



Stantec Consulting Services Inc.  
12075 Corporate Parkway, Suite 200  
Mequon, WI 53092  
Tel: (262) 241-4466  
Fax: (262) 241-4901

April 23, 2019  
Stantec No.: 725553

Mr. John J. Hnat, P.G., C.P.G.  
Wisconsin Department of Natural Resources  
2300 North Dr. Martin Luther King, Jr. Drive  
Milwaukee, Wisconsin 53212-3128

**Reference: Workplan and Cost Estimate – Additional Investigation  
Whitefish Bay Cleaners, 419 West Silver Spring Drive, Glendale, Wisconsin  
WDNR BRRTS #02-41-550821**

Dear Mr. Hnat:

Stantec Consulting Services Inc. (Stantec) continues to investigate a tetrachloroethene (PCE) release at the above-referenced property (the Site). Based on a previous conversation with you, the Wisconsin Department of Natural Resources (WDNR) requires additional investigation to further evaluate the extent of PCE in soil, soil vapor, and groundwater. Therefore, Stantec developed this workplan and cost estimate for additional investigation. To ensure the additional investigation is eligible for reimbursement under the Drycleaner Environmental Response Fund, estimated costs are summarized on the attached WDNR Form 4400-214D.

## **BACKGROUND INFORMATION**

Whitefish Bay Cleaners, an active dry cleaner business, has operated at 419 West Silver Spring Drive, Glendale, Wisconsin (the Site) for more than 30 years. Dry cleaning businesses have continuously operated at the Site since the 1950s. Giles Engineering Associates, Incorporated (Giles) completed a Preliminary Site Assessment (PSA) at the Site during December 2007 and PCE was detected in soil and groundwater. Giles concluded that spillage and/or leakage of PCE associated with dry cleaning activities was the source of the release. Giles reported the results of the PSA to the WDNR who subsequently requested a site investigation and appropriate remedial action be completed.

During November 2013, Stantec, on behalf of Whitefish Bay Cleaners, submitted a Site Investigation Workplan to the WDNR. During August 2014, Stantec oversaw the collection of sub-surface soil samples from boreholes B-1 through B-7 and installation of groundwater monitoring wells MW1 through MW4 and TW1 at the Site or in the adjacent public alleyway. Soil sampling results are summarized on Table 1. During September 2014, Stantec collected groundwater samples from the wells. The Site layout and borehole and groundwater monitoring wells locations are shown on Figure 1.

PCE in soil and groundwater extended off-site to the south and west requiring additional investigation. During May 2016, Stantec provided the WDNR with the soil and groundwater sampling results and recommended installation of additional groundwater monitoring wells. During June 2016 the WDNR responded to Stantec's recommendations with additional suggestions related to future investigation. More specifically, the WDNR requested that samples be collected from the groundwater monitoring wells since the wells had not been sampled since 2014. In addition, the WDNR requested that a vapor intrusion assessment be conducted at the Site.

Therefore, during June 2016 Stantec collected samples from each groundwater monitoring well at the Site. Groundwater elevation measurements and laboratory analysis results are summarized on Table 2 and 3, respectively. In every well, the PCE concentrations in groundwater during June 2016 were less than the initial groundwater sampling event. Soil and groundwater sampling results indicated that released PCE has migrated off-site to the west and south and documented a south to southwest groundwater flow across the Site.

During July 2016, Stantec submitted a workplan to the WDNR for additional soil and groundwater investigation. The WDNR reviewed the workplan and requested revisions to the proposed soil and groundwater sample locations and the addition of a soil vapor assessment.

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This workplan addresses the WDNR's July 2016 recommendations regarding the soil and groundwater investigation. Additional soil and groundwater quality data collected during the completion of this workplan will facilitate the development of a targeted soil vapor assessment workplan.

## **WORKPLAN**

The additional investigation includes soil sample collection and groundwater monitoring well installation in the adjacent alleyway and property south of the Site and in the parking lot directly east of the Whitefish Bay Cleaner building. Stantec will also collect groundwater samples from the existing wells, MW1 through MW4. All new and old wells will be surveyed and referenced to mean sea level.

### **Obtain Off-Site Access Agreements**

To further evaluate the extent of released PCE in soil and groundwater, additional boreholes and monitoring wells are needed beyond the Site boundaries. Therefore, Stantec, on behalf of Whitefish Bay Cleaners, will request access to these properties. Stantec will also request access to adjacent property buildings for sub-slab vapor sample collections for the second workplan phase. Access agreements will be drafted for the property owners' review and approval.

Stantec will obtain a permit from the City of Glendale (the City) for any borehole or monitoring well installed in City right-of-ways. The necessary access agreements and City permits will be obtained before completing work on these properties.

### **Evaluate Buried Utility Corridors**

Stantec will add the locations and determine the depths of buried utilities that extend through or are near areas of PCE contamination and evaluate the potential of the buried utilities to act as a contaminant migration pathway. These will be added to an updated site figure for future reference.

### **Complete Additional Soil Investigation**

Stantec proposes to collect soil samples from three boreholes located on the northeast corner of the Site and offsite to the south and west using direct push soil sampling techniques. Groundwater monitoring wells will also be constructed in these boreholes and are discussed in the next section. The goal of the additional sampling is to evaluate the extent of released PCE in soil. The proposed soil borehole locations are shown in Figure 1.

Soil samples will be continuously collected, described, and field screened using a photoionization detector (PID) to a total depth of 16 feet below grade (fbg). One near surface soil sample (0 to 4 fbg) from each borehole will be submitted for volatile organic compound (VOC) laboratory analysis. Based on field screening results, a second soil sample from each borehole collected between four fbg and the groundwater table will be laboratory analyzed for VOCs.

### **Complete Additional Groundwater Investigation**

Stantec proposes to install three groundwater monitoring wells south and west of MW4 and north of MW1 to further evaluate the lateral extent of PCE in groundwater and groundwater flow direction at and near the Site. The monitoring wells will be installed using hollow stem auger drilling methods to a total anticipated depth of 16 fbg. The proposed monitoring well locations are shown in Figure 1.

The monitoring wells will be constructed in accordance with state requirements (Chapter NR 141, Wisconsin Administrative Code). Specifically, the wells will be constructed of 2-inch diameter polyvinyl chloride (PVC) threaded casing utilizing 5-feet of 0.010-inch slot PVC screen. No glues, solvents, or lubricants will be used in well construction. The horizontal and vertical locations of the wells (old and new) will be surveyed to determine the groundwater flow direction and gradient (referenced to mean sea level). The wells will be completed with flush-mounted protective covers.

The monitoring wells will be developed using a variable capacity bailer or centrifugal pump to remove the effects of drilling and well installation and to maximize well yield. During development, measurements of specific

Reference: **Workplan and Cost Estimate – Additional Investigation  
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conductance, pH, temperature, and turbidity will be recorded. Development will continue until 10 saturated well volumes are removed from the wells or the wells produce sediment-free water.

The three newly installed wells and the current existing wells (MW1 through MW4 and TW1) will be purged and sampled in accordance with WDNR groundwater sampling procedures (WDNR Publication No. WR-168). Groundwater samples will be submitted for laboratory analysis for VOCs. A duplicate sample will be collected and laboratory analyzed for VOCs from one well during each sampling event. All non-disposable well development and sampling equipment will be thoroughly cleaned between wells. Groundwater produced from each well will be stored in 55-gallon drums on-site. Appropriate disposal of the groundwater will be determined after receipt of laboratory analyses.

**Analyze and Tabulate Data, Evaluate Need for Additional Investigation, and Prepare Workplan**

Stantec will complete the required soil borehole logs and monitoring well construction forms for the additional boreholes and monitoring wells (WDNR Forms 4400-113A and 4400-122). Soil, and groundwater analysis results will be tabulated, and the site figures will be updated to reflect the additional investigation completed.

The results will be provided to the WDNR in a brief letter report and discussions with the WDNR will occur to determine the scope of vapor intrusion assessment needed and if additional soil and/or groundwater investigation is required (second phase of the workplan). After concurrence from the WDNR regarding the appropriate scope of additional investigation, Stantec will prepare a workplan to complete a vapor intrusion assessment and additional soil and/or groundwater investigation. The workplan will include a cost estimate for the additional investigation using WDNR Form 4400-214D – Linking Spreadsheet.

**PROBABLE COST AND SCHEDULE**

The cost presented below is based on the quantities listed in the workplan. For budgeting purposes, the proposed work will be divided into cost categories consistent with the WDNR Linking Spreadsheet with off-site access coordination, data tabulation, and reporting incorporated into the various cost categories. A summary of probable costs are included on the enclosed WDNR Form 4400-214D. The probable costs are presented below.

**WDNR Linking Spreadsheet Cost Category A – Soil Investigation**

Consulting Services

Associate Geologist	1 hour @ \$185/hr	\$ 185.00
Senior Geologist/Project Manager	3 hours @ \$158/hr	\$ 474.00
Registered Geologist	10 hours @ \$137/hr	\$ 1,370.00
GID/CAD Technician	1 hours @ \$121/hr	\$ 121.00
Administrative Aid	1 hours @ \$97/hr	<u>\$ 97.00</u>
	Subtotal	\$2,247.00

Direct Push Services

Subtotal \$1,177.00

**Cost Category A Total \$ 3,424.00**

**WDNR Linking Spreadsheet Cost Category B – Groundwater Investigation**

Consulting Services

Associate Geologist	2 hour @ \$185/hr	\$ 370.00
Senior Geologist/Project Manager	4 hours @ \$158/hr	\$ 632.00
Registered Geologist	30 hours @ \$137/hr	\$ 4,110.00

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	Staff Geologist	10 hours @ \$121/hr	\$ 1,210.00
	GID/CAD Technician	3 hours @ \$121/hr	\$ 363.00
	Administrative Aid	3 hours @ \$97/hr	<u>\$ 291.00</u>
		Subtotal	\$6,976.00
<u>Well Installation</u>		Subtotal	\$2,185.00
		<b>Cost Category B Total</b>	<b>\$9,161.00</b>

**WDNR Linking Spreadsheet Costs Category G - Laboratory Analysis**

	<u>Soil VOCs</u>	7 samples @ \$51.50/each	\$ 360.50
	<u>Water VOCs (1 round of samples)</u>	9 samples @ \$51.50/each	<u>\$ 463.50</u>
		<b>Cost Category G Total</b>	<b>\$ 824.00</b>

**WDNR Linking Spreadsheet Costs Category H – Miscellaneous Costs**

Soil and Purge Water Barrel Disposal (6 drums total)

	<u>Consulting Services</u>		
	Registered Geologist	1 hours @ \$137/hr	\$ 137.00
	<u>Disposal Contractor*</u>	drum disposal	<u>\$ 3,050.00</u>
		<b>Cost Category H Total</b>	<b>\$ 3,187.00</b>

**TOTAL COSTS CATEGORIES A THROUGH H** **\$16,596.00**

\* Note: containerized water will be classified as hazardous waste thereby increasing disposal cost



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Initial contacts with off-site property owners will be made immediately after approval of this workplan and cost estimate by the WDNR. Scheduling of the onsite work will be dependent upon off-site access approval and may be quite variable. Groundwater sampling will occur less than 2-weeks after the groundwater monitoring well installation. Stantec anticipates the proposed scope of work to be completed within 4-months of WDNR approval of this workplan and cost estimate.

Please contact us if you have any questions or comments.

Regards,

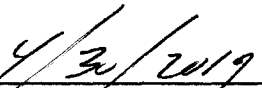
**STANTEC CONSULTING SERVICES INC.**

Chris Hatfield  
Senior Geologist  
Phone: (262) 643-9171  
Fax: (262) 241-8222  
Chris.Hatfield@stantec.com

Client Approval

I, Charles Mathers, approve the scope and probable costs presented above.

  
\_\_\_\_\_  
Signature – Title

  
\_\_\_\_\_  
Date

Enclosures








c: Charles Mathers, Whitefish Bay Cleaners

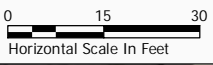


THE CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS. DO NOT SCALE THE DRAWING. ANY ERRORS OR OMISSIONS SHALL BE REPORTED TO STANTEC IMMEDIATELY. REPRODUCTION OR USE FOR ANY PURPOSE OTHER THAN THAT AUTHORIZED BY STANTEC IS PROHIBITED.

Plot Date: 12/05/2014 - 11:07am  
Drawing name: V:\1937\active\193702517\05\_report\_deliv\dwg\_design\figures\193702517\_Milwaukee\_RIC 2.dwg  
User: zent

### LEGEND

-  APPROXIMATE PROPERTY BOUNDARY
-  DRY CLEANING MACHINES
-  TB-1 BOREHOLE LOCATION AND IDENTIFICATION (GILES ENGINEERING)
-  B-6 BOREHOLE LOCATION AND IDENTIFICATION (STANTEC)
-  B-4/MW4 GROUNDWATER MONITORING WELL LOCATION AND IDENTIFICATION (STANTEC)
-  B-5 BOREHOLE IN BASEMENT LOCATION AND IDENTIFICATION (STANTEC)
-  PROPOSED BOREHOLE AND GROUNDWATER MONITORING WELL LOCATION (STANTEC)



SITE LAYOUT  
WHITEFISH BAY CLEANERS INVESTIGATION  
WHITEFISH BAY CLEANERS  
MILWAUKEE COUNTY, GLENDALE, WI

NO	REVISION	DATE

SURVEY	
DRAWN	EJM
DESIGNED	
CHECKED	
APPROVED	
PROJ. NO.	193702517



Site Name: Whitefish Bay Cleaners  
 BRRTS #: 02-41-550821  
 Type of Action: Site Investigation

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

TASKS	BUDGET			INVOICES						DERF COST BREAKOUT (this claim)								Budget Remaining Use (-) to indicate cost over-run	% Task Complete, Remarks		
	Bid / Budgeted Amount	INSERT	Total Approved Budget	Previous Claims (if applicable)	Provider Name, Invoice #, Billing Date	Provider Name, Invoice #, Billing Date	Provider Name, Invoice #, Billing Date	Provider Name, Invoice #, Billing Date	INSERT	Total Invoiced Costs	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	
Consultant Costs																					
Task			\$ -						\$ -											\$ -	Task % Complete
Additional Soil Boreholes	\$ 2,315.50		\$ 2,315.50						\$ -	\$ 2,247.00							\$ 68.50		\$ 2,315.50		
Groundwater Monitoring Well Installation & GW Sampling	\$ 7,044.50		\$ 7,044.50						\$ -			\$ 6,976.00					\$ 68.50		\$ 7,044.50		
			\$ -						\$ -										\$ -		
			\$ -						\$ -										\$ -		
			\$ -						\$ -										\$ -		
			\$ -						\$ -										\$ -		
			\$ -						\$ -										\$ -		
<i>Consultant Cost Total</i>	\$ 9,360.00	\$ -	\$ 9,360.00	\$ -					\$ -										\$ 9,360.00		
Sub-Contractor Costs																					
Well Driller	\$ 3,362.00	\$ -	\$ 3,362.00						\$ -	\$ 1,177.00		\$ 2,185.00							\$ 3,362.00		
Laboratory	\$ 824.00		\$ 824.00						\$ -							\$ 824.00			\$ 824.00		
Waste Disposal	\$ 3,050.00		\$ 3,050.00						\$ -								\$ 3,050.00		\$ 3,050.00		
			\$ -						\$ -										\$ -		
			\$ -						\$ -										\$ -		
			\$ -						\$ -										\$ -		
			\$ -						\$ -										\$ -		
<i>Sub-Contractor Cost Total</i>	\$ 7,236.00	\$ -	\$ 7,236.00	\$ -					\$ -										\$ 7,236.00		
<b>DERF ELIGIBLE SUB-TOTALS</b>	<b>\$ 16,596.00</b>	<b>\$ -</b>	<b>\$ 16,596.00</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 3,424.00</b>	<b>\$ -</b>	<b>\$ 9,161.00</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 824.00</b>	<b>\$ 3,187.00</b>	<b>\$ 16,596.00</b>		

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

Total DERF Eligible Costs This Claim \$ 16,596.00