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May 4, 2018

Mr. Binyoti Amungwafor
Hydrogeologist
Wisconsin Department of Natural Resources
2300 N Dr. Martin Luther King Jr Dr.
Milwaukee, WI 53212

Re: DERF Budget Request - Vapor Sampling, Pilot Test for Vapor Mitigation System, Soil Sampling and Groundwater Sampling
Change Order #4 (Revised)
Redi Quick Dry Cleaner
9508 West Greenfield Avenue
West Allis, Wisconsin
WDNR BRRTS Nos. 02-49-559903

Dear Mr. Amungwafor:

APTIM Environmental & Infrastructure, Inc. (APTIM) is presenting this updated scope of work and Dry Cleaner Environmental Response Fund (DERF) budget request for the Redi Quick Dry Cleaner facility (Site) located at 9508 West Greenfield Avenue in West Allis, Wisconsin.

Based on the discussion between APTIM and Wisconsin Department of Natural Resources (WDNR) personnel on August 16, 2017 regarding the information presented in the Status Update Letter for the site, the scope of work and budget for the site activities consisting of vapor sampling, vapor mitigation pilot testing, groundwater and soil sampling and reporting are presented below. Based on data obtained from activities conducted to date at the Site, the impacts to soil and groundwater are understood to be defined and are showing stable to decreasing conditions. Two additional rounds of groundwater sampling are recommended by the WDNR to monitor the plume trends.

In order to move the site to regulatory closure, the vapor intrusion pathway within the Redi Quick building needs to be assessed to provide protection to the building occupants. The WDNR is requesting that sub slab vapor samples, along with indoor and outdoor ambient air samples, be collected from the Redi Quick Building. Redi Quick is also presenting this work scope for a vapor mitigation pilot test. The data from the pilot test will be utilized in the development and installation of a vapor mitigation sub slab depressurization system which will break the pathway into the indoor air. Upon Site closure, continuing obligations will be required for the vapor mitigation system until at such time the structural impediment of the overlying building is addressed and the soils and former solvent tank can be remediated and or removed. Additionally, during the August discussion the WDNR also stated that the Site needs to have the vapor screening assessed based on the updated guidance presented in document RR-800 (Addressing Vapor Intrusion at Remediation and Redevelopment Sites in Wisconsin).

This Change Order scope of work is also in response to the phone conversation conducted on December 13, 2017 with the WDNR regarding the Site. Better definition of soils with concentrations of chlorinated volatile organic compounds (CVOC) exceeding the direct contact standards within the 0 to 4 foot interval

near the adjacent north residence at 1391 N. 95th Street is also requested. Additionally, at depth soil samples (12-20 feet deep) will be collected and sampled for residual soil impacts following the electron donor remediation previously conducted in 2009.

Scope of Work

Task 1 - Sub Slab Vapor Sampling

In accordance with the Wisconsin Administrative Code NR 716.11 (5)(a),(b), (g), and (h), the collection of three sub-slab vapor samples from beneath the floor within the Redi Quick building will be conducted. The square footage area of the Redi Quick building, a commercial building, is less than 3,000 square feet (sq ft), therefore according to RR-986 guidance, three sub slab samples are recommended for a commercial building greater than 1,500 sq. ft and less than 5,000 sq. ft. Two ambient air samples, one from within the building and one from outside will also be collected. The sub slab sample locations will be installed through the floor slab and a Cox-Colvin sampling pin will be installed at each location. Prior to collecting each sub slab sample, the sampling pin will be leak tested utilizing either helium shroud, shut-in testing, or a water dam method. Each of the sub slab vapor sampling locations will consist of a laboratory supplied six liter summa canister to be connected to each sampling pin via nylon tubing, Additionally, one outdoor ambient air sample and one indoor ambient air sample will also be collected in a six liter summa canister. Each sub slab canister will collect a sample over the recommended 30 to 60 minutes to fill utilizing a flow of 100 to 200 milliliters per minute of sub slab vapor flow. The ambient indoor and the outdoor samples will collect a sample over 8 hours. The summa canisters will then be submitted to Pace Analytical in Green Bay, Wisconsin for analysis of CVOCs in each sample by Method TO-15. Figure B.1.b presents the proposed sub slab vapor locations.

Following the receipt of the analytical report, a Sub Slab Vapor Assessment Report with corresponding tables and figures will be prepared and submitted to the WDNR.

Task 2 - Vapor Mitigation System Pilot Test

The Redi Quick building, which is less than 3,000 square feet in size, was built prior to the 1950s when it was utilized as a gas station. In the 1950s, the use was changed to a dry cleaning facility. The building appears to have varied floor slab thicknesses throughout the building; therefore, sub-slab diagnostics testing is needed to determine the under slab air flow as well as the best location within the building for a drop point vapor mitigation system. The pilot test will also assist in determining the piping configuration from the drop pit to the exterior wall, as well as the size and placement of the system fan. Radon Abatement will be subcontracted to conduct the testing. The installation of the vapor mitigation system installed/maintained in the adjacent building located at 1361 South 95th Street was conducted by Radon Abatement.

The Pilot test will consist of installing up to 10 ports within the floor slab throughout the building to determine the extent of influence from a vacuum system. All ports will be fitted with a Cox Colvin vapor pin for use as either a vapor sampling or a vacuum testing port and will stay in place with a sealing cap. Each pin location will be leak tested utilizing either helium shroud, shut-in testing, or a water dam method. Each port will be utilized to measure background vacuum readings and volatile organic gases utilizing a photoionization detector (PID). Baseline differential reading from the pilot vacuum ports will be collected and recorded. One 2 inch extraction point will be installed along the northern interior wall near the location of the former underground storage tank. A shop vacuum will be set up at this point to pull air from beneath the floor. The ports will then be gauged with a micromanometer to record the influence of pressure field beneath the floor slab. If any of the ports do not report the influence of the pressure field during the test, an additional 2 inch diameter extraction point will also be installed to pull a vacuum. The collected data will be used to determine the number of extraction points and fan size and placement to be selected for the final system design. Figure B.1.b presents the proposed sub slab pilot test probe locations.

The floor slab will be inspected for any floor penetrations and cracks which will be sealed to prevent vapor intrusion from soil and groundwater to indoor air and to prevent short circuiting of the final vapor mitigation system.

Task 3 - Soil Sampling

To investigate the direct contact interval soils of 0 to 4 feet below ground surface interval near the 1361 N. 95th Street residence, up to six soil borings will be advanced by a Geoprobe®. APTIM personnel will oversee the installation of the soil borings and will describe the soil lithology at each location. Each location will also be scanned for volatile organics with a PID. One soil sample will be collected from each location based on the highest PID response or from the 2 to 4 foot interval if there is no response.

In order to investigate residual soil volatile organic impacts that may remain following the 2009 electron donor injection activities, each of the six soil borings will be installed down to a depth of 20 feet below ground surface. The soil borings will be logged for lithology down to 20 feet and will be scanned with a PID. The interval with the highest PID response will be sampled for volatile organic compounds, and if there is no PID response, the interval of groundwater interface will be sampled. The data for the deeper soil samples will be compared to the 2006 soil sampling data of soil borings P1 through P8, which were installed in the driveway between Redi Quick and the adjacent residence. Figure B.1.b presents the proposed soil boring location.

Each soil sample will be placed into laboratory supplied jars for shipment under signed chain of custody to Pace Analytical in Green Bay, Wisconsin for volatile organic compounds by EPA Method 8260. Following the receipt of the soil analytical data, a Supplemental Soil Investigation Report with corresponding figures and tables will be prepared and submitted to the WDNR.

Task 4 - Groundwater Sampling and Sampling Update Report

The previous two rounds of groundwater sampling at the Site were conducted in May 2013 and in March 2017. Two additional groundwater sampling events are proposed to support the stable to decreasing dissolved phase contaminant trends currently observed at the Site.

The groundwater samples will be collected from the existing monitoring well network for two consecutive quarters. Prior to each quarterly groundwater sampling event, the monitoring well network will be gauged for the depth to water, and aquifer parameters of temperature, dissolved oxygen, oxidation reduction potential, specific conductivity, and pH will be monitored for stabilization using low-flow sampling techniques. Groundwater samples will be collected into laboratory provided jars from each well following the stabilization of the aquifer parameter readings. The groundwater samples will be submitted to a state-certified laboratory for analysis of CVOCs using USEPA Method 8260. One duplicated groundwater sample and one quality control blank will also be analyzed each quarter for CVOCs. The groundwater samples will be collected into laboratory-provided containers and shipped on ice under chain-of-custody to Pace in Green Bay, Wisconsin.

Following the two proposed rounds of groundwater sampling, a Groundwater Sampling Update Report that summarizes the groundwater data and trends at the site will be prepared and submitted to the WDNR.

Task 5 – DERF Claims

APTIM will prepare a DERF reimbursement package site activities based on timing of the work scope. Up to two reimbursement claims per fiscal year for remedial activities are allowed by the WDNR. Therefore, it assumed that two claims will be prepared this year for the soil sampling, partial groundwater sampling, vapor sampling and mitigation design, and one more claim will be made next year for the remaining groundwater sampling and reporting. It is understood that the DERF claim preparations are not reimbursable.

Assumptions

It is assumed that the soil sampling activities and the vapor sampling and oversight acitvies can be scheduled so they can be conducted at the same time. APTIM will prepare the Supplement Soil Investigation Report and the Vapor Assessment Report as one report. If the coordination is not possible, a change order request will be made to cover the additional mobilization and on-site time.

Cost Estimate

The following table itemizes the tasks with associated costs. APTIM estimates that the cost to implement scope of work as described above is $24,592.24. Table 1 presents the breakdown of the budget per task, and Table 2, in Attachment A, presents the detailed budget costs.

Table 1 - Item	**Budget**
Task 1 - Sub Slab Vapor Sampling and Reporting	$5,760.08
Task 2 – Vapor Mitigation Pilot Test	$2,663.00
Task 3 - Soil Sampling and Report	6,425.00
Task 3 - Two Quarters of Groundwater Sampling and Status Report	$9,744.16
Total	**$24,592.24**

Closing

APTIM appreciates the opportunity to submit this DERF scope of work and budget request for the Redi Quick site and the time that you have taken to review it. If you have any questions or need additional information, please do not hesitate to contact me at (414) 687-3313.

Sincerely,

Heidi Woelfel
Project Manager

Attachment A

Table 2 4/30/2018
Cost Breakdown - Change Order #4 Revised
Redi-Quick Dry Cleaners
BRRTS No. 02-49-559903
West Allis, Wisconsin

Task 1: Sub Slab Vapor Assessment and Reporting					
Aptim E&I Services					
Vapor Sampling	Hours/Unit	Hourly (Unit) Rate			Cost
Project Scientist 3	13	$	104.00	$	1,352.00
Project Manager	4	$	135.00	$	540.00
Admin Assistant	1	$	67.00	$	67.00
Drafter 3	0	$	86.00	$	-
		Subtotal		**$**	**1,959.00**
Reporting	Hours/Unit	Hourly (Unit) Rate			Cost
Project Scientist 3	6	$	104.00	$	624.00
Project Manager	10	$	135.00	$	1,350.00
Engineer 3	2	$	129.00	$	258.00
Drafter 3	2	$	86.00	$	172.00
Administrative Assistant	1	$	67.00	$	67.00
		Subtotal		**$**	**2,471.00**
	Subtotal Task 1: Aptim E&I Services			**$**	**4,430.00**
Subcontractor Services					
Laboratory	Units	Rate			Cost
Vapor VOCs Analytical	5	$	170.00	$	850.00
Summa Canister Rental and Cleaning	5	$	28.00	$	140.00
Flow Control Rental	5	$	28.00	$	140.00
		Subtotal		**$**	**1,130.00**
Field Equipment and Supplies					
Mileage (236 Roundtrip)	236	$	0.53	$	125.08
Field Supplies, Equipment	1	$	75.00	$	75.00
		Subtotal		**$**	**200.08**
	Subtotal Task 1: Subcontracted Services			**$**	**1,330.08**
	Total Cost Task 1:			**$**	**5,760.08**
Task 2: Vapor Mitigation Pilot Study					
Aptim E&I Services					
Pilot Study Oversight	Hours/Unit	Hourly (Unit) Rate			Cost
Administrative Assistant	2	$	67.00	$	134.00
Project Manager	6	$	135.00	$	810.00
		Subtotal		**$**	**944.00**
	Subtotal Task 2: Aptim E&I Services			**$**	**944.00**
Subcontractor Services					
Radon Abatement	Units	Rate			Cost
Communications and Diagnostics	1	$	1,719.00	$	1,719.00
		Subtotal		**$**	**1,719.00**
	Subtotal Task 2: Subcontracted Services			**$**	**1,719.00**
	Total Cost Task 2:			**$**	**2,663.00**
Task 3: Soil Sampling and Reporting					
Aptim E&I Services					
Soil Sampling	Hours/Unit	Hourly (Unit) Rate			Cost
Project Scientist 3	8	$	104.00	$	832.00
Project Manager	4	$	135.00	$	540.00
Admin Assistant	1	$	67.00	$	67.00
Drafter 3	0	$	86.00	$	-
		Subtotal		**$**	**1,439.00**
Reporting	Hours/Unit	Hourly (Unit) Rate			Cost
Project Scientist 3	8	$	104.00	$	832.00
Project Manager	9	$	135.00	$	1,215.00
Engineer 3	1	$	129.00	$	129.00
Drafter 3	2	$	86.00	$	172.00
Administrative Assistant	1	$	67.00	$	67.00
		Subtotal		**$**	**2,415.00**
	Subtotal Task 3: Aptim E&I Services			**$**	**3,854.00**
Subcontractor Services					
Laboratory	Units	Rate			Cost
Soil VOCs Analytical	12	$	71.00	$	852.00
		Subtotal		**$**	**852.00**
Soil Probing					
Geoprobe	1	$	1,624.00	$	1,624.00
		Subtotal		**$**	**1,624.00**
Field Equipment and Supplies					
Photo Ionization Detector	1	$	25.00	$	25.00
Mileage (236 Roundtrip)	0	$	0.53	$	-
Field Supplies, Equipment	1	$	70.00	$	70.00
		Subtotal		**$**	**95.00**
	Subtotal Task 3: Subcontracted Services			**$**	**2,571.00**
	Total Cost Task 3:			**$**	**6,425.00**

Task 4: 2 Quarters of Groundwater Sampling and Reporting

Aptim E&I Services

Groundwater Sampling	Hours/Unit	Hourly (Unit) Rate		Cost
Project Scientist 3	34	$	104.00	$ 3,536.00
Project Manager	6	$	135.00	$ 810.00
Admin Assistant	2	$	67.00	$ 134.00
Drafter 3	4	$	86.00	$ 344.00
		Subtotal		**$ 4,824.00**

Reporting	Hours/Unit	Hourly (Unit) Rate		Cost
Project Scientist 3	8	$	104.00	$ 832.00
Project Manager	10	$	135.00	$ 1,350.00
Engineer 3	1	$	129.00	$ 129.00
Drafter 3	1	$	86.00	$ 86.00
Administrative Assistant	1	$	67.00	$ 67.00
		Subtotal		**$ 2,464.00**

Subtotal Task 4: Aptim E&I Services	**$ 7,288.00**

Subcontractor Services

Laboratory	Units	Rate		Cost
Groundwater VOCs	22	$	71.00	$ 1,562.00
Groundwater VOCs QA/QC Samples	4	$	71.00	$ 284.00
		Subtotal		**$ 1,846.00**
Field Equipment and Supplies				
Peristaltic Pump	2	$	25.00	$ 50.00
YSI Meter	2	$	75.00	$ 150.00
Water Level Indicator	2	$	10.00	$ 20.00
Mileage (236 Roundtrip, 2 events)	472	$	0.53	$ 250.16
Field Supplies, Equipment	2	$	70.00	$ 140.00
		Subtotal		**$ 610.16**

Subtotal Task 4: Subcontracted Services	**$ 2,456.16**
Total Cost Task 4:	**$ 9,744.16**

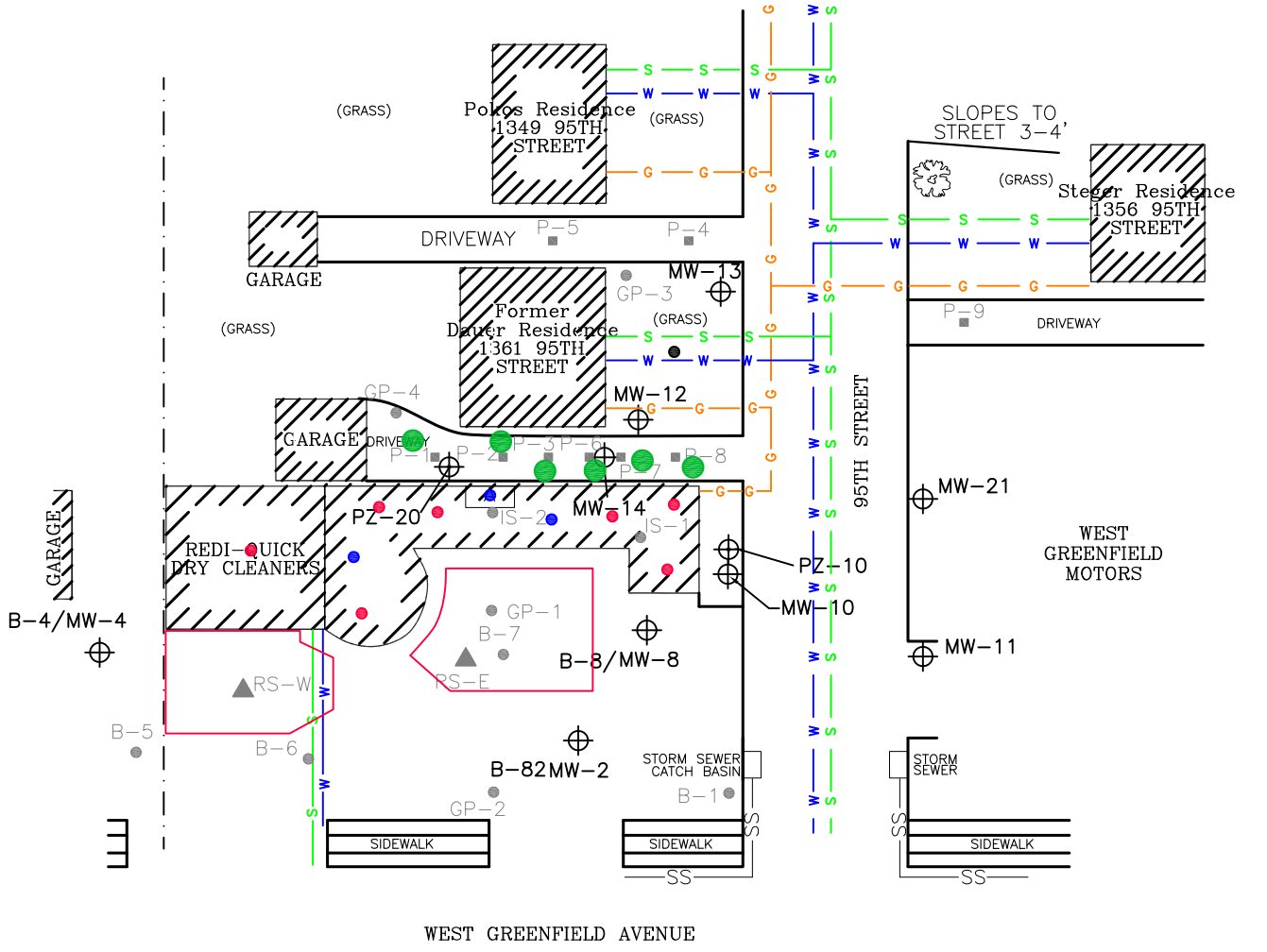
Total Estimated Subcontractor Costs:	**$ 8,076.24**
Total Estimated Aptim E&I Costs:	**$ 16,516.00**
Total Costs:	**$ 24,592.24**

CHANGE ORDER #4 AUTHORIZATION:

Accepted by: Mr. Binyoti Amungwafor - WNDR Project Manager

Date

Figures



LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- FORMER UNDERGROUND STORAGE TANK (UST)
- MONITORING WELL
- PIEZOMETER
- TEST BORING, DRILLED 5/19/99 BY JJS & ASSOCIATES
- RECOVERY SUMP
- GEOPROBE BORING
- PROBE
- W — WATER LINE
- S — SEWER LINE
- G — GAS LINE
- PROPOSED SUBSLAB PILOT TEST PROBES
- PROPOSED SUBSLAB VAPOR SAMPLING PROBE
- PROPOSED DIRECT CONTACT SOIL BORING LOCATION

TANK KEY

A 1,000–GALLON DRY CLEANER SOLVENT UST (NO LONGER IN USE)

APPROXIMATE SCALE IN FEET

0 20 40 60

N

APTIM

APTIM
2872 N. Ridge Road, Suite 102B
Wichita, Kansas 67205

CLIENT: **Redi-Quick Dry Cleaners**

LOCATION: **Redi-Quick Dry Cleaners Site**
9508 West Greenfield Avenue
West Allis, Wisconsin

TITLE

SITE PLAN VIEW MAP

DRWN	CHKD	REVD BY	APPRVD BY	PROJECT NO.	FIGURE NO.
JRD	HAW	JRD	-	631224187	B.1.b
		REVISION DATE: -		DATE: 11/16/17	