

December 30, 2015

Project #14990

Mr. Doug Cieslak
Remediation and Redevelopment Program
Wisconsin Department of Natural Resources - Sturtevant Office
9531 Rayne Road
Sturtevant, Wisconsin 53177

Re: Additional Sampling & Site Investigation
Twin Lakes Laundry
111 South Lake Avenue
Twin Lakes, Wisconsin

BRRTS Activity # 02-30-545024

WDNR FID # 230117910

Dear Mr. Cieslak:

Thank you for meeting with The Sigma Group, Inc. (Sigma) on June 24, 2015 to discuss the status of the DERF project at the former Twin Lakes Laundry & Dry Cleaning (TLL) facility located at 111 S. Lake Avenue, Twin Lakes, Wisconsin. On behalf of Tom Olsen, Olsen Properties LLC. (Owner of the Twin Lake Laundry facility), Sigma is pleased to present this scope of work and costs for additional site activities discussed during the meeting.

SCOPE OF WORK

Based on a review of the available information and recent groundwater monitoring data it was concluded that the following activities are necessary to move the site toward case closure:

- **Task 1: Additional Groundwater Sampling** – A complete round of groundwater monitoring will be performed using the network of groundwater monitoring wells and potable wells located in the vicinity of the site. The groundwater sampling will include seven shallow water table wells (MW-1 through MW-7, **Figure 1**), one piezometer (PZ-1) and eleven potable wells located at the following addresses:

Subway/Library Building 110 S. Lake Ave.; Twin Lake Laundry 111 S. Lake Ave.;
Business – 118 S. Lake Avenue; Business – 120 S. Lake Avenue;
Touch of Class – 121 S. Lake Avenue; Business – 126 S. Lake Avenue;
Residence – 202 S. Lake Avenue; Residence – 208 S. Lake Avenue;
Residence – 212 S. Lake Avenue; Law Office – 215 S. Lake Avenue; and,
Residence – 202 S. Lake Avenue.

For all the monitoring wells the following measurement will recorded: depth to water level and in situ field parameters (DO, REDOX, pH, dissolved iron, conductivity and temperature) to assess the groundwater biodegradation conditions. The wells will then be purged and sampled for laboratory analysis. All the potable wells will be

samples per the WDNR "Groundwater Sampling Field Manual, PUB-DG-038 96". To ensure the collection of a representative groundwater sample from each potable well, the water tap will be run for at least 15 minutes and any aerator connected at the tap will be temporarily removed before sample collection. All groundwater samples collected from on- and off-site wells will be preserved and submitted to a Wisconsin certified laboratory for analysis of VOCs.

- **Task 2: Utility Identification** – To evaluate the potential vapor migration pathways the utility locations in the area (routes and depths of existing utilities) will be identified. The city of Twin Lakes will be contacted to locate the various utilities on the sidewalks and the South Lake Avenue. The depths of the storm and sanitary sewers will be verified by measuring the invert elevation at the respective manhole. The information will be presented on a site map.
- **Task 3: Evaluate Off-Site Soil Vapor Conditions** – Several businesses are located within close proximity of the Twin Lake Laundry site. In accordance with the WDNR Vapor Intrusion Guidance Document (PUB-RR-800) a soil gas survey will be performed in the immediate vicinity of the area. A total of seven soil gas samples is proposed, of which four samples will be collected from four newly installed soil gas probes along the South Lake Avenue; three additional soil gas samples will be collected from the wellhead of three monitoring wells (MW-4, MW-5 and MW-7) located further downgradient of the site. Attached **Figure 3** presents the location of the soil gas samples. The exact locations of the soil gas probes may be adjusted based on the results of the utility survey.

All the soil gas probes will be installed in the sidewalks along South Lake Avenue and strategically placed in close proximity to the following businesses: west of the Subway store, west of the Library building, northeast corner of the Touch of Class building, and northwest corner of Straw Hat building. Soil gas samples collected from the three monitoring wells will provide information regarding subsurface conditions in the vicinity of Trader Brothers building, Law Office and the residence at 518 Legion Drive.

Each gas probe will be installed within a pilot borehole and completed with a 1-in dia foot long PVC screen set at approximately one foot above the water table. The pilot borehole will be constructed using a Hydro-Vac Super Sucker to avoid damaging any unknown utilities. Appropriate sand pack and bentonite surface seal will be placed to ensure no short-circuiting during sampling and the probes will be allowed to equilibrate for 48 hours prior to sampling. A 6.0 liter SUMMA canister sampler will be used to collect the soil gas sample at each sample location. In accordance with the WDNR soil gas sampling protocol an appropriate leak test will be performed at each sample location prior to sample collection. Following sample collection the SUMMA canisters will be submitted to a certified laboratory for analysis using EPA Method TO-15.

- **Task 4: Evaluate On-Site Sub-slab Vent System** – To evaluate the effectiveness of the sub-slab vent system a sub-slab vapor sample will be collected from inside the

Twin Lakes Laundry building. A sub-slab sample probe will be installed near the southeast corner of the building next to the boring location B-13 (initial sub-slab sample location) to collect a sub-slab soil gas sample. A SUMMA canister will be used to collect the sample and be submitted to a certified laboratory for analysis by the EPA method TO-15. Prior to sample collection the existing sub-slab vent system will be turned off and the space below the slab will be allowed to equilibrate for 24 hours prior to sampling. Installation of the sample probe and sample collection will follow the WDNR protocol for sub-slab vapor sampling. Following sample collection the vent system will be turned on and sub-slab pressure field measurements will be performed to evaluate the effectiveness of the vacuum distribution. For the purpose of air quality comparison a background air sample will be collected from outside the facility building using a SUMMA canister and analyzed by the EPA TO-15 method.

- **Task 5: Evaluate Source Area Soil Conditions** – A total of eight soil borings are proposed to evaluate the source area soil conditions near the southeast corner of the Twin Lakes Laundry building. Three of the soil borings will be installed inside the building and completed relatively shallow to collect a soil sample from one to two feet below the slab. Attached **Figure 2** presents the approximate location of the soil borings. Five additional Geoprobe soil borings are proposed outside the southeast corner of the laundry building. At each location continuous soil sampling will be performed from ground surface to a depth of approximately 8 feet below ground. Each soil samples will be screened in the field using a photoionization detector (PID) and visually inspected for color and staining. Depending upon field screening and visual observation one to two soil samples will be preserved and submitted to the project laboratory for VOC analysis.
- **Task 6: Sub-Slab Vent System Documentation and O & M Plan** – At the request of the WDNR the sub-slab vent system installed at the former Twin Lakes Laundry will be field verified and as-built information will be compiled. In addition, sub-slab pressure field measurements will be made to evaluate the effectiveness of the vent system. A System O & M plan will be prepared in accordance with the WDNR Vapor Intrusion Guidance document and submitted to the WDNR.
- **Task 7: Data Evaluation and Report** – Subsurface information collected through site investigation activities will be compiled, evaluated and a conceptual site model will be developed and presented in a report to the WDNR. Recommendations to address any concern associate with the vapor intrusion and groundwater contaminant plume will be included in the report.

In addition to the activities described above, Sigma will work with the current site owner to identify the suspected release area and timing when suspected release may have stopped (approximate location of the dry cleaning equipment and approximate time frame when the facility was converted from dry cleaning to laundromat). All the site investigation data and information related to the former dry cleaner operation will be compiled, evaluated and a conceptual site model will be developed and presented in a report to the WDNR. Recommendations to address any concern associate with the vapor intrusion and groundwater contaminant plume will be included in the report.

COST AND SCHEDULE

The attached table presents the cost breakdown for each of the proposed activities and costs for each task are summarized below:

TASK 1: Additional Groundwater Sampling = \$8,435

For cost estimating purposes it is assumed that all the monitoring wells/piezometer and potable wells located in the downgradient of the site will be sampled. The cost includes an extra site visit to ensure collection of water samples from some of the residences if access is not available during the initial visit. The cost also includes collection of four quality control/quality assurance (QA/QC) samples, disposal of purge water, coordination with residences, data compilation and reporting. The total cost for **Task 1** is **\$8,435** which includes consultant cost of **\$6,170** and subcontractors cost of **\$2,265**.

TASK 2: Utility Identification = \$1,360

The cost estimate includes efforts to contact the city of Twin Lakes and digger's hotline to locate existing utilities, mark the locations on a site map, measure the sewer invert elevations where appropriate, and update the site map.

TASK 3: Evaluate Off-Site Soil Vapor Conditions = \$5,795

To evaluate the off-site vapor conditions three existing monitoring wells and newly install soil gas probes will be sampled. Due to the shallow depth and locations of the probes (maximum depth 6 feet below ground and located away from the source property) spoils generated during probe installation is considered not impacted and will be managed as clean fill. The total cost for **Task 3** is **\$5,795** which includes consultant cost of **\$2,220** and subcontractors cost of **\$3,575**.

TASK 4: Evaluate On-Site Sub-Slab Vapor Conditions = \$1,730

The cost estimate assumes installation of one sub-slab vapor probe in the vicinity of the boring location B-13 at the southeast corner of the building and collecting a SUMMA canister soil gas sample for TO-15 analysis. The cost also include collection and analysis of a background air sample from a location outside of the building using SUMMA canister. The total cost for **Task 4** is **\$1,730** which includes consultant cost of **\$1,180** and laboratory costs of **\$550**.

TASK 5: Evaluate Source Area Soil Conditions = \$5,470

The cost estimate assumes installation of three shallow hand Geoprobe soil borings inside the building and five additional Geoprobe soil borings outside the southeast corner of the building. The cost also includes laboratory analysis of 16 soil samples for VOCs and a data summary report. The total cost of **\$5,470** includes consultant cost of **\$2,340** and subcontractors cost of **\$3,130**.

TASK 6: Sub-Slab Vent System Documentation and O & M Plan = \$2,550

The cost estimate includes preparation of the as-built drawing of the vent system, photo documentation, flow and vacuum measurements. An O & M Plan will be included with the documentation.

TASK 7: Data Evaluation and Report = \$5,780

The cost estimate includes preparation of a comprehensive report including development of a conceptual site model and recommendation for future activities.

Pending WDNR approval, **Task 1** will be implemented within a week. The groundwater monitoring and potable well sampling activities will be completed in two weeks. The utility identification task will be implemented during the same time and the city of Twin Lakes (and/or digger's hot-line) will be contacted to locate the public utilities present along the South Lake Avenue. The implementation of the **Tasks 3** and **4** will occur following utility identification activities. The proposed locations of the off-site soil gas samples may be adjusted based on the result of the utility identification. Depending upon the results of **Tasks 1** through **4**, the need for the implementation of **Task 5** will be determined. **Tasks 6** and **7** will be implemented following completion of all the site activities.

Sigma appreciates WDNR's technical assistance and help in developing the proposed scope of work. Please do not hesitate to contact me at 414-643-4125 if you have any questions or comments.

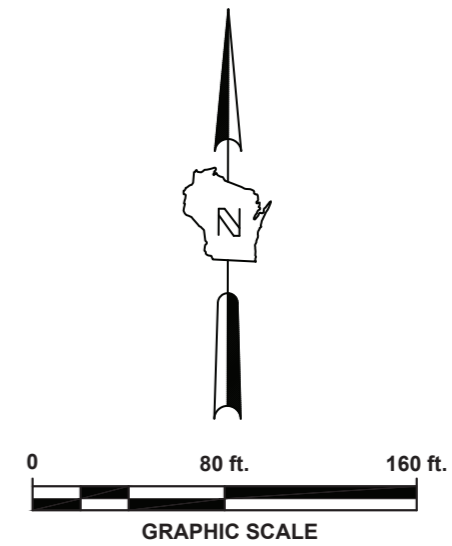
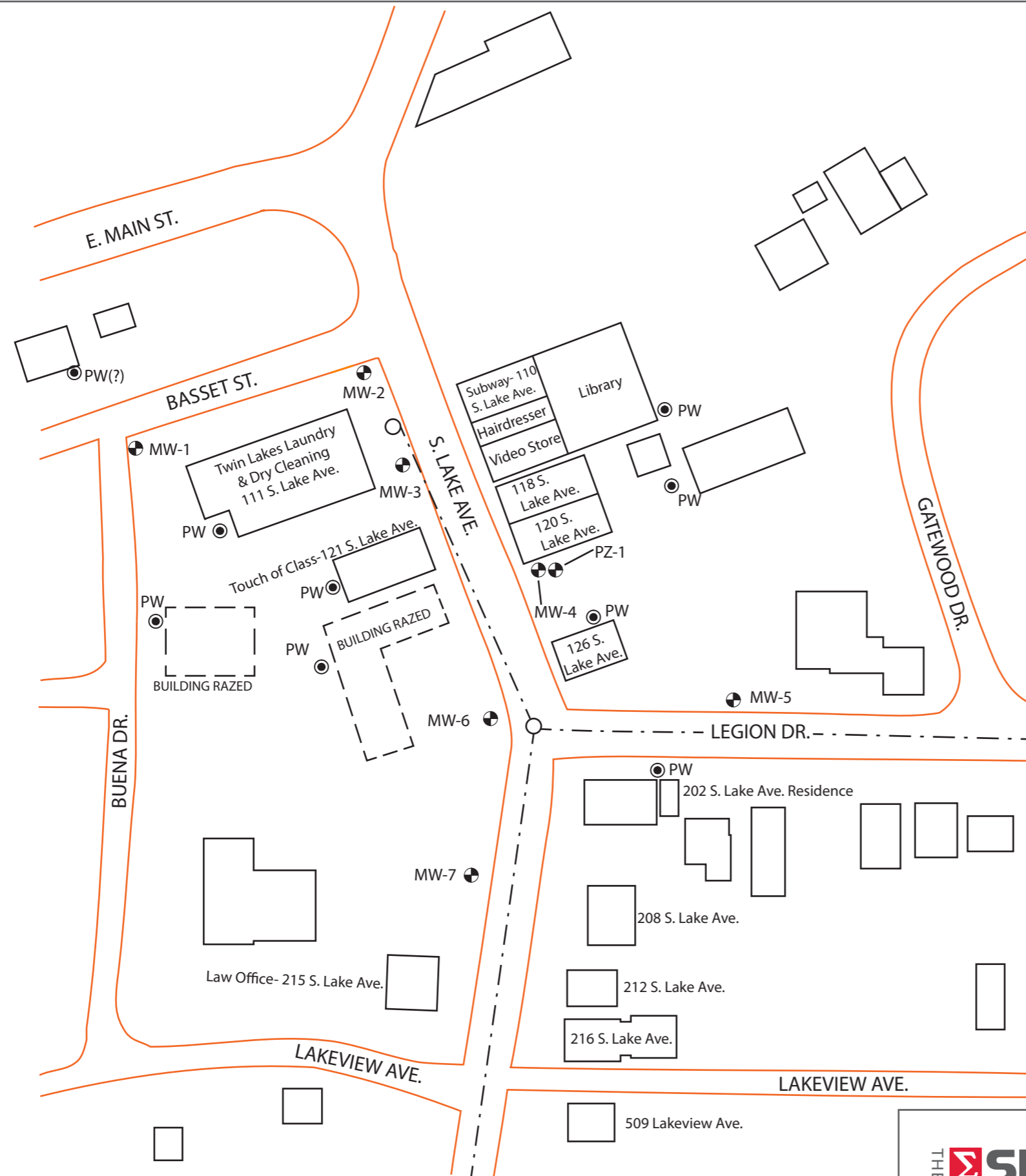
Sincerely,

THE SIGMA GROUP, INC.



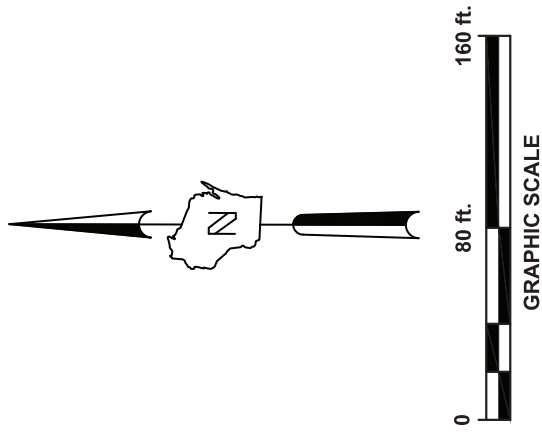
Mafizul Islam, P.E.
Senior Project Engineer

/attachments



LEGEND	
	PW Potable Well
	MW-1 Monitoring Well
	Manhole
	Storm Sewer

DRAFT



LEGEND	
●	Potable Well
⊕	Monitoring Well
○	Manhole
- - -	Storm Sewer
●	Proposed Soil Boring





 PROPOSED SOIL GAS
 SAMPLE LOCATIONS

FIGURE 3
PROPOSED SOIL GAS SAMPLE LOCATIONS
TWIN LAKES LAUNDRY
111 S. LAKE AVENUE, TWIN LAKES, WI

Site Name: **TWIN LAKES LAUNDRY**

BRRTS #: **02-30-545024**

Type of Action: **Additional Investigation**

Date: **December 30, 2015**

TASKS	ESTIMATED COST			
	Quantity	Unit	Rate	Total Cost
Consultant Costs				
Task 1: Additional Groundwater Sampling				
Labor	62	hrs.	\$ 85.00	\$ 5,270.00
Equipment, Supplies & Travel Expense	1	Lump Sum	\$ 900.00	\$ 900.00
Task 1 Consultant Cost =				\$ 6,170.00
Task 2: Utility Identification				
Labor	16	hrs.	\$ 85.00	\$ 1,360.00
Task 2 Consultant Cost =				\$ 1,360.00
Task 3: Evaluate Off-Site Soil Vapor Conditions				
Labor	22	hrs.	\$ 85.00	\$ 1,870.00
Equipment & Supplies	1	Lump Sum	\$ 350.00	\$ 350.00
Task 3 Consultant Cost =				\$ 2,220.00
Task 4: Evaluate On-Site Sub-slab Vapor Conditions				
Labor	8	hrs.	\$ 85.00	\$ 680.00
Equipment & Supplies	1	Lump Sum	\$ 500.00	\$ 500.00
Task 4 Consultant Cost =				\$ 1,180.00
Task 5: Evaluate Source Area Soil Conditions				
Labor	24	hrs.	\$ 85.00	\$ 2,040.00
Equipment & Supplies	1	Lump Sum	\$ 300.00	\$ 300.00
Task 5 Consultant Cost =				\$ 2,340.00
Task 6: Sub-Slab Vent System Documentation and O & M				
Staff Engineer	30	hrs.	\$ 85.00	\$ 2,550.00
Task 6 Consultant Cost =				\$ 2,550.00
Task 7: Data Evaluation and Reporting				
Labor	68	hrs.	\$ 85.00	\$ 5,780.00
Task 7 Consultant Cost =				\$ 5,780.00
Consultant Cost Total		68		\$ 21,600.00
Sub-Contractor Costs				
Service				
Task 1: Laboratory Groundwater Analytical	23	Samples	\$ 55.00	\$ 1,265.00
Task 1: Purge Water Disposal	1	Lump Sum	\$ 1,000.00	\$ 1,000.00
Task 1 Sub-Contractor Cost =				
Task 3: Soil Gas Probe Install	1	Lump Sum	\$ 1,500.00	\$ 1,500.00
Task 3: Soil Gas Sampling & Analysis (SUMMA)	7	Samples	\$ 275.00	\$ 1,925.00
Task 3: Disposal of Drill Cuttings	1	Lump Sum	\$ 150.00	\$ 150.00
Task 3 Sub-Contractor Cost =				
Task 4: Sub-slab Vapor Sampling & Analysis (SUMMA)	2	Samples	\$ 275.00	\$ 550.00
Task 4 Sub-Contractor Cost =				
Task 5: Geoprobe Install	5	Probes	\$ 300.00	\$ 1,500.00
Task 5: Hand Probe	3	Probes	\$ 250.00	\$ 750.00
Task 5: Laboratory Soil Analytical	16	Lump Sum	\$ 55.00	\$ 880.00
Task 5 Sub-Contractor Cost =				
Sub-Contractor Cost Total				\$ 9,520.00
Total Cost =				\$ 31,120.00