

Targeted Brownfield Assessment & Cleanup of Former Manufactured Gas Plant Site, 260 River Street, Montpelier, Vermont

STONE
ENVIRONMENTAL
100% EMPLOYEE-OWNED

Services / Expertise

EPA-Funded Brownfield Redevelopment –VT
DEC Brownfields Technical Assistance Grant
Site-Specific Quality Assurance Project Plan
Phase I ESA (ASTM E1527-13)
Phase II ESA (ASTM E1903-11)
Groundwater and Soil Sampling
Supplemental Site Investigation / Phase III
ESA
Vapor Intrusion Investigation
Asbestos and Building Material Abatement
Remedial Action Planning – ECAA & CAP
Preparation of Plans, Specifications, and
Engineering Documents,
Green & Sustainable Remediation
PCBs in Air Assessment

Markets

Private Industry, State Government

Project Location

Montpelier, Vermont

Date Completed

2017 to present

Project Owner

260 River Corporation, LLC
260 River Street Montpelier Properties, LLC.

Project ID#

16-163

Project Team

Lee Rosberg (Project Manager), Dan Voisin,
Katrina Mattice, PE, Peter Lazorchak, PE,
LEED AP, Gabe Bolin, PE, Amy Macrellis,
Branden Martin, PE, Laura Rajnak, Barb
Patterson, Jodie Wright

Subcontractors

US Ecology (NRC Services), Phoenix
Environmental, Con-Test Laboratories,
Absolute Spill Response, Cascade Technical
Services



Coffer dam and coal tar excavation cells along the bank of the Winooski River in Montpelier, Vermont. The former building supply retailer building has been redeveloped as the headquarters for a wastewater service contractor.

IN THE SPRING OF 2017, Stone was hired by VT DEC to assess the site of a former manufactured gas plant (MGP) on the banks of the Winooski River. A Site-Specific Quality Assurance Project Plan was designed to determine whether Recognized Environmental Conditions (RECs) identified in a previous Phase I ESA resulted in releases of contaminants to the environment and, to define the degree, nature, and extent of contamination. Stone developed a Conceptual Site Model (CSM) to evaluate contaminants, release mechanisms, and the site's geologic setting to assess fate and transport of contaminants of concern.

Phase II ESA field work included advancing soil borings using a Geoprobe, collection of soil samples for analysis of several contaminants of concern, installation, development, and low-flow sampling of groundwater monitoring wells, installation and collection of groundwater samples from temporary sampling points, collection of asphalt samples for polychlorinated biphenyl (PCB) analysis, mapping the extent of coal tar discovered along the Winooski River, and collection of surface water and sediment samples from the Winooski River. The Phase II ESA identified releases of coal tar from historic MGP operations that resulted in groundwater, soil, and sediment contamination requiring cleanup under Vermont regulations.

A Supplemental Site Investigation (SSI) was completed in January 2018 to evaluate the degree and extent of contaminants identified during the Phase II ESA and assess their potential impacts to sensitive receptors and support an Evaluation of Corrective Action Alternatives (ECAA). The SSI included a vapor intrusion assessment into the existing Site building and within the footprint of a proposed building, removal of asbestos-containing floor tiles, and a soil quality assessment of soils that will be disturbed during proposed site redevelopment.

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In the fall of 2018, Stone submitted an ECAA report to evaluate and select appropriate corrective actions to prevent unacceptable risks to human health and the environment through various exposure pathways to known site contaminants. Three remedial alternatives were developed for each area of concern, specifically subsurface coal tar contamination within the former MGP, coal tar along the bank of the Winooski River, and contaminated soils within the developable portion of the site. Comparison criteria for corrective action alternatives included protectiveness, compliance with applicable regulations long-term effectiveness and performance, short term effectiveness, feasibility of implementation, environmental impact/sustainability, cost, and community acceptance. The project team selected the following remedial alternatives:

- Sub-surface coal tar: monitored natural attenuation with institutional controls.
- Riverbank coal tar: excavation with off-site disposal.
- Development area soils: on-site soil management with engineered barriers and institutional controls.

In August 2019, Stone submitted a partial Corrective Action Plan (CAP) for completing the preferred cleanup alternatives related to coal gasification wastes. The CAP was approved by Vermont DEC in September 2019 and Stone secured permits with the Vermont Rivers Program and US Army Corp of Engineers to install a temporary coffer dam within the Winooski River, excavate coal tar for on-site stabilization prior to off-site disposal, and site restoration.

Stone prepared specifications and coordinated cleanup efforts with the site owner's preferred contractors. Cleanup activities began in late November 2019 using local contractors (Dubois Construction and Malone Properties), who cleared vegetation, constructed a coal tar stockpile pad to store and dewater excavated coal tar and sediment prior to off-site disposal. An approximately 280-foot-long cofferdam was temporarily installed around the coal tar excavation area and a silt curtain was installed in the Winooski River around each coal tar excavation area prior to installation of the coffer dam and coal tar excavation. In December 2019, approximately 700 tons of coal tar and sediment were excavated from the bank and channel of the Winooski River and transported to Casella's landfill in Clinton County, New York for disposal.



Top: Tar released to the ground surface on the bank of the Winooski River. Bottom: Excavation crews employ a coffer dam in the Winooski River while removing coal tar contaminated soils. Photos by Stone Environmental

In July 2020, Stone prepared a Soil Management Plan and Partial CAP for the developable portion of the site. Green spaces, the access drive, parking lot, sidewalks, and new building slab were constructed as engineered barriers with all PAH contaminated soil managed on-site. Stone provided oversight of site redevelopment between August and December 2020 to ensure compliance with the Soil Management Plan and Partial CAP. Following streambank restoration and installation of a fence, the prospective purchaser received a Certificate of Completion as an enrollee of Vermont's Brownfields Reuse and Environmental Liability Limitation program (BRELLA) on June 23, 2022. Stone is conducting annual groundwater monitoring downgradient of the former MGP where coal tar remains in the subsurface as required in the COC.