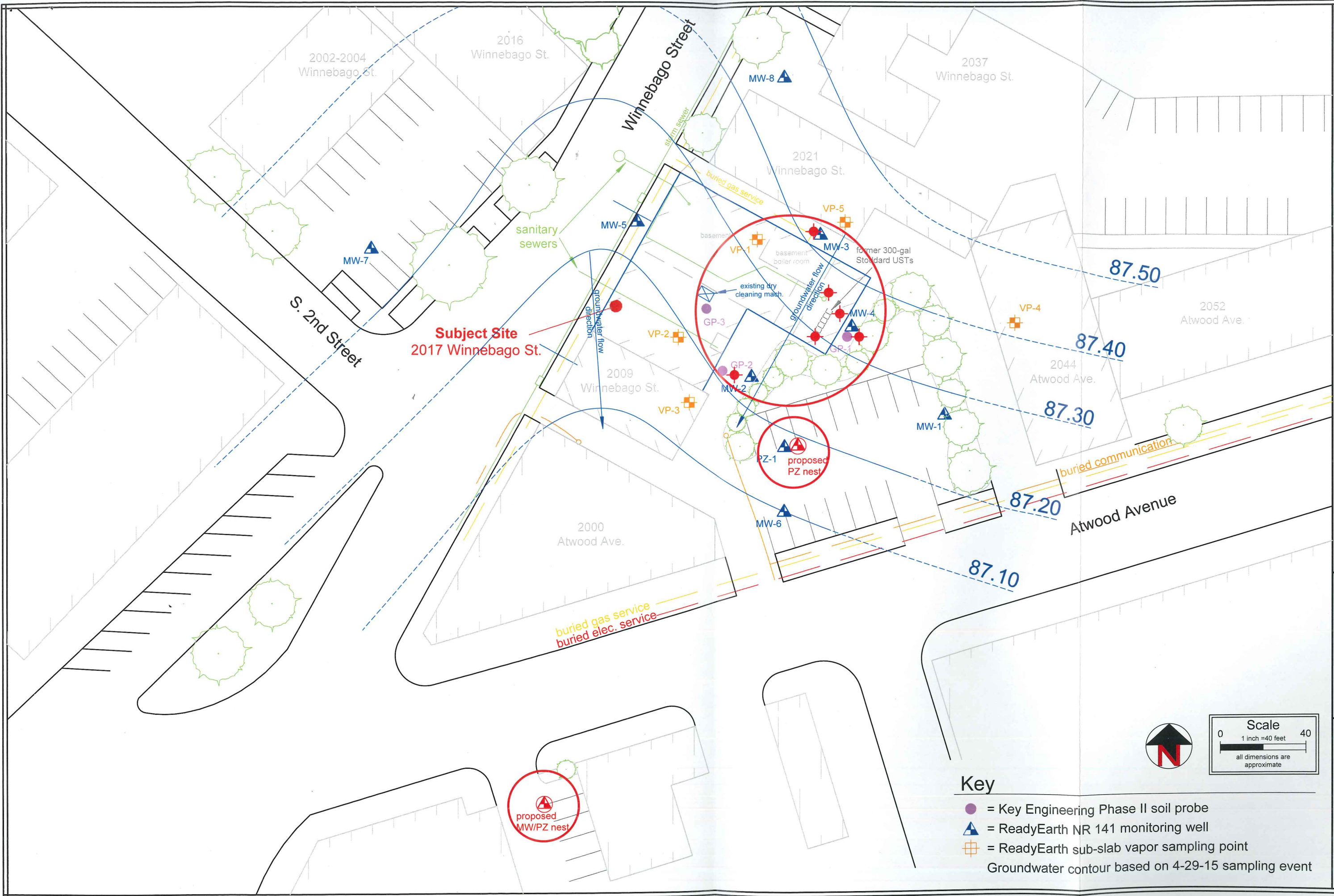
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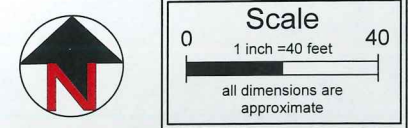






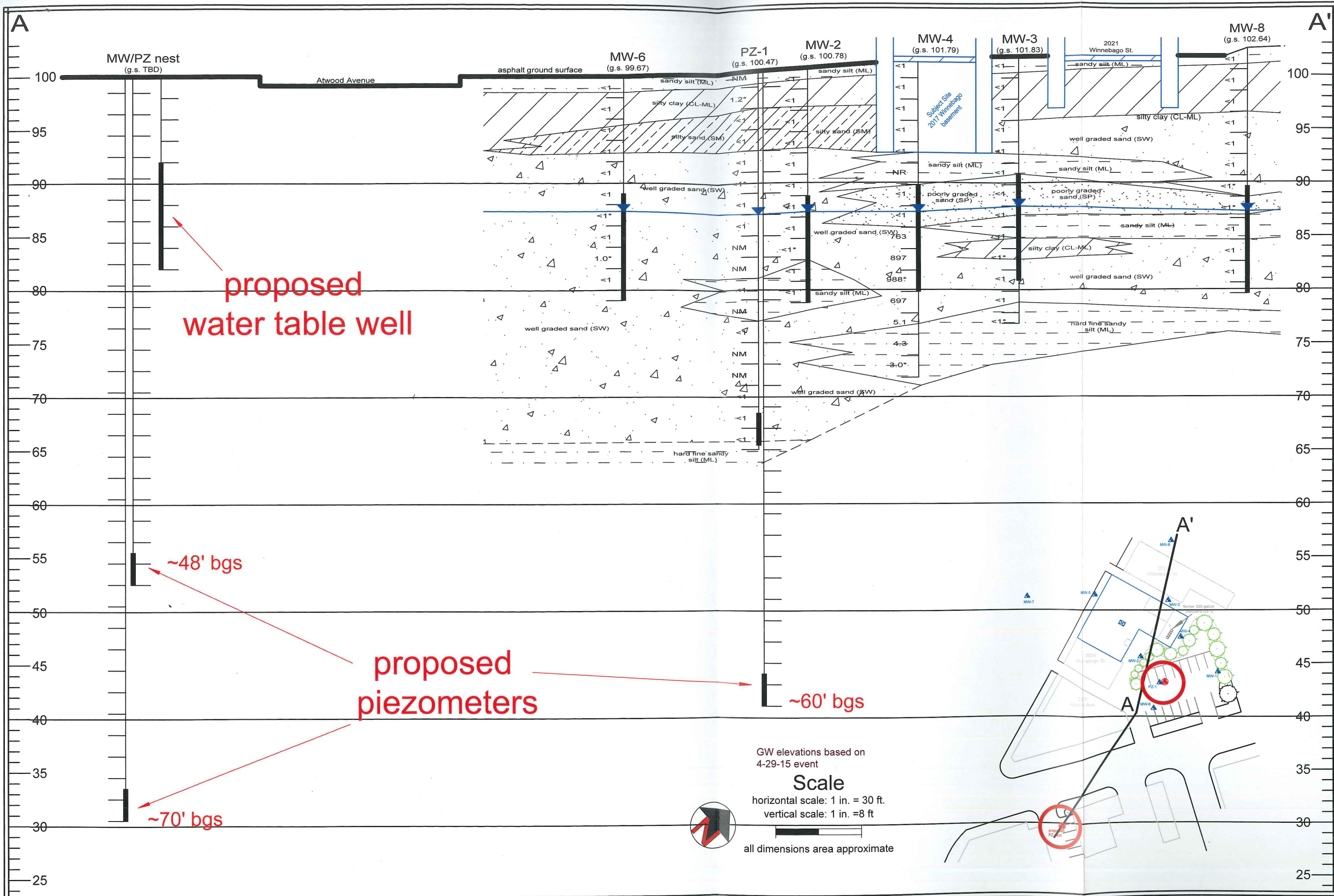
**B.1.b Detailed Site Map**  
 Block System Cleaners  
 2017 Winnebago Street  
 Madison, Wisconsin

Drawing No.: 11-0604Z  
 DWG Date: 06-27-17  
 Rev Date: 08-02-17  
 Drafted by: JEB



- Key**
- = Key Engineering Phase II soil probe
  - ▲ = ReadyEarth NR 141 monitoring well
  - ⊞ = ReadyEarth sub-slab vapor sampling point
  - = Groundwater contour based on 4-29-15 sampling event





proposed  
water table well

~48' bgs

proposed  
piezometers

~60' bgs

~70' bgs

GW elevations based on  
4-29-15 event  
**Scale**  
horizontal scale: 1 in. = 30 ft.  
vertical scale: 1 in. = 8 ft  
all dimensions area approximate

**B.3.a Geologic Cross-Section Figure A-A'**

Block System Cleaners  
2017 Winnebago Street  
Madison, Wisconsin

Drawing No.: 11-0604y
DWG Date: 04-27-12
Rev Date: 08-02-17
Drafted by: JEB

