



August 13, 2019

via email

Shawn Donovan
Vermont Department of Environmental Conservation
1 National Life Drive, Davis West
Montpelier, VT 05602

Subject: Updates to the Investigation Methods, Cost Estimate and Schedule for Phase II Environmental Site Assessment at Long Falls Paperboard, Brattleboro, Vermont
Stone Project No.: P19-015

Dear Shawn,

Stone Environmental, Inc. (Stone) is pleased to provide the following update to the Site-Specific Quality Assurance Project Plan (SSQAPP) to the Vermont Department of Environmental Conservation (VT DEC) and US Environmental Protection Agency, to address the changes in subsurface investigation method, cost estimate and project schedule. These updates were discussed a telephone conversation held on August 2, 2019 and confirmed with a follow-up funding confirmation on August 2, 2019. This letter documents the updates.

1. Subsurface Investigation Method

During the initial site mobilization, drilling conditions, specifically the coarse sand and some gravel that was encountered, limited the direct push Geoprobe method to advance and retrieve soil cores and subsequent groundwater samples. The direct push method was limited to 30 – 40 feet below ground surface (bgs) and groundwater is estimated to be at 75 feet bgs. Stone received multiple quotes for continuing the subsurface investigation using hollow-stem auger drilling techniques and has updated the cost estimate and schedule (below) accordingly.

Stone will advance hollow-stem augers and retrieve one split-spoon soil sample every five feet of boring advancement with the exception that at locations where continuous soil cores were obtained by direct-push methods, Stone will drill down to the depth previously obtained before beginning soil core collection. If boring advancement allows for continuous soil cores to be collected within the provided schedule and cost estimate, then continuous cores will be collected. Soil samples will be collected as per the approved SSQAPP.

Upon completion of each soil boring to approximately five feet below the observed soil saturation level, Stone will install a two-inch diameter polyvinyl chloride (PVC) well, with a 0.010-inch screened section installed across the observed water table. Monitoring well installation and construction will be performed in accordance with Stone Standard Operating Procedure (SOP) SEI-5.34.5 “Installation, Development and Decommissioning of Monitoring Wells and Observation Wells” provided in Stone’s EPA-approved Generic QAPP dated December 19, 2016. In summary, groundwater monitoring wells will be developed using the

surge and purge method and allowed to equilibrate for a minimum of one week prior to collection of groundwater samples. Groundwater samples will be collected per the SSQAPP.

2. Schedule

The anticipated schedule for completion of Phase II ESA activities, including reporting, is provided in the following table.

Project Timeline

Task	Exp. Duration	Exp. Start Date	Exp. Completion Date	Deliverable
Task 1 – Work Plan / SSQAPP				
<i>Draft SSQAPP</i>			May 29, 2019	Draft SSQAPP
<i>Regulatory Review</i>	30 days	May 30, 2019	June 28, 2019	
<i>Final SSQAPP</i>	2 days	July 1, 2019	July 2, 2019	Response to Comments memo, as needed Final SSQAPP
Task 2 – Dig Safe/ Site Visit	2 days		July 17, 2019	Dig Safe Ticket Number
Task 3 – Phase II Investigation Field Work	3 weeks	July 22, 2019	August 26, 2019	Field Notes, call with VT DEC
<i>Analytical Turn-Around¹</i>	15 business days	August 26, 2019	September 16, 2019	Laboratory Reports
Present Summary of Results & Stakeholder Meeting	1 day		Week of September 16, 2019	Email
Task 3 -Data Evaluation and Reporting				
<i>Draft Phase II ESA Report</i>	1 week	September 16, 2019	September 20, 2019	Draft Phase II ESA Report
<i>VT DEC Review</i>	1 week	September 23, 2019	September 27, 2019	
<i>Final Phase II ESA Report</i>	3 days	September 28, 2019	September 30, 2019	Response to Comments memo, as needed. Final Phase II ESA Report

¹Laboratory analysis for PFAS is 10-15 business days; dioxin is 15 business days; all other 10 business days

3. Cost Estimate

The anticipated Costs to perform the Phase II ESA is provided in the following table; a detailed cost estimate, including laboratory analytical and drilling estimates, is attached.

Cost Estimate

Task	Professional Services	Consultant	Expenses	Total
Task 1 - Work Plan, Project Coordination, HASP, Dig Safe & Monitoring Well Assessment & Redevelopment	\$5,955	\$1,428	\$442	\$7,825
2 Task 2 - Soil Assessment	\$6,100	\$16,605	\$1,167	\$23,872
3 Task 3 - Groundwater Assessment	\$15,260	\$40,335	\$8,092	\$63,688
4 Task 4 – Data Evaluation and Reporting	\$6,090	\$0	\$0	\$6,090
TOTAL	\$33,405	\$58,368	\$9,702	\$101,475

If you have any questions or concerns regarding this update, please let me know

Sincerely,



David Abrahamson, P.E. (NH, NY, VT), PMP
Senior Environmental Engineer

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Attachment

Cc: Joe Ferrari, US EPA
Robert Reinhart, US EPA
Sue Fillion, Town of Brattleboro
Susan Westa, Windham Regional Commission
Dan Voisin, Stone Environmental
Lee Rosberg, Stone Environmental

Long Falls Paperboard Phase II ESA 19-015 DETAILED FEE & SCOPE DETAILS							
#	Staff Type	Name	Rate Per Unit	Unit	Amount	Subtotal	Scope Details
1	Task 1 - Project Coordination, SSQAPP, HASP, Digsafe, Development of Existing Wells						Prepare Work Plan in accordance with the I-Rule. Prepare a site specific Health and Safety Plan.
	Professional Services						
	Senior Professional 2	DAA	\$ 115 / hour	16	\$1,840		Includes obtaining and review of WSWMD files related to groundwater at the Site.
	Project Professional 2	LJR	\$ 100 / hour	20	\$2,000		
	Staff Professional 2	WR	\$ 80 / hour	8	\$640		Includes overall project management (DAA): coordination with team, and updates to stakeholders. Includes invoicing time.
	Senior Professional 3	KBW	\$ 115 / hour	1	\$115		
	Staff Professional 3	BMD	\$ 80 / hour	10	\$800		Stone will perform an initial site visit and dig safe mark-out.
	Staff Professional 1	DTC	\$ 70 / hour	8	\$560		
	Professional Services Summary			55		\$5,955	Staff: Senior Professional: - Overall Project Coordination (12) - Work Plan/HASP Review (4) Project Professional: - Draft Work Plan/HASP (16) - Review WSWMD information (4) Staff Professional: - Draft Work Plan Figures (8) - Utility location oversight/contingent well development (10) - Draft Work Plan Appendix A (8)
	Consultants*						
	Private Utility Locator		\$1,298 ea	1	\$1,428		A Stone subcontractor with Stone oversight will attempt to locate private utilities at the Site.
	Consultant Summary					\$1,428	
	Stone Equipment						
	Tacoma Mileage		\$0.58 / mile	452	\$262.16		
	GDS Trimble GEO 7X GPS		\$125 / day	1	\$125.00		- Draft Work Plan Figures (8) - Utility location oversight/contingent well development (10) - Draft Work Plan Appendix A (8)
	EAR Interface Probe		\$55 / day	1	\$55.00		
	Expense Summary					\$442	
	TASK SUBTOTAL					\$7,825	
2	Task 2 - Soil Assessment						Includes up to 5 standard work days of field work, 3 with Geoprobe.
	Professional Services						
	Project Professional 2	LJR	\$ 100 / hour	40	\$4,000		Deep subsurface drilling and labor effort are included in Task 3 below. Labor here is for Geoprobe and surface soil sampling.
	Staff Professional 1	DTC	\$ 70 / hour	30	\$2,100		
	Professional Services Summary			70		\$6,100	Mob/demob (travel) - Project and staff professional (4 hrs each)
	Consultants*						
	EAI - Mob/Demob		\$450 / ls	1	\$495		Dye Test Maintenance Area Floor Drain - Project and staff professional (2 hrs ea)
	EAI - Geoprobe, Support Vehicle, & Labor		\$1,450 / day	2	\$3,190		
	EAI - Consumables		\$200 / day	2	\$440		Surface soil sampling RECs 5, 6, 9 - Project and staff professional (6 hrs ea)
	EAI - Per Diem		\$325 / day	1	\$358		
	Alpha - Soil (See attched detail)		\$11,020 / ea	1	\$12,122		DU1 & DU2 Sampling - Project and staff professional (8 hrs ea)
	Consultant Summary					\$16,605	
	External Expenses						Subsurface soil sampling up to 25 fbg - Project and staff professional (10 hrs ea)
	Field Supplies & Equipment		\$25 / day	3	\$83		
	Per Diem/Meals (non lodging)		\$55 / day	3	\$182		WWT sludge sample collection - Project professional (4 hrs)
	Shipping/Freight		\$75 / ea	1	\$83		
	Lodging		\$94 / ea	2	\$207		All soil laboratory analysis included in this Task 2.
	Stone Equipment						
	Tacoma Mileage		\$0.58 / mile	300	\$174		
	EAR PID		\$90 / day	3	\$270		
	GDS Trimble GEO 7X GPS		\$125 / day	1	\$125		
	Stone Consumables						
	EAR PPE		\$15 / day/staff	3	\$45		
	Expense Summary					\$1,167	
	TASK SUBTOTAL					\$23,872	
3	Task 3 - Groundwater Assessment						Includes 9 days of field work, including 4 soil borings w/ samples and groundwater well installation and 5 additional well installations, groundwater well development and well completion (i.e. flush mount road boxes). All boring and well installations are assumed to be 80 feet below ground surface.
	Professional Services						
	Project Professional 2	LJR	\$ 100 / hour	98	\$9,800		Mob/demob (travel) - Project and staff professional (4 hrs staff professional and 8 hrs (2 trips) project professional) for soil boring & well installation. - Staff Professional (4 hrs) for groundwater sampling.
	Staff Professional 1	DTC	\$ 70 / hour	78	\$5,460		
	Professional Services Summary			176		\$15,260	Soil Boring, Soil Sampling and Well Installation - Project professional (90 hrs) - Staff professional (40 hrs)
	Consultants*						
	Drilex (see attached detail)		\$25,224 / LS	1	\$27,746		Groundwater Sampling - Staff professional (30 hrs); assumes 3 wells per day low flow sampling.
	Alpha - GW (see attached detail)		\$11,445 / ea	1	\$12,590		
			/		\$0		Cost estimate does not include sampling groundwater monitoring wells that existed in 1994, if located.
	Consultant Summary					\$40,335	
	External Expenses						Includes twelve 55-gallon drums for well development water, sampling purge water, and soil cuttings.
	Field Supplies & Equipment		\$25 / day	9	\$248		
	Per Diem/Meals (non lodging)		\$55 / day	16	\$968		Assumes soil cuttings will be contained in 55 gallon drums for one well to be installed in the former UST area where there was known contamination; the anular space for this will be completed with benontite grout above the well pack and benonite seal; for all other wells, the anular space will be backfilled with drill cuttings.
	Shipping/Freight		\$75 / ea	3	\$248		
	Lodging		\$94 / ea	10	\$1,034		Cost estimate does not include any waste disposal or managemet beyond initial containment.
	Rental-Field Equipment		\$135 ea	9	\$1,337		
	Watera Pump		\$92 day	9	\$911		
	Stone Equipment						
	Tacoma Mileage		\$0.58 / mile	600	\$348.00		
	EAR Electrical Generator - Honda Eu 2000		\$50.00 / day	12	\$600.00		
	Stone Consumables						
	EAR PPE		\$15 / day/staff	16	\$240		
	EAR 1/4" OD FEP Tubing SG		\$2.16 / foot	1000	\$2,160		
	Expense Summary					\$8,092	
	TASK SUBTOTAL					\$63,688	
4	Task 4 - Data Evaluation & Reporting						Includes: Daily briefs to VT DEC during field activities - assumes 8 days, 1 hr per day for Senior professional.
	Professional Services						
	Senior Professional 2	DAA	\$ 115 / hour	14	\$1,610		The estimate for Phase II Site Investigation Report DOES NOT INCLUDE a Method 2 Cummulative Risk Assessment (CRA) for surface soils as may be required based on analytical results (due to the updated IRule). A Method 2 CRA will only be performed as this budget allows.
	Project Professional 2	LJR	\$ 100 / hour	32	\$3,200		
	Staff Professional 2	WR	\$ 80 / hour	16	\$1,280		
	Professional Services Summary			62		\$6,090	
	Consultants*						
			\$0		\$0		
			\$0		\$0		
			\$0		\$0		
	Consultant Summary					\$0	

Long Falls Paperboard Phase II ESA
19-015

DETAILED FEE & SCOPE DETAILS

#	Staff Type	Name	Rate Per Unit	Unit	Amount	Subtotal	Scope Details
		<i>External Expenses</i>					
			\$0.000 /		\$0		
		<i>Stone Equipment</i>					
			\$0.00 /		\$0.00		
		<i>Stone Consumables</i>					
			\$0.00 /		\$0.00		
		<i>Expense Summary</i>				\$0	
		TASK SUBTOTAL				\$6,090	
		PROJECT TOTAL				\$101,475	

**Stone Environmental's standard mark-up on all Consultant and reimbursable project expenses is 10%.*

Sample Analytical Summary by Investigation Point, Phase II ESA, Long Falls Paperboard, Brattleboro, VT

Alpha Analytical

		VOCs		1,4-Dioxane	SVOCs		Dioxins / Furans		PCB Aroclors		PFAS					Metals (23 TAL + cyanide)		PAHs	Herbicides	
Investigation Location ID (Figures 1 & 2)	Matrix:	Soil	GW	GW	Soil	GW	Soil	GW	Soil	GW	Soil	GW	Sludge	SPLP	TOP	Soil	GW	Soil	Soil	REC(s) Addressed
	EPA Method:	8260C	8260C	8270D SIM	8270D	8270	8290 A	8290A	8082A	8082A	537(M)	537(M)	537(M)			6010	6010	8270D	8151A	
	Total:	15	15	15	15	11	4	3	6	3	7	18	3	1	1	12	12	7	7	
IP-01			1	1		1						1					1			RECs 3 & 4
IP-02		2	1	1	2	1						1				2	1			RECs 1, 2, 3 & 4
IP-03		2	1	1	2	1						1				2	1			RECs 1, 2, 3 & 4
IP-04			1	1		1						1					1			RECs 3 & 4
IP-05		1	1	1	1	1	1	1	1	1	1	1				1	1			RECs 3 & 4
IP-06		2	1	1	2	1	1	1	1	1	1	1				1	1			RECs 3 & 4
IP-07		2	1	1	2	1						1					1			RECs 1, 2, 3 & 4
IP-08			1	1		1						1					1			RECs 3 & 4
IP-09 & IP-10			2	2		2						2					2			RECs 3 & 4
IP-11																				REC 5
IP-12 & 13		2			2				2		2					2				REC 10
IP-14		1			1											1				REC 9
IP-15		1			1											1				REC 9
IP-16			1	1													1			REC 12
IP-17																				REC 6
IP-22 (WWTP Sludge)		1			1		1		1		1		3	1	1	1				N/A
DU-1																		3	3	REC 11
DU-2																		3	3	REC 11
Contingent Samples																				
IP-18 to 21																				REC 7
QA/QC Sample Estimate																				
Field Duplicates (5%)		1	1	1	1	1	1	1	1	1	1	1				1	1	1	1	
Field Blank (1/day GW PFAS) & EB (1 PFAS)												4								
Trip Blanks (1/day VOCs & PFAS)			3	3							1	3								

Shaded rows - no samples required based on field observations.

	Soil	GW	GW	Soil	GW	Soil	GW	Soil	GW	Soil	GW	Sludge	SPLP	TOP	Soil	GW	Soil	Soil	
Alpha Analytical Pricing (ea)	\$71	\$60	\$110	\$120	\$120	\$500	\$500	\$45	\$45	\$275	\$250	\$275	\$60	\$200	\$120	\$120	\$70	\$135	Total
Subtotals:	\$1,065	\$900	\$1,650	\$1,800	\$1,320	\$2,000	\$1,500	\$270	\$135	\$1,925	\$4,500	\$825	\$60	\$200	\$1,440	\$1,440	\$490	\$945	\$ 22,465
																			Total Soil: \$ 11,020
																			Total Groundwater: \$ 11,445

Deep Subsurface Borings and Groundwater Monitoring Well Installation Estimate - Drilex

	Qty	Unit	Unit Cost		SubTotal
CME Drill Rig (Truck) Mob/Demob	1	ea	\$ 585.00	\$	585.00
CME Drill Rig (Truck) Drill Rig and Crew	9	day	\$ 1,600.00	\$	14,400.00
CME Drill Rig (Truck) Overtime	0	hr	\$ 350.00	\$	-
Per Diem	7	nights	\$ 325.00	\$	2,275.00
Support Truck	2	wk	\$ 725.00	\$	1,450.00
2" PVC Riser	630	ft	\$ 5.50	\$	3,465.00
2" PVC Screen	90	ft	\$ 6.50	\$	585.00
2" PVC Slip Point	9	ea	\$ 10.00	\$	90.00
Sand (50 lb)	45	bag	\$ 11.50	\$	517.50
Benonite Chips	5	bag	\$ 28.00	\$	140.00
6" I.D. Road Box	9	ea	\$ 70.00	\$	630.00
2" Gripper Plug	9	ea	\$ 20.00	\$	180.00
Redi-Mix Concrete	9	bag	\$ 18.00	\$	162.00
17-H DOT Drum, 55 Gal for Well Purge Water & Soils	12	ea	\$ 62.00	\$	744.00
Total Estimate:				\$	25,223.50