



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
1 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

Direct Phone / 802.778.0428

Mobile / 603.370.0424

E-Mail / dabrahamson@stone-env.com

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							<p>Prepare Work Plan in accordance with the I-Rule. Prepare a site specific Health and Safety Plan.</p> <p>Includes obtaining and review of WSWMD files related to groundwater at the Site.</p> <p>Includes overall project management (DAA): coordination with team, and updates to stakeholders. Includes invoicing time.</p> <p>Stone will perform an initial site visit and dig safe mark-out.</p> <p><u>Staff:</u> 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)</p> <p>A Stone subcontractor with Stone oversight will attempt to locate private utilities at the Site.</p>	
Professional Services								
	Senior Professional 2	DAA	\$ 115 / hour	16	\$1,840			
	Project Professional 2	LJR	\$ 100 / hour	20	\$2,000			
	Staff Professional 2	WR	\$ 80 / hour	8	\$640			
	Senior Professional 3	KBW	\$ 115 / hour	1	\$115			
	Staff Professional 3	BMD	\$ 80 / hour	10	\$800			
	Staff Professional 1	DTC	\$ 70 / hour	8	\$560			
	<i>Professional Services Summary</i>			55		\$5,955		
Consultants*								
	Private Utility Locator		\$1,298 ea	1	\$1,428			
	<i>Consultant Summary</i>					\$1,428		
Stone Equipment								
	Tacoma Mileage		\$0.58 / mile	452	\$262.16			
	GDS Trimble GEO 7X GPS		\$125 / day	1	\$125.00			
	EAR Interface Probe		\$55 / day	1	\$55.00			
	<i>Expense Summary</i>					\$442		
TASK SUBTOTAL						\$7,825		
2 Task 2 - Soil Assessment								<p>Includes up to 5 standard work days of field work, 3 with Geoprobe.</p> <p>Deep subsurface drilling and labor effort are included in Task 3 below. Labor here is for Geoprobe and surface soil sampling.</p> <p>Mob/demob (travel) - Project and staff professional (4 hrs each)</p> <p>Dye Test Maintenance Area Floor Drain - Project and staff professional (2 hrs ea)</p> <p>Surface soil sampling RECs 5, 6, 9 - Project and staff professional (6 hrs ea)</p> <p>DU1 & DU2 Sampling - Project and staff professional (8 hrs ea)</p> <p>Subsurface soil sampling up to 25 fbgs - Project and staff professional (10 hrs ea)</p> <p>WWT sludge sample collection - Project professional (4 hrs)</p> <p>All soil laboratory analysis included in this Task 2.</p>
Professional Services								
	Project Professional 2	LJR	\$ 100 / hour	40	\$4,000			
	Staff Professional 1	DTC	\$ 70 / hour	30	\$2,100			
	<i>Professional Services Summary</i>			70		\$6,100		
Consultants*								
	EAI - Mob/Demob		\$450 / ls	1	\$495			
	EAI - Geoprobe, Support Vehicle, & Labor		\$1,450 / day	2	\$3,190			
	EAI - Consumables		\$200 / day	2	\$440			
	EAI - Per Diem		\$325 / day	1	\$358			
	Alpha - Soil (See attached detail)		\$11,020 / ea	1	\$12,122			
	<i>Consultant Summary</i>					\$16,605		
External Expenses								
	Field Supplies & Equipment		\$25 / day	3	\$83			
	Per Diem/Meals (non lodging)		\$55 / day	3	\$182			
	Shipping/Freight		\$75 / ea	1	\$83			
	Lodging		\$94 / ea	2	\$207			
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			
	<i>Expense Summary</i>					\$1,167		
TASK SUBTOTAL						\$23,872		
3 Task 3 - Groundwater Assessment							<p>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.</p> <p>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.</p> <p>Soil Boring, Soil Sampling and Well Installation - Project professional (90 hrs) - Staff professional (40 hrs)</p> <p>Groundwater Sampling - Staff professional (30 hrs); assumes 3 wells per day low flow sampling.</p> <p>Cost estimate does not include sampling groundwater monitoring wells that existed in 1994, if located.</p> <p>Includes twelve 55-gallon drums for well development water, sampling purge water, and soil cuttings.</p> <p>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 annular space for this will be completed with benonite grout above the well pack and benonite seal; for all other wells, the annular space will be backfilled with drill cuttings.</p> <p>Cost estimate does not include any waste disposal or management beyond initial containment.</p>	
Professional Services								
	Project Professional 2	LJR	\$ 100 / hour	98	\$9,800			
	Staff Professional 1	DTC	\$ 70 / hour	78	\$5,460			
	<i>Professional Services Summary</i>			176		\$15,260		
Consultants*								
	Drilex (see attached detail)		\$25,224 / LS	1	\$27,746			
	Alpha - GW (see attached detail)		\$11,445 / ea	1	\$12,590			
			/		\$0			
	<i>Consultant Summary</i>					\$40,335		
External Expenses								
	Field Supplies & Equipment		\$25 / day	9	\$248			
	Per Diem/Meals (non lodging)		\$55 / day	16	\$968			
	Shipping/Freight		\$75 / ea	3	\$248			
	Lodging		\$94 / ea	10	\$1,034			
	Rental-Field Equipment		\$135 ea	9	\$1,337			
	Water 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			
	<i>Expense Summary</i>					\$8,092		
TASK SUBTOTAL						\$63,688		
4 Task 4 - Data Evaluation & Reporting							<p>Includes:</p> <p>Daily briefs to VT DEC during field activities - assumes 8 days, 1 hr per day for Senior professional.</p> <p>The estimate for Phase II Site Investigation Report DOES NOT INCLUDE a Method 2 Cumulative 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.</p>	
Professional Services								
	Senior Professional 2	DAA	\$ 115 / hour	14	\$1,610			
	Project Professional 2	LJR	\$ 100 / hour	32	\$3,200			
	Staff Professional 2	WR	\$ 80 / hour	16	\$1,280			
	<i>Professional Services Summary</i>			62		\$6,090		
Consultants*								
			\$0		\$0			
			\$0		\$0			
			\$0		\$0			
	<i>Consultant Summary</i>					\$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

Investigation Location ID (Figures 1 & 2)	VOCs		1,4-Dioxane	SVOCs		Dioxins / Furans		PCB Aroclors		PFAS					Metals (23 TAL + cyanide)		PAHs	Herbicides	REC(s) Addressed	
	Matrix:	Soil	GW	GW	Soil	GW	Soil	GW	Soil	GW	Soil	GW	Sludge	SPLP	TOP	Soil	GW	Soil		Soil
	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			RECs 3 & 4	
IP-02		2	1	1	2	1									2	1			RECs 1, 2, 3 & 4	
IP-03		2	1	1	2	1									2	1			RECs 1, 2, 3 & 4	
IP-04			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			RECs 1, 2, 3 & 4	
IP-08			1	1		1										1			RECs 3 & 4	
IP-09 & IP-10			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