



November 7, 2007

Project Reference #9956

Mr. David G. Volkert, P.G.
Wisconsin Department of Natural Resources
Bureau for Remediation and Redevelopment
Waukesha Service Center
141 NW Barstow Street, Room 180
Waukesha, WI 53188

RE: Response to WDNR 10/09/2007 Letter and
Cost Estimate for Additional Investigation
Former Dutch Maid Cleaners
701 East Geneva Street
Delavan, Wisconsin

BRRTS #02-65-354526

Dear Mr. Volkert:

On October 3, 2007, the Wisconsin Department of Natural Resources (WDNR) reviewed the project file regarding the site investigation activities completed at the Former Dutch Maid Cleaners, 701 East Geneva Street, Delavan, Wisconsin (hereafter the "Property") as documented in the June 23, 2003 *Closure Request/Remedial Investigation Report* prepared by Drake Environmental, Inc and the July 31, 2007 *Summary of Activities for a DERF Site Investigation prepared by Sigma Environmental Services, Inc (Sigma)*. Your review of the site investigation work completed to date determined that additional work is required before the WDNR will consider the site investigation complete. The WDNR list of the items that need to be addressed is as follows:

- 1) Survey the monitoring wells installed at the site in order that groundwater elevations can be obtained. Prepare a site-specific groundwater flow map.
- 2) After determining the site-specific groundwater flow direction, install a piezometer in the immediate vicinity of or down-gradient from hand auger HA-10. Place the top of the screen for the piezometer 20 feet below the water table.
- 3) Previous site investigation work completed by others at the Brahm's Service Station site located at 725 East Geneva Street detected tetrachloroethene (PCE) in the groundwater at Brahm's Service Station and at the Associated Bank property. Please evaluate whether or not the Property is the source of the PCE found on these properties and if it will be necessary to install a groundwater monitoring well on the adjacent Associated Bank property (709 East Geneva Street).
- 4) It will be necessary to define the extent of PCE contamination in the soil on the Associated Bank property.
- 5) Identify potential receptors including public supply wells within 1,200 feet of the Property.
- 6) Identify and evaluate potential contaminant pathways including utilities in the vicinity of the Property.

- 7) Sample all of the groundwater wells and the piezometer for Volatile Organic Compounds (VOCs).
- 8) Prepare isoconcentration maps for PCE in soil and groundwater at the Property.

As requested, a cost estimate for the aforementioned tasks is provided in **Table 1**. Included in the cost estimate is preparation of a summary report (already presented) to document the additional findings. Sigma proposes to provide the WDNR with the completed Site Investigation Report to include the additional items required by the WDNR. Therefore, Sigma is requesting WDNR approval of \$13,485.00 for the additional items required by the WDNR as the second phase of the investigation

In addition, the WDNR, based on the documentation presented to the WDNR in the July 31, 2007 summary report, assumed the following tasks were not completed: Please note, Sigma has completed the activities and each is discussed in bullet form below (**Sigma Response in bold**)

- Site survey and preparation of a groundwater flow map. **Surveying (performed August 6, 2007) and preparation of a groundwater flow map was completed but not included in the summary report. Survey information and flow maps will be presented in the completed Site Investigation Report.**
- Slug testing and analysis. **Slug testing (performed August 6, 2007) and analysis were completed and will be included in the Site Investigation Report.**
- Substitution of an additional monitoring well for the proposed piezometer. **A piezometer was not installed due to encountering large gravel at approximately 16 feet below ground surface (bgs), which prohibited drilling deeper than 30 feet bgs with the existing drill rig. An additional monitoring well was substituted to aid in delineating the extent of the PCE impacts to the groundwater.**
- Completion of the Summary Report versus the Site Investigation Report. **A Summary Report was completed at the request of legal counsel to facilitate the meeting between the WDNR and Legal Counsel for the Property. It was not intended as a substitute for the Site Investigation Report. Sigma did not finalize the Site investigation report as we were awaiting the result of the meeting between the WDNR and legal counsel.**

The WDNR requested Sigma identify the amount of the approved cost estimate that was spent versus the portion that was not completed for the first phase of the site investigation. The comparison is provided for the subcontracted drilling costs in **Table 2** and for the consultant portion of the project in **Table 3**.

A review of the attached information in **Tables 2 and 3** indicates actual incurred project costs total \$4,043.59 greater than initially budgeted. A review of **Table 2** indicates the Geoprobe and Hollow Stem Auger drilling fees were higher than budgeted due to several factors. The first factor is that groundwater was substantially deeper than anticipated and therefore the probing and drilling fees increased accordingly. A second factor is the presence of a gravel and cobble zone encountered at approximately 16 feet bgs. A review of **Table 3** indicates the consultant fees were higher than budgeted. The presence of the gravel and cobble zone resulted in much slower probing and drilling conditions. Sigma estimated one day of consultant labor for probing

and one day of consultant labor for drilling. Each task actually took two full days of consultant oversight to complete. The additional consultant time is presented in **Table 3**.

In addition, off-site access for the neighboring properties Associated Bank and Barker Building Material required more time than budgeted. Sigma budgeted one hour of time to obtain off-site access from the neighboring properties. However, Associated Bank required on-site meetings prior to each field event to demonstrate boring and well locations prior to granting approval to enter their property to complete the work. The additional costs are presented in **Table 3**.

Sigma proposed 26 soil and groundwater samples for laboratory analysis of VOCs. Four extra samples were submitted for VOC analysis. Three additional soil samples and one additional water sample. Proposed versus actual costs are presented in **Table 3**.

As previously discussed, the report titled *Summary of Activities for a DERF Site Investigation* prepared by Sigma was completed at the request of legal counsel to facilitate a meeting with the WDNR. Sigma moved forward with completing the site investigation report while awaiting results of the meeting between the WDNR and legal counsel. Therefore, the proposed costs to complete the site investigation report were expended.

Sigma is proposing the completion of a summary report as a task to provide the WDNR with the results of the additional requested investigation activities. The cost for the summary report covers the additional Sigma time creating the July 31, 2007 report and the anticipated data analysis and Table and Figure modification to reflect the additional data generated for the items outlined in the October 9, 2007 WDNR letter. Sigma will provide the completed site investigation report as the deliverable upon completion of the WDNR required additional site investigation tasks.

Therefore, Sigma is requesting WDNR approval of \$4,043.59 for the additional tasks necessary to complete the first phase of the investigation and \$13,485.00 for the additional items required by the WDNR as the second phase of the investigation. If you have any questions regarding the content of this request, please call me at (414) 643-4126.

Respectfully submitted,

SIGMA ENVIRONMENTAL SERVICES, INC.



Mark H. Krueger, P.G., P.H.
Senior Project Hydrogeologist



Randy E. Boness, P.G.
Manager- Geosciences Group

kal

Attachments

TABLES

TABLE 1
COST ESTIMATE
FOR ADDITIONAL SITE INVESTIGATION ACTIVITIES
FORMER DUTCH MAID CLEANERS
701 EAST GENEVA STREET
DELAVAN, WISCONSIN
Project Reference #9956

	Item Description	Unit Price	Quantity	Units	Total Cost
TASK 1	Survey Monitoring Wells & Create GW Flow Map				
	Subtotal Task 1				Completed
TASK 2	Piezometer Installation to 50' Below Ground Surface				
	Off-Site Access	\$ 115.00	2	hour	\$230.00
	Project Manager	\$ 115.00	2	hour	\$230.00
	Staff Hydrogeologist	\$ 75.00	8	hour	\$600.00
	Equipment / Supplies				
	PID	\$ 75.00	1	day	\$75.00
	Mobilization	\$ 100.00	1	day	\$100.00
	Drilling Fees (3 bids)	\$3,290.00		lump sum	\$3,290.00
	Soil Disposal (non-hazardous)	\$ 75.00	7	drums	\$525.00
	Subtotal Task 2				\$5,050.00
TASK 3	Monitoring Well Installation on Associated Bank Property				
	Off-Site Access (see Task 2)	NC			NC
	Project Manager	\$ 115.00	2	hour	\$230.00
	Staff Hydrogeologist	\$ 75.00	6	hour	\$450.00
	Equipment / Supplies (see Task 2)	NC			NC
	Drilling Fees (see Task 2)	NC			NC
	Subtotal Task 3				\$680.00
TASK 4	Delineate the Extent of PCE in Soil (3 probes to 20')				
	Off-Site Access (see Task 2)	NC			NC
	Project Manager	\$ 115.00	2	hour	\$230.00
	Staff Hydrogeologist	\$ 75.00	6	hour	\$450.00
	Equipment / Supplies				
	Geoprobe	\$ 500.00	1	day	\$500.00
	PID	NC			NC
	Soil Analytical				
	VOCs	\$ 65.00	6	sample	\$390.00
	Subtotal Task 4				\$1,570.00
TASK 5	Receptor Survey Including Public Supply Wells				
	Senior Hydrogeologist	\$ 115.00	6	hour	\$690.00
	CADD Technician	\$ 75.00	2	hour	\$150.00
	Subtotal Task 5				\$840.00
TASK 6	Contaminant Pathway Evaluation				
	Staff Hydrogeologist	\$ 75.00	2	hour	\$150.00
	Subtotal Task 6				\$150.00
TASK 7	Monitoring Well Development / GW Sampling				
MW Development	Senior Project Manager	\$ 115.00	1	hour	\$115.00
	Field Technician	\$ 65.00	7	hour	\$455.00
	Equipment / Supplies				
	Drums	\$ 30.00	3	drum	\$90.00
	WLI	\$ 15.00	1	day	\$15.00
	Pumps	\$ 50.00	2	each	\$100.00
GW Sampling	Senior Project Manager	\$ 115.00	2	hour	\$230.00
	Field Technician	\$ 65.00	10	hour	\$650.00
	Equipment / Supplies				
	Drums	\$ 30.00	2	drum	\$60.00
	WLI	\$ 15.00	1	day	\$15.00
	Bailer Kits	\$ 15.00	7	each	\$105.00
	Groundwater Analytical				
	VOCs	\$ 60.00	7	sample	\$420.00
	VOCs, Dup 1	\$ 60.00	1	sample	\$60.00
	VOCs, Equip 1	\$ 60.00	1	sample	\$60.00
VOCs, Trip 1	NC			NC	
Groundwater Disposal to POTW					
	Field Technician	\$ 65.00	2	hour	\$130.00
	Subtotal Task 7				\$2,505.00
TASK 8	Additional Site Investigation Summary Report				
	Senior Hydrogeologist	\$ 115.00	10	hour	\$1,150.00
	Staff Hydrogeologist	\$ 115.00	10	hour	\$1,150.00
	CADD Technician	\$ 65.00	6	hour	\$390.00
	Subtotal Task 8				\$2,690.00
TOTAL COST ESTIMATE					\$13,485.00

TABLE 2

PROPOSED

ACTUAL

Drilling Costs							Drilling Costs						
Task	Interval	Number of Borings or Wells	Number of Days	Total Number Feet Drilled	Cost/feet, Day or Well	Total Cost	Task	Interval	Number of Borings or Wells	Number of Days	Total Number Feet Drilled	Cost/feet, Day or Well	Total Cost
Well installation and Completion							Well installation and Completion						
Well Construction	0 ft to 20 ft	4	0.5	80	\$11.00	\$880.00	Well Construction	0 ft to 20 ft	5	2	140	\$11.79	\$1,650.60
Piezometer	0 ft to 35 ft	1	0.5	35	\$11.00	\$385.00	Piezometer	0 ft to 35 ft					\$0.00
	___ ft to ___ ft							___ ft to ___ ft					
	> ___ ft							> ___ ft					
Decontamination Costs		Lump Sum				\$150.00	Decontamination Costs		Lump Sum				
Mobilization Costs		Lump Sum				\$250.00	Mobilization Costs		Lump Sum				\$664.75
Auger Borings (continuous sampling)							Auger Borings (continuous sampling)						
Well Drilling	0 ft to 20 ft	4	<0.5	80	\$11.00	\$880.00	Well Drilling	0 ft to 25 ft			100	\$13.15	\$1,315.00
Piezometer	0 ft to 35 ft	1	<0.5	35	\$11.00	\$385.00	Piezometer	25 ft to 50 ft			14.5	\$13.67	\$198.22
	___ ft to ___ ft							___ ft to ___ ft					
	> ___ ft							> ___ ft					
Decontamination Costs							Decontamination Costs						
Mobilization Costs							Mobilization Costs						
Auger Borings (specify split spoon sampling interval)							Auger Borings (specify split spoon sampling interval)						
	___ ft to ___ ft						Soil boring without sampling	___ ft to ___ ft	1		29	\$10.33	\$299.57
	___ ft to ___ ft							___ ft to ___ ft					
	___ ft to ___ ft							___ ft to ___ ft					
	> ___ ft							> ___ ft					
Decontamination Costs							Decontamination Costs						
Mobilization Costs							Mobilization Costs						
Direct Push Borings (per point)							Direct Push Borings (per point)						
Geoprobos	< ___ ft depth	8	1	160	\$6.50	\$1,040.00	Geoprobos	< ___ ft depth	7	2	175	\$6.00	\$1,050.00
Temporary Well	_ ft - _ ft depth	5		100	\$4.00	\$450.00	Temporary Well	_ ft - _ ft depth	5		150	\$4.00	\$600.00
Abandonment	> ___ ft depth	8		160	\$0.50	\$80.00	Abandonment	> ___ ft depth	2		50	\$0.50	\$25.00
Decontamination Costs						\$50.00	Decontamination Costs						\$100.00
Mobilization Costs						\$175.00	Mobilization Costs						\$200.00
Well Development (if done by subcontractor)							Well Development (if done by subcontractor)						
	Monitoring Wells							Monitoring Wells					
	Piezometers							Piezometers					
	Recovery Wells							Recovery Wells					
Other							Other						
Drums	7 @ \$25					\$175.00	Drums		9			\$35.00	\$315.00
Flush Mount Covers	1 @ \$75					\$75.00	Flush Mount Covers		5			\$131.49	\$657.45
Protector Pipes	4 @ \$75					\$300.00	Flush Mount Wells		5			\$50.00	\$250.00
Interior Boring Equipment	366					\$350.00	Padlocks		5			\$7.10	\$35.50
Borehole Abandonment (Geoprobe)	0 - 20 feet						Borehole Abandonment (Geoprobe)	0 - 20 feet					\$0.00
Total Drilling Costs						\$5,625.00	Total Drilling Costs						\$7,361.09

TABLE 3
COST COMPARISON
FOR ADDITIONAL SITE INVESTIGATION ACTIVITIES
FORMER DUTCH MAID CLEANERS
701 EAST GENEVA STREET
DELAVAN, WISCONSIN
Project Reference #9956

Item Description	Unit Price	Quantity	Total Cost
Drilling and Geoprobe Activities			
Proposed			\$5,625.00
Actual			\$7,361.09
		Difference	\$1,736.09
Drilling Services, Consultant Labor			
Proposed	\$ 75.00	12	\$900.00
Actual	\$ 65.00	22	\$1,430.00
		Difference	\$530.00
Geoprobe Services, Consultant Labor			
Proposed	\$ 75.00	8	\$600.00
Actual	\$ 65.00	17.5	\$1,137.50
		Difference	\$537.50
Off Site Access			
Proposed	\$ 75.00	1	\$75.00
Actual	\$ 115.00	8	\$920.00
Actual	\$ 65.00	3	\$195.00
		Difference	\$1,040.00
Analytical Lab (VOC Samples)			
Proposed	\$ 50.00	26	\$1,300.00
Actual	\$ 50.00	30	\$1,500.00
		Difference	\$200.00
TOTAL COST DIFFERENCE			\$4,043.59