Utility-Related Abatement Measure (URAM) Plan

207 Marston Street
Lawrence,
Massachusetts

RTN 3-18126

woodardcurran.com
COMMITMENT & INTEGRITY DRIVE RESULTS

228526.00
City of Lawrence
October 2017

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1. INTRODUCTION

This Utility-Related Abatement Measure (URAM) Plan was prepared at the request of the City of Lawrence and in general accordance with the requirements of the Massachusetts Contingency Plan (MCP; 310 CMR 40.0000) for cleaning and inspecting subsurface utilities (e.g., sewer and stormwater) at the former John C. Tombarello & Sons property located at 207 Marston Street in Lawrence, Massachusetts (the former Tombarello property; hereto referred to as "the Site"). This URAM Plan documents the results of initial investigations conducted to evaluate potential releases of oil and/or hazardous materials (OHM) to the sewer and stormwater utilities at and surrounding the Site, provides a summary of expected utility inspection and cleaning activities, equipment and material staging locations and requirements, minimum requirements for protecting the health and safety of employees, decontamination requirements, and waste management protocols. Refer to Figure 1 for the Site Locus.

Between 1941 and 2001, the Site operated as a metal reclamation facility, where scrap metal was sorted, cut, segregated, bailed, recycled, and sold. Storm water and process water generated during reclamation activities was discharged to the stormwater drains at the Site. During this time, the Massachusetts Department of Environmental Protection (MassDEP) issued three Release Tracking Numbers (RTNs; 3-16817, 3-18126, and 3-18431) for historical releases of hazardous materials at the Site. The three RTNs are summarized below:

- On May 19, 1998, approximately 20 to 30 gallons of heat transfer oil was released to soils at the Site from a scrap heat exchanger that was being delivered to the facility. MassDEP assigned RTN 3-16817 to this 2-hour reporting condition. Response actions were conducted (i.e., removal of oil from the unit and excavation of impacted soil) and a Class A-1 Response Action Outcome (RAO) Statement was filed in July 1998.
- In August 1998, an environmental site assessment was conducted at the Site following the closure of the scrap metal recycling facility. Analytical results for soil and groundwater samples collected at the facility indicated semi-volatile organic compounds (SVOCs), total petroleum hydrocarbons (TPH), polychlorinated biphenyls (PCBs), and select metals were detected at concentrations exceeding the MCP Reportable Concentrations (RCs) in at least one of the samples. As a result, MassDEP issued a Notice of Responsibility (NOR) to the former operator (Tombarello) and then owner (American Recycling, Inc.) on March 31, 1999, and assigned RTN 3-18126 to the release. ***This RTN is currently active as a Tier I Disposal Site. The nature and extent of the release has not been defined and the next report that is required to be submitted is a Final Phase II Comprehensive Site Assessment.***
- On June 21, 1999, MassDEP conducted a field inspection of the baler/press building at the Site and observed the presence of oily sludge, a floor drain, and several partially-full 55-gallon containers. MassDEP interpreted these conditions as indicative of a potential Threat of Release to the environment and issued RTN 3-18431 for this 2-hour reporting condition. Response actions were conducted and a Class A-1 RAO, Immediate Response Action Statement, and Release Notification & Notification Retraction Form were filed in August 1999. This RTN was also linked with RTN 3-18126.

2. BACKGROUND

2.1 MUNICIPALITY WITH EXEMPT STATUS

The City of Lawrence and the respective departments have never "owned" or "operated" the former Tombarello property, which was the source of the historic release(s) and has complied with M.G.L Chapter 21E, Section 2(d). Therefore, the City of Lawrence is not considered to be a "Potentially Responsible Party" and meets all the requirements of the M.G.L 21E, Section 2 for an exempt municipality. As an exempt municipality, the City of Lawrence is voluntarily working toward divesting this Site and/or achieving a Temporary or Permanent Solution for the release(s) at the Site.

2.2 SITE DESCRIPTION AND LOCATION

The Site consists of an approximately 14-acre parcel that is situated in a mixed-use commercial/industrial/residential area of Lawrence, Massachusetts, and is bounded by Marston Street to the west beyond which is the Parthum Middle School, residential properties and Hofmann Avenue to the north, Interstate 495 to the east, and Commonwealth Motors automobile dealership to the south. Residential properties are also located across both Marston Street and Hofmann Avenue. Overhead and subsurface utilities (telephone, electric, storm drains, sewer, gas and water utilities) bisect the Site from east to west. An earthen berm ranging from approximately 10 to 20 feet high is present along the eastern and southern property boundaries, which was reportedly formed by pushing shallow soils from the Site toward the property boundaries.

Prior to 1935, the southern portion of the former Tombarello site was owned by a soap manufacturer and a community landfill. The northern portion formerly contained a metal reclamation facility, which was purchased in 1941, by John C. Tombarello & Sons, Inc. The property was later sold to American Recycling of Massachusetts, Inc. in December 1998. Since 2001, operations at the Site have ceased and was vacant with the exception of a truck-driving school which operated on the Site for a short time in 2006. The truck-driving school is no longer present at the Site. In March 2016, the City of Lawrence obtained the Site via tax foreclosure.

A number of buildings consisting of a single family dwelling, office and scale house, metal shop and garage, furnace building, press/bailer building, small and large shear buildings, sheds, and outbuildings, all related to the scrap metal handling operations were present at the Site. Operations performed at the Site included sorting, cutting, shearing, segregation, stockpiling, baling, and management and sales of scrap metal materials. The Site reportedly had permission to discharge all storm and process water to the storm water drains that are located throughout the Site (Baumgartner & Associates, Inc., 1998).

Assessor's Information (Map/Parcel): Map 33 Lot 17

NAD 1983 UTM meters (Zone: 19)**:**
==========
Northing (Y): 4731841
Easting (X): 324761

WGS 1984 Latitude / Longitude:
==========
Latitude (Y): 42° 43' 8.71" N
Longitude (X): 71° 8' 24.68" E

GPS coordinates are centered on the Property.

2.3 POTENTIAL HUMAN RECEPTORS

The Site is located in a mixed commercial/residential area and is surrounded by a security fence, is vacant, and partially developed with abandoned buildings. Therefore, there are no on-site workers and human receptors present on a daily basis. The only on-site workers would be those associated with the work described in this URAM and other environmental professionals conducting response actions at the Site. Based upon the 2010 Census track data, the residential population is greater than 7,500 people within a square mile of the Property. There are no known publicly or privately owned hospitals, health care facilities, orphanages, nursing homes, convalescent homes, or correctional facilities that in whole or part provide overnight housing located within 500 feet of the Site. There are no known daycares located within 500 feet of the Site; however, the Parthum Middle School is located across Marston Street to the west in an anticipated upgradient location from the Site.

2.4 ENVIRONMENTAL SETTING & NATURAL RESOURCES

As depicted on the September 2017 MassDEP Phase I Site Assessment Map, the Site is not located within 0.5 miles of public drinking water supply areas (Zone II, Interim Wellhead Protection Aquifers (IWPA), Zone A, Sole Source Aquifer) with the exception of a medium-yield, Potentially Productive Aquifer approximately 500 feet from the eastern Property boundary on the east side of Route 495 and is surrounded by medium-yield Non-Potential Drinking Water Source Areas. The medium-yield NPDWSA is located on the eastern half of the Property. The nearest surface water feature is the Merrimack River approximately 500 feet east from the eastern Property boundary easts of Route 495. The Site is not located within the 100-year and 500-year FEMA floodplain, Bordering Vegetated Wetlands, Isolated Land Subject to Flooding, Areas of Protected Open Space, Areas of Critical Environmental Concern (ACEC), MassDEP Permitted Solid Waste Facilities, Natural Heritage Endangered Species Program Habitats, or Certified Vernal Pools. There are no known public or private water supply wells located on the Property or within 0.5 miles of the vacant Property. A copy of the September 2017 MassDEP Phase I Site Assessment Map is included in Appendix A.

The surface topography of the Site is generally flat with less than 10 feet of elevation change across the entire Property. Stormwater from precipitation events largely remains on the Site in unpaved areas and likely infiltrates. Storm drains are located on site but the discharge location (sewer or Merrimack River) is not known at this time. The remaining areas surrounding the Site are mostly paved except for small landscaped areas associated with residential dwellings.

2.5 HYDROGEOLOGY

The surficial geology of the Site has been mapped as fill overlying river terrace and flood plain deposits consisting primarily of well-sorted fine sands and silts (USGS Surficial Geology Map for the Lawrence Quadrangle, 1951-1952). Bedrock outcrops were not mapped within the vicinity of the Site. Soil test borings completed by HEA in 1999 verified that site soils are comprised of very fine brown sands with minimal silt and gravel content. Depth to groundwater at the Site ranged from approximately 5 to 12 ft below ground surface (bgs), and groundwater flows in an easterly direction towards the Merrimack River.

2.6 RELEASE AND REGULATORY HISTORY

On May 19, 1998, approximately 20 to 30 gallons of heat transfer oil were released to soils at the Site from a scrap heat exchanger that was being delivered to the facility. MassDEP was notified and response actions were taken which consisted of pumping approximately 300 gallons of heat transfer oil from the unit and removing approximately 50 cubic yards of impacted soil from the Site. MassDEP assigned RTN 3-16817 to this release. A Class A-1 RAO Statement, which indicated that remedial actions were taken and cleanup activities achieved background levels, was submitted in July 1998.

In August 1998, an environmental site assessment was conducted at the Site following the closure of the scrap metal recycling facility. The assessment included advancement of soil borings, collection of soil samples, and installation of groundwater monitoring wells. Analytical results for soil and groundwater samples indicated concentrations of SVOCs, TPH-, PCBs, and select metals were above applicable MCP standards). As a result, MassDEP issued an NOR to the

former operator (Tombarello) and the then owner (American Recycling, Inc.) on March 31, 1999, and assigned RTN 3-18126 to the release.

The NOR requested that Tombarello prepare an Immediate Response Action (IRA) Plan, including an Imminent Hazard (IH) Evaluation, to further assess environmental conditions, specifically the presence of PCBs at concentrations greater than 10 parts per million (ppm) in potentially-accessible soils within 500 feet of residential properties, documented during the environmental site assessment.

An IRA Plan was filed on April 21, 1999 which, included the removal of a 100-cubic yard soil stockpile generated during excavation activities in the area of the previous release of heat transfer oil (RTN 3-18126), the collection and analysis of surficial soil samples, and the sampling and analysis of groundwater from new and existing monitoring wells for use in conducting the IH Evaluation. Results of the sampling indicated extractable petroleum hydrocarbons (EPH), lead, volatile organic compounds (VOCs), and PCBs present in soil at concentrations exceeding applicable MCP standards, and VOCs and metals present in groundwater above applicable MCP standards. A barbed-wire fence was installed around the Site to mitigate the potential IH condition (i.e., by limiting access to impacted surficial soils).

On June 21, 1999, MassDEP conducted a field inspection of the baler/press building at the Site and observed the presence of oily sludge, a floor drain, and several partially-full 55-gallon containers. MassDEP interpreted these conditions as a potential Threat of Release to the environment and issued RTN 3-18431. Response actions consisting of the removal of the 55-gallon containers, maintenance on the leaking equipment, decommissioning of the floor drain, and clean-up of the oily sludge was conducted.

In September 2001, soil samples were collected from the vicinity of the former baler press building and from the soil berm located along the southern and eastern portions of the Site. Results indicated concentrations of PCBs above the applicable regulatory risk-based thresholds.

In September 2002, sediment samples were collected from the Merrimack River for laboratory analysis of PCBs. The concentrations of PCBs detected in two sediment samples exceeded the National Ocean and Atmospheric Administration (NOAA) Threshold Effect Levels (TELs) in effect at the time (0.03 mg/kg). However, it is not clear if the PCBs were related to the Site or from other potential sources along the Merrimack River because the nature and extent has not been defined at the Site.

From February through September 2003, Comprehensive Site Assessment (CSA) activities were conducted at the Site which consisted of collection of surface and subsurface soil samples, groundwater samples, and sediment samples from the Merrimack River to further delineate the extent of contamination at the Site. Results of the soil samples reported concentrations of EPH, metals, and PCBs above applicable MCP soil standards. Groundwater samples were analyzed for VOCs and metals, and concentrations of vinyl chloride were detected in downgradient monitoring well MW-7. In sediment samples collected from both upstream and downstream sampling locations relative to the Site, concentrations of PCBs were detected above the NOAA TEL of 0.03 mg/kg. A draft Phase II CSA report was prepared and submitted to MassDEP but was never finalized because of the data gaps in the report and assessment.

In 2011, the United States Environmental Protection Agency (USEPA) developed a removal action plan for the Site that included the removal of “hot spot” soils and limited quantities of contaminated soil from the Site and residential properties that abut the Site to the north. An approximate 600-foot by 50-foot area of PCB-impacted soils was excavated along the northern property boundary fence to a depth of 1 foot. Post-excavation confirmatory soil sample results indicated PCB concentrations ranging from 0.23 mg/kg to 14.8 mg/kg.

Nobis Engineering, Inc. (Nobis) completed a Targeted Brownfields Assessment (TBA) for the Site on behalf of the USEPA as a grant of service provided to the City of Lawrence. The TBA consisted of a field investigation conducted in June 2016, evaluation of environmental data, and development of potential remedial alternatives to address contaminated soils that are present on the Site. Investigative activities included the collection of soil cores from 76 drilling locations, construction of nine groundwater wells, excavation of 20 test pits, and collection of 20 shallow soil samples. In general, the contaminants of potential concern (COPC) concentrations detected during 2016 TBA investigations and COPCs detected during historical investigations are similar. Refer to Appendix B a summary analytical table created by Nobis.

3. INITIAL SEWER AND STORMWATER UTILITY INVESTIGATION

As part of maintenance activities associated with subsurface utilities, the City performs investigations that include cameras to record video of the interior of the utilities to identify breaks, blockages, surcharges, debris, and other vegetation/organic matter. If the utilities are surcharged or there are breaks/blockages, jetting is necessary to clean the utilities such that the camera can travel unimpeded. The City has not been able to assess the sewer and stormwater utilities on the Site since it was abandoned and there were reported releases to the sewer and stormwater utilities. In consultation with Joanne Fagan of MassDEP, Woodard & Curran developed a scope to evaluate sediment and water inside these utilities prior to jetting because of the previous illicit discharges at the Site. This section summarizes the initial investigation and the results of the sewer and stormwater utilities at the Site. The sewer and stormwater utilities both have several manholes located throughout the Site as shown on Figure 2.

3.1 SITE RECONNAISSANCE ACTIVITIES

On August 1, 2016, 40-hour OSHA HAZWOPER-trained employees from Woodard & Curran conducted an initial investigation to locate the sewer and stormwater manholes and catch basins (Figure 2), perform an integrity inspection, collect utility (rim and invert) and sediment depth, and collect the approximate liquid flow depth. During the initial investigation, the Site was overgrown with vegetation and debris in some areas making it difficult to locate all of the potential sewer manholes and catch basin covers. The following stormwater and sewer manholes could not be located at the time of the initial inspection: MH5033, MH5046, MH5070, MH0277, and MH0278. Sewer manholes MH0272, MH0273, MH0274, MH0279 and stormwater manholes MH5034 and MH5035 were identified by Woodard & Curran. Observations from these manholes and catch basins are summarized in the table below. Please note that MH0271 is an upgradient sewer manhole located prior to the entrance of the Site MH0272 is the first sewer manhole located on the Site, and MH0279 is the last downgradient manhole before leaving the site. In addition, stormwater manholes MH5034 and MH5035 located on the Commonwealth Motors property are downgradient of the Site. Other downgradient stormwater manholes at the Site were not identified.

Manhole ID	Overall Manhole Condition	Approx. Sediment Depth (in.)	Approx. Flow Depth (in.)	Depth from Rim to Bench (ft.)	Depth from Rim to Invert Out (ft.)	Comments
MH0272 (sewer)	Sound	2	3	9.8	10.7	Evidence of surcharge, debris on manhole bench.
MH0273 (sewer)	Sound	< 1	3	7.8	8.8	Cover is round catch basin grate; no surcharge.
MH0274 (sewer)	Sound	Unknown	Unknown	Unknown	Unknown	Cannot open; cover is square catch basin grate that is rusted shut; structure is sound.
MH0279 (sewer)	Defective	> 3	> 3	14.7	15.6	Missing cover; manhole opening is covered by plywood and a large tire. ***This is a "downgradient" location of the Site.***
MH5034 (stormwater)	Sound	Unknown	Unknown	Unknown	Unknown	Not accessible Commonwealth Motors denied access. ***This is a "downgradient" location of the Site.***
MH5035 (stormwater)	Paved Over	Unknown	Unknown	Unknown	Unknown	Not accessible. Asphalt patch observed in location where cover should be located. ***This is a "downgradient" location of the Site.***

3.2 SEWER AND STORMWATER UTILITY EVALUATION ACTIVITIES

On September 28, 2016, 40-hour OSHA HAZWOPER-trained employees from Woodard & Curran mobilized to the site to collect solid and liquid samples from accessible sewer and stormwater utilities. Several types of equipment (e.g., peristaltic pumps, dredges, extendable plastic rods with a cup, and a fabricated PVC pipe capable of collecting water and sediment) were brought to the Site that could be used to collect sediment and water in the utilities. Sediment and water samples were not collected at manholes MH0274 and MH0273 because the cover could not be removed and there was no evidence of sediment in the utility, respectively. Samples were not collected from stormwater manholes MH5033/MH5046 (couldn't be located due to vegetation and overgrowth) and MH5034/MH5035 (because there was no sediment in the structures). Multiple methods were attempted to collect the sediment and water separately from the sewer utilities. However, because of the limited amount of sediment in the sewer utility and the consistency of the material (mostly liquid), solid samples were very difficult to collect. Therefore, on a solid and liquid sample were collected from the downgradient-most manhole that could be located (MH0279) and a solid sample from manhole MH0272.

Using dedicated polyethylene tubing and a peristaltic pump, the liquid sample was collected directly into laboratory provided bottleware. The solid samples were collected using a 2-inch diameter polyvinyl chloride (PVC) tee-fitting with an end cap over one end. The tee-fitting was attached to approximately 20 feet of 1.5-inch diameter PVC pipe. Solids were scrapped from the bottom of the sewer pipe, collected in the tee-fitting, and then composited in a stainless steel bowl. Solid sampling equipment was decontaminated between sampling locations using an Alconox and water rinse. Both liquid and solid samples were submitted to TestAmerica for analysis of the following parameters:

- EPH via MassDEP Methods;
- Volatile Petroleum Hydrocarbons (VPH) via MassDEP Methods;
- PCBs via USEPA Method 8082
- VOCs via USEPA Method8260C (soil only); and
- MCP14 Metals via USEPA Methods 6010C and 7471A.

Results of the liquid sample from MH0279 indicated BTEX compounds (benzene, toluene, ethylbenzene, and xylene), EPH, and select metals were detected at concentrations above the laboratory reporting limit (LRLs). PCBs were not detected above the LRLs. Results were also compared to the Greater Lawrence Sewer District (GLSD) discharge standards; no exceedances were reported. VOCs in water were not reported due to headspace issues with the samples. Based upon these results, liquid wastes generated during utility inspection and cleaning activities can be discharged to the GLSD providing that intermittent sampling prior to discharge continues to indicate that results remain below GLSD standards. Refer to Table 1 for a summary of analytical results for the liquid sample and Appendix C for laboratory analytical reports.

Results of the solid sampling indicated detections of VOCs, VPH, EPH, PCBs, and select metals. With the exception of concentrations of VOCs in the solid sample from manhole MH0279, the remaining detections were below the 1997 Reuse and Disposal of Contamination Soil at Massachusetts Landfills (Comm-97-001 policy) standards. Specifically, concentrations of toluene detected at 14 mg/kg exceed the Comm-97 policy standard of 4 mg/kg for total VOCs. Concentrations of detected constituents in solids sampled in manhole MH0272 were below the Comm-97 standards. Note that the highest concentrations were detected in manhole MH0279, which is the downgradient-most manhole sample, while reduced concentrations were detected in the upgradient-most manhole. This distribution of impacts suggests that the concentrations in MH0272 are from an on-site source, rather than being transported through the utility from an off-site source. Based on the total VOC exceedance of the Comm-97 standards, solids collected as part of the sewer and drainage line inspection and cleaning will require proper management and disposal, as discussed in subsequent sections. Refer to Table 2 for a summary of analytical results for the solid samples and Appendix C for laboratory analytical reports.

A liquid sample could not be collected from manhole MH0272 due to issues with the sampling equipment. Samples could not be collected from manholes MH0273 due to insufficient sediment volume to collect a sample and from manhole MH0274 or catch basin CB0437 due to inaccessibility.

4. UTILITY-RELATED ABATEMENT MEASURE PLAN

4.1 PERSON ASSUMING RESPONSIBILITY FOR THE URAM PLAN

Contact Name: Carlos Jaquez

Relationship to the Site: Director of Public Works

Address: City Hall
200 Common St
Lawrence, MA 01840
(978) 620-3090

Licensed Site Professional (LSP) Of-Record: Jarrod P. Yoder, PG, LSP
40 Shattuck Rd, Suite 110
Andover, Massachusetts 01810
License No. 8188

4.2 OBJECTIVE

The objective of this URAM Plan is to manage impacted solids and water during routine sewer and drainage line cleaning activities at the Site as well as document the removal and off-site disposal of solids and liquids that could be generated during these activities.

4.3 PIPE INSPECTION

Prior to pipe cleaning, closed-circuit television (CCTV) inspection of the sewer pipe will be attempted to assess the level and type of debris in the pipe. If no significant debris is observed during the pre-cleaning inspection, cleaning will not be performed. Otherwise, the pipe will be cleaned prior to performing post-cleaning CCTV inspection as described below. CCTV inspections will be completed in accordance with the National Association of Sewer Service Companies' (NASSCO) Pipeline Assessment Certification Program (PACP). The inspection will be performed by a OSHA HAZWOPER-trained subcontractor and Woodard & Curran personnel.

4.4 PIPE CLEANING

If debris exists within the sewer and/or drainage pipes, the pipes will be cleaned primarily using high-velocity hydro-cleaning equipment (i.e., jetting). Jetting involves directing water against the pipe wall to remove debris, clear blockages, and cut small roots. The procedure for jetting the utilities will be to start at the upgradient manholes with jetting to loosen the debris inside the utilities. In the case for the sewer utility, limited debris and sediment was identified and therefore, the jetting water will be permitted to flow through the sewer utility and into the Greater Lawrence Sanitary District for treatment. For the stormwater utility, a vactor truck located at the nearest downgradient manhole will be used to collect liquid and solids that break free in the utility so that the solids can be pre-characterized for off-site disposal at an approved facility. Water will be decanted and allowed to drain into the sewer utility

Based upon estimated pipe size diameter and potential debris inside these utilities, an estimated 19,200 gallons of potable water from an off-site source will be used per day. The total water used in the jetting process is estimated to be approximately 100,000 to 200,000 gallons not including the existing flow through the utilities. The jetting equipment has the ability to use water at rates up to 80 gallons per minute depending upon the amount of debris and nature of the material inside the utility. Based upon the preliminary inspection conducted in August 2016 and calculations based upon pipe length and diameter, approximately 500 cubic yards of sediment may be present inside of the drainage utility and may be generated during cleaning activities.

Mechanical cleaning techniques (i.e., root cutting) may also be used if there are large deposits that cannot be removed by jetting the pipe. CCTV inspection will be conducted as necessary during cleaning activities to observe the progress

of solid/debris removal and document the condition of the pipe. The inspection will be performed by a OSHA HAZWOPER-trained subcontractor and Woodard & Curran personnel.

4.5 DECONTAMINATION ACTIVITIES

Equipment and tools used during pipe cleaning activities will be decontaminated prior to leaving the work area using water and detergent (i.e. Alconox) and/or brushes. Limited water and detergent will be used to the extent feasible, and will be discharged to the sewer system.

4.6 MANAGEMENT OF WASTE

Liquids generated during the stormwater utility cleaning will be decanted through a discharge valve and hose on the vactor truck back into the sewer line and ultimately treated at the GLSD regional wastewater treatment facility. Solids and semi-solids from the stormwater utility will be collected in the vactor truck and transferred into lined roll-off containers that will be characterized for off-site disposal in accordance with MCP and disposal facility acceptance criteria. Refer to Figure 2 for staging locations of the roll-offs.

The solids will be analyzed for various waste disposal criteria, including TPH, VOCs, SVOCs, PCBs, total RCRA 8 metals, flash point, pH, reactivity, conductivity, and/or other criteria, as appropriate. The appropriate shipping papers (Bill of Lading and/or hazardous waste manifest) will be completed and kept with the waste material at all times and will be used to facilitate the transport of the materials to the destination facility. Lined and unlined landfills will be the target disposal facility for these materials unless disposal characterization data suggest other facilities will be more appropriate.

For the purposes of this URAM, it is estimated that up to 500 cubic yards (approximately 850 tons) of solids and semi-solids will be shipped off-site for disposal at an approved facility. Water used or generated during the cleaning process is anticipated to meet GLSD discharge criteria and will be conveyed to the GLSD treatment plant via the existing sewer system.

4.7 FEDERAL, STATE, AND OR LOCAL PERMITS

No federal, state, or local permits are anticipated to be required.

4.8 PUBLIC NOTIFICATION

Consistent with the public involvement requirements of the MCP, notice of the availability of this URAM Plan has been provided (within 20 days of implementing this URAM) to the Mayor and Health Director for the City of Lawrence. A copy of this notice was provided to MassDEP concurrently with the submittal of this URAM Plan (Appendix D).

4.9 HEALTH AND SAFETY PLAN

Work conducted during the URAM will be conducted in general accordance with the MCP and workers and surrounding human and environmental receptors will be reasonably protected from exposure to impacted materials during and following URAM activities. All personnel performing URAM activities described in this report will comply with applicable federal, state, local, and other applicable safety and health regulations. All workers will be adequately trained and possess 40-hour Hazardous Waste Operations and Emergency Response (HAZWOPER) training under the Occupational Health and Safety Administration) OHSA HAZWOPER standard (29 CFR 1910.120).

Woodard & Curran personnel will comply with the health and safety procedures and requirements of the site-specific health and safety plan (HASP), which is provided herein as Appendix E**.** Subcontractors working on the project are responsible for preparing and complying with their own HASP.

4.10 SCHEDULE

Utility inspection and cleaning activities are expected to be conducted in fall 2017. The sampling and disposal of sediment generated during pipe cleaning activities will be transported off-property for disposal within one to two months of completion of the utility cleaning and final inspection.

5. LIMITATIONS

Woodard & Curran prepared this document in a manner consistent with generally accepted professional consulting principles and practices. No other warranty, express or limited, is implied. Accordingly, the findings and recommendations in this report do not constitute scientific certainties, but rather probabilities based upon our professional judgment concerning data gathered and reviewed during the course of Site investigation and evaluation activities, and the use of engineering and scientific principles. Any conclusions presented in this report were based upon the services described and not on scientific tasks or procedures beyond the scope of described services or time or budgetary constraints. Any statement or opinion contained in this report prepared by Woodard & Curran shall not be construed to create any warranty or representation that the property is free of pollution or that it complies with any or all applicable regulatory or statutory requirements.

Results of the activities contained in this report apply to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. Woodard & Curran is neither responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services, nor does it warranty the accuracy of information supplied by others or the use of segregated portions of this report. Woodard & Curran shall not be responsible for conditions or consequences arising from relevant facts that were concealed, withheld or not fully disclosed at the time the evaluation was performed. Woodard & Curran cannot represent that the Site does not contain hazardous materials or other latent environmental conditions beyond those detected or observed as described herein, nor guarantee that any action or recommended action will achieve all of its objectives, or that this URAM Plan or any action as to which the URAM Plan relates will be upheld by any audit conducted by MassDEP or any other party. The passage of time may result in changes in remedial technology, economic conditions, regulatory standards, manifestations of undiscovered latent conditions, or the occurrence of future events, which would render this URAM Plan inaccurate or otherwise inapplicable. Neither Woodard & Curran nor the Licensed Site Professional (LSP) shall be liable or responsible for the consequences of any such unforeseen changed circumstances or conditions on the accuracy of this report.

This report is solely for the use of our client unless otherwise noted. Any reliance on this report by a third party is at such party's sole risk. Neither Woodard & Curran nor the LSP shall be liable for the existence of any condition that would have been discovered only by the performance of other services not authorized under the agreements between Woodard & Curran and the City of Lawrence. Should additional information regarding the Site become available in the future that is inconsistent with the findings and assumptions presented herein, the recommendations in this report should be re-evaluated by Woodard & Curran or another qualified environmental professional in light of the additional information.

6. REFERENCES

Haley & Aldrich, 2000. Phase I Requirements/Tier Classification, 207 Marston Street, Lawrence, Massachusetts; March 31.

Haley & Aldrich, 2001. Immediate Response Action (IRA) Completion Report, American Recycling of Mass. Inc., 207 Marston Street, Lawrence, Massachusetts; May 15.

Nobis Engineering, Inc., 2016. Targeted Brownfields Assessment Report, Former Tombarello Property, Lawrence, Massachusetts; September.

Weston Solutions, 2007. Immediate Response Action Completion Report, Former John C. Tombarello & Sons Property, 207 Marston Street, Lawrence, Massachusetts; April.

W.Z. Baumgartner & Associates, Inc., 1998. Environmental Site Assessment, John C. Tombarello & Sons, Inc., Lawrence, Massachusetts; August.

TABLES

TABLE 1
AQUEOUS ANALYTICAL RESULTS
Tombarello Site - 207 Marston Street, Lawrence, Massachusetts

Parameter	Reporting Units	GLSD standards	MH0279
GC Volatiles by MA VPH			
C5-C8 Aliphatics (adjusted)	ug/l	4000	< 1.5
C9-C12 Aliphatics (adjusted)	ug/l	20000	< 1.5
C9-C10 Aromatics	ug/l	4,000	< 5.0
Methyl tert-butyl ether	ug/l	50,000	< 2.5
Naphthalene	ug/l		< 2.5
Benzene	ug/l	7,000	< 2.5
Toluene	ug/l		**32**
Ethylbenzene	ug/l		**5.5J**
o-Xylene	ug/l		< 2.5
m-Xylene & p-Xylene	ug/l		< 5.0
Total BTEX		61,900	**37.5**
GC Semivolatiles by 8082			
PCB-1016	ug/l		< 0.10
PCB-1221	ug/l		< 0.10
PCB-1232	ug/l		< 0.10
PCB-1242	ug/l		< 0.10
PCB-1248	ug/l		< 0.10
PCB-1254	ug/l		< 0.10
PCB-1260	ug/l		< 0.10
PCB-1262	ug/l		< 0.10
PCB-1268	ug/l		< 0.10
GC Semivolatiles by MA-EPH			
C11-C22 Aromatics (Adjusted)	ug/l	30000	**630**
C19-C36 Aliphatics	ug/l	20000	**1900B**
C9-C18 Aliphatics	ug/l	20000	**47B**
2-Methylnaphthalene	ug/l		< 1.9
Acenaphthene	ug/l		< 1.9
Acenaphthylene	ug/l		< 1.9
Anthracene	ug/l		< 1.9
Benzo[a]anthracene	ug/l		< 1.9
Benzo[a]pyrene	ug/l		< 1.9
Benzo[b]fluoranthene	ug/l		< 1.9
Benzo[g,h,i]perylene	ug/l		< 1.9
Benzo[k]fluoranthene	ug/l		**2.1J**
Chrysene	ug/l		< 1.9
Dibenz(a,h)anthracene	ug/l		< 1.9
Fluoranthene	ug/l		< 1.9
Fluorene	ug/l		< 1.9
Indeno[1,2,3-cd]pyrene	ug/l		< 1.9
Naphthalene	ug/l		< 1.9
Phenanthrene	ug/l		**4.6J B**
Pyrene	ug/l		< 1.9
Metals by 6010			
Antimony	mg/l		< 0.0068
Arsenic	mg/l	0.31	< 0.0056
Barium	mg/l		**0.16**
Beryllium	mg/l		< 0.00030
Cadmium	mg/l	0.16	**0.0015**
Chromium	mg/l	1.65	**0.014**
Lead	mg/l	0.29	**0.062**
Nickel	mg/l	1.74	**0.027**
Selenium	mg/l		< 0.0087
Silver	mg/l	0.227	**0.028**
Thallium	mg/l		< 0.010
Vanadium	mg/l		**0.013**
Zinc	mg/l	2	**0.74**
Metals by 7470A			
Mercury	mg/l	**0.0048**	0.00026

Notes:
mg/l - milligrams per liter
ug/l - micrograms/liter
B - Compound was found in the blank and sample.
J - Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
J B - Compound was found in the blank and sample.
GLSD - Greater Lawrence Sanitary District
Bold = Bold results indicate a detection above laboratory reporting limit

TABLE 2
SOLID ANALYTICAL RESULTS
Tombarello Site - 207 Marston Street, Lawrence, Massachusetts

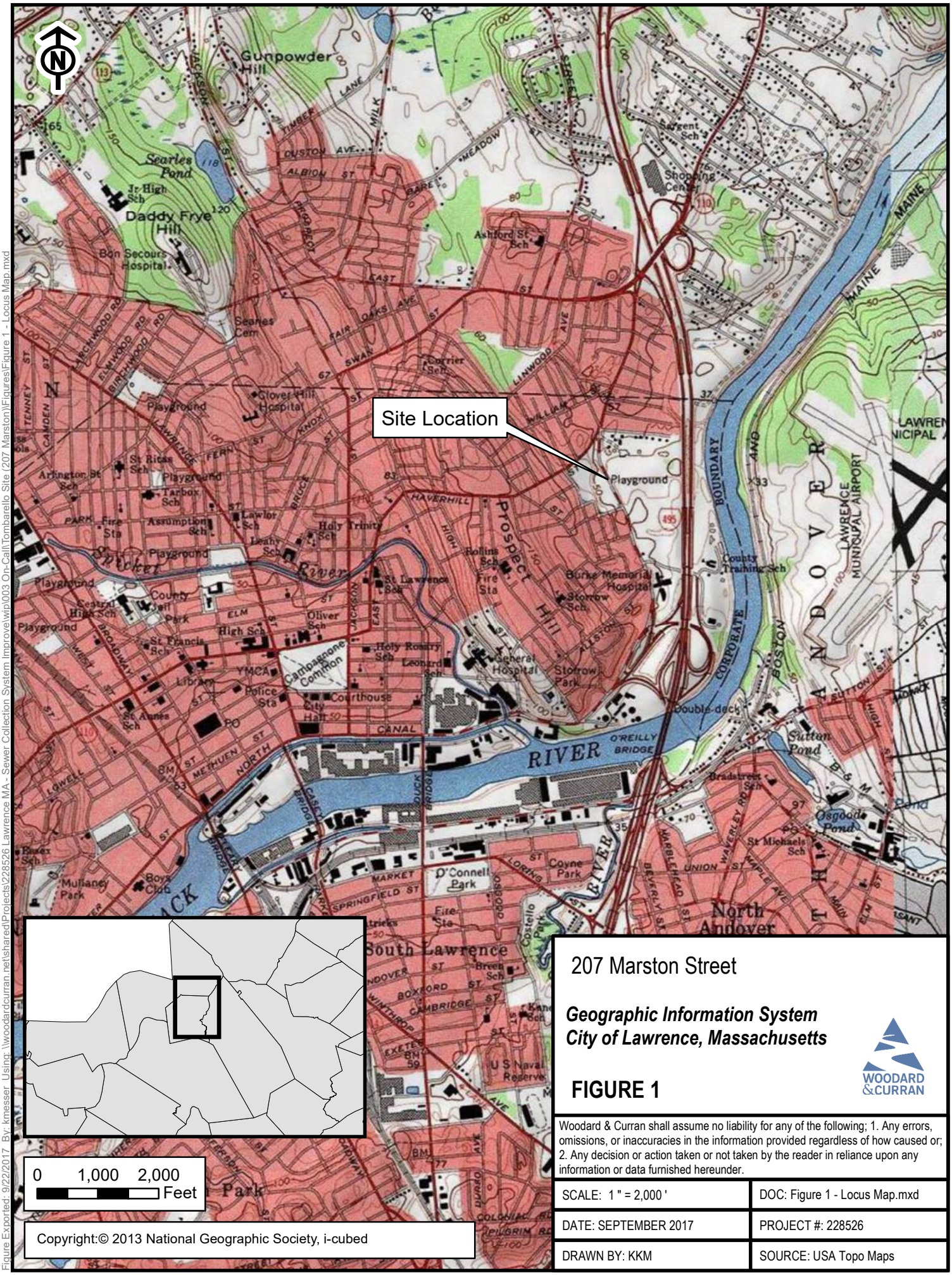
Parameter	Reporting Units	RCS1	RCS-2	Comm97-Unlined	MH0279	MH0272
Volatiles by 8260C						
1,4-Dichlorobenzene	mg/kg	0.7	1		**1.4**	< 0.058
4-Isopropyltoluene	mg/kg	NA	NA		**0.76**	**0.23J**
Acetone	mg/kg	6	50		**0.47J**	< 0.35
Chlorobenzene	mg/kg	1	3		**1.4**	< 0.055
Ethylbenzene	mg/kg	40	1,000		**0.13J**	< 0.029
Naphthalene	mg/kg	4	20		**0.064J**	< 0.056
Styrene	mg/kg	3	4		**0.044J**	**0.031J**
Toluene	mg/kg	30	1,000		**14**	**0.14J**
Total				**4**	**18.664**	**0.401**
Volatiles by MAVPH						
C5-C8 Aliphatics (adjusted)	mg/kg	NA	500		< 0.15	0.14J
C9-C12 Aliphatics (adjusted)	mg/kg	NA	3,000		0.85J	1.2
C9-C10 Aromatics	mg/kg	100	500		**1.6J**	**0.34**
Benzene	mg/kg	2	200		< 0.15	< 0.011
Ethylbenzene	mg/kg	40	1,000		**1.3**	**0.048J**
Methyl tert-butyl ether	mg/kg	0.1	100		< 0.15	< 0.011
m-Xylene & p-Xylene	mg/kg	NA	NA		< 0.15	< 0.011
Naphthalene	mg/kg	4	20		< 0.15	**0.017J**
o-Xylene	mg/kg	NA	NA		**0.62J**	**0.043J**
Toluene	mg/kg	30	1,000		**9.0**	**0.064**
Total					**17.72**	**1.972**
Semivolatiles by MAEPH						
C11-C22 Aromatics (Adjusted)	mg/kg	1000	3,000		**41**	**42**
C19-C36 Aliphatics	mg/kg	2	5,000		**7.6***	**8.5***
C9-C18 Aliphatics	mg/kg	7	3,000		**10***	**8.0***
Anthracene	mg/kg	1000	3,000		**0.72**	< 0.67
Benzo[a]anthracene	mg/kg	70	40		**1.4**	**1.0**
Benzo[a]pyrene	mg/kg	NA	7		**1.2**	**0.88**
Benzo[b]fluoranthene	mg/kg	1000	40		**2.1**	**1.2**
Benzo[g,h,i]perylene	mg/kg	3000	3,000		**1.3**	**1.1**
Benzo[k]fluoranthene	mg/kg	1000	400		**0.78**	< 0.67
Chrysene	mg/kg	70	400		**1.7**	**1.1**
Fluoranthene	mg/kg	1000	3,000		**3.5**	**2.4**
Indeno[1,2,3-cd]pyrene	mg/kg	7	40		**0.96**	< 0.67
Phenanthrene	mg/kg	10	1,000		**3.1**	**2.5**
Pyrene	mg/kg	1000	3,000		**3.3**	**2.2**
Total				**2,500**	**139.66**	**125.88**

TABLE 2
SOLID ANALYTICAL RESULTS
Tombarello Site - 207 Marston Street, Lawrence, Massachusetts

Parameter	Reporting Units	RCS1	RCS-2	Comm97-Unlined	MH0279	MH0272
PCBs by 8082						
PCB-1016	mg/kg	NA	NA		< 0.014	< 0.014
PCB-1221	mg/kg	NA	NA		< 0.014	< 0.014
PCB-1232	mg/kg	NA	NA		< 0.014	< 0.014
PCB-1242	mg/kg	NA	NA		< 0.014	< 0.014
PCB-1248	mg/kg	NA	NA		**0.34**	< 0.014
PCB-1254	mg/kg	NA	NA		< 0.014	**0.081J**
PCB-1260	mg/kg	NA	NA		< 0.014	**0.077J**
PCB-1262	mg/kg	NA	NA		< 0.014	< 0.014
PCB-1268	mg/kg	NA	NA		< 0.014	< 0.014
Total		**1**	**4**	**2**	**0.34**	**0.158**
Metals by 6010						
Antimony	mg/kg	20	30	20*	**1.1**	**1.8**
Arsenic	mg/kg	20	20	40	**2.6**	**4.1**
Barium	mg/kg	1,000	3,000	1,000*	**62B**	**88B**
Beryllium	mg/kg	90	200	90*	**0.19J**	**0.27J**
Cadmium	mg/kg	70	100	30	**0.47**	**0.34**
Chromium	mg/kg	100	200	1000	**18B**	**31B**
Lead	mg/kg	200	600	1000	**61B**	**46B**
Nickel	mg/kg	600	1,000	600*	**12**	**82**
Selenium	mg/kg	400	700	400*	**0.83**	< 0.56
Silver	mg/kg	100	200	100*	**0.58J**	**0.28J**
Thallium	mg/kg	8	60	8*	< 0.44	< 0.42
Vanadium	mg/kg	400	700	400*	**11**	**30**
Zinc	mg/kg	1000	3,000	1000*	**130B**	**120B**
Metals by 7471A						
Mercury	mg/kg	20	30	10	**0.023J**	< 0.011

Notes:
mg/kg - milligrams per kilogram
B - Compound was found in the blank and sample.
J - Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
J B - Compound was found in the blank and sample.
* MassDEP Reportable Concentrations for S-1 Soils (RCS-1)
Bold = Bold results indicate a detection above laboratory reporting limit
[Bold] = bold and bracketed results indicate an exceedance of applicable standard.

FIGURES



207 Marston Street

Geographic Information System
City of Lawrence, Massachusetts

FIGURE 1

WOODARD &CURRAN

SCALE: 1 " = 2,000 '	DOC: Figure 1 - Locus Map.mxd
DATE: SEPTEMBER 2017	PROJECT #: 228526
DRAWN BY: KKM	SOURCE: USA Topo Maps

Figure Exported: 9/22/2017 By: kmesser Using: \\woodardcurran.net\shared\Projects\228526 Lawrence MA - Sewer Collection System Improve\wip\003 On-Call\Tombarello Site (207 Marston)\Figures\Figure 1 - Locus Map.mxd

Waste Storage Location

0 75 150 300 Feet

LEGEND

- Parcel Boundary
- Marston Street Subject Property
- Sewer Manhole
- Sewer Structure
- Sewer Gravity Pipe
- Sewer Force Main
- Drainage Manhole
- Drainage Catch Basin
- MS4 Outfall
- Gravity Main
- Underdrain
- Water Hydrants
- Water Mains

207 Marston Street

Geographic Information System

City of Lawrence, Massachusetts

40 Shattuck Rd, Suite 110
Andover, Massachusetts 01810
866.702.6371 | www.woodardcurran.com
COMMITMENT & INTEGRITY DRIVE RESULTS

SCALE: 1 inch = 150 feet | PROJECT #: 228526

DATE: SEPTEMBER 2017 | DRAWN BY: KKM

Figure Exported: 9/25/2017 By: kmesser Using: \\woodardcurran.net\shared\Projects\228526 Lawrence MA - Sewer Collection System Improve\wip\003 On-Call\Tombarello Site (207 Marston)\Figures\Figure 2 - 207 Marston Street Site Plan.mxd

APPENDIX A: MASSGIS PHASE I MAP

MassDEP - Bureau of Waste Site Cleanup

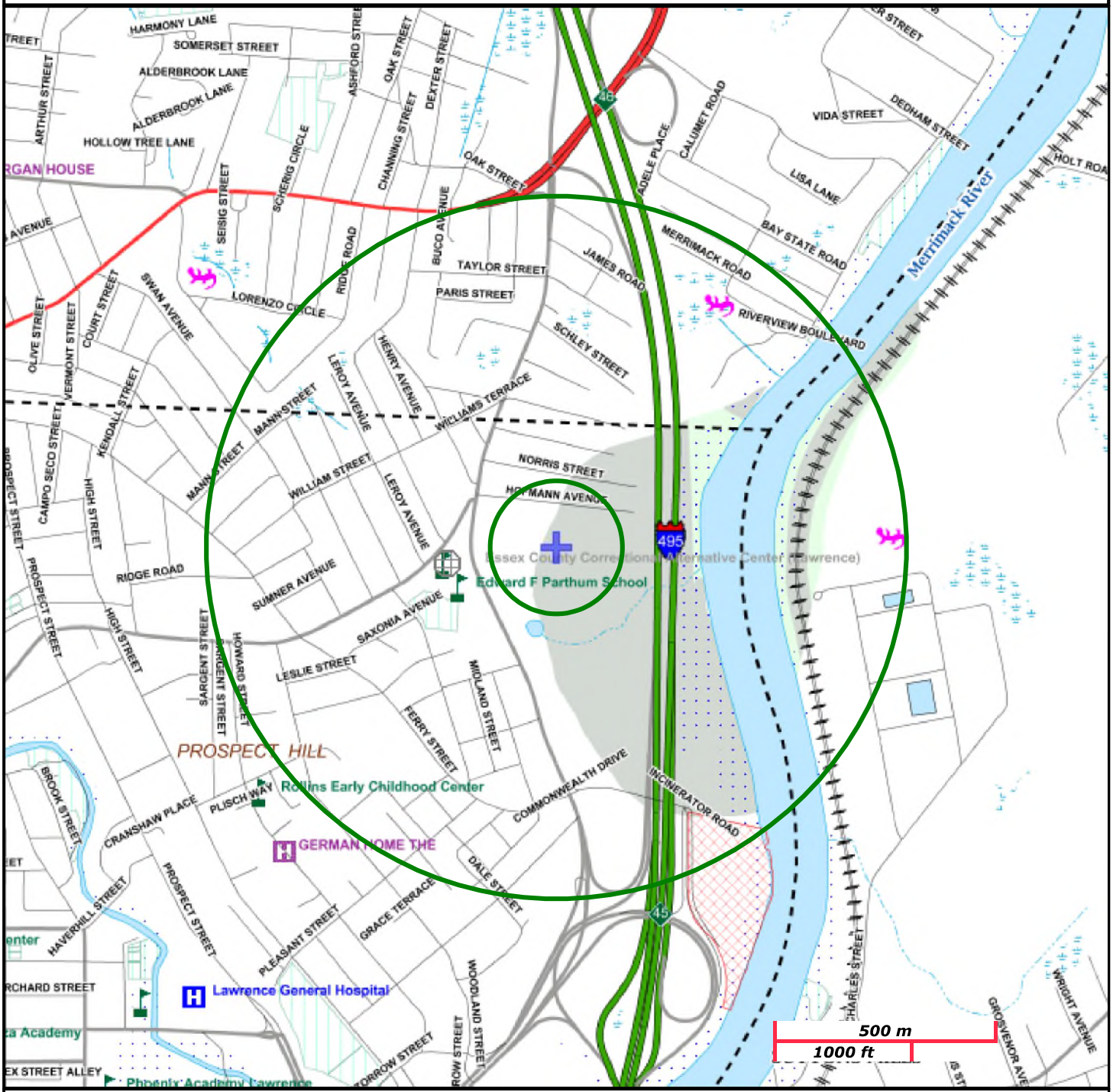
Phase 1 Site Assessment Map: 500 feet & 0.5 Mile Radii

Site Information:
TOMBARELLO
207 MARSTON ST LAWRENCE, MA

NAD83 UTM Meters:
4731841mN , 324761mE (Zone: 19)
September 22, 2017

The information shown is the best available at the date of printing. However, it may be incomplete. The responsible party and LSP are ultimately responsible for ascertaining the true conditions surrounding the site. Metadata for data layers shown on this map can be found at: http://www.mass.gov/mgis/.

MassDEP
Commonwealth of Massachusetts
Department of Environmental Protection



Roads: Limited Access, Divided, Other Hwy, Major Road, Minor Road, Track, Trail

Boundaries: Town, County, DEP Region; Train; Powerline; Pipeline; Aqueduct

Basins: Major, PWS; Streams: Perennial, Intermittent, Man Made Shore, Dam

Aquifers: Medium Yield, High Yield, EPA Sole Source

Non Potential Drinking Water Source Area: Medium, High (Yield)

PWS Protection Areas: Zone II, IWPA, Zone A

Hydrography: Open Water, PWS Reservoir, Tidal Flat

Wetlands: Freshwater, Saltwater, Cranberry Bog

FEMA 100yr Floodplain; Protected Open Space; ACEC

Est. Rare Wetland Wildlife Hab; Vernal Pool: Cert., Potential

Solid Waste Landfill; PWS: Com.GW,SW, Emerg., Non-Com.

APPENDIX B: NOBIS ANALYTICAL DATA AND FIGURES

Table 3-1
Summary of TBA PCB Analytical Results
Former Tombarello Property
Lawrence, Massachusetts

Sample Location		BPA-01		BPA-02			CD-34		CD-34E		CD-34N		CD-34S			CD-34W		CD-45		CD-45E		CD-45S		
Sample Depth (ft)		1 - 2	2 - 3	1 - 2	2 - 3	6 - 7	3 - 4	7 - 8	0 - 1	1 - 3	0 - 1	1 - 3	0 - 1	1 - 3		0 - 1	1 - 3	3 - 4	7 - 8	0 - 1	1 - 3	0 - 1	1 - 3	
Sample Date		06/07/16	06/07/16	06/07/16	06/07/16	06/07/16	06/06/16	06/06/16	06/06/16	06/06/16	06/06/16	06/06/16	06/06/16	06/06/16		06/06/16	06/06/16	06/06/16	06/06/16	06/06/16	06/06/16	06/06/16	06/06/16	
QC Identifier														FD	FD								FD	FD
Pesticides/PCBs	**Units**																							
Aroclor 1016	mg/kg	0.035 UJ	0.72 U	0.74 U	0.36 U	0.042 UJ	3.9 U	0.043 UJ	35 U	18 U	0.70 U	0.037 U	0.35 U	0.037 U	0.037 U	0.34 U	0.37 U	0.46 U	0.044 R	3.8 U	3.7 U	0.034 UJ	0.37 U	0.037 U
Aroclor 1221	mg/kg	0.035 UJ	0.72 U	0.74 U	0.36 U	0.042 UJ	3.9 U	0.043 UJ	35 U	18 U	0.70 U	0.037 U	0.35 U	0.037 U	0.037 U	0.34 U	0.37 U	0.46 U	0.044 U	3.8 U	3.7 U	0.034 UJ	0.37 U	0.037 U
Aroclor 1232	mg/kg	0.035 UJ	0.72 U	0.74 U	0.36 U	0.042 UJ	3.9 U	0.043 UJ	35 U	18 U	0.70 U	0.037 U	0.35 U	0.037 U	0.037 U	0.34 U	0.37 U	0.46 U	0.044 U	3.8 U	3.7 U	0.034 UJ	0.37 U	0.037 U
Aroclor 1242	mg/kg	0.035 UJ	0.72 U	0.74 U	0.36 U	0.042 UJ	3.9 U	0.043 UJ	35 U	18 U	0.70 U	0.037 U	0.35 U	0.037 U	0.037 U	0.34 U	0.37 U	0.46 U	0.044 U	3.8 U	3.7 U	0.034 UJ	0.37 U	0.037 U
Aroclor 1248	mg/kg	0.035 UJ	0.72 U	0.74 U	0.36 U	0.042 UJ	3.9 U	0.043 UJ	35 U	18 U	0.70 U	0.037 U	0.35 U	0.037 U	0.037 U	0.34 U	0.37 U	0.46 U	0.044 U	3.8 U	3.7 U	0.034 UJ	0.37 U	0.037 U
Aroclor 1254	mg/kg	0.035 UJ	0.72 U	0.74 U	0.36 U	0.042 UJ	3.9 U	0.043 UJ	35 U	18 U	0.70 U	0.037 U	0.35 U	0.037 U	0.037 U	0.34 U	0.37 U	0.46 U	0.044 U	3.8 U	3.7 U	0.034 UJ	0.37 U	0.037 U
Aroclor 1260	mg/kg	**0.064 J-**	**9.7**	**5.0**	**1.2**	0.042 UJ	**22**	**0.028 J**	**220**	**24**	**6.0**	0.037 U	**4.3**	0.037 U	0.037 U	**4.7**	**0.430 J**	**5.8**	0.044 U	**39**	**17**	0.034 UJ	**3.1 J**	0.037 UJ
Aroclor 1262	mg/kg	0.035 UJ	0.72 U	0.74 U	0.36 U	0.042 UJ	3.9 U	0.043 UJ	35 U	18 U	0.70 U	0.037 U	0.35 U	0.037 U	0.037 U	0.34 U	0.37 U	0.46 U	0.044 U	3.8 U	3.7 U	0.034 UJ	0.37 U	0.037 U
Aroclor 1268	mg/kg	0.035 UJ	0.72 U	0.74 U	0.36 U	0.042 UJ	3.9 U	0.043 UJ	35 U	18 U	0.70 U	0.037 U	0.35 U	0.037 U	0.037 U	0.34 U	0.37 U	0.46 U	0.044 U	3.8 U	3.7 U	0.034 UJ	0.37 U	0.037 U
Aroclor, Total	mg/kg	**0.064 J-**	**9.7**	**5.0**	**1.2**	0.042 UJ	**22**	**0.028 J**	**220**	**24**	**6.0**	0.037 U	**4.3**	0.037 U	0.037 U	**4.7**	**0.430 J**	**5.8**	0.044 U	**39**	**17**	0.034 UJ	**3.1 J**	0.037 UJ

Red: >100 ppm; Orange: >50 ppm; Yellow: >10 ppm; Green: >1 ppm; Bold - Detected; U - Not Detected;
J - Estimated; NA - Not Analyzed

Table 3-1
Summary of TBA PCB Analytical Results
Former Tombarello Property
Lawrence, Massachusetts

Sample Location		CD-45W		D-5			D-5E		D-5N		FB-01			FB-02		FB-03		FB-04				FG-34	
Sample Depth (ft)		0 - 1	1 - 3	0 - 2	2 - 3	6 - 7	0 - 1	1 - 3	0 - 1	1 - 3	1 - 2	2 - 3	5 - 7	1 - 2	2 - 3	1 - 2	2 - 3	1 - 2	2 - 3	5 - 7		0 - 1	1 - 3
Sample Date		06/06/16	06/06/16	06/06/16	06/06/16	06/06/16	06/06/16	06/06/16	06/06/16	06/06/16	06/06/16	06/06/16	06/06/16	06/07/16	06/07/16	06/06/16	06/06/16	06/06/16	06/06/16	06/06/16		06/07/16	06/07/16
QC Identifier																				FD	FD		
Pesticides/PCBs	**Units**																						
Aroclor 1016	mg/kg	3.5 U	0.036 U	0.19 U	3.7 U	0.043 U	1.8 U	0.037 UJ	0.36 U	0.074 U	0.035 U	0.039 U	0.043 UJ	0.18 U	0.037 UJ	0.038 U	0.035 UJ	0.035 U	0.037 UJ	0.041 U	0.042 U	7.5 U	0.21 U
Aroclor 1221	mg/kg	3.5 U	0.036 U	0.19 U	3.7 U	0.043 U	1.8 U	0.037 UJ	0.36 U	0.074 U	0.035 U	0.039 U	0.043 UJ	0.18 U	0.037 UJ	0.038 U	0.035 UJ	0.035 U	0.037 UJ	0.041 U	0.042 U	7.5 U	0.21 U
Aroclor 1232	mg/kg	3.5 U	0.036 U	0.19 U	3.7 U	0.043 U	1.8 U	0.037 UJ	0.36 U	0.074 U	0.035 U	0.039 U	0.043 UJ	0.18 U	0.037 UJ	0.038 U	0.035 UJ	0.035 U	0.037 UJ	0.041 U	0.042 U	7.5 U	0.21 U
Aroclor 1242	mg/kg	3.5 U	0.036 U	0.19 U	3.7 U	0.043 U	1.8 U	0.037 UJ	0.36 U	0.074 U	0.035 U	0.039 U	0.043 UJ	0.18 U	0.037 UJ	0.038 U	0.035 UJ	0.035 U	0.037 UJ	0.041 U	0.042 U	7.5 U	0.21 U
Aroclor 1248	mg/kg	3.5 U	0.036 U	0.19 U	3.7 U	0.043 U	1.8 U	0.037 UJ	0.36 U	0.074 U	0.035 U	0.039 U	0.043 UJ	0.18 U	0.037 UJ	0.038 U	0.035 UJ	0.035 U	0.037 UJ	0.041 U	0.042 U	7.5 U	0.21 U
Aroclor 1254	mg/kg	3.5 U	0.036 U	0.19 U	3.7 U	0.043 U	1.8 U	0.037 UJ	0.36 U	0.074 U	0.035 U	0.039 U	0.043 UJ	0.18 U	0.037 UJ	0.038 U	0.035 UJ	0.035 U	0.037 UJ	0.041 U	0.042 U	7.5 U	0.21 U
Aroclor 1260	mg/kg	**16**	0.036 U	**1.4**	**22**	0.043 U	**14**	0.037 UJ	**1.8**	**0.63**	0.035 U	**0.073**	0.043 UJ	**1.5 J**	**0.31 J-**	0.038 U	**0.033 J**	0.035 U	**0.11 J**	0.041 U	0.042 U	**67**	**1.5**
Aroclor 1262	mg/kg	3.5 U	0.036 U	0.19 U	3.7 U	0.043 U	1.8 U	0.037 UJ	0.36 U	0.074 U	0.035 U	0.039 U	0.043 UJ	0.18 U	0.037 UJ	0.038 U	0.035 UJ	0.035 U	0.037 UJ	0.041 U	0.042 U	7.5 U	0.21 U
Aroclor 1268	mg/kg	3.5 U	0.036 U	0.19 U	3.7 U	0.043 U	1.8 U	0.037 UJ	0.36 U	0.074 U	0.035 U	0.039 U	0.043 UJ	0.18 U	0.037 UJ	0.038 U	0.035 UJ	0.035 U	0.037 UJ	0.041 U	0.042 U	7.5 U	0.21 U
Aroclor, Total	mg/kg	**16**	0.036 U	**1.4**	**22**	0.043 U	**14**	0.037 UJ	**1.8**	**0.63**	0.035 U	**0.073**	0.043 UJ	**1.5 J**	**0.31 J-**	0.038 U	**0.033 J**	0.035 U	**0.11 J**	0.041 U	0.042 U	**67**	**1.5**

Red: >100 ppm; Orange: >50 ppm; Yellow: >10 ppm; Green: >1 ppm; Bold - Detected; U - Not Detected;
J - Estimated; NA - Not Analyzed

Table 3-1
Summary of TBA PCB Analytical Results
Former Tombarello Property
Lawrence, Massachusetts

Sample Location		FG-34N		FG-34S		FG-34W		FG-45E			FG-45N		FG-45S			FG-45W		G-3			G-3E		G-3N	
Sample Depth (ft)		0 - 1	1 - 3	0 - 1	1 - 3	0 - 1	1 - 3	0 - 1		1 - 3	0 - 1	1 - 3	0 - 1	1 - 3		0 - 1	1 - 3	1 - 2	2 - 3	5 - 6	0 - 2	2 - 3	0 - 1	2 - 3
Sample Date		06/07/16	06/07/16	06/07/16	06/07/16	06/07/16	06/07/16	06/08/16		06/08/16	06/08/16	06/08/16	06/08/16	06/08/16		06/08/16	06/08/16	06/07/16	06/07/16	06/07/16	06/07/16	06/07/16	06/07/16	06/07/16
QC Identifier								FD	FD					FD	FD									
Pesticides/PCBs	**Units**																							
Aroclor 1016	mg/kg	1.8 U	2.0 U	1.8 U	0.041 U	0.38 U	0.39 U	1.8 U	0.71 U	0.040 U	1.8 U	0.042 U	0.37 U	0.040 U	0.040 U	1.8 U	0.040 U	0.45 U	0.22 U	0.041 U	0.037 UJ	0.073 U	3.8 U	0.76 U
Aroclor 1221	mg/kg	1.8 U	2.0 U	1.8 U	0.041 U	0.38 U	0.39 U	1.8 U	0.71 U	0.040 U	1.8 U	0.042 U	0.37 U	0.040 U	0.040 U	1.8 U	0.040 U	0.45 U	0.22 U	0.041 U	0.037 UJ	0.073 U	3.8 U	0.76 U
Aroclor 1232	mg/kg	1.8 U	2.0 U	1.8 U	0.041 U	0.38 U	0.39 U	1.8 U	0.71 U	0.040 U	1.8 U	0.042 U	0.37 U	0.040 U	0.040 U	1.8 U	0.040 U	0.45 U	0.22 U	0.041 U	0.037 UJ	0.073 U	3.8 U	0.76 U
Aroclor 1242	mg/kg	1.8 U	2.0 U	1.8 U	0.041 U	0.38 U	0.39 U	1.8 U	0.71 U	0.040 U	1.8 U	0.042 U	0.37 U	0.040 U	0.040 U	1.8 U	0.040 U	0.45 U	0.22 U	0.041 U	0.037 UJ	0.073 U	3.8 U	0.76 U
Aroclor 1248	mg/kg	1.8 U	2.0 U	1.8 U	0.041 U	0.38 U	0.39 U	1.8 U	0.71 U	0.040 U	1.8 U	0.042 U	0.37 U	0.040 U	0.040 U	1.8 U	0.040 U	**2.6**	**1.9**	0.041 U	0.037 UJ	0.073 U	3.8 U	0.76 U
Aroclor 1254	mg/kg	1.8 U	2.0 U	1.8 U	0.041 U	0.38 U	0.39 U	1.8 U	0.71 U	0.040 U	1.8 U	0.042 U	0.37 U	0.040 U	0.040 U	1.8 U	0.040 U	0.45 U	0.22 U	0.041 U	0.037 UJ	0.073 U	3.8 U	0.76 U
Aroclor 1260	mg/kg	**13**	**20**	**24**	**0.22**	**3.2**	**3.7**	**15 J**	**8.5 J**	0.040 U	**25**	0.042 U	**1.4**	**0.18**	**0.19**	**4.6**	**0.32**	0.45 U	0.22 U	0.041 U	**0.55 J-**	**0.86**	**51**	**4.9**
Aroclor 1262	mg/kg	1.8 U	2.0 U	1.8 U	0.041 U	0.38 U	0.39 U	1.8 U	0.71 U	0.040 U	1.8 U	0.042 U	0.37 U	0.040 U	0.040 U	1.8 U	0.040 U	0.45 U	0.22 U	0.041 U	0.037 UJ	0.073 U	3.8 U	0.76 U
Aroclor 1268	mg/kg	1.8 U	2.0 U	1.8 U	0.041 U	0.38 U	0.39 U	1.8 U	0.71 U	0.040 U	1.8 U	0.042 U	0.37 U	0.040 U	0.040 U	1.8 U	0.040 U	0.45 U	0.22 U	0.041 U	0.037 UJ	0.073 U	3.8 U	0.76 U
Aroclor, Total	mg/kg	**13**	**20**	**24**	**0.22**	**3.2**	**3.7**	**15 J**	**8.5 J**	0.040 U	**25**	0.042 U	**1.4**	**0.18**	**0.19**	**4.6**	**0.32**	**2.6**	**1.9**	0.041 U	**0.55 J-**	**0.86**	**51**	**4.9**

Red: >100 ppm; Orange: >50 ppm; Yellow: >10 ppm; Green: >1 ppm; Bold - Detected; U - Not Detected;
J - Estimated; NA - Not Analyzed

Table 3-1
Summary of TBA PCB Analytical Results
Former Tombarello Property
Lawrence, Massachusetts

Sample Location		G-3S		G-3W		HA-01		HA-02	HA-03	HA-04	HA-05	HA-06	HA-07		HA-08	HA-09	HA-10	HA-11	HA-12	LS-01		LS-02	
Sample Depth (ft)		0 - 1	2 - 3	0 - 1	2 - 3	0 - 1		0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1		0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	1 - 3	7 - 8	1 - 2	2 - 3
Sample Date		06/07/16	06/07/16	06/07/16	06/07/16	06/09/16		06/09/16	06/09/16	06/09/16	06/09/16	06/09/16	06/09/16		06/09/16	06/09/16	06/09/16	06/09/16	06/09/16	06/09/16	06/09/16	06/09/16	06/09/16
QC Identifier						FD	FD						FD	FD									
Pesticides/PCBs	**Units**																						
Aroclor 1016	mg/kg	3.9 U	0.043 U	0.76 U	0.042 U	0.19 U	0.75 U	180 U	1.8 U	0.72 U	0.72 U	0.74 U	0.76 U	0.76 U	0.71 U	0.75 U	0.72 U	18 U	18 U	0.035 U	0.042 U	0.035 U	0.043 UJ
Aroclor 1221	mg/kg	3.9 U	0.043 U	0.76 U	0.042 U	0.19 U	0.75 U	180 U	1.8 U	0.72 U	0.72 U	0.74 U	0.76 U	0.76 U	0.71 U	0.75 U	0.72 U	18 U	18 U	0.035 U	0.042 U	0.035 U	0.043 UJ
Aroclor 1232	mg/kg	3.9 U	0.043 U	0.76 U	0.042 U	0.19 U	0.75 U	180 U	1.8 U	0.72 U	0.72 U	0.74 U	0.76 U	0.76 U	0.71 U	0.75 U	0.72 U	18 U	18 U	0.035 U	0.042 U	0.035 U	0.043 UJ
Aroclor 1242	mg/kg	3.9 U	0.043 U	0.76 U	0.042 U	0.19 U	0.75 U	180 U	1.8 U	0.72 U	0.72 U	0.74 U	0.76 U	0.76 U	0.71 U	0.75 U	0.72 U	18 U	18 U	0.035 U	0.042 U	0.035 U	0.043 UJ
Aroclor 1248	mg/kg	**22**	0.043 U	0.76 U	0.042 U	0.19 U	0.75 U	180 U	**18**	**1.3**	**1.3**	**2.9**	**2.9**	**3.2**	**1.2**	0.75 U	0.72 U	18 U	18 U	**0.089**	0.042 U	**0.13**	0.043 UJ
Aroclor 1254	mg/kg	3.9 U	0.043 U	0.76 U	0.042 U	0.19 U	0.75 U	180 U	1.8 U	0.72 U	0.72 U	0.74 U	0.76 U	0.76 U	0.71 U	0.75 U	0.72 U	18 U	18 U	0.035 U	0.042 U	0.035 U	0.043 UJ
Aroclor 1260	mg/kg	**20**	0.043 U	**7.9**	**0.19**	**0.88**	**0.89**	**890**	**20**	**9.3**	**6.5**	**8.4**	**10**	**10**	**4.7**	**4.2**	**6.7**	**70**	**85**	**0.32**	0.042 R	**0.40**	0.043 UJ
Aroclor 1262	mg/kg	3.9 U	0.043 U	0.76 U	0.042 U	0.19 U	0.75 U	180 U	1.8 U	0.72 U	0.72 U	0.74 U	0.76 U	0.76 U	0.71 U	0.75 U	0.72 U	18 U	18 U	0.035 U	0.042 U	0.035 U	0.043 UJ
Aroclor 1268	mg/kg	3.9 U	0.043 U	0.76 U	0.042 U	0.19 U	0.75 U	180 U	1.8 U	0.72 U	0.72 U	0.74 U	0.76 U	0.76 U	0.71 U	0.75 U	0.72 U	18 U	18 U	0.035 U	0.042 U	0.035 U	0.043 UJ
Aroclor, Total	mg/kg	**42**	0.043 U	**7.9**	**0.19**	**0.88**	**0.89**	**890**	**38**	**10.6**	**7.8**	**11.3**	**12.9**	**13.2**	**5.9**	**4.2**	**6.7**	**70**	**85**	**0.409**	0.042 U	**0.53**	0.043 UJ

Red: >100 ppm; Orange: >50 ppm; Yellow: >10 ppm; Green: >1 ppm; Bold - Detected; U - Not Detected;
J - Estimated; NA - Not Analyzed

Table 3-1
Summary of TBA PCB Analytical Results
Former Tombarello Property
Lawrence, Massachusetts

Sample Location		M-4		M-4E		M-4N		M-4S	M-4W	M-7			M-7E		M-7S		M-7W		MS-01		MS-02		MS-03	
Sample Depth (ft)		2 - 3	12 - 13	0 - 1	1 - 3	0 - 1	1 - 3	1 - 3	1 - 3	1 - 2	2 - 3	6 - 7	0 - 1	1 - 3	0 - 1	1 - 3	0 - 1	1 - 3	1 - 2	2 - 3	1 - 2	2 - 3	1 - 2	2 - 3
Sample Date		06/09/16	06/09/16	06/09/16	06/09/16	06/09/16	06/09/16	06/09/16	06/09/16	06/07/16	06/07/16	06/07/16	06/07/16	06/07/16	06/07/16	06/07/16	06/07/16	06/07/16	06/10/16	06/10/16	06/10/16	06/10/16	06/10/16	06/10/16
QC Identifier																								
Pesticides/PCBs	**Units**																							
Aroclor 1016	mg/kg	0.045 UJ	0.042 U	740 U	740 U	0.037 UJ	1.8 U	0.86 U	0.041 U	0.036 UJ	0.042 U	0.042 UJ	3.9 U	2.1 U	20 U	0.037 U	0.73 U	0.044 U	0.033 U	0.038 U	6.9 U	0.36 U	0.035 U	0.036 U
Aroclor 1221	mg/kg	0.045 UJ	0.042 U	740 U	740 U	0.037 UJ	1.8 U	0.86 U	0.041 U	0.036 UJ	0.042 U	0.042 UJ	3.9 U	2.1 U	20 U	0.037 U	0.73 U	0.044 U	0.033 U	0.038 U	6.9 U	0.36 U	0.035 U	0.036 U
Aroclor 1232	mg/kg	0.045 UJ	0.042 U	740 U	740 U	0.037 UJ	1.8 U	0.86 U	0.041 U	0.036 UJ	0.042 U	0.042 UJ	3.9 U	2.1 U	20 U	0.037 U	0.73 U	0.044 U	0.033 U	0.038 U	6.9 U	0.36 U	0.035 U	0.036 U
Aroclor 1242	mg/kg	0.045 UJ	0.042 U	740 U	740 U	0.037 UJ	1.8 U	0.86 U	0.041 U	0.036 UJ	0.042 U	0.042 UJ	3.9 U	2.1 U	20 U	0.037 U	0.73 U	0.044 U	0.033 U	0.038 U	6.9 U	0.36 U	0.035 U	0.036 U
Aroclor 1248	mg/kg	0.045 UJ	0.042 U	740 U	740 U	**0.38 J**	**5.3**	0.86 U	**0.25 J+**	**0.11 J-**	0.042 U	0.042 UJ	3.9 U	2.1 U	20 U	0.037 U	0.73 U	0.044 U	**0.029 J**	**0.23**	**13**	**1.3**	**0.23**	**0.34**
Aroclor 1254	mg/kg	0.045 UJ	0.042 U	740 U	740 U	0.037 UJ	1.8 U	0.86 U	0.041 U	0.036 UJ	0.042 U	0.042 UJ	3.9 U	2.1 U	20 U	0.037 U	0.73 U	0.044 U	0.033 U	0.038 U	6.9 U	0.36 U	0.035 U	0.036 U
Aroclor 1260	mg/kg	**0.054 J**	0.042 U	740 U	740 U	**0.13 J**	**15**	**8.2**	**0.60 J+**	0.036 UJ	0.042 U	0.042 UJ	**28**	**23**	**110**	**3.5**	**3.9**	**0.31**	**0.038**	**0.074**	**3.4 J**	**3.3**	**0.092**	**0.12**
Aroclor 1262	mg/kg	0.045 UJ	0.042 U	740 U	740 U	0.037 UJ	1.8 U	0.86 U	0.041 U	0.036 UJ	0.042 U	0.042 UJ	3.9 U	2.1 U	20 U	0.037 U	0.73 U	0.044 U	0.033 U	0.038 U	6.9 U	0.36 U	0.035 U	0.036 U
Aroclor 1268	mg/kg	0.045 UJ	0.042 U	740 U	740 U	0.037 UJ	1.8 U	0.86 U	0.041 U	0.036 UJ	0.042 U	0.042 UJ	3.9 U	2.1 U	20 U	0.037 U	0.73 U	0.044 U	0.033 U	0.038 U	6.9 U	0.36 U	0.035 U	0.036 U
Aroclor, Total	mg/kg	**0.054 J**	0.042 U	740 U	740 U	**0.51 J**	**20.3**	**8.2**	**0.85 J**	**0.11 J-**	0.042 U	0.042 UJ	**28**	**23**	**110**	**3.5**	**3.9**	**0.31**	**0.067 J**	**0.304**	**16.4 J**	**4.6**	**0.322**	**0.46**

Red: >100 ppm; Orange: >50 ppm; Yellow: >10 ppm; Green: >1 ppm; Bold - Detected; U - Not Detected;
J - Estimated; NA - Not Analyzed

Table 3-1
Summary of TBA PCB Analytical Results
Former Tombarello Property
Lawrence, Massachusetts

Sample Location		NPA-01		NPA-02		NPA-03		NPA-04		NPA-05		NPA-06		NPA-07		P-13			P-13N		P-13S		
Sample Depth (ft)		0.5 - 2	2 - 3	0.5 - 2	2 - 3	0.5 - 2	2 - 3	0.5 - 2	2 - 3	0.5 - 2	2 - 3	0.5 - 2	2 - 3	0.5 - 2	2 - 3	1 - 2	2 - 3	9 - 10	0 - 1	1 - 3	0 - 1	1 - 3	
Sample Date		06/10/16	06/10/16	06/10/16	06/10/16	06/10/16	06/10/16	06/10/16	06/10/16	06/10/16	06/10/16	06/10/16	06/10/16	06/10/16	06/10/16	06/08/16	06/08/16	06/08/16	06/08/16	06/08/16	06/08/16	06/08/16	
QC Identifier																						FD	FD
Pesticides/PCBs	**Units**																						
Aroclor 1016	mg/kg	0.071 U	0.037 U	0.037 U	7.2 U	0.35 U	0.037 U	0.035 U	0.036 UJ	0.075 U	0.038 UJ	0.37 U	0.038 UJ	0.36 U	0.034 U	0.80 U	0.81 U	0.044 U	0.80 U	0.044 UJ	1.5 U	1.5 U	0.76 U
Aroclor 1221	mg/kg	0.071 U	0.037 U	0.037 U	7.2 U	0.35 U	0.037 U	0.035 U	0.036 UJ	0.075 U	0.038 UJ	0.37 U	0.038 UJ	0.36 U	0.034 U	0.80 U	0.81 U	0.044 U	0.80 U	0.044 UJ	1.5 U	1.5 U	0.76 U
Aroclor 1232	mg/kg	0.071 U	0.037 U	0.037 U	7.2 U	0.35 U	0.037 U	0.035 U	0.036 UJ	0.075 U	0.038 UJ	0.37 U	0.038 UJ	0.36 U	0.034 U	0.80 U	0.81 U	0.044 U	0.80 U	0.044 UJ	1.5 U	1.5 U	0.76 U
Aroclor 1242	mg/kg	0.071 U	0.037 U	0.037 U	7.2 U	0.35 U	0.037 U	0.035 U	0.036 UJ	0.075 U	0.038 UJ	0.37 U	0.038 UJ	0.36 U	0.034 U	0.80 U	0.81 U	0.044 U	0.80 U	0.044 UJ	1.5 U	1.5 U	0.76 U
Aroclor 1248	mg/kg	**0.21**	0.037 U	**0.13**	**7.1 J**	0.35 U	0.037 U	**0.032 J**	0.036 UJ	**0.099**	0.038 UJ	**0.62**	0.038 UJ	**1.4**	0.034 U	0.80 U	0.81 U	0.044 U	0.80 U	0.044 UJ	**6.9**	**8.4 J**	0.76 UJ
Aroclor 1254	mg/kg	0.071 U	0.037 U	0.037 U	7.2 U	0.35 U	0.037 U	0.035 U	0.036 UJ	0.075 U	0.038 UJ	0.37 U	0.038 UJ	0.36 U	0.034 U	0.80 U	0.81 U	0.044 U	0.80 U	0.044 UJ	1.5 U	1.5 U	0.76 U
Aroclor 1260	mg/kg	0.071 U	**0.044**	0.037 U	7.2 U	**0.25 J**	0.037 U	0.035 U	**0.026 J**	0.075 U	**4.5 J**	**1.5**	0.038 UJ	0.36 U	**0.092**	**0.88**	**5.6**	0.044 U	**3.0**	**0.073 J-**	**7.0**	**9.1**	**6.1**
Aroclor 1262	mg/kg	0.071 U	0.037 U	0.037 U	7.2 U	0.35 U	0.037 U	0.035 U	0.036 UJ	0.075 U	0.038 UJ	0.37 U	0.038 UJ	0.36 U	0.034 U	0.80 U	0.81 U	0.044 U	0.80 U	0.044 UJ	1.5 U	1.5 U	0.76 U
Aroclor 1268	mg/kg	0.071 U	0.037 U	0.037 U	7.2 U	0.35 U	0.037 U	0.035 U	0.036 UJ	0.075 U	0.038 UJ	0.37 U	0.038 UJ	0.36 U	0.034 U	0.80 U	0.81 U	0.044 U	0.80 U	0.044 UJ	1.5 U	1.5 U	0.76 U
Aroclor, Total	mg/kg	**0.21**	**0.044**	**0.13**	**7.1 J**	**0.25 J**	0.037 U	**0.032 J**	**0.026 J**	**0.099**	**4.5 J**	**2.12**	0.038 UJ	**1.4**	**0.092**	**0.88**	**5.6**	0.044 U	**3.0**	**0.073 J-**	**13.9**	**17.5 J**	**6.1**

Red: >100 ppm; Orange: >50 ppm; Yellow: >10 ppm; Green: >1 ppm; Bold - Detected; U - Not Detected;
J - Estimated; NA - Not Analyzed

Table 3-1
Summary of TBA PCB Analytical Results
Former Tombarello Property
Lawrence, Massachusetts

Sample Location		P-13W		SA-01	SB-3		SB-3E		SB-3N	SB-3S		SB-3W	SBB-3W	SS-01		SVA-01		SVA-02		SVA-03		
Sample Depth (ft)		0 - 1	1 - 3	1 - 3	2 - 3	5 - 6	0 - 1	1 - 3	1 - 3	0 - 1	1 - 3	0 - 1	1 - 3	1 - 2	7 - 8	0 - 1	1 - 3	0 - 1	1 - 3	0 - 1	1 - 3	
Sample Date		06/08/16	06/08/16	06/09/16	06/09/16	06/09/16	06/09/16	06/09/16	06/09/16	06/09/16	06/09/16	06/09/16	06/09/16	06/08/16	06/08/16	06/07/16	06/07/16	06/08/16	06/08/16	06/08/16	06/08/16	
QC Identifier																					FD	FD
Pesticides/PCBs	**Units**																					
Aroclor 1016	mg/kg	3.9 U	0.052 U	0.81 U	0.038 UJ	0.040 UJ	0.034 UJ	0.38 U	0.39 U	0.72 U	3.6 U	0.034 UJ	18 U	0.73 U	0.055 U	17 U	0.041 U	3.6 U	0.40 U	0.36 U	0.43 U	0.88 U
Aroclor 1221	mg/kg	3.9 U	0.052 U	0.81 U	0.038 UJ	0.040 UJ	0.034 UJ	0.38 U	0.39 U	0.72 U	3.6 U	0.034 UJ	18 U	0.73 U	0.055 U	17 U	0.041 U	3.6 U	0.40 U	0.36 U	0.43 U	0.88 U
Aroclor 1232	mg/kg	3.9 U	0.052 U	0.81 U	0.038 UJ	0.040 UJ	0.034 UJ	0.38 U	0.39 U	0.72 U	3.6 U	0.034 UJ	18 U	0.73 U	0.055 U	17 U	0.041 U	3.6 U	0.40 U	0.36 U	0.43 U	0.88 U
Aroclor 1242	mg/kg	3.9 U	0.052 U	0.81 U	0.038 UJ	0.040 UJ	0.034 UJ	0.38 U	0.39 U	0.72 U	3.6 U	0.034 UJ	18 U	0.73 U	0.055 U	17 U	0.041 U	3.6 U	0.40 U	0.36 U	0.43 U	0.88 U
Aroclor 1248	mg/kg	**19**	**0.17**	**1.4**	**0.054 J**	0.040 UJ	0.034 UJ	**0.89**	**0.53**	**1.9**	**4.9**	0.034 UJ	18 U	0.73 U	0.055 U	17 U	0.041 U	3.6 U	0.40 U	0.36 U	0.43 U	**4.5 J**
Aroclor 1254	mg/kg	3.9 U	0.052 U	0.81 U	0.038 UJ	0.040 UJ	0.034 UJ	0.38 U	0.39 U	0.72 U	3.6 U	0.034 UJ	18 U	0.73 U	0.055 U	17 U	0.041 U	3.6 U	0.40 U	0.36 U	0.43 U	0.88 U
Aroclor 1260	mg/kg	**29**	**0.20**	**5.3**	**0.41 J**	0.040 UJ	**0.18 J**	**5.1**	**4.1**	**5.7**	**25**	0.034 UJ	**62**	**8.4**	**0.095**	**100**	**0.32**	**37**	**1.2**	**2.2**	**3.4 J**	**10 J**
Aroclor 1262	mg/kg	3.9 U	0.052 U	0.81 U	0.038 UJ	0.040 UJ	0.034 UJ	0.38 U	0.39 U	0.72 U	3.6 U	0.034 UJ	18 U	0.73 U	0.055 U	17 U	0.041 U	3.6 U	0.40 U	0.36 U	0.43 U	0.88 U
Aroclor 1268	mg/kg	3.9 U	0.052 U	0.81 U	0.038 UJ	0.040 UJ	0.034 UJ	0.38 U	0.39 U	0.72 U	3.6 U	0.034 UJ	18 U	0.73 U	0.055 U	17 U	0.041 U	3.6 U	0.40 U	0.36 U	0.43 U	0.88 U
Aroclor, Total	mg/kg	**48**	**0.37**	**6.7**	**0.46 J**	0.040 UJ	**0.18 J**	**5.99**	**4.63**	**7.6**	**29.9**	0.034 UJ	**62**	**8.4**	**0.095**	**100**	**0.32**	**37**	**1.2**	**2.2**	**3.4 J**	**14.5 J**

Red: >100 ppm; Orange: >50 ppm; Yellow: >10 ppm; Green: >1 ppm; Bold - Detected; U - Not Detected;
J - Estimated; NA - Not Analyzed

Table 3-1
Summary of TBA PCB Analytical Results
Former Tombarello Property
Lawrence, Massachusetts

Sample Location		SVA-04		SVA-05		SVA-06		SVA-07		SVA-08		TP-01		TP-02		TP-03		TP-04		TP-05		TP-06	
Sample Depth (ft)		0 - 1	1 - 3	0 - 1	1 - 3	0 - 1	1 - 3	0 - 1	1 - 3	0 - 1	1 - 3	0 - 1	2 - 3	0 - 1	3 - 4	0 - 1	4 - 5	0 - 1	5 - 6	0 - 1	4 - 5	0 - 1	9 - 10
Sample Date		06/08/16	06/08/16	06/08/16	06/08/16	06/08/16	06/08/16	06/09/16	06/09/16	06/09/16	06/09/16	06/15/16	06/15/16	06/15/16	06/15/16	06/15/16	06/15/16	06/15/16	06/15/16	06/15/16	06/15/16	06/14/16	06/14/16
QC Identifier																							
Pesticides/PCBs	**Units**																						
Aroclor 1016	mg/kg	0.36 U	0.042 U	3.8 U	190 U	0.38 U	0.73 U	0.36 U	0.37 U	0.034 UJ	0.37 U	17 U	0.36 U	18 U	18 U	0.037 U	3.8 U	0.074 U	0.38 U	0.036 U	3.9 U	19 U	7.4 U
Aroclor 1221	mg/kg	0.36 U	0.042 U	3.8 U	190 U	0.38 U	0.73 U	0.36 U	0.37 U	0.034 UJ	0.37 U	17 U	0.36 U	18 U	18 U	0.037 U	3.8 U	0.074 U	0.38 U	0.036 U	3.9 U	19 U	7.4 U
Aroclor 1232	mg/kg	0.36 U	0.042 U	3.8 U	190 U	0.38 U	0.73 U	0.36 U	0.37 U	0.034 UJ	0.37 U	17 U	0.36 U	18 U	18 U	0.037 U	3.8 U	0.074 U	0.38 U	0.036 U	3.9 U	19 U	7.4 U
Aroclor 1242	mg/kg	0.36 U	0.042 U	3.8 U	190 U	0.38 U	0.73 U	0.36 U	0.37 U	0.034 UJ	0.37 U	17 U	0.36 U	18 U	18 U	0.037 U	3.8 U	0.074 U	0.38 U	0.036 U	3.9 U	19 U	7.4 U
Aroclor 1248	mg/kg	0.36 U	0.042 U	**16**	190 U	0.38 U	**6.4**	**0.60**	**0.67**	**0.16 J**	**0.90**	**9.0 J**	**0.43**	**22**	**6.0 J**	**0.083**	**11**	**0.086**	**1.7**	**4.1**	**20**	**37**	**7.6**
Aroclor 1254	mg/kg	0.36 U	0.042 U	3.8 U	190 U	0.38 U	0.73 U	0.36 U	0.37 U	0.034 UJ	0.37 U	17 U	0.36 U	18 U	18 U	0.037 U	3.8 U	0.074 U	0.38 U	0.036 U	3.9 U	19 U	7.4 U
Aroclor 1260	mg/kg	**2.3**	**0.23**	**27**	**1300**	**1.3**	**5.0**	**1.9**	**2.3**	**0.33 J**	**2.7**	**18**	**3.8**	**62**	**22**	**2.4**	**34**	**0.28**	**4.7**	**7.9 J**	**14**	**41**	**15**
Aroclor 1262	mg/kg	0.36 U	0.042 U	3.8 U	190 U	0.38 U	0.73 U	0.36 U	0.37 U	0.034 UJ	0.37 U	17 U	0.36 U	18 U	18 U	0.037 U	3.8 U	0.074 U	0.38 U	0.036 U	3.9 U	19 U	7.4 U
Aroclor 1268	mg/kg	0.36 U	0.042 U	3.8 U	190 U	0.38 U	0.73 U	0.36 U	0.37 U	0.034 UJ	0.37 U	17 U	0.36 U	18 U	18 U	0.037 U	3.8 U	0.074 U	0.38 U	0.036 U	3.9 U	19 U	7.4 U
Aroclor, Total	mg/kg	**2.3**	**0.23**	**43**	**1300**	**1.3**	**11.4**	**2.5**	**2.97**	**0.49 J**	**3.6**	**27 J**	**4.23**	**84**	**28 J**	**2.4**	**45**	**0.366**	**6.4**	**12 J**	**34**	**78**	**22.6**

Red: >100 ppm; Orange: >50 ppm; Yellow: >10 ppm; Green: >1 ppm; Bold - Detected; U - Not Detected;
J - Estimated; NA - Not Analyzed

Table 3-1
Summary of TBA PCB Analytical Results
Former Tombarello Property
Lawrence, Massachusetts

Sample Location		TP-07		TP-08			TP-09		TP-10		TP-11		TP-12		TP-13		TP-14		TP-15		TP-16		TP-17	
Sample Depth (ft)		0 - 1	7 - 8	0 - 1	9 - 10		0 - 1	9 - 10	0 - 1	6 - 7	0 - 1	5 - 6	0 - 1	6 - 7	0 - 1	5 - 6	0 - 1	5 - 6	0 - 1	8 - 9	0 - 1	8 - 9	0 - 1	3 - 4
Sample Date		06/14/16	06/14/16	06/14/16	06/14/16		06/14/16	06/14/16	06/14/16	06/14/16	06/16/16	06/16/16	06/15/16	06/15/16	06/15/16	06/15/16	06/15/16	06/15/16	06/14/16	06/14/16	06/14/16	06/14/16	06/15/16	06/15/16
QC Identifier					FD	FD																		
Pesticides/PCBs	**Units**																							
Aroclor 1016	mg/kg	0.79 U	0.79 U	19 U	40 U	22 U	7.6 U	9.3 U	0.38 U	0.40 U	0.73 U	7.7 U	0.36 U	0.37 U	0.36 U	0.75 U	0.036 U	0.19 U	0.36 U	0.37 U	7.3 U	19 U	17 U	18 U
Aroclor 1221	mg/kg	0.79 U	0.79 U	19 U	40 U	22 U	7.6 U	9.3 U	0.38 U	0.40 U	0.73 U	7.7 U	0.36 U	0.37 U	0.36 U	0.75 U	0.036 U	0.19 U	0.36 U	0.37 U	7.3 U	19 U	17 U	18 U
Aroclor 1232	mg/kg	0.79 U	0.79 U	19 U	40 U	22 U	7.6 U	9.3 U	0.38 U	0.40 U	0.73 U	7.7 U	0.36 U	0.37 U	0.36 U	0.75 U	0.036 U	0.19 U	0.36 U	0.37 U	7.3 U	19 U	17 U	18 U
Aroclor 1242	mg/kg	0.79 U	0.79 U	19 U	40 U	22 U	7.6 U	9.3 U	0.38 U	0.40 U	0.73 U	7.7 U	0.36 U	0.37 U	0.36 U	0.75 U	0.036 U	0.19 U	0.36 U	0.37 U	7.3 U	19 U	17 U	18 U
Aroclor 1248	mg/kg	**6.1**	**8.0**	**15 J**	**26 J**	**27**	7.6 U	9.3 U	**0.64**	**2.1**	**3.9**	**36**	**2.6**	**3.2**	**2.2**	**8.0**	**2.1**	**0.97**	**2.1**	**1.9**	**47**	**19**	**8.7 J**	**6.1 J**
Aroclor 1254	mg/kg	0.79 U	0.79 U	19 U	40 U	22 U	7.6 U	9.3 U	0.38 U	0.40 U	0.73 U	7.7 U	0.36 U	0.37 U	0.36 U	0.75 U	0.036 U	0.19 U	0.36 U	0.37 U	7.3 U	19 U	17 U	18 U
Aroclor 1260	mg/kg	**2.9**	**3.1**	**54**	**50**	**81**	**12**	**16**	**3.9**	**3.1**	0.73 U	**19**	**2.1**	**2.1**	**1.3**	**4.3**	**4.3 J**	**1.3**	**3.2**	**5.1**	**23**	19 U	**57**	**73**
Aroclor 1262	mg/kg	0.79 U	0.79 U	19 U	40 U	22 U	7.6 U	9.3 U	0.38 U	0.40 U	0.73 U	7.7 U	0.36 U	0.37 U	0.36 U	0.75 U	0.036 U	0.19 U	0.36 U	0.37 U	7.3 U	19 U	17 U	18 U
Aroclor 1268	mg/kg	0.79 U	0.79 U	19 U	40 U	22 U	7.6 U	9.3 U	0.38 U	0.40 U	0.73 U	7.7 U	0.36 U	0.37 U	0.36 U	0.75 U	0.036 U	0.19 U	0.36 U	0.37 U	7.3 U	19 U	17 U	18 U
Aroclor, Total	mg/kg	**9.0**	**11.1**	**69 J**	**76 J**	**108**	**12**	**16**	**4.54**	**5.2**	**3.9**	**55**	**4.7**	**5.3**	**3.5**	**12.3**	**6.4 J**	**2.27**	**5.3**	**7.0**	**70**	**19**	**65.7 J**	**79.1 J**

Red: >100 ppm; Orange: >50 ppm; Yellow: >10 ppm; Green: >1 ppm; Bold - Detected; U - Not Detected;
J - Estimated; NA - Not Analyzed

Table 3-1
Summary of TBA PCB Analytical Results
Former Tombarello Property
Lawrence, Massachusetts

Sample Location		TP-18		TP-19		TP-20			WSB-6		WSB-6N		WSB-6W	
Sample Depth (ft)		0 - 1	3 - 4	0 - 1	6 - 7	0 - 1		5 - 6	0 - 1	1 - 3	0 - 1	1 - 3	0 - 1	1 - 3
Sample Date		06/16/16	06/16/16	06/15/16	06/15/16	06/14/16		06/14/16	06/07/16	06/07/16	06/07/16	06/07/16	06/07/16	06/07/16
QC Identifier						FD	FD							
Pesticides/PCBs	**Units**													
Aroclor 1016	mg/kg	0.36 U	0.034 U	0.36 U	0.37 U	0.35 U	0.35 U	0.36 U	0.71 U	0.039 U	0.71 U	0.040 U	0.72 U	0.044 U
Aroclor 1221	mg/kg	0.36 U	0.034 U	0.36 U	0.37 U	0.35 U	0.35 U	0.36 U	0.71 U	0.039 U	0.71 U	0.040 U	0.72 U	0.044 U
Aroclor 1232	mg/kg	0.36 U	0.034 U	0.36 U	0.37 U	0.35 U	0.35 U	0.36 U	0.71 U	0.039 U	0.71 U	0.040 U	0.72 U	0.044 U
Aroclor 1242	mg/kg	0.36 U	0.034 U	0.36 U	0.37 U	0.35 U	0.35 U	0.36 U	0.71 U	0.039 U	0.71 U	0.040 U	0.72 U	0.044 U
Aroclor 1248	mg/kg	**2.8**	0.034 U	**3.1**	**3.6**	**1.5**	**1.4**	**2.4**	0.71 U	0.039 U	0.71 U	0.040 U	0.72 U	0.044 U
Aroclor 1254	mg/kg	0.36 U	0.034 U	0.36 U	0.37 U	0.35 U	0.35 U	0.36 U	0.71 U	0.039 U	0.71 U	0.040 U	0.72 U	0.044 U
Aroclor 1260	mg/kg	**1.8**	**0.19**	**2.3**	**2.2**	**3.2**	**2.4**	**4.5**	**5.2**	**0.099**	**5.7**	**0.11**	**5.5**	0.044 U
Aroclor 1262	mg/kg	0.36 U	0.034 U	0.36 U	0.37 U	0.35 U	0.35 U	0.36 U	0.71 U	0.039 U	0.71 U	0.040 U	0.72 U	0.044 U
Aroclor 1268	mg/kg	0.36 U	0.034 U	0.36 U	0.37 U	0.35 U	0.35 U	0.36 U	0.71 U	0.039 U	0.71 U	0.040 U	0.72 U	0.044 U
Aroclor, Total	mg/kg	**4.6**	**0.19**	**5.4**	**5.8**	**4.7**	**3.8**	**6.9**	**5.2**	**0.099**	**5.7**	**0.11**	**5.5**	0.044 U

Red: >100 ppm; Orange: >50 ppm; Yellow: >10 ppm; Green: >1 ppm; Bold - Detected; U - Not Detected;
J - Estimated; NA - Not Analyzed

Table 3-2
Historical PCB Analytical Results
Former Tombarello Property
Lawrence, Massachusetts

Sample Location		A-05	A-06	A-07	AB13		AB35		B-04	B-05	B-06	B-07	B-08	B-09	B4	BC13		BC35		BLR-TP1		BLR-TP2
Sample Depth (ft)		0 - 0.5	0 - 0.5	0 - 0.5	0 - 1	1 - 3	0 - 1	1 - 3	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 1	0 - 1	1 - 3	0 - 1	1 - 3	1.5 - 2	3 - 4.5	0 - 1
Sample Date		10/01/10	10/01/10	10/01/10	07/14/03	07/14/03	07/14/03	07/14/03	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	09/01/01	07/14/03	07/14/03	07/14/03	07/14/03	09/01/01	09/01/01	09/01/01
QC Identifier																						
	Units																					
Aroclor 1016	mg/kg	ND	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	**3.2**	**2.1**	NA
Aroclor 1242	mg/kg	ND	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1248	mg/kg	ND	ND	ND	NA	NA	NA	NA	ND	**24**	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1254	mg/kg	ND	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	**2.0**	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1260	mg/kg	**19**	**0.91**	**2.1**	NA	NA	NA	NA	ND	ND	ND	**9.8**	**4.0**	**2.3**	**0.85**	NA	NA	NA	NA	**2.8**	**3.6**	**2.0**
Aroclor 1262	mg/kg	ND	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1268	mg/kg	ND	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor, Total	mg/kg	**19**	**0.91**	**2.1**	**1.1**	0.6 U	**17.2**	0.7 U	ND	**24**	ND	**9.8**	**4.0**	**4.3**	**0.85**	**10.2**	**1.2**	**3.9**	0.7 U	**6.0**	**5.7**	**2.0**

Red: >100 ppm; Orange: >50 ppm; Yellow: >10 ppm; Green: >1 ppm; Bold - Detected; U - Not Detected;
J - Estimated; NA - Not Analyzed

Table 3-2
Historical PCB Analytical Results
Former Tombarello Property
Lawrence, Massachusetts

Sample Location		BRM-TP1	BRM-TP3	BRM-TP4		BRM-TP5	BRM-TP6	BRM-TP7		BRM-TP8		BRM-TP10	BRM-TP9/9A	C-05	C-06	C-07	C-08	C-09	CD13		CD35		D-05	D-06
Sample Depth (ft)		4 - 6	9 - 11	3.5 - 5	6 - 7	9 - 11	11 - 13	3 - 6	12 - 15	4 - 5	5 - 6	0 - 1	4 - 6	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 1	1 - 3	0 - 1	1 - 3	0 - 0.5	0 - 0.5
Sample Date		09/01/01	09/01/01	09/01/01	09/01/01	09/01/01	09/01/01	09/01/01	09/01/01	09/01/01	09/01/01	09/01/01	09/01/01	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	07/14/03	07/14/03	07/14/03	07/14/03	10/01/10	10/01/10
QC Identifier																								
	Units																							
Aroclor 1016	mg/kg	NA	**2.6**	NA	**9.3**	**11**	**4.5**	NA	**0.37**	NA	NA	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	ND	ND
Aroclor 1242	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	ND	ND
Aroclor 1248	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	ND	ND
Aroclor 1254	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	**11**	**0.68**	**0.86**	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	ND	ND
Aroclor 1260	mg/kg	**13**	**9.3**	**78**	**62**	**60**	**11**	**9.9**	**0.57**	NA	**0.47**	**1.1**	**42**	**3.5**	**3.9**	**4.5**	**9.2**	**1.4**	NA	NA	NA	NA	**2.1**	**3.9**
Aroclor 1262	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	ND	ND
Aroclor 1268	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	ND	ND
Aroclor, Total	mg/kg	**13**	**11.9**	**78**	**71.3**	**71**	**15.5**	**9.9**	**0.94**	**11**	**1.15**	**1.96**	**42**	**3.5**	**3.9**	**4.5**	**9.2**	**1.4**	**22.1**	0.6 U	**4.6**	**200**	**2.1**	**3.9**

Red: >100 ppm; Orange: >50 ppm; Yellow: >10 ppm; Green: >1 ppm; Bold - Detected; U - Not Detected;
J - Estimated; NA - Not Analyzed

Table 3-2
Historical PCB Analytical Results
Former Tombarello Property
Lawrence, Massachusetts

Sample Location		D-07	D-08	D-09	D5	DE13		DE35		E-02	E-05	E-07	E-08	E4	EF13		EF35		F-08	F2	F4	FG13	
Sample Depth (ft)		0 - 0.5	0 - 0.5	0 - 0.5	0 - 1	0 - 1	1 - 3	0 - 1	1 - 3	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 1	0 - 1	1 - 3	0 - 1	1 - 3	0 - 0.5	0 - 1	0 - 1	0 - 1	1 - 3
Sample Date		10/01/10	10/01/10	10/01/10	09/01/01	07/14/03	07/14/03	07/14/03	07/14/03	10/01/10	10/01/10	10/01/10	10/01/10	09/01/01	07/14/03	07/14/03	07/14/03	07/14/03	10/01/10	09/01/01	09/01/01	07/14/03	07/14/03
QC Identifier																							
	Units																						
Aroclor 1016	mg/kg	ND	ND	ND	NA	NA	NA	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA
Aroclor 1242	mg/kg	ND	ND	ND	NA	NA	NA	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA
Aroclor 1248	mg/kg	ND	ND	ND	NA	NA	NA	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA
Aroclor 1254	mg/kg	ND	ND	ND	NA	NA	NA	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA
Aroclor 1260	mg/kg	**4.0**	**0.9**	**1.5**	**52**	NA	NA	NA	NA	**2.2**	**1.1**	**2.4**	**1.5**	**15**	NA	NA	NA	NA	**3.4**	**15**	**26**	NA	NA
Aroclor 1262	mg/kg	ND	ND	ND	NA	NA	NA	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA
Aroclor 1268	mg/kg	ND	ND	ND	NA	NA	NA	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA
Aroclor, Total	mg/kg	**4.0**	**0.9**	**1.5**	**52**	**45**	0.60 U	**3.4**	0.60 U	**2.2**	**1.1**	**2.4**	**1.5**	**15**	**11**	0.60 U	**20**	**7.8**	**3.4**	**15**	**26**	**38**	0.60 U

Red: >100 ppm; Orange: >50 ppm; Yellow: >10 ppm; Green: >1 ppm; Bold - Detected; U - Not Detected;
J - Estimated; NA - Not Analyzed

Table 3-2
Historical PCB Analytical Results
Former Tombarello Property
Lawrence, Massachusetts

Sample Location		FG35			G-08	G3	G4	GH24		GH46		H-08	H-09	H2	H3	H6	HI24		HI46		I-08	I-09	I3	I4
Sample Depth (ft)		0 - 1	1 - 3		0 - 0.5	0 - 1	0 - 1	0 - 1	1 - 3	0 - 1	1 - 3	0 - 0.5	0 - 0.5	0 - 1	0 - 1	0 - 1	0 - 1	1 - 3	0 - 1	1 - 3	0 - 0.5	0 - 0.5	0 - 1	0 - 1
Sample Date		07/14/03	07/14/03	07/15/03	10/01/10	09/01/01	09/01/01	07/14/03	07/14/03	07/14/03	07/14/03	10/01/10	10/01/10	09/01/01	09/01/01	09/01/01	07/14/03	07/14/03	07/14/03	07/14/03	10/01/10	10/01/10	09/01/01	09/01/01
QC Identifier			FD	FD																				
	Units																							
Aroclor 1016	mg/kg	NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	ND	ND	NA	**6.5**	**8.7**	NA	NA	NA	NA	ND	ND	NA	**0.81**
Aroclor 1242	mg/kg	NA	NA	NA	ND	**64**	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA
Aroclor 1248	mg/kg	NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA
Aroclor 1254	mg/kg	NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA
Aroclor 1260	mg/kg	NA	NA	NA	**3.2**	NA	**21**	NA	NA	NA	NA	**2.0**	**1.7**	**11**	**37.0**	**8.2**	NA	NA	NA	NA	**4.7**	**5.6**	**43**	**2.2**
Aroclor 1262	mg/kg	NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA
Aroclor 1268	mg/kg	NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA
Aroclor, Total	mg/kg	**66**	**38**	0.60 U	**3.2**	**64**	**21**	**3.7**	0.60 U	**28**	0.50 U	**2.0**	**1.7**	**11**	**43.5**	**16.9**	**2.8**	0.60 U	**11.4**	**1.5**	**4.7**	**5.6**	**43**	**3.01**

Red: >100 ppm; Orange: >50 ppm; Yellow: >10 ppm; Green: >1 ppm; Bold - Detected; U - Not Detected;
J - Estimated; NA - Not Analyzed

Table 3-2
Historical PCB Analytical Results
Former Tombarello Property
Lawrence, Massachusetts

Sample Location		IJ24		IJ46		J-04	J-05	J-08	J-09	J1	J5	JK24		JK46		K-08-01	K-08-02	K-04	K-05	K-06	K-07	K-08	K-09
Sample Depth (ft)		0 - 1	1 - 3	0 - 1	1 - 3	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 1	0 - 1	0 - 1	1 - 3	0 - 1	1 - 3	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5
Sample Date		07/14/03	07/14/03	07/14/03	07/14/03	10/01/10	10/01/10	10/01/10	10/01/10	09/01/01	09/01/01	07/14/03	07/14/03	07/14/03	07/14/03	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10
QC Identifier																							
	Units																						
Aroclor 1016	mg/kg	NA	NA	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1242	mg/kg	NA	NA	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1248	mg/kg	NA	NA	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1254	mg/kg	NA	NA	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND	**2.6**	ND	ND
Aroclor 1260	mg/kg	NA	NA	NA	NA	**12**	**1.5**	**5.2**	**17**	**2.6**	**0.74**	NA	NA	NA	NA	**15**	**3.4**	**27**	**2.5**	**4.1**	**9.8**	**15**	**2.2**
Aroclor 1262	mg/kg	NA	NA	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1268	mg/kg	NA	NA	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor, Total	mg/kg	**18.1**	0.60 U	**15.2**	0.60 U	**12**	**1.5**	**5.2**	**17**	**2.6**	**0.74**	**7.0**	3.5 U	**37.8**	**4.0**	**15**	**3.4**	**27**	**2.5**	**4.1**	**12.4**	**15**	**2.2**

Red: >100 ppm; Orange: >50 ppm; Yellow: >10 ppm; Green: >1 ppm; Bold - Detected; U - Not Detected;
J - Estimated; NA - Not Analyzed

Table 3-2
Historical PCB Analytical Results
Former Tombarello Property
Lawrence, Massachusetts

Sample Location		KL24		L-04	L-05	L-06	L-07	L-08	L-09	L5	LM24		M-03	M-04	M-05	M-06	M-07	M-08	M-09	M2	M3	M4	N-03	N-04
Sample Depth (ft)		0 - 1	1 - 3	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 1	0 - 1	1 - 3	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 1	0 - 1	0 - 1	0 - 0.5	0 - 0.5
Sample Date		07/14/03	07/14/03	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	09/01/01	07/14/03	07/14/03	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	09/01/01	09/01/01	09/01/01	10/01/10	10/01/10
QC Identifier																								
	Units																							
Aroclor 1016	mg/kg	NA	NA	ND	ND	ND	ND	ND	ND	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	ND	ND
Aroclor 1242	mg/kg	NA	NA	ND	ND	ND	ND	ND	ND	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	**66**	ND	ND
Aroclor 1248	mg/kg	NA	NA	**0.92**	ND	ND	ND	ND	ND	NA	NA	NA	ND	ND	ND	ND	**11**	ND	ND	NA	NA	NA	**5.1**	**1.2**
Aroclor 1254	mg/kg	NA	NA	**2.5**	**1.5**	ND	ND	ND	ND	NA	NA	NA	**11**	**9.9**	**2.0**	ND	**18**	**5.1**	ND	NA	**9.2**	NA	**7.1**	**7.5**
Aroclor 1260	mg/kg	NA	NA	**3.5**	**2.2**	**16**	**25**	**40**	**7.7**	**3.8**	NA	NA	**15**	**5.9**	**3.5**	**26**	**46**	**14**	**6.1**	**1.4**	**2.4**	NA	**4.8**	**6.4**
Aroclor 1262	mg/kg	NA	NA	ND	ND	ND	ND	ND	ND	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	ND	ND
Aroclor 1268	mg/kg	NA	NA	ND	ND	ND	ND	ND	ND	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	ND	ND
Aroclor, Total	mg/kg	**4.9**	**5.9**	**6.92**	**3.7**	**16**	**25**	**40**	**7.7**	**3.8**	**25.7**	0.60 U	**26**	**15.8**	**5.5**	**26**	**75**	**19.1**	**6.1**	**1.4**	**11.6**	**66**	**17**	**15.1**

Red: >100 ppm; Orange: >50 ppm; Yellow: >10 ppm; Green: >1 ppm; Bold - Detected; U - Not Detected;
J - Estimated; NA - Not Analyzed

Table 3-2
Historical PCB Analytical Results
Former Tombarello Property
Lawrence, Massachusetts

Sample Location		N-05	N-07	N-08	N-09	N-10	N-11	N-12	O-03	O-04	O-05	O-06	O-07	O-08	O-09	O-10	O-11	O-12	O-13	P-03	P-04	P-05	P-06	P-10
Sample Depth (ft)		0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5
Sample Date		10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	09/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10
QC Identifier																								
	Units																							
Aroclor 1016	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1242	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1248	mg/kg	ND	**7.2**	ND	ND	ND	ND	**20**	ND	ND	ND	ND	**5.7**	ND	ND	ND	ND	**2.2**	**5.2**	ND	ND	ND	ND	**1.0**
Aroclor 1254	mg/kg	**1.4**	**4.8**	**11**	ND	**7.0**	**3.7**	**7.0**	**2.0**	**2.6**	ND	**1.1**	**14**	**6.7**	ND	**4.1**	**4.2**	**2.8**	**3.0**	**4.1**	**2.6**	**1.8**	ND	**6.5**
Aroclor 1260	mg/kg	**2.2**	**4.2**	**21**	**3.2**	**8.2**	**4.3**	**4.4**	**3.7**	**4.2**	ND	**1.8**	**6.6**	**11**	**3.7**	**3.7**	**4.4**	**3.5**	**3.5**	**6.5**	**3.7**	**3.4**	**4.2**	**17**
Aroclor 1262	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1268	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor, Total	mg/kg	**3.6**	**16.2**	**32**	**3.2**	**15.2**	**8.0**	**31.4**	**5.7**	**6.8**	ND	**2.9**	**26.3**	**17.7**	**3.7**	**7.8**	**8.6**	**8.5**	**11.7**	**10.6**	**6.3**	**5.2**	**4.2**	**24.5**

Red: >100 ppm; Orange: >50 ppm; Yellow: >10 ppm; Green: >1 ppm; Bold - Detected; U - Not Detected;
J - Estimated; NA - Not Analyzed

Table 3-2
Historical PCB Analytical Results
Former Tombarello Property
Lawrence, Massachusetts

Sample Location		P-11	P-12	P-13	Q-03	Q-04	Q-05	Q-06	Q-10	Q-12	Q-13	R-03	R-04	R-05	R-06	R-07	R-08	R-10	R-11	R-12	R-13	S-04-01	S-04-02	S-07-01
Sample Depth (ft)		0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5
Sample Date		10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10
QC Identifier																								
	Units																							
Aroclor 1016	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1242	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1248	mg/kg	**0.79**	**2.1**	ND	ND	ND	ND	ND	**1.2**	ND	ND	ND	ND	ND	ND	ND	ND	**4.1**	**6.9**	**8.8**	ND	ND	ND	ND
Aroclor 1254	mg/kg	**1.8**	**4.9**	**7.7**	**2.8**	**4.0**	**1.3**	**3.1**	**1.8**	**6.3**	**5.0**	**3.2**	**1.2**	**4.6**	ND	**2.1**	**3.2**	**2.7**	**4.1**	**11**	**1.5**	ND	**1.1**	**11**
Aroclor 1260	mg/kg	**2.4**	**12**	**57**	**2.6**	**4.0**	**2.1**	**4.4**	**2.1**	**4.0**	**2.2**	**3.4**	**1.1**	**5.2**	**24**	**3.4**	**2.7**	**3.3**	**4.8**	**19**	**3.3**	**1.6**	**1.3**	**7.4**
Aroclor 1262	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1268	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor, Total	mg/kg	**4.99**	**19**	**64.7**	**5.4**	**8.0**	**3.4**	**7.5**	**5.1**	**10.3**	**7.2**	**6.6**	**2.3**	**9.8**	**24**	**5.5**	**5.9**	**10.1**	**15.8**	**38.8**	**4.8**	**1.6**	**2.4**	**18.4**

Red: >100 ppm; Orange: >50 ppm; Yellow: >10 ppm; Green: >1 ppm; Bold - Detected; U - Not Detected;
J - Estimated; NA - Not Analyzed

Table 3-2
Historical PCB Analytical Results
Former Tombarello Property
Lawrence, Massachusetts

Sample Location		S-08-01	S-03	S-04	S-05	S-06	S-07	S-08	S-8	S-09	S-9	S-10	S-11	S-12	S-13	SB1-S1	SB1	SB2	SB3	SB4	SB5-E	SB5-N	SB5-S	SB5-W
Sample Depth (ft)		0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 2	0 - 2	0 - 2	0 - 2	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5
Sample Date		10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	07/08/98	10/01/10	07/08/98	10/01/10	10/01/10	10/01/10	10/01/10	06/02/99	07/08/98	07/08/98	07/08/98	07/08/98	04/28/99	04/28/99	04/28/99	04/28/99
QC Identifier																								
	Units																							
Aroclor 1016	mg/kg	ND	ND	ND	ND	ND	ND	ND	0.33 U	ND	0.333 U	ND	ND	ND	ND	NA	0.166 U	0.033 U	3.330 U	0.033 U	0.1 U	1 U	0.1 U	0.1 U
Aroclor 1242	mg/kg	ND	ND	ND	ND	ND	ND	ND	0.33 U	ND	0.333 U	ND	ND	ND	ND	NA	0.166 U	0.033 U	3.330 U	0.033 U	0.1 U	1 U	0.1 U	0.1 U
Aroclor 1248	mg/kg	ND	ND	ND	ND	ND	ND	**2.1**	**7.193**	ND	0.333 U	ND	**9.0**	**13**	**5.9**	0.1 U	**3.097**	**0.619**	3.330 U	0.033 U	0.2 U	1 U	0.1 U	2 U
Aroclor 1254	mg/kg	**18**	ND	ND	**2.6**	**2.0**	ND	**4.9**	0.33 U	**0.97**	0.333 U	**2.0**	**4.2**	**4.1**	**11**	NA	0.166 U	0.033 U	3.330 U	0.033 U	**2.0**	**2.1**	0.1 U	**2.3**
Aroclor 1260	mg/kg	**5.2**	**3.6**	**11**	**5.1**	**1.9**	**1.3**	**12**	**3.397**	**1.3**	0.333 U	**1.8**	**2.3**	**3.1**	**14**	0.1 U	**3.913**	**0.765**	**59.3**	**0.609**	0.1 U	0.1 U	0.1 U	0.1 U
Aroclor 1262	mg/kg	ND	ND	ND	ND	ND	ND	ND	NA	0 U	NA	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1268	mg/kg	ND	ND	ND	ND	ND	ND	ND	NA	0 U	NA	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor, Total	mg/kg	**23.2**	**3.6**	**11**	**7.7**	**3.9**	**1.3**	**19**	**10.6**	**2.27**	0.333 U	**3.8**	**15.5**	**20.2**	**30.9**	0.2 U	**7.01**	**1.385**	**59.3**	**0.609**	**2.0**	**2.1**	0.1 U	**2.3**

Red: >100 ppm; Orange: >50 ppm; Yellow: >10 ppm; Green: >1 ppm; Bold - Detected; U - Not Detected;
J - Estimated; NA - Not Analyzed

Table 3-2
Historical PCB Analytical Results
Former Tombarello Property
Lawrence, Massachusetts

Sample Location		SB6-E1	SB6-N1	SB6-SS1	SB6-SS2	SB6-W1	SB6	SCC-1	SM2-3	SS-7-E	SS-7-N	SS-7-S	SS-7-W	SS-7		SS-8		SS-9	SS8-E	SS8-N	SS8-S	SS8-W	T-11-01	T-12-01
Sample Depth (ft)		0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 2	0 - 1	0 - 1	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5		0 - 0.5		0 - 0.5	0 - 0.05	0 - 0.05	0 - 0.05	0 - 0.05	0 - 0.5	0 - 0.5
Sample Date		06/02/99	06/02/99	04/28/99	06/02/99	06/02/99	07/08/98	09/01/01	09/01/01	04/28/99	04/28/99	04/28/99	04/28/99	04/28/99		07/08/98	04/28/99	07/08/98	04/28/99	04/28/99	04/28/99	04/28/99	10/01/10	10/01/10
QC Identifier														FD	FD	FD	FD							
	Units																							
Aroclor 1016	mg/kg	NA	NA	NA	NA	NA	0.033 U	NA	NA	NA	NA	NA	NA	NA	NA	0.1 U	NA	NA	0.1 U	0.1 U	0.1 U	0.1 U	ND	ND
Aroclor 1242	mg/kg	NA	NA	NA	NA	NA	0.033 U	NA	NA	NA	NA	NA	NA	NA	NA	0.1 U	NA	NA	0.1 U	0.1 U	0.1 U	0.1 U	ND	ND
Aroclor 1248	mg/kg	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.033 U	NA	NA	0.1 U	0.1 U	0.1 U	0.1 U	**3.696**	0.1 U	**7.193**	0.1 U	0.33 U	0.1 U	0.1 U	0.1 U	0.1 U	ND	**5.8**
Aroclor 1254	mg/kg	NA	NA	NA	NA	NA	0.033 U	NA	NA	NA	NA	NA	NA	NA	NA	**0.95**	NA	NA	**2.3**	**3.0**	**3.4**	**2.3**	**2.6**	**8.6**
Aroclor 1260	mg/kg	**3.8**	**92**	**57**	0.1 U	0.1 U	**0.679**	**3.2**	**2.8**	**3.5**	**2.6**	**3.2**	**2.9**	**2.707**	**3.2**	**3.397**	0.1 U	0.33 U	0.1 U	0.1 U	0.1 U	0.1 U	**2.4**	**3.1**
Aroclor 1262	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND
Aroclor 1268	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND
Aroclor, Total	mg/kg	**3.8**	**92**	**57**	0.2 U	0.2 U	**0.679**	**3.2**	**2.8**	**3.5**	**2.6**	**3.2**	**2.9**	**6.403**	**3.2**	**10.59**	**0.95**	NA	**2.3**	**3.0**	**3.4**	**2.3**	**5.0**	**17.5**

Red: >100 ppm; Orange: >50 ppm; Yellow: >10 ppm; Green: >1 ppm; Bold - Detected; U - Not Detected;
J - Estimated; NA - Not Analyzed

Table 3-2
Historical PCB Analytical Results
Former Tombarello Property
Lawrence, Massachusetts

Sample Location		T-12-02	T-12-03	T-03	T-04	T-05	T-09	T-10	T-11	T-12	T-13	U-09-01	U-10-01	U-10-02	U-11-01	U-11-02	U-12-01	U-12-02	U-13-01	U-03	U-04	U-05	U-07	U-09
Sample Depth (ft)		0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5
Sample Date		10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10
QC Identifier																								
	Units																							
Aroclor 1016	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1242	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1248	mg/kg	**8.6**	**7.4**	ND	ND	ND	**2.2**	ND	ND	**4.5**	ND	ND	ND	ND	ND	**1.1**	**5.1**	**9.9**	**16**	ND	ND	ND	ND	**1.9**
Aroclor 1254	mg/kg	**5.1**	**6.8**	**1.8**	ND	**0.94**	**8.8**	**3.6**	**2.5**	**6.5**	**5.4**	**9.0**	**26**	**11**	**5.7**	**2.9**	**5.6**	**7.9**	**6.0**	ND	**0.93**	ND	**1.5**	**5.6**
Aroclor 1260	mg/kg	**2.5**	**2.8**	**2.6**	**1.1**	**1.6**	**4.0**	**3.5**	**2.1**	**3.2**	**7.8**	**2.5**	ND	**3.0**	**12**	**2.4**	**2.7**	**2.8**	**2.3**	**0.98**	**1.2**	ND	**1.6**	**2.0**
Aroclor 1262	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1268	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor, Total	mg/kg	**16.2**	**17**	**4.4**	**1.1**	**2.5**	**15**	**7.1**	**4.6**	**14.2**	**13.2**	**11.5**	**26**	**14**	**17.7**	**6.4**	**13.4**	**20.6**	**24.3**	**0.98**	**2.13**	ND	**3.1**	**9.5**

Red: >100 ppm; Orange: >50 ppm; Yellow: >10 ppm; Green: >1 ppm; Bold - Detected; U - Not Detected;
J - Estimated; NA - Not Analyzed

Table 3-2
Historical PCB Analytical Results
Former Tombarello Property
Lawrence, Massachusetts

Sample Location		U-10	U-11	U-12	U-13	V-12-01	V-12-02	V-04	V-05	V-07	V-08	V-09	V-10	V-11	V-12	V-13	W-05-01	W-06-01	W-09-01	W-09-02	W-09-03	W-04	W-05	W-06
Sample Depth (ft)		0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5
Sample Date		10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10
QC Identifier																								
	Units																							
Aroclor 1016	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1242	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1248	mg/kg	**1.5**	**4.2**	**3.7**	**18**	**4.3**	**2.1**	ND	ND	ND	ND	**4.0**	**0.91**	**1.4**	**3.2**	**30**	ND	**1.1**	**1.1**	ND	ND	ND	ND	**2.3**
Aroclor 1254	mg/kg	**1.0**	**6.9**	**4.9**	**5.4**	**4.1**	**3.7**	**1.5**	**1.0**	**1.4**	ND	**5.0**	**1.9**	**3.5**	**5.8**	**8.0**	ND	**2.3**	**2.4**	**1.5**	**1.8**	**1.8**	**1.6**	**2.2**
Aroclor 1260	mg/kg	**2.1**	**8.0**	**2.5**	**2.9**	**2.3**	**3.4**	**1.4**	**1.2**	**1.2**	**1.6**	**5.0**	**2.6**	**3.0**	**4.4**	**2.9**	**8.9**	**2.0**	**1.6**	**1.4**	**1.2**	**2.0**	**2.6**	**2.1**
Aroclor 1262	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1268	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor, Total	mg/kg	**4.6**	**19.1**	**11.1**	**26.3**	**10.7**	**9.2**	**2.9**	**2.2**	**2.6**	**1.6**	**14**	**5.41**	**7.9**	**13.4**	**41**	**8.9**	**5.6**	**5.1**	**2.9**	**3.0**	**3.8**	**4.2**	**6.6**

Red: >100 ppm; Orange: >50 ppm; Yellow: >10 ppm; Green: >1 ppm; Bold - Detected; U - Not Detected;
J - Estimated; NA - Not Analyzed

Table 3-2
Historical PCB Analytical Results
Former Tombarello Property
Lawrence, Massachusetts

Sample Location		W-07	W-08	W-09	W-10	W-11	W-12	WSB-1					WSB-2					WSB-3		WSB-4		WSB-5	
Sample Depth (ft)		0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	1 - 2	1 - 3	2 - 3	3 - 5	0 - 0.5	1 - 2	1 - 3	2 - 3	3 - 5	0 - 1	1 - 3	0 - 1	1 - 3	0 - 1	1 - 3
Sample Date		10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	05/02/05	05/03/05	02/01/03	05/04/05	02/01/03	05/02/05	05/02/05	02/01/03	05/02/05	02/01/03	02/01/03	02/01/03	02/01/03	02/01/03	02/01/03	02/01/03
QC Identifier																							
	Units																						
Aroclor 1016	mg/kg	ND	ND	ND	ND	ND	ND	0.054 U	0.539 U	NA	0.551 U	NA	0.27 U	0.58 U	NA	0.58 U	NA	NA	NA	NA	NA	NA	NA
Aroclor 1242	mg/kg	ND	ND	ND	ND	ND	ND	0.054 U	0.539 U	NA	0.551 U	NA	0.27 U	0.58 U	NA	0.58 U	NA	NA	NA	NA	NA	NA	NA
Aroclor 1248	mg/kg	**23**	ND	ND	**6.1**	**1.9**	**1.7**	0.054 U	0.539 U	NA	0.551 U	NA	0.27 U	0.58 U	NA	0.58 U	NA	NA	NA	NA	NA	NA	NA
Aroclor 1254	mg/kg	**6.0**	**2.1**	**0.92**	**5.0**	**4.1**	**5.5**	0.054 U	0.539 U	NA	0.551 U	NA	0.27 U	0.58 U	NA	0.58 U	NA	NA	NA	NA	NA	NA	NA
Aroclor 1260	mg/kg	**3.2**	**1.7**	**1.2**	**4.7**	**2.2**	**4.6**	**0.73**	**6.95**	NA	**2.95**	NA	**1.71**	**0.376**	NA	**0.651**	NA	NA	NA	NA	NA	NA	NA
Aroclor 1262	mg/kg	ND	ND	ND	ND	ND	ND	0.054 U	0.539 U	NA	0.551 U	NA	0.27 U	0.58 U	NA	0.58 U	NA	NA	NA	NA	NA	NA	NA
Aroclor 1268	mg/kg	ND	ND	ND	ND	ND	ND	0.054 U	0.539 U	NA	0.551 U	NA	0.27 U	0.58 U	NA	0.58 U	NA	NA	NA	NA	NA	NA	NA
Aroclor, Total	mg/kg	**32.2**	**3.8**	**2.12**	**15.8**	**8.2**	**11.8**	**0.73**	**6.95**	**1.6**	**2.95**	**0.05**	**1.71**	**0.376**	**26.4**	**0.651**	0.050 U	**0.27**	**21.8**	**9.8**	**0.25**	**1.9**	**7.0**

Red: >100 ppm; Orange: >50 ppm; Yellow: >10 ppm; Green: >1 ppm; Bold - Detected; U - Not Detected;
J - Estimated; NA - Not Analyzed

Table 3-2
Historical PCB Analytical Results
Former Tombarello Property
Lawrence, Massachusetts

Sample Location		WSB-6		WSB-7		WSB-8		WSB-9		WSB-10		WSB-11		WSB-12		WSB-14				WSB-16		
Sample Depth (ft)		0 - 1	1 - 3	0 - 1	1 - 3	1 - 3	3 - 5	0 - 1	1 - 3	0 - 1	1 - 3	0 - 1	1 - 3	0 - 1	1 - 3	0 - 1	1 - 3	3 - 5	5 - 7	0 - 1	1 - 2	2 - 3
Sample Date		02/01/03	02/01/03	02/01/03	02/01/03	02/01/03	02/01/03	02/01/03	02/01/03	02/01/03	02/01/03	02/01/03	02/01/03	02/01/03	02/01/03	02/01/03	02/01/03	02/01/03	02/01/03	07/14/03	07/14/03	07/15/03
QC Identifier																						
	Units																					
Aroclor 1016	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1242	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1248	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1254	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1260	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1262	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1268	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor, Total	mg/kg	**2700**	**34**	**0.8**	**7.1**	**7.3**	0.040 U	**0.36**	**0.04**	**4.8**	**26**	**0.45**	**4.5**	**7.1**	**0.09**	**0.15**	**7.85**	0.040 U	0.040 U	**3.1**	0.50 U	0.60 U

Red: >100 ppm; Orange: >50 ppm; Yellow: >10 ppm; Green: >1 ppm; Bold - Detected; U - Not Detected;
J - Estimated; NA - Not Analyzed

Table 3-2
Historical PCB Analytical Results
Former Tombarello Property
Lawrence, Massachusetts

Sample Location		WSB-17				WSB-18			WSB-21			WSB-22			WSB-25			WSB-26				WSB-27		
Sample Depth (ft)		0 - 1		1 - 2	2 - 3	0 - 1	1 - 2	2 - 3	0 - 1	1 - 2	2 - 3	0 - 1	1 - 2	2 - 3	0 - 1	1 - 2	2 - 3	0 - 1		1 - 2	2 - 3	0 - 1	1 - 2	2 - 3
Sample Date		07/14/03	07/16/03	07/14/03	07/14/03	07/14/03	07/14/03	07/14/03	07/14/03	07/14/03	07/14/03	07/14/03	07/14/03	07/14/03	07/14/03	07/14/03	07/14/03	07/14/03		07/14/03	07/14/03	07/14/03	07/14/03	07/14/03
QC Identifier																		FD	FD					
	Units																							
Aroclor 1016	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1242	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1248	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1254	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1260	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1262	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1268	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor, Total	mg/kg	**2.5**	**3.7**	0.60 U	0.60 U	**1.7**	0.60 U	0.60 U	**18.2**	0.60 U	0.60 U	**17**	0.60 U	0.60 U	**14.9**	0.60 U	0.60 U	**39**	**50**	**510**	**7.1**	**24**	0.60 U	0.60 U

Red: >100 ppm; Orange: >50 ppm; Yellow: >10 ppm; Green: >1 ppm; Bold - Detected; U - Not Detected;
J - Estimated; NA - Not Analyzed

Table 3-2
Historical PCB Analytical Results
Former Tombarello Property
Lawrence, Massachusetts

Sample Location		WSB-30			WSB-31			WSB-32			X-05-01	X-07-01	X-07-02	X-07-03	X-10-01	X-10-02	X-10-03	X-10-04	X-11-01	X-11-02	X-11-03	X-04	X-05	X-06
Sample Depth (ft)		0 - 1	1 - 2	2 - 3	0 - 1	1 - 2	2 - 3	0 - 1	1 - 2	2 - 3	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5
Sample Date		07/14/03	07/14/03	07/14/03	07/14/03	07/14/03	07/14/03	07/14/03	07/14/03	07/14/03	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10
QC Identifier																								
	Units																							
Aroclor 1016	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1242	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1248	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND	**1.5**	**4.0**	**7.7**	**11**	ND	ND	**1.7**	ND	ND	**1.0**
Aroclor 1254	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	**10**	**1.9**	ND	**1.8**	**7.5**	**8.6**	**7.8**	**13**	**21**	**4.9**	**4.1**	**2.1**	ND	**2.7**
Aroclor 1260	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	**16**	**0.86**	ND	**0.83**	**3.4**	**4.3**	**4.3**	**4.4**	**4.9**	**3.4**	**1.9**	**6.5**	**8.1**	**3.9**
Aroclor 1262	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1268	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor, Total	mg/kg	**20**	**20**	0.60 U	**13000**	**2.7**	0.60 U	3.00 U	3.00 U	0.60 U	**26**	**2.76**	ND	**2.63**	**12.4**	**16.9**	**19.7**	**28.4**	**25.9**	**8.3**	**7.7**	**8.6**	**8.1**	**7.6**

Red: >100 ppm; Orange: >50 ppm; Yellow: >10 ppm; Green: >1 ppm; Bold - Detected; U - Not Detected;
J - Estimated; NA - Not Analyzed

Table 3-2
Historical PCB Analytical Results
Former Tombarello Property
Lawrence, Massachusetts

Sample Location		X-07	X-08	X-10	X-11	X-12	Z-00	Z-01	Z-02	Z-03	Z-04	Z-05	Z-06	Z-07	Z-08	Z-09
Sample Depth (ft)		0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5
Sample Date		10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10
QC Identifier																
	Units															
Aroclor 1016	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1242	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1248	mg/kg	**1.2**	ND	**4.5**	**0.85**	**2.0**	ND	ND	ND	ND	ND	ND	ND	ND	ND	**6.0**
Aroclor 1254	mg/kg	**2.3**	**3.0**	**7.3**	**5.0**	**5.4**	ND	ND	ND	ND	ND	**1.9**	**3.7**	**17**	**7.3**	**9.0**
Aroclor 1260	mg/kg	**1.2**	**1.1**	**5.2**	**2.2**	**3.8**	ND	**3.0**	**3.6**	**12**	**15**	**2.6**	**6.6**	**3.1**	**11**	**3.5**
Aroclor 1262	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1268	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor, Total	mg/kg	**4.7**	**4.1**	**17**	**8.05**	**11.2**	ND	**3.0**	**3.6**	**12**	**15**	**4.5**	**10.3**	**20.1**	**18.3**	**18.5**

Red: >100 ppm; Orange: >50 ppm; Yellow: >10 ppm; Green: >1 ppm; Bold - Detected; U - Not Detected;
J - Estimated; NA - Not Analyzed

Table 3-3
Summary of TBA Metals and Cyanide Soil Sample Results
Former Tombarello Property
Lawrence, Massachusetts

Sample Location						BPA-01		BPA-02			CD-34		CD-34E		CD-34N		CD-34S			CD-34W		CD-45	
Sample Depth (ft)						1 - 2	2 - 3	1 - 2	2 - 3	6 - 7	3 - 4	7 - 8	0 - 1	1 - 3	0 - 1	1 - 3	0 - 1	1 - 3		0 - 1	1 - 3	3 - 4	7 - 8
Sample Date						06/07/16	06/07/16	06/07/16	06/07/16	06/07/16	06/06/16	06/06/16	06/06/16	06/06/16	06/06/16	06/06/16	06/06/16	06/06/16		06/06/16	06/06/16	06/06/16	06/06/16
QC Identifier																		FD	FD				
	Units	**S-1/GW-1**	**S-1/GW-2**	**S-1/GW-3**	**Soil UCL**																		
Metals																							
Arsenic	mg/kg	20	20	20	500	**7.6**	**8.1**	**13**	**6.9**	**7.0**	NA	NA	NA	NA	NA	**20**	**5.5**	NA	NA	NA	NA	**11**	**6.2**
Barium	mg/kg	1000	1000	1000	10000	**22**	**150**	**970**	**310**	**23**	NA	NA	NA	NA	NA	**140**	**50**	NA	NA	NA	NA	**170**	**25**
Cadmium	mg/kg	70	70	70	1000	**8.8**	**2.6**	**22**	**7.0**	0.24 U	NA	NA	NA	NA	NA	**0.97**	**1.1**	NA	NA	NA	NA	**11**	0.23 U
Chromium	mg/kg	100	100	100	2000	**25**	**33**	**99**	**32**	**11**	NA	NA	NA	NA	NA	**38**	**100**	NA	NA	NA	NA	**55**	**13**
Chromium-Hexavalent	mg/kg	100	100	100	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	mg/kg	200	200	200	6000	**18**	**240**	**5300**	**590**	**5.7**	NA	NA	NA	NA	NA	**650**	**280**	NA	NA	NA	NA	**3700**	**5.0**
Mercury	mg/kg	20	20	20	300	**0.013 J**	**0.42**	**2.8**	**0.88**	0.05 U	NA	NA	NA	NA	NA	**0.34**	**0.18**	NA	NA	NA	NA	**0.73**	**0.008 J**
Selenium	mg/kg	400	400	400	7000	**1.4**	**2.1**	**5.4**	**3.5**	**2.8**	NA	NA	NA	NA	NA	**3.2**	**1.2**	NA	NA	NA	NA	**4.0**	**1.1 J**
Silver	mg/kg	100	100	100	2000	**0.21 J**	**0.27 J**	**3.7**	**1.3**	1.5 U	NA	NA	NA	NA	NA	**0.39 J**	**0.42 J**	NA	NA	NA	NA	**1.4 J**	1.4 U
General Chemistry																							
Cyanide	mg/kg	30	30	30	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide (PAC)	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Percent Moisture	%	--	--	--	--	**4.5 J**	**8.4 J**	**10**	**10**	**23**	**15**	**24**	**6.3 J**	**9.9 J**	**6 J**	**12**	**5.7 J**	**11**	**9.7 J**	**5.7 J**	**11**	**30**	**25**

Red Shading - UCL Exceeded; Black Shading - Method 1 Std Exceeded; Bold - Detected; U - Not Detected;
J - Estimated; NA - Not Analyzed

Table 3-3
Summary of TBA Metals and Cyanide Soil Sample Results
Former Tombarello Property
Lawrence, Massachusetts

Sample Location						CD-45E		CD-45N		CD-45S			CD-45W		D-5			D-5E		D-5N		FB-01		
Sample Depth (ft)						0 - 1	1 - 3	0 - 1	1 - 3	0 - 1	1 - 3		0 - 1	1 - 3	0 - 2	2 - 3	6 - 7	0 - 1	1 - 3	0 - 1	1 - 3	1 - 2	2 - 3	5 - 7
Sample Date						06/06/16	06/06/16	06/06/16	06/06/16	06/06/16	06/06/16		06/06/16	06/06/16	06/06/16	06/06/16	06/06/16	06/06/16	06/06/16	06/06/16	06/06/16	06/06/16	06/06/16	06/06/16
QC Identifier											FD	FD												
	Units	**S-1/GW-1**	**S-1/GW-2**	**S-1/GW-3**	**Soil UCL**																			
Metals																								
Arsenic	mg/kg	20	20	20	500	NA	**20**	NA	NA	NA	**16**	**12**	NA	NA	NA	NA	NA	NA	**5.1**	**8.5**	NA	**5.8**	**7.5**	**8.7**
Barium	mg/kg	1000	1000	1000	10000	NA	**1700**	NA	NA	NA	**530**	**460**	NA	NA	NA	NA	NA	NA	**98**	**100**	NA	**36**	**51**	**29**
Cadmium	mg/kg	70	70	70	1000	NA	**37**	NA	NA	NA	**14**	**10**	NA	NA	NA	NA	NA	NA	**0.61**	**2.2**	NA	**0.13 J**	**0.84**	0.24 U
Chromium	mg/kg	100	100	100	2000	NA	**110**	NA	NA	NA	**90**	**130**	NA	NA	NA	NA	NA	NA	**19**	**49**	NA	**22**	**24**	**16**
Chromium-Hexavalent	mg/kg	100	100	100	2000	NA	NA	NA	NA	NA	**0.749**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	mg/kg	200	200	200	6000	NA	**6400**	NA	NA	NA	**8600 J**	**2300 J**	NA	NA	NA	NA	NA	NA	**180**	**370**	NA	**38**	**350**	**15**
Mercury	mg/kg	20	20	20	300	NA	**6.5**	NA	NA	NA	**4.7**	**5.8**	NA	NA	NA	NA	NA	NA	**0.32**	**0.72**	NA	**0.037 J**	**0.14**	**0.019 J**
Selenium	mg/kg	400	400	400	7000	NA	1.6 U	NA	NA	NA	**3.2 J**	**1.8 J**	NA	NA	NA	NA	NA	NA	**0.91 J**	**1.6**	NA	**1 J**	**0.99 J**	**1.7**
Silver	mg/kg	100	100	100	2000	NA	**3.0**	NA	NA	NA	**5.9 J**	**1.9 J**	NA	NA	NA	NA	NA	NA	**0.28 J**	**0.85 J**	NA	**0.15 J**	**0.2 J**	**0.15 J**
General Chemistry																								
Cyanide	mg/kg	30	30	30	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.397 U	0.465 U	0.643 U
Cyanide (PAC)	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.05 U	1.18 U	1.3 U
Percent Moisture	%	--	--	--	--	**14**	**11**	**6.7 J**	**14**	**5.5 J**	**11**	**13**	**8.1 J**	**8.1 J**	**13**	**11**	**25**	**7.1 J**	**12**	**9.2 J**	**11**	**7.7 J**	**15**	**23**

Red Shading - UCL Exceeded; Black Shading - Method 1 Std Exceeded; Bold - Detected; U - Not Detected;
J - Estimated; NA - Not Analyzed

Table 3-3
Summary of TBA Metals and Cyanide Soil Sample Results
Former Tombarello Property
Lawrence, Massachusetts

Sample Location						FB-02		FB-03		FB-04				FG-34		FG-34N		FG-34S		FG-34W		FG-45E	
Sample Depth (ft)						1 - 2	2 - 3	1 - 2	2 - 3	1 - 2	2 - 3	5 - 7		0 - 1	1 - 3	0 - 1	1 - 3	0 - 1	1 - 3	0 - 1	1 - 3	0 - 1	1 - 3
Sample Date						06/07/16	06/07/16	06/06/16	06/06/16	06/06/16	06/06/16	06/06/16		06/07/16	06/07/16	06/07/16	06/07/16	06/07/16	06/07/16	06/07/16	06/07/16	06/08/16	06/08/16
QC Identifier												FD	FD									FD	FD
	Units	**S-1/GW-1**	**S-1/GW-2**	**S-1/GW-3**	**Soil UCL**																		
Metals																							
Arsenic	mg/kg	20	20	20	500	**8.8 J**	**10 J**	**4.5**	**5.4**	**7.3**	**6.9**	**7.5**	**7.2**	NA	NA	NA	NA	**14**	NA	NA	**10**	NA	NA	**5.2**
Barium	mg/kg	1000	1000	1000	10000	**54**	**50**	**18**	**30**	**33**	**52**	**74**	**62**	NA	NA	NA	NA	**140**	NA	NA	**250**	NA	NA	**20**
Cadmium	mg/kg	70	70	70	1000	**0.76**	**0.64**	0.24 U	**0.12 J**	**0.052 J**	**0.36**	**0.8**	**0.56**	NA	NA	NA	NA	**2.7**	NA	NA	**6.4**	NA	NA	0.23 U
Chromium	mg/kg	100	100	100	2000	**35**	**37**	**8.6**	**20**	**27**	**29**	**26**	**38**	NA	NA	NA	NA	**91**	NA	NA	**51**	NA	NA	**12**
Chromium-Hexavalent	mg/kg	100	100	100	2000	NA	NA	NA	0.53 U	0.533 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	mg/kg	200	200	200	6000	**46 J**	**120 J**	**7.6**	**76**	**29**	**35**	**110**	**130**	NA	NA	NA	NA	**720**	NA	NA	**1000**	NA	NA	**12**
Mercury	mg/kg	20	20	20	300	**0.084 J-**	**0.08 J-**	**0.014 J**	**0.17**	**0.055**	**0.027 J**	**0.088**	**0.15**	NA	NA	NA	NA	**1.2**	NA	NA	**0.44**	NA	NA	**0.015 J**
Selenium	mg/kg	400	400	400	7000	**0.71 J**	**1.8**	**0.76 J**	1.4 U	**0.68 J**	1.3 U	**1.2**	**1.3 J**	NA	NA	NA	NA	**3.2**	NA	NA	**4.7**	NA	NA	**2.7**
Silver	mg/kg	100	100	100	2000	**0.22 J**	**0.2 J**	1.5 U	**0.11 J**	**0.18 J**	**0.13 J**	**0.24 J**	**0.33 J**	NA	NA	NA	NA	**0.9 J**	NA	NA	**0.95 J**	NA	NA	**0.12 J**
General Chemistry																							
Cyanide	mg/kg	30	30	30	5000	0.54 U	0.547 U	0.526 U	0.499 U	0.453 U	0.571 U	0.539 U	0.555 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide (PAC)	mg/kg	--	--	--	--	1.07 U	1.11 U	1.14 U	1.07 U	1.07 U	1.13 U	1.24 U	1.26 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Percent Moisture	%	--	--	--	--	**7.9 J**	**10**	**12**	**7.1 J**	**6.3 J**	**10**	**20**	**22**	**12**	**22**	**11**	**18**	**9.6 J**	**20**	**13**	**17**	**8 J**	**7.7 J**	**18**

Red Shading - UCL Exceeded; Black Shading - Method 1 Std Exceeded; Bold - Detected; U - Not Detected;
J - Estimated; NA - Not Analyzed

Table 3-3
Summary of TBA Metals and Cyanide Soil Sample Results
Former Tombarello Property
Lawrence, Massachusetts

Sample Location						FG-45N		FG-45S			FG-45W		G-3			G-3E		G-3N		G-3S		G-3W	
Sample Depth (ft)						0 - 1	1 - 3	0 - 1	1 - 3		0 - 1	1 - 3	1 - 2	2 - 3	5 - 6	0 - 2	2 - 3	0 - 1	2 - 3	0 - 1	2 - 3	0 - 1	2 - 3
Sample Date						06/08/16	06/08/16	06/08/16	06/08/16		06/08/16	06/08/16	06/07/16	06/07/16	06/07/16	06/07/16	06/07/16	06/07/16	06/07/16	06/07/16	06/07/16	06/07/16	06/07/16
QC Identifier									FD	FD													
	Units	**S-1/GW-1**	**S-1/GW-2**	**S-1/GW-3**	**Soil UCL**																		
Metals																							
Arsenic	mg/kg	20	20	20	500	NA	NA	NA	NA	NA	**9.4**	NA	NA	NA	NA	NA	NA	**10**	NA	NA	**10 J**	NA	NA
Barium	mg/kg	1000	1000	1000	10000	NA	NA	NA	NA	NA	**99**	NA	NA	NA	NA	NA	NA	**220**	NA	NA	**320 J**	NA	NA
Cadmium	mg/kg	70	70	70	1000	NA	NA	NA	NA	NA	**2.0**	NA	NA	NA	NA	NA	NA	**5.5**	NA	NA	**2.7 J**	NA	NA
Chromium	mg/kg	100	100	100	2000	NA	NA	NA	NA	NA	**37**	NA	NA	NA	NA	NA	NA	**47**	NA	NA	**23 J**	NA	NA
Chromium-Hexavalent	mg/kg	100	100	100	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	mg/kg	200	200	200	6000	NA	NA	NA	NA	NA	**310**	NA	NA	NA	NA	NA	NA	**2100**	NA	NA	**290 J**	NA	NA
Mercury	mg/kg	20	20	20	300	NA	NA	NA	NA	NA	**0.49**	NA	NA	NA	NA	NA	NA	**0.94**	NA	NA	**0.18**	NA	NA
Selenium	mg/kg	400	400	400	7000	NA	NA	NA	NA	NA	**3.7**	NA	NA	NA	NA	NA	NA	**5.4**	NA	NA	**4.1**	NA	NA
Silver	mg/kg	100	100	100	2000	NA	NA	NA	NA	NA	**1.6**	NA	NA	NA	NA	NA	NA	**1.5**	NA	NA	**0.39 J**	NA	NA
General Chemistry																							
Cyanide	mg/kg	30	30	30	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide (PAC)	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Percent Moisture	%	--	--	--	--	**7.1 J**	**22**	**12**	**17**	**19**	**11**	**17**	**26**	**23**	**20**	**11**	**11**	**12**	**14**	**16**	**24**	**14**	**21**

Red Shading - UCL Exceeded; Black Shading - Method 1 Std Exceeded; Bold - Detected; U - Not Detected;
J - Estimated; NA - Not Analyzed

Table 3-3
Summary of TBA Metals and Cyanide Soil Sample Results
Former Tombarello Property
Lawrence, Massachusetts

Sample Location						HA-01		HA-02	HA-03	HA-04	HA-05	HA-06	HA-07		HA-08	HA-09	HA-10	HA-11	HA-12	LS-01		LS-02	
Sample Depth (ft)						0 - 1		0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1		0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	1 - 3	7 - 8	1 - 2	2 - 3
Sample Date						06/09/16		06/09/16	06/09/16	06/09/16	06/09/16	06/09/16	06/09/16		06/09/16	06/09/16	06/09/16	06/09/16	06/09/16	06/09/16	06/09/16	06/09/16	06/09/16
QC Identifier						FD	FD						FD	FD									
	Units	**S-1/GW-1**	**S-1/GW-2**	**S-1/GW-3**	**Soil UCL**																		
Metals																							
Arsenic	mg/kg	20	20	20	500	**40 J**	**16 J**	**17**	**11**	**13**	**17**	**27**	**16**	**18**	**11**	**12**	**11**	**13**	**20**	**5.9**	**5.8**	**11**	**22**
Barium	mg/kg	1000	1000	1000	10000	**480**	**480**	**450**	**150**	**310**	**300**	**370**	**450**	**520**	**260 J**	**170**	**320**	**300**	**370**	**23**	**31**	**70**	**850**
Cadmium	mg/kg	70	70	70	1000	**9.6**	**9.3**	**15**	**5.6**	**5.8**	**7.7**	**14**	**12**	**14**	**4.8 J**	**7.3**	**3.8**	**11**	**13**	**0.16 J**	0.25 U	**0.65**	**5.8**
Chromium	mg/kg	100	100	100	2000	**92**	**74**	**120**	**55 J**	**54**	**310**	**180**	**93**	**92**	**47 J**	**51**	**38**	**68**	**230**	**13**	**12**	**44**	**55**
Chromium-Hexavalent	mg/kg	100	100	100	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	mg/kg	200	200	200	6000	**5700 J**	**910 J**	**1200**	**810 J**	**940**	**730**	**860**	**1500**	**2000**	**1600 J**	**310**	**720**	**1100**	**1400**	**15**	**5.5**	**67**	**1400**
Mercury	mg/kg	20	20	20	300	**0.43**	**0.38**	**4.0**	**1.7**	**1.8**	**1.1**	**1.8**	**2.3 J**	**2.9**	**1.4**	**0.38**	**1.1**	**4.1**	**4.9**	**0.037 J**	0.05 U	**0.1**	**3.6**
Selenium	mg/kg	400	400	400	7000	**2.8**	**2.5**	**1.5**	**2.0**	**1.5**	1.3 U	1.2 U	1.2 U	**1.1 J**	**1.6**	**2.9**	**2.9**	1.1 U	1.4 U	**1 J**	**1.5 J**	**1.5**	1.6 U
Silver	mg/kg	100	100	100	2000	**1.4**	1.4 U	1.5 U	1.4 U	**2.6**	1.3 U	1.2 U	**1.6**	**1.8**	**1.4**	1.3 U	1.4 U	**2.0**	**1.6**	1 U	1.5 U	1 U	1.6 U
General Chemistry																							
Cyanide	mg/kg	30	30	30	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide (PAC)	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Percent Moisture	%	--	--	--	--	**12**	**12**	**8.3 J**	**7.2 J**	**9.2 J**	**8.8 J**	**11**	**13**	**13**	**7.7 J**	**12**	**9 J**	**9.1 J**	**8.2 J**	**6.3 J**	**22**	**5.5 J**	**24**

Red Shading - UCL Exceeded; Black Shading - Method 1 Std Exceeded; Bold - Detected; U - Not Detected;
J - Estimated; NA - Not Analyzed

Table 3-3
Summary of TBA Metals and Cyanide Soil Sample Results
Former Tombarello Property
Lawrence, Massachusetts

Sample Location						M-4		M-4E		M-4N		M-4S	M-4W	M-7			M-7E		M-7S		M-7W	
Sample Depth (ft)						2 - 3	12 - 13	0 - 1	1 - 3	0 - 1	1 - 3	1 - 3	1 - 3	1 - 2	2 - 3	6 - 7	0 - 1	1 - 3	0 - 1	1 - 3	0 - 1	1 - 3
Sample Date						06/09/16	06/09/16	06/09/16	06/09/16	06/09/16	06/09/16	06/09/16	06/09/16	06/07/16	06/07/16	06/07/16	06/07/16	06/07/16	06/07/16	06/07/16	06/07/16	06/07/16
QC Identifier																						
	Units	**S-1/GW-1**	**S-1/GW-2**	**S-1/GW-3**	**Soil UCL**																	
Metals																						
Arsenic	mg/kg	20	20	20	500	NA	NA	NA	NA	NA	**35**	**15**	NA	NA	**4.5**	NA	NA	**21**	NA	NA	NA	NA
Barium	mg/kg	1000	1000	1000	10000	NA	NA	NA	NA	NA	**610**	**1100**	NA	NA	**23**	NA	NA	**950**	NA	NA	NA	NA
Cadmium	mg/kg	70	70	70	1000	NA	NA	NA	NA	NA	**11**	**3.9**	NA	NA	0.25 U	NA	NA	**16**	NA	NA	NA	NA
Chromium	mg/kg	100	100	100	2000	NA	NA	NA	NA	NA	**54**	**66**	NA	NA	**14**	NA	NA	**81**	NA	NA	NA	NA
Chromium-Hexavalent	mg/kg	100	100	100	2000	NA	NA	NA	NA	NA	NA	6.61 UJ	NA	NA	NA	NA	NA	NA	NA	NA	0.588 U	NA
Lead	mg/kg	200	200	200	6000	NA	NA	NA	NA	NA	**1400**	**1300**	NA	NA	**14**	NA	NA	**1800**	NA	NA	NA	NA
Mercury	mg/kg	20	20	20	300	NA	NA	NA	NA	NA	**1.2**	**3.8 J**	NA	NA	**0.055**	NA	NA	**2.8**	NA	NA	NA	NA
Selenium	mg/kg	400	400	400	7000	NA	NA	NA	NA	NA	0.87 U	1.8 U	NA	NA	**2.6**	NA	NA	**7.2**	NA	NA	NA	NA
Silver	mg/kg	100	100	100	2000	NA	NA	NA	NA	NA	0.87 U	1.8 U	NA	NA	**0.11 J**	NA	NA	**2.0**	NA	NA	NA	NA
General Chemistry																						
Cyanide	mg/kg	30	30	30	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide (PAC)	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Percent Moisture	%	--	--	--	--	**28**	**22**	**12**	**12**	**13**	**11**	**23**	**19**	**8.9 J**	**23**	**22**	**14**	**20**	**16**	**13**	**9.9 J**	**25**

Red Shading - UCL Exceeded; Black Shading - Method 1 Std Exceeded; Bold - Detected; U - Not Detected;
J - Estimated; NA - Not Analyzed

Table 3-3
Summary of TBA Metals and Cyanide Soil Sample Results
Former Tombarello Property
Lawrence, Massachusetts

Sample Location						MS-01		MS-02		MS-03		NPA-01		NPA-02		NPA-03		NPA-04		NPA-05		NPA-06	
Sample Depth (ft)						1 - 2	2 - 3	1 - 2	2 - 3	1 - 2	2 - 3	0.5 - 2	2 - 3	0.5 - 2	2 - 3	0.5 - 2	2 - 3	0.5 - 2	2 - 3	0.5 - 2	2 - 3	0.5 - 2	2 - 3
Sample Date						06/10/16	06/10/16	06/10/16	06/10/16	06/10/16	06/10/16	06/10/16	06/10/16	06/10/16	06/10/16	06/10/16	06/10/16	06/10/16	06/10/16	06/10/16	06/10/16	06/10/16	06/10/16
QC Identifier																							
	Units	**S-1/GW-1**	**S-1/GW-2**	**S-1/GW-3**	**Soil UCL**																		
Metals																							
Arsenic	mg/kg	20	20	20	500	**9.4**	**9.6**	**8.7**	**8.9**	**8.1**	**8.3**	**5.1**	**8.9**	**6.2 J**	**8.4 J**	**9.3**	**4.9**	**7.0**	**8.5**	**8.6**	**13**	**18**	**9.8**
Barium	mg/kg	1000	1000	1000	10000	**190**	**85**	**120**	**210**	**130**	**110**	**87**	**32**	**58**	**49**	**91**	**91**	**65**	**39**	**97**	**66**	**140**	**450**
Cadmium	mg/kg	70	70	70	1000	**0.37**	**1.0**	**2.0**	**4.9**	**2.0**	**1.4**	**0.61**	**0.2**	**0.63**	**0.15 J**	**0.33**	**0.19 J**	**0.46**	**1.1**	**0.62**	**9**	**0.74**	**5.8**
Chromium	mg/kg	100	100	100	2000	**44**	**26**	**45**	**45**	**21**	**26**	**18**	**13**	**21**	**17**	**32**	**10**	**26**	**15**	**15**	**25**	**56**	**43**
Chromium-Hexavalent	mg/kg	100	100	100	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	mg/kg	200	200	200	6000	**230**	**190**	**160**	**490**	**190**	**210**	**350**	**100**	**230**	**160**	**390**	**600**	**450**	**250**	**270**	**370**	**320**	**750**
Mercury	mg/kg	20	20	20	300	**0.076**	**1.2**	**0.21**	**0.38**	**0.11**	**0.18**	**0.83**	**0.27**	**0.12**	**0.12**	**0.18**	**0.21**	**0.37**	**0.15**	**0.31**	**0.95**	**0.32**	**0.22**
Selenium	mg/kg	400	400	400	7000	**0.88 J**	**1.1 J**	**1 J**	**0.79 J**	**0.71 J**	**0.78 J**	**0.83 J**	**0.73 J**	**0.75 J**	1.4 U	**1.3 J**	1.5 U	1.3 U	1.4 U	1.6 U	**0.68 J**	**2.0**	1.3 U
Silver	mg/kg	100	100	100	2000	1.4 U	1.3 U	**0.32 J**	**0.13 J**	1.5 U	**0.078 J**	1.2 U	1 U	1.4 U	1.4 U	1.4 U	1.5 U	1.3 U	1.4 U	1.6 U	**0.21 J**	**0.18 J**	**0.15 J**
General Chemistry																							
Cyanide	mg/kg	30	30	30	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide (PAC)	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Percent Moisture	%	--	--	--	--	**2.3 J**	**15**	**5 J**	**9.6 J**	**6.4 J**	**7.4 J**	**8.1 J**	**10**	**11**	**9 J**	**8.2 J**	**12**	**6.2 J**	**8.4 J**	**13**	**13**	**11**	**13**

Red Shading - UCL Exceeded; Black Shading - Method 1 Std Exceeded; Bold - Detected; U - Not Detected;
J - Estimated; NA - Not Analyzed

Table 3-3
Summary of TBA Metals and Cyanide Soil Sample Results
Former Tombarello Property
Lawrence, Massachusetts

Sample Location						NPA-07		P-13			P-13N		P-13S			P-13W		SA-01	SB-3		SB-3E		SB-3N
Sample Depth (ft)						0.5 - 2	2 - 3	1 - 2	2 - 3	9 - 10	0 - 1	1 - 3	0 - 1	1 - 3		0 - 1	1 - 3	1 - 3	2 - 3	5 - 6	0 - 1	1 - 3	1 - 3
Sample Date						06/10/16	06/10/16	06/08/16	06/08/16	06/08/16	06/08/16	06/08/16	06/08/16	06/08/16		06/08/16	06/08/16	06/09/16	06/09/16	06/09/16	06/09/16	06/09/16	06/09/16
QC Identifier														FD	FD								
	Units	**S-1/GW-1**	**S-1/GW-2**	**S-1/GW-3**	**Soil UCL**																		
Metals																							
Arsenic	mg/kg	20	20	20	500	**8.4**	**9.9**	**42**	NA	NA	NA	NA	**14**	NA	NA	NA	NA	**29 J**	NA	NA	NA	NA	**21**
Barium	mg/kg	1000	1000	1000	10000	**120**	**140**	**600**	NA	NA	NA	NA	**350**	NA	NA	NA	NA	**880 J**	NA	NA	NA	NA	**3400**
Cadmium	mg/kg	70	70	70	1000	**1.3**	**0.45**	**9.8**	NA	NA	NA	NA	**13**	NA	NA	NA	NA	**8.6**	NA	NA	NA	NA	**5.3**
Chromium	mg/kg	100	100	100	2000	**32**	**22**	**130**	NA	NA	NA	NA	**200**	NA	NA	NA	NA	**90 J+**	NA	NA	NA	NA	**31**
Chromium-Hexavalent	mg/kg	100	100	100	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	mg/kg	200	200	200	6000	**450**	**710**	**2400**	NA	NA	NA	NA	**1700**	NA	NA	NA	NA	**1400 J**	NA	NA	NA	NA	**3800**
Mercury	mg/kg	20	20	20	300	**1.3**	**0.5**	**5.3**	NA	NA	NA	NA	**4.1**	NA	NA	NA	NA	**5.0**	NA	NA	NA	NA	**5.4**
Selenium	mg/kg	400	400	400	7000	1.5 U	**0.52 J**	1.3 U	NA	NA	NA	NA	**2.4**	NA	NA	NA	NA	1.4 UJ	NA	NA	NA	NA	**2.5**
Silver	mg/kg	100	100	100	2000	**0.1 J**	**0.12 J**	**2.5**	NA	NA	NA	NA	**4.2**	NA	NA	NA	NA	**0.35 J**	NA	NA	NA	NA	**1.3 J**
General Chemistry																							
Cyanide	mg/kg	30	30	30	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide (PAC)	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Percent Moisture	%	--	--	--	--	**11**	**3.2 J**	**18**	**19**	**25**	**18**	**25**	**13**	**13**	**14**	**14**	**37**	**19**	**14**	**18**	**3.9 J**	**14**	**15**

Red Shading - UCL Exceeded; Black Shading - Method 1 Std Exceeded; Bold - Detected; U - Not Detected;
J - Estimated; NA - Not Analyzed

Table 3-3
Summary of TBA Metals and Cyanide Soil Sample Results
Former Tombarello Property
Lawrence, Massachusetts

Sample Location						SB-3S		SB-3W	SBB-3W	SS-01		SVA-01		SVA-02		SVA-03			SVA-04		SVA-05		SVA-06	
Sample Depth (ft)						0 - 1	1 - 3	0 - 1	1 - 3	1 - 2	7 - 8	0 - 1	1 - 3	0 - 1	1 - 3	0 - 1	1 - 3		0 - 1	1 - 3	0 - 1	1 - 3	0 - 1	1 - 3
Sample Date						06/09/16	06/09/16	06/09/16	06/09/16	06/08/16	06/08/16	06/07/16	06/07/16	06/08/16	06/08/16	06/08/16	06/08/16		06/08/16	06/08/16	06/08/16	06/08/16	06/08/16	06/08/16
QC Identifier																	FD	FD						
	Units	**S-1/GW-1**	**S-1/GW-2**	**S-1/GW-3**	**Soil UCL**																			
Metals																								
Arsenic	mg/kg	20	20	20	500	**50**	NA	NA	NA	**8.9**	**20**	**8.9**	**7.7**	**19**	**15**	**11 J**	**28 J**	**53 J**	**11**	**16**	**12**	**13**	0.72 U	**10**
Barium	mg/kg	1000	1000	1000	10000	**150**	NA	NA	NA	**110**	**1600**	**120**	**57**	**350**	**480**	**120**	**1200**	**1100**	**270**	**520**	**270**	**250**	**170**	**160**
Cadmium	mg/kg	70	70	70	1000	**4.1**	NA	NA	NA	**1.3**	**4.6**	**1.9**	**0.48**	**6.2**	**5.6**	**2.7**	**6.7**	**7.8**	**4.2**	**3.1**	**13**	**12**	**24**	**6.2**
Chromium	mg/kg	100	100	100	2000	**83**	NA	NA	NA	**51**	**46**	**42**	**18**	**61**	**42**	**57 J**	**440 J**	**450 J**	**50**	**48**	**110**	**120**	**40000**	**100**
Chromium-Hexavalent	mg/kg	100	100	100	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.605 U	3.09 U	NA	NA	NA	NA	NA	NA
Lead	mg/kg	200	200	200	6000	**500**	NA	NA	NA	**210**	**3100**	**740**	**38**	**1000**	**1200**	**380 J**	**6700 J**	**5400 J**	**1400**	**2900**	**1400**	**1100**	**680**	**930**
Mercury	mg/kg	20	20	20	300	**0.92**	NA	NA	NA	**0.49**	**0.91**	**0.49**	**0.071**	**1.8**	**0.99**	**1.5 J**	**0.48 J**	**0.57 J**	**2.6**	**1.9**	**4.4**	**4.8**	**11**	**2.4**
Selenium	mg/kg	400	400	400	7000	**3.6**	NA	NA	NA	**2.1**	**11**	**3.2**	**3.2**	**5.7**	**5.2**	**4.9 J**	**9.7 J**	**4 J**	**5.6**	**8.5**	**3.8**	**5.1**	1.1 U	**5.6**
Silver	mg/kg	100	100	100	2000	**1.4**	NA	NA	NA	**0.8 J**	**2.4**	**2.7**	**0.22 J**	**2.0**	**1.4 J**	**1.6**	**2.7**	**2.7**	**1.4**	**8.0**	**3.1**	**3.0**	**1.7**	**2.2**
General Chemistry																								
Cyanide	mg/kg	30	30	30	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide (PAC)	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Percent Moisture	%	--	--	--	--	**8.8 J**	**8.6 J**	**3.4 J**	**8.3 J**	**10**	**41**	**6.6 J**	**21**	**9.2 J**	**17**	**8.4 J**	**23**	**26**	**11**	**23**	**13**	**15**	**15**	**11**

Red Shading - UCL Exceeded; Black Shading - Method 1 Std Exceeded; Bold - Detected; U - Not Detected;
J - Estimated; NA - Not Analyzed

Table 3-3
Summary of TBA Metals and Cyanide Soil Sample Results
Former Tombarello Property
Lawrence, Massachusetts

Sample Location						SVA-07		SVA-08		TP-01		TP-02		TP-03		TP-04		TP-05		TP-06		TP-07	
Sample Depth (ft)						0 - 1	1 - 3	0 - 1	1 - 3	0 - 1	2 - 3	0 - 1	3 - 4	0 - 1	4 - 5	0 - 1	5 - 6	0 - 1	4 - 5	0 - 1	9 - 10	0 - 1	7 - 8
Sample Date						06/09/16	06/09/16	06/09/16	06/09/16	06/15/16	06/15/16	06/15/16	06/15/16	06/15/16	06/15/16	06/15/16	06/15/16	06/15/16	06/15/16	06/14/16	06/14/16	06/14/16	06/14/16
QC Identifier																							
	Units	**S-1/GW-1**	**S-1/GW-2**	**S-1/GW-3**	**Soil UCL**																		
Metals																							
Arsenic	mg/kg	20	20	20	500	**9.2**	**15**	**12**	**28**	**13**	**8.9**	**12**	**17**	**6.9**	**12**	**9.6**	**11**	**13 J**	0.78 UJ	**15**	**9.1**	**9.3**	**14**
Barium	mg/kg	1000	1000	1000	10000	**170**	**360**	**110**	**440**	**260**	**97**	**250**	**380**	**41**	**260**	**110**	**210**	**300 J**	**210 J**	**270**	**190**	**120**	**260**
Cadmium	mg/kg	70	70	70	1000	**4.2**	**4.8**	**1.5**	**3.7**	**8.7**	**1.8**	**7.8**	**17**	**0.14 J**	**5.9**	**1.2**	**2.1**	**4.8 J**	**29 J**	**17**	**3.2**	**8.2**	**25**
Chromium	mg/kg	100	100	100	2000	**57**	**44**	**87**	**74**	**260**	**38**	**61**	**74**	**18**	**77**	**53**	**34**	**160 J**	**86000 J**	**230**	**100**	**55**	**100**
Chromium-Hexavalent	mg/kg	100	100	100	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	mg/kg	200	200	200	6000	**610**	**1200**	**240**	**800**	**760**	**150**	**660**	**1400**	**64**	**550**	**210**	**510**	**660 J**	**1200 J**	**1200**	**430**	**510 J**	**1000**
Mercury	mg/kg	20	20	20	300	**2.7**	**2.7**	**0.6**	**1.5**	**1.4**	**0.4**	**1.1**	**3.6**	**0.093**	**1.2**	**0.2**	**1.4**	**2.2 J**	**2.6 J**	**6.9**	**1.3**	**13**	**14**
Selenium	mg/kg	400	400	400	7000	**3.0**	**1.4**	**1.1 J**	**1.7**	**5.6**	**4.2**	**6.0**	**2.8**	**3.0**	**4.5**	**5.3**	**4.3**	**3.4**	1.2 U	1.3 U	**1.2 J**	**5.4**	1.3 U
Silver	mg/kg	100	100	100	2000	**0.55 J**	**0.57 J**	**0.18 J**	**0.55 J**	**1.1 J**	1.5 U	**0.5 J**	**0.76 J**	1.6 U	**0.51 J**	1.5 U	**0.33 J**	**1.1 J**	1.2 U	**2.0**	**0.45 J**	**0.95 J**	**2.3**
General Chemistry																							
Cyanide	mg/kg	30	30	30	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide (PAC)	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Percent Moisture	%	--	--	--	--	**8.7 J**	**13**	**5.8 J**	**11**	**6.1 J**	**9.3 J**	**8.7 J**	**10**	**12**	**12**	**11**	**13**	**10**	**15**	**14**	**11**	**16**	**17**

Red Shading - UCL Exceeded; Black Shading - Method 1 Std Exceeded; Bold - Detected; U - Not Detected;
J - Estimated; NA - Not Analyzed

Table 3-3
Summary of TBA Metals and Cyanide Soil Sample Results
Former Tombarello Property
Lawrence, Massachusetts

Sample Location						TP-08			TP-09		TP-10		TP-11		TP-12		TP-13		TP-14		TP-15		TP-16	
Sample Depth (ft)						0 - 1	9 - 10		0 - 1	9 - 10	0 - 1	6 - 7	0 - 1	5 - 6	0 - 1	6 - 7	0 - 1	5 - 6	0 - 1	5 - 6	0 - 1	8 - 9	0 - 1	8 - 9
Sample Date						06/14/16	06/14/16		06/14/16	06/14/16	06/14/16	06/14/16	06/16/16	06/16/16	06/15/16	06/15/16	06/15/16	06/15/16	06/15/16	06/15/16	06/14/16	06/14/16	06/14/16	06/14/16
QC Identifier							FD	FD																
	Units	**S-1/GW-1**	**S-1/GW-2**	**S-1/GW-3**	**Soil UCL**																			
Metals																								
Arsenic	mg/kg	20	20	20	500	**15**	**14**	**15**	**22**	**20**	**18**	**12**	**15**	**16**	**65**	**20**	**17**	**41**	**21**	**26**	**15**	**15**	**13**	**13**
Barium	mg/kg	1000	1000	1000	10000	**350**	**320**	**320**	**290**	**390**	**250**	**340**	**330**	**360**	**400**	**390**	**210**	**260**	**230**	**280**	**280**	**280**	**240**	**230**
Cadmium	mg/kg	70	70	70	1000	**12**	**11**	**15**	**19**	**16**	**26**	**3.2**	**18**	**26**	**18**	**20**	**16**	**27**	**11**	**15**	**11**	**15**	**21**	**12**
Chromium	mg/kg	100	100	100	2000	**140 J**	**62**	**71 J**	**150**	**95**	**130**	**44**	**150**	**170**	**91**	**260**	**270**	**14000**	**1400**	**290**	**120**	**230**	**120**	**170**
Chromium-Hexavalent	mg/kg	100	100	100	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	mg/kg	200	200	200	6000	**1400**	**1300**	**1400 J**	**1200**	**2000**	**1000**	**1000**	**1300**	**1500**	**790**	**6500**	**740**	**1100**	**1100**	**1700**	**700**	**1500**	**820**	**740**
Mercury	mg/kg	20	20	20	300	**3.1**	**2.5**	**2.1**	**6.3**	**2.4**	**3.2**	**0.96**	**14**	**18**	**4.8**	**5.7**	**6.4**	**6.1**	**4.2**	**4.1**	**3.4**	**2.1**	**16**	**12**
Selenium	mg/kg	400	400	400	7000	1.3 U	1.4 U	**1.7**	1.5 U	1.6 U	1.6 U	**1.6**	1 U	1.5 U	0.87 U	1.4 U	1.1 U	1.1 U	1.1 U	1.5 U	1.6 U	1.2 U	1.5 U	1.2 U
Silver	mg/kg	100	100	100	2000	**1.8**	**2.1**	**1.9**	**2.7**	**2.3**	**0.83 J**	**2.6**	**1.6**	**0.55 J**	**3.1**	**4.3**	**2.9**	**6.9**	**1.4**	**3.1**	**1.8**	**2.0**	**11**	**3.1**
General Chemistry																								
Cyanide	mg/kg	30	30	30	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide (PAC)	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Percent Moisture	%	--	--	--	--	**14**	**18**	**25**	**15**	**29**	**15**	**17**	**9.6 J**	**14**	**8.8 J**	**12**	**9.5 J**	**12**	**9.5 J**	**13**	**8.9 J**	**12**	**10**	**12**

Red Shading - UCL Exceeded; Black Shading - Method 1 Std Exceeded; Bold - Detected; U - Not Detected;
J - Estimated; NA - Not Analyzed

Table 3-3
Summary of TBA Metals and Cyanide Soil Sample Results
Former Tombarello Property
Lawrence, Massachusetts

Sample Location						TP-17		TP-18		TP-19		TP-20			WSB-6		WSB-6N		WSB-6W	
Sample Depth (ft)						0 - 1	3 - 4	0 - 1	3 - 4	0 - 1	6 - 7	0 - 1		5 - 6	0 - 1	1 - 3	0 - 1	1 - 3	0 - 1	1 - 3
Sample Date						06/15/16	06/15/16	06/16/16	06/16/16	06/15/16	06/15/16	06/14/16		06/14/16	06/07/16	06/07/16	06/07/16	06/07/16	06/07/16	06/07/16
QC Identifier												FD	FD							
	Units	**S-1/GW-1**	**S-1/GW-2**	**S-1/GW-3**	**Soil UCL**															
Metals																				
Arsenic	mg/kg	20	20	20	500	**15**	**17**	**10**	**5.6**	**29**	**16**	NA	**12**	**18**	NA	NA	NA	NA	NA	NA
Barium	mg/kg	1000	1000	1000	10000	**280**	**300**	**240**	**34**	**370**	**280**	NA	**170**	**140**	NA	NA	NA	NA	NA	NA
Cadmium	mg/kg	70	70	70	1000	**6.9**	**6.3**	**9.9**	**0.32**	**19**	**12**	NA	**16**	**6.7**	NA	NA	NA	NA	NA	NA
Chromium	mg/kg	100	100	100	2000	**160**	**100**	**79**	**28**	**1200**	**130**	NA	**120**	**55**	NA	NA	NA	NA	NA	NA
Chromium-Hexavalent	mg/kg	100	100	100	2000	NA	NA	NA	NA	NA	0.568 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	mg/kg	200	200	200	6000	**780**	**920**	**690**	**26**	**2000**	**1200**	NA	**610**	**10000**	NA	NA	NA	NA	NA	NA
Mercury	mg/kg	20	20	20	300	**0.81**	**0.65**	**12**	**0.091**	**7.1**	**7.2**	NA	**0.86**	**1.2**	NA	NA	NA	NA	NA	NA
Selenium	mg/kg	400	400	400	7000	**4.7**	**4.2**	**2.7**	**0.71 J**	1.1 U	1.4 U	NA	**180**	**2.4**	NA	NA	NA	NA	NA	NA
Silver	mg/kg	100	100	100	2000	**0.34 J**	**1.3**	**2.7**	1.1 U	**2.2**	**1.6**	NA	**1.7**	**1.2 J**	NA	NA	NA	NA	NA	NA
General Chemistry																				
Cyanide	mg/kg	30	30	30	5000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide (PAC)	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Percent Moisture	%	--	--	--	--	**6.7 J**	**7.7 J**	**8.1 J**	**4.2 J**	**7.8 J**	**10**	**6 J**	**6.6 J**	**11**	**7.5 J**	**17**	**7.2 J**	**19**	**7.8 J**	**26**

Red Shading - UCL Exceeded; Black Shading - Method 1 Std Exceeded; Bold - Detected; U - Not Detected;
J - Estimated; NA - Not Analyzed

Table 3-4
Historical Metals Soil Sample Results
Former Tombarello Property
Lawrence, Massachusetts

					Sample Location	A-05	A-06	A-07	B-04	B-05	B-06	B-07	B-08	B-09	C-05	C-06	C-07	C-08	C-09	D-05	D-06	D-07	D-08	D-09	E-02
					Sample Depth (ft)	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5
					Sample Date	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10
					QC Identifier																			
Metals	**Units**	**S-1/GW-1**	**S-1/GW-2**	**S-1/GW-3**	**Soil UCL**																			
Arsenic	mg/kg	20	20	20	500	**50**	ND	**95**	ND	ND	**64**	**94**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**25**	**33**	ND
Barium	mg/kg	1000	1000	1000	10000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	mg/kg	70	70	70	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**20**	ND	ND	ND	ND	ND	ND	ND
Chromium	mg/kg	100	100	100	2000	**94**	ND	**80**	**82**	**40**	**66**	ND	**65**	**135**	**143**	**43**	**36**	**79**	**58**	**58**	**54**	**92**	ND	**36**	**52**
Lead	mg/kg	200	200	200	6000	**557**	**248**	**1192**	**275**	**717**	**1210**	**3186**	**771**	**1129**	**1351**	**632**	**920**	**1051**	**503**	**164**	**267**	**981**	**226**	**299**	**180**
Mercury	mg/kg	20	20	20	300	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	mg/kg	400	400	400	7000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	mg/kg	100	100	100	2000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Red Shading - UCL Exceeded; Black Shading - Method 1 Std Exceeded; Bold - Detected; U - Not Detected;
J - Estimated; NA - Not Analyzed

Table 3-4
Historical Metals Soil Sample Results
Former Tombarello Property
Lawrence, Massachusetts

					Sample Location	E-05	E-07	E-08	F-08	G-08	H-08	H-09	I-08	I-09	J-04	J-05	J-08	J-09	K-08-01	K-08-02	K-04	K-05	K-06	K-07	K-08
					Sample Depth (ft)	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5
					Sample Date	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10
					QC Identifier																				
Metals	**Units**	**S-1/GW-1**	**S-1/GW-2**	**S-1/GW-3**	**Soil UCL**																				
Arsenic	mg/kg	20	20	20	500	**47**	ND	ND	ND	**42**	ND	ND	**45**	ND	ND	ND	**71**	ND	ND	ND	ND	ND	**48**	**41**	ND
Barium	mg/kg	1000	1000	1000	10000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	mg/kg	70	70	70	1000	ND	ND	ND	ND	ND	ND	ND	**40**	ND	ND	ND	**14**	ND	ND	**11.45**	ND	ND	ND	ND	ND
Chromium	mg/kg	100	100	100	2000	**75**	ND	**45**	ND	**80**	**29**	ND	**88**	ND	**72**	**83**	**98**	**52**	**55**	**71**	**64**	**52**	**196**	**55**	**69**
Lead	mg/kg	200	200	200	6000	**679**	**338**	**271**	**423**	**533**	**296**	**290**	**886**	**607**	**368**	**328**	**929**	**395**	**658**	**626**	**659**	**395**	**515**	**629**	**693**
Mercury	mg/kg	20	20	20	300	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	mg/kg	400	400	400	7000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	mg/kg	100	100	100	2000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Red Shading - UCL Exceeded; Black Shading - Method 1 Std Exceeded; Bold - Detected; U - Not Detected;
J - Estimated; NA - Not Analyzed

Table 3-4
Historical Metals Soil Sample Results
Former Tombarello Property
Lawrence, Massachusetts

					Sample Location	K-09	L-04	L-05	L-06	L-07	L-08	L-09	M-03	M-04	M-05	M-06	M-07	M-08	M-09	N-03	N-04	N-05	N-07	N-08	N-09
					Sample Depth (ft)	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5
					Sample Date	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10
					QC Identifier																			
Metals	**Units**	**S-1/GW-1**	**S-1/GW-2**	**S-1/GW-3**	**Soil UCL**																			
Arsenic	mg/kg	20	20	20	500	**55**	ND	ND	**87**	**57**	**58**	**45**	**53**	ND	ND	ND	**89**	ND	**38**	ND	**77**	**34**	**48**	**100**	**78**
Barium	mg/kg	1000	1000	1000	10000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	mg/kg	70	70	70	1000	ND	ND	ND	ND	ND	**14**	**16**	ND	**16**	ND	ND	**35**	ND	ND	**18**	**15**	ND	ND	**25**	ND
Chromium	mg/kg	100	100	100	2000	ND	**188**	**77**	**114**	**90**	**61**	**47**	**101**	**119**	**76**	**65**	**137**	**59**	**57**	**57**	**410**	**73**	**151**	**102**	**105**
Lead	mg/kg	200	200	200	6000	**447**	**2256**	**305**	**820**	**548**	**613**	**671**	**771**	**1896**	**403**	**605**	**1553**	**704**	**435**	**370**	**524**	**379**	**1117**	**1479**	**687**
Mercury	mg/kg	20	20	20	300	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	mg/kg	400	400	400	7000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	mg/kg	100	100	100	2000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Red Shading - UCL Exceeded; Black Shading - Method 1 Std Exceeded; Bold - Detected; U - Not Detected;
J - Estimated; NA - Not Analyzed

Table 3-4
Historical Metals Soil Sample Results
Former Tombarello Property
Lawrence, Massachusetts

				Sample Location		N-10	N-11	N-12	O-03	O-04	O-05	O-06	O-07	O-08	O-09	O-10	O-11	O-12	O-13	P-03	P-04	P-05	P-06	P-10	P-11
				Sample Depth (ft)		0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5
				Sample Date		10/01/10	10/01/10	10/01/10	09/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10
				QC Identifier																					
Metals	**Units**	**S-1/GW-1**	**S-1/GW-2**	**S-1/GW-3**	**Soil UCL**																				
Arsenic	mg/kg	20	20	20	500	**91**	ND	ND	ND	**45**	ND	ND	**61**	**65**	ND	ND	ND	ND	ND	**41**	ND	**33**	ND	ND	**74**
Barium	mg/kg	1000	1000	1000	10000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	mg/kg	70	70	70	1000	**23.1**	ND	ND	ND	ND	**13**	**17**	**15**	**14**	**33**	ND	ND	ND	**49**	ND	ND	ND	ND	ND	ND
Chromium	mg/kg	100	100	100	2000	**114**	**157**	**251**	**156**	**303**	**64**	**189**	**221**	**160**	**146**	**179**	**653**	**251**	**293**	**69**	**71**	**61**	**75**	**114**	**154**
Lead	mg/kg	200	200	200	6000	**1858**	**1535**	**1457**	**277**	**341**	**560**	**985**	**1095**	**937**	**798**	**1300**	**1348**	**1139**	**1143**	**484**	**486**	**425**	**377**	**1448**	**1283**
Mercury	mg/kg	20	20	20	300	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	mg/kg	400	400	400	7000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	mg/kg	100	100	100	2000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Red Shading - UCL Exceeded; Black Shading - Method 1 Std Exceeded; Bold - Detected; U - Not Detected;
J - Estimated; NA - Not Analyzed

Table 3-4
Historical Metals Soil Sample Results
Former Tombarello Property
Lawrence, Massachusetts

					Sample Location	P-12	P-13	Q-03	Q-04	Q-05	Q-06	Q-10	Q-12	Q-13	R-03	R-04	R-05	R-06	R-07	R-08	R-10	R-11	R-12	R-13	S-04-01
					Sample Depth (ft)	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5
					Sample Date	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10
					QC Identifier																				
Metals	**Units**	**S-1/GW-1**	**S-1/GW-2**	**S-1/GW-3**	**Soil UCL**																				
Arsenic	mg/kg	20	20	20	500	**63**	**74**	ND	**41**	ND	ND	**75**	**80**	**184**	ND	ND	ND	ND	**79**	**52**	ND	**63**	ND	ND	**266**
Barium	mg/kg	1000	1000	1000	10000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	mg/kg	70	70	70	1000	**22**	**40**	ND	ND	ND	ND	**22**	**23**	**29**	ND	ND	**11**	ND	**18**	ND	ND	**26**	ND	ND	ND
Chromium	mg/kg	100	100	100	2000	**122**	**261**	**65**	**62**	**92**	**125**	**159**	**99**	**152**	ND	**54**	**36**	**81**	**215**	**138**	**282**	**270**	**162**	**233**	**178**
Lead	mg/kg	200	200	200	6000	**1155**	**1566**	**486**	**515**	**294**	**900**	**1350**	**1560**	**2224**	**338**	**483**	**252**	**947**	**1646**	**848**	**1394**	**1068**	**5830**	**1565**	**415**
Mercury	mg/kg	20	20	20	300	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**1277**
Selenium	mg/kg	400	400	400	7000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	mg/kg	100	100	100	2000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Red Shading - UCL Exceeded; Black Shading - Method 1 Std Exceeded; Bold - Detected; U - Not Detected;
J - Estimated; NA - Not Analyzed

Table 3-4
Historical Metals Soil Sample Results
Former Tombarello Property
Lawrence, Massachusetts

					Sample Location	S-04-02	S-07-01	S-08-01	S-03	S-04	S-05	S-06	S-07	S-08	S-8	S-09	S-9	S-10	S-11	S-12	S-13	SB1		SB2	
					Sample Depth (ft)	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0 - 2	2 - 4	0 - 2	2 - 4
					Sample Date	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	07/08/98	10/01/10	07/08/98	10/01/10	10/01/10	10/01/10	10/01/10	07/08/98	07/08/98	07/08/98	07/08/98
					QC Identifier																				
Metals	**Units**	**S-1/GW-1**	**S-1/GW-2**	**S-1/GW-3**	**Soil UCL**																				
Arsenic	mg/kg	20	20	20	500	ND	ND	ND	**27**	ND	ND	**47**	**64**	ND	**11.8**	**36**	**4.98**	ND	ND	ND	**58**	**4.76**	**3.22**	**2.74**	**3.18**
Barium	mg/kg	1000	1000	1000	10000	ND	ND	ND	ND	ND	ND	ND	ND	ND	**552**	ND	**52.9**	ND	ND	ND	ND	**45.5**	**25.6**	**13.3**	**16.7**
Cadmium	mg/kg	70	70	70	1000	ND	**58**	ND	ND	ND	ND	**16**	ND	**36**	**4.95**	ND	0.96 U	ND	ND	ND	ND	**1.9**	**2.62**	0.98 U	0.99 U
Chromium	mg/kg	100	100	100	2000	**48**	ND	**147**	**76**	**64**	**57**	**103**	**41**	**174**	**64**	**1265**	**38.3**	**239**	**151**	**1240**	**278**	**15.2**	**10.1**	**6.46**	**8.55**
Lead	mg/kg	200	200	200	6000	**604**	**244**	**716**	**297**	**415**	**469**	**918**	**1159**	**2053**	**1110**	**484**	**172**	**2178**	**971**	**1398**	**1468**	**146**	**712**	**26.8**	**9.74**
Mercury	mg/kg	20	20	20	300	ND	ND	ND	ND	ND	ND	ND	ND	ND	**7.13**	ND	**1.06**	ND	ND	ND	ND	**0.32**	0.1 U	**0.43**	0.1 U
Selenium	mg/kg	400	400	400	7000	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.95 U	ND	0.96 U	ND	ND	ND	ND	0.95 U	1.01 U	0.98 U	0.99 U
Silver	mg/kg	100	100	100	2000	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.95 U	ND	0.96 U	ND	ND	ND	ND	0.95 U	**2.21**	0.98 U	0.99 U

Red Shading - UCL Exceeded; Black Shading - Method 1 Std Exceeded; Bold - Detected; U - Not Detected;
J - Estimated; NA - Not Analyzed

Table 3-4
Historical Metals Soil Sample Results
Former Tombarello Property
Lawrence, Massachusetts

				Sample Location		SB3		SB4	SB5-E	SB5-N	SB5-S	SB5-W	SB5		SB6-SS1	SB6		SS-7	SS-8		SS-9	SS8-E	SS8-N	SS8-S	SS8-W
				Sample Depth (ft)		0 - 2	2 - 4	0 - 2	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 2	4 - 6	0 - 0.5	0 - 2	4 - 6	0 - 0.5	0 - 0.5		0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5
				Sample Date		07/08/98	07/08/98	07/08/98	04/28/99	04/28/99	04/28/99	04/28/99	07/08/98	07/08/98	04/28/99	07/08/98	07/08/98	04/28/99	07/08/98	04/28/99	07/08/98	04/28/99	04/28/99	04/28/99	04/28/99
				QC Identifier															FD	FD					
Metals	**Units**	**S-1/GW-1**	**S-1/GW-2**	**S-1/GW-3**	**Soil UCL**																				
Arsenic	mg/kg	20	20	20	500	**9.52**	**4.04**	**5.73**	NA	NA	NA	NA	**13.3**	**3.99**	NA	**3.62**	**4.2**	**10.7**	**11.8**	NA	**4.98**	NA	NA	NA	NA
Barium	mg/kg	1000	1000	1000	10000	**333**	**12.5**	**54**	NA	NA	NA	NA	**197**	**16.4**	NA	**44.3**	**19.8**	**141**	**552**	NA	**52.9**	NA	NA	NA	NA
Cadmium	mg/kg	70	70	70	1000	**2.67**	1.01 U	0.99 U	**5.45**	**6.6**	**0.59**	**5.4**	**5.78**	1 U	**8.21**	1.01 U	0.95 U	**8.19**	**4.95**	**2.72**	0.96 U	**3.36**	**4.58**	**3.42**	**2.98**
Chromium	mg/kg	100	100	100	2000	**60.4**	**8.69**	**33**	NA	NA	NA	NA	**57.4**	**7.19**	NA	**14.5**	**7.63**	**62.3**	**64**	NA	**38.3**	NA	NA	NA	NA
Lead	mg/kg	200	200	200	6000	**918**	**5.45**	**106**	**980**	**550**	**100**	**670**	**3470**	**8.58**	**790**	**37.4**	**4.01**	**672**	**1110**	**270**	**172**	**490**	**500**	**310**	**330**
Mercury	mg/kg	20	20	20	300	**0.97**	0.1 U	**0.5**	NA	NA	NA	NA	**2.13**	0.1 U	NA	0.1 U	0.1 U	**4.19**	**7.13**	NA	**1.06**	NA	NA	NA	NA
Selenium	mg/kg	400	400	400	7000	0.95 U	1.01 U	0.99 U	NA	NA	NA	NA	0.096 U	1 U	NA	1.01 U	0.95 U	0.95 U	0.95 U	NA	0.96 U	NA	NA	NA	NA
Silver	mg/kg	100	100	100	2000	**1.71**	1.01 U	0.99 U	NA	NA	NA	NA	0.096 U	1 U	NA	1.01 U	0.95 U	**20.8**	0.95 U	NA	0.96 U	NA	NA	NA	NA

Red Shading - UCL Exceeded; Black Shading - Method 1 Std Exceeded; Bold - Detected; U - Not Detected;
J - Estimated; NA - Not Analyzed

Table 3-4
Historical Metals Soil Sample Results
Former Tombarello Property
Lawrence, Massachusetts

					Sample Location	T-11-01	T-12-01	T-12-02	T-12-03	T-03	T-04	T-05	T-09	T-10	T-11	T-12	T-13	U-09-01	U-10-01	U-10-02	U-11-01	U-11-02	U-12-01	U-12-02	U-13-01
					Sample Depth (ft)	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5
					Sample Date	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10
					QC Identifier																			
Metals	**Units**	**S-1/GW-1**	**S-1/GW-2**	**S-1/GW-3**	**Soil UCL**																			
Arsenic	mg/kg	20	20	20	500	**54**	ND	ND	ND	**88**	ND	**31**	**176**	ND	ND	**83**	ND	**135**	**102**	**235**	**60**	ND	ND	ND	ND
Barium	mg/kg	1000	1000	1000	10000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	mg/kg	70	70	70	1000	ND	ND	ND	ND	ND	ND	ND	**37**	ND	**20**	**25**	ND	**32**	**34**	**31**	ND	ND	ND	ND	ND
Chromium	mg/kg	100	100	100	2000	**236**	**204**	**216**	**179**	**133**	**84**	**41**	**291**	**38**	**185**	**110**	**116**	**237**	**255**	**223**	**195**	**288**	**254**	**322**	**224**
Lead	mg/kg	200	200	200	6000	**1012**	**1542**	**1347**	**1289**	**852**	**409**	**369**	**4992**	**512**	**1359**	**1897**	**1604**	**3133**	**2151**	**4332**	**1184**	**1092**	**1377**	**2016**	**1537**
Mercury	mg/kg	20	20	20	300	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	mg/kg	400	400	400	7000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	mg/kg	100	100	100	2000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Red Shading - UCL Exceeded; Black Shading - Method 1 Std Exceeded; Bold - Detected; U - Not Detected;
J - Estimated; NA - Not Analyzed

Table 3-4
Historical Metals Soil Sample Results
Former Tombarello Property
Lawrence, Massachusetts

				Sample Location		U-03	U-04	U-05	U-07	U-09	U-10	U-11	U-12	U-13	V-12-01	V-12-02	V-04	V-05	V-07	V-08	V-09	V-10	V-11	V-12	V-13
				Sample Depth (ft)		0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5
				Sample Date		10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10
				QC Identifier																					
Metals	**Units**	**S-1/GW-1**	**S-1/GW-2**	**S-1/GW-3**	**Soil UCL**																				
Arsenic	mg/kg	20	20	20	500	ND	ND	ND	ND	**168**	ND	ND	**52**	**76**	**50**	ND	**40**	**32**	ND	ND	**117**	ND	**69**	**92**	**49**
Barium	mg/kg	1000	1000	1000	10000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	mg/kg	70	70	70	1000	ND	ND	ND	ND	**42**	ND	**20**	ND	ND	ND	ND	ND	ND	ND	**25**	**20**	ND	**23**	ND	ND
Chromium	mg/kg	100	100	100	2000	**40**	**87**	**35**	**74**	**324**	**273**	**102**	**185**	**174**	**499**	**482**	**87**	**116**	**124**	**198**	**201**	**179**	**162**	**147**	**207**
Lead	mg/kg	200	200	200	6000	**357**	**369**	**177**	**528**	**2328**	**1797**	**1091**	**900**	**920**	**1247**	**1478**	**445**	**390**	**746**	**1624**	**1997**	**730**	**902**	**1191**	**1176**
Mercury	mg/kg	20	20	20	300	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	mg/kg	400	400	400	7000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	mg/kg	100	100	100	2000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Red Shading - UCL Exceeded; Black Shading - Method 1 Std Exceeded; Bold - Detected; U - Not Detected;
J - Estimated; NA - Not Analyzed

Table 3-4
Historical Metals Soil Sample Results
Former Tombarello Property
Lawrence, Massachusetts

					Sample Location	W-05-01	W-06-01	W-09-01	W-09-02	W-09-03	W-04	W-05	W-06	W-07	W-08	W-09	W-10	W-11	W-12	WSB-1		WSB-2		WSB-3	
					Sample Depth (ft)	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	1 - 3	3 - 5	1 - 3	3 - 5	0 - 1	1 - 3
					Sample Date	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	02/01/03	02/01/03	02/01/03	02/01/03	02/01/03	02/01/03
					QC Identifier																			
Metals	**Units**	**S-1/GW-1**	**S-1/GW-2**	**S-1/GW-3**	**Soil UCL**																			
Arsenic	mg/kg	20	20	20	500	ND	**75**	ND	ND	**101**	**54**	ND	**48**	**115**	ND	ND	**97**	ND	ND	**6.1**	**5.88**	**7.42**	**11**	**5.49**	**6.75**
Barium	mg/kg	1000	1000	1000	10000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**106**	**64**	**107**	**166**	**74.4**	**142**
Cadmium	mg/kg	70	70	70	1000	ND	ND	ND	ND	ND	ND	ND	ND	**23**	ND	**17**	**35**	**27**	**25**	**4.01**	0.796 U	**716**	**20**	**1.82**	**3.86**
Chromium	mg/kg	100	100	100	2000	**64**	**103**	**230**	**190**	**577**	**192**	**36**	**106**	**128**	**107**	**125**	**258**	**194**	**826**	**23.2**	**12.4**	**34.4**	**220**	**27.5**	**30.7**
Lead	mg/kg	200	200	200	6000	**490**	**906**	**1234**	**895**	**1267**	**572**	**451**	**900**	**1319**	**1374**	**877**	**1624**	**1562**	**1027**	**1180**	**159**	**1330**	**168**	**389**	**563**
Mercury	mg/kg	20	20	20	300	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**2.71**	**0.145**	**1.17**	0.367 U	**3.07**	**2.42**
Selenium	mg/kg	400	400	400	7000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	7.1 U	7.96 U	6.89 U	10.7 U	7.94 U	7.12 U
Silver	mg/kg	100	100	100	2000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.71 U	0.796 U	0.689 U	1.07 U	0.794 U	0.712 U

Red Shading - UCL Exceeded; Black Shading - Method 1 Std Exceeded; Bold - Detected; U - Not Detected;
J - Estimated; NA - Not Analyzed

Table 3-4
Historical Metals Soil Sample Results
Former Tombarello Property
Lawrence, Massachusetts

					Sample Location	WSB-4		WSB-5		WSB-6		WSB-7		WSB-8		WSB-9		WSB-10		WSB-11		WSB-12	
					Sample Depth (ft)	0 - 1	1 - 3	0 - 1	1 - 3	0 - 1	1 - 3	0 - 1	1 - 3	1 - 3	3 - 5	0 - 1	1 - 3	0 - 1	1 - 3	0 - 1	1 - 3	0 - 1	1 - 3
					Sample Date	02/01/03	02/01/03	02/01/03	02/01/03	02/01/03	02/01/03	02/01/03	02/01/03	02/01/03	02/01/03	02/01/03	02/01/03	02/01/03	02/01/03	02/01/03	02/01/03	02/01/03	02/01/03
					QC Identifier																		
Metals	**Units**	**S-1/GW-1**	**S-1/GW-2**	**S-1/GW-3**	**Soil UCL**																		
Arsenic	mg/kg	20	20	20	500	**8.97**	**15.6**	**13.6**	**14.2**	**17.9**	**8.52**	**9.89**	**6.13**	**4.49**	**8.1**	**7.33**	**5.56**	**69.4**	**10.8**	**6.04**	**14.3**	**8.51**	3.91 U
Barium	mg/kg	1000	1000	1000	10000	**156**	**52.9**	**344**	**867**	**55.8**	**19.4**	**70.6**	**197**	**35.3**	**184**	**228**	**18.9**	**195**	**526**	**82.3**	**176**	**376**	**46.6**
Cadmium	mg/kg	70	70	70	1000	**2.88**	0.796 U	**3.75**	**5.77**	**1.61**	0.801 U	**2.3**	**3.07**	0.669 U	**3.55**	**1.42**	0.866 U	**0.977**	**4.1**	**1.68**	**12.5**	**10.6**	0.782 U
Chromium	mg/kg	100	100	100	2000	**29.1**	**15.5**	**40**	**52.2**	**29.6**	**12.6**	**48.6**	**28.9**	**15.5**	**35.5**	**20.6**	**12.6**	**40.1**	**47**	**28.7**	**57.9**	**40.7**	**10.1**
Lead	mg/kg	200	200	200	6000	**381**	**30.2**	**2700**	**1260**	**92.2**	8.01 U	**215**	**517**	**99.2**	**464**	**94.9**	8.66 U	**789**	**1320**	**216**	**709**	**652**	**13.7**
Mercury	mg/kg	20	20	20	300	**0.912**	0.0392 U	**1.07**	1.86 U	**0.327**	0.0414 U	**1.39**	**0.535**	**0.401**	**1.29**	**0.174**	0.0433 U	**0.323**	**2.08**	**0.661**	**2.26**	**0.751**	0.0382 U
Selenium	mg/kg	400	400	400	7000	6.87 U	7.96 U	7.48 U	8.66 U	6.89 U	8.01 U	7.12 U	7.2 U	6.69 U	7.58 U	8.38 U	8.66 U	7.18 U	7.41 U	7.51 U	7.51 U	7.33 U	7.82 U
Silver	mg/kg	100	100	100	2000	0.687 U	0.796 U	0.748 U	0.866 U	0.689 U	0.801 U	0.712 U	1.62 U	0.669 U	0.758 U	0.838 U	0.866 U	0.718 U	0.741 U	0.751 U	0.751 U	0.733 U	0.782 U

Red Shading - UCL Exceeded; Black Shading - Method 1 Std Exceeded; Bold - Detected; U - Not Detected;
J - Estimated; NA - Not Analyzed

Table 3-4
Historical Metals Soil Sample Results
Former Tombarello Property
Lawrence, Massachusetts

					Sample Location	WSB-14				X-05-01	X-07-01	X-07-02	X-07-03	X-10-01	X-10-02	X-10-03	X-10-04	X-11-01	X-11-02	X-11-03	X-04	X-05	X-06
					Sample Depth (ft)	0 - 1	1 - 3	3 - 5	5 - 7	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5
					Sample Date	02/01/03	02/01/03	02/01/03	02/01/03	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10
					QC Identifier																		
Metals	**Units**	**S-1/GW-1**	**S-1/GW-2**	**S-1/GW-3**	**Soil UCL**																		
Arsenic	mg/kg	20	20	20	500	3.69 U	**14.05**	**10.7**	**4.66**	ND	**123**	**152**	**110**	ND	**77**	ND	ND	**83**	ND	**64**	ND	**51**	ND
Barium	mg/kg	1000	1000	1000	10000	**45.8**	**765**	**1480**	**18.1**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	mg/kg	70	70	70	1000	**2.11**	**6.245**	0.808 U	0.786 U	ND	ND	**40**	**41**	ND	ND	ND	ND	ND	ND	ND	**18**	ND	ND
Chromium	mg/kg	100	100	100	2000	**24.6**	**52.15**	**15.1**	**8.34**	**94**	**366**	**241**	**355**	**440**	**453**	**300**	**386**	**218**	**178**	**270**	**122**	**121**	**100**
Lead	mg/kg	200	200	200	6000	**115**	**1240**	**2230**	7.86 U	**611**	**2155**	**1896**	**1904**	**1397**	**1294**	**1415**	**1885**	**1457**	**1110**	**1391**	**1108**	**590**	**3476**
Mercury	mg/kg	20	20	20	300	**1.28**	**1.41**	**0.28**	0.0398 U	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	mg/kg	400	400	400	7000	7.38 U	7.7 U	8.08 U	7.86 U	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	mg/kg	100	100	100	2000	0.738 U	**0.99**	0.808 U	0.786 U	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Red Shading - UCL Exceeded; Black Shading - Method 1 Std Exceeded; Bold - Detected; U - Not Detected;
J - Estimated; NA - Not Analyzed

Table 3-4
Historical Metals Soil Sample Results
Former Tombarello Property
Lawrence, Massachusetts

					Sample Location	X-07	X-08	X-10	X-11	X-12	Z-00	Z-01	Z-02	Z-03	Z-04	Z-05	Z-06	Z-07	Z-08	Z-09
					Sample Depth (ft)	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5
					Sample Date	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10	10/01/10
					QC Identifier															
Metals	**Units**	**S-1/GW-1**	**S-1/GW-2**	**S-1/GW-3**	**Soil UCL**															
Arsenic	mg/kg	20	20	20	500	**206**	ND	**97**	ND	ND	ND	ND	ND	ND	ND	ND	**82**	ND	ND	ND
Barium	mg/kg	1000	1000	1000	10000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	mg/kg	70	70	70	1000	ND	ND	**21**	ND	**17**	ND	ND	ND	ND	ND	ND	ND	**51**	ND	ND
Chromium	mg/kg	100	100	100	2000	**339**	**142**	**363**	**52**	**143**	**75**	ND	**50**	**86**	**104**	**143**	**82**	**358**	**153**	**175**
Lead	mg/kg	200	200	200	6000	**4415**	**1027**	**1241**	**411**	**1306**	**412**	**543**	**473**	**398**	**1921**	**728**	**505**	**3279**	**1256**	**1037**
Mercury	mg/kg	20	20	20	300	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	mg/kg	400	400	400	7000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	mg/kg	100	100	100	2000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Red Shading - UCL Exceeded; Black Shading - Method 1 Std Exceeded; Bold - Detected; U - Not Detected;
J - Estimated; NA - Not Analyzed

Table 3-5
Summary of TCLP Metals Soil Sampling Results
Former Tombarello Property
Lawrence, Massachusetts

		Sample Location	CD-45E	CD-45S	SVA-03	SVA-06	TP-20	TP-05	TP-13	TP-12
		Sample Depth (ft)	1-3	1-3	1-3	0-1	5-6	4-5	5-6	6-7
		Sample Date	06/06/16	06/06/16	06/08/16	06/08/16	06/14/16	06/15/16	06/15/16	06/15/16
TCLP Metals (mg/L)	**Units**	**RCRA Limits**								
Chromium	mg/L	5	NA	NA	NA	0.0059 J	NA	0.0189	0.0038 J	NA
Lead	mg/L	5	**95**	**28**	4.73	NA	3.2	NA	NA	1.58

U – not detected; J – estimated value; UJ – not detected, reporting limit estimated

Table 3-6
Summary of TBA EPH and SVOC Soil Sample Results
Former Tombarello Property
Lawrence, Massachusetts

					Sample Location	BPA-01	BPA-02	CD-34E	CD-34W	CD-45E	CD-45N		CD-45W	FB-01	FB-02		FB-04	FG-34	FG-34N	FG-45N
					Sample Depth (ft)	2 - 3	2 - 3	1 - 3	0 - 1	0 - 1	0 - 1	1 - 3	1 - 3	1 - 2	1 - 2	2 - 3	1 - 2	0 - 1	1 - 3	0 - 1
					Sample Date	06/07/16	06/07/16	06/06/16	06/06/16	06/06/16	06/06/16	06/06/16	06/06/16	06/06/16	06/07/16	06/07/16	06/06/16	06/07/16	06/07/16	06/08/16
					QC Identifier															
Semivolatiles	**Units**	**S-1/GW-1**	**S-1/GW-2**	**S-1/GW-3**	**Soil UCL**															
2-Methylnaphthalene	ug/kg	700	80000	300000	5000000	**1500**	370 U	**4000 J+**	**2200 J+**	**3900**	**970**	**11000 J**	**1800**	350 U	**310 J**	**380**	**3200**	**2200**	**210 J**	**270 J**
Acenaphthene	ug/kg	4000	1000000	1000000	10000000	**3700**	370 U	**22000 J**	**16000 J**	**17000 J**	**470**	**64000**	**5000**	**150 J**	**620**	**940**	**8100 J**	**2500**	**880**	**430**
Acenaphthylene	ug/kg	1000	600000	10000	10000000	**930**	370 U	**3600 J+**	**970 J+**	**1800**	**1200**	**5600 J-**	**7600 J**	**72 J**	**81 J**	**120 J**	**750**	**2200**	**390 J**	**880**
Anthracene	ug/kg	1000000	1000000	1000000	10000000	**10000**	**310 J**	**63000 J**	**30000 J**	**36000**	**1800**	**150000**	**23000**	**400**	**1800**	**2700**	**27000**	**6800**	**2100**	**1400**
Benzo(a)anthracene	ug/kg	7000	7000	7000	3000000	**17000**	**630**	**110000**	**69000 J**	**86000**	**5500**	**240000**	**37000**	**1000**	**2400**	**3800**	**33000**	**14000**	**4900**	**5300**
Benzo(a)pyrene	ug/kg	2000	2000	2000	300000	**15000**	**690**	**110000**	**61000 J**	**72000**	**5300**	**210000**	**37000**	**710 J-**	**2200**	**3100**	**29000**	**13000**	**4700**	**4400**
Benzo(b)fluoranthene	ug/kg	7000	7000	7000	3000000	**19000**	**940**	**140000**	**84000**	**98000**	**11000**	**250000**	**45000**	**1500**	**3000**	**4400**	**36000**	**16000**	**6000**	**9000**
Benzo(g,h,i)perylene	ug/kg	1000000	1000000	1000000	10000000	**8000**	**830**	**62000 J**	**35000 J**	**46000**	**5000**	**99000**	**23000**	**530**	**1200**	**1800**	**14000**	**7800**	**3600**	**5300**
Benzo(k)fluoranthene	ug/kg	70000	70000	70000	10000000	**5200**	**380**	**53000 J**	**430 J+**	**42000**	**1800**	**92000**	**18000**	**590**	**1200**	**1500**	**15000**	**5000**	**2700**	**3300**
Chrysene	ug/kg	70000	70000	70000	10000000	**17000**	**630**	**120000**	**66000 J**	**85000**	**7000**	**1400 J-**	**35000**	**1000**	**2200**	**3300**	**31000**	**14000**	**4300**	**5100**
Dibenz(a,h)anthracene	ug/kg	700	700	700	300000	**2100**	**120 J**	360 U	350 U	380 U	350 U	380 UJ	350 U	350 U	**320 J**	**460**	340 U	**2200**	**880**	**1400**
Fluoranthene	ug/kg	1000000	1000000	1000000	10000000	**37000**	**1200**	**300000**	**500 J+**	**190000**	**10000**	**460000**	**79000**	**2100**	**5000**	**9200**	**80000**	**30000**	**11000**	**9300**
Fluorene	ug/kg	1000000	1000000	1000000	10000000	**4400**	370 U	**33000 J**	**17000 J**	**19000 J**	**1100**	**97000**	**13000**	**160 J**	**920**	**1500**	**14000**	**4400**	**940**	**570**
Indeno(1,2,3-cd)pyrene	ug/kg	7000	7000	7000	3000000	**9500**	**630**	**70000 J**	**40000 J**	**49000**	**5400**	**110000**	**25000**	**620**	**1300**	**1900**	**16000**	**8800**	**3800**	**5300**
Naphthalene	ug/kg	4000	20000	500000	10000000	**2900**	370 U	90000 U	**4300 J+**	**10000 J**	**930**	**30000 J**	**2800**	350 U	**450**	**660**	**5200**	**3600**	**400**	**270 J**
Phenanthrene	ug/kg	10000	500000	500000	10000000	**38000**	**820**	**260000**	**120000**	**170000**	**5200**	**430000**	**71000**	**1600**	**5300**	**9400**	**76000**	**27000**	**8200**	**4500**
Pyrene	ug/kg	1000000	1000000	1000000	10000000	**28000**	**1100**	**210000**	**110000**	**140000**	**9500**	**390000**	**59000**	**1900**	**4200**	**5900**	**54000**	**23000**	**8400**	**8000**

Shading - UCL Exceeded; Bold - Detected; U - Not Detected;
J - Estimated; R - Rejected; NA - Not Analyzed

Table 3-6
Summary of TBA EPH and SVOC Soil Sample Results
Former Tombarello Property
Lawrence, Massachusetts

					Sample Location	BPA-01	BPA-02	CD-34E	CD-34W	CD-45E	CD-45N		CD-45W	FB-01	FB-02		FB-04	FG-34	FG-34N	FG-45N
					Sample Depth (ft)	2 - 3	2 - 3	1 - 3	0 - 1	0 - 1	0 - 1	1 - 3	1 - 3	1 - 2	1 - 2	2 - 3	1 - 2	0 - 1	1 - 3	0 - 1
					Sample Date	06/07/16	06/07/16	06/06/16	06/06/16	06/06/16	06/06/16	06/06/16	06/06/16	06/06/16	06/07/16	06/07/16	06/06/16	06/07/16	06/07/16	06/08/16
					QC Identifier															
EPH	**Units**	**S-1/GW-1**	**S-1/GW-2**	**S-1/GW-3**	**Soil UCL**															
C11-C22 Aromatics	mg/kg	1000	1000	1000	10000	**417**	**514**	NA	NA	NA	NA	NA	NA	**15.1**	**313**	**204**	**199 J**	NA	NA	NA
C19-C36 Aliphatics	mg/kg	3000	3000	3000	20000	**277**	**2160 J**	NA	NA	NA	NA	NA	NA	10.5 U	**741 J**	**544**	10.4 U	NA	NA	NA
C9-C18 Aliphatics	mg/kg	1000	1000	1000	20000	27.4 U	**752 J**	NA	NA	NA	NA	NA	NA	10.5 U	**49.8**	**33.9**	10.4 UJ	NA	NA	NA
2-Methylnaphthalene	mg/kg	0.7	80	300	5000	0.911 U	0.358 U	NA	NA	NA	NA	NA	NA	0.35 U	**1.07**	0.352 U	**0.935 J**	NA	NA	NA
Acenaphthene	mg/kg	4	1000	1000	10000	**2.57**	0.358 U	NA	NA	NA	NA	NA	NA	0.35 U	**1.95**	**0.851**	**2.51 J**	NA	NA	NA
Acenaphthylene	mg/kg	1	600	10	10000	0.911 U	0.358 U	NA	NA	NA	NA	NA	NA	0.35 U	0.352 U	0.352 U	0.695 UJ	NA	NA	NA
Anthracene	mg/kg	1000	1000	1000	10000	**7.18**	0.358 U	NA	NA	NA	NA	NA	NA	**0.518**	**6.77**	**2.83**	**9.72 J**	NA	NA	NA
Benzo(a)anthracene	mg/kg	7	7	7	3000	**15.9**	**0.606**	NA	NA	NA	NA	NA	NA	**1.11**	**8.02**	**5.59**	**13.2 J**	NA	NA	NA
Benzo(a)pyrene	mg/kg	2	2	2	300	**13.4**	**0.714**	NA	NA	NA	NA	NA	NA	**1.14**	**6.9**	**4.77**	**9.77 J**	NA	NA	NA
Benzo(b)fluoranthene	mg/kg	7	7	7	3000	**9.57**	**0.46**	NA	NA	NA	NA	NA	NA	**0.672**	**4.6**	**3.09**	**6.37 J**	NA	NA	NA
Benzo(g,h,i)perylene	mg/kg	1000	1000	1000	10000	**5.56**	**0.559**	NA	NA	NA	NA	NA	NA	**0.493**	**2.95**	**2.4**	**3.95 J**	NA	NA	NA
Benzo(k)fluoranthene	mg/kg	70	70	70	10000	**10.8**	**0.646**	NA	NA	NA	NA	NA	NA	**1.1**	**6.01**	**3.67**	**7.77 J**	NA	NA	NA
Chrysene	mg/kg	70	70	70	10000	**13.7**	**0.635**	NA	NA	NA	NA	NA	NA	**1.2**	**6.9**	**4.84**	**10.7 J**	NA	NA	NA
Dibenz(a,h)anthracene	mg/kg	0.7	0.7	0.7	300	**1.73**	0.358 U	NA	NA	NA	NA	NA	NA	0.35 U	**0.872**	**0.703**	**1.11 J**	NA	NA	NA
Fluoranthene	mg/kg	1000	1000	1000	10000	**31.7**	**1.16**	NA	NA	NA	NA	NA	NA	**2.65**	**17.2**	**11.5**	**31.2 J**	NA	NA	NA
Fluorene	mg/kg	1000	1000	1000	10000	**3.71**	**0.403**	NA	NA	NA	NA	NA	NA	0.35 U	**4**	**1.22**	**4.92 J**	NA	NA	NA
Indeno(1,2,3-cd)pyrene	mg/kg	7	7	7	3000	**5.82**	**0.476**	NA	NA	NA	NA	NA	NA	**0.406**	**2.93**	**2.34**	**3.82 J**	NA	NA	NA
Naphthalene	mg/kg	4	20	500	10000	**2.03**	0.358 U	NA	NA	NA	NA	NA	NA	0.35 U	**1.2**	**0.421**	**1.48 J**	NA	NA	NA
Phenanthrene	mg/kg	10	500	500	10000	**33.1**	**0.86**	NA	NA	NA	NA	NA	NA	**2.0**	**19.8**	**10.8**	**33.2 J**	NA	NA	NA
Pyrene	mg/kg	1000	1000	1000	10000	**26.6**	**1.13**	NA	NA	NA	NA	NA	NA	**2.26**	**13.3**	**9.18**	**24.2 J**	NA	NA	NA

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Table 3-6
Summary of TBA EPH and SVOC Soil Sample Results
Former Tombarello Property
Lawrence, Massachusetts

					Sample Location	FG-45S		LS-01	LS-02	MS-01	MS-02	NPA-01	NPA-03	NPA-04	NPA-05	NPA-06	NPA-07	P-13N	P-13W	SA-01
					Sample Depth (ft)	1 - 3		7 - 8	2 - 3	2 - 3	2 - 3	0.5 - 2	0.5 - 2	2 - 3	0.5 - 2	0.5 - 2	0.5 - 2	0 - 1	1 - 3	1 - 3
					Sample Date	06/08/16		06/09/16	06/09/16	06/10/16	06/10/16	06/10/16	06/10/16	06/10/16	06/10/16	06/10/16	06/10/16	06/08/16	06/08/16	06/09/16
					QC Identifier	FD	FD													
Semivolatiles	**Units**	**S-1/GW-1**	**S-1/GW-2**	**S-1/GW-3**	**Soil UCL**															
2-Methylnaphthalene	ug/kg	700	80000	300000	5000000	400 U	400 U	410 U	430 U	**120 J**	**360 J**	1400 U	35000 U	**370**	**1200**	**24000 J**	360 U	**140 J**	510 U	**1700**
Acenaphthene	ug/kg	4000	1000000	1000000	10000000	**180 J**	400 U	410 U	430 U	**520**	**1800**	**370 J**	**25000 J**	**1400**	**5900**	**59000 J**	**110 J**	**290 J**	510 U	**560**
Acenaphthylene	ug/kg	1000	600000	10000	10000000	400 U	400 U	410 U	430 U	**210 J**	**370**	**560 J**	35000 U	**410**	**830**	71000 U	**230 J**	**410**	**620**	**190 J**
Anthracene	ug/kg	1000000	1000000	1000000	10000000	**400**	**190 J**	410 U	430 U	**1700**	**6800**	**1200 J**	**58000**	**4900**	**15000**	**160000**	**480**	**1200**	**1900**	**1700**
Benzo(a)anthracene	ug/kg	7000	7000	7000	3000000	**840 J**	**450 J**	410 U	430 U	**3600**	**12000**	**3400 J**	**120000**	**11000**	**29000**	**280000**	**1400**	**3700**	**5000**	**2300**
Benzo(a)pyrene	ug/kg	2000	2000	2000	300000	**780**	**470**	410 U	430 U	**3400**	**12000**	**3300 J**	**100000**	**10000**	**24000**	**250000**	**1500**	**2900**	**4300**	**2500**
Benzo(b)fluoranthene	ug/kg	7000	7000	7000	3000000	**1100 J**	**640 J**	410 U	430 U	**4600**	**15000**	**4400 J**	**130000**	**12000**	**32000**	**330000**	**1900**	**5200**	**6300**	**3400**
Benzo(g,h,i)perylene	ug/kg	1000000	1000000	1000000	10000000	**450**	**360 J**	410 U	430 U	**2000**	**7200**	**1700 J**	**44000**	**4900**	**12000**	**110000**	**1100**	**4200**	**3200**	**1100**
Benzo(k)fluoranthene	ug/kg	70000	70000	70000	10000000	**460**	**230 J**	410 U	430 U	**1800**	**4000 J**	**1800 J**	**61000**	**4800**	**5900**	**130000**	**900**	**2100**	**2900**	**1200**
Chrysene	ug/kg	70000	70000	70000	10000000	**860 J**	**470 J**	410 U	430 U	**3300**	**11000**	**3000 J**	**120000**	**10000**	**28000**	**250000**	**1400**	**3400**	**4500**	**2200**
Dibenz(a,h)anthracene	ug/kg	700	700	700	300000	**120 J**	**100 J**	410 U	430 U	**530**	**1800 J**	**480 J**	**16000 J**	**1700**	**4400**	**36000 J**	**280 J**	**930**	**760**	**310 J**
Fluoranthene	ug/kg	1000000	1000000	1000000	10000000	**1800 J**	**930 J**	410 U	430 U	**8500**	**30000**	**8000 J**	**280000**	**23000**	**68000**	**750000**	**2800**	**5500**	**12000**	**5500**
Fluorene	ug/kg	1000000	1000000	1000000	10000000	**180 J**	400 U	410 U	430 U	**670**	**2500**	**410 J**	**27000 J**	**2100**	**7200 J**	**68000 J**	**150 J**	**340 J**	**200 J**	**1000**
Indeno(1,2,3-cd)pyrene	ug/kg	7000	7000	7000	3000000	**440**	**380 J**	410 U	430 U	**2100**	**8200**	**1900 J**	**51000**	**5400**	**15000**	**130000**	**990**	**4100**	**3500**	**1300**
Naphthalene	ug/kg	4000	20000	500000	10000000	**160 J**	400 U	410 U	430 U	**200 J**	**470**	1400 U	35000 U	**760**	**2100**	**39000 J**	360 U	**190 J**	510 U	**1500**
Phenanthrene	ug/kg	10000	500000	500000	10000000	**1700 J**	**670 J**	410 U	430 U	**5700**	**22000**	**4300 J**	**230000**	**15000**	**58000**	**660000**	**1800**	**3300**	**6300**	**5700**
Pyrene	ug/kg	1000000	1000000	1000000	10000000	**1500 J**	**860 J**	410 U	430 U	**5800**	**20000**	**4900 J**	**200000**	**15000**	**46000**	**480000**	**2400**	**6000**	**8600**	**4600**

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Table 3-6
Summary of TBA EPH and SVOC Soil Sample Results
Former Tombarello Property
Lawrence, Massachusetts

					Sample Location	FG-45S		LS-01	LS-02	MS-01	MS-02	NPA-01	NPA-03	NPA-04	NPA-05	NPA-06	NPA-07	P-13N	P-13W	SA-01
					Sample Depth (ft)	1 - 3		7 - 8	2 - 3	2 - 3	2 - 3	0.5 - 2	0.5 - 2	2 - 3	0.5 - 2	0.5 - 2	0.5 - 2	0 - 1	1 - 3	1 - 3
					Sample Date	06/08/16		06/09/16	06/09/16	06/10/16	06/10/16	06/10/16	06/10/16	06/10/16	06/10/16	06/10/16	06/10/16	06/08/16	06/08/16	06/09/16
					QC Identifier	FD	FD													
EPH	**Units**	**S-1/GW-1**	**S-1/GW-2**	**S-1/GW-3**	**Soil UCL**															
C11-C22 Aromatics	mg/kg	1000	1000	1000	10000	NA	NA	12.6 U	13.1 U	NA	**347**	NA	NA	NA	NA	NA	NA	NA	NA	**347**
C19-C36 Aliphatics	mg/kg	3000	3000	3000	20000	NA	NA	12.6 U	13.1 U	NA	53.8 U	NA	NA	NA	NA	NA	NA	NA	NA	**847 J**
C9-C18 Aliphatics	mg/kg	1000	1000	1000	20000	NA	NA	12.6 U	13.1 U	NA	53.8 U	NA	NA	NA	NA	NA	NA	NA	NA	**135**
2-Methylnaphthalene	mg/kg	0.7	80	300	5000	NA	NA	0.418 U	0.435 U	NA	1.79 U	NA	NA	NA	NA	NA	NA	NA	NA	**1.69**
Acenaphthene	mg/kg	4	1000	1000	10000	NA	NA	0.418 U	0.435 U	NA	1.79 U	NA	NA	NA	NA	NA	NA	NA	NA	0.396 U
Acenaphthylene	mg/kg	1	600	10	10000	NA	NA	0.418 U	0.435 U	NA	1.79 U	NA	NA	NA	NA	NA	NA	NA	NA	0.396 U
Anthracene	mg/kg	1000	1000	1000	10000	NA	NA	0.418 U	0.435 U	NA	**6.48**	NA	NA	NA	NA	NA	NA	NA	NA	**0.838**
Benzo(a)anthracene	mg/kg	7	7	7	3000	NA	NA	0.418 U	0.435 U	NA	**13.9**	NA	NA	NA	NA	NA	NA	NA	NA	**2.17**
Benzo(a)pyrene	mg/kg	2	2	2	300	NA	NA	0.418 U	0.435 U	NA	**13.1**	NA	NA	NA	NA	NA	NA	NA	NA	**2.5**
Benzo(b)fluoranthene	mg/kg	7	7	7	3000	NA	NA	0.418 U	0.435 U	NA	**7.31**	NA	NA	NA	NA	NA	NA	NA	NA	**1.8**
Benzo(g,h,i)perylene	mg/kg	1000	1000	1000	10000	NA	NA	0.418 U	0.435 U	NA	**8.3**	NA	NA	NA	NA	NA	NA	NA	NA	**1.64**
Benzo(k)fluoranthene	mg/kg	70	70	70	10000	NA	NA	0.418 U	0.435 U	NA	**10.1**	NA	NA	NA	NA	NA	NA	NA	NA	**1.76**
Chrysene	mg/kg	70	70	70	10000	NA	NA	0.418 U	0.435 U	NA	**11.8**	NA	NA	NA	NA	NA	NA	NA	NA	**1.96**
Dibenz(a,h)anthracene	mg/kg	0.7	0.7	0.7	300	NA	NA	0.418 U	0.435 U	NA	**2.11**	NA	NA	NA	NA	NA	NA	NA	NA	**0.417**
Fluoranthene	mg/kg	1000	1000	1000	10000	NA	NA	0.418 U	0.435 U	NA	**29.5**	NA	NA	NA	NA	NA	NA	NA	NA	**3.71**
Fluorene	mg/kg	1000	1000	1000	10000	NA	NA	0.418 U	0.435 U	NA	**2.37**	NA	NA	NA	NA	NA	NA	NA	NA	**0.511**
Indeno(1,2,3-cd)pyrene	mg/kg	7	7	7	3000	NA	NA	0.418 U	0.435 U	NA	**7.48**	NA	NA	NA	NA	NA	NA	NA	NA	**1.48**
Naphthalene	mg/kg	4	20	500	10000	NA	NA	0.418 U	0.435 U	NA	1.79 U	NA	NA	NA	NA	NA	NA	NA	NA	**1.23**
Phenanthrene	mg/kg	10	500	500	10000	NA	NA	0.418 U	0.435 U	NA	**22.9**	NA	NA	NA	NA	NA	NA	NA	NA	**3.13**
Pyrene	mg/kg	1000	1000	1000	10000	NA	NA	0.418 U	0.435 U	NA	**23.1**	NA	NA	NA	NA	NA	NA	NA	NA	**3.42**

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Table 3-6
Summary of TBA EPH and SVOC Soil Sample Results
Former Tombarello Property
Lawrence, Massachusetts

					Sample Location	SB-3E	SBB-3W	SS-01		SVA-01	SVA-02	SVA-03		SVA-04	SVA-05	SVA-06	SVA-07	SVA-08
					Sample Depth (ft)	0 - 1	1 - 3	1 - 2	7 - 8	0 - 1	1 - 3	1 - 3		1 - 3	1 - 3	1 - 3	1 - 3	1 - 3
					Sample Date	06/09/16	06/09/16	06/08/16	06/08/16	06/07/16	06/08/16	06/08/16		06/08/16	06/08/16	06/08/16	06/09/16	06/09/16
					QC Identifier							FD	FD					
Semivolatiles	**Units**	**S-1/GW-1**	**S-1/GW-2**	**S-1/GW-3**	**Soil UCL**													
2-Methylnaphthalene	ug/kg	700	80000	300000	5000000	330 U	350 U	370 U	550 U	**160 J**	**150 J**	**130 J**	**140 J**	**110 J**	**670**	**2300**	**180 J**	**130 J**
Acenaphthene	ug/kg	4000	1000000	1000000	10000000	330 U	**240 J**	**260 J**	**150 J**	**550**	**180 J**	**130 J**	**140 J**	**420**	**1900**	**3700**	**190 J**	**330 J**
Acenaphthylene	ug/kg	1000	600000	10000	10000000	330 U	**240 J**	**180 J**	**430 J**	**380**	**460**	**150 J**	**350 J**	**230 J**	**850**	**2600**	**460**	**1000**
Anthracene	ug/kg	1000000	1000000	1000000	10000000	330 U	**990**	**1600**	**1100**	**2400**	**970**	**280 J**	**650**	**1000**	**5700**	**13000**	**1200**	**3700**
Benzo(a)anthracene	ug/kg	7000	7000	7000	3000000	**130 J**	**3400**	**3800**	**3300**	**4700**	**2500**	**790**	**1600**	**2700**	**11000**	**20000**	**3200**	**12000**
Benzo(a)pyrene	ug/kg	2000	2000	2000	300000	**150 J**	**3500**	**2300**	**2000**	**5200**	**2900**	**730**	**1300**	**2600**	**10000**	**18000**	**3500 J**	**11000**
Benzo(b)fluoranthene	ug/kg	7000	7000	7000	3000000	**200 J**	**5100**	**4300**	**4200**	**7600**	**3800**	**1400**	**2400**	**3400**	**14000**	**24000**	**4600 J**	**14000**
Benzo(g,h,i)perylene	ug/kg	1000000	1000000	1000000	10000000	**120 J**	**2500**	**2400**	**2100**	**5200**	**2100**	**1000**	**1800**	**1600**	**5600**	**8900**	**3100 J**	**6400**
Benzo(k)fluoranthene	ug/kg	70000	70000	70000	10000000	**84 J**	**1900**	**2000**	**1500**	**2800**	**1500**	**370 J**	**820**	**1400**	**4200**	**11000**	**1800 J**	**5100 J**
Chrysene	ug/kg	70000	70000	70000	10000000	**130 J**	**2800**	**3100**	**2900**	**4000**	**2400**	**850**	**1500**	**2700**	**10000**	**19000**	**2800**	**12000**
Dibenz(a,h)anthracene	ug/kg	700	700	700	300000	330 U	**630**	**640**	**560**	**1100**	**510**	**190 J**	**440**	**430**	**1900**	**2900**	**750 J**	**1900 J**
Fluoranthene	ug/kg	1000000	1000000	1000000	10000000	**220 J**	**5400**	**8100**	**5100**	**9500**	**3900**	**1400**	**2800**	**4600**	**24000**	**47000**	**5000**	**23000**
Fluorene	ug/kg	1000000	1000000	1000000	10000000	330 U	**270 J**	**540**	**230 J**	**630**	**380 J**	420 U	**270 J**	**540**	**2500**	**7900**	**430**	**1100**
Indeno(1,2,3-cd)pyrene	ug/kg	7000	7000	7000	3000000	**120 J**	**2600**	**2600**	**2400**	**4900**	**2200**	**970**	**1900**	**1800**	**6000**	**11000**	**3200 J**	**7400**
Naphthalene	ug/kg	4000	20000	500000	10000000	330 U	350 U	370 U	550 U	**260 J**	**280 J**	**400 J**	**480**	**120 J**	**1100**	**3400**	**170 J**	**180 J**
Phenanthrene	ug/kg	10000	500000	500000	10000000	330 U	**3200**	**4500**	**2400**	**5300**	**2800**	**980**	**2100**	**3900**	**19000**	**44000**	**3600**	**11000**
Pyrene	ug/kg	1000000	1000000	1000000	10000000	**210 J**	**5100**	**5700**	**4900**	**7800**	**3800**	**1400**	**2900**	**5000**	**17000**	**35000**	**5200**	**18000**

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Table 3-6
Summary of TBA EPH and SVOC Soil Sample Results
Former Tombarello Property
Lawrence, Massachusetts

					Sample Location	SB-3E	SBB-3W	SS-01		SVA-01	SVA-02	SVA-03		SVA-04	SVA-05	SVA-06	SVA-07	SVA-08
					Sample Depth (ft)	0 - 1	1 - 3	1 - 2	7 - 8	0 - 1	1 - 3	1 - 3		1 - 3	1 - 3	1 - 3	1 - 3	1 - 3
					Sample Date	06/09/16	06/09/16	06/08/16	06/08/16	06/07/16	06/08/16	06/08/16		06/08/16	06/08/16	06/08/16	06/09/16	06/09/16
					QC Identifier							FD	FD					
EPH	**Units**	**S-1/GW-1**	**S-1/GW-2**	**S-1/GW-3**	**Soil UCL**													
C11-C22 Aromatics	mg/kg	1000	1000	1000	10000	NA	NA	**55.9**	**67.9**	**135**	**101**	**286**	**295**	**107**	**156**	**465**	**145**	**285**
C19-C36 Aliphatics	mg/kg	3000	3000	3000	20000	NA	NA	**177**	**20.7**	**148**	**423**	**1030 J**	**847 J**	**318**	**433**	**1430 J**	**396**	**266**
C9-C18 Aliphatics	mg/kg	1000	1000	1000	20000	NA	NA	**17.4**	15.6 U	**10.5**	**23.2**	**227 J**	**93.9 J**	**26.1**	**29.3**	**232**	**43.1**	**27.9**
2-Methylnaphthalene	mg/kg	0.7	80	300	5000	NA	NA	0.347 U	0.52 U	0.347 U	0.398 U	0.397 U	0.398 U	0.406 U	0.371 U	**0.748**	0.379 U	0.37 U
Acenaphthene	mg/kg	4	1000	1000	10000	NA	NA	0.347 U	0.52 U	**0.696**	0.398 U	0.397 U	0.398 U	0.406 U	**0.598**	**1.26**	0.379 U	0.37 U
Acenaphthylene	mg/kg	1	600	10	10000	NA	NA	0.347 U	0.52 U	0.347 U	0.398 U	0.397 U	0.398 U	0.406 U	0.371 U	**0.413**	0.379 U	0.37 U
Anthracene	mg/kg	1000	1000	1000	10000	NA	NA	**0.44**	**0.719**	**3.2**	**0.477**	0.397 U	0.398 U	**0.505**	**2.18**	**4.38**	**0.438**	**1.66**
Benzo(a)anthracene	mg/kg	7	7	7	3000	NA	NA	**1.08**	**2.92**	**6.05**	**1.28**	**0.464**	**0.574**	**1.46**	**4.08**	**9.93**	**1.14**	**7.89**
Benzo(a)pyrene	mg/kg	2	2	2	300	NA	NA	**1.34**	**3.12**	**5.33**	**1.56**	**0.424**	**0.528**	**1.39**	**3.58**	**8.75**	**1.48**	**6.25**
Benzo(b)fluoranthene	mg/kg	7	7	7	3000	NA	NA	**0.865**	**2.73**	**3.89**	**1.24**	**0.423**	**0.469**	**0.908**	**2.09**	**9.21**	**0.827**	**5.77**
Benzo(g,h,i)perylene	mg/kg	1000	1000	1000	10000	NA	NA	**0.761**	**1.47**	**2.92**	**0.941**	0.397 U	0.398 U	**0.778**	**1.97**	**4.05**	**0.98**	**3.35**
Benzo(k)fluoranthene	mg/kg	70	70	70	10000	NA	NA	**0.952**	**2.39**	**4.81**	**1.31**	**0.434**	**0.515**	**1.21**	**3.39**	**6.28**	**1.3**	**5.5**
Chrysene	mg/kg	70	70	70	10000	NA	NA	**1.01**	**2.72**	**5.14**	**1.34**	**0.545**	**0.612**	**1.4**	**3.58**	**8.43**	**1.25**	**6.95**
Dibenz(a,h)anthracene	mg/kg	0.7	0.7	0.7	300	NA	NA	0.347 U	0.52 U	**0.911**	0.398 U	0.397 U	0.398 U	0.406 U	**0.618**	**1.36**	0.379 U	**0.918**
Fluoranthene	mg/kg	1000	1000	1000	10000	NA	NA	**1.98**	**4.74**	**12.5**	**2.22**	**0.752**	**0.864**	**2.45**	**8.11**	**18.3**	**2.29**	**12.4**
Fluorene	mg/kg	1000	1000	1000	10000	NA	NA	0.347 U	0.52 U	**1.12**	0.398 U	0.397 U	0.398 U	0.406 U	**1.04**	**2.38**	0.379 U	**0.507**
Indeno(1,2,3-cd)pyrene	mg/kg	7	7	7	3000	NA	NA	**0.743**	**1.54**	**2.75**	**0.855**	0.397 U	0.398 U	**0.74**	**1.86**	**4.28**	**0.896**	**3.28**
Naphthalene	mg/kg	4	20	500	10000	NA	NA	0.347 U	0.52 U	0.347 U	0.398 U	**0.474**	**0.418**	0.406 U	0.371 U	**0.727**	0.379 U	0.37 U
Phenanthrene	mg/kg	10	500	500	10000	NA	NA	**1.28**	**1.62**	**10.8**	**1.28**	**0.475**	**0.544**	**1.41**	**7.54**	**15.5**	**1.59**	**5.84**
Pyrene	mg/kg	1000	1000	1000	10000	NA	NA	**1.59**	**3.82**	**10.2**	**2.04**	**0.688**	**0.804**	**2.31**	**6.56**	**15**	**2.28**	**11.3**

Shading - UCL Exceeded; Bold - Detected; U - Not Detected;
J - Estimated; R - Rejected; NA - Not Analyzed

Table 3-7
Summary of TBA VOC Soil Sample Results
Former Tombarello Property
Lawrence, Massachusetts

					Sample Location	BPA-01	BPA-02	FB-01	FB-02		FB-03	FB-04	LS-01	LS-02	M-7E	MS-01	NPA-02
					Sample Depth (ft)	2 - 3	2 - 3	5 - 7	1 - 2	2 - 3	2 - 3	1 - 2	7 - 8	2 - 3	1 - 3	12 - 13	6 - 7
					Sample Date	06/07/16	06/07/16	06/06/16	06/07/16	06/07/16	06/06/16	06/06/16	06/09/16	06/09/16	06/07/16	06/10/16	06/10/16
					QC Identifier												
Volatiles	**Units**	**S-1/GW-1**	**S-1/GW-2**	**S-1/GW-3**	**Soil UCL**												
1,1,1,2-Tetrachloroethane	ug/kg	100	100	80000	5000000	5.9 U	5.3 U	6.2 U	4.6 U	3 U	4.1 U	5 U	5.1 U	7.8 U	4.2 U	4.5 U	4.2 U
1,1,1-Trichloroethane	ug/kg	30000	500000	500000	10000000	5.9 U	5.3 U	6.2 U	4.6 U	3 U	4.1 U	5 U	5.1 U	7.8 U	4.2 U	4.5 U	4.2 U
1,1,2,2-Tetrachloroethane	ug/kg	5	20	10000	4000000	5.9 U	5.3 U	6.2 U	4.6 U	3 U	4.1 U	5 U	5.1 U	7.8 U	4.2 U	4.5 U	4.2 U
1,1,2-Trichloroethane	ug/kg	100	2000	40000	5000000	5.9 U	5.3 U	6.2 U	4.6 U	3 U	4.1 U	5 U	5.1 U	7.8 U	4.2 U	4.5 U	4.2 U
1,1-Dichloroethane	ug/kg	400	9000	500000	10000000	5.9 U	5.3 U	6.2 U	4.6 U	3 U	4.1 U	5 U	5.1 U	**2.4 J**	4.2 U	4.5 U	4.2 U
1,1-Dichloroethene	ug/kg	3000	40000	500000	10000000	5.9 U	5.3 U	6.2 U	4.6 U	3 U	4.1 U	5 U	5.1 U	7.8 U	4.2 U	4.5 U	4.2 U
1,1-Dichloropropene	ug/kg	--	--	--	--	5.9 U	5.3 U	6.2 U	4.6 U	3 U	4.1 U	5 U	5.1 U	7.8 U	4.2 U	4.5 U	4.2 U
1,2,3-Trichlorobenzene	ug/kg	--	--	--	--	5.9 U	5.3 U	6.2 U	4.6 U	3 U	4.1 U	5 U	5.1 U	7.8 U	4.2 U	4.5 U	4.2 U
1,2,3-Trichloropropane	ug/kg	--	--	--	--	5.9 U	5.3 U	6.2 U	4.6 U	3 U	4.1 U	5 U	5.1 U	7.8 U	4.2 U	4.5 U	4.2 U
1,2,4-Trichlorobenzene	ug/kg	2000	6000	700000	10000000	5.9 U	5.3 U	6.2 U	4.6 U	3 U	4.1 U	5 U	5.1 U	7.8 U	4.2 U	4.5 U	4.2 U
1,2,4-Trimethylbenzene	ug/kg	--	--	--	--	**4.3 J**	5.3 U	6.2 U	4.6 U	3 U	4.1 U	5 U	5.1 U	7.8 U	**57**	4.5 U	4.2 U
1,2-Dibromo-3-chloropropane	ug/kg	--	--	--	--	5.9 U	5.3 U	6.2 U	4.6 U	3 U	4.1 U	5 U	5.1 U	7.8 U	4.2 U	4.5 U	4.2 U
1,2-Dibromoethane	ug/kg	100	100	1000	400000	5.9 U	5.3 U	6.2 U	4.6 U	3 U	4.1 U	5 U	5.1 U	7.8 U	4.2 U	4.5 U	4.2 U
1,2-Dichlorobenzene	ug/kg	9000	100000	300000	10000000	5.9 U	5.3 U	6.2 U	4.6 U	3 U	4.1 U	5 U	5.1 U	7.8 U	**1 J**	4.5 U	4.2 U
1,2-Dichloroethane	ug/kg	100	100	20000	9000000	5.9 U	5.3 U	6.2 U	4.6 U	3 U	4.1 U	5 U	5.1 U	7.8 U	4.2 U	4.5 U	4.2 U
1,2-Dichloropropane	ug/kg	100	100	30000	10000000	5.9 U	5.3 U	6.2 U	4.6 U	3 U	4.1 U	5 U	5.1 U	7.8 U	4.2 U	4.5 U	4.2 U
1,3,5-Trimethylbenzene	ug/kg	--	--	--	--	5.9 U	5.3 U	6.2 U	4.6 U	3 U	4.1 U	5 U	5.1 U	7.8 U	**2.9 J**	4.5 U	4.2 U
1,3-Dichlorobenzene	ug/kg	3000	100000	100000	5000000	5.9 U	5.3 U	6.2 U	4.6 U	3 U	4.1 U	5 U	5.1 U	7.8 U	4.2 U	4.5 U	4.2 U
1,3-Dichloropropane	ug/kg	--	--	--	--	5.9 U	5.3 U	6.2 U	4.6 U	3 U	4.1 U	5 U	5.1 U	7.8 U	4.2 U	4.5 U	4.2 U
1,4-Dichlorobenzene	ug/kg	700	1000	80000	10000000	5.9 U	5.3 U	6.2 U	4.6 U	3 U	4.1 U	5 U	5.1 U	7.8 U	4.2 U	4.5 U	4.2 U
1,4-Dioxane	ug/kg	200	6000	20000	5000000	120 U	110 U	120 U	92 U	59 U	83 U	100 U	100 U	160 U	85 U	91 U	83 U
2,2-Dichloropropane	ug/kg	--	--	--	--	5.9 U	5.3 U	6.2 U	4.6 U	3 U	4.1 U	5 U	5.1 U	7.8 U	4.2 U	4.5 U	4.2 U
2-Butanone	ug/kg	4000	50000	400000	10000000	**41**	**6.4**	6.2 U	4.6 U	3 U	4.1 U	5 U	5.1 U	7.8 U	**10**	4.5 U	4.2 U
2-Chlorotoluene	ug/kg	--	--	--	--	5.9 U	5.3 U	6.2 U	4.6 U	3 U	4.1 U	5 U	5.1 U	7.8 U	4.2 U	4.5 U	4.2 U
2-Hexanone	ug/kg	--	--	--	--	5.9 U	5.3 U	6.2 U	4.6 U	3 U	4.1 U	5 U	5.1 U	7.8 U	4.2 U	4.5 U	4.2 U
4-Chlorotoluene	ug/kg	--	--	--	--	5.9 U	5.3 U	6.2 U	4.6 U	3 U	4.1 U	5 U	5.1 U	7.8 U	4.2 U	4.5 U	4.2 U
4-Isopropyltoluene	ug/kg	--	--	--	--	5.9 U	5.3 U	6.2 U	4.6 U	3 U	4.1 U	5 U	5.1 U	7.8 U	4.2 U	4.5 U	4.2 U
4-Methyl-2-pentanone	ug/kg	400	50000	400000	10000000	5.9 U	5.3 U	6.2 U	4.6 U	3 U	4.1 U	5 U	5.1 U	7.8 U	4.2 U	4.5 U	4.2 U
Acetone	ug/kg	6000	50000	400000	10000000	**140**	**17**	**17**	**14**	3 U	4.1 U	5 U	5.1 U	**6.3 J**	**44**	4.5 U	4.2 U
Benzene	ug/kg	2000	40000	40000	10000000	**8.6**	5.3 U	6.2 U	4.6 U	3 U	4.1 U	5 U	5.1 U	7.8 U	**13**	4.5 U	4.2 U
Bromobenzene	ug/kg	--	--	--	--	5.9 U	5.3 U	6.2 U	4.6 U	3 U	4.1 U	5 U	5.1 U	7.8 U	4.2 U	4.5 U	4.2 U
Bromochloromethane	ug/kg	--	--	--	--	5.9 U	5.3 U	6.2 U	4.6 U	3 U	4.1 U	5 U	5.1 U	7.8 U	4.2 U	4.5 U	4.2 U
Bromodichloromethane	ug/kg	100	100	30000	5000000	5.9 U	5.3 U	6.2 U	4.6 U	3 U	4.1 U	5 U	5.1 U	7.8 U	4.2 U	4.5 U	4.2 U
Bromoform	ug/kg	100	1000	300000	10000000	5.9 U	5.3 U	6.2 U	4.6 U	3 U	4.1 U	5 U	5.1 U	7.8 U	4.2 U	4.5 U	4.2 U
Bromomethane	ug/kg	500	500	30000	6000000	5.9 U	5.3 U	6.2 U	4.6 U	3 U	4.1 U	5 U	5.1 U	7.8 U	4.2 U	4.5 U	4.2 U
Carbon disulfide	ug/kg	--	--	--	--	5.9 U	5.3 U	6.2 U	4.6 U	3 U	4.1 U	5 U	5.1 U	7.8 U	4.2 U	4.5 U	4.2 U

Red Shading - UCL Exceeded; Black Shading - Method 1 Std Exeeded; Bold - Detected; U - Not Detected;
J - Estimated; R - Rejected; NA - Not Analyzed

Table 3-7
Summary of TBA VOC Soil Sample Results
Former Tombarello Property
Lawrence, Massachusetts

Sample Location						SA-01	SS-01		SVA-01	SVA-02	SVA-03		SVA-04	SVA-05	SVA-06	SVA-07	SVA-08
Sample Depth (ft)						1 - 3	1 - 2	7 - 8	0 - 1	1 - 3	1 - 3		1 - 3	1 - 3	1 - 3	1 - 3	1 - 3
Sample Date						06/09/16	06/08/16	06/08/16	06/07/16	06/08/16	06/08/16		06/08/16	06/08/16	06/08/16	06/09/16	06/09/16
QC Identifier											FD	FD					
Volatiles	**Units**	**S-1/GW-1**	**S-1/GW-2**	**S-1/GW-3**	**Soil UCL**												
1,1,1,2-Tetrachloroethane	ug/kg	100	100	80000	5000000	7.1 U	4.6 U	9.2 U	5.4 U	5.6 U	5.1 U	9.1 U	6.6 U	4.1 U	3.7 U	5.9 U	7.6 U
1,1,1-Trichloroethane	ug/kg	30000	500000	500000	10000000	7.1 U	4.6 U	9.2 U	5.4 U	5.6 U	5.1 U	9.1 U	6.6 U	4.1 U	3.7 U	5.9 U	7.6 U
1,1,2,2-Tetrachloroethane	ug/kg	5	20	10000	4000000	7.1 U	4.6 U	9.2 U	5.4 U	5.6 U	5.1 U	9.1 U	6.6 U	4.1 U	3.7 U	5.9 U	7.6 U
1,1,2-Trichloroethane	ug/kg	100	2000	40000	5000000	7.1 U	4.6 U	9.2 U	5.4 U	5.6 U	5.1 U	9.1 U	6.6 U	4.1 U	3.7 U	5.9 U	7.6 U
1,1-Dichloroethane	ug/kg	400	9000	500000	10000000	7.1 U	4.6 U	**130**	5.4 U	**4.4 J**	**1 J**	**3.3 J**	6.6 U	4.1 U	3.7 U	5.9 U	7.6 U
1,1-Dichloroethene	ug/kg	3000	40000	500000	10000000	7.1 U	4.6 U	9.2 U	5.4 U	5.6 U	5.1 U	9.1 U	6.6 U	4.1 U	3.7 U	5.9 U	7.6 U
1,1-Dichloropropene	ug/kg	--	--	--	--	7.1 U	4.6 U	9.2 U	5.4 U	5.6 U	5.1 U	9.1 U	6.6 U	4.1 U	3.7 U	5.9 U	7.6 U
1,2,3-Trichlorobenzene	ug/kg	--	--	--	--	7.1 U	4.6 U	9.2 U	5.4 U	5.6 U	5.1 U	9.1 U	6.6 U	4.1 U	3.7 U	5.9 U	7.6 U
1,2,3-Trichloropropane	ug/kg	--	--	--	--	7.1 U	4.6 U	9.2 U	5.4 U	5.6 U	5.1 U	9.1 U	6.6 U	4.1 U	3.7 U	5.9 U	7.6 U
1,2,4-Trichlorobenzene	ug/kg	2000	6000	700000	10000000	7.1 U	4.6 U	9.2 U	5.4 U	5.6 U	5.1 U	9.1 U	6.6 U	4.1 U	3.7 U	5.9 U	7.6 U
1,2,4-Trimethylbenzene	ug/kg	--	--	--	--	**21**	4.6 U	9.2 U	5.4 U	5.6 U	**2.4 J**	**8 J**	6.6 U	4.1 U	**87**	5.9 U	7.6 U
1,2-Dibromo-3-chloropropane	ug/kg	--	--	--	--	7.1 U	4.6 U	9.2 U	5.4 U	5.6 U	5.1 U	9.1 U	6.6 U	4.1 U	3.7 U	5.9 U	7.6 U
1,2-Dibromoethane	ug/kg	100	100	1000	400000	7.1 U	4.6 U	9.2 U	5.4 U	5.6 U	5.1 U	9.1 U	6.6 U	4.1 U	3.7 U	5.9 U	7.6 U
1,2-Dichlorobenzene	ug/kg	9000	100000	300000	10000000	7.1 U	4.6 U	9.2 U	5.4 U	5.6 U	5.1 U	9.1 U	6.6 U	4.1 U	3.7 U	5.9 U	7.6 U
1,2-Dichloroethane	ug/kg	100	100	20000	9000000	**4.9 J**	4.6 U	9.2 U	5.4 U	5.6 U	5.1 U	9.1 U	6.6 U	4.1 U	3.7 U	5.9 U	7.6 U
1,2-Dichloropropane	ug/kg	100	100	30000	10000000	7.1 U	4.6 U	9.2 U	5.4 U	5.6 U	5.1 U	9.1 U	6.6 U	4.1 U	3.7 U	5.9 U	7.6 U
1,3,5-Trimethylbenzene	ug/kg	--	--	--	--	**4.1 J**	4.6 U	9.2 U	5.4 U	5.6 U	**1.3 J**	**3.8 J**	6.6 U	4.1 U	**11**	5.9 U	7.6 U
1,3-Dichlorobenzene	ug/kg	3000	100000	100000	5000000	7.1 U	4.6 U	9.2 U	5.4 U	5.6 U	5.1 U	9.1 U	6.6 U	4.1 U	3.7 U	5.9 U	7.6 U
1,3-Dichloropropane	ug/kg	--	--	--	--	7.1 U	4.6 U	9.2 U	5.4 U	5.6 U	5.1 U	9.1 U	6.6 U	4.1 U	3.7 U	5.9 U	7.6 U
1,4-Dichlorobenzene	ug/kg	700	1000	80000	10000000	7.1 U	4.6 U	9.2 U	5.4 U	5.6 U	5.1 U	9.1 U	6.6 U	4.1 U	3.7 U	5.9 U	7.6 U
1,4-Dioxane	ug/kg	200	6000	20000	5000000	140 U	91 U	180 U	110 U	110 U	100 U	180 U	130 U	81 U	74 U	120 U	150 U
2,2-Dichloropropane	ug/kg	--	--	--	--	7.1 U	4.6 U	9.2 U	5.4 U	5.6 U	5.1 U	9.1 U	6.6 U	4.1 U	3.7 U	5.9 U	7.6 U
2-Butanone	ug/kg	4000	50000	400000	10000000	**18**	4.6 U	9.2 U	5.4 U	5.6 U	5.1 U	**18**	**24**	4.1 U	3.7 U	5.9 U	7.6 U
2-Chlorotoluene	ug/kg	--	--	--	--	7.1 U	4.6 U	9.2 U	5.4 U	5.6 U	5.1 U	9.1 U	6.6 U	4.1 U	3.7 U	5.9 U	7.6 U
2-Hexanone	ug/kg	--	--	--	--	**15**	4.6 U	9.2 U	5.4 U	5.6 U	5.1 U	9.1 U	6.6 U	4.1 U	3.7 U	5.9 U	7.6 U
4-Chlorotoluene	ug/kg	--	--	--	--	7.1 U	4.6 U	9.2 U	5.4 U	5.6 U	5.1 U	9.1 U	6.6 U	4.1 U	3.7 U	5.9 U	7.6 U
4-Isopropyltoluene	ug/kg	--	--	--	--	**2.6 J**	4.6 U	9.2 U	5.4 U	5.6 U	5.1 U	**3.2 J**	6.6 U	4.1 U	**1.2 J**	5.9 U	7.6 U
4-Methyl-2-pentanone	ug/kg	400	50000	400000	10000000	7.1 U	4.6 U	9.2 U	5.4 U	5.6 U	5.1 U	9.1 U	6.6 U	4.1 U	3.7 U	5.9 U	7.6 U
Acetone	ug/kg	6000	50000	400000	10000000	**63**	4.6 U	9.2 U	5.4 U	**7.4**	**23 J**	**92 J**	**88**	4.1 U	**13**	**23**	**27**
Benzene	ug/kg	2000	40000	40000	10000000	**17**	4.6 U	9.2 U	5.4 U	5.6 U	**1.1 J**	9.1 U	6.6 U	4.1 U	**4.1**	**1.3 J**	**3.4 J**
Bromobenzene	ug/kg	--	--	--	--	7.1 U	4.6 U	9.2 U	5.4 U	5.6 U	5.1 U	9.1 U	6.6 U	4.1 U	3.7 U	5.9 U	7.6 U
Bromochloromethane	ug/kg	--	--	--	--	7.1 U	4.6 U	9.2 U	5.4 U	5.6 U	5.1 U	9.1 U	6.6 U	4.1 U	3.7 U	5.9 U	7.6 U
Bromodichloromethane	ug/kg	100	100	30000	5000000	7.1 U	4.6 U	9.2 U	5.4 U	5.6 U	5.1 U	9.1 U	6.6 U	4.1 U	3.7 U	5.9 U	7.6 U
Bromoform	ug/kg	100	1000	300000	10000000	7.1 U	4.6 U	9.2 U	5.4 U	5.6 U	5.1 U	9.1 U	6.6 U	4.1 U	3.7 U	5.9 U	7.6 U
Bromomethane	ug/kg	500	500	30000	6000000	7.1 U	4.6 U	9.2 U	5.4 U	5.6 U	5.1 U	9.1 U	6.6 U	4.1 U	3.7 U	5.9 U	7.6 U
Carbon disulfide	ug/kg	--	--	--	--	7.1 U	4.6 U	9.2 U	5.4 U	5.6 U	5.1 U	9.1 U	6.6 U	4.1 U	3.7 U	5.9 U	7.6 U

Red Shading - UCL Exceeded; Black Shading - Method 1 Std Exeeded; Bold - Detected; U - Not Detected;
J - Estimated; R - Rejected; NA - Not Analyzed

Table 3-7
Summary of TBA VOC Soil Sample Results
Former Tombarello Property
Lawrence, Massachusetts

					Sample Location	BPA-01	BPA-02	FB-01	FB-02		FB-03	FB-04	LS-01	LS-02	M-7E	MS-01	NPA-02
					Sample Depth (ft)	2 - 3	2 - 3	5 - 7	1 - 2	2 - 3	2 - 3	1 - 2	7 - 8	2 - 3	1 - 3	12 - 13	6 - 7
					Sample Date	06/07/16	06/07/16	06/06/16	06/07/16	06/07/16	06/06/16	06/06/16	06/09/16	06/09/16	06/07/16	06/10/16	06/10/16
					QC Identifier												
Volatiles (cont.)	**Units**	**S-1/GW-1**	**S-1/GW-2**	**S-1/GW-3**	**Soil UCL**												
Carbon tetrachloride	ug/kg	10000	5000	30000	10000000	5.9 U	5.3 U	6.2 U	4.6 U	3 U	4.1 U	5 U	5.1 U	7.8 U	4.2 U	4.5 U	4.2 U
Chlorobenzene	ug/kg	1000	3000	100000	10000000	5.9 U	5.3 U	6.2 U	4.6 U	3 U	4.1 U	5 U	5.1 U	7.8 U	**2.2 J**	4.5 U	4.2 U
Chloroethane	ug/kg	--	--	--	--	5.9 U	5.3 U	6.2 U	4.6 U	3 U	4.1 U	5 U	5.1 U	7.8 U	4.2 U	4.5 U	4.2 U
Chloroform	ug/kg	400	200	500000	10000000	5.9 U	5.3 U	6.2 U	4.6 U	3 U	4.1 U	5 U	5.1 U	7.8 U	4.2 U	4.5 U	4.2 U
Chloromethane	ug/kg	--	--	--	--	5.9 U	5.3 U	6.2 U	4.6 U	3 U	4.1 U	5 U	5.1 U	7.8 U	4.2 U	4.5 U	4.2 U
cis-1,2-Dichloroethene	ug/kg	300	100	100000	5000000	5.9 U	5.3 U	6.2 U	4.6 U	3 U	4.1 U	5 U	5.1 U	7.8 U	4.2 U	4.5 U	**0.89 J**
cis-1,3-Dichloropropene	ug/kg	--	--	--	--	5.9 U	5.3 U	6.2 U	4.6 U	3 U	4.1 U	5 U	5.1 U	7.8 U	4.2 U	4.5 U	4.2 U
Dibromochloromethane	ug/kg	5	30	20000	5000000	5.9 U	5.3 U	6.2 U	4.6 U	3 U	4.1 U	5 U	5.1 U	7.8 U	4.2 U	4.5 U	4.2 U
Dibromomethane	ug/kg	--	--	--	--	5.9 U	5.3 U	6.2 U	4.6 U	3 U	4.1 U	5 U	5.1 U	7.8 U	4.2 U	4.5 U	4.2 U
Dichlorodifluoromethane	ug/kg	--	--	--	--	5.9 U	5.3 U	6.2 U	4.6 U	3 U	4.1 U	5 U	5.1 U	7.8 U	4.2 U	4.5 U	4.2 U
Diethyl ether	ug/kg	--	--	--	--	5.9 U	5.3 U	6.2 U	4.6 U	3 U	4.1 U	5 U	5.1 U	7.8 U	4.2 U	4.5 U	4.2 U
Diisopropyl Ether	ug/kg	--	--	--	--	5.9 U	5.3 U	6.2 U	4.6 U	3 U	4.1 U	5 U	5.1 U	7.8 U	4.2 U	4.5 U	4.2 U
Ethylbenzene	ug/kg	40000	500000	500000	10000000	5.9 U	5.3 U	6.2 U	4.6 U	3 U	4.1 U	5 U	5.1 U	7.8 U	**6.5**	4.5 U	4.2 U
Hexachlorobutadiene	ug/kg	30000	30000	30000	1000000	5.9 U	5.3 U	6.2 U	4.6 U	3 U	4.1 U	5 U	5.1 U	7.8 U	4.2 U	4.5 U	4.2 U
Isopropylbenzene	ug/kg	--	--	--	--	**2.5 J**	5.3 U	6.2 U	4.6 U	3 U	4.1 U	5 U	5.1 U	7.8 U	**2.8 J**	4.5 U	4.2 U
m,p-Xylene	ug/kg	--	--	--	--	5.9 U	5.3 U	6.2 U	4.6 U	3 U	4.1 U	5 U	5.1 U	7.8 U	**18**	4.5 U	4.2 U
Methyl tert-butyl ether	ug/kg	100	100000	100000	5000000	5.9 U	5.3 U	6.2 U	4.6 U	3 U	4.1 U	5 U	5.1 U	**6.4 J**	4.2 U	4.5 U	4.2 U
Methylene chloride	ug/kg	100	4000	400000	7000000	5.9 U	5.3 U	6.2 U	4.6 U	3 U	4.1 U	5 U	5.1 U	7.8 U	4.2 U	4.5 U	4.2 U
Naphthalene	ug/kg	4000	20000	500000	10000000	**23**	5.3 U	6.2 U	4.6 U	3 U	4.1 U	**7.8**	5.1 U	7.8 U	**4.1 J**	4.5 U	4.2 U
n-Butylbenzene	ug/kg	--	--	--	--	5.9 U	5.3 U	6.2 U	4.6 U	3 U	4.1 U	5 U	5.1 U	7.8 U	4.2 U	4.5 U	4.2 U
n-Propylbenzene	ug/kg	--	--	--	--	5.9 U	5.3 U	6.2 U	4.6 U	3 U	4.1 U	5 U	5.1 U	7.8 U	**3.4 J**	4.5 U	4.2 U
o-Xylene	ug/kg	--	--	--	--	**2.8 J**	5.3 U	6.2 U	4.6 U	3 U	4.1 U	5 U	5.1 U	7.8 U	**3.1 J**	4.5 U	4.2 U
sec-Butylbenzene	ug/kg	--	--	--	--	5.9 U	5.3 U	6.2 U	4.6 U	3 U	4.1 U	5 U	5.1 U	7.8 U	4.2 U	4.5 U	4.2 U
Styrene	ug/kg	3000	4000	70000	10000000	5.9 U	5.3 U	6.2 U	4.6 U	3 U	4.1 U	5 U	5.1 U	7.8 U	4.2 U	4.5 U	4.2 U
tert-Amyl methyl ether	ug/kg	--	--	--	--	5.9 U	5.3 U	6.2 U	4.6 U	3 U	4.1 U	5 U	5.1 U	7.8 U	4.2 U	4.5 U	4.2 U
Tert-Butyl Ethyl Ether	ug/kg	--	--	--	--	5.9 U	5.3 U	6.2 U	4.6 U	3 U	4.1 U	5 U	5.1 U	7.8 U	4.2 U	4.5 U	4.2 U
tert-Butylbenzene	ug/kg	--	--	--	--	5.9 U	5.3 U	6.2 U	4.6 U	3 U	4.1 U	5 U	5.1 U	7.8 U	4.2 U	4.5 U	4.2 U
Tetrachloroethene	ug/kg	1000	10000	30000	10000000	5.9 U	5.3 U	6.2 U	4.6 U	3 U	4.1 U	5 U	**2.9 J**	7.8 U	4.2 U	4.5 U	4.2 U
Tetrahydrofuran	ug/kg	--	--	--	--	12 U	11 U	12 U	9.2 U	5.9 U	8.3 U	10 U	10 U	16 U	8.5 U	9.1 U	8.3 U
Toluene	ug/kg	30000	500000	500000	10000000	5.9 U	5.3 U	6.2 U	4.6 U	3 U	4.1 U	5 U	5.1 U	7.8 U	**2.8 J**	4.5 U	4.2 U
trans-1,2-Dichloroethene	ug/kg	1000	1000	500000	10000000	5.9 U	5.3 U	6.2 U	4.6 U	3 U	4.1 U	5 U	5.1 U	7.8 U	4.2 U	4.5 U	4.2 U
trans-1,3-Dichloropropene	ug/kg	--	--	--	--	5.9 U	5.3 U	6.2 U	4.6 U	3 U	4.1 U	5 U	5.1 U	7.8 U	4.2 U	4.5 U	4.2 U
Trichloroethene	ug/kg	300	300	30000	600000	5.9 U	5.3 U	6.2 U	4.6 U	3 U	4.1 U	5 U	5.1 U	7.8 U	4.2 U	4.5 U	**1.8 J**
Trichlorofluoromethane	ug/kg	--	--	--	--	5.9 U	5.3 U	6.2 U	4.6 U	3 U	4.1 U	5 U	5.1 U	7.8 U	4.2 U	4.5 U	4.2 U
Vinyl chloride	ug/kg	900	700	1000	600000	5.9 U	5.3 U	6.2 U	4.6 U	3 U	4.1 U	5 U	5.1 U	7.8 U	4.2 U	4.5 U	4.2 U
Xylene (total)	ug/kg	400000	100000	500000	10000000	**2.8 J**	5.3 U	6.2 U	4.6 U	3 U	4.1 U	5 U	5.1 U	7.8 U	**21**	4.5 U	4.2 U

Red Shading - UCL Exceeded; Black Shading - Method 1 Std Exeeded; Bold - Detected; U - Not Detected;
J - Estimated; R - Rejected; NA - Not Analyzed

Table 3-7
Summary of TBA VOC Soil Sample Results
Former Tombarello Property
Lawrence, Massachusetts

					Sample Location	SA-01	SS-01		SVA-01	SVA-02	SVA-03		SVA-04	SVA-05	SVA-06	SVA-07	SVA-08
					Sample Depth (ft)	1 - 3	1 - 2	7 - 8	0 - 1	1 - 3	1 - 3		1 - 3	1 - 3	1 - 3	1 - 3	1 - 3
					Sample Date	06/09/16	06/08/16	06/08/16	06/07/16	06/08/16	06/08/16		06/08/16	06/08/16	06/08/16	06/09/16	06/09/16
					QC Identifier						FD	FD					
Volatiles (cont.)	**Units**	**S-1/GW-1**	**S-1/GW-2**	**S-1/GW-3**	**Soil UCL**												
Carbon tetrachloride	ug/kg	10000	5000	30000	10000000	7.1 U	4.6 U	9.2 U	5.4 U	5.6 U	5.1 U	9.1 U	6.6 U	4.1 U	3.7 U	5.9 U	7.6 U
Chlorobenzene	ug/kg	1000	3000	100000	10000000	7.1 U	4.6 U	9.2 U	5.4 U	5.6 U	5.1 U	9.1 U	6.6 U	4.1 U	3.7 U	5.9 U	7.6 U
Chloroethane	ug/kg	--	--	--	--	7.1 U	4.6 U	9.2 U	5.4 U	5.6 U	5.1 U	9.1 U	6.6 U	4.1 U	3.7 U	5.9 U	7.6 U
Chloroform	ug/kg	400	200	500000	10000000	7.1 U	4.6 U	9.2 U	5.4 U	5.6 U	5.1 U	9.1 U	6.6 U	4.1 U	3.7 U	5.9 U	7.6 U
Chloromethane	ug/kg	--	--	--	--	7.1 U	4.6 U	9.2 U	5.4 U	5.6 U	5.1 U	9.1 U	6.6 U	4.1 U	3.7 U	5.9 U	7.6 U
cis-1,2-Dichloroethene	ug/kg	300	100	100000	5000000	7.1 U	4.6 U	**27**	5.4 U	5.6 U	5.1 U	9.1 U	**6.5 J**	4.1 U	3.7 U	5.9 U	7.6 U
cis-1,3-Dichloropropene	ug/kg	--	--	--	--	7.1 U	4.6 U	9.2 U	5.4 U	5.6 U	5.1 U	9.1 U	6.6 U	4.1 U	3.7 U	5.9 U	7.6 U
Dibromochloromethane	ug/kg	5	30	20000	5000000	7.1 U	4.6 U	9.2 U	5.4 U	5.6 U	5.1 U	9.1 U	6.6 U	4.1 U	3.7 U	5.9 U	7.6 U
Dibromomethane	ug/kg	--	--	--	--	7.1 U	4.6 U	9.2 U	5.4 U	5.6 U	5.1 U	9.1 U	6.6 U	4.1 U	3.7 U	5.9 U	7.6 U
Dichlorodifluoromethane	ug/kg	--	--	--	--	7.1 U	4.6 U	9.2 U	5.4 U	5.6 U	5.1 U	9.1 U	6.6 U	4.1 U	3.7 U	5.9 U	7.6 U
Diethyl ether	ug/kg	--	--	--	--	7.1 U	4.6 U	9.2 U	5.4 U	5.6 U	5.1 U	9.1 U	6.6 U	4.1 U	3.7 U	5.9 U	7.6 U
Diisopropyl Ether	ug/kg	--	--	--	--	7.1 U	4.6 U	9.2 U	5.4 U	5.6 U	5.1 U	9.1 U	6.6 U	4.1 U	3.7 U	5.9 U	7.6 U
Ethylbenzene	ug/kg	40000	500000	500000	10000000	**11**	4.6 U	9.2 U	5.4 U	5.6 U	5.1 U	9.1 U	6.6 U	4.1 U	**22**	5.9 U	7.6 U
Hexachlorobutadiene	ug/kg	30000	30000	30000	1000000	7.1 U	4.6 U	9.2 U	5.4 U	5.6 U	5.1 U	9.1 U	6.6 U	4.1 U	3.7 U	5.9 U	7.6 U
Isopropylbenzene	ug/kg	--	--	--	--	**7.2**	4.6 U	9.2 U	5.4 U	5.6 U	5.1 U	**5 J**	6.6 U	4.1 U	**3.4 J**	5.9 U	7.6 U
m,p-Xylene	ug/kg	--	--	--	--	**18**	4.6 U	9.2 U	5.4 U	5.6 U	5.1 U	**6.8 J**	6.6 U	4.1 U	**11**	5.9 U	7.6 U
Methyl tert-butyl ether	ug/kg	100	100000	100000	5000000	7.1 U	4.6 U	**3.2 J**	5.4 U	5.6 U	5.1 U	9.1 U	6.6 U	4.1 U	3.7 U	5.9 U	7.6 U
Methylene chloride	ug/kg	100	4000	400000	7000000	7.1 U	4.6 U	9.2 U	5.4 U	5.6 U	5.1 U	9.1 U	6.6 U	4.1 U	3.7 U	5.9 U	7.6 U
Naphthalene	ug/kg	4000	20000	500000	10000000	**280**	4.6 U	9.2 U	5.4 U	5.6 U	**3.9 J**	**9.3**	6.6 U	**0.88 J**	**7.2**	5.9 U	7.6 U
n-Butylbenzene	ug/kg	--	--	--	--	**43**	4.6 U	9.2 U	5.4 U	5.6 U	5.1 U	**7.5 J**	6.6 U	4.1 U	**3.6 J**	5.9 U	7.6 U
n-Propylbenzene	ug/kg	--	--	--	--	**23**	4.6 U	9.2 U	5.4 U	5.6 U	5.1 U	**5 J**	6.6 U	4.1 U	**6.1**	5.9 U	7.6 U
o-Xylene	ug/kg	--	--	--	--	**6.8 J**	4.6 U	9.2 U	5.4 U	5.6 U	**1.3 J**	**2.8 J**	6.6 U	4.1 U	**2.4 J**	5.9 U	7.6 U
sec-Butylbenzene	ug/kg	--	--	--	--	**17**	4.6 U	9.2 U	5.4 U	5.6 U	5.1 U	**12**	6.6 U	4.1 U	**1 J**	5.9 U	7.6 U
Styrene	ug/kg	3000	4000	70000	10000000	7.1 U	4.6 U	9.2 U	5.4 U	5.6 U	5.1 U	9.1 U	6.6 U	4.1 U	3.7 U	5.9 U	7.6 U
tert-Amyl methyl ether	ug/kg	--	--	--	--	7.1 U	4.6 U	9.2 U	5.4 U	5.6 U	5.1 U	9.1 U	6.6 U	4.1 U	3.7 U	5.9 U	7.6 U
Tert-Butyl Ethyl Ether	ug/kg	--	--	--	--	7.1 U	4.6 U	9.2 U	5.4 U	5.6 U	5.1 U	9.1 U	6.6 U	4.1 U	3.7 U	5.9 U	7.6 U
tert-Butylbenzene	ug/kg	--	--	--	--	7.1 U	4.6 U	9.2 U	5.4 U	5.6 U	5.1 U	**2.5 J**	6.6 U	4.1 U	3.7 U	5.9 U	7.6 U
Tetrachloroethene	ug/kg	1000	10000	30000	10000000	7.1 U	4.6 U	9.2 U	**1.8 J**	5.6 U	5.1 U	9.1 U	6.6 U	**1.5 J**	3.7 U	5.9 U	7.6 U
Tetrahydrofuran	ug/kg	--	--	--	--	14 U	9.1 U	18 U	11 U	11 U	10 U	18 U	13 U	8.1 U	7.4 U	12 U	15 U
Toluene	ug/kg	30000	500000	500000	10000000	**22**	4.6 U	9.2 U	5.4 U	5.6 U	5.1 U	9.1 U	6.6 U	4.1 U	**1.7 J**	**1.2 J**	7.6 U
trans-1,2-Dichloroethene	ug/kg	1000	1000	500000	10000000	7.1 U	4.6 U	9.2 U	5.4 U	5.6 U	5.1 U	9.1 U	6.6 U	4.1 U	3.7 U	5.9 U	7.6 U
trans-1,3-Dichloropropene	ug/kg	--	--	--	--	7.1 U	4.6 U	9.2 U	5.4 U	5.6 U	5.1 U	9.1 U	6.6 U	4.1 U	3.7 U	5.9 U	7.6 U
Trichloroethene	ug/kg	300	300	30000	600000	7.1 U	4.6 U	**2.5 J**	5.4 U	5.6 U	5.1 U	9.1 U	6.6 U	**1 J**	3.7 U	5.9 U	7.6 U
Trichlorofluoromethane	ug/kg	--	--	--	--	7.1 U	4.6 U	9.2 U	5.4 U	5.6 U	5.1 U	9.1 U	6.6 U	**4.6**	3.7 U	5.9 U	7.6 U
Vinyl chloride	ug/kg	900	700	1000	600000	7.1 U	4.6 U	9.2 U	5.4 U	5.6 U	5.1 U	9.1 U	6.6 U	4.1 U	3.7 U	5.9 U	7.6 U
Xylene (total)	ug/kg	400000	100000	500000	10000000	**25**	4.6 U	9.2 U	5.4 U	5.6 U	**1.3 J**	**9.6**	6.6 U	4.1 U	**13**	5.9 U	7.6 U

Red Shading - UCL Exceeded; Black Shading - Method 1 Std Exeeded; Bold - Detected; U - Not Detected;
J - Estimated; R - Rejected; NA - Not Analyzed

Table 3-8
Summary of Historical and TBA Groundwater Analytical Results
Former Tombarello Property
Lawrence, Massachusetts

Sample Location					MW-1				MW-2	MW-2A	MW-3	MW-3A	MW-4	MW-5		MW-6	
Sample Date					07/09/98	06/10/99	02/13/03	06/16/16	07/09/98	07/30/98	07/09/98	07/30/98	07/09/98	06/10/99	02/13/03	06/10/99	02/13/03
QC Identifier																	
Volatiles	**Units**	**GW-2**	**GW-3**	**GW UCL**													
1,1,1,2-Tetrachloroethane	ug/L	10	50000	100000	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	ug/L	4000	20000	100000	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	ug/L	9	50000	100000	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	ug/L	900	50000	100000	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	ug/L	2000	20000	100000	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	ug/L	80	30000	100000	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloropropene	ug/L	--	--	--	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene	ug/L	--	--	--	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichloropropane	ug/L	--	--	--	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	ug/L	200	50000	100000	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene	ug/L	--	--	--	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	ug/L	--	--	--	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	ug/L	2	50000	100000	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	ug/L	8000	2000	80000	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	ug/L	5	20000	100000	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	ug/L	3	50000	100000	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	ug/L	--	--	--	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	ug/L	6000	50000	100000	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichloropropane	ug/L	--	--	--	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	ug/L	60	8000	80000	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dioxane	ug/L	6000	50000	100000	NA	NA	NA	100 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,2-Dichloropropane	ug/L	--	--	--	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	ug/L	50000	50000	100000	NA	NA	NA	5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorotoluene	ug/L	--	--	--	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	ug/L	--	--	--	NA	NA	NA	5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorotoluene	ug/L	--	--	--	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Isopropyltoluene	ug/L	--	--	--	NA	NA	NA	5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	ug/L	50000	50000	100000	NA	NA	NA	5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	ug/L	50000	50000	100000	NA	NA	NA	5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	ug/L	1000	10000	100000	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromobenzene	ug/L	--	--	--	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromochloromethane	ug/L	--	--	--	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	ug/L	6	50000	100000	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	ug/L	700	50000	100000	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	ug/L	7	800	8000	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	ug/L	--	--	--	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA

Red Shading - UCL Exceeded; Black Shading - Method 1 Std Exceeded; Bold - Detected; U - Not Detected;
J - Estimated; R - Rejected; NA - Not Analyzed

Table 3-8
Summary of Historical and TBA Groundwater Analytical Results
Former Tombarello Property
Lawrence, Massachusetts

Sample Location					MW-7		MW-8	MW-9	MW-11	MW-11F	MW-12	MW-13		MW-15	MW-16
Sample Date					06/10/99	02/13/03	06/13/16	06/13/16	06/13/16	06/17/16	06/14/16	06/14/16		06/16/16	06/13/16
QC Identifier												FD	FD		
Volatiles	**Units**	**GW-2**	**GW-3**	**GW UCL**											
1,1,1,2-Tetrachloroethane	ug/L	10	50000	100000	NA	NA	1 U	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U
1,1,1-Trichloroethane	ug/L	4000	20000	100000	NA	NA	1 U	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	ug/L	9	50000	100000	NA	NA	1 U	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	ug/L	900	50000	100000	NA	NA	1 U	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	ug/L	2000	20000	100000	NA	NA	1 U	1 U	**2.3**	NA	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	ug/L	80	30000	100000	NA	NA	1 U	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U
1,1-Dichloropropene	ug/L	--	--	--	NA	NA	1 U	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U
1,2,3-Trichlorobenzene	ug/L	--	--	--	NA	NA	1 U	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U
1,2,3-Trichloropropane	ug/L	--	--	--	NA	NA	1 U	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U
1,2,4-Trichlorobenzene	ug/L	200	50000	100000	NA	NA	1 U	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U
1,2,4-Trimethylbenzene	ug/L	--	--	--	NA	NA	**10**	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U
1,2-Dibromo-3-chloropropane	ug/L	--	--	--	NA	NA	1 U	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U
1,2-Dibromoethane	ug/L	2	50000	100000	NA	NA	1 U	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U
1,2-Dichlorobenzene	ug/L	8000	2000	80000	NA	NA	1 U	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	ug/L	5	20000	100000	NA	NA	1 U	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane	ug/L	3	50000	100000	NA	NA	1 U	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U
1,3,5-Trimethylbenzene	ug/L	--	--	--	NA	NA	**2.5**	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U
1,3-Dichlorobenzene	ug/L	6000	50000	100000	NA	NA	1 U	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U
1,3-Dichloropropane	ug/L	--	--	--	NA	NA	1 U	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene	ug/L	60	8000	80000	NA	NA	1 U	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U
1,4-Dioxane	ug/L	6000	50000	100000	NA	NA	100 U	100 U	100 U	NA	100 U	100 U	100 U	100 U	100 U
2,2-Dichloropropane	ug/L	--	--	--	NA	NA	1 U	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U
2-Butanone	ug/L	50000	50000	100000	NA	NA	5 U	5 U	5 U	NA	5 U	5 U	5 U	5 U	5 U
2-Chlorotoluene	ug/L	--	--	--	NA	NA	1 U	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U
2-Hexanone	ug/L	--	--	--	NA	NA	5 U	5 U	5 U	NA	5 U	5 U	5 U	5 U	5 U
4-Chlorotoluene	ug/L	--	--	--	NA	NA	1 U	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U
4-Isopropyltoluene	ug/L	--	--	--	NA	NA	5 U	5 U	5 U	NA	5 U	5 U	5 U	5 U	5 U
4-Methyl-2-pentanone	ug/L	50000	50000	100000	NA	NA	5 U	5 U	5 U	NA	5 U	5 U	5 U	5 U	5 U
Acetone	ug/L	50000	50000	100000	NA	NA	5 U	5 U	5 U	NA	5 U	5 U	5 U	5 U	5 U
Benzene	ug/L	1000	10000	100000	NA	NA	**1.9**	1 U	**1.3**	NA	1 U	**1.8**	**1.9**	1 U	1 U
Bromobenzene	ug/L	--	--	--	NA	NA	1 U	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U
Bromochloromethane	ug/L	--	--	--	NA	NA	1 U	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U
Bromodichloromethane	ug/L	6	50000	100000	NA	NA	1 U	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U
Bromoform	ug/L	700	50000	100000	NA	NA	1 U	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U
Bromomethane	ug/L	7	800	8000	NA	NA	1 U	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U
Carbon disulfide	ug/L	--	--	--	NA	NA	1 U	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U

Red Shading - UCL Exceeded; Black Shading - Method 1 Std Exceeded; Bold - Detected; U - Not Detected;
J - Estimated; R - Rejected; NA - Not Analyzed

Table 3-8
Summary of Historical and TBA Groundwater Analytical Results
Former Tombarello Property
Lawrence, Massachusetts

				Sample Location	MW-1				MW-2	MW-2A	MW-3	MW-3A	MW-4	MW-5		MW-6	
				Sample Date	07/09/98	06/10/99	02/13/03	06/16/16	07/09/98	07/30/98	07/09/98	07/30/98	07/09/98	06/10/99	02/13/03	06/10/99	02/13/03
				QC Identifier													
Volatiles (cont.)	**Units**	**GW-2**	**GW-3**	**GW UCL**													
Carbon tetrachloride	ug/L	2	5000	50000	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	ug/L	200	1000	10000	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	ug/L	--	--	--	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	ug/L	50	20000	100000	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	ug/L	--	--	--	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	ug/L	20	50000	100000	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	ug/L	--	--	--	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	ug/L	20	50000	100000	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromomethane	ug/L	--	--	--	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	ug/L	--	--	--	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethyl ether	ug/L	--	--	--	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diisopropyl Ether	ug/L	--	--	--	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	ug/L	20000	5000	100000	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	ug/L	50	3000	30000	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	ug/L	--	--	--	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
m,p-Xylene	ug/L	--	--	--	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	ug/L	50000	50000	100000	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	ug/L	2000	50000	100000	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	ug/L	700	20000	100000	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Butylbenzene	ug/L	--	--	--	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	ug/L	--	--	--	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	ug/L	--	--	--	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	ug/L	--	--	--	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	ug/L	100	6000	60000	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Amyl methyl ether	ug/L	--	--	--	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tert-Butyl Ethyl Ether	ug/L	--	--	--	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	ug/L	--	--	--	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	ug/L	50	30000	100000	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrahydrofuran	ug/L	--	--	--	NA	NA	NA	5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	ug/L	50000	40000	100000	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	ug/L	80	50000	100000	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	ug/L	--	--	--	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	ug/L	5	5000	50000	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	ug/L	--	--	--	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	ug/L	2	50000	100000	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylene (total)	ug/L	3000	5000	100000	NA	NA	NA	5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA

Red Shading - UCL Exceeded; Black Shading - Method 1 Std Exceeded; Bold - Detected; U - Not Detected;
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Table 3-8
Summary of Historical and TBA Groundwater Analytical Results
Former Tombarello Property
Lawrence, Massachusetts

Sample Location					MW-7		MW-8	MW-9	MW-11	MW-11F	MW-12	MW-13		MW-15	MW-16
Sample Date					06/10/99	02/13/03	06/13/16	06/13/16	06/13/16	06/17/16	06/14/16	06/14/16		06/16/16	06/13/16
QC Identifier												FD	FD		
Volatiles (cont.)	**Units**	**GW-2**	**GW-3**	**GW UCL**											
Carbon tetrachloride	ug/L	2	5000	50000	NA	NA	1 U	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	ug/L	200	1000	10000	NA	NA	1 U	1 U	1 U	NA	1 U	**140**	**150**	1 U	1 U
Chloroethane	ug/L	--	--	--	NA	NA	1 U	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U
Chloroform	ug/L	50	20000	100000	NA	NA	1 U	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U
Chloromethane	ug/L	--	--	--	NA	NA	1 U	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	ug/L	20	50000	100000	NA	NA	**1.6**	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U
cis-1,3-Dichloropropene	ug/L	--	--	--	NA	NA	1 U	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	ug/L	20	50000	100000	NA	NA	1 U	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U
Dibromomethane	ug/L	--	--	--	NA	NA	1 U	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U
Dichlorodifluoromethane	ug/L	--	--	--	NA	NA	1 U	**17**	1 U	NA	1 U	1 U	1 U	1 U	1 U
Diethyl ether	ug/L	--	--	--	NA	NA	1 U	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U
Diisopropyl Ether	ug/L	--	--	--	NA	NA	1 U	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	ug/L	20000	5000	100000	NA	NA	**2.6**	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U
Hexachlorobutadiene	ug/L	50	3000	30000	NA	NA	1 U	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U
Isopropylbenzene	ug/L	--	--	--	NA	NA	1 U	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U
m,p-Xylene	ug/L	--	--	--	NA	NA	**10**	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U
Methyl tert-butyl ether	ug/L	50000	50000	100000	NA	NA	**4.6**	**1.6**	1 U	NA	1 U	1 U	1 U	1 U	1 U
Methylene chloride	ug/L	2000	50000	100000	NA	NA	1 U	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U
Naphthalene	ug/L	700	20000	100000	NA	NA	**3.1**	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U
n-Butylbenzene	ug/L	--	--	--	NA	NA	1 U	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U
n-Propylbenzene	ug/L	--	--	--	NA	NA	**1.5**	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U
o-Xylene	ug/L	--	--	--	NA	NA	**5.3**	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U
sec-Butylbenzene	ug/L	--	--	--	NA	NA	1 U	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U
Styrene	ug/L	100	6000	60000	NA	NA	1 U	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U
tert-Amyl methyl ether	ug/L	--	--	--	NA	NA	1 U	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U
Tert-Butyl Ethyl Ether	ug/L	--	--	--	NA	NA	1 U	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U
tert-Butylbenzene	ug/L	--	--	--	NA	NA	1 U	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene	ug/L	50	30000	100000	NA	NA	1 U	**10**	1 U	NA	1 U	1 U	1 U	1 U	1 U
Tetrahydrofuran	ug/L	--	--	--	NA	NA	5 U	5 U	5 U	NA	5 U	5 U	5 U	5 U	5 U
Toluene	ug/L	50000	40000	100000	NA	NA	**3.6**	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U
trans-1,2-Dichloroethene	ug/L	80	50000	100000	NA	NA	1 U	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U
trans-1,3-Dichloropropene	ug/L	--	--	--	NA	NA	1 U	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U
Trichloroethene	ug/L	5	5000	50000	NA	NA	**2.7**	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U
Trichlorofluoromethane	ug/L	--	--	--	NA	NA	1 U	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U
Vinyl chloride	ug/L	2	50000	100000	NA	NA	**1**	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U
Xylene (total)	ug/L	3000	5000	100000	NA	NA	**15**	5 U	5 U	NA	5 U	5 U	5 U	5 U	5 U

Red Shading - UCL Exceeded; Black Shading - Method 1 Std Exceeded; Bold - Detected; U - Not Detected;
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Table 3-8
Summary of Historical and TBA Groundwater Analytical Results
Former Tombarello Property
Lawrence, Massachusetts

				Sample Location	MW-1				MW-2	MW-2A	MW-3	MW-3A	MW-4	MW-5		MW-6	
				Sample Date	07/09/98	06/10/99	02/13/03	06/16/16	07/09/98	07/30/98	07/09/98	07/30/98	07/09/98	06/10/99	02/13/03	06/10/99	02/13/03
				QC Identifier													
PAHs	**Units**	**GW-2**	**GW-3**	**GW UCL**													
1,4-Dioxane	ug/L	6000	50000	100000	NA	NA	NA	0.1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	ug/L	2000	20000	100000	NA	NA	NA	0.1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	ug/L	--	10000	100000	NA	NA	NA	0.1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	ug/L	10000	40	100000	NA	NA	NA	0.1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	ug/L	--	30	600	NA	NA	NA	0.1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	ug/L	--	1000	10000	NA	NA	NA	0.1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	ug/L	--	500	5000	NA	NA	NA	0.1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	ug/L	--	400	4000	NA	NA	NA	0.1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	ug/L	--	20	500	NA	NA	NA	0.1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	ug/L	--	100	1000	NA	NA	NA	0.1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	ug/L	--	70	700	NA	NA	NA	0.1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	ug/L	--	40	400	NA	NA	NA	0.1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	ug/L	--	200	2000	NA	NA	NA	0.1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	ug/L	--	40	400	NA	NA	NA	0.1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	ug/L	--	100	1000	NA	NA	NA	0.1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	ug/L	700	20000	100000	NA	NA	NA	0.1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	ug/L	--	10000	100000	NA	NA	NA	**0.17**	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	ug/L	--	20	600	NA	NA	NA	0.1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPH																	
2-Methylnaphthalene	ug/L	2000	20000	100000	NA	NA	NA	6.25 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	ug/L	--	10000	100000	NA	NA	NA	6.25 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	ug/L	10000	40	100000	NA	NA	NA	6.25 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	ug/L	--	30	600	NA	NA	NA	6.25 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	ug/L	--	1000	10000	NA	NA	NA	6.25 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	ug/L	--	500	5000	NA	NA	NA	6.25 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	ug/L	--	400	4000	NA	NA	NA	6.25 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	ug/L	--	20	500	NA	NA	NA	6.25 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	ug/L	--	100	1000	NA	NA	NA	6.25 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
C11-C22 Aromatics	ug/L	50000	5000	100000	NA	NA	NA	125 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
C19-C36 Aliphatics	ug/L	--	50000	100000	NA	NA	NA	125 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
C9-C18 Aliphatics	ug/L	5000	50000	100000	NA	NA	NA	125 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	ug/L	--	70	700	NA	NA	NA	6.25 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	ug/L	--	40	400	NA	NA	NA	6.25 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	ug/L	--	200	2000	NA	NA	NA	6.25 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	ug/L	--	40	400	NA	NA	NA	6.25 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	ug/L	--	100	1000	NA	NA	NA	6.25 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	ug/L	700	20000	100000	NA	NA	NA	6.25 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	ug/L	--	10000	100000	NA	NA	NA	6.25 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	ug/L	--	20	600	NA	NA	NA	6.25 U	NA	NA	NA	NA	NA	NA	NA	NA	NA

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J - Estimated; R - Rejected; NA - Not Analyzed

Table 3-8
Summary of Historical and TBA Groundwater Analytical Results
Former Tombarello Property
Lawrence, Massachusetts

Sample Location					MW-7		MW-8	MW-9	MW-11	MW-11F	MW-12	MW-13		MW-15	MW-16
Sample Date					06/10/99	02/13/03	06/13/16	06/13/16	06/13/16	06/17/16	06/14/16	06/14/16		06/16/16	06/13/16
QC Identifier												FD	FD		
PAHs	**Units**	**GW-2**	**GW-3**	**GW UCL**											
1,4-Dioxane	ug/L	6000	50000	100000	NA	NA	0.1 U	0.1 U	**0.26**	NA	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
2-Methylnaphthalene	ug/L	2000	20000	100000	NA	NA	**0.67**	0.1 U	0.1 U	NA	**0.25**	0.1 U	0.1 U	0.1 U	0.1 U
Acenaphthene	ug/L	--	10000	100000	NA	NA	**0.16**	0.1 U	0.1 U	NA	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Acenaphthylene	ug/L	10000	40	100000	NA	NA	0.1 U	0.1 U	0.1 U	NA	**0.19**	0.1 U	0.1 U	0.1 U	0.1 U
Anthracene	ug/L	--	30	600	NA	NA	**0.13**	0.1 U	0.1 U	NA	**0.14**	**0.13**	**0.12**	0.1 U	0.1 U
Benzo(a)anthracene	ug/L	--	1000	10000	NA	NA	**0.12**	0.1 U	0.1 U	NA	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Benzo(a)pyrene	ug/L	--	500	5000	NA	NA	**0.17**	0.1 U	0.1 U	NA	0.1 U	0.1 U	0.1 U	**0.13**	0.1 U
Benzo(b)fluoranthene	ug/L	--	400	4000	NA	NA	**0.14**	0.1 U	0.1 U	NA	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Benzo(g,h,i)perylene	ug/L	--	20	500	NA	NA	**0.11**	0.1 U	0.1 U	NA	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Benzo(k)fluoranthene	ug/L	--	100	1000	NA	NA	0.1 U	0.1 U	0.1 U	NA	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Chrysene	ug/L	--	70	700	NA	NA	**0.11**	0.1 U	0.1 U	NA	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Dibenz(a,h)anthracene	ug/L	--	40	400	NA	NA	0.1 U	0.1 U	0.1 U	NA	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Fluoranthene	ug/L	--	200	2000	NA	NA	**0.31**	0.1 U	0.1 U	NA	**0.11**	0.1 U	0.1 U	**0.19**	0.1 U
Fluorene	ug/L	--	40	400	NA	NA	**0.13**	0.1 U	0.1 U	NA	**0.1**	0.1 U	0.1 U	0.1 U	0.1 U
Indeno(1,2,3-cd)pyrene	ug/L	--	100	1000	NA	NA	0.1 U	0.1 U	0.1 U	NA	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Naphthalene	ug/L	700	20000	100000	NA	NA	**1.4**	0.1 U	0.1 U	NA	**0.67**	**0.64**	**0.77**	0.1 U	0.1 U
Phenanthrene	ug/L	--	10000	100000	NA	NA	**0.37**	0.1 U	0.1 U	NA	**0.36**	0.1 U	0.1 U	**0.19**	**0.16**
Pyrene	ug/L	--	20	600	NA	NA	**0.25**	0.1 U	0.1 U	NA	0.1 U	0.1 U	0.1 U	**0.14**	0.1 U
EPH															
2-Methylnaphthalene	ug/L	2000	20000	100000	NA	NA	6.33 U	6.76 U	6.49 U	NA	5.88 UJ	6.17 U	6.58 U	5.62 U	6.25 U
Acenaphthene	ug/L	--	10000	100000	NA	NA	6.33 U	6.76 U	6.49 U	NA	5.88 UJ	6.17 U	6.58 U	5.62 U	6.25 U
Acenaphthylene	ug/L	10000	40	100000	NA	NA	6.33 U	6.76 U	6.49 U	NA	5.88 UJ	6.17 U	6.58 U	5.62 U	6.25 U
Anthracene	ug/L	--	30	600	NA	NA	6.33 U	6.76 U	6.49 U	NA	5.88 U	6.17 U	6.58 U	5.62 U	6.25 U
Benzo(a)anthracene	ug/L	--	1000	10000	NA	NA	6.33 U	6.76 U	6.49 U	NA	5.88 U	6.17 U	6.58 U	5.62 U	6.25 U
Benzo(a)pyrene	ug/L	--	500	5000	NA	NA	6.33 U	6.76 U	6.49 U	NA	5.88 UJ	6.17 U	6.58 U	5.62 U	6.25 U
Benzo(b)fluoranthene	ug/L	--	400	4000	NA	NA	6.33 U	6.76 U	6.49 U	NA	5.88 UJ	6.17 U	6.58 U	5.62 U	6.25 U
Benzo(g,h,i)perylene	ug/L	--	20	500	NA	NA	6.33 U	6.76 U	6.49 U	NA	5.88 U	6.17 U	6.58 U	5.62 U	6.25 U
Benzo(k)fluoranthene	ug/L	--	100	1000	NA	NA	6.33 U	6.76 U	6.49 U	NA	5.88 U	6.17 U	6.58 U	5.62 U	6.25 U
C11-C22 Aromatics	ug/L	50000	5000	100000	NA	NA	127 U	135 U	130 U	NA	118 U	123 U	132 U	112 U	125 U
C19-C36 Aliphatics	ug/L	--	50000	100000	NA	NA	127 U	135 U	130 U	NA	118 U	123 U	132 U	112 U	125 U
C9-C18 Aliphatics	ug/L	5000	50000	100000	NA	NA	127 U	135 U	130 U	NA	118 UJ	123 U	132 U	112 U	125 U
Chrysene	ug/L	--	70	700	NA	NA	6.33 U	6.76 U	6.49 U	NA	5.88 U	6.17 U	6.58 U	5.62 U	6.25 U
Dibenz(a,h)anthracene	ug/L	--	40	400	NA	NA	6.33 U	6.76 U	6.49 U	NA	5.88 UJ	6.17 U	6.58 U	5.62 U	6.25 U
Fluoranthene	ug/L	--	200	2000	NA	NA	6.33 U	6.76 U	6.49 U	NA	5.88 U	6.17 U	6.58 U	5.62 U	6.25 U
Fluorene	ug/L	--	40	400	NA	NA	6.33 U	6.76 U	6.49 U	NA	5.88 UJ	6.17 U	6.58 U	5.62 U	6.25 U
Indeno(1,2,3-cd)pyrene	ug/L	--	100	1000	NA	NA	6.33 U	6.76 U	6.49 U	NA	5.88 UJ	6.17 U	6.58 U	5.62 U	6.25 U
Naphthalene	ug/L	700	20000	100000	NA	NA	6.33 U	6.76 U	6.49 U	NA	5.88 UJ	6.17 U	6.58 U	5.62 U	6.25 U
Phenanthrene	ug/L	--	10000	100000	NA	NA	6.33 U	6.76 U	6.49 U	NA	5.88 U	6.17 U	6.58 U	5.62 U	6.25 U
Pyrene	ug/L	--	20	600	NA	NA	6.33 U	6.76 U	6.49 U	NA	5.88 U	6.17 U	6.58 U	5.62 U	6.25 U

Red Shading - UCL Exceeded; Black Shading - Method 1 Std Exceeded; Bold - Detected; U - Not Detected;
J - Estimated; R - Rejected; NA - Not Analyzed

Table 3-8
Summary of Historical and TBA Groundwater Analytical Results
Former Tombarello Property
Lawrence, Massachusetts

				Sample Location	MW-1				MW-2	MW-2A	MW-3	MW-3A	MW-4	MW-5		MW-6	
				Sample Date	07/09/98	06/10/99	02/13/03	06/16/16	07/09/98	07/30/98	07/09/98	07/30/98	07/09/98	06/10/99	02/13/03	06/10/99	02/13/03
				QC Identifier													
Metals	**Units**	**GW-2**	**GW-3**	**GW UCL**													
Arsenic	ug/L	--	900	9000	**6**	10 U	NA	**0.05 J**	5 U	**53**	**24**	**143**	**21**	10 U	NA	10 U	NA
Barium	ug/L	--	50000	100000	**54**	NA	NA	**14.5 J**	**177**	**329**	**180**	**915**	**996**	NA	NA	NA	NA
Cadmium	ug/L	--	4	50	1 U	NA	NA	**0.042 J**	1 U	1 U	1 U	**1**	**3.6**	NA	NA	NA	NA
Chromium	ug/L	--	300	3000	5 U	NA	NA	5.2 U	5 U	**145**	**33**	**477**	**27**	NA	NA	**13**	NA
Lead	ug/L	--	10	150	**5**	5 U	NA	0.5 U	**5**	**25**	**31**	**58**	**1560**	5 U	NA	5 U	NA
Mercury	ug/L	--	20	200	2 U	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	**0.64**	NA	NA	NA	NA
Selenium	ug/L	--	100	1000	5 U	NA	NA	**0.44 J**	5 U	5 U	**9**	**6**	5 U	NA	NA	NA	NA
Silver	ug/L	--	7	1000	5 U	NA	NA	0.5 U	5 U	5 U	5 U	5 U	5 U	NA	NA	NA	NA
Dissolved Metals																	
Arsenic	ug/L	--	900	9000	5 U	NA	50 U	NA	5 U	5 U	5 U	5 U	5 U	NA	50 U	NA	50 U
Barium	ug/L	--	50000	100000	**39**	NA	50 U	NA	**177**	**49**	**70**	**48**	**108**	NA	**70**	NA	**70**
Cadmium	ug/L	--	4	50	1 U	NA	50 U	NA	1 U	1 U	1 U	1 U	1 U	NA	50 U	NA	50 U
Chromium	ug/L	--	300	3000	5 U	NA	20 U	NA	5 U	5 U	5 U	5 U	5 U	NA	20 U	NA	20 U
Lead	ug/L	--	10	150	3 U	NA	5 U	NA	5 U	3 U	3 U	3 U	**6**	NA	**6**	NA	5 U
Mercury	ug/L	--	20	200	2 U	NA	0.5 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	0.5 U	NA	0.5 U
Selenium	ug/L	--	100	1000	5 U	NA	10 U	NA	5 U	5 U	5 U	5 U	5 U	NA	10 U	NA	10 U
Silver	ug/L	--	7	1000	5 U	NA	5 U	NA	5 U	5 U	5 U	5 U	5 U	NA	5 U	NA	5 U
Pesticides/PCBs																	
Aroclor 1016	ug/L	5	10	100	NA	NA	NA	0.5 UJ	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1221	ug/L	5	10	100	NA	NA	NA	0.5 UJ	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1232	ug/L	5	10	100	NA	NA	NA	0.5 UJ	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1242	ug/L	5	10	100	NA	NA	NA	0.5 UJ	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1248	ug/L	5	10	100	NA	NA	NA	0.5 UJ	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1254	ug/L	5	10	100	NA	NA	NA	0.5 UJ	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1260	ug/L	5	10	100	NA	NA	NA	0.5 UJ	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1262	ug/L	5	10	100	NA	NA	NA	0.5 UJ	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1268	ug/L	5	10	100	NA	NA	NA	0.5 UJ	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor, Total	ug/L	5	10	100	3.6 U	NA	NA	0.5 UJ	3.6 U	3.6 U	3.6 U	3.6 U	3.5 U	NA	NA	NA	NA
General Chemistry																	
Cyanide	ug/L	--	30	2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide (PAC)	ug/L	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Red Shading - UCL Exceeded; Black Shading - Method 1 Std Exceeded; Bold - Detected; U - Not Detected;
J - Estimated; R - Rejected; NA - Not Analyzed

Table 3-8
Summary of Historical and TBA Groundwater Analytical Results
Former Tombarello Property
Lawrence, Massachusetts

				Sample Location	MW-7		MW-8	MW-9	MW-11	MW-11F	MW-12	MW-13		MW-15	MW-16
				Sample Date	06/10/99	02/13/03	06/13/16	06/13/16	06/13/16	06/17/16	06/14/16	06/14/16		06/16/16	06/13/16
				QC Identifier								FD	FD		
Metals	**Units**	**GW-2**	**GW-3**	**GW UCL**											
Arsenic	ug/L	--	900	9000	10 U	NA	**12**	**3.3**	**10**	**2.4**	0.5 U	**5.44**	**5.13**	**1.78**	**0.32 J**
Barium	ug/L	--	50000	100000	NA	NA	**100**	**40**	**1400**	**100**	**45.2**	**46.3**	**46.2**	**24.4 J**	**36**
Cadmium	ug/L	--	4	50	NA	NA	**0.53 J**	1 U	**2.2**	**0.31 J**	**0.049 J**	**0.061 J**	**0.063 J**	**0.049 J**	1 U
Chromium	ug/L	--	300	3000	**16**	NA	**0.6 J**	2 U	**0.62 J**	2 U	5.2 U	5.2 U	5.2 U	5.2 U	2 U
Lead	ug/L	--	10	150	5 U	NA	**69**	**0.4 J**	**25**	**0.36 J**	0.5 U	0.5 U	0.5 U	**1.31**	**0.29 J**
Mercury	ug/L	--	20	200	NA	NA	0.2 U	0.2 U	0.2 U	**0.03 J**	0.2 U	**0.031 J**	0.2 U	NA	0.2 U
Selenium	ug/L	--	100	1000	NA	NA	**0.39 J**	**0.74 J**	**1.9 J**	5 U	0.5 U	**0.23 J**	0.5 U	0.5 U	5 U
Silver	ug/L	--	7	1000	NA	NA	**0.046 J**	**0.051 J**	**0.029 J**	1 U	0.5 U	0.5 U	0.5 U	**0.03 J**	**0.059 J**
Dissolved Metals															
Arsenic	ug/L	--	900	9000	NA	50 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	ug/L	--	50000	100000	NA	50 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	ug/L	--	4	50	NA	50 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	ug/L	--	300	3000	NA	20 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	ug/L	--	10	150	NA	5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	ug/L	--	20	200	NA	0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	ug/L	--	100	1000	NA	10 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	ug/L	--	7	1000	NA	5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pesticides/PCBs															
Aroclor 1016	ug/L	5	10	100	NA	NA	0.5 UJ	0.5 UJ	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ
Aroclor 1221	ug/L	5	10	100	NA	NA	0.5 UJ	0.5 UJ	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ
Aroclor 1232	ug/L	5	10	100	NA	NA	0.5 UJ	0.5 UJ	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ
Aroclor 1242	ug/L	5	10	100	NA	NA	0.5 UJ	0.5 UJ	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ
Aroclor 1248	ug/L	5	10	100	NA	NA	0.5 UJ	0.5 UJ	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ
Aroclor 1254	ug/L	5	10	100	NA	NA	0.5 UJ	0.5 UJ	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ
Aroclor 1260	ug/L	5	10	100	NA	NA	0.5 UJ	0.5 UJ	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ
Aroclor 1262	ug/L	5	10	100	NA	NA	0.5 UJ	0.5 UJ	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ
Aroclor 1268	ug/L	5	10	100	NA	NA	0.5 UJ	0.5 UJ	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ
Aroclor, Total	ug/L	5	10	100	NA	NA	0.5 UJ	0.5 UJ	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ
General Chemistry															
Cyanide	ug/L	--	30	2000	NA	NA	NA	NA	NA	NA	5 U	5 U	5 U	NA	NA
Cyanide (PAC)	ug/L	--	--	--	NA	NA	NA	NA	NA	NA	5 U	5 U	5 U	NA	NA

Red Shading - UCL Exceeded; Black Shading - Method 1 Std Exceeded; Bold - Detected; U - Not Detected;
J - Estimated; R - Rejected; NA - Not Analyzed

Table 3-9
Summary of Dust Monitoring Sample Results
Former Tombarello Property
Lawrence, Massachusetts
1 of 4

	Sample Location	AMS-1	AMS-1	AMS-1	AMS-01	AMS-01	AMS-01	AMS-2	AMS-2
	Sample Date	06/09/2016	06/09/2016	06/09/2016	06/15/2016	06/15/2016	06/15/2016	06/09/2016	06/09/2016
Analysis									
NIOSH 0500	**Units**								
DUST	Total mg	0.05 U	NT	NT	0.05 U	NT	NT	0.05 U	NT
NIOSH 5503									
PCB 1016	Total µg	NT	0.1 U	NT	NT	0.1 U	NT	NT	0.1 U
PCB 1221	Total µg	NT	0.1 U	NT	NT	0.1 U	NT	NT	0.1 U
PCB 1232	Total µg	NT	0.1 U	NT	NT	0.1 U	NT	NT	0.1 U
PCB 1242	Total µg	NT	0.1 U	NT	NT	0.1 U	NT	NT	0.1 U
PCB 1248	Total µg	NT	0.1 U	NT	NT	0.1 U	NT	NT	0.1 U
PCB 1254	Total µg	NT	0.1 U	NT	NT	0.1 U	NT	NT	0.1 U
PCB 1260	Total µg	NT	0.1 U	NT	NT	0.1 U	NT	NT	0.1 U
PCB 1262	Total µg	NT	0.1 U	NT	NT	0.1 U	NT	NT	0.1 U
PCB 1268	Total µg	NT	0.1 U	NT	NT	0.1 U	NT	NT	0.1 U
NIOSH 7303									
LEAD	Total µg	NT	NT	1.2 U	NT	NT	1.2 U	NT	NT

NOTES:

1. U = Not detected above the lab reporting limits shown in parenthesis.
2. NT = Not tested.
3. mg = milligram
4. µg = microgram

Table 3-9
Summary of Dust Monitoring Sample Results
Former Tombarello Property
Lawrence, Massachusetts
2 of 4

	Sample Location	AMS-2	AMS-02	AMS-02	AMS-02	AMS-3	AMS-3	AMS-3	AMS-03
	Sample Date	06/09/2016	06/15/2016	06/15/2016	06/15/2016	06/09/2016	06/09/2016	06/09/2016	06/15/2016
Analysis									
NIOSH 0500	**Units**								
DUST	Total mg	NT	0.05 U	NT	NT	0.05 U	NT	NT	0.05 U
NIOSH 5503									
PCB 1016	Total µg	NT	NT	0.1 U	NT	NT	0.1 U	NT	NT
PCB 1221	Total µg	NT	NT	0.1 U	NT	NT	0.1 U	NT	NT
PCB 1232	Total µg	NT	NT	0.1 U	NT	NT	0.1 U	NT	NT
PCB 1242	Total µg	NT	NT	0.1 U	NT	NT	0.1 U	NT	NT
PCB 1248	Total µg	NT	NT	0.1 U	NT	NT	0.1 U	NT	NT
PCB 1254	Total µg	NT	NT	0.1 U	NT	NT	0.1 U	NT	NT
PCB 1260	Total µg	NT	NT	0.1 U	NT	NT	0.1 U	NT	NT
PCB 1262	Total µg	NT	NT	0.1 U	NT	NT	0.1 U	NT	NT
PCB 1268	Total µg	NT	NT	0.1 U	NT	NT	0.1 U	NT	NT
NIOSH 7303									
LEAD	Total µg	1.2 U	NT	NT	1.2 U	NT	NT	1.2 U	NT

NOTES:

1. U = Not detected above the lab reporting limits shown in parenthesis.
2. NT = Not tested.
3. mg = milligram
4. µg = microgram

Table 3-9
Summary of Dust Monitoring Sample Results
Former Tombarello Property
Lawrence, Massachusetts
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	Sample Location	AMS-03	AMS-03	AMS-4	AMS-04	AMS-5	AMS-5	AMS-5	AMS-06
	Sample Date	06/15/2016	06/15/2016	06/09/2016	06/15/2016	06/09/2016	06/09/2016	06/09/2016	06/15/2016
Analysis									
NIOSH 0500	**Units**								
DUST	Total mg	NT	NT	NT	NT	0.05 U	NT	NT	0.05 U
NIOSH 5503									
PCB 1016	Total µg	0.1 U	NT	0.1 U	0.1 U	NT	0.1 U	NT	NT
PCB 1221	Total µg	0.1 U	NT	0.1 U	0.1 U	NT	0.1 U	NT	NT
PCB 1232	Total µg	0.1 U	NT	0.1 U	0.1 U	NT	0.1 U	NT	NT
PCB 1242	Total µg	0.1 U	NT	0.1 U	0.1 U	NT	0.1 U	NT	NT
PCB 1248	Total µg	0.1 U	NT	0.1 U	0.1 U	NT	0.1 U	NT	NT
PCB 1254	Total µg	0.1 U	NT	0.1 U	0.1 U	NT	0.1 U	NT	NT
PCB 1260	Total µg	0.1 U	NT	0.1 U	0.1 U	NT	0.1 U	NT	NT
PCB 1262	Total µg	0.1 U	NT	0.1 U	0.1 U	NT	0.1 U	NT	NT
PCB 1268	Total µg	0.1 U	NT	0.1 U	0.1 U	NT	0.1 U	NT	NT
NIOSH 7303									
LEAD	Total µg	NT	1.2 U	NT	NT	NT	NT	1.2 U	NT

NOTES:

1. U = Not detected above the lab reporting limits shown in parenthesis.
2. NT = Not tested.
3. mg = milligram
4. µg = microgram

Table 3-9
Summary of Dust Monitoring Sample Results
Former Tombarello Property
Lawrence, Massachusetts
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	Sample Location	AMS-06	AMS-06	Blank-061516	Dust 1	Dust 2	Lead 1	Lead 2
	Sample Date	06/15/2016	06/15/2016	06/15/2016	06/15/2016	06/15/2016	06/15/2016	06/15/2016
Analysis								
NIOSH 0500	**Units**							
DUST	Total mg	NT	NT	NT	0.05 U	0.05 U	NT	NT
NIOSH 5503								
PCB 1016	Total µg	0.1 U	NT	0.1 U	NT	NT	NT	NT
PCB 1221	Total µg	0.1 U	NT	0.1 U	NT	NT	NT	NT
PCB 1232	Total µg	0.1 U	NT	0.1 U	NT	NT	NT	NT
PCB 1242	Total µg	0.1 U	NT	0.1 U	NT	NT	NT	NT
PCB 1248	Total µg	0.1 U	NT	0.1 U	NT	NT	NT	NT
PCB 1254	Total µg	0.1 U	NT	0.1 U	NT	NT	NT	NT
PCB 1260	Total µg	0.1 U	NT	0.1 U	NT	NT	NT	NT
PCB 1262	Total µg	0.1 U	NT	0.1 U	NT	NT	NT	NT
PCB 1268	Total µg	0.1 U	NT	0.1 U	NT	NT	NT	NT
NIOSH 7303								
LEAD	Total µg	NT	1.2 U	NT	NT	NT	1.2 U	1.2 U

NOTES:

1. U = Not detected above the lab reporting limits shown in parenthesis.
2. NT = Not tested.
3. mg = milligram
4. µg = microgram

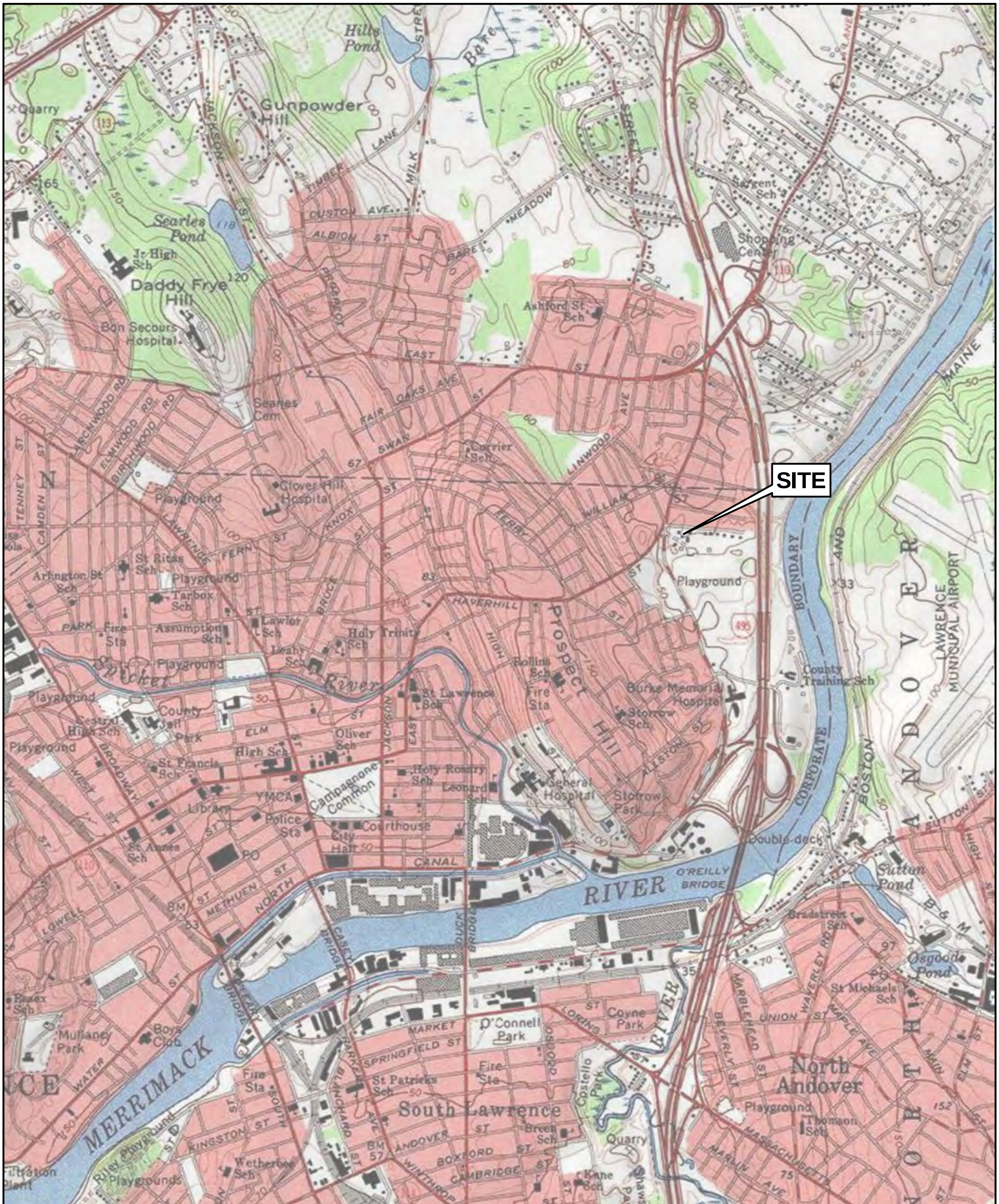
Table 5-1
Summary of Capital and O/M Costs for Remedial Alternatives
Former Tombarello Property
Lawrence, Massachusetts

Alternative	PCB Cleanup Goal	UCLs Removed	Soil Volume	Barrier	Capital Cost Range	Annual O&M Cost Range
1A	10 mg/kg	Yes	75,000 CY	Cap	$45M to $70M	$20K to $25K
1B	10 mg/kg	Yes	75,000 CY	Cover	$45M to $65M	$10K to $15K
2A	50 mg/kg	Yes	10,000 CY	Cover	$7.5M to $11M	$10K to $15K
2B	50 mg/kg	No	9,000 CY	Cap	$9M to $13M	$20K to $25K
2C	50 mg/kg	No	9,000 CY	Cover	$7M to $10M	$10K to $15K
3A	100 mg/kg	Yes	4,000 CY	Cover	$4M to $6M	$10K to $15K
3B	100 mg/kg	No	2,000 CY	Cap	$4.5M to $7M	$20K to $25K
3C	100 mg/kg	No	2,000 CY	Cover	$3M to $4M	$10K to $15K

Note:

O&M Costs based on Year 1 estimates. Costs expected to increase with inflation.

FIGURES



USGS Topographic Map
Lawrence, Mass. - N.H.
Revised 1966

0 500 1,000 2,000
Feet
1 inch = 2,000 feet

N

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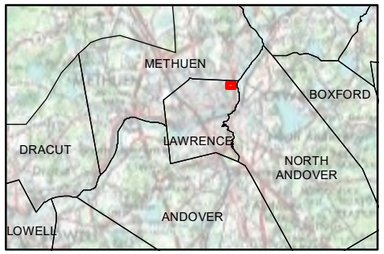
FIGURE 1-1

LOCUS MAP
FORMER TOMBARELLO PROPERTY
LAWRENCE, MASSACHUSETTS

PREPARED BY: JH	CHECKED BY: SV
PROJECT NO. 80108.04	DATE: AUGUST 2016

Path: R:\80000 Task Orders\80108 Brownfields Multi-Site\GIS\MLRR\Figures\Figure 1-1 Tombarello Locus.mxd **Date Printed:** 8/18/2016



Map Location

Notes:

1. Source: Figure 4, Comprehensive Phase II Site Investigation Services, Former Tombarello Property, by Tighe & Bond.

2. Property lines from MassGIS, Aerial photo from MassGIS, 2013.

3. Location of site features depicted hereon is approximate and given for illustrative purposes only.

Legend

- 2011 Excavation Area
- Soil Consolidation Area
- Existing Building
- Former Building
- Property Lines

N

0 50 100 200

Feet

1 inch = 100 feet

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FIGURE 1-2

SITE PLAN
FORMER TOMBARELLO PROPERTY
LAWRENCE, MASSACHUSETTS

PREPARED BY: JH	CHECKED BY: SV
PROJECT NO. 80108.04	DATE: AUGUST 2016

Path: R:\80000 Task Orders\80108 Brownfields Multi-Site\GIS\MLRR\Figures\Figure 1-2 Tombarello Site Plan.mxd Date Printed: 8/18/2016

HOFMANN AVE

MARSTON ST

Metal Shop / Garage

Furnace Building

Baler Press Area

Small Shear

Large Shear

Notes:

1. Source: Figure 4, Comprehensive Phase II Site Investigation Services, Former Tombarello Property, by Tighe & Bond.

2. Property lines from MassGIS, Aerial photo from MassGIS, 2013.

3. Locations of site features depicted hereon are approximate and given for illustrative purposes only.

Legend

- Soil Boring
- Soil Sample, EPA 2010
- Test Pit

Historical Monitoring Wells

- HEA June 1999
- Weston Feb 2003
- Weston July 2003
- Property Lines
- Existing Building
- Former Building
- 2011 Excavation Area
- Soil Consolidation Area

N

0 50 100 200

Feet

1 inch = 100 feet

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FIGURE 1-3

HISTORICAL SAMPLE LOCATIONS
FORMER TOMBARELLO PROPERTY
LAWRENCE, MASSACHUSETTS

PREPARED BY: JH	CHECKED BY: AR
PROJECT NO. 80108.04	DATE: JULY 2016

Path: R:\80000 Task Orders\80108 Brownfields Multi-Site\GIS\MLRR\Figures\Figure 1-3 Tombarello Historical Sample Locations.mxd **Date Printed:** 8/1/2016

HOFMANN AVE

MARSTON ST

Metal Shop / Garage

Furnace Building

Baler Press Area

Small Shear

Large Shear

NPA-01
NPA-02
MW-15
AMS-3
NPA-04
NPA-03
NPA-05
NPA-07
NPA-06
MW-1 HEA
MW-1 Weston
MS-01
MW-14
MS-03
MS-02
AMS-2
MW-16
AMS-1
WSB-6N
WSB-6W
WSB-6
SVA-01
TP-01
HA-01
TP-02
HA-02
TP-17
LS-01
MW-9
FB-01
MW-13
FB-02
FB-03
FB-04
MW-12
BPA-01
BPA-02/
MW-11
G3N
G3W
G3
G3E
G3S
M7
M7E
M7S
M-7W
FG-34N
FG-34
FG-34W
FG-34S
CD-34N
CD-34
CD-34W
CD-34E
CD-43S
CD-45N
CD-45W
CD-45
CD-45E
CD-45S
D-5N
D5
D-5E
TP-20
FG-45N
FG-45
FG-45E
FG-45W
FG-45S
SB-3N
SB-3W
SB3
SB-3E
SB-3S
SS-01
MW-10
MW-3
MW-3A
LS-02
TP-18
TP-19
TP-03
HA-03
M4N
M4W
M4
M4E
M4S
HA-04
TP-04
TP-12
TP-11
SVA-08
TP-13
HA-05
SVA-07
TP-15
TP-14
TP-05
HA-06
SA-01
MW-8
AMS-06
TP-06
TP-07
TP-16
HA-07
SVA-02
SVA-03
SVA-04
SVA-06
P13N
P13
P13W
P13S
TP-09
TP-08
SVA-05
TP-10
HA-11
AMS-5
HA-10
HA-09
HA-08
HA-12
AMS-4

Notes:

1. Source: Figure 4, Comprehensive Phase II Site Investigation Services, Former Tombarello Property, by Tighe & Bond, And Nobis survey, June 2016.

2. Property lines from MassGIS, Aerial photo from MassGIS, 2013.

3. Locations of site features depicted hereon are approximate and given for illustrative purposes only.

Legend

- Air Monitoring Location
- June 2016 Soil Borings
- Hand Auger Borings
- Monitoring Well
- Test Pit Location
- Existing Borings
- Existing Monitoring Wells
- Catch Basin
- Property Lines
- Existing Building
- Former Building
- 2011 Excavation Area
- Soil Consolidation Area

N

0 50 100 200

Feet

1 inch = 100 feet

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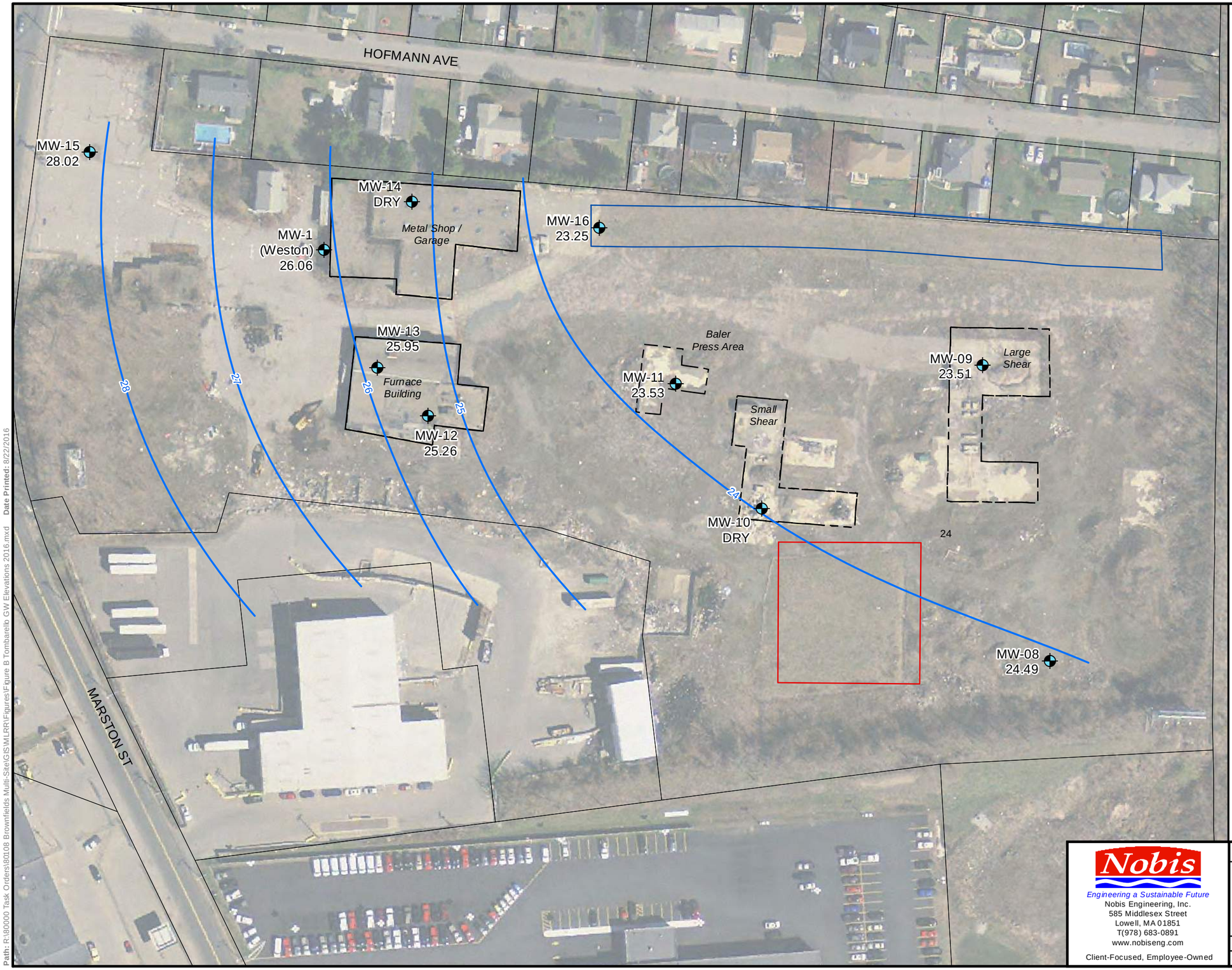
FIGURE 2-1

TBA SAMPLE LOCATIONS
FORMER TOMBARELLO PROPERTY
LAWRENCE, MASSACHUSETTS

PREPARED BY: JH	CHECKED BY: SV
PROJECT NO. 80108.04	DATE: JULY 2016

Path: R:\80000 Task Orders\80108 Brownfields Multi-Site\GIS\MLRR\Figures\Figure 2-1 TombarelloTBA Locations.mxd Date Printed: 8/22/2016



Notes:

1. Groundwater contours are interpolated based on elevation data obtained on the dates indicated. Other interpretations are possible.

2. Source: Figure 4, Comprehensive Phase II Site Investigation Services, Former Tombarello Property, by Tighe & Bond, And Nobis survey, June 2016.

3. Property lines from MassGIS, Aerial photo from MassGIS, 2013.

4. Locations of site features depicted hereon are approximate and given for illustrative purposes only.

Legend

- Monitoring Well with Groundwater Elevation (6/17/16)
- Groundwater Contours (6/17/16)
- Property Lines
- Existing Building
- Former Building
- 2011 Excavation Area
- Soil Consolidation Area

N

0 50 100 200

Feet

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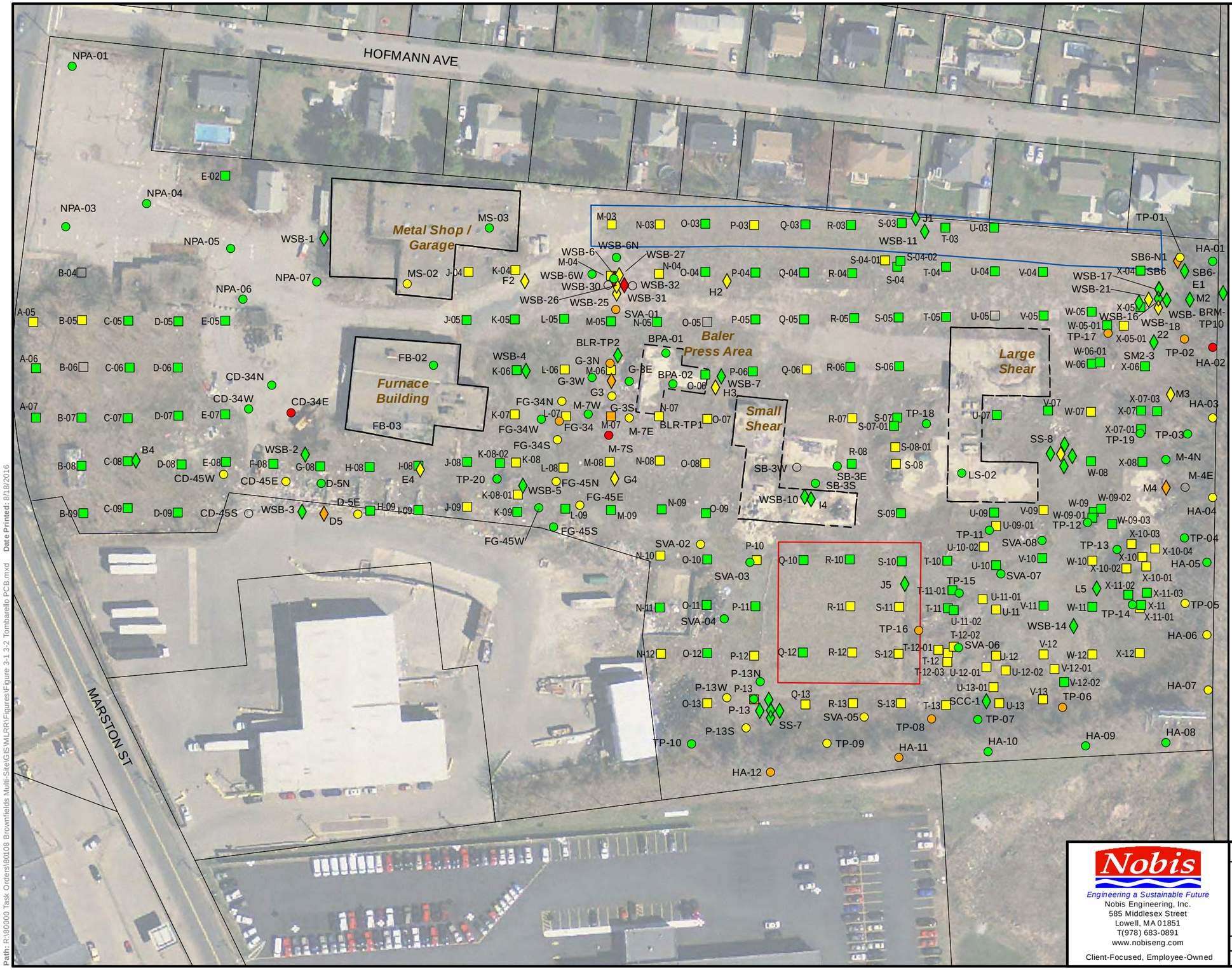
FIGURE 2-2

GROUNDWATER
POTENTIOMETRIC SURFACE
FORMER TOMBARELLO PROPERTY
LAWRENCE, MASSACHUSETTS

PREPARED BY: JH	CHECKED BY: AR
PROJECT NO. 80108.04	DATE: AUGUST 2016

Path: R:\80000 Task Orders\80108 Brownfields Multi-Site\GIS\MLRR\Figures\Figure B Tombarello GW Elevations 2016.mxd Date Printed: 8/22/2016



Notes:

1. Soil samples are from multiple events from 1998-2016. PCB results are total Aroclors, in milligrams per Kilogram (mg/Kg), Where duplicate/multiple samples occur, the higher result is shown.

2. Samples within the range 0 to 2 feet bgs by Nobis, 2016 are included in the surface soil results.

3. Source: Figure 4, Comprehensive Phase II Site Investigation Services, Former Tombarello Property, by Tighe & Bond.

4. Property lines from MassGIS, Aerial photo from MassGIS, 2013.

5. Locations of site features depicted hereon are approximate and given for illustrative purposes only.

Legend

Surface Soil PCB (0-1 ft bgs, ppm)[2]

- > 100
- 50 - 100
- 10 - 50
- < 10
- No PCBs Detected

Shape Indicator

- Sampled by Nobis, 2016
- Sampled by EPA, 2010
- Sampled by others, Prior to 2010
- Property Lines
- Existing Building
- Former Building
- 2011 Excavation Area
- Soil Consolidation Area

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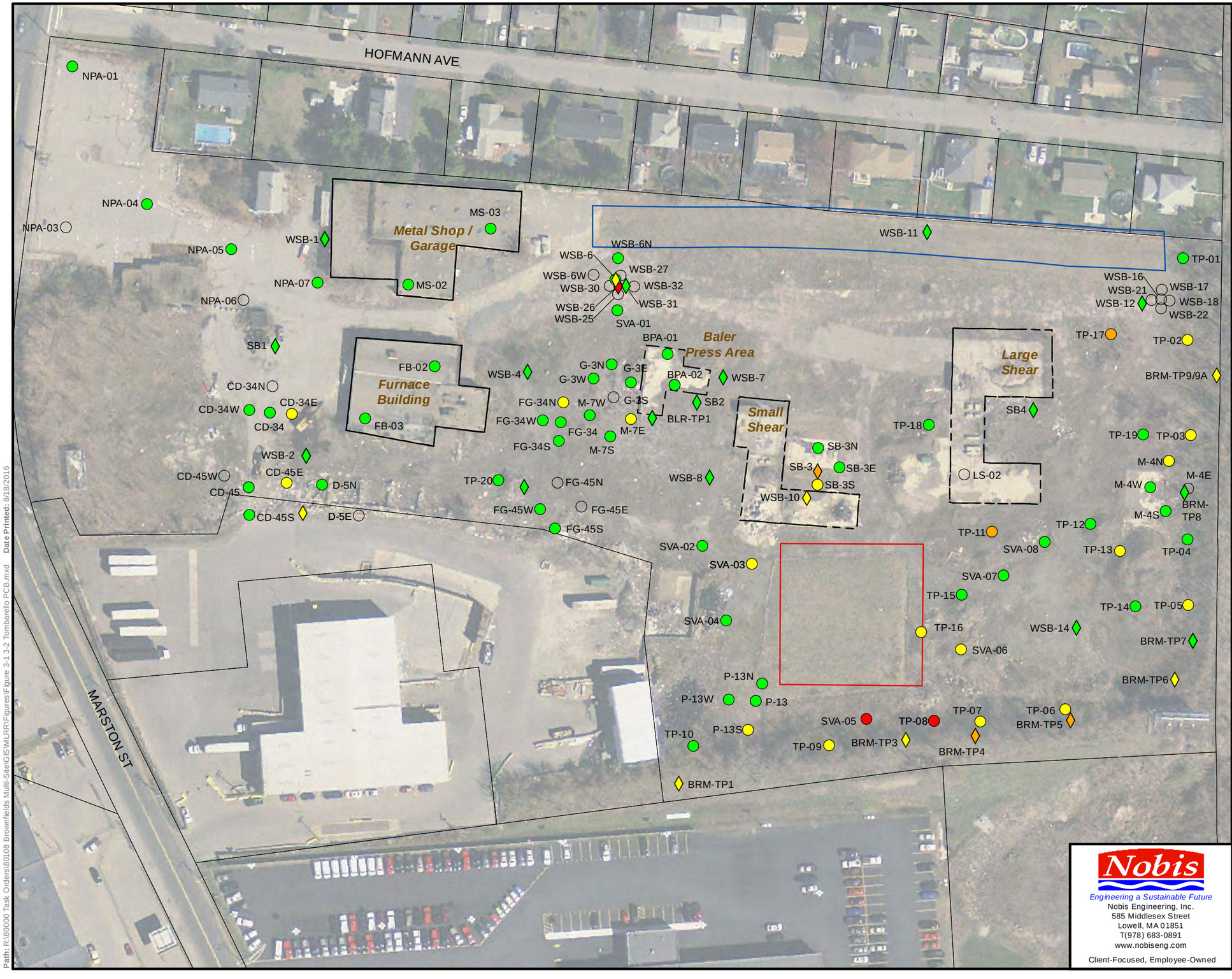
FIGURE 3-1

SUMMARY OF SURFACE SOIL
PCB SAMPLE RESULTS
FORMER TOMBARELLO PROPERTY
LAWRENCE, MASSACHUSETTS

PREPARED BY: JH	CHECKED BY: AR
PROJECT NO. 80108.04	DATE: AUGUST 2016

Path: R:\80000 Task Orders\80108 Brownfields Multi-Site\GIS\MLRR\Figures\Figure 3-1 3-2 Tombarello PCB.mxd Date Printed: 8/18/2016



Notes:

1. Soil samples are from multiple events from 1998-2016. PCB results are total Aroclors, in milligrams per Kilogram (mg/Kg), Where duplicate/multiple samples occur, the higher result is shown.

2. Samples within the range 0 to 2 feet bgs by Nobis, 2016 are included in the surface soil results.

3. Source: Figure 4, Comprehensive Phase II Site Investigation Services, Former Tombarello Property, by Tighe & Bond.

4. Property lines from MassGIS, Aerial photo from MassGIS, 2013.

5. Locations of site features depicted hereon are approximate and given for illustrative purposes only.

Legend

Subsurface Soil PCB (>1 ft bgs, ppm)[2]

- > 100
- 50 - 100
- 10 - 50
- < 10

Shape Indicator

- Sampled by Nobis, 2016
- Sampled by others, prior to 2010
- Property Lines
- Existing Building
- Former Building
- 2011 Excavation Area
- Soil Consolidation Area

N

0 50 100 200

Feet

1 inch = 100 feet

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FIGURE 3-2

SUMMARY OF SUBSURFACE SOIL
PCB SAMPLE RESULTS
FORMER TOMBARELLO PROPERTY
LAWRENCE, MASSACHUSETTS

PREPARED BY: JH	CHECKED BY: AR
PROJECT NO. 80108.04	DATE: AUGUST 2016

Path: R:\80000 Task Orders\80108 Brownfields Multi-Site\GIS\MLRR\Figures\Figure 3-1 3-2 Tombarello PCB.mxd Date Printed: 8/18/2016

HOFMANN AVE

MARSTON ST

Metal Shop / Garage

Furnace Building

Baler Press Area

Small Shear

Large Shear

Alternative	PCB Cleanup Goal	UCLs Removed?	Soil Volume	Barrier	Capital Cost Range
1A	10 mg/kg	Yes	75,000 CY	Cap	$45M to $70M
1B	10 mg/kg	Yes	75,000 CY	Cover	$45M to $65M

Notes:

1. Source: Figure 4, Comprehensive Phase II Site Investigation Services, Former Tombarello Property, by Tighe & Bond.

2. Property lines from MassGIS, Aerial photo from MassGIS, 2013.

3. Locations of site features depicted hereon are approximate and given for illustrative purposes only.

Legend

Surface Soil PCB (0-2 ft bgs, ppm)

- > 100
- 50 - 100
- 10 - 50
- < 10
- No PCBs Detected

Shape Indicator

- Sampled by Nobis, 2016
- Sampled by EPA, 2010
- Sampled by others, Prior to 2010
- Proposed Excavation Area
- Extent of Cap/Cover
- 2011 Excavation Area
- Soil Consolidation Area
- Property Lines
- Existing Building
- Former Building

N

0 50 100 200

Feet

1 inch = 100 feet

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FIGURE 5-1

ALTERNATIVES 1A & 1B
PROPOSED SOIL REMOVAL AREAS
FORMER TOMBARELLO PROPERTY
LAWRENCE, MASSACHUSETTS

PREPARED BY: JH	CHECKED BY: SV
PROJECT NO. 80108.04	DATE: AUGUST 2016

Path: R:\80000 Task Orders\80108 Brownfields Multi-Site\GIS\MLRR\Figures\Figure 5-1 Tombarello Removal Areas.mxd Date Printed: 8/12/2016

HOFMANN AVE

MARSTON ST

Metal Shop / Garage

Furnace Building

Baler Press Area

Small Shear

Large Shear

Alternative	PCB Cleanup Goal	UCLs Removed?	Soil Volume	Barrier	Capital Cost Range
2A	50 mg/kg	Yes	10,000 CY	Cover	$7.5M to $11M

Notes:

1. Source: Figure 4, Comprehensive Phase II Site Investigation Services, Former Tombarello Property, by Tighe & Bond.

2. Property lines from MassGIS, Aerial photo from MassGIS, 2013.

3. Locations of site features depicted hereon are approximate and given for illustrative purposes only.

Legend

Surface Soil PCB (0-2 ft bgs, ppm)

- > 100
- 50 - 100
- 10 - 50
- < 10
- No PCBs Detected

Shape Indicator

- Sampled by Nobis, 2016
- Sampled by EPA, 2010
- Sampled by others, Prior to 2010
- Proposed Excavation Area
- Extent of Cap/Cover
- 2011 Excavation Area
- Soil Consolidation Area
- Property Lines
- Existing Building
- Former Building

N

0 50 100 200

Feet

1 inch = 100 feet

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FIGURE 5-2 A

ALTERNATIVE 2A
PROPOSED SOIL REMOVAL AREAS
FORMER TOMBARELLO PROPERTY
LAWRENCE, MASSACHUSETTS

PREPARED BY: JH	CHECKED BY: SV
PROJECT NO. 80108.04	DATE: AUGUST 2016

Path: R:\80000 Task Orders\80108 Brownfields Multi-Site\GIS\MLRR\Figures\Figure 5-1 Tombarello Removal Areas.mxd Date Printed: 8/12/2016

HOFMANN AVE

MARSTON ST

Metal Shop / Garage

Furnace Building

Baler Press Area

Small Shear

Large Shear

Alternative	PCB Cleanup Goal	UCLs Removed?	Soil Volume	Barrier	Capital Cost Range
2B	50 mg/kg	No	9,000 CY	Cap	$9M to $13M
2C	50 mg/kg	No	9,000 CY	Cover	$7M to $10M

Notes:

1. Source: Figure 4, Comprehensive Phase II Site Investigation Services, Former Tombarello Property, by Tighe & Bond.

2. Property lines from MassGIS, Aerial photo from MassGIS, 2013.

3. Locations of site features depicted hereon are approximate and given for illustrative purposes only.

Legend

Surface Soil PCB (0-2 ft bgs, ppm)

- > 100
- 50 - 100
- 10 - 50
- < 10
- No PCBs Detected

Shape Indicator

- Sampled by Nobis, 2016
- Sampled by EPA, 2010
- Sampled by others, Prior to 2010
- Proposed Excavation Area
- Extent of Cap/Cover
- 2011 Excavation Area
- Soil Consolidation Area
- Property Lines
- Existing Building
- Former Building

N

0 50 100 200

Feet

1 inch = 100 feet

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FIGURE 5-2 B

ALTERNATIVES 2B & 2C
PROPOSED SOIL REMOVAL AREAS
FORMER TOMBARELLO PROPERTY
LAWRENCE, MASSACHUSETTS

PREPARED BY: JH	CHECKED BY: SV
PROJECT NO. 80108.04	DATE: AUGUST 2016

Path: R:\80000 Task Orders\80108 Brownfields Multi-Site\GIS\MLRR\Figures\Figure 5-1 Tombarello Removal Areas.mxd Date Printed: 8/12/2016

HOFMANN AVE

MARSTON ST

Metal Shop / Garage

Furnace Building

Baler Press Area

Small Shear

Large Shear

Alternative	PCB Cleanup Goal	UCLs Removed?	Soil Volume	Barrier	Capital Cost Range
3A	100 mg/kg	Yes	4,000 CY	Cover	$4M to $6M

Notes:

1. Source: Figure 4, Comprehensive Phase II Site Investigation Services, Former Tombarello Property, by Tighe & Bond.

2. Property lines from MassGIS, Aerial photo from MassGIS, 2013.

3. Locations of site features depicted hereon are approximate and given for illustrative purposes only.

Legend

Surface Soil PCB (0-2 ft bgs, ppm)

- > 100
- 50 - 100
- 10 - 50
- < 10
- No PCBs Detected

Shape Indicator

- Sampled by Nobis, 2016
- Sampled by EPA, 2010
- Sampled by others, Prior to 2010
- Proposed Excavation Area
- Extent of Cap/Cover
- 2011 Excavation Area
- Soil Consolidation Area
- Property Lines
- Existing Building
- Former Building

N

0 50 100 200

Feet

1 inch = 100 feet

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FIGURE 5-3 A

ALTERNATIVE 3A
PROPOSED SOIL REMOVAL AREAS
FORMER TOMBARELLO PROPERTY
LAWRENCE, MASSACHUSETTS

PREPARED BY: JH	CHECKED BY: SV
PROJECT NO. 80108.04	DATE: AUGUST 2016

Path: R:\80000 Task Orders\80108 Brownfields Multi-Site\GIS\MLRR\Figures\Figure 5-1 Tombarello Removal Areas.mxd Date Printed: 8/15/2016

HOFMANN AVE

MARSTON ST

Metal Shop / Garage

Furnace Building

Baler Press Area

Small Shear

Large Shear

Alternative	PCB Cleanup Goal	UCLs Removed?	Soil Volume	Barrier	Capital Cost Range
3B	100 mg/kg	No	2,000 CY	Cap	$4.5M to $7M
3C	100 mg/kg	No	2,000 CY	Cover	$3M to $4M

Notes:

1. Source: Figure 4, Comprehensive Phase II Site Investigation Services, Former Tombarello Property, by Tighe & Bond.

2. Property lines from MassGIS, Aerial photo from MassGIS, 2013.

3. Locations of site features depicted hereon are approximate and given for illustrative purposes only.

Legend

Surface Soil PCB (0-2 ft bgs, ppm)

- > 100
- 50 - 100
- 10 - 50
- < 10
- No PCBs Detected

Shape Indicator

- Sampled by Nobis, 2016
- Sampled by EPA, 2010
- Sampled by others, Prior to 2010
- Proposed Excavation Area
- Extent of Cap/Cover
- 2011 Excavation Area
- Soil Consolidation Area
- Property Lines
- Existing Building
- Former Building

N

0 50 100 200

Feet

1 inch = 100 feet

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FIGURE 5-3 B

ALTERNATIVES 3B & 3C
PROPOSED SOIL REMOVAL AREAS
FORMER TOMBARELLO PROPERTY
LAWRENCE, MASSACHUSETTS

PREPARED BY: JH	CHECKED BY: SV
PROJECT NO. 80108.04	DATE: AUGUST 2016

Path: R:\80000 Task Orders\80108 Brownfields Multi-Site\GIS\MLRR\Figures\Figure 5-1 Tombarello Removal Areas.mxd Date Printed: 8/15/2016

APPENDIX C: LABORATORY ANALYTICAL RESULTS

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Tel: (716)691-2600

TestAmerica Job ID: 480-106760-1
Client Project/Site: Tombarello Lawrence, MA

For:
Woodard & Curran, Inc.
40 Shattuck Road
Suite 110
Andover, Massachusetts 01810

Attn: Ms. Keri Lauer

Denise L Giglia

Authorized for release by:
10/7/2016 12:34:04 PM
Denise Giglia, Project Management Assistant II
denise.giglia@testamericainc.com

Designee for

Becky Mason, Project Manager II
(413)572-4000
becky.mason@testamericainc.com

Table of Contents

Definitions/Glossary

Client: Woodard & Curran, Inc.
Project/Site: Tombarello Lawrence, MA

TestAmerica Job ID: 480-106760-1

Qualifiers

GC VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC Semi VOA

Qualifier	Qualifier Description
X	Surrogate is outside control limits
*	RPD of the LCS and LCSD exceeds the control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: Woodard & Curran, Inc.
Project/Site: Tombarello Lawrence, MA

TestAmerica Job ID: 480-106760-1

Job ID: 480-106760-1

Laboratory: TestAmerica Buffalo

Narrative

Job Narrative
480-106760-1

Receipt
The sample was received on 9/30/2016 1:00 AM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.7º C.

Receipt Exceptions
The 8260 analysis was canceled on the following sample on 10/4/16: MH0279 (480-106760-1).

GC VOA
Method MAVPH: The following sample was diluted to bring the concentration of target analytes within the calibration range: MH0279 (480-106760-1). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA
Method 8082: The %RPD of the laboratory control sample (LCS) and laboratory control standard duplicate (LCSD) for preparation batch 480-323268 recovered outside control limits. The following associated samples were non-detect, therefore the data has been reported: MH0279 (480-106760-1)

Method 8082: Surrogate recovery for the following samples was outside control limits: MH0279 (480-106760-1). Evidence of matrix interference is present therefore re-extraction was not performed. In accordance with the MCP protocol, a chromatogram is included for reference. Refer to the QC report for details.

Method MA-EPH: Per question G on the MassDEP Analytical Protocol Certification Form, TestAmerica's routine reporting limits do not achieve the CAM reporting limits specified in this CAM protocol; however they do achieve method 1 GW2/GW3 standards.

Method MA-EPH: The following samples are associated with a Laboratory Control Sample (LCS) and Laboratory Control Sample Dup (LCSD) that exhibited breakthrough for Naphthalene and Methylnaphthalene slightly greater than 5%: MH0279 (480-106760-1) . This may indicate a low bias in the results for these compounds, though since all spike recoveries are well within acceptance limits, the data is unaffected.

Method MA-EPH: The %RPD of the laboratory control sample (LCS) and laboratory control standard duplicate (LCSD) for preparation batch 480-323273 and 480-323352 recovered outside control limits for the following analytes: Acenaphthylene. Both LCS and LCSD recoveries are within acceptance limits, and the %RPD difference is due to a baseline anomaly. Therefore, the data has been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

MassDEP Analytical Protocol Certification Form

Laboratory Name: **TestAmerica Buffalo** Project #: **480-106760**

Project Location: **Tombarello Lawrence, MA** RTN:

This form provides certifications for the following data set: list Laboratory Sample ID Number(s):

480-106760 [1]

Matrices: ■ Groundwater/Surface Water ☐ Soil/Sediment ☐ Drinking Water ☐ Air ☐ Other:

CAM Protocols (check all that apply below):

8260 VOC CAM II A ☐	7470/7471 Hg CAM III B ■	Mass DEP VPH CAM IV A ■	8081 Pesticides CAM V B ☐	7196 Hex Cr CAM VI B ☐	Mass DEP APH CAM IX A ☐
8270 SVOC CAM II B ☐	7010 Metals CAM III C ☐	Mass DEP EPH CAM IV B ■	8151 Herbicides CAM V C ☐	8330 Explosives CAM VIII A ☐	TO-15 VOC CAM IX B ☐
6010 Metals CAM III A ■	6020 Metals CAM III D ☐	8082 PCB CAM V A ☐	9014 Total Cyanide/PAC CAM VI A ☐	6860 Perchlorate CAM VIII B ☐	

Affirmative Responses to Questions A through F are required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding time.	■ Yes ☐ No
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	■ Yes ☐ No
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	■ Yes ☐ No
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	■ Yes ☐ No
E	a. VPH, EPH and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	■ Yes ☐ No ☐ Yes ☐ No
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	■ Yes ☐ No

Responses to Questions G, H and I below are required for "Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	☐ Yes ■ No[1]

***Data User Note:* Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WCS-07-350**

H	Were **all** QC performance standards specified in the CAM protocol(s) achieved?	☐ Yes ■ No[1]
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s) ?	■ Yes ☐ No[1]

[1] All negative responses must be addressed in an attached laboratory narrative.

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, is accurate and complete.

Signature: Denise L Giglia Position: Project Manager Assistant II

Printed Name: Denise L. Giglia Date: 10/7/16 9:43

Detection Summary

Client: Woodard & Curran, Inc.
Project/Site: Tombarello Lawrence, MA

TestAmerica Job ID: 480-106760-1

Client Sample ID: MH0279

Lab Sample ID: 480-106760-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
C5-C8 Aliphatics (unadjusted)	16	J	50	15	ug/L	10		MAVPH	Total/NA
Ethylbenzene	5.5	J	10	2.5	ug/L	10		MAVPH	Total/NA
Toluene	32		10	2.5	ug/L	10		MAVPH	Total/NA
Benzo[k]fluoranthene	2.1	J	9.5	1.9	ug/L	1		MA-EPH	Total/NA
Phenanthrene	4.6	J B	9.5	1.9	ug/L	1		MA-EPH	Total/NA
C11-C22 Aromatics (unadjusted)	630	B	47	9.5	ug/L	1		MA-EPH	Total/NA
C19-C36 Aliphatics	1900	B	47	9.5	ug/L	1		MA-EPH	Total/NA
C9-C18 Aliphatics	47	B	47	9.5	ug/L	1		MA-EPH	Total/NA
Silver	0.028		0.0050	0.0017	mg/L	1		6010	Total/NA
Barium	0.16		0.010	0.00070	mg/L	1		6010	Total/NA
Cadmium	0.0015		0.0010	0.00050	mg/L	1		6010	Total/NA
Chromium	0.014		0.0050	0.0010	mg/L	1		6010	Total/NA
Nickel	0.027		0.010	0.0013	mg/L	1		6010	Total/NA
Vanadium	0.013		0.010	0.0015	mg/L	1		6010	Total/NA
Zinc	0.74		0.050	0.0015	mg/L	1		6010	Total/NA
Lead	0.062		0.0050	0.0030	mg/L	1		6010	Total/NA
Mercury	0.00026		0.00020	0.00012	mg/L	1		7470A	Total/NA

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
C11-C22 Aromatics (Adjusted)	630		50	50	ug/L	1		MA-EPH	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: MH0279
Date Collected: 09/28/16 10:45
Date Received: 09/30/16 01:00

Lab Sample ID: 480-106760-1
Matrix: Water

Method: MA VPH - Massachusetts - Volatile Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C5-C8 Aliphatics (adjusted)	<1.5		5.0	1.5	ug/L			10/06/16 12:40	1
C9-C12 Aliphatics (adjusted)	<1.5		5.0	1.5	ug/L			10/06/16 12:40	1

Method: MAVPH - Massachusetts - Volatile Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<2.5		10	2.5	ug/L			10/04/16 17:03	10
C5-C8 Aliphatics (unadjusted)	**16**	**J**	50	15	ug/L			10/04/16 17:03	10
C9-C12 Aliphatics (unadjusted)	<15		50	15	ug/L			10/04/16 17:03	10
C9-C10 Aromatics	<5.0		50	5.0	ug/L			10/04/16 17:03	10
Ethylbenzene	**5.5**	**J**	10	2.5	ug/L			10/04/16 17:03	10
Methyl tert-butyl ether	<2.5		10	2.5	ug/L			10/04/16 17:03	10
m-Xylene & p-Xylene	<5.0		20	5.0	ug/L			10/04/16 17:03	10
Naphthalene	<2.5		10	2.5	ug/L			10/04/16 17:03	10
o-Xylene	<2.5		10	2.5	ug/L			10/04/16 17:03	10
Toluene	**32**		10	2.5	ug/L			10/04/16 17:03	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,5-Dibromotoluene (fid)	*92*		*73 - 144*		*10/04/16 17:03*	*10*
2,5-Dibromotoluene (pid)	*89*		*81 - 132*		*10/04/16 17:03*	*10*

Method: 8082 - Polychlorinated Biphenyls (GC/ECD)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.10	*	0.25	0.10	ug/L		09/30/16 14:11	10/01/16 04:17	1
PCB-1221	<0.10		0.25	0.10	ug/L		09/30/16 14:11	10/01/16 04:17	1
PCB-1232	<0.10		0.25	0.10	ug/L		09/30/16 14:11	10/01/16 04:17	1
PCB-1242	<0.10		0.25	0.10	ug/L		09/30/16 14:11	10/01/16 04:17	1
PCB-1248	<0.10		0.25	0.10	ug/L		09/30/16 14:11	10/01/16 04:17	1
PCB-1254	<0.10		0.25	0.10	ug/L		09/30/16 14:11	10/01/16 04:17	1
PCB-1260	<0.10	*	0.25	0.10	ug/L		09/30/16 14:11	10/01/16 04:17	1
PCB-1262	<0.10		0.25	0.10	ug/L		09/30/16 14:11	10/01/16 04:17	1
PCB-1268	<0.10		0.25	0.10	ug/L		09/30/16 14:11	10/01/16 04:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*40*		*30 - 150*	*09/30/16 14:11*	*10/01/16 04:17*	*1*
Tetrachloro-m-xylene	*28*	*X*	*30 - 150*	*09/30/16 14:11*	*10/01/16 04:17*	*1*
DCB Decachlorobiphenyl	*16*	*X*	*30 - 150*	*09/30/16 14:11*	*10/01/16 04:17*	*1*
DCB Decachlorobiphenyl	*13*	*X*	*30 - 150*	*09/30/16 14:11*	*10/01/16 04:17*	*1*

Method: MA-EPH - Massachusetts - Extractable Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	<1.9		9.5	1.9	ug/L		09/30/16 14:25	10/03/16 17:42	1
Acenaphthene	<1.9		9.5	1.9	ug/L		09/30/16 14:25	10/03/16 17:42	1
Acenaphthylene	<1.9	*	9.5	1.9	ug/L		09/30/16 14:25	10/03/16 17:42	1
Anthracene	<1.9		9.5	1.9	ug/L		09/30/16 14:25	10/03/16 17:42	1
Benzo[a]anthracene	<1.9		9.5	1.9	ug/L		09/30/16 14:25	10/03/16 17:42	1
Benzo[a]pyrene	<1.9		9.5	1.9	ug/L		09/30/16 14:25	10/03/16 17:42	1
Benzo[b]fluoranthene	<1.9		9.5	1.9	ug/L		09/30/16 14:25	10/03/16 17:42	1
Benzo[g,h,i]perylene	<1.9		9.5	1.9	ug/L		09/30/16 14:25	10/03/16 17:42	1
Benzo[k]fluoranthene	**2.1**	**J**	9.5	1.9	ug/L		09/30/16 14:25	10/03/16 17:42	1
Chrysene	<1.9		9.5	1.9	ug/L		09/30/16 14:25	10/03/16 17:42	1

Client Sample ID: MH0279
Date Collected: 09/28/16 10:45
Date Received: 09/30/16 01:00

Lab Sample ID: 480-106760-1
Matrix: Water

Method: MA-EPH - Massachusetts - Extractable Petroleum Hydrocarbons (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenz(a,h)anthracene	<1.9		9.5	1.9	ug/L		09/30/16 14:25	10/03/16 17:42	1
Fluoranthene	<1.9		9.5	1.9	ug/L		09/30/16 14:25	10/03/16 17:42	1
Fluorene	<1.9		9.5	1.9	ug/L		09/30/16 14:25	10/03/16 17:42	1
Indeno[1,2,3-cd]pyrene	<1.9		9.5	1.9	ug/L		09/30/16 14:25	10/03/16 17:42	1
Naphthalene	<1.9		9.5	1.9	ug/L		09/30/16 14:25	10/03/16 17:42	1
Phenanthrene	**4.6**	**J B**	9.5	1.9	ug/L		09/30/16 14:25	10/03/16 17:42	1
Pyrene	<1.9		9.5	1.9	ug/L		09/30/16 14:25	10/03/16 17:42	1
C11-C22 Aromatics (unadjusted)	**630**	**B**	47	9.5	ug/L		09/30/16 14:25	10/03/16 17:42	1
C19-C36 Aliphatics	**1900**	**B**	47	9.5	ug/L		09/30/16 14:25	10/03/16 17:42	1
C9-C18 Aliphatics	**47**	**B**	47	9.5	ug/L		09/30/16 14:25	10/03/16 17:42	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
C11-C22 Aromatics (Adjusted)	**630**		50	50	ug/L			10/04/16 13:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctadecane	*44*		*40 - 140*	*09/30/16 14:25*	*10/03/16 17:42*	*1*
2-Bromonaphthalene	*80*		*40 - 140*	*09/30/16 14:25*	*10/03/16 17:42*	*1*
2-Fluorobiphenyl	*122*		*40 - 140*	*09/30/16 14:25*	*10/03/16 17:42*	*1*
o-Terphenyl	*73*		*40 - 140*	*09/30/16 14:25*	*10/03/16 17:42*	*1*

Method: 6010 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	**0.028**		0.0050	0.0017	mg/L		09/30/16 10:35	10/01/16 11:15	1
Arsenic	<0.0056		0.010	0.0056	mg/L		09/30/16 10:35	10/01/16 11:15	1
Barium	**0.16**		0.010	0.00070	mg/L		09/30/16 10:35	10/01/16 11:15	1
Beryllium	<0.00030		0.0010	0.00030	mg/L		09/30/16 10:35	10/01/16 11:15	1
Cadmium	**0.0015**		0.0010	0.00050	mg/L		09/30/16 10:35	10/01/16 11:15	1
Chromium	**0.014**		0.0050	0.0010	mg/L		09/30/16 10:35	10/01/16 11:15	1
Nickel	**0.027**		0.010	0.0013	mg/L		09/30/16 10:35	10/01/16 11:15	1
Thallium	<0.010		0.020	0.010	mg/L		09/30/16 10:35	10/01/16 11:15	1
Vanadium	**0.013**		0.010	0.0015	mg/L		09/30/16 10:35	10/01/16 11:15	1
Zinc	**0.74**		0.050	0.0015	mg/L		09/30/16 10:35	10/01/16 11:15	1
Lead	**0.062**		0.0050	0.0030	mg/L		09/30/16 10:35	10/01/16 11:15	1
Selenium	<0.0087		0.010	0.0087	mg/L		09/30/16 10:35	10/01/16 11:15	1
Antimony	<0.0068		0.0060	0.0068	mg/L		09/30/16 10:35	10/01/16 11:15	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.00026**		0.00020	0.00012	mg/L		10/03/16 08:20	10/03/16 13:22	1

Surrogate Summary

Client: Woodard & Curran, Inc.
Project/Site: Tombarello Lawrence, MA

TestAmerica Job ID: 480-106760-1

Method: MAVPH - Massachusetts - Volatile Petroleum Hydrocarbons (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)									
Lab Sample ID	Client Sample ID	25DBT2 (73-144)	25DBT1 (81-132)								
480-106760-1	MH0279	92	89								
LCS 480-323703/5	Lab Control Sample	88	82								
LCSD 480-323703/6	Lab Control Sample Dup	90	89								
MB 480-323703/4	Method Blank	89	87								

Surrogate Legend

25DBT = 2,5-Dibromotoluene (fid)

Method: 8082 - Polychlorinated Biphenyls (GC/ECD)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)									
Lab Sample ID	Client Sample ID	TCX1 (30-150)	TCX2 (30-150)	DCB1 (30-150)	DCB2 (30-150)						
480-106760-1	MH0279	40	28 X	16 X	13 X						
LCS 480-323268/2-A	Lab Control Sample	119	77	64	52						
LCSD 480-323268/3-A	Lab Control Sample Dup	98	67	51	44						
MB 480-323268/1-A	Method Blank	111	86	73	62						

Surrogate Legend

TCX = Tetrachloro-m-xylene
DCB = DCB Decachlorobiphenyl

Method: MA-EPH - Massachusetts - Extractable Petroleum Hydrocarbons (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)									
Lab Sample ID	Client Sample ID	1COD2 (40-140)	2BN1 (40-140)	FBP1 (40-140)	OTPH1 (40-140)						
480-106760-1	MH0279	44	80	122	73						
LCS 480-323273/2-B	Lab Control Sample	64	91	126	99						
LCSD 480-323273/3-B	Lab Control Sample Dup	69	82	116	94						
MB 480-323273/1-B	Method Blank	61	82	118	92						

Surrogate Legend

1COD = 1-Chlorooctadecane
2BN = 2-Bromonaphthalene
FBP = 2-Fluorobiphenyl
OTPH = o-Terphenyl

Method: MAVPH - Massachusetts - Volatile Petroleum Hydrocarbons (GC)

Lab Sample ID: MB 480-323703/4
Matrix: Water
Analysis Batch: 323703

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.25		1.0	0.25	ug/L			10/04/16 13:49	1
C5-C8 Aliphatics (unadjusted)	<1.5		5.0	1.5	ug/L			10/04/16 13:49	1
C9-C12 Aliphatics (unadjusted)	<1.5		5.0	1.5	ug/L			10/04/16 13:49	1
C9-C10 Aromatics	<0.50		5.0	0.50	ug/L			10/04/16 13:49	1
Ethylbenzene	<0.25		1.0	0.25	ug/L			10/04/16 13:49	1
Methyl tert-butyl ether	<0.25		1.0	0.25	ug/L			10/04/16 13:49	1
m-Xylene & p-Xylene	<0.50		2.0	0.50	ug/L			10/04/16 13:49	1
Naphthalene	<0.25		1.0	0.25	ug/L			10/04/16 13:49	1
o-Xylene	<0.25		1.0	0.25	ug/L			10/04/16 13:49	1
Toluene	<0.25		1.0	0.25	ug/L			10/04/16 13:49	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,5-Dibromotoluene (fid)	*89*		*73 - 144*		*10/04/16 13:49*	*1*
2,5-Dibromotoluene (pid)	*87*		*81 - 132*		*10/04/16 13:49*	*1*

Lab Sample ID: LCS 480-323703/5
Matrix: Water
Analysis Batch: 323703

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	5.00	5.22		ug/L		104	70 - 130
C5-C8 Aliphatics (unadjusted)	15.0	14.1		ug/L		94	70 - 130
C9-C12 Aliphatics (unadjusted)	15.0	16.0		ug/L		107	70 - 130
C9-C10 Aromatics	5.00	5.05		ug/L		101	70 - 130
Ethylbenzene	5.00	5.21		ug/L		104	70 - 130
Methyl tert-butyl ether	5.00	4.71		ug/L		94	70 - 130
m-Xylene & p-Xylene	10.0	10.5		ug/L		105	70 - 130
Naphthalene	5.00	4.23		ug/L		85	70 - 130
o-Xylene	5.00	5.17		ug/L		103	70 - 130
Toluene	5.00	5.26		ug/L		105	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2,5-Dibromotoluene (fid)	*88*		*73 - 144*
2,5-Dibromotoluene (pid)	*82*		*81 - 132*

Lab Sample ID: LCSD 480-323703/6
Matrix: Water
Analysis Batch: 323703

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	5.00	5.30		ug/L		106	70 - 130	1	25
C5-C8 Aliphatics (unadjusted)	15.0	14.0		ug/L		93	70 - 130	1	25
C9-C12 Aliphatics (unadjusted)	15.0	15.6		ug/L		104	70 - 130	3	25
C9-C10 Aromatics	5.00	5.17		ug/L		103	70 - 130	2	25
Ethylbenzene	5.00	5.29		ug/L		106	70 - 130	2	25
Methyl tert-butyl ether	5.00	4.69		ug/L		94	70 - 130	0	25
m-Xylene & p-Xylene	10.0	10.7		ug/L		107	70 - 130	2	25

Method: MAVPH - Massachusetts - Volatile Petroleum Hydrocarbons (GC) (Continued)

Lab Sample ID: LCSD 480-323703/6
Matrix: Water
Analysis Batch: 323703

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Naphthalene			5.00	4.42		ug/L		88	70 - 130	4	25
o-Xylene			5.00	5.31		ug/L		106	70 - 130	3	25
Toluene			5.00	5.35		ug/L		107	70 - 130	2	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2,5-Dibromotoluene (fid)	*90*		*73 - 144*
2,5-Dibromotoluene (pid)	*89*		*81 - 132*

Method: 8082 - Polychlorinated Biphenyls (GC/ECD)

Lab Sample ID: MB 480-323268/1-A
Matrix: Water
Analysis Batch: 323315

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 323268

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.10		0.25	0.10	ug/L		09/30/16 14:11	10/01/16 03:13	1
PCB-1221	<0.10		0.25	0.10	ug/L		09/30/16 14:11	10/01/16 03:13	1
PCB-1232	<0.10		0.25	0.10	ug/L		09/30/16 14:11	10/01/16 03:13	1
PCB-1242	<0.10		0.25	0.10	ug/L		09/30/16 14:11	10/01/16 03:13	1
PCB-1248	<0.10		0.25	0.10	ug/L		09/30/16 14:11	10/01/16 03:13	1
PCB-1254	<0.10		0.25	0.10	ug/L		09/30/16 14:11	10/01/16 03:13	1
PCB-1260	<0.10		0.25	0.10	ug/L		09/30/16 14:11	10/01/16 03:13	1
PCB-1262	<0.10		0.25	0.10	ug/L		09/30/16 14:11	10/01/16 03:13	1
PCB-1268	<0.10		0.25	0.10	ug/L		09/30/16 14:11	10/01/16 03:13	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*111*		*30 - 150*	*09/30/16 14:11*	*10/01/16 03:13*	*1*
Tetrachloro-m-xylene	*86*		*30 - 150*	*09/30/16 14:11*	*10/01/16 03:13*	*1*
DCB Decachlorobiphenyl	*73*		*30 - 150*	*09/30/16 14:11*	*10/01/16 03:13*	*1*
DCB Decachlorobiphenyl	*62*		*30 - 150*	*09/30/16 14:11*	*10/01/16 03:13*	*1*

Lab Sample ID: LCS 480-323268/2-A
Matrix: Water
Analysis Batch: 323315

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 323268

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
PCB-1016			4.00	4.67		ug/L		117	40 - 140
PCB-1260			4.00	3.89		ug/L		97	40 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Tetrachloro-m-xylene	*119*		*30 - 150*
Tetrachloro-m-xylene	*77*		*30 - 150*
DCB Decachlorobiphenyl	*64*		*30 - 150*
DCB Decachlorobiphenyl	*52*		*30 - 150*

Method: 8082 - Polychlorinated Biphenyls (GC/ECD) (Continued)

Lab Sample ID: LCSD 480-323268/3-A
Matrix: Water
Analysis Batch: 323315

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 323268

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
PCB-1016			4.00	3.66	*	ug/L		92	40 - 140	24	20
PCB-1260			4.00	3.02	*	ug/L		76	40 - 140	25	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Tetrachloro-m-xylene	*98*		*30 - 150*
Tetrachloro-m-xylene	*67*		*30 - 150*
DCB Decachlorobiphenyl	*51*		*30 - 150*
DCB Decachlorobiphenyl	*44*		*30 - 150*

Method: MA-EPH - Massachusetts - Extractable Petroleum Hydrocarbons (GC)

Lab Sample ID: MB 480-323273/1-B
Matrix: Water
Analysis Batch: 323519

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 323273

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	<2.0		10	2.0	ug/L		09/30/16 14:25	10/03/16 16:14	1
Acenaphthene	<2.0		10	2.0	ug/L		09/30/16 14:25	10/03/16 16:14	1
Acenaphthylene	<2.0		10	2.0	ug/L		09/30/16 14:25	10/03/16 16:14	1
Anthracene	<2.0		10	2.0	ug/L		09/30/16 14:25	10/03/16 16:14	1
Benzo[a]anthracene	<2.0		10	2.0	ug/L		09/30/16 14:25	10/03/16 16:14	1
Benzo[a]pyrene	<2.0		10	2.0	ug/L		09/30/16 14:25	10/03/16 16:14	1
Benzo[b]fluoranthene	<2.0		10	2.0	ug/L		09/30/16 14:25	10/03/16 16:14	1
Benzo[g,h,i]perylene	6.47	J	10	2.0	ug/L		09/30/16 14:25	10/03/16 16:14	1
Benzo[k]fluoranthene	<2.0		10	2.0	ug/L		09/30/16 14:25	10/03/16 16:14	1
Chrysene	<2.0		10	2.0	ug/L		09/30/16 14:25	10/03/16 16:14	1
Dibenz(a,h)anthracene	3.35	J	10	2.0	ug/L		09/30/16 14:25	10/03/16 16:14	1
Fluoranthene	<2.0		10	2.0	ug/L		09/30/16 14:25	10/03/16 16:14	1
Fluorene	<2.0		10	2.0	ug/L		09/30/16 14:25	10/03/16 16:14	1
Indeno[1,2,3-cd]pyrene	3.96	J	10	2.0	ug/L		09/30/16 14:25	10/03/16 16:14	1
Naphthalene	<2.0		10	2.0	ug/L		09/30/16 14:25	10/03/16 16:14	1
Phenanthrene	3.62	J	10	2.0	ug/L		09/30/16 14:25	10/03/16 16:14	1
Pyrene	<2.0		10	2.0	ug/L		09/30/16 14:25	10/03/16 16:14	1
C11-C22 Aromatics (unadjusted)	42.6	J	50	10	ug/L		09/30/16 14:25	10/03/16 16:14	1
C19-C36 Aliphatics	27.0	J	50	10	ug/L		09/30/16 14:25	10/03/16 16:14	1
C9-C18 Aliphatics	20.4	J	50	10	ug/L		09/30/16 14:25	10/03/16 16:14	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctadecane	*61*		*40 - 140*	*09/30/16 14:25*	*10/03/16 16:14*	*1*
2-Bromonaphthalene	*82*		*40 - 140*	*09/30/16 14:25*	*10/03/16 16:14*	*1*
2-Fluorobiphenyl	*118*		*40 - 140*	*09/30/16 14:25*	*10/03/16 16:14*	*1*
o-Terphenyl	*92*		*40 - 140*	*09/30/16 14:25*	*10/03/16 16:14*	*1*

Method: MA-EPH - Massachusetts - Extractable Petroleum Hydrocarbons (GC) (Continued)

Lab Sample ID: LCS 480-323273/2-B
Matrix: Water
Analysis Batch: 323519

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 323273

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2-Methylnaphthalene	50.0	46.3		ug/L		93	40 - 140
Acenaphthene	50.0	50.0		ug/L		100	40 - 140
Acenaphthylene	50.0	51.1		ug/L		102	40 - 140
Anthracene	50.0	56.4		ug/L		113	40 - 140
Benzo[a]anthracene	50.0	49.1		ug/L		98	40 - 140
Benzo[a]pyrene	50.0	44.4		ug/L		89	40 - 140
Benzo[b]fluoranthene	50.0	47.1		ug/L		94	40 - 140
Benzo[g,h,i]perylene	50.0	31.4		ug/L		63	40 - 140
Benzo[k]fluoranthene	50.0	51.9		ug/L		104	40 - 140
Chrysene	50.0	50.4		ug/L		101	40 - 140
Dibenz(a,h)anthracene	50.0	38.3		ug/L		77	40 - 140
Fluoranthene	50.0	51.2		ug/L		102	40 - 140
Fluorene	50.0	51.8		ug/L		104	40 - 140
Indeno[1,2,3-cd]pyrene	50.0	34.1		ug/L		68	40 - 140
Naphthalene	50.0	42.9		ug/L		86	40 - 140
Phenanthrene	50.0	54.7		ug/L		109	40 - 140
Pyrene	50.0	52.8		ug/L		106	40 - 140
C11-C22 Aromatics (unadjusted)	850	862		ug/L		101	40 - 140
C19-C36 Aliphatics	400	333		ug/L		83	40 - 140
C9-C18 Aliphatics	300	252		ug/L		84	40 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctadecane	*64*		*40 - 140*
2-Bromonaphthalene	*91*		*40 - 140*
2-Fluorobiphenyl	*126*		*40 - 140*
o-Terphenyl	*99*		*40 - 140*

Lab Sample ID: LCSD 480-323273/3-B
Matrix: Water
Analysis Batch: 323519

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 323273

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
2-Methylnaphthalene	50.0	43.2		ug/L		86	40 - 140	7	25
Acenaphthene	50.0	49.4		ug/L		99	40 - 140	1	25
Acenaphthylene	50.0	36.2	*	ug/L		72	40 - 140	34	25
Anthracene	50.0	55.7		ug/L		111	40 - 140	1	25
Benzo[a]anthracene	50.0	47.9		ug/L		96	40 - 140	2	25
Benzo[a]pyrene	50.0	45.9		ug/L		92	40 - 140	3	25
Benzo[b]fluoranthene	50.0	48.7		ug/L		97	40 - 140	3	25
Benzo[g,h,i]perylene	50.0	33.8		ug/L		68	40 - 140	7	25
Benzo[k]fluoranthene	50.0	51.9		ug/L		104	40 - 140	0	25
Chrysene	50.0	49.4		ug/L		99	40 - 140	2	25
Dibenz(a,h)anthracene	50.0	41.4		ug/L		83	40 - 140	8	25
Fluoranthene	50.0	49.6		ug/L		99	40 - 140	3	25
Fluorene	50.0	52.0		ug/L		104	40 - 140	0	25
Indeno[1,2,3-cd]pyrene	50.0	34.9		ug/L		70	40 - 140	2	25
Naphthalene	50.0	38.9		ug/L		78	40 - 140	10	25
Phenanthrene	50.0	53.8		ug/L		108	40 - 140	2	25

Method: MA-EPH - Massachusetts - Extractable Petroleum Hydrocarbons (GC) (Continued)

Lab Sample ID: LCSD 480-323273/3-B
Matrix: Water
Analysis Batch: 323519

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 323273

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Pyrene			50.0	50.8		ug/L		102	40 - 140	4	25
C11-C22 Aromatics (unadjusted)			850	965		ug/L		114	40 - 140	11	25
C19-C36 Aliphatics			400	381		ug/L		95	40 - 140	13	25
C9-C18 Aliphatics			300	296		ug/L		99	40 - 140	16	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctadecane	*69*		*40 - 140*
2-Bromonaphthalene	*82*		*40 - 140*
2-Fluorobiphenyl	*116*		*40 - 140*
o-Terphenyl	*94*		*40 - 140*

Method: 6010 - Metals (ICP)

Lab Sample ID: MB 480-323208/1-A
Matrix: Water
Analysis Batch: 323467

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 323208

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	<0.0017		0.0050	0.0017	mg/L		09/30/16 10:35	10/01/16 10:48	1
Arsenic	<0.0056		0.010	0.0056	mg/L		09/30/16 10:35	10/01/16 10:48	1
Barium	<0.00070		0.010	0.00070	mg/L		09/30/16 10:35	10/01/16 10:48	1
Beryllium	<0.00030		0.0010	0.00030	mg/L		09/30/16 10:35	10/01/16 10:48	1
Cadmium	<0.00050		0.0010	0.00050	mg/L		09/30/16 10:35	10/01/16 10:48	1
Chromium	<0.0010		0.0050	0.0010	mg/L		09/30/16 10:35	10/01/16 10:48	1
Nickel	<0.0013		0.010	0.0013	mg/L		09/30/16 10:35	10/01/16 10:48	1
Thallium	<0.010		0.020	0.010	mg/L		09/30/16 10:35	10/01/16 10:48	1
Vanadium	<0.0015		0.010	0.0015	mg/L		09/30/16 10:35	10/01/16 10:48	1
Zinc	<0.0015		0.050	0.0015	mg/L		09/30/16 10:35	10/01/16 10:48	1
Lead	<0.0030		0.0050	0.0030	mg/L		09/30/16 10:35	10/01/16 10:48	1
Selenium	<0.0087		0.010	0.0087	mg/L		09/30/16 10:35	10/01/16 10:48	1
Antimony	<0.0068		0.0060	0.0068	mg/L		09/30/16 10:35	10/01/16 10:48	1

Lab Sample ID: LCS 480-323208/2-A
Matrix: Water
Analysis Batch: 323467

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 323208

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Silver			0.0500	0.0496		mg/L		99	80 - 120
Arsenic			0.200	0.204		mg/L		102	80 - 120
Barium			0.200	0.212		mg/L		106	80 - 120
Beryllium			0.200	0.205		mg/L		103	80 - 120
Cadmium			0.200	0.199		mg/L		99	80 - 120
Chromium			0.200	0.201		mg/L		100	80 - 120
Nickel			0.200	0.195		mg/L		98	80 - 120
Thallium			0.200	0.198		mg/L		99	80 - 120
Vanadium			0.200	0.197		mg/L		99	80 - 120
Zinc			0.200	0.197		mg/L		99	80 - 120
Lead			0.200	0.201		mg/L		101	80 - 120

Method: 6010 - Metals (ICP) (Continued)

Lab Sample ID: LCS 480-323208/2-A
Matrix: Water
Analysis Batch: 323467

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 323208

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Selenium	0.200	0.198		mg/L		99	80 - 120
Antimony	0.200	0.202		mg/L		101	80 - 120

Lab Sample ID: LCSD 480-323208/22-A
Matrix: Water
Analysis Batch: 323467

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 323208

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Silver	0.0500	0.0489		mg/L		98	80 - 120	1	20
Arsenic	0.200	0.202		mg/L		101	80 - 120	1	20
Barium	0.200	0.211		mg/L		105	80 - 120	0	20
Beryllium	0.200	0.205		mg/L		103	80 - 120	0	20
Cadmium	0.200	0.199		mg/L		100	80 - 120	0	20
Chromium	0.200	0.200		mg/L		100	80 - 120	0	20
Nickel	0.200	0.195		mg/L		97	80 - 120	0	20
Thallium	0.200	0.199		mg/L		99	80 - 120	0	20
Vanadium	0.200	0.198		mg/L		99	80 - 120	0	20
Zinc	0.200	0.195		mg/L		98	80 - 120	1	20
Lead	0.200	0.199		mg/L		99	80 - 120	1	20
Selenium	0.200	0.197		mg/L		98	80 - 120	1	20
Antimony	0.200	0.202		mg/L		101	80 - 120	0	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 480-323448/1-A
Matrix: Water
Analysis Batch: 323553

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 323448

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00012		0.00020	0.00012	mg/L		10/03/16 08:20	10/03/16 13:14	1

Lab Sample ID: LCS 480-323448/2-A
Matrix: Water
Analysis Batch: 323553

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 323448

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00667	0.00692		mg/L		104	80 - 120

Lab Sample ID: LCSD 480-323448/17-A
Matrix: Water
Analysis Batch: 323553

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 323448

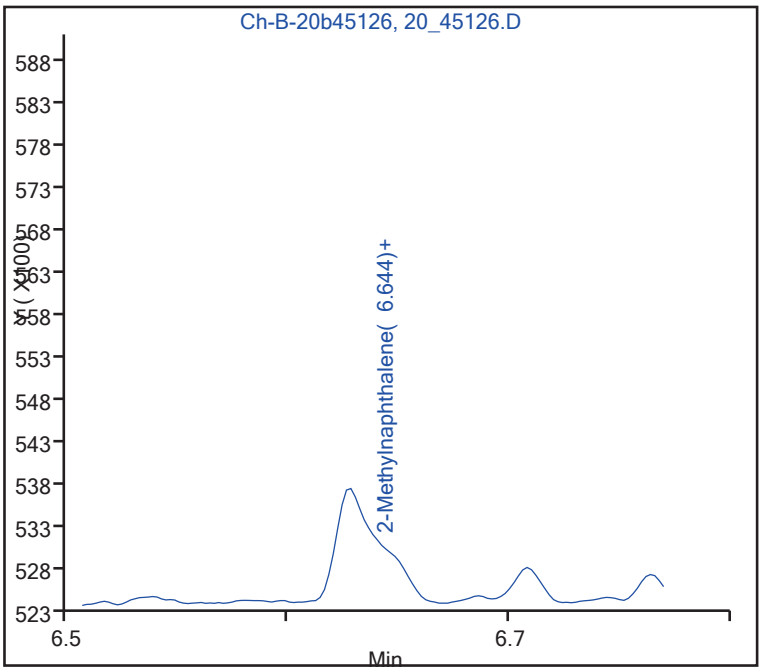
Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.00667	0.00682		mg/L		102	80 - 120	1	20

Breakdown Report

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP7890-20\20161003-56932.b\20_45126.D
Injection Date: 03-Oct-2016 16:44:00 Instrument ID: HP7890-20
Lims ID: LCS 480-323273/2-B
Client ID:
Operator ID: BufTCHROM ALS Bottle#: 0 Worklist Smp#: 13
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 7890-EPH Limit Group: GC MAEPH ICAL

Extractable Petrolium Hydrocarbon Breakthrough



10 2-Methylnaphthalene
Aliphatic Detector: Ch-B-20b45126
Aromatic Detector: Ch-A-20a45126
%Breakthrough =
(Aliphatic Amount/
Total Amount) * 100

%Breakthrough = 7.3022
Aliphatic Amount = 1.8248
Aromatic Amount = 23.1651
Total Amount = 24.9899

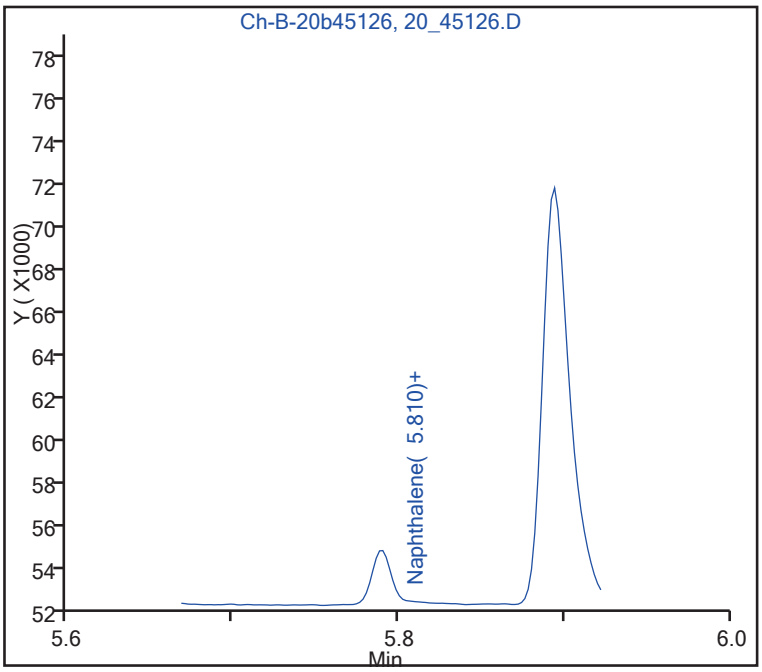
%Breakthrough:* 7.30%, Max Limit: 5.00%
Failed

Breakdown Report

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP7890-20\20161003-56932.b\20_45126.D
Injection Date: 03-Oct-2016 16:44:00 Instrument ID: HP7890-20
Lims ID: LCS 480-323273/2-B
Client ID:
Operator ID: BufTCHROM ALS Bottle#: 0 Worklist Smp#: 13
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 7890-EPH Limit Group: GC MAEPH ICAL

Extractable Petrolium Hydrocarbon Breakthrough



8 Naphthalene
Aliphatic Detector: Ch-B-20b45126
Aromatic Detector: Ch-A-20a45126
%Breakthrough =
(Aliphatic Amount/
Total Amount) * 100

%Breakthrough = 8.7178
Aliphatic Amount = 2.0489
Aromatic Amount = 21.4540
Total Amount = 23.5030

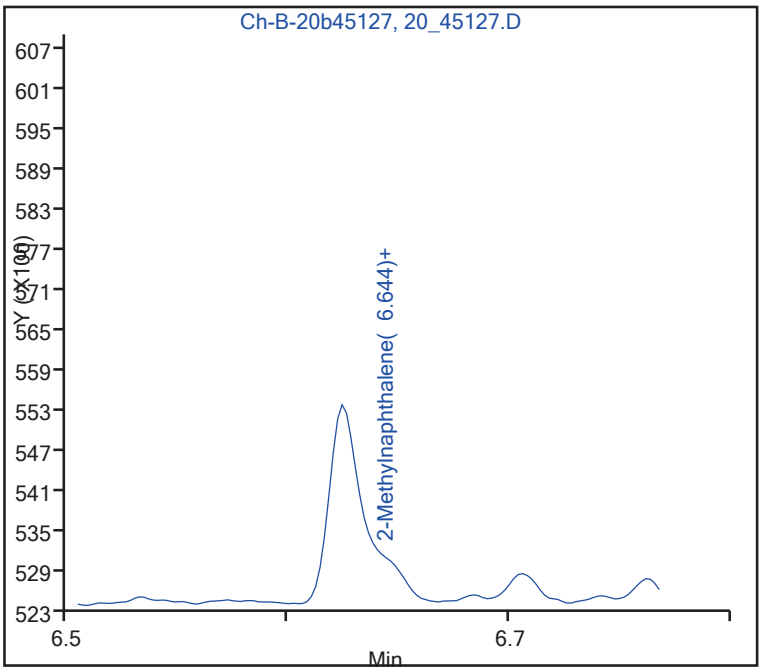
%Breakthrough:* 8.72%, Max Limit: 5.00%
Failed

Breakdown Report

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP7890-20\20161003-56932.b\20_45127.D
Injection Date: 03-Oct-2016 17:13:17 Instrument ID: HP7890-20
Lims ID: LCSD 480-323273/3-B
Client ID:
Operator ID: BufTCHROM ALS Bottle#: 0 Worklist Smp#: 14
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 7890-EPH Limit Group: GC MAEPH ICAL

Extractable Petrolium Hydrocarbon Breakthrough



10 2-Methylnaphthalene
Aliphatic Detector: Ch-B-20b45127
Aromatic Detector: Ch-A-20a45127
%Breakthrough =
(Aliphatic Amount/
Total Amount) * 100

%Breakthrough = 13.3459
Aliphatic Amount = 3.3290
Aromatic Amount = 21.6147
Total Amount = 24.9437

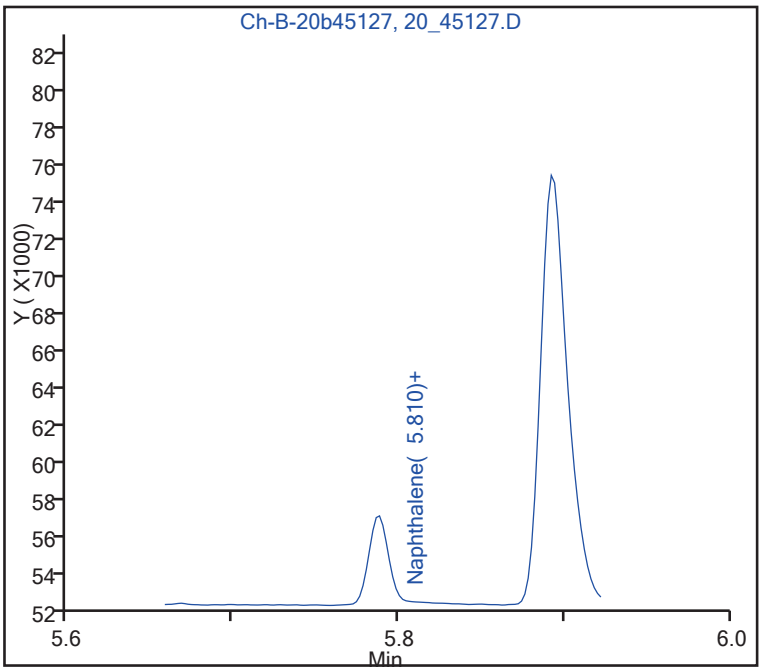
%Breakthrough:* 13.35%, Max Limit: 5.00%
Failed

Breakdown Report

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP7890-20\20161003-56932.b\20_45127.D
Injection Date: 03-Oct-2016 17:13:17 Instrument ID: HP7890-20
Lims ID: LCSD 480-323273/3-B
Client ID:
Operator ID: BufTCHROM ALS Bottle#: 0 Worklist Smp#: 14
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 7890-EPH Limit Group: GC MAEPH ICAL

Extractable Petrolium Hydrocarbon Breakthrough



8 Naphthalene
Aliphatic Detector: Ch-B-20b45127
Aromatic Detector: Ch-A-20a45127
%Breakthrough =
(Aliphatic Amount/
Total Amount) * 100

%Breakthrough = 16.6171
Aliphatic Amount = 3.8791
Aromatic Amount = 19.4649
Total Amount = 23.3440

%Breakthrough:* 16.62%, Max Limit: 5.00%
Failed

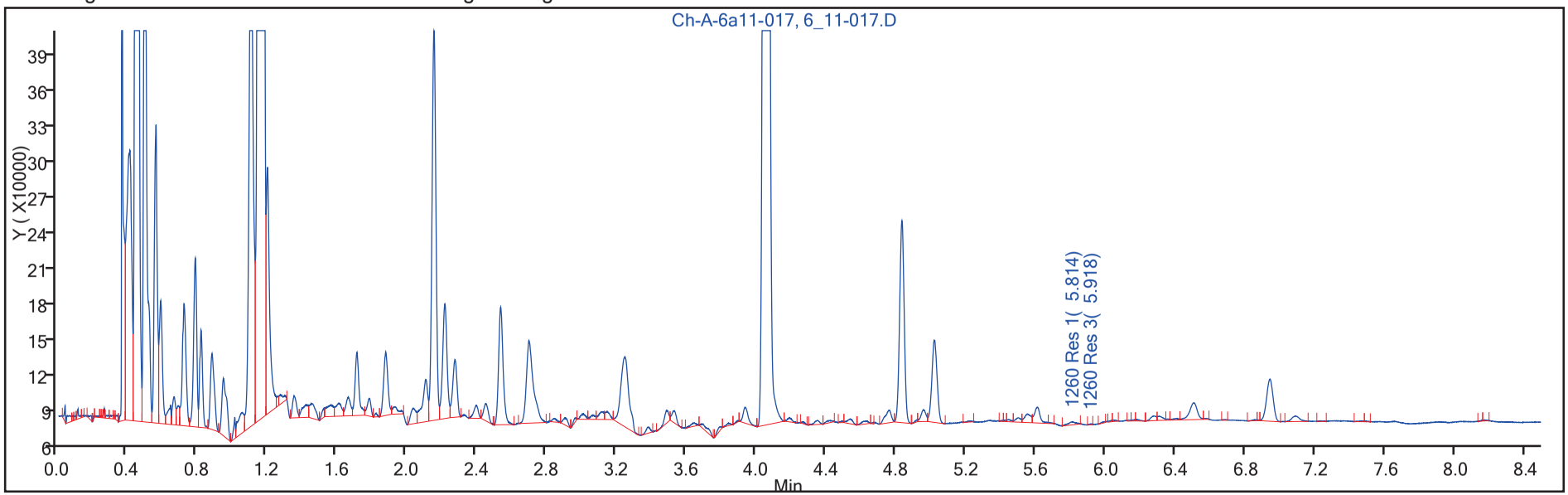
Report Date: 03-Oct-2016 16:28:44 Chrom Revision: 2.2 08-Sep-2016 14:45:52

TestAmerica Buffalo

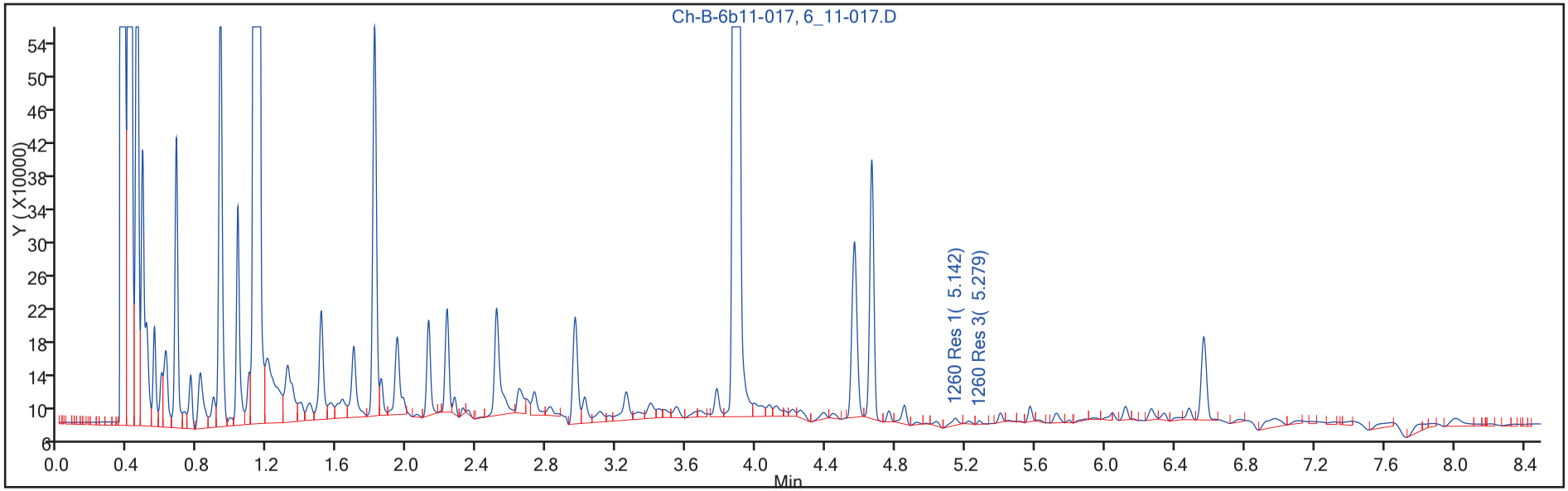
Data File: \\ChromNA\Buffalo\ChromData\HP6890-06\20160930-56887.b\6_11-017.D

Injection Date:	01-Oct-2016 04:17:26	Instrument ID:	HP6890-6	Operator ID:	BufTCHROM
Lims ID:	480-106760-C-1-A	Lab Sample ID:	480-106760-1	Worklist Smp#:	36
Client ID:	MH0279				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	6890-6 PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



GC VOA

Analysis Batch: 323703

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-106760-1	MH0279	Total/NA	Water	MAVPH	
MB 480-323703/4	Method Blank	Total/NA	Water	MAVPH	
LCS 480-323703/5	Lab Control Sample	Total/NA	Water	MAVPH	
LCSD 480-323703/6	Lab Control Sample Dup	Total/NA	Water	MAVPH	

Analysis Batch: 324164

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-106760-1	MH0279	Total/NA	Water	MA VPH	

GC Semi VOA

Prep Batch: 323268

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-106760-1	MH0279	Total/NA	Water	3510C	
MB 480-323268/1-A	Method Blank	Total/NA	Water	3510C	
LCS 480-323268/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 480-323268/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Prep Batch: 323273

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-106760-1	MH0279	Total/NA	Water	3510C	
MB 480-323273/1-B	Method Blank	Total/NA	Water	3510C	
LCS 480-323273/2-B	Lab Control Sample	Total/NA	Water	3510C	
LCSD 480-323273/3-B	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 323315

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-106760-1	MH0279	Total/NA	Water	8082	323268
MB 480-323268/1-A	Method Blank	Total/NA	Water	8082	323268
LCS 480-323268/2-A	Lab Control Sample	Total/NA	Water	8082	323268
LCSD 480-323268/3-A	Lab Control Sample Dup	Total/NA	Water	8082	323268

Fraction Batch: 323352

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-106760-1	MH0279	Total/NA	Water	MA EPH Frac	323273
MB 480-323273/1-B	Method Blank	Total/NA	Water	MA EPH Frac	323273
LCS 480-323273/2-B	Lab Control Sample	Total/NA	Water	MA EPH Frac	323273
LCSD 480-323273/3-B	Lab Control Sample Dup	Total/NA	Water	MA EPH Frac	323273

Analysis Batch: 323519

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-106760-1	MH0279	Total/NA	Water	MA-EPH	323352
MB 480-323273/1-B	Method Blank	Total/NA	Water	MA-EPH	323352
LCS 480-323273/2-B	Lab Control Sample	Total/NA	Water	MA-EPH	323352
LCSD 480-323273/3-B	Lab Control Sample Dup	Total/NA	Water	MA-EPH	323352

Analysis Batch: 323758

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-106760-1	MH0279	Total/NA	Water	MA-EPH	

Metals

Prep Batch: 323208

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-106760-1	MH0279	Total/NA	Water	3005A	
MB 480-323208/1-A	Method Blank	Total/NA	Water	3005A	
LCS 480-323208/2-A	Lab Control Sample	Total/NA	Water	3005A	
LCSD 480-323208/22-A	Lab Control Sample Dup	Total/NA	Water	3005A	

Prep Batch: 323448

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-106760-1	MH0279	Total/NA	Water	7470A	
MB 480-323448/1-A	Method Blank	Total/NA	Water	7470A	
LCS 480-323448/2-A	Lab Control Sample	Total/NA	Water	7470A	
LCSD 480-323448/17-A	Lab Control Sample Dup	Total/NA	Water	7470A	

Analysis Batch: 323467

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-106760-1	MH0279	Total/NA	Water	6010	323208
MB 480-323208/1-A	Method Blank	Total/NA	Water	6010	323208
LCS 480-323208/2-A	Lab Control Sample	Total/NA	Water	6010	323208
LCSD 480-323208/22-A	Lab Control Sample Dup	Total/NA	Water	6010	323208

Analysis Batch: 323553

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-106760-1	MH0279	Total/NA	Water	7470A	323448
MB 480-323448/1-A	Method Blank	Total/NA	Water	7470A	323448
LCS 480-323448/2-A	Lab Control Sample	Total/NA	Water	7470A	323448
LCSD 480-323448/17-A	Lab Control Sample Dup	Total/NA	Water	7470A	323448

Lab Chronicle

Client: Woodard & Curran, Inc.
Project/Site: Tombarello Lawrence, MA

TestAmerica Job ID: 480-106760-1

Client Sample ID: MH0279
Date Collected: 09/28/16 10:45
Date Received: 09/30/16 01:00

Lab Sample ID: 480-106760-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	MA VPH		1	324164	10/06/16 12:40	GSR	TAL BUF
Total/NA	Analysis	MAVPH		10	323703	10/04/16 17:03	JLS	TAL BUF
Total/NA	Prep	3510C			323268	09/30/16 14:11	ARS	TAL BUF
Total/NA	Analysis	8082		1	323315	10/01/16 04:17	JMO	TAL BUF
Total/NA	Prep	3510C			323273	09/30/16 14:25	ARS	TAL BUF
Total/NA	Fraction	MA EPH Frac			323352	10/01/16 08:05	RJS	TAL BUF
Total/NA	Analysis	MA-EPH		1	323519	10/03/16 17:42	JMO	TAL BUF
Total/NA	Analysis	MA-EPH		1	323758	10/04/16 13:33	GSR	TAL BUF
Total/NA	Prep	3005A			323208	09/30/16 10:35	MVZ	TAL BUF
Total/NA	Analysis	6010		1	323467	10/01/16 11:15	AMH	TAL BUF
Total/NA	Prep	7470A			323448	10/03/16 08:20	RMZ	TAL BUF
Total/NA	Analysis	7470A		1	323553	10/03/16 13:22	RMZ	TAL BUF

Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

Certification Summary

Client: Woodard & Curran, Inc.
Project/Site: Tombarello Lawrence, MA

TestAmerica Job ID: 480-106760-1

Laboratory: TestAmerica Buffalo

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Arkansas DEQ	State Program	6	88-0686	07-06-17
California	State Program	9	1169CA	09-30-17
Connecticut	State Program	1	PH-0568	09-30-18
Florida	NELAP	4	E87672	06-30-17
Georgia	State Program	4	N/A	03-31-17
Georgia	State Program	4	956	03-31-17
Illinois	NELAP	5	200003	09-30-16 *
Iowa	State Program	7	374	03-01-17
Kansas	NELAP	7	E-10187	10-31-16
Kentucky (DW)	State Program	4	90029	12-31-16
Kentucky (UST)	State Program	4	30	03-31-17
Kentucky (WW)	State Program	4	90029	12-31-16
Louisiana	NELAP	6	02031	06-30-17
Maine	State Program	1	NY00044	12-04-16
Maryland	State Program	3	294	03-31-17
Massachusetts	State Program	1	M-NY044	06-30-17
Michigan	State Program	5	9937	03-31-17
Minnesota	NELAP	5	036-999-337	12-31-16
New Hampshire	NELAP Primary AB	1	2973	09-11-17
New Hampshire	NELAP Secondary AB	1	2337	11-17-16
New Jersey	NELAP	2	NY455	06-30-17
New York	NELAP	2	10026	03-31-17
North Dakota	State Program	8	R-176	03-31-17
Oklahoma	State Program	6	9421	08-31-17
Oregon	NELAP	10	NY200003	06-09-17
Pennsylvania	NELAP	3	68-00281	07-31-17
Rhode Island	State Program	1	LAO00328	12-30-16
Tennessee	State Program	4	TN02970	03-31-17
Texas	NELAP	6	T104704412-15-6	07-31-17
USDA	Federal		P330-11-00386	11-26-17
Virginia	NELAP	3	460185	09-14-17
Washington	State Program	10	C784	02-10-17
West Virginia DEP	State Program	3	252	09-30-16 *
Wisconsin	State Program	5	998310390	08-31-17

* Certification renewal pending - certification considered valid.

Method Summary

Client: Woodard & Curran, Inc.
Project/Site: Tombarello Lawrence, MA

TestAmerica Job ID: 480-106760-1

Method	Method Description	Protocol	Laboratory
MA VPH	Massachusetts - Volatile Petroleum Hydrocarbons (GC)	MA DEP	TAL BUF
MAVPH	Massachusetts - Volatile Petroleum Hydrocarbons (GC)	MA DEP	TAL BUF
8082	Polychlorinated Biphenyls (GC/ECD)	MA DEP	TAL BUF
MA-EPH	Massachusetts - Extractable Petroleum Hydrocarbons (GC)	MA DEP	TAL BUF
6010	Metals (ICP)	SW846	TAL BUF
7470A	Mercury (CVAA)	SW846	TAL BUF

Protocol References:

MA DEP = Massachusetts Department Of Environmental Protection

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

Sample Summary

Client: Woodard & Curran, Inc.
Project/Site: Tombarello Lawrence, MA

TestAmerica Job ID: 480-106760-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-106760-1	MH0279	Water	09/28/16 10:45	09/30/16 01:00

Login Sample Receipt Checklist

Client: Woodard & Curran, Inc.

Job Number: 480-106760-1

Login Number: 106760
List Number: 1
Creator: Williams, Christopher S

List Source: TestAmerica Buffalo

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	W AND C
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	N/A	
Chlorine Residual checked.	N/A	

360325-Boston Water

TestAmerica Westfield
501 Southampton Road
Westfield MA 01085
Phone: (413) 572-4000 Fax: (303) 467-7247

TestAmerica Boston
240 Bear Hill Road – Suite 104
Waltham MA 02451
Phone: (781) 466-6900 Fax: (781) 466-6901

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information:	Sample Collector's Name (Please Print Neatly): KERI LAUER	Lab PM: BECKY MASON	Lab COC Barcode Label	COC No: 37057
Client Contact: KERI LAUER	Sample Collector's Phone: 603-731-9936	E-Mail:		Page: _____ of _____
Company: WOODARD + CURRAN			480-106760 COC	Job #:
Address: 40 SHATTUCK RD	Due Date Requested: -			
City: ANDOVER, MA 01810	Turnaround Time (TAT) Requested (business days): 5-day			
State and Zip:				
Client's Phone: 978-482-7888	Quote # or Project #:			
Client's Contact Email: klauer@woodardcurran.com	PO #:			
Client's Project Name/Number: 228526	WO #:			
Sample Collection Site Name & Location: LAWRENCE, MA	PWS ID #:			

Analysis Reques

Sample Identification	Sample Collection Date (MM/DD/YY)	Sample Collection Time (24 Hour Clock)	Sample Type: C=Comp G=Grab	Matrix Type **	VPH - MAVPH (3 x HCl)	EPH - MAEPH (2 x HCl)	VOCs - 8260B (3 x HCl)	PCBs - 8082	MCP metals - 6010MCP + 7470 (1 x HNO3)	Total Number of Containers (enter total for each line)
			Preservation Codes ▸							↓
MH0279	09-28-16	1045	G	X	X	X	X	X	X	11

Preservation Codes:
A - Hydrochloric Acid; B - Sodium Hydroxide; C - Zinc Acetate; D - Nitric Acid; E - Sodium Bisulfite; F - Methanol; H - Ascorbic Acid; I - Deionized Water; M - Hexane; N - No Preservative; P - Sodium Sulfate; Q - Sodium Sulfite; R - Sodium Thiosulfate; S - Sulfuric Acid; Z - other (specify)

Regulatory Programs:
MCP ☐ GW1/S1 ☐
RCP ☐ CT RSR ☐
DEP Form ☐ EDD Required ☐
eDEP Filing ☐ NPDES ☐

SUBCONTRACT POLICY: Unless you provide instructions to the contrary, or specify which sub-contract labs are or are not to be used, you agree in advance to permit TestAmerica to use certified subcontract labs, without any additional notification made by us, as necessary to fulfill your work order

Special Instructions & Notes:

Possible Hazard Identification (please check off each that may apply):
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal Requirements (A fee may be assessed if samples are retained longer than 1 month):
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

** Matrix Types: A=Air S=Solid/Soil W=Water O=Oil X=Waste (non-water) Z=Other: _____

► NOTE!! ALL SAMPLES MUST BE TRANSPORTED IN A COOLER, ON ICE !! ◄

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Keri Lauer	9-29-16 10:00	W+C	R Anderson		
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
				9-29-16 1230	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	9-29-16 1500			9-30-16 0100	

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks:

2.7 #1

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Tel: (716)691-2600

TestAmerica Job ID: 480-106761-1
Client Project/Site: Tombarello Lawrence, MA

For:
Woodard & Curran, Inc.
40 Shattuck Road
Suite 110
Andover, Massachusetts 01810

Attn: Ms. Keri Lauer

Authorized for release by:
10/7/2016 4:10:55 PM

Becky Mason, Project Manager II
(413)572-4000
becky.mason@testamericainc.com

Table of Contents

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*	LCS or LCSD is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.

GC Semi VOA

Qualifier	Qualifier Description
*	RPD of the LCS and LCSD exceeds the control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Job ID: 480-106761-1

Laboratory: TestAmerica Buffalo

Narrative

Job Narrative
480-106761-1

Receipt
The samples were received on 9/30/2016 1:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.7º C.

GC/MS VOA
Method 8260C: With the exception of diluted samples and adjustments made for % solids or insufficient sample mass, per question G on the MassDEP Analytical Protocol Certification Form, TestAmerica's routine reporting limits do not achieve the CAM reporting limits specified in this CAM protocol for 1,2-Dibromo-3-Chloropropane, Bromomethane, Chloroethane, Chloromethane, Dichlorodifluoromethane, m&p-Xylene, Naphthalene, Tetrahydrofuran, and Trichlorofluoromethane.

Methodg 8260C: The continuing calibration verification (CCV) for Acetone, Dichlorodifluoromethane, Chloromethane, Methylene Chloride, and Trichlorofluoromethane associated with batch 480-323504 recovered outside the MCP control limit criteria. MCP protocol allows for 20% of the target compounds to be outside the 20% difference but not over 40% difference. Difficult analytes are allowed to be outside the 20% difference but not over 60% difference. The following samples were affected : MH0279 (480-106761-1) and MH0272 (480-106761-2).

Method 8260C: The laboratory control sample (LCS) and / or the laboratory control sample duplicate (LCSD) for batch 480-323504 exceeded control limits for the following analytes: Acetone and Chloroethane. MCP protocol allows for 10% of the target compounds to be outside of the limits provided the recoveries are over 10%. The following samples were affected : MH0279 (480-106761-1) and MH0272 (480-106761-2).

Method 8260C: The following sample was diluted to bring the concentration of target analytes within the calibration range: MH0279 (480-106761-1). Elevated reporting limits (RLs) are provided.

Method 8260C: The following sample was analyzed using medium level soil analysis to bring the concentration of target analytes within the calibration range: MH0279 (480-106761-1). Elevated reporting limits (RLs) are provided.

Method 8260C: The following sample was analyzed using medium level soil analysis due to the nature of the sample matrix: MH0272 (480-106761-2). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC VOA
Due to the dilutions required, per question G on the MassDEP Analytical Protocol Certification Form, the CAM reporting limits specified in this CAM protocol could not be achieved for some or all samples/analytes.

Method MAVPH: The method blank for preparation batch 480-324003 and analytical batch 480-324007 contained C5-C8 Aliphatics (unadjusted) and C9-C12 Aliphatics (unadjusted) above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method MAVPH: The following sample was diluted to bring the concentration of target analytes within the calibration range: MH0279 (480-106761-1). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA
Method MA-EPH: Per question G on the MassDEP Analytical Protocol Certification Form, TestAmerica's routine reporting limits do not achieve the CAM reporting limits specified in this CAM protocol; however they do achieve method 1 S1 standards.

Method MA-EPH: The following samples are associated with a Laboratory Control Sample (LCS) and Laboratory Control Sample Dup (LCSD) that exhibited breakthrough for Naphthalene and Methylnaphthalene slightly greater than 5%: MH0279 (480-106761-1) and MH0272 (480-106761-2) . This may indicate a low bias in the results for these compounds, though since all spike recoveries are well

Job ID: 480-106761-1 (Continued)

Laboratory: TestAmerica Buffalo (Continued)

within acceptance limits, the data is unaffected.

Method MA-EPH: The %RPD of the laboratory control sample (LCS) and laboratory control standard duplicate (LCSD) for preparation batch 480-323207 and 480-323353 recovered outside control limits for the C9-C18 Aliphatic and C19-C36 Aliphatic ranges. All recoveries are well within limits. Therefore, the data has been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
Method 6010C: The method blank for 480-323265 contained Total Lead above the reporting limit (RL). Associated sample(s) MH0279 (480-106761-1) and MH0272 (480-106761-2) were not re-extracted and/or re-analyzed because results were greater than 10X the value found in the method blank.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep
Method 3546: The following samples: MH0279 (480-106761-1) and MH0272 (480-106761-2) was decanted prior to preparation.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

MassDEP Analytical Protocol Certification Form

Laboratory Name: **TestAmerica Buffalo** Project #: **480-106761-1**

Project Location: **Tombarello Lawrence, MA** RTN:

This form provides certifications for the data set for the following Laboratory Sample ID Number(s):

480-106761-1[1-2]

Matrices: ☐ Groundwater/Surface Water ☒ Soil/Sediment ☐ Drinking Water ☐ Air ☐ Other:

CAM Protocols (check all that apply below):

8260 VOC CAM II A ☒	7470/7471 Hg CAM III B ☒	Mass DEP VPH CAM IV A ☒	8081 Pesticides CAM V B ☐	7196 Hex Cr CAM VI B ☐	Mass DEP APH CAM IX A ☐
8270 SVOC CAM II B ☐	7010 Metals CAM III C ☐	Mass DEP EPH CAM IV B ☒	8151 Herbicides CAM V C ☐	8330 Explosives CAM VIII A ☐	TO-15 VOC CAM IX B ☐
6010 Metals CAM III A ☒	6020 Metals CAM III D ☐	8082 PCB CAM V A ☒	9012 / 9014/ 4500CN Total Cyanide/PAC CAM VI A ☐	6860 Perchlorate CAM VIII B ☐	

Affirmative Responses to Questions A through F are required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding time.	☒ Yes	☐ No
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	☒ Yes	☐ No
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	☒ Yes	☐ No
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	☒ Yes	☐ No
E	a. VPH, EPH and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	☒ Yes ☐ Yes	☐ No ☐ No
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	☒ Yes	☐ No

Responses to Questions G, H and I below are required for "Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	☐ Yes	☒ No[1]

***Data User Note:* Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WCS-07-350**

H	Were **all** QC performance standards specified in the CAM protocol(s) achieved?	☐ Yes	☒ No[1]
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s) ?	☒ Yes	☐ No[1]

[1] All negative responses must be addressed in an attached laboratory narrative.

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, is accurate and complete.

Signature:  Position: Project Manager

Printed Name: Becky Mason Date: 10/7/16 16:07

This form has been electronically signed and approved

Detection Summary

Client: Woodard & Curran, Inc.
Project/Site: Tombarello Lawrence, MA

TestAmerica Job ID: 480-106761-1

Client Sample ID: MH0279 — Lab Sample ID: 480-106761-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dichlorobenzene	1.4		0.48	0.067	mg/Kg	1	☼	8260C	Total/NA
4-Isopropyltoluene	0.76		0.48	0.038	mg/Kg	1	☼	8260C	Total/NA
Acetone	0.47	J *	24	0.40	mg/Kg	1	☼	8260C	Total/NA
Chlorobenzene	1.4		0.48	0.063	mg/Kg	1	☼	8260C	Total/NA
Ethylbenzene	0.13	J	0.48	0.033	mg/Kg	1	☼	8260C	Total/NA
Naphthalene	0.064	J	2.4	0.064	mg/Kg	1	☼	8260C	Total/NA
Styrene	0.044	J	0.48	0.024	mg/Kg	1	☼	8260C	Total/NA
Toluene - DL	14		0.96	0.073	mg/Kg	2	☼	8260C	Total/NA
C9-C12 Aliphatics (adjusted)	0.85	J	3.7	0.15	mg/Kg	10	☼	MA VPH	Total/NA
C5-C8 Aliphatics (unadjusted)	1.1	J B	3.7	0.15	mg/Kg	10	☼	MAVPH	Total/NA
C9-C10 Aromatics	1.6	J	3.7	0.15	mg/Kg	10	☼	MAVPH	Total/NA
C9-C12 Aliphatics (unadjusted)	4.1	B	3.7	0.15	mg/Kg	10	☼	MAVPH	Total/NA
Ethylbenzene	1.3		0.74	0.15	mg/Kg	10	☼	MAVPH	Total/NA
o-Xylene	0.62	J	0.74	0.15	mg/Kg	10	☼	MAVPH	Total/NA
Toluene	9.0		0.74	0.15	mg/Kg	10	☼	MAVPH	Total/NA
PCB-1248	0.34		0.14	0.014	mg/Kg	1	☼	8082	Total/NA
Silver	0.58	J	0.74	0.30	mg/Kg	1	☼	6010	Total/NA
Arsenic	2.6		1.5	0.59	mg/Kg	1	☼	6010	Total/NA
Barium	62	B	0.74	0.16	mg/Kg	1	☼	6010	Total/NA
Beryllium	0.19	J	0.30	0.041	mg/Kg	1	☼	6010	Total/NA
Cadmium	0.47		0.30	0.044	mg/Kg	1	☼	6010	Total/NA
Chromium	18	B	0.74	0.30	mg/Kg	1	☼	6010	Total/NA
Nickel	12		1.5	0.34	mg/Kg	1	☼	6010	Total/NA
Vanadium	11		0.74	0.16	mg/Kg	1	☼	6010	Total/NA
Zinc	130	B	3.7	0.95	mg/Kg	1	☼	6010	Total/NA
Lead	61	B	0.74	0.36	mg/Kg	1	☼	6010	Total/NA
Selenium	0.83		0.74	0.59	mg/Kg	1	☼	6010	Total/NA
Antimony	1.1		0.74	0.59	mg/Kg	1	☼	6010	Total/NA
Mercury	0.023	J	0.029	0.012	mg/Kg	1	☼	7471A	Total/NA

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
C11-C22 Aromatics (Adjusted)	41		7.3	7.3	mg/Kg	1	☼	MA-EPH	Total/NA
Anthracene	0.72		0.70	0.70	mg/Kg	1	☼	MA-EPH	Total/NA
Benzo[a]anthracene	1.4		0.70	0.70	mg/Kg	1	☼	MA-EPH	Total/NA
Benzo[a]pyrene	1.2		0.70	0.70	mg/Kg	1	☼	MA-EPH	Total/NA
Benzo[b]fluoranthene	2.1		0.70	0.70	mg/Kg	1	☼	MA-EPH	Total/NA
Benzo[g,h,i]perylene	1.3		0.70	0.70	mg/Kg	1	☼	MA-EPH	Total/NA
Benzo[k]fluoranthene	0.78		0.70	0.70	mg/Kg	1	☼	MA-EPH	Total/NA
Chrysene	1.7		0.70	0.70	mg/Kg	1	☼	MA-EPH	Total/NA
Fluoranthene	3.5		0.70	0.70	mg/Kg	1	☼	MA-EPH	Total/NA
Indeno[1,2,3-cd]pyrene	0.96		0.70	0.70	mg/Kg	1	☼	MA-EPH	Total/NA
Phenanthrene	3.1		0.70	0.70	mg/Kg	1	☼	MA-EPH	Total/NA
Pyrene	3.3		0.70	0.70	mg/Kg	1	☼	MA-EPH	Total/NA
C11-C22 Aromatics (unadjusted)	61		7.0	7.0	mg/Kg	1	☼	MA-EPH	Total/NA
C19-C36 Aliphatics	7.6	*	7.0	7.0	mg/Kg	1	☼	MA-EPH	Total/NA
C9-C18 Aliphatics	10	*	7.0	7.0	mg/Kg	1	☼	MA-EPH	Total/NA

Client Sample ID: MH0272 — Lab Sample ID: 480-106761-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
4-Isopropyltoluene	0.23	J	0.41	0.033	mg/Kg	1	☼	8260C	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

Client Sample ID: MH0272 (Continued)

Lab Sample ID: 480-106761-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Styrene	0.031	J	0.41	0.021	mg/Kg	1	☼	8260C	Total/NA
Toluene	0.14	J	0.41	0.031	mg/Kg	1	☼	8260C	Total/NA
C5-C8 Aliphatics (adjusted)	0.14	J	0.34	0.014	mg/Kg	1	☼	MA VPH	Total/NA
C9-C12 Aliphatics (adjusted)	1.2		0.34	0.014	mg/Kg	1	☼	MA VPH	Total/NA
C5-C8 Aliphatics (unadjusted)	0.16	J B	0.28	0.011	mg/Kg	1	☼	MAVPH	Total/NA
C9-C10 Aromatics	0.34		0.28	0.011	mg/Kg	1	☼	MAVPH	Total/NA
C9-C12 Aliphatics (unadjusted)	1.3	B	0.28	0.011	mg/Kg	1	☼	MAVPH	Total/NA
Ethylbenzene	0.048	J	0.057	0.011	mg/Kg	1	☼	MAVPH	Total/NA
Naphthalene	0.017	J	0.057	0.011	mg/Kg	1	☼	MAVPH	Total/NA
o-Xylene	0.043	J	0.057	0.011	mg/Kg	1	☼	MAVPH	Total/NA
Toluene	0.064		0.057	0.011	mg/Kg	1	☼	MAVPH	Total/NA
PCB-1254	0.081	J	0.14	0.014	mg/Kg	1	☼	8082	Total/NA
PCB-1260	0.077	J	0.14	0.014	mg/Kg	1	☼	8082	Total/NA
Silver	0.28	J	0.70	0.28	mg/Kg	1	☼	6010	Total/NA
Arsenic	4.1		1.4	0.56	mg/Kg	1	☼	6010	Total/NA
Barium	88	B	0.70	0.15	mg/Kg	1	☼	6010	Total/NA
Beryllium	0.27	J	0.28	0.039	mg/Kg	1	☼	6010	Total/NA
Cadmium	0.34		0.28	0.042	mg/Kg	1	☼	6010	Total/NA
Chromium	31	B	0.70	0.28	mg/Kg	1	☼	6010	Total/NA
Nickel	82		1.4	0.32	mg/Kg	1	☼	6010	Total/NA
Vanadium	30		0.70	0.15	mg/Kg	1	☼	6010	Total/NA
Zinc	120	B	3.5	0.90	mg/Kg	1	☼	6010	Total/NA
Lead	46	B	0.70	0.34	mg/Kg	1	☼	6010	Total/NA
Antimony	1.8		0.70	0.56	mg/Kg	1	☼	6010	Total/NA

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
C11-C22 Aromatics (Adjusted)	42		6.9	6.9	mg/Kg	1	☼	MA-EPH	Total/NA
Benzo[a]anthracene	1.0		0.67	0.67	mg/Kg	1	☼	MA-EPH	Total/NA
Benzo[a]pyrene	0.88		0.67	0.67	mg/Kg	1	☼	MA-EPH	Total/NA
Benzo[b]fluoranthene	1.2		0.67	0.67	mg/Kg	1	☼	MA-EPH	Total/NA
Benzo[g,h,i]perylene	1.1		0.67	0.67	mg/Kg	1	☼	MA-EPH	Total/NA
Chrysene	1.1		0.67	0.67	mg/Kg	1	☼	MA-EPH	Total/NA
Fluoranthene	2.4		0.67	0.67	mg/Kg	1	☼	MA-EPH	Total/NA
Phenanthrene	2.5		0.67	0.67	mg/Kg	1	☼	MA-EPH	Total/NA
Pyrene	2.2		0.67	0.67	mg/Kg	1	☼	MA-EPH	Total/NA
C11-C22 Aromatics (unadjusted)	55		6.7	6.7	mg/Kg	1	☼	MA-EPH	Total/NA
C19-C36 Aliphatics	8.5	*	6.7	6.7	mg/Kg	1	☼	MA-EPH	Total/NA
C9-C18 Aliphatics	8.0	*	6.7	6.7	mg/Kg	1	☼	MA-EPH	Total/NA

This Detection Summary does not include radiochemical test results.

Client: Woodard & Curran, Inc.
Project/Site: Tombarello Lawrence, MA

TestAmerica Job ID: 480-106761-1

Client Sample ID: MH0279
Date Collected: 09/28/16 10:45
Date Received: 09/30/16 01:00

Lab Sample ID: 480-106761-1
Matrix: Solid
Percent Solids: 68.4

Method: 8260C - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.048		0.48	0.048	mg/Kg	☼	10/03/16 11:44	10/03/16 17:49	1
1,1,1-Trichloroethane	<0.035		0.48	0.035	mg/Kg	☼	10/03/16 11:44	10/03/16 17:49	1
1,1,2,2-Tetrachloroethane	<0.078		0.48	0.078	mg/Kg	☼	10/03/16 11:44	10/03/16 17:49	1
1,1,2-Trichloroethane	<0.062		0.48	0.062	mg/Kg	☼	10/03/16 11:44	10/03/16 17:49	1
1,1-Dichloroethane	<0.059		0.48	0.059	mg/Kg	☼	10/03/16 11:44	10/03/16 17:49	1
1,1-Dichloroethene	<0.059		0.48	0.059	mg/Kg	☼	10/03/16 11:44	10/03/16 17:49	1
1,1-Dichloropropene	<0.068		0.48	0.068	mg/Kg	☼	10/03/16 11:44	10/03/16 17:49	1
1,2,3-Trichlorobenzene	<0.051		0.48	0.051	mg/Kg	☼	10/03/16 11:44	10/03/16 17:49	1
1,2,3-Trichloropropane	<0.049		0.48	0.049	mg/Kg	☼	10/03/16 11:44	10/03/16 17:49	1
1,2,4-Trichlorobenzene	<0.029		0.48	0.029	mg/Kg	☼	10/03/16 11:44	10/03/16 17:49	1
1,2,4-Trimethylbenzene	<0.092		0.48	0.092	mg/Kg	☼	10/03/16 11:44	10/03/16 17:49	1
1,2-Dibromo-3-Chloropropane	<0.24		2.4	0.24	mg/Kg	☼	10/03/16 11:44	10/03/16 17:49	1
1,2-Dichlorobenzene	<0.038		0.48	0.038	mg/Kg	☼	10/03/16 11:44	10/03/16 17:49	1
1,2-Dichloroethane	<0.024		0.48	0.024	mg/Kg	☼	10/03/16 11:44	10/03/16 17:49	1
1,2-Dichloropropane	<0.24		0.48	0.24	mg/Kg	☼	10/03/16 11:44	10/03/16 17:49	1
1,3,5-Trimethylbenzene	<0.031		0.48	0.031	mg/Kg	☼	10/03/16 11:44	10/03/16 17:49	1
1,3-Dichlorobenzene	<0.025		0.48	0.025	mg/Kg	☼	10/03/16 11:44	10/03/16 17:49	1
1,3-Dichloropropane	<0.029		0.48	0.029	mg/Kg	☼	10/03/16 11:44	10/03/16 17:49	1
1,4-Dichlorobenzene	**1.4**		0.48	0.067	mg/Kg	☼	10/03/16 11:44	10/03/16 17:49	1
1,4-Dioxane	<2.3		24	2.3	mg/Kg	☼	10/03/16 11:44	10/03/16 17:49	1
2,2-Dichloropropane	<0.082		0.48	0.082	mg/Kg	☼	10/03/16 11:44	10/03/16 17:49	1
2-Butanone (MEK)	<0.18		2.4	0.18	mg/Kg	☼	10/03/16 11:44	10/03/16 17:49	1
2-Chlorotoluene	<0.031		0.48	0.031	mg/Kg	☼	10/03/16 11:44	10/03/16 17:49	1
2-Hexanone	<0.24		2.4	0.24	mg/Kg	☼	10/03/16 11:44	10/03/16 17:49	1
4-Chlorotoluene	<0.057		0.48	0.057	mg/Kg	☼	10/03/16 11:44	10/03/16 17:49	1
4-Isopropyltoluene	**0.76**		0.48	0.038	mg/Kg	☼	10/03/16 11:44	10/03/16 17:49	1
4-Methyl-2-pentanone (MIBK)	<0.16		2.4	0.16	mg/Kg	☼	10/03/16 11:44	10/03/16 17:49	1
Acetone	**0.47**	**J ***	24	0.40	mg/Kg	☼	10/03/16 11:44	10/03/16 17:49	1
Benzene	<0.024		0.48	0.024	mg/Kg	☼	10/03/16 11:44	10/03/16 17:49	1
Bromobenzene	<0.084		0.48	0.084	mg/Kg	☼	10/03/16 11:44	10/03/16 17:49	1
Bromoform	<0.24		0.48	0.24	mg/Kg	☼	10/03/16 11:44	10/03/16 17:49	1
Bromomethane	<0.043		0.48	0.043	mg/Kg	☼	10/03/16 11:44	10/03/16 17:49	1
Carbon disulfide	<0.24		0.48	0.24	mg/Kg	☼	10/03/16 11:44	10/03/16 17:49	1
Carbon tetrachloride	<0.046		0.48	0.046	mg/Kg	☼	10/03/16 11:44	10/03/16 17:49	1
Chlorobenzene	**1.4**		0.48	0.063	mg/Kg	☼	10/03/16 11:44	10/03/16 17:49	1
Chlorobromomethane	<0.035		0.48	0.035	mg/Kg	☼	10/03/16 11:44	10/03/16 17:49	1
Chlorodibromomethane	<0.061		0.48	0.061	mg/Kg	☼	10/03/16 11:44	10/03/16 17:49	1
Chloroethane	<0.11	*	0.48	0.11	mg/Kg	☼	10/03/16 11:44	10/03/16 17:49	1
Chloroform	<0.030		0.48	0.030	mg/Kg	☼	10/03/16 11:44	10/03/16 17:49	1
Chloromethane	<0.029		0.48	0.029	mg/Kg	☼	10/03/16 11:44	10/03/16 17:49	1
cis-1,2-Dichloroethene	<0.061		0.48	0.061	mg/Kg	☼	10/03/16 11:44	10/03/16 17:49	1
cis-1,3-Dichloropropene	<0.069		0.48	0.069	mg/Kg	☼	10/03/16 11:44	10/03/16 17:49	1
Dichlorobromomethane	<0.064		0.48	0.064	mg/Kg	☼	10/03/16 11:44	10/03/16 17:49	1
Dichlorodifluoromethane	<0.040		0.48	0.040	mg/Kg	☼	10/03/16 11:44	10/03/16 17:49	1
Ethyl ether	<0.20		0.48	0.20	mg/Kg	☼	10/03/16 11:44	10/03/16 17:49	1
Ethylbenzene	**0.13**	**J**	0.48	0.033	mg/Kg	☼	10/03/16 11:44	10/03/16 17:49	1
Ethylene Dibromide	<0.062		0.48	0.062	mg/Kg	☼	10/03/16 11:44	10/03/16 17:49	1
Hexachlorobutadiene	<0.056		0.48	0.056	mg/Kg	☼	10/03/16 11:44	10/03/16 17:49	1
Isopropyl ether	<0.24		0.48	0.24	mg/Kg	☼	10/03/16 11:44	10/03/16 17:49	1

Client Sample ID: MH0279
Date Collected: 09/28/16 10:45
Date Received: 09/30/16 01:00

Lab Sample ID: 480-106761-1
Matrix: Solid
Percent Solids: 68.4

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Isopropylbenzene	<0.072		0.48	0.072	mg/Kg	☼	10/03/16 11:44	10/03/16 17:49	1
Methyl tert-butyl ether	<0.047		0.48	0.047	mg/Kg	☼	10/03/16 11:44	10/03/16 17:49	1
Methylene Chloride	<0.22		0.48	0.22	mg/Kg	☼	10/03/16 11:44	10/03/16 17:49	1
m-Xylene & p-Xylene	<0.081		0.48	0.081	mg/Kg	☼	10/03/16 11:44	10/03/16 17:49	1
Naphthalene	**0.064**	**J**	2.4	0.064	mg/Kg	☼	10/03/16 11:44	10/03/16 17:49	1
n-Butylbenzene	<0.042		0.48	0.042	mg/Kg	☼	10/03/16 11:44	10/03/16 17:49	1
N-Propylbenzene	<0.038		0.48	0.038	mg/Kg	☼	10/03/16 11:44	10/03/16 17:49	1
o-Xylene	<0.063		0.48	0.063	mg/Kg	☼	10/03/16 11:44	10/03/16 17:49	1
sec-Butylbenzene	<0.042		0.48	0.042	mg/Kg	☼	10/03/16 11:44	10/03/16 17:49	1
Styrene	**0.044**	**J**	0.48	0.024	mg/Kg	☼	10/03/16 11:44	10/03/16 17:49	1
Tert-amyl methyl ether	<0.12		0.48	0.12	mg/Kg	☼	10/03/16 11:44	10/03/16 17:49	1
Tert-butyl ethyl ether	<0.21		0.48	0.21	mg/Kg	☼	10/03/16 11:44	10/03/16 17:49	1
tert-Butylbenzene	<0.050		0.48	0.050	mg/Kg	☼	10/03/16 11:44	10/03/16 17:49	1
Tetrachloroethene	<0.064		0.48	0.064	mg/Kg	☼	10/03/16 11:44	10/03/16 17:49	1
Tetrahydrofuran	<0.44		4.8	0.44	mg/Kg	☼	10/03/16 11:44	10/03/16 17:49	1
trans-1,2-Dichloroethene	<0.050		0.48	0.050	mg/Kg	☼	10/03/16 11:44	10/03/16 17:49	1
trans-1,3-Dichloropropene	<0.21		0.48	0.21	mg/Kg	☼	10/03/16 11:44	10/03/16 17:49	1
Trichloroethene	<0.11		0.48	0.11	mg/Kg	☼	10/03/16 11:44	10/03/16 17:49	1
Trichlorofluoromethane	<0.045		0.48	0.045	mg/Kg	☼	10/03/16 11:44	10/03/16 17:49	1
Vinyl chloride	<0.059		0.48	0.059	mg/Kg	☼	10/03/16 11:44	10/03/16 17:49	1
Dibromomethane	<0.049		0.48	0.049	mg/Kg	☼	10/03/16 11:44	10/03/16 17:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*95*		*70 - 130*	*10/03/16 11:44*	*10/03/16 17:49*	*1*
1,2-Dichloroethane-d4 (Surr)	*104*		*70 - 130*	*10/03/16 11:44*	*10/03/16 17:49*	*1*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*	*10/03/16 11:44*	*10/03/16 17:49*	*1*
Dibromofluoromethane (Surr)	*105*		*70 - 130*	*10/03/16 11:44*	*10/03/16 17:49*	*1*

Method: 8260C - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	**14**		0.96	0.073	mg/Kg	☼	10/03/16 11:44	10/03/16 18:36	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*96*		*70 - 130*	*10/03/16 11:44*	*10/03/16 18:36*	*2*
1,2-Dichloroethane-d4 (Surr)	*102*		*70 - 130*	*10/03/16 11:44*	*10/03/16 18:36*	*2*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*	*10/03/16 11:44*	*10/03/16 18:36*	*2*
Dibromofluoromethane (Surr)	*104*		*70 - 130*	*10/03/16 11:44*	*10/03/16 18:36*	*2*

Method: MA VPH - Massachusetts - Volatile Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C5-C8 Aliphatics (adjusted)	<0.15		3.7	0.15	mg/Kg	☼		10/07/16 15:37	10
C9-C12 Aliphatics (adjusted)	**0.85**	**J**	3.7	0.15	mg/Kg	☼		10/07/16 15:37	10

Method: MAVPH - Massachusetts - Volatile Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.74	0.15	mg/Kg	☼	10/05/16 17:40	10/06/16 01:10	10
C5-C8 Aliphatics (unadjusted)	**1.1**	**J B**	3.7	0.15	mg/Kg	☼	10/05/16 17:40	10/06/16 01:10	10
C9-C10 Aromatics	**1.6**	**J**	3.7	0.15	mg/Kg	☼	10/05/16 17:40	10/06/16 01:10	10
C9-C12 Aliphatics (unadjusted)	**4.1**	**B**	3.7	0.15	mg/Kg	☼	10/05/16 17:40	10/06/16 01:10	10
Ethylbenzene	**1.3**		0.74	0.15	mg/Kg	☼	10/05/16 17:40	10/06/16 01:10	10
Methyl tert-butyl ether	<0.15		0.74	0.15	mg/Kg	☼	10/05/16 17:40	10/06/16 01:10	10

Client Sample ID: MH0279
Date Collected: 09/28/16 10:45
Date Received: 09/30/16 01:00

Lab Sample ID: 480-106761-1
Matrix: Solid
Percent Solids: 68.4

Method: MAVPH - Massachusetts - Volatile Petroleum Hydrocarbons (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
m-Xylene & p-Xylene	<0.15		1.5	0.15	mg/Kg	☼	10/05/16 17:40	10/06/16 01:10	10
Naphthalene	<0.15		0.74	0.15	mg/Kg	☼	10/05/16 17:40	10/06/16 01:10	10
o-Xylene	**0.62**	**J**	0.74	0.15	mg/Kg	☼	10/05/16 17:40	10/06/16 01:10	10
Toluene	**9.0**		0.74	0.15	mg/Kg	☼	10/05/16 17:40	10/06/16 01:10	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,5-Dibromotoluene (fid)	*107*		*35 - 168*	*10/05/16 17:40*	*10/06/16 01:10*	*10*
2,5-Dibromotoluene (pid)	*101*		*67 - 129*	*10/05/16 17:40*	*10/06/16 01:10*	*10*

Method: 8082 - Polychlorinated Biphenyls (GC/ECD)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.014		0.14	0.014	mg/Kg	☼	09/30/16 07:17	09/30/16 19:52	1
PCB-1221	<0.014		0.14	0.014	mg/Kg	☼	09/30/16 07:17	09/30/16 19:52	1
PCB-1232	<0.014		0.14	0.014	mg/Kg	☼	09/30/16 07:17	09/30/16 19:52	1
PCB-1242	<0.014		0.14	0.014	mg/Kg	☼	09/30/16 07:17	09/30/16 19:52	1
PCB-1248	**0.34**		0.14	0.014	mg/Kg	☼	09/30/16 07:17	09/30/16 19:52	1
PCB-1254	<0.014		0.14	0.014	mg/Kg	☼	09/30/16 07:17	09/30/16 19:52	1
PCB-1260	<0.014		0.14	0.014	mg/Kg	☼	09/30/16 07:17	09/30/16 19:52	1
PCB-1262	<0.014		0.14	0.014	mg/Kg	☼	09/30/16 07:17	09/30/16 19:52	1
PCB-1268	<0.014		0.14	0.014	mg/Kg	☼	09/30/16 07:17	09/30/16 19:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*86*		*30 - 150*	*09/30/16 07:17*	*09/30/16 19:52*	*1*
Tetrachloro-m-xylene	*76*		*30 - 150*	*09/30/16 07:17*	*09/30/16 19:52*	*1*
DCB Decachlorobiphenyl	*97*		*30 - 150*	*09/30/16 07:17*	*09/30/16 19:52*	*1*
DCB Decachlorobiphenyl	*75*		*30 - 150*	*09/30/16 07:17*	*09/30/16 19:52*	*1*

Method: MA-EPH - Massachusetts - Extractable Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.70		0.70	0.70	mg/Kg	☼	09/30/16 09:46	10/03/16 14:47	1
C11-C22 Aromatics (Adjusted)	**41**		7.3	7.3	mg/Kg	☼		10/04/16 13:33	1
Acenaphthylene	<0.70		0.70	0.70	mg/Kg	☼	09/30/16 09:46	10/03/16 14:47	1
Anthracene	**0.72**		0.70	0.70	mg/Kg	☼	09/30/16 09:46	10/03/16 14:47	1
Benzo[a]anthracene	**1.4**		0.70	0.70	mg/Kg	☼	09/30/16 09:46	10/03/16 14:47	1
Benzo[a]pyrene	**1.2**		0.70	0.70	mg/Kg	☼	09/30/16 09:46	10/03/16 14:47	1
Benzo[b]fluoranthene	**2.1**		0.70	0.70	mg/Kg	☼	09/30/16 09:46	10/03/16 14:47	1
Benzo[g,h,i]perylene	**1.3**		0.70	0.70	mg/Kg	☼	09/30/16 09:46	10/03/16 14:47	1
Benzo[k]fluoranthene	**0.78**		0.70	0.70	mg/Kg	☼	09/30/16 09:46	10/03/16 14:47	1
Chrysene	**1.7**		0.70	0.70	mg/Kg	☼	09/30/16 09:46	10/03/16 14:47	1
Dibenz(a,h)anthracene	<0.70		0.70	0.70	mg/Kg	☼	09/30/16 09:46	10/03/16 14:47	1
Fluoranthene	**3.5**		0.70	0.70	mg/Kg	☼	09/30/16 09:46	10/03/16 14:47	1
Fluorene	<0.70		0.70	0.70	mg/Kg	☼	09/30/16 09:46	10/03/16 14:47	1
Indeno[1,2,3-cd]pyrene	**0.96**		0.70	0.70	mg/Kg	☼	09/30/16 09:46	10/03/16 14:47	1
2-Methylnaphthalene	<0.70		0.70	0.70	mg/Kg	☼	09/30/16 09:46	10/03/16 14:47	1
Naphthalene	<0.70		0.70	0.70	mg/Kg	☼	09/30/16 09:46	10/03/16 14:47	1
Phenanthrene	**3.1**		0.70	0.70	mg/Kg	☼	09/30/16 09:46	10/03/16 14:47	1
Pyrene	**3.3**		0.70	0.70	mg/Kg	☼	09/30/16 09:46	10/03/16 14:47	1
C11-C22 Aromatics (unadjusted)	**61**		7.0	7.0	mg/Kg	☼	09/30/16 09:46	10/03/16 14:47	1
C19-C36 Aliphatics	**7.6**	*	7.0	7.0	mg/Kg	☼	09/30/16 09:46	10/03/16 14:47	1
C9-C18 Aliphatics	**10**	*	7.0	7.0	mg/Kg	☼	09/30/16 09:46	10/03/16 14:47	1

Client Sample ID: MH0279

Date Collected: 09/28/16 10:45
Date Received: 09/30/16 01:00

Lab Sample ID: 480-106761-1

Matrix: Solid
Percent Solids: 68.4

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctadecane	64		40 - 140	09/30/16 09:46	10/03/16 14:47	1
2-Bromonaphthalene	105		40 - 140	09/30/16 09:46	10/03/16 14:47	1
2-Fluorobiphenyl	125		40 - 140	09/30/16 09:46	10/03/16 14:47	1
o-Terphenyl	76		40 - 140	09/30/16 09:46	10/03/16 14:47	1

Method: 6010 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	0.58	J	0.74	0.30	mg/Kg	☼	09/30/16 15:10	10/04/16 00:03	1
Arsenic	2.6		1.5	0.59	mg/Kg	☼	09/30/16 15:10	10/04/16 00:03	1
Barium	62	B	0.74	0.16	mg/Kg	☼	09/30/16 15:10	10/04/16 00:03	1
Beryllium	0.19	J	0.30	0.041	mg/Kg	☼	09/30/16 15:10	10/04/16 00:03	1
Cadmium	0.47		0.30	0.044	mg/Kg	☼	09/30/16 15:10	10/04/16 00:03	1
Chromium	18	B	0.74	0.30	mg/Kg	☼	09/30/16 15:10	10/04/16 00:03	1
Nickel	12		1.5	0.34	mg/Kg	☼	09/30/16 15:10	10/04/16 00:03	1
Thallium	<0.44		1.5	0.44	mg/Kg	☼	09/30/16 15:10	10/04/16 00:03	1
Vanadium	11		0.74	0.16	mg/Kg	☼	09/30/16 15:10	10/04/16 00:03	1
Zinc	130	B	3.7	0.95	mg/Kg	☼	09/30/16 15:10	10/04/16 00:03	1
Lead	61	B	0.74	0.36	mg/Kg	☼	09/30/16 15:10	10/04/16 00:03	1
Selenium	0.83		0.74	0.59	mg/Kg	☼	09/30/16 15:10	10/04/16 00:03	1
Antimony	1.1		0.74	0.59	mg/Kg	☼	09/30/16 15:10	10/04/16 00:03	1

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.023	J	0.029	0.012	mg/Kg	☼	09/30/16 09:45	09/30/16 12:54	1

Client Sample ID: MH0272

Date Collected: 09/28/16 16:45
Date Received: 09/30/16 01:00

Lab Sample ID: 480-106761-2

Matrix: Solid
Percent Solids: 72.5

Method: 8260C - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.041		0.41	0.041	mg/Kg	☼	10/03/16 11:44	10/03/16 19:00	1
1,1,1-Trichloroethane	<0.030		0.41	0.030	mg/Kg	☼	10/03/16 11:44	10/03/16 19:00	1
1,1,2,2-Tetrachloroethane	<0.067		0.41	0.067	mg/Kg	☼	10/03/16 11:44	10/03/16 19:00	1
1,1,2-Trichloroethane	<0.054		0.41	0.054	mg/Kg	☼	10/03/16 11:44	10/03/16 19:00	1
1,1-Dichloroethane	<0.051		0.41	0.051	mg/Kg	☼	10/03/16 11:44	10/03/16 19:00	1
1,1-Dichloroethene	<0.051		0.41	0.051	mg/Kg	☼	10/03/16 11:44	10/03/16 19:00	1
1,1-Dichloropropene	<0.059		0.41	0.059	mg/Kg	☼	10/03/16 11:44	10/03/16 19:00	1
1,2,3-Trichlorobenzene	<0.044		0.41	0.044	mg/Kg	☼	10/03/16 11:44	10/03/16 19:00	1
1,2,3-Trichloropropane	<0.042		0.41	0.042	mg/Kg	☼	10/03/16 11:44	10/03/16 19:00	1
1,2,4-Trichlorobenzene	<0.025		0.41	0.025	mg/Kg	☼	10/03/16 11:44	10/03/16 19:00	1
1,2,4-Trimethylbenzene	<0.080		0.41	0.080	mg/Kg	☼	10/03/16 11:44	10/03/16 19:00	1
1,2-Dibromo-3-Chloropropane	<0.21		2.1	0.21	mg/Kg	☼	10/03/16 11:44	10/03/16 19:00	1
1,2-Dichlorobenzene	<0.032		0.41	0.032	mg/Kg	☼	10/03/16 11:44	10/03/16 19:00	1
1,2-Dichloroethane	<0.021		0.41	0.021	mg/Kg	☼	10/03/16 11:44	10/03/16 19:00	1
1,2-Dichloropropane	<0.21		0.41	0.21	mg/Kg	☼	10/03/16 11:44	10/03/16 19:00	1
1,3,5-Trimethylbenzene	<0.027		0.41	0.027	mg/Kg	☼	10/03/16 11:44	10/03/16 19:00	1
1,3-Dichlorobenzene	<0.021		0.41	0.021	mg/Kg	☼	10/03/16 11:44	10/03/16 19:00	1
1,3-Dichloropropane	<0.025		0.41	0.025	mg/Kg	☼	10/03/16 11:44	10/03/16 19:00	1
1,4-Dichlorobenzene	<0.058		0.41	0.058	mg/Kg	☼	10/03/16 11:44	10/03/16 19:00	1
1,4-Dioxane	<2.0		21	2.0	mg/Kg	☼	10/03/16 11:44	10/03/16 19:00	1

Client: Woodard & Curran, Inc.
Project/Site: Tombarello Lawrence, MA

TestAmerica Job ID: 480-106761-1

Client Sample ID: MH0272
Date Collected: 09/28/16 16:45
Date Received: 09/30/16 01:00

Lab Sample ID: 480-106761-2
Matrix: Solid
Percent Solids: 72.5

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,2-Dichloropropane	<0.071		0.41	0.071	mg/Kg	☼	10/03/16 11:44	10/03/16 19:00	1
2-Butanone (MEK)	<0.15		2.1	0.15	mg/Kg	☼	10/03/16 11:44	10/03/16 19:00	1
2-Chlorotoluene	<0.027		0.41	0.027	mg/Kg	☼	10/03/16 11:44	10/03/16 19:00	1
2-Hexanone	<0.21		2.1	0.21	mg/Kg	☼	10/03/16 11:44	10/03/16 19:00	1
4-Chlorotoluene	<0.049		0.41	0.049	mg/Kg	☼	10/03/16 11:44	10/03/16 19:00	1
4-Isopropyltoluene	**0.23**	**J**	0.41	0.033	mg/Kg	☼	10/03/16 11:44	10/03/16 19:00	1
4-Methyl-2-pentanone (MIBK)	<0.14		2.1	0.14	mg/Kg	☼	10/03/16 11:44	10/03/16 19:00	1
Acetone	<0.35	*	21	0.35	mg/Kg	☼	10/03/16 11:44	10/03/16 19:00	1
Benzene	<0.020		0.41	0.020	mg/Kg	☼	10/03/16 11:44	10/03/16 19:00	1
Bromobenzene	<0.073		0.41	0.073	mg/Kg	☼	10/03/16 11:44	10/03/16 19:00	1
Bromoform	<0.21		0.41	0.21	mg/Kg	☼	10/03/16 11:44	10/03/16 19:00	1
Bromomethane	<0.037		0.41	0.037	mg/Kg	☼	10/03/16 11:44	10/03/16 19:00	1
Carbon disulfide	<0.21		0.41	0.21	mg/Kg	☼	10/03/16 11:44	10/03/16 19:00	1
Carbon tetrachloride	<0.040		0.41	0.040	mg/Kg	☼	10/03/16 11:44	10/03/16 19:00	1
Chlorobenzene	<0.055		0.41	0.055	mg/Kg	☼	10/03/16 11:44	10/03/16 19:00	1
Chlorobromomethane	<0.030		0.41	0.030	mg/Kg	☼	10/03/16 11:44	10/03/16 19:00	1
Chlorodibromomethane	<0.053		0.41	0.053	mg/Kg	☼	10/03/16 11:44	10/03/16 19:00	1
Chloroethane	<0.094	*	0.41	0.094	mg/Kg	☼	10/03/16 11:44	10/03/16 19:00	1
Chloroform	<0.026		0.41	0.026	mg/Kg	☼	10/03/16 11:44	10/03/16 19:00	1
Chloromethane	<0.025		0.41	0.025	mg/Kg	☼	10/03/16 11:44	10/03/16 19:00	1
cis-1,2-Dichloroethene	<0.053		0.41	0.053	mg/Kg	☼	10/03/16 11:44	10/03/16 19:00	1
cis-1,3-Dichloropropene	<0.060		0.41	0.060	mg/Kg	☼	10/03/16 11:44	10/03/16 19:00	1
Dichlorobromomethane	<0.056		0.41	0.056	mg/Kg	☼	10/03/16 11:44	10/03/16 19:00	1
Dichlorodifluoromethane	<0.034		0.41	0.034	mg/Kg	☼	10/03/16 11:44	10/03/16 19:00	1
Ethyl ether	<0.17		0.41	0.17	mg/Kg	☼	10/03/16 11:44	10/03/16 19:00	1
Ethylbenzene	<0.029		0.41	0.029	mg/Kg	☼	10/03/16 11:44	10/03/16 19:00	1
Ethylene Dibromide	<0.053		0.41	0.053	mg/Kg	☼	10/03/16 11:44	10/03/16 19:00	1
Hexachlorobutadiene	<0.049		0.41	0.049	mg/Kg	☼	10/03/16 11:44	10/03/16 19:00	1
Isopropyl ether	<0.21		0.41	0.21	mg/Kg	☼	10/03/16 11:44	10/03/16 19:00	1
Isopropylbenzene	<0.063		0.41	0.063	mg/Kg	☼	10/03/16 11:44	10/03/16 19:00	1
Methyl tert-butyl ether	<0.041		0.41	0.041	mg/Kg	☼	10/03/16 11:44	10/03/16 19:00	1
Methylene Chloride	<0.19		0.41	0.19	mg/Kg	☼	10/03/16 11:44	10/03/16 19:00	1
m-Xylene & p-Xylene	<0.070		0.41	0.070	mg/Kg	☼	10/03/16 11:44	10/03/16 19:00	1
Naphthalene	<0.056		2.1	0.056	mg/Kg	☼	10/03/16 11:44	10/03/16 19:00	1
n-Butylbenzene	<0.036		0.41	0.036	mg/Kg	☼	10/03/16 11:44	10/03/16 19:00	1
N-Propylbenzene	<0.033		0.41	0.033	mg/Kg	☼	10/03/16 11:44	10/03/16 19:00	1
o-Xylene	<0.054		0.41	0.054	mg/Kg	☼	10/03/16 11:44	10/03/16 19:00	1
sec-Butylbenzene	<0.036		0.41	0.036	mg/Kg	☼	10/03/16 11:44	10/03/16 19:00	1
Styrene	**0.031**	**J**	0.41	0.021	mg/Kg	☼	10/03/16 11:44	10/03/16 19:00	1
Tert-amyl methyl ether	<0.11		0.41	0.11	mg/Kg	☼	10/03/16 11:44	10/03/16 19:00	1
Tert-butyl ethyl ether	<0.18		0.41	0.18	mg/Kg	☼	10/03/16 11:44	10/03/16 19:00	1
tert-Butylbenzene	<0.043		0.41	0.043	mg/Kg	☼	10/03/16 11:44	10/03/16 19:00	1
Tetrachloroethene	<0.056		0.41	0.056	mg/Kg	☼	10/03/16 11:44	10/03/16 19:00	1
Tetrahydrofuran	<0.38		4.1	0.38	mg/Kg	☼	10/03/16 11:44	10/03/16 19:00	1
Toluene	**0.14**	**J**	0.41	0.031	mg/Kg	☼	10/03/16 11:44	10/03/16 19:00	1
trans-1,2-Dichloroethene	<0.043		0.41	0.043	mg/Kg	☼	10/03/16 11:44	10/03/16 19:00	1
trans-1,3-Dichloropropene	<0.18		0.41	0.18	mg/Kg	☼	10/03/16 11:44	10/03/16 19:00	1
Trichloroethene	<0.091		0.41	0.091	mg/Kg	☼	10/03/16 11:44	10/03/16 19:00	1
Trichlorofluoromethane	<0.039		0.41	0.039	mg/Kg	☼	10/03/16 11:44	10/03/16 19:00	1

Client Sample ID: MH0272
Date Collected: 09/28/16 16:45
Date Received: 09/30/16 01:00

Lab Sample ID: 480-106761-2
Matrix: Solid
Percent Solids: 72.5

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	<0.051		0.41	0.051	mg/Kg	☼	10/03/16 11:44	10/03/16 19:00	1
Dibromomethane	<0.043		0.41	0.043	mg/Kg	☼	10/03/16 11:44	10/03/16 19:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*95*		*70 - 130*	*10/03/16 11:44*	*10/03/16 19:00*	*1*
1,2-Dichloroethane-d4 (Surr)	*97*		*70 - 130*	*10/03/16 11:44*	*10/03/16 19:00*	*1*
4-Bromofluorobenzene (Surr)	*95*		*70 - 130*	*10/03/16 11:44*	*10/03/16 19:00*	*1*
Dibromofluoromethane (Surr)	*101*		*70 - 130*	*10/03/16 11:44*	*10/03/16 19:00*	*1*

Method: MA VPH - Massachusetts - Volatile Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C5-C8 Aliphatics (adjusted)	**0.14**	**J**	0.34	0.014	mg/Kg	☼		10/07/16 15:38	1
C9-C12 Aliphatics (adjusted)	**1.2**		0.34	0.014	mg/Kg	☼		10/07/16 15:38	1

Method: MAVPH - Massachusetts - Volatile Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.011		0.057	0.011	mg/Kg	☼	10/05/16 17:40	10/06/16 15:03	1
C5-C8 Aliphatics (unadjusted)	**0.16**	**J B**	0.28	0.011	mg/Kg	☼	10/05/16 17:40	10/06/16 15:03	1
C9-C10 Aromatics	**0.34**		0.28	0.011	mg/Kg	☼	10/05/16 17:40	10/06/16 15:03	1
C9-C12 Aliphatics (unadjusted)	**1.3**	**B**	0.28	0.011	mg/Kg	☼	10/05/16 17:40	10/06/16 15:03	1
Ethylbenzene	**0.048**	**J**	0.057	0.011	mg/Kg	☼	10/05/16 17:40	10/06/16 15:03	1
Methyl tert-butyl ether	<0.011		0.057	0.011	mg/Kg	☼	10/05/16 17:40	10/06/16 15:03	1
m-Xylene & p-Xylene	<0.011		0.11	0.011	mg/Kg	☼	10/05/16 17:40	10/06/16 15:03	1
Naphthalene	**0.017**	**J**	0.057	0.011	mg/Kg	☼	10/05/16 17:40	10/06/16 15:03	1
o-Xylene	**0.043**	**J**	0.057	0.011	mg/Kg	☼	10/05/16 17:40	10/06/16 15:03	1
Toluene	**0.064**		0.057	0.011	mg/Kg	☼	10/05/16 17:40	10/06/16 15:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,5-Dibromotoluene (fid)	*102*		*35 - 168*	*10/05/16 17:40*	*10/06/16 15:03*	*1*
2,5-Dibromotoluene (pid)	*96*		*67 - 129*	*10/05/16 17:40*	*10/06/16 15:03*	*1*

Method: 8082 - Polychlorinated Biphenyls (GC/ECD)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.014		0.14	0.014	mg/Kg	☼	09/30/16 07:17	09/30/16 20:08	1
PCB-1221	<0.014		0.14	0.014	mg/Kg	☼	09/30/16 07:17	09/30/16 20:08	1
PCB-1232	<0.014		0.14	0.014	mg/Kg	☼	09/30/16 07:17	09/30/16 20:08	1
PCB-1242	<0.014		0.14	0.014	mg/Kg	☼	09/30/16 07:17	09/30/16 20:08	1
PCB-1248	<0.014		0.14	0.014	mg/Kg	☼	09/30/16 07:17	09/30/16 20:08	1
PCB-1254	**0.081**	**J**	0.14	0.014	mg/Kg	☼	09/30/16 07:17	09/30/16 20:08	1
PCB-1260	**0.077**	**J**	0.14	0.014	mg/Kg	☼	09/30/16 07:17	09/30/16 20:08	1
PCB-1262	<0.014		0.14	0.014	mg/Kg	☼	09/30/16 07:17	09/30/16 20:08	1
PCB-1268	<0.014		0.14	0.014	mg/Kg	☼	09/30/16 07:17	09/30/16 20:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*72*		*30 - 150*	*09/30/16 07:17*	*09/30/16 20:08*	*1*
DCB Decachlorobiphenyl	*82*		*30 - 150*	*09/30/16 07:17*	*09/30/16 20:08*	*1*

Method: MA-EPH - Massachusetts - Extractable Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.67		0.67	0.67	mg/Kg	☼	09/30/16 09:46	10/03/16 15:16	1
C11-C22 Aromatics (Adjusted)	**42**		6.9	6.9	mg/Kg	☼		10/04/16 13:33	1

Client: Woodard & Curran, Inc.
Project/Site: Tombarello Lawrence, MA

TestAmerica Job ID: 480-106761-1

Client Sample ID: MH0272
Date Collected: 09/28/16 16:45
Date Received: 09/30/16 01:00

Lab Sample ID: 480-106761-2
Matrix: Solid
Percent Solids: 72.5

Method: MA-EPH - Massachusetts - Extractable Petroleum Hydrocarbons (GC) (Continued)

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthylene	<0.67		0.67	0.67	mg/Kg	☼	09/30/16 09:46	10/03/16 15:16	1
Anthracene	<0.67		0.67	0.67	mg/Kg	☼	09/30/16 09:46	10/03/16 15:16	1
Benzo[a]anthracene	**1.0**		0.67	0.67	mg/Kg	☼	09/30/16 09:46	10/03/16 15:16	1
Benzo[a]pyrene	**0.88**		0.67	0.67	mg/Kg	☼	09/30/16 09:46	10/03/16 15:16	1
Benzo[b]fluoranthene	**1.2**		0.67	0.67	mg/Kg	☼	09/30/16 09:46	10/03/16 15:16	1
Benzo[g,h,i]perylene	**1.1**		0.67	0.67	mg/Kg	☼	09/30/16 09:46	10/03/16 15:16	1
Benzo[k]fluoranthene	<0.67		0.67	0.67	mg/Kg	☼	09/30/16 09:46	10/03/16 15:16	1
Chrysene	**1.1**		0.67	0.67	mg/Kg	☼	09/30/16 09:46	10/03/16 15:16	1
Dibenz(a,h)anthracene	<0.67		0.67	0.67	mg/Kg	☼	09/30/16 09:46	10/03/16 15:16	1
Fluoranthene	**2.4**		0.67	0.67	mg/Kg	☼	09/30/16 09:46	10/03/16 15:16	1
Fluorene	<0.67		0.67	0.67	mg/Kg	☼	09/30/16 09:46	10/03/16 15:16	1
Indeno[1,2,3-cd]pyrene	<0.67		0.67	0.67	mg/Kg	☼	09/30/16 09:46	10/03/16 15:16	1
2-Methylnaphthalene	<0.67		0.67	0.67	mg/Kg	☼	09/30/16 09:46	10/03/16 15:16	1
Naphthalene	<0.67		0.67	0.67	mg/Kg	☼	09/30/16 09:46	10/03/16 15:16	1
Phenanthrene	**2.5**		0.67	0.67	mg/Kg	☼	09/30/16 09:46	10/03/16 15:16	1
Pyrene	**2.2**		0.67	0.67	mg/Kg	☼	09/30/16 09:46	10/03/16 15:16	1
C11-C22 Aromatics (unadjusted)	**55**		6.7	6.7	mg/Kg	☼	09/30/16 09:46	10/03/16 15:16	1
C19-C36 Aliphatics	**8.5**	*	6.7	6.7	mg/Kg	☼	09/30/16 09:46	10/03/16 15:16	1
C9-C18 Aliphatics	**8.0**	*	6.7	6.7	mg/Kg	☼	09/30/16 09:46	10/03/16 15:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctadecane	*59*		*40 - 140*	*09/30/16 09:46*	*10/03/16 15:16*	*1*
2-Bromonaphthalene	*96*		*40 - 140*	*09/30/16 09:46*	*10/03/16 15:16*	*1*
2-Fluorobiphenyl	*119*		*40 - 140*	*09/30/16 09:46*	*10/03/16 15:16*	*1*
o-Terphenyl	*80*		*40 - 140*	*09/30/16 09:46*	*10/03/16 15:16*	*1*

Method: 6010 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	**0.28**	**J**	0.70	0.28	mg/Kg	☼	09/30/16 15:10	10/04/16 00:07	1
Arsenic	**4.1**		1.4	0.56	mg/Kg	☼	09/30/16 15:10	10/04/16 00:07	1
Barium	**88**	**B**	0.70	0.15	mg/Kg	☼	09/30/16 15:10	10/04/16 00:07	1
Beryllium	**0.27**	**J**	0.28	0.039	mg/Kg	☼	09/30/16 15:10	10/04/16 00:07	1
Cadmium	**0.34**		0.28	0.042	mg/Kg	☼	09/30/16 15:10	10/04/16 00:07	1
Chromium	**31**	**B**	0.70	0.28	mg/Kg	☼	09/30/16 15:10	10/04/16 00:07	1
Nickel	**82**		1.4	0.32	mg/Kg	☼	09/30/16 15:10	10/04/16 00:07	1
Thallium	<0.42		1.4	0.42	mg/Kg	☼	09/30/16 15:10	10/04/16 00:07	1
Vanadium	**30**		0.70	0.15	mg/Kg	☼	09/30/16 15:10	10/04/16 00:07	1
Zinc	**120**	**B**	3.5	0.90	mg/Kg	☼	09/30/16 15:10	10/04/16 00:07	1
Lead	**46**	**B**	0.70	0.34	mg/Kg	☼	09/30/16 15:10	10/04/16 00:07	1
Selenium	<0.56		0.70	0.56	mg/Kg	☼	09/30/16 15:10	10/04/16 00:07	1
Antimony	**1.8**		0.70	0.56	mg/Kg	☼	09/30/16 15:10	10/04/16 00:07	1

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.011		0.028	0.011	mg/Kg	☼	09/30/16 09:45	09/30/16 12:56	1

Surrogate Summary

Client: Woodard & Curran, Inc.
Project/Site: Tombarello Lawrence, MA

TestAmerica Job ID: 480-106761-1

Method: 8260C - Volatile Organic Compounds (GC/MS)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		TOL	12DCE	BFB	DBFM
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)	(70-130)
480-106761-1	MH0279	95	104	97	105
480-106761-1 - DL	MH0279	96	102	97	104
480-106761-2	MH0272	95	97	95	101
LCS 480-323528/1-A	Lab Control Sample	95	102	97	110
LCSD 480-323528/2-A	Lab Control Sample Dup	96	94	98	102
MB 480-323528/3-A	Method Blank	96	99	93	103

Surrogate Legend

TOL = Toluene-d8 (Surr)
12DCE = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)

Method: MAVPH - Massachusetts - Volatile Petroleum Hydrocarbons (GC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		25DBT2	25DBT1
Lab Sample ID	Client Sample ID	(35-168)	(67-129)
480-106761-1	MH0279	107	101
480-106761-2	MH0272	102	96
LCS 480-324003/2-A	Lab Control Sample	86	83
LCS 480-324003/2-A	Lab Control Sample	98	93
LCSD 480-324003/3-A	Lab Control Sample Dup	87	84
LCSD 480-324003/3-A	Lab Control Sample Dup	94	91
MB 480-324003/1-A	Method Blank	85	81
MB 480-324003/1-A	Method Blank	96	91

Surrogate Legend

25DBT = 2,5-Dibromotoluene (fid)

Method: 8082 - Polychlorinated Biphenyls (GC/ECD)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		TCX1	TCX2	DCB1	DCB2
Lab Sample ID	Client Sample ID	(30-150)	(30-150)	(30-150)	(30-150)
480-106761-1	MH0279	86	76	97	75
480-106761-2	MH0272	72		82	
LCS 480-323159/2-A	Lab Control Sample	93	85	108	91
LCSD 480-323159/3-A	Lab Control Sample Dup	92	81	107	92
MB 480-323159/1-A	Method Blank	90	94	107	92

Surrogate Legend

TCX = Tetrachloro-m-xylene
DCB = DCB Decachlorobiphenyl

Surrogate Summary

Client: Woodard & Curran, Inc.
Project/Site: Tombarello Lawrence, MA

TestAmerica Job ID: 480-106761-1

Method: MA-EPH - Massachusetts - Extractable Petroleum Hydrocarbons (GC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		1COD2	2BN1	FBP1	OTPH1
Lab Sample ID	Client Sample ID	(40-140)	(40-140)	(40-140)	(40-140)
480-106761-1	MH0279	64	105	125	76
480-106761-2	MH0272	59	96	119	80
LCS 480-323207/2-B	Lab Control Sample	99	98	130	102
LCSD 480-323207/3-B	Lab Control Sample Dup	73	86	119	96
MB 480-323207/1-B	Method Blank	78	92	129	105

Surrogate Legend

1COD = 1-Chlorooctadecane
2BN = 2-Bromonaphthalene
FBP = 2-Fluorobiphenyl
OTPH = o-Terphenyl

Method: 8260C - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 480-323528/3-A
Matrix: Solid
Analysis Batch: 323504

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 323528

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.050		0.50	0.050	mg/Kg		10/03/16 11:44	10/03/16 14:36	1
1,1,1-Trichloroethane	<0.036		0.50	0.036	mg/Kg		10/03/16 11:44	10/03/16 14:36	1
1,1,2,2-Tetrachloroethane	<0.081		0.50	0.081	mg/Kg		10/03/16 11:44	10/03/16 14:36	1
1,1,2-Trichloroethane	<0.065		0.50	0.065	mg/Kg		10/03/16 11:44	10/03/16 14:36	1
1,1-Dichloroethane	<0.061		0.50	0.061	mg/Kg		10/03/16 11:44	10/03/16 14:36	1
1,1-Dichloroethene	<0.061		0.50	0.061	mg/Kg		10/03/16 11:44	10/03/16 14:36	1
1,1-Dichloropropene	<0.071		0.50	0.071	mg/Kg		10/03/16 11:44	10/03/16 14:36	1
1,2,3-Trichlorobenzene	<0.053		0.50	0.053	mg/Kg		10/03/16 11:44	10/03/16 14:36	1
1,2,3-Trichloropropane	<0.051		0.50	0.051	mg/Kg		10/03/16 11:44	10/03/16 14:36	1
1,2,4-Trichlorobenzene	<0.030		0.50	0.030	mg/Kg		10/03/16 11:44	10/03/16 14:36	1
1,2,4-Trimethylbenzene	<0.096		0.50	0.096	mg/Kg		10/03/16 11:44	10/03/16 14:36	1
1,2-Dibromo-3-Chloropropane	<0.25		2.5	0.25	mg/Kg		10/03/16 11:44	10/03/16 14:36	1
1,2-Dichlorobenzene	<0.039		0.50	0.039	mg/Kg		10/03/16 11:44	10/03/16 14:36	1
1,2-Dichloroethane	<0.025		0.50	0.025	mg/Kg		10/03/16 11:44	10/03/16 14:36	1
1,2-Dichloropropane	<0.25		0.50	0.25	mg/Kg		10/03/16 11:44	10/03/16 14:36	1
1,3,5-Trimethylbenzene	<0.032		0.50	0.032	mg/Kg		10/03/16 11:44	10/03/16 14:36	1
1,3-Dichlorobenzene	<0.026		0.50	0.026	mg/Kg		10/03/16 11:44	10/03/16 14:36	1
1,3-Dichloropropane	<0.030		0.50	0.030	mg/Kg		10/03/16 11:44	10/03/16 14:36	1
1,4-Dichlorobenzene	<0.070		0.50	0.070	mg/Kg		10/03/16 11:44	10/03/16 14:36	1
1,4-Dioxane	<2.4		25	2.4	mg/Kg		10/03/16 11:44	10/03/16 14:36	1
2,2-Dichloropropane	<0.085		0.50	0.085	mg/Kg		10/03/16 11:44	10/03/16 14:36	1
2-Butanone (MEK)	<0.18		2.5	0.18	mg/Kg		10/03/16 11:44	10/03/16 14:36	1
2-Chlorotoluene	<0.033		0.50	0.033	mg/Kg		10/03/16 11:44	10/03/16 14:36	1
2-Hexanone	<0.25		2.5	0.25	mg/Kg		10/03/16 11:44	10/03/16 14:36	1
4-Chlorotoluene	<0.059		0.50	0.059	mg/Kg		10/03/16 11:44	10/03/16 14:36	1
4-Isopropyltoluene	<0.040		0.50	0.040	mg/Kg		10/03/16 11:44	10/03/16 14:36	1
4-Methyl-2-pentanone (MIBK)	<0.16		2.5	0.16	mg/Kg		10/03/16 11:44	10/03/16 14:36	1
Acetone	<0.42		25	0.42	mg/Kg		10/03/16 11:44	10/03/16 14:36	1
Benzene	<0.025		0.50	0.025	mg/Kg		10/03/16 11:44	10/03/16 14:36	1
Bromobenzene	<0.088		0.50	0.088	mg/Kg		10/03/16 11:44	10/03/16 14:36	1
Bromoform	<0.25		0.50	0.25	mg/Kg		10/03/16 11:44	10/03/16 14:36	1
Bromomethane	<0.045		0.50	0.045	mg/Kg		10/03/16 11:44	10/03/16 14:36	1
Carbon disulfide	<0.25		0.50	0.25	mg/Kg		10/03/16 11:44	10/03/16 14:36	1
Carbon tetrachloride	<0.048		0.50	0.048	mg/Kg		10/03/16 11:44	10/03/16 14:36	1
Chlorobenzene	<0.066		0.50	0.066	mg/Kg		10/03/16 11:44	10/03/16 14:36	1
Chlorobromomethane	<0.036		0.50	0.036	mg/Kg		10/03/16 11:44	10/03/16 14:36	1
Chlorodibromomethane	<0.064		0.50	0.064	mg/Kg		10/03/16 11:44	10/03/16 14:36	1
Chloroethane	<0.11		0.50	0.11	mg/Kg		10/03/16 11:44	10/03/16 14:36	1
Chloroform	<0.031		0.50	0.031	mg/Kg		10/03/16 11:44	10/03/16 14:36	1
Chloromethane	<0.030		0.50	0.030	mg/Kg		10/03/16 11:44	10/03/16 14:36	1
cis-1,2-Dichloroethene	<0.064		0.50	0.064	mg/Kg		10/03/16 11:44	10/03/16 14:36	1
cis-1,3-Dichloropropene	<0.072		0.50	0.072	mg/Kg		10/03/16 11:44	10/03/16 14:36	1
Dichlorobromomethane	<0.067		0.50	0.067	mg/Kg		10/03/16 11:44	10/03/16 14:36	1
Dichlorodifluoromethane	<0.041		0.50	0.041	mg/Kg		10/03/16 11:44	10/03/16 14:36	1
Ethyl ether	<0.21		0.50	0.21	mg/Kg		10/03/16 11:44	10/03/16 14:36	1
Ethylbenzene	<0.035		0.50	0.035	mg/Kg		10/03/16 11:44	10/03/16 14:36	1
Ethylene Dibromide	<0.064		0.50	0.064	mg/Kg		10/03/16 11:44	10/03/16 14:36	1
Hexachlorobutadiene	<0.059		0.50	0.059	mg/Kg		10/03/16 11:44	10/03/16 14:36	1

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 480-323528/3-A
Matrix: Solid
Analysis Batch: 323504

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 323528

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Isopropyl ether	<0.25		0.50	0.25	mg/Kg		10/03/16 11:44	10/03/16 14:36	1
Isopropylbenzene	<0.075		0.50	0.075	mg/Kg		10/03/16 11:44	10/03/16 14:36	1
Methyl tert-butyl ether	<0.049		0.50	0.049	mg/Kg		10/03/16 11:44	10/03/16 14:36	1
Methylene Chloride	<0.23		0.50	0.23	mg/Kg		10/03/16 11:44	10/03/16 14:36	1
m-Xylene & p-Xylene	<0.084		0.50	0.084	mg/Kg		10/03/16 11:44	10/03/16 14:36	1
Naphthalene	<0.067		2.5	0.067	mg/Kg		10/03/16 11:44	10/03/16 14:36	1
n-Butylbenzene	<0.044		0.50	0.044	mg/Kg		10/03/16 11:44	10/03/16 14:36	1
N-Propylbenzene	<0.040		0.50	0.040	mg/Kg		10/03/16 11:44	10/03/16 14:36	1
o-Xylene	<0.065		0.50	0.065	mg/Kg		10/03/16 11:44	10/03/16 14:36	1
sec-Butylbenzene	<0.044		0.50	0.044	mg/Kg		10/03/16 11:44	10/03/16 14:36	1
Styrene	<0.025		0.50	0.025	mg/Kg		10/03/16 11:44	10/03/16 14:36	1
Tert-amyl methyl ether	<0.13		0.50	0.13	mg/Kg		10/03/16 11:44	10/03/16 14:36	1
Tert-butyl ethyl ether	<0.22		0.50	0.22	mg/Kg		10/03/16 11:44	10/03/16 14:36	1
tert-Butylbenzene	<0.052		0.50	0.052	mg/Kg		10/03/16 11:44	10/03/16 14:36	1
Tetrachloroethene	<0.067		0.50	0.067	mg/Kg		10/03/16 11:44	10/03/16 14:36	1
Tetrahydrofuran	<0.46		5.0	0.46	mg/Kg		10/03/16 11:44	10/03/16 14:36	1
Toluene	<0.038		0.50	0.038	mg/Kg		10/03/16 11:44	10/03/16 14:36	1
trans-1,2-Dichloroethene	<0.052		0.50	0.052	mg/Kg		10/03/16 11:44	10/03/16 14:36	1
trans-1,3-Dichloropropene	<0.22		0.50	0.22	mg/Kg		10/03/16 11:44	10/03/16 14:36	1
Trichloroethene	<0.11		0.50	0.11	mg/Kg		10/03/16 11:44	10/03/16 14:36	1
Trichlorofluoromethane	<0.047		0.50	0.047	mg/Kg		10/03/16 11:44	10/03/16 14:36	1
Vinyl chloride	<0.061		0.50	0.061	mg/Kg		10/03/16 11:44	10/03/16 14:36	1
Dibromomethane	<0.052		0.50	0.052	mg/Kg		10/03/16 11:44	10/03/16 14:36	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*96*		*70 - 130*	*10/03/16 11:44*	*10/03/16 14:36*	*1*
1,2-Dichloroethane-d4 (Surr)	*99*		*70 - 130*	*10/03/16 11:44*	*10/03/16 14:36*	*1*
4-Bromofluorobenzene (Surr)	*93*		*70 - 130*	*10/03/16 11:44*	*10/03/16 14:36*	*1*
Dibromofluoromethane (Surr)	*103*		*70 - 130*	*10/03/16 11:44*	*10/03/16 14:36*	*1*

Lab Sample ID: LCS 480-323528/1-A
Matrix: Solid
Analysis Batch: 323504

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 323528

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	2.50	2.39		mg/Kg		96	70 - 130
1,1,1-Trichloroethane	2.50	2.54		mg/Kg		101	70 - 130
1,1,2,2-Tetrachloroethane	2.50	2.06		mg/Kg		82	70 - 130
1,1,2-Trichloroethane	2.50	2.24		mg/Kg		89	70 - 130
1,1-Dichloroethane	2.50	2.56		mg/Kg		102	70 - 130
1,1-Dichloroethene	2.50	2.41		mg/Kg		96	70 - 130
1,1-Dichloropropene	2.50	2.46		mg/Kg		98	70 - 130
1,2,3-Trichlorobenzene	2.50	2.17		mg/Kg		87	70 - 130
1,2,3-Trichloropropane	2.50	1.88		mg/Kg		75	70 - 130
1,2,4-Trichlorobenzene	2.50	2.23		mg/Kg		89	70 - 130
1,2,4-Trimethylbenzene	2.50	2.36		mg/Kg		94	70 - 130
1,2-Dibromo-3-Chloropropane	2.50	1.93	J	mg/Kg		77	70 - 130
1,2-Dichlorobenzene	2.50	2.28		mg/Kg		91	70 - 130

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 480-323528/1-A
Matrix: Solid
Analysis Batch: 323504

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 323528

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2-Dichloroethane	2.50	2.33		mg/Kg		93	70 - 130
1,2-Dichloropropane	2.50	2.50		mg/Kg		100	70 - 130
1,3,5-Trimethylbenzene	2.50	2.40		mg/Kg		96	70 - 130
1,3-Dichlorobenzene	2.50	2.26		mg/Kg		91	70 - 130
1,3-Dichloropropane	2.50	2.09		mg/Kg		84	70 - 130
1,4-Dichlorobenzene	2.50	2.34		mg/Kg		94	70 - 130
1,4-Dioxane	50.0	37.2		mg/Kg		74	70 - 130
2,2-Dichloropropane	2.50	2.64		mg/Kg		106	70 - 130
2-Butanone (MEK)	12.5	9.67		mg/Kg		77	70 - 130
2-Chlorotoluene	2.50	2.27		mg/Kg		91	70 - 130
2-Hexanone	12.5	9.75		mg/Kg		78	70 - 130
4-Chlorotoluene	2.50	2.45		mg/Kg		98	70 - 130
4-Isopropyltoluene	2.50	2.34		mg/Kg		94	70 - 130
4-Methyl-2-pentanone (MIBK)	12.5	9.56		mg/Kg		76	70 - 130
Acetone	12.5	8.55	J *	mg/Kg		68	70 - 130
Benzene	2.50	2.54		mg/Kg		102	70 - 130
Bromobenzene	2.50	2.30		mg/Kg		92	70 - 130
Bromoform	2.50	2.29		mg/Kg		92	70 - 130
Bromomethane	2.50	2.11		mg/Kg		84	70 - 130
Carbon disulfide	2.50	2.49		mg/Kg		100	70 - 130
Carbon tetrachloride	2.50	2.51		mg/Kg		100	70 - 130
Chlorobenzene	2.50	2.35		mg/Kg		94	70 - 130
Chlorobromomethane	2.50	2.57		mg/Kg		103	70 - 130
Chlorodibromomethane	2.50	2.45		mg/Kg		98	70 - 130
Chloroethane	2.50	1.85		mg/Kg		74	70 - 130
Chloroform	2.50	2.44		mg/Kg		98	70 - 130
Chloromethane	2.50	2.74		mg/Kg		110	70 - 130
cis-1,2-Dichloroethene	2.50	2.57		mg/Kg		103	70 - 130
cis-1,3-Dichloropropene	2.50	2.72		mg/Kg		109	70 - 130
Dichlorobromomethane	2.50	2.54		mg/Kg		102	70 - 130
Dichlorodifluoromethane	2.50	2.94		mg/Kg		117	70 - 130
Ethyl ether	2.50	2.30		mg/Kg		92	70 - 130
Ethylbenzene	2.50	2.29		mg/Kg		92	70 - 130
Ethylene Dibromide	2.50	2.21		mg/Kg		88	70 - 130
Hexachlorobutadiene	2.50	2.40		mg/Kg		96	70 - 130
Isopropyl ether	2.50	2.28		mg/Kg		91	70 - 130
Isopropylbenzene	2.50	2.32		mg/Kg		93	70 - 130
Methyl tert-butyl ether	2.50	2.38		mg/Kg		95	70 - 130
Methylene Chloride	2.50	2.78		mg/Kg		111	70 - 130
m-Xylene & p-Xylene	2.50	2.33		mg/Kg		93	70 - 130
Naphthalene	2.50	2.05	J	mg/Kg		82	70 - 130
n-Butylbenzene	2.50	2.28		mg/Kg		91	70 - 130
N-Propylbenzene	2.50	2.34		mg/Kg		93	70 - 130
o-Xylene	2.50	2.40		mg/Kg		96	70 - 130
sec-Butylbenzene	2.50	2.29		mg/Kg		92	70 - 130
Styrene	2.50	2.38		mg/Kg		95	70 - 130
Tert-amyl methyl ether	2.50	2.23		mg/Kg		89	70 - 130
Tert-butyl ethyl ether	2.50	2.25		mg/Kg		90	70 - 130

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 480-323528/1-A
Matrix: Solid
Analysis Batch: 323504

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 323528

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
tert-Butylbenzene	2.50	2.29		mg/Kg		92	70 - 130
Tetrachloroethene	2.50	2.37		mg/Kg		95	70 - 130
Tetrahydrofuran	5.00	5.78		mg/Kg		116	70 - 130
Toluene	2.50	2.24		mg/Kg		90	70 - 130
trans-1,2-Dichloroethene	2.50	2.55		mg/Kg		102	70 - 130
trans-1,3-Dichloropropene	2.50	2.31		mg/Kg		93	70 - 130
Trichloroethene	2.50	2.65		mg/Kg		106	70 - 130
Trichlorofluoromethane	2.50	2.78		mg/Kg		111	70 - 130
Vinyl chloride	2.50	2.77		mg/Kg		111	70 - 130
Dibromomethane	2.50	2.43		mg/Kg		97	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*95*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*102*		*70 - 130*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*
Dibromofluoromethane (Surr)	*110*		*70 - 130*

Lab Sample ID: LCSD 480-323528/2-A
Matrix: Solid
Analysis Batch: 323504

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 323528

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	2.50	2.38		mg/Kg		95	70 - 130	1	20
1,1,1-Trichloroethane	2.50	2.53		mg/Kg		101	70 - 130	0	20
1,1,2,2-Tetrachloroethane	2.50	2.07		mg/Kg		83	70 - 130	1	20
1,1,2-Trichloroethane	2.50	2.23		mg/Kg		89	70 - 130	0	20
1,1-Dichloroethane	2.50	2.52		mg/Kg		101	70 - 130	2	20
1,1-Dichloroethene	2.50	2.36		mg/Kg		94	70 - 130	2	20
1,1-Dichloropropene	2.50	2.42		mg/Kg		97	70 - 130	2	20
1,2,3-Trichlorobenzene	2.50	2.11		mg/Kg		84	70 - 130	3	20
1,2,3-Trichloropropane	2.50	1.87		mg/Kg		75	70 - 130	1	20
1,2,4-Trichlorobenzene	2.50	2.25		mg/Kg		90	70 - 130	1	20
1,2,4-Trimethylbenzene	2.50	2.39		mg/Kg		95	70 - 130	1	20
1,2-Dibromo-3-Chloropropane	2.50	2.07	J	mg/Kg		83	70 - 130	7	20
1,2-Dichlorobenzene	2.50	2.29		mg/Kg		92	70 - 130	1	20
1,2-Dichloroethane	2.50	2.23		mg/Kg		89	70 - 130	4	20
1,2-Dichloropropane	2.50	2.33		mg/Kg		93	70 - 130	7	20
1,3,5-Trimethylbenzene	2.50	2.45		mg/Kg		98	70 - 130	2	20
1,3-Dichlorobenzene	2.50	2.34		mg/Kg		93	70 - 130	3	20
1,3-Dichloropropane	2.50	2.08		mg/Kg		83	70 - 130	0	20
1,4-Dichlorobenzene	2.50	2.32		mg/Kg		93	70 - 130	1	20
1,4-Dioxane	50.0	36.8		mg/Kg		74	70 - 130	1	20
2,2-Dichloropropane	2.50	2.56		mg/Kg		102	70 - 130	3	20
2-Butanone (MEK)	12.5	9.20		mg/Kg		74	70 - 130	5	20
2-Chlorotoluene	2.50	2.35		mg/Kg		94	70 - 130	3	20
2-Hexanone	12.5	9.24		mg/Kg		74	70 - 130	5	20
4-Chlorotoluene	2.50	2.50		mg/Kg		100	70 - 130	2	20
4-Isopropyltoluene	2.50	2.47		mg/Kg		99	70 - 130	6	20

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 480-323528/2-A
Matrix: Solid
Analysis Batch: 323504

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 323528

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
4-Methyl-2-pentanone (MIBK)	12.5	9.38		mg/Kg		75	70 - 130	2	20
Acetone	12.5	7.59	J *	mg/Kg		61	70 - 130	12	20
Benzene	2.50	2.43		mg/Kg		97	70 - 130	4	20
Bromobenzene	2.50	2.37		mg/Kg		95	70 - 130	3	20
Bromoform	2.50	2.23		mg/Kg		89	70 - 130	3	20
Bromomethane	2.50	2.04		mg/Kg		82	70 - 130	3	20
Carbon disulfide	2.50	2.41		mg/Kg		96	70 - 130	3	20
Carbon tetrachloride	2.50	2.51		mg/Kg		101	70 - 130	0	20
Chlorobenzene	2.50	2.34		mg/Kg		93	70 - 130	0	20
Chlorobromomethane	2.50	2.38		mg/Kg		95	70 - 130	7	20
Chlorodibromomethane	2.50	2.40		mg/Kg		96	70 - 130	2	20
Chloroethane	2.50	1.74	*	mg/Kg		69	70 - 130	6	20
Chloroform	2.50	2.37		mg/Kg		95	70 - 130	3	20
Chloromethane	2.50	2.71		mg/Kg		108	70 - 130	1	20
cis-1,2-Dichloroethene	2.50	2.42		mg/Kg		97	70 - 130	6	20
cis-1,3-Dichloropropene	2.50	2.61		mg/Kg		104	70 - 130	4	20
Dichlorobromomethane	2.50	2.44		mg/Kg		98	70 - 130	4	20
Dichlorodifluoromethane	2.50	2.98		mg/Kg		119	70 - 130	1	20
Ethyl ether	2.50	2.22		mg/Kg		89	70 - 130	3	20
Ethylbenzene	2.50	2.33		mg/Kg		93	70 - 130	2	20
Ethylene Dibromide	2.50	2.12		mg/Kg		85	70 - 130	4	20
Hexachlorobutadiene	2.50	2.47		mg/Kg		99	70 - 130	3	20
Isopropyl ether	2.50	2.17		mg/Kg		87	70 - 130	5	20
Isopropylbenzene	2.50	2.37		mg/Kg		95	70 - 130	2	20
Methyl tert-butyl ether	2.50	2.29		mg/Kg		92	70 - 130	4	20
Methylene Chloride	2.50	2.67		mg/Kg		107	70 - 130	4	20
m-Xylene & p-Xylene	2.50	2.37		mg/Kg		95	70 - 130	2	20
Naphthalene	2.50	2.00	J	mg/Kg		80	70 - 130	3	20
n-Butylbenzene	2.50	2.37		mg/Kg		95	70 - 130	4	20
N-Propylbenzene	2.50	2.37		mg/Kg		95	70 - 130	1	20
o-Xylene	2.50	2.43		mg/Kg		97	70 - 130	1	20
sec-Butylbenzene	2.50	2.35		mg/Kg		94	70 - 130	2	20
Styrene	2.50	2.42		mg/Kg		97	70 - 130	2	20
Tert-amyl methyl ether	2.50	2.10		mg/Kg		84	70 - 130	6	20
Tert-butyl ethyl ether	2.50	2.15		mg/Kg		86	70 - 130	4	20
tert-Butylbenzene	2.50	2.39		mg/Kg		96	70 - 130	4	20
Tetrachloroethene	2.50	2.48		mg/Kg		99	70 - 130	5	20
Tetrahydrofuran	5.00	5.33		mg/Kg		107	70 - 130	8	20
Toluene	2.50	2.27		mg/Kg		91	70 - 130	1	20
trans-1,2-Dichloroethene	2.50	2.49		mg/Kg		100	70 - 130	3	20
trans-1,3-Dichloropropene	2.50	2.33		mg/Kg		93	70 - 130	1	20
Trichloroethene	2.50	2.46		mg/Kg		98	70 - 130	7	20
Trichlorofluoromethane	2.50	2.85		mg/Kg		114	70 - 130	3	20
Vinyl chloride	2.50	2.74		mg/Kg		109	70 - 130	1	20
Dibromomethane	2.50	2.27		mg/Kg		91	70 - 130	7	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*96*		*70 - 130*

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 480-323528/2-A
Matrix: Solid
Analysis Batch: 323504

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 323528

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	94		70 - 130
4-Bromofluorobenzene (Surr)	98		70 - 130
Dibromofluoromethane (Surr)	102		70 - 130

Method: MAVPH - Massachusetts - Volatile Petroleum Hydrocarbons (GC)

Lab Sample ID: MB 480-324003/1-A
Matrix: Solid
Analysis Batch: 324007

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 324003

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.010		0.050	0.010	mg/Kg		10/05/16 17:40	10/05/16 19:23	1
C5-C8 Aliphatics (unadjusted)	0.0905	J	0.25	0.010	mg/Kg		10/05/16 17:40	10/05/16 19:23	1
C9-C10 Aromatics	<0.010		0.25	0.010	mg/Kg		10/05/16 17:40	10/05/16 19:23	1
C9-C12 Aliphatics (unadjusted)	0.0323	J	0.25	0.010	mg/Kg		10/05/16 17:40	10/05/16 19:23	1
Ethylbenzene	<0.010		0.050	0.010	mg/Kg		10/05/16 17:40	10/05/16 19:23	1
Methyl tert-butyl ether	<0.010		0.050	0.010	mg/Kg		10/05/16 17:40	10/05/16 19:23	1
m-Xylene & p-Xylene	<0.010		0.10	0.010	mg/Kg		10/05/16 17:40	10/05/16 19:23	1
Naphthalene	<0.010		0.050	0.010	mg/Kg		10/05/16 17:40	10/05/16 19:23	1
o-Xylene	<0.010		0.050	0.010	mg/Kg		10/05/16 17:40	10/05/16 19:23	1
Toluene	<0.010		0.050	0.010	mg/Kg		10/05/16 17:40	10/05/16 19:23	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,5-Dibromotoluene (fid)	85		35 - 168	10/05/16 17:40	10/05/16 19:23	1
2,5-Dibromotoluene (pid)	81		67 - 129	10/05/16 17:40	10/05/16 19:23	1

Lab Sample ID: MB 480-324003/1-A
Matrix: Solid
Analysis Batch: 324160

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 324003

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.010		0.050	0.010	mg/Kg		10/05/16 17:40	10/06/16 12:15	1
C5-C8 Aliphatics (unadjusted)	0.0867	J	0.25	0.010	mg/Kg		10/05/16 17:40	10/06/16 12:15	1
C9-C10 Aromatics	<0.010		0.25	0.010	mg/Kg		10/05/16 17:40	10/06/16 12:15	1
C9-C12 Aliphatics (unadjusted)	0.0415	J	0.25	0.010	mg/Kg		10/05/16 17:40	10/06/16 12:15	1
Ethylbenzene	<0.010		0.050	0.010	mg/Kg		10/05/16 17:40	10/06/16 12:15	1
Methyl tert-butyl ether	<0.010		0.050	0.010	mg/Kg		10/05/16 17:40	10/06/16 12:15	1
m-Xylene & p-Xylene	<0.010		0.10	0.010	mg/Kg		10/05/16 17:40	10/06/16 12:15	1
Naphthalene	<0.010		0.050	0.010	mg/Kg		10/05/16 17:40	10/06/16 12:15	1
o-Xylene	<0.010		0.050	0.010	mg/Kg		10/05/16 17:40	10/06/16 12:15	1
Toluene	<0.010		0.050	0.010	mg/Kg		10/05/16 17:40	10/06/16 12:15	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,5-Dibromotoluene (fid)	96		35 - 168	10/05/16 17:40	10/06/16 12:15	1
2,5-Dibromotoluene (pid)	91		67 - 129	10/05/16 17:40	10/06/16 12:15	1

Method: MAVPH - Massachusetts - Volatile Petroleum Hydrocarbons (GC) (Continued)

Lab Sample ID: LCS 480-324003/2-A
Matrix: Solid
Analysis Batch: 324007

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 324003

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	0.250	0.263		mg/Kg		105	70 - 130
C5-C8 Aliphatics (unadjusted)	0.750	0.714		mg/Kg		95	70 - 130
C9-C10 Aromatics	0.250	0.255		mg/Kg		102	70 - 130
C9-C12 Aliphatics (unadjusted)	0.750	0.767		mg/Kg		102	70 - 130
Ethylbenzene	0.250	0.264		mg/Kg		106	70 - 130
Methyl tert-butyl ether	0.250	0.236		mg/Kg		94	70 - 130
m-Xylene & p-Xylene	0.500	0.532		mg/Kg		106	70 - 130
Naphthalene	0.250	0.219		mg/Kg		88	70 - 130
o-Xylene	0.250	0.264		mg/Kg		106	70 - 130
Toluene	0.250	0.267		mg/Kg		107	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2,5-Dibromotoluene (fid)	*86*		*35 - 168*
2,5-Dibromotoluene (pid)	*83*		*67 - 129*

Lab Sample ID: LCS 480-324003/2-A
Matrix: Solid
Analysis Batch: 324160

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 324003

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	0.250	0.258		mg/Kg		103	70 - 130
C5-C8 Aliphatics (unadjusted)	0.750	0.656		mg/Kg		87	70 - 130
C9-C10 Aromatics	0.250	0.252		mg/Kg		101	70 - 130
C9-C12 Aliphatics (unadjusted)	0.750	0.812		mg/Kg		108	70 - 130
Ethylbenzene	0.250	0.260		mg/Kg		104	70 - 130
Methyl tert-butyl ether	0.250	0.227		mg/Kg		91	70 - 130
m-Xylene & p-Xylene	0.500	0.528		mg/Kg		106	70 - 130
Naphthalene	0.250	0.218		mg/Kg		87	70 - 130
o-Xylene	0.250	0.259		mg/Kg		104	70 - 130
Toluene	0.250	0.261		mg/Kg		104	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2,5-Dibromotoluene (fid)	*98*		*35 - 168*
2,5-Dibromotoluene (pid)	*93*		*67 - 129*

Lab Sample ID: LCSD 480-324003/3-A
Matrix: Solid
Analysis Batch: 324007

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 324003

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	0.250	0.261		mg/Kg		105	70 - 130	1	25
C5-C8 Aliphatics (unadjusted)	0.750	0.697		mg/Kg		93	70 - 130	2	25
C9-C10 Aromatics	0.250	0.252		mg/Kg		101	70 - 130	1	25
C9-C12 Aliphatics (unadjusted)	0.750	0.761		mg/Kg		102	70 - 130	1	25
Ethylbenzene	0.250	0.263		mg/Kg		105	70 - 130	0	25
Methyl tert-butyl ether	0.250	0.235		mg/Kg		94	70 - 130	0	25
m-Xylene & p-Xylene	0.500	0.524		mg/Kg		105	70 - 130	2	25

Method: MAVPH - Massachusetts - Volatile Petroleum Hydrocarbons (GC) (Continued)

Lab Sample ID: LCSD 480-324003/3-A
Matrix: Solid
Analysis Batch: 324007

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 324003

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Naphthalene			0.250	0.222		mg/Kg		89	70 - 130	1	25
o-Xylene			0.250	0.264		mg/Kg		106	70 - 130	0	25
Toluene			0.250	0.264		mg/Kg		106	70 - 130	1	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2,5-Dibromotoluene (fid)	*87*		*35 - 168*
2,5-Dibromotoluene (pid)	*84*		*67 - 129*

Lab Sample ID: LCSD 480-324003/3-A
Matrix: Solid
Analysis Batch: 324160

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 324003

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene			0.250	0.253		mg/Kg		101	70 - 130	2	25
C5-C8 Aliphatics (unadjusted)			0.750	0.640		mg/Kg		85	70 - 130	2	25
C9-C10 Aromatics			0.250	0.248	J	mg/Kg		99	70 - 130	2	25
C9-C12 Aliphatics (unadjusted)			0.750	0.797		mg/Kg		106	70 - 130	2	25
Ethylbenzene			0.250	0.257		mg/Kg		103	70 - 130	1	25
Methyl tert-butyl ether			0.250	0.221		mg/Kg		89	70 - 130	3	25
m-Xylene & p-Xylene			0.500	0.516		mg/Kg		103	70 - 130	2	25
Naphthalene			0.250	0.214		mg/Kg		85	70 - 130	2	25
o-Xylene			0.250	0.256		mg/Kg		102	70 - 130	1	25
Toluene			0.250	0.256		mg/Kg		103	70 - 130	2	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2,5-Dibromotoluene (fid)	*94*		*35 - 168*
2,5-Dibromotoluene (pid)	*91*		*67 - 129*

Method: 8082 - Polychlorinated Biphenyls (GC/ECD)

Lab Sample ID: MB 480-323159/1-A
Matrix: Solid
Analysis Batch: 323272

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 323159

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.0095		0.095	0.0095	mg/Kg		09/30/16 07:17	09/30/16 18:49	1
PCB-1221	<0.0095		0.095	0.0095	mg/Kg		09/30/16 07:17	09/30/16 18:49	1
PCB-1232	<0.0095		0.095	0.0095	mg/Kg		09/30/16 07:17	09/30/16 18:49	1
PCB-1242	<0.0095		0.095	0.0095	mg/Kg		09/30/16 07:17	09/30/16 18:49	1
PCB-1248	<0.0095		0.095	0.0095	mg/Kg		09/30/16 07:17	09/30/16 18:49	1
PCB-1254	<0.0095		0.095	0.0095	mg/Kg		09/30/16 07:17	09/30/16 18:49	1
PCB-1260	<0.0095		0.095	0.0095	mg/Kg		09/30/16 07:17	09/30/16 18:49	1
PCB-1262	<0.0095		0.095	0.0095	mg/Kg		09/30/16 07:17	09/30/16 18:49	1
PCB-1268	<0.0095		0.095	0.0095	mg/Kg		09/30/16 07:17	09/30/16 18:49	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*90*		*30 - 150*	*09/30/16 07:17*	*09/30/16 18:49*	*1*

Method: 8082 - Polychlorinated Biphenyls (GC/ECD) (Continued)

Lab Sample ID: MB 480-323159/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 323272 — **Prep Batch: 323159**

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	94		30 - 150	09/30/16 07:17	09/30/16 18:49	1
DCB Decachlorobiphenyl	107		30 - 150	09/30/16 07:17	09/30/16 18:49	1
DCB Decachlorobiphenyl	92		30 - 150	09/30/16 07:17	09/30/16 18:49	1

Lab Sample ID: LCS 480-323159/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 323272 — **Prep Batch: 323159**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
PCB-1016			0.956	0.928		mg/Kg		97	40 - 140		
PCB-1260			0.956	0.902		mg/Kg		94	40 - 140		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Tetrachloro-m-xylene	93		30 - 150
Tetrachloro-m-xylene	85		30 - 150
DCB Decachlorobiphenyl	108		30 - 150
DCB Decachlorobiphenyl	91		30 - 150

Lab Sample ID: LCSD 480-323159/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 323272 — **Prep Batch: 323159**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
PCB-1016			0.965	0.906		mg/Kg		94	40 - 140	2	30
PCB-1260			0.965	0.904		mg/Kg		94	40 - 140	0	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Tetrachloro-m-xylene	92		30 - 150
Tetrachloro-m-xylene	81		30 - 150
DCB Decachlorobiphenyl	107		30 - 150
DCB Decachlorobiphenyl	92		30 - 150

Method: MA-EPH - Massachusetts - Extractable Petroleum Hydrocarbons (GC)

Lab Sample ID: MB 480-323207/1-B — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 323519 — **Prep Batch: 323207**

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.49		0.49	0.49	mg/Kg		09/30/16 09:46	10/03/16 13:20	1
Acenaphthylene	<0.49		0.49	0.49	mg/Kg		09/30/16 09:46	10/03/16 13:20	1
Anthracene	<0.49		0.49	0.49	mg/Kg		09/30/16 09:46	10/03/16 13:20	1
Benzo[a]anthracene	<0.49		0.49	0.49	mg/Kg		09/30/16 09:46	10/03/16 13:20	1
Benzo[a]pyrene	<0.49		0.49	0.49	mg/Kg		09/30/16 09:46	10/03/16 13:20	1
Benzo[b]fluoranthene	<0.49		0.49	0.49	mg/Kg		09/30/16 09:46	10/03/16 13:20	1
Benzo[g,h,i]perylene	<0.49		0.49	0.49	mg/Kg		09/30/16 09:46	10/03/16 13:20	1
Benzo[k]fluoranthene	<0.49		0.49	0.49	mg/Kg		09/30/16 09:46	10/03/16 13:20	1

Method: MA-EPH - Massachusetts - Extractable Petroleum Hydrocarbons (GC) (Continued)

Lab Sample ID: MB 480-323207/1-B
Matrix: Solid
Analysis Batch: 323519

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 323207

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chrysene	<0.49		0.49	0.49	mg/Kg		09/30/16 09:46	10/03/16 13:20	1
Dibenz(a,h)anthracene	<0.49		0.49	0.49	mg/Kg		09/30/16 09:46	10/03/16 13:20	1
Fluoranthene	<0.49		0.49	0.49	mg/Kg		09/30/16 09:46	10/03/16 13:20	1
Fluorene	<0.49		0.49	0.49	mg/Kg		09/30/16 09:46	10/03/16 13:20	1
Indeno[1,2,3-cd]pyrene	<0.49		0.49	0.49	mg/Kg		09/30/16 09:46	10/03/16 13:20	1
2-Methylnaphthalene	<0.49		0.49	0.49	mg/Kg		09/30/16 09:46	10/03/16 13:20	1
Naphthalene	<0.49		0.49	0.49	mg/Kg		09/30/16 09:46	10/03/16 13:20	1
Phenanthrene	<0.49		0.49	0.49	mg/Kg		09/30/16 09:46	10/03/16 13:20	1
Pyrene	<0.49		0.49	0.49	mg/Kg		09/30/16 09:46	10/03/16 13:20	1
C11-C22 Aromatics (unadjusted)	<4.9		4.9	4.9	mg/Kg		09/30/16 09:46	10/03/16 13:20	1
C19-C36 Aliphatics	<4.9		4.9	4.9	mg/Kg		09/30/16 09:46	10/03/16 13:20	1
C9-C18 Aliphatics	<4.9		4.9	4.9	mg/Kg		09/30/16 09:46	10/03/16 13:20	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctadecane	*78*		*40 - 140*	*09/30/16 09:46*	*10/03/16 13:20*	*1*
2-Bromonaphthalene	*92*		*40 - 140*	*09/30/16 09:46*	*10/03/16 13:20*	*1*
2-Fluorobiphenyl	*129*		*40 - 140*	*09/30/16 09:46*	*10/03/16 13:20*	*1*
o-Terphenyl	*105*		*40 - 140*	*09/30/16 09:46*	*10/03/16 13:20*	*1*

Lab Sample ID: LCS 480-323207/2-B
Matrix: Solid
Analysis Batch: 323519

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 323207

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	4.91	5.10		mg/Kg		104	40 - 140
Acenaphthylene	4.91	5.15		mg/Kg		105	40 - 140
Anthracene	4.91	5.36		mg/Kg		109	40 - 140
Benzo[a]anthracene	4.91	5.02		mg/Kg		102	40 - 140
Benzo[a]pyrene	4.91	4.83		mg/Kg		98	40 - 140
Benzo[b]fluoranthene	4.91	4.97		mg/Kg		101	40 - 140
Benzo[g,h,i]perylene	4.91	3.24		mg/Kg		66	40 - 140
Benzo[k]fluoranthene	4.91	5.10		mg/Kg		104	40 - 140
Chrysene	4.91	5.17		mg/Kg		105	40 - 140
Dibenz(a,h)anthracene	4.91	4.15		mg/Kg		84	40 - 140
Fluoranthene	4.91	5.02		mg/Kg		102	40 - 140
Fluorene	4.91	5.22		mg/Kg		106	40 - 140
Indeno[1,2,3-cd]pyrene	4.91	3.58		mg/Kg		73	40 - 140
2-Methylnaphthalene	4.91	4.84		mg/Kg		99	40 - 140
Naphthalene	4.91	4.51		mg/Kg		92	40 - 140
Phenanthrene	4.91	5.35		mg/Kg		109	40 - 140
Pyrene	4.91	5.17		mg/Kg		105	40 - 140
C11-C22 Aromatics (unadjusted)	83.5	84.6		mg/Kg		101	40 - 140
C19-C36 Aliphatics	39.3	46.0		mg/Kg		117	40 - 140
C9-C18 Aliphatics	29.5	32.9		mg/Kg		112	40 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctadecane	*99*		*40 - 140*

Method: MA-EPH - Massachusetts - Extractable Petroleum Hydrocarbons (GC) (Continued)

Lab Sample ID: LCS 480-323207/2-B
Matrix: Solid
Analysis Batch: 323519

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 323207

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Bromonaphthalene	98		40 - 140
2-Fluorobiphenyl	130		40 - 140
o-Terphenyl	102		40 - 140

Lab Sample ID: LCSD 480-323207/3-B
Matrix: Solid
Analysis Batch: 323519

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 323207

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acenaphthene	4.90	4.77		mg/Kg		97	40 - 140	7	25
Acenaphthylene	4.90	4.74		mg/Kg		97	40 - 140	8	25
Anthracene	4.90	5.26		mg/Kg		107	40 - 140	2	25
Benzo[a]anthracene	4.90	4.78		mg/Kg		97	40 - 140	5	25
Benzo[a]pyrene	4.90	4.51		mg/Kg		92	40 - 140	7	25
Benzo[b]fluoranthene	4.90	4.71		mg/Kg		96	40 - 140	5	25
Benzo[g,h,i]perylene	4.90	3.33		mg/Kg		68	40 - 140	3	25
Benzo[k]fluoranthene	4.90	5.01		mg/Kg		102	40 - 140	2	25
Chrysene	4.90	4.92		mg/Kg		100	40 - 140	5	25
Dibenz(a,h)anthracene	4.90	4.09		mg/Kg		83	40 - 140	1	25
Fluoranthene	4.90	4.74		mg/Kg		97	40 - 140	6	25
Fluorene	4.90	4.88		mg/Kg		100	40 - 140	7	25
Indeno[1,2,3-cd]pyrene	4.90	3.57		mg/Kg		73	40 - 140	0	25
2-Methylnaphthalene	4.90	4.38		mg/Kg		89	40 - 140	10	25
Naphthalene	4.90	4.00		mg/Kg		82	40 - 140	12	25
Phenanthrene	4.90	5.05		mg/Kg		103	40 - 140	6	25
Pyrene	4.90	4.88		mg/Kg		100	40 - 140	6	25
C11-C22 Aromatics (unadjusted)	83.3	81.7		mg/Kg		98	40 - 140	3	25
C19-C36 Aliphatics	39.2	34.4	*	mg/Kg		88	40 - 140	29	25
C9-C18 Aliphatics	29.4	24.7	*	mg/Kg		84	40 - 140	29	25

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1-Chlorooctadecane	73		40 - 140
2-Bromonaphthalene	86		40 - 140
2-Fluorobiphenyl	119		40 - 140
o-Terphenyl	96		40 - 140

Method: 6010 - Metals (ICP)

Lab Sample ID: MB 480-323265/1-A
Matrix: Solid
Analysis Batch: 323668

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 323265

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	<0.19		0.48	0.19	mg/Kg		09/30/16 15:10	10/03/16 23:57	1
Arsenic	<0.38		0.95	0.38	mg/Kg		09/30/16 15:10	10/03/16 23:57	1
Barium	<0.10		0.48	0.10	mg/Kg		09/30/16 15:10	10/03/16 23:57	1
Beryllium	<0.027		0.19	0.027	mg/Kg		09/30/16 15:10	10/03/16 23:57	1

Method: 6010 - Metals (ICP) (Continued)

Lab Sample ID: MB 480-323265/1-A | **Client Sample ID: Method Blank**
Matrix: Solid | **Prep Type: Total/NA**
Analysis Batch: 323668 | **Prep Batch: 323265**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	<0.029		0.19	0.029	mg/Kg		09/30/16 15:10	10/03/16 23:57	1
Chromium	0.300	J	0.48	0.19	mg/Kg		09/30/16 15:10	10/03/16 23:57	1
Nickel	<0.22		0.95	0.22	mg/Kg		09/30/16 15:10	10/03/16 23:57	1
Thallium	<0.29		0.95	0.29	mg/Kg		09/30/16 15:10	10/03/16 23:57	1
Vanadium	<0.10		0.48	0.10	mg/Kg		09/30/16 15:10	10/03/16 23:57	1
Zinc	<0.61		2.4	0.61	mg/Kg		09/30/16 15:10	10/03/16 23:57	1
Lead	1.01		0.48	0.23	mg/Kg		09/30/16 15:10	10/03/16 23:57	1
Selenium	<0.38		0.48	0.38	mg/Kg		09/30/16 15:10	10/03/16 23:57	1
Antimony	<0.38		0.48	0.38	mg/Kg		09/30/16 15:10	10/03/16 23:57	1

Lab Sample ID: LCDSRM 480-323265/22-A | **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid | **Prep Type: Total/NA**
Analysis Batch: 323668 | **Prep Batch: 323265**

Analyte	Spike Added	LCDSRM Result	LCDSRM Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Silver	59.6	53.9		mg/Kg		90.4	66.8 - 133.1	3	30
Arsenic	221	197		mg/Kg		89.3	71.0 - 133.5	1	30
Barium	428	377		mg/Kg		88.1	74.3 - 125.5	3	30
Beryllium	112	97.4		mg/Kg		87.0	75.0 - 125.0	4	30
Cadmium	126	106		mg/Kg		84.1	73.3 - 126.2	7	30
Chromium	74.7	72.1		mg/Kg		96.5	68.5 - 131.3	1	30
Nickel	178	185		mg/Kg		103.7	73.6 - 128.7	2	30
Thallium	151	151		mg/Kg		99.8	68.2 - 131.1	3	30
Vanadium	150	139		mg/Kg		92.5	70.7 - 129.3	3	30
Zinc	338	290		mg/Kg		85.9	71.9 - 127.8	4	30
Lead	76.9	83.3		mg/Kg		108.3	68.8 - 131.3	1	30
Selenium	111	96.5		mg/Kg		86.9	65.7 - 134.2	1	30
Antimony	105	64.7		mg/Kg		61.6	19.6 - 254.3	1	30

Lab Sample ID: LCSSRM 480-323265/2-A | **Client Sample ID: Lab Control Sample**
Matrix: Solid | **Prep Type: Total/NA**
Analysis Batch: 323668 | **Prep Batch: 323265**

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
Silver	59.6	55.3		mg/Kg		92.8	66.8 - 133.1
Arsenic	221	200		mg/Kg		90.6	71.0 - 133.5
Barium	428	387		mg/Kg		90.5	74.3 - 125.5

Method: 6010 - Metals (ICP) (Continued)

Lab Sample ID: LCSSRM 480-323265/2-A
Matrix: Solid
Analysis Batch: 323668

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 323265

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
Beryllium	112	101		mg/Kg		90.6	75.0 - 125.0
Cadmium	126	114		mg/Kg		90.5	73.3 - 126.2
Chromium	74.7	73.0		mg/Kg		97.7	68.5 - 131.3
Nickel	178	188		mg/Kg		105.6	73.6 - 128.7
Thallium	151	155		mg/Kg		102.5	68.2 - 131.1
Vanadium	150	142		mg/Kg		94.9	70.7 - 129.3
Zinc	338	302		mg/Kg		89.5	71.9 - 127.8
Lead	76.9	84.4		mg/Kg		109.7	68.8 - 131.3
Selenium	111	97.1		mg/Kg		87.5	65.7 - 134.2
Antimony	105	65.1		mg/Kg		62.0	19.6 - 254.3

Method: 7471A - Mercury (CVAA)

Lab Sample ID: MB 480-323168/1-A
Matrix: Solid
Analysis Batch: 323267

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 323168

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.0081		0.020	0.0081	mg/Kg		09/30/16 09:45	09/30/16 12:22	1

Lab Sample ID: LCDSRM 480-323168/21-A ^5
Matrix: Solid
Analysis Batch: 323267

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 323168

Analyte	Spike Added	LCDSRM Result	LCDSRM Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	7.10	6.44		mg/Kg		90.7	51.3 - 149.3	13	30

Lab Sample ID: LCSSRM 480-323168/2-A ^5
Matrix: Solid
Analysis Batch: 323267

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 323168

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	7.10	7.31		mg/Kg		102.9	51.3 - 149.3

GC/MS VOA

Analysis Batch: 323504

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-106761-1	MH0279	Total/NA	Solid	8260C	323528
480-106761-1 - DL	MH0279	Total/NA	Solid	8260C	323528
480-106761-2	MH0272	Total/NA	Solid	8260C	323528
MB 480-323528/3-A	Method Blank	Total/NA	Solid	8260C	323528
LCS 480-323528/1-A	Lab Control Sample	Total/NA	Solid	8260C	323528
LCSD 480-323528/2-A	Lab Control Sample Dup	Total/NA	Solid	8260C	323528

Prep Batch: 323528

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-106761-1	MH0279	Total/NA	Solid	5035A	
480-106761-1 - DL	MH0279	Total/NA	Solid	5035A	
480-106761-2	MH0272	Total/NA	Solid	5035A	
MB 480-323528/3-A	Method Blank	Total/NA	Solid	5035A	
LCS 480-323528/1-A	Lab Control Sample	Total/NA	Solid	5035A	
LCSD 480-323528/2-A	Lab Control Sample Dup	Total/NA	Solid	5035A	

GC VOA

Prep Batch: 324003

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-106761-1	MH0279	Total/NA	Solid	5035	
480-106761-2	MH0272	Total/NA	Solid	5035	
MB 480-324003/1-A	Method Blank	Total/NA	Solid	5035	
LCS 480-324003/2-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 480-324003/3-A	Lab Control Sample Dup	Total/NA	Solid	5035	

Analysis Batch: 324007

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-106761-1	MH0279	Total/NA	Solid	MAVPH	324003
MB 480-324003/1-A	Method Blank	Total/NA	Solid	MAVPH	324003
LCS 480-324003/2-A	Lab Control Sample	Total/NA	Solid	MAVPH	324003
LCSD 480-324003/3-A	Lab Control Sample Dup	Total/NA	Solid	MAVPH	324003

Analysis Batch: 324160

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-106761-2	MH0272	Total/NA	Solid	MAVPH	324003
MB 480-324003/1-A	Method Blank	Total/NA	Solid	MAVPH	324003
LCS 480-324003/2-A	Lab Control Sample	Total/NA	Solid	MAVPH	324003
LCSD 480-324003/3-A	Lab Control Sample Dup	Total/NA	Solid	MAVPH	324003

Analysis Batch: 324442

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-106761-1	MH0279	Total/NA	Solid	MA VPH	
480-106761-2	MH0272	Total/NA	Solid	MA VPH	

GC Semi VOA

Prep Batch: 323159

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-106761-1	MH0279	Total/NA	Solid	3546	

GC Semi VOA (Continued)

Prep Batch: 323159 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-106761-2	MH0272	Total/NA	Solid	3546	
MB 480-323159/1-A	Method Blank	Total/NA	Solid	3546	
LCS 480-323159/2-A	Lab Control Sample	Total/NA	Solid	3546	
LCSD 480-323159/3-A	Lab Control Sample Dup	Total/NA	Solid	3546	

Prep Batch: 323207

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-106761-1	MH0279	Total/NA	Solid	3546	
480-106761-2	MH0272	Total/NA	Solid	3546	
MB 480-323207/1-B	Method Blank	Total/NA	Solid	3546	
LCS 480-323207/2-B	Lab Control Sample	Total/NA	Solid	3546	
LCSD 480-323207/3-B	Lab Control Sample Dup	Total/NA	Solid	3546	

Analysis Batch: 323272

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-106761-1	MH0279	Total/NA	Solid	8082	323159
480-106761-2	MH0272	Total/NA	Solid	8082	323159
MB 480-323159/1-A	Method Blank	Total/NA	Solid	8082	323159
LCS 480-323159/2-A	Lab Control Sample	Total/NA	Solid	8082	323159
LCSD 480-323159/3-A	Lab Control Sample Dup	Total/NA	Solid	8082	323159

Fraction Batch: 323353

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-106761-1	MH0279	Total/NA	Solid	MA EPH Frac	323207
480-106761-2	MH0272	Total/NA	Solid	MA EPH Frac	323207
MB 480-323207/1-B	Method Blank	Total/NA	Solid	MA EPH Frac	323207
LCS 480-323207/2-B	Lab Control Sample	Total/NA	Solid	MA EPH Frac	323207
LCSD 480-323207/3-B	Lab Control Sample Dup	Total/NA	Solid	MA EPH Frac	323207

Analysis Batch: 323519

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-106761-1	MH0279	Total/NA	Solid	MA-EPH	323353
480-106761-2	MH0272	Total/NA	Solid	MA-EPH	323353
MB 480-323207/1-B	Method Blank	Total/NA	Solid	MA-EPH	323353
LCS 480-323207/2-B	Lab Control Sample	Total/NA	Solid	MA-EPH	323353
LCSD 480-323207/3-B	Lab Control Sample Dup	Total/NA	Solid	MA-EPH	323353

Analysis Batch: 323758

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-106761-1	MH0279	Total/NA	Solid	MA-EPH	
480-106761-2	MH0272	Total/NA	Solid	MA-EPH	

Metals

Prep Batch: 323168

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-106761-1	MH0279	Total/NA	Solid	7471A	
480-106761-2	MH0272	Total/NA	Solid	7471A	
MB 480-323168/1-A	Method Blank	Total/NA	Solid	7471A	
LCDSRM 480-323168/21-A ^5	Lab Control Sample Dup	Total/NA	Solid	7471A	

Metals (Continued)

Prep Batch: 323168 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSSRM 480-323168/2-A ^5	Lab Control Sample	Total/NA	Solid	7471A	

Prep Batch: 323265

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-106761-1	MH0279	Total/NA	Solid	3050B	
480-106761-2	MH0272	Total/NA	Solid	3050B	
MB 480-323265/1-A	Method Blank	Total/NA	Solid	3050B	
LCDSRM 480-323265/22-A	Lab Control Sample Dup	Total/NA	Solid	3050B	
LCSSRM 480-323265/2-A	Lab Control Sample	Total/NA	Solid	3050B	

Analysis Batch: 323267

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-106761-1	MH0279	Total/NA	Solid	7471A	323168
480-106761-2	MH0272	Total/NA	Solid	7471A	323168
MB 480-323168/1-A	Method Blank	Total/NA	Solid	7471A	323168
LCDSRM 480-323168/21-A ^5	Lab Control Sample Dup	Total/NA	Solid	7471A	323168
LCSSRM 480-323168/2-A ^5	Lab Control Sample	Total/NA	Solid	7471A	323168

Analysis Batch: 323668

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-106761-1	MH0279	Total/NA	Solid	6010	323265
480-106761-2	MH0272	Total/NA	Solid	6010	323265
MB 480-323265/1-A	Method Blank	Total/NA	Solid	6010	323265
LCDSRM 480-323265/22-A	Lab Control Sample Dup	Total/NA	Solid	6010	323265
LCSSRM 480-323265/2-A	Lab Control Sample	Total/NA	Solid	6010	323265

General Chemistry

Analysis Batch: 323188

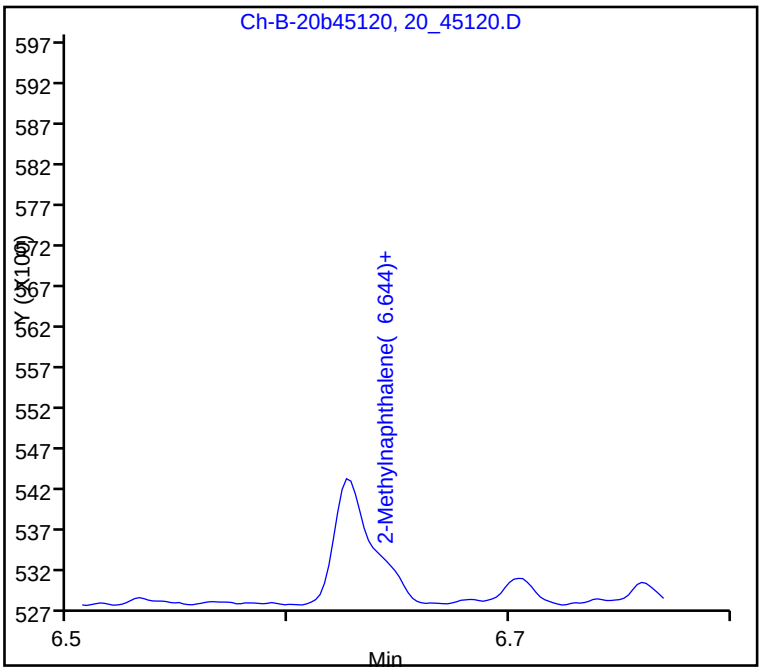
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-106761-1	MH0279	Total/NA	Solid	Moisture	
480-106761-2	MH0272	Total/NA	Solid	Moisture	

Breakdown Report

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP7890-20\20161003-56932.b\20_45120.D
Injection Date: 03-Oct-2016 13:49:13 Instrument ID: HP7890-20
Lims ID: LCS 480-323207/2-B
Client ID:
Operator ID: BufTCHROM ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 7890-EPH Limit Group: GC MAEPH ICAL

Extractable Petrolium Hydrocarbon Breakthrough



10 2-Methylnaphthalene
Aliphatic Detector: Ch-B-20b45120
Aromatic Detector: Ch-A-20a45120
%Breakthrough =
(Aliphatic Amount/
Total Amount) * 100

%Breakthrough = 6.8917
Aliphatic Amount = 1.8248
Aromatic Amount = 24.6538
Total Amount = 26.4787

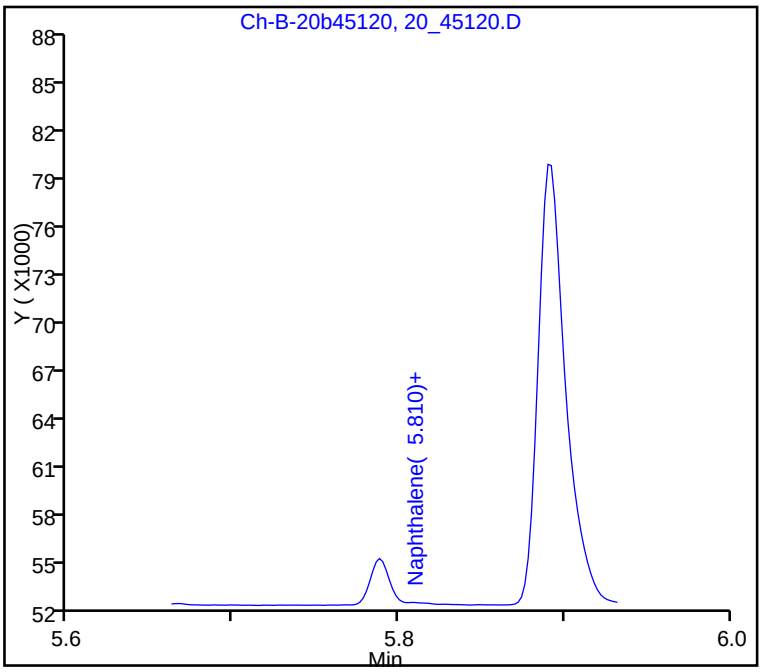
%Breakthrough:* 6.89%, Max Limit: 5.00%
Failed

Breakdown Report

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP7890-20\20161003-56932.b\20_45120.D
Injection Date: 03-Oct-2016 13:49:13 Instrument ID: HP7890-20
Lims ID: LCS 480-323207/2-B
Client ID:
Operator ID: BufTCHROM ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 7890-EPH Limit Group: GC MAEPH ICAL

Extractable Petrolium Hydrocarbon Breakthrough



8 Naphthalene
Aliphatic Detector: Ch-B-20b45120
Aromatic Detector: Ch-A-20a45120
%Breakthrough =
(Aliphatic Amount/
Total Amount) * 100

%Breakthrough = 9.1946
Aliphatic Amount = 2.3236
Aromatic Amount = 22.9479
Total Amount = 25.2715

%Breakthrough:* 9.19%, Max Limit: 5.00%
Failed

Lab Chronicle

Client: Woodard & Curran, Inc.
Project/Site: Tombarello Lawrence, MA

TestAmerica Job ID: 480-106761-1

Client Sample ID: MH0279 — **Lab Sample ID: 480-106761-1**
Date Collected: 09/28/16 10:45 — **Matrix: Solid**
Date Received: 09/30/16 01:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	323188	09/30/16 08:56	CSW	TAL BUF

Client Sample ID: MH0279 — **Lab Sample ID: 480-106761-1**
Date Collected: 09/28/16 10:45 — **Matrix: Solid**
Date Received: 09/30/16 01:00 — **Percent Solids: 68.4**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A			323528	10/03/16 11:44	GTG	TAL BUF
Total/NA	Analysis	8260C		1	323504	10/03/16 17:49	RRS	TAL BUF
Total/NA	Prep	5035A	DL		323528	10/03/16 11:44	GTG	TAL BUF
Total/NA	Analysis	8260C	DL	2	323504	10/03/16 18:36	RRS	TAL BUF
Total/NA	Analysis	MA VPH		10	324442	10/07/16 15:37	GSR	TAL BUF
Total/NA	Prep	5035			324003	10/05/16 17:40	MRB	TAL BUF
Total/NA	Analysis	MAVPH		10	324007	10/06/16 01:10	MRB	TAL BUF
Total/NA	Prep	3546			323159	09/30/16 07:17	CAM	TAL BUF
Total/NA	Analysis	8082		1	323272	09/30/16 19:52	JMO	TAL BUF
Total/NA	Prep	3546			323207	09/30/16 09:46	CAM	TAL BUF
Total/NA	Fraction	MA EPH Frac			323353	10/01/16 08:09	RJS	TAL BUF
Total/NA	Analysis	MA-EPH		1	323519	10/03/16 14:47	JMO	TAL BUF
Total/NA	Analysis	MA-EPH		1	323758	10/04/16 13:33	GSR	TAL BUF
Total/NA	Prep	3050B			323265	09/30/16 15:10	MVZ	TAL BUF
Total/NA	Analysis	6010		1	323668	10/04/16 00:03	AMH	TAL BUF
Total/NA	Prep	7471A			323168	09/30/16 09:45	RMZ	TAL BUF
Total/NA	Analysis	7471A		1	323267	09/30/16 12:54	RMZ	TAL BUF

Client Sample ID: MH0272 — **Lab Sample ID: 480-106761-2**
Date Collected: 09/28/16 16:45 — **Matrix: Solid**
Date Received: 09/30/16 01:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	323188	09/30/16 08:56	CSW	TAL BUF

Client Sample ID: MH0272 — **Lab Sample ID: 480-106761-2**
Date Collected: 09/28/16 16:45 — **Matrix: Solid**
Date Received: 09/30/16 01:00 — **Percent Solids: 72.5**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A			323528	10/03/16 11:44	GTG	TAL BUF
Total/NA	Analysis	8260C		1	323504	10/03/16 19:00	RRS	TAL BUF
Total/NA	Analysis	MA VPH		1	324442	10/07/16 15:38	GSR	TAL BUF
Total/NA	Prep	5035			324003	10/05/16 17:40	MRB	TAL BUF
Total/NA	Analysis	MAVPH		1	324160	10/06/16 15:03	MRB	TAL BUF

Lab Chronicle

Client: Woodard & Curran, Inc.
Project/Site: Tombarello Lawrence, MA

TestAmerica Job ID: 480-106761-1

Client Sample ID: MH0272
Date Collected: 09/28/16 16:45
Date Received: 09/30/16 01:00

Lab Sample ID: 480-106761-2
Matrix: Solid
Percent Solids: 72.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			323159	09/30/16 07:17	CAM	TAL BUF
Total/NA	Analysis	8082		1	323272	09/30/16 20:08	JMO	TAL BUF
Total/NA	Prep	3546			323207	09/30/16 09:46	CAM	TAL BUF
Total/NA	Fraction	MA EPH Frac			323353	10/01/16 08:09	RJS	TAL BUF
Total/NA	Analysis	MA-EPH		1	323519	10/03/16 15:16	JMO	TAL BUF
Total/NA	Analysis	MA-EPH		1	323758	10/04/16 13:33	GSR	TAL BUF
Total/NA	Prep	3050B			323265	09/30/16 15:10	MVZ	TAL BUF
Total/NA	Analysis	6010		1	323668	10/04/16 00:07	AMH	TAL BUF
Total/NA	Prep	7471A			323168	09/30/16 09:45	RMZ	TAL BUF
Total/NA	Analysis	7471A		1	323267	09/30/16 12:56	RMZ	TAL BUF

Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

Certification Summary

Client: Woodard & Curran, Inc.
Project/Site: Tombarello Lawrence, MA

TestAmerica Job ID: 480-106761-1

Laboratory: TestAmerica Buffalo

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Arkansas DEQ	State Program	6	88-0686	07-06-17
California	State Program	9	1169CA	09-30-17
Connecticut	State Program	1	PH-0568	09-30-18
Florida	NELAP	4	E87672	06-30-17
Georgia	State Program	4	N/A	03-31-17
Georgia	State Program	4	956	03-31-17
Illinois	NELAP	5	200003	09-30-16 *
Iowa	State Program	7	374	03-01-17
Kansas	NELAP	7	E-10187	10-31-16
Kentucky (DW)	State Program	4	90029	12-31-16
Kentucky (UST)	State Program	4	30	03-31-17
Kentucky (WW)	State Program	4	90029	12-31-16
Louisiana	NELAP	6	02031	06-30-17
Maine	State Program	1	NY00044	12-04-16
Maryland	State Program	3	294	03-31-17
Massachusetts	State Program	1	M-NY044	06-30-17
Michigan	State Program	5	9937	03-31-17
Minnesota	NELAP	5	036-999-337	12-31-16
New Hampshire	NELAP Primary AB	1	2973	09-11-17
New Hampshire	NELAP Secondary AB	1	2337	11-17-16
New Jersey	NELAP	2	NY455	06-30-17
New York	NELAP	2	10026	03-31-17
North Dakota	State Program	8	R-176	03-31-17
Oklahoma	State Program	6	9421	08-31-17
Oregon	NELAP	10	NY200003	06-09-17
Pennsylvania	NELAP	3	68-00281	07-31-17
Rhode Island	State Program	1	LAO00328	12-30-16
Tennessee	State Program	4	TN02970	03-31-17
Texas	NELAP	6	T104704412-15-6	07-31-17
USDA	Federal		P330-11-00386	11-26-17
Virginia	NELAP	3	460185	09-14-17
Washington	State Program	10	C784	02-10-17
West Virginia DEP	State Program	3	252	09-30-16 *
Wisconsin	State Program	5	998310390	08-31-17

* Certification renewal pending - certification considered valid.

Method Summary

Client: Woodard & Curran, Inc.
Project/Site: Tombarello Lawrence, MA

TestAmerica Job ID: 480-106761-1

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds (GC/MS)	MA DEP	TAL BUF
MA VPH	Massachusetts - Volatile Petroleum Hydrocarbons (GC)	MA DEP	TAL BUF
MAVPH	Massachusetts - Volatile Petroleum Hydrocarbons (GC)	MA DEP	TAL BUF
8082	Polychlorinated Biphenyls (GC/ECD)	MA DEP	TAL BUF
MA-EPH	Massachusetts - Extractable Petroleum Hydrocarbons (GC)	MA DEP	TAL BUF
6010	Metals (ICP)	SW846	TAL BUF
7471A	Mercury (CVAA)	SW846	TAL BUF
Moisture	Percent Moisture	EPA	TAL BUF

Protocol References:

EPA = US Environmental Protection Agency

MA DEP = Massachusetts Department Of Environmental Protection

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

Sample Summary

Client: Woodard & Curran, Inc.
Project/Site: Tombarello Lawrence, MA

TestAmerica Job ID: 480-106761-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-106761-1	MH0279	Solid	09/28/16 10:45	09/30/16 01:00
480-106761-2	MH0272	Solid	09/28/16 16:45	09/30/16 01:00

Login Sample Receipt Checklist

Client: Woodard & Curran, Inc.

Job Number: 480-106761-1

Login Number: 106761

List Source: TestAmerica Buffalo

List Number: 1

Creator: Williams, Christopher S

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	FREEZER ON 30SEPT2016 AT 0600
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	W AND C
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	N/A	
Chlorine Residual checked.	N/A	

Soil

360325-Boston

TestAmerica Westfield
501 Southampton Road
Westfield MA 01085
Phone: (413) 572-4000 Fax: (303) 467-7247

TestAmerica Boston
240 Bear Hill Road – Suite 104
Waltham MA 02451
Phone: (781) 466-6900 Fax: (781) 466-6901

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information:
Client Contact: Keri Lauer
Company: Woodard & Curran
Address: 40 Shattuck Rd.
City: Andover, MA 01810
State and Zip:
Client's Phone: 978-482-7888
Client's Contact Email: klauer@woodardcurran.com
Client's Project Name/Number: 228526
Sample Collection Site Name & Location: Lawrence, MA

Sample Collector's Name (Please Print Neatly): Keri Lauer
Sample Collector's Phone: 603-731-9936

Lab PM: Becky Mason
E-Mail:

Lab COC Barcode Label: 480-106761 COC

COC No: 37058
Page: ____ of ____
Job #:

Due Date Requested:
Turnaround Time (TAT) Requested (business days): 5-day
Quote # or Project #:
PO #:
WO #:
PWS ID #:

Analysis Reque

Sample Identification	Sample Collection Date (MM/DD/YY)	Sample Collection Time (24 Hour Clock)	Sample Type: C=Comp G=Grab	Matrix Type **	MA EPH	MA VPH	PCBs - 8082	VOCs - 8260	Metals - MCP 6010 + 7471	Total Number of Containers (enter total for each line)
			Preservation Codes: ►							↓
MH0279	09-28-16	1045	G	S	X	X	X	X	X	6
MH0272	09-28-16	1645	G	S	X	X	X	X	X	6

Preservation Codes:
A - Hydrochloric Acid; B - Sodium Hydroxide; C - Zinc Acetate; D - Nitric Acid; E - Sodium Bisulfite; F - Methanol; H - Ascorbic Acid; J - Deionized Water; M - Hexane; N - No Preservative; P - Sodium Sulfate; Q - Sodium Sulfite; R - Sodium Thiosulfate; S - Sulfuric Acid; Z - other (specify)

Regulatory Programs:
MCP ☐ GW1/S1 ☐
RCP ☐ CT RSR ☐
DEP Form ☐ EDD Required ☐
eDEP Filing ☐ NPDES ☐

SUBCONTRACT POLICY: Unless you provide instructions to the contrary, or specify which sub-contract labs are or are not to be used, you agree in advance to permit TestAmerica to use certified, subcontract labs, without any additional notification made by us, as necessary to fulfill your work order.

Special Instructions & Notes:

Possible Hazard Identification (please check off each that may apply):
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal Requirements (A fee may be assessed if samples are retained longer than 1 month):
☐ Return To Client ☒ Disposal By Lab ☐ Archive For ____ Months

** **Matrix Types:** A=Air S=Solid/Soil W=Water O=Oil X=Waste (non-water) Z=Other: ____

► **NOTE!! ALL SAMPLES MUST BE TRANSPORTED IN A COOLER, ON ICE !!** ◄

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Keri B. Lauer	9-29-16 10:00	WTC	[signature]		
[signature]			[signature]	9-29-16 1230	
[signature]	9-29-16 1800		[signature]	9-30-16 0800	

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.:
Cooler Temperature(s) °C and Other Remarks: 2.7 #1

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10/7/2016

WI-QA-010 rev 8

Revised 10/29/2014
TAL-8245-360R

APPENDIX D: PUBLIC NOTIFICATION

COMMITMENT & INTEGRITY
DRIVE RESULTS

40 Shattuck Road
Suite 110
Andover, Massachusetts 01810
www.woodardcurran.com

T 866.702.6371
T 978.557.8150
F 978.557.7948

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

September 25, 2017

Mayor Daniel Rivera
Lawrence City Hall
200 Common Street, 3rd Floor, Room 309
Lawrence, Massachusetts 01840

Re: Public Notification Requirement
Utility-Related Abatement Measure Plan
Former Tombarello Disposal Site
207 Marston Street, Lawrence, Massachusetts
MassDEP Release Tracking Number 3-18126

Dear Mayor Rivera:

This letter is being submitted to fulfill the public notification requirements established by the Massachusetts Contingency Plan (MCP; 310 CMR 40.0000). As described in 310 CMR 40.1403(3)(d), the public notification provisions require that the Chief Municipal Officer and the Board of Health be notified of the implementation of a Utility-Related Abatement Measure (URAM). This letter serves to inform you of the purpose, nature, and expected duration of the RAM for the Disposal Site referenced above.

The URAM activities described in the plan provide for the management of waste materials generated as part of the sewer and stormwater drainage structures on the former Tombarello property (addressed referenced above). In general, the utilities will be pressure-washed using jetting techniques. Water and sediment in the sewer utility will be permitted to flow through the utility to the Greater Lawrence Sanitary District. Water and sediment in the stormwater utilities will be collected with a vactor truck. Water from the stormwater utility will be decanted into the sewer utility and the sediment will be stored in lined roll-off containers to be characterized for off-sited disposal.

The URAM Plan will be available online (http://public.dep.state.ma.us/wsc_viewer/main.aspx) or by appointment at the MassDEP Northeastern Regional Office, located at 205B Lowell Street, Wilmington, MA 01887 (978-694-3200). If you have any questions regarding this notification, please feel free to contact me at 978-482-7871.

Sincerely,

WOODARD & CURRAN INC.

Jarrod P. Yoder, PG, LSP
Associate Principal

228526

cc: MassDEP Northeastern Regional Office
City of Lawrence Health Department
Carlos Jacquez – Lawrence Director of Public Works

APPENDIX E: HEALTH AND SAFETY PLAN

Project Health and Safety Plan
Form 2 HASP

Project Name: Lawrence Sewer System Improvements Project #: 228526

Client Name: City of Lawrence, MA Project Location: Lawrence, MA

Field Work Start Date: 8/1/2016 Anticipated Duration: On-going

Project Description (include anticipated work tasks): Site reconnaissance and surface investigation of sewer and drain structures in support of future subsurface utility cleaning and inspection; observation of said utility clearing

This Health and Safety Plan (HASP) is designed to identify project hazards, primary work tasks, and safe practices and equipment to perform work safely. This HASP is intended to establish the minimum health and safety requirements to be followed by Woodard & Curran personnel and persons not otherwise required to prepare their own HASP (e.g., visitors) while engaged in activities at the Site. This HASP must be completed by a competent person and approved by the Project Manager. All project team members subject to this HASP must review its contents and sign the acknowledgment form. **Completion of this HASP also serves as a certified personal protective equipment (PPE) hazard assessment.**

Job Safety Analyses (JSAs) for the primary work tasks identified for this project are attached to this HASP. The sections below identify the hazards and safe practices to be applied; these are also incorporated into the JSAs for reference.

This HASP was completed by: Teri Demers Date: 7/29/2016

Project Manager or PIC Approval: Jarrod Yoder Date: 7/30/2016

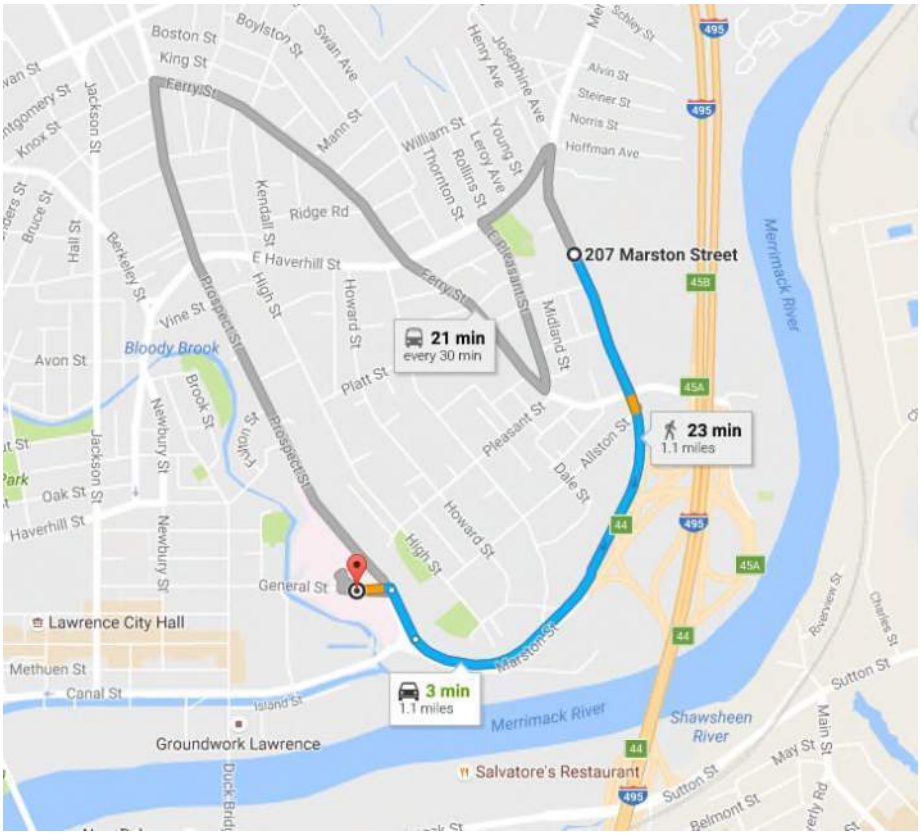
Section 1: Project Contact & Team Organization Information

Company / Entity	Role	Name	Primary Contact Number
Woodard & Curran	Project Manager	Justin deMello/Jarrod Yoder	978-482-4884 617-877-4936
Woodard & Curran	LSP	Jarrod Yoder	978-482-4884 617-877-4936
Woodard & Curran	Safety Lead	Jarrod Yoder	978-482-7871 617-240-3660
Woodard & Curran	Field Lead	Teri Demers	978-482-7911 978-314-5895
Local Fire Department	**Emergency Response**	Click here to enter text.	**911**
Local Police		Click here to enter text.	**911**
Incident Intervention Hotline	**Non-Emergency Incidents**	**Incident Intervention**	**888-449-7787**
Poison Control	**Poison Emergency**	**U.S Poison Control Centers**	**800-222-1222**
DigSafe NOTE: Advanced notice to DigSafe is required before any digging activity.	**Utility Clearance**	**National DigSafe Call Center**	**811**

Section 2: Map and Directions to Nearest Medical Facility

Name, location of, and directions to the nearest medical center are below or are attached to this HASP.

Medical Center Name: Lawrence General Hospital Location Address: 1 General Street, Lawrence, MA



3 min (1.1 miles)

via Marston St

2 min without traffic

207 Marston Street
Lawrence, MA 01841

- Head southeast on Marston St toward E Platt St — 1.0 mi
- Continue onto Prospect St — 495 ft
- Turn left onto General St — 335 ft

1 General Street, Lawrence, MA

Section 3: Project Hazard Assessment

(See Section 2, Appendix A of Corporate H&S Manual for guidance on identifying project hazards)

General Hazards/Considerations — Not Applicable ☐

- ☐ Aerial Lift Work (Operator training required)
- ☐ Compressed Gases Storage/Use
- ☐ Confined Spaces (CSE Training Required for Permit Entry) (Request confined space inventory from client. If no client inventory exists, document inventory using form in Section 12 Appendix D of Corporate H&S Manual and attach to this HASP)
- ☐ Drilling/Exploration
- ☐ Energized Equipment or Circuits
- ☐ Excavation Work
- ☒ Falling/Overhead Objects
- ☐ Falls from Elevated Work (> than 4 feet)
- ☐ Flammable Liquids Storage/Use
- ☐ Forklifts/Lulls (Operator training required)
- ☐ General Construction Exposure
- ☐ General Manufacturing Area Exposure
- ☒ Heavy Equipment Use
- ☐ Hot Work – Cutting, welding, or grinding generated sparks or heat sources. (Hot work permit required)
- ☐ Laboratory Area Exposure
- ☒ Pinch Points
- ☒ Power Equipment/Tool
- ☐ Rotating Equipment
- ☒ Slips and Trips
- ☒ Utilities – Overhead or Underground
- ☒ Vehicular Traffic
- ☐ Working In, Over, or Adjacent to Water

Biological / Environmental Hazards — Not Applicable ☐

- ☒ Excessive Cold (<32°F)
- ☒ Excessive Heat (>91°F)
- ☒ Microbiological (bacterial/viral) such as in wastewater or research labs
- ☒ Mosquitoes
- ☒ Poisonous Plants (Ivy, Oak, Sumac, Ragweed etc.)
- ☒ Ticks
- ☒ Venomous Insects (Spiders, wasps, bees, etc.)
- ☐ Venomous Snakes
- ☒ Wet Conditions
- ☐ Wild/Dangerous Animals ☐ Other: Click here to enter text.

Chemical Hazards (attach chemical-specific information to this HASP. Resources are available in Section 22, Appendix E of Corporate H&S Manual) — Not Applicable ☐

- ☐ Acid and Alkaline Substances
- ☒ Contaminated Soil/Particulate
- ☐ Flammable/Explosive
- ☐ Organic Solvents
- ☐ Oxidizers
- ☐ Radiological **(Consult with H&S)**
- ☐ Reactive
- ☒ Volatiles/Semi Volatiles
- ☒ List site-specific COCs (or attach to this HASP): PCBs, metals, petroleum
- ☐ Other: Click here to enter text.

Ergonomic Hazards — Not Applicable ☐

- ☒ Bending/Twisting
- ☒ Lifting
- ☒ Pulling/Tugging
- ☒ Repetitive Motion

Eye / Face Hazards — Not Applicable ☐

- ☐ Acid and Alkaline Substances
- ☐ Laser Operations
- ☒ Liquid Splashes
- ☒ Particulates
- ☒ Sharps/Punctures
- ☐ Ultraviolet Radiation
- ☐ Welding Arc

☐ Other: Click here to enter text.

Foot Hazards — **Not Applicable** ☐

☒ Crush
☒ Sharps/Puncture
☐ Conductive Hazards
☒ Chemical Hazards
☐ Other: Click here to enter text.

Hand Hazards — **Not Applicable** ☐

☐ Acid and Alkaline Substances
☐ Excessive Cold (Surface <40°F)
☐ Excessive Heat (Surface >100°F)
☒ Handling Contaminated Media
☐ High Vibration
☒ Organic Solvents
☒ Sharps/Punctures
☒ Other: crush

Hearing Hazards (Perceived or measured noise > 85 decibels) — **Not Applicable** ☒

☐ Impact Noise
☒ High Ambient Noise
☒ Other: Equipment Noise

Respiratory Hazards — **Not Applicable** ☐

☐ Acid Gases
☐ Aerosols/Particles
☐ Asbestos **(Contact H&S)**
☐ Chromium
☐ Lead **(Contact H&S)**
☐ Mercury Vapor
☒ Organic Vapors
☐ Oxygen Deficient
☐ Welding Fumes
☒ Other: sanitary odor, methane, particualtes, SVOCs, PCBs

Other Hazards (Describe) — **Not Applicable** ☒

Click here to enter text.

Section 4: PPE Requirements *(Check all that Apply)*

Standard Work Uniform

☐ Cotton Coveralls
☒ Hard Hat
☒ Hi-Visibility Vest or Equivalent
☒ Long Pants
☒ Rubber Boots / Disposable Over Boots
☒ Safety-Toed Boots
☒ Safety Glasses
☒ Sleeved Shirts (Long)

Additional Eye Protection — **Not Applicable** ☒

☐ Chemical Goggles
☐ Face Shield
☐ Welding Goggles
☐ Welding Helmet
☐ Welding Screens

Body Protection — **Not Applicable** ☒

☐ Fire Resistant Clothing
☐ Fully Encapsulating Suit
☐ Insulated Coveralls
☐ Lab Coat
☐ Poly-coated Tyvek® Coveralls or Equivalent
☐ Saranex® Coveralls or Equivalent
☐ Tyvek Coveralls or Equivalent
☐ Other: Click here to enter text.

Electrical Protective Clothing / Tools — **Not Applicable** ☒

☐ Arc-Flash Hazard Clothing: (qualified electrical workers only)
  ☐ PPE Category 1
  ☐ PPE Category 2
☐ PPE Category 3 (Woodard & Curran Electricians Only)
PPE Category 4 (Not allowed by W&C, must be subcontracted)
☐ High Visibility Vest (arc rated)
☐ Personal Fall Arrest System (arc rated) (harness, lanyard, anchorage, etc.)
☐ Insulated Tools

☐ Multimeter ☐ Power Monitor

Hand Protection **Not Applicable ☐**

☐ Anti-Vibration Gloves ☐ Insulated Gloves or Glove Liners ☐ Rubber Gloves
☐ Butyl Gloves ☒ Leather Gloves (As Needed) ☐ Other: Click here to enter text.
☐ Cotton Gloves ☐ Neoprene Gloves
☐ Cut-Resistant Gloves ☒ Nitrile Gloves

Head Protection / Tools **Not Applicable ☒**

☐ Bump/Miners Helmet ☐ Head Lamp ☐ Other: Click here to enter text.

Hearing Protection (Required for areas where perceived or measured noise > 85 decibels) **Not Applicable ☐**

☒ Ear Plugs ☒ Ear Muffs ☐ Ear plugs and muffs

Respiratory Protection (If respiratory protection is required, complete Section 5 below and attach completed site-specific respiratory protection plan available in Section 10, Appendix A of *Corporate H&S Manual. Each employee voluntarily wearing a respirator must complete the Voluntary Respirator Use Request form in Appendix B in Section 10 of Corporate H&S Manual and send copy to H&S Manager.*) **Not Applicable ☐**

☐ Air Purifying Respirator (APR)
- ☐ Half Face
- ☐ Full Face

Cartridge Type(s):
- ☐ Particulate P100 ☐ Organic Vapor
- ☐ Mercury Vapor ☐ Other: Click here to enter text.

☒ Dust Mask (As Needed for Nuisance Dust Protection)
☐ Powered APR
☐ Airline Respirator **(Consult with H&S prior to use)**
☐ SCBA **(Consult with H&S prior to use)**

Additional PPE **Not Applicable ☐**

☐ Insect gaiters ☐ Permethrin Clothing Treatment ☒ Sunscreen
☒ Insect Repellant ☐ Personal Fall Arrest System ☐ Other: Click here to enter text.

Section 5: Monitoring Protocol *(Check all that Apply if Required)* Not Required ☒

Applicable Activity

☐ Confined Space Entry ☐ Exclusion Zone Monitoring
☐ Excavation ☐ Worksite Perimeter Monitoring
☐ Other: Click here to enter text.

Monitoring Hazard

☐ Oxygen ☐ Hydrogen Sulfide (H_2S) ☐ Carbon Monoxide
☐ PCBs ☐ Lead **(Contact H&S)** ☐ Volatile Organics
☐ Other Metals ☐ Aerosols/Particulate ☐ Dioxins
☐ Hydrocarbons ☐ Asbestos **(Contact H&S)**
☐ Other: Click here to enter text.

Type of Monitoring Device

☐ Aerosol/Dust Meter ☐ Mercury Vapor Meter ☐ Personal Sampling Badges
☐ Colorimetric Tubes ☐ Multi-gas meter ☐ Personal Sampling Pumps
☐ Heat monitoring equipment ☐ Noise Meter ☐ Photoionization Detector
☐ Other: Click here to enter text.

Project Action Levels: (Below are typical hazards and limits assigned, **customize table as needed. Contact H&S for further guidance on assigning action limits as needed**)

Equipment	Chemical of Concern	Action Level	Safety Action
☐ Multi-Gas Meter	Hazardous Atmosphere	Oxygen >19.5%-<23.5% LEL < 10% H2S < 10 ppm CO < 35ppm	Stop work, apply ventilation controls to bring the atmosphere within safe limits. Monitor continuously, if atmosphere does not improve, stop work and contact H&S.
☐ PID	Volatile Organics	> 5ppm sustained for >1 minute or any reading > 10 ppm in breathing zone.	Stop work; apply ventilation or other controls (foam etc.) to reduce concentrations. If concentrations cannot be reduced, stop work, move to safe locations and contact H&S. Upgrade to Level C protection may be required.
☐ Aerosol Dust Meter	Nuisance Dust or Particulates	Any visual observation of uncontrolled dust or >5mg/m^3 in work zone or >0.150mg/m^3 above background at work zone perimeter.	Stop work, apply wet controls to reduce dust generation, other controls such as HEPA vacuum units for power tools may also be evaluated as applicable.
☐ Mercury Vapor Meter	Mercury Vapor	>0.01 mg/m^3 in breathing zone.	Stop work, monitor continuously in Level C until concentration decreases. Contact H&S for Level C planning if equipment is needed.
☐ Colorimetric Tube	Benzene	>1 ppm reading in breathing zone.	Stop work; apply ventilation or other controls (foam etc.) to reduce concentrations. If concentrations cannot be reduced, stop work, move to safe locations and contact H&S. Upgrade to Level C protection may be required.
☐ Other	Click here to enter text.	Click here to enter text.	Click here to enter text.

Section 6: Additional Planning Considerations

Work Zone/Traffic Control Measures **Not Applicable** ☐

- ☐ Caution/Warning Tape
- ☐ Low Visibility/Evening Work
- ☐ Electrical Barricading/Spotter
- ☒ Fencing
- ☐ Flaggers
- ☒ Police Detail/Escort
- ☐ Signal Lights (as needed)
- ☒ Traffic Cones
- ☐ Traffic Control Plan Required (refer to plan)
- ☒ Vehicle Barriers (as needed)
- ☐ Work Zone Signage
- ☒ Other: High Visibility Clothing

If certain work zones such as exclusion zones and decontamination zones are established, please summarize any additional special requirements for management of these areas: Click here to enter text.

Chemical Safety Data Sheets (SDSs) & Hazard Communication Program (See Section 6 of Corporate H&S Manual for HazCom Program)

Will hazardous chemicals be used or maintained on the jobsite by Woodard & Curran? (e.g, solvents, decontamination fluids, sample preservatives, treatment chemicals, fuel oils, diesel fuel, etc.)

- ☒ Yes. Attach a chemical inventory and SDSs. (SDSs are available from chemical manufacturer. Resources for additional chemical-specific information is in Section 22, Appendix E of Corporate H&S Manual) PCB, Lead, d-Limonene
- ☐ No. No further action needed.

Safe Work Permit / Protocols

Confined Spaces: Will the work include a permit required entry of a confined space by employees following this HASP?

☐ Yes. Entry permit(s) must be attached to this HASP and completed as applicable. This permit is available in Section 12, Appendix C of the Corporate H&S Manual. ☐ Confined Space Permit Supplied by Owner/Client

☒ No. No further action needed.

Hot Work: Will hot work be performed by employees following this HASP? *This permit is available in Section 23 Appendix D of the Corporate H&S Manual.*

☐ Yes. Hot work permit(s) must be attached to this HASP and completed as applicable.

☐ Hot Work Permit Supplied by Owner/Client

☒ No. No further action needed.

Lockout/Tagout: Will hazardous energies need to be controlled to conduct work tasks?

☐ Yes. Equipment-specific energy control procedures must be developed and attached to this HASP if a client energy control procedure is not available. A template is available in Section 13 Appendix B of the Corporate H&S Manual,

☐ LOTO Procedure Supplied by Owner/Client (attach to this HASP)

☒ No. No further action needed.

Electrical Work: Will electrical work be conducted in an energized state? *Note: Only allowed for Woodard & Curran Qualified Electrical Workers.*

☐ Yes, electrical work will be conducted in an energized state not falling under NFPA 70E work permit exemptions. See Section 19 of the Corporate H&S Manual. An energized work permit (available in Section 19 Appendix B of the Corporate H&S Manual) must be completed, approved at the time of work, and saved in the project folder.

☐ Energized Work Permit Supplied by Owner/Client

☐ Yes, electrical work falls under NFPA 70 Work Permit exemptions such as: 1) testing, troubleshooting, and voltage measuring; or 2) thermography and visual inspections if the restricted approach boundary is not crossed. A Job Briefing Checklist (available in doForms or Section 19 Appendix C of the Corporate H&S Manual), must be completed and saved in the project folder.

☒ No. No further action needed.

Special Training Qualification Requirements (Please check if any of the following training is required for work on the work site as applicable)

☐ Confined Space Entry
☒ First Aid/CPR
☒ HAZWOPER 40 Hour Training & Annual Refresher
☒ HAZWOPER 8 Hour Supervisory Training (Required for SSO/Field Lead/PM)
☐ MSHA 24 Hour New Miner Training & Annual Refresher
☐ OSHA 10 Hour Construction Safety Training
☐ Other: Click here to enter text.
☐ OSHA 10 Hour General Industry Safety Training
☐ OSHA 30 Hour Construction Safety Training
☐ Powered Industrial Truck Operation
☐ Qualified Electrical Worker Training
☐ TWIC
☐ USDOT/PHMSA Operator Qualification Training

Please summarize or qualify training requirements checked above as needed: Click here to enter text.

Medical Surveillance or Screening Requirements (Please check if any of the following medical clearances are required to conduct aspects of the work as applicable)

☐ Client Required Screenings
☒ HAZWOPER Medical Surveillance
☐ Other: Click here to enter text.
☐ Medical Clearance for Respirator Use
☐ USDOT Screenings

Please summarize or qualify requirements as needed: Click here to enter text.

Decontamination Protocol (if required please attach) ☒ **Required** ☐ **Not Required**

Investigation equipment (e.g. manhole lift, shovel, etc.) shall be decontaminated via gross removal of visible contaminants. Following gross removal, any components in contact with the impacted media shall be decontaminated using a solution of d-Limonene and water. Disinfecting wipes may be used in addition to the d-Limonene solution. Decontamination is not anticipated for activities limited to site inspection and observation of cleaning and pipeline inspection.

Job Safety Analysis

Please list the JSAs attached to this HASP, pertinent to the project: General Site Visit & Inspection, Manually Lifting a Manhole Cover, Pipe Cleaning and Inspection Observation, Tick/Spider/Stinging Insects, and Poisonous Plants

Client Safety Program Requirements (if required please attach)	☐ Required	☒ Not Required

Section 7: General Emergency Information

In addition to any client or work location requirements, the following basic emergency protocol should be followed in the event of an emergency:

1. In the event of a fire or other emergency that is threatening to life and health evacuate the premises as soon as possible to a safe assembly location upwind of the incident location, this may constitute a field vehicle or as otherwise designated by the field safety lead. ☒ Location of safety assembly area has been verbally communicated **OR**

   ☐Site layout diagram showing safety assembly area is attached
2. If fire extinguishers are available, they may only be used for incipient firefighting by trained personnel.
3. In the event of an injury or illness:
   a. For life-threatening incidents, initiate emergency response (911 or local contact number) and notify Manager.
   b. If the injury is not life threatening, but may require clinical attention or advice, the employee notifies his or her Manager then calls the **Incident Intervention Hotline 888-449-7787**.
   c. A first-aid kit should be available for minor injuries, by an employee who is first aid trained.
4. If chemicals are handled on-site, proper spill prevention and containment supplied should be immediately available for use, spill response can only be handled by trained personnel, otherwise evacuate and contact the local fire department or designated responder.
5. All workplace injuries and illnesses must be reported to Woodard & Curran Health & Safety as soon as possible. For workplace injury or illness incidents, an Incident Report (available in Section 5, Appendix A of Corporate H&S Manual) must be completed by the Manager within 24 hours of the incident and submitted to H&S. Health & Safety department staff may be reached at 207-774-2112.

Emergency Communication Available (select all applicable): ☒ Cell Phone ☐ Landline Telephone ☐ 2 Way Radio ☒ Hand Signal ☒ Vocal ☐ Signal Horn

If additional emergency detail is required, please summarize below or attach to this HASP. Additional emergency details could include client-required reporting protocol, client-required emergency procedures, etc. For more information, refer to Woodard & Curran's Emergency Preparedness Policy (Section 7 of the Corporate H&S Manual).

Click here to enter text.

HASP Acknowledgement *I acknowledge that I have reviewed this HASP and understand its requirements.*		
Employee Name	**Company / Entity**	**Date Acknowledged**
Teri Demers	W+C	8/1/2016
	W+C	8/1/2016
Kevin B. Lanes	W+C	09-28-2016

Record of Review & Revision

HASP review and update is required annually for active projects or when: 1) a new work phase not previously identified for the project is identified; 2) new project hazards (including chemicals) are discovered; 3) a change in the scope of work affects the degree of safety exposure; 4) an administrative change occurs (e.g., contact information for site personnel changes); or 5 new technology to control project hazards is considered or implemented for project use (note: new technology includes products and equipment introduced by manufacturers to protect workers performing hazardous waste operations.)

Date	Description of Change	Name of Person Making Change	Reason for Change (check all that apply or specify)						
			Annual Review	New Work Phase	New Hazards	Scope of Work Change	Administrative Update	New Technology Considered	Other (specify)
09/10/17	Added hazards associated with observation of utility clearing	Keri Lauer	X	X	X				

Job Safety Analyses

(Note: JSA library and templates are available at:
https://sharepoint.woodardcurran.com/SiteDirectory/corphealthsafety/Pages/Job-Safety-Analysis-(JSA).aspx)

JOB SAFETY ANALYSIS

GENERAL SITE VISIT AND INSPECTION

Scope of Work: To identify potential energy saving projects and conservation measures. The focus of this site visit and inspection will include a condition assessment at a WWTF. This JSA does not address confined space entry operations or the inspection work that may need to be conducted in a permit required confined space, such activities require additional planning and training.

General Precautions: There is the potential of exposure to various physical hazards such as slips, trips, and falls particularly when walking on stairs and slopes or access to building roofs or elevated platforms, contact or struck-by hazards to the head due to overhead piping and structures, electrical hazards, work using a ladder, and biological hazards such as animal wild life, and insects such as spiders, hornets, bees, and wasps.

Personal protective equipment: Impact and compression resistant safety boots, eye protection, high visibility clothing (if working outdoors around heavy equipment or traffic) and hard hats (if overhead hazards exit). Leather work gloves are required when handling materials with a sharp edge or power tools. Hearing protection in designated areas greater than 85 decibels.

TASK	HAZARDS	CONTROLS
1. Mobilization to the Site	Driving Hazards	• Plan journey ahead of time • Travel well rested • Avoid traveling in poor weather (rain, severe storms etc.) when possible. • Avoid distracted driving such as cell phone use. • Never text and drive.
2. Arrival to the Site	Site specific hazards for new/visitor employees	• Conduct safety tail gate or briefing on site specific hazards and visitor safety requirements.
3. Property Access	Same level slip/trip/falls from uneven ground, wet surfaces, and obstructions.	• Ensure path to destination is clear. • Be aware of proximity to uneven surfaces/obstructions when walking. • Communicate to others around of moving around the work area. Wear protective footwear per PPE requirements of this JSA
	Same level slip/trip/falls from losing balance while carrying tools and equipment.	Ensure path to destination is clear. Be aware of proximity to uneven surfaces/obstructions when walking. Do not carry more items than is safe to do so which would upset balance while naturally standing and walking. Maintain a wide stance while standing.
	Fall hazard from stairwells, roofs, and platforms.	Ensure stairs are effectively guard railed with exposed edges above 4feet. On platforms or roofs, ensure permanent or portable guardrail systems, or personal fall restraint systems are implemented to guard against falls around the access/work area.
	Low Visibility	Head lamps, handheld spotlights or high powered flashlights shall be utilized by the entry crew to further assist with visibility if adequate light is not available to conduct work safely.

	4. Inspection Activities	Electrical Hazards	If authorized to do so, deenergize exposed electrical hazards and apply lock out/tag out, special training is required for authorized personnel. Avoid exposure to electrical hazards during work if able. Do not work on electrical equipment unless authorized, light bulb changes are permitted so long as staff is aware of the hazards in completing the task and the employee has exclusive control of the light switch.
		Sharps	Use leather work gloves with adequate cut resistance protection to handle materials and tools with sharp edges.
		Noise greater than 85 decibels	Wear hearing protection such as ear plugs
		Ergonomic hazards while lifting, twisting, and carrying materials during inspection walk through.	Use proper lifting technique; lift materials with your legs while maintaining a wide stance, keep the back straight. Do not lift too much at one time, any items generally greater than 50lbs should not be carried by one individual. Ensure path to destination is clear. Be aware of proximity to uneven surfaces/obstructions when walking. Do not carry more items than is safe to do so which would upset balance while naturally standing and walking. Maintain a wide stance while standing.
		Same level slip/trip/falls from uneven ground, wet surfaces, and obstructions.	Ensure path to destination is clear. Be aware of proximity to uneven surfaces/obstructions when walking. Communicate to others around of moving around the work area. Wear protective footwear per PPE requirements of this JSA
		Same level slip/trip/falls from losing balance while carrying tools and equipment.	Ensure path to destination is clear. Be aware of proximity to uneven surfaces/obstructions when walking. Do not carry more items than is safe to do so which would upset balance while naturally standing and walking. Maintain a wide stance while standing.
		Low Visibility	Head lamps, handheld spotlights or high powered flashlights shall be utilized by the entry crew to further assist with visibility if adequate light is not available to conduct work safely.
		Working at Heights Greater than 4 Feet	See Sections 1 and 2 of this JSA above for fall protection controls.

	5. Biological Hazards Associated with Inspection Work	Biological Hazards - Animal Life	Animal life may be encountered. Animal life such as small rodents, insects, and snakes are possible. These are not anticipated to pose a significant hazard, but caution should be followed if rodents are encountered, these animals may carry communicable diseases or parasites that could be contracted if direct contact is made. Insects such as spiders and snakes should also be avoided if observed during inspection. Wasp, hornet, or bee hives may be present in structures and buildings, any employee with known allergies to such insects should avoid working in areas with live hives until they are removed. If employees with known allergies carry an epi-pen, they may share with colleagues in how to use the device in the event of an emergency.
		Cold Stress	Hypothermia is a condition in which core temperature drops below the required temperature for normal metabolism and body functions which is defined as 35.0 °C (95.0 °F). Appropriate clothing helps to prevent hypothermia. Synthetic and wool fabrics are superior to cotton as they provide better insulation when wet and dry. Some synthetic fabrics, such as polypropylene and polyester, are used in clothing designed to wick perspiration away from the body, such as liner socks and moisture-wicking undergarments. Drink warm fluids and take frequent breaks in warming areas during cold weather.
		Contact with Hazardous Materials	Activities within this JSA are controlled to avoid hazardous material exposure. However, access to areas which may contain be evaluated based on a newly recognized hazard that exists. Any non-authorized personnel must be escorted by an authorized employee in areas where the potential for contact with hazardous material is present.
	Required Training: Site specific orientation Knowledge and use of task specific PPE	**Required Personal Protective Equipment (PPE)** ***Level D*** – Impact and compression resistant safety boots or safety boots and safety glasses. ***Level D Modifications*** - Hard hats if overhead hazards exist. Leather work gloves are required when handling materials with a sharp edge. Hearing protection in designated areas greater than 85 decibels. ***Level C or B Upgrade considerations:*** A condition requiring this PPE level is not anticipated.	
	Air Monitoring Plan: Currently not applicable to this task.		
Other Information:	***Anticipated worker tools:*** Step or extension ladders, hand work tools, hand power tools.		
JSA Author:	Jeremy Wherren, Woodard & Curran		
Created:	May 14, 2013		
JSA Number:			

JOB SAFETY ANALYSIS

OVERBURDEN DRILLING

Scope of Work: Performed to evaluate materials or groundwater in the overburden for contamination. The drilling activity described within is relevant to hollow-stem auger type drilling application.

General Precautions: Pay attention to your surroundings and your location at the site with respect to hazards. Be continuously aware of your proximity to hazardous activities. Steel toed work boots, safety glasses or goggles, work gloves, hearing protection, and high visibility clothing are required.

STEPS	HAZARDS	CONTROLS
1. Preliminary procedures • Notify relevant parties of the time and place of drilling activities. • Call dig safe to ensure utility clearance of the work area. • Review HASP and work description.	Lack of proper planning can cause safety incidents and injury	• Conduct preliminary procedures as noted and as otherwise required. • Note and correct any exceptions identified during this preliminary process to avoid incidents, note and correct exceptions in this JSA as necessary.
2. Access and mark well locations. • This may involve brush clearing activities.	Ticks/insects	• See Tick, Stinging Insect, and Spider JSA.
	Poisonous plants	• See Poisonous Plants JSA.
	Traffic	• The site owner/manager should be notified of work activities and locations. • Wear appropriate PPE including high visibility clothing such as a reflective vest. • Utilize truck flashers/strobes, cones, signs, flags or other traffic control devices as needed to divert traffic around working activities. • Where pedestrian traffic is an issue, set up a barricade surrounding the work area.
	Lacerations and flying objects from chainsaw activities.	• See Chain Saw operation JSA.
3. Assemble field supplies and personal protective equipment: • Sampling equipment, drilling equipment, flagging tape, GPS, field notebook.	Foot hazard from dropped equipment	• Wear steel toed boots. • Wear work gloves that provide a secure grip on the items you are carrying.
	Chemical exposure from VOA preservatives (may include acids or carcinogens such as hydrochloric acid and dyes for non-aqueous phase liquids)	• Ensure that chemicals are maintained in proper packaging. • Maintain a safety data sheet on hand for the applicable preservatives.

		Back strain	• Assess the weight of an item in the context of your own strength before you lift it. Ask for assistance from additional employees if needed. • Use proper body mechanics when lifting. Bend at the knees and lift with your legs, keeping the back straight and avoiding twisting postures. • Carry items at your center of gravity, waist to chest level.
	4. Access the site. • Meet the driller. • Review Health & Safety Plan and site specific hazards • Walk through the site to identify well locations, decontamination pad area, and waste disposal area	Ticks/insects	• See controls in step 2.
		Poisonous plants	• See controls in step 2.
		Traffic	• See controls in step 2.
		Injury from hunting activities	• Wear high visibility clothing during hunting season. • Notify site/property owners of work activities and locations.
	5. Mobilize to drilling locations	Traffic	• See controls in step 2.
		Rig instability issues	• Keep a safe distance from mobilized rigs. Do not assume that the operator is aware of your presence. • Maintain communication with drivers • Mobilize only with the mast down! Driving with the mast up could take out power lines, resulting in injury by electrocution or falling objects from above.
	6. Perform drill boring	Dust inhalation	• Wear protective eyewear. • Wear a dust mask if it is appropriate (e.g., for dry air hammer use).
		Noise	• Wearing hearing protection is required. • Employees are required to wear hearing protection for work areas and tasks that have noise levels greater than 90 dBA.
		Injury or crush hazard from dropped heavy objects (rods, bits, casings, etc.)	• Wear steel toed work boots. • Keep a safe distance from drilling activities.
		Burns if fluid escapes due to damaged hoses	• Wear eye protection, gloves, hard hat, tyvek suit, and boots. • Maintain a safe distance of 25 feet away while the well rig is running.
		Rotational hazards from clothing being caught in rotational equipment.	• Maintain a safe distance of 25 feet away while the well rig is running.

		Engulfment in ditches or trenches	• Do not enter a ditch that is greater than 4 feet deep without the appropriate bracing.
		Flying objects (metal drill cuttings, hydraulic fluid)	• Wear eye protection such as safety glasses or goggles. • Keep a safe distance from drilling activities.
	7. Install well	See hazards in step 6	• See controls in step 6.
	8. Clean drilling equipment. • May involve the use of pressure washers	Chemical hazards (TCE, PCE, VOC, etc.)	• Wear the appropriate PPE including safety glasses or goggles, gloves, and work boots.
		Trips/slips	• Be aware of your proximity to obstructions that could present a trip or hazard (e.g., tools on the ground, puddles of water). • Keep the area organized. • Never squeeze the spray gun trigger of a pressure washer unless you are securely braced. • Clean up spilled soap, fuel or oil immediately to avoid slips. • Wear proper footwear: slip resistant, closed toed, even sole, clean and study shoes.
	9. Dispose of waste. • May include contaminated drill cuttings	Chemical hazards (TCE, PCE, VOC, etc.)	• See controls in step 8.
		Traffic	• Wear high visibility clothing. • Keep a safe distance from trucks. Do not assume that the driver is aware of your presence.
		Rig instability and vehicle safety issues from trailers carrying toxic materials	• Be aware of your proximity to activities around you. Keep a safe distance from trucks and trailers. Wear high visibility clothing. Do not assume that the driver is aware of your presence.
	10. Develop the well • Clearing the water in the well of sediment to enable sampling	Chemical hazards (TCE, PCE, VOC, etc.)	• See controls in step 8.
		Repetitive motion injury from using the manual pump	• Use an automated pump whenever it is available. • Alternate this job task with another employee to avoid prolonged exposure to repetitive motions.
	11. Sample the well	Chemical hazards (TCE, PCE, VOC, etc.)	• See controls in step 8.
	12. Demobilization • Leaving the site or moving to the next location.	Traffic	• See controls in step 2.
		Rig instability issues	• See controls in step 5.

	Required Training: Mandatory job shadowing is required for training. Any employee performing this task must have obtained knowledge of safe practices and have experience with drilling.	**Required Personal Protective Equipment (PPE):** Steel toed work boots, safety glasses or goggles, work gloves, hearing protection, and high visibility clothing are required. A dust mask may be required.
Other Information:		
JSA Author: **Created:** **JSA Number:**	Sheldon Smith, Caitlyn DellaTorre 8/3/12, updated 7/31/15 by Dylan Hovey	

JOB SAFETY ANALYSIS

PIPE CLEANING AND INSPECTION OBSERVATION

Scope of Work: Observe subsurface sewer and stormwater pipe cleaning and closed-circuit television (CCTV) inspection work conducted by subcontractors. Applies to pipe cleaning methods using high pressure jet/vac equipment.

General Precautions: If the site is a remote location, use the buddy system.
Required PPE: Steel toed boots, safety glasses, hard hat, hearing protection. High visibility clothing is required when working in a traffic area.
Required Training: 10-hour construction safety training.40-hour HAZWOPER training is required if accessing utility lines via a hazardous waste site. Knowledge and use of task specific PPE.

STEPS	HAZARDS	CONTROLS
1. Approach the drainage or sewer infrastructure for cleaning and/or inspection.	Poisonous plants	• Wear long pants, long sleeves (as appropriate), and shoes that cover the whole foot. • If direct contact with poison ivy, oak, or sumac is encountered, utilize scrub wash products or irrigate the contact area with water to minimize allergic rash effect/remove the urushiol.
	Insects/ticks	• Inspect work areas upon arriving at the site to identify hazard(s). • Use insect repellant as necessary, with DEET (on skin or clothing) or permethrin (on clothing only). Always follow product instructions. • Conduct periodic body checks for ticks and bites to help prevent transmission of tick borne illnesses. • Wear appropriate PPE including leather gloves, and Tyvek suits or long sleeves (as appropriate), long pants and socks.
	Heat stress	• Employees should be aware of the effects of heat stress, provided with adequate cool liquids such as water and beverages containing electrolytes, and instructed to observe each other for signs of heat stress during hot weather. • Take frequent breaks in cooling areas during hot weather.
	Cold stress	• Employees should be aware of the effects of cold stress and wear appropriate clothing

			(synthetic fabrics such as polypropylene and polyester) to prevent hypothermia. • Drink warm fluids and take frequent breaks in warming areas during cold weather.
		Traffic	• The site owner/manager should be notified of work activities and locations. • Wear appropriate PPE including high visibility clothing such as a reflective vest. • Utilize truck flashers/strobes, cones, signs, flags, police details, and/or other traffic control devices as needed to divert traffic around working activities. • Where pedestrian traffic is an issue, set up a barricade surrounding the work area.
		Slip/trip	• All personnel should be constantly watching for trip hazards such as uneven terrain, holes, ditches, stretched wires or ropes, or any other materials or pieces of equipment in their path. • Significant below-grade hazards (e.g., holes or trenches) should be marked with flagging, fencing or other means to identify the obstacle. • Wear footwear appropriate for the terrain and work to be performed. • Muddy, snowy, and icy conditions will warrant a more cautious work attitude. Adjust work speed to fit the weather conditions.
		Carrying heavy equipment	• Use proper lifting techniques: bend your knees and lift with your legs, keeping the back straight and avoiding twisting positions. Use the right tool for the job
	2. Conducting utility cleaning and inspection activities. • Utility manholes will be opened and cleaned by the subcontractor.	Struck by hazards • Connecting & disconnecting hoses and boom on vacuum truck	• Maintain a safe distance between yourself and the vacuum truck (approximately 25 feet) to avoid being struck by hoses and other moving parts
		Noise	• Wear hearing protection during operation of

			the jet/vac equipment
		Falls • Working adjacent to an open manhole	• Maintain a safe distance (approximately 25 feet) between yourself and the manhole.
		Exposure to contaminated air (e.g., hydrogen sulfide) at the manhole.	• Maintain a safe distance (approximately 25 feet) between yourself and the manhole.
		Splash hazards	• Wear eye protection (safety glasses and/or safety goggles) when in close proximity of the jet/vac equipment
		Traffic	• See controls in Step 1.
	3. Disconnect and demobilize the cleaning and inspection equipment.	Residual exposure to contamination from stormwater or sewer.	• Continue to wear personal protective equipment even after cleaning and inspection activities have been completed. • Wash/sanitize hands prior to consuming food and/or water.
		Vehicular hazards • Demobilizing to and from locations	• Maintain eye contact with vehicle operator prior to approaching vehicle • Wear high visibility clothing • Don't stand in vehicle blind spots or directly behind the vehicle • Communicate with vehicle operator to understand movements to subsequent locations • Utilize a spotter when backing up vehicles
	4. Closing utility covers	Pinch points	• Request subcontractor complete work • Use the correct tool for the job • Do not place body parts (e.g., hands or feet) between the utility cover and the utility structure without an object (e.g., pry bar) that is thicker in place first.
Other Information:			
JSA Author:	Keri Lauer		
Created:	09/21/2017		
JSA Number:			

JOB SAFETY ANALYSIS

MANUALLY LIFTING A MANHOLE COVER

Scope of Work: Manually removing manhole covers for the purpose of inspection and maintenance. If the job requires a large number of covers to be lifted, consider utilizing a mechanical lifter if available and practical.

General Precautions: There is the potential for ergonomic hazards from lifting, and pinch hazards to the hands and feet from the cover. Required Personal Protective Equipment includes leather work gloves, steel toed safety boots, and safety vest. Fall protection or restraint equipment such as a length limiting lanyard and harness may also be required.

TASK	HAZARDS	CONTROLS
1. Gather necessary tools (shovel, crowbar, 48" J-hook, 3 pronged sledge hammer, PPE, cones)	Foot hazard from dropped tools	• Take your time and avoid hurrying. • Wear appropriate PPE including steel-toed boots.
2. Approach the manhole	Traffic (including pedestrian)	• If applicable, notify site owner/manager of work activities and location • Wear appropriate PPE including high visibility clothing such as a reflective vest. • Utilize truck flashers/strobes, cones, signs, flags or other traffic control devices as needed to divert traffic around working activities. • Where pedestrian traffic is an issue, set up a barricade surrounding the work area.
	Same level slip/trip/falls from uneven ground, wet surfaces, and obstructions.	• Ensure path to destination is clear. • Be aware of proximity to uneven surfaces/obstructions when walking. • Wear protective footwear per PPE requirements of this JSA.

		Tick/insect bites (when manhole is located in wooded or grassy area)	• Inspect work areas upon arriving at the site to identify hazard(s). • Use insect repellant as necessary, with DEET (on skin or clothing) or permethrin (on clothing). Products containing permethrin can be used to treat boots, clothing and camping gear which can remain protective through several washings. Repellents containing 20% or more DEET (N, N-diethyl-m-toluamide) can be applied to the skin, and they can protect up to several hours. Always follow product instructions! • Conduct periodic body checks for ticks and bites to help prevent transmission of tick borne illnesses. • Wear appropriate PPE including leather gloves, and Tyvek suits or long sleeves, long pants and socks.
	3. Remove manhole cover • Place shovel in the rim, using it as a lever to pry the cover up. • Place the j-hook inside the opening created. • Remove the shovel. • Use the j-hook to remove the cover.	Pinch hazard (hands/feet)	• Watch positioning of hands and feet Use tools to prevent hands and feet from being underneath the cover. • Wear appropriate PPE including leather gloves and steel-toed boots.
		Back strain	• Use proper ergonomics when moving heavy objects; use appropriate mechanical assistance and tools when possible to pry and lift off covers. • Lift with your legs and avoid awkward twisting or postures. • Use your best judgment and obtain assistance from another person if the cover is too heavy to safely handle alone.
		Fall hazard	• Where the manhole is deeper than 6 feet, some type of fall protection must be employed (e.g., safety grating, guardrail system, fall arrest equipment, or a fall restraint system (length limiting lanyard and harness). . • Do not leave open manhole unattended without proper barriers or fall prevention controls.
	4. Replace cover	Pinch hazard (hands/feet)	• Watch positioning of hands and feet. Use tools to prevent hands and feet from being underneath the cover. • Wear appropriate PPE including leather gloves and steel-toed boots.

		Back strain	• Use proper ergonomics when moving heavy objects; use appropriate mechanical assistance and tools when possible to pry and lift off covers. • Lift with your legs and avoid awkward twisting or postures. • Use your best judgment and obtain assistance from another person if the cover is too heavy to safely handle alone
		Fall hazard	• Where the manhole is deeper than 6 feet, some type of fall protection must be employed (e.g., safety grating, guardrail system, fall arrest equipment, or a fall restraint system (length limiting lanyard and harness). • Do not leave open manhole unattended without proper barriers or fall prevention controls.
	Required Personal Protective Equipment (PPE): Leather work gloves, safety vest, and steel toed boots are required. Fall protection equipment may also be required.		
Other Information:			
JSA Author:	Jim Gagliard, Caitlyn DellaTorre		
Created:	7/12/12		
JSA Number:			

JOB SAFETY ANALYSIS

WORKING IN POISONOUS PLANT ENVIRONMENTS

Scope of Work: When working outdoors employees are at risk of being exposed to poisonous plants i.e. poison ivy, poison oak, and poison sumac.

General Precautions.Poisonous plants secrete urishiol oil, which can cause allergic rash to the skin upon contact or lungs upon inhalation. In order to avoid the hazards associated with poisonous plants, it is important to be able to identify poisonous plants and take measures to avoid and protect yourself against them.

TASK	HAZARDS	CONTROLS
1. Working in an area with known or suspected poison ivy (see photo on page 2). • Found in Eastern and Midwestern United States. • Grows in shaded areas, along the banks of streams and lakes or in wooded areas.	• Allergic skin or lung reaction to poisonous plant, exposure routes are direct skin contact, contact with contaminated clothing, contact from removing shoes, sitting in a contaminated vehicle, contact with tools	• Be able to identify poisonous plants before going in the field and pay attention to placement of body and tools when working in known or suspected poisonous plant habitat. • Have proper PPE including Tyvek coveralls, nitrile gloves, and boot covers if working in an area where contact of poison ivy, poison oak, or poison sumac is unavoidable or if highly susceptible to these plants and working in an area where they are known to be present. • Reduce contamination by separating tools, and PPE until they can be decontaminated. Urushoil oil stays active on any surface including dead plants for up to 5 years. • Shower as soon as possible after exposure to remove any potential contamination. Do not take a bath because of risk of entire body contamination. • Wash body parts with Tecnu or other product designed for removing urushoil. • Do not drive vehicles into areas known or suspected of having poisonous plants. • Before entering a vehicle, remove outer layers of clothing or Tyvek so not to spread urushiol oil. • Do not burn poisonous plants because the oil can become airborne and inhaled.
2. Working in an area with known or suspected poison oak (see photo on page 2) • Found in the Mid-Atlantic to Texas, as well the pacific coast.		
3. Working in an area with known or suspected poison sumac (see photo on page 2) • Found in Southeastern United States. • Exclusively grows in wetlands		
Required Training: Task-specific training.	**Required Personal Protective Equipment (PPE):** Tyvek coveralls, gloves, boot covers, long sleeves, and Tecnu cleaning product.	

Other Information:	 **Poison Oak**  **Poison Ivy**  **Poison Sumac**
JSA Author:	Dylan Hovey
Created:	7/24/2015
JSA Number:	

JOB SAFETY ANALYSIS

TICKS, STINGING INSECTS, AND SPIDERS

Scope of Work:
When working outdoors employers are at risk of being exposed to ticks, stinging insects, and spiders.

General Precautions:
It is important to be able to recognize habitats where ticks, stinging insects, and spiders are known or suspected to be.

TASK	HAZARDS	CONTROLS
1. Working in an area with known or suspected ticks.	Tick borne diseases.	• Perform tick checks by scanning clothes and any exposed skin frequently. • Stay on cleared, well-traveled trails. • Keep work areas clear. • Avoid sitting directly on the ground or on stone walls. • Be aware that ticks can also be above you. • Keep long hair tied back. • Required PPE: o Wear light colored pants. o Tuck pants into socks or wear boot gaiters. • Encouraged PPE: o Use insect repellant contain DEET on skin or clothes. o Use permethrin-treated or impregnated clothing (do not apply to skin).
2. Working in an area with known or suspect poisonous spiders. Below are examples of poisonous spiders and where they live. • Black Widows are found throughout North America but are more common in southern and western areas. • Brown Recluse Spiders which is found in the Midwestern and Southern states. • Hobo Spiders in the Pacific Northwest.	Illness caused by poisonous spider bite	• Inspect or shake out any clothing, shoes, towels, or equipment before use. • Wear protective clothing such as long-sleeved shirt and long pants, hats, gloves, and boots when handling stacked or undisturbed piles of materials that are indoors or outdoors. • Minimize the empty spaces between stacked materials that are indoors or outdoors. • Remove and reduce debris and rubble from around outside work areas. • Trim or eliminate tall grasses from around outdoor work areas. • Store apparel and outdoor equipment in tightly closed plastic bags.

	3. Working in an area with known or suspected stinging insects such as: • Bees • Wasps • Hornets	Being stung by stinging insects.	• Wear a Hooded Bee Jacket or face covering when disturbing a bee hive is necessary • Wear light-colored, smooth-finished clothing. • Avoid perfumed soaps, shampoos, and deodorants. • Avoid bananas and banana-scented toiletries. • Wear clean clothing and bathe daily. • Wear clothing to cover as much of the body as possible. • Avoid flowering plants when possible. • Keep work areas clean. • Remain calm and still. • Workers with a history of severe allergic reactions to inspect bites or stings should consider carrying an epinephrine auto injector (EpiPen) and should wear a medical identification bracelet or necklace stating their allergy and let people working with you know about your allergy.
	Required Training: Job specific training.	**Required Personal Protective Equipment (PPE):** Site specific PPE • Required Tick PPE includes light colored pants and gaiter or pants tucked into socks. Recommended practices included using DEET and permethrin treated clothing (optional PPE). • Spider PPE includes long-sleeved shirt and pant, hat, gloves, and boots. • Bees, wasps, and hornets PPE includes an EpiPen if necessary, wear light-colored, smooth-finished, and long sleeved clothing.	
Other Information:			
JSA Author: Dylan Hovey **Created:** 7/24/2015 **JSA Number:**			

Additional Forms and Attachments

(Note: available in Section 22, Appendix E of Corporate H&S Manual)

POLYCHLORINATED BIPHENYL (AROCLOR 1254)

ICSC: 0939

Chlorobiphenyl (54% chlorine) Chlorodiphenyl (54% chlorine) PCB Molecular mass: 327 (average) ICSC # 0939 	CAS # 11097-69-1 RTECS # TQ1360000 UN # 2315 EC # 602-039-00-4 October 20, 1999 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Not combustible. Gives off irritating or toxic fumes (or gases) in a fire.		In case of fire in the surroundings: powder, carbon dioxide.
EXPLOSION			
EXPOSURE		PREVENT GENERATION OF MISTS! STRICT HYGIENE!	
•INHALATION		Ventilation.	Fresh air, rest. Refer for medical attention.
•SKIN	MAY BE ABSORBED! Dry skin. Redness.	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap. Refer for medical attention.
•EYES		Safety goggles, face shield.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Headache. Numbness.	Do not eat, drink, or smoke during work.	Rest. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING

Consult an expert! Collect leaking liquid in sealable containers. Absorb remaining liquid in sand or inert absorbent and remove to safe place. Do NOT let this chemical enter the environment. Personal protection: complete protective clothing including self-contained breathing apparatus.	Separated from food and feedstuffs . Cool. Dry. Keep in a well-ventilated room.	Unbreakable packaging; put breakable packaging into closed unbreakable container. Do not transport with food and feedstuffs. Severe marine pollutant. Note: C Xn symbol N symbol R: 33-50/53 S: 2-35-60-61 UN Hazard Class: 9 UN Packing Group: II
ICSC: 0939	Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.	

POLYCHLORINATED BIPHENYL (AROCLOR 1254)

IMPORTANT DATA	PHYSICAL STATE; APPEARANCE: LIGHT YELLOW VISCOUS LIQUID. PHYSICAL DANGERS: CHEMICAL DANGERS: The substance decomposes in a fire producing irritating and toxic gases . OCCUPATIONAL EXPOSURE LIMITS: TLV: 0.5 mg/m^3 as TWA; (skin); A3; (ACGIH 2004). MAK: 0.05 ppm, 0.70 mg/m^3; H; Peak limitation category: II(8); Carcinogen category: 3B; Pregnancy risk group: B; (DFG 2004). OSHA PEL: TWA 0.5 mg/m^3 skin NIOSH REL*: Ca TWA 0.001 mg/m^3 See Appendix A *Note: The REL also applies to other PCBs. NIOSH IDLH: Ca 5 mg/m^3 See: IDLH INDEX	ROUTES OF EXPOSURE: The substance can be absorbed into the body by inhalation of its aerosol, through the skin and by ingestion. INHALATION RISK: A harmful contamination of the air will be reached rather slowly on evaporation of this substance at 20°C. EFFECTS OF SHORT-TERM EXPOSURE: EFFECTS OF LONG-TERM OR REPEATED EXPOSURE: Repeated or prolonged contact with skin may cause dermatitis. Chloracne is the most visible effect. The substance may have effects on the liver . Animal tests show that this substance possibly causes toxic effects upon human reproduction.
PHYSICAL PROPERTIES	Relative density (water = 1): 1.5 Solubility in water: none	Vapour pressure, Pa at 25°C: 0.01 Octanol/water partition coefficient as log Pow: 6.30 (estimated)
ENVIRONMENTAL DATA	In the food chain important to humans, bioaccumulation takes place, specifically in aquatic organisms. It is strongly advised not to let the chemical enter into the environment. 	

NOTES

Changes into a resinous state (pour point) at 10°C. Distillation range: 365°-390°C. Card has been partly updated in October 2004. See sections Occupational Exposure Limits, EU classification, Emergency Response.

Transport Emergency Card: TEC (R)-90GM2-II-L

ADDITIONAL INFORMATION

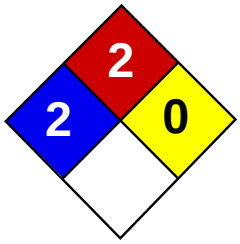
ICSC: 0939	POLYCHLORINATED BIPHENYL (AROCLOR 1254)

IMPORTANT LEGAL NOTICE:	Neither NIOSH, the CEC or the IPCS nor any person acting on behalf of NIOSH, the CEC or the IPCS is responsible for the use which might be made of this information. This card contains the collective views of the IPCS Peer Review Committee and may not reflect in all cases all the detailed requirements included in national legislation on the subject. The user should verify compliance of the cards with the relevant legislation in the country of use. The only modifications made to produce the U.S. version is inclusion of the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

Page last reviewed: July 22, 2015

Page last updated: July 1, 2014

Content source: Centers for Disease Control and Prevention (http://www.cdc.gov/)



Health	2
Fire	2
Reactivity	0
Personal Protection	H

Material Safety Data Sheet
DLimonene MSDS

Section 1: Chemical Product and Company Identification

Product Name: DLimonene

Catalog Codes: SLL1933

CAS#: 5989-27-5

RTECS: GW6360000

TSCA: TSCA 8(b) inventory: DLimonene

CI#: Not applicable.

Synonym: optical isomer of Dipentene; D-(+)-Limonene; Carvene; (+)-4-Isopropenyl-1-methylcyclohexene; (+)- R-Limonene; (R)-1-Methyl-4-(1-methylethyenyl)cyclohexene

Chemical Name: Cyclohexene, 1-methyl-4-(1-methylethenyl)-

Chemical Formula: C10H16

Contact Information:

Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396

US Sales: **1-800-901-7247**
International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call: 1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
{D}Limonene	5989-27-5	100

Toxicological Data on Ingredients: DLimonene: ORAL (LD50): Acute: 4400 mg/kg [Rat]. 5600 mg/kg [Mouse]. DERMAL (LD50): Acute: >5000 mg/kg [Rabbit].

Section 3: Hazards Identification

Potential Acute Health Effects:
Hazardous in case of skin contact (irritant, sensitizer), of eye contact (irritant), of inhalation (lung irritant). Slightly hazardous in case of skin contact (permeator), of ingestion.

Potential Chronic Health Effects:
CARCINOGENIC EFFECTS: 3 (Not classifiable for human.) by IARC. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. Repeated or prolonged exposure is not known to aggravate medical condition.

Section 4: First Aid Measures

Eye Contact:
Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Get medical attention.

Skin Contact:
In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

Serious Skin Contact:
Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek medical attention.

Inhalation:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Serious Inhalation:
Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek medical attention.

Ingestion:
Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: Flammable.

Auto-Ignition Temperature: Not available.

Flash Points: CLOSED CUP: 45°C (113°F). OPEN CUP: 53°C (127.4°F).

Flammable Limits: LOWER: 0.7% UPPER: 6.1%

Products of Combustion: These products are carbon oxides (CO, CO2).

Fire Hazards in Presence of Various Substances: Flammable in presence of open flames and sparks, of heat.

Explosion Hazards in Presence of Various Substances:
Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.

Fire Fighting Media and Instructions:
Flammable liquid, insoluble in water. SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray or fog. Cool containing vessels with water jet in order to prevent pressure build-up, autoignition or explosion.

Special Remarks on Fire Hazards: When heated to decomposition it emits acrid smoke and irritating fumes.

Special Remarks on Explosion Hazards: Not available.

Section 6: Accidental Release Measures

Small Spill: Absorb with an inert material and put the spilled material in an appropriate waste disposal.

Large Spill:
Flammable liquid, insoluble in water. Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Do not get water inside container. Do not touch spilled material. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7: Handling and Storage

Precautions:
Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe gas/fumes/ vapor/spray. Avoid contact with eyes. Wear suitable protective clothing. If ingested, seek medical advice immediately and show the container or the label. Keep away from incompatibles such as oxidizing agents.

Storage:
Store in a segregated and approved area. Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame).

Section 8: Exposure Controls/Personal Protection

Engineering Controls:
Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Personal Protection: Splash goggles. Lab coat. Gloves (impervious).

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Boots. Gloves. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits:
TWA: 30 from AIHA TWA: 165.5 (mg/m3) from AIHA Consult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties

Physical state and appearance: Liquid.

Odor: Citrus

Taste: Citrus

Molecular Weight: 136.23 g/mole

Color: Clear. almost Colorless.

pH (1% soln/water): Not applicable.

Boiling Point: 175°C (347°F) - 176 C

Melting Point: -40°C (-40°F)

Critical Temperature: Not available.

Specific Gravity: 0.8402 (Water = 1)

Vapor Pressure: 0.2 kPa (@ 20°C)

Vapor Density: 4.7 (Air = 1)

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: Not available.

Ionicity (in Water): Not available.

Dispersion Properties: See solubility in water, diethyl ether.

Solubility:
Easily soluble in diethyl ether. Insoluble in cold water, hot water. Soluble in all proportions in alcohol.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Heat, ignition sources (flame, sparks), prolonged exposure to air, incompatible materials

Incompatibility with various substances: Reactive with oxidizing agents.

Corrosivity: Not considered to be corrosive for metals and glass.

Special Remarks on Reactivity:
Air sensitive. Oxidizes to a film when exposed to air. Reacts with a combination of iodine tetrafluoride and tetrafluoroethylene. Limonene reacts with dry hydrogen chloride or hydrogen bromide to form monohalides

Special Remarks on Corrosivity: Not available.

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Absorbed through skin. Eye contact. Inhalation. Ingestion.

Toxicity to Animals:
Acute oral toxicity (LD50): 4400 mg/kg [Rat]. Acute dermal toxicity (LD50): >5000 mg/kg [Rabbit].

Chronic Effects on Humans: CARCINOGENIC EFFECTS: 3 (Not classifiable for human.) by IARC.

Other Toxic Effects on Humans:
Hazardous in case of skin contact (irritant, sensitizer), of inhalation (lung irritant). Slightly hazardous in case of skin contact (permeator), of ingestion.

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans: May cause adverse reproductive effects and birth defects (teratogenic)

Special Remarks on other Toxic Effects on Humans:
Acute Potential Health Effects: Skin: Causes skin irritation. It can be absorbed through intact skin. However, it is generally regarded to have low toxicity by dermal route. Eyes: Causes eye irritation. Inhalation: Aspiration of large doses may produce pulmonary edema and chemical pneumonitis. May cause dizziness and suffocation. No nasal or pharyngeal irritation has been reported. Ingestion: It is generally regarded to have low toxicity by oral route. It may produce burning pain in the mouth and throat, abdominal pain, nausea, vomiting, and diarrhea. There may an odor of terpenes in the vomitus or breath. It may affect behavior/central nervous and peripheral nervous system. Central nervous system effects may include excitememt, somnolence, delirium, ataxia, convulsions, and stupor while peripheral system effects may include spastic paralysis. It may affect respiration (respiratory depression, choking, coughing, dyspnea, cyanosis). Other symptoms may include cyanosis, fever, and tachycardia. Systemic absorption of large doses may produce pulmonary edema and chemical pneumonitis. The urine may smell like violets. Chronic Potential Health Effects: Ingestion: Prolonged or repeated ingestion may produce nausea, lowered blood sugar and cholesterol, and kidney damage (hematuria, albuminuria, tubular necrosis), and may also affect the liver. Skin: It may be a weak sensitizer and responsible for some rare allergic responses (dermatitis)

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The product itself and its products of degradation are not toxic.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:
Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information

DOT Classification: CLASS 3: Flammable liquid.

Identification: : Dipentene UNNA: 2052 PG: III

Special Provisions for Transport: Marine pollutant

Section 15: Other Regulatory Information

Federal and State Regulations: TSCA 8(b) inventory: DLimonene

Other Regulations: OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).

Other Classifications:

WHMIS (Canada):
CLASS B-3: Combustible liquid with a flash point between 37.8°C (100°F) and 93.3°C (200°F).

DSCL (EEC):
R10- Flammable. R38- Irritating to skin. R43- May cause sensitization by skin contact. R50/53- Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. S24- Avoid contact with skin. S37- Wear suitable gloves. S60- This material and its container must be disposed of as hazardous waste. S61- Avoid release to the environment. Refer to special instructions/Safety data sheets.

HMIS (U.S.A.):

Health Hazard: 2

Fire Hazard: 2

Reactivity: 0

Personal Protection: h

National Fire Protection Association (U.S.A.):

Health: 2

Flammability: 2

Reactivity: 0

Specific hazard:

Protective Equipment:
Gloves. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Splash goggles.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

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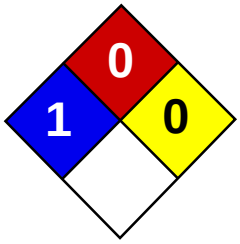

Material Safety Data Sheet
Lead MSDS

Section 1: Chemical Product and Company Identification

Product Name: Lead

Catalog Codes: SLL1291, SLL1669, SLL1081, SLL1459, SLL1834

CAS#: 7439-92-1

RTECS: OF7525000

TSCA: TSCA 8(b) inventory: Lead

CI#: Not available.

Synonym: Lead Metal, granular; Lead Metal, foil; Lead Metal, sheet; Lead Metal, shot

Chemical Name: Lead

Chemical Formula: Pb

Contact Information:

Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396

US Sales: **1-800-901-7247**
International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call: 1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Lead	7439-92-1	100

Toxicological Data on Ingredients: Lead LD50: Not available. LC50: Not available.

Section 3: Hazards Identification

Potential Acute Health Effects: Slightly hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation.

Potential Chronic Health Effects:
Slightly hazardous in case of skin contact (permeator). CARCINOGENIC EFFECTS: Classified A3 (Proven for animal.) by ACGIH, 2B (Possible for human.) by IARC. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance may be toxic to blood, kidneys, central nervous system (CNS). Repeated or prolonged exposure to the substance can produce target organs damage.

Section 4: First Aid Measures

Eye Contact:

Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation occurs.

Skin Contact: Wash with soap and water. Cover the irritated skin with an emollient. Get medical attention if irritation develops.

Serious Skin Contact: Not available.

Inhalation:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Serious Inhalation: Not available.

Ingestion:
Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: May be combustible at high temperature.

Auto-Ignition Temperature: Not available.

Flash Points: Not available.

Flammable Limits: Not available.

Products of Combustion: Some metallic oxides.

Fire Hazards in Presence of Various Substances: Non-flammable in presence of open flames and sparks, of shocks, of heat.

Explosion Hazards in Presence of Various Substances:
Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.

Fire Fighting Media and Instructions:
SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

Special Remarks on Fire Hazards: When heated to decomposition it emits highly toxic fumes of lead.

Special Remarks on Explosion Hazards: Not available.

Section 6: Accidental Release Measures

Small Spill:
Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

Large Spill:
Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7: Handling and Storage

Precautions:
Keep locked up.. Keep away from heat. Keep away from sources of ignition. Empty containers pose a fire risk, evaporate the residue under a fume hood. Ground all equipment containing material. Do not ingest. Do not breathe dust. Wear suitable

protective clothing. If ingested, seek medical advice immediately and show the container or the label. Keep away from incompatibles such as oxidizing agents.

Storage: Keep container tightly closed. Keep container in a cool, well-ventilated area.

Section 8: Exposure Controls/Personal Protection

Engineering Controls:
Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection: Safety glasses. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits:
TWA: 0.05 (mg/m3) from ACGIH (TLV) [United States] TWA: 0.05 (mg/m3) from OSHA (PEL) [United States] TWA: 0.03 (mg/m3) from NIOSH [United States] TWA: 0.05 (mg/m3) [Canada]Consult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties

Physical state and appearance: Solid. (Metal solid.)

Odor: Not available.

Taste: Not available.

Molecular Weight: 207.21 g/mole

Color: Bluish-white. Silvery. Gray

pH (1% soln/water): Not applicable.

Boiling Point: 1740°C (3164°F)

Melting Point: 327.43°C (621.4°F)

Critical Temperature: Not available.

Specific Gravity: 11.3 (Water = 1)

Vapor Pressure: Not applicable.

Vapor Density: Not available.

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: Not available.

Ionicity (in Water): Not available.

Dispersion Properties: Not available.

Solubility: Insoluble in cold water.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Incompatible materials, excess heat

Incompatibility with various substances: Reactive with oxidizing agents.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity:
Can react vigorously with oxidizing materials. Incompatible with sodium carbide, chlorine trifluoride, trioxane + hydrogen peroxide, ammonium nitrate, sodium azide, disodium acetylide, sodium acetylide, hot concentrated nitric acid, hot concentrated hydrochloric acid, hot concentrated sulfuric acid, zirconium.

Special Remarks on Corrosivity: Not available.

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Absorbed through skin. Inhalation. Ingestion.

Toxicity to Animals:
LD50: Not available. LC50: Not available.

Chronic Effects on Humans:
CARCINOGENIC EFFECTS: Classified A3 (Proven for animal.) by ACGIH, 2B (Possible for human.) by IARC. May cause damage to the following organs: blood, kidneys, central nervous system (CNS).

Other Toxic Effects on Humans: Slightly hazardous in case of skin contact (irritant), of ingestion, of inhalation.

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans: Not available.

Special Remarks on other Toxic Effects on Humans:
Acute Potential: Skin: Lead metal granules or dust: May cause skin irritation by mechanical action. Lead metal foil, shot or sheets: Not likely to cause skin irritation Eyes: Lead metal granules or dust: Can irritate eyes by mechanical action. Lead metal foil, shot or sheets: No hazard. Will not cause eye irritation. Inhalation: In an industrial setting, exposure to lead mainly occurs from inhalation of dust or fumes. Lead dust or fumes: Can irritate the upper respiratory tract (nose, throat) as well as the bronchi and lungsby mechanical action. Lead dust can be absorbed through the respiratory system. However, inhaled lead does not accumulate in the lungs. All of an inhaled dose is eventually abssorbed or transferred to the gastrointestinal tract. Inhalation effects of exposure to fumes or dust of inorganic lead may not develop quickly. Symptoms may include metallic taste, chest pain, decreased physical fitness, fatigue, sleep disturbance, headache, irritability, reduces memory, mood and personality changes, aching bones and muscles, constipation, abdominal pains, decreasing appetite. Inhalation of large amounts may lead to ataxia, deliriuim, convulsions/seizures, coma, and death. Lead metal foil, shot, or sheets: Not an inhalation hazard unless metal is heated. If metal is heated, fumes will be released. Inhalation of these fumes may cause "fume metal fever", which is characterized by flu-like symptoms. Symptoms may include metallic taste, fever, nausea, vomiting, chills, cough, weakness, chest pain, generalized muscle pain/aches, and increased white blood cell count. Ingestion: Lead metal granules or dust: The symptoms of lead poisoning include abdominal pain or cramps (lead cholic), spasms, nausea, vomiting, headache, muscle weakness, hallucinations, distorted perceptions, "lead line" on the gums, metallic taste, loss of appetite, insomnia, dizziness and other symptoms similar to that of inhalation. Acute poisoning may result in high lead levels in the blood and urine, shock, coma and death in extreme cases. Lead metal foil, shot or sheets: Not an ingestion hazard for usual industrial handling.

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are less toxic than the product itself.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:
Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information

DOT Classification: Not a DOT controlled material (United States).

Identification: Not applicable.

Special Provisions for Transport: Not applicable.

Section 15: Other Regulatory Information

Federal and State Regulations:
California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer, birth defects or other reproductive harm, which would require a warning under the statute: Lead California prop. 65: This product contains the following ingredients for which the State of California has found to cause reproductive harm (female) which would require a warning under the statute: Lead California prop. 65: This product contains the following ingredients for which the State of California has found to cause reproductive harm (male) which would require a warning under the statute: Lead California prop. 65 (no significant risk level): Lead: 0.0005 mg/day (value) California prop. 65: This product contains the following ingredients for which the State of California has found to cause birth defects which would require a warning under the statute: Lead California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: Lead Connecticut hazardous material survey.: Lead Illinois toxic substances disclosure to employee act: Lead Illinois chemical safety act: Lead New York release reporting list: Lead Rhode Island RTK hazardous substances: Lead Pennsylvania RTK: Lead

Other Regulations:
OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:

WHMIS (Canada): CLASS D-2A: Material causing other toxic effects (VERY TOXIC).

DSCL (EEC):
R20/22- Harmful by inhalation and if swallowed. R33- Danger of cumulative effects. R61- May cause harm to the unborn child. R62- Possible risk of impaired fertility. S36/37- Wear suitable protective clothing and gloves. S44- If you feel unwell, seek medical advice (show the label when possible). S53- Avoid exposure - obtain special instructions before use.

HMIS (U.S.A.):

Health Hazard: 1

Fire Hazard: 0

Reactivity: 0

Personal Protection: E

National Fire Protection Association (U.S.A.):

Health: 1

Flammability: 0

Reactivity: 0

Specific hazard:

Protective Equipment:
Gloves. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Safety glasses.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

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