



RFP 2015-056
REQUEST FOR QUALIFICATIONS/PROPOSAL

**DESTRUCTIVE HAZARDOUS BUILDING MATERIALS INVESTIGATION,
PREPARATION OF ABATEMENT AND DEMOLITION SPECIFICATIONS, AND
DEMOLITION OVERSIGHT FOR CENTER SCHOOL
1000 EAST BROADWAY, STRATFORD, CT 06615**



Proposals due WEDNESDAY, NOVEMBER 25th, 2015, 2pm

The Town of Stratford is currently soliciting fee proposals and qualifications for the completion of a destructive Hazardous Building Materials Investigation (HBMI), preparation of abatement and demolition bid specifications, contractor procurement and demolition oversight, for the property referenced above. Please note the former Board of Education (BOE) building located facing East Broadway is *NOT* to be demolished. Therefore, investigation of the BOE building is not to be included with the Scope of Work described herein. The HBMI and Demolition Oversight apply *ONLY* to the public school, which was constructed around 1969, at the northern portion of the site along Sutton Road. Furthermore, the Town requests that the consultant awarded this project be available to begin the destructive HBMI by December 1st, 2015.

BACKGROUND: The Town of Stratford was awarded a \$1.2 million grant from the State of Connecticut's Department of Economic and Community Development (DECD) to remediate, abate, and demolish the former public school (known as Center School) located at 1000 East Broadway. To date, the following Environmental Assessments have been performed at Center School:

- a) Phase I Environmental Site Assessment (May 2014)
- b) Phase II Environmental Site Assessment/non-destructive Hazardous Building Materials Investigation (September 2014)

Consultant firms are expected to review the reports listed above and develop a scope of work for this project accordingly.

REQUIRED EXPERIENCE: Eligible respondents will be those qualified professionals that effectively demonstrate the following:

- a) Experience and expertise in (i) hazardous or regulated materials, including, without limitation, lead, mercury, chemicals, radioactive contaminated materials, and asbestos, (ii) PCB consulting, and (iii) possessing the professional credentials to undertake and successfully complete the services outlined in this RFP.
- b) Knowledge of Federal and State laws and regulations governing the services outlined in this RFP.
- c) Experience with State DPH, DAS, DEEP, and U.S. EPA technical processes.

SCOPE OF SERVICES: The Town is seeking the following services to be provided in response to this RFQ/RFP:

Destructive Hazardous Building Materials Investigation (HBMI): The scope of work for this category may include, but is not necessarily limited to, the following components as listed below:

- **Asbestos-Containing Materials:** The consultant will conduct a destructive HBMI of the Center School building on site in accordance with the Code of Federal Regulations (CFR) 40 Part 61 National Emissions Standards for Hazardous Airborne Pollutants (NESHAPs). The asbestos inspection work shall be performed by a State of Connecticut licensed asbestos inspector. The destructive HBMI will supplement the non-destructive HBMI report previously prepared for the site.

The contractor will conduct destructive inspection of the building that will include the following items as identified for further investigation on the existing HBMI report (see Appendix A, page 13):

LOCATION	MINIMUM NUMBER OF SAMPLES*
BELOW GYMNASIUM FLOOR/FELT AND MASTIC	7
BENEATH THE RUBBER ROOF MEMBRANE	7
ROOF DRAIN MUD PACK FITTING CEMENT	3
INSIDE THE BOILER BASE/INSULATION AND REFRACTORY CEMENT ON RIBS	3
CEMENT BOARD PANELS AT COOLING TOWER	3
MUD PACK FITTING CEMENT	3
INSIDE FIRE DOORS	2
INSIDE PLUMBING CHASES AND WALL CAVITIES	2
UNDERNEATH CERAMIC FLOOR AND WALL TILE	2
ADHESIVE AND GROUT ASSOCIATED WITH CERAMIC FLOOR TILE	2
ADHESIVE AND GROUT ASSOCIATED WITH CERAMIC WALL TILE	2
ADHESIVE ASSOCIATED WITH COMPOSITE SILL	2
ADHESIVE ASSOCIATED WITH CORKBOARD	2
ADHESIVE ASSOCIATED WITH MIRRORS	2
BLACKBOARD ADHESIVE	2
TACK/MARKER BOARD ADHESIVE	2

*Note that number of samples applies to the minimum number of samples *per homogenous area encountered*.

Bulk Sampling – The consultant shall collect samples of suspect bulk materials for analysis by Polarized Light Microscopy (PLM) using United States Environmental Protection Agency (EPA) approved protocol in accordance with accreditation of the National Institute of Standards and Technology (NIST). This sampling will be performed in accordance with the EPA requirements for asbestos identification.

Bulk samples of suspect ACM shall be collected in accordance with protocols developed by EPA under the Asbestos Hazard Emergency Response Act (AHERA). Sampling protocols are described below for each of the three principal categories of ACM, as defined by EPA.

Surfacing Materials

The required number of samples shall be collected for each suspect homogeneous surfacing material. The EPA sampling protocol for surfacing materials requires that a

minimum of three (3) samples be collected for surfacing materials quantified up to 1,000 square feet; five samples for surfacing materials quantified between one 1,000 and 5,000 square feet; and seven samples for greater than 5,000 square feet.

Thermal Systems Insulation

The required number of samples shall be collected for each type of suspect thermal systems insulation (TSI). The EPA requires a minimum of three samples for each different type of TSI. One sample is permissible for TSI patches less than or equal to six square feet or six linear feet.

Miscellaneous Materials

A minimum of two samples for each type of suspect miscellaneous material shall be collected per homogenous area. Where large quantities of miscellaneous materials are present, additional samples shall be collected at the discretion of the Licensed Asbestos Inspector. Current regulations require that sampling of miscellaneous materials "will be conducted in a manner sufficient to provide accurate results". Samples of suspect ACM shall be analyzed by PLM, using EPA Method 600/R-93/116. Bulk samples of non-friable organically bound (NOB) material having dense matrices, such as roofing, door and window caulking, vinyl adhesive floor tile, and floor tile mastic are considered by EPA to be "Problem Samples" due to the potential for false negatives by PLM analysis alone. Consultant shall require that NOB samples be subjected to additional analyses by EPA Method 600/R-93/116 with gravimetric reduction or EPA 600/R-93/116b.

Sample analyses – Samples of suspect asbestos containing materials shall be sent to a State of Connecticut approved laboratory for analyses.

- **PCB Containing Materials:** The consultant will conduct sampling of materials that were not measured as part of the non-destructive HBMI. The consultant will collect up to three samples of each of the indicated materials consistent with the EPA sampling guidelines.

Source Materials to be Investigated

- a) Roofing materials installed prior to 1979
- b) Mirror/corkboard/chalkboard adhesive
- c) Brown paint of structural steel
- d) Floor wax/tile wax
- e) Sink undercoat

Please note the film thickness of items *c-f* was identified as being insufficient for sampling by conventional means and, therefore, should ultimately be treated as PCB Bulk Product Waste or sampled and characterized using an alternate sampling protocol. Additionally, for item *b*, if adhesive is installed on primary interior paint coating (i.e. beige paint with multi-colored specks) then the adhesive should be treated as PCB Bulk Product Waste.

Substrate to be Investigated

- a) Brick
- b) Mortar

c) Cement

Soils to be Investigated

Soils adjacent to exterior courtyard seam caulk must be characterized for PCBs.

- **Destructive Hazardous Building Materials Investigation Report:** The consultant will develop a destructive HBMI report for the building to supplement the existing non-destructive HBMI report. The final report will provide an inventory of the identified hazardous building materials including the location and quantity of each type of material. The report will also include a site plan that will depict the layout of the building. The report will include all sample logs, laboratory chain of custodies, accreditations, and licenses. An Opinion of Probable Abatement Cost (for *all* hazardous building materials) shall be included in the report to assist with redevelopment discussions and planning. A draft of the report will be provided to the Town for review prior to finalization.

ABATEMENT AND DEMOLITION SPECIFICATIONS, CONTRACTOR PROCUREMENT, AND DEMOLITION OVERSIGHT: The scope of work for this category may include, but is not necessarily limited to, the following components as listed below:

- Design and prepare technical bid specifications for the abatement of hazardous building materials identified through current and previous investigations. Specifications should include the means and methods for removal and disposal of hazardous building materials as well as applicable regulatory requirements associated with abatement.
- Conduct a detailed visual assessment of the structure to determine the likely demolition scenario, waste streams, salvage options (crushed masonry), site constraints, and other conditions that may affect the work or demolition costs.
- Assessment of potential effects of demolition work outside the project envelope related to adjacent public roads, neighboring properties, traffic issues, noise, safety, and protection of active infrastructure proximal to the site.
- Preparation of technical specifications to facilitate demolition of Center School.
- Contractor procurement working under guidelines established by DECD.
- Demolition oversight.

REQUIREMENTS FOR RESPONSES: Interested firms responding to this RFP should submit a package which contains the information described in the following subsections.

Professional Information: Please provide a brief discussion of how your firm meets the “REQUIRED EXPERIENCE” as described, above. Briefly discuss your firm’s capabilities, experience, and qualifications performing HBMI and designing abatement and demolition specifications.

Personnel: Respondents should identify the staff that will directly work on the project, and those who will provide relevant technical expertise. The role and qualification for all direct staff should also be provided. Qualification information should include educational background, and any licenses or certifications for the State of Connecticut.

Completed Cost Proposal: Please complete the cost proposal as provided, below.

Project Scheduling: Firms *must* be available to begin destructive HBMI by December 1st, 2015, and proposals should include a statement indicating this availability. Firms should also provide a schedule for completion of the HBMI, HBMI report, and Abatement and Demolition Specifications.

INSTRUCTIONS FOR SUBMISSION OF PROPOSALS:

Proposals must be submitted to the Town of Stratford in a sealed envelope addressed to the following:

Town of Stratford
C/o Michael Bonnar, Purchasing Agent
2725 Main Street
Stratford, CT 06615
E: mbonnar@townofstratford.com
P: (203) 385-4044

All bids are to be clearly marked, “Destructive Hazardous Building Materials Investigation and Preparation of Abatement and Demolition Specifications For Center School.”

Proposals (**three copies**) are due no later than **2:00 p.m. local time on Wednesday, November 25th, 2015** by mail or delivery. The proposals must be sealed in an envelope with the title of this RFP and the Respondent’s name, address, and telephone number clearly marked on the envelope.

The above deadline is firm as to the date and hour. The Town will treat as ineligible for consideration any submission that is received after that deadline. All submissions become the property of the Town and will not be returned.

CRITERIA FOR EVALUATION: Proposals will be evaluated upon experience of respondent, cost proposal, and timeliness of schedule.

REQUESTS FOR ADDITIONAL INFORMATION: For questions, or to request the complete Phase I, Phase II, non-destructive HBMI report, or DECD procurement guidelines as previously prepared for the town (including all chemical testing results), please email cbatoh@townofstratford.com. The summarized findings of the previous non-destructive HBMI report are provided as Appendix A.

Collusion:

By responding, the firm implicitly states: that his/her proposal has not been made in connection with any other competing firm submitting a separate response to this RFP; is in all respects fair; and has been submitted without collusion or fraud. It is further implied that the firm did not participate in the RFP development process, had no knowledge of the specific contents of the RFP before its issuance, and that no employee of the Town either directly or indirectly assisted in the vendor's proposal preparation.

General Conditions:

The Town of Stratford reserves the right to reject any or all proposals; to select one or more respondents; to void this RFP and the review process and/or terminate negotiations at any time; to revise any conditions and stipulations contained herein, as convenient or necessary; to further negotiate fees, rates and financial arrangements, etc; to establish further criteria for selection; to ask respondents to submit additional information or evidence of their qualifications and experience; to waive informalities in the proposals and in the proposal process; and to negotiate with successful respondents; to reject any and/or all proposals for any reason, in the Town's sole discretion.

Town of Stratford - RFP 2015-056

Cost Proposal

Please provide fee proposal for the following scope of services as described above for the Center School located at 1000 East Broadway, Stratford, Connecticut.

ITEM	REQUEST FOR PROPOSAL	ITEM PRICE
	(ITEM PRICE IN WORDS - DOLLARS AND CENTS)	
1	ASBESTOS SAMPLING COSTS- <i>Per Sample (collection and analysis)</i>	\$ _____
2	PCB SOURCE MATERIAL SAMPLING COSTS- <i>Per Sample (collection and analysis)</i>	\$ _____
3	PCB SUBSTRATE SAMPLING COSTS- <i>Per Sample (collection and analysis)</i>	\$ _____
4	PCB SOIL SAMPLING COSTS- <i>Per Sample (collection and analysis)</i>	\$ _____
5	DESTRUCTIVE HAZARDOUS BUILDING MATERIALS INVESTIGATION (LABOR AND REPORTING)- <i>Lump Sum</i>	\$ _____
6	ABATEMENT AND DEMOLITION SPECIFICATIONS - <i>Lump Sum</i>	\$ _____
7	CONTRACTOR PROCUREMENT AND DEMOLITION OVERSIGHT- <i>Lump Sum</i>	\$ _____
	Days to Completion after Issuance of a Purchase Order	_____ Days

Appendix A

**Stratford Board of
Education
1000 East Broadway
Stratford,
Connecticut**

Phase II Site Assessment
and Hazardous Building
Materials Inspection
Report

September 2014

USEPA Brownfields
Grant BF-96177201



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- Appendix E – Soil Analytical Reports
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1.0 INTRODUCTION

1.1 Project Objective

Weston & Sampson, Inc. (Weston and Sampson) was retained by the Greater Bridgeport Regional Council (GBRC) to prepare a site specific quality assurance project plan (QAPP), conduct a hazardous materials building inspection (HBMI), and a Phase II environmental site investigation (ESI) at 1000 East Broadway in Stratford, Connecticut (the "Site"). The location of the Site is shown on **Figure 1** (Site Locus Map). The work was conducted in accordance with the site-specific QAPP approved by EPA on July 22, 2014. The purpose of conducting the HBMI and Phase II SI is to assess the potential opinion of cost to abate and manage the disposal of hazardous materials at the Stratford Board of Education (SBOE) and to assess potential releases of oil and hazardous materials to soil and groundwater at the Site. The Site will potentially be reused for a transient oriented redevelopment by renovation the SBOE building.

1.2 Applicability

The site investigation activities were performed in general accordance with the approved EPA site-specific QAPP and CTDEEP *Site Characterization Guidance Document* (SCGD) dated September 2007, revised December 2010. Soil and groundwater results were compared to applicable Connecticut Department of Environmental Protection (CTDEEP) Remediation Standard Regulations (RSR) cleanup criteria, as appropriate. These criteria include direct exposure, soil pollutant mobility, volatilization, and surface water protection criteria.

2.0 SITE INFORMATION AND PRELIMINARY CONCEPTUAL MODEL

2.1 Physical Description

The irregular-shaped Site consists of a single 3.6-acre parcel of land located on the north side of East Broadway and west side of Sutton Avenue in the downtown area of Stratford, Connecticut. The Site is accessed via a curb cut off Sutton Avenue into a parking lot shared by the Stratford BOE and Center School staff. Center School is located to the north across the parking lot. Only pedestrian access to the Site via concrete sidewalks is available from East Broadway. The location of the Site is depicted on a Locus Map enclosed as **Figure 1**.

The approximate geographical coordinates for the property are as follows:

<u>UTM Coordinates:</u>	4561734.5 meters North 656875.2 meters East
<u>Latitude/Longitude:</u>	41° 11' 37.32" North -73° 7' 45.48" West

The Site is currently improved with an approximate 20,500 square feet, two-story, brick office building with a basement fronting East Broadway. A Site plan is enclosed as **Figure 2**.

Stormwater drainage is via sheetflow to catch basins located in the grassy or paved areas of the Site and to catch basins located along Sutton Avenue and East Broadway. The Town of Stratford provides both water and sanitary sewer service to the Site. The SBOE building is heated by a combination of natural gas and oil. Topography of the Site is predominantly flat. According to the Environmental Data Resources (EDR) Database Report, the average elevation of the Site is 22 feet above mean sea level.

2.2 Site History

Most notable historic uses of the property include an office building historically utilized as a school dating back to 1885 and currently occupied by the Town of Stratford Board of Education for office space.

The northern portion of the Site along Sutton Road was historically utilized for residential purposes until these buildings were razed sometime prior to 1969 for the construction of the current Center School building.

2.3 Physiographic Setting

The subject Site is generally flat and slopes moderately to the west and north. Although the topographic maps do not depict the elevation change, the northern and western portion of the Site visibility appears to be elevated relative to the abutting property located west-northwest of the Site, hence the presence of a retaining wall on that portion of the Site boundary.

2.4 Site Geology and Hydrogeology

According to the "Surficial Materials Map of Connecticut," (1992), the surficial geology underlying the Site is described as sand overlying fines. This unit is characterized as sand of variable thickness that overlay thinly bedded fines of variable thickness. Soil encountered in testing borings during the Phase II SI included fine to coarse SAND and gravel to a depth of 16 ft.

According to the "Bedrock Geological Map of the Connecticut," (Rodgers, 1985), the bedrock underlying the Site is described as "Oronoque Schist." This formation consists of gray to silver, medium to fine-grained schist and granofels.

Groundwater was observed in test borings at an approximate depth of 13 ft. Groundwater flow direction at the Site is to the northwest (refer to **Figure 2**). The groundwater gradient at the Site is approximately 0.007 ft./ft.

2.5 Previous Investigation Summary

A Phase I environmental site assessment (ESA) was conducted at the Site by Weston & Sampson in May 2014. The Phase I ESA findings are as follows:

The major findings of the Phase I ESA are as follows:

The single irregular-shaped Site parcel consists of approximately 3.6-acres of land situated on the north side of East Broadway and west side of Sutton Avenue;
Municipal water and sanitary sewer service are provided to the Site;
The Site lies within a mapped Residential Zone of Stratford;
The Site is improved with an office building historically utilized as a school dating back to 1885 and currently occupied by the Town of Stratford Board of Education for office space and a single-story school building known as the Center Elementary School constructed in 1969-1970;
The northern portion of the Site along Sutton Road was historically utilized for residential purposes until these buildings were razed sometime prior to 1969 for the construction of the current school building;
The BOE building formerly utilized a underground storage tank (UST) for the storage of heating oil which was replaced sometime between (2001 and 2007) with the current heating oil UST and is listed on the registered UST database of the environmental database report;
Topographic maps do not depict an elevation change at the northwest section of the Site, however visual observations including the presence of a retaining wall suggesting that this area of the Site was likely filled given it is relatively higher in elevation than the abutting property to the west;
The Site does not appear to qualify as an “establishment” as defined by the Connecticut Transfer Act; and
Based on the age of the buildings (1885 and 1969-1970) the presence of asbestos-containing materials (ACMs), lead-based paint (LBP) and polychlorinated biphenyl (PCB)-containing light ballast and building source materials is likely and will be addressed by Eagle Environmental, Inc., a licensed subcontractor. Results of Eagle’s HBMI are included in this report.

Weston & Sampson did not identify any Controlled Recognized Environmental Conditions (CRECs).

The Phase I ESA identified two RECs in connection with the Site as follows:

The former use of a bare steel heating oil UST has been identified as a REC since environmental conditions of the former tank grave are unknown due to a lack of UST closure documentation. Based on the age (~25 years) and construction of the previous UST there is the potential that a release could have occurred.

The potential historic filling of the northern, northeastern, and western areas of the Site has been identified as a REC. This is based upon information on the removal of former residential properties along Sutton Avenue to the northeast of the Center School building and the subsequent

construction of the school in 1969 to 1970. The source of the fill and deposition of the former residences is unknown.

RECs will be referenced as Areas of Concern (AOCs) as defined in the CTDEEP SCGD in the remainder of this report.

2.6 State Regulatory Information

The Site is currently not regulated under the Connecticut Property Transfer Law and has not been entered into the State Voluntary Site Cleanup Program. However, the investigation is being funded by an EPA Brownfield Grant program administered by the GBRC. The RSRs are being use as guidance for the project.

2.7 Future Intended Use

The future intended use of the Site is unknown at this time. However, the Town of Stratford and GBRC anticipates the Site will be redeveloped as a new municipal mixed use commercial and parking facility for the adjacent Stratford Metro North Train Station as part of a planned transient community corridor.

2.8 Constituents of Concern

Based on the results of the Phase I ESA conducted by Weston & Sampson and the approved site-specific QAPP, the following table is presented which summarizes the Areas of Concern at the Site that required further investigation and the associated constituents of concern (COCs) within each AOC:

AOC No.	Number of Releases	Date of Release	Phases of Investigation Completed	COCs	Data Gap	Proposed Test Boring/Monitoring Well No.
1-The former use of a bare steel heating oil UST	Unknown	Unknown	Phase I ESA	Volatile Organic Compounds (VOCs), extractable total petroleum hydrocarbons (ETPH) (soil & groundwater)	Need to assess if a release of petroleum has occurred to soil and/or groundwater within and adjacent to this AOC due to historic and current use of this area for the operation of a No. 2 fuel oil UST	SB-1 through SB-3/MW-1
2-The potential historic filling of the northern, northeastern, and western areas of the Site	Unknown	Unknown	Phase I ESA	VOCs, heavy metals and ETPH (soil & groundwater)	Need to assess the quality of the fill used on-site and backfilling of historic residential building foundations along Sutton Street	SB-4 through SB-8/MW-2 and MW-3

COCs associated with the HBMI included asbestos-containing building materials, lead based paint, PCB and DEHP containing light ballasts, PCB containing equipment and building “source” materials, and universal waste materials.

3.0 REGULATORY FRAMEWORK

This assessment is one of the required steps in the ultimate demonstration that the Site is in compliance with the Remediation Standard Regulations (RSRs).

The Connecticut Remediation Standard Regulations (RSRs) are the clean-up standards in the State of Connecticut. They also contain procedures to evaluate whether actions (e.g. remediation or institutional controls) will be required to address identified releases of hazardous substances.

The RSRs require that the nature and extent of release areas be fully characterized prior to making a final compliance determination with the RSRs. At this point in the investigation process AOCs have not been characterized. Because the ultimate goal of the site investigation and remediation is compliance with the RSRs, it is also important to understand, from the outset, the regulations that guide the site investigations. For these reasons, baseline RSR criteria are presented alongside the analytical data as an evaluation tool and the RSR criteria that apply are discussed in the following subsections

3.1 RSR Soil Criteria

The RSR Soil Remediation Standards (RCSA Section 22a-133k-2) require polluted soil at a release area be remediated to meet the Direct Exposure Criteria (DEC) to protect human health from exposure to constituents of concern (COCs). Soil must meet the Pollutant Mobility Criterion (PMC), which are intended to prevent the pollution of groundwater through the leaching of constituents from impacted soil. However, the RSRs also define specific alternatives to strict compliance with the baseline numeric DEC and PMC by including self-implementing options, exceptions, and variances.

Direct Exposure Criteria: In general, these criteria apply to soil located within fifteen feet of the ground surface. Soil impacted by a release must be remediated to a concentration that is consistent with the Residential Direct Exposure (RDEC) criteria, unless the Site is used exclusively for industrial or commercial activities. In such a case, the Industrial/Commercial (I/C) DEC may be used, provided an Environmental Land Use Restriction (ELUR) is recorded to ensure that the Site is used only for industrial/commercial activities. It is possible to use institutional or engineered controls to manage impacted soil on a Site in lieu of active remediation. Variances exist for the presence of widespread, polluted fill and constituents associated with the fill that contains only asphalt fragments, coal fragments, or coal/wood ash.

Pollutant Mobility Criteria: The pollutant mobility criteria (PMC) are dependent upon the groundwater classification of the Site. Based on the Site's location in a GB-designated area, the GB PMC apply to the Site. As with the DEC, it is possible to use engineered controls to manage impacted soil on-site. Variances exist for the presence of widespread, polluted fill and constituents associated with fill that contain only asphalt fragment, coal fragments, or coal/wood ash. It is possible to use institutional or engineered controls to manage impacted soil on site in

lieu of active remediation. The PMC in a GB area apply to soil located above the seasonal high water table.

3.2 RSR Groundwater Criteria

The RSR Groundwater Remediation Standards (RCSA Section 22a-133k-3) require that remediation of a groundwater plume in a GB groundwater classified area shall result in the attainment of the Surface Water Protection Criteria (SWPC) and Volatilization Criteria (VC) or the background concentration for groundwater for each substance in the impacted groundwater plume, if the Site's groundwater has been impacted by an off-site source of contamination to a degree that exceed the SWPC or VC. These criteria are discussed in more detail below. As with soil, the RSRs specify self-implementing options and exceptions associated with determining compliance with groundwater criteria.

Background: No obvious off -site groundwater sources from upgradient releases have been identified. If the Site groundwater was found to be impacted by an off-site source only, remediation would not be required. The CTDEEP's policy on upgradient sources of contamination is that a downgradient property owner is not responsible for remediating groundwater contamination flowing onto his or her property from another site, as long as the contamination is present solely as a result of the off-site sources (CTDEP Policy on Upgradient Contamination, Michael Harder, Director of Permitting, Enforcement, and Remediation Division, August 28, 1997).

Surface Water Protection Criteria (SWPC): The SWPC ensure that surface water quality is not impaired by the discharge of contaminated groundwater into a surface water body at constituent concentrations above the CTDEEP Water Quality Standards. The SWPC apply to a groundwater plume at the point where the plume discharges to a surface water body. Alternatively, the SWPC may be evaluated as an average of concentrations within the plume. Site-specific SWPC may also be calculated.

Volatilization Criteria (VC): The VC protects human health from volatile substances in shallow groundwater that may migrate from groundwater into overlying buildings. Under the current regulations, the VC is considered for areas where groundwater is within 15 feet of the ground surface or a structure intended for human occupancy.

4.0 PHASE II SITE INVESTIGATION AND HBMI SCOPE OF STUDY

4.1 Phase III Site Investigation

Environmental investigations were conducted at and adjacent to the following AOCs listed in *Section 2.8*: The former use of a bare steel heating oil UST and the potential historic filling of the northern, northeastern, and western areas of the Site. This section of the report provides an overview of the methods used to investigate the Site and evaluate the data collected, describes data quality objectives (DQOs), constituents of concern (COCs), laboratory methods used to

analyze environmental samples, and field investigation methods.

4.1.1 Data Quality Objectives

DQOs are used to ensure that data is collected in a manner that permits it to be used to evaluate a site and support decisions based on those evaluations. Procedures used to ensure that DQOs for the project were met include:

- Selection of analytical methods with appropriate detection limits
- Use of pre-determined sampling handling and custody procedures
- Use of pre-determined data management and documentation procedures
- Selection of sampling locations and COCs appropriate to the potential release area
- Collection of samples from locations most likely to exhibit evidence of a release based on the AOC conceptual model
- Apply preservation and hold time procedures to ensure sample integrity
- Analysis of blind duplicate samples (laboratory and field) to determine precision.
- Conduct a completeness check to confirm that all required sampling and analytical documents and records are present in the data package to ensure sufficient documentation for data defensibility

A review of data usability is summarized on **Table I**. After a review of the field procedures and laboratory data the DQOs for this project have been met and the data is usable.

4.1.2 Constituents of Concern

A list of COCs to be investigated was developed for each AOC. The COC list comprises those compounds most likely to be released, based on knowledge of site history and operations and results of previous investigations. The COCs include:

- Volatile Organic Compounds (VOCs)
- Extractable Petroleum Hydrocarbons (ETPH)
- Heavy Metals

The analytical methods presented in the following table were selected to identify and evaluate potential releases because they are capable of achieving analytical detection limits less than the baseline numeric RSR cleanup criteria applicable to the Site.

Constituent of Concern (COC)	Analytical Method
VOCs	VOCs by EPA Method 8260 (soil and groundwater)
Petroleum Hydrocarbons	Connecticut ETPH Method (soil and groundwater)
RCRA 8 Metals	EPA Method Series 6000/7000 (soil and groundwater).

Sample analysis was conducted by Con-Test Analytical Laboratory of East Longmeadow, Massachusetts.

4.1.3 Phase II Environmental Site Investigation Procedures

The Phase II SI field activities conducted on August 6, 11, and 19, 2014 was broken down into the following general tasks, which are described in the following subsections:

- Test Borings (seven locations)
- Groundwater Sampling (three locations)

Sample locations are depicted on **Figure 2**.

Soil Sampling:

Test borings and monitoring well installations were conducted on August 6 and 11, 2014 by using a AMS PowerProbe 9500-VTR direct push rig (test borings SB-1, SB-3, and monitoring well MW-1) and a Case 580 backhoe mounted drill rig (test borings SB-4 through SB-8 and monitoring wells MW-2 and MW-3). Soil samples were collected from polyethylene sleeves from the direct push drill rig and were collected using a split spoon sampler on the Case 580 drill rig. Soil samples were collected using the appropriate method for sample preservation and kept chilled for subsequent analytical testing. Non-dedicated sampling equipment was decontaminated with a non-phosphate soapy solution, rinsed with methanol, then double rinsed with distilled water between each sampling event to prevent cross contamination.

Each soil sample was inspected by a field scientist for physical evidence of contamination (i.e. staining, odors) and soils were physically described. Samples were also field screened for organic vapors of VOCs using a photoionization detector (PID). Soil sampling intervals were selected to detect and characterize the highest concentrations of released constituents within the AOCs. Visual inspection and field screening did not reveal evidence of contamination. Therefore, samples were selected for laboratory analysis from predetermined intervals (0.0 ft to 2.0 ft.) based on the conceptual model and the regulatory compliance goal for the Site. Soil samples collected adjacent to the heating oil UST were submitted for laboratory analysis from depths of 4.0 ft. to 6.0 ft. (SB-3) and 6.0 ft. to 8.0 ft. (SB-1). The field soil conditions encountered during the test borings are provided in **Appendix A**. Groundwater monitoring wells were installed in the following completed test borings: SB-1 (monitoring well MW-1), SB-5 (monitoring well MW-2), and SB-7 (monitoring well MW-3). Groundwater monitoring well installation reports are presented in **Appendix B**.

Due to access constraints and buried utilities, test boring SB-2 was not drilled in the parking area north of the UST, located hydraulically downgradient relative to the UST.

Groundwater Sampling:

Prior to groundwater sampling at monitoring wells MW-1 through MW-3, a level survey was conducted to assess groundwater flow direction at the Site using a relative benchmark elevation of 100 feet. Groundwater was collected on August 19, 2014. Prior to initiating low flow sampling at each well depth to groundwater was recorded. A grab sample of groundwater was collected from the monitoring well after low flow parameters had stabilized in the groundwater. Well Purging/Groundwater Sampling Reports are presented in **Appendix C**.

4.1.4 Hazardous Building Materials Investigation

On July 31, August 1, and 7, 2014, Eagle Environmental, Inc. (Eagle) conducted a HBMI of the structure known as the Stratford Public Schools Board or Education office located at 1000 East Broadway, Stratford, Connecticut. The scope of the HBMI included an asbestos-containing materials inspection, a lead-based paint screen and an inspection for universal waste. The inspection was performed to support the renovation of the building.

Prior to the inspection, the previous three (3) year Asbestos Hazard Emergency Response Act (AHERA) inspection report date September 29, 2011 was reviewed and custodial staff was interviewed regarding the history of the building. An asbestos-containing roofing materials inspection report dated June 18, 2012 was reviewed. Roof sampling was not included in the Eagle inspection as the roof was presumably replaced after the 2012 inspection. A copy of the Eagle HBMI report is presented in **Appendix D**.

5.0 PHASE II ESI AND HBMI RESULTS

Site environmental investigation soil analytical results are summarized in **Table 2** and presented in **Appendix E**. The site investigation groundwater monitoring analytical results are summarized on **Table 3** and presented in **Appendix F**.

5.1 Phase II ESI AOC Specific Results

5.1.1 AOC 1 – The former use of a bare steel heating oil UST

Initial Conceptual Model

The BOE building formerly utilized an UST for the storage of heating oil which was replaced sometime between (2001 and 2007) with the current heating oil UST and is listed on the CTDEEP registered UST database. In addition, fill has been placed onto the Site during the construction of the Center School. An investigation if a release of oil or hazardous materials within this AOC was addressed.

Soil Analytical Results

VOCs were not detected above the laboratory reporting limit for soil samples SB-01 (6.0 ft. to 8.0 ft.) and SB-3 (4.0 ft. to 6.0 ft.). ETPH was detected in SB-1 (46 mg/kg) and SB-2 (67 mg/kg) above the laboratory reporting limit of 11 mg/kg and 10 mg/kg, respectively. Total metals (arsenic, barium, cadmium, chromium, lead, and mercury) were detected at background concentrations typical for Connecticut soils.

Groundwater Analytical Results

VOCs and ETPH were not detected above the laboratory reporting limit in groundwater collected from MW-1. Barium (73 µg/L) was detected in groundwater collected from MW-1.

5.1.2 AOC 2 – Potential Historic Filling of the Northern, Northeastern, and Western Areas of the Site

Initial Conceptual Model

Topographic maps do not depict an elevation change at the northwest section of the Site, however visual observations including the presence of a retaining wall suggests that this area of the Site was likely filled given it is relatively higher in elevation than the abutting property to the west. In addition, fill may have been placed during the demolition of residential properties along the western side of Sutton Avenue prior to the construction of the Center School. An investigation if a release of oil or hazardous materials within this AOC was addressed.

Soil Analytical Results

With the exception of sample DUP-1, VOCs were not detected above the laboratory reporting limit in soil samples SB-4 through SB-8. Naphthalene (0.003 mg/kg) was detected above the laboratory reporting limit of 0.0025 mg/kg in soil sample DUP-1. DUP-1 was a blind duplicate sample of soil sample SB-8.

ETPH was detected in soil samples collected from SB-4 through SB-8 at concentrations ranging from 38 mg/kg to 220 mg/kg, below the applicable RSR criteria of 500 mg/kg.

Total metals (arsenic, barium, cadmium, chromium, lead, and mercury) were either not detected above the laboratory reporting limit or were detected at background concentrations typical for Connecticut soils.

Groundwater Analytical Results

VOCs and ETPH were not detected above the laboratory reporting limit in groundwater collected from MW-2, MW-3 and groundwater sample DUP-1. DUP-1 was a blind duplicate sample for

groundwater collected at MW-2. Barium (73 $\mu\text{g/L}$, 360 $\mu\text{g/L}$, and 72 $\mu\text{g/L}$) was detected in groundwater samples MW-1, MW-2 and DUP-1, respectively.

5.1.3 HBMI

For the location of hazardous building materials inventoried and collected for analysis refer to the floor plan in the HBMI reported presented in **Appendix D** and reference to tables in sections that follow.

Asbestos-Containing Materials (ACM)

The summarizes of the asbestos and non-asbestos materials are presented in **Table 1** and **Table 2** in the HBMI report in **Appendix D**.

Forty-five (45) bulk samples of ACM were collected and forty three (43) samples were analyzed by Phase Light Microscopy (PLM) based on a “stop on first positive” request to the laboratory. Additionally, two (2) samples of non-friable organically bound (NOB) materials were analyzed by the NOB TEM Method.

Based on the results of the analyses the following building materials were found to contain asbestos:

Miscellaneous ACM:

- Black floor tile; mastic and all associated floor tiles
- Residual caulk behind aluminum panning on the exterior windows

The remaining suspect materials were confirmed to be non-ACM.

Areas that were inaccessible for sampling included:

- Beneath the rubber roof membrane
- Inside the boiler fire box
- Inside fire doors
- Inside plumbing chases and wall cavities
- Underneath ceramic floor and wall tile

The following materials are presumed to be asbestos-containing:

- Adhesive and grout associated with yellow ceramic wall tile
- Adhesive associated with mirrors
- Boiler fire box insulation
- Boiler flue thimble

Fire door insulation

Thin set and grout associated with turquoise ceramic tile

The NOB TEM analyses confirmed the black mastic on the vinyl cove base in Room 015 and the adhesive associated with the tan vinyl cove base in Room 008 to be non-asbestos.

Lead-Based Paint

X-Ray Fluorescence Screening

A complete inventory of testing building materials is presented in Appendix 3 of the HBMI report.

A total of one hundred sixty-seven (167) XRF readings were collected during the lead-based paint screening of the building. Of these readings, eleven (11) were found to contain high levels of lead.

The general inventory of surfaces containing high levels of lead include the following: metal stair components in Room 014 and Room 019, brick walls in Room 018, plaster walls in Rooms 028, 029, 034, and 048 and exterior concrete window columns.

Additionally, several building materials were determined to contain low levels of lead in paint. Although these levels of lead were less than 1.0 mg/cm², the Contractor must perform an exposure assessment on employees during tasks that disturb the painted materials during renovation/demolition activities.

Lead Waste Characterization Results

There were no TCLP samples of lead-paint collected from the BOE office building at this time. If the plaster, concrete or brick components coated with lead-based paint will be disturbed by renovation activities, the painted components must be removed and disposed of as a hazardous lead waste or TCLP samples of the waste streams must be collected and analyzed to determine the proper disposal for these materials.

PCB in Bulk "Source" Materials

No PCB sampling was conducted at the BOE office per the request of the Town of Stratford.

Suspect "source" materials identified at the Site during the HBMI are as follows:

Carpet adhesives

Ceramic thin set and grout

Exterior door frame caulk

Exterior window caulk
Floor tile mastic
Vinyl cove base adhesives
Wall paints
Window glazing compounds

Universal Waste Materials and Other Environmental Concerns

The associated inspection data for the universal waste materials and other environmental concerns are summarized in Table III of the HBMI report.

PCB and Diethylhexylphthalate (DEHP) Containing Items

There were no PCB or DEHP containing lighting ballasts identified within the building. There were no capacitors potentially containing dielectric fluid identified. Two-hundred forty-two (242) electronic ballasts were identified. No further action is required for the electronic ballasts.

Mercury Containing Items

A total of approximately one thousand six hundred sixty-two (1,662) liner feet of fluorescent light bulbs and ten (10) round lamps are present within the building. The fluorescent light tubes must be removed from the building for proper recycling if they will be disturbed or replaced during renovation activities.

Used Electronics and Batteries

Four (4) fire alarms, eight (8) exit signs and eight (8) emergency lights presumed to contain lead-acid batteries are present within the building. The batteries must be removed and properly recycled if they are to be disturbed or replaced during renovation activities.

Chlorofluorocarbons

Two (2) rooftop HVAC units containing Freon tank(s) were identified. The Freon must be reclaimed from the tank(s) if the HVAC units will be removed or replaced during the renovation activities.

6.0 CONCLUSIONS AND RECOMMENDATIONS

6.1 Soil

Evidence of a release of petroleum or hazardous substances to soil that require further investigation has not been encountered during this investigation. However, during the renovation

activities associated with the BOE, if the fuel oil UST is to be placed out of service and removed from the ground or abandoned in place Weston & Sampson recommends the UST be closed in accordance with CTDEEP regulations.

6.2 Groundwater

Evidence of a release of petroleum or hazardous substances to groundwater was not encountered during this Phase II ESI. Based on the level survey groundwater flows in a northwesterly direction across the Site and the hydraulic gradient is 0.007 ft./ft. As a result of the level survey, monitoring well MW-1 is located in the hydraulically upgradient direction relative to the heating oil UST location. It is therefore inconclusive if any impact to groundwater has taken place during the operation of the historic or current heating oil UST.

Weston & Sampson recommends the installation of one downgradient groundwater monitoring well to be located northwest of the current UST to assess if there is any impact to groundwater due to a release from the historic or current heating oil UST.

6.3 Hazardous Building Materials

ACM was detected in the following building materials within the Stratford BOE Building: black floor tile; mastic and all associated floor tiles, and residual caulk behind aluminum panning on the exterior windows. The following materials are presumed to be asbestos-containing: Adhesive and grout associated with yellow ceramic wall tile, adhesive associated with mirrors, boiler fire box insulation, boiler flue thimble, fire door insulation, and thin set and grout associated with turquoise ceramic tile.

The NOB TEM analyses confirmed the black mastic on the vinyl cove base in Room 015 and the adhesive associated with the tan vinyl cove base in Room 008 to be non-asbestos.

All regulated friable and regulated non-friable ACM must be removed prior to demolition/renovation activities. A State of Connecticut Licensed Asbestos Abatement Contractor must be retained to perform the removal work. Visual inspections and air clearances must be performed within each abatement area at the completion of the abatement work. The visual and air clearances must be performed by a State of Connecticut Licensed Asbestos Project Monitor. The abatement areas must meet final visual and air clearance inspection criteria prior to building renovation/demolition. Re-occupancy air monitoring is required if the building will be re-entered by any person following abatement and prior to demolition. This includes but is not limited to entry for utility disconnects, salvage, and equipment removal.

The Asbestos Abatement Contractor must submit a notice of asbestos abatement to the State of Connecticut Department of Public Health (DPH) post marked or hand delivered ten (10) days prior to the commencement of any asbestos abatement activities involving the abatement of greater than ten (10) linear feet or twenty-five (25) square feet of ACM. The asbestos abatement

notification satisfies the DPH regulatory requirements for demolition notification. For asbestos projects involving less than ten (10) liner feet or twenty-five (25) square feet of ACM or a project where no regulated ACM are identified, the facility owner or any person who will be conducting the demolition must submit a demolition notification to the State of Connecticut DPH post marked or hand delivered ten (10) days prior to the commencement of demolition activities.

The general inventory of surfaces containing high levels of lead include the following: metal stair components in Room 014 and Room 019, brick walls in Room 018, plaster walls in Rooms 028, 029, 034, and 048 and exterior concrete window columns.

Additionally, several building materials were determined to contain low levels of lead in paint. Although these levels of lead were less than 1.0 mg/cm^2 , the Contractor must perform an exposure assessment on employees during tasks that disturb the painted materials.

The U.S. Department of Labor Occupational Safety and Health Administration (OSHA) regulates lead dust exposure to workers in the construction industry under 20 CFR 1926.62 Lead Exposure in Construction; Interim Final Rule. Currently, OSHA does not define a threshold level of lead in paint that may cause worker exposure. Any detectable level of lead in paint ($>0.0 \text{ mg/cm}^2 \pm 0.3 \text{ mg/cm}^2$ by XRF) requires task specific exposure monitoring. This "initial exposure assessment" must be conducted by trained workers utilizing appropriate personal protective equipment. Weston & Sampson recommends exposure assessments be conducted for each task where painted surfaces or components are disturbed during renovation/demolition activities.

Examples of tasks subject to initial monitoring when detectable levels of lead are identified include but are not limited to surface preparation for repainting, manual demolition of components with detectable levels of lead paint and the welding, cutting, or grinding of steel with detectable levels of lead in paint.

There were no TCLP samples of lead-paint collected from the BOE office building at this time. If the plaster, concrete or brick components coated with lead-based paint will be disturbed by renovation activities, Weston & Sampson recommends the painted components be removed and disposed of as a hazardous lead waste or TCLP samples of the waste streams be collected and analyzed to determine the proper disposal for these materials.

No PCB sampling was conducted at the BOE office per the request of the Town of Stratford. Suspect "source" materials were identified at the Site during the HBMI. If these source materials are to be disturbed or removed during renovation activities Weston & Sampson recommends these suspect source materials be sampled and analyzed for PCBs prior to disturbance/removal in order to determine the proper handling and disposal of potential PCB impacted building materials source and substrates (brick, cement, mortar) and potentially associated PCB-impacted soil.

Universal waste (fluorescent light tubes, lead acid batteries, Freon) must be properly recycled or disposed if these items will be disturbed or removed from the Site during renovation activities.

An opinion on the abatement of hazardous materials for the renovation project will be provided under separate cover.

7.0 LIMITATION OF WORK PRODUCT

This Phase II Environmental Site Investigation and HMBI Report was prepared for the use of GBRC and the Town of Stratford, exclusively. The findings provided by Weston & Sampson in this report are 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.

Should additional information become available concerning this Site or neighboring properties, which could directly impact the Site in the future, that information 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 Town of Stratford personnel, and samples collected and analyzed on the dates shown or stated in this report. The report has been prepared in accordance with generally accepted engineering and geological practices. No other warranty, express or implied, is made.

FIGURES

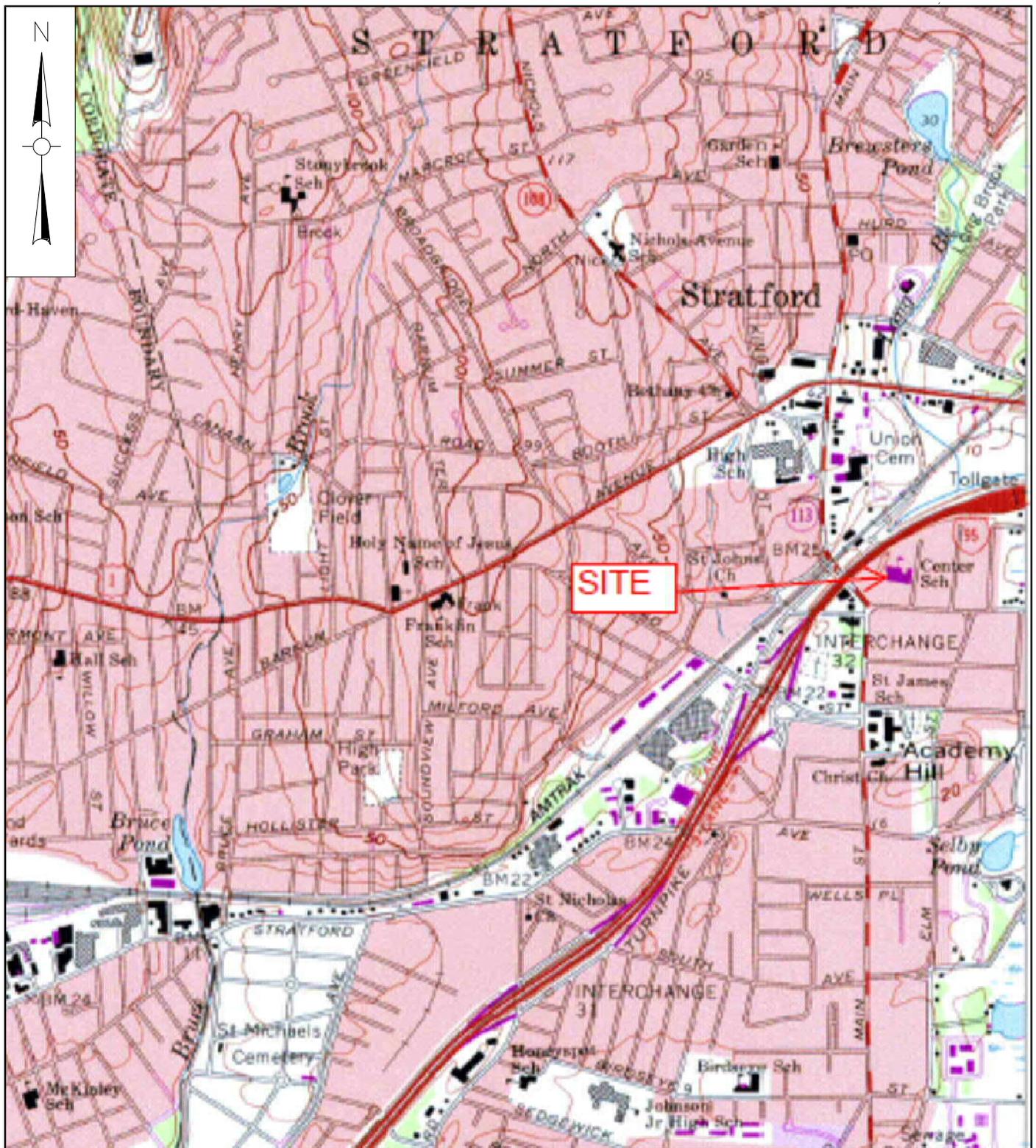
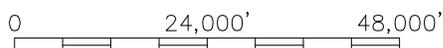


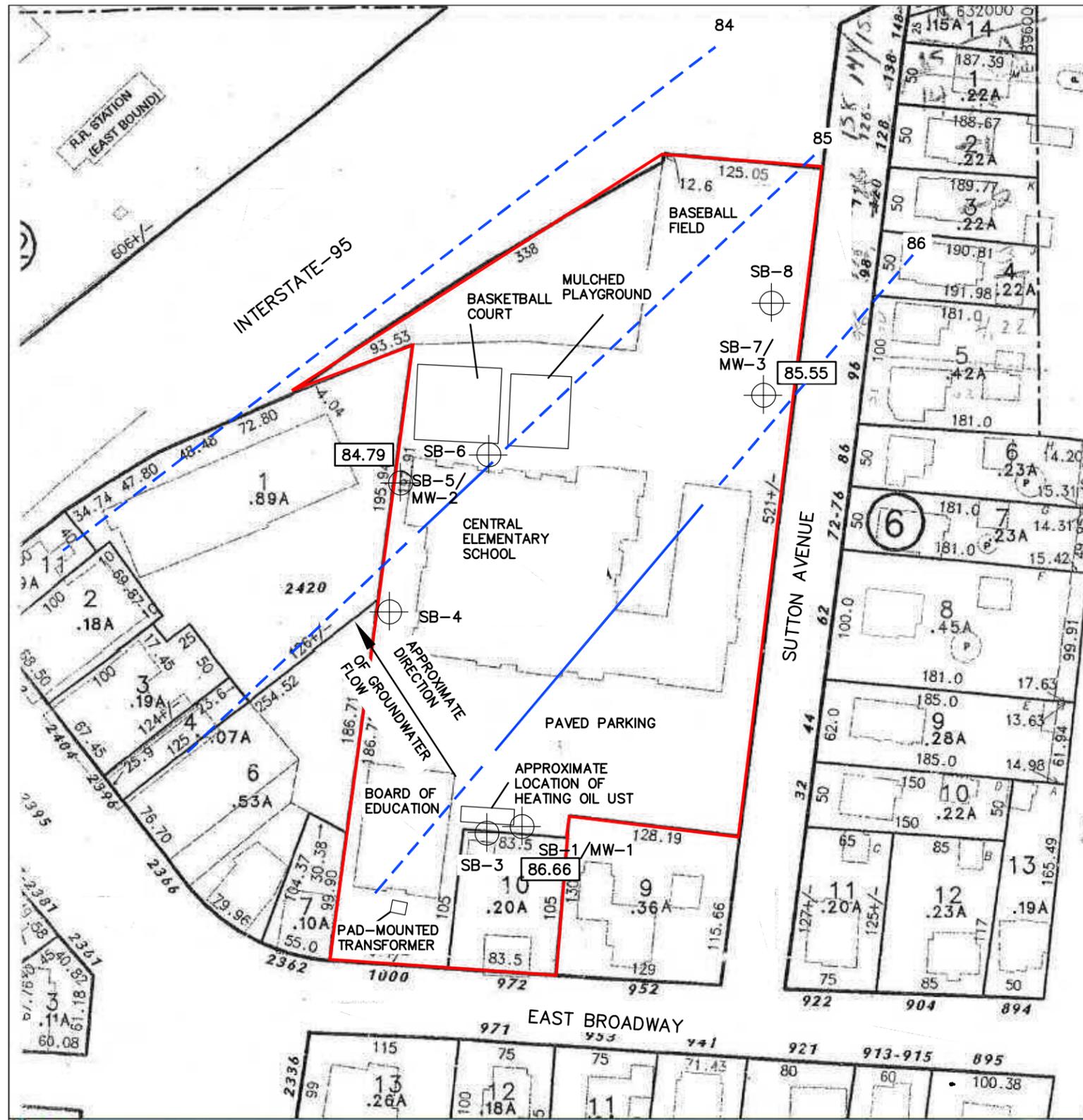
FIGURE 1
 STRATFORD BOE & CENTER SCHOOL
 PHASE II ENVIRONMENTAL SITE INVESTIGATION
 1000 EAST BROADWAY
 STRATFORD, CONNECTICUT
 SITE LOCUS MAP

NOTE:

LOCUS MAP DERIVED FROM
 ENVIRONMENTAL DATA RESOURCES
 TOPOGRAPHIC MAP REPORT.
 BRIDGEPORT, CT 1984

APRIL 2014 SCALE: 1" = 24000'





SCALE: 1" = 100'



LEGEND:

- SITE BOUNDARY
- PROPOSED TEST BORING LOCATION
- PROPOSED GROUNDWATER MONITORING WELL LOCATION
- 86.66 GROUNDWATER ELEVATION MEASURED ON JUNE 26, 2014
- 86 — GROUNDWATER CONTOUR AND ELEVATION; DASHED WHERE INFERRED

NOTE:

SITE PLAN DERIVED FROM TOWN OF STRATFORD, CT TAX ASSESSORS MAP

FIGURE 2
TEST BORING/MONITORING WELL LOCATIONS
STRATFORD BOE & CENTER SCHOOL
PHASE II ENVIRONMENTAL SITE INVESTIGATION
1000 EAST BROADWAY
STRATFORD, CT
SITE PLAN

AUGUST 2014

SCALE: AS SHOWN