

**REMOVAL PROGRAM  
PRELIMINARY ASSESSMENT/  
SITE INVESTIGATION REPORT  
FOR THE  
CARIBOU POWER PLANT SITE  
CARIBOU, AROOSTOOK COUNTY, MAINE  
15 NOVEMBER 2022**

Prepared For:

U.S. Environmental Protection Agency  
Region I  
Superfund and Emergency Management Division  
5 Post Office Square, Suite 100  
Boston, Massachusetts 02109-3912

CONTRACT NO. 68HE0120D0001

TASK ORDER NO. 68HE0120F0027

TO/AD NO.: TOFP-01-22-10-0001

TASK NO.: 0169

DC NO.: R-50515

Submitted By:

Weston Solutions, Inc.  
Region I  
Superfund Technical Assessment and Response Team  
101 Billerica Avenue, Building 5, Suite 103  
North Billerica, Massachusetts 01862

May 2023

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## I. Preliminary Assessment/Site Investigation Forms



## REMOVAL PRELIMINARY ASSESSMENT

**Operator:** City of Caribou  
**Address:** 25 High Street, Caribou, ME

**Telephone:** 207-493-3324

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### Site Access

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**Authorizing Person:** Penny Thompson – City of Caribou  
**Date:** 18 October 2022      ☒ **Obtained**      ☐ **Verbal**  
**Telephone:**      ☐ **Not Obtained**      ☐ **Written**

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### Historical Preservation

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☐ **Site is Historically Significant or Eligible for Historic Preservation**

#### Contacts Identified

**1) State Historical Preservation Officer (SHPO)**

**Name:** Kirk F. Mohnney      **Telephone:** 207-287-2132

**2) Tribal Historical Preservation Officer (THPO)**

**Name:** Kendyl Reis      **Telephone:** 207-764-1972 ext 161

**Comments:**

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### Physical Site Characterization

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**Background Information:** The Caribou Power Plant Site (the Site) is located at 142 Lower Lyndon Street in Caribou, Aroostook County, Maine (ME). The Site (8 acres) consists of the Caribou Generating Station Steam Plant, Diesel Plant, Bulk Plant, and outbuildings, with vacant parcels to the north and south. The Site is identified as Lots 148 and 149AA on Tax Map 25 and is owned by Merlin One LLC (Lot 148) and the City of Caribou (Lot 149AA). The surrounding area consists of undeveloped woodlands to the south and vacant parcels to the north. General surface topography of the area is flat with a steep embankment near the Aroostook River. The Site is bound by the Aroostook River to the east and two sets of railroad tracks to the west and Route 1 to the east. The north parcel is grassed (former electrical regulator station), the south parcel is wooded (public boat launch), and the yard between the Steam Plant and Diesel Plant is paved. The Bulk Plant consists of a 240,000-gallon diesel aboveground storage tank (AST) and two 420,000-gallon Bunker C ASTs, with associated aboveground and underground piping and railcar and tanker truck offloading stations. The Bulk Plant is equipped with an earthen berm. The Steam Plant and Diesel Plant are equipped with multiple discharge outfalls near the Aroostook River for process water (steam generation, diesel engine cooling) and facility drainage (floor drains, roof drains). The Bulk Plant is also equipped with discharge outfalls for process water (internal heating coils) and dike drainage (earthen berm).

The Caribou Dam and former hydroelectric plant were constructed in 1889 and operated by the Caribou Water, Light and Power Company through the 1940s. Historical maps indicate that the Site was previously developed, with a shed south of the hydroelectric plant, and a dwelling, two sheds, and stone crusher on the north parcel. The north parcel was previously developed with an electrical regulator station. The Site was acquired by Maine Public Service Company (Emera

## REMOVAL PRELIMINARY ASSESSMENT

Maine, Versant Power) in 1943, and the existing Diesel Plant and Steam Plant were constructed in 1949. Additional land for the Bulk Plant was acquired in 1950, and the ASTs for Bunker C (No. 6 fuel oil) and diesel were constructed in 1953. The Site was acquired by PDI New England (WPS New England, Algonquin Northern Maine Gen Co.) in 1999. Records indicate that the Bulk Plant ASTs were removed from service in 2005 (diesel) and 2006 (Bunker C), but the tanks are not permanently closed as is required under 40 CFR 112.2 of the Spill Prevention, Control and Countermeasures (SPCC) regulations. The Steam Plant was deactivated in 2011; and the Diesel Plant was deactivated in 2012. Merlin One LLC acquired the Site in 2013. The Site, including the north and south parcels, is currently owned by the City of Caribou.

The Site includes a 10,700-square-foot Steam Plant, a 12,200-square-foot Diesel Plant, the three large ASTs, and several outbuildings, including an Oil Tank Building, Oil Storage Building, Pump Station, Pump House, and two storage buildings (North and South Storage Buildings). The Steam Plant consists of two steam turbines, and the Diesel Plant consists of five diesel engines. All floor drains at the facility discharge to municipal sewer or discharge outfalls near the Aroostook River. A 15,000-gallon diesel AST is located inside the Oil Tank Building with underground piping to the Steam Plant. ASTs at the Steam Plant include a 300-gallon diesel heating boiler day tank, 275-gallon diesel tank, and 275-gallon waste oil tank. ASTs at the Diesel Plant include a 275-gallon waste oil tank, 1,000-gallon “dirty” waste oil tank, and 1,000-gallon “clean” waste oil tank. Waste oil was previously treated on site at the Diesel Plant (in a centrifuge refinery). An oil/water separator is located inside the Diesel Plant. Two 1,000-gallon underground storage tank (USTs) for regular and unleaded gasoline were installed in 1979 and removed in 1991. There is no documentation regarding subsurface conditions during UST removals at the Site. Records indicate that there were multiple releases of hazardous materials at the site over the years, primarily involving diesel fuel or Bunker C fuel, but also including lubricating oils and transformer oils containing polychlorinated biphenyls (PCBs). PCB concentrations reportedly included <50 parts per million (ppm) and 57 ppm.

County Environmental Engineering, Inc. (CEE) completed a Phase I Environmental Site Assessment (ESA) in 2021 for the Maine Department of Environmental Protection (MEDEP), which included a Site visit. Several diesel and waste oil tanks and numerous drums of waste oil, transformer oil, lube oil, antifreeze, and degreaser were observed at the Site. The steam turbines and diesel engines are equipped with oil-filled operational equipment for Bunker C, diesel, turbine oil, lube oil, and waste oil. Known and suspected asbestos-containing materials (ACM), lead- and mercury-containing components, and universal and hazardous wastes were observed at the Site. Potential ACM included thermal systems insulation, equipment components, stored materials (fire brick, pipe insulation), and building materials (surfacing material, roofing, caulking). Due to the age of the facility, the potential exists for lead-based paint on buildings, equipment, tanks, and piping. Universal, hazardous, and other wastes observed at the Site include potential mercury-containing fixtures and components (switches, controls), lead batteries, laboratory and boiler treatment chemicals, and retail-sized containers of paints, solvents, and other flammables. Fire suppression systems containing per- and polyfluoroalkyl substances (PFAS) may exist at the Site.

A Phase II ESA was completed in May 2022 by CEE for MEDEP to address recognized environmental conditions (RECs) identified at the Site in the Phase I ESA. Sixteen soil samples (including one duplicate), six groundwater samples (including one duplicate), and three porewater samples were collected at the Site. Petroleum and hazardous substances were detected in site soils, but below regulatory guidelines. Volatile organic compounds (VOCs) were not detected in soil

## REMOVAL PRELIMINARY ASSESSMENT

samples above the laboratory Quantitation Limit (QL). PCBs were detected in two samples at a maximum of 0.2 milligrams per kilogram (mg/kg). Volatile petroleum hydrocarbons (VPH) were detected in SS03; extractable petroleum hydrocarbons (EPH) were detected in multiple samples; and elevated metals (cadmium at 6.88 mg/kg, copper at 226 mg/kg, and zinc at 2,590 mg/kg) were detected, but below the MEDEP Remedial Action Guidelines for Contaminated Sites (RAGs). Arsenic was detected in multiple samples above the leaching to groundwater RAG, at a maximum of 8.6 mg/kg, but below the undeveloped Maine background upper prediction limit. VOCs, VPH, PCBs, and priority pollutant metals were not detected in groundwater or porewater samples above the laboratory QL. Tanks, drums, oil-filled equipment, lead- and mercury-containing components, and universal and hazardous wastes were observed at the Steam and Diesel Plants, including a hazardous and universal waste storage area and flammable cabinets in the Steam Plant. A storage building contained suspect ACM insulation and fire bricks. Numerous drums of waste oil, transformer oil, lube oil, antifreeze, and degreaser were observed in the Oil Storage Building.

A Hazardous Building Materials Survey (HBMS) was completed in May 2022 by CEE for MEDEP, including an asbestos identification survey. Sixty-four (64) bulk samples of suspect ACM were collected from the Steam Plant, including window glazing and caulk, tar and gravel roof, asphalt shingles, ceiling tile, sheetrock, joint compound, floor tile, mastic, transite board, pipe insulation, surfacing material, interior boiler insulation, electrical wire coating, and gaskets. Twenty-four (24) bulk samples of suspect ACM were collected from the Diesel Plant, including window glazing and caulk, tar and gravel roof, ceiling tile, cementitious flooring, floor tile, and mastic. Twelve (12) bulk samples of suspect ACM, window caulk, tar, and gravel roof were collected from the diesel Pump House. Six (6) bulk samples of suspect ACM window glazing and caulk were collected from the Pump Station, Oil Storage Building, and North Storage Building. Three (3) bulk samples of suspect ACM surfacing material were collected from the interior of the Pump Station. Six (6) bulk samples of suspect ACM tar paper and asphalt shingles were collected from the Oil Tank Building. Five (5) bulk samples of suspect ACM fire brick, pipe, and block insulation were collected from the South Storage Building. Bulk samples of suspect ACM were submitted for laboratory analysis by USEPA Method 600/R-93/116 using polarized light microscopy (PLM). Non-friable organically bound materials were analyzed with gravimetric preparation. Bulk samples from each homogeneous area were analyzed until a positive result was obtained or all samples tested negative for asbestos.

ACM ( $\geq 1\%$  asbestos) was identified at the Steam Plant, Diesel Plant, Oil Storage Building, Pump Station, diesel Pump House, and storage buildings. The estimated quantity of ACM window glazing and caulk is based on the surface area of exterior windows.

**Description of Substances Possibly Present, Known or Alleged:** ACM, oils, greases, antifreeze, mercury, lead-based paint, laboratory and boiler treatment chemicals, and retail-sized containers of paints, solvents, and other flammables.

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### Existing Analytical Data

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( ) **Real-Time Monitoring Data:**

(X) **Sampling Data:** Phase II ESA, May 2022, by CEE for MEDEP; Hazardous Building Materials Survey, May 2022, by CEE for MEDEP.

## REMOVAL PRELIMINARY ASSESSMENT

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### Potential Threat

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Description of potential hazards to environment and/or population-identify any of the criteria for a Removal Action (from NCP) that may be met by the site under 40 CFR 300.415 [b] [2].

- i. Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances, pollutants or contaminants.
- iii. Hazardous substances or pollutants or contaminants in drums, barrels, tanks, or other bulk storage containers, that may pose a threat of release.
- v. Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released.
- vi. Threat of fire or explosion.
- vii. The availability of other appropriate federal or state response mechanisms to respond to the release.
- viii. Other situations or factors that may pose threats to public health or welfare or the environment.

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### Prior Response Activities

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☐ PRP                      ☐ STATE                      ☐ FEDERAL                      ☐ OTHER  
Brief Description: None.

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### Priority for Site Investigation

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☒ High                      ☐ Medium                      Low ☐                      None ☐  
Comments:

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### Report Generation

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<b>Originator:</b>	Paul Callahan	<b>Date:</b>	17 November 2022
<b>Affiliation:</b>	Weston Solutions, Inc. (START)	<b>Telephone:</b>	(978) 621-1203
<b>Contract No.</b>	68HE0120D0001	<b>Contract Name:</b>	START V
<b>Task Order No.</b>	68HE0120F0027	<b>Task Order:</b>	CRT
<b>AD No.:</b>	TOFP-01-22-10-0001	<b>Task No.:</b>	0169



**EPA REGION I  
REMOVAL SITE INVESTIGATION**

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**Inspection Information**

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**Site Name:** Caribou Power Plant      **Address:** 142 Lower Lyndon Street  
**Town:** Caribou      **County:** Aroostook      **State:** Maine (ME)  
**Date of Inspection:** 15 November 2022      **Time of Inspection:** 0800 hours  
**Weather Conditions:** 24 ° Fahrenheit, clear in morning with increasing cloudiness, calm  
**Site Status at Time of Inspection:**      ☐ **ACTIVE**      ☒ **INACTIVE**  
**Comments:**

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**Agencies/Personnel Performing Inspection**

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	<u><b>Names</b></u>	<u><b>Program</b></u>
<input checked="" type="radio"/> <b>EPA:</b>	Catherine Young Zachary Taylor	U.S. Environmental Protection Agency (EPA) Region I, Emergency Planning and Response Branch (EPRB), On-Scene Coordinator (OSC)
<input checked="" type="radio"/> <b>EPA Contractor:</b>	Paul Callahan Bill Mahany	Weston Solutions, Inc. (WESTON), Superfund Technical Assessment and Response Team V (START)
<input checked="" type="radio"/> <b>State:</b>	Bill Sheehan*	Maine Department of Environmental Protection (ME DEP)
<input checked="" type="radio"/> <b>Local:</b>	Ken Murchison*	City of Caribou

\* Met with OSC Young on site prior to the inspection, but did not participate in the inspection.

**Current Owner Based on Field Interview:** City of Caribou

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**Physical Site Characteristics**

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<u><b>Parameter</b></u>	<u><b>Quantities/Extent</b></u>
<input type="radio"/> <b>Cylinders:</b>	
<input checked="" type="radio"/> <b>Drums:</b>	Multiple drums throughout facility, not inspected.
<input type="radio"/> <b>Lagoons:</b>	
<input checked="" type="radio"/> <b>Tanks:</b> <input checked="" type="radio"/> <b>Above:</b>	Multiple tanks throughout the facility, not inspected.
<input type="radio"/> <b>Below:</b>	
<input checked="" type="radio"/> <b>Asbestos:</b>	Suspected asbestos-containing materials (ACM) in Steam Plant, Diesel Plant, and South Storage Building.
<input type="radio"/> <b>Piles:</b>	

## REMOVAL SITE INVESTIGATION

☐ Stained Soil:

☐ Sheens:

☐ Stressed Vegetation:

☐ Landfill:

☒ Population in Vicinity: Residential areas approximately 400 feet to the east, 600 feet to the north.

☐ Wells: ☐ Drinking:

☐ Monitoring:

☐ Other:

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### Physical Site Observations

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Comments: The Site is adjacent to the Aroostook River to the west. The Site includes a Steam Plant, Diesel Plant, Bulk Plant [three large aboveground storage tanks (ASTs)], Diesel Pump House, Northern Storage Building, Southern Storage Building, Oil Tank Building, Oil Storage Building, and Pump Station. Only the Steam Plant, Diesel Plant, and Southern Storage Building were investigated.

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### Field Sampling and Analysis

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Matrix	Field Instrumentation Readings				
	CGI/O <sub>2</sub> (%)	RAD (μR/hr)	PID (ppm)	FID (ppm)	Other
Background:					
Air:	0/20.8	< 1 mr/hr	0		
Soil:					
Surface Water:					
Tanks:					
Drums:					
Vats:					
Lagoons:					
Spillage:					
Run Off:					
Piles:					
Sediments:					
Groundwater:					
Other:					

CGI/O<sub>2</sub> (%) = Combustible Gas Indicator/Oxygen (percentage)

PID = PhotoIonization Detector (parts per million)

RAD (μR/hr) = Radiation (microRoentgens per hour)

FID (ppm) = Flame Ionization Detector (parts per million)

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### Field Quality Control Procedures

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☒ SOP Followed

☐ Deviation from SOP

Comments: Sampling was conducted according to the site Sampling and Analysis Plan (SAP), prepared as a separate document entitled *Sampling and Analysis Plan for the Caribou Power Plant Site, Caribou, Aroostook County, Maine*, dated November 2022.

## REMOVAL SITE INVESTIGATION

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### Description of Sampling Conducted

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On 15 November 2022, START personnel collected fifteen bulk asbestos samples (ACM-01 through ACM-15). All samples were submitted to EPA Laboratory Services and Applied Sciences Division (LSASD), New England Regional Laboratory (NERL), located in North Chelmsford, Massachusetts, for asbestos analysis.

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### Analyses

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Analytical Parameter	Media	Laboratory
<input type="checkbox"/> VOC	<input type="checkbox"/> AIR	<input checked="" type="checkbox"/> NERL
<input type="checkbox"/> PCB	<input type="checkbox"/> WATER	<input type="checkbox"/> CLP
<input type="checkbox"/> PESTICIDE	<input type="checkbox"/> SOIL	<input type="checkbox"/> PRIVATE
<input type="checkbox"/> METALS	<input checked="" type="checkbox"/> SOURCE	<input type="checkbox"/> DAS
<input type="checkbox"/> CYANIDE	<input type="checkbox"/> SEDIMENT	<input type="checkbox"/> SOW
<input type="checkbox"/> SVOC	<input type="checkbox"/> SOIL GAS	<input type="checkbox"/> FIELD
<input type="checkbox"/> TOXICITY		
<input type="checkbox"/> DIOXIN		
<input checked="" type="checkbox"/> ASBESTOS		
<input type="checkbox"/> OTHER		

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### Receptors

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#### Comments

☐ Drinking Water:    ☐ Private:  
   ☐ Municipal:

☐ Groundwater:

☒ Unrestricted Access:

☒ Population in Proximity:

☒ Sensitive Ecosystem:

☐ Other:

Evidence of continual trespassing was documented.  
Residential areas are located approximately 400 feet to the east, 600 feet to the north.  
The Aroostook River is located directly to the east.

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### Additional Procedures for Site Determination

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☐ Biological Evaluation

☐ ATSDR

☐ None

To be determined by the On-Scene Coordinator (OSC).

## REMOVAL SITE INVESTIGATION

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### Site Determination

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Depending on further information, criteria that may be met by the site include 40 CFR 300.415 [b] [2], parts:

- i. Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances, pollutants or contaminants.
- iii. Hazardous substances or pollutants or contaminants in drums, barrels, tanks, or other bulk storage containers, that may pose a threat of release.
- v. Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released.
- vi. Threat of fire or explosion.
- vii. The availability of other appropriate federal or state response mechanisms to respond to the release.
- viii. Other situations or factors that may pose threats to public health or welfare or the environment.

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### Report Generation

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<b>Originator:</b>	Paul Callahan	<b>Date:</b>	17 November 2022
<b>Affiliation:</b>	Weston Solutions, Inc. (START)	<b>Telephone:</b>	(978) 621-1203
<b>Contract No.</b>	68HE0120D0001	<b>Contract Name:</b>	START V
<b>Task Order No.</b>	68HE0120F0027	<b>Task Order:</b>	CRT
<b>AD No.:</b>	TOFP-01-22-10-0001	<b>Task No.:</b>	0169

## II. Narrative Chronology

## **Narrative Chronology**

### **Introduction**

The Caribou Power Plant Site (the Site) is located at 142 Lower Lyndon Street in Caribou, Aroostook County, Maine (ME) (see Appendix A, Figure 1, Site Location Map) [1]. The Site (8 acres) consists of the Caribou Generating Station, including the Steam Plant, Diesel Plant, Bulk Plant, and outbuildings, with vacant parcels to the north and south (see Appendix A, Figure 2, Site Diagram) [2]. The Site is identified as Lots 148 and 149AA on Tax Map 25 and owned by Merlin One LLC (Lot 148) and the City of Caribou (Lot 149AA). The surrounding area consists of undeveloped woodlands to the south and vacant parcels to the north. General surface topography of the area is flat with a steep embankment near the Aroostook River. The Site is bound by the Aroostook River to the east and two sets of railroad tracks and Route 1 to the west. The north parcel is grassed (former electrical regulator station), the south parcel is wooded (public boat launch), and the yard between the Steam Plant and Diesel Plant is paved. The Bulk Plant consists of a 240,000-gallon diesel aboveground storage tank (AST) and two 420,000-gallon Bunker C ASTs, with associated aboveground and underground piping and railcar and tanker truck offloading stations.

The Caribou Dam and former hydroelectric plant were constructed in 1889 and operated by the Caribou Water, Light and Power Company through the 1940s. Historical maps indicate that the Site was previously developed, with a shed south of the hydroelectric plant, and a dwelling, two sheds, and stone crusher on the north parcel. The north parcel was previously developed with an electrical regulator station. The Site was acquired by Maine Public Service Company (Emera Maine, Versant Power) in 1943, and the existing Diesel Plant and Steam Plant were constructed in 1949. Additional land for the Bulk Plant was acquired in 1950, and the ASTs for Bunker C (No. 6 fuel oil) and diesel were constructed in 1953. The Site was acquired by PDI New England (WPS New England, Algonquin Northern Maine Gen Co.) in 1999. Records indicate that the Bulk Plant ASTs were removed from service in 2005 (diesel) and 2006 (Bunker C); but the tanks are not permanently closed as is required under 40 CFR 112.2 of the Spill Prevention, Control and Countermeasures (SPCC) regulations. The Steam Plant was deactivated in 2011; and the Diesel Plant was deactivated in 2012. Merlin One LLC acquired the Site in 2013. The Site, including the north and south parcels, is currently owned by the City of Caribou.

The Site includes a 10,700-square-foot Steam Plant, a 12,200-square-foot Diesel Plant, the three large ASTs, and several outbuildings, including an Oil Tank Building, Oil Storage Building, Pump Station, Pump House, and North and South Storage Buildings. The Steam Plant consists of two steam turbines, and the Diesel Plant consists of five diesel engines. All floor drains at the facility discharge to municipal sewer or discharge outfalls near the Aroostook River. A 15,000-gallon diesel AST is located inside the Oil Tank Building, with underground piping to the Steam Plant. ASTs at the Steam Plant include a 300-gallon diesel heating boiler day tank, a 275-gallon diesel tank, and a 275-gallon waste oil tank. ASTs at the Diesel Plant include a 275-gallon waste oil tank, a 1,000-gallon “dirty” waste oil tank, and a 1,000-gallon “clean” waste oil tank. Waste oil was previously treated on site at the Diesel Plant (in a centrifuge refinery). An oil/water separator is located inside the Diesel Plant. Two 1,000-gallon underground storage tanks (USTs) for regular and unleaded gasoline were installed in 1979 and removed in 1991. There is no documentation

regarding subsurface conditions during UST removals at the Site. Records indicate that there were multiple releases of hazardous materials at the site over the years, primarily involving diesel fuel or Bunker C fuel, but also including lubricating oils and transformer oils containing polychlorinated biphenyls (PCBs). PCB concentrations reportedly included < 50 parts per million (ppm) and 57 ppm.

County Environmental Engineering, Inc. (CEE) completed a Phase I Environmental Site Assessment (ESA) in 2021 for the Maine Department of Environmental Protection (MEDEP), which included a Site visit. Diesel and waste oil tanks and numerous drums of waste oil, transformer oil, lube oil, antifreeze, and degreaser were observed at the Site [3]. The steam turbines and diesel engines were equipped with oil-filled operational equipment for Bunker C, diesel, turbine oil, lube oil, and waste oil. Known and suspected asbestos-containing material (ACM), lead- and mercury-containing components, and universal and hazardous wastes were observed at the Site. Potential ACM included thermal systems insulation, equipment components, stored materials (fire brick, pipe insulation) and building materials (surfacing material, roofing, caulking). Due to the age of the facility, the potential existed for lead-based paint on buildings, equipment, tanks, and piping. Universal, hazardous, and other wastes observed at the Site included potential mercury-containing fixtures and components (switches, controls), lead batteries, laboratory and boiler treatment chemicals, and retail-sized containers of paints, solvents, and other flammables. Fire suppression systems containing per- and polyfluoroalkyl substances (PFAS) may exist at the Site.

A Phase II ESA was completed in May 2022 by CEE for MEDEP to address recognized environmental conditions (RECs) identified at the Site in the Phase I ESA [4]. Sixteen soil samples (including one duplicate), six groundwater samples (including one duplicate), and three porewater samples were collected at the Site. Petroleum and hazardous substances were detected in site soils, but below regulatory guidelines. Volatile organic compounds (VOCs) were not detected in soil samples above the laboratory Quantitation Limit (QL). PCBs were detected in two samples at a maximum of 0.2 milligrams per kilogram (mg/kg). Volatile petroleum hydrocarbons (VPH) were detected in SS03; extractable petroleum hydrocarbons (EPH) were detected in multiple samples; and elevated metals (cadmium at 6.88 mg/kg, copper at 226 mg/kg, and zinc at 2,590 mg/kg) were detected, but below the MEDEP Remedial Action Guidelines for Contaminated Sites (RAGs). Arsenic was detected in multiple samples above the leaching to groundwater RAG, at a maximum of 8.6 mg/kg, but below the undeveloped Maine background upper prediction limit. VOCs, VPH, PCBs, and priority pollutant metals were not detected in groundwater or porewater samples above the laboratory QL. Tanks, drums, oil-filled equipment, lead- and mercury-containing components, and universal and hazardous wastes were observed at the Steam and Diesel Plants, including a hazardous and universal waste storage area and flammable cabinets in the Steam Plant. The South Storage Building contained suspect ACM insulation and fire bricks. Numerous drums of waste oil, transformer oil, lube oil, antifreeze, and degreaser were observed in the Oil Storage Building.

A Hazardous Building Materials Survey (HBMS) was completed in May 2022 by CEE for MEDEP, including an asbestos identification survey [5]. Sixty-four (64) bulk samples of suspect ACM were collected from the Steam Plant, including window glazing and caulk, tar and gravel roof, asphalt shingles, ceiling tile, sheetrock, joint compound, floor tile, mastic, transite board, pipe insulation, surfacing material, interior boiler insulation, electrical wire coating, and gaskets. Twenty-four (24) bulk samples of suspect ACM were collected from the Diesel Plant, including

window glazing and caulk, tar and gravel roof, ceiling tile, cementitious flooring, floor tile, and mastic. Twelve (12) bulk samples of suspect ACM, window caulk, tar and gravel roof were collected from the Diesel Pump House. Six (6) bulk samples of suspect ACM window glazing and caulk were collected from the Pump Station, Oil Storage Building, and North Storage Building. Three (3) bulk samples of suspect ACM surfacing material were collected from the interior of the Pump Station. Six (6) bulk samples of suspect ACM tar paper and asphalt shingles were collected from the Oil Tank Building. Five (5) bulk samples of suspect ACM fire brick, pipe, and block insulation were collected from the South Storage Building. Bulk samples of suspect ACM were submitted for laboratory analysis by USEPA Method 600/R-93/116 using polarized light microscopy (PLM). Non-friable organically bound materials were analyzed with gravimetric preparation. Bulk samples from each homogeneous area were analyzed until a positive result was obtained or all samples tested negative for asbestos.

ACM ( $\geq 1\%$  asbestos) was identified at the Steam Plant, Diesel Plant, Oil Storage Building, Pump Station, Diesel Pump House, and Storage Buildings. The estimated quantity of ACM window glazing and caulk is based on the surface area of exterior windows.

### **Site/Sampling Activities**

On 15 November 2022, U.S. Environmental Protection Agency (EPA) On-Scene Coordinators (OSCs) Catherine Young and Zachary Taylor met Weston Solutions, Inc. (Weston) Superfund Technical Assessment and Response Team (START) members Paul Callahan and Bill Mahany at the Site. The purpose of the Site visit was to conduct sampling as part of a Preliminary Assessment/Site Investigation (PA/SI). Bill Sheehan from MEDEP and Ken Murchison from the City of Caribou met with OSC Young at the Site, but did not participate in the inspection. Weather conditions were 24 degrees Fahrenheit, with partly cloudy skies. START prepared a MultiRAE multi-gas meter with sensors for oxygen ( $O_2$ ), carbon monoxide ( $CO$ ), hydrogen sulfide ( $H_2S$ ), lower explosive limit (LEL), and VOCs via a photoionization detector (PID), and a Ludlum Model 3 with a Model 44-6 beta-gamma probe. START conducted a safety briefing, and reviewed and signed the Site Health and Safety Plan (HASP), which has been prepared as a separate document, entitled *Removal Program Site Health And Safety Plan for the Caribou Power Plant Site Preliminary Assessment/Site Investigation, Caribou, ME*. Sampling activities were performed in accordance with the site Sampling and Analysis Plan (SAP), which has been prepared as a separate document, entitled *Sampling and Analysis Plan for the Caribou Power Plant Site, Caribou, ME*.

EPA and START began the inspection on the first floor of the Steam Plant, using visual identification and sample location diagrams from the CEE HBMS as a guide for where to collect samples. Nine bulk samples (ACM-01 to ACM-09) were collected from various locations on the first floor for ACM analysis (see Appendix A, Figures 3A-E, Sample Locations; and Appendix B, Table 1, Sample Descriptions). No levels above background were detected on the air monitoring instruments. No oils or other potentially hazardous materials were investigated. The building appeared to be in good shape structurally, but there was water on the floor throughout, believed to be coming from the roof. Sample ACM-10 was collected from the second floor, and ACM-11 was collected from the third floor.

The inspection team then proceeded to the Diesel Plant. The first floor contained five large diesel engines, and drums and tanks of oil and grease, but visual identification and sample location

diagrams from the CEE HBMS did not indicate that any ACM was present. The second floor contained office areas, where sample ACM-12 was collected from a piece of floor tile. No levels above background were detected on the air monitoring instruments.

The inspection team then proceeded to the South Storage Building, where unused potential ACM in the form of pipe wrap, fire bricks, and pipe support brick/stanchions were located. Three bulk samples (ACM-13 to ACM-15) were collected from this area. No levels above background were detected on the air monitoring instruments.

All sample locations were photodocumented (see Appendix C, Photodocumentation Log). The chain-of-custody record is included in Appendix D. Samples were hand-delivered to EPA's Laboratory Services and Applied Sciences Division (LSASD), EPA New England Regional Laboratory (NERL), on Wednesday, 16 November 2022.

### **Analytical Data Summaries**

On 30 November 2022, START received the analytical data results from NERL. These data are summarized in Appendix B and are included in Appendix D.

Asbestos was identified in 12 of 15 samples, with a maximum total concentration of 25% in ACM-01. Amosite was detected in six samples with a maximum concentration of 10% in ACM-01. Chrysotile was detected in 11 samples with a maximum concentration of 18% in ACM-04 and ACM-05. Crocidolite was detected in one sample at a concentration of 6% in ACM-06.

## REFERENCES

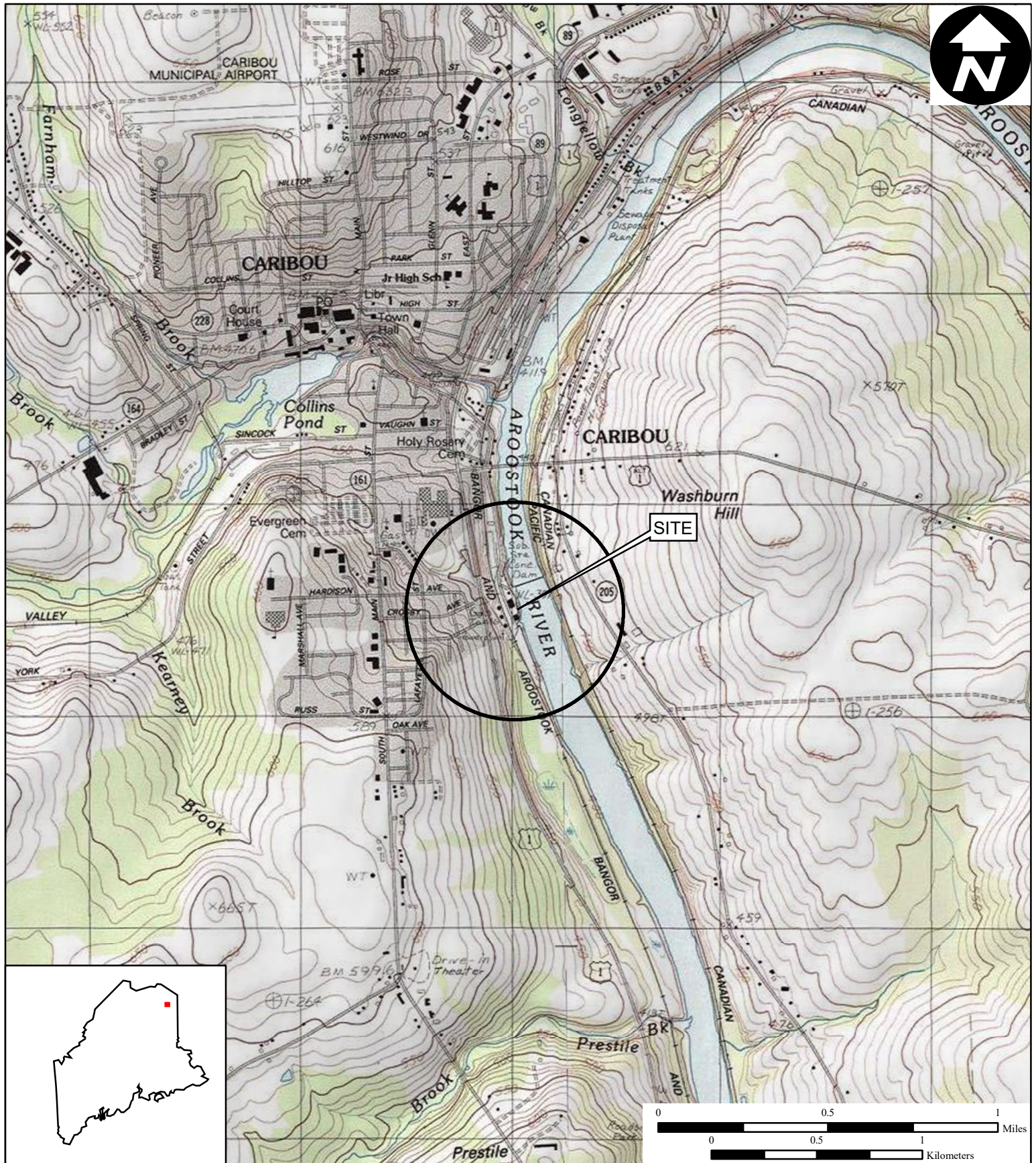
- [1] US. Geological Survey. 2021. 7.5-minute topographic map, Caribou, Maine.
- [2] Esri, i-cubed, USDA FSA, USGS, AEX, GeoEye, Getmapping, Aerogrid, IGP. 2019. ArcGIS.com World Imagery Map. April.
- [3] County Environmental Engineering, Inc. 5 August 2021. Phase I Environmental Site Assessment.
- [4] County Environmental Engineering, Inc. 14 May 2022. Phase II Environmental Site Assessment.
- [5] County Environmental Engineering, Inc. 8 May 2022. Hazardous Building Materials Survey.
- [6] Weston Solutions, Inc. November 2022. Sampling and Analysis Plan for the Caribou Power Plant Site, Caribou, Aroostook County. Document Control No. R-50510.
- [7] Weston Solutions, July 2020. Standard Operating Procedure for the PID-MultiRAE Model PGM-50; SOP No. WSI/S5-018, Superfund Technical Assessment and Response Team (START), Billerica, Massachusetts.
- [8] Weston Solutions, Inc. July 2020. Standard Operating Procedure for Asbestos Sampling, SOP No. WSI/S5-019, Superfund Technical Assessment and Response Team (START), Billerica, Massachusetts.
- [9] U.S. Environmental Protection Agency. 30 November 2022. Laboratory Services and Applied Sciences Division (LSASD). Laboratory Report. Project No. 22110022. Caribou Power Plant, Caribou, ME - Bulk Asbestos Analysis by PLM.

### III. Appendices

## Appendix A

### Figures

- Figure 1 - Site Location Map
- Figure 2 - Site Diagram
- Figure 3A - Sample Location Map – Steam Plant First Floor
- Figure 3B - Sample Location Map – Steam Plant Second Floor
- Figure 3C - Sample Location Map – Steam Plant Third Floor
- Figure 3D - Sample Location Map – Diesel Plant Second Floor
- Figure 3E - Sample Location Map – South Storage Building



**Figure 1**

**Site Location Map**

**Caribou Power Plant  
142 Lower Lyndon Street  
Caribou, Maine**

**EPA Region I  
Superfund Technical Assessment and  
Response Team (START) V  
Contract No. 68HE0120D0001**

**AD Number:** TOFP-01-22-10-0001  
**Created by:** B. Mahany  
**Created on:** 21 December 2022  
**Modified by:** B. Mahany  
**Modified on:** 21 December 2022

**Data Sources:**

Topos: MicroPath/USGS/USA Topo Maps  
Quadrangle Name(s): Caribou  
All other data: START






**Figure 2**

**Site Diagram**

**Caribou Power Plant  
142 Lower Lyndon Street  
Caribou, Maine**

**EPA Region I  
Superfund Technical Assessment and  
Response Team (START) V  
Contract No. 68HE0120D0001  
AD Number: TOFP-01-22-10-0001  
Created by: B. Mahany  
Created on: 21 December 2022  
Modified by: B. Mahany  
Modified on: 22 December 2022**

**LEGEND**

 Approximate Site Boundaries



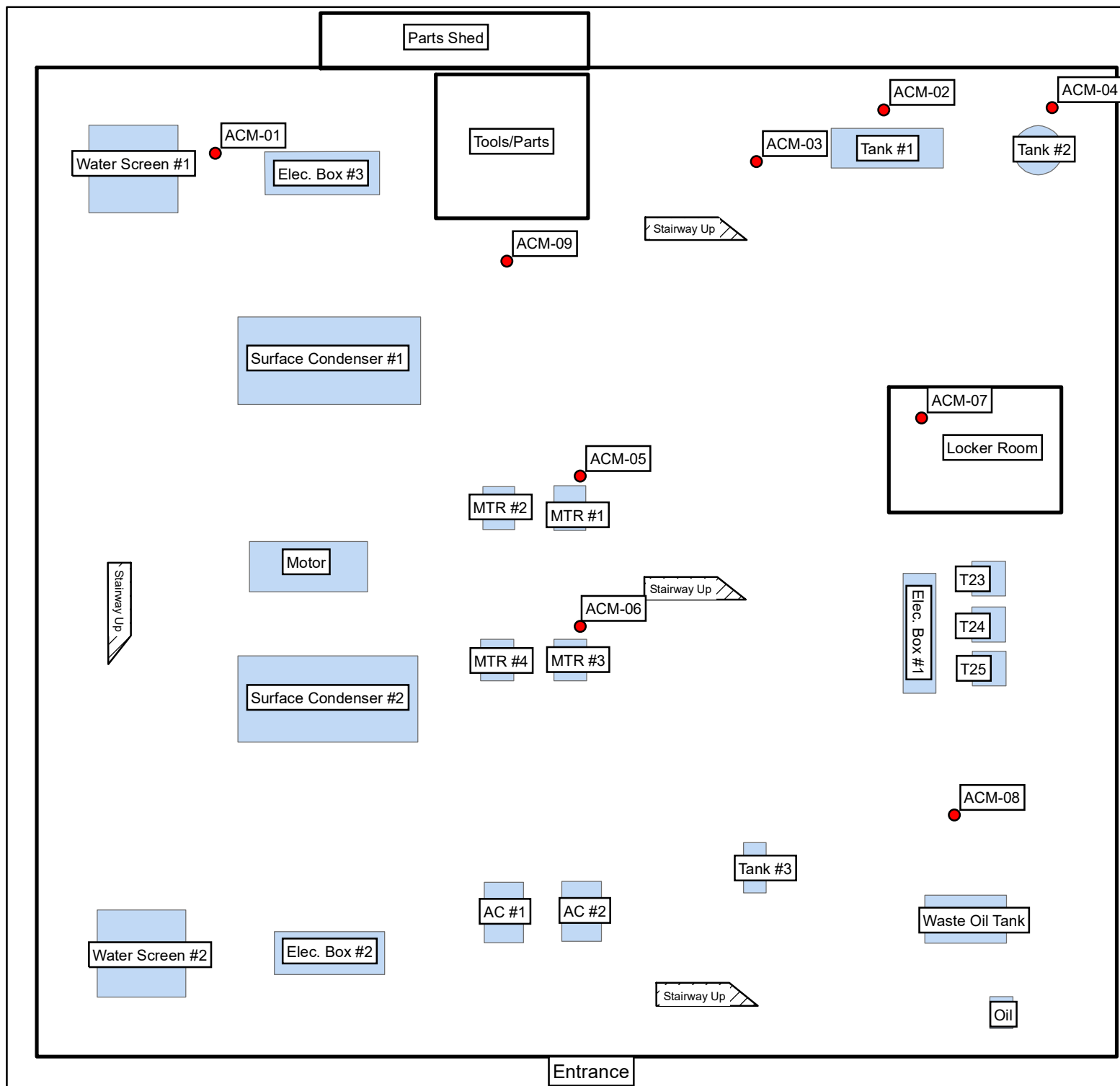
0 50 100 200 300 400  
Feet

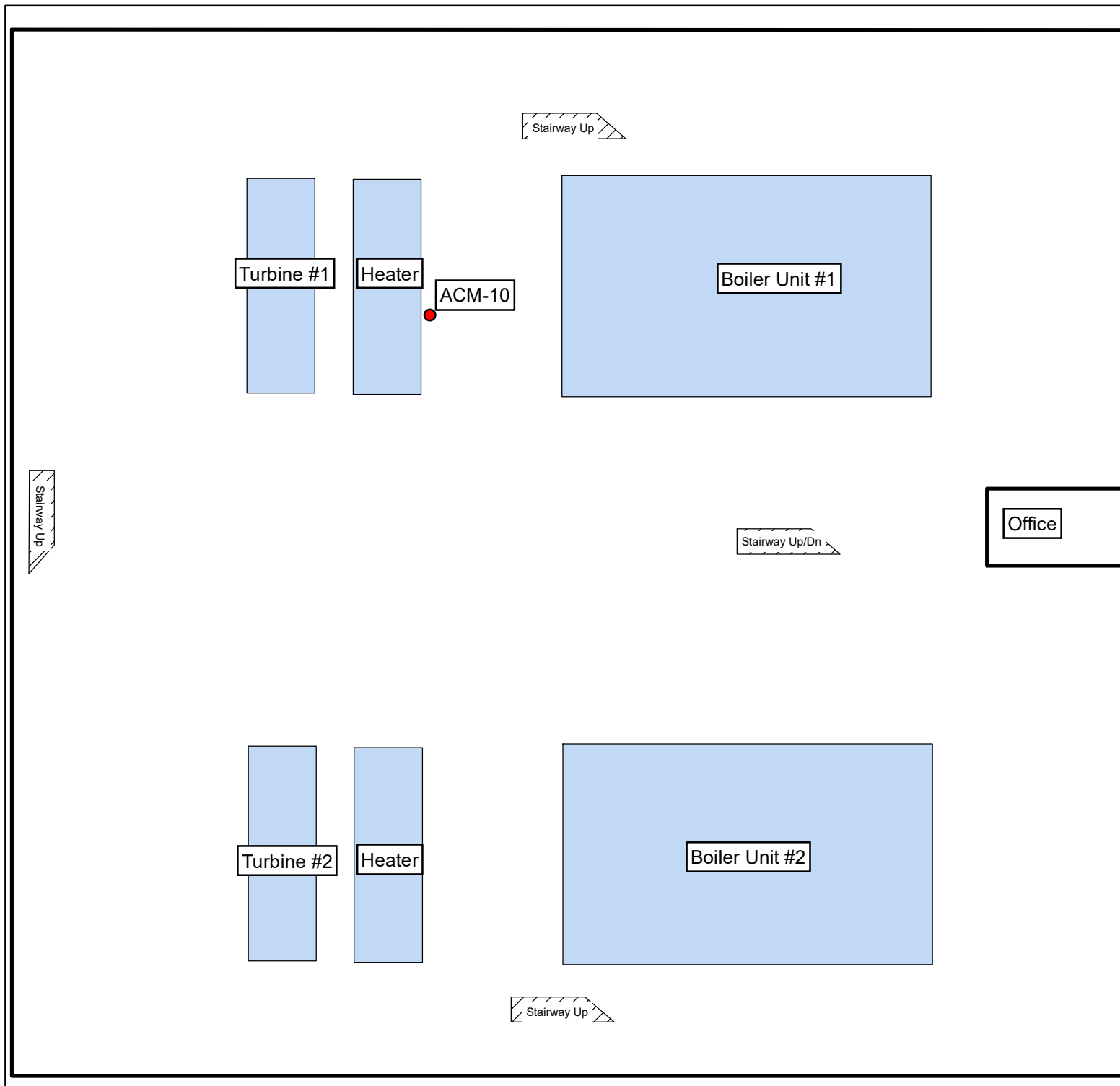
**Data Sources:**

Imagery: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, AEX, GeoEye, Getmapping, Aerogrid, IGP  
Topos: USA TopoMaps  
All other data: START, Maine Geolibrary



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community








**Figure 3B**  
**Sample Location Map**  
**Steam Plant Second Floor**

**Caribou Power Plant**  
**142 Lower Lyndon Street**  
**Caribou, Maine**

**EPA Region I**  
**Superfund Technical Assessment and**  
**Response Team (START) V**  
**Contract No. 68HE0120D0001**  
**AD Number:** TOFP-01-22-10-0001  
**Created by:** B. Mahany  
**Created on:** 30 December 2022  
**Modified by:** B. Mahany  
**Modified on:** 3 January 2023

### **LEGEND**

-  Boilers/Equipment
-  Stairs
-  Sample Location



0 15 30 60 90 120 Feet

### **Data Sources:**

Imagery: ESRI, i-cubed, USDA FSA, USGS  
AEX, GeoEye, Getmapping, Aerogrid, IGP  
Topos: USA TopoMaps  
All other data: START, County Environmental  
Engineering, Inc. Hazardous Building Materials  
Survey. May 2022.



**Figure 3C**  
**Sample Location Map**  
**Steam Plant Third Floor**

**Caribou Power Plant**  
**142 Lower Lyndon Street**  
**Caribou, Maine**

**EPA Region I**  
**Superfund Technical Assessment and**  
**Response Team (START) V**  
**Contract No. 68HE0120D0001**  
**AD Number:** TOFP-01-22-10-0001  
**Created by:** B. Mahany  
**Created on:** 30 December 2022  
**Modified by:** B. Mahany  
**Modified on:** 3 January 2023

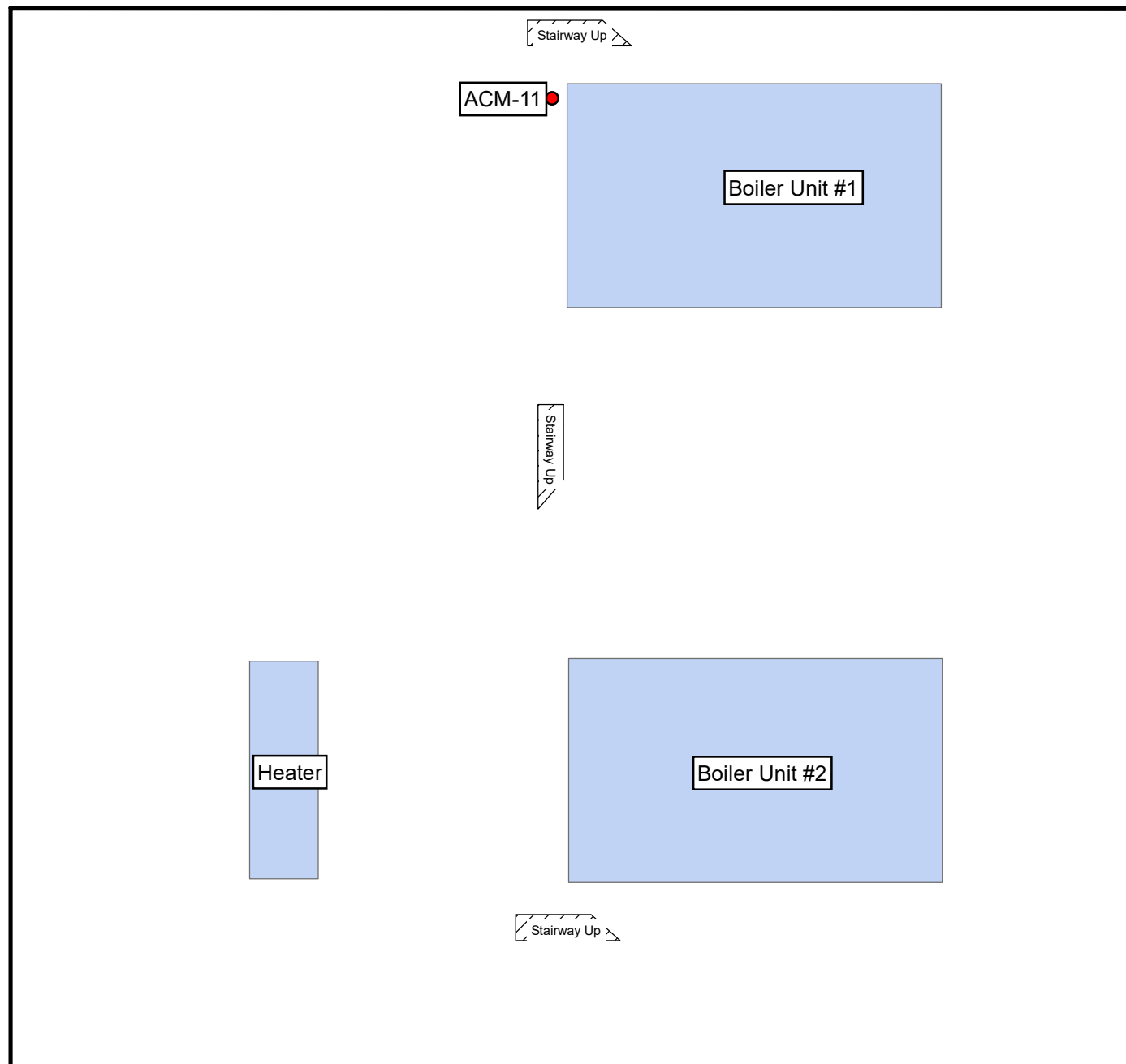
**LEGEND**

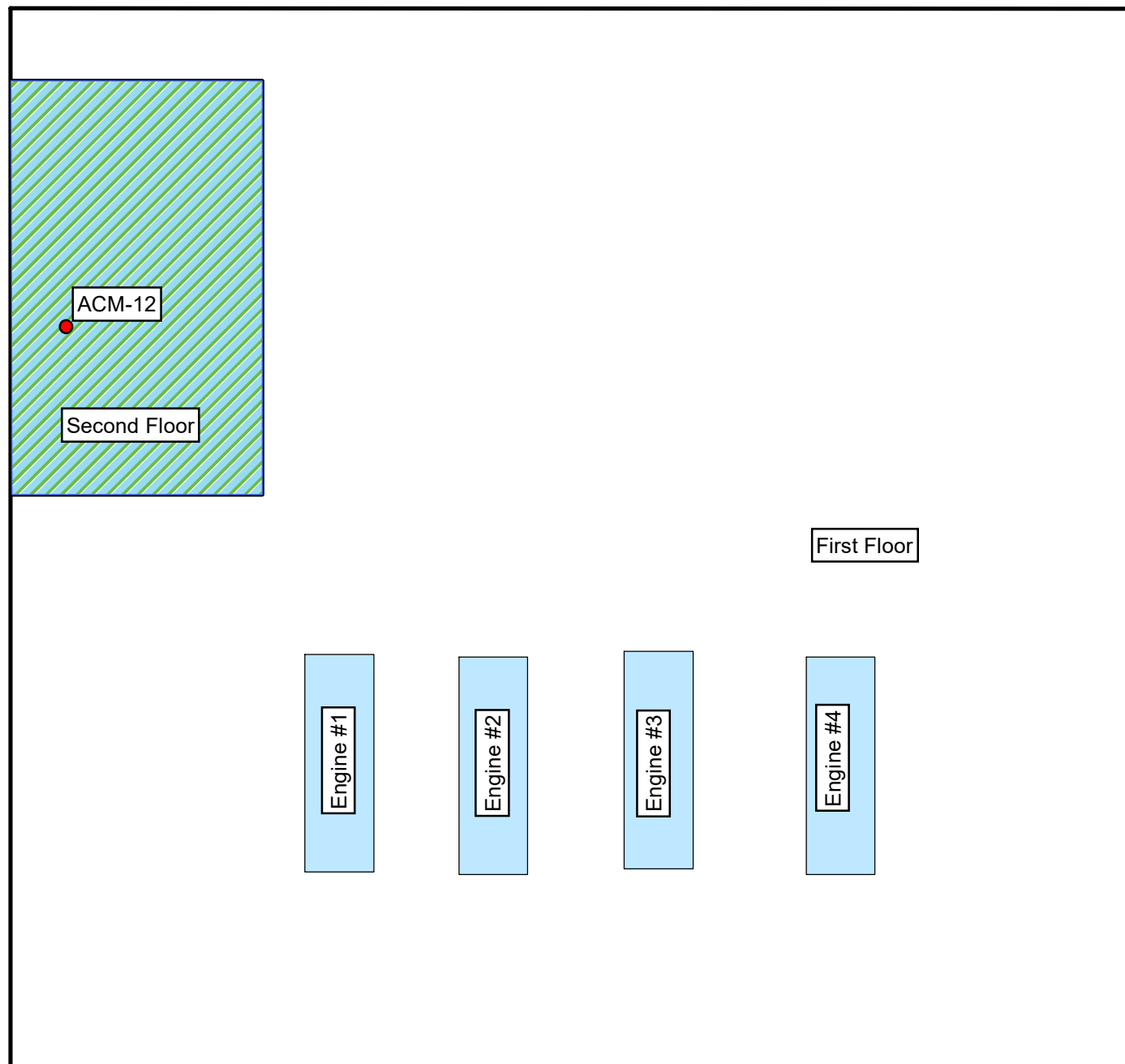
- Sample Location
- Boilers/Equipment
- Stairs



**Data Sources:**

Imagery: ESRI, i-cubed, USDA FSA, USGS  
 AEX, GeoEye, Getmapping, Aerogrid, IGP  
 Topos: USA TopoMaps  
 All other data: START, County Environmental  
 Engineering, Inc. Hazardous Building Materials  
 Survey. May 2022.





**Figure 3D**  
**Sample Location Map**  
**Diesel Plant Second Floor**  
**Caribou Power Plant**  
**142 Lower Lyndon Street**  
**Caribou, Maine**

**EPA Region I**  
**Superfund Technical Assessment and**  
**Response Team (START) V**  
**Contract No. 68HE0120D0001**  
**AD Number:** TOFP-01-22-10-0001  
**Created by:** B. Mahany  
**Created on:** 30 December 2022  
**Modified by:** B. Mahany  
**Modified on:** 13 January 2023

## **LEGEND**

- Sample Location
- Floor Tile
- Boilers/Equipment



0 15 30 60 90 120 Feet

### **Data Sources:**

Imagery: ESRI, i-cubed, USDA FSA, USGS  
 AEX, GeoEye, Getmapping, Aerogrid, IGP  
 Topos: USA TopoMaps  
 All other data: START, County Environmental  
 Engineering, Inc. Hazardous Building Materials  
 Survey. May 2022.







**Figure 3E**  
**Sample Location Map**  
**South Storage Building**  
  
**Caribou Power Plant**  
**142 Lower Lyndon Street**  
**Caribou, Maine**

**EPA Region I**  
**Superfund Technical Assessment and**  
**Response Team (START) V**  
**Contract No. 68HE0120D0001**  
**AD Number:** TOFP-01-22-10-0001  
**Created by:** B. Mahany  
**Created on:** 30 December 2022  
**Modified by:** B. Mahany  
**Modified on:** 3 January 2023

**LEGEND**

-  Approximate Site Boundaries
-  Sample Location



0 10 20 40 60 80  
Feet

**Data Sources:**

Imagery: ESRI, i-cubed, USDA FSA, USGS  
AEX, GeoEye, Getmapping, Aerogrid, IGP  
Topos: USA TopoMaps  
All other data: START, Maine Geolibrary



## Appendix B

### Tables

- Table 1 - Sample Descriptions
- Table 2 - Summary of Bulk Asbestos Sample Results

TABLE 1

**SAMPLE DESCRIPTIONS  
CARIBOU POWER PLANT  
CARIBOU, MAINE**

Sample Location	Sample Number	Sample Location	Collection Date	Collection Time	Sample Description	Corresponding Hazardous Building Materials Survey Sample Number *
ACM-01	01RV-0001	Steam Plant 1st Floor	11/15/2022	0850	Transite board east corner.	N/A
ACM-02	01RV-0002	Steam Plant 1st Floor	11/15/2022	0900	White insulation from side of tank southeast side.	PI36C
ACM-03	01RV-0003	Steam Plant 1st Floor	11/15/2022	0902	White insulation from side of tank southeast side.	PI35C
ACM-04	01RV-0004	Steam Plant 1st Floor	11/15/2022	0905	White pipe insulation fallen from overhead southwest corner.	PI34C
ACM-05	01RV-0005	Steam Plant 1st Floor	11/15/2022	0915	White pipe insulation central area.	PI37A
ACM-06	01RV-0006	Steam Plant 1st Floor	11/15/2022	0920	White pipe insulation central area.	PI36A
ACM-07	01RV-0007	Steam Plant 1st Floor	11/15/2022	0925	White pipe insulation fallen from overhead west side.	PI37C
ACM-08	01RV-0008	Steam Plant 1st Floor	11/15/2022	0927	White pipe insulation west side.	PI35C
ACM-09	01RV-0009	Steam Plant 1st Floor	11/15/2022	0930	White pipe insulation fallen from overhead southeast end.	N/A
ACM-10	01RV-0010	Steam Plant 2nd Floor	11/15/2022	0955	White insulation from pipe adjacent to Turbine 2.	PI37B, PI37C
ACM-11	01RV-0011	Steam Plant 3rd Floor	11/15/2022	1005	White insulation fallen from Boiler 1.	N/A
ACM-12	01RV-0012	Diesel Plant 2nd Floor	11/15/2022	1030	Black Floor tile.	FT24A, FT24B, FT24C
ACM-13	01RV-0013	South Storage Building	11/15/2022	1045	Unused/new pipe insulation.	Possible PI13, PI14
ACM-14	01RV-0014	South Storage Building	11/15/2022	1050	White fire brick, in box from Johns Manville.	Possible WB12, WBI16
ACM-15	01RV-0015	South Storage Building	11/15/2022	1055	Tan fire brick/pipe support.	Possible YBI15

**NOTES**

NA = Not Applicable

ACM = Asbestos-Containing Material

\* Hazardous Building Materials Survey conducted by County Environmental Engineering, Inc.

TABLE 2

**SUMMARY OF BULK ASBESTOS SAMPLE RESULTS  
CARIBOU POWER PLANT SITE  
CARIBOU, MAINE  
% Volume**

SAMPLE LOCATION SAMPLE NUMBER LABORATORY NUMBER DATE SAMPLED	ACM-01 01RV-0001 AC03363 11/15/2022	ACM-02 01RV-0002 AC03364 11/15/2022	ACM-03 01RV-0003 AC03365 11/15/2022	ACM-04 01RV-0004 AC03366 11/15/2022	ACM-05 01RV-0005 AC03367 11/15/2022	ACM-06 01RV-0006 AC03368 11/15/2022
<b>COMPOUND</b>						
Actinolite	ND	ND	ND	ND	ND	ND
Amosite	10	ND	ND	2	ND	8
Anthophyllite	ND	ND	ND	ND	ND	ND
Chrysotile	15	7	5	18	18	ND
Crocidolite	ND	ND	ND	ND	ND	6
Tremolite	ND	ND	ND	ND	ND	ND

SAMPLE LOCATION SAMPLE NUMBER LABORATORY NUMBER DATE SAMPLED	ACM-07 01RV-0007 AC03369 11/15/2022	ACM-08 01RV-0008 AC03370 11/15/2022	ACM-09 01RV-0009 AC03371 11/15/2022	ACM-010 01RV-0010 AC03372 11/15/2022	ACM-11 01RV-0011 AC03373 11/15/2022	ACM-12 01RV-0012 AC03374 11/15/2022
<b>COMPOUND</b>						
Actinolite	ND	ND	ND	ND	ND	ND
Amosite	4	ND	ND	4	8	ND
Anthophyllite	ND	ND	ND	ND	ND	ND
Chrysotile	1	7	2	2	4	1
Crocidolite	ND	ND	ND	ND	ND	ND
Tremolite	ND	ND	ND	ND	ND	ND

SAMPLE LOCATION SAMPLE NUMBER LABORATORY NUMBER DATE SAMPLED	ACM-13 01RV-0013 AC03375 11/15/2022	ACM-14 01RV-0014 AC03376 11/15/2022	ACM-15 01RV-0015 AC03377 11/15/2022
<b>COMPOUND</b>			
Actinolite	ND	ND	ND
Amosite	ND	ND	ND
Anthophyllite	ND	ND	ND
Chrysotile	ND	ND	ND
Crocidolite	ND	ND	ND
Tremolite	ND	ND	ND

**NOTES:**

- 1) Samples were analyzed by U.S. EPA Office of Environmental Measurement and Evaluation (OEME) New England Regional Laboratory (NERL) via Polarized Light Microscopy (PLM).
- 2) All quantities are estimated volume percent.
- 3) ND = Not Detected
- 4) % = Percent

## Appendix C

### Photodocumentation Log

**PHOTODOCUMENTATION LOG**  
**Caribou Power Plant • Caribou, Maine**



**SCENE:** View of sample location ACM-01, collected from transite on the first floor of the Steam Plant. Photograph taken facing northwest.

**DATE:** 15 November 2022

**PHOTOGRAPHER:** P. Callahan

**TIME:** 0857 hours

**CAMERA:** Apple iPhone 13



**SCENE:** View of sample location ACM-02, collected from white tank insulation on the first floor of the Steam Plant. Photograph taken facing west.

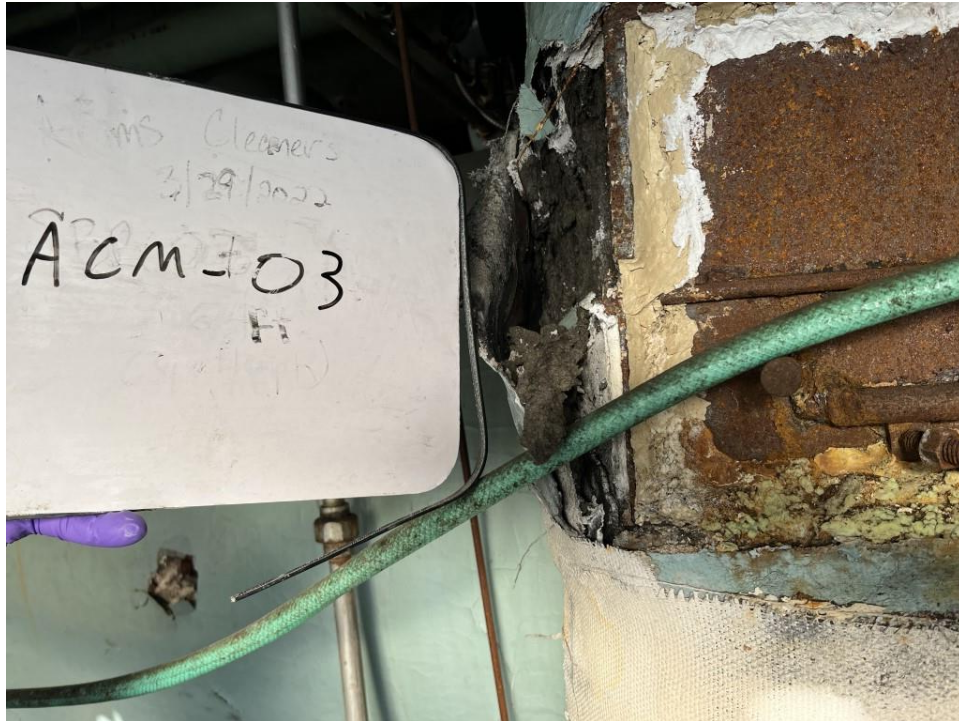
**DATE:** 15 November 2022

**PHOTOGRAPHER:** P. Callahan

**TIME:** 0900 hours

**CAMERA:** Apple iPhone 13

**PHOTODOCUMENTATION LOG**  
**Caribou Power Plant • Caribou, Maine**



**SCENE:** View of sample location ACM-03, collected from white tank insulation on the first floor of the Steam Plant.

**DATE:** 15 November 2022

**PHOTOGRAPHER:** P. Callahan

**TIME:** 0901 hours

**CAMERA:** Apple iPhone 13



**SCENE:** View of sample location ACM-04, collected from white pipe insulation fallen from the ceiling on the first floor of the Steam Plant. Photograph taken facing northwest.

**DATE:** 15 November 2022

**PHOTOGRAPHER:** P. Callahan

**TIME:** 0905 hours

**CAMERA:** Apple iPhone 13

**PHOTODOCUMENTATION LOG**  
**Caribou Power Plant • Caribou, Maine**



**SCENE:** View of sample location ACM-05, collected from white pipe insulation on the first floor of the Steam Plant.

**DATE:** 15 November 2022

**TIME:** 0914 hours

**PHOTOGRAPHER:** P. Callahan

**CAMERA:** Apple iPhone 13



**SCENE:** View of sample location ACM-06, collected from white pipe insulation on the first floor of the Steam Plant.

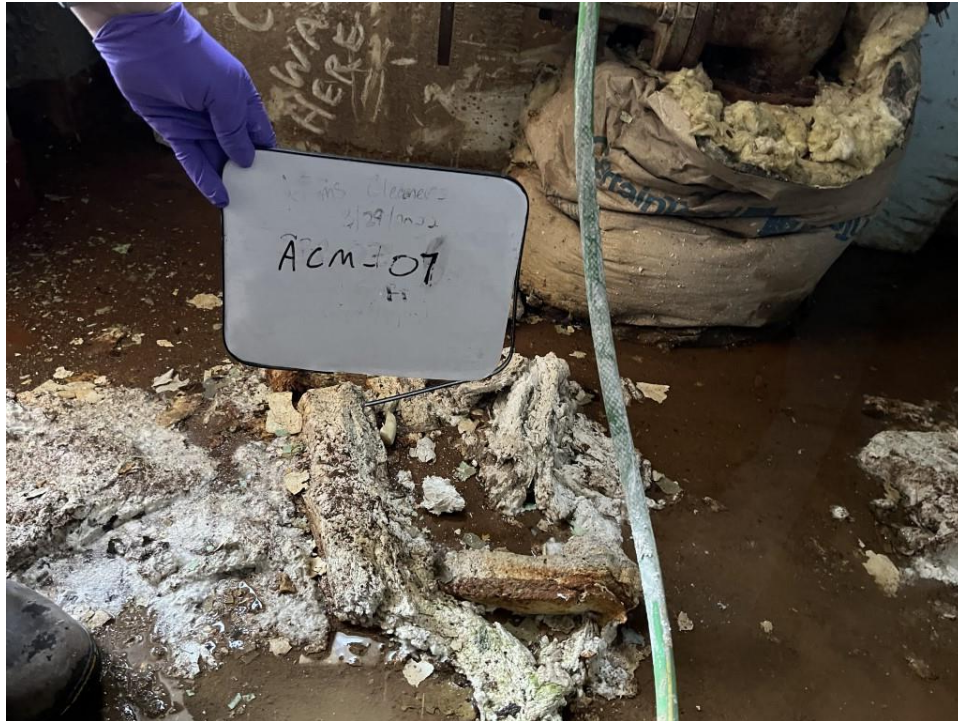
**DATE:** 15 November 2022

**TIME:** 0918 hours

**PHOTOGRAPHER:** P. Callahan

**CAMERA:** Apple iPhone 13

**PHOTODOCUMENTATION LOG**  
**Caribou Power Plant • Caribou, Maine**



**SCENE:** View of sample location ACM-07, collected from white pipe insulation fallen from the ceiling on the first floor of the Steam Plant.

**DATE:** 15 November 2022

**PHOTOGRAPHER:** P. Callahan

**TIME:** 0926 hours

**CAMERA:** Apple iPhone 13



**SCENE:** View of sample location ACM-08, collected from white pipe insulation on the first floor of the Steam Plant. Photograph taken facing west.

**DATE:** 15 November 2022

**PHOTOGRAPHER:** P. Callahan

**TIME:** 0929 hours

**CAMERA:** Apple iPhone 13

**PHOTODOCUMENTATION LOG**  
**Caribou Power Plant • Caribou, Maine**



**SCENE:** View of sample location ACM-09, collected from pipe insulation fallen from the ceiling on the first floor of the Steam Plant.

**DATE:** 15 November 2022

**TIME:** 0932 hours

**PHOTOGRAPHER:** P. Callahan

**CAMERA:** Apple iPhone 13



**SCENE:** View of sample location ACM-10, collected from white pipe insulation on the second floor of the Steam Plant.

**DATE:** 15 November 2022

**TIME:** 0956 hours

**PHOTOGRAPHER:** P. Callahan

**CAMERA:** Apple iPhone 13

**PHOTODOCUMENTATION LOG**  
**Caribou Power Plant • Caribou, Maine**



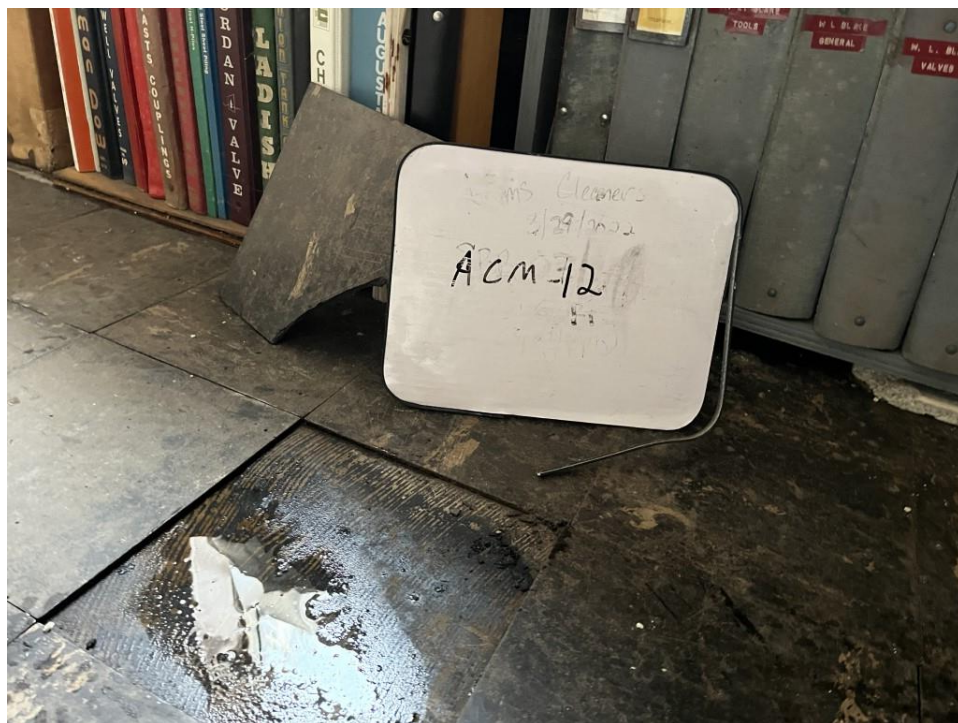
**SCENE:** View of sample location ACM-11, collected from white tank insulation on the third floor of the Steam Plant.

**DATE:** 15 November 2022

**TIME:** 1007 hours

**PHOTOGRAPHER:** P. Callahan

**CAMERA:** Apple iPhone 13



**SCENE:** View of sample location ACM-12, collected from black floor tiles on the second floor of the Diesel Plant.

**DATE:** 15 November 2022

**TIME:** 1033 hours

**PHOTOGRAPHER:** P. Callahan

**CAMERA:** Apple iPhone 13

**PHOTODOCUMENTATION LOG**  
**Caribou Power Plant • Caribou, Maine**



**SCENE:** View of unused pipe insulation and fire brick in the Southern Storage Building. Photograph taken facing south.

**DATE:** 15 November 2022

**TIME:** 1050 hours

**PHOTOGRAPHER:** P. Callahan

**CAMERA:** Apple iPhone 13



**SCENE:** View of unused pipe insulation and fire brick in the Southern Storage Building. Photograph taken facing east.

**DATE:** 15 November 2022

**TIME:** 1050 hours

**PHOTOGRAPHER:** P. Callahan

**CAMERA:** Apple iPhone 13

**PHOTODOCUMENTATION LOG**  
**Caribou Power Plant • Caribou, Maine**



**SCENE:** View of unused pipe insulation and fire brick in the Southern Storage Building. Photograph taken facing northeast.

**DATE:** 15 November 2022

**PHOTOGRAPHER:** P. Callahan

**TIME:** 1050 hours

**CAMERA:** Apple iPhone 13



**SCENE:** View of sample location ACM-13, collected from unused white pipe insulation in the Southern Storage Building. Photograph taken facing southeast.

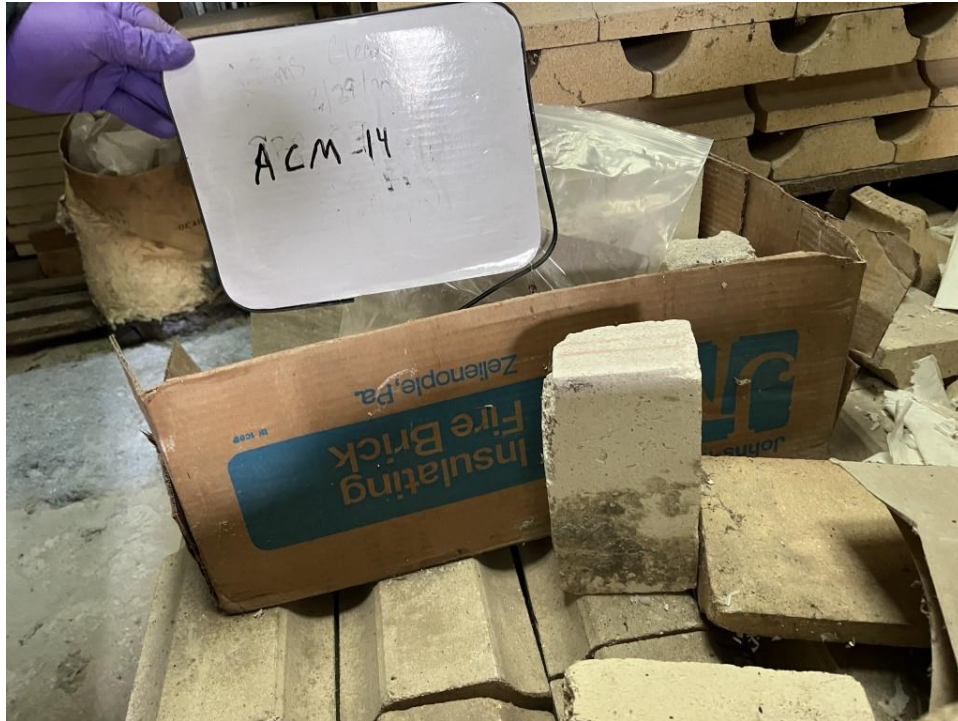
**DATE:** 15 November 2022

**PHOTOGRAPHER:** P. Callahan

**TIME:** 1051 hours

**CAMERA:** Apple iPhone 13

**PHOTODOCUMENTATION LOG**  
**Caribou Power Plant • Caribou, Maine**



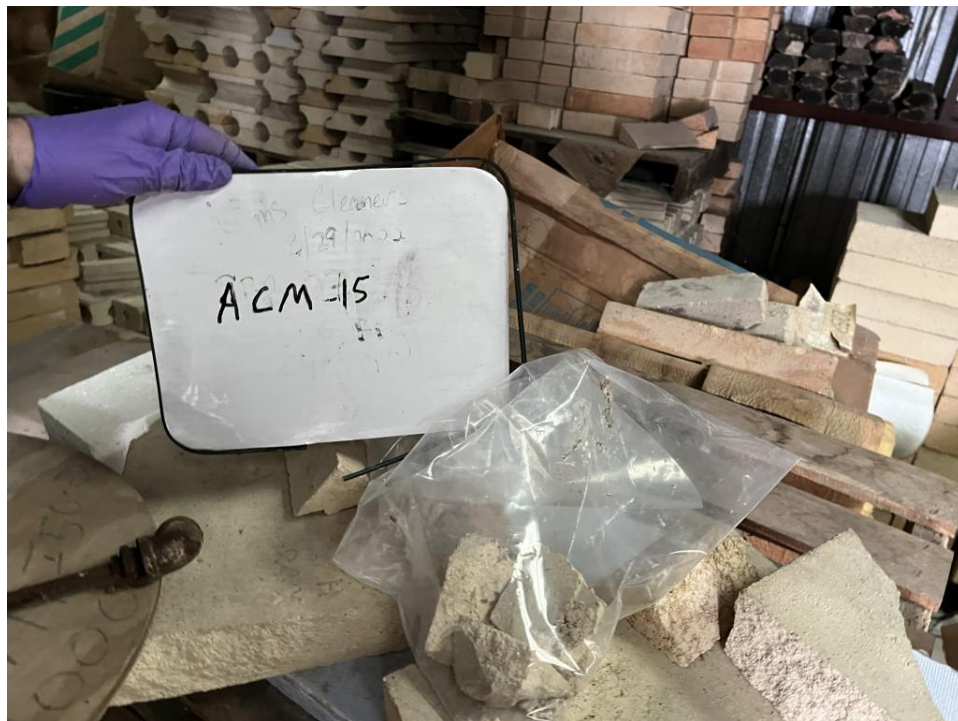
**SCENE:** View of sample location ACM-14, collected from unused Johns Manville fire brick in the Southern Storage Building. Photograph taken facing east.

**DATE:** 15 November 2022

**PHOTOGRAPHER:** P. Callahan

**TIME:** 1100 hours

**CAMERA:** Apple iPhone 13



**SCENE:** View of sample location ACM-15, collected from yellowish fire brick in the Southern Storage Building. Photograph taken facing northeast.

**DATE:** 15 November 2022

**PHOTOGRAPHER:** P. Callahan

**TIME:** 1100 hours

**CAMERA:** Apple iPhone 13

## Appendix D

### Chain-of-Custody Records and Analytical Data

## Laboratory Report

November 30, 2022

Zachary Taylor  
US EPA New England R1

Project Number: 22110022  
Project: Caribou Power Plant - Caribou, ME  
Analysis: Bulk Asbestos Analysis by PLM  
Analyst: Scott Clifford

### Analytical Procedure:

All samples were received and logged in by the laboratory according to the USEPA New England SOP for Sample Log-in.

Sample preparation and analysis was done following the EPA Region I SOP, INGASBSED2.

Analytical Method: Polarized Light Microscope (PLM) with Dispersion Staining.  
All quantities are estimated volume percent.

Date Samples Received by the Laboratory: 11/16/2022

Data were reviewed in accordance with the internal verification procedures described in the EPA New England OEME Chemistry QA Plan.

Results relate only to the items tested or to the samples as received by the Laboratory. This analytical report shall not be reproduced except in full, without written approval of the laboratory.

Report may contain multiple sections and each section will be numbered independently.

If you have any questions please call me at 617-918-8340 .

Sincerely,

**DANIEL  
BOUDREAU** Digitally signed by  
DANIEL BOUDREAU  
Date: 2022.11.30  
12:41:48 -05'00'

22110022\$ASBES

**Caribou Power Plant - Caribou, ME**

**Bulk Asbestos Analysis by PLM**

Client Sample ID: 01RV-0001  
Date of Collection: 11/15/2022  
Date of Extraction: 11/28/22  
Date of Analysis: 11/28/22

Lab Sample ID: AC03363  
Matrix Asbestos

<b>CAS Number</b>	<b>Compound</b>	<b>Concentration %</b>	<b>RL %</b>	<b>Qualifier</b>
	Actinolite	ND	1.0	
	Amosite	10	1.0	
	Anthophyllite	ND	1.0	
	Chrysotile	15	1.0	
	Crocidolite	ND	1.0	
	Tremolite	ND	1.0	

Comments: Sample had two very distinct materials present.  
Thin board had 15% Chrysotile.  
1/2 inch board had 10% Amosite.

Client Sample ID: 01RV-0002  
Date of Collection: 11/15/2022  
Date of Extraction: 11/28/22  
Date of Analysis: 11/28/22

Lab Sample ID: AC03364  
Matrix Asbestos

<b>CAS Number</b>	<b>Compound</b>	<b>Concentration %</b>	<b>RL %</b>	<b>Qualifier</b>
	Actinolite	ND	1.0	
	Amosite	ND	1.0	
	Anthophyllite	ND	1.0	
	Chrysotile	7	1.0	
	Crocidolite	ND	1.0	
	Tremolite	ND	1.0	

Comments:

**Caribou Power Plant - Caribou, ME**

**Bulk Asbestos Analysis by PLM**

Client Sample ID: 01RV-0003  
Date of Collection: 11/15/2022  
Date of Extraction: 11/28/22  
Date of Analysis: 11/28/22

Lab Sample ID: AC03365  
Matrix Asbestos

<b>CAS Number</b>	<b>Compound</b>	<b>Concentration %</b>	<b>RL %</b>	<b>Qualifier</b>
	Actinolite	ND	1.0	
	Amosite	ND	1.0	
	Anthophyllite	ND	1.0	
	Chrysotile	5	1.0	
	Crocidolite	ND	1.0	
	Tremolite	ND	1.0	

Comments:

Client Sample ID: 01RV-0004  
Date of Collection: 11/15/2022  
Date of Extraction: 11/28/22  
Date of Analysis: 11/28/22

Lab Sample ID: AC03366  
Matrix Asbestos

<b>CAS Number</b>	<b>Compound</b>	<b>Concentration %</b>	<b>RL %</b>	<b>Qualifier</b>
	Actinolite	ND	1.0	
	Amosite	2	1.0	
	Anthophyllite	ND	1.0	
	Chrysotile	18	1.0	
	Crocidolite	ND	1.0	
	Tremolite	ND	1.0	

Comments:

**Caribou Power Plant - Caribou, ME**

**Bulk Asbestos Analysis by PLM**

Client Sample ID: 01RV-0005  
Date of Collection: 11/15/2022  
Date of Extraction: 11/28/22  
Date of Analysis: 11/28/22

Lab Sample ID: AC03367  
Matrix: Asbestos

<b>CAS Number</b>	<b>Compound</b>	<b>Concentration %</b>	<b>RL %</b>	<b>Qualifier</b>
	Actinolite	ND	1.0	
	Amosite	ND	1.0	
	Anthophyllite	ND	1.0	
	Chrysotile	<b>18</b>	1.0	
	Crocidolite	ND	1.0	
	Tremolite	ND	1.0	

Comments:

Client Sample ID: 01RV-0006  
Date of Collection: 11/15/2022  
Date of Extraction: 11/28/22  
Date of Analysis: 11/28/22

Lab Sample ID: AC03368  
Matrix: Asbestos

<b>CAS Number</b>	<b>Compound</b>	<b>Concentration %</b>	<b>RL %</b>	<b>Qualifier</b>
	Actinolite	ND	1.0	
	Amosite	<b>8</b>	1.0	
	Anthophyllite	ND	1.0	
	Chrysotile	ND	1.0	
	Crocidolite	<b>6</b>	1.0	
	Tremolite	ND	1.0	

Comments:

**Caribou Power Plant - Caribou, ME**

**Bulk Asbestos Analysis by PLM**

Client Sample ID: 01RV-0007  
Date of Collection: 11/15/2022  
Date of Extraction: 11/29/22  
Date of Analysis: 11/29/22

Lab Sample ID: AC03369  
Matrix Asbestos

<b>CAS Number</b>	<b>Compound</b>	<b>Concentration %</b>	<b>RL %</b>	<b>Qualifier</b>
	Actinolite	ND	1.0	
	Amosite	4	1.0	
	Anthophyllite	ND	1.0	
	Chrysotile	1	1.0	
	Crocidolite	ND	1.0	
	Tremolite	ND	1.0	

Comments:

Client Sample ID: 01RV-0008  
Date of Collection: 11/15/2022  
Date of Extraction: 11/29/22  
Date of Analysis: 11/29/22

Lab Sample ID: AC03370  
Matrix Asbestos

<b>CAS Number</b>	<b>Compound</b>	<b>Concentration %</b>	<b>RL %</b>	<b>Qualifier</b>
	Actinolite	ND	1.0	
	Amosite	ND	1.0	
	Anthophyllite	ND	1.0	
	Chrysotile	7	1.0	
	Crocidolite	ND	1.0	
	Tremolite	ND	1.0	

Comments:

**Caribou Power Plant - Caribou, ME**

**Bulk Asbestos Analysis by PLM**

Client Sample ID: 01RV-0009  
Date of Collection: 11/15/2022  
Date of Extraction: 11/29/22  
Date of Analysis: 11/29/22

Lab Sample ID: AC03371  
Matrix Asbestos

<b>CAS Number</b>	<b>Compound</b>	<b>Concentration %</b>	<b>RL %</b>	<b>Qualifier</b>
	Actinolite	ND	1.0	
	Amosite	ND	1.0	
	Anthophyllite	ND	1.0	
	Chrysotile	2	1.0	
	Crocidolite	ND	1.0	
	Tremolite	ND	1.0	

Comments:

Client Sample ID: 01RV-0010  
Date of Collection: 11/15/2022  
Date of Extraction: 11/29/22  
Date of Analysis: 11/29/22

Lab Sample ID: AC03372  
Matrix Asbestos

<b>CAS Number</b>	<b>Compound</b>	<b>Concentration %</b>	<b>RL %</b>	<b>Qualifier</b>
	Actinolite	ND	1.0	
	Amosite	4	1.0	
	Anthophyllite	ND	1.0	
	Chrysotile	2	1.0	
	Crocidolite	ND	1.0	
	Tremolite	ND	1.0	

Comments:

**Caribou Power Plant - Caribou, ME**

**Bulk Asbestos Analysis by PLM**

Client Sample ID: 01RV-0011  
Date of Collection: 11/15/2022  
Date of Extraction: 11/29/22  
Date of Analysis: 11/29/22

Lab Sample ID: AC03373  
Matrix Asbestos

<b>CAS Number</b>	<b>Compound</b>	<b>Concentration %</b>	<b>RL %</b>	<b>Qualifier</b>
	Actinolite	ND	1.0	
	Amosite	8	1.0	
	Anthophyllite	ND	1.0	
	Chrysotile	4	1.0	
	Crocidolite	ND	1.0	
	Tremolite	ND	1.0	

Comments:

Client Sample ID: 01RV-0012  
Date of Collection: 11/15/2022  
Date of Extraction: 11/29/22  
Date of Analysis: 11/29/22

Lab Sample ID: AC03374  
Matrix Asbestos

<b>CAS Number</b>	<b>Compound</b>	<b>Concentration %</b>	<b>RL %</b>	<b>Qualifier</b>
	Actinolite	ND	1.0	
	Amosite	ND	1.0	
	Anthophyllite	ND	1.0	
	Chrysotile	1	1.0	
	Crocidolite	ND	1.0	
	Tremolite	ND	1.0	

Comments:

**Caribou Power Plant - Caribou, ME**

**Bulk Asbestos Analysis by PLM**

Client Sample ID: 01RV-0013  
Date of Collection: 11/15/2022  
Date of Extraction: 11/29/22  
Date of Analysis: 11/29/22

Lab Sample ID: AC03375  
Matrix Asbestos

<b>CAS Number</b>	<b>Compound</b>	<b>Concentration %</b>	<b>RL %</b>	<b>Qualifier</b>
	Actinolite	ND	1.0	
	Amosite	ND	1.0	
	Anthophyllite	ND	1.0	
	Chrysotile	ND	1.0	
	Crocidolite	ND	1.0	
	Tremolite	ND	1.0	

Comments:

Client Sample ID: 01RV-0014  
Date of Collection: 11/15/2022  
Date of Extraction: 11/29/22  
Date of Analysis: 11/29/22

Lab Sample ID: AC03376  
Matrix Asbestos

<b>CAS Number</b>	<b>Compound</b>	<b>Concentration %</b>	<b>RL %</b>	<b>Qualifier</b>
	Actinolite	ND	1.0	
	Amosite	ND	1.0	
	Anthophyllite	ND	1.0	
	Chrysotile	ND	1.0	
	Crocidolite	ND	1.0	
	Tremolite	ND	1.0	

Comments:

**Caribou Power Plant - Caribou, ME**

**Bulk Asbestos Analysis by PLM**

Client Sample ID: 01RV-0015  
Date of Collection: 11/15/2022  
Date of Extraction: 11/29/22  
Date of Analysis: 11/29/22

Lab Sample ID: AC03377  
Matrix Asbestos

<b>CAS Number</b>	<b>Compound</b>	<b>Concentration %</b>	<b>RL %</b>	<b>Qualifier</b>
	Actinolite	ND	1.0	
	Amosite	ND	1.0	
	Anthophyllite	ND	1.0	
	Chrysotile	ND	1.0	
	Crocidolite	ND	1.0	
	Tremolite	ND	1.0	

Comments:

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DateShipped: 11/16/2022

Caribou Power Plant

## CHAIN OF CUSTODY RECORD

Site #: 01RV

**Contact Name:** Paul Callahan

Contact Phone: 978-621-1203

No: ME22100001-0001

**Lab Contact:** Don's Guzman

Lab: New England Regional Laboratory


Lab Phone: 617-918-8490

[illegible]

Special Instructions: Please provide data to OSC Catherine Young and Zach Taylor

SAMPLES TRANSFERRED FROM

CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
	BWS Lester	11/16/2022 1:00	 J. Taylor ESAT	11-16-22 12:00	

# US EPA REGION 1 SAMPLE RECEIPT CHECKLIST

PROJ #: <b>22110022</b>	RECEIPT DATE: <b>11-16-22</b>
SURVEY NAME: <b>CARIBOLL POWER PLANT.</b>	REC'D BY: <b>DORIS GUZMAN</b>
LOCATION: <b>CARIBOLL, ME</b>	<b>ESAT</b>
OSC/PO: <b>ZACHARY TAYLOR (2-MI).</b>	SITE ID: <b>01RM</b> SUPERFUND <input checked="" type="radio"/> YES/NO

WERE SAMPLES SHIPPED? YES: FEDEX / UPS / OTHER _____	COMMENTS:  <b>Asbestos sample</b>  <b>15 \$ASBEST</b>
TRACKING #: _____	
DATE/SENT: _____	
<input checked="" type="radio"/> NO COURIER PICKUP <input checked="" type="radio"/> HAND DELIVERED	
COOLER TEMPERATURE UPON ARRIVAL _____ °C/NA <input checked="" type="radio"/>	
CHAIN OF CUSTODY PRESENT? <input checked="" type="radio"/> YES/NO	
COMPLETE? <input checked="" type="radio"/> YES/NO	
CUSTODY SEALS PRESENT ON COOLER? <input checked="" type="radio"/> YES/NO	
SAMPLES? <input checked="" type="radio"/> YES/NO	
WERE SAMPLE CONTAINERS INTACT? <input checked="" type="radio"/> YES/NO	
WAS SAMPLE PRESERVATION DOCUMENTED? <input checked="" type="radio"/> YES/NO	
COC (circle) Sample Container (circle)	
APPROPRIATE SAMPLES VOLUME	
FOR REQUESTED ANALYSIS? <input checked="" type="radio"/> YES/NO	
SAMPLES AND COC MATCH? <input checked="" type="radio"/> YES/NO	
IF ANY PROBLEMS WAS PROJECT MANAGER NOTIFIED? YES/NO	
BY WHOM? _____	
APPROPRIATE SAMPLE CONTAINERS? <b>poly Bags</b> <input checked="" type="radio"/> YES/NO	
SAMPLES WITHIN HOLDING TIMES? <input checked="" type="radio"/> YES/NO	
ALL ANALYSIS SPECIFIED ON COC? <input checked="" type="radio"/> YES/NO	
DATE/TIME OF COLLECTION ON COC <input checked="" type="radio"/> YES/NO	
TURN-AROUND TIME: <b>4 WEEKS</b>	
<b>DECON</b>	