

24 December 2013

Mr. William P. Scott  
Gonzalez, Saggio & Harlan LLP  
111 East Wisconsin Avenue, Suite 1000  
Milwaukee, WI 53202

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

**RE: UPDATED PROPOSAL**  
Former Express Cleaners  
3941 N. Main Street, Racine, Wisconsin  
WDNR BRRTS #02-52-547631  
WDNR FID #252010000

Dear Mr. Scott and Ms. Ryan,

Geosyntec Consultants (Geosyntec) is pleased to provide this updated proposal for remediation services at the above reference site. This updated proposal was prepared pursuant to the 20 November 2013 Request for Updated DERP Proposal provided by Gonzalez Saggio & Harlan, LLP, on behalf of the Ehrlich Family Limited Partnership. **This updated proposal supplements Geosyntec's 19 August 2011 proposal for the site.**

This updated proposal includes (i) a summary of the advantages to building demolition, (ii) a summary of proposed cleanup objectives, (iii) an updated proposed remediation scope of work (SOW), and (iv) a cost estimate to complete the updated proposed SOW.

#### **ADVANTAGES TO BUILDING DEMOLITION**

Building demolition would allow direct access and increased remediation effectiveness of the most highly impacted (source area) soil and groundwater. Remediation of these source impacts would result in the following substantial advantages:

- Decreases long-term liability related to current and future site use.
- Reduces the potential for off-site migration and enhances potential remediation strategies if off-site impacts are encountered.
- Eliminates potentially costly mitigation to address current risk of soil vapor intrusion (SVI) for existing building.
- Eliminates the need to manage soil as a hazardous waste during future site redevelopment.

- Allows cost effective implementation of SVI mitigation, if needed, during future site redevelopment.
- A reduced period of groundwater monitoring and a subsequently reduced period of time to achieve WDNR closure.

## CLEANUP OBJECTIVES

The following table summarizes the proposed cleanup objectives for unsaturated soil and groundwater at the site, the time frame considerations to achieve the cleanup objectives, and closure conditions upon achieving the cleanup objectives:

Media	Cleanup Objective	Time Frame Considerations to Achieve Cleanup Objectives	Closure Conditions
Unsaturated Soil	PCE - 100 mg/kg ( <i>See Note 1</i> ) with pretreatment of soil with concentrations greater than WDNR health-based “contained out” concentrations (PCE - 153 mg/kg, TCE - 8.81 mg/kg, vinyl chloride - 2.03 mg/kg) ( <i>see Note 2</i> )	Immediately remediate primary source to continued leaching to groundwater and the generation of soil vapor. Allows for future redevelopment without significant limitations. Sampling conducted to confirm cleanup objectives have been achieved.	GIS Registry, cap, and cap maintenance ( <i>see Note 3</i> ).
Groundwater	Establish stable or decreasing groundwater plume	Three year period of post-remediation groundwater monitoring (1 year of quarterly performance monitoring and 2 years of semi-annual MNA monitoring) would be conducted to confirm effectiveness of remedial action in achieving cleanup objectives.	GIS Registry
	Establish conditions that allow NR 140 Enforcement Standards to be achieved in a reasonable period of time		

*Notes:*

1. It is estimated that source remediation to 100 mg/kg PCE will result in the removal of a considerable quantity of the mass that is a source to leaching to groundwater and the generation of soil vapor. The mass removal will be confirmed following Task 3.
2. Since the 19 August 2011 proposal, the WDNR has adjusted the “contained out” concentrations. PCE “contained out” concentrations increased from 33 mg/kg to 153 mg/kg.
3. It is assumed that cap construction would be included in the site redevelopment construction; therefore, the scope and costs for cap construction are not included in this proposal.

## UPDATED PROPOSED REMEDIATION SCOPE OF WORK

The following updated proposed remediation SOW was developed based on the assumption that the building would be demolished and the above cleanup objectives.

### Task 1 - Project Kick-Off Meeting and Management

- Participate in a project kickoff meeting
- Project management, including providing routine project email updates

### Task 2 - Building Demolition

- Obtain demolition permits and make necessary notifications including: (i) City of Racine demolition permit, (ii) City of Racine erosion control permit, (iii) Notification of Demolition and/or Renovation and Application for Permit Application (WDNR Form 4500-113), and (iv) notification to all utilities having service connections within the building, such as water, sewer, gas, electric, and telephone/communication.
- Implement site and environmental controls, including temporary fencing and erosion controls (i.e. silt fencing).
- Conduct utility disconnects and abandonment prior to building razing.
- Remove Universal Waste and Freon and properly manage/dispose. It is understood that asbestos abatement has already been completed and subsequently is not included in this scope of work.
- Conduct building razing.
- Remove concrete floor and footings.
- Remove asphalt pavement within proposed soil remedial action area (Tasks 4 and 5).
- Remove, recycle, salvage, or dispose of demolition debris in accordance with applicable federal, state and local laws, rules, and regulations. Based on the provided concrete core sampling data, the concrete floor near former dry cleaning machine would be managed as a special waste.
- Implement dust control during building demolition to prevent the formation and migration of dust.
- Backfill foundation removal areas to surrounding grade.

### Task 3 - Pre-Remedial Action Activities

- *Supplemental Soil Sampling.* Advance five Geoprobe<sup>®</sup> soil borings to further define the extent of soil impacts exceeding “contained-out” concentrations and to collect samples for waste profiling and soil treatment bench-scale testing.
- *Soil Treatment Bench-Scale Study.* Conduct a limited bench-scale study to assess the total organic demand (TOD) of the soil at various concentrations of oxidant, and to evaluate different oxidants. It is anticipated that Fenton’s Chemistry (hydrogen peroxide with iron catalyst), potassium permanganate, sodium permanganate and/or sodium persulfate would be evaluated.
- *Groundwater Treatment Pilot Study.* Conduct a limited pilot study to evaluate the application of emulsified oil solution (EOS) to stimulate enhanced bioremediation. The pilot study would include the excavation of a test pit adjacent to existing groundwater monitoring well MW-8, and the application of approximately 10 gallons of Newman Zone<sup>®</sup> Oil to the test pit, the injection of KB-1<sup>™</sup> bacteria to MW-8 and the post-application monitoring of MW-8. MW-8 would be sampled for VOCs, methane, ethane, ethene, and

total organic carbon prior to the addition of the amendments, and at two month intervals for a period of six months (total of four sample collection events) after amendment addition. One Gene-Trac® analysis would be performed after six months to determine if the addition of EOS and KB-1™ has allowed for proliferation of bacteria critical to ethene destruction. In addition, field parameters including dissolved oxygen and oxidation-reduction potential would be measured during the sample collection.

- Prepare a submittal to the WDNR requesting a NR 140 exemption and WPDES permit for the application of EOS and KB-1™ to the groundwater.

#### Task 4 - Pre-Soil Removal Treatment

- Conduct in-situ backhoe mixing of selected oxidant within the area of unsaturated soil impacts exceeding “contained out” concentrations. It is assumed that approximately 350 tons of soil would be treated. This volume would be confirmed in Task 3.
- Conduct treatment verification sampling and testing using a mobile laboratory. In addition, three samples would be submitted for fixed laboratory analysis of VOCs.

#### Task 5 - Unsaturated Soil Excavation and Disposal

- Assist with establishing approved special waste disposal profile for pre-treated, excavated soil.
- Excavate unsaturated soil concentrations exceeding 100 mg/kg (including pre-treated soil) and transport off-site for disposal. It is assumed that approximately 700 tons of soil would be excavated. This volume would be confirmed in Task 3.
- Collect confirmation soil samples from the completed excavation and submit for analysis of VOCs.

#### Task 6 - Enhanced Bioremediation of Groundwater

- Add Newman Zone® Oil to the base of the completed excavation and mechanically mix with the saturated zone.
- Install a limited piping system in the excavation prior to backfill (horizontal perforated/geotextile wrapped PVC piping in the base and several solid vertical risers with flush-mount covers) to allow injection of KB-1® bacteria solution (and allow for the contingency for future KB-1® and/or EOS injection if needed).
- Backfill the excavation with clay to limit infiltration of oxygen from ambient air.
- Install four additional groundwater monitoring wells to support enhanced bioremediation and natural attenuation groundwater monitoring.
- Conduct post-remediation groundwater monitoring (one year of quarterly performance monitoring and two years of semi-annual MNA monitoring). Collected groundwater

samples would be submitted for analysis of VOCs, gases (methane, ethane, ethene), and TOC. Field parameters, including dissolved oxygen (DO), oxidation-reduction potential (ORP) and pH would also be measured during sample collection.

- After the first groundwater monitoring event, assuming the appropriate geochemical environment is established (negative ORP, and DO of less than 1 mg/l), KB-1<sup>®</sup> would be injected through the piping system. *Note: The cost for additional KB-1<sup>®</sup> and/or EOS injection through the piping system is not included in the cost estimate and would be contingent upon performance groundwater monitoring results.*

#### Task 7 - WDNR Reporting and Closure

- Prepare a NR 724 Construction Documentation Report for submittal to the WDNR.
- Prepare NR 724 quarterly progress reports for submittal to the WDNR.
- Prepare semi-annual groundwater monitoring reports (WDNR Operations, Maintenance and Optimization Report forms) for submittal to WDNR.
- Complete WDNR *Case Closure-GIS Registry* form for submittal to WDNR.
- Abandon the groundwater monitoring wells upon receipt of WDNR conditional case closure.

#### **COST ESTIMATE**

The estimated cost to complete the scope of work is summarized in Table 1. The estimated costs are based on available existing data and are subject to change as additional data is collected. The estimated contractor costs are based on past similar projects. Primary cost estimate assumptions are included in Table 1.

#### **CERTIFICATION**

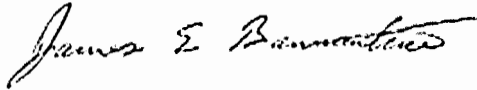
This proposal was prepared as a supplement to Geosyntec's 19 August 2011 proposal for this site. The 19 August 2011 proposal was prepared in accordance with the requirements of NR 169.23. In accordance with NR 169.23(9), Geosyntec certifies the following:

- If selected to complete the scope of work described herein, Geosyntec will comply with the applicable requirements of NR 169 and NR 700 to NR 728.
- Geosyntec will make available to the WDNR upon request, for inspection and copying, all of the documents and records related to the contract services.
- Geosyntec did not prepare this bid in collusion with any other consultant submitting a bid on this site.

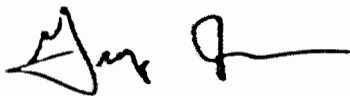
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Please contact us if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "James E. Bannantine". The signature is written in a cursive style with a long horizontal stroke at the end.

James E. Bannantine, P.G.  
Senior Hydrogeologist

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Gregory L. Johnson, CHMM, P.H., P.G., P.E.  
Senior Engineer

Attachments: Table 1 - Remedial Action Cost Estimate



**TABLE 1**  
**COST ESTIMATE - UPDATED REMEDIATION SERVICES PROPOSAL**  
 Express Cleaners Site  
 3941 North Main Street, Racine, Wisconsin

Item	Cost Component	Unit	Unit Cost	Qty	Consulting	Contractor	Assumptions/Notes
<b>6</b>	<b>Enhanced Bioremediation of Groundwater Implementation</b>						
A	Mobilization/Demobilization, Decontamination	LS	\$1,500	1		\$1,500	
B	EOS Purchase	LB	\$2	8,400		\$16,800	2,200 gal (8,400 lb) EOS for 2% solution within target saturated zone
C	EOS Delivery	LS	\$2,000	1		\$2,000	
D	Backhoe Mixing of EOS	DAY	\$3,000	3		\$9,000	
E	KB-1 Purchase	LITER	\$250	20		\$5,000	
F	KB-1 Delivery	LS	\$1,800	1		\$1,800	
G	Perforated/Solid PVC Piping, Geotextile, Fittings, Covers	LS	\$4,000	1		\$4,000	contingency for future EOS/KB-1 placement; placement of EOS/KB-1 not included
H	Senior Professional	HR	\$150	8	\$1,200		
I	Project Professional	HR	\$125	12	\$1,500		
J	Staff Professional	HR	\$100	50	\$5,000		coordination, oversight, KB-1 Injection
K	Administrative Assistant	HR	\$50	4	\$200		
L	Field Expenses	DAY	\$100	5	\$500		
	<b>Performance and MNA Groundwater Monitoring</b>						
M	Drilling, Well Installation and Development	EA	\$1,250	4		\$5,000	
N	Surveying	DAY	\$1,500	1		\$750	
O	Laboratory Analysis - VOCs	EA	\$70	96		\$6,720	
P	Laboratory Analysis - Methane, Ethane, Ethene	EA	\$75	96		\$7,200	
Q	Laboratory Analysis - TOC	EA	\$35	96		\$3,360	10 wells, one duplicate and one blank per sampling event
R	Senior Professional	HR	\$125	16	\$2,000		
S	Project Professional	HR	\$125	24	\$3,000		
T	Staff Professional	HR	\$100	94	\$9,400		
U	Groundwater Sampling Expenses	DAY	\$250	8	\$2,000		YSI, tubing, water level indicator, supplies
	<b>Subtotal</b>				<b>\$24,800</b>	<b>\$63,130</b>	
<b>7</b>	<b>WDNR Reporting and Closure</b>						
	<b>Project Status Update Letters</b>						
A	Senior Professional	HR	\$125	8	\$1,000		
B	Project Professional	HR	\$100	24	\$2,400		
C	Administrative Assistant	HR	\$50	4	\$200		
	<b>NR 724 Remedial Action Documentation Report</b>						
D	Senior Professional	HR	\$150	12	\$1,800		
E	Project Professional	HR	\$125	40	\$5,000		
F	Staff Professional	HR	\$100	8	\$800		
G	CAD	HR	\$75	16	\$1,200		
H	Administrative Assistant	HR	\$50	4	\$200		
	<b>WDNR Closure-GIS Registry Form and Attachments</b>						
I	Senior Professional	HR	\$150	16	\$2,400		
J	Project Professional	HR	\$125	40	\$5,000		
K	CAD	HR	\$75	12	\$900		
L	Administrative Assistant	HR	\$50	4	\$200		
M	WDNR Review and GIS Registry Fees	LS	\$1,700	1	\$1,700		
	<b>Monitoring Well Abandonment</b>						
N	Staff Professional	HR	\$100	20	\$2,000		following conditional closure includes Monitoring Well Abandonment and Form Preparation/Submittal well abandonment supplies and equipment
O	Field Expenses	LS	\$500	1	\$500		EFLP will contract directly with demolition, remediation, and waste disposal contractors/facilities
	<b>Subtotal</b>				<b>\$25,300</b>	<b>\$0</b>	
	<b>SUBTOTAL</b>				<b>\$84,500</b>	<b>\$253,580</b>	
	<b>TOTAL</b>				<b>\$338,080</b>		
	Potential DERP-Eligible Expenses				<b>\$280,730</b>		\$15,000 dollars of the demolition expense is eligible for reimbursement under DERP