SOIL & GROUNDWATER MANAGEMENT PLAN
and
HEALTH and SAFETY PLAN

Former Universal Steel & Trading Company Site
297 – 305 Bridge Street
Salem, Massachusetts
Release Tracking Number (RTN) 3-11726

October 2015

Prepared for:

Mr. Robert Mucciarone
F.W. Webb Company
160 Middlesex Turnpike
Bedford, Massachusetts 01730

Prepared by:

Alliance Environmental Group, Inc.

One Mifflin Place, Suite 400
Cambridge, Massachusetts 02138

Richard C. Hittinger
President

Joel Walcott, PE
Senior Engineer

Felix A. Perriello, CHMM, CPG, LSP, LEP
Principal Scientist

TABLE OF CONTENTS

FIGURES

APPENDICES

1.0 INTRODUCTION

Alliance Environmental Group, Inc. (AEG) has prepared this combined Soil and Groundwater Management Plan (S&GMP) and Health and Safety Plan (HASP) on behalf of F.W. Webb Company (F.W. Webb) for the proposed building construction at the Former Universal Steel & Trading Company Site located at 297-305 Bridge Street, Salem, Massachusetts (Site). The Massachusetts Department of Environmental Protection (MassDEP) assigned Release Tracking Number (RTN) 3-11726 to the Site. The Site Contractor must review this S&GMP carefully and make any changes necessary for them to accept the Plan in its entirety. This Plan, as modified and accepted, will then be the operative Plan that the Contractor will follow at this Site.

The proposed building will include a two-story warehouse, office space, and a showroom center. Please refer to Figures 1 through 3 for details.

2.0 SITE DESCRIPTION

The former Universal Steel & Trading Company property is located at 297-305 Bridge Street in Salem, Massachusetts. The Site location is shown in Figure 1 (Locus Map).

Regulations applicable to Universal Steel & Trading Company include the following:

- 40 CFR 761
- 310 CMR 40.0000
- 310 CMR 40.0030 et seq
- 310 CMR 40.0018

The Site consists of an approximately 1.2 acre parcel located in an area of mixed commercial and residential use. The area surrounding the Site is shown in Figure 2 (Site Plan). As shown in Figure 2, the Site is abutted by Bridge Street to the north, a F.W. Webb plumbing supply store to the east, residential properties to the south, and Beckford Street to the west. Historically, the Site was developed and contained several structures, including a two-story warehouse building, two large concrete pads, and several ancillary features (i.e., truck scale and paved loading areas). The historical warehouse building was demolished in 2012. The remaining Site features were demolished and removed as part of Site remediation completed in 2013.

Currently, the Site is used as a temporary parking lot for a nearby Massachusetts Bay Transportation Authority (MBTA) train station. The parking lot was opened by the City of Salem in October 2013 following Site remediation. The parking lot consists of a large central paved area with small landscaped islands and vegetative buffer areas along the perimeter of the Site. In addition, two sediment forebays are located at each corner of the parcel along Bridge Street.

3.0 BACKGROUND

In October 1994, MassDEP assigned Release Tracking Number (RTN) 3-11726 to the Site following notification of a release to soil and groundwater of polychlorinated biphenyls (PCBs),

metals and petroleum. The release was identified during soil and groundwater assessment activities completed at the Site from November 1993 until July 1994. The source of contamination was attributed to the former metals recycling and reclamation activities conducted by the Universal Steel & Trading Company at the Site.

Since the release was discovered, several subsurface investigations and preliminary response actions were conducted at the Site. In 2011, Weston & Sampson (W&S) completed a Phase II Comprehensive Site Investigation (CSA) to evaluate the current nature and extent of contamination at the Site, and a Site-specific Method 3 Risk Characterization (M3RC) to evaluate risk to human health, safety, public welfare, and the environment. The 2011 M3RC indicated that a condition of No Significant Risk (NSR) to human health did not exist due to the potential exposure to PCBs in soil.

Based on the findings of the Phase II CSA and M3RC, W&S evaluated several remedial options for the Site under the direction of the MassDEP and the U.S. Environmental Protection Agency (USEPA) from June 2011 until October 2011. Subsequently, a multi-agency team consisting of MassDEP, USEPA, the City of Salem, and MassDevelopment agreed to fund and implement a risk-based cleanup of the Site. The risk-based cleanup approved by MassDEP and USEPA included the excavation and removal of the top foot of soil across the Site and the select removal of deeper PCB-impacted soils with concentrations greater than 50 parts per-million (ppm). At the conclusion of the removal actions, the construction of a pavement cap and implementation of an Activity and Use Limitation (AUL) was proposed to mitigate future direct exposure to residual PCB impacts at the Site.

The applicable USEPA regulations for the Site included the following Risk Based Cleanup Standards:

- 40 CFR 761.61(c)
- 40 CFR 761.61(a)(3)
- 40 CFR 761.62(c)

The applicable MassDEP regulation for the Site included 310 CMR 40.0321(2)(b) - Imminent Hazards.

The excavation and removal of PCB-impacted materials was completed as a Removal Action under USEPA's Emergency Response and Removal Program (ERRP). The Removal Action was initiated in December 2012 and was completed in September 2013. In total, approximately 6,380 cubic yards of PCB-impacted soil and concrete were excavated and disposed off-site as part of the Removal Action, and 81 post-excavation confirmatory soil samples were collected to verify the limits of remediation. EPA subsequently backfilled and compacted the Site with gravel, and Manter Construction installed a paved parking lot and stormwater control features (i.e., sediment forebays). The parking lot cap construction was completed in October 2013.

Weston & Sampson utilized the 2013 EPA post-excavation soil analytical results and historical data sets for contaminants of concern remaining below the final USEPA excavation depths to perform an updated M3RC for the Site. The updated M3RC indicated that the MassDEP and

USEPA risk-based cleanup achieved a condition of NSR for current and future Site use with the implementation of an AUL. Therefore, the requirements for a Permanent Solution with Conditions Statement were achieved at the Site.

4.0 ACTIVITY AND USE LIMITATION

The risk-based cleanup plan included the excavation and off-site disposal of PCB contaminated soil and concrete, capping the Site with asphalt, and implementing an AUL to mitigate and control the direct exposure to residual PCBs in soil.

The AUL was executed in December 2014.

Activities and Uses Consistent with Maintaining No Significant Risk Condition at the Site included the following:

Industrial uses including, but not limited to, a parking lot.

Activities and uses including, but not limited to, normal commercial and industrial operations, pedestrian and/or vehicle traffic, and vehicle parking.

Any landscaping activities including, but not limited to, lawn mowing, mulching, weeding, and/or planting of flowers, trees, and shrubs, provided the pavement, orange geotextile liner and soils located beneath the liner at 1.5 feet or more below the surface grade are not disturbed by the landscaping activities.

Underground utility and/or construction activities including maintenance or repair of Site improvements, or utility repair and maintenance, excavation, movement and handling of soils below the geotextile liner at depths greater than 1.5 feet or more provided that such activities are conducted in accordance with a Soil Management Plan (SMP) and a Health and Safety Plan (HASP) in accordance with Conditions of the AUL.

Such other activities or uses which, in the Opinion of a Licensed Site Professional (LSP), shall present no greater risk of harm to health, safety, public welfare or the environment than the activities and uses set forth in the AUL.

Such other activities and uses not identified in the AUL as being Activities and Uses Inconsistent with Maintaining No Significant Risk Conditions.

Activities and Uses Inconsistent with Maintaining No Significant Risk Conditions included the following:

Residential uses, including but not limited to, one family or two-family dwellings, apartments, tenement houses, condominiums or town houses, mobile homes, lodging houses, nursing or rest homes, or dormitories.

Agricultural uses, including but not limited to, tilling and planting of gardens or crops for human consumption.

Institutional uses, including but not limited to, public or private schools and day care facilities.

Activities or uses which are likely to involve the removal and/or disturbance of the contaminated soil located beneath the geotextile liner at the Property with the exception of underground utility and/or construction work carried out in accordance with the Conditions set forth in the AUL, unless an LSP renders an Opinion which states that a Level of No Significant Risk is maintained at the Site consistent with the Massachusetts Contingency Plan (MCP).

Any use or activity that may involve direct ongoing contact to the contaminated soil located beneath the geotextile liner, or any use or activity that may not comply with the Conditions set forth in the AUL.

Such other activity and uses not identified in the AUL, but identified as being Activities and Uses Inconsistent with Maintaining No Significant Risk Conditions.

The following obligations and/or conditions are necessary and must be undertaken and/or maintained at the Property to maintain a Permanent Solution and a condition of No Significant Risk.

Maintain existing asphalt pavement, concrete blocks, and sidewalks such that the physical integrity of each surface is not compromised.

Maintain existing landscaped areas such that soil erosion does not degrade and compromise the existing asphalt pavement.

Perform annual inspections to confirm that existing asphalt pavement, concrete blocks, sidewalks and landscaping are properly maintained.

A SMP must be prepared by an LSP in accordance with the remediation waste management procedures of the MCP and the Toxic Substances Control Act (TSCA), and implemented at the commencement of any activity that may disturb contaminated soil located beneath the geotextile liner at the Property. The SMP should describe appropriate soil excavation, characterization, handling, storage, transport, and disposal procedures and include a description of the engineering controls and air monitoring procedures necessary to ensure that workers and receptors in the vicinity are not affected by fugitive dust or particulates. On-site workers who may come in contact with the contaminated soil should be appropriately trained on the requirements of the SMP, and the plan must be available on-site throughout the course of a project.

A HASP must be prepared by a certified Industrial Hygienist or other qualified individual sufficiently trained in worker health and safety requirements, and implemented prior to the commencement of any activity that may disturb contaminated soil located beneath the geotextile liner at the Property. The HASP should specify the type of personal protection (i.e., clothing and respirators), engineering controls, and environmental monitoring necessary to prevent worker

exposures to contaminated soil through dermal contact, ingestion, and/or inhalation. On-site workers who may come in contact with the contaminated soil should be appropriately trained on the requirements of the HASP, and the plan must be available on-site throughout the course of a project.

The contaminated soil located beneath the geotextile liner must remain at depth and may not be relocated, unless such activity is first appropriately evaluated by an LSP who renders an Opinion which states that such relocation is consistent with maintaining a condition of No Significant Risk.

5.0 PROPOSED BUILDING ACTIVITIES

F.W. Webb is proposing to construct a single-story warehouse with adjoining two-story showroom at the Site. The warehouse will encompass 15,875 ft^2 and the showroom 10,225 ft^2 for a total footprint of about 26,000 ft^2. F.W. Webb will utilize Vibro-Stone Columns (VSC) to construct the new building foundations. VSC are continuous vertical columns of dense interlocking aggregate that are formed by inserting a vibratory probe to incorporate granular material into the ground and create vertical inclusions with high stiffness, shear strength and draining characteristics. VSC are a highly efficient and cost-effective solution for improving soil prior to construction of foundations and slabs for commercial, industrial and residential buildings; to reduce settlement in areas of landfills; and to reduce the risk of liquefaction under roadways, airport runways, embankments and bridges.

The use of VSC will significantly reduce the volume of soil that will require off-site disposal.

6.0 SOIL MANAGEMENT PLAN

6.1 Soil Management Practices

During redevelopment, the movement and regrading of Site soils will be required. Currently, the Site is being managed under an AUL which, as detailed in Section 4.0, mandates certain Site uses and activities. The AUL does allow construction activities to occur within the top 1.5 feet (above the geotextile liner) at the Site. However, at depths below the liner located at 1.5 feet below ground surface (bgs), soils will be encountered in some areas of the Site that contain PCBs at concentrations that exceed the allowable risk levels. For this reason, great care must be implemented when work may extend beyond the 1.5 feet depth of the geotextile demarcation. It is also noted that during the 2013, PCB-impacted soils were excavated to depths between 1.5 and 4.0 feet bgs. As such, all soils located above the completion depths of the excavation currently consist of clean fill material and will be suitable for reuse on-Site.

As previously agreed upon by USEPA and MassDEP, excavated material with PCB levels below 10 milligrams per kilogram (mg/kg) can be reused on-Site under a cap. Materials exhibiting PCB concentrations above 10 mg/kg materials will be segregated into two waste streams: materials with PCB concentrations in excess of 50 mg/kg and materials with PCB concentrations less than 50 mg/kg. The excavated materials will be segregated into two waste streams since USEPA and MassDEP indicated that soils with PCB levels above 50 mg/kg would need to be disposed off-

Site as TSCA bulk remediation waste at a TSCA-certified landfill. Alternatively, soils with PCB concentrations less than 50 mg/kg could be disposed off-Site as non-TSCA waste at a Subtitle D landfill facility.

As stated previously in Section 4.0, F.W. Webb and its construction manager, Green Leaf Construction (GLC), plan to limit soil excavation by installing soil foundations using VSC. The installation of the VSC will likely extend to depths of to 8 to 10 feet bgs or greater; however, this method does not result in the generation of drill cuttings that would require management. The primary construction activities that will result in the generation of potentially impacted soil include the following:

- Installation of the F.W. Webb building foundation walls; and
- Installation of the storm water catch basins and associated drainage lines to the south and east of the proposed building location.

During any excavation activities, soils required to be stockpiled shall be placed on (and covered with) 6-mil polyethylene sheeting at all times. During cases where soils are to be stockpiled for an extended period of time (i.e., greater than one week), daily inspection of the stockpile shall be made to ensure controls are maintained and, if needed, repaired. If stockpiling is necessary, a berm with hay bales to filter and prevent run-off will be installed around the stockpile. In addition, the stockpile will be located away from storm drains and encircled with temporary fencing and signage.

Proper application and disposal at a licensed facility will be required for all excavated soils exhibiting PCB levels above 10 mg/kg. This will entail, at a minimum, sampling of stockpiled soils for the permitted facility's requirements and detailed documentation for record keeping purposes. In addition, the stockpiled soils will be analyzed for PCBs using EPA Method 8082 with soxhlet extraction. Soil disposal shall be completed using the Bill of Lading (BOL) process, pursuant to the MCP (310 CMR 40.0000) requirements.

All stockpiled soils will be thoroughly characterized prior to transporting such stockpile(s) for off-site disposal. Representative soil samples will be collected from any stockpiles to determine whether such soil does or does not exceed any applicable analytical performance standards (such as the MCP Risk Characterization Standards or a selected receiving facility's acceptance criteria). All soil testing will be completed by a Commonwealth of Massachusetts-certified analytical laboratory in accordance with MassDEP regulations and guidelines.

Non-TSCA PCB-impacted materials will be transported off-site under a Massachusetts BOL. The PCB-impacted materials disposed of as TSCA bulk remediation waste will be transported off-site using uniform hazardous waste manifests.

6.2 Soil Transportation Practices

F.W. Webb and GLC will retain a transportation and disposal (T&D) contractor to transport and dispose of any excavated soils in compliance with applicable legal requirements; that is, at a TSCA-certified landfill for PCB-impacted soils above 50 mg/kg and a Subtitle D landfill facility for PCB-impacted, non-TSCA soils (below 50 mg/kg and above 10 mg/kg).

Anti-Tracking: F.W. Webb and GLC will employ anti-tracking measures (street sweepers, anti-tracking pads, stone tracking pad, etc.) at the Staging, Transfer and/or Temporary Storage Areas designated at the Site during the new building construction to ensure that vehicles that have entered the Staging, Transfer and/or Temporary Storage Area do not track soils from the Site onto a public roadway at any time. Construction entrance anti-tracking pads shall be constructed in a manner that is consistent with applicable Best Management Practices (BMPs).

Transporter Practices: The permittee shall instruct the transporters of contaminated soil and/or sediment of BMPs for the transportation of such soil (proper tarping of hauling dump bodies, removing loose material from dump bodies, etc.).

Queuing and Idling of Transport Vehicles: GLC or its designated representative will control all traffic related to the operation of the facility in such a way as to mitigate the queuing of vehicles off-site and/or an excessive or unsafe traffic impact in the area surrounding the Site.

6.3 Dust Control Practices

Preventative measures shall be made during all on-Site construction and remedial activities to minimize the generation of dust at the Site. During the progress of work, dust control shall be maintained by applying a spray mist of water to on-Site soils to minimize the creation and dispersion of dust. Site soils shall be lightly misted (not saturated) continuously throughout the entire workday or controlled by some other LSP-approved method. The contractor shall provide the labor, water, and sprayer for misting purposes.

During earthwork activity, a perimeter-monitoring program shall be conducted. At least two air monitors shall be positioned at the perimeter of the Site downwind from the subject activity, and one upwind (together creating roughly an equilateral triangle). These monitors shall be capable of reading PM-10 particulates on real-time and time-weighted-average (TWA) to 0.001 mg/m^3. The meters shall be monitored at a minimum of every hour.

Based on the background level monitoring, AEG will develop an action level that will ensure Site activities will be conducted in a manner that will not generate unacceptable levels of fugitive dust. The background particulate level shall be based on the upwind level concentrations. The upwind dust concentration can be subtracted from the downwind dust concentration in order to measure the impacts from the monitored site.

As stated previously, the dust action level will be established using risk-based calculations for Site contaminants as well as the MassDEP *Real-Time Air Monitoring at Construction and Remediation Sites* guidance document dated October 1997. From the MassDEP guidance, the action level will be established as 0.02 mg/m^3 above background.

During the proposed activities, any time that the difference between downwind and upwind 10-minute TWA readings exceeds the established action level, Site activities shall cease until operation modifications are implemented to lower the exceedance.

Dust Controls: GLC shall minimize wind erosion and dust transport from the stockpiles and the travel areas of the Staging, Transfer and/or Temporary Storage Areas by ensuring that all necessary dust controls (tarps, dust suppressants, routine street sweeping, etc.) are implemented and maintained at all times during periods of operation.

6.4 Erosion Control Practices

As discussed in the section above, proper misting of exposed Site surfaces will be implemented to prevent fugitive dust. Mitigation measures shall also be implemented to prevent movement of soils across the Site through precipitation events and adverse weather conditions including heavy rain or excessive wind. To prevent off-site movement of soils, proper erosion controls shall be placed along the perimeter of the work area. These measures shall entail the use of silt fencing in conjunction with hay bales or straw wattles.

GLC or its designated representatives shall place the soil stockpiles on an impervious surface to prevent or minimize the transfer or infiltration of contaminants from the soil stockpiles into the ground surface. In addition, GLC shall minimize or control stormwater run-on and run-off. As discussed previously, soil stockpiles shall be covered at the end of each operating day or at any time that the Staging, Transfer and/or Temporary Storage Areas are unattended. Run-on/run-off controls shall be consistent with applicable BMPs.

Proper care and maintenance shall be conducted on all erosion controls. The controls shall be inspected weekly and after storm events to ensure their integrity is maintained.

7.0 GROUNDWATER MANAGEMENT PLAN

7.1 Groundwater Management Practices

The depth to groundwater at the Site is typically between four and six feet bgs. As such, excavation dewatering will likely be required to facilitate the installation of the Site utilities and certain sections of the building foundation wall. Based on the results of previous environmental investigations, groundwater in certain areas of the Site contain cadmium and chlorobenzene at concentrations above the associated MCP GW-2 and/or GW-3 Groundwater Standards. As such, groundwater containment and disposal processes during construction will be carefully managed to minimize the potential risk of exposure to the residual dissolved-phase contaminants.

The volume of groundwater to be generated during station construction activities is not expected to exceed approximately 30,000 gallons. The dewatering estimate was based on a Site hydraulic conductivity of 0.168 feet/day obtained by W&S during the implementation of Phase II activities. The calculated groundwater infiltration rate is estimated at 500 gallons per day. Given the relatively small volume anticipated to be generated, it is recommended that any groundwater infiltrating the excavations and/or trenches be pumped from the excavation into fractionation tanks to be staged on-Site during construction. Disposal of the recovered groundwater will require proper application to and disposal at a licensed water disposal facility. This will entail, at a minimum, sampling of groundwater within the fractionation tank for the permitted facility's requirements and detailed documentation for record keeping purposes. All groundwater testing

will be completed by a Commonwealth of Massachusetts-certified analytical laboratory in accordance with MassDEP guidelines. Groundwater disposal shall be completed pursuant to the applicable MCP (310 CMR 40.0000) requirements.

At the conclusion of the dewatering activities, and prior to removal from the Site, the fractionation tank will require cleaning to remove any sediment buildup at the bottom. The cleaning will be conducted by a safety-trained contractor licensed to perform permitted confined space entry. Sediment accumulated within fractionation tanks is usually shoveled into Massachusetts Department of Transportation (MassDOT) approved 55-gallon steel, ring-topped drums. Pending waste characterization, if required to supplement the soil and groundwater profiling data, the drums will be transported by a licensed waste hauler to an approved facility for disposal or recycling.

7.2 Groundwater Transportation Practices

Transporter Practices: F.W. Webb and GLC will contract a licensed vacuum truck operator to transport and dispose of the groundwater pumped into the fractionation tank(s) in compliance with applicable legal requirements and in accordance with applicable MassDOT regulations. The permittee shall inform the vacuum truck operator of available BMPs for the pumping and transportation of potentially impacted groundwater.

Queuing and Idling of Transport Vehicles: GLC or its designated representative will control all traffic related to the operation of the facility in such a way as to mitigate the queuing of vehicles off-site and/or the excessive or unsafe traffic impact in the area surrounding the Site.

8.0 HEALTH AND SAFETY PLAN

8.1 Hazard Evaluation and Contaminants of Concern

In accordance with MassDEP risk assessment guidance (July 1995), chemical contaminants detected at a Site may be eliminated from the risk characterization as a contaminant of concern (COC) based on any of the following criteria:

- The chemical is present at a low frequency of detection and at low concentrations.
- The chemical concentration is consistent with background levels and there is no evidence that the chemical is associated with site activities.
- The chemical is a laboratory or field contaminant.

For the M3RC prepared for the Site by W&S, selenium was the only metal that was not detected above RLs in any prior sample and was eliminated as a COC. No other metals, PCBs, extractable petroleum hydrocarbons (EPH) or polycyclic aromatic hydrocarbons (PAHs) were eliminated as COCs based on low detection frequency (typically considered less than 10%) or based on comparison to MassDEP's published background concentrations for metals and PAHs in urban fill containing coal and wood ash (MassDEP, May 2002). MassDEP's background policy states that all detections must be below the background criteria to be screened out as a COC unless there is site-specific information indicating otherwise.

The highest concentrations at the Site were detected in the urban fill unit from approximately 0-4 feet bgs, but given the historic use of the Site as a scrap metal yard, it would be difficult to identify the source of elevated contaminant concentrations. Therefore, all PAHs and metals were retained as COCs. In summary, the COCs present at the Site consist of PCBs, VOCs, EPH aliphatic and aromatic parameters, the 17 target PAHs, and 7 Resource Conservation and Recovery Act (RCRA) metals (since selenium was eliminated).

The threat from these contaminants arises through chronic long-term exposure through dermal contact, ingestion, or inhalation of contaminated dust. The proper precautions involve intercepting these exposure routes prior to introduction to the receptor.

An updated M3RC (provided under separate cover) was prepared in support of the recent Release Abatement Measure (RAM) Plan submittal for the proposed Site construction activities.

8.2 Site Control

The Site control program limits the movement of people and equipment in order to minimize potential exposure to contamination. In order to control access to the Site during redevelopment, only individuals involved in the Site activities shall be allowed onto the Site. In addition, to control access to the Site from unauthorized individuals, the construction area will be fenced to control pedestrian or vehicular entry, except at controlled points (i.e., gates). Gates will be closed and locked during non-construction hours. "No Trespassing" signs will be posted at a minimum of every 500 feet along the perimeter fencing.

People visiting the Site for the first time shall be informed of this HASP and S&GMP, and will be held to the requirements described herein. To ensure their understanding, the Project Superintendent (PS) and Site Health and Safety Associate (HASA) shall be responsible for briefing individuals visiting the Site. Signatures of all visitors shall be required to document their understanding of the HASP requirements. These records shall be maintained on-Site by the PS and HASA.

8.3 Noise Control

GLC and its subcontractor will utilize BMPs to control and limit noise production during the new building construction activities. In addition, GLC will provide hearing protection to employees involved in the construction activities to minimize potential exposures to high noise levels.

Project workers must be protected against the deleterious effects of noise exposure when sound levels exceed the Occupational Safety and Health Administration (OSHA) permissible exposure levels specified in Table G-16 of 1910.95. These exposures are presented in Table 1 below.

When workers are subjected to noise exceeding the levels shown in Table 1, feasible engineering or administrative controls should be used. If such controls fail to reduce the noise to the specified levels, hearing protectors must be provided. Employing administrative controls, (i.e.,

rotating employees or limiting their duration of exposure) for compliance purposes in lieu of engineering controls is acceptable; however, it constitutes poor industrial hygiene practice.

Table 1 - Permissible Noise Exposures[1]

DURATION PER DAY (HOURS)	SOUND LEVEL SLOW RESPONSE (DBA*)
8	90
6	92
4	95
3	97
2	100
1.5	102
1	105
0.5	110
0.25	115**

* Decibels A-weighted.

** Maximum exposure of 115 dBA for 15 minutes or less.

[1]When the daily noise exposure is composed of two or more periods of noise exposure of different levels, their combined effect should be considered, rather than the individual effect of each. If the sum of the following fractions: C(1)/T(1) + C(2)/T(2) C(n)/T(n) exceeds unity, then, the mixed exposure should be considered to exceed the limit value. Cn indicates the total time of exposure at a specified noise level, and Tn indicates the total time of exposure permitted at that level. Exposure to impulsive or impact noise should not exceed 140 dB peak sound pressure level.
Impact (impulsive) noise limited to a maximum of 140 dBA (peak);

Various combinations of duration and intensity are permissible; and Exposure limits for various durations, pursuant to Table G-16 of 29 CFR 1910.95.

8.4 Personal Protective Equipment

Based on an evaluation of the anticipated hazards, at a minimum, Level D personal protection equipment (PPE) will be required for any construction worker entering the Site. Level D PPE (steel-toed boots, eye protection, protective gloves, dust masks, etc.) will be provided by the contractor, and Level "D" will be acceptable for all tasks where workers will not be directly engaged with contaminated or potentially contaminated soils.

In the event workers are to enter an OSHA compliant excavation as part of potential drainage or utility work, these workers have a greater potential of contacting contaminated soil via inhalation, skin absorption, ingestion and/or eye contact. Consequently, these workers will be required to wear a particulate filtration respirator (Level C). Level C protection shall include a particulate filtration respirator that is to be worn when working in and around soil along with the Level D protection measures listed below.

All other workers at the Site not involved with the direct handling and contact of soil shall implement basic Level D protection.

The following PPE will be used at a minimum for Level D protection:

- Coveralls/uniform
- Safety boots
- Gloves
- Eye protection

Level C PPE includes the following:

- Coveralls/uniform
- Safety boots
- Gloves
- Eye protection
- Half Face Respirator
  (recommended 3M Particulate Respirator 8233 with N100 Filter)

Any general construction work in the AUL areas containing PCB-impacted soils will require the proper PPE. Since PCBs bio-accumulate, it is imperative that workers avoid all exposure to skin and eyes and avoid any potential for accidental ingestion by wearing, at a minimum, the following:

- Suitable chemical and/or oil resistant gloves (see the glove manufacturer's specifications for suitability)
- Goggles if there is potential for a chemical or oil splash hazard
- Protective clothing such as a Tyvek® coveralls/suit

Strict adherence to this plan will reduce to a minimal level, but not eliminate, the potential for harm from impacted media at the Site. Therefore, AEG cannot and does not guarantee the health and safety of on-Site personnel or individuals who may come into contact with Site soil or groundwater. It is the responsibility of on-Site personnel to report all potential hazards to the PS, whose job it is to implement and enforce this HASP.

Note that all workers managing soil from depths greater than 3 feet bgs must have 40-hours of OSHA Hazardous Waste Operations and Emergency Response Standard (HAZWOPER) training. The PS shall keep the Site HASA informed of any HASP-related issues and shall assume all routine, on-Site health and safety responsibilities. If emergency conditions arise or operational changes occur or are anticipated (e.g., work practices are altered, Site conditions change), the PS shall immediately confer with the Site HASA.

9.0 DECONTAMINATION PLAN

9.1 Equipment Decontamination Procedure

According to the USEPA[1], physical decontamination procedures can be used to remove gross contamination from construction equipment and vehicles. These methods, which can be abrasive as well as non-abrasive, include the use of brushes, air blasting, wet blasting, and high or low pressure water cleaning. Typically, the first step is a soap and water wash that removes all visible

[1] USEPA, Sampling Equipment Decontamination; SOP#: 2006, Date 08/11/94

particulate matter and residual oils and grease, which may be preceded by a steam or high pressure water wash. The second step involves a tap water rinse and a distilled or deionized water rinse to remove the detergent. The third step is the performance of a high purity solvent rinse for the removal of trace organics, which include PCBs. Solvents commonly used for the removal of organic contaminants include acetone, hexane and water. The solvent must be allowed to evaporate completely, and then a final distilled/ deionized water rinse is performed. This rinse removes any residual traces of the solvent.

The decontamination process line is typically set up so that the first station is used to clean the most contaminated item and progresses to the last station, where the least contaminated item is cleaned. To reduce the spread of contaminants, each decontamination station should be separated by a minimum of 3 feet. A site is typically divided up into the following boundaries:

- Hot Zone or Exclusion Zone (EZ);
- Contamination Reduction Zone (CRZ); and
- Support or Safe Zone (SZ).

The decontamination process should be set up in a Contamination Reduction Corridor (CRC) within the CRZ. The CRC is used to control access into and out of the EZ and to confine the decontamination activities. The far end of the CRC is called the hotline and is the boundary between the EZ and the CRZ. The size of the decontamination corridor depends on the number of stations in the process and the dimensions/space available for use. Another corridor may be required for the entry and exit of heavy equipment. All personnel in the CRC shall wear the appropriate level of PPE designated for the decontamination process. Sampling and monitoring equipment and sampling supplies shall be maintained outside of the CRC.

The minimum required steps in the decontamination procedure (including setup) are outlined below. It is noted that intermediate steps such as the physical removal of contaminated media using a high-pressure washer, use of additional rinsing stations, etc., may be added to the procedure as appropriate.

9.1.1 Decontamination Setup

Station 1: Segregate Equipment Drop

Place plastic sheeting on the ground. The dimensions will depend on the amount of equipment to be decontaminated. Provide containers lined with plastic if the equipment is to be segregated, which may be required if sensitive or mildly impacted equipment is used at the same time as grossly contaminated equipment.

Station 2: Physical Removal with Brushes and a Wash Basin

Fill a large bucket, wash basin or children's swimming pool with tap water and a non-phosphate detergent. Select the brushes to be used for physical contaminant removal.

Station 3: Water Basin Station

Fill a large bucket, wash basin or children's swimming pool with tap water. Several brushes should be selected and dedicated to this station.

Station 4: Low-Pressure Sprayers

Fill a low-pressure sprayer with distilled or deionized water. Provide a 5-gallon bucket or basin for the collection of rinse water generated during rinsing.

Station 5: Organic Solvent Sprayers

Fill a spray bottle with organic solvent. The amount of solvent needed will depend on the amount of equipment required to be decontaminated. After each solvent rinse, the equipment should be rinsed with distilled or deionized water and dried. Provide a 5-gallon bucket or basin for the collection of solvent generated during rinsing.

Station 6: Low-Pressure Sprayers

Fill a low-pressure sprayer with distilled or deionized water. Provide a 5-gallon bucket or basin for the collection of rinse water generated during the rinsate process.

Station 7: Clean Equipment Drop

Place a clean piece of plastic sheeting over the bottom plastic layer, which will allow for easy removal of the plastic if it should become dirty. Provide plastic, aluminum foil or other protective material to wrap the cleaned equipment.

9.1.2 Decontamination Process

Station 1: Segregate Equipment Drop

Deposit the equipment used on-site such as tools, sampling devices, containers, monitoring instruments, radios, clipboards, etc., on the plastic sheeting or in different containers with plastic liners. Segregation at this stage reduces the possibility of cross contamination. Loose data sheets and maps can be placed in plastic zip lock bags if contamination is suspected.

Station 2: Physical Removal with Brushes and a Wash Basin

Scrub the equipment with soap and water using bottle brushes and/or bristle brushes. Only sensitive equipment that is waterproof should be cleaned in this manner. Equipment that is not waterproof should have the plastic bags removed and be wiped down with a damp cloth. Note that organic solvent rinses may also ruin sensitive equipment, and the manufacturers should be contacted for recommended decontamination solutions.

Station 3: *Water Basin Station/Equipment Rinse*

Wash the soap off of the equipment with water by immersing the equipment in the water while brushing. Repeat this step as many times as is necessary.

Station 4: Low-Pressure Sprayers

Rinse the sampling equipment with distilled or deionized water using a low-pressure sprayer.

Station 5: Organic Solvent Sprayers

Rinse the sampling equipment with the selected organic solvent. Begin by spraying the inside and outside of the equipment at one end, allowing the solvent to drip to the other end and into a 5-gallon bucket or basin. Allow the solvent to evaporate from the equipment before proceeding to the next station.

Station 6: Low-Pressure Sprayers

Rinse the sampling equipment with distilled or deionized water using a low-pressure washer.

Station 7: Clean Equipment Drop

Lay the clean equipment on plastic sheeting. Once air-dried, wrap the sampling equipment with plastic, aluminum foil or other protective material.

9.1.3 Post-Decontamination Procedures

The solid and liquid wastes should be collected and stored in appropriate MassDOT approved 55-gallon drums or other approved containers. The organic solvent, detergent and water liquid wastes from the sprayers, 5-gallon buckets, children's pools and/or collection basins should also be stored in appropriate containers.

All solid waste materials generated from the decontamination area such as used gloves, plastic sheeting, etc., should be placed in MassDOT approved 55-gallon drums.

Appropriate labels should be prepared for all waste containers to facilitate appropriate off-site disposal.

Examples of a typical equipment wash station layout and equipment wash station cross section are included as Figures 4 and 5, respectively.

9.2 Personnel Decontamination Procedure

Prior to conducting work in the potentially impacted areas, cabinets or lockers should be assembled for the storage of clean clothing, decontaminated clothing, and PPE.

Outer protective clothing exhibiting or suspected of gross impacts can be deposited on drop cloths made of plastic or other suitable material. Lined boxes can also be used for wiping or rinsing off gross solid or liquid contaminants. Long-handled, soft-bristled brushes can be utilized to help remove contaminants during the washing and rinsing process. The wash and rinse solutions should be selected based on the contaminants present at the site. For the subject Site, organic solutions are preferred for the residual PCB impacts that may be encountered. A children's pool, galvanized tub or other large basin is recommended for the washing and rinsing process, and should be large enough to place a booted foot inside.

Paper or cloth towels should be provided for drying of the protective clothing and other PPE cleaned or decontaminated during the above process. All personnel should also wash their hands thoroughly after removing gloves and other outer clothing materials.

Similar to the equipment decontamination waste discussed above in Section 9.1, MassDOT approved 55-gallon drums should be used for the storage of used PPE and other wastes generated during personnel decontamination activities. These drums should be appropriately labeled and disposed of off-site in a manner similar to the equipment decontamination wastes.

9.3 Construction Vehicle Decontamination Procedure

Prior to leaving the Site, any vehicle used for the excavation or transport of impacted soil shall be suitably cleaned of gross soil that could fall off onto public ways or create dust. Excavation equipment buckets used to remove materials from below the existing geotextile layer (between 1.5 and 4 feet bgs) should be rinsed within the excavation to prevent mixture with overlying soils.

A construction entrance in the form of large (4" plus) angular stone shall be constructed to prevent vehicular dispersal of soils beyond the limits of work. Heavy soils must be brushed from vehicle tires prior to leaving the Site. In the event soils are tracked onto nearby roadways, the roadways will be swept clean and the materials deposited back on the Site.

10.0 COMMUNICATION AND EMERGENCY PROCEDURES

The following items should be located and discussed with all field personnel prior to the initiation of work at the Site.

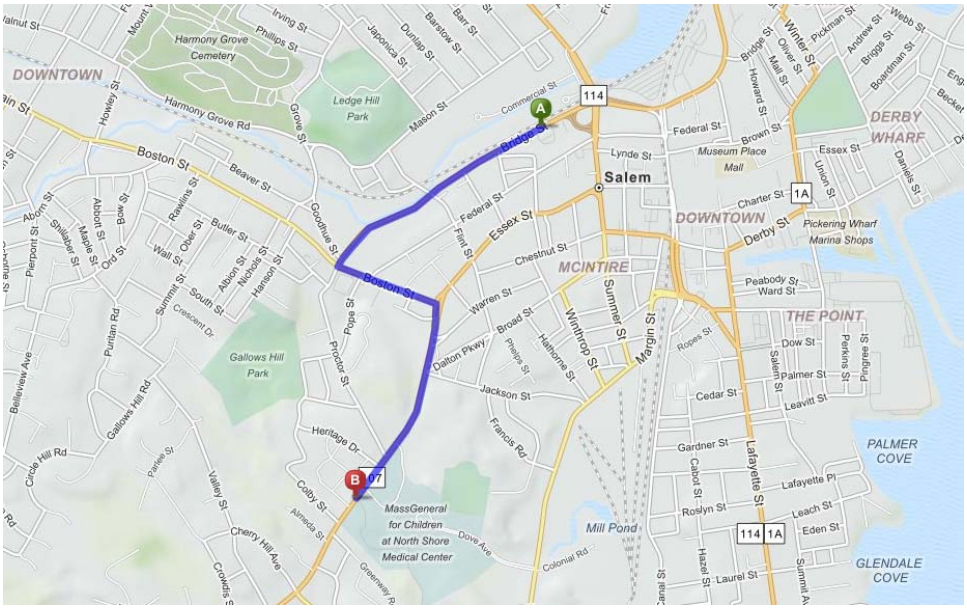
1) Personal Protective Equipment
2) Project HASA Contact
3) Location of Nearest Hospital

In the event of an emergency, development of hazardous Site conditions, or significant changes in the work plan, communication will be established as soon as is practicable.

Environmental Firm Site HASA	Telephone
Alliance Environmental Group, Inc. Felix A. Perriello, CHMM, CPG, LSP, LEP	Office: 401-732-7600 Ext 306 Cell: 617-699-8678
Agency	**Telephone**
Police Dept. (Salem, MA)	**911** or **(**978)-744-0171
Fire Dept. (Salem, MA)	**911** or (978)-744-1235
Public Health Officer (Salem, MA)	(978)-741-1800
DigSafe	1-888-DIG-SAFE (1-888-344-7233)
City Hall (Salem, MA)	(978) 745-9595
Massachusetts State Police	(978) 538-6161
State Poison Control Center	(800) 222-1222
MassDEP Hotline	(888)-304-1133
North Shore Medical Center 81 Highland Avenue Salem, MA	(978) 741-1215

Direction to North Shore Medical Center:

1. Start out going southwest on Bridge Street/MA-107 toward Lynn Street (0.5 mi).
2. Turn left onto Boston Street/MA-107. Boston St is just past Goodhue Street (0.2 mi)
3. Turn right onto Essex St/MA-107. Continue to follow MA-107 (0.5 mi)
4. 81 Highland Avenue is on the left.



Safety Precautions/Work Practices

Safety precautions and good work practices shall be implemented at all times to maintain strong safety awareness. A list of standing orders will be developed to ensure that all persons are cognizant of potential hazards during the Site work activities. These standing orders will be reviewed by the PS. Any changes in the orders will be announced officially during the scheduled safety meetings.

The following orders apply:

- Prescribed personal protective equipment shall be worn as directed by the PS and the Site HASA.

- Assumptions will not be made concerning the nature of suspect materials found on the Site. Should any unusual situations occur or materials be encountered, operations will cease and the PS or Site HASA shall be contacted for further direction.

- Consultation with the PS in a requirement to verify any uncertainties.

- The PS and Site HASA shall be informed when:
    - Unusual or suspect odors are detected;
    - Visual evidence of suspect soil is noted; or
    - Symptoms of chemical exposure or suspicious health conditions become apparent.

- Any unsafe conditions shall be reported immediately.

- Workers shall minimize contact with hazardous materials by:
    - Avoiding areas of obvious or likely contamination;
    - Using polyethylene sheeting to help contain contaminants, when identified or suspected; and
    - Avoiding direct contact with potentially contaminated materials.

- Only essential personnel shall be permitted in the work zones.

- Whenever possible, personnel will be located upwind during material handling.

Ancillary Health and Safety Items Considerations

This HASP is intended to cover workers who are exposed to greater hazards than the general employee/visitor population. Consequently, a clerk in an office on the periphery of the Site who does not enter the operations part of the Site and is exposed only to background levels of hazardous substances is not covered under this HASP. Employees who regularly enter the operations areas of the Site and who are exposed to levels significantly above background are covered by this HASP.

This HASP concentrates on those substances that will create the greatest risk to Site employees and visitors. Risk assessment considers the following: substance toxicity, potential for exposure, proximity to toxic substance, and availability of controls. For example, a level of exposure to a general population that is not likely to exceed background levels would not normally require notification. Similarly, a level of exposure above background but below established permissible exposure limits would also not require specific notification.

As a precaution, however, if levels are unknown, employees, contractors and subcontractors will be informed of the potential for exposure.

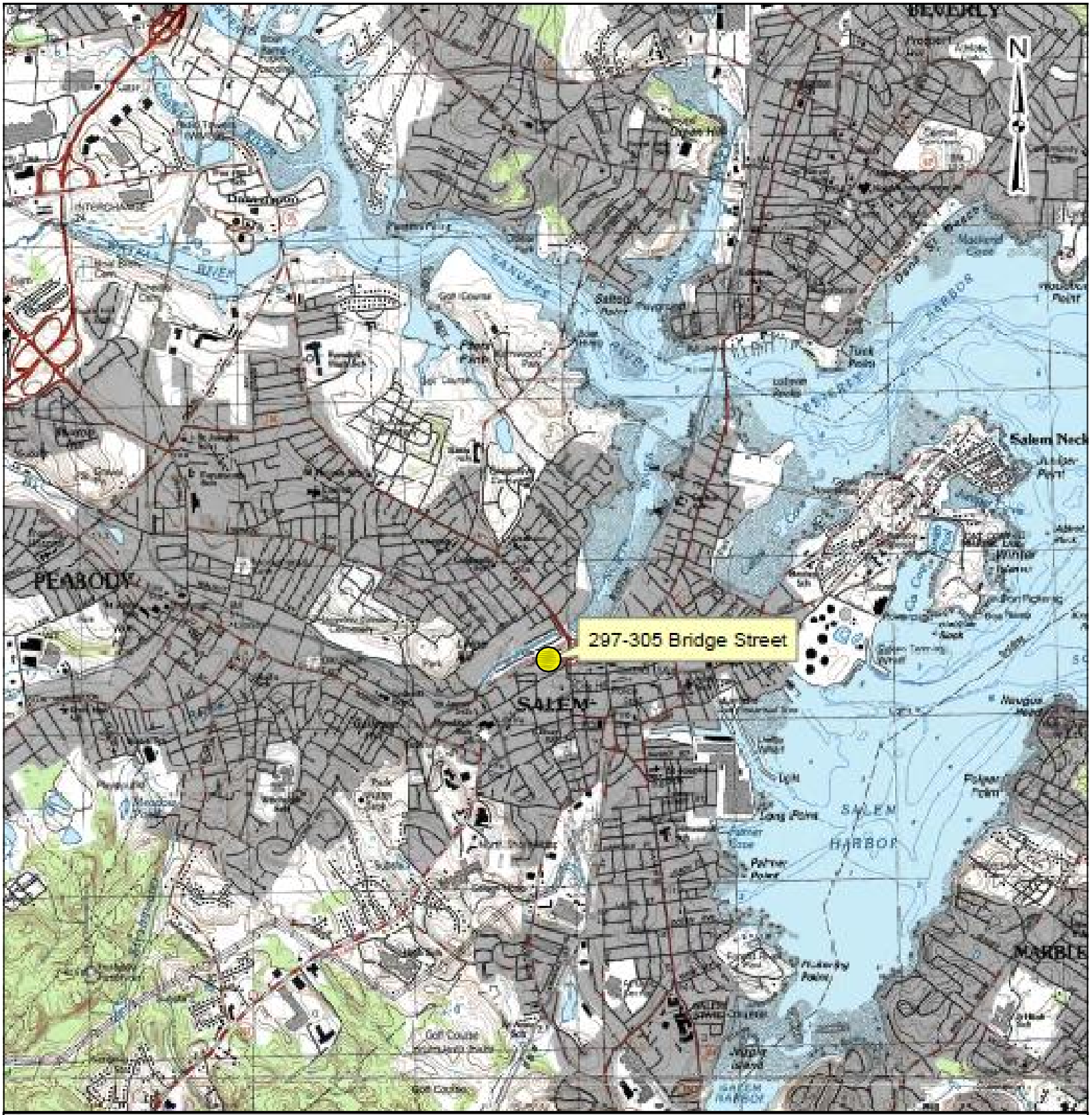
Safety Meeting

Weekly safety meetings will be held to discuss the following:

- Contents of the Site HASP;
- Hazards of chemicals potentially present; and
- Safety precautions/work practices.

An attendance sheet shall be completed at the Safety Meeting and a log will be kept of the Safety Meeting discussion topics, questions, and resolutions. These sheets will be maintained in the project file.

FIGURES



Alliance Environmental Group, Inc.

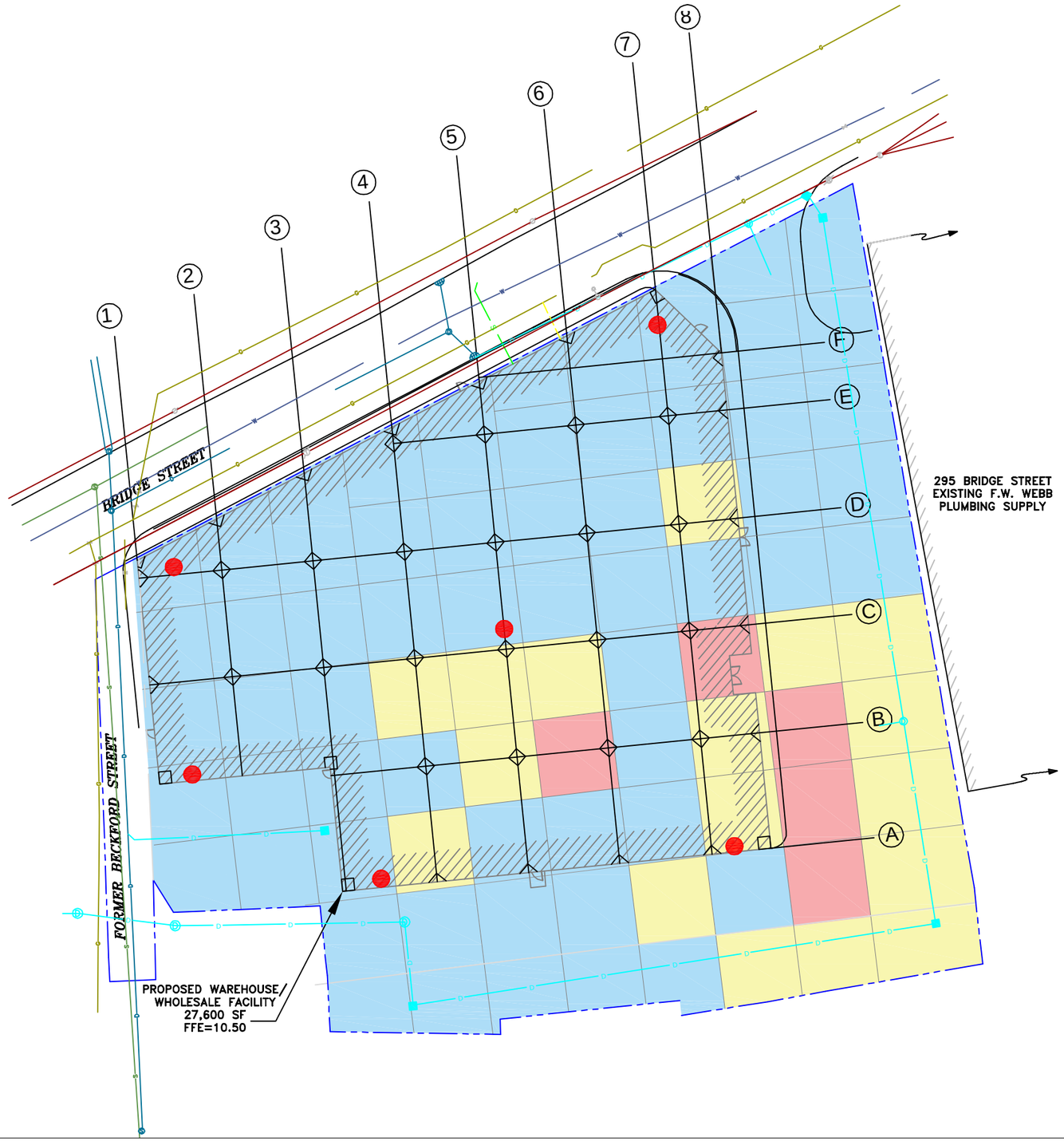
NOTES:

Approximate Site Location:

N

FIGURE 2 - SITE LOCUS MAP
297-305 BRIDGE STREET
SALEM, MA
DERIVED FROM:
WESTON & SAMPSON MASSDEP SARSS PROJECT

Date: 7/27/2015 Drawn by: DTC Checked by: FAP



General Notes

Remaining PCB Concentrations:

- 0-9.9 ppm
- 10-49.9 ppm
- 50+ ppm

Property Line:

- Stone Foundation Column
- 30' Deep Geotechnical Boring
- Water Utility
- Sewer Utility
- Drainage Line
- Gas Utility
- Electric Utility
- Overhead Wiring

No.	Revision/Issue	Date

Alliance Environmental Group, Inc.
100 JEFFERSON BLVD., SUITE 220
WARWICK, RI 02888
PHONE: 401-732-7600
FAX: 401-732-7670
WWW.ALLIANCEEGI.COM

Project Name and Address

FIGURE 2

SITE/CONSTRUCTION OVERLAY PLAN
297-305 BRIDGE STREET
SALEM, MA 01970

Project	2261-02	Sheet	1 of 1
Date	10/6/2015		
Scale	1"=40'		

GREEN LEAF CONSTRUCTION

F.W. WEBB SALEM
CONCEPT PERSPECTIVE

MARCH 16, 2015

VIEW FROM BRIDGE STREET

Figure 3

ATTACHMENT – A

Plan Approval Agreement

The following individuals have reviewed the Site-specific Health and Safety Plan (HASP) for the 297-305 Bridge Street, Salem, Massachusetts project. They are responsible for implementing and enforcing the procedures and items covered by this HASP. In addition, the Alliance Environmental Group, Inc. (AEG) Manager of Occupational Health and Safety, Mr. Felix A. Perriello, CHMM, CPG, LSP, LEP must approve any revisions or alterations to this plan prior to implementation.

Notify Felix A. Perriello or Richard Hittinger of AEG of any alterations or deviations from the procedures, requirements, etc., listed in this HASP. Once signed below, return a signed copy of this document to AEG.

_____ _____

Project Superintendent Date

_____ _____

Felix A. Perriello, CHMM, CPG, LSP, LEP, Date
Alliance Environmental Group, Inc.
HASA

ATTACHMENT – B

Compliance Agreements

All appropriate on-Site personnel (i.e., Contractor employees and subcontractors) must complete and sign this section to be allowed access to the 297-305 Bridge Street, Salem, Massachusetts Site. This copy of the Health and Safety Plan (HASP) will be maintained by AEG.

I have read and understood the contents of this Site-Specific HASP, and have had all relevant questions answered to my satisfaction. In addition, I agree to comply with the conditions/ provisions outlined therein.

NAME (print)	SIGNATURE	COMPANY	DATE