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report

# ASTM Phase I Environmental Site Assessment Report

Former Lincoln Hall  
158-162 Rifle Street  
Springfield, MA

March 2015

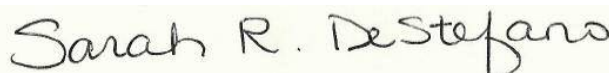
Funded through the EPA Brownfields Assessment Grant Number: BF 96191801

**ASTM Phase I Environmental Site Assessment  
158-162 Rifle Street  
Springfield, Massachusetts**



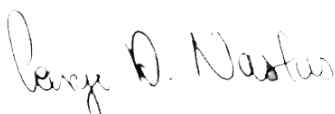
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March 2015  
Date

This ESA was prepared by Qualified Environmental Professionals (EPs) as defined in ASTM E1527-13 and EPA's AAI Final Rule. We declare that, to the best of our professional knowledge and belief, we meet the definition of *Environmental Professional* as defined in § 312.10 of 40 CFR 312. We have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. We have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR 312. Please note that the signatory is not acting in their LSP capacity or as an LSP-of-Record under the provisions of the Massachusetts Contingency Plan, 310 CMR 40.0000.

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## EXECUTIVE SUMMARY

Weston & Sampson Engineers, Inc. (Weston & Sampson), on behalf of the City of Springfield (the City), has prepared this Phase I Environmental Site Assessment (ESA) Report on a property located at 158-162 Rifle Street in Springfield, Massachusetts (herein referred to as the Site; the Target Property). This ESA was funded through a cooperative agreement between the City and the United States Environmental Protection Agency (EPA) through a Brownfields Assessment Grant (BF 96191801). The Phase I ESA was performed to assess if recognized environmental conditions (RECs) are present at the Site. This ESA was performed in accordance with ASTM International's Standard Practice E1527-13 that is compliant with EPA's All Appropriate Inquiry (AAI) requirements.

Weston & Sampson was requested by the City to complete the Phase I ESA of the Site in advance of an anticipated property acquisition by the City. In order to be eligible for liability protection under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), prospective property owners must conduct AAI in compliance with 40 CFR Part 312 within one year prior to acquiring ownership of a property. In addition, certain aspects or provisions of AAI must be conducted or updated within 180 days prior to acquiring ownership of a property. The City anticipates obtaining the Site in the summer of 2015.

Based on the work conducted, it is our opinion that the following RECs exist in connection with the Site:

- The documented presence of an unattended 275-gallon above ground storage tank (AST) within the basement of the abandoned building has been identified as a REC because the contents, condition, purpose and/or age is unknown.
- The documented presence of a 2,000-gallon underground storage tank (UST), installed at the Site in 1948, has been identified as a REC because the status, contents, condition, location of this tank is unknown.
- The historical use of an incinerator at the Target Property, as documented in City records, represents a REC because it is Weston & Sampson's opinion that the use of incinerators typically results in releases of oil and/or hazardous substances to the surrounding environmental media at concentrations above applicable standards.
- The documented release and non-compliant regulatory status for a portion of release tracking number (RTN) 1-527 at the northern adjoining property located at 468 Walnut Street has been identified as a REC, because it is Weston & Sampson's opinion that the presence of a historical release of petroleum at 468 Walnut Street has the high potential of impacting environmental media at the Site.
- The documented presence of asbestos containing materials (ACMs) located within debris piles at the Target Property are identified as a REC.

Based on the findings developed during performance of this Phase I ESA, the following recommendations are offered:

- Further site assessment activities in the form of a Phase II ESA should be completed to address the RECs identified above and fully characterize the Site for redevelopment. The results from the Phase II ESA may then be used to determine if a VEC exists at the Site or if it can be ruled out because it does not, or is unlikely to, exist.

## 1.0 INTRODUCTION

Weston & Sampson, on behalf of the City of Springfield, has prepared this Phase I ESA Report for the property located at 158-162 Rifle Street in Springfield, Massachusetts (the Site; the Target Property). This ESA was funded by a Cooperative Agreement between the City and the EPA through a Brownfields Assessment Grant (BF-96191801).

Weston & Sampson was requested by the City to complete an ASTM Phase I ESA of the Site in advance of the anticipated acquisition of the property by the City via eminent domain.

The ESA was performed in accordance with the Phase I Environmental Site Assessment (Standard Practice E1527-13), as developed by ASTM International, the Oil and Hazardous Material Release Prevention and Response Act - Massachusetts General Law Chapter 21E (MGL c. 21E), and EPA's AAI Rule (40 CFR part §312).

The ESA included an environmental database search; review of local, state, and federal regulatory agency files; a review of historical documents to determine the past use of the Site; and a limited reconnaissance of the Site and vicinity for potential on- and off-Site contamination sources. No sampling or other intrusive activities were conducted as part of the Phase I ESA. This report is subject to the Limitations described in Section 11.0.

### 1.1. Purpose

This Phase I ESA was performed to assess the Site with respect to the range of contaminants within the scope of CERCLA (42 U.S.C. §9601) and petroleum products. This practice is intended to permit the City of Springfield to satisfy one of the requirements to qualify for the innocent landowner, contiguous property owner, or bona fide prospective purchaser limitations on CERCLA liability: that is, the practices that constitute "all appropriate inquiry into the previous ownership and uses of the Site consistent with good commercial or customary practice" as defined in 42 U.S.C. § 9601(35)(B).

The objective of the Phase I ESA is to identify recognized environmental conditions in connection with the property at the time of the property evaluation. The term "recognized environmental condition" (REC) referenced in the ASTM standard, E1527-13, refers to "the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment." The ASTM definition does not include, "de minimis" conditions, which generally do not present a threat to human health or the environment and would not be the subject of an enforcement action if brought to the attention of the appropriate governmental agencies; therefore, de minimis conditions are not considered RECs. A new term, "controlled recognized environmental condition" (CREC) referenced in ASTM E1527-13, refers to "a REC from past releases that has been addressed to the satisfaction of the applicable regulatory authority, with hazardous substances or petroleum allowed to remain in place subject to the implementation of required controls".

This ESA was conducted utilizing a standard of good commercial and customary practice that is consistent with the ASTM Practice E 1527-13. Any significant scope-of-work additions, deletions or deviations to ASTM Practice E 1527-13 are noted below or in the corresponding sections of this report.

The scope of work for this assessment included an evaluation of the following:

- Physical characteristics of the Site through a review of referenced sources for topographic, geologic, soil and hydrologic data;
- Site history through a review of referenced sources such as land deeds, fire insurance maps, city directories, aerial photographs, prior reports, and interviews;
- Current Site conditions, including a site reconnaissance to observe conditions exposed at the ground surface for evidence of previous and current property usage, and indications of environmental impacts (e.g., stressed vegetation, staining, etc.), as well as interviews regarding: the presence or absence of hazardous substances or petroleum products; generation, treatment, storage, or disposal of hazardous, regulated, or biomedical waste; equipment that utilizes oils which potentially contain PCBs; and storage tanks (aboveground and underground);
- Usage of surrounding area properties and the likelihood for releases of hazardous substances and petroleum products (if known and/or suspected) to migrate onto the Site;
- Information in referenced environmental agency databases and local environmental records for sites located within specified minimum search distances;
- Past ownership through a review of available prior reports and local municipal files; and
- Vapor encroachment screening based on information obtained via the environmental database report, local and/or state research and interview documentation.

The scope of work did not include the consideration of potential environmental conditions that are outside the scope of ASTM Practice E 1527-13 including, but not limited to, asbestos-containing materials (ACM), lead-based paint (LBP), lead in drinking water, and radon.



## 2.0 SITE DESCRIPTION

### 2.1. Site Ownership and Location

Site Owner:	Beckett & Taylor Enterprises, LLC
Site Occupants:	Not-Applicable / vacant commercial building
Site Location:	158-162 Rifle Street, Springfield, Massachusetts
County:	Hampden
Parcel ID:	102000034
Latitude/Longitude:	42° 5 53.36" North 72° 33 51.12" West
UTM Coordinates:	Zone 18 701,430.4 meters East 4,663,270 meters North
Size:	0.8023 acres

The irregular-shaped Site consists of a single parcel of land, which is comprised of three smaller lots, totaling approximately 0.80 acres which is located on the west side of Allen Street and between Hickory Street and Rifle Street in Springfield, Massachusetts. A Locus Map showing the location and general surroundings of the Site is provided as Figure 1.

### 2.2. Current Use of the Property

A dilapidated commercial building which has been vacant for approximately 10 years currently exists at the Site. The eastern portion of the Site appears to have been utilized as a paved parking area. The northern and western portions of the Site are scattered with solid waste debris.

### 2.3. Description of Structures, Roads, Other Improvements on the Site

The Site is improved with an approximate 11,000 square foot, two-story, commercial building with a basement. A paved asphalt parking lot is located on the east side of the building which is accessed via curb cuts off Rifle Street and Hickory Street. A chain link fence with locking gate is present along the northeast corner of the Site along Hickory Street. Chain link fencing is also located along the entire length of the western property boundary and at southwest corner of the Site until tying into the southwest corner of the building, however the fencing is not secure and access is not prevented to the Site. A Site plan is provided as Figure 2.

Drainage is via sheet flow towards catch basins located along Allen Street and Rifle Street. Water and sanitary sewer service via the City of Springfield are available to the Site. The building is currently not heated.

### 2.4. Current Uses of Adjoining Properties

Uses of the adjoining properties were assessed by walking along Rifle Street, Allen Street and Hickory Street. The property and surrounding areas are described below:

North: Hickory Street, beyond which is Impoco's Poultry Market (468 Walnut Street) and a residence (46 Hickory Street);

East: Allen Street, beyond which is a large mixed commercial/industrial building (1 Allen Street);

West: Bakery & Spanish Cuisine (152 Rifle Street); and

South: Rifle Street, beyond which is the Mill River.

### **3.0 USER PROVIDED INFORMATION**

A User Questionnaire completed by Ms. Samalid Hogan of the City of Springfield Office of Planning and Economic Development is included as Appendix A. The information requested in the User Questionnaire is intended to assist in gathering evidence to identify RECs at the Site.

In addition, a Limited Asbestos and OHM Inspection report, which was performed for the Site in August 2014 by ECS of Agawam, Massachusetts, was made available to Weston & Sampson by the City of Springfield and has been attached as Appendix I. The findings of the report are summarized in Section 4.5.

The following is a summary of the completed User Questionnaire by Ms. Hogan.

#### **3.1. Environmental Liens**

Ms. Hogan is not aware of any environmental cleanup liens against the Site that are filed or recorded under federal, tribal, state, or local law.

#### **3.2. Activity and Use Limitations**

Ms. Hogan is not aware of any Activity and Use Limitation (AUL) implemented at the Site.

#### **3.3. Specialized Knowledge**

Ms. Hogan reported no specialized knowledge of RECs, historical recognized environmental conditions (HRECs), or other potential environmental concerns in connection with the Site or nearby properties, other than those described in Sections 4.2 and 4.5 of this report.

#### **3.4. Commonly Known or Reasonable Ascertainable Information**

Ms. Hogan did not report any commonly known or reasonably ascertainable information about the Site that would be indicative of releases or threatened releases, other than those described in Sections 4.2 and 4.5 of this report.

#### **3.5. Valuation Reduction for Environmental Issues**

No property valuation reduction related to environmental issues or concerns was reported by Ms. Hogan.

#### **3.6. Degree of Obviousness of Contamination**

The user reported it is unknown if obvious indicators that point to the presence or likely presence of contamination at the Site, other than those described in Sections 4.2 and 4.5 of this report.

## 4.0 DATABASE SEARCH REPORT AND PUBLIC RECORDS

### 4.1. Electronic Database Search

A review of standard environmental databases maintained by federal, state, and tribal offices was completed through EDR of Shelton, Connecticut. The databases were searched for properties with reported environmental conditions located within approximate minimum search distances as specified by ASTM Standard E 1527-13. The databases use geocoded information to identify the coordinates of the properties in the databases or to check the street addresses of practically reviewable non-geocoded “orphan” properties located within the same zip code. The detailed database report and limitations of the search criteria are contained in Appendix B, which also defines database acronyms that are not explicitly defined in this discussion.

The database report identified 15 “orphan sites.” Orphan sites are those sites that could not be accurately mapped or geocoded due to inadequate location information. Weston & Sampson attempted to locate these sites via internet research, vehicular reconnaissance and/or interviews with personnel familiar with the area. Based on this research, Weston & Sampson did not identify any listed orphan sites that are likely to have impacted conditions at the Site.

It should be noted that plotted locations of listed sites are not always accurate. With regard to listings that are determined or suspected to be inaccurate, based on information from other sources such as direct observation or consultation with individuals familiar with the property, Weston & Sampson uses the best available data when evaluating the location of listed sites discussed below.

The following table provides a summary of findings of EDR’s report. The Target Property and specific properties identified within the database report are further discussed below.

<b>SUMMARY OF EDR’S REGULATORY DATABASE SEARCH FINDINGS</b>			
<b>Regulatory Database</b>	<b>Approximate Minimum Search Distance</b>	<b>Target Property Listed</b>	<b>Off-site Listings Within Search Distance</b>
Federal NPL Sites	1.0 mile	No	0
Federal Delisted NPL Sites	0.5 mile	No	0
Federal CERCLIS Sites	0.5 mile	No	0
Federal CERCLIS NFRAP Sites	0.5 mile	No	1
Federal RCRA CORRACTS Sites	1.0 mile	No	0
Federal RCRA non-CORRACTS TSD Sites	0.5 mile	No	0
Federal RCRA Generator Sites	Target Property and Adjoining	No	1
Federal RCRA Non-Generator Sites	Target Property and Adjoining	No	4
Federal Engineering / Institutional Control Sites	Target Property	No	NA
Federal ERNS Sites	Target Property	No	NA
State and Tribal equivalent CERCLIS Sites	1.0 mile	No	76
State and Tribal SPILLS Sites	Target Property	No	NA
State and Tribal Landfill or Solid Waste Disposal Sites	0.5 mile	No	2

<b>SUMMARY OF EDR'S REGULATORY DATABASE SEARCH FINDINGS</b>			
<b>Regulatory Database</b>	<b>Approximate Minimum Search Distance</b>	<b>Target Property Listed</b>	<b>Off-site Listings Within Search Distance</b>
State and Tribal Leaking Storage Tank Sites	0.5 mile	No	<b>15</b>
State and Tribal Registered Storage Tank Sites	Target Property and Adjoining	No	0
State and Tribal Engineering / Institutional Control Sites	Target Property	No	NA
State and Tribal Voluntary Cleanup Sites	0.5 mile	No	0
State and Tribal Brownfields sites – BROWNFIELDS Database	0.5 mile	No	<b>1</b>
Local Brownfields List – US BROWNFIELDS	0.5 mile	No	<b>5</b>
Records of Emergency Release Reports – RELEASE Database	Target Property	No	NA
Records of Emergency Release Reports – SPILLS Database	Target Property	No	NA

The discussion in the following sections serves to highlight findings of the database search that may have the potential to present RECs at the Site. Specific properties identified in the above regulatory databases may tend to pose a risk to the Site based on characteristics such as proximity, elevation, type of contaminant and regulatory status. Whether or not a REC associated with an off-site source has the potential to impact the Site depends on the distance of the source from the Site, its direction from the Site relative to the flow of groundwater, the magnitude of the release, contaminant type, and location. In general, off-site RECs with sources that are proximate to, and hydraulically up-gradient of the Site have the potential to impact the Target Property. Presumed hydrogeologic gradient is based upon regional topography and inferred groundwater flow direction. Based on the topographic map, inferred groundwater flow direction is to the south / southwest towards the Mill River.

#### 4.1.1. Federal Agency Database Listings

##### National Priority List (NPL)

The NPL database, also known as the Superfund List, is a subset of CERCLIS and identifies sites that are ranked as high priority for remedial action under the Federal Superfund Act. Neither the Target Property nor any properties located within a 1.0-mile radius of the Target Property are identified on the NPL.

##### Delisted National Priority List (NPL)

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establish criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425(e), sites may be deleted from the NPL where no further response is appropriate. Neither the Target Property nor any properties located within a 1.0-mile radius of the Target Property are identified on the Delisted NPL database.

### Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS)

CERCLIS contains data regarding potentially hazardous waste sites that have been reported to the EPA by states, municipalities, private companies, and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). CERCLIS contains sites that are included on the National Priority List (NPL), as well as sites which are in the screening and assessment phase for possible inclusion on the NPL. Neither the Target Property nor any properties located within a 0.5-mile radius of the Target Property are identified on the CERCLIS database.

### CERCLIS – No Further Remedial Action Planned (CERCLIS-NFRAP)

As of February 1995, CERCLIS sites designated as No Further Remedial Action Planned (NFRAP) have been removed from the CERCLIS list. NFRAP sites may be sites where, following an initial investigation, no contamination was found, contamination was removed without the need for the site to be placed on the NPL, or the contamination was not considered sufficient to warrant Federal Superfund action or NPL consideration.

The EDR report identified one (1) property located within a 0.5-mile radius of the Target Property on the CERCLIS-NFRAP database. Advanced Laboratories, Inc. at One Allen Street is located east and potentially cross-gradient to the Site. According to the listing, this property is not on the National Priority List and was listed for “removal” with no assessment required. Based on the lack of releases reported for this property and perceived groundwater flow trends inferred from surrounding topographic and hydrogeological conditions (i.e., the adjacent Mill River), Weston & Sampson is of the opinion that the CERCLIS-NFRAP site identified in the EDR report is not likely to pose a threat to the subsurface conditions of the Site.

### Resource Conservation and Recovery Act – Corrective Action Tracking System (CORRACTS)

RCRAInfo is EPA’s comprehensive information system that provides access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976, and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRAInfo replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS). The database includes selective information regarding sites that generate, transport, store, treat, and/or dispose of hazardous waste as defined by RCRA. The RCRA-CORRACTS database identifies treatment, storage, and/or disposal (TSD) facilities that have conducted, or are currently conducting, corrective action(s) as regulated under RCRA. Neither the Target property nor any properties located within a 1.0-mile radius of the Target Property were identified on the RCRA-CORRACTS database.

### RCRA non-CORRACTS Treatment, Storage and/or Disposal Facilities

RCRA non-CORRACTS TSD facilities are required to register hazardous waste activity under the Resource Conservation and Recovery Act. Neither the Target Property nor any properties located within a 0.5-mile radius of the Target Property are identified on the RCRA non-CORRACTS TSD database.

### RCRA Hazardous Waste Generators

Hazardous waste generators tracked under RCRA are classified as either Large Quantity Generators (LQGs), Small Quantity Generators (SQGs), or Conditionally Exempt Small Quantity Generators (CESQG). A RCRA-LQG is defined as a facility that generates over 1,000 kilograms (Kg) of hazardous waste, or over 1 Kg of acutely hazardous waste per month. A RCRA-SQG is defined as a facility that generates between 100 Kg and 1,000 Kg of hazardous waste per month. A RCRA-CESQG is defined as a facility that generates less than 100 Kg of hazardous

waste, or less than 1 Kg of acutely hazardous waste per month. The Target Property was not identified as a RCRA generator.

The EDR database report identified one (1) adjoining property on the RCRA Generators database. Poly-Metal Finishing Inc. of One Allen Street, is located east across Allen Street and potentially cross-gradient of the Site and was identified as a RCRA LQG. According to the database report, the MassDEP received a form dated April 2012 stating that the Poly-Metal Finishing was operating as a LQG. Historic records included on the database report indicate that this business has operated as a LQGP from 1980 through 2012. Types of wastes generated include ignitable hazardous waste (D001), waste with pH <2 or greater than 12.5 (D002), cadmium (D006), chromium (D007), lead (D008), methyl ether ketone (D035), vinyl chloride (D043), spent solvents (F005), wastewater treatment – electroplating (F006), spent stripping and cleaning (F009), wastewater treatment – sludge (F019) and waste oil (MA01). Several RCRA violations were listed however the majority of the violations have reached compliance. Weston & Sampson is of the opinion that the RCRA Generator site identified in the EDR report and summarized above is not likely to pose a threat to the subsurface conditions of the Site based upon the lack of documented release, violation status and distance/gradient relative to the Site as well as the surrounding topographic and hydrogeological conditions.

#### RCRA Non-Generators

Tracked under the RCRA Info database, RCRA Non-Generator sites are those sites no longer generating hazardous waste as defined by RCRA. The Target Property was not identified as RCRA non-generator.

The EDR report identified four (4) businesses located at the adjoining eastern property across Allen Street at One (1) Allen Street, as RCRA non-generators including: Poly-Testing, Inc.; Advanced Laboratories; Pochemo, Inc.; and Valley Plating, Inc. The EDR reports no violations during a compliance inspection in June of 1988. Weston & Sampson is of the opinion that the four (4) RCRA Non-Generator sites identified in the EDR report are not likely to pose a threat to the subsurface conditions of the Site based upon the generator class, violation status, description, distance/gradient relative to the Site and surrounding topographic and hydrogeological conditions.

#### Federal Engineering Control / Institutional Control Registries

The completion of site cleanup activities may include the implementation of engineering controls or institutional controls as part of the response action. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to eliminate the exposure pathway of regulated substances. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls. The Target Property was not identified on Federal Engineering Control or Institutional Control Registries.

#### Emergency Response Notification System (ERNS)

Emergency Response Notification System (ERNS) is a national database used to collect information regarding reported releases of petroleum products and/or hazardous substances. The database contains information from spill reports submitted to federal agencies, including the EPA, the U.S. Coast Guard, the National Response Center, and the U.S. Department of Transportation. A review of this database was conducted in order to determine whether any spills or incidents involving releases of hazardous substances or petroleum products have occurred at the Site. The Target Property is not identified on the ERNS database.

#### 4.1.2. State and Tribal Agency Database Records

##### State and tribal equivalent NPL and CERCLIS databases

State and tribal equivalent NPL and CERCLIS databases were searched for sites located within a 1.0-mile radius of the Target Property. The EDR report identified 76 state/tribal equivalent CERCLIS sites located within a 1.0-mile radius of the Target Property. Of the listed sites, 71 are located more than 1,000 feet from the Site and are not likely to pose a threat to the subsurface conditions at the Site based upon the release conditions, distance/gradient relative to the Site, and/or closed regulatory status. Three (3) of the five (5) remaining sites located within a 1,000-foot radius of the Target Property are each located hydraulically down-gradient of the target property and therefore do not have the potential to adversely impact the Target Property.

##### 1 Allen Street

The State Hazardous Waste Site (SHWS) identified in the EDR database report as Aero-Bond Corp of 1 Allen Street, is located adjacent (i.e., across Allen Street to the east) and potentially cross-gradient of the Target Property. According to the EDR Report, a notification of release was provided to the MassDEP for the 1 Allen Street property on April 15, 1989. MassDEP subsequently assigned RTN 1-606 to the release. The EDR report indicates that an A-2 Remedial Action Outcome (RAO) was obtained for the release in October 2004 and that although contamination had not be reduced to background conditions, a permanent solution had been achieved for the site.

According to files available through the MassDEP "Searchable Sites" webpage <http://public.dep.state.ma.us/SearchableSites/Search.asp>, which Weston & Sampson reviewed on January 21, 2015 as part of a regulatory file review, a Phase II Comprehensive Site Assessment (CSA) and A-2 RAO Statement were completed for RTN 1-606 by Tighe & Bond in 2004. According to the report, a historic chlorine fire occurred at the former Advanced Laboratories property in 1988 and was subsequently remediated. However, during investigation activities, low concentrations of volatile organic compounds (VOCs) and petroleum were identified in site soils in groundwater and presumed to be associated with historic USTs located at the property. MassDEP subsequently assigned RTN 1-606 to the Site. Several historic USTs were removed and/or closed-in-place and impacted soils were also removed from the 1 Allen Street property in 1990.

The Phase II CSA investigation activities completed for RTN 1-606 included the assessment of soil, groundwater and soil gas samples collected at the site between 2002 and 2004. The findings of the Phase II CSA were consistent with previous reports and identified concentrations of VOCs and petroleum constituents in site soils, groundwater and soil gas. The findings of the Phase II CSA were utilized to conduct a Method 3 Risk Characterization for the site and a condition of No Significant Risk (NSR) was found to exist for both current and unrestricted future site use. RTN 1-606 obtained regulatory closure in the form of an A-2 RAO, indicating that remedial work was completed and a permanent solution and condition of NSR has been achieved for the release site, but contamination was not reduced to background conditions.

Based upon the foregoing information, Weston & Sampson is of the opinion that RTN 1-1-606 is not likely to pose a threat to the subsurface conditions of the Target Property based upon the distance/gradient relative to the Site, nature and extent of contamination, and regulatory closure status.



#### 454 Walnut Street

The remaining SHWS is identified in the EDR database report as Metal Craft, Inc. of 454 Walnut Street, which is located to the north across Hickory Street and hydraulically up-gradient of the Target Property. According to the EDR report, a release of petroleum hydrocarbons was reported to the MassDEP on January 15, 1989 and subsequently assigned a RTN 1-527 to the property. The database indicates that in April 1998 the MassDEP issued a notice of responsibility to a potentially responsible party (PRP) for the release. In October 1998, the MassDEP notified the PRP of a notice of non-compliance for the property. Environmental investigations occurred at this property between 1999 and 2008, and according to the EDR report a partial A-2 RAO was submitted for a portion of this site; however the remaining portion of the site still remains in Phase II (Tier II) regulatory status.

Weston & Sampson performed a MassDEP regulatory file review for RTN 1-527 on January 21, 2015. According to files available through the MassDEP "Searchable Sites" webpage (<http://public.dep.state.ma.us/SearchableSites/Search.asp>), the 454-462 Walnut Street portion of RTN 1-157 has obtained regulatory closure in the form of an A-2 RAO, indicating that remedial work was completed and a permanent solution and condition of No Significant Risk has been achieved for this portion of the release site, but contamination was not reduced to background conditions. However, the portion of the Site that remains in non-compliance with the MCP encompasses the northern portion of 468 Walnut Street, which is the adjoining property located to the north of the Target Property across Hickory Street.

The site (454, 460 and 468 Walnut Street) was previously utilized as a gasoline station / service garage for approximately 48 years. Previous reports indicate the presence of petroleum contamination in the vicinity of historic USTs. Specifically, historic investigations completed at the property in 1988 indicated that the highest detected concentrations (1,154 mg/kg) of total petroleum hydrocarbons (TPH) were located at soil boring location B-9, in the vicinity of a waste oil UST that had historically been removed from the 468 Walnut Street property. No further investigations and/or remedial activities have occurred on the 468 Walnut Street portion of RTN 1-527 to date.

Based on the distance / gradient relative to the Target Property, limited environmental data and current regulatory status, it is Weston & Sampson's opinion that the lack of information available about the nature and extent of the contamination associated with the non-compliant portion of RTN 1-527 (i.e. 468 Walnut Street) presents a data gap, as it is unknown whether this portion of the release is likely or not to pose a threat to the subsurface conditions at the Target Property.

#### State and Tribal Spills Sites (SPILLS)

A review of available Release/Spills databases was conducted in order to determine whether any spills or incidents involving releases of hazardous substances or petroleum products have occurred at the Target Property. The Target Property was not identified on the Release/Spills databases.

#### State and Tribal Landfill Sites and Solid Waste Disposal Sites

The state and tribal landfill and solid waste disposal site databases identify active or inactive landfill and transfer station facilities, as well as open dumps that failed to meet RCRA Subtitle D Section 4004 criteria for solid waste landfills or disposal sites. The EDR report identified two (2) properties located within a 0.5-mile radius of the Target Property are identified on state or tribal landfill and solid waste disposal site databases. According to database report, both properties are listed as inactive. Neither of these properties is deemed to have the potential to pose a

threat to the subsurface conditions at the Site based on their down-gradient location relative to the Target Property.

#### State and Tribal Leaking Storage Tank (LST) Sites

Leaking Storage Tank Sites are properties where releases of hazardous substances or petroleum products from underground storage tanks (USTs) and/or aboveground storage tanks (ASTs) have been identified and reported to state, tribal, or local agencies. The EDR Report identified fifteen (15) LST sites located within a 0.5-mile radius of the Target Property. Twelve (12) of the listed LST sites are located more than 1,000 feet from the Target Property and are not likely to pose a threat to subsurface conditions at the Target Property based upon the release conditions, distance/gradient relative to the Site, and/or closed regulatory status. Of the remaining three (3) LST sites located within 1,000 feet of the Target Property, two (2) are located down-gradient of the Target property and therefore do not have the potential to adversely impact the subsurface conditions at the Target property.

The remaining property identified in the EDR report is 460 Walnut Street, which is located across Hickory Street and potentially up-gradient of the Site based upon perceived groundwater flow trends inferred from surrounding topographic conditions. According to the database report, a surface release of approximately 250-gallons of No. 2 fuel oil from a LST was reported on August 4, 2005 at 460 Walnut Street and assigned a RTN 1-15857. The database report states that a Class A-2 RAO was received by the MassDEP on October 4, 2005 indicating that remedial work was completed and a permanent solution and condition of No Significant Risk has been achieved but contamination was not reduced to background conditions.

Weston & Sampson performed a MassDEP regulatory file review for RTN 1-15857 on January 21, 2015. According to files available through the MassDEP "Searchable Sites" webpage (<http://public.dep.state.ma.us/SearchableSites/Search.asp>), the release associated with RTN 1-15857 occurred when a waste oil AST, primarily consisting of hydraulic fluid, was dumped from the back of a truck onto the dirt driveway of the 460 Walnut Street property. The spill migrated southeasterly, downhill onto the adjacent parcel located at 468 Walnut Street. Immediate Response Actions (IRA) consisted of the use of absorbent materials and soil excavation activities. Following the removal of approximately 44 tons of petroleum impacted soil and asphalt, confirmatory soil samples were obtained for laboratory analysis. A method 1 risk characterization was performed for the residual contamination remaining at the site and all exposure point concentrations (EPCs) were calculated to be below Method 1 S-1 standards. As detailed above, the site achieved regulatory closure in the form of an A-2 RAO.

Based upon the foregoing information, Weston & Sampson is of the opinion that RTN 1-15857 is not likely to pose a threat to the subsurface conditions of the Target Property based upon the distance/gradient relative to the Site, nature and extent of contamination, and the regulatory closure status.

#### State and Tribal Registered Storage Tanks

The Underground Storage Tank database contains registered USTs. USTs are regulated under Subtitle I of RCRA. The data is generated from the MassDEP's Summary Listing of all registered tanks in Massachusetts. Neither the Target Property nor any adjoining properties are identified as having registered storage tanks.

#### State and Tribal Engineering Control / Institutional Control Registries

The completion of disposal site cleanup activities may include the implementation of engineering controls or institutional controls as part of the response action. Engineering controls

include various forms of caps, building foundations, liners, and treatment methods for the pathway elimination of regulated substances. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls. The Target property was not identified on the EDR Report as an engineering/institutional control site.

#### State and Tribal Voluntary Cleanup Sites

Neither the Target Property nor any properties located within a 0.5-mile radius of the Site are identified on state or tribal voluntary cleanup site databases.

#### State and Tribal Brownfields Sites (BROWNFIELDS)

The Brownfields Act of 1998 amended M.G.L. c. 21E by establishing significant liability relief and financial incentives to spur the redevelopment of brownfields, while ensuring that the Commonwealth's environmental standards are met. Most brownfields are redeveloped with the benefit of liability protections that operate automatically under M.G.L. c. 21E.

Two (2) properties located within a 0.5-mile radius of the Site on Hickory Street are identified on the BROWNFIELDS database. These properties are not likely to pose a threat to the subsurface conditions of the Target Property based upon the distance/gradient relative to the Site, nature and extent of contamination, and/or the regulatory closure status.

#### 4.1.3. Additional Environmental Records

##### Local Brownfields Lists

The US BROWNFIELDS list is EPA's listing of Brownfields properties from the Cleanups in My Community program, which provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

The EDR report identified five (5) local Brownfields listings located within a 0.5-mile radius of the Target Property. Three (3) of the five (5) local Brownfields listings are located down-gradient from the Target Property. Therefore, based on distance/gradient (>1000ft) and/or lack of reported releases at these three (3) properties from the Target Property, Weston & Sampson's opinion is that these sites are not likely to pose a threat of impact to subsurface conditions at the Target Property.

The two (2) remaining Brownfields listings are located potentially up-gradient of the Site. The EDR report identified these two (2) listings as RTN 1-527 located at 454 Walnut Street and 454-462 Walnut Street.

The first listing identified as 454-462 Walnut Street states that the property formerly operated as an auto body shop (since demolished) and that the property was taken by the City in 2007. The listing states that in 2005, a 275-gallon AST containing heating oil was illegally dumped on the property prompting an IRA. The listing also indicates that USTs were removed from this property in the 1980s and that the property was damaged from a June 2011 tornado. Furthermore, the EDR report states that the 454 Walnut Street portion of the site still requires cleanup.

The second listing for as 454 Walnut Street property provides similar information and also indicates that a commercial building, consisting of offices and a 2-bay garage on the first floor and residents on the second floor, was present at the property during a 2005 Phase I ESA.

The database report identifies several historic uses of this property including a blacksmith shop, machine shop, auto repair facility and gasoline service station.

As detailed in the previous sections above, based upon the distance/gradient relative to the Target Property, limited environmental data, and current regulatory status, it is Weston & Sampson's opinion that the lack of information available about the nature and extent of the contamination associated with the non-compliant portion of RTN 1-527 (i.e. 468 Walnut Street) presents a data gap, as it is unknown whether this portion of the release is likely or not to pose a threat to the subsurface conditions at the Target Property.

#### 4.1.4. Adjoining Property Listings

The northern adjoining property (across Hickory Street) located at 468 Walnut Street is associated with two (2) known release sites with the MassDEP (RTNs 1-527 and 1-15857). This property was also identified on the RCRA non-generator, SHWS, leaking AST and Brownfields databases that were searched by EDR, as described in more detail in the preceding sections. Based on a review of the database entries and information obtained from a regulatory file review, it is Weston & Sampson's opinion that the lack of information available about the nature and extent of the contamination associated with the non-compliant portion of RTN 1-527 presents a data gap, as it is unknown whether this portion of the release is likely or not to pose a threat to the subsurface conditions at the Target Property. Further information regarding the release(s) at this property are described in greater detail in Section 4.3 of this report.

The adjoining property to the east (across Allen Street), located at One (1) Allen Street, was identified on the database report under several businesses on the RCRA-LQG, RCRA non-generator and SHWS databases. As discussed in more detail in the sections above, based on a review of the database entries and information obtained from a regulatory file review, it is Weston & Sampson's opinion that this property is not likely to have the potential to adversely impact the Target Property due to the distance/gradient, nature and extent of contamination, surrounding topographic and hydrogeological conditions, and/or regulatory status.

#### 4.1.5. Orphan Listings

The EDR database report identified fifteen (15) orphan site listings. None of the orphan listings were identified as Adjacent Properties. Each of the orphan site listings were determined to not likely pose a threat to subsurface conditions at the Site based upon: the release conditions or lack of known release; distance/gradient relative to the Site; and/or closed regulatory status.

#### 4.1.6. Tier 1 Vapor Encroachment Screening Report Summary

In 2010, ASTM International issued its revised Standard E2600-10 entitled "Standard Guide for Vapor Encroachment Screening on Property Involved in Real Estate Transactions." The purpose of the standard is to define good commercial and customary practice for real estate transactions in the United States for conducting a screening assessment directed solely at the likelihood for migrating vapors to encroach upon a target property (i.e. the Site) creating a vapor encroachment condition (VEC). Whether or not encroaching vapors result in a vapor intrusion problem requires further investigation that is beyond the scope of the standard.

A VEC is defined as the presence or likely presence of chemicals of concern (COC) vapors in the subsurface of the Site caused by the release of vapors from contaminated soil or groundwater on or near the Site. An area of concern (AOC) as defined in the E2600-10 is measured 0.33-miles from the Site for known or suspect contaminated sites with volatile organic

compounds (VOCs) or semi-VOCs, and 0.1-mile from the Site for known or suspect petroleum hydrocarbon releases. The identification of AOCs may be reduced if the groundwater flow direction is known relative to the Site. Critical distances are taken into account for contaminated groundwater plumes in any direction for COCs including petroleum LNAPL accumulating above the water table at a distance of 100 feet from the edge of the plume to the Site and 30 feet for dissolved volatile petroleum hydrocarbons.

Using the cumulative information obtained during this Phase I ESA and the EDR Tier I screening report, Weston & Sampson has performed a Vapor Encroachment Screening (Tier 1) in general accordance with the scope of work and limitations of ASTM Standard Practice E 2600-10 for the Target Property. The purpose of this Vapor Encroachment Screening (Tier 1) was to identify existing or potential VECs (as defined by ASTM Standard E 2600-10) affecting the subject property. As part of the screening, Weston & Sampson completed the Questionnaire that can be found in Section X3 of ASTM E 2600-10, which is duplicated in the table below:

*VEC Tier 1 Screening*

<b>Question</b>	<b>Response</b>	<b>Comments</b>
1. Property Type?	Commercial	Vacant
2. Are there buildings/structures on the property?	Yes	Two-story with basement
3. Will buildings/structures be constructed on the property in the future?	Unknown	Conceptual reuse plans include commercial use
4. If buildings exist or are proposed, do/will they have elevators?	Unknown	
5. Type of level below grade (existing or proposed)?	Basement (currently existing)	
6. Ventilation in level below grade?	Unknown	
7. Sump pumps, floor drains, or trenches (existing or proposed)?	Unknown	Limited access to building due to safety concerns.
8. Radon or methane mitigation system installed?	Unknown	Limited access to building due to safety concerns.
9. Heating system type (existing or proposed)?	Unknown	
10. Type of fuel energy (existing or proposed)?	Unknown	Gas – last documented heating fuel
11. Have there ever been any environmental problems at the property?	No	
12. Does/will a gas station or dry cleaner operate anywhere on the property?	No	Gasoline service stations historically located to the west and north (across Hickory Street) adjoining the Site
13. Do any tenants use hazardous chemicals in relatively large quantities	No – Currently vacant and slated	Visual observations limited due to significant amounts of debris as well as and lack of

Question	Response	Comments
on the property?	for demolition.	interior access to due to safety concerns.
14. Have any tenants ever complained about odors in the building or experienced health-related problems that may have been associated with the building?	Unknown	Currently vacant
15. Are the operations (or proposed operations to be performed) on the property OSHA regulated?	Unknown	Currently vacant. Conceptual reuse plans include commercial use.
16. Are there any existing or proposed underground storage tanks (USTs) or above ground storage tanks (ASTs)?	USTs = Unknown ASTs = Yes	Based on a previous report, a 275-gallon AST is located in the basement. City fire department records indicate that at 2,000-gallon UST was installed at the Site; however, no documentation regarding the removal / abandonment of the tank is available; therefore the status of this UST is known.
17. Are there any sensitive receptors (for example, children, elderly, people in poor health, and so forth) that occupy or will occupy the property?	No	Currently vacant. Conceptual reuse plans include commercial use.

*Additional VEC Criteria*

Question	Response	Comments
1. Is the property known to have current or past contamination?	No	No VOC source - only documented presence of ACM and potential for other hazardous building materials including LBP, PCBs and mercury due to the age of structure.
2. Is contamination of the property suspected?	Yes	Hazardous building materials; Potential petroleum from ASTs/USTs and/or PAHs from historic fire that occurred at the property in March 2013.
3. Is an adjacent property known to have current or past contamination which may have impacted the subject property?	Yes	The petroleum release associated with the non-compliant portion of RTN 1-527, which adjoins the Site to the north (separated by

Question	Response	Comments
		Hickory Street), and is considered up-gradient of the Site and has the potential to impact the subsurface conditions at the Target Property
4. Is a nearby property known to have current or past contamination which may have impacted the subject property?	No	Gasoline service stations were historically located on the adjoining properties to the west and north (across Hickory Street) of the Target Property
5. Is regional groundwater contamination known to exist beneath the property?	No	Historic dissolved petroleum groundwater impacts were identified above MassDEP standards in the limited data available for the adjacent property to the north located at 468 Walnut Street (RTN 1-527).  In addition, historic dissolved petroleum and VOC impacted groundwater was identified at the adjacent property to the east located at 1 Allen Street (RTN 1-606); however a Method 3 Risk Characterization completed for RTN 1-606 determined that a condition of NSR exists for current and unrestricted future use.
6. Are you aware of other conditions which may result in vapor intrusion at the property?	No	

Twenty (20) sites of concern were identified in the EDR regulatory database report with the potential to impact the Target Property due to their location within the 1/3 mile AOC radius from the Site. Weston & Sampson is of the opinion that nineteen (19) of these sites are not likely to pose a threat to subsurface conditions at the Site based upon: the release conditions or lack of documented release; nature and extent of contamination; distance/gradient relative to the Site; and/or regulatory status.

The remaining off-site property is located at 468 Walnut Street (i.e., the non-compliant portion of RTN 1-527) and is identified as being hydraulically up-gradient from the Site based upon inferred groundwater flow direction. Based upon the limited data available for RTN 1-527, historic dissolved petroleum contamination groundwater is known to be a concern at this off-site property. The nature and extent of contamination at this off-site property has not been adequately characterized and has the potential to migrate onto the Target Property. Therefore,

Weston & Sampson is of the opinion that a VEC associated with off-Site sources cannot be ruled out.

Furthermore, based upon the lack of available information with respect to the historic presence of USTs at the Target Property, it is Weston & Sampson's opinion that this presents a data gap because it is unknown whether a removal or a release to the subsurface occurred at the location of tank. Furthermore, this lack of closure assessment documentation presents a data gap because a VEC associated with the Target Property cannot be ruled out.

## **4.2. Municipal Records**

Weston & Sampson conducted a file review at the City of Springfield municipal offices. Pertinent information obtained from the City is included in Appendix C and discussed below.

### 4.2.1. City of Springfield Assessor's Office

Weston & Sampson completed an on-line file review at the City of Springfield Assessor's Office website. The electronic Assessor's records identify the Site parcel as ID No. 102000034, totaling approximately 0.80 acres. According to the property record card, the approximate 11,000 square-foot, two-story commercial building was constructed in 1890. A copy of the property record card and map are included in Appendix C.

### 4.2.2. City of Springfield Fire Department

On January 15, 2015, Laura Yellen of Weston & Sampson went to the Springfield Fire Department to request any documents associated with the Site. UST records available at the fire department identified a 2,000-gallon UST installed at 162 Rifle Street (former Site address) on December 10, 1948. Further information regarding the status of this UST was not available. No other USTs were identified on Site.

Additionally, one 2,000-gallon UST, two 1,000-gallon USTs and one 500-gallon UST installed on November 11, 1986, were on file for 152 Rifle Street (Vin's Package), the western adjoining property and are documented as "removed". Additional information regarding these USTs is unknown. A copy of the UST record is included in Appendix C.

Furthermore, these USTs were not identified on the EDR database report. Based on the prior use of this parcel as a gasoline filling station, as identified in historical Sanborn Maps discussed in the following sections of this report, Weston & Sampson attempted to research the MassDEP website for any regulatory records pertaining to this property. No additional files or known releases associated with the 152 Rifle Street property were identified.

### 4.2.3. City of Springfield Building Department

Laura Yellen of Weston & Sampson performed a file review at the City of Springfield Building Department on January 15, 2015. The building department possesses the following records for the Site under 158 Rifle Street (current Site address) and/or 158, and 160 Rifle Street or 492-496 Mills Street (former Site address):

- July 30, 1930: Building Permit to remodel basement (Lincoln Hall - 494 Mill Street);
- July 31, 1930: Building Permit to remodel 12-apartment building;
- October 21, 1932: Building Permit (#10425) to build an incinerator fastened to the first floor of the building (A copy of this permit is included in Appendix C);
- June 23, 1941: Building Permit for store alterations;
- January 20, 1943: Building Permit for alternations to residential units and restaurant. The permit also references that the property is heated by coal ;
- January 30, 1946: Building Permit for alternations to the Café and Drug Store;



- June 24, 1955: Building Permit to repair fire damage;
- January 26, 1968: Building Permit to install a suspended ceiling;
- March 22, 1971: Building Permit for alternations to store;
- April 8, 1972: Building Permit for alternations to package store;
- August 4, 1978: Building Permit to remove top story and eliminate some residential units;
- January 29, 1979: Building Permit to remove four additional apartments and alterations to the restaurant. The permit also references that the property is supplied gas heat;
- April 8, 1985: Building Permit for alterations to restaurant; and
- August 30, 1992: Building Permit for a tent associated with Parish & Glory Church.

#### 4.2.1. City of Springfield Planning Department

Laura Yellen of Weston & Sampson performed a file review at the City of Springfield Zoning Office on January 15, 2015. According to records, the Site is located in a “B2”, business zone of Springfield.

#### 4.2.2. City of Springfield Clerk’s Office

Laura Yellen of Weston & Sampson performed a file review at the City of Springfield Clerk’s Office on January 15, 2015. The Clerk did not have any records on file for the Site with respect to environmental cleanup liens, AULs or licenses for hazardous materials.

#### 4.2.3. City of Springfield Health

Laura Yellen of Weston & Sampson contacted the Health Department on January 20, 2015 to inquire about records for the property. The health department did not possess any records, including but not limited to, septic systems, asbestos, or MassDEP files.

#### 4.2.4. City of Springfield Water & Sewer Commission

Laura Yellen contacted the City of Springfield Water and Sewer Commission on January 16, 2015. The Water and Sewer Department confirmed that municipal water and sewer service is available to the Site. Original connection dates to these systems could not be located.

### **4.3. State Records – MassDEP**

Although the Site was not identified on any of the environmental databases, the adjoining off-site property to the north (across Hickory Street), located at 468 Walnut Street was identified as RTN 1-527 and RTN 1-15857 with MassDEP. Weston & Sampson performed a MassDEP regulatory file review for these RTNs on January 21, 2015 through the MassDEP “Searchable Sites” webpage (<http://public.dep.state.ma.us/SearchableSites/Search.asp>).

The following is a summary of notable information obtained from records reviewed by Weston & Sampson. Copies of relevant reports, as described, below are included in Appendix D.

#### RTN 1-527

The MassDEP possessed records for this RTN including several reports pertaining to environmental investigations that occurred between 1988 and 2009 and various correspondences. Due to the volume of information, Weston & Sampson summarized the most recent report, *Partial Response Action Outcome Statement (RAO-P)*, prepared by Tighe & Bond and dated July 2009, which included brief summaries of the former investigations leading up to the RAO-P, as follows:

### ***Associated Environmental Scientists (AES) 21E Assessment – September 1988***

AES conducted a 21E assessment of 454, 460 and 468 (i.e., northern adjoining parcel) Walnut Street in September 1988 which was submitted to the MassDEP by the owner of 468 Walnut Street. According to the AES report, two 2,000-gallon gasoline USTs were located on the southern portion of the 454-462 Walnut Street parcel and were replaced in the 1960s and subsequently removed in 1982. It was noted that during the removal of these tanks, evidence of leakage was observed. Additionally the report references the removal of a 275-gallon waste oil UST and replacement with an AST near the southern property line of 454-462 Walnut Street. The assessment included a total of sixty borings and the installation of 3 wells across the 454-462 Walnut Street parcel and 468 Walnut Street parcel. Results revealed elevated concentrations of petroleum hydrocarbons in soil near all three former USTs. The release of petroleum hydrocarbons was reported to the MassDEP on January 15, 1989 and was subsequently assigned a RTN 1-527.

### ***Clough, Harbour & Associates LLP (CHA) Subsurface Investigation – January 1999***

In September and October 1998, CHA conducted an additional subsurface investigation including the advancement of seven borings and installation of two wells along the property boundaries of the two parcels (454-462 Walnut Street [southern] and 468 Walnut Street [northern]). Petroleum hydrocarbons were detected in several soil and groundwater samples. The detected VPH, naphthalene and methyl tert-butyl ether (MTBE) concentrations exceeded applicable Reportable Concentrations (RCs) in boring B-201. VPH exceedances were also detected in groundwater well MW-201.

### ***Weston & Sampson Phase I ESA (454-462 Walnut Street) – May 2005***

At the time of the report, the 454-462 Walnut Street parcel consisted of a vacant commercial building which included an office and two-bay garage with a residence on the second floor. Key findings of the Phase I ESA were as follows:

- Two 275-gallon ASTs were observed in the building with associated oil staining on the ground surface beneath one of the ASTs;
- Oil staining was observed through the concrete floors of the building;
- The property was identified by the MassDEP as default Tier 1D indicating that the release is out of compliance with the Massachusetts Contingency Plan (MCP); and
- Weston & Sampson recommended additional Phase II investigation.

### ***ATC Associates, Inc. (ATC) Hydraulic Lift Removal - February 2006***

ATC observed the removal of a hydraulic lift from the southern portion of the 454-462 Walnut Street parcel on February 10, 2006. Oil odors, black oil-staining soils and sheen on groundwater were observed and noted during the excavation activities. Approximately four cubic yards of impacted soil were reportedly removed from the excavation, stockpiled and later transported to the Ted Ondrick Construction Company asphalt batching facility in Chicopee, Ma in July 2009 for disposal. Prior to lining the excavation with polyethylene sheeting for backfilling, confirmatory soil samples were collected from each of the four sidewalls and bottom of the excavation. The samples were submitted for polychlorinated biphenyl (PCB), volatile petroleum hydrocarbons (VPH) and extractable petroleum hydrocarbon (EPH) analysis. Results revealed the presence of elevated EPH carbon fractions, some that exceed Method 1 S-1 standards. ATC reports that no additional excavation was performed.

### ***Weston & Sampson Phase II ESA – August 2007***

In August 2007, Weston & Sampson performed a Phase II ESA on the 454-462 Walnut Street parcel which consisted of the advancement of fourteen borings and collection of soil samples. The purpose of the investigation was to focus on 1) soil beneath the footprint of the building

(demolished prior the investigation) and 2) delineating the extent of petroleum impacts from the hydraulic lift removal. Groundwater was not encountered before refusal on bedrock at shallower depths ranging from 1 foot to 3.5 feet below ground surface; therefore, the five proposed groundwater monitoring wells could not be installed. Soil samples were submitted for volatile organic compound (VOC), semi-volatile organic compounds (SVOCs), PCBs, VPH/EPH and Resource Conservation and Recovery Act (RCRA) 8 metals. Results revealed several SVOCs and lead above the applicable Method 1 Cleanup Standards.

#### ***Tighe & Bond Tier Classification - 2008***

Tighe & Bond prepared a Phase I Initial Site Investigation which incorporated the data from Weston & Sampson's 2007 Phase II ESA. The numerical ranking system (NRS) was completed for this RTN and was compared to the Tier I Inclusionary Criteria. The property did not meet those criteria and was subsequently classified as Tier II.

#### ***Tighe & Bond RAO-P Statement – July 2009***

Tighe & Bond conducted additional subsurface investigation activities at the 454-462 Walnut Street parcel between December 2008 and March 2009 through an EPA Brownfields grant. A Method 1 Risk Characterization conducted at this property yielded a condition of No Significant Risk. The future use of the property at the time of the Risk Characterization was commercial use, therefore a Class A-2 RAO-P was considered appropriate to close out the portion of the RTN-0000527 that the City of Springfield currently owned (454-462 Walnut Street). Therefore, the portion of the RTN containing 468 Walnut Street (northern adjoining parcel) still remains out of compliance in accordance with the MCP.

#### **RTN 1-15857**

An IRA Completion Statement and A-2 RAO, dated September 2005, were submitted by Tighe & Bond to the MassDEP on behalf of the City of Springfield, the owner of the 460 Walnut Street property. As documented in the report, the release associated with RTN 1-15857 occurred when a waste oil AST, primarily consisting of hydraulic fluid, was dumped from the back of a truck onto the dirt driveway of the 460 Walnut Street property on August 4, 2005. The spill migrated southeasterly, downhill onto the adjacent parcel located at 468 Walnut Street. IRA activities consisted of the use of absorbent materials and soil excavation activities. Following the removal of approximately 44 tons of petroleum impacted soil and asphalt, confirmatory soil samples were obtained for laboratory analysis. A method 1 risk characterization was performed for the residual contamination remaining at the site and all exposure point concentrations (EPCs) were calculated to be below Method 1 S-1 standards. RTN 1-15857 achieved regulatory closure in the form of an A-2 RAO.

### **4.4. State and Area History**

#### **4.4.1. Sanborn Maps**

A search for historical Sanborn fire insurance maps depicting the Site and vicinity was conducted by EDR, Inc. EDR identified Sanborn maps for the Site area dated 1896, 1911, 1931, 1950 and 1970. Copies of the Sanborn fire insurance maps are included in Appendix E.

The 1896 Sanborn map depict the Site developed with the current 2-story structure situated at the southern portion of the Site along Mill Street (currently known as Rifle Street). The structure is referred to as Lincoln Hall and contained residential units on the upper story and a drug store on the second floor. A second structure is depicted at the southwest corner of the Site. Due to the resolution of the 1896 map, the labels on the structure are unclear but appear to possibly be associated with a bakery. The eastern portion of the Site consists of a parking lot and a shed is

depicted at the northwest corner of the Site. The Site at this time has a range of addresses including 486-498 Mill Street. The abutting property west of the Site consists of a strip mall like structure with several commercial store fronts along Mill Street in the 1896 and 1911 Sanborn maps.

The 1911 Sanborn maps depict a similar layout of structures on Site as depicted on the 1896 map with the exception of the addition of a dwelling east of the shed at the northern portion of the Site along Hickory Street. The main building at this time remains of residential use on the upper floor and mixed-use on the main level, including a drug store and pool room. The building at the southeast corner of the Site is utilized for “grain storage” and residential with store frontage.

Sometime prior to 1931, the dwelling and shed along the northern portion of the Site and the building at the southwest corner of the Site were razed. The 1931 Sanborn map only depicts the current 2-story building, with continued residential use on the upper floor and a drug store on the main level. Also, sometime prior to this time, the commercial structure on the abutting property to the west was razed and replaced with a small concrete building labeled as “filling station” and is accompanied by a gas tank located at the northeast portion of this parcel in close proximity to the Site’s southwest property boundary.

By 1950, the use of the main structure remains the same with the exception of the addition of a restaurant on the main level. A new 3-car automobile garage is depicted at the northwest corner of the Site. The address at this time is now known as 158-162 Rifle Street (the current Site address). An addition to the filling station building on the western abutting parcel is evident on the 1950 Sanborn map. Additionally, the gas tank previously depicted on the 1931 map at the northeast portion of this parcel is absent and a new gas tank is depicted near the southeast portion of this parcel. This parcel is known as 152 Rifle Street.

The Site configuration remains the same in the 1970 Sanborn map as depicted in the 1950 map. Also at this time, the abutting western parcel no longer appears to be operating as a filling station and no gas tanks are depicted. Other surrounding properties depicted throughout the Sanborn maps include residential and commercial businesses.

#### 4.4.2. Topographic Maps

Historical topographic maps provide information related to physical land configuration such as elevation, ground slope, surface water and other features. While most buildings in densely developed urban centers are not depicted, topographic maps typically show structures equal to or larger than the size of a single-family residence in rural areas. Other notable features such as woods, pipelines, municipal boundaries, and areas of filled land are often marked on topographic maps.

A search for historical topographic maps depicting the Site and vicinity was conducted by EDR. The Site can be identified in eight EDR-supplied topographic maps dated 1895, 1901, 1919, 1938, 1946, 1958, 1970, and 1979. The historical topographic maps are presented in Appendix F and offer the following historical Site information:

- Each of the topographic maps depict the Site sloping moderately to the south; and
- Due to the dense development of the area, structures are not depicted on any of the topographic maps.

#### 4.4.3. Aerial Photographs

Historical aerial photographs may be used to evaluate changes in land use and to identify visible areas of potential environmental concern. A search for historical aerial photographs depicting the Site and vicinity was conducted by EDR. The EDR Aerial Photo Decade Package for the Site included nine photographs dated 1952, 1957, 1969, 1970, 1974, 1980, 1985, 1991, 1997, 2002, 2006, 2008, 2010, and 2012. The EDR Aerial Photo Decade Package is included as Appendix G and a summary of findings from the aerials is provided below.

Each of the aerial photographs depicts the current Site structure situated centrally at the southern property boundary along Rifle Street with associated parking to the east and west. The 3-car garage structure first depicted on the 1950 Sanborn map at the northwest corner of the Site is also depicted on the 1952 through 1997 aerial photographs. By 2010, vegetation growth at the northern and western portions of the Site is visible. Each of the aerial photographs depict the surrounding properties to be a mix of residential and commercial land usage, while the property east of the Site across Allen Street is depicted as a (former) industrial complex currently known as One (1) Allen Street.

#### 4.4.4. City Directories

Historical street directories are commercial publications containing names and addresses, and in many cases, occupations of the occupants of a particular community. The directories may also contain information pertaining to business processes conducted within a community. Street directories for the years 1942, 1946, 1950, 1955, 1958, 1963, 1968, 1992, 1995, 1999, 2003, 2008 and 2013 were obtained through EDR. The street directories revealed the following information:

- Delehanty Drug Store (158 Rifle Street), Lincoln Hall Apartments (160 Rifle Street) and the Mill River Café (162 Rifle Street) are listed as the Site occupants in the 1942 through 1968 street directories;
- Messiah Temple is listed as the Site occupant under 162 Rifle Street in the 1995 street directory;
- The Junction and Nails Plus are the listed Site occupants in the 1999 street directory;
- The most recent Site occupant is Victory Church, as identified in the 2008 street directory;
- According to the 1946 through 1958 street directories, the western abutting parcel was occupied by a gasoline service station under various names throughout this timeframe;
- Other occupants of the western abutting parcel include the American Fuel Oil Company (1963), Herbert's Imported Cars (1968), Springfield Riders (1992-2003), Roscoe Banquet House (1999), Big Joe's Variety Store (2003) and Puerto Rico Restaurant (2008-2013).

The EDR City Directory Abstract is included as Appendix H.

### **4.5 Previous Reports**

The City provided Weston & Sampson with a copy of a Limited Asbestos and OHM Inspection report prepared on behalf of the City of Springfield by Environmental Compliance Services, Inc. (ECS) of Agawam, Massachusetts and dated August 2014. A brief summary of the ECS report is provided below:

- ECS collected a total of 71 bulk samples of suspect ACM and inventoried oil and hazardous materials (OHM) from the Site building;
- Laboratory results revealed the presence of asbestos in 12" by 12" floor tiles, mastic associated with the 12" by 12" floor tiles, window casing caulking to exterior windows

and debris piles located at the Target Property including asphalt roof materials, built-up tar/gravel asphalt roof material and various color shingles; and

- An inventory of OHM, most notably revealed the presence of fluorescent tube lights, ballasts, thermostats, a 275-gallon AST in the basement and miscellaneous paints and cleaners.
- All painted surfaces were presumed to contain lead; however testing of LBP was not performed.

A copy of the ECS report is included in Appendix I.

## 5.0 SITE RECONNAISSANCE

On January 15, 2015, Weston & Sampson personnel performed a visual reconnaissance of the Site. The purpose of the Site reconnaissance was to observe current Site and vicinity conditions for the presence of RECs [i.e., release(s) and/or threats of releases of oil and/or hazardous materials (OHM) to the surface or subsurface at the Site and/or its surrounding areas] that may have impacted the property. Visual observations of the ground surface were limited on the day of the reconnaissance due to light snow and/or ice cover. Additionally, due to the structural integrity of the Site building, access and visual observations of the building interior were limited. Specifically, access to the second floor, basement and portions of the first floor were not available. Furthermore, due to the lack of electricity and the significant amount of debris scattered throughout the floor surface, visual observations of the building interior were also limited.

Based on field observations made during the Site reconnaissance, information obtained through EDR and the Massachusetts Office of Geographic Information (MassGIS), and a review of previous investigations, this section presents a description of the environmental setting pertaining to the Site and regional features including topography, groundwater, and geology. Pertinent Site characteristics are shown on the Site plan presented as Figure 2 and in photographs included in Appendix J.

### 5.1. Physical Setting

#### 5.1.1. Site Setting and Topography

Topography of the Site slopes moderately to the south. According to the EDR Report, the average elevation of the Site is 165 feet above mean sea level. The Site Locus Map (Figure 1) depicts the Site and surrounding topography as based on the United States Geological Survey (USGS) Quadrangle 7.5-minute series topographic map.

#### 5.1.2. Groundwater Characteristics

Based on a review of topographic maps and previous reports, inferred groundwater flow is to the south towards the Mill River. The Flood Insurance Rate Map (FIRM) shows the Site is located within an X zone, which are areas determined to be outside the 0.2% chance floodplain. A copy of the FIRM map is included in Appendix C.

#### 5.1.3. Bedrock and Soil Characteristics

Bedrock outcroppings were not observed on Site, however visibility was limited due to physical obstructions, including debris, and other physical constraints, such as snow and/or ice cover, on the exterior grounds. "According to the USGS Bedrock Geologic Map of Massachusetts (E.an Zen, et al 1983), bedrock underlying the Site is part of the Lower Jurassic Portland Formation, which consists primarily of sedimentary rocks, specifically reddish-brown to pale red arkose and siltstone, as well as gray sandstone, gray siltstone, and black shale interpreted as lake beds."

#### 5.1.4. Potential Environmental Receptors

According to the Area Receptors Map (Figure 3), prepared using the MassGIS Environmental Receptors Database, the Site is not located in a potentially productive aquifer or within a Current or Potential Drinking Water Source Area. The Site is located within a medium yield, non-potential drinking water source area. No portion of the Site is listed as Natural Heritage and Endangered Species Protected (NHESP) Wetlands Habitats for Rare or Endangered Species.

The closest environmental receptor to the Site is the Mill River situated approximately 168 feet to the south-southeast.

## **5.2. Physical Characteristics**

The following is a list of observations made during the reconnaissance of the Site. As previously mentioned, visibility was limited due to physical obstructions, including large amounts of scattered debris throughout the interior and exterior portions of the property, as well as other physical constraints, including a light snow and/or ice cover, on the exterior grounds. Photographs of the Site visit can be found in Appendix J.

### 5.2.1. Land Area and Observations

The Site is improved with a 2-story, brick building with a basement situated centrally along the southern property boundary and fronts Rifle Street. Paved asphalt parking is located east of the building which is accessed via curb cuts of Hickory Street and Rifle Street. The northern and western portions of the Site appear to be unpaved and consist of various piles of debris, discussed in greater detail in Section 5.3.3.

### 5.2.2. Buildings and Improvements

The Site is improved with an approximate 11,000 square feet, 2-story building that has been vacant for over 10 years. The building is in a state of severe disrepair and has several windows and/or doors boarded up and or missing. A section of chain link fencing stretches along the northeast portion of the Site from Hickory Street. Chain link fencing is also located along the western property boundary and southern property boundary easterly prior to tying into the southwest corner of the building; however the fencing is not secure and access to the Target Property is not prevented.

### 5.2.3. Utilities

Municipal water and sewer is available to the Site by the City of Springfield. The building is currently not heated.

## **5.3. Potential Environmental Hazards and OHM Storage and Use**

The information discussed below is based on observations conducted during the Site visit on January 15, 2015

### 5.3.1. Hazardous Substances and Petroleum Products

No evidence of hazardous substances and/or petroleum products was observed at the Site, other than typical household size containers of paints, sealers, cleaners and joint compound. It is unknown if other hazardous materials or petroleum products are located on the property (interior and exterior) due to several factors including physical obstructions and constraints which limited visual observations.

### 5.3.2. Underground Storage Tanks (USTs)

No evidence of USTs was observed at the Site.

### 5.3.3. Above Ground Storage Tanks (ASTs)

No evidence of ASTs was observed at the Site. However, access to the building interior, including the basement, was not available during the Site reconnaissance due to safety



concerns. However, as previously mentioned in Section 4.5, an AST was previously observed in the basement of the building during an August 2014 inspection.

#### 5.3.4. Odors

No odors were detected at the Site, other than a musty odor associated with water damage to the abandoned building due to a historic fire and/or compromised integrity of the existing roof.

#### 5.3.5. Pools of Liquid

No pools of liquid were identified at the Site.

#### 5.3.6. Drums

No drums were identified at the Site, with the exception of an approximate 30-gallon drum observed near the entrance to the building. The drum was labeled "A Mobil", contained no lid and possessed a good amount of rusting. It is unknown if other drums are located on the property (interior and exterior) due to several factors limiting visual observations.

#### 5.3.7. Unidentified Substance Containers

No unidentified substance containers were observed at the Site.

#### 5.3.8. Polychlorinated Biphenyls (PCBs)

No equipment potentially containing PCBs including pole or pad-mounted transformers were observed on-Site.

#### 5.3.9. Stains or Corrosion

No obvious signs of staining were observed at the Site; however observations were limited due to physical obstructions and constraints, including snow/ice cover and scattered debris, as well as safety concerns and lack of electricity inside the facility.

#### 5.3.10. Drains and Sumps

No sumps were observed at the Site.

#### 5.3.11. Pits, Ponds, or Lagoons

No pits, ponds or lagoons were observed at the Site.

#### 5.3.12. Stressed Vegetation

No obvious signs of stressed vegetation were observed.

#### 5.3.13. Solid Waste

Various debris including furniture, bags of garbage, tires, a mattress and a shopping carriage were observed along the length of the northern property boundary fronting Hickory Street that does not have chain link fencing. This type of debris was also noted in the areas north of the building in the central portion of the Site. Additional debris was observed west of the building and consisted of several brush piles, a row boat, automotive tires and a stockpile of small cobbles. A large linear grouping of debris consisting of wood pallets, furniture, carpeting, miscellaneous wood and garbage pails were also observed on the west side of the building. Piles of building debris including cinder blocks were observed near the northeast corner of the building. Additional debris may also be present; however observations were limited due to physical obstructions and constraints.

Solid waste debris observed near the main entrance of the building included furniture, appliances, large stacks of foam boards, coolers and fallen roof insulation. Other solid waste may be present in the other areas of the building, however due to the limitations previously identified these areas could not be inspected further.

## 6.0 INTERVIEWS

### 6.1. User

A User Questionnaire was completed by Ms. Samalid Hogan, on behalf of the City of Springfield Office of Planning and Economic Development, to assist Weston & Sampson in gathering evidence to identify RECs at the Site. A copy of the completed User Questionnaire is included as Appendix A. The City also provided Weston & Sampson with a copy of a Limited Asbestos and OHM Inspection report, prepared by ECS of Agawam, Massachusetts, dated August 2014. A copy of the report is attached as Appendix C and is discussed in more detail in Section 4.5.

The user did not have any additional information for the Site, other than what is presented in the User Questionnaire (Section 3.0).

### 6.2. Government Officials

On January 15, 2015, Weston & Sampson interviewed various officials from several City departments including but not limited to, the building department, clerk's office and zoning department; however, they did not report any additional information about the Site or nearby properties, other than those described in Sections 4.2 of this report.

In addition, Weston & Sampson interviewed Mr. Richard Griffin of the City of Springfield Department of Public Works, during Site reconnaissance activities. According to Mr. Griffin, he had limited knowledge of the property other than the building had been vacated for at least 10 years. Additionally, Mr. Griffin stated that previous Site occupants included a restaurant and a church. Mr. Griffin has no knowledge of how the building was previously heated nor did he have any knowledge of the presence of any USTs, ASTs or other OHM.

Weston & Sampson contacted Columbia Gas on January 19, 2015. According to Columbia Gas staff, the Site is not currently connected to natural gas service.

### 6.3. Owner / Key Site Manager / Occupants and Others

Interviews with the current owner(s) of the property were not conducted at the time of the assessment. According to information provided by the City, the Site has been vacant for approximately ten (10) years. The City is scheduled to acquire the Target Property via eminent domain in the summer of 2015. Although the Site is currently owned by Beckett & Taylor Enterprises, LLC, the City has been provided a demolition court order for the property. The City was unable to provide Weston & Sampson with contact information for the current owners. Furthermore, although interviews with owners of neighboring nearby properties were also conducted, no additional information was obtained that was not already available from other sources including the regulatory database search and local municipal reviews.

Ms. Samalid Hogan from the City of Springfield Department Office of Planning and Economic Development was interviewed as the Key Site Manager of the Site as part of site reconnaissance activities. An environmental questionnaire was also completed by Ms. Hogan and has been included in Appendix A. The questionnaire did not report any additional information of environmental significance about the Site, or nearby properties, other than those described previously within this report.

No other interviews were performed as part of the assessment.

## 7.0 DATA GAPS

All AAI reports must include an identification of “significant” data gaps (as defined in § 312.20 of AAI final rule and § 12.7 of ASTM E1527-13), if any, in the information collected for the inquiry. Significant data gaps include missing or unattainable information that affects the ability of the environmental professional to identify conditions indicative of releases or threatened releases of hazardous substances, and as applicable, pollutants and contaminants, petroleum or petroleum products, or controlled substances, on, at, in or to the subject property. The documentation of significant data gaps must include information regarding the significance of these data gaps.

The following significant data gaps were identified during this Phase I ESA:

- Weston & Sampson identified a data gap due to the fact that the Springfield Fire Department did not have closure assessment documentation for the historic USTs identified at the Site. Therefore, whether a removal or a release to the subsurface occurred at the locations of tanks has not been appropriately investigated and/or documented, and is considered a data gap. Furthermore, this lack of closure assessment documentation presents a data gap because a VEC associated with the Target Property cannot be ruled out.
- Weston & Sampson identified a data gap due to the lack of information available regarding the use of an incinerator at the Site. Records on file at the building department identified an incinerator was installed at the Site; however the purpose and location of the incinerator are unknown. It is Weston & Sampson’s opinion that activities associated with incinerators have resulted in releases of oil and/or hazardous substances to the surrounding environmental media at concentrations above applicable standards.
- Weston & Sampson identified a data gap due to the lack of information available regarding the nature and extent of the contamination associated with the non-compliant portion of RTN 1-527. Given its proximity to the Target Property, it is unknown whether the portion of release RTN 1-527 at the adjoining property to the north (i.e., 468 Walnut Street) has impacted the subsurface conditions at the Site. Furthermore, given that the nature and extent of contamination at this off-site property has not been adequately characterized and delineated, it is Weston & Sampson’s opinion that a VEC associated with this off-Site source cannot be ruled out.
- Weston & Sampson identified a data gap due to the physical obstructions (i.e., debris located inside and outside of the building, as well as snow and/or ice cover on the exterior grounds) and the limited interior access (due to safety concerns) during site reconnaissance activities. Due to these obstructions and constraints, Weston & Sampson was prohibited from identifying additional RECs which may be present at the Site.
- Weston & Sampson identified a data gap due to the fact that interviews with the current and former owners of the Site could not be completed during this Phase I ESA. This is deemed to be a significant data gap due to the lack of a complete documented heating source history for the Target Property.

Weston & Sampson did not identify any additional significant data gaps, as defined by ASTM Practice E 1527-13, during the Site reconnaissance and records review that would significantly affect the ability of Weston & Sampson to identify recognized environmental conditions in connection with the Site.

## 8.0 FINDINGS AND OPINIONS

Based on the information compiled in this Phase I ESA, Weston & Sampson offers the following pertinent findings for the site:

- Based on a previous report, a 275-gallon AST is known to be located in the basement of the existing building. During the course of this Phase I ESA, no information regarding the purpose, age, contents and/or condition of the unattended AST was developed. In addition, as the tank is unattended and the condition of ground surface beneath the AST is unknown, it is Weston & Sampson's opinion that there is material threat of a release that could potentially impact the environmental conditions at the Target Property and therefore the AST has been identified as a REC.
- Various types of solid wastes were observed within the visible interior and exterior portions of the Site. The full extent and types of solid waste is unknown due to limited access and visual observations. However, a previous report for the Target Property documented the presence of asbestos within in-place interior and exterior building materials. In addition, asbestos containing debris piles located at the Target Property have also been documented and therefore are identified as a REC. Other hazardous materials were also identified in the previous report, including, but not limited to, lead based paint. An evaluation of building materials is beyond the scope of a Phase I ESA.
- Records on file at the building department identified the installation and use of an incinerator at the Site. No information regarding the location of the incinerator or its operational history was developed during the performance of this Phase I ESA. It is Weston & Sampson's opinion that the incinerator may have been associated with the disposal of garbage and/or for heating purposes given the past mixed residential-commercial use of the building. It is Weston & Sampson's opinion that the use incinerators typically results in releases of oil and/or hazardous substances to the surrounding environmental media at concentrations above applicable standards.
- Fire department records indicate that at 2,000-gal UST was installed at the Site in 1948. No records documenting the removal or abandonment of this UST, its contents, and/or location were available, therefore the status of this UST is known. If the unattended UST is still present at the property, it is Weston & Sampson's opinion that there is material threat of a release and therefore the UST has been identified as a REC. Furthermore, a VEC associated with this potential onsite source cannot be ruled out.
- Historic records indicate that the adjoining property to the west of the Target Property operated as historic gasoline / automobile service station. It is Weston & Sampson's opinion that due to the historic use, storage, disposal, and/or generation of hazardous substances and/or petroleum products associated with such activities and its proximity relative to the Target Property; this adjoining property has the potential to impact the subsurface conditions at the Target Property.
- The northern adjoining property (across Hickory Street) located at 468 Walnut Street is a documented release site with the MassDEP, identified as RTN 1-527. Based on the proximity (i.e., distance/gradient) to the Target Property and the lack of information regarding the nature and extent of contamination associated with RTN 1-527, it is Weston & Sampson's opinion that the historic release has the potential to pose a threat to the subsurface conditions at the Target Property and has been identified as a REC. Additionally, due to the lack of information, it is Weston & Sampson's opinion that a VEC associated with this off-Site source cannot be ruled out.

## 9.0 CONCLUSIONS

We have performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E1527-13 of the property located at 158-162 Rifle Street in Springfield, Massachusetts, the *property*. Any exceptions to, or deletions from, this practice are described in Section 11.0 of this *report*. This assessment has revealed no evidence of *recognized environmental conditions* in connection with the *property*, except for the following:

- The documented presence and historical use of a 275-gallon AST within the basement of the building has been identified as a REC because the contents, condition, purpose and/or age is unknown and the potential of this tank to impact the environmental conditions at the Target Property is significant. Furthermore, as the tank is unattended and the condition of ground surface beneath the AST is unknown, it is Weston & Sampson's opinion that there is material threat of a release at the Site.
- The documented presence of a 2,000-gallon UST, installed at the Site in 1948, has been identified as a REC because the status, contents, condition, location and/or purpose of this tank is unknown. Furthermore, whether a removal or a release to the subsurface occurred at the location of this tank has not been appropriately investigated and/or documented. It is Weston & Sampson's opinion that if the unattended UST is still present at the property, there is material threat of a release at the Site. In addition, it is Weston & Sampson's opinion that a VEC associated with this potential on-Site sources cannot be ruled out either.
- The historical use of an incinerator at the Site, as documented in City records, represents a REC because it is Weston & Sampson's opinion that the use incinerators typically results in releases of oil and/or hazardous substances to the surrounding environmental media at concentrations above applicable standards.
- The documented release and non-compliant regulatory status for a portion of RTN 1-527 at the northern adjoining property located at 468 Walnut Street has been identified as a REC. It is Weston & Sampson's opinion that the presence of a historical release of petroleum at 468 Walnut Street has a high potential to impact environmental media at the Site representing a REC because the release occurred in close proximity of the Site and information regarding the physical setting of the Site suggests that the groundwater and air migration pathways are viable. Furthermore, based upon the limited data available for RTN 1-527, historical dissolved petroleum contaminated groundwater was known to be a concern at this off-site property. However, as the nature and extent of contamination has not been adequately characterized and it has the potential to migrate onto the Target Property, Weston & Sampson is of the opinion that a VEC associated with off-Site sources cannot be ruled out.
- The documented presence of ACMs located within debris piles at the Target Property is identified as a REC.

## 10.0 RECOMMENDATIONS

Based on the findings and conclusions discussed herein, the following recommendations are offered:

- Weston & Sampson recommends that a Phase II ESA be completed to address the identified RECs and fully characterize the Site for redevelopment. The results from the Phase II ESA may then be used to determine if a VEC exists or if it can be ruled out because it does not, or is unlikely to, exist.
- Due to the strong likelihood that USTs were used and left in place at the Site, Weston & Sampson recommends completing a ground penetrating radar (GPR) survey for abandoned USTs at the Site. Any identified abandoned USTs should be appropriately closed via removal along with the 275-gallon AST that is present in the basement. This work should be performed in conjunction with Phase II ESA activities.
- Given the planned redevelopment activities of the Site, Weston & Sampson recommends that the ACM and other hazardous materials (OHM) identified during a previous limited asbestos and hazardous materials investigation be properly abated, handled and/or disposed of off-site in accordance with all local, state and federal regulations. The identification of these building materials is beyond the scope of this Phase I ESA.

## 11.0 LIMITATIONS

This report was prepared exclusively for the City of Springfield and the US EPA. Information provided by Weston & Sampson in this report is based solely on the information reported in this document. Future investigations and/or information that was not available to Weston & Sampson at the time of the investigation may result in a modification of the findings stated in this report.

Additional information that becomes available concerning this Site, or neighboring properties that could directly impact the Site in the future, should be made available to Weston & Sampson for review so that, if necessary, conclusions presented in this report may be modified. The conclusions of this report are based on Site conditions observed by Weston & Sampson personnel at the time of the investigation, information provided by EDR, and information provided by federal, state, and local agencies. This report has been prepared in accordance with generally accepted engineering and geological practices. No other warranty, express or implied, is made.



## 12.0 REFERENCES

ASTM.2000, E 1527-13. Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process.

EDR, Historic Topographic Maps dated 1895, 1901, 1919, 1938, 1946, 1958, 1970 and 1979.

EDR, Aerial Photographs dated, 1952, 1957, 1969, 1970, 1974, 1980, 1985, 1991, 1997, 2002, 2066, 2008, 2010 and 2012.

EDR, Street Directories, Price & Lee City Directory for 1938, 1942, 1946, 1950, 1955, 1958, 1963 and 1968, Cole Information Systems for 1992, 1995, 1999, 2003, 2008 and 2013.

EDR, Sanborn Fire Insurance Maps; 1896, 1911, 1931, 1950 and 1970.

EDR Environmental Database Report, 158 Rifle Street (also including 46 Hickory Street and 468 Walnut Street) Springfield, Massachusetts 01105, dated January 5, 2015.

Federal Emergency Management Agency (FEMA), Flood Insurance Rate Map (FIRM), Panel 25013C-0402E, City of Springfield, Hampden County, Massachusetts.

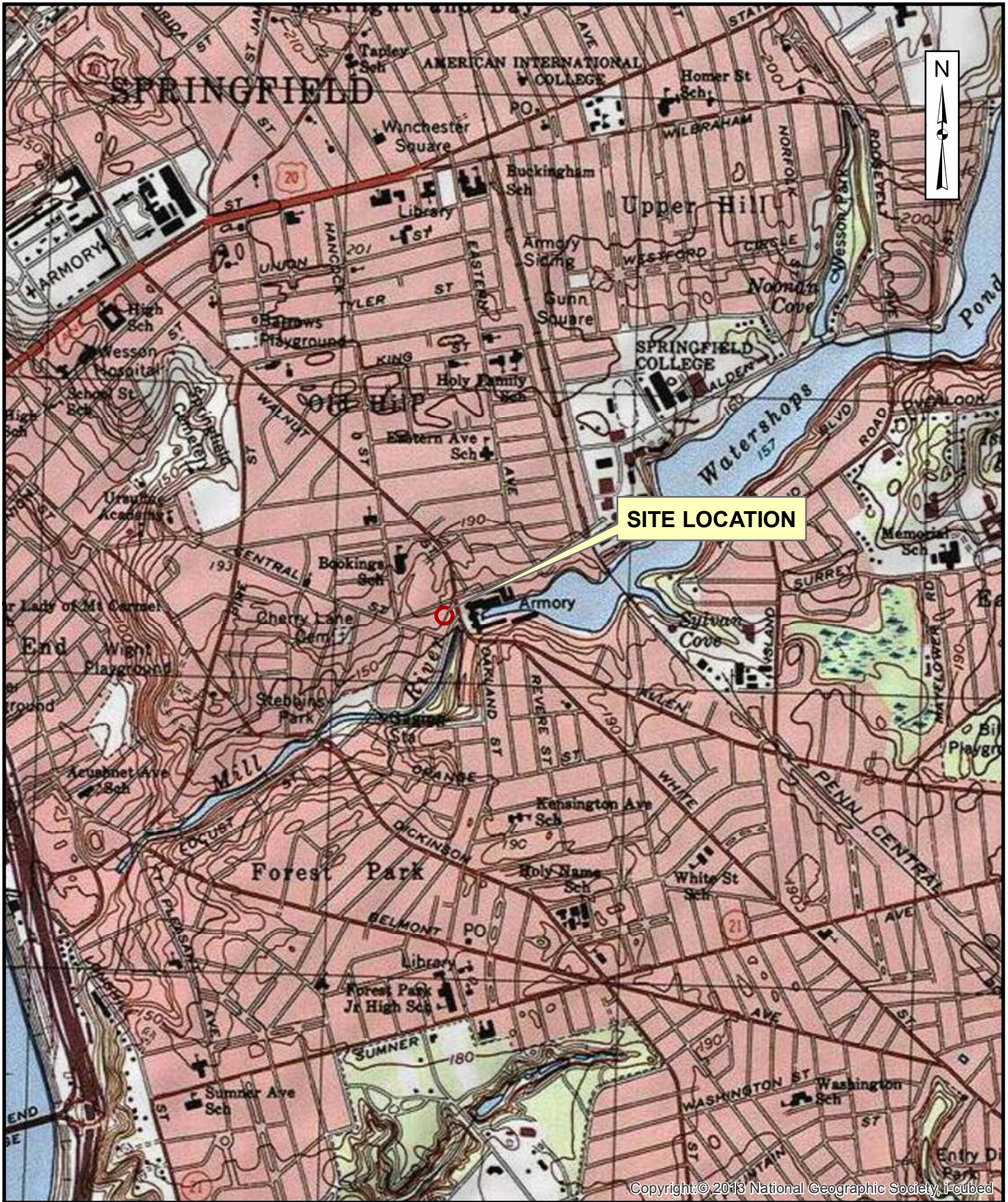
MassDEP Searchable Sites <http://public.dep.state.ma.us/SearchableSites/Search.asp>).

MassGIS Website <http://www.mass.gov/mgis/>

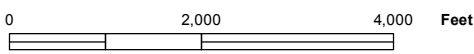
United States Geological Survey Bedrock Geologic Map of Massachusetts – Zen et al., 1983.

## FIGURES

Path: Z:\CT-RockyHill\Projects\Springfield MA\Brownfields Program\158 Rifle St (Vacant Lincoln Hall)\Figures\Figure 1 -Locus Map.mxd User: mcgrathl Saved: 1/19/2015 1:02:36 PM Opened: 1/19/2015 1:02:51 PM

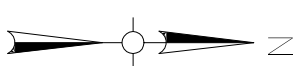


**FIGURE 1**  
**158 RIFLE STREET**  
**SPRINGFIELD, MASSACHUSETTS**  
**LOCUS MAP**

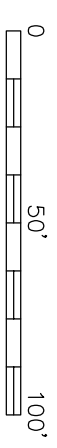


**Weston & Sampson**

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SCALE: 1" = 50'



**LEGEND**

— SITE BOUNDARY

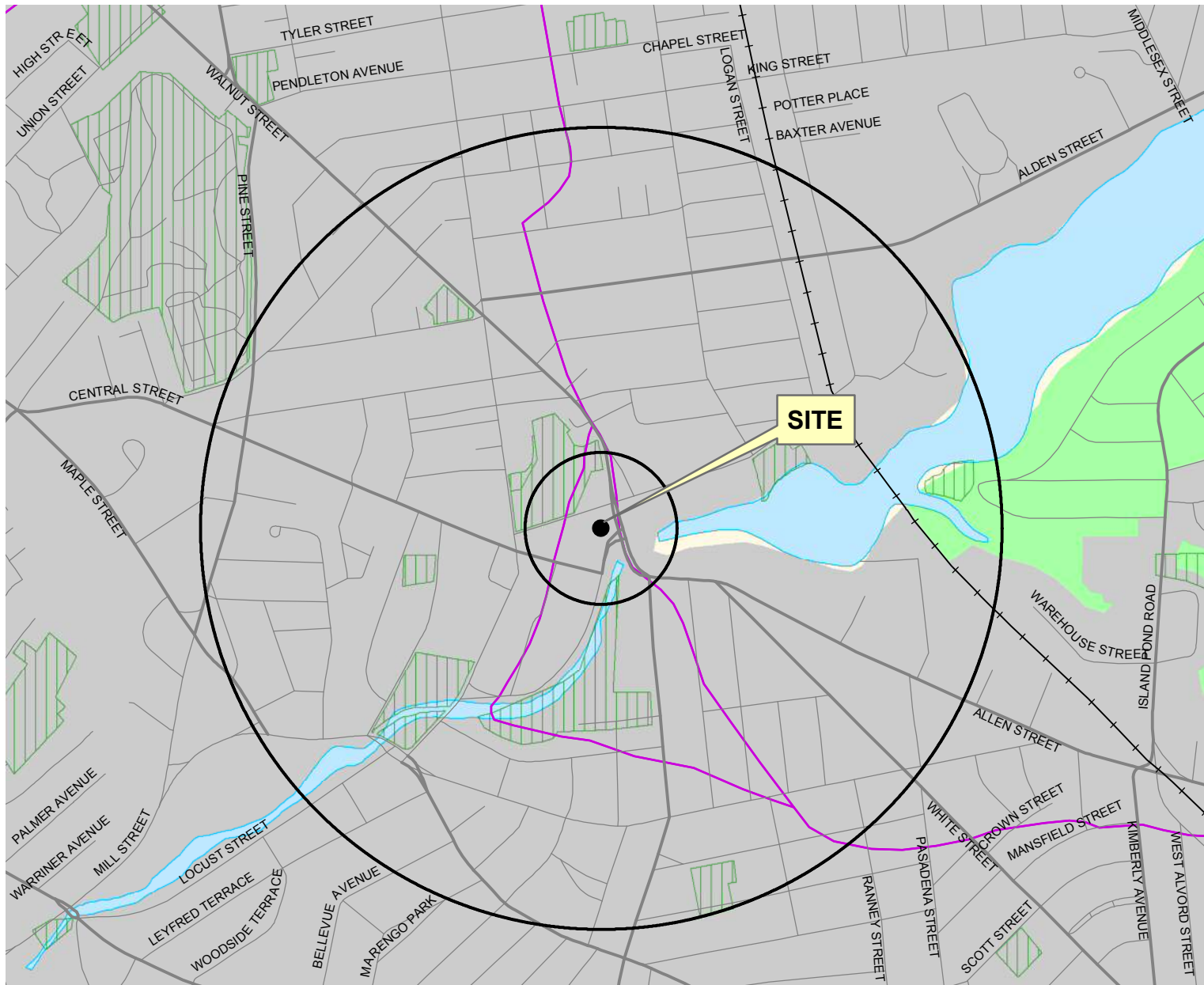
**NOTE:**  
 SITE PLAN DERIVED FROM CITY OF SPRINGFIELD GIS MAPPING.

**FIGURE 2**  
 158 RIFLE STREET  
 SPRINGFIELD, MA  
 SITE PLAN

JANUARY 2015

SCALE: AS SHOWN

**Weston & Sampson**



- Legend**
- Town Boundaries
  - State Boundary
  - ▲ Ground Water
  - ▲ Surface Water
  - ★ Non-Community
  - ★ NHESP Certified Vernal Pools
  - Railroads by Ownership
  - Pipeline
  - Pipeline Arbitrary Extension
  - Powerline
  - Powerline Arbitrary Extension
  - Ski Lift/Tramway
  - Substation
  - Landing Strip/Airport
  - ◆ Highway Exit Locations
- All Roads**
- Road Classification**
- Limited Access Highway
  - Multi-lane Hwy, not limited access
  - Other Numbered Highway
  - Major Road, Collector
  - Minor Road, Arterial
  - Sub-basins
  - Major Basins
  - Landfills
  - Dumping Grounds
  - Protected Open Space
  - ACECs
  - Zone A
  - IWPA's
  - DEP Approved Zone IIs
  - River, Stream, Shoreline
  - Water
  - Wetland
  - Sole Source Aquifers
  - NHESP Estimated Habitats of Rare Wildlife
  - NHESP Priority Habitats of Rare Species
- Non Potential Drinking Water Source Area**
- High Yield
  - Medium Yield
- Aquifers**
- High Yield
  - Medium Yield
- MA Towns (from Survey Points)**
- MA Towns (from Survey Points)

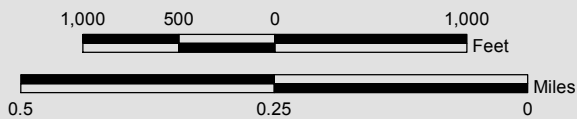
**FIGURE 3**

Area Receptors Map  
158 Rifle Street  
Springfield, Massachusetts



**Data Source:** Office of Geographic and Environmental Information (MassGIS), Commonwealth of Massachusetts Executive Office of Environmental Affairs

**Note:** Radii shown are approximately 500-foot and 1/2-mile from center of Site.





ENVIRONMENTAL COMPLIANCE SERVICES, INC.

588 Silver Street, Agawam, MA 01001 tel 413.789.3530 fax 413.789.2776 www.ecsconsult.com

Ms. Tina-Marie Quagliato  
Disaster Recovery and Compliance  
City of Springfield  
36 Court St. Room 405  
Springfield, MA 01103

March 16, 2015  
Project No. 01-222350.00  
Document No. 44192

RE: 158-162 Rifle Street.  
Springfield, MA 01103

Dear Ms. Quagliato,

As per your request, ECS has completed services including final visual inspections and air clearance testing analysis using Phase Contrast Microscopy (PCM) at the above referenced location.

On March 12, 2015, Green Environmental of Rockland, Massachusetts, completed a response action(s) including the removal of approximately 1500 square feet of asbestos containing materials. These materials included floor tile and mastic, located on the first and second floors, as well as the casing caulking associated with the exterior windows.

Visual inspection and subsequent air testing was conducted following the completion of the response action(s). Final visual inspection and final air clearance samples were analyzed by PCM and passed the Massachusetts Department of Labor and Work Force Development clearance standards (453 CMR 6.14(5)(a)(b)(2)). A copy of the PCM air sampling log/chain of custody and certification of visual inspection forms are enclosed with this letter report.

If you have any questions regarding this information, please contact our office at your convenience.

Sincerely,  
ENVIRONMENTAL COMPLIANCE SERVICES, INC.

Aric B. Pont  
Field Technician • Project Monitor # AM900481

ABP/ems  
Attachments

WHERE BUSINESS AND THE ENVIRONMENT CONVERGE

NATIONWIDE COVERAGE   

**ATTACHMENT I**

---

PCM AIR SAMPLING LOG/CHAIN OF CUSTODY

**PHASE CONTRAST MICROSCOPY (PCM) CHAIN OF CUSTODY**

Environmental Compliance Services, Inc.  
 588 Silver Street  
 Agawam, MA 01001  
 (413) 789-3530 PHONE (413) 789-2776 FAX  
 Laboratory ID#: MA. 000166 (Mass.) / CT. PH0257 (Conn.) / AL 050515 (Vermont)

Client: CITY OF SPRINGFIELD Contact: TINA MARRIE GUAGLIATO For Lab Use> Batch Number: 15-022  
 Address: 36 COURT ST. ROOM 405 SPRINGFIELD MA 01103 Received By and Date: AP 3/12/15 QC By/Date: AP 3/12/15  
 Phone/Fax Number: 413 750 2114 Analyzed By and Date: AP 3/12/15 Qty of Samples Analyzed: 12  
 Project Job Number: 01-227350-00 Daily Microscope Calibration By and Date: (Optics/alignment/test slide): AP 3/12/15  
 Project Site: 158-162 RILEY ST. SPRINGFIELD MA Rotometer #: 2004

DISASTER RECOVERY AND COMPLIANCE

Lab ID	Field ID	Description and/or Location	Pump On Hr./Mn.	Pump Off Hr./Mn.	Rotometer (LPM) On / Off	Rate (LPM)	Time (Min)	Air Volume (Liters)	Fibers per 100 fields	Fibers per CC
15-022-01	AP031215A-01	Field Blank							0/100	—
-02	-02	Field Blank							0/100	—
-03	-03	14/FAC 1 <sup>ST</sup> NORTH	1030	1220	14.8/14.3	14.5	110	1595	13/100	0.004
-04	-04	14/FAC 1 <sup>ST</sup> SOUTH	1031	1221	14.8/14.3	14.5	110	1595	10/100	0.003
-05	-05	14/FAC 1 <sup>ST</sup> EAST	1032	1222	14.8/14.3	14.5	110	1595	10/100	0.003
-06	-06	14/FAC 1 <sup>ST</sup> WEST	1033	1223	14.8/14.3	14.5	110	1595	7/100	0.003
-07	-07	14/FAC 1 <sup>ST</sup> CENTER	1034	1224	14.8/14.3	14.5	110	1595	9/100	0.003
-08	-08	14/FAC 2 <sup>ND</sup> NORTH	1050	1245	14.8/14.3	14.5	115	1668	13/100	0.004
-09	-09	14/FAC 2 <sup>ND</sup> SOUTH	1051	1246	14.8/14.3	14.5	115	1668	13/100	0.004
-10	-10	14/FAC 2 <sup>ND</sup> EAST	1052	1247	14.8/14.3	14.5	115	1668	10/100	0.003
-11	-11	14/FAC 2 <sup>ND</sup> WEST	1053	1248	14.8/14.3	14.5	115	1668	11/100	0.003
-12	-12	14/FAC 2 <sup>ND</sup> CENTER	1054	1249	14.8/14.3	14.5	115	1668	10/100	0.003
	REFERENCE SLIDE	149-4							64/100	—
	DUPLICATE SLIDE	AP031215A-07							8/100	0.003

Note: Analysis performed using NIOSH Method 7400 (Issue 2) Phase Contrast Microscopy. LOD= Limit of Detection equals 5.5 fibers per 100 fields  
 FAC= Final Air Clearance IC=Inside Containment OC= Outside Containment BK = Background DR= During Removal DP = Area



**ATTACHMENT II**

---

**CERTIFICATION OF VISUAL INSPECTION FORM**

# VISUAL INSPECTION AND CONTRACTORS CERTIFICATION

1. Client: CITY OF SPRINGFIELD, MA	2. Project Name and Address: 158-102 RIPLE ST. SPRINGFIELD, MA	3. Area(s) Inspected: 1ST FLOOR ARSA	4. Project #: C1-222350.00
5. Contractor: GREEN ENVIRONMENTAL	6. Materials Abated: GPOSF UNIT / MASTIC	7. Method of Abatement: FOIL CONTAINMENT	8. Date: 3/12/15

## VISUAL INSPECTION AND CONTRACTORS CERTIFICATION:

In accordance with the Specifications for this project and any applicable regulations the Contractor hereby certifies that he has visually inspected the work area (all surfaces including pipes, beams, ledges, walls, ceiling and floor, decontamination unit, sheet plastic, etc.) and has found no visible dust, debris or residue. The work area is dry and there are no visible pools of water. The contractor also verifies that all on-site personnel are current with applicable certification, licensing, and any necessary medical monitoring including fit testing.

Contractor's Supervisor: MARK SHEEHAN (Print Name/Sign Name) AS06/1907 (DLWD-DOS/CTDPH/VTDPH)

## ECS REPRESENTATIVE'S CERTIFICATION OF VISUAL INSPECTION:

ECS Project Monitor hereby certifies that he has accompanied the Contractor on his visual inspection and verifies that this inspection has been thorough and to the best knowledge and belief the Contractor's certification of visual inspection above is a true and honest one.

ECS Representative: AFIC RONT (Print Name/Sign Name) AM900481 (DLWD-DOS/CTDPH/VTDPH)

## FINAL CLEARANCE AIR MONITORING CHECKLIST:

	Yes	No	NA
1. Critical Barriers remaining?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Wall and floor poly remaining?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Work Areas secured and posted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Decontamination chamber in place?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Waste load unit in place?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. HVAC shut down/locked out?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. HEPA filtration system operating?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Contractor equipment removed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Asbestos waste removed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Work area has been wet cleaned?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Visible debris on floor, walls or ceiling?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Visible debris on removed surfaces?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Work area/surfaces encapsulated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Work area(s) passed visual inspection?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Square Footage of Area Sampled: <u>~700</u> square feet			
Number of Rooms in Work Area: <u>1</u>			
Number of Air Samples Collected: <u>IC 5</u>			
Method of Air Sample Analysis: <u>PCM 7</u>			

Notes:

# VISUAL INSPECTION AND CONTRACTORS CERTIFICATION

1. Client: <b>CITY OF SPRINGFIELD, MA</b>	2. Project Name and Address: <b>158-162 RIFE ST. SPRINGFIELD, MA</b>	3. Area(s) Inspected: <b>RUFFICE OFFICE AREA</b>	4. Project #: <b>01-222330.00</b>
5. Contractor: <b>GREEN ENVIRONMENTAL</b>	6. Materials Abated: <b>WOOD &amp; VINYL/PLASTIC</b>	7. Method of Abatement: <b>FULL CONTAINMENT</b>	8. Date: <b>3/12/15</b>

## VISUAL INSPECTION AND CONTRACTORS CERTIFICATION:

In accordance with the Specifications for this project and any applicable regulations the Contractor hereby certifies that he has visually inspected the work area, (all surfaces including pipes, beams, ledges, walls, ceiling and floor, decontamination unit, sheet plastic, etc.) and has found no visible dust, debris or residue. The work area is dry and there are no visible pools of water. The contractor also verifies that all on-site personnel are current with applicable certification, licensing, and any necessary medical monitoring including fit testing.

Contractor's Supervisor: MARK SHEEHAN (Print Name/Sign Name) AS061907 (DLWD-DOS/CIDPH/VTDPH)

## ECS REPRESENTATIVE'S CERTIFICATION OF VISUAL INSPECTION:

ECS Project Monitor hereby certifies that he has accompanied the Contractor on his visual inspection and verifies that this inspection has been thorough and to the best knowledge and belief the Contractor's certification of visual inspection above is a true and honest one.

ECS Representative: ALIC RUM (Print Name/Sign Name) AM990481 (DLWD-DOS/CIDPH/VTDPH)

## FINAL CLEARANCE AIR MONITORING CHECKLIST:

	Yes	No	NA
1. Critical Barriers remaining?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Wall and floor poly remaining?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Work Areas secured and posted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Decontamination chamber in place?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Waste load unit in place?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. HVAC shut down/locked out?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. HEPA filtration system operating?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Square Footage of Area Sampled: <u>400</u> square feet			
Number of Rooms in Work Area: <u>1</u>			
Number of Air Samples Collected: IC <u>5</u> OC <u>0</u>			
Method of Air Sample Analysis: PCM <u>X</u> TEM <u>    </u>			

Notes:

# VISUAL INSPECTION AND CONTRACTORS CERTIFICATION

1. Client: <b>CITY OF SPRINGFIELD, MA</b>	2. Project Name and Address: <b>158-162 RIPLE ST. SPRINGFIELD, MA</b>	3. Area(s) Inspected: <b>EXTERIOR / INTERIOR AREAS</b>	4. Project #: <b>01-272350.00</b>
5. Contractor: <b>GREEN ENVIRONMENTAL</b>	6. Materials Abated: <b>WTS WINDOWS w/ CASING COOK (6) 8X9' (22) 3X5'</b>	7. Method of Abatement: <b>REGULATED AREA</b>	8. Date: <b>3/12/15</b>

## VISUAL INSPECTION AND CONTRACTORS CERTIFICATION:

In accordance with the Specifications for this project and any applicable regulations the Contractor hereby certifies that he has visually inspected the work area (all surfaces including pipes, beams, ledges, walls, ceiling and floor, decontamination unit, sheet plastic, etc.) and has found no visible dust, debris or residue. The work area is dry and there are no visible pools of water. The contractor also verifies that all on-site personnel are current with applicable certification, licensing, and any necessary medical monitoring including fit testing.

Contractor's Supervisor: Mark Sheehan ASO 61907 MASHA  
(Print Name/Sign Name) (DLWD-DOS/CIDPH/VTDPH)

## ECS REPRESENTATIVE'S CERTIFICATION OF VISUAL INSPECTION:

ECS Project Monitor hereby certifies that he has accompanied the Contractor on his visual inspection and verifies that this inspection has been thorough and to the best knowledge and belief the Contractor's certification of visual inspection above is a true and honest one.

ECS Representative: Alic Mont  
(Print Name/Sign Name) AM900481  
(DLWD-DOS/CIDPH/VTDPH)

## FINAL CLEARANCE AIR MONITORING CHECKLIST:

	Yes	No	NA
1. Critical Barriers remaining?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Wall and floor poly remaining?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Work Areas secured and posted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Decontamination chamber in place?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Waste load unit in place?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. HVAC shut down/locked out?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. HEPA filtration system operating?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Square Footage of Area Sampled:	square feet		
Number of Rooms in Work Area:	IC	OC	TEM
Method of Air Sample Analysis:	PCM		

Notes:



LIMITED ASBESTOS AND OHM  
INSPECTION  
158-162 RIFLE STREET  
SPRINGFIELD, MASSACHUSETTS

A large, stylized silhouette of a tree is centered within a circular frame. The background of the frame is a textured, olive-green color. The tree's canopy is dense and rounded, while its trunk is simple and vertical. The circular frame is set against a larger, textured olive-green background that also features a faint, larger-scale version of the tree silhouette.

WHERE BUSINESS AND THE ENVIRONMENT CONVERGE

Prepared for:  
City of Springfield  
36 Court Street  
Room 405  
Springfield, MA 01103

Project No. 01-222350  
Document No. 43475  
August 21, 2014

Prepared by:  
ECS  
588 Silver Street  
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tel 413.789.3530 fax 413.789.2776  
[www.ecsconsult.com](http://www.ecsconsult.com)

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### Appendices:

Appendix A Laboratory Data

## EXECUTIVE SUMMARY

Environmental Compliance Services, Inc. (ECS) has completed limited inspections for asbestos containing materials and other hazardous materials on the structure located at 158-162 Rifle in Springfield, Massachusetts. Areas inspected were inclusive of a two-story unoccupied former commercial hospitality facility. This inspection was performed to identify potentially hazardous building materials that may be disturbed during proposed demolition activities.


On July 30, 2014 ECS inspected accessible interior and exterior areas of the building described above to identify suspected asbestos containing materials (ACM). Using destructive sampling methods ECS collected a total of 71 bulk samples of suspect ACM from this property. Those materials have been analyzed using required protocols at an accredited laboratory. A review of the laboratory results indicates that ACMs were detected the structure inspected. Laboratory results indicate the following materials contain asbestos:

- Various colors 12"x12" vinyl floor tiles;
- Mastic associated with various colors 12"x12" vinyl floor tiles;
- Window casing caulking applied to all exterior windows;
- Debris piles located outside the building.

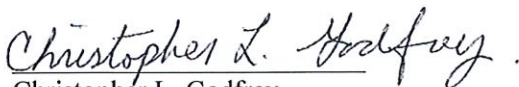
ECS inspectors also conducted a visual inspection (no sampling) of various hardware, machinery, and building systems that may require special handling and/or disposal prior to demolition activities. This included light fixtures/ballasts, and various operating systems that may contain PCB containing oils, mercury or other, recognized hazardous materials (OHM). Additionally, ECS created an inventory of general waste observed throughout property.

Types, locations, and estimated quantities of ACM and OHM are detailed in Section 3.0. Analytical data sheets for all samples collected are provided as Appendix A.

The following report summarizes the independent conclusions representing ECS's best professional judgment based on information and data available to us during the course of this assignment. Factual information regarding operations, conditions, and test data provided by the Client, owner, or their representative has been assumed to be correct and complete. Additionally, the conclusions presented are based on the conditions that existed at the time of the assessment.



Nickolas E. Anderson  
Environmental Field Technician II,  
MA Asbestos Inspector # AI900473



Christopher L. Godfrey  
Associate, Senior Project Manager

## 1.0 INTRODUCTION

This inspection was performed at the request of Ms. Tina-Marie Quagliato, Deputy Director of Neighborhood Stabilization with The City of Springfield, Massachusetts Office of Housing, with the purpose of identifying hazardous building materials that may impact proposed demolition of the building located at 158-162 Rifle Street in Springfield, Massachusetts. The structure on this property is a two-story former hospitality facility with a basement and is currently unoccupied (see Appendix B for site photos).

Regulatory requirements and evaluation practices applicable to demolition projects in Massachusetts are as follows, but not limited to the following:

### *Asbestos*

- The United States Environmental Protection Agency (USEPA) National Emissions Standard for Hazardous Air Pollutants (NESHAPs, 40 CFR 61, Subpart M) requires facilities be inspected by competent persons for the presence of asbestos containing materials (ACM) which could or will be disturbed during renovation, construction and demolition activities.
- The Massachusetts Department of Environmental Protection (MADEP) additionally regulates ACM under 310 CMR 7.15 & 310 CMR 19.061.
- The Massachusetts Department of Labor and Workforce Development, Department of Occupational Safety (MA DLWD-DOS) regulates asbestos worker protection and work practices under 453 CMR 6.00.
- The Occupational Safety and Health Administration (OSHA) regulates asbestos worker protection under 29 CFR 1926.1101

These same regulations dictate that this information is to be conveyed to any individuals who will conduct work that may disturb ACM.

### 1.1 LIMITATIONS

The term “destructive sampling method” refers to the method of collecting samples that would require destruction of various building surfaces (i.e. wall cavities, ceilings, flooring materials, roofing) for the purpose of locating hidden heating, plumbing, or other building components that may contain ACM. Destructive methods are strongly recommended for facilities slated for demolition. Additional limitations may exist for both destructive sampling methods. Certain portions of the buildings inspected may be physically inaccessible, or because electrical, mechanical, structural, or other hazards exist in portions of the structures at the time of the inspections.

ECS inspected all reasonable accessible spaces of the buildings. Areas that were part of or within energized equipment (air handlers, electrical, etc.) were not inspected.

Suspect ACM subsequently identified or encountered in physically inaccessible areas should be assumed to contain asbestos unless testing confirms otherwise.

The following areas were not included in the scope of work at the time of this survey:

- Materials only accessible through significant structural demolition;
- Materials entombed or beneath concrete;
- Materials associated with functional equipment, machinery, and building systems including mechanical, plumbing, electrical and HVAC.



---

## 2.0 METHODS AND MATERIALS

### 2.1 ASBESTOS

Samples were collected per regulations governing asbestos evaluations. Samples were placed into plastic bags with an air tight seal. Labels were affixed to the sample bags with specific nomenclature.

Bulk samples were analyzed by Polarized Light Microscopy (PLM) using the United States Environmental Protection Agency USEPA/600/R-93/116 method. Sample analysis was conducted by ProScience Analytical Services, Inc., 22 Cummings Park, Woburn, Massachusetts (NVLAP Accreditation 2000090-0).

There are six minerals grouped into the term "asbestos." Chrysotile, amosite, and crocidolite are the asbestos minerals most commonly found in building materials. ACM is defined as a material containing more than one percent (1%) asbestos by weight. ACBM is a subset of materials in the group ACM and are considered to be ACM that is found in or on interior structural members of a building. Materials found to be asbestos containing are listed in Section 3.0. Exact sample compositions are included in the laboratory reports or chains of custody found in Appendix A. Types, locations, estimated quantities, and conditions of ACM are shown on Table 3.1A. Suspect materials sampled and found not to be ACM are found in Table 3.1B.

Polarized light microscopy (PLM) is the root method used for the identification of ACM. The USEPA Office of Research and Development (USEPA/ORD) has reviewed data from performance audits of various laboratories performing PLM. The results of that review indicated an unacceptable number of false negatives and positives for visual estimation of materials containing less than 10% asbestos. On the basis of those findings the National Emissions Standards Hazardous Air Pollutants (NESHAP) regulations were amended on November 20, 1990 (Federal Register, V.55, N.224). The revisions state that if the analyst detects asbestos in the sample and estimates the amount to be less than 10% by visual estimation, the parties legally responsible (owner or operator) for the building may (1) elect to assume the amount to be greater than 1% and treat the material as ACM or (2) require verification of the amount by point counting. Point counting is a technique used to quantify the amount of asbestos present in a sample on which PLM has already been performed. ECS recommends point counting re-analysis for asbestos values less than 10%, and where applicable those results are reflected in the report. In instances where client authorization is not received for this reanalysis, PLM visual results indicating a trace or 1% value will be reported as assumed ACM as required by item (1) above.

A similar situation exists for matrix bound fibers such as those found in floor tiles, mastics, and asphalt based materials. The organic matrix of these bulk samples may interfere with the identification and quantification of asbestos mineral content. These types of samples are generally referred to as Non-friable organically bound (NOB) materials. Transmission Electron Microscopy (TEM-NOB) is a method that utilizes a combination of special sample preparation techniques and high magnification to quantify asbestos content with greater accuracy than PLM. Currently only the State of New York has regulations requiring TEM-NOB re-analysis of suspect ACM for which negative or trace determination resulted from PLM analysis.

## 2.2 OTHER HAZARDOUS MATERIALS

According to the US EPA, Polychlorinated biphenyls, PCBs, are persistent manmade chemicals that were widely used in construction materials and electrical products before 1978. In 1976, Congress banned the manufacture and use of PCBs because of concern about their health and environmental effects and they were phased out except for certain limited uses in 1978. The use and disposal of PCBs before the phase-out resulted in their widespread presence in our soil, air, water and food. Despite the federal ban, they remain present today in caulking and sealants used in the construction of buildings before 1978. No bulk building material samples for PCBs were collected as part of this inspection.

Short term exposure to large amounts of PCBs can lead to skin conditions such as acne and rashes, decreased liver function, neurological effects, and gastrointestinal effects. These types of acute toxic effects due to high levels of exposure are generally rare. Chronic exposure to lower levels of PCBs may also cause health effects. In animal studies, PCBs have been shown to cause effects on the immune, reproductive, nervous and endocrine systems. PCBs have also been shown to cause cancer in animals. Studies in humans provide supportive evidence for these health effects. Studies also show that high levels of PCBs in pregnant women can have an impact on their children's birth weight, short-term memory, and learning.

Observations of light fixtures/ballasts/transformers, various operating systems that may contain PCBs, mercury, and/or oils were also performed. Representative light fixtures were accessed and the ballasts were inspected for the presence of PCBs. Any mechanical systems encountered during this inspection were inspected for leaks or residual staining related to a potential leak of stored oils, PCBs and other internal fluids. Items that may contain coolants or refrigerants include at a minimum, refrigeration and freezer units, and air conditioner units.

Items that may contain mercury include fluorescent lights, thermometers, heating thermostats, and electrical switches. The majority, if not all, of these items are capable of being removed (with appropriate handling methods) intact for proper disposal or reuse. Fixtures observed typically contained between 1 and 4 fluorescent light tubes each. Fluorescent light tubes contain trace amounts of various hazardous substances including mercury, cadmium, lead, and antimony. Fluorescent light tubes may contain on average 45 milligrams of mercury. According to the EPA, fluorescent light tubes are presumed to contain hazardous materials requiring proper disposal unless otherwise demonstrated.

Nearly all fluorescent light ballasts manufactured prior to 1979 contained capacitors that contained PCBs. Ballasts installed as late as 1985 may contain PCB capacitors. Fluorescent light ballasts, which are not labeled as "No PCBs," must be assumed to contain PCBs unless proven otherwise by quantitative analytical testing. Capacitors in fluorescent light ballasts labeled as non-PCB containing may contain di(2-ethylhexyl) phthalate (DEHP). DEHP was the primary substitute to replace PCBs for small capacitors in fluorescent lighting ballasts. DEHP is a toxic substance, a suspected carcinogen and is listed under RCRA and the Superfund law as a hazardous waste. Therefore, Superfund liability exists for landfilling DEHP ballasts. Other Hazardous Materials (OHMs) information is presented in Table 3.2.

### **3.0 RESULTS AND FINDINGS**

The results of this inspection are presented in tabular form. These tables summarize the nature, distribution, and estimated quantity of ACM and OHM found during this inspection.

Types, locations, estimated quantities, and conditions of ACM are presented in Table 3.1A.

Suspect materials sampled and found to not contain asbestos are presented in Table 3.1B.

OHM information is presented in Table 3.2.

**TABLE 3.1A**  
**ASBESTOS CONTAINING MATERIALS**  
**158-162 RIFLE STREET**  
**SPRINGFIELD, MASSACHUSETTS**

Location	Description	Material Class	Field ID	Friability & access	Condition assessment	Est. quantity
First floor main room and Second floor office	Black 12"x12" vinyl floor tile	Misc	RA-09A, B	Friable; Accessible	Damaged	700 SF first floor; 400 SF second floor
	White 12"x12" vinyl floor tile	Misc	RA-10A, B	Friable; Accessible	Damaged	
	Mastic associated with black and white 12"x12" vinyl floor tiles	Misc	RA-11A, B; RA-12A, B;	Friable; Accessible	Damaged	
Throughout exterior	Gray window casing caulking	Misc	RA-18A, B; RA-19A, B	Friable; Accessible	Damaged	Windows throughout building
Debris pile(s)	Layered asphalt roof material	Misc	RA-28A, B	Friable; Accessible	Significantly Damaged	Entire pile(s)
	Built-up tar/gravel asphalt roof material	Misc	RA-29A, B	Friable; Accessible	Significantly Damaged	
	<i>Black asphalt shingle</i>	<i>Misc</i>	<i>RA-25A, B</i>	<i>Friable; Accessible</i>	<i>Significantly Damaged</i>	
	<i>Black/green asphalt shingle</i>	<i>Misc</i>	<i>RA-26A, B</i>	<i>Friable; Accessible</i>	<i>Significantly Damaged</i>	
	<i>Tar/gravel asphalt roof material</i>	<i>Misc</i>	<i>RA-27A, B</i>	<i>Friable; Accessible</i>	<i>Significantly Damaged</i>	
	<i>Black/gray asphalt shingle</i>	<i>Misc</i>	<i>RA-30A, B</i>	<i>Friable; Accessible</i>	<i>Significantly Damaged</i>	

Notes:

- *Italicized entries* considered ACM as these materials are comingled with damaged ACM
- Misc = Miscellaneous; SF = square feet; LF = linear feet
- See Limitations Section for areas deemed inaccessible or not included in Scope of Work
- Any suspect materials not identified in report shall be presumed ACM until lab. results prove otherwise
- Analytical results for samples obtained by EPA/600/R-93/116 or "visual estimate" quantitative method

**TABLE 3.1B**  
**BUILDING MATERIALS WITH NO ASBESTOS DETECTED**  
**158-162 RIFLE STREET**  
**SPRINGFIELD, MASSACHUSETTS**

Location	Description	Field ID
Throughout	Joint compound associated with drywall board	RA-01A through RA-01G
	Decorative white skim coat	RA-02A through RA-02E
	Drywall board	RA-03A through RA-03D
	White 2'x2' drop ceiling tile with pinholes and fissures	RA-05A, B
	Paper on fiberglass batting insulation	RA-06A, B
	Paper under hardwood floors	RA-15A, B
Kitchen	White 2'x2' drop ceiling tile	RA-04A, B
	Yellow adhesive assoc. w/4"x4" ceramic floor tile	RA-07A, B
	Grout associated with 4"x4" ceramic floor tile	RA-08A, B
	Yellow adhesive assoc. w/4"x4" ceramic wall tile	RA-16A, B
Bathrooms	Yellow adhesive assoc. w/1"x1" ceramic floor tile	RA-13A, B
	Grout associated with 1"x1" ceramic floor tile	RA-14A, B
	Yellow adhesive assoc. w/4"x4" ceramic wall tile	RA-16C
Basement	Flue cement	RA-21A, B
	Black adhesive associated with cork board	RA-22A, B
	Black paper wall near cooler	RA-23A, B
	Plaster of cooler wall	RA-24A, B, C
Roof	Roofing material	RA-17A, B, C
Exterior	Door casing caulking	RA-20A, B

Notes:

- See Limitations Section for areas deemed inaccessible or not included in Scope of Work
- Analytical results for samples obtained by EPA/600/R-93/116 or "visual estimate" quantitative method.

**TABLE 3.2**  
**OTHER HAZARDOUS MATERIALS**  
**158-162 RIFLE STREET**  
**SPRINGFIELD, MASSACHUSETTS**

Suspect Hazardous Item	Location	Estimated Quantity (in units)
Florescent tube lights	Throughout	23
Ballasts	Throughout	22
Other light bulbs	Throughout	29
Thermostat	Throughout	1
Fire extinguishers	First floor	1
Exhaust fan	First floor	1
275 gallon above ground storage tank	Basement	1
Range hood	First floor	1
Box spring	First floor	1
Tables	First floor	10
Ovens	First floor	2
Miscellaneous paints and cleaners	First floor	10
Residential propane tank	First floor	2
"polyol" cans	First floor	2
Piano	First floor	1
Convection ovens	First floor	2
Steam table	First floor	1
Walk-in cooler	First floor	1
Pool pump	First floor	1
Chairs	Throughout	30
Couches	First floor	2
Dishes	First floor	350
Foam board	First floor	~35 yard <sup>3</sup>
Coolers	First floor	6
Exit signs	First floor	3
CRT computer monitor	First floor	4
Water heater	First floor	2
Pool table	Second floor	2
Book case	Second floor	2

## **4.0 DISCUSSION AND INTERPRETATION**

### **4.1 ASBESTOS**

Removal is always required where pending demolition will disturb ACM. Any material not identified in this report discovered in the course of demolition activities should be presumed to contain asbestos until sampling shows otherwise. Materials identified as ACM are detailed in Table 3.1A. Section 1.1 details areas that were deemed inaccessible or were not included in the scope of work.

### **4.2 OTHER HAZARDOUS MATERIALS**

ECS conducted a visual inspection (no sampling) of various hardware, machinery, and building systems which may require special handling and/or disposal prior to demolition activities. The results of the Other Hazardous Material Inspection are detailed in Table 3.2. The majority, if not all, of these items are capable of being removed (with appropriate handling methods) intact for proper disposal or reuse.

In addition, all painted or coated materials shall be presumed lead containing. No bulk sampling of paint chips was performed as part of this inspection

## 5.0 CONCLUSION

Asbestos abatement of items listed in Table 3.1.A will be required prior to any demolition work that would disturb these locations. ECS recommends the preparation of an asbestos abatement design specification to direct the safe and efficient removal of ACM materials from this building.

OSHA lead regulations would apply to any demolition operation that would disturb lead paint surfaces (i.e. sanding, scraping, cutting, and welding). ECS recommends the preparation of a Lead Containing Paint (LCP) handling specification to define work practice requirements in these areas. ECS recommends that TCLP (Toxicity Characterization Leaching Potential) lead testing be performed on the anticipated waste stream generated from proposed demolition activities.

OHMs are listed in Table 3.2 and should be removed before any demolition activities impact these items. ECS recommends the preparation of a specification defining the handling and disposal of these materials.



**APPENDIX A**  
**LABORATORY DATA**

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73 Bulbs

**Prosciencce Analytical Services, Inc.** www.prosciencce.net  
 22 Cummings Park, Woburn, MA 01801 T: 781-935-3212 F: 781-932-4857 general@prosciencce.net

**TAT**  
 (circle one)  
 3 Hours 6 Hours Same Day Next Day  
 2 Days 3 Days 5 Days Other  
 TAT in bus. days - lab approval required for rush analysis

**PASI** Batch #  
 B92898

**PLM** Stop on first positive\* (Yes/No)  Yes /  No  
 \*if no selection is made the lab will analyze all samples

Client: Environmental Compliance Services, Inc.  
 Address: 588 Silver Street Agawam, MA 01001

Project #: 18-102 Pipe St. Springfield, MA  
 Project Site: 18-102 Pipe St. Springfield, MA

Contact: Nick Anderson  
 Tel./ Fax #: (413) 237-6438  
 Email: nanderson@ecsconsult.com

Relinquished By: [Signature]  
 Received By Lab: Rathay Arstone  
 Date/Time: 7/30/14  
 Date/Time: 7-31-14 @ 11AM

# of Samples Received: 73  
 Results: email/ fax verbal  
 By: [Signature] Date: [Signature]  
 Analyst/ Date: [Signature] Date: [Signature]

Sample ID	Date Sampled	Description / Location	Stereo Scope			Optical Properties				Asbestos Percentage (%)		Non Asbestos Percentage (%)																
			Color	Homogeneity	Texture	Fibrils	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI	Chrysotile	Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous			
PA-0A	7/30/14	FV/Mastic Lm Cm Pls/Pib Sh/G TSI CT Ck Glz Adh Description: Floor: 2 Rm: Men's Room	0	HYPY							II																	100
01B		FV/Mastic Lm Cm Pls/Pib Sh/G TSI CT Ck Glz Adh Description: Floor: 1 Rm: Curtain wall - main room	0	HYPY																								100
01C		FV/Mastic Lm Cm Pls/Pib Sh/G TSI CT Ck Glz Adh Description: Floor: 1 Rm: Room Entry	0	HYPY																								100
01D		FV/Mastic Lm Cm Pls/Pib Sh/G TSI CT Ck Glz Adh Description: Floor: 2 Rm: Office	0	HYPY																								100
01E		FV/Mastic Lm Cm Pls/Pib Sh/G TSI CT Ck Glz Adh Description: Floor: 2 Rm: Game Room	0	HYPY																								100
01F		FV/Mastic Lm Cm Pls/Pib Sh/G TSI CT Ck Glz Adh Description: Floor: 1 Rm: Women's Room	0	HYPY																								100

Comments: Birefringence L= less than .010, M= .011-.029, H= greater than .03; Microscope Olympus BH-2, Serial # circle 11-242277, 229027, 235000, 230663 Lab uses the EPA or ELAP point count method as appropriate. SSAPE = Stereo Scope Ass. % Est.  
 FV/Mastic= Floor tile & Mastic, Lms=Linoleum, Cm=Carpet Mastic, Adh=Adhesive, Pls=Plaster Skim, Pib=Plaster Base, Sh=Sheetrock, Jc=Joint Compound, TSI Thermal System Insulation, CT=Ceiling Tile, Ck=Caulking, Glz=Glazing, Gbd=Glue dab  
 Each layer of multilayered materials are analyzed and charged individually (per NESHAP/EPA).



















**TAT**  
(circle one)  
 3 Hours 6 Hours Same Day Next Day  
 2 Days 3 Days 5 Days Other

**PASI Batch #**  
 B42898

TAT in bus. days - lab approval required for rush analysis

\*if no selection is made the lab will analyze all samples

**Client:** Environmental Compliance Services, Inc.

Stop on first positive\*:  Yes /  No

**Address:** 588 Silver Street Agawam, MA 01001

**Chain of Custody** Special Instructions:

Relinquished By: *[Signature]*

Date/Time: 7/30/14

**Project #:** PO:

Received By Lab: *[Signature]*

Date/Time:

**Project Site:** *Rich St*

Shaded area for lab use only.

**Contact:** Nick Anderson

Analyzed:

**Tel. / Fax #:** (413) 237-6438

By: *[Signature]* Date:

**Email:** nanderson@ecconsult.com

# of Samples Received: *17/14* GC by / Date:

Sample ID	Date Sampled	Description / Location	Stereo Scope			Optical Properties							Asbestos Percentage (%)							Non Asbestos Percentage (%)							
			Color	Homogeneity	Texture	Friable	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI	Chrysotile	Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous		
RA-224	7/30/14	FV/Mastic Lm Cm Pls/Pib Sh/Jc TSI CT Ck Glz Adh Description: Black w/ Cork board Floor: B Rm: Rear - near ceiling	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	
728		FV/Mastic Lm Cm Pls/Pib Sh/Jc TSI CT Ck Glz Adh Description: Same Floor: B Rm: Rear - near ceiling	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100
730		FV/Mastic Lm Cm Pls/Pib Sh/Jc TSI CT Ck Glz Adh Description: Spack paper Floor: B Rm: Rear - near ceiling	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	70
732		FV/Mastic Lm Cm Pls/Pib Sh/Jc TSI CT Ck Glz Adh Description: Same Floor: B Rm: Rear - near ceiling	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	70
740		FV/Mastic Lm Cm Pls/Pib Sh/Jc TSI CT Ck Glz Adh Description: Basement ceiling Floor: B Rm: Same	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100
742		FV/Mastic Lm Cm Pls/Pib Sh/Jc TSI CT Ck Glz Adh Description: Same Floor: B Rm: Same	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100







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**APPENDIX B**  
SITE PHOTOS

