



## REMEDIAL ACTION DESIGN REPORT

**FORMER ROBINSON'S CLEANERS  
1036 4TH STREET  
BELOIT, WI 53511  
BRRTS# 02-54-515602**

September 27, 2017

*Prepared By:*

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Handwritten signature of Brian Kappen in blue ink.

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## CERTIFICATIONS

I, Andrew Horwath, hereby certify that I am a registered professional engineer in the State of Wisconsin, registered in accordance with the requirements of ch. A-E 4, Wis. Adm. Code; that this document has been prepared in accordance with the Rules of Professional Conduct in ch. A-E 8, Wis. Adm. Code; and that, to the best of my knowledge, all information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR 700 to 726, Wis. Adm. Code.

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Signature, title and P.E. number

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P.E. stamp

I, Brian Kappen, hereby certify that I am a hydrogeologist as that term is defined in s. NR 712.03 (1), Wis. Adm. Code, am registered in accordance with the requirements of ch. GHSS 2, Wis. Adm. Code, or licensed in accordance with the requirements of ch. GHSS 3, Wis. Adm. Code, and that, to the best of my knowledge, all of the information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR 700 to 726, Wis. Adm. Code.

  
\_\_\_\_\_  
Project Manager  
Signature and title

9/27/2017  
Date

## EXECUTIVE SUMMARY

EnviroForensics, LLC (EnviroForensics) has prepared this Remedial Action Design Report (Report) on behalf of Ray Gehrig d/b/a RayChris, Inc. for the former Robinson's Cleaners facility located at 1036 North 4<sup>th</sup> Street, Beloit, Wisconsin (Site). Soil, groundwater, and soil gas have been contaminated by a release of tetrachloroethene (PCE) from the former Robinson's facility.

The remedial action for soil will consist of soil vapor extraction (SVE). The primary objectives of SVE are to remove contaminant mass from soil and reduce the potential for vapor intrusion in the Site building. Active groundwater remediation will not be implemented at this time since concentrations in groundwater have not increased over time or spread further down-gradient indicating that the groundwater plume may have attenuated. However, the SVE system may act to reduce groundwater concentrations around the Site building as volatilization occurs at the water table. Chlorinated volatile organic compound (CVOC) concentrations in other areas of the groundwater plume may decrease gradually as CVOC mass is removed from the source area and mass loading to the groundwater is reduced or eliminated. Periodic groundwater sampling will be implemented to monitor the effect of SVE on the groundwater plume. Risk management procedures, such as off-site property notifications and GIS Registry enrollment, will be implemented as needed for closure purposes.

The SVE system has been designed using the results of an SVE pilot study conducted in 2012. The system consists of five (5) extraction wells connected to the SVE mechanical equipment via sub-grade piping. The system will be operated at the vacuum necessary to achieve the desired radius of influence (ROI) and so that groundwater upwelling is minimized. Operation and maintenance (O&M) activities for the SVE system will be conducted routinely to optimize system efficiency. Performance monitoring, including subsurface vacuum measurements and effluent sampling for CVOCs, will be performed to verify the ROI and calculate contaminant mass removal rates. The overall effectiveness of SVE will be evaluated by confirmation soil sampling.

A Construction Documentation Report will be prepared that documents as-built construction of the SVE system and the final O&M Plan for the SVE system. Semi-annual progress reports will be submitted to WDNR, as required, during remediation.



## 1.0 INTRODUCTION

EnviroForensics, LLC (EnviroForensics) has prepared this Remedial Action Design Report (Report) on behalf of Ray Gehrig and RayChris, Inc. formerly d/b/a Robinson's Cleaners (Robinson's) located at 1036 North 4<sup>th</sup> Street, Beloit, Wisconsin (Site). This Report follows guidelines for remedial action design set forth in Wisconsin Administrative Code (WAC) Chapter NR 724 rule and other associated State of Wisconsin Chapter NR 700 series rules.

This Report follows submittal of the Site Investigation Report, dated September 5, 2014, and the Remedial Action Options Report (RAOR), dated February 19, 2015. The recommended closure strategy and preliminary design of remedial actions were presented in the RAOR. The design of the remedial action for soil, including engineering plans and specifications, is provided in this Report. The need for active groundwater treatment will be evaluated as soil remediation progresses and the groundwater plume is monitored.

## 2.0 SITE BACKGROUND

Site investigation activities began at the Site by others in 2003. EnviroForensics assumed management of investigation activities in 2009, and the characterization of the full nature and extent of contamination in all media was completed. This section describes the Site and presents a brief history.

### 2.1 Geographic Information

The Site occupies the northwest  $\frac{1}{4}$  of the northeast  $\frac{1}{4}$  of Section 35, Township 1 North, Range 12 East, in Beloit, Rock County, Wisconsin. The topography at the Site is generally flat. The Rock River is located approximately one block (less than 500 feet) to the east of the Site. The location of the Site is depicted on **Figure 1**.

A Site Layout is included as **Figure 2**. The Site is bound by 4<sup>th</sup> Street to the east, the former Marathon Service Station (1020 North 4<sup>th</sup> Street) and AutoZone (1004 North 4<sup>th</sup> Street) properties to the south, residential properties and 5<sup>th</sup> Street to the west, and a grass field and Speedway Gas Station to the north. The area surrounding the Site consists of residential and commercial properties.

### 2.2 Site History

The site was purchased by the responsible party, RayChris, Inc., on April 3, 1981, from the estate of Arthur R. Furman. Gehrig operated the site as an active dry cleaning facility until January 1, 1990. The former dry cleaning machine was located on the north-central portion of the building. The dry cleaning solvent used was tetrachloroethene (PCE) and deliveries occurred through the overhead doors on the southwest side of the building. There are two (2) floor drains in the room where the dry cleaning machine was located. The floor drains discharge to the sanitary sewer, which exits the east side of the building.

PCE degrades under subsurface microbial action to other chlorinated volatile organic compounds (CVOCs) such as trichloroethene (TCE), dichloroethene (DCE), and vinyl chloride. PCE and other related products of degradation were detected in the subsurface during initial discovery testing in September 2003. The property was sold in late 2006 and was unoccupied until approximately 2009. From 2009 to 2013, the east (office) portion of the building was occupied by a printing/copying business, and the remaining portion of the building was used

primarily as a warehouse. The Site building is currently occupied by a fabricator that produces metal guarding for industrial machinery.

### **2.3 Nature and Extent of Contamination**

Several contaminants present in the soil, groundwater, and soil vapor beneath the Site exceed Wisconsin Department of Natural Resources (WDNR) health-based standards and screening levels. The site investigation data indicate that the source of contamination is from undocumented, and likely incidental releases of PCE which occurred over time in the vicinity of the dry cleaning machine and the back receiving bay door. PCE releases from the sanitary sewer lateral have not been specifically identified; however, sanitary sewer laterals are notoriously leaky and the sewer extends east-west under the length of the Site building through an area of elevated PCE impacts in soil. The PCE migrated vertically through soil beneath the Site building, causing subsurface soil, groundwater and soil gas impacts. A PCE groundwater plume extends off-site approximately 500 feet downgradient to the south. An isoconcentration map of PCE in soil is provided on **Figure 3**, and the extent of the PCE groundwater plume is depicted on **Figure 4**.

Petroleum-related compounds including benzene, ethyl benzene, naphthalene, and xylenes were detected in groundwater and sub-slab vapor samples collected from adjacent properties. The impacts associated with petroleum-related compounds are likely related to releases from the former Marathon station (BRRTS #: 03-54-525722) that is adjacent to the Site to the south.

### **3.0 REMEDIAL ACTIVITIES**

The recommended closure strategy identified in the RAOR included a combination of risk management and remediation. The remedial action for soil will consist of soil vapor extraction (SVE). Active groundwater remediation will not be implemented at this time since concentrations in groundwater have not increased over time or spread further down-gradient indicating that the groundwater plume may have attenuated. However, the SVE system may treat shallow groundwater around the Site building as volatilization occurs at the water table. CVOC concentrations in other areas of the groundwater plume may decrease gradually as CVOC mass is removed from the source area and mass loading to the groundwater is reduced or eliminated. Periodic groundwater sampling will be implemented to monitor the effect of SVE on the groundwater plume. A groundwater use restriction may still be necessary for the Site and other off-site properties after remediation is complete to prohibit exposure to residual groundwater impacts.

#### **3.1 Soil Vapor Extraction (SVE)**

SVE technology will be used to remediate vadose zone soil impacts beneath and around the Site building. The primary objective of SVE is to remove contaminant mass from vadose zone soil. The following sections describe the SVE system design, operation and maintenance activities, and performance monitoring program.

The results of indoor air samples collected during the Site investigation indicated that the vapor intrusion pathway was not complete. However, PCE concentrations as high as 797,000 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ) were detected in sub-slab vapor under the Site building. Implementing SVE as designed eliminates the need for a vapor mitigation system and the associated commissioning, maintenance, and monitoring. The vapor intrusion pathway will be re-evaluated once operation of the SVE system is discontinued.

##### **3.1.1 *Permitting***

Construction and operation permits apply to remediation systems that emit contaminants under WAC Chapters NR 406 and 407, respectively. The following permitting thresholds apply to remediation systems, regardless of whether or not emissions control devices are used:



- Total volatile organic compound (VOC) emissions greater than 5.7 pounds per hour (lb/hr) [NR 406.04(1)(m)2]; and
- Assuming a stack height less than 25 feet, PCE emissions greater than 9.11 lb/hr or 301 pounds per year (lb/yr) [NR 407.03(1)(sm)].

The sampling data collected during the 2012 SVE pilot test indicated a VOC mass removal rate of less than 100 lb/yr at startup. Therefore, EnviroForensics anticipates that the SVE system will be exempt from permitting requirements. However, the SVE system is designed so that carbon treatment can easily be added if necessary to reduce the concentrations of total VOCs or PCE to below the permit thresholds. It is also possible to raise the stack height above 25 feet, which increases the annual PCE emission limit to 1,237 lb/yr.

Ambient air quality criteria defined in WAC Chapter NR 445.07 also apply to remediation systems. The concentration of PCE must be less than 4,069  $\mu\text{g}/\text{m}^3$  in ambient air while the SVE system is operating. The monitoring program designed to ensure compliance with all emissions and air quality standards is described in Section 3.1.4.

### **3.1.2 SVE System Design**

The SVE system is designed to extract soil vapor and consists of five (5) extraction wells installed around the perimeter of the Site building, below grade piping, and the SVE mechanical components. The extraction wells will be constructed of 4-inch diameter schedule 40 PVC with 0.020-slotted screen from 3 to 6 feet below grade surface (bgs). The wellheads will be protected at the surface with 24-inch square flush-mount vaults set in a concrete pad. The extraction wells will be connected with 4-inch diameter PVC in trenches, leading to the equipment trailer on the west side of the Site building. The proposed layout of the system is shown on **Figure 5**. The extraction well and sub-grade piping construction details are depicted on **Figure 6**.

The results of the 2012 pilot test indicated an achievable radius of influence (ROI) of 55 feet at a vacuum of 12.5 inches of mercury (inHg). However, water intake was estimated to be approximately 0.5 gallons per minute (GPM). Therefore, the system is designed with a lower vacuum to minimize groundwater upwelling. The SVE system design parameters are as follows:

- Extraction rate of 375 standard cubic feet per minute (SCFM), or 75 SCFM per extraction well;

- Operating vacuum of 8 inHg; and
- ROI of 35 feet at each extraction well.

The designed ROI for each well is depicted on **Figure 5**. The extraction well layout around the perimeter of the building limits disruption to current business operations inside the building while still achieving full vacuum coverage in the contaminated area under the Site building. The SVE system is designed to allow various operational configurations. A ball valve will be installed at each of the five (5) extraction wellheads so that individual wells can be disconnected from service. This design allows targeting of specific areas as the remediation progresses to maximize efficiency.

The SVE mechanical equipment and controls include the following:

- Roots URAI 59 positive displacement blower;
- 15 HP 3-phase motor;
- Inlet filter;
- Vacuum relief valve;
- Discharge silencer;
- Low vacuum switch;
- 110-gallon air-water separator tank with float switch assembly;
- 1.5 horsepower progressive cavity transfer pump;
- Remote telemetry unit with various process controls and sensors.

The equipment will be positioned on the west side of the Site building in a trailer-mounted enclosure. A chain-link fence will be installed around the trailer for added security. Recovered vapors and condensate first go through the air-water separator tank. After the water and vapor have been separated, the SVE exhaust is discharged to the atmosphere. Water will be discharged to the sanitary sewer under a permit obtained through the City of Beloit. A 2-inch PVC discharge line will be installed, connecting to the sanitary sewer lateral on the east side of the building as shown on **Figure 5**. If needed, water will be pumped through the bag filter and carbon treatment vessels to comply with permitted discharge limits. A process and instrumentation diagram is presented on **Figure 7**.

### 3.1.3 *SVE System Operation and Maintenance (O&M)*

Initially, the SVE system will be operated for a period of one (1) year. After the first year of operation, the need for continued operation will be evaluated based on the rate and efficiency of CVOC mass removal. If additional remediation is warranted, a change order will be issued to cover the anticipated duration of system operation.

Routine and periodic O&M of the SVE system will be required. O&M activities will include the following:

- Address system shutdowns or operational issues;
- Record operational parameters and vapor concentrations to evaluate efficiency:
  - Effluent CVOC vapor concentration by sample collection in vacuum canisters;
  - Total system run time;
  - System vacuum;
  - Vacuum at each wellhead;
  - Vacuum at monitoring points;
  - Flow rate; and
  - Exhaust temperature.
- Inspect, maintain, and/or repair the following components as needed and recommended by the manufacturers:
  - Blower belts and pulleys;
  - Blower inlet filter;
  - Blower motor bearings and oil level;
  - System enclosure exhaust fan;
  - Moisture separator tank and float switches;
  - Vacuum bypass valve;
  - Moisture separator dilution valve;
  - Exhaust muffler; and
  - Electrical power phase converter.

EnviroForensics will prepare and submit an Operation and Maintenance Plan to WDNR in accordance with Wisconsin Administrative Code (WAC) Chapter NR 724.13 after the system has been installed.

### **3.1.4 SVE Performance Monitoring**

The effectiveness of the SVE system is evaluated periodically by monitoring the subsurface vacuum influence and air emissions of target CVOCs. These activities are summarized below.

Samples of the SVE system emissions will be collected from the effluent piping and analyzed for target CVOCs to calculate mass removal rates and cumulative mass removed and to determine operational changes to optimize system performance. Testing is also required to determine whether emissions treatment is required to stay below permitting thresholds. The emissions testing schedule required under WAC Chapter 419.07 is as follows:

- Once each day for the first 3 days of operation;
- Weekly for the next 3 weeks; and
- Monthly thereafter.

The effluent samples will be collected in 1-liter vacuum canisters at a rate of 200 milliliters per minute and submitted to a laboratory for analysis for PCE and related compounds. The first two samples, collected on days 1 and 2 of operation, will be analyzed on a rush timeframe to avoid delays in meeting the emissions thresholds.

Outdoor air samples will be collected to evaluate air quality and the need for emissions treatment to meet the ambient air standard. The samples will be collected from locations downwind of the exhaust stack at the time of sampling. Two (2) 24-hour samples will be collected one day and one week after start up. The first two (2) samples will be analyzed on a rush basis. The samples will be collected in 6-liter vacuum canisters and shipped to a laboratory for analysis of PCE and related compounds.

### **3.1.5 Confirmation Sampling**

Once performance monitoring data indicates a significantly diminished mass removal rate, the SVE system will be shut down and soil samples will be collected to confirm the effectiveness of the SVE remedy. Up to ten (10) soil samples will be collected using hand auger or direct-push methods from areas that previously contained elevated impacts beneath and south of the Site building. The samples will be submitted to a laboratory for analysis of VOCs according to US EPA Test Method 8260.

The vapor intrusion pathway will also be re-evaluated after system shutdown. Three (3) sub-slab vapor samples will be collected from the Site building and analyzed for target CVOCs.

### **3.1.6**            *Proposed Implementation Schedule*

The SVE mechanical system is available immediately for delivery to the Site. Installation of the extraction wells and conveyance piping can be completed within 60 days of WDNR approval of this design report. The timing of system startup will depend on the availability of electrical service; however, it is anticipated that startup will occur within 90 days of WDNR approval of this design report. Construction documentation will be submitted within 60 days after the remedial system construction is completed. Operation and monitoring reports will be submitted on a semi-annual basis, as required.

Initially, one (1) year of continuous SVE system operation is planned. Mass removal rates will be evaluated after the first year of operation to determine whether additional operation is warranted. EnviroForensics will then provide recommendations for system shutdown or a proposed timeframe for continued operation, maintenance, and monitoring.

## **3.2**            **Groundwater Monitoring**

Groundwater monitoring will be conducted to track conditions as soil remediation progresses. Initially, four (4) monitoring events are proposed; however, additional monitoring may be required for case closure. The monitoring schedule is flexible, with the first event occurring approximately 6 months after SVE startup. Activities to be performed during the monitoring events will include groundwater elevation measurements and groundwater sample collection from 12 monitoring wells and piezometers located within the plume area (MW-1, MW-4, MW-8, MW-10, MW-13, MW-14, MW-15, MW-17, MW-20, MW-21, PZ-12 and PZ-22). The locations of the monitoring wells and piezometers are depicted on **Figure 2**.

Monitoring well caps will be removed at least 15 minutes prior to collecting water level measurements to allow groundwater in the monitoring wells to equilibrate with atmospheric pressure. The depth to water in each well will be measured to the nearest 0.01 foot using an electronic water level indicator. Groundwater purging and sample collection will be conducted using standard low-flow (minimal drawdown) methods. Field parameters including pH, specific



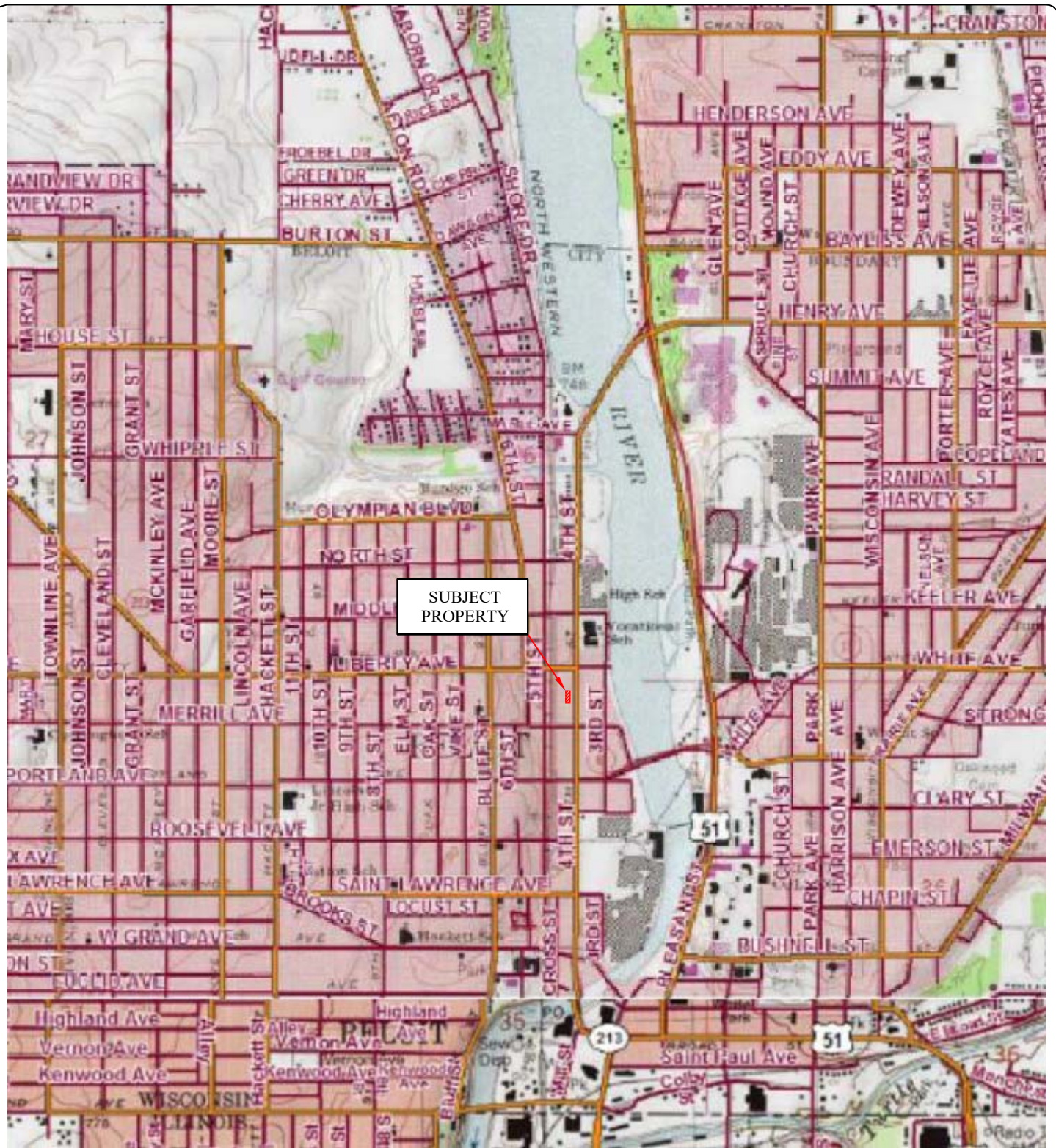
conductivity, temperature, ORP, and DO will be measured during purging and recorded on the groundwater field sampling form.

Two (2) duplicate samples and two (2) equipment blanks will be collected during each monitoring event, and one (1) trip blank sample will be analyzed per sample cooler for quality assurance/ quality control (QA/QC) purposes. A total of 17 samples per event will be transmitted to a state-certified laboratory and analyzed for VOCs according to U.S. Environmental Protection Agency (EPA) SW-846 Method 8260.

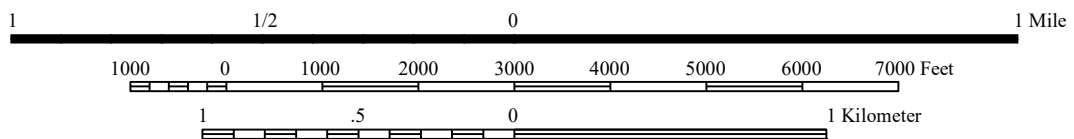
Investigation-derived media (IDM), including purge water and decontamination fluids, will be containerized in 55-gallon drums. A licensed contractor will be retained to remove drums following each monitoring event. The IDM will be managed under existing non-hazardous waste profiles.

EnviroForensics will tabulate and evaluate the groundwater analytical data to determine the effects of soil remediation on groundwater conditions. Sample results notifications will be prepared and submitted to the property owner and WDNR as required.

## **FIGURES**



Scale 1:24,000



Source: US Geological Survey, Southern Wisconsin Quadrangle, 7.5 Minute Series, 1984

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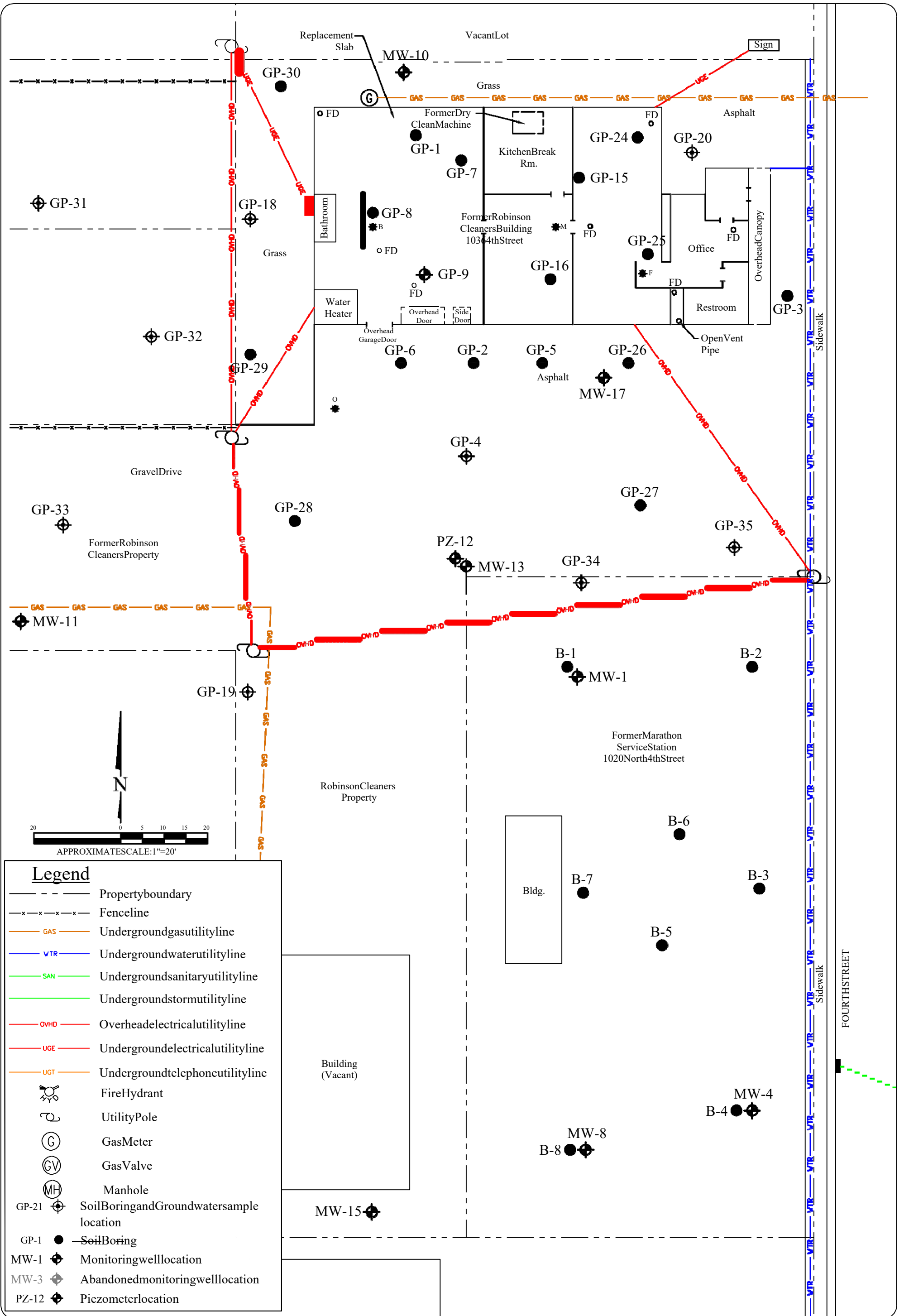
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 EnviroForensics.com

Date: 1/25/13  
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 Checked: KG  
 DWG file: 71844-13

**SITE LOCATION MAP**  
 Robinson's Cleaners: Beloit  
 1036 4th Street  
 Beloit, Wisconsin

Figure
1
Project
6154





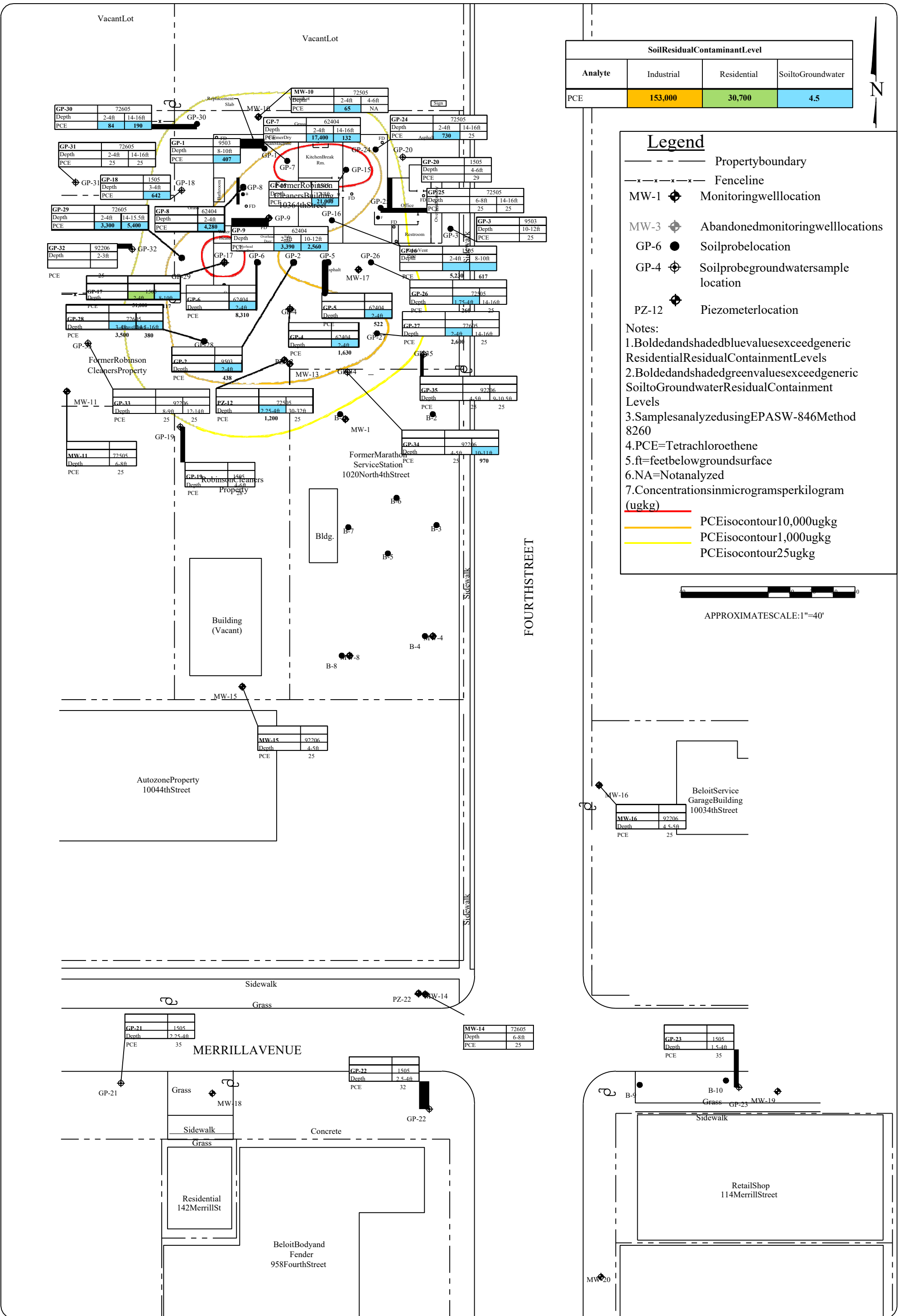
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DWG file:	6154-0766

**SITELAYOUT**  
 Robinson's Cleaners: Beloit  
 1036 4th Street  
 Beloit, Wisconsin

Figure	2
Project	6154



SoilResidualContaminantLevel			
Analyte	Industrial	Residential	SoiltoGroundwater
PCE	153,000	30,700	4.5

**Legend**

- Propertyboundary
- Fenceline
- MW-1 Monitoringwelllocation
- MW-3 Abandonedmonitoringwelllocations
- GP-6 Soilprobelocation
- GP-4 Soilprobegroundwatersample location
- PZ-12 Piezometerlocation

Notes:

1. Boldedandshadedbluevaluesexceedgeneric ResidentialResidualContainmentLevels
2. Boldedandshadedgreenvaluesexceedgeneric SoiltoGroundwaterResidualContainment Levels
3. SamplesanalyzedusingEPASW-846Method 8260
4. PCE=Tetrachloroethene
5. ft=feetbelowgroundsurface
6. NA=Notanalyzed
7. Concentrationsinmicrogramsperkilogram (ug/kg)

- PCEisocontour10,000ug/kg
- PCEisocontour1,000ug/kg
- PCEisocontour25ug/kg



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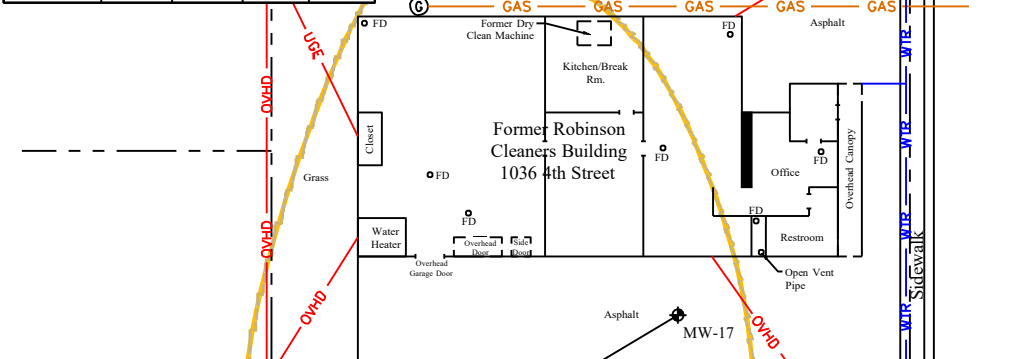
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**SOILBORINGLOCATIONANDPCE ISOCONCENTRATIONMAP**

Robinson's Cleaners: Beloit  
 10364th Street  
 Beloit, Wisconsin

Figure	3
Project	6154

<b>MW-10</b>	9/13	12/13	3/14	6/14
PCE	<b>11</b>	<b>7.3</b>	<b>12.4</b>	<b>8.4</b>
TCE	<0.19	<0.33	<b>0.40 J</b>	<0.33
cis-1,2-DCE	<0.12	<0.38	<b>0.57 J</b>	<0.38



<b>MW-17</b>	9/13	12/13	3/14	6/14
PCE	<b>15</b>	<b>12.7</b>	<b>3.09</b>	<b>2.11</b>
TCE	<0.19	<0.33	<0.33	<0.33
cis-1,2-DCE	<0.12	<0.38	<0.38	<0.38

<b>MW-13</b>	9/13	12/13	3/14	6/14
PCE	<b>27</b>	<b>8.3</b>	<b>6.3</b>	<b>31.2</b>
TCE	<0.19	<0.33	<0.33	<0.33
cis-1,2-DCE	<0.12	<0.38	<0.38	<0.38

<b>MW-11</b>	9/13	12/13	3/14	6/14
PCE	<b>1.8</b>	<b>2.05</b>	<b>1.85</b>	<b>1.42</b>
TCE	<0.19	<0.33	<0.33	<0.33
cis-1,2-DCE	<0.12	<0.38	<0.38	<0.38

<b>MW-1</b>	9/13	12/13	3/14	6/14
PCE	<b>210</b>	<b>92</b>	<b>132</b>	<b>141</b>
TCE	<b>1.4</b>	<3.3	<b>0.79 J</b>	<b>0.78 J</b>
cis-1,2-DCE	<0.12	<0.38	<0.38	<0.38

<b>MW-8</b>	9/13	12/13	3/14	6/14
PCE	<b>5.9</b>	<b>6.3</b>	<b>7.0</b>	<b>9.5</b>
TCE	<b>2.3</b>	<b>1.1</b>	<b>2.47</b>	<b>1.08</b>
cis-1,2-DCE	<b>69</b>	<b>45</b>	<b>41</b>	<b>18.2</b>
trans-1,2-DCE	<b>1.9</b>	<b>0.91</b>	<b>0.89 J</b>	<b>0.38 J</b>
Vinyl Chloride	<0.10	<b>0.33 J</b>	<b>0.20 J</b>	<0.18
n-Butylbenzene	<0.13	<b>0.67 J</b>	<b>1.43</b>	<0.35
sec-Butylbenzene	<b>1.9</b>	<b>0.79 J</b>	<b>1.78</b>	<0.33
Isopropylbenzene	<0.14	<0.3	<b>0.44 J</b>	<0.3

<b>MW-4</b>	9/13	12/13	3/14	6/14
PCE	<b>2.4</b>	<3.3	<b>1.16</b>	<3.3
TCE	<b>0.95</b>	<3.3	<b>0.85 J</b>	<3.3
cis-1,2-DCE	<b>10</b>	<b>12.2</b>	<b>7.2</b>	<b>7.8</b>
Benzene	<0.074	<2.4	<0.24	<0.24
Ethylbenzene	<b>190</b>	<b>287</b>	<b>226</b>	<b>283</b>
Toluene	<b>9.4</b>	<b>13.5 J</b>	<b>2.53 J</b>	<b>17.7 J</b>
Trimethylbenzene	<0.18	<22	13.9	<22
Xylenes	<b>100</b>	<b>190</b>	<b>203.4</b>	<b>192.1</b>
Naphthalene	<b>89</b>	<b>96</b>	<b>104</b>	<b>104</b>
n-Butylbenzene	<b>8.7</b>	<b>8.5 J</b>	<b>10.8</b>	<b>8.1 J</b>
sec-Butylbenzene	<b>4.3</b>	<3.3	<b>4.7</b>	<b>4.1 J</b>
Isopropylbenzene	<b>20</b>	<b>19</b>	<b>22.6</b>	<b>20.4</b>
n-Isopropyltoluene	<b>1.1</b>	<3.1	<b>1.14</b>	<3.1
n-Propylbenzene		<b>56</b>	<b>79</b>	<b>71</b>

<b>MW-15</b>	9/13	12/13	3/14	6/14
PCE	<b>12</b>	<b>6.5</b>	<b>15.7</b>	<b>4.0</b>
TCE	<b>0.41 J</b>	<0.33	<b>1.12</b>	<0.33
cis-1,2-DCE	<0.12	<0.38	<0.38	<0.38

<b>MW-14</b>	9/13	12/13	3/14	6/14
PCE	<b>14</b>	<b>6.9</b>	NA	<b>0.91 J</b>
Ethylbenzene	<b>0.45 J</b>	<0.55	<0.55	<0.33
Xylenes	<b>0.36 J</b>	<0.69	<0.69	<0.38

<b>MW-16</b>	9/13	12/13	3/14	6/14
PCE	<b>2</b>	<b>1.57</b>	<b>0.33</b>	<b>1.81</b>
TCE	<0.19	<0.33	<0.33	<0.33
cis-1,2-DCE	<0.12	<0.38	<0.38	<0.38

<b>MW-14</b>	9/13	12/13	3/14	6/14
PCE	<b>14</b>	<b>6.9</b>	NA	<b>0.91 J</b>
Ethylbenzene	<b>0.45 J</b>	<0.55	<0.55	<0.33
Xylenes	<b>0.36 J</b>	<0.69	<0.69	<0.38

<b>PZ-22</b>	6/14
PCE	<b>0.87 J</b>
TCE	<0.33
cis-1,2-DCE	<0.38

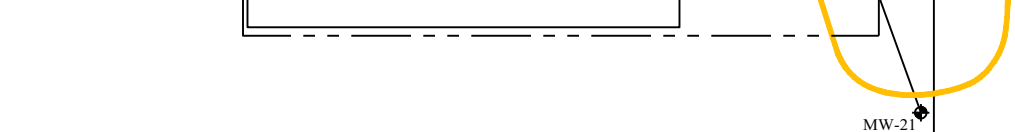
<b>MW-18</b>	9/13	12/13	3/14	6/14
PCE	<b>14</b>	<b>6.9</b>	NA	<b>0.91 J</b>
Ethylbenzene	<b>0.45 J</b>	<0.55	<0.55	<0.33
Xylenes	<b>0.36 J</b>	<0.69	<0.69	<0.38

<b>MW-21</b>	9/13	12/13	3/14	6/14
PCE	<b>7.4</b>	<b>5.6</b>	<b>5.6</b>	<b>4.8</b>
TCE	<0.19	<0.33	<0.33	<0.33
cis-1,2-DCE	<0.12	<0.38	<0.38	<0.38

<b>MW-19</b>	9/13	12/13	3/14	6/14
PCE	<0.17	<b>0.64 J</b>	<b>0.41 J</b>	<b>0.61 J</b>
TCE	<0.19	<0.33	<0.33	<0.33
cis-1,2-DCE	<0.12	<0.38	<0.38	<0.38

<b>MW-20</b>	9/13	12/13	3/14	6/14
PCE	<0.17	<b>0.64 J</b>	<b>0.41 J</b>	<b>0.61 J</b>
TCE	<0.19	<0.33	<0.33	<0.33
cis-1,2-DCE	<0.12	<0.38	<0.38	<0.38

<b>MW-21</b>	9/13	12/13	3/14	6/14
PCE	<b>7.4</b>	<b>5.6</b>	<b>5.6</b>	<b>4.8</b>
TCE	<0.19	<0.33	<0.33	<0.33
cis-1,2-DCE	<0.12	<0.38	<0.38	<0.38



### Legend

- Property boundary
- x-x-x-x-x- Fence line
- GAS --- Underground gas utility line
- WTR --- Underground water utility line
- SAN --- Underground sanitary utility line
- UGT --- Underground storm utility line
- OVD --- Over head electrical utility line
- UGE --- Underground electrical utility line
- UGT --- Underground telephone utility line
- ⊙ Fire Hydrant
- ⊙ Utility Pole
- ⊙ Gas Meter
- ⊙ Gas Valve
- ⊙ Manhole
- MW-1 ⊙ Monitoring well location
- MW-3 ⊙ Abandoned monitoring well location
- PZ-12 ⊙ Piezometer location

Analyte (ug/L)	Public Health Preventive Action Limit	Public Health Enforcement Standard
PCE	<b>0.5</b>	<b>5</b>
TCE	<b>0.5</b>	<b>5</b>
cis-1,2-DCE	<b>7</b>	<b>70</b>
trans-1,2-DCE	<b>20</b>	<b>100</b>
Vinyl Chloride	<b>0.02</b>	<b>0.2</b>
Benzene	<b>0.5</b>	<b>5</b>
Ethylbenzene	<b>140</b>	<b>700</b>
Toluene	<b>200</b>	<b>1,000</b>
Trimethylbenzene	<b>96</b>	<b>400</b>
Xylenes	<b>1,000</b>	<b>10,000</b>
Naphthalene	<b>10</b>	<b>100</b>
n-Butylbenzene	NE	NE
sec-Butylbenzene	NE	NE
Isopropylbenzene	NE	NE
p-Isopropyltoluene	NE	NE
n-Propylbenzene	NE	NE

- Note:
- Bolded and orange shaded values exceed the Public Health Enforcement Standard
  - Bolded and blue shaded values exceed the Public Health Preventive Action Limit
  - Bolded values are above detection limits
  - J = Estimated concentration less than laboratory reporting limit
  - Samples analyzed using EPA SW-846 Method 8260 results reported in units of micrograms per liter (ug/L) Beloit Service
  - All
  - PCE = Tetrachloroethene
  - TCE = Trichloroethene
  - cis-1,2-DCE = cis-1,2-Dichloroethene
  - trans-1,2-DCE = trans-1,2-Dichloroethene
  - ND = Not detected
  - NL = Not Located
  - NA = Not accessible
  - Petroleum compounds are not subject to cleanup by Robinson's Cleaners

--- PCE concentrations exceed enforcement standards (dashed where inferred)



APPROXIMATE SCALE: 1" = 40'

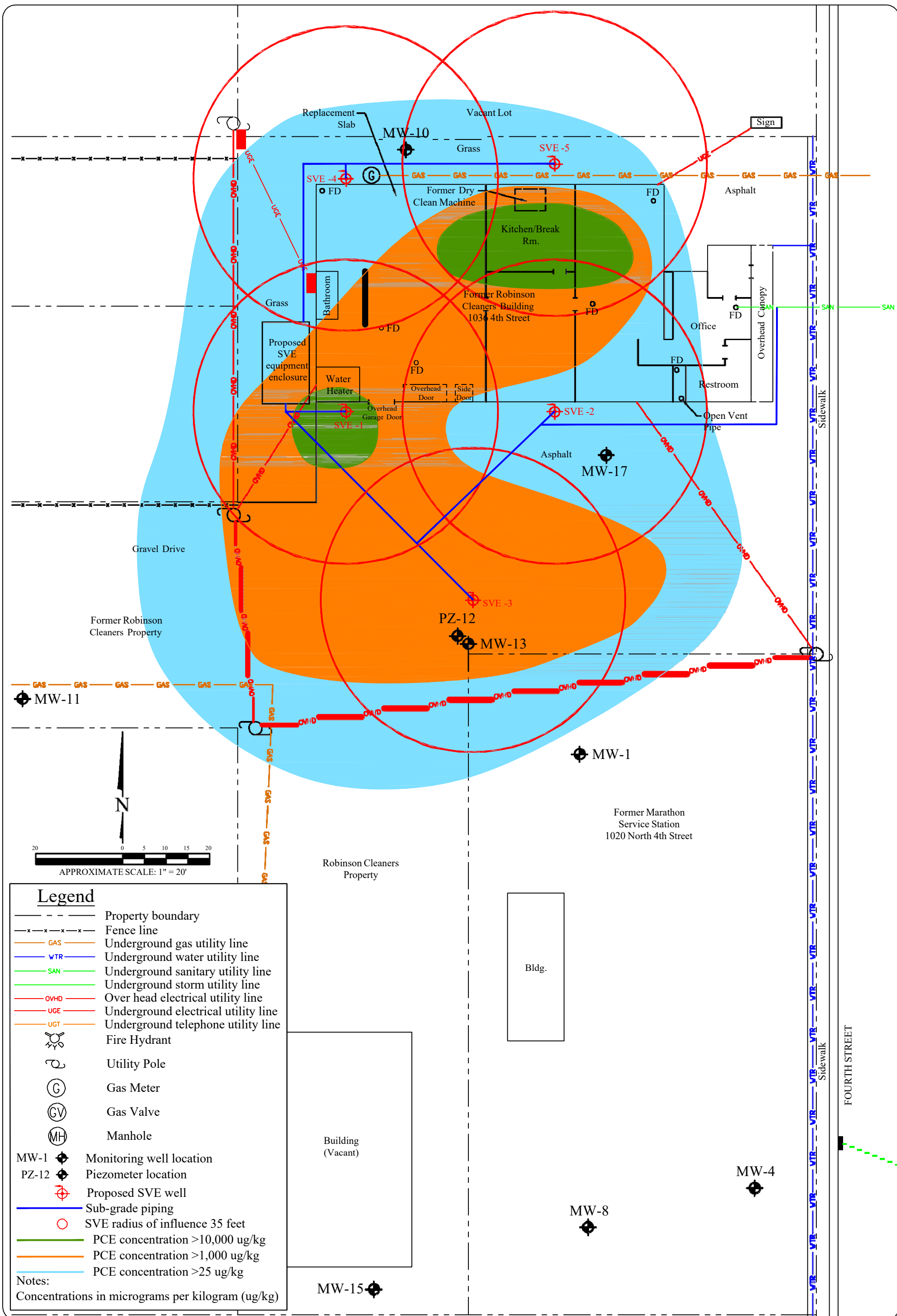
No.	Date	Revision	Approved

**ENVIROforensics**  
 ENVIRONMENTAL FORENSIC INVESTIGATIONS, INC.  
 602 N Capitol Ave, Suite 210, Indianapolis, IN 46204

Date: 7/16/14  
 Designed: EB  
 Drawn: EB  
 Checked: BR  
 DWG file: 6154-0583

**GROUNDWATER ANALYTICAL RESULTS AND PLUME MAP**  
 Robinson's Cleaners: Beloit  
 1036 4th Street  
 Beloit, Wisconsin

Figure	4
Project	6154



No.	Date	Revision	Approved	Date:	PROPOSED SOIL VAPOR EXTRACTION SYSTEM LAYOUT		Figure
				7/22/16	Robinson's Cleaners: Beloit		5
				Designed: EB	1036 4th Street		Project
				Drawn: EB	Beloit, Wisconsin		6154
				Checked: BK			
				DWG file: 6154-0781			



Site Name: Former Robinson's Cleaners - Beloit  
 BRRTS #: 02-54-515602  
 Type of Action: Remediation

TASKS	BUDGET		Previous Claims (If applicable)	INVOICES		Total Invoiced Costs
	Bid / Budgeted Amount	Total Approved Budget		EnviroForensics, Invoice #, Billing Date	EnviroForensics, Invoice #, Billing Date	
<b>Consultant Costs</b>						
Phase 30c - Remedial Action Design Report	\$ 13,644.00	\$ 13,644.00				\$ -
Phase 30d - SVE System Installation	\$ 22,700.00	\$ 22,700.00				\$ -
Phase 30e - Operation, Maintenance, and Monitoring	\$ 28,814.00	\$ 28,814.00				\$ -
Phase 30f - Confirmation Sampling	\$ 3,865.00	\$ 3,865.00				\$ -
Phase 30g - Groundwater Monitoring	\$ 21,151.00	\$ 21,151.00				\$ -
Phase 30h - Project Coordination and Management	\$ 10,660.00	\$ 10,660.00				\$ -
<i>Consultant Cost Total</i>	\$ 100,834.00	\$ 100,834.00	\$ -	\$ -	\$ -	\$ -
<b>Sub-Contractor Costs</b>						
Driller	\$ 6,535.00	\$ 6,535.00				\$ -
Remediation Construction Contractor	\$ 71,401.00	\$ 71,401.00				\$ -
Asphalt Contractor	\$ 2,000.00	\$ 2,000.00				\$ -
Fence Contractor	\$ 5,000.00	\$ 5,000.00				\$ -
Electrician	\$ 7,500.00	\$ 7,500.00				\$ -
SVE System Lease	\$ 24,000.00	\$ 24,000.00				\$ -
Electrical Service	\$ 8,300.00	\$ 8,300.00				\$ -
Laboratory	\$ 11,260.00	\$ 11,260.00				\$ -
Plumber	\$ 620.00	\$ 620.00				\$ -
Waste Disposal	\$ 6,350.00	\$ 6,350.00				\$ -
<i>Sub-Contractor Cost Total</i>	\$ 142,966.00	\$ 142,966.00	\$ -	\$ -	\$ -	\$ -
<b>DERF ELIGIBLE SUB-TOTALS</b>	<b>\$ 243,800.00</b>	<b>\$ 243,800.00</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
<b>Non-DERF Eligible Expenses</b>						
						\$ -
						\$ -
<i>Non-DERF Cost Total</i>			\$ -	\$ -	\$ -	\$ -
<b>INVOICE GRAND TOTAL</b>			\$ -	\$ -	\$ -	\$ -

**Check Numbers**

Site Name: Former Robinson's Cleaners - Beloit  
 BRRTS #: 02-54-515602  
 Type of Action: Remediation

Dry Cleaner Environmental Response Program  
 Reimbursement Cost Detail Linking Spreadsheet Form 4400-214D (R 08/12)

TASKS	BUDGET		Previous Claims (If applicable)	DERF COST BREAKOUT (this claim)								Budget Remaining Use (-) to indicate cost over-run	% Task Complete, Remarks
	Bid / Budgeted Amount	Total Approved Budget		A Soil Investigation	B Soil Remediation	C Groundwater Investigation	D Groundwater Remediation	E Air/Vapor Investigation	F Air/Vapor Remediation	G Lab & Other Analysis	H Miscellaneous Costs		
<b>Consultant Costs</b>													
Phase 30c - Remedial Action Design Report	\$ 13,644.00	\$ 13,644.00										\$ 13,644.00	Task % Complete
Phase 30d - SVE System Installation	\$ 22,700.00	\$ 22,700.00										\$ 22,700.00	
Phase 30e - Operation, Maintenance, and Monitoring	\$ 28,814.00	\$ 28,814.00										\$ 28,814.00	
Phase 30f - Confirmation Sampling	\$ 3,865.00	\$ 3,865.00										\$ 3,865.00	
Phase 30g - Groundwater Monitoring	\$ 21,151.00	\$ 21,151.00										\$ 21,151.00	
Phase 30h - Project Coordination and Management	\$ 10,660.00	\$ 10,660.00										\$ 10,660.00	
<i>Consultant Cost Total</i>	\$ 100,834.00	\$ 100,834.00	\$ -									\$ 100,834.00	
<b>Sub-Contractor Costs</b>													
Driller	\$ 6,535.00	\$ 6,535.00										\$ 6,535.00	
Remediation Construction Contractor	\$ 71,401.00	\$ 71,401.00										\$ 71,401.00	
Asphalt Contractor	\$ 2,000.00	\$ 2,000.00										\$ 2,000.00	
Fence Contractor	\$ 5,000.00	\$ 5,000.00										\$ 5,000.00	
Electrician	\$ 7,500.00	\$ 7,500.00										\$ 7,500.00	
SVE System Lease	\$ 24,000.00	\$ 24,000.00										\$ 24,000.00	
Electrical Service	\$ 8,300.00	\$ 8,300.00										\$ 8,300.00	
Laboratory	\$ 11,260.00	\$ 11,260.00										\$ 11,260.00	
Plumber	\$ 620.00	\$ 620.00										\$ 620.00	
Waste Disposal	\$ 6,350.00	\$ 6,350.00										\$ 6,350.00	
<i>Sub-Contractor Cost Total</i>	\$ 142,966.00	\$ 142,966.00	\$ -									\$ 142,966.00	
<b>DERF ELIGIBLE SUB-TOTALS</b>	<b>\$ 243,800.00</b>	<b>\$ 243,800.00</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 243,800.00</b>	

Non-DERF Eligible Expenses		
<i>Non-DERF Cost Total</i>		\$ -
<b>INVOICE GRAND TOTAL</b>		<b>\$ -</b>

Total DERF Eligible Costs This Claim \$ -

**Check Numbers**



**TABLE 1**  
**REMEDIATION AND MONITORING COST ESTIMATE**

Former Robinson's Cleaners  
Beloit, Wisconsin

TASK	LABOR COSTS	SUB-CONTRACTOR COSTS	DIRECT COSTS	PHASE COST
<b>Phase 30c - Design Report</b>				
Remedial Action Design Report	\$13,635	\$0	\$9	<b>\$13,644</b>
<b>Phase 30d - SVE System Installation</b>				
Extraction Well and Conveyance Line Installation Construction Documentation Report	\$14,470	\$80,716	\$1,740	<b>\$96,926</b>
Mechanical SVE System Lease (One Year) Mechanical SVE System Installation Electrical Service Installation	\$5,430	\$16,900	\$25,060	<b>\$47,390</b>
<b>Phase 30e - Operation, Maintenance, and Monitoring</b>				
SVE Operation, Maintenance, and Monitoring (One Year) Operation and Maintenance Plan Semi-Annual Progress Reports	\$24,370	\$12,900	\$4,444	<b>\$41,714</b>
<b>Phase 30f - Confirmation Sampling</b>				
Confirmation Soil Sampling	\$3,110	\$2,890	\$755	<b>\$6,755</b>
<b>Phase 30g - Groundwater Monitoring</b>				
Groundwater Monitoring Plan Development Semi-Annual Groundwater Monitoring and Reports (4 Events)	\$15,555	\$5,560	\$5,596	<b>\$26,711</b>
<b>Phase 30h - Project Coordination and Management</b>				
Project Coordination and Management	\$10,600	\$0	\$60	<b>\$10,660</b>
<b>TOTAL</b>	<b>\$87,170</b>	<b>\$118,966</b>	<b>\$37,664</b>	<b>\$243,800</b>

**Project Title:**  
**Project Number/Name:**  
**Date:**

Remediation and Monitoring  
 6154/Robinson Beloit  
 9/27/2017



Phase 30c Remedial Action Design Report						
<b>Labor - Field</b>						
Principal	\$190.00	hr			\$0.00	Task Total
Chief Technical Officer	\$175.00	hr			\$0.00	
Director	\$175.00	hr			\$0.00	
Sr Project Manager	\$155.00	hr			\$0.00	
Sr Professional	\$155.00	hr			\$0.00	
Project Manager	\$130.00	hr			\$0.00	
Project Professional	\$130.00	hr			\$0.00	
Staff Professional-Office	\$120.00	hr			\$0.00	
Staff Professional-Field	\$95.00	hr			\$0.00	
Field Professional	\$95.00	hr			\$0.00	
Drafting	\$85.00	hr			\$0.00	
Admin	\$65.00	hr			\$0.00	
Compliance Specialist	\$140.00	hr			\$0.00	
Vapor Intrusion Specialist	\$130.00	hr			\$0.00	
Health and Safety Specialist	\$130.00	hr			\$0.00	
		hr			\$0.00	
					\$0.00	\$0.00
<b>Labor - Office/Reporting</b>						
Principal	\$190.00	hr			\$0.00	Task Total
Chief Technical Officer	\$175.00	hr			\$0.00	
Director	\$175.00	hr			\$0.00	
Sr Project Manager	\$155.00	hr	14.0		\$2,170.00	
Sr Professional	\$155.00	hr	16.0		\$2,480.00	
Project Manager	\$130.00	hr	30.0		\$3,900.00	
Project Professional	\$130.00	hr	26.0		\$3,380.00	
Staff Professional-Office	\$120.00	hr	8.0		\$960.00	
Staff Professional-Field	\$95.00	hr			\$0.00	
Field Professional	\$95.00	hr			\$0.00	
Drafting	\$85.00	hr	8.0		\$680.00	
Admin	\$65.00	hr	1.0		\$65.00	
Compliance Specialist	\$140.00	hr			\$0.00	
Vapor Intrusion Specialist	\$130.00	hr			\$0.00	
Health and Safety Specialist	\$130.00	hr			\$0.00	
		hr			\$0.00	
					\$13,635.00	\$13,635.00
<b>Contractors/Consultants</b>						
Utility Locate		LS		1.00	\$0.00	Task Total
Driller		LS		1.00	\$0.00	
Surveyor		LS		1.00	\$0.00	
Waste Disposal		LS		1.00	\$0.00	
Historical Database Report		LS		1.00	\$0.00	
Remediation		LS		1.00	\$0.00	
				1.00	\$0.00	
				1.00	\$0.00	
				1.00	\$0.00	
				1.00	\$0.00	
					\$0.00	\$0.00
<b>Contractor/Consultant - Laboratory</b>						
Soil VOC 8260 dry wt	\$70.00	ea		1.00	\$0.00	Task Total
Soil VOC 8260 dry wt QA/QC	\$70.00	ea		1.00	\$0.00	
GW VOC 8260	\$70.00	ea		1.00	\$0.00	
GW VOC 8260 QA/QC	\$70.00	ea		1.00	\$0.00	
Air TO-15 -- Soil Gas	\$150.00	ea		1.00	\$0.00	
Air TO-15 -- Sub-Slab	\$200.00	ea		1.00	\$0.00	
Air TO-15 -- Indoor Air	\$200.00	ea		1.00	\$0.00	
Air - Individual Certification	\$50.00	ea		1.00	\$0.00	
Air - Batch Certification	\$30.00	LS		1.00	\$0.00	
Trip Blank VOCs 8260	\$70.00	ea		1.00	\$0.00	
Level IV QA/QC (15%)					\$0.00	
					\$0.00	
<b>Direct Costs - Expenses</b>						
Hotel	\$120.00	day		1.00	\$0.00	Task Total
Meals	\$60.00	LS		1.00	\$0.00	
Misc Materials		LS		1.00	\$0.00	
Equipment Rental		LS		1.00	\$0.00	
					\$0.00	
					\$0.00	
					\$0.00	
					\$0.00	
					\$0.00	
					\$0.00	
					\$0.00	\$0.00



	Direct Costs - Chargeable Equipment Expense	Rate (hr/unit)	# Hrs/Units	Rate (day/use)	# days/use	Subtotal
Vehicles	Field Vehicle - Full Day	\$ 20.00		\$ 130.00		
	Support Vehicle - Full Day	\$ 30.00		\$ 180.00		
	Mileage at Federal IRS Reimbursement Rate (used only for daily use over 230 miles)	\$ 0.54				
Meters	Air Velocity Meter (per use)			\$ 25.00		
	Multi-meter Conductivity/pH/Temp/TDS			\$ 165.00		
	Dissolved Oxygen Meter			\$ 40.00		
	FID Foxboro/Sensidyne (TIP)			\$ 155.00		
	Flow Calibrator			\$ 30.00		
	Methane Meter			\$ 116.00		
	PID or 580 OVM			\$ 120.00		
	Turbidity Meter			\$ 30.00		
	ppb RAE			\$ 175.00		
	Ozone Leak Detector			\$ 135.00		
	Inline Ozone Meter			\$ 230.00		
ORP Meter			\$ 30.00			
Pumps	Air Pump - Low Flow (Barcad)			\$ 25.00		
	Development Pump			\$ 130.00		
	Electric Submersible Pump with Control Box (Units)			\$ 130.00		
	Low-Flow Sampling Bladder	\$ 12.00				
	Peristaltic Pump			\$ 105.00		
	Pumping Test Accessory Equipment (Flow Meters/Manifolds/Tubing)	\$ 100.00				
	Portable SVE Unit - 1.5 HP			\$ 155.00		
	Intrinsically Safe Vapor Evacuation Blower			\$ 125.00		
	Pneumatic Low-Flow Pump - 1" Well			\$ 50.00		
Pneumatic Low-Flow Sampling Kit w/ Flow Cell and Multimeter			\$ 270.00			
Other	Asbestos Sampling Kit			\$ 250.00		
	Asbestos Investigation Supplies			\$ 130.00		
	Asbestos Sampling Core	\$ 2.50				
	Bailers (Disposable)	\$ 10.00				
	Bailers (Non-Disposable)			\$ 15.00		
	Core Boxes	\$ 10.00				
	Core Sampler			\$ 55.00		
	Data Logger with Transducer			\$ 155.00		
	Well Caps	\$ 30.00				
	Elec. Well Sounder (Probe)			\$ 30.00		
	Metal Detector			\$ 50.00		
	5035 Sample Kit	\$ 16.00				
	P/T Plugs	\$ 5.00				
	Field Book	\$ 11.00				
	Filter - Large	\$ 18.00				
	Filter - Small	\$ 9.00				
	Generator			\$ 105.00		
	Hand Auger			\$ 30.00		
	Helium QA/QC Kit			\$ 265.00		
	Helium QA/QC Accessories	\$ 20.00				
	Oil/Water Interface Probe			\$ 105.00		
	Padlocks	\$ 15.00				
	Steam Cleaner			\$ 130.00		
	Transducer (ea)			\$ 40.00		
	Coring Machine			\$ 200.00		
	Rotary Hammer Drill			\$ 170.00		
	Hand Drill			\$ 75.00		
	NAPL Sample Kit			\$ 40.00		
	SVE Inlet Air Filter			\$ 80.00		
	SVE Dilution Air Filter			\$ 28.00		
	SVE Blower Oil (quart)			\$ 32.00		
	SVE Blower Grease (tube)			\$ 20.00		
	Ozone Air Filter Holder			\$ 18.00		
	Tubing (Bonded) - Polyethylene (Teflon): 1/4" OD X 3/8" OD (per foot)	\$ 1.50				
	Tubing (Bonded) - Polyethylene (Teflon): 1/4" OD X 1/4" OD (per foot)	\$ 1.20				
	Tubing (Bonded) - Polyethylene (Teflon) : 1/16" OD X 1/4" (per foot)	\$ 1.25				
	Tubing (Bonded) - Polyethylene: 1/4" OD X 3/8" OD (per foot)	\$ 1.10				
	Tubing - Polyethylene: 1/4" OD (per foot)	\$ 0.60				
	Tubing - Polyethylene: 1/2" OD (per foot)	\$ 0.85				
	Tubing - Tygon: 3/8" STD (per foot)	\$ 4.45				
	Tubing - Silicone: 3/8" STD (per foot)	\$ 4.50				
	System Wiring (per foot)	\$ 0.60				
	Manual Drive Point Kit	\$ 90.00				
	PFA Tubing - 1/2-inch ID	\$ 5.00				
	55-Gallon Drum	\$ 55.00				
	550 gal poly tank			\$ 40.00		
	325 gal poly tank			\$ 30.00		
	Temporary Sampling Port	\$ 25.00				
	Vapor Pin Sub-Slab Sampling Port	\$ 75.00				
	Sub-Slab Cover (Stainless Steel)	\$ 40.00				
Well Cover 8X12"	\$ 105.00					
Measuring Wheel			\$ 15.00			
Measuring Wheel or Pole			\$ 15.00			
Camera			\$ 25.00			
1L Tedlar Bag	\$ 20.00					
Radon Sample Kit	\$ 30.00					
HAZMAT Exemption Shipper	\$ 40.00					
Manometers	\$ 105.00					
Westlaw	\$ 105.00					
CAD/drafting/graphics	\$ 90.00					
Safety	Barricades & Traffic Signs			\$ 10.00		
	Fall Protection			\$ 25.00		
	Gloves (Chemical Resistant)	\$ 10.00				
	Level "B": Level "C1" plus SCBA			\$ 210.00		
	Level "C1": Level "C2" plus Polycoat Suit			\$ 85.00		
	Level "C2": Level "D" plus Respirator			\$ 40.00		
	Standby SCBA			\$ 130.00		
	Routine Field and Safety Equipment			\$ 130.00		
Production	1 Inch Binder	\$ 9.00				
	2 Inch Binder	\$ 12.00				
	3 Inch Binder	\$ 15.00				
	4 Inch Binder	\$ 22.00				
	Binder Tabs (Set of 8)	\$ 5.00				
	Color Copies	\$ 0.40	5			\$ 2.00
	B/W Copies	\$ 0.25	28			\$ 7.00
	Document - Format/Sending	\$ 15.00				
	Report CD Copy	\$ 5.00				
						\$9.00
<b>PHASE TOTAL</b>						<b>\$13,644.00</b>

Project Title:  
 Project Number/Name:  
 Date:

Remediation and Monitoring  
 6154/Robinson Beloit  
 9/27/2017



Phase 30d Extraction Well and Conveyance Line Installation						
Labor - Field	Price	Unit	# Units		Subtotal	Task Total
Principal	\$190.00	hr			\$0.00	
Chief Technical Officer	\$175.00	hr			\$0.00	
Director	\$175.00	hr			\$0.00	
Sr Project Manager	\$155.00	hr			\$0.00	
Sr Professional	\$155.00	hr			\$0.00	
Project Manager	\$130.00	hr			\$0.00	
Project Professional	\$130.00	hr			\$0.00	
Staff Professional-Office	\$120.00	hr			\$0.00	
Staff Professional-Field	\$95.00	hr			\$0.00	
Field Professional	\$95.00	hr	50.0		\$4,750.00	
Drafting	\$85.00	hr			\$0.00	
Admin	\$65.00	hr			\$0.00	
Compliance Specialist	\$140.00	hr			\$0.00	
Vapor Intrusion Specialist	\$130.00	hr			\$0.00	
Health and Safety Specialist	\$130.00	hr			\$0.00	
		hr			\$0.00	
					\$4,750.00	\$4,750.00
Labor - Office/Reporting	Price	Unit	# Units		Subtotal	Task Total
Principal	\$190.00	hr			\$0.00	
Chief Technical Officer	\$175.00	hr			\$0.00	
Director	\$175.00	hr			\$0.00	
Sr Project Manager	\$155.00	hr	4.0		\$620.00	
Sr Professional	\$155.00	hr	8.0		\$1,240.00	
Project Manager	\$130.00	hr	20.0		\$2,600.00	
Project Professional	\$130.00	hr	10.0		\$1,300.00	
Staff Professional-Office	\$120.00	hr	24.0		\$2,880.00	
Staff Professional-Field	\$95.00	hr			\$0.00	
Field Professional	\$95.00	hr	6.0		\$570.00	
Drafting	\$85.00	hr	6.0		\$510.00	
Admin	\$65.00	hr			\$0.00	
Compliance Specialist	\$140.00	hr			\$0.00	
Vapor Intrusion Specialist	\$130.00	hr			\$0.00	
Health and Safety Specialist	\$130.00	hr			\$0.00	
		hr			\$0.00	
					\$9,720.00	\$9,720.00
Contractors/Consultants	Price	Unit	# Units	Markup	Subtotal	Task Total
Construction Contractor	\$67,501.00	LS	1.0	1.00	\$67,501.00	
Driller	\$4,975.00	LS	1.0	1.00	\$4,975.00	
Asphalt Replacement	\$2,000.00	LS	1.0	1.00	\$2,000.00	
Plumber	\$620.00	LS	1.0	1.00	\$620.00	
Waste Disposal	\$5,550.00	LS	1.0	1.00	\$5,550.00	
				1.00	\$0.00	
				1.00	\$0.00	
				1.00	\$0.00	
				1.00	\$0.00	
					\$80,646.00	\$80,646.00
Contractor/Consultant - Laboratory	Price	Unit	# Units	Markup	Subtotal	Task Total
Soil VOC 8260 dry wt (waste characterization)	\$70.00	ea	1.0	1.00	\$70.00	
Soil VOC 8260 dry wt QA/QC	\$70.00	ea		1.00	\$0.00	
GW VOC 8260	\$70.00	ea		1.00	\$0.00	
GW VOC 8260 QA/QC	\$70.00	ea		1.00	\$0.00	
Air TO-15 -- Soil Gas	\$150.00	ea		1.00	\$0.00	
Air TO-15 -- Sub-Slab	\$200.00	ea		1.00	\$0.00	
Air TO-15 -- Indoor Air	\$200.00	ea		1.00	\$0.00	
Air - Individual Certification	\$50.00	ea		1.00	\$0.00	
Air - Batch Certification	\$30.00	LS		1.00	\$0.00	
Trip Blank VOCs 8260	\$70.00	ea		1.00	\$0.00	
Level IV QA/QC (15%)					\$0.00	
					\$70.00	\$70.00
Direct Costs - Expenses	Price	Unit	# Units	Markup	Subtotal	Task Total
Hotel	\$120.00	day	4.0	1.00	\$480.00	
Meals	\$60.00	day	8.0	1.00	\$480.00	
					\$0.00	
					\$0.00	
					\$0.00	
					\$0.00	
					\$0.00	
					\$0.00	
					\$960.00	\$960.00

	Direct Costs - Chargeable Equipment Expense	Rate (hr/unit)	# Hrs/Units	Rate (day/use)	# days/use	Subtotal
Vehicles	Field Vehicle - Full Day	\$ 20.00		\$ 130.00	5	\$ 650.00
	Support Vehicle - Full Day	\$ 30.00		\$ 180.00		
	Mileage at Federal IRS Reimbursement Rate (used only for daily use over 230 miles)	\$ 0.54				
Meters	Air Velocity Meter (per use)			\$ 25.00		
	Multi-meter Conductivity/pH/Temp/TDS			\$ 165.00		
	Dissolved Oxygen Meter			\$ 40.00		
	FID Foxboro/Sensidyne (TIP)			\$ 155.00		
	Flow Calibrator			\$ 30.00		
	Methane Meter			\$ 116.00		
	PID or 580 OVM			\$ 120.00		
	Turbidity Meter			\$ 30.00		
	ppb RAE			\$ 175.00		
	Ozone Leak Detector			\$ 135.00		
Pumps	Inline Ozone Meter			\$ 230.00		
	ORP Meter			\$ 30.00		
	Air Pump - Low Flow (Barcad)			\$ 25.00		
	Development Pump			\$ 130.00		
	Electric Submersible Pump with Control Box (Units)			\$ 130.00		
	Low-Flow Sampling Bladder	\$ 12.00				
	Peristaltic Pump			\$ 105.00		
	Pumping Test Accessory Equipment (Flow Meters/Manifolds/Tubing)	\$ 100.00				
	Portable SVE Unit - 1.5 HP			\$ 155.00		
Other	Intrinsically Safe Vapor Evacuation Blower			\$ 125.00		
	Pneumatic Low-Flow Pump - 1" Well			\$ 50.00		
	Pneumatic Low-Flow Sampling Kit w/ Flow Cell and Multimeter			\$ 270.00		
	Asbestos Sampling Kit			\$ 250.00		
	Asbestos Investigation Supplies			\$ 130.00		
	Asbestos Sampling Core	\$ 2.50				
	Bailers (Disposable)	\$ 10.00				
	Bailers (Non-Disposable)			\$ 15.00		
	Core Boxes	\$ 10.00				
	Core Sampler			\$ 55.00		
	Data Logger with Transducer			\$ 155.00		
	Well Caps	\$ 30.00				
	Elec. Well Sounder (Probe)			\$ 30.00		
	Metal Detector			\$ 50.00		
	5035 Sample Kit	\$ 16.00				
	P/T Plugs	\$ 5.00				
	Field Book	\$ 11.00				
	Filter - Large	\$ 18.00				
	Filter - Small	\$ 9.00				
	Generator			\$ 105.00		
	Hand Auger			\$ 30.00		
	Helium QA/QC Kit			\$ 265.00		
	Helium QA/QC Accessories	\$ 20.00				
	Oil/Water Interface Probe			\$ 105.00		
	Padlocks	\$ 15.00				
	Steam Cleaner			\$ 130.00		
	Transducer (ea)			\$ 40.00		
	Coring Machine			\$ 200.00		
	Rotary Hammer Drill			\$ 170.00		
	Hand Drill			\$ 75.00		
	NAPL Sample Kit			\$ 40.00		
	SVE Inlet Air Filter			\$ 80.00		
	SVE Dilution Air Filter			\$ 28.00		
	SVE Blower Oil (quart)			\$ 32.00		
	SVE Blower Grease (tube)			\$ 20.00		
	Ozone Air Filter Holder			\$ 18.00		
	Tubing (Bonded) - Polyethylene (Teflon): 1/4" OD X 3/8" OD (per foot)	\$ 1.50				
	Tubing (Bonded) - Polyethylene (Teflon): 1/4" OD X 1/4" OD (per foot)	\$ 1.20				
	Tubing (Bonded) - Polyethylene (Teflon) : 1/16" OD X 1/4" (per foot)	\$ 1.25				
	Tubing (Bonded) - Polyethylene: 1/4" OD X 3/8" OD (per foot)	\$ 1.10				
	Tubing - Polyethylene: 1/4" OD (per foot)	\$ 0.60				
	Tubing - Polyethylene: 1/2" OD (per foot)	\$ 0.85				
Tubing - Tygon: 3/8" STD (per foot)	\$ 4.45					
Tubing - Silicone: 3/8" STD (per foot)	\$ 4.50					
System Wiring (per foot)	\$ 0.60					
PFA Tubing - 1/2-inch ID	\$ 5.00					
Manual Drive Point Kit	\$ 90.00					
55-Gallon Drum	\$ 55.00					
550 gal poly tank			\$ 40.00			
325 gal poly tank			\$ 30.00			
Temporary Sampling Port	\$ 25.00					
Vapor Pin Sub-Slab Sampling Port	\$ 75.00					
Sub-Slab Cover (Stainless Steel)	\$ 40.00					
Well Cover 8X12"	\$ 105.00					
Measuring Wheel			\$ 15.00			
Measuring Wheel or Pole			\$ 15.00			
Camera			\$ 25.00			
1L Tedlar Bag	\$ 20.00					
Radon Sample Kit	\$ 30.00					
HAZMAT Exemption Shipper	\$ 40.00					
Manometers	\$ 105.00					
Westlaw	\$ 105.00					
CAD/drafting/graphics	\$ 90.00					
Safety	Barricades & Traffic Signs			\$ 10.00		
	Fall Protection			\$ 25.00		
	Gloves (Chemical Resistant)	\$ 10.00				
	Level "B": Level "C1" plus SCBA			\$ 210.00		
	Level "C1": Level "C2" plus Polycoat Suit			\$ 85.00		
	Level "C2": Level "D" plus Respirator			\$ 40.00		
	Standby SCBA			\$ 130.00		
Routine Field and Safety Equipment			\$ 130.00	1	\$ 130.00	
Production	1 Inch Binder	\$ 9.00				
	2 Inch Binder	\$ 12.00				
	3 Inch Binder	\$ 15.00				
	4 Inch Binder	\$ 22.00				
	Binder Tabs (Set of 8)	\$ 5.00				
	Color Copies	\$ 0.40				
	B/W Copies	\$ 0.25				
	Document - Format/Sending	\$ 15.00				
Report CD Copy	\$ 5.00					
						\$780.00
<b>PHASE TOTAL</b>						<b>\$96,926.00</b>

Project Title:  
 Project Number/Name:  
 Date:

SVE-SSDS Budgetary Cost Estimate  
 6154/Robinson Beloit  
 9/27/2017



Phase 30d Mechanical System Installation						
Labor - Field	Price	Unit	# Units		Subtotal	Task Total
Principal	\$190.00	hr			\$0.00	
Chief Technical Officer	\$175.00	hr			\$0.00	
Director	\$175.00	hr			\$0.00	
Sr Project Manager	\$155.00	hr			\$0.00	
Sr Professional	\$155.00	hr			\$0.00	
Project Manager	\$130.00	hr			\$0.00	
Project Professional	\$130.00	hr	4.0		\$520.00	
Staff Professional-Office	\$120.00	hr			\$0.00	
Staff Professional-Field	\$95.00	hr			\$0.00	
Field Professional	\$95.00	hr	20.0		\$1,900.00	
Drafting	\$85.00	hr			\$0.00	
Admin	\$65.00	hr			\$0.00	
Compliance Specialist	\$140.00	hr			\$0.00	
Vapor Intrusion Specialist	\$130.00	hr			\$0.00	
Health and Safety Specialist	\$130.00	hr			\$0.00	
		hr			\$0.00	
					\$2,420.00	\$2,420.00
Labor - Office/Reporting	Price	Unit	# Units		Subtotal	Task Total
Principal	\$190.00	hr			\$0.00	
Chief Technical Officer	\$175.00	hr			\$0.00	
Director	\$175.00	hr			\$0.00	
Sr Project Manager	\$155.00	hr	2.0		\$310.00	
Sr Professional	\$155.00	hr	4.0		\$620.00	
Project Manager	\$130.00	hr	8.0		\$1,040.00	
Project Professional	\$130.00	hr	8.0		\$1,040.00	
Staff Professional-Office	\$120.00	hr			\$0.00	
Staff Professional-Field	\$95.00	hr			\$0.00	
Field Professional	\$95.00	hr			\$0.00	
Drafting	\$85.00	hr			\$0.00	
Admin	\$65.00	hr			\$0.00	
Compliance Specialist	\$140.00	hr			\$0.00	
Vapor Intrusion Specialist	\$130.00	hr			\$0.00	
Health and Safety Specialist	\$130.00	hr			\$0.00	
		hr			\$0.00	
					\$3,010.00	\$3,010.00
Contractors/Consultants	Price	Unit	# Units	Markup	Subtotal	Task Total
Electrical Service Installation	\$7,500.00	LS	1.0	1.00	\$7,500.00	
Utility Company Fees	\$500.00	LS	1.0	1.00	\$500.00	
Security Fence	\$5,000.00	LS	1.0	1.00	\$5,000.00	
Transfer pump installation and control integration	\$3,900.00	LS	1.0	1.00	\$3,900.00	
				1.00	\$0.00	
				1.00	\$0.00	
				1.00	\$0.00	
				1.00	\$0.00	
				1.00	\$0.00	
				1.00	\$0.00	
					\$16,900.00	\$16,900.00
Contractor/Consultant - Laboratory	Price	Unit	# Units	Markup	Subtotal	Task Total
Soil VOC 8260 dry wt	\$70.00	ea		1.00	\$0.00	
Soil VOC 8260 dry wt QA/QC	\$70.00	ea		1.00	\$0.00	
GW VOC 8260	\$70.00	ea		1.00	\$0.00	
GW VOC 8260 QA/QC	\$70.00	ea		1.00	\$0.00	
Air TO-15 -- Soil Gas	\$150.00	ea		1.00	\$0.00	
Air TO-15 -- Sub-Slab	\$200.00	ea		1.00	\$0.00	
Air TO-15 -- Indoor Air	\$200.00	ea		1.00	\$0.00	
Air - Individual Certification	\$50.00	ea		1.00	\$0.00	
Air - Batch Certification	\$30.00	LS		1.00	\$0.00	
Trip Blank VOCs 8260	\$70.00	ea		1.00	\$0.00	
Level IV QA/QC (15%)					\$0.00	
					\$0.00	\$0.00
Direct Costs - Expenses	Price	Unit	# Units	Markup	Subtotal	Task Total
Hotel	\$120.00	day	1.0	1.00	\$120.00	
Meals	\$60.00	day	1.0	1.00	\$60.00	
SVE System Lease	\$2,000.00	Month	12.0	1.00	\$24,000.00	
Forklift Mobilization and Rental		LS		1.00	\$0.00	
					\$0.00	
					\$0.00	
					\$0.00	
					\$0.00	
					\$0.00	
					\$24,180.00	\$24,180.00

	Direct Costs - Chargeable Equipment Expense	Rate (hr/unit)	# Hrs/Units	Rate (day/use)	# days/use	Subtotal
Vehicles	Field Vehicle - Full Day	\$ 20.00		\$ 130.00	2	\$ 260.00
	Support Vehicle - Full Day	\$ 30.00		\$ 180.00	2	\$ 360.00
	Mileage at Federal IRS Reimbursement Rate (used only for daily use over 230 miles)	\$ 0.54				
Meters	Air Velocity Meter (per use)			\$ 25.00		
	Multi-meter Conductivity/pH/Temp/TDS			\$ 165.00		
	Dissolved Oxygen Meter			\$ 40.00		
	FID Foxboro/Sensidyne (TIP)			\$ 155.00		
	Flow Calibrator			\$ 30.00		
	Methane Meter			\$ 116.00		
	PID or 580 OVM			\$ 120.00		
	Turbidity Meter			\$ 30.00		
	ppb RAE			\$ 175.00		
	Ozone Leak Detector			\$ 135.00		
Pumps	Inline Ozone Meter			\$ 230.00		
	ORP Meter			\$ 30.00		
	Air Pump - Low Flow (Barcad)			\$ 25.00		
	Development Pump			\$ 130.00		
	Electric Submersible Pump with Control Box (Units)			\$ 130.00		
	Low-Flow Sampling Bladder	\$ 12.00				
	Peristaltic Pump			\$ 105.00		
	Pumping Test Accessory Equipment (Flow Meters/Manifolds/Tubing)	\$ 100.00				
	Portable SVE Unit - 1.5 HP			\$ 155.00		
	Intrinsically Safe Vapor Evacuation Blower			\$ 125.00		
Other	Pneumatic Low-Flow Pump - 1" Well			\$ 50.00		
	Pneumatic Low-Flow Sampling Kit w/ Flow Cell and Multimeter			\$ 270.00		
	Asbestos Sampling Kit			\$ 250.00		
	Asbestos Investigation Supplies			\$ 130.00		
	Asbestos Sampling Core	\$ 2.50				
	Bailers (Disposable)	\$ 10.00				
	Bailers (Non-Disposable)			\$ 15.00		
	Core Boxes	\$ 10.00				
	Core Sampler			\$ 55.00		
	Data Logger with Transducer			\$ 155.00		
	Well Caps	\$ 30.00				
	Elec. Well Sounder (Probe)			\$ 30.00		
	Metal Detector			\$ 50.00		
	5035 Sample Kit	\$ 16.00				
	P/T Plugs	\$ 5.00				
	Field Book	\$ 11.00				
	Filter - Large	\$ 18.00				
	Filter - Small	\$ 9.00				
	Generator			\$ 105.00		
	Hand Auger			\$ 30.00		
	Helium QA/QC Kit			\$ 265.00		
	Helium QA/QC Accessories	\$ 20.00				
	Oil/Water Interface Probe			\$ 105.00		
	Padlocks	\$ 15.00				
	Steam Cleaner			\$ 130.00		
	Transducer (ea)			\$ 40.00		
	Coring Machine			\$ 200.00		
	Rotary Hammer Drill			\$ 170.00		
	Hand Drill			\$ 75.00		
	NAPL Sample Kit			\$ 40.00		
	SVE Inlet Air Filter			\$ 80.00		
	SVE Dilution Air Filter			\$ 28.00		
	SVE Blower Oil (quart)			\$ 32.00		
	SVE Blower Grease (tube)			\$ 20.00		
	Ozone Air Filter Holder			\$ 18.00		
	Tubing (Bonded) - Polyethylene (Teflon): 1/4" OD X 3/8" OD (per foot)	\$ 1.50				
	Tubing (Bonded) - Polyethylene (Teflon): 1/4" OD X 1/4" OD (per foot)	\$ 1.20				
	Tubing (Bonded) - Polyethylene (Teflon) : 1/16" OD X 1/4" (per foot)	\$ 1.25				
	Tubing (Bonded) - Polyethylene: 1/4" OD X 3/8" OD (per foot)	\$ 1.10				
	Tubing - Polyethylene: 1/4" OD (per foot)	\$ 0.60				
	Tubing - Polyethylene: 1/2" OD (per foot)	\$ 0.85				
	Tubing - Tygon: 3/8" STD (per foot)	\$ 4.45				
	Tubing - Silicone: 3/8" STD (per foot)	\$ 4.50				
	PFA Tubing - 1/2-inch ID	\$ 5.00				
	Manual Drive Point Kit	\$ 90.00				
	55-Gallon Drum	\$ 55.00				
	550 gal poly tank			\$ 40.00		
	325 gal poly tank			\$ 30.00		
	Temporary Sampling Port	\$ 25.00				
	Vapor Pin Sub-Slab Sampling Port	\$ 75.00				
Sub-Slab Cover (Stainless Steel)	\$ 40.00					
Well Cover 8X12"	\$ 105.00					
Measuring Wheel			\$ 15.00			
Measuring Wheel or Pole			\$ 15.00			
Camera			\$ 25.00			
1L Tedlar Bag	\$ 20.00					
Radon Sample Kit	\$ 30.00					
HAZMAT Exemption Shipper	\$ 40.00					
Manometers	\$ 105.00					
Westlaw	\$ 105.00					
CAD/drafting/graphics	\$ 90.00					
Safety	Barricades & Traffic Signs			\$ 10.00		
	Fall Protection			\$ 25.00		
	Gloves (Chemical Resistant)	\$ 10.00				
	Level "B": Level "C1" plus SCBA			\$ 210.00		
	Level "C1": Level "C2" plus Polycoat Suit			\$ 85.00		
	Level "C2": Level "D" plus Respirator			\$ 40.00		
	Standby SCBA			\$ 130.00		
Routine Field and Safety Equipment			\$ 130.00	2	\$ 260.00	
Production	1 Inch Binder	\$ 9.00				
	2 Inch Binder	\$ 12.00				
	3 Inch Binder	\$ 15.00				
	4 Inch Binder	\$ 22.00				
	Binder Tabs (Set of 8)	\$ 5.00				
	Color Copies	\$ 0.40				
	B/W Copies	\$ 0.25				
	Document - Format/Sending	\$ 15.00				
Report CD Copy	\$ 5.00					
						\$880.00
<b>PHASE TOTAL</b>						<b>\$47,390.00</b>

Project Title:  
 Project Number/Name:  
 Date:

Remediation and Monitoring  
 6154/Robinson Beloit  
 9/27/2017



Phase 30e SVE Operation, Maintenance and Monitoring (One Year)						
<b>Labor - Field</b>	<b>Price</b>	<b>Unit</b>	<b># Units</b>		<b>Subtotal</b>	<b>Task Total</b>
Principal	\$190.00	hr			\$0.00	
Chief Technical Officer	\$175.00	hr			\$0.00	
Director	\$175.00	hr			\$0.00	
Sr Project Manager	\$155.00	hr			\$0.00	
Sr Professional	\$155.00	hr			\$0.00	
Project Manager	\$130.00	hr			\$0.00	
Project Professional	\$130.00	hr			\$0.00	
Staff Professional-Office	\$120.00	hr			\$0.00	
Staff Professional-Field	\$95.00	hr			\$0.00	
Field Professional	\$95.00	hr	168.0		\$15,960.00	
Drafting	\$85.00	hr			\$0.00	
Admin	\$65.00	hr			\$0.00	
Compliance Specialist	\$140.00	hr			\$0.00	
Vapor Intrusion Specialist	\$130.00	hr			\$0.00	
Health and Safety Specialist	\$130.00	hr			\$0.00	
		hr			\$0.00	
					\$15,960.00	\$15,960.00
<b>Labor - Office/Reporting</b>	<b>Price</b>	<b>Unit</b>	<b># Units</b>		<b>Subtotal</b>	<b>Task Total</b>
Principal	\$190.00	hr			\$0.00	
Chief Technical Officer	\$175.00	hr			\$0.00	
Director	\$175.00	hr			\$0.00	
Sr Project Manager	\$155.00	hr	6.0		\$930.00	
Sr Professional	\$155.00	hr	4.0		\$620.00	
Project Manager	\$130.00	hr	16.0		\$2,080.00	
Project Professional	\$130.00	hr			\$0.00	
Staff Professional-Office	\$120.00	hr	24.0		\$2,880.00	
Staff Professional-Field	\$95.00	hr			\$0.00	
Field Professional	\$95.00	hr	20.0		\$1,900.00	
Drafting	\$85.00	hr			\$0.00	
Admin	\$65.00	hr			\$0.00	
Compliance Specialist	\$140.00	hr			\$0.00	
Vapor Intrusion Specialist	\$130.00	hr			\$0.00	
Health and Safety Specialist	\$130.00	hr			\$0.00	
		hr			\$0.00	
					\$8,410.00	\$8,410.00
<b>Contractors/Consultants</b>	<b>Price</b>	<b>Unit</b>	<b># Units</b>	<b>Markup</b>	<b>Subtotal</b>	<b>Task Total</b>
Utility Locate		LS		1.00	\$0.00	
Driller		LS		1.00	\$0.00	
Surveyor		LS		1.00	\$0.00	
Waste Disposal		LS		1.00	\$0.00	
Historical Database Report		LS		1.00	\$0.00	
Electrical Service	\$650.00	Month	12.0	1.00	\$7,800.00	
				1.00	\$0.00	
				1.00	\$0.00	
				1.00	\$0.00	
					\$7,800.00	\$7,800.00
<b>Contractor/Consultant - Laboratory</b>	<b>Price</b>	<b>Unit</b>	<b># Units</b>	<b>Markup</b>	<b>Subtotal</b>	<b>Task Total</b>
Soil VOC 8260 dry wt	\$70.00	ea		1.00	\$0.00	
Soil VOC 8260 dry wt QA/QC	\$70.00	ea		1.00	\$0.00	
GW VOC 8260	\$70.00	ea	4.0	1.00	\$280.00	
GW VOC 8260 QA/QC	\$70.00	ea		1.00	\$0.00	
Air TO-15 -- Soil Gas	\$200.00	ea	17.0	1.00	\$3,400.00	
Air TO-15 -- Sub-Slab	\$200.00	ea		1.00	\$0.00	
Air TO-15 -- Outdoor Air	\$200.00	ea	4.0	1.00	\$800.00	
Air - Individual Certification	\$50.00	ea	4.0	1.00	\$200.00	
Air - Batch Certification	\$30.00	LS	14.0	1.00	\$420.00	
Trip Blank VOCs 8260	\$70.00	ea		1.00	\$0.00	
Level IV QA/QC (15%)						
					\$5,100.00	\$5,100.00
<b>Direct Costs - Expenses</b>	<b>Price</b>	<b>Unit</b>	<b># Units</b>	<b>Markup</b>	<b>Subtotal</b>	<b>Task Total</b>
Hotel	\$120.00	day		1.00	\$0.00	
Meals	\$60.00	LS		1.00	\$0.00	
Misc Materials	\$20.00	LS		1.00	\$0.00	
Oil, filters, etc	\$200.00	LS	1.0	1.00	\$200.00	
Municipal discharge permit fee	\$200.00	LS	1.0	1.00	\$200.00	
Wastewater disposal fees	\$300.00	LS	1.0	1.00	\$300.00	
					\$0.00	
					\$0.00	
					\$0.00	
					\$700.00	\$700.00

	Direct Costs - Chargeable Equipment Expense	Rate (hr/unit)	# Hrs/Units	Rate (day/use)	# days/use	Subtotal
Vehicles	Field Vehicle - Full Day	\$ 20.00		\$ 130.00	21	\$ 2,730.00
	Support Vehicle - Full Day	\$ 30.00		\$ 180.00		
	Mileage at Federal IRS Reimbursement Rate (used only for daily use over 230 miles)	\$ 0.54				
Meters	Air Velocity Meter (per use)			\$ 25.00		
	Multi-meter Conductivity/pH/Temp/TDS			\$ 165.00		
	Dissolved Oxygen Meter			\$ 40.00		
	FID Foxboro/Sensidyne (TIP)			\$ 155.00		
	Flow Calibrator			\$ 30.00		
	Methane Meter			\$ 116.00		
	PID or 580 OVM			\$ 120.00	4	\$ 480.00
	Turbidity Meter			\$ 30.00		
	ppb RAE			\$ 175.00		
	Ozone Leak Detector			\$ 135.00		
Pumps	Inline Ozone Meter			\$ 230.00		
	ORP Meter			\$ 30.00		
	Air Pump - Low Flow (Barcad)			\$ 25.00		
	Development Pump			\$ 130.00		
	Electric Submersible Pump with Control Box (Units)			\$ 130.00		
	Low-Flow Sampling Bladder	\$ 12.00				
	Peristaltic Pump			\$ 105.00		
	Pumping Test Accessory Equipment (Flow Meters/Manifolds/Tubing)	\$ 100.00				
	Portable SVE Unit - 1.5 HP			\$ 155.00		
Other	Intrinsically Safe Vapor Evacuation Blower			\$ 125.00		
	Pneumatic Low-Flow Pump - 1" Well			\$ 50.00		
	Pneumatic Low-Flow Sampling Kit w/ Flow Cell and Multimeter			\$ 270.00		
	Asbestos Sampling Kit			\$ 250.00		
	Asbestos Investigation Supplies			\$ 130.00		
	Asbestos Sampling Core	\$ 2.50				
	Bailers (Disposable)	\$ 10.00				
	Bailers (Non-Disposable)			\$ 15.00		
	Core Boxes	\$ 10.00				
	Core Sampler			\$ 55.00		
	Data Logger with Transducer			\$ 155.00		
	Well Caps	\$ 30.00				
	Elec. Well Sounder (Probe)			\$ 30.00		
	Metal Detector			\$ 50.00		
	5035 Sample Kit	\$ 16.00				
	P/T Plugs	\$ 5.00				
	Field Book	\$ 11.00				
	Filter - Large	\$ 18.00				
	Filter - Small	\$ 9.00				
	Generator			\$ 105.00		
	Hand Auger			\$ 30.00		
	Helium QA/QC Kit			\$ 265.00		
	Helium QA/QC Accessories	\$ 20.00				
	Oil/Water Interface Probe			\$ 105.00		
	Padlocks	\$ 15.00				
	Steam Cleaner			\$ 130.00		
	Transducer (ea)			\$ 40.00		
	Coring Machine			\$ 200.00		
	Rotary Hammer Drill			\$ 170.00		
	Hand Drill			\$ 75.00		
	NAPL Sample Kit			\$ 40.00		
	SVE Inlet Air Filter			\$ 80.00		
	SVE Dilution Air Filter			\$ 28.00		
	SVE Blower Oil (quart)			\$ 32.00		
	SVE Blower Grease (tube)			\$ 20.00		
	Ozone Air Filter Holder			\$ 18.00		
	Tubing (Bonded) - Polyethylene (Teflon): 1/4" OD X 3/8" OD (per foot)	\$ 1.50				
	Tubing (Bonded) - Polyethylene (Teflon): 1/4" OD X 1/4" OD (per foot)	\$ 1.20				
	Tubing (Bonded) - Polyethylene (Teflon) : 1/16" OD X 1/4" (per foot)	\$ 1.25				
	Tubing (Bonded) - Polyethylene: 1/4" OD X 3/8" OD (per foot)	\$ 1.10				
	Tubing - Polyethylene: 1/4" OD (per foot)	\$ 0.60	40			\$ 24.00
	Tubing - Polyethylene: 1/2" OD (per foot)	\$ 0.85				
Tubing - Tygon: 3/8" STD (per foot)	\$ 4.45					
Tubing - Silicone: 3/8" STD (per foot)	\$ 4.50	20			\$ 90.00	
System Wiring (per foot)	\$ 0.60					
PFA Tubing - 1/2-inch ID	\$ 5.00					
Manual Drive Point Kit	\$ 90.00					
55-Gallon Drum	\$ 55.00					
550 gal poly tank			\$ 40.00			
325 gal poly tank			\$ 30.00			
Temporary Sampling Port	\$ 25.00					
Vapor Pin Sub-Slab Sampling Port	\$ 75.00					
Sub-Slab Cover (Stainless Steel)	\$ 40.00					
Well Cover 8X12"	\$ 105.00					
Measuring Wheel			\$ 15.00			
Measuring Wheel or Pole			\$ 15.00			
Camera			\$ 25.00			
1L Tedlar Bag	\$ 20.00					
Radon Sample Kit	\$ 30.00					
HAZMAT Exemption Shipper	\$ 40.00					
Manometers	\$ 105.00	4			\$ 420.00	
Westlaw	\$ 105.00					
CAD/drafting/graphics	\$ 90.00					
Safety	Barricades & Traffic Signs			\$ 10.00		
	Fall Protection			\$ 25.00		
	Gloves (Chemical Resistant)	\$ 10.00				
	Level "B": Level "C1" plus SCBA			\$ 210.00		
	Level "C1": Level "C2" plus Polycoat Suit			\$ 85.00		
	Level "C2": Level "D" plus Respirator			\$ 40.00		
	Standby SCBA			\$ 130.00		
Routine Field and Safety Equipment			\$ 130.00			
Production	1 Inch Binder	\$ 9.00				
	2 Inch Binder	\$ 12.00				
	3 Inch Binder	\$ 15.00				
	4 Inch Binder	\$ 22.00				
	Binder Tabs (Set of 8)	\$ 5.00				
	Color Copies	\$ 0.40				
	B/W Copies	\$ 0.25				
	Document - Format/Sending	\$ 15.00				
Report CD Copy	\$ 5.00					
						\$3,744.00
<b>PHASE TOTAL</b>						<b>\$41,714.00</b>

**Project Title:**  
**Project Number/Name:**  
**Date:**

Remediation and Monitoring  
 6154/Robinson Beloit  
 9/27/2017



Phase 30f Confirmation Sampling						
<b>Labor - Field</b>	<b>Price</b>	<b>Unit</b>	<b># Units</b>		<b>Subtotal</b>	<b>Task Total</b>
Principal	\$190.00	hr			\$0.00	
Chief Technical Officer	\$175.00	hr			\$0.00	
Director	\$175.00	hr			\$0.00	
Sr Project Manager	\$155.00	hr			\$0.00	
Sr Professional	\$155.00	hr			\$0.00	
Project Manager	\$130.00	hr			\$0.00	
Project Professional	\$130.00	hr			\$0.00	
Staff Professional-Office	\$120.00	hr			\$0.00	
Staff Professional-Field	\$95.00	hr			\$0.00	
Field Professional	\$95.00	hr	20.0		\$1,900.00	
Drafting	\$85.00	hr			\$0.00	
Admin	\$65.00	hr			\$0.00	
Compliance Specialist	\$140.00	hr			\$0.00	
Vapor Intrusion Specialist	\$130.00	hr			\$0.00	
Health and Safety Specialist	\$130.00	hr			\$0.00	
		hr			\$0.00	
					\$1,900.00	\$1,900.00
<b>Labor - Office/Reporting</b>	<b>Price</b>	<b>Unit</b>	<b># Units</b>		<b>Subtotal</b>	<b>Task Total</b>
Principal	\$190.00	hr			\$0.00	
Chief Technical Officer	\$175.00	hr			\$0.00	
Director	\$175.00	hr			\$0.00	
Sr Project Manager	\$155.00	hr	2.0		\$310.00	
Sr Professional	\$155.00	hr			\$0.00	
Project Manager	\$130.00	hr			\$0.00	
Project Professional	\$130.00	hr	4.0		\$520.00	
Staff Professional-Office	\$120.00	hr			\$0.00	
Staff Professional-Field	\$95.00	hr			\$0.00	
Field Professional	\$95.00	hr	4.0		\$380.00	
Drafting	\$85.00	hr			\$0.00	
Admin	\$65.00	hr			\$0.00	
Compliance Specialist	\$140.00	hr			\$0.00	
Vapor Intrusion Specialist	\$130.00	hr			\$0.00	
Health and Safety Specialist	\$130.00	hr			\$0.00	
		hr			\$0.00	
					\$1,210.00	\$1,210.00
<b>Contractors/Consultants</b>	<b>Price</b>	<b>Unit</b>	<b># Units</b>	<b>Markup</b>	<b>Subtotal</b>	<b>Task Total</b>
Utility Locate		LS		1.00	\$0.00	
Driller	\$1,560.00	LS	1.0	1.00	\$1,560.00	
Surveyor		LS		1.00	\$0.00	
Waste Disposal		LS		1.00	\$0.00	
Historical Database Report		LS		1.00	\$0.00	
Remediation		LS		1.00	\$0.00	
				1.00	\$0.00	
				1.00	\$0.00	
				1.00	\$0.00	
					\$1,560.00	\$1,560.00
<b>Contractor/Consultant - Laboratory</b>	<b>Price</b>	<b>Unit</b>	<b># Units</b>	<b>Markup</b>	<b>Subtotal</b>	
Soil VOC 8260 dry wt	\$70.00	ea	10.0	1.00	\$700.00	
Soil VOC 8260 dry wt QA/QC	\$70.00	ea		1.00	\$0.00	
GW VOC 8260	\$70.00	ea		1.00	\$0.00	
GW VOC 8260 QA/QC	\$70.00	ea		1.00	\$0.00	
Air TO-15 -- Soil Gas	\$150.00	ea		1.00	\$0.00	
Air TO-15 -- Sub-Slab	\$200.00	ea	3.0	1.00	\$600.00	
Air TO-15 -- Indoor Air	\$200.00	ea		1.00	\$0.00	
Air - Individual Certification	\$50.00	ea		1.00	\$0.00	
Air - Batch Certification	\$30.00	LS	1.0	1.00	\$30.00	
Trip Blank VOCs 8260	\$70.00	ea		1.00	\$0.00	
Level IV QA/QC (15%)						
					\$1,330.00	\$1,330.00
<b>Direct Costs - Expenses</b>	<b>Price</b>	<b>Unit</b>	<b># Units</b>	<b>Markup</b>	<b>Subtotal</b>	
Hotel	\$120.00	day		1.00	\$0.00	
Meals	\$60.00	LS		1.00	\$0.00	
Misc Materials	\$20.00	LS		1.00	\$0.00	
Oil, filters, etc	\$200.00	LS		1.00	\$0.00	
					\$0.00	
					\$0.00	
					\$0.00	
					\$0.00	
					\$0.00	
					\$0.00	\$0.00



	Direct Costs - Chargeable Equipment Expense	Rate (hr/unit)	# Hrs/Units	Rate (day/use)	# days/use	Subtotal
Vehicles	Field Vehicle - Full Day	\$ 20.00		\$ 130.00	2	\$ 260.00
	Support Vehicle - Full Day	\$ 30.00		\$ 180.00		
	Mileage at Federal IRS Reimbursement Rate (used only for daily use over 230 miles)	\$ 0.54				
Meters	Air Velocity Meter (per use)			\$ 25.00		
	Multi-meter Conductivity/pH/Temp/TDS			\$ 165.00		
	Dissolved Oxygen Meter			\$ 40.00		
	FID Foxboro/Sensidyne (TIP)			\$ 155.00		
	Flow Calibrator			\$ 30.00		
	Methane Meter			\$ 116.00		
	PID or 580 OVM			\$ 120.00		
	Turbidity Meter			\$ 30.00		
	ppb RAE			\$ 175.00		
	Ozone Leak Detector			\$ 135.00		
Pumps	Inline Ozone Meter			\$ 230.00		
	ORP Meter			\$ 30.00		
	Air Pump - Low Flow (Barcad)			\$ 25.00		
	Development Pump			\$ 130.00		
	Electric Submersible Pump with Control Box (Units)			\$ 130.00		
	Low-Flow Sampling Bladder	\$ 12.00				
	Peristaltic Pump			\$ 105.00		
	Pumping Test Accessory Equipment (Flow Meters/Manifolds/Tubing)	\$ 100.00				
	Portable SVE Unit - 1.5 HP			\$ 155.00		
Other	Intrinsically Safe Vapor Evacuation Blower			\$ 125.00		
	Pneumatic Low-Flow Pump - 1" Well			\$ 50.00		
	Pneumatic Low-Flow Sampling Kit w/ Flow Cell and Multimeter			\$ 270.00		
	Asbestos Sampling Kit			\$ 250.00		
	Asbestos Investigation Supplies			\$ 130.00		
	Asbestos Sampling Core	\$ 2.50				
	Bailers (Disposable)	\$ 10.00				
	Bailers (Non-Disposable)			\$ 15.00		
	Core Boxes	\$ 10.00				
	Core Sampler			\$ 55.00		
	Data Logger with Transducer			\$ 155.00		
	Well Caps	\$ 30.00				
	Elec. Well Sounder (Probe)			\$ 30.00		
	Metal Detector			\$ 50.00		
	5035 Sample Kit	\$ 16.00				
	P/T Plugs	\$ 5.00				
	Field Book	\$ 11.00				
	Filter - Large	\$ 18.00				
	Filter - Small	\$ 9.00				
	Generator			\$ 105.00		
	Hand Auger			\$ 30.00		
	Helium QA/QC Kit			\$ 265.00		
	Helium QA/QC Accessories	\$ 20.00				
	Oil/Water Interface Probe			\$ 105.00		
	Padlocks	\$ 15.00				
	Steam Cleaner			\$ 130.00		
	Transducer (ea)			\$ 40.00		
	Coring Machine			\$ 200.00		
	Rotary Hammer Drill			\$ 170.00	1	\$ 170.00
	Hand Drill			\$ 75.00		
	NAPL Sample Kit			\$ 40.00		
	SVE Inlet Air Filter			\$ 80.00		
	SVE Dilution Air Filter			\$ 28.00		
	SVE Blower Oil (quart)			\$ 32.00		
	SVE Blower Grease (tube)			\$ 20.00		
	Ozone Air Filter Holder			\$ 18.00		
	Tubing (Bonded) - Polyethylene (Teflon): 1/4" OD X 3/8" OD (per foot)	\$ 1.50				
	Tubing (Bonded) - Polyethylene (Teflon): 1/4" OD X 1/4" OD (per foot)	\$ 1.20				
	Tubing (Bonded) - Polyethylene (Teflon) : 1/16" OD X 1/4" (per foot)	\$ 1.25				
	Tubing (Bonded) - Polyethylene: 1/4" OD X 3/8" OD (per foot)	\$ 1.10				
	Tubing - Polyethylene: 1/4" OD (per foot)	\$ 0.60	3			\$ 1.80
	Tubing - Polyethylene: 1/2" OD (per foot)	\$ 0.85				
Tubing - Tygon: 3/8" STD (per foot)	\$ 4.45					
Tubing - Silicone: 3/8" STD (per foot)	\$ 4.50	3			\$ 13.50	
System Wiring (per foot)	\$ 0.60					
PFA Tubing - 1/2-inch ID	\$ 5.00					
Manual Drive Point Kit	\$ 90.00					
55-Gallon Drum	\$ 55.00					
550 gal poly tank			\$ 40.00			
325 gal poly tank			\$ 30.00			
Temporary Sampling Port	\$ 25.00	3			\$ 75.00	
Vapor Pin Sub-Slab Sampling Port	\$ 75.00					
Sub-Slab Cover (Stainless Steel)	\$ 40.00					
Well Cover 8X12"	\$ 105.00					
Measuring Wheel			\$ 15.00			
Measuring Wheel or Pole			\$ 15.00			
Camera			\$ 25.00			
1L Tedlar Bag	\$ 20.00					
Radon Sample Kit	\$ 30.00					
HAZMAT Exemption Shipper	\$ 40.00					
Manometers	\$ 105.00	1			\$ 105.00	
Westlaw	\$ 105.00					
CAD/drafting/graphics	\$ 90.00					
Safety	Barricades & Traffic Signs			\$ 10.00		
	Fall Protection			\$ 25.00		
	Gloves (Chemical Resistant)	\$ 10.00				
	Level "B": Level "C1" plus SCBA			\$ 210.00		
	Level "C1": Level "C2" plus Polycoat Suit			\$ 85.00		
	Level "C2": Level "D" plus Respirator			\$ 40.00		
	Standby SCBA			\$ 130.00		
Routine Field and Safety Equipment			\$ 130.00	1	\$ 130.00	
Production	1 Inch Binder	\$ 9.00				
	2 Inch Binder	\$ 12.00				
	3 Inch Binder	\$ 15.00				
	4 Inch Binder	\$ 22.00				
	Binder Tabs (Set of 8)	\$ 5.00				
	Color Copies	\$ 0.40				
	B/W Copies	\$ 0.25				
	Document - Format/Sending	\$ 15.00				
Report CD Copy	\$ 5.00					
						\$755.30
<b>PHASE TOTAL</b>						<b>\$6,755.30</b>

Project Title:  
 Project Number/Name:  
 Date:

Remediation and Monitoring  
 6154/Robinson Beloit  
 9/27/2017



Phase 30g Groundwater Monitoring						
Labor - Field	Price	Unit	# Units		Subtotal	Task Total
Principal	\$190.00	hr			\$0.00	
Chief Technical Officer	\$175.00	hr			\$0.00	
Director	\$175.00	hr			\$0.00	
Sr Project Manager	\$155.00	hr			\$0.00	
Sr Professional	\$155.00	hr			\$0.00	
Project Manager	\$130.00	hr			\$0.00	
Project Professional	\$130.00	hr			\$0.00	
Staff Professional-Office	\$120.00	hr			\$0.00	
Staff Professional-Field	\$95.00	hr			\$0.00	
Field Professional	\$95.00	hr	84.0		\$7,980.00	
Drafting	\$85.00	hr			\$0.00	
Admin	\$65.00	hr			\$0.00	
Compliance Specialist	\$140.00	hr			\$0.00	
Vapor Intrusion Specialist	\$130.00	hr			\$0.00	
Health and Safety Specialist	\$130.00	hr			\$0.00	
		hr			\$0.00	
					\$7,980.00	\$7,980.00
Labor - Office/Reporting	Price	Unit	# Units		Subtotal	Task Total
Principal	\$190.00	hr			\$0.00	
Chief Technical Officer	\$175.00	hr			\$0.00	
Director	\$175.00	hr	1.0		\$175.00	
Sr Project Manager	\$155.00	hr	4.0		\$620.00	
Sr Professional	\$155.00	hr			\$0.00	
Project Manager	\$130.00	hr	16.0		\$2,080.00	
Project Professional	\$130.00	hr			\$0.00	
Staff Professional-Office	\$120.00	hr	24.0		\$2,880.00	
Staff Professional-Field	\$95.00	hr			\$0.00	
Field Professional	\$95.00	hr	12.0		\$1,140.00	
Drafting	\$85.00	hr	8.0		\$680.00	
Admin	\$65.00	hr			\$0.00	
Compliance Specialist	\$140.00	hr			\$0.00	
Vapor Intrusion Specialist	\$130.00	hr			\$0.00	
Health and Safety Specialist	\$130.00	hr			\$0.00	
		hr			\$0.00	
					\$7,575.00	\$7,575.00
Contractors/Consultants	Price	Unit	# Units	Markup	Subtotal	Task Total
Utility Locate		LS		1.00	\$0.00	
Driller		LS		1.00	\$0.00	
Surveyor		LS		1.00	\$0.00	
Waste Disposal	\$200.00	Drum	4.0	1.00	\$800.00	
Historical Database Report		LS		1.00	\$0.00	
Remediation		LS		1.00	\$0.00	
				1.00	\$0.00	
				1.00	\$0.00	
				1.00	\$0.00	
					\$800.00	\$800.00
Contractor/Consultant - Laboratory	Price	Unit	# Units	Markup	Subtotal	Task Total
Soil VOC 8260 dry wt	\$70.00	ea		1.00	\$0.00	
Soil VOC 8260 dry wt QA/QC	\$70.00	ea		1.00	\$0.00	
GW VOC 8260	\$70.00	ea	48.0	1.00	\$3,360.00	
GW VOC 8260 QA/QC	\$70.00	ea	16.0	1.00	\$1,120.00	
Air TO-15 -- Soil Gas	\$150.00	ea		1.00	\$0.00	
Air TO-15 -- Sub-Slab	\$200.00	ea		1.00	\$0.00	
Air TO-15 -- Indoor Air	\$200.00	ea		1.00	\$0.00	
Air - Individual Certification	\$50.00	ea		1.00	\$0.00	
Air - Batch Certification	\$30.00	LS		1.00	\$0.00	
Trip Blank VOCs 8260	\$70.00	ea	4.0	1.00	\$280.00	
Level IV QA/QC (15%)						
					\$4,760.00	\$4,760.00
Direct Costs - Expenses	Price	Unit	# Units	Markup	Subtotal	Task Total
Hotel	\$120.00	day	4.0	1.00	\$480.00	
Meals	\$60.00	LS	8.0	1.00	\$480.00	
Misc Materials		LS		1.00	\$0.00	
Equipment Rental		LS		1.00	\$0.00	
					\$0.00	
					\$0.00	
					\$0.00	
					\$0.00	
					\$0.00	
					\$960.00	\$960.00

	Direct Costs - Chargeable Equipment Expense	Rate (hr/unit)	# Hrs/Units	Rate (day/use)	# days/use	Subtotal
Vehicles	Field Vehicle - Full Day	\$ 20.00		\$ 130.00	8	\$ 1,040.00
	Support Vehicle - Full Day	\$ 30.00		\$ 180.00		
	Mileage at Federal IRS Reimbursement Rate (used only for daily use over 230 miles)	\$ 0.54				
Meters	Air Velocity Meter (per use)			\$ 25.00		
	Multi-meter Conductivity/pH/Temp/TDS			\$ 165.00		
	Dissolved Oxygen Meter			\$ 40.00		
	FID Foxboro/Sensidyne (TIP)			\$ 155.00		
	Flow Calibrator			\$ 30.00		
	Methane Meter			\$ 116.00		
	PID or 580 OVM			\$ 120.00		
	Turbidity Meter			\$ 30.00		
	ppb RAE			\$ 175.00		
	Ozone Leak Detector			\$ 135.00		
Pumps	Inline Ozone Meter			\$ 230.00		
	ORP Meter			\$ 30.00		
	Air Pump - Low Flow (Barcad)			\$ 25.00		
	Development Pump			\$ 130.00		
	Electric Submersible Pump with Control Box (Units)			\$ 130.00		
	Low-Flow Sampling Bladder	\$ 12.00				
	Peristaltic Pump			\$ 105.00		
	Pumping Test Accessory Equipment (Flow Meters/Manifolds/Tubing)	\$ 100.00				
	Portable SVE Unit - 1.5 HP			\$ 155.00		
	Intrinsically Safe Vapor Evacuation Blower			\$ 125.00		
Other	Pneumatic Low-Flow Pump - 1" Well			\$ 50.00		
	Pneumatic Low-Flow Sampling Kit w/ Flow Cell and Multimeter			\$ 270.00	8	\$ 2,160.00
	Asbestos Sampling Kit			\$ 250.00		
	Asbestos Investigation Supplies			\$ 130.00		
	Asbestos Sampling Core	\$ 2.50				
	Bailers (Disposable)	\$ 10.00				
	Bailers (Non-Disposable)			\$ 15.00		
	Core Boxes	\$ 10.00				
	Core Sampler			\$ 55.00		
	Data Logger with Transducer			\$ 155.00		
	Well Caps	\$ 30.00				
	Elec. Well Sounder (Probe)			\$ 30.00	4	\$ 120.00
	Metal Detector			\$ 50.00		
	5035 Sample Kit	\$ 16.00				
	P/T Plugs	\$ 5.00				
	Field Book	\$ 11.00				
	Filter - Large	\$ 18.00				
	Filter - Small	\$ 9.00				
	Generator			\$ 105.00		
	Hand Auger			\$ 30.00		
	Helium QA/QC Kit			\$ 265.00		
	Helium QA/QC Accessories	\$ 20.00				
	Oil/Water Interface Probe			\$ 105.00		
	Padlocks	\$ 15.00				
	Steam Cleaner			\$ 130.00		
	Transducer (ea)			\$ 40.00		
	Coring Machine			\$ 200.00		
	Rotary Hammer Drill			\$ 170.00		
	Hand Drill			\$ 75.00		
	NAPL Sample Kit			\$ 40.00		
	SVE Inlet Air Filter			\$ 80.00		
	SVE Dilution Air Filter			\$ 28.00		
	SVE Blower Oil (quart)			\$ 32.00		
	SVE Blower Grease (tube)			\$ 20.00		
	Ozone Air Filter Holder			\$ 18.00		
	Tubing (Bonded) - Polyethylene (Teflon): 1/4" OD X 3/8" OD (per foot)	\$ 1.50				
	Tubing (Bonded) - Polyethylene (Teflon): 1/4" OD X 1/4" OD (per foot)	\$ 1.20				
	Tubing (Bonded) - Polyethylene (Teflon): 1/16" OD X 1/4" (per foot)	\$ 1.25				
	Tubing (Bonded) - Polyethylene: 1/4" OD X 3/8" OD (per foot)	\$ 1.10				
	Tubing - Polyethylene: 1/4" OD (per foot)	\$ 0.60	600			\$ 360.00
	Tubing - Polyethylene: 1/2" OD (per foot)	\$ 0.85				
	Tubing - Tygon: 3/8" STD (per foot)	\$ 4.45				
	Tubing - Silicone: 3/8" STD (per foot)	\$ 4.50	48			\$ 216.00
	System Wiring (per foot)	\$ 0.60				
	PFA Tubing - 1/2-inch ID	\$ 5.00				
Manual Drive Point Kit	\$ 90.00					
55-Gallon Drum	\$ 55.00	4			\$ 220.00	
550 gal poly tank				\$ 40.00		
325 gal poly tank				\$ 30.00		
Temporary Sampling Port	\$ 25.00					
Vapor Pin Sub-Slab Sampling Port	\$ 75.00					
Sub-Slab Cover (Stainless Steel)	\$ 40.00					
Well Cover 8X12"	\$ 105.00					
Measuring Wheel			\$ 15.00			
Measuring Wheel or Pole			\$ 15.00			
Camera			\$ 25.00			
1L Tedlar Bag	\$ 20.00					
Radon Sample Kit	\$ 30.00					
HAZMAT Exemption Shipper	\$ 40.00					
Manometers	\$ 105.00					
Westlaw	\$ 105.00					
CAD/drafting/graphics	\$ 90.00					
Safety	Barricades & Traffic Signs			\$ 10.00		
	Fall Protection			\$ 25.00		
	Gloves (Chemical Resistant)	\$ 10.00				
	Level "B": Level "C1" plus SCBA			\$ 210.00		
	Level "C1": Level "C2" plus Polycoat Suit			\$ 85.00		
	Level "C2": Level "D" plus Respirator			\$ 40.00		
	Standby SCBA			\$ 130.00		
Routine Field and Safety Equipment			\$ 130.00	4	\$ 520.00	
Production	1 Inch Binder	\$ 9.00				
	2 Inch Binder	\$ 12.00				
	3 Inch Binder	\$ 15.00				
	4 Inch Binder	\$ 22.00				
	Binder Tabs (Set of 8)	\$ 5.00				
	Color Copies	\$ 0.40				
	B/W Copies	\$ 0.25				
	Document - Format/Sending	\$ 15.00				
Report CD Copy	\$ 5.00					
						\$4,636.00
<b>PHASE TOTAL</b>						<b>\$26,711.00</b>

Project Title:  
 Project Number/Name:  
 Date:

Remediation and Monitoring  
 6154/Robinson Beloit  
 9/27/2017



Phase 30h Project Coordination and Management						
Labor - Field	Price	Unit	# Units		Subtotal	Task Total
Principal	\$190.00	hr			\$0.00	
Chief Technical Officer	\$175.00	hr			\$0.00	
Director	\$175.00	hr			\$0.00	
Sr Project Manager	\$155.00	hr			\$0.00	
Sr Professional	\$155.00	hr			\$0.00	
Project Manager	\$130.00	hr			\$0.00	
Project Professional	\$130.00	hr			\$0.00	
Staff Professional-Office	\$120.00	hr			\$0.00	
Staff Professional-Field	\$95.00	hr			\$0.00	
Field Professional	\$95.00	hr			\$0.00	
Drafting	\$85.00	hr			\$0.00	
Admin	\$65.00	hr			\$0.00	
Compliance Specialist	\$140.00	hr			\$0.00	
Vapor Intrusion Specialist	\$130.00	hr			\$0.00	
Health and Safety Specialist	\$130.00	hr			\$0.00	
		hr			\$0.00	
					\$0.00	\$0.00
Labor - Office/Reporting	Price	Unit	# Units		Subtotal	Task Total
Principal	\$190.00	hr			\$0.00	
Chief Technical Officer	\$175.00	hr			\$0.00	
Director	\$175.00	hr	4.0		\$700.00	
Sr Project Manager	\$155.00	hr	32.0		\$4,960.00	
Sr Professional	\$155.00	hr			\$0.00	
Project Manager	\$130.00	hr	36.0		\$4,680.00	
Project Professional	\$130.00	hr			\$0.00	
Staff Professional-Office	\$120.00	hr			\$0.00	
Staff Professional-Field	\$95.00	hr			\$0.00	
Field Professional	\$95.00	hr			\$0.00	
Drafting	\$85.00	hr			\$0.00	
Admin	\$65.00	hr	4.0		\$260.00	
Compliance Specialist	\$140.00	hr			\$0.00	
Vapor Intrusion Specialist	\$130.00	hr			\$0.00	
Health and Safety Specialist	\$130.00	hr			\$0.00	
		hr			\$0.00	
					\$10,600.00	\$10,600.00
Contractors/Consultants	Price	Unit	# Units	Markup	Subtotal	Task Total
Utility Locate		LS		1.00	\$0.00	
Driller		LS		1.00	\$0.00	
Surveyor		LS		1.00	\$0.00	
Waste Disposal		LS		1.00	\$0.00	
Historical Database Report		LS		1.00	\$0.00	
Remediation		LS		1.00	\$0.00	
				1.00	\$0.00	
				1.00	\$0.00	
				1.00	\$0.00	
					\$0.00	\$0.00
Contractor/Consultant - Laboratory	Price	Unit	# Units	Markup	Subtotal	Task Total
Soil VOC 8260 dry wt	\$70.00	ea		1.00	\$0.00	
Soil VOC 8260 dry wt QA/QC	\$70.00	ea		1.00	\$0.00	
GW VOC 8260	\$70.00	ea		1.00	\$0.00	
GW VOC 8260 QA/QC	\$70.00	ea		1.00	\$0.00	
Air TO-15 -- Soil Gas	\$150.00	ea		1.00	\$0.00	
Air TO-15 -- Sub-Slab	\$200.00	ea		1.00	\$0.00	
Air TO-15 -- Indoor Air	\$200.00	ea		1.00	\$0.00	
Air - Individual Certification	\$50.00	ea		1.00	\$0.00	
Air - Batch Certification	\$30.00	LS		1.00	\$0.00	
Trip Blank VOCs 8260	\$70.00	ea		1.00	\$0.00	
Level IV QA/QC (15%)					\$0.00	
					\$0.00	\$0.00
Direct Costs - Expenses	Price	Unit	# Units	Markup	Subtotal	Task Total
Hotel	\$120.00	day		1.00	\$0.00	
Meals	\$60.00	LS		1.00	\$0.00	
Misc Materials		LS		1.00	\$0.00	
Equipment Rental		LS		1.00	\$0.00	
					\$0.00	
					\$0.00	
					\$0.00	
					\$0.00	
					\$0.00	\$0.00

	Direct Costs - Chargeable Equipment Expense	Rate (hr/unit)	# Hrs/Units	Rate (day/use)	# days/use	Subtotal
Vehicles	Field Vehicle - Full Day	\$ 20.00		\$ 130.00		
	Support Vehicle - Full Day	\$ 30.00		\$ 180.00		
	Mileage at Federal IRS Reimbursement Rate (used only for daily use over 230 miles)	\$ 0.54				
Meters	Air Velocity Meter (per use)			\$ 25.00		
	Multi-meter Conductivity/pH/Temp/TDS			\$ 165.00		
	Dissolved Oxygen Meter			\$ 40.00		
	FID Foxboro/Sensidyne (TIP)			\$ 155.00		
	Flow Calibrator			\$ 30.00		
	Methane Meter			\$ 116.00		
	PID or 580 OVM			\$ 120.00		
	Turbidity Meter			\$ 30.00		
	ppb RAE			\$ 175.00		
	Ozone Leak Detector			\$ 135.00		
Pumps	Inline Ozone Meter			\$ 230.00		
	ORP Meter			\$ 30.00		
	Air Pump - Low Flow (Barcad)			\$ 25.00		
	Development Pump			\$ 130.00		
	Electric Submersible Pump with Control Box (Units)			\$ 130.00		
	Low-Flow Sampling Bladder	\$ 12.00				
	Peristaltic Pump			\$ 105.00		
	Pumping Test Accessory Equipment (Flow Meters/Manifolds/Tubing)	\$ 100.00				
	Portable SVE Unit - 1.5 HP			\$ 155.00		
Other	Intrinsically Safe Vapor Evacuation Blower			\$ 125.00		
	Pneumatic Low-Flow Pump - 1" Well			\$ 50.00		
	Pneumatic Low-Flow Sampling Kit w/ Flow Cell and Multimeter			\$ 270.00		
	Asbestos Sampling Kit			\$ 250.00		
	Asbestos Investigation Supplies			\$ 130.00		
	Asbestos Sampling Core	\$ 2.50				
	Bailers (Disposable)	\$ 10.00				
	Bailers (Non-Disposable)			\$ 15.00		
	Core Boxes	\$ 10.00				
	Core Sampler			\$ 55.00		
	Data Logger with Transducer			\$ 155.00		
	Well Caps	\$ 30.00				
	Elec. Well Sounder (Probe)			\$ 30.00		
	Metal Detector			\$ 50.00		
	5035 Sample Kit	\$ 16.00				
	P/T Plugs	\$ 5.00				
	Field Book	\$ 11.00				
	Filter - Large	\$ 18.00				
	Filter - Small	\$ 9.00				
	Generator			\$ 105.00		
	Hand Auger			\$ 30.00		
	Helium QA/QC Kit			\$ 265.00		
	Helium QA/QC Accessories	\$ 20.00				
	Oil/Water Interface Probe			\$ 105.00		
	Padlocks	\$ 15.00				
	Steam Cleaner			\$ 130.00		
	Transducer (ea)			\$ 40.00		
	Coring Machine			\$ 200.00		
	Rotary Hammer Drill			\$ 170.00		
	Hand Drill			\$ 75.00		
	NAPL Sample Kit			\$ 40.00		
	SVE Inlet Air Filter			\$ 80.00		
	SVE Dilution Air Filter			\$ 28.00		
	SVE Blower Oil (quart)			\$ 32.00		
	SVE Blower Grease (tube)			\$ 20.00		
	Ozone Air Filter Holder			\$ 18.00		
	Tubing (Bonded) - Polyethylene (Teflon): 1/4" OD X 3/8" OD (per foot)	\$ 1.50				
	Tubing (Bonded) - Polyethylene (Teflon): 1/4" OD X 1/4" OD (per foot)	\$ 1.20				
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	4 Inch Binder	\$ 22.00				
	Binder Tabs (Set of 8)	\$ 5.00				
	Color Copies	\$ 0.40				
	B/W Copies	\$ 0.25	240			\$ 60.00
	Document - Format/Sending	\$ 15.00				
Report CD Copy	\$ 5.00					
						\$60.00
<b>PHASE TOTAL</b>						<b>\$10,660.00</b>