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May 9, 2019

Mr. Adrian Herrera
Wisconsin Department of Natural Resources
101 South Webster Street – RR/5
P.O. Box 7921
Madison, Wisconsin 53707-7921

Mr. John Feeney
Wisconsin Department of Natural Resources
1155 Pilgrim Road
Plymouth, Wisconsin 53073-4294

Subject: Sampling and Analysis Plan with Cost Proposal for an Off-site Vapor Intrusion Assessment adjacent to the former Quality Cleaners Located at 1228 11th Avenue, Wisconsin; AECOM Project No. 60602996

Dear Mr. Herrera and Mr. Feeney:

AECOM Technical Services, Inc. (AECOM) has prepared this Sampling and Analysis Plan with Cost Proposal to conduct an Off-site Vapor Intrusion (VI) Assessment adjacent to the former Quality Cleaners (BRRTS #02-46-560212). AECOM's scope of work for the off-site VI assessment is based on information provided by the WDNR from site investigation conducted at the Former Quality Cleaners located at 1228 11th Avenue in the city of Grafton, Wisconsin by other consultants. A site-specific Health and Safety Plan has been prepared as a separate document.

Site Location and General Description

The former Quality Cleaners is located at 1228 11th Avenue in the City of Grafton, County of Ozaukee, State of Wisconsin and is the source of the subsurface impacts necessitating the off-site VI assessment. Three properties adjacent to the former Quality Cleaners are included in the off-site VI assessment and are depicted on Figure 1. Photographs of the three structures are also attached to this plan. The property addresses and their location relative to the former Quality Cleaners are:

- 1102 Bridge Street, a commercial building without a basement, located immediately adjacent to the south of the former Quality Cleaners
- 1233 12th Avenue, Seth's Antiques a retail establishment without a basement, located adjacent to the southeast of the former Quality Cleaners
- 1225-1227 12th Ave, a two-story residential-type structure converted to retail use, with a basement, located east of Quality Cleaners and immediately adjacent to the north of Slow Pokes Foods.

Investigation Participants

The following parties are participants in this site assessment.

Property Owners

Behrens, LLC
1102 Bridge Street
Grafton, WI

Seth's Antiques
1233 12th Avenue
Grafton, WI

K&G Real Properties, LLC
1225-1227 12th Avenue
Grafton, WI

Regulatory Agency

Wisconsin Department of Natural Resources
101 South Webster Street – RR/5
P.O. Box 7921
Madison, WI 53707-7921
Contact: Tom Coogan
608-267-7560

Wisconsin Department of Natural Resources
1155 Pilgrim Road
Plymouth, WI 53073-4294
Contact: John Feeney
920-893-8523

Consultant

AECOM
1555 N RiverCenter Drive, Suite 214
Milwaukee, WI 53212
Contact: Lanette Altenbach
414-944-6186

Analytical Laboratory

Pace Analytical Services
1241 Bellevue Street, Suite 9
Green Bay, WI 54302
Contact: Christopher Hyska
920-321-9405

Site Background

The former Quality Cleaners site 1126-1228 11th Ave, Grafton, Wisconsin has an identified volatile organic compound release to the subsurface which could present a potential human health risk from vapor intrusion of contaminants into nearby occupied buildings. The former Quality Cleaners has no viable responsible party at this time. A dry cleaner operated in the building from the 1960s until 2013, when, as part of a property transaction, a Phase II Environmental Site Assessment (ESA) conducted by Moraine Environmental identified tetrachloroethene (PCE, a dry-cleaning chemical) in soil and groundwater at the site. PCE was detected in soil under the floor slab and a subsequent subsurface investigation found PCE contamination in the soil and groundwater. The soil and groundwater contaminant plume are within 100 feet of occupied buildings and vapors from the plume could be migrating into these nearby buildings.

Scope of Work

The scope of work consists of the following:

- 1) Collect and analyzed vapor samples
 - a) Install sub-slab vapor probes and collect an initial round of sub-slab vapor samples at each of the three locations listed above
 - b) Collect indoor air samples at two of the locations which have residential space on the second floor
 - c) Collect outdoor ambient air samples adjacent to the buildings where the indoor air samples were collected.

The samples that will be collected at each location are:

<u>Property address</u>	<u>Samples to be collected</u>
1102 Bridge Street	Two sub-slab vapor probes
1225-1227 12 th Avenue	One sub-slab vapor probe One indoor air sample on the second floor One outdoor ambient air sample
1233 12 th Avenue	Two sub-slab vapor probes One indoor air sample on the second floor One outdoor ambient air sample

2) Perform up to two additional vapor sampling events

Depending upon the results of the initial vapor sampling, a second and/or third sampling event may be conducted for sub-slab vapor, indoor air and ambient air.

3) Abandon the sub-slab vapor probe

The procedures used to install the vapor pins and to collect the samples are provided in the next sections.

Sub-Slab Vapor Sampling

Five sub-slab vapor samples via VAPOR PIN® (VO) (sample identification of SS-1 through SS-5), will be collected through the floor slab of the buildings. The proposed locations of the sub-slab vapor sampling probes are depicted on Figure 1. Note that actual vapor sampling locations may be different, based on physical access constraints inside the building. The physical access constraints include not locating the vapor point within 15 feet of a building wall, known utility lateral or large cracks in the floor which could influence the vapor test with an influx of fresh air.

VAPOR PINs® Installation

Vapor Pins (VPs) will be installed and sampled as outlined below:

- VPs will be installed with a hand-held hammer drill by drilling into concrete floors to a depth of approximately 2 inches below grade utilizing a 1.5-inch diameter concrete drill bit.
- A smaller 5/8-inch diameter hole will be drilled inside the 1.5-inch diameter hole until the entire thickness of the concrete slab has been penetrated.
- A nylon brush will be used to dislodge debris and clean out the drill holes. A portable shop vacuum will be used to remove the concrete drill cuttings and dust.
- A brass VP will be installed into each concrete hole/boring. The VP includes a silicone sleeve that provides a seal between the fitting and the surrounding drill hole.
- The top of the brass VP consists of a 1/4-inch diameter barbed fitting. The VPs will be installed by tapping them into the 5/8-inch diameter holes with a hammer, utilizing an installation tool provided by the manufacturer.
- Each VP will be installed so that the top of the brass barbed fitting is below the surrounding concrete floor. The VPs will be finished with a small rubber cap placed over the brass barbed fitting and secured with a 1 3/4-inch diameter flush-mounted steel cap.

VAPOR PINs® Sampling

- The VPs will be sampled a minimum of 12-24 hours after installation to allow the soil vapor to return to typical conditions.
- Soil vapor samples from each VP will be collected in laboratory-provided, certified clean 6-liter SUMMA® canisters, using laboratory-supplied flow regulators, and flow rates of 200 milliliters per minute (mL/min) or less.
- Prior to sample collection, each VP will undergo a leak test with a physical sampling train check (shut-in test) and by using a helium shroud to confirm the VP sample trains will be properly sealed.
- Field records will be completed for each sample, using a Soil Gas Sampling Form to record the following information: unique sample name, sample location reference, and sample date, sampler's name(s), sample collection date and time, other significant field observations pertinent to sample collection, SUMMA® canister serial number, sampling flow rate, minimum purge volume, sampling start and end times, canister start and end pressures, and weather conditions, including barometric pressure.

- The air samples will be sent by courier under chain-of-custody (COC) control to a Wisconsin-certified laboratory, Pace Analytical for VOCs using United States Environmental Protection Agency (EPA) Air Method, Toxic Organics TO-15).

Indoor Air Quality Sampling

AECOM will use a 24-hour SUMMA® canisters to collect ambient air samples at the second-floor level of each of the addresses with residential spaces (1225-1227 12th Avenue (K&G Real Properties LLC) and 1233 12th Avenue (Seth's Antiques)). The SUMMA® canisters will be placed in locations determined by AECOM field personnel on one day and then approximately 24 hours later, the canister will be retrieved. After the SUMMA® canisters have been collected; AECOM will send the SUMMA® canisters to Pace, Minneapolis, Minnesota for the analysis of VOCs using EPA TO-15.

Outdoor Air Quality Sampling

AECOM will use a 24-Hour SUMMA® canisters to collect outdoor ambient air samples at two locations outside the buildings where the indoor air samples were collected. The SUMMA® canisters will be placed in locations determined by AECOM field personnel on one day and then retrieved 24 hours later. After the SUMMA® canisters have been collected; AECOM will send the SUMMA® canisters to Pace, Minneapolis, Minnesota for the analysis of VOCs using EPA TO-15.

Laboratory Analytical Methods

Analytical testing for VOCs using EPA TO-15 for volatile organics.

Deliverable

AECOM will prepare a letter with a summary of the procedures and methods used to for VI sampling, ambient outdoor air sampling, indoor air sampling, a map with sampling locations, and the laboratory reports following the initial vapor sampling event and again after any subsequent sample events.

Schedule

Field work will be scheduled upon receipt of the notice to proceed and will be dependent upon coordination of site access at the three sampling locations. We anticipate that this project will require three separate trips to the site for the first sampling event: the first trip will be to complete installation of five sub-slab VPs, the second will be to collect five sub-slab vapor samples and to place the two indoor air samples and two outdoor ambient air samples, the third trip will be to collect the indoor and outdoor air canisters. Analytical results will be provided to AECOM within approximately two weeks of receipt of samples by the laboratory. A letter describing the vapor sampling procedures will be provided with a copy of the sample location map and the analytical reports. If requested by WDNR, AECOM will perform up to two additional vapor sampling events similar to initial vapor sampling, indoor air quality sampling, and ambient outdoor air sampling. Following data review by WDNR, AECOM will abandon the five VPs and submit and brief email summary summarizing completion of contract requirements.

Health and Safety Plan

A site-specific Health and Safety Plan was prepared for this assessment and is provided as a separate document. The Health and Safety Plan contains a summary of known site contaminants and other site hazards, emergency resources available, personnel protection, and emergency procedures recommended for this project. Project field personnel will read and be familiar with the Plan prior to beginning the fieldwork.

Cost Proposal

AECOM proposes to complete this project on a time and materials basis in accordance with the labor and unit rates provided to the WDNR. AECOM estimates the breakdown of labor and material costs to complete this project to be \$20,640.70, as shown on the attached Cost Proposal. A breakdown of the cost by sampling event:

Prepare work plan and health & safety plan	\$ 2,365.00
Initial Sample Event, including vapor pin installation	
AECOM Labor and equipment	\$ 4,357.20
Laboratory fee (including 5% markup)	<u>\$ 2,331.00</u>
Event Subtotal	\$ 6,688.20
Second Sampling event	
AECOM Labor and equipment	\$ 2,997.20
Laboratory fee (including 5% markup)	<u>\$ 2,331.00</u>
Event Subtotal	\$ 5,328.20
Third Sampling event	
AECOM Labor and equipment	\$ 2,997.20
Laboratory fee (including 5% markup)	<u>\$ 2,331.00</u>
Event Subtotal	\$ 5,328.20
Abandon Vapor Pins	
AECOM Labor and mileage	\$ <u>931.10</u>
Project Total	\$20,640.70

The Cost Proposal indicates the unit prices for the various elements of service that we expect will be utilized to provide the services outlined in this proposal. A back-up labor estimate is also provided, as you requested, to provide a breakdown of the labor effort by task. Invoice amounts will be based on actual units utilized at the agreed upon rates and will include travel costs and other expenses incurred by AECOM in rendering the proposed services. AECOM understands that the WDNR will incorporate this proposal into a contract including terms provided in the WDNR's Request for Statements of Qualification dated February 10, 2010.

Please contact us if you have any questions or comments regarding the scope of services or procedures presented in this plan.

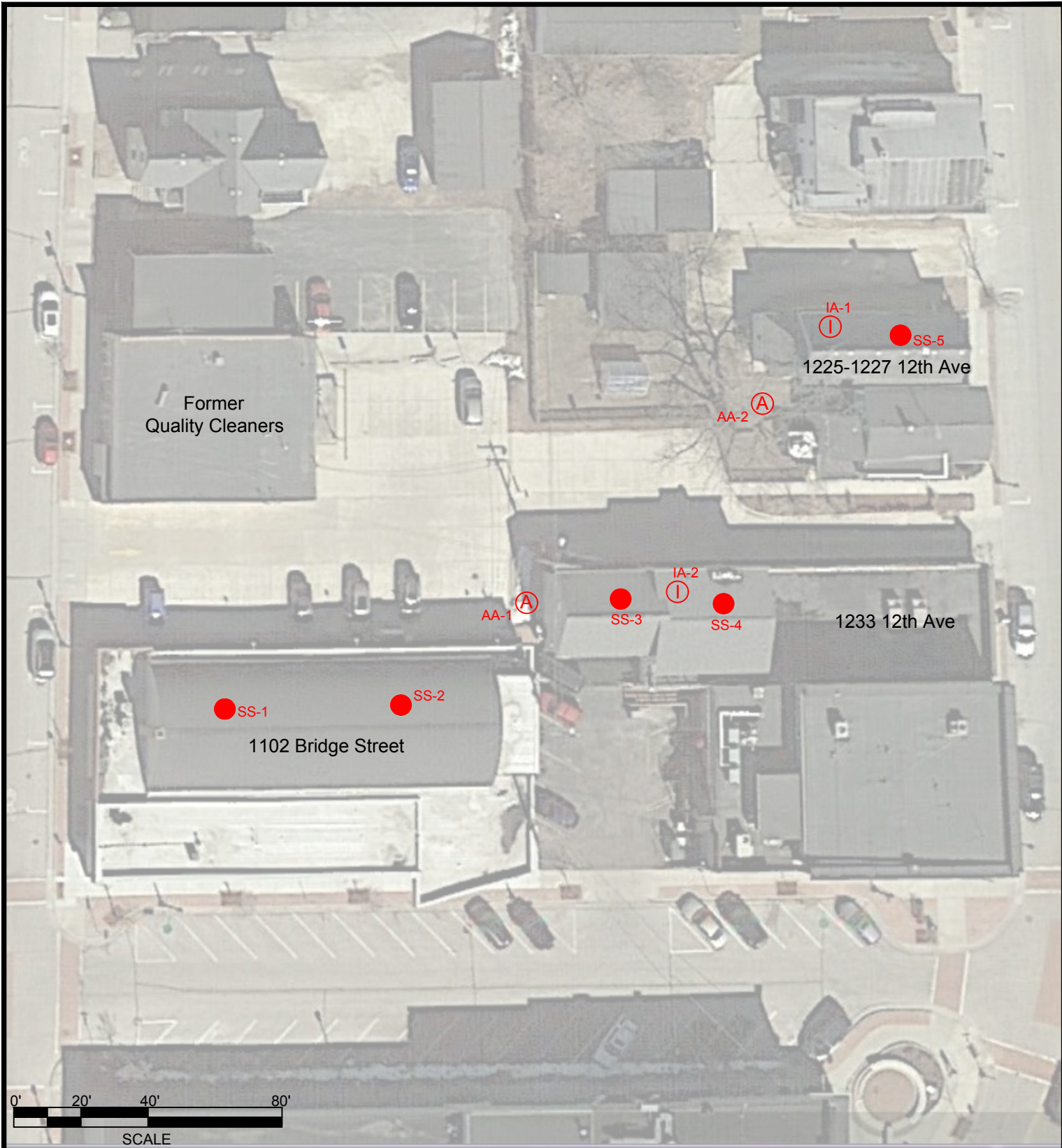
Yours sincerely,


Lanette Altenbach, P.G., CPG
Project Manager/Senior Hydrogeologist
lanette.altenbach@aecom.com


Kevin L. Brehm, P.E.
Associate Vice President
kevin.brehm@aecom.com

Attachments:

Figure 1 – Site Layout and proposed Sample Location Map
Sample Location Photos
Cost Estimate



File: P:\60602996\900_CAD_GIS\CAD\Grafton VI Assessment.dwg; USER: SCHOLZ, CAROLYN; PLOTTED: May 3, 2019 - 10:37 AM

Legend:

- Subslab Vapor Probe and Identification Number
- Ⓜ Indoor Air Sample Location and Identification Number
- Ⓐ Ambient Air Sample Location and Identification Number

Notes:

1. Aerial photograph from Google Earth Pro dated 10/10/2013.



AECOM
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 1555 RiverCenter Dr
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 414.944.6080



GRAFTON VI ASSESSMENT

**VAPOR INTRUSION ASSESSMENT
 SAMPLE LOCATIONS**

Project Number: 60602996	Drawn By: CAS	Date: 5/3/2019
		Figure No. 1

Project Name: Grafton Vapor Intrusion Assessment	Site Location: Grafton, Wisconsin	Project No.: 60602996
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Photo No. 1	Date: 5-2-19
Direction Photo Taken: Southeast	
Description: 1102 Bridge Street Photo from Google Earth, Street view.	



Photo No. 2	Date: 5-2-19
Direction Photo Taken: Southeast	
Description: 1102 Bridge Street Photo from Google Earth, Street view.	



Project Name: Grafton Vapor Intrusion Assessment	Site Location: Grafton, Wisconsin	Project No.: 60602996
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Photo No.: 3	Date: 5-2-19
Direction Photo Taken: Southwest	
Description: 1233 12 th Avenue Photo from Google Earth, Street view	



Photo No.: 4	Date: 5-2-19
Direction Photo Taken: East	
Description: 1233 12 th Avenue Rear of Seth's Antiques at arrow Photo from Google Earth, Street view	



Project Name:
Grafton Vapor Intrusion Assessment

Site Location:
Grafton, Wisconsin

Project No.
60602996

Photo No. 5	Date: ??/??/13
Direction Photo Taken: West-Northwest	
Description: Green and white 2-story building 1225-1227 12 th Avenue.	



Photo No.	Date:
Direction Photo Taken:	
Description:	

AECOM

COST PROPOSAL - (Site Name)

LABOR				FIELD INSTRUMENTS/EQUIPMENT					ANALYTICAL LABORATORY TESTING**				
PERSONNEL BILLING TITLE	TOTAL HOURS	HOURLY RATE	TOTAL COST	DESCRIPTION	QTY USED	# OF DAYS	UNIT COST*	TOTAL COST	Analyte	QTY USED	UNIT COST*	TOTAL COST	
PROJECT DIRECTOR II/III / ENGINEER V	0	\$150	\$0.00	55-GALLON STEEL DRUM			\$55.00	\$0.00	CHROMIUM, HEXAVALENT (water)		\$35	\$0	
PROJECT MANAGER II / PROJECT DIRECTOR I	16	\$135	\$2,160.00	AIR SAMPLE PUMP CALIBRATOR	1	3	\$25.00	\$75.00	CYANIDE, TOTAL (groundwater)		\$20	\$0	
ENGINEER IV/ SCIENTIST V/PROJECT MANAGER I	22	\$120	\$2,640.00	BAILER (PVC/POLYETHYLENE)			\$10.00	\$0.00	DRO (soil)		\$28	\$0	
/ENGINEER III/ SCIENTIST IV	0	\$105	\$0.00	BAILER (STAINLESS STEEL)			\$15.00	\$0.00	FLASH POINT (soil)		\$15	\$0	
ENGINEER III /SCIENTIST IV	4	\$105	\$420.00	COMBUSTIBLE/MULTI-GAS METER	1	3	\$50.00	\$150.00	GRO (soil)		\$22	\$0	
ENGINEER II /SCIENTIST III	1	\$95	\$95.00	GENERATOR			\$25.00	\$0.00	HERBICIDES (soil & groundwater) Method 8151		\$220	\$0	
SCIENTIST II/ENGINEER I	0	\$85	\$0.00	GPS EQUIPMENT			\$200.00	\$0.00	HERBICIDES (soil & groundwater) Method 8321		\$153	\$0	
SCIENTIST I/PROJECT CONTROLS I/PROJ ADMIN II	92	\$60	\$5,520.00	GROUNDWATER FILTER			\$20.00	\$0.00	Mercury (7471/7470)		\$18	\$0	
PROJECT ADMINISTRATOR I	6	\$60	\$360.00	HAND AUGER (SOIL/SLUDGE)			\$45.00	\$0.00	METALS - INDIVIDUAL (soil & groundwater) (6010)		\$6	\$0	
TECHNICIAN II	0	\$60	\$0.00	INTERFACE PROBE			\$25.00	\$0.00	PAHs (soil & groundwater)		\$55	\$0	
PROJECT ADMINISTRATOR I	6	\$50	\$300.00	METAL DETECTOR			\$25.00	\$0.00	PCBs (soil & groundwater)		\$60	\$0	
				Mileage (Federal Rate)	45	7	\$0.580	\$182.70	PESTICIDES (soil & groundwater) Method 8081		\$90	\$0	
TOTAL LABOR COST			\$11,495	PERISTALTIC PUMP			\$25.00	\$0.00	pH		\$10	\$0	
				pH/CONDUCTIVITY/TEMPERATURE METER			\$15.00	\$0.00	PVOC		\$22	\$0	
SUBCONTRACTORS				PHOTO IONIZATION DETECTOR	1	3	\$75.00	\$225.00	PVOCs + naphthalene (soil & groundwater)		\$25	\$0	
other		1.05	\$0.00	POLYETHYLENE TUBING (per ft.)			\$0.50	\$0.00	VOCs (air) initial event (9 samples, 1 duplicate)	10	\$150	\$1,500	
other		1.05	\$0.00	SILICONE TUBING (per ft.)			\$4.50	\$0.00	Air - Can and Flow Control Rental/per can	10	\$72	\$720	
other		1.05	\$0.00	VINYL TUBING (per ft.)			\$0.25	\$0.00	VOCs (air) second event	10	\$150	\$1,500	
other		1.05	\$0.00	WATER LEVEL METER			\$10.00	\$0.00	Air - Can and Flow Control Rental/per can	10	\$72	\$720	
other		1.05	\$0.00	WELL LOCKS			\$15.00	\$0.00	VOCs (air) third event	10	\$150	\$1,500	
other		1.05	\$0.00	WELL SAMPLING W/OUT PUMP (PER WELL)*			\$10.00	\$0.00	Air - Can and Flow Control Rental/per can	10	\$72	\$720	
other		1.05	\$0.00	WELL SAMPLING W/PUMP (PER WELL)*			\$20.00	\$0.00	VOCs (soil & groundwater)		\$50	\$0	
other		1.05	\$0.00	YSI Multimeter			\$75.00	\$0.00	Asbestos (EHS Laboratory)		\$10	\$0	
other		1.05	\$0.00	Hammer Drill	1	1	\$150.00	\$150.00	Paint Chips-lead (EHS Laboratory)		\$10	\$0	
other		1.05	\$0.00	Helium detector	1	3	\$275.00	\$825.00			\$100	\$0	
other		1.05	\$0.00	Helium gas (leak testing)	1	3	\$40.00	\$120.00			\$0	\$0	
other		1.05	\$0.00				\$0.00	\$0.00			\$0	\$0	
other		1.05	\$0.00	Vapor Pin® Supplies/Materials	1	1	\$425.00	\$425.00			\$0	\$0	
TOTAL PROBE/SUBCONTRACTORS				\$0.00	* - includes all expendables and equipment			TOTAL EQUIPMENT & OTHER DIRECT COSTS \$2,152.70		(other parameters by site-specific quote)		TOTAL LABORATORY COSTS	\$6,660.00
										TOTAL LABORATORY COSTS (w/ 5% markup)		\$6,993.00	

Cost for equipment and lab include the initial event plus 2 more sample events

TOTAL ESTIMATED PROJECT COSTS	\$20,640.70
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The actual invoice amounts may vary due to many factors, including, but not limited to, the scope of services not yet fully developed, changes in project requirements, or alterations in the scope of services as actual site conditions are evaluated. Invoice amounts will be based on actual units utilized at the rates identified on this Cost Proposal and will also include travel costs and other expenses incurred by AECOM in rendering the services described in this proposal. AECOM will not exceed the attached cost estimate without prior approval.

Proposed changes, if any, to the scope of services and estimated costs following commencement of AECOM's services will be discussed with Client and amendments made as described in the attached Terms and Conditions. For additional services rendered, if any, but not included in the scope of services described in this proposal, invoice amounts will be based on the actual units used at the rates shown, and will include travel costs, and other expenses incurred by AECOM in rendering the services described in Subcontract unit rates for soil probe sampling are provided. Our preference is to obtain site-specific bids for services of this type due to varying mobilization distances, site access and soil conditions. Competitive bids can efficiently be obtained on a site by site basis.

A 5% markup will be applied to other expenses and costs.

PROJECT COST ESTIMATE - LABOR
Off-site Vapor Assessment - Grafton, Wisconsin

	PERSONNEL	Project Director K. Brehm	Project Manager II L. Altenbach	Sci V T. Schultz	Eng III	Sci IV Heather Thiel	Proj Controls Hansmann	Eng I /Sci II	Sampling Technician K. Nielsen	Proj Controls 1 C. Scholz	Proj Admin II	Proj Admin B. Nienow	TOTAL LABOR REVENUE
	BY DISCIPLINE												
		\$150	\$135	\$120	\$105	\$105	\$95	\$85	\$60	\$60	\$60	\$50	
	SAP and HASP												
A.	SAP		7	5			1			2			\$1,760
B.	HASP		1			4						1	\$605
	SUBTOTAL HOURS / UNITS	0	8	5	0	4	1	0	0	2	0	1	21
	SUBTOTAL COSTS	\$0	\$1,080	\$600	\$0	\$420	\$95	\$0	\$0	\$120	\$0	\$50	\$2,365
	1) Collect Vapor and Air samples												
A.	Project Initiation		2	2					2				\$630
B.	Install Vpins, set up air cannisters			1					12				\$840
C.	Sample Vpins								12				\$720
D.	Procedure letter preparation		1	4					4	2		2	\$1,075
	SUBTOTAL HOURS / UNITS	0	3	7	0	0	0	0	30	2	0	2	44
	SUBTOTAL COSTS	\$0	\$405	\$840	\$0	\$0	\$0	\$0	\$1,800	\$120	\$0	\$100	\$3,265
	2) Second Sampling (Optional)												
A.	Planning/coordination		1	2					2				\$495
B.	Install Vpins, set up air cannisters			1					12				\$840
C.	Sample Vpins								12				\$720
D.	Procedure letter preparation		1	1					1	1		1	\$425
	SUBTOTAL HOURS / UNITS	0	2	4	0	0	0	0	27	1	0	1	35
	SUBTOTAL COSTS	\$0	\$270	\$480	\$0	\$0	\$0	\$0	\$1,620	\$60	\$0	\$50	\$2,480
	2) Third Sampling (Optional)												
A.	Planning/coordination		1	2					2				\$495
B.	Install Vpins, set up air cannisters			1					12				\$840
C.	Sample Vpins								12				\$720
D.	Procedure letter preparation		1	1					1	1		1	\$425
	SUBTOTAL HOURS / UNITS	0	2	4	0	0	0	0	27	1	0	1	35
	SUBTOTAL COSTS	\$0	\$270	\$480	\$0	\$0	\$0	\$0	\$1,620	\$60	\$0	\$50	\$2,480
	3) VP abandonment												
A.	Abandonment and Documentation		1	2					8			1	\$905
	SUBTOTAL HOURS / UNITS	0	1	2	0	0	0	0	8	0	0	1	12
	SUBTOTAL COSTS	\$0	\$135	\$240	\$0	\$0	\$0	\$0	\$480	\$0	\$0	\$50	\$905
	TOTAL HOURS / UNITS	0	16	22	0	4	1	0	92	6	0	6	147
	TOTAL COSTS	\$0	\$2,160	\$2,640	\$0	\$420	\$95	\$0	\$5,520	\$360	\$0	\$300	\$11,495

1 site visit- 12 hrs day 1 (install 5 VPs and start indoor and outdoor sampling)

1 site visit- 12 hrs