THE SIGMA GROUP
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November 25, 2019 Project Reference #18883

Ms. Nancy Ryan
Wisconsin Department of Natural Resources
2300 N. Dr. Martin Luther King Jr. Drive
Milwaukee, WI 53212

Subject: Additional Vapor Sampling Proposal
MPS/Vaughan Manufacturing
801 S. 70th Street, West Allis, WI

Dear Ms. Ryan:

The Sigma Group, Inc. (Sigma), as requested, presents this proposal to the Wisconsin Department of Natural Resources (WDNR) to complete additional vapor sampling at the MPS/Vaughan Manufacturing Co. property located at 801 S. 70th Street, West Allis, Wisconsin (hereinafter the "Site"). A summary of the Site conditions and proposed scope of work, consistent with the November 18, 2019 Change Order request for cost estimate for MPS/Vaughan MFG follows.

BACKGROUND

The MPS/Vaughan Manufacturing property consists of one building utilized as a medical clinic/office building and ancillary parking lots. Shallow soil gas sampling completed at the Site in July 2019 suggested a potential risk from vapor intrusion to occupants of the existing site building from select volatile organic compounds (VOCs), specifically naphthalene and trichloroethene (TCE). As a result, the WDNR recommended collection of sub-slab vapor and indoor air samples at the existing site building to further assess the potential vapor intrusion pathway.

Sigma completed initial indoor air and sub-slab vapor samples within the Site building in October 2019. No exceedances to indoor air standards or applicable Vapor Risk Screening Levels (VRSLs) were identified with the exception of isopropyl alcohol. Considering the Site building is currently occupied as a medical office/out-patient facility and the absence of a sub-slab source it is concluded that the detected concentration of isopropyl alcohol is the results of use within the medical facility.

To confirm initial results and assess seasonal subsurface conditions WDNR has requested collection of two additional rounds of indoor air and sub-slab vapor sampling at the Site building to further evaluate the potential vapor intrusion pathway.

SCOPE OF WORK

In accordance with the Scope of Work provided by WDNR in electronic correspondence dated November 18, 2019, two rounds of sub-slab and indoor air sampling will be conducted. The first sampling event will be completed in December, January or February

with the second two to three months after. The activities proposed by Sigma will include the following:

- Prior to sampling, a walk-through with the tenant staff will be completed to review proposed sampling locations, procedures and schedule.

- During each sampling event, Sigma will collect indoor air samples at approximately 10 select locations within the building interior using laboratory supplied Summa canisters placed within the normal breathing zone over an approximately 8-hour period. Concurrent with indoor air sample collection, an ambient air sample will be collected at a location outside the site building.

- As part of the first sampling event, sub-slab vapor sampling points will be installed at 9 locations within the existing site building. The proposed sample locations will be provided to WDNR for review and approval following the walk-through inspection. The sub-slab vapor points will be installed to allow the points to remain in place for the duration of the two sampling events. The sample points will be constructed using Vapor-Pin® sample points by first drilling a 1.5-incha diameter hole partially into the floor slab to allow placement of a flush-mount cover over the sample point, then drilling a 5/8-inch diameter hole through the concrete floor slab, and vacuuming concrete dust from the hole and surrounding area. The brass Vapor-Pin® sample points will be installed at each location using a new silicon sleeve to create an air-tight seal. The sample point will be capped following installation to seal the sub-slab air space while QA/QC testing is completed.

- Following installation, Sigma will perform a leak test at each sample point to confirm the surface seal is air-tight and will not allow infiltration of indoor air into the sub-slab space. The leak test will consist of a "water dam" test using plumber's putty to seal a small length of 2-inch diameter PVC pipe to the floor surface surrounding the sub-slab sample point. An appropriate amount of de-ionized water will be placed inside the PVC pipe and the level of the water monitored before and during sample collection to ensure that the water level remains constant (a drop in water level within the PVC pipe would be indicative of a leak in the surface seal).

- Prior to sample collection, Sigma will perform a leak test on the tubing connecting the sample point to the laboratory supplied Summa canister. An appropriate length of nylon tubing will be connected to the Summa canister using laboratory supplied swage-lok fittings. A hand powered vacuum pump will be connected to the tubing to create negative pressure within the tubing connected to the Summa canister. The vacuum gauge on the pump will be monitored to confirm the tubing/connections hold the negative pressure at a consistent level for a minimum of 5 minutes at each sample location.

- Prior to sample collection, each sub-slab sample point will be purged with a photo-ionization detector (PID) until VOC readings are stable. Once VOC readings are stable, sample collection will be initiated by opening the valve on the laboratory supplied Summa canister. Each Summa canister will be equipped with a flow controller that will limit the sample flow rate to not exceed 200 mL/minute.

- Following collection of the sub-slab and indoor air samples, the Summa cans will be shipped to the analytical laboratory under chain-of-custody documentation for laboratory analysis of the following VOCs by EPA Method TO-15: benzene, 1,1-dichloroethane, cis-1,2-dichloroethene, naphthalene, tetrachloroethene, trichloroethene and vinyl chloride. Following collection of the second round of samples, the Vapor-Pin® sampling points will be removed and the holes in the concrete floor slab filled with concrete patch material.

- Laboratory analytical results will be provided to WDNR as soon as available from the analytical laboratory.

- Within 60 days of receipt of the second round of laboratory analytical results, a report summarizing the completed sampling activities and associated results will be provided to WDNR.

PROJECT TEAM

The Sigma project team will consist of the following staff:

- Senior QA/QC – Ms. Kristin Kurzka, P.E., P.G.
- Senior Engineer – Mr. Stephen Meer, P.E.
- Staff Engineers – Mr. Steven Kikkert, E.I.T. & Mr. Jackson Rock, E.I.T.

Statements of qualifications for the project team members are included as **Attachment A**.

The analytical laboratory for the sub-slab and indoor air samples will be:

Pace Analytical Services, LLC
1700 Elm Street SE
Minneapolis, MN 55414
Kirsten Hogberg, Pace Project Manager,
(612) 607-6407, Kirsten.Hogberg@pacelabs.com

ESTIMATED PROJECT COSTS

Sigma will conduct the above scope of work and invoice the WDNR based on a not to exceed basis. The estimated costs are based on our understanding of current site information and experience with similar projects. The estimated cost to conduct the scope of work as described is **$18,814.80**. A copy of the WDNR provided *Task and Price Quote Spreadsheet* is included as **Attachment B**. A supplemental cost estimate summary table (**Table 1**) of the above-referenced tasks is attached for your review. The estimated cost assumes standard laboratory turn-around-time for the vapor samples.

At no time will actual costs exceed those presented above for the specified scope without prior authorization from the WDNR. Changes and/or additions to the scope will be discussed and accommodated with the WDNR prior to implementation. Please note that these costs assume sub-slab sampling will be completed outside of normal business hours

(after 5 PM, Monday through Friday) per the building tenant's requirements, and do not include removal or replacement of finished floor coverings such as carpet, tile, etc. but assume sub-slab sample points can be installed directly through the unfinished concrete floor at appropriate locations. If additional restoration of the floor surface is required, additional costs may be incurred.

SCHEDULE

Sigma can initiate the scope of work upon authorization to proceed from the WDNR. It is Sigma's understanding that WDNR will obtain an access agreement from the property owner and provide contact information for the tenant so that a walk-through can be completed and field sampling times can be coordinated.

Sigma understands the initial sampling event is to be completed between December 2019 and February 2020 with the second sampling event to be completed 2 to 3 months following the initial event.

We appreciate the opportunity to assist you. If you have questions or need additional information, please call us at (414) 643-4200.

Sincerely,

THE SIGMA GROUP, INC.

Stephen Meer, P.E.
Senior Engineer

Kristin Kurzka, P.E., P.G.
Senior Engineer

Randy E. Boness, P.G.
Geosciences Group Leader

Attachments

Table 1 – Cost Summary
Attachment A – Project Team Resume's
Attachment B – *Task and Price Quote Spreadsheet*

TABLE 1- COST ESTIMATE
WISCONSIN DEPARTMENT OF NATURAL RESOURCES
MPS/Vaughan Manufacturing
801 S. 70th Street
WEST ALLIS, WI
Project Reference # 18883

Item Description	Unit Price	Quantity	Units	Total Cost
SUB-SLAB and INDOOR VAPOR SAMPLING				
Professional Services				
Site Walk-Through, Sample Point Installation, Sub-Slab and Indoor Air Sampling				
Staff Engineer	$80.00	50	hours	$4,000.00
Senior Engineer	$115.00	12	hours	$1,380.00
Senior QA/QC	$150.00	3	hours	$450.00
Equipment and Expenses				$1,314.80
			Subtotal	*$7,144.80*
Commodity Services (Budgeted)				
Laboratory Analysis (includes Summa canisters and flow controllers)				
Sub-Slab Vapor				
VOCs - short list	$195.00	18	samples	$3,510.00
			markup	$351.00
Indoor + Ambient Air				
VOCs-short list	$195.00	22	samples	$4,290.00
			markup	$429.00
			Subtotal	*$8,580.00*
TOTAL COST SUB-SLAB AND INDOOR VAPOR SAMPLING				**$15,724.80**
LETTER REPORT OF RESULTS				
Project Management, Coordination and Report Preparation				
Staff Engineer	$80.00	20	hours	$1,600.00
Senior Engineer	$115.00	8	hours	$920.00
Senior QA/QC	$150.00	3	hours	$450.00
Office Support	$60.00	2	hours	$120.00
			Subtotal	*$3,090.00*
TOTAL COST LETTER REPORT OF RESULTS				**$3,090.00**
TOTAL PROJECT COST				**$18,814.80**

5 miles one way

Expenses - Soil borings	Quantity		Rate		Total
Concrete Drill and Bits	1	day	$100.00	per day	$100.00
Mileage	60	miles	$0.58	per mile	$34.80
PID	2	day	$70.00	per day	$140.00
HEPA equipment	1	day	$500.00	per day	$500.00
Vapor Pins	9	each	$60.00	each	$500.00
General Supplies	2	day	$20.00	per day	$40.00
			subtotal		*$1,314.80*

ATTACHMENT A

Kristin Kurzka, P.E, P.G.
Senior Engineer

Professional Profile

Kristin is a Senior Engineer with responsibilities ranging from the oversight and direction of subsurface investigation and remediation for various brownfield redevelopment projects to assisting clients in securing public sector funding. She has over 25 years of regulatory and consulting experience having worked for the Wisconsin Department of Natural Resources (WDNR) prior to joining The Sigma Group.

Areas of Expertise
- Environmental Assessment
- Brownfield Redevelopment
- Soil/Groundwater Investigations
- Grant Writing/Procurement
- Demolition Planning

Registrations / Certification
- Professional Engineer, Wisconsin E-34222-006
- Professional Geologist/Hydrogeologist, Wisconsin 1367 - 13

Education / Training
- M.S. in Environmental Engineering, Milwaukee School of Engineering, 1998
- B.S. in Geological Engineering, University of Wisconsin-Madison, 1994
- B.S. in Geology, University of Wisconsin-Madison, 1994
- OSHA 40-Hour Health & Safety Training

Representative Experience

Brownfield Redevelopment - City of Milwaukee Century City
Project Manager for the City of Milwaukee Century City demolition and redevelopment planning. Responsible for coordinating hazardous material assessments, demolition, stormwater planning and the evaluation of a master plan for the proposed industrial park including concept, feasibility assessment and cost analysis. Also provide support with negotiations with the local POTW, as well as preparation of grant and funding assistance applications.

Brownfield Redevelopment – Menomonee Valley Industrial Center, Milwaukee, Wisconsin
Project Manager for a City of Milwaukee due diligence investigation, remediation, geotechnical assessment and preparation, and stormwater management of the 100-acre former Milwaukee Road rail yard located in the Menomonee Valley. Project responsibilities included research and review of site history, investigation strategy development, coordination of field activities, data evaluation, remedial alternative consideration and implementation, geotechnical assessment coordination, stormwater plan development and implementation and construction management.

EPA Petroleum and Hazardous Assessment Fund Programs - City of Milwaukee
Project Manager for City of Milwaukee properties participating within the EPA Funded Petroleum and Hazardous Assessment Fund programs. Responsible for assisting the City with completion of Phase I Hazardous Materials Assessment (HMA), Phase II HMA and Remedial Options development. Completed all relevant EPA correspondence and compliance of all activities within the constraints of the grant program.

Wisconsin Plant Recovery Initiative – Wisconsin Department of Natural Resources
Project Manager for the WDNR WAM program. Responsible for coordinating Phase I and Phase II activities for several diverse industrial/manufacturing properties across central, southern and southeastern Wisconsin. Responsible for completing activities in compliance with EPA funding guidelines and approved Quality Assurance Project Plan.

Closed Landfill Redevelopment – Ballpark Commons, Franklin, Wisconsin
Project Manager for the engineering and design for the redesign of a methane control system and landfill cap relative to a proposed multi-use commercial and recreational facility on and immediately adjacent to a closed non-engineered landfill. Representative for the developer, responsible for coordination with the design team and regulatory agency to obtain approval for the first extensive development on a closed landfill with the State of Wisconsin.

Environmental Assessment and Demolition Planning and Oversight – Various Private Developers and Public Entities
Project Manager for various demolition and/or deconstruction activities including asbestos and hazardous material assessment, demolition and abatement specification preparation, contractor bidding, contract award and abatement and demolition oversight activities. Responsible for client representation with abatement and demolition contractors and regulatory agencies, change management, regulatory compliance and public relations.

Brownfield Redevelopment – Several Private Developers
Project Manager for several private developers completing redevelopment of brownfield properties. Responsibilities range from coordinating and communicating the results of due diligence Phase I and Phase II assessments, remediation planning, regulatory coordination, grant application, documentation, reimbursement claim preparation and closeout and project expediting. Projects range from small (less than one acre) to 22-acres or larger and simple to complex (co-mingled contaminants, complex hydrogeology, and potential exposure risk mitigation and VPLE program participants).

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Stephen R. Meer, P.E.
Senior Engineer

Professional Profile

Stephen provides environmental engineering services for a variety of municipal, commercial and industrial clients. His experience includes managing environmental site assessments, field investigations, remediation projects and developing remedial and closure strategies for sites. Stephen is responsible for managing individual projects from initial investigation through regulatory case closure and developing cost-effective strategies for managing risks associated with redevelopment of brownfield sites.

Areas of Expertise
- Geosynthetic Clay Liners
- Methane Abatement System Installation
- Soil/Groundwater Investigations
- Vapor Intrusion Investigation/Mitigation
- Wetland Restoration
- Radon
- Remediation System Design and Installation

Education / Training
- M.S. in Geological Engineering, UW-Madison, 2003
- B.S. in Agricultural Engineering, UW-Madison, 2001

Registrations / Certification
- Professional Engineer, Wisconsin No. E-39390
- OSHA HAZWOPER (29 CFR 1910.120)
- AARST-NRPP Certified Residential Radon Measurement and Mitigation Provider, Multifamily Measurement Certification

Recognition / Publications
- J. James Croes Medal Recipient, 2008, American Society of Civil Engineers (ASCE)
- Alfred Noble Prize Recipient, 2008, ASCE
- Meer, S. and Benson, C. (March 2009), "Relative Abundance of Monovalent and Divalent Cations and the Impact of Desiccation on Geosynthetic Clay Liners," J. Geotech Geoenviron. Eng., 135(3) 349-358.
- Meer, S., and Benson, C. (May 2007), "Hydraulic Conductivity of Geosynthetic Clay Liners Exhumed from Landfill Final Covers," J. Geotech. Geoenviron. Eng., 133(5) 550-563.
- Meer, S., and Benson, C. (2004), "In-Service Hydraulic Conductivity of GCLs in Landfill Covers: Laboratory and Field Studies," Rep. No. EPA/600/R-05/148, U.S. Environmental Protection Agency, Washington, D.C.

Representative Experience

Site Investigation/Remedial Action, Former Dry Cleaner
Managed investigation and remedial action at a two-acre site in a high profile and high traffic location that had historically been used as a dry cleaner. The investigation identified elevated concentrations of contaminants at depth. A remedial excavation was completed to remove contamination and minimize site disruption. Following completion of remedial actions and post-remediation groundwater monitoring, regulatory case closure was approved.

Site Investigation/Remedial Action, Former Metal Part Manufacturing Facility
Managed the VPLE site investigation and remedial action at a nine-acre site in a high profile and location that had historically been used as a metal parts manufacturer. The investigation identified elevated concentrations of contaminants at various locations across the site. A multi-faceted remedial approach was developed based on the degree and extent of identified impacts and proposed residential redevelopment. Remedial components included excavation with off-site disposal, in-situ treatment via chemical oxidation and installation of a soil vapor extraction system. Redevelopment and remediation work at the site is in the process of completion.

Residential/Commercial Redevelopment, Former Landfill
Managed environmental aspects of redevelopment at multiple parcels adjacent to closed municipal landfill. Conducted pre-development methane evaluations and soil investigation. Obtained required regulatory approval for development of the parcels. Oversaw soil management and methane abatement system installation at each parcel as part of building construction.

Methane Abatement System Installation, Various Sites
Oversaw the installation of methane abatement systems as part of the construction of commercial and industrial facilities at various sites in southeastern Wisconsin.

Brownfield Redevelopment, Former Paper Mill
Managed environmental aspects of redevelopment of a former paper mill property in Wisconsin's Fox Valley. Multiple contaminants of concern were present, development-specific investigation identified and delineated characteristically hazardous material at the site, subsequent remediation allowed redevelopment as a multi-tenant residential property.

Historic Fill Site Redevelopment, Former Industrial Property
Oversaw due diligence investigation work associated with land acquisition of a former industrial property by a local non-profit agency. Developed remedial action plan incorporating features of the proposed redevelopment that received regulatory approval. Assisted with demolition and construction project bidding and management and documented completion of demolition and construction activities. The project is now used as a natural recreation area.

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Stephen R. Meer, P.E.
Project Engineer

Brownfield Redevelopment, Former Petroleum Service Station
Managed site investigation of a former petroleum service station. Developed an environmental management plan for use by general contractor during redevelopment of the site. Provided oversight and documentation during redevelopment in areas of the site containing known contamination. The site was redevelopment as a multi-story mixed use facility. Regulatory case closure was approved following completion of post-construction groundwater monitoring.

Site Investigation/Remedial Action, Industrial Facility Sub-Station
Managed the investigation and remedial action within the electrical sub-station at an active industrial facility following the identification of PCB-impacted material within the sub-station. Following completion of remedial actions, the site received case closure.

Site Investigation/Remedial Action, Former Auto Salvage Yard
Managed the investigation and remedial action at a three-acre site that had been used for both legal and illegal auto salvage. The investigation identified hazardous concentrations of lead within shallow soils as well as impacts associated with petroleum storage. Following completion of remedial actions, the site received case closure.

Wetland Restoration, Former Paper Manufacturing Facility
Designed and managed the restoration of a wetland area at a site in northern Wisconsin following remedial excavation activities.

Brownfield Redevelopment, Former Grocery Warehouse
Managed site investigation of a former grocery warehouse and distribution center. Developed an environmental management plan for use by general contractor during redevelopment of the site. Provided oversight and documentation during redevelopment in areas of the site containing known contamination and where previously unknown impacts/USTs were encountered. The site was redevelopment as a multi-tenant commercial facility. Regulatory case closure is anticipated following redevelopment of remaining out lot areas.

Steven Kikkert, E.I.T.
Staff Engineer

Professional Profile

Steven provides environmental engineering services for a variety of commercial, industrial, and municipal clients. His experience includes field investigations, interpreting soil and groundwater data, utilizing computer-aided design software, and completing reports for clients and regulatory agencies.

Areas of Expertise

- Soil/Groundwater Investigations
- Groundwater and Soil Sampling
- Data Management/ Analysis

Registrations / Certification

- Engineer-in-Training, Wisconsin
- ACI Concrete Field Testing Technician – Grade 1

Education / Training

- B.S., Geological Engineering and Geology & Geophysics, University of Wisconsin – Madison, 2016
- OSHA 40-hour HAZWOPER (29 CFR 1910.120), July 2016

Representative Experience

Field Services
Oversees environmental drilling and monitoring well installation activities at active/former commercial, industrial, and/or brownfield sites. Responsible for classifying soil cores and collecting soil, groundwater, and vapor samples for environmental laboratory analyses.

Remedial Systems
Responsible for oversight and maintenance of remedial systems and actions including soil vapor extraction (SVE) systems and soil management during remedial excavations.

Engineering Technician (2014-2015)
Performed field testing of concrete including air entrainment and slump testing and field testing of soil and asphalt using a nuclear density gauge. Performed laboratory testing including compressive strength of concrete, and proctor tests on soil, and grain size distribution testing of soil.

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Jackson Rock, E.I.T.
Staff Engineer

Professional Profile

Jackson provides geological and environmental engineering services for a variety of commercial, industrial and municipal clients. His experience includes field investigations, utilizing computer aided design software, and completing reports for clients and regulatory agencies.

Areas of Expertise

- Soil/Groundwater Investigations
- Groundwater and Soil Sampling
- Data Management/Analysis
- Construction Oversight

Education / Training

- B.S., Geological Engineering and Geology & Geophysics – University of Wisconsin-Madison, graduated December 2018

Registrations / Certification

- Engineer-in-Training
- OSHA 40-hour HAZWOPER (29 CFR 1910.120), February 2019

Representative Experience

Field Services

Oversees environmental drilling and monitoring well installation activities at active/former petroleum storage, dry cleaner, industrial, and/or brownfield sites. Responsible for classifying soil cores and collecting soil and groundwater samples for environmental laboratory analyses.

Remedial Systems

Responsible for environmental oversight of excavations, installation and monitoring of soil vapor extraction (SVE) systems, in-situ chemical treatment systems, and soil management practices at contaminated sites throughout southeastern Wisconsin.

United States Geological Survey

Worked with a team to implement large-scale surface water sampling programs in Dane County and Green Lake County, WI. Tasks include sampling groundwater, surface water, and river sediment, installing remotely monitored river flow systems, and inspecting and assessing the health of lakes and rivers in Dane County and the Green Lake County, WI.

ATTACHMENT B

Task and Price Quote Spreadsheet – November 2019
MPS/Vaughan Manufacturing Co
BRRTS # 02-41-000938 and # 06-41-200024

Task Description	Consulting Costs	Laboratory Costs	Total Costs
Sub-slab and Indoor Air vapor sampling	$7,144.80	Normal Turn $8,580.00	$15,724.80
Letter report of results	$3,090.00	$0.00	$3,090.00
Total Cost*	$10,234.80	$8,580.00	$18,814.80

Notes: Do not round unit costs to the nearest dollar.
Total cost* will be the not-to-exceed dollar amount approved. Estimated subcontractor costs may not be applied to consulting charges.
Reimbursement may be pro-rated for tasks that are not fully completed.

Signature: _____ Date: 11-25-19

Printed Name: DAVID F. Scherzer Company Name: The Sigma Group Env

The bid deadline is **4:00 p.m., on Friday November 29, 2019**. Bidders shall submit two paper copies and one electronic copy of the proposal to Nancy Ryan at the following address:

WDNR – SER
Nancy Ryan
2300 N. Dr. ML King Dr.
Milwaukee, WI 53212