SECTION 011110

UNIVERSAL HAZARDOUS WASTE

PART 1 – GENERAL

1.1 SCOPE OF WORK

A. This specification outlines the removal and disposal of miscellaneous universal hazardous waste (UHW) as defined under the federal universal hazardous waste regulations found in Title 40 of the Code of Federal Regulations (CFR), part 273 (40 CFR 273). The regulation applies to the four types of universal waste, which include: batteries, pesticides, mercury containing equipment, and mercury containing fluorescent lamps. Miscellaneous hazardous wastes that require special handling for disposal include PCB-containing oils. Miscellaneous non-hazardous wastes as defined herein include cleaning chemicals, petroleum products, refrigerants, and paints.

B. Listed materials and quantities are approximate. The table below is not considered "all-inclusive." By submitting a base bid, the Contractor signifies they have visited the site, examined conditions that may affect the work, verified quantities of UHW, and is informed as to the extent and character of the project. Any discrepancies from estimated quantities shall not be cause for a contract cost adjustment.

C. The Universal Hazardous Waste scope summarization includes, but is not limited to:
    1. Universal Hazardous Waste as listed in Appendix 1 – Phase I Environmental Site Assessment And Hazardous Materials Inventory

1.2 CODES AND REGULATIONS

A. All work and disposal shall be performed in compliance with all applicable federal, state, and local regulations including, but not limited to:

    1. 40 CFR 273, Standards for Universal Waste Management;
    2. 25 PA Code 266b, Universal Waste Management;
    3. 40 CFR 750, Toxic Substance control Act;
    4. 40 CFR 761, Polychlorinated biphenyls;

5. 40 CFR Part 82, Subpart F Section 608, Clean Air Act;
6. 40 CFR 300-399, EPA Comprehensive Environmental Response Compensation & Liability Act;
7. 40 CFR 260-299, Resource Conservation and Recovery Act (RCRA);
8. 49 CFR 171-180, DOT Hazardous Material Regulations;
9. this Specification.

B. The Contractor has the responsibility of informing themselves fully of the requirements of these regulations and the agencies enforcing them and shall satisfy completely this Specification and all referenced regulations. All other applicable federal, state and local regulations are incorporated by reference.

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

3.1 REMOVAL OF UHW

A. The Contractor shall remove all fluorescent light tubes and compact fluorescent light (CFL) bulbs suspected of containing mercury. Fluorescent light tubes and CFL bulbs shall be treated as universal waste in accordance with 40 CFR 763 and PA Code 266b.

B. All fluorescent light ballasts associated with the fluorescent lighting systems are presumed to contain polychlorinated biphenyl (PCB) and as such should be properly removed and disposed of as hazardous waste in accordance 40 CFR Part 763 and 40 CFR Part 761. Ballast units that are clearly labeled as “Non-PCB” do not require disposal as hazardous waste.

C. Mercury-containing instrumentation such as mercury switches and/or mercury thermostats, if any, shall be properly removed and disposed of as universal waste in accordance with 40 CFR Part 763.

D. The Contractor shall remove and recycle all 6 Volt lead-acid batteries associated with emergency lighting and/or exit signs found throughout the building.

E. The Contractor shall remove and recycle lead acid batteries associated with the Emergency Boiler Shut off.

F. Fan coil units and other heating, ventilating and air conditioning (HVAC) and refrigeration equipment, if any, may contain chlorofluorocarbons (CFC) such as Freon-12, a controlled substance, that should be captured and properly disposed of prior to renovation of the

facility. The removal and disposal of any CFC's, as well as any HVAC and refrigeration equipment from the subject properties will be performed, in accordance with 40 CFR Part 82, Subpart F.

G. After removal of CFC's, equipment may be disposed as solid waste.

H. On-site breakage of fluorescent light tubes or CFL bulbs shall not be permitted with the exception of the use of an approved, fully contained, fluorescent lamp crushing system.

I. Mercury-containing equipment shall be removed intact. On-site breakage of mercury-containing equipment shall not be permitted.

J. PCB-containing light ballasts and/or capacitors shall be removed intact. On-site breakage of light ballasts and/or capacitors shall not be permitted

3.2 DISPOSAL OF UHW

A. Procedure for hauling and disposal of universal hazardous waste shall comply with 40 CFR 260-265 & 40 CFR 273 (as applicable), as well as all applicable state, regional and local standards. All universal hazardous waste, debris, containers and contaminated clothing and equipment shall be packaged, sealed, labeled and disposed of in accordance with applicable regulations. This waste material shall be transported in sealed, properly labeled, DOT approved containers and disposed of only at an USEPA or state approved sanitary landfill or universal waste recycling center. The procedure for hauling, disposal and/or recycling of universal hazardous waste shall comply with all federal, state and local regulations.

3.3 PROJECT CLOSEOUT

A. All documentation of transportation and disposal transactions such as landfill receipts, trip tickets, and waste manifests shall be completed and include in the final report for the Owner.

END OF SECTION 011110

SECTION 011120

ASBESTOS ABATEMENT

PART 1 – GENERAL

1.1 SCOPE OF WORK

A. This section outlines the required tasks and procedures involved in the removal of asbestos containing material (ACM) at the Lawncrest Recreation Center. ACM removal, associated equipment demolition, if appropriate, and decontamination cleaning procedures shall be accomplished under asbestos-abatement conditions. The Asbestos Abatement Contractor (AAC) shall cooperate fully with the other Contractors in expediting the work of all trades, and avoid damage to the work of the other Contractors.

1. The AAC may be permitted to combine or separate adjacent, Major and/or Minor work areas, as feasible, provided the Project Designer and/or API is amenable to the plans, and presents no written objections.

B. The abatement work scope summarization includes, but is not limited to:

1. Asbestos Containing Materials as listed in Appendix 1 – Phase I Environmental Site Assessment And Hazardous Materials Inventory

C. Assessment The AAC shall have a PA licensed Supervisor on site at all times during asbestos abatement activities. The AAC shall not perform any abatement activities, including prep, bag-out, and teardown unless a City of Philadelphia certified API is on site.

D. AAC access shall be confined to the work areas indicated in this Contract. The Contract may be proceeding concurrently with others in the building.

E. The AAC shall be served with a Stop Work Order by the Project Designer and/or API when they are in non-compliance with this Contract Specification and/or other pertinent regulations.

F. The project shall remain halted until all matters identified in the Stop Work Order are corrected. The Project Designer and/or API shall notify the AAC to resume work once it has been determined that all remedies have been applied for the AAC to be in compliance with this Contract Specification and/or pertinent regulations.

G. If it is determined that airborne asbestos contamination has occurred "outside the work area" adjacent to an active asbestos abatement work area, the AAC shall contain and clean the affected premises under the direction of the API at no additional cost to the Owner. Causes for "outside the work area" airborne asbestos contamination include, but are not limited to:

1. The loss of a negative pressure differential inside any active asbestos abatement work area;

2. A breech of containment into any active asbestos abatement work area;
3. Improper maintenance of AFDs/HEPA vacuums;
4. Improper worker decontamination procedures;
5. Negligence of the AAC;
6. Any other poor work practices of the AAC.

H. The Owner reserves the right to require asbestos abatement and associated work be performed at times when the building is unoccupied.

I. The AAC shall provide the number of AFDs to obtain a negative pressure differential of four (4) air changes per hour for all pipe chase/wall cavity asbestos abatement work areas.

1. Number of AFDs projected to obtain a negative pressure differential sufficient to provide a minimum of four (4) air changes of the work area per hour:

$$\frac{L \times W \times H \times 4 \text{ air changer per hour}}{\text{CFM Rating of AFD} \times 60}$$

J. As required by the Asbestos Control Regulation, the AAC shall provide a minimum 18" square transparent viewing window consisting of shatterproof material greater than or equal to 1/8" in thickness located at a height appropriate for accessible viewing and in such a manner as to maximize visibility of the abatement work area.

K. AFDs and HEPA vacuums require different maintenance schedules and attention depending on the model. Check the user's manual to determine and comply with the maintenance, filter replacement, and cleaning requirements of each AFD and HEPA vacuum being used.

1. At no time shall an AFD be dismantled and the inner HEPA filter replaced while onsite. Removal and replacement of HEPA filters shall be performed offsite.
2. At no time shall a HEPA vacuum be opened for cleaning/emptying outside an active asbestos abatement work area.
3. Cleaning/emptying a HEPA vacuum shall be performed INSIDE an active asbestos abatement work area with a minimum negative pressure differential of -0.02 inches of water column.
    a. Cleaning/emptying of HEPA vacuums shall be performed directly beside an operating AFD exhausting to the exterior.
    b. HEPA vacuums shall be cleaned/emptied only during gross removal of asbestos and/or equipment demolition. No HEPA vacuums shall be cleaned/emptied, or opened for any other reason, during final cleaning and/or encapsulation.
4. A daily maintenance log should be kept of the ongoing equipment repairs and maintenance activities such as cleaning the air filter devices and HEPA Vacuums.

L. De-energize the asbestos abatement work areas and all conduit running through the work areas, if possible.

1. Appropriate lock and tag out devices shall be installed at the breakers.
2. The AAC shall supply sufficient temporary lighting to illuminate the work areas during wall demolition and asbestos abatement. All active work areas shall be lighted to not less than the minimum illumination intensities listed in OSHA Regulation 29 CFR 1926.56(a), Table D-3 for Indoors: warehouses, corridors, hallways, and exit ways (e.g. - 5-foot candles).

M. Only approved noncombustible or flame-resistant materials shall be used for work area preparation. Polyethylene sheeting shall be certified to conform to NFPA 701.

N. The dropping, lowering, transporting or otherwise moving any open or packaged waste through any shaft during this project is strictly prohibited.

O. Stated quantities are approximate. By submitting a bid, the AAC S certifies they have visited the site, examined conditions that may affect the work, verified quantities of materials, and is informed as to the extent and character of the project.

P. If the AAC discovers or suspects ACM not previously identified for abatement the AAC will notify the Owner who will schedule testing of the materials.

1.2 CODES AND REGULATIONS

A. All work and disposal shall be performed in compliance with all applicable Federal, State, and local regulations including, but not limited to:

1. 29 CFR 1910.1000 Asbestos in General Industry
2. 29 CFR 1910.134 Respiratory Protection
3. 29 CFR 1926.1101 (OSHA);
4. 29 CFR 1926.501 (OSHA);
5. 40 CFR 257 Criteria for Classification of Solid Waste Disposal Facilities and Practices
6. 40 CFR Part 61 (NESHAP);
7. 40 CFR Part 763 (AHERA);
8. 40 CFR 761 (PCB Regulations);
9. Resource Conservation and Recovery Act (RCRA);
10. 40 CFR 300-399, EPA Comprehensive Environmental Response Compensation & Liability Act;
11. 40 CFR 745, EPA Toxic Substances Control Act; LBP Poisoning Prevention
12. EPA Renovation, Repair, and Painting (RRP) rule under the Toxic Substances Control Act;
13. 49 CFR 171-180, DOT Hazardous Material Regulations;
14. 42 CFR Part 84 & 30 CFR Part 11 (NIOSH/DHHS respirator standards);

15. The Asbestos Control Regulation (Philadelphia Department of Public Health);
16. Act 194 & Act 161 (Pennsylvania Department of Labor and Industry);
17. Section F-315.8 (R) of the Philadelphia Fire Prevention Code; and
18. this Specification.

B. The AAC has the responsibility of informing themselves fully of the requirements of these agencies and shall satisfy completely this Specification and all referenced regulations. All other applicable federal state and local regulations are incorporated by reference.

C. The AAC must be a City of Philadelphia Licensed Asbestos Abatement Contractor as well as a Pennsylvania Licensed Asbestos Contractor and employ asbestos workers certified to work in the state of Pennsylvania.

1.3 NOTIFICATIONS

A. The AAC shall notify all applicable agencies including the EPA, DEP, and Philadelphia Air Management Services, using the appropriate form(s).

B. [If Alternate Method Requests are proposed] A request for alternative method shall be submitted to and approved by Air Management Services of the City of Philadelphia prior to the start of the project.

C. The installation and usage of bag-out chambers require a request for alternative methods submitted to and approved by Air Management Services of the City of Philadelphia

D. The AAC shall provide a copy of the asbestos notification to the Owner prior to starting any abatement work.

1.4 SUBMITTALS

A. The AAC shall provide a schedule for all work areas listed. The schedule shall be approved by the Owner and API prior to the commencement of work. The schedule shall include the number of active abatement work areas at any given time, proposed crew sizes, and waiting periods following the delivery of the work area to the API for final visual inspections and clearance testing.

B. Work plan delineating phasing and preparation of the work site, including intended locations of water and electrical sources, and the intended storage locations for furniture and ceiling mounted light fixtures and other ceiling mounted items. Description of decontamination sequence, removal methods to be used and waste handling.

C. Supervisor credentials and delineation of responsibility for work site supervision, including name, telephone number and pager number for both the project manager and the on-site supervisor.

D. Worker qualifications, current licenses, fit tests, and medicals. These may be submitted as the crew is selected or changed; however, no workers will be permitted to remain on site without submission and approval of qualifications.

E. Safety Data Sheets (SDS) for the materials to be used on the job:

1. Asbestos abatement encapsulant (only encapsulants approved by the Department of Public Health may be used).

2. Heavy-duty polyethylene tape used for sealing fixed objects, the construction of critical barriers, decontamination chambers and floor/wall containments.

F. Name of Waste Hauler(s) and disposal site with EPA/DEP identification numbers.

G. Name of the firm or competent person performing the Contractor's OSHA required personnel monitoring and the laboratories PAT Certification and Philadelphia Laboratory Certification.

H. A detailed written description of emergency procedures to be followed in the event of injury or fire. This submittal must include execution procedures, source of emergency assistance (including telephone numbers), and access procedures to be used by emergency personnel.

I. A COVID-19 response plan shall be submitted at the request of the Owner and appropriate City of Philadelphia Department.

1.5 OWNER'S RESPONSIBILITIES

A. The Owner shall employ the services of an Asbestos Project Inspector (API) who is licensed by the City of Philadelphia to perform asbestos project inspection as defined by the Asbestos Control Regulation (ACR).

B. The Owner shall ensure the work areas will be unoccupied prior to abatement activity commencing.

C. The Owner shall make water and electricity available at the site at no cost to the Contractor. The Owner shall notify the AAC of scheduled system shutdowns to ensure no interruptions to the project's engineering controls.

D. The Owner shall be responsible to remove all computers, monitors, printers, all other computer related components, personal effects, books, or other items deemed too valuable or sensitive to leave in the scheduled work areas to be handled by the Contractor. A list of such items includes:

1. Personal items throughout any previously mentioned work areas.

E. All computers and computer accessories in any previously mentioned work areas.

F. Stored maintenance and building supply items, paper products, paints, cleaners, replacement ceiling tiles and florescent light bulbs, excess furniture, etc. located in any of the work areas scheduled for abatement, demolition and/or cleaning.

G. Any other items deemed appropriate by the Owner.

H. The Owner shall store items in areas not scheduled for asbestos abatement work.

I. Any movable items remaining in the scheduled work areas at the time of the mobilization of the AAC shall be removed by the AAC.

1.6 ASBESTOS ABATEMENT CONTRACTOR'S (AAC's) RESPONSIBILITIES

A. The AAC is responsible for visiting the site and verifying quantities of asbestos containing materials, locations of utilities, and waste out routes prior to submitting a bid.

B. Project phasing, start and completion dates are subject to change at the discretion of the Owner.

C. The Contractor shall provide all labor, tools, materials and scaffold necessary to complete the project safely, in a timely fashion, and in accordance with the specification and all applicable regulations.

1. All tools, ladders, equipment, etc. shall arrive at the project site in good condition and free of any visual residual asbestos contamination.

D. Any movable items remaining in the scheduled work areas at the time of the mobilization of the Contractor shall be removed by the Contractor.

E. The Contractor shall protect all non-movable furniture, cabinetry and equipment from damage throughout the duration of this project.

F. The Contractor shall supply, at their own expense, all construction materials, supplies, and all electrical, water, and waste connections, tie-ins, or extensions. Temporary service lines shall be installed to prevent tripping, slipping or falling. The Contractor must utilize a licensed electrician to install separate temporary electric panels, receptacles, and lights, all with ground fault interruption and current-overload protection. All temporary electrical set-ups shall be in accordance with OSHA regulation and NEMA standards.

G. The Contractor shall maintain current copies of certifications for workers on-site and shall keep copies of all pertinent specifications and regulations on-site. The API retains the right to prohibit work by employees without current certifications.

H. The Contractor shall maintain a detailed sign-in/sign-out log, which must be filled out by every person entering the work area. All entries shall be complete and legible.

I. The Contractor shall be responsible for security of the work site, fire/smoke detection, and maintenance of existing utility systems as it relates to the performance of this project.

J. The Contractor shall provide fire protection in accordance with all State and Local codes. This includes, but is not limited to:

1. Providing a written fire prevention and emergency action plan.

2. Providing multi-purpose ABC rated fire extinguishers, ensuring that on-site personnel are aware of the location and proper use of all fire extinguishers and other safety equipment.
3. Performing a fire watch of the overall work area.
4. Designating a safety coordinator to implement the above actions. The Contractors safety coordinator shall be responsible for:
    a. Fire/life safety entries shall be entered into the Contractors log daily and shall be submitted with the Contractor's final report.
    b. Daily entries shall include names, dates, duration, problems & corrective actions taken by the fire watch - must be signed by the safety coordinator.

K. Assure protection of AFD exhaust ducts from damage during asbestos abatement activities.

L. The Contractor Supervisor and API shall perform a visual inspection of the entire floor immediately below all active abatement work areas at the end of each 8-hour shift to verify that no water leaks, fallen material, or any other type of damage has occurred.

1. If water leaks, fallen material, or any other type of damage has occurred:
    a. All asbestos abatement work shall be halted.
    b. The API shall immediately notify the Asbestos Project Manager, Construction Manager and Owner for direction and input.
    c. The source of the leak or damage shall be determined.
    d. The containment breech issue shall be rectified before any asbestos abatement work will be permitted to continue.

M. As required by the Asbestos Control Regulation, the Contractor shall provide a minimum 18" square transparent viewing window consisting of shatterproof material greater than or equal to 1/8" in thickness located at a height appropriate for accessible viewing and in such a manner as to maximize visibility of the abatement work area.

N. During the performance of final cleaning of all surfaces inside the active abatement work area, all horizontal surfaces "outside the work area" shall also be cleaned. This includes the dirty, shower and clean rooms of decontamination chambers attached to the asbestos abatement work area being tested and all immediate surroundings of representative makeup air entering each independent asbestos abatement work area being tested.

1.7 ASBESTOS PROJECT INSPECTOR (API) RESPONSIBILITIES

A. The API shall act as the Owner's representative on the work site to assure and document compliance with this Specification and applicable regulations and to perform all project sampling and analysis required by the Philadelphia ACR.

B. The API shall be responsible to see that required information and notifications are posted and are accessible for review by all concerned parties.

C. The API shall keep a daily log documenting the progress and performance of the Contractor over the course of the project.

D. The API shall perform continuous inspections to monitor the performance of the Contractor and to assure and document compliance with this Specification and applicable regulations. Inspections shall be performed during all phases of the project including verifying compliance with standard operating procedures, checking engineering controls, personal protection and decontamination systems, and handling and disposition of the resulting asbestos waste materials.

E. The API shall be responsible for performing all project sampling and analysis required by the Philadelphia ACR.

1. The API shall also perform representative personal air sampling on themselves during the project as defined within OSHA 1926.1101 and 1910.1001. Personal air samples shall be collected to establish a time weighted average (TWA) and a short-term excursion limit (STEL). Such air samples shall be collected within the breathing zone and used to:

    a. Initially determine the level of respiratory protection;

    b. Subsequently to assure that such protections remain adequate throughout the project.

F. The API shall routinely perform smoke testing at all critical barriers throughout the performance of asbestos abatement activities until the receipt of acceptable clearance air sample results to verify the integrity of critical barriers and presence of an adequate negative pressure differential.

G. The API shall notify the Owner and Air Management Services of the City of Philadelphia if the Contractor is found to be in non-compliance with the specifications or those Municipal, State or Federal regulations applicable to this project.

1. The API shall serve written notice to the Contractor for all non-compliance actions.

H. The Contractor Supervisor and API shall perform a visual inspection of the entire floor immediately below all active abatement work areas at the end of each 8-hour shift to verify that no water leaks, fallen material, or any other type of damage has occurred.

1. If water leaks, fallen material, or any other type of damage has occurred:

    a. All asbestos abatement work shall be halted.

    b. The API shall immediately notify the Contractor and Owner for direction and input.

    c. The source of the leak or damage shall be determined.

    d. The containment breech issue shall be rectified before any asbestos abatement work will be permitted to continue.

I. The API shall conduct a detailed final inspection to ensure that no visible dust or debris remains on any surfaces. This includes all surfaces inside the abatement work area and all horizontal

surfaces in the immediate surroundings of representative makeup air entering each independent asbestos abatement work area tested.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.1 AIR MONITORING BY THE OWNER

A. The Owner shall employ the services of an API who is in licensed by the City of Philadelphia to perform air monitoring and quality assurance of the Contractors work practices.

B. The API shall collect pre-test and project air samples in accordance with the Philadelphia Asbestos Control Regulations. Project air monitoring during abatement activities shall include samples inside and outside the work area to ensure airborne fiber concentrations remain at acceptable levels. Acceptable airborne fiber concentrations outside the work area shall be < 0.010 f/cc for PCM and < 0.010 s/cc for TEM. The API may also perform discretionary random personnel monitoring. Pre-test and project samples shall be analyzed via Phase Contrast Microscopy (PCM), NIOSH Method 7403 or Transmission Electron Microscopy (TEM), EPA AHERA 40 CFR 763.

1. Transmission Electron Microscopy (TEM) sampling may be performed in locations outside the containment work areas at the Owner's discretion throughout the abatement project. Results shall be evaluated in accordance with the ACR.

C. The API shall provide clearance air sampling:

1. For Major Projects, five (5) clearance samples shall be collected and analyzed via TEM. Results shall be evaluated in accordance with the ACR.
2. For Small and Minor Projects, five (5) clearance samples shall be collected and analyzed via Phase Contrast Microscopy (PCM) or TEM. Results shall be evaluated in accordance with the ACR.
3. For Non-Friable Projects, a discretionary number of clearance samples shall be collected and analyzed via Phase Contrast Microscopy (PCM) or TEM. Results shall be evaluated in accordance with the ACR.
4. Clearance air sampling shall be performed using aggressive techniques. Sampling procedures and clearance criteria shall follow all requirements of the Philadelphia ACR.

D. The Owner shall be responsible for costs incurred for the initial required laboratory work. Any subsequent testing required due to limits exceeded during abatement or any clearance sampling shall be paid by the Contractor. These costs include both labor and analysis.

1. The API shall invoice the Owner on a separate invoice, for all costs relating to labor and analyses resulting from additional testing required due to limits exceeded during abatement or failure of first round clearance sampling.

2. The Contractors contract amount shall be reduced by an amount equal to the costs for labor and analyses resulting from additional testing required due to limits exceeded during abatement or failure of first round clearance sampling.
3. The Owner shall retain possession and ownership of all air sampling data and documentation.

Asbestos is sampled and analyzed by methods found in National Institute of Occupational Safety and Health (NIOSH) Publications:

- Method 7400 Asbestos and Other Fibers by PCM;
- Method 7402 Transmission Electron Microscopy; and
- Method 9002 Asbestos (bulk) by PLM.

The AAC has the responsibility of informing themselves fully of the requirements of these agencies and shall satisfy completely this Specification and all referenced regulations. All other applicable federal state and local regulations are incorporated by reference.

Asbestos projects are regulated under Philadelphia Asbestos Control Regulations and Asbestos Codes:

- Title 6 Chapter 6-600 - Asbestos Projects (Asbestos Control Regulations).

E. The Z-test method found in 40 CFR 763, Subpart E., Appendix A, is a test method in which inside and outside area averages can be used to pass an area based upon the outcome of the arithmetic comparison of both areas. However, the analysis and comparison of the inside and outside air samples via the Z-test method is not permitted as part of this project.

1. Inside the work area samples shall be analyzed using the geometric mean. Outside the work area samples shall be analyzed and compared independently.
    a. An Exceedance of the geometric mean inside the work area and/or an exceedance of 0.010 s/cc outside the work area shall require corrective action recleaning by the Contractor.
2. Inside and outside final clearance air samples shall be collected and analyzed via PCM or TEM. Results shall be evaluated in accordance with the ACR.
3. Acceptable airborne fiber concentrations for individual "outside the work area" air samples shall be < 0.010 f/cc for PCM and < 0.010 s/cc for TEM.
4. During all phases of the project, the API/Consulting Firm shall be required to notify the Department of Public Health in the event an “outside the work area” air sample is in exceedance of 0.01 s/cc.

3.2 AIR MONITORING BY THE ASBESTOS ABATEMENT CONTRACTOR

A. The Contractor shall perform representative personal air sampling as defined within OSHA 1926.1101 and 1910.1001. Personal air samples shall be collected to establish a time weighted average (TWA) and a short-term excursion limit (STEL). Such air samples shall be collected within the breathing zone and used to:

1. Initially determine the level of respiratory protection.

2. Subsequently to assure that such protections remain adequate throughout the project.

B. Sampling strategy and protocols shall be determined by a competent sampling professional according to NIOSH 7400 method. The Contractor shall have a competent person collect personal air samples.

C. Personal air sample results must be posted within 24 hours of sample collection.

D. Contractor personnel shall comply with the personal air sampling of the competent person and shall not interfere with or alter sampling protocol.

3.3 RESPIRATORY AND PERSONAL PROTECTIVE EQUIPMENT

A. The Contractor shall provide approved respirators and protective clothing to all workers. Authorized representatives of the City, State or other Government entity who arrive to inspect the work site shall be permitted access to the work area provided the visitor arrives with their own approved respirator. The Contractor shall provide protective clothing to these visitors.

1. The Contractor shall provide approved respirators to all visitors that can provide proof that a Pulmonary Function Test, Medical exam and chest x-ray has been performed on the visitor, and that a doctor has performed a pulmonary evaluation of the visitor indicating that the visitor has been deemed able to safely wear a respirator.

B. The Contractor shall require that each person entering the work area shall wear an approved respirator and protective clothing. There shall be no exceptions to this rule.

C. Respiratory protection shall be in compliance with:

1. OSHA regulations 29 CFR 1910.1001, 1926.1101, and 1910.134;
2. ANSI Z88.2-1980;
3. NIOSH 30 CFR Part 11 for type B and C respiratory protection;
4. NIOSH and DHHS 42 CFR Part 84 for non-powered, air-purifying particulate-filter respirators.

D. At a minimum, the respiratory protection at the start of the project shall be Type B (PAPR). After the initial exposure assessment establishes the expected airborne asbestos concentrations during removal, the respiratory protection shall be:

1. 0.01 – 1.0 f/cc - Dual Cartridge, Air Purifying respirator, Type A.
2. 1.0-2.5 f/cc - Powered Air Purifying Respirators - Type B (PAPR).
3. >2.5 f/cc- - Supplied Air with Constant Flow - Type C.

E. All persons performing asbestos abatement work requiring respiratory protection (including Type B) shall be clean shaven and have an unobstructed face mask seal. Only mustaches that do not exceed the corners of the upper lip and sideburns that do not extend below the earlobes are permitted.

F. For containments with an attached three (3) stage decontamination unit, asbestos workers shall wear a single disposable suit including hood and footwear. Before exiting the work area, the workers shall remove their respirator filters and disposable suit in the shower after appropriate wetting. These shall be disposed of as asbestos waste.

G. For containments utilizing a remote decontamination unit, asbestos workers shall wear two (2) disposable Tyvek-type suits. Before exiting the work area, the worker shall remove both suits and change into a clean disposable suit in the one-stage chamber. The worker shall immediately proceed to the remote centralized, decontamination chamber, equipped with a shower and clean room. Dispose of clean suit and respirator cartridges in the centralized decontamination chamber.

3.4 DECONTAMINATION FACILITIES

A. For Major Projects described in this Specification, the Contractor shall construct and place a three-stage decontamination unit at the entrance to the work area. For Minor and Non-Friable Projects, a one-stage decontamination unit shall be constructed and placed at the entrance to the work area, with a two-stage centralized decontamination unit/shower constructed prior to work in any abatement work areas. Decontamination units shall have a sturdy frame comprised of studs or equivalent.

B. Decontamination units shall be constructed as described below:

1. Three-stage unit (clean room, shower room, equipment room):
    a. Interior of the chamber shall be covered with two layers of six (6) mil polyethylene with triple flap airlocks installed between each chamber.
    b. Shall have a sturdy frame comprised of studs and ⅜ “plywood.
    c. Entrance shall be equipped with a secure, lockable plywood door with louver system.
    d. Shall have danger signs posted at the entrance.
    e. Shall be provided with hot and cold water for use in the shower room.
    f. Shower water shall be added to waste materials or pumped through a five (5) micron filter element prior to discharging it to the sanitary sewer or floor drains.

2. One-stage unit:
    a. Interior of the chamber shall be covered with two layers of six (6) mil polyethylene and triple flap airlocks shall be placed at entrance and exit.
    b. Shall have a sturdy frame comprised of studs or an approved equivalent.
    c. Shall have danger signs posted at the entrance.
    d. Asbestos workers shall wear two (2) disposable Tyvek-type suits. Before exiting the work area, the worker shall remove the outer suit in the single-stage decontamination chamber. The worker shall immediately proceed to the remote centralized, decontamination chamber, equipped with a shower and clean room.

The inner disposable suit and respirator shall be removed after appropriate wetting. Dispose of the inner suit and respirator cartridges in the centralized decontamination chamber. Workers shall shower with liquid bath soap and shampoo. Clean, dry towels shall be available for drying.

Hot and cold water shall be available for use in the shower room.

e. Shower water shall be added to waste materials or pumped through a five (5) micron filter element prior to discharging it to the sanitary sewer or floor drains.

2. The Contractor shall provide one decontamination chamber for every eight (8) workers.

C. The use of a remote decontamination unit for MAJOR PROJECTS requires the submission of an Alternative Method Request to the City of Philadelphia's Air Management Services, Asbestos Division, and receipt of approval by that office.

D. Asbestos abatement shall not commence until the Contractor can demonstrate to the API that the shower unit is fully operational.

3.5 GENERAL PREPARATION FOR ALL ASBESTOS ABATEMENT ACTIVITIES

A. The Contractor shall confine their apparatus, the storage of materials, tools, supplies and the activities of their workman to the limits established by the City and City ordinances.

B. The Contractor shall assure that building exits are not obstructed and that appropriate safety barriers are established to prevent access by unauthorized persons. The works areas are to be kept neat, clean and safe.

C. The Contractor shall post OSHA specified, asbestos specific danger signs at the entrance to each work area. Such signs shall also be posted when applicable to decontamination chambers, bag-out chambers, critical and separation barriers, and waste storage containers.

D. Provide isolation barriers to separate the abatement work areas from the remaining occupied areas of each floor.

E. All necessary building occupants remaining in the building during the asbestos abatement project shall be denied access to the asbestos abatement work area(s) by isolation barriers and/or locked doors.

F. All moveable objects shall be removed from the work area. Movable objects shall be wet wiped & HEPA vacuumed prior to their relocation to a clean area.

G. AFDs and HEPA vacuums require different maintenance schedules and attention depending on the model. Check the user's manual to determine and comply with the maintenance, filer replacement, and cleaning requirements of each AFD and HEPA vacuum being used.

1. At no time shall an AFD be dismantled, and the inner HEPA filter replaced while on site. Removal and replacement of HEPA filters shall be performed off site.

2. At no time shall a HEPA vacuum be opened for cleaning/emptying outside an active asbestos abatement work area.

3. Cleaning/emptying a HEPA vacuum shall be performed INSIDE an active asbestos abatement work area with a minimum negative pressure differential of -0.02 inches of water column.

    a. Cleaning/emptying of HEPA vacuums shall be performed directly near an operating AFD exhausting to the exterior.

    b. HEPA vacuums shall be cleaned/emptied only during gross removal of asbestos and/or equipment demolition. No HEPA vacuums shall be cleaned/emptied, or opened for any other reason, during final cleaning and/or encapsulation.

H. AFDs and all other supplies and equipment shall arrive at the project site in good condition and free of any visual residual asbestos contamination.

I. Assure HVAC systems associated with, or that pass through any abatement work areas are shut down. Provide appropriate lock and tag out devices at the shut off point of the fan.

J. De-energize the work areas and all conduit running through the work areas.

1. Appropriate lock and tag out devices shall be installed at the breakers.

2. The Contractor shall provide a temporary electric panel with ground fault interruption.

3. The Contractor shall supply sufficient temporary lighting to illuminate the work areas during asbestos abatement and paint stabilization. All active work areas shall be lighted to not less than the minimum illumination intensities listed in OSHA Regulation 29 CFR 1926.56(a), Table D-3 for Indoors: warehouses, corridors, hallways, and exit ways (e.g. - 5-foot candles).

K. Only approved noncombustible or flame-resistant materials shall be used for work area preparation. Polyethylene sheeting shall be certified to conform to NFPA 701.

L. The dropping, lowering, transporting or otherwise moving any open or packaged waste through any shaft during this project is strictly prohibited. When the asbestos abatement work area is a shaft, asbestos waste must be packaged and lowered in a controlled fashion to the base of the shaft. No dropping of waste in any shaft shall be permitted at any time.

M. The abatement contractor is responsible to provide site security for the duration of the abatement process.

3.6 PREPARATION AND ABATEMENT – MAJOR/MINOR WORK AREAS

A. This section is intended to specify the acceptable methods for the removal of all friable and non-friable asbestos containing material listed in *Section 1.01.B* utilizing full containment protocols.

B. The GC shall assure that exits from the building are not obstructed. The work areas are to be kept neat, clean, and safe.

C. Only approved noncombustible or flame-resistant materials shall be used in the construction of temporary enclosures. Polyethylene sheeting shall be certified to conform to NFPA 701.

D. Post OSHA specified, asbestos specific danger signs at the entrance to the work area. Such signs shall also be posted when applicable to decontamination chambers, bag-out chambers, critical and separation barriers, and waste storage containers.

E. All building occupants shall be removed from the work area floors during the performance of the removal project, unless access to the work area is restricted by an isolation barrier or lockable doors.

1. If required, wooden isolation barriers shall be erected to completely isolate the work area from any occupied areas of the building.

2. Isolation barriers shall be eight (8) feet high and shall be constructed of minimum ⅜" fire-rated plywood supported by 2'x3' stud framing, or equivalent, placed on sixteen-inch (16") centerlines. Appropriate footings and bracings shall be installed to provide proper support.

F. The GC shall confine their equipment, storage of materials, tools, supplies, and activities of their workers to the limits established by the City and local ordinances.

G. Assure any HVAC systems associated with or which course through the work area are sealed, shut down, and locked out.

H. Approved high quality HEPA equipped air filtration devices (AFDs) shall be placed so as to develop and hold a negative differential air pressure. Each AFD shall be equipped with a magnehelic gauge or manometer to measure pressure drop across the filters, indicating overload and a need to change filters. An automatic shutdown system shall be provided in the event of improper filter fit, a rupture in the HEPA filter, or a blocked air discharge.

1. The negative differential air pressure shall be sufficient to provide a minimum of four (4) air changes of the work area per hour. The GC shall install a manometer to confirm this differential, which should read minimum of -0.02 inches of water column.

2. Negative differential air pressure shall be continuously maintained 24 hours a day, from the time the isolation barrier is first established until final clearance air sampling is completed, and the Contractor is released by the API.

3. The AFD exhaust shall be vented outside of the building, where feasible.

I. For Major Project work areas, construct a three-stage decontamination unit at the work area entrance. For Minor Project work areas, construct and attach a one-stage decontamination unit at the work area entrance. A remote two-stage decontamination unit shall also be constructed at an appropriate location. Exact decontamination unit placements shall be at the discretion of the GC with approval from the on-site API.

J. Pre-clean the floor and horizontal surfaces via wet wipe and HEPA vacuum techniques.

1. All fixed objects, including but not limited to, unit-vents, radiators, motors, AHUs, ductwork, etc. shall be wet wiped and sealed with one (1) layer of six (6) mil polyethylene.

K. Install critical barriers consisting of two (2) separate identifiable layers of six-mil polyethylene over all windows, doors, openings between walls and ceilings, and any other critical openings inside the work area such that the work area is isolated from the rest of the building.

1. Ensure all electrical panels, control panels, and control boxes are protected with watertight critical barriers consisting of two (2) separate identifiable layers of six-mil polyethylene.
2. Areas where critical barriers are to be installed shall first be pre-cleaned via wet wipe and HEPA vacuum techniques.

L. Critical 'containment' barriers shall be erected to cover openings greater than six feet in width, consisting of two (2) separate identifiable layers of six-mil polyethylene. Studs or equivalent shall support these barrier(s). Note: these are considered critical barriers, and application of two additional layers of wall coverings shall be required.

M. All floor and wall surfaces (including polyethylene critical 'containment' barriers) shall then be covered with two (2) layers of six-mil polyethylene sheeting. Sheeting shall be installed in such a manner as to cause minimal damage to underlying surfaces. The GC shall ensure proper adhesion of the sheeting to problem areas, such as walls with peeling paint.

1. Wall coverings shall extend from ceiling level to floor level and overlap the floor sheeting. Floor coverings shall extend twelve inches (12") up behind the wall coverings. All seams shall be staggered as to overlap a minimum of twelve inches and be sealed with duct tape.
2. Note that floor coverings shall be omitted in areas where vinyl asbestos floor tile is scheduled for removal.

N. The GC shall de-energize the work area and all conduit running through the work area, if possible.

1. Appropriate lock and tag out devices shall be installed at the circuit breakers.
2. All conduit that cannot be de-energized shall be wrapped with a minimum of one (1) layer of six (6) mil polyethylene sheeting.
    a. Suspend OSHA approved, electrical - voltage and shock hazard warning tags from the energized conduit traveling through the work area every six feet. The warning tags shall remain in place for the duration of the abatement project.
3. The GC shall provide a temporary electrical panel board with ground fault interruption. All electrical power shall be brought into the work area via ground fault interrupters (GFIs).
4. The GC shall supply sufficient temporary lighting to illuminate the work areas during abatement.

O. Erect ladders, scaffolding, and/or raised work platforms to access elevated areas of ACM.

1. Ladders, scaffolding and/or raised work platforms shall be of sound condition and assembled per OSHA requirements on a level, secure base.
2. Ladders, scaffolding and/or raised work platforms shall not be overloaded.
3. Scaffold work platforms shall comply with OSHA Regulation 29 CFR 1926.451.

P. In locations where vinyl floor tile is scheduled for removal and floor coverings have been omitted, install temporary floor coverings consisting of one (1) layer of six (6) mil polyethylene beneath the pipe/pipe fitting to be removed extending at least five (5) feet in all directions.

Q. Upon completion of the work area preparation, and approval by the on-site API, install containment bags (glove bags) around all pipe/pipe fitting insulation in accordance with the ACR Section VI.C.3.e.2-5. The containment bag, once attached, shall be smoke tested using a smoke tube and aspirator bulb. The containment bags shall be utilized in order to further contain any airborne asbestos fibers released during the removal tasks and simplify the subsequent final cleaning tasks.

R. Removal of pipe/pipe fitting insulation shall be initiated only after the material has been treated with a solution of water and wetting agent. At the start of each work day, the pipe/pipe fitting insulation to be removed shall be wetted. This wetting shall be repeated at such intervals as to prevent the material from drying out.

S. Perform removal of pipe/pipe fitting insulation using the containment-bag technique. Containment bag removal practices shall conform to the ACR Section VI.C.3.e.7-20.

T. The API shall conduct a visual inspection prior to encapsulation. The on-site API shall approve the area when no visible dust is evident.

U. Prior to removing the glove-bag, any residue shall be removed using a stiff nylon brush or a scraper. The pipe surfaces shall then be wet wiped to remove any visible debris. The API shall conduct a visual inspection and shall approve encapsulation to be performed when no visible ACM dust or debris is evident on any surfaces.

V. Upon approval by the API, encapsulate the pipe surface prior to removing the containment bag. The API shall inspect the sealant/encapsulant to confirm adequate and proper application and approve subsequent removal of the glove bags. When acceptable, the API shall approve the removal of the glove-bag.

    1. A HEPA vacuum shall be used when evacuating and breaking the seal of the glove-bag.

W. Remove and dispose of all other friable ACM:

    1. Removal of asbestos shall be initiated only after the material has been treated with a solution of water and wetting agent. This wetting shall be repeated at such intervals as to prevent the asbestos from drying out. Removal shall be performed in a manner that minimizes the release of asbestos fibers.

        a. Continually mist the air with water using an airless sprayer to keep airborne fiber levels to a minimum.

        b. No standing water shall be tolerated inside of the work area. Standing water would have the potential of leaking to spaces below the work area. The GC shall designate a worker to constantly monitor the work area and vacuum or mop up any standing water resulting from the pre-wetting or air misting procedures.

        c. All wastewater generated in the decontamination chamber shower shall be retrieved and added to packaged asbestos waste materials or pumped through a five (5) micron filter element prior to discharging it to the sanitary sewer or floor drains.

d. All wastewater generated in the abatement work area shall be retrieved and added to packaged asbestos waste materials and/or placed in plastic lined leak-tight drums for disposal in accordance with VI.C.7 of the Asbestos Control Regulation.

X. Perform removal of vinyl floor tile. Mechanical methods may be employed.

1. Remove all carpeting, binding strips, cove base, and other restrictive moldings holding flooring at locations such as doorways, walls, thresholds, etc.
2. Adequately wet flooring prior to removal.
3. Crews shall be structured such that flooring is packaged as it is removed. Removed flooring shall not be permitted to accumulate in the work area, and shall be completely contained in proper asbestos waste containers, without further breakage, ready for disposal, before the end of each shift.

Y. All floor tile mastic is verified as non-asbestos throughout the building. Mastic removals may be performed using non-toxic organic solvents.

Z. Upon completion of removal, perform final cleaning of all surfaces in the work area. Assure that all surfaces to which asbestos insulation was applied are visibly free of insulation material. Any residue shall be removed using a stiff nylon brush or a scraper. Work area surfaces shall then be HEPA vacuumed and/or wet wiped to remove any visible debris. The scaffolding shall either be encapsulated or wet wiped clean to the API's satisfaction. AFDs shall remain in operation during this procedure.

AA. During the performance of final cleaning of all surfaces inside the active abatement work area, all horizontal surfaces “outside the work area” shall also be cleaned. This includes the dirty, shower and clean rooms of decontamination chambers attached to the asbestos abatement work area being tested and all immediate surroundings of representative makeup air entering each independent asbestos abatement work area being tested.

1. Remove all bulk trash and/or large construction debris items from the area.
2. Wet bulk piles of debris with a fine water mister or "Hudson" sprayer.
   a. Pick up large pieces by hand and/or shovel and place into asbestos waste bags. Broom sweeping is not permitted at any time on any asbestos abatement project.
3. Any residues shall be removed using a stiff nylon brush or scraper.
4. Floors, walls, ceilings, critical and containment barriers shall be swept with the exhaust of an electric leaf blower to dislodge any remaining dust within the asbestos abatement work area. Allow for the HEPA equipped air filtration devices (AFDs) to provide several air changes within the work area prior to vacuuming and wet wiping.
5. Surfaces shall then be HEPA vacuumed and/or wet wiped to remove any visible debris.

AB. The API shall conduct a detailed final inspection to ensure that no visible dust or debris remains on any surfaces. If any suspect or objectionable material is evident, the GC shall clean the material and sufficient surrounding areas to the satisfaction of the API, via wet-wipe and HEPA-vacuum techniques.

AC. Upon completion of removal, cleaning, encapsulation, and an acceptable visual inspection, final clearance samples shall be collected and analyzed. Refer to *Section* 3.1 - Air Monitoring by the Owner.

AD. If any of the results of clearance samples are unacceptable according to the Philadelphia ACR, the GC shall re-clean the work area via wet-wipe and HEPA-vacuum techniques. Following an acceptable inspection, the API shall re-test the area. This sequence shall be repeated until receipt of acceptable air sample results according to the Philadelphia ACR.

AE. Upon receipt of acceptable final visual inspections and acceptable air sample clearance results according to the Philadelphia ACR, the GC shall carefully dismantle critical barriers, plastic sheeting, tape and other materials used in the work area construction.

1. All asbestos containing and contaminated material shall be disposed of in accordance with Section 3.10 - ACM Waste Disposal.

AF. The GC shall remove all glue and tape adhesive reside from all walls, floors and all other surfaces in which glue and tape were utilized in containment preparations. The API shall conduct a post teardown inspection to ensure this task has been completed.

3.10 ACM WASTE DISPOSAL

A. The dropping, lowering, transporting or otherwise moving any open or packaged waste through any shaft during this project is strictly prohibited. When the asbestos abatement work area IS a shaft, asbestos waste must be packaged and lowered in a controlled fashion to the base of the shaft. No dropping of waste in any shaft shall be permitted at any time.

B. Approval must be obtained from the API prior for temporary storage of any asbestos waste containers or construction debris on site, prior to being loaded into appropriate dumpsters. The waste shall be appropriately packaged according to the type of waste. A polyethylene drop cloth and covering shall be provided and the storage areas restricted by barrier tape and appropriate signage. Asbestos waste containers must be distinctly stored separately from other waste. No long-term storage may occur in these areas.

C. The loading, transportation, and disposal of asbestos waste at the landfill shall occur in accordance with regulatory requirements of NESHAPS and applicable state and City guidelines and regulations.

D. Waste disposal containers shall conform to one of the following. Waste with sharp edges shall not be disposed of solely in polyethylene bags. All six-mil polyethylene bags shall be transparent so that when filled, the contents of the bag are readily visible.

E. The Contractor shall label asbestos waste with the name of the generator and the location from which the waste was generated.

F. The container used for transporting and disposing of ACM waste shall be clearly and properly labeled as specified in EPA and DOT regulations. In addition to generator labels, containers must carry the following labels:

DANGER
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD
-and-

DOT labels requirement: (Easily readable in sharp relief)

CAUTION
Contains Asbestos Fibers
Avoid Opening or Breaking Container
Breathing Asbestos is Hazardous
to your Health
RQ ASBESTOS
9,NA2212,PG III
(ASBESTOS)

G. During waste load out, post asbestos specific danger signs along the waste disposal route, and on and around the vehicle or dumpster being used to transport the waste off site.

   1. Drop cloths shall be utilized along routes in which bagged ACM waste is passed through the building. Proposed waste removal route shall be presented to the API and Asbestos Project Designer for approval prior to performing delivery of asbestos waste material to the intended waste container. The API must document the proposed route and the APIs subsequent approval in an activity log.

H. Waste routes must be approved by the Owner and on-site API prior to the commencement of work. All waste being transported through the building must be placed in covered/enclosed containers bearing proper warning signs. The waste route must be kept clean.

   1. The rolling of waste drums or the dropping of waste bags down stairs is strictly prohibited.
   2. After transport of waste through the building is completed, the Contractor shall wet mop the waste removal route to assure continued cleanliness and removal of any debris associated with the waste transport tasks.

I. All documentation of transportation and disposal transactions such as dump receipts, trip tickets and waste manifests shall be completed and delivered to the Owner for their records.

J. Should the Owner not receive a receipt of the waste shipment record within 35 days of Project Closeout, the Owner shall contact the Contractor to determine the status/disposition of the waste.

K. Should the Owner not receive a receipt of the waste shipment record within 45 days of Project Closeout, the Owner shall notify the EPA.

3.11 PROJECT CLOSEOUT

A. After achieving acceptable air sample clearance and dismantling the work area, the Contractor shall be released after the following items are completed:

1. Removal of all temporary signs, labels, tape and glue/tape adhesive residue.
2. Removal of all temporary devices, facilities, and equipment.
3. Cleaning the project site and storage areas of trash, etc.
4. Replacement/repair of any damage.
5. The Owner deems the repair work (if any) is acceptable for re-occupancy.
6. Removal of all waste containers (asbestos, scrap, and construction debris) from site and proper disposal of waste.

B. Upon completion of the project, the Contractor shall submit final documentation to the Owner, including but not limited to, all waste handling/shipping documentation/manifests.

PART 4 REFERENCES

1. See Appendix 1 – Phase I Environmental Site Assessment And Hazardous Materials Inventory

END OF SECTION 011100

SECTION 011130

LEAD IN CONSTRUCTION

PART 1 – GENERAL

1.1 SCOPE OF WORK

A. This specification outlines the required tasks and procedures involved with construction activities such as demolition and/or removal of Lead-based Paint (LBP)/Lead Containing Coating (LCC) materials which are covered by this specification.

B. The General Contractor and/or Lead Abatement Contractor (LAC) must demonstrate they have the necessary personnel, equipment, materials, training, licenses and experience to complete a project of this nature in the required time period.

C. The Contractor shall supply all labor, materials, equipment, testing, permits, notifications, insurance and incidentals that are necessary and/or required to perform the work in accordance with applicable local, state and federal regulations; as may be necessary to comply with the OSHA Lead in Construction Standards 29CFR1926.62 and 29CFR1910.25 and for the demolition/construction activities as specified in this section or as indicated in associated drawings, sketches, or details of the work.

D. Demolition/construction activities associated with Lead Containing Coatings include the following components.

E. Lead Based Paint/Lead Containing Coatings Waste scope summarization includes, but is not limited to:

1. Lead Based Paint/Lead Containing Coatings as listed in Appendix 1 – Phase I Environmental Site Assessment And Hazardous Materials Inventory

F. This project shall include the LBP/LCC materials that are required to be modified, removed or demolished to facilitate the work indicated by this contract. This responsibility includes locations identified or locations not identified in the report.

G. Included in the lead work areas shall be buffer zones. These buffer zones shall be intended for staging areas as well as locations to install decontamination chambers, if applicable. Buffer zones are also intended to protect all occupants from airborne lead exposure in the event that "outside the work area" air samples show elevated levels of airborne lead particulate.

H. The Contractor and its Subcontractors shall inform themselves fully of the scope and scale of the lead related demolition/construction activities as it relates to this project.

I. The contractor shall coordinate with work being performed in adjacent areas. Coordination procedures shall be explained in a work plan and shall describe how the Contractor will prevent lead exposure to other contractors and/or occupants/personnel.

1.2 CODES AND REGULATIONS

A. All work and disposal shall be performed in compliance with all applicable Federal, State, and City regulations including but not limited to:

1. 29 CFR 1926.62 (OSHA).

2. 29 CFR 1910.25 (OSHA).

3. 40 CFR 300-399, EPA Comprehensive Environmental Response Compensation & Liability Act.

4. 40 CFR 260-299, Resource Conservation and Recovery Act (RCRA).

5. 42 CFR Part 84 & 30 CFR Part 11 (NIOSH/DHHS respirator standards).

6. This Specification.

1.3 SUBMITTALS

A. Occupational and Environmental Assessment Data Report (if objective data is used to justify excluding the initial occupational exposure assessment).

B. Lead Compliance Plan.

C. The contractor and subcontractors must identify a competent person. A Competent Person refers to a person employed by the contractor who is trained in the recognition and control of lead hazards in accordance with current federal, State, and local regulations and has the authority to take prompt corrective actions to control the lead hazard.

D. If applicable, a completed and signed hazardous waste manifest from treatment or disposal facility.

E. Fit test and medicals. These may be submitted as the crew is selected or changed.

F. A detailed written description of emergency procedures to be followed in the event of injury or fire. This submittal must include execution procedures, source of emergency assistance (including telephone numbers), and access procedures to be used by emergency personnel.

1.4 OWNER RESPONSIBILITIES

A. The Owner shall ensure work areas will be unoccupied prior to demolition/construction activity commencing.

B. The Owner shall make water and electricity available at the site at no cost to the Contractor. The Owner shall notify the Contractor of scheduled system shutdowns to ensure no interruptions to the project's engineering controls.

C. The Owner shall be responsible to remove all contents from the scheduled work areas. A list of such items includes, but is not limited to:

1. Personal items throughout the work areas.

2. All computers and computer accessories in any of the work areas.

3. Stored maintenance and building supply items, paper products, paints, cleaners, replacement ceiling tiles and florescent light bulbs, excess furniture, etc. located in any of the work areas scheduled for demolition and/or construction.

4. Any other items deemed appropriate by the Owner.

1.5 CONTRACTOR RESPONSIBILITIES

A. The Contractor is responsible for reviewing the Phase I Environmental Site Assessment And Hazardous Materials Inventory and visiting the site to locate LBP/LCC materials and locations of utilities, prior to submitting a bid.

B. The Contractor shall provide all labor, tools, materials and scaffold necessary to complete the project safely, in a timely fashion, and in accordance with the specification and all applicable regulations.

C. Any movable items remaining in the scheduled work areas shall be removed by the Contractor.

D. The Contractor shall protect all non-movable furniture, cabinetry and equipment from damage throughout the duration of this project.

E. The Contractor shall maintain current copies of all pertinent specifications and regulations on-site.

F. The Contractor shall provide fire protection in accordance with all State and Local codes. This includes, but is not limited to:

1. Providing a written fire prevention and emergency action plan.

2. Providing multi-purpose ABC rated fire extinguishers, ensuring that on-site personnel are aware of the location and proper use of all fire extinguishers and other safety equipment.

3. Performing a fire watch of the overall work area.

4. Designating a safety coordinator to implement the above actions. The Contractor's safety coordinator shall be responsible for:

    a. Fire/life safety entries shall be entered into the Contractor's log daily and shall be submitted with the Contractor's final report.

    b. Daily entries shall include names, dates, duration, problems & corrective actions taken by the fire watch-must be signed by the safety coordinator.

G. The contractor and subcontractors shall follow work permit procedures for all work including, but not limited to, working near potentially live electric, hot work, working at heights.

H. Hot work is defined as all work that causes or requires the use of open flames, arcs, sparks, or other forms of high temperature ignition sources that could initiate a fire or explosion.

1. Examples of hot work include welding, burning, soldering, hot tapping, drilling, grinding, abrasive blasting, chipping, the operation of impact wrenches, the operation of electronic or electrical equipment that is not intrinsically safe, opening explosion proof electrical enclosures and any other work that may generate sufficient heat that it would pose a possible ignition source.

I. The contractor shall use appropriate ladders, scaffolds, lifts, and/or hoists to provide safe access for work activities. Personnel safety lines and harnesses are required where appropriate.

1. Fall Protection equipment and guidelines shall comply with OSHA Regulation Standards 29 CFR1926.501.

2. The use of aerial lifts shall comply with OSHA Regulation Standards 29 CFR 1926.453 and ANSIA92.2-1969.

3. All stairs, platforms, catwalks and walking surfaces shall be kept, as is practical, free from obstructions, accumulation of water, and tripping hazards, and where elevated, be protected by OSHA specified top-rails, mid-rails, and toe boards.

4. Ladders of sufficient quantity and of suitable length or height shall be provided. Ladders shall be kept in good repair and inspected regularly. Personnel shall be instructed in the proper use of ladders. No structural alterations shall be made to any ladder.

5. Ladders shall arrive at the project site in good condition and free of any residual contamination.

PART 2 – PRODUCTS

NOT USED

PART 3 - EXECUTION

3.1 SCOPE OF WORK

A. The Owner may utilize an Industrial Hygienist or Air Monitoring Firm to perform daily quality assurance evaluations and air sampling outside the work area(s).

B. After all work areas are completed, the owner has the option to collect surface dust wipe samples inside of the work completed work areas. The clearance surface dust wipe criteria are as follows:

   1. The clearance surface dust wipe sample results collected inside the work area must be less than (<) 10 micrograms per square foot on all floor surfaces and less than (<) 100 micrograms per square foot on all windowsill surfaces.

C. The owner shall be responsible for costs incurred for the initial required laboratory work. Any subsequent testing required due to failed clearance sampling shall be paid by the contractor. These costs include both labor and analysis.

1. The Owner shall retain possession and ownership of all air and surface sampling data and documentation.

3.2 AIR MONITORING BY THE GENERAL CONTRACTOR

A. All personal air samples shall be collected via NIOSH 7082 sampling method and analyzed via NIOSH 7082 by Flame Atomic Absorption Spectroscopy (AAS).

B. An Initial Exposure Assessment (IEA) (OSHA29CFR1926.62) must be performed during the first shift.

1. An IEA requires an exposure assessment immediately before or at the initiation of the lead demolition/removal operation to ascertain expected lead-in-air exposures. During that operation and to provide information necessary to assure that all control systems planned are appropriate and will work properly.

2. If it is determined that the expected lead exposure, as a result of the IEA monitoring, will be below fifty micrograms of lead per cubic meter of air (50 ug/m3), averaged over an 8-hour work-day, then personal protective equipment (PPE - suits and respirators) and/or engineering controls shall not be required, but are optional.

a. PPE and appropriate lead demolition engineering controls <u>are required</u> until an IEA is established, or if the results of the IEA monitoring reveals expected lead exposure concentrations to be above 50 ug/m^3 8-hour time weighted average (TWA). The selection of the respiratory protection shall be appropriate to the lead exposure concentrations determined by the NEA monitoring.

3.3 RESPIRATORY AND PERSONAL PROTECTIVE EQUIPMENT

A. If required, the contractor shall provide approved respirators and protective clothing to all workers.

B. If it has been determined via the IEA that the OSHA Permissible Exposure Limit (PEL) is exceeded, the contractor shall require that each person entering the work areas to wear an approved respirator and protective clothing. There shall be no exceptions to this rule.

C. Respiratory protection shall be in compliance with:

1. OSHA regulations 29 CFR 1910.1001, 1926.1101, and 1910.134; ANSI Z88.2-1980;NIOSH 30CFR Part11 for type B and C respiratory protection;

2. NIOSH and DHHS 42 CFR Part 84 for non-powered, air-purifying particulate-filter respirators

D. If determined that respiratory protection is required, at a minimum, the respiratory protection shall be:

1. Dual Cartridge, Air Purifying respirator, Type A.

2. Powered Air Purifying Respirators (PAPR) - Type B.

3. Supplied Air with Constant Flow – Type C.

E. All persons performing lead removal work requiring respiratory protection shall be clean shaven and have an unobstructed face mask seal. Only mustaches that do not exceed the corners of the upper lip and sideburns that do not extend below the earlobes are permitted.

3.4 MEDICAL SURVEILLANCE

A. Under the occupational health standard for inorganic lead, a program of biological monitoring and medical surveillance is to be made available to all employees exposed to lead above the action level of 30 ug/m3 TWA for more than 30 days each year. This program consists of periodic blood sampling and medical evaluation to be performed on a schedule that is defined by previous laboratory results, worker complaints or concerns, and clinical assessment of the examining physician. Employers shall maintain complete and accurate medical records of employees for the duration of employment plus 30 years.

B. Any worker blood lead level increases of 10 micrograms/dl or greater or any blood lead level greater than 25 micrograms/dl will trigger an investigation of protective equipment and work practices. All workers on this project shall be informed of their blood lead levels as soon as the testing results are received.

3.5 DECONTAMINATION FACILITIES

A. Provide clean and contaminated change rooms and hand washing stations in accordance with this specification and 29 CFR1926.62.

3.6 GENERAL PREPARATION AND CONTROLS FOR ALL LEAD RELATED ACTIVITIES

A. Physical Boundary- Provide physical boundaries around the lead control area by roping off the area designated in the workplan or providing curtains, portable partitions or other enclosures to ensure that lead will not escape outside of the lead control area.

B. Warning Signs - Provide warning signs at approaches to lead control areas. Locate signs at such a distance that personnel may read the sign and take the necessary precautions before entering the area. Signs shall comply with the requirements of 29 CFR1926.62.

C. Shutdown, lockout, and isolate HVAC systems that supply, exhaust, or pass through the lead control areas. Seal intake and exhaust vents in the lead control area with 0.15 mm 6 mil

plastic sheet and tape. Seal seams in HVAC components that pass through the lead control area.

D. To the extent feasible, use local exhaust ventilation or other collection systems. Local exhaust ventilation systems shall be evaluated and maintained in accordance with 29 CFR1926.62.

E. Vent local exhaust outside the building and away from building ventilation intakes or ensure exhaust system shall connected to HEPA filters prior to discharge.

F. Use locally exhausted, power actuated tools or manual hand tools.

G. Manual or power sanding or grinding of lead containing or coated materials is not permitted unless tools are equipped with HEPA attachments or wet methods are applied. The dry sanding or grinding of surfaces that contain lead is prohibited. Provide methodology for removing lead in the Lead Compliance Plan. Select lead removal processes to minimize contamination of work areas outside the control area with lead-contaminated dust or other lead-contaminated debris or waste and to ensure that unprotected personnel are not exposed to hazardous concentrations of lead. Describe this removal process in the Lead Compliance Plan.

H. Perform manual or mechanical removal in the lead control areas using barriers and powered locally exhausted tools.

3.7 LEAD WASTE DISPOSAL

A. All removed LBP components that will not be recycled, lead containing dust and waste water shall be disposed of in accordance with the Hazardous and Universal Waste Disposal Regulations set forth by the Resource Conservation and Recovery Act (RCRA); 40 CFR 260-299.

B. All lead-contaminated material classified as hazardous waste will be transported to and disposed of at an EPA or State approved hazardous waste treatment, storage, or disposal facility off site.

C. Dispose of lead contaminated waste/rinse water as hazardous or non-hazardous waste on the basis of sample analysis (TCLP) results.

D. All documentation of transportation and disposal transactions such as dump receipts, trip tickets, and waste manifests shall be completed and include in the final report for the building owner.

3.8 PROJECT CLOSE OUT

A. After achieving acceptable air sample clearance and dismantling the work area, the Contractor shall be released after the following items are completed:

1. Removal of all temporary signs, labels, tape and glue/tape adhesive residue.

2. Removal of all temporary devices, facilities, and equipment.

B. Upon completion of the project, the Contractor shall submit final documentation to the Owner, including but not limited to, all waste handling/shipping documentation/manifests.

END OF SECTION 011130

SECTION 011140

STORAGE TANK REMOVAL

PART 1 – GENERAL

1.1 SCOPE OF WORK

A. This specification outlines the general requirements for the cleaning and removal (e.g., closure) of petroleum-containing underground storage tanks (USTs) and above ground storage tanks (ASTs) as per 25 Pa. CODE § 245 Administration of the Storage Tank and Spill Prevention Program.

1. Regulated Underground Storage Tanks are defined as tanks used to contain regulated substances with a capacity of more than 110 gallons where 10 percent or more of the volume is below the surface of the ground.

2. Regulated Substances include, but are not limited to, petroleum, including crude oil and/or fraction thereof and hydrocarbons which are liquid at standard conditions of temperature and pressure including but not limited to, petroleum products such as, fuel oil, used oil, oil sludge, oil reuse, diesel, kerosene, and gasoline.

3. Tanks that meet ALL the following requirements are NOT REGULATED and are not required to follow PADEP storage tank regulations:

    a. The tank was emptied before December 22, 1988.

    b. The tank has remained out of operation since before December 22, 1988.

    c. The tank does not pose a current or potential threat to human health and the environment.

4. Tanks which store heating oil used on the premises where stored are NOT REGULATED USTs.

5. ASTs which store less than 30,000 gallons of heating oil used on the premises where stored are NOT REGULATED.

B. Decisions regarding regulated and un-regulated USTs will be made by an environmental professional and/or a PADEP-certified Tank Contractor

C. Regulated tanks must be closed by a PADEP-certified Tank Contractor and in accordance with applicable regulations.

D. The closure of unregulated tanks do not require a PADEP-certified Tank Contractor.

E. The Owner's Representative will observe tank cleaning and removal, and will conduct soil sampling after removal of USTS, whether REGULATED or NOT REGULATED. Sampling and analysis will conform to PADEP guidance for tank closures.

1.2 CODES AND REGULATIONS

A. Pennsylvania Department of Environmental Protection (PADEP)

1. Administration of the Storage Tank and Spill Prevention Program (25 Pa Code 245). Closure Requirements for Underground Storage Tank Systems (Document 263-4500-601).

2. Closure Requirements for Underground Storage Tank Systems (Document 263-4500-601).

3. Applicability of Chapter 245.453-Assessing the Site at Closure or Change-In-Service- to UST Systems Closed Prior to the Effective Date of the Federal Regulations (Document 263-0900-014).

4. Site Assessment Sampling Requirements at Regulated Storage Tank System Closures (document 2630-BK-4699, Rev. 9/2020.

5. 2020 Management of Fill Policy (Document 258-2182-773).

6. Residual Waste and Special Handling Waste Streams (Document 258-2000-764).

7. 25 Pa. Code Chapters 287 to 299 (residual waste regulations).

8. 25 Pa. Code Chapters 271 to 285 (municipal waste regulations) Solid Waste Management Act, 35 P.S. §§ 6018.101 et seq.

9. Land Recycling and Environmental Remediation Standards Act, 35 P.S. §§ 6026.101 et seq.

10. The Storage Tank and Spill Prevention Act (the Act of July 6, 1989, as amended 35 P.S. Section 6021.101 et seq.) and Chapter 245.454.

11. API Publication 2015, Requirements for Safe Entry and Cleaning of Petroleum Storage Tanks.

B. City of Philadelphia, Department of Licenses and Inspections.

C. Code of Federal Regulations (CFR) – 40 CFR Part 261 Subpart C.

1.3 SUBMITTALS

A. The Contractor shall provide copies of PADEP-Certified Installer Certificate, both individual and company.

B. The Contractor shall provide copies of all worker certifications associated with OSHA 40 Hour Hazardous Waste Site Health and Safety Training in accordance with 29 CFR 1910.120.

C. Contractor shall provide a Site-specific Health and Safety Plan.

D. Submit at the pre-construction meeting the name, address and sampling requirements of the proposed facility to receive fill.

E. Contractor shall submit tickets/receipts/records/manifests/bills of lading for any material shipped offsite. Submittal of these documents shall be required for payment.

1.4 OWNER RESPONSIBILITIES

A. The Owner will pay the PADEP registration fees for tanks that require registration prior to removal.

B. Owners Representative will conduct soil sampling to support the characterization and disposal of materials to be transported offsite.

C. Owners Representative will provide to Contractor soil sampling diagram, chain-of-custody for samples, and laboratory report to support disposal approvals.

D. Owner's Representative will observe UST cleaning and removals and collect soil samples for analysis to document soil conditions after removal.

E. If regulated tank, Owner's Representative will prepare the PADEP UST System Closure Report Form.

1.5 MEASUREMENT AND PAYMENT

A. The measurement of petroleum-containing soils with concentrations that are unacceptable for reuse on-site and requiring disposal at a permitted facility, will be based on the measured weight of soil delivered to the receiving facility. Weights shall be measured at the receiving facility scale or other means acceptable to the Owner and confirmed in writing. Payment for disposal will not be made until final tickets/receipts/records/manifests/bills of lading are provided.

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

3.1 GENERAL REQUIREMENTS

A. The Contractor shall furnish all labor, material, tools, transportation and equipment necessary to remove and dispose of UST(s), associated electrical, structural, and product equipment, (e.g., dead men, anchor straps, piping, manways, piping, pumps, and dispenser(s), if present). This section specifies requirements for the environmental and tank assessment, permitting, removal and disposal of the UST(s). Generally, the work shall include, but not be limited to:

B. Submitting all necessary notices, obtaining all permits and licenses, and paying for all fees, and other costs in connection with the work. Obtaining all necessary approvals of all governmental departments having jurisdiction.

C. Conducting tank removal in a manner that minimizes interference with adjacent structures, if any.

D. Containerizing, removing, and properly disposing of residual stored products and sludges from the designated tanks and appurtenant equipment.

E. Clean, remove, and dispose of [UST(s) and appurtenant piping for the tank(s). The work shall include removal and proper disposal of fuel and residual sludges in the tanks and associated piping between the tanks and the building.

F. If a release is verified, the PADEP-certified tank contractor will notify the Owner and/or Owner's Representative and will report the release to the PADEP in accordance with §245.304 (c) (2). The contractor will provide a copy of the Notification of Release to the Owner.

G. Perform remediation of contaminated material, if necessary, as directed by the Owners Representative at the unit price established for the work.

H. Coordinate with the Owners Representative relative to the collection, sampling and analysis of impacted soils. Refer to ENVIRONMENTAL SOILS MANAGEMENT PLAN.

I. If a regulated tank is removed, support the preparation of the UST System Closure Report Form by completing and certifying Section II. Tank Handling Information. Owner's Representative will submit the Form to PADEP

END OF SECTION 011140

SECTION 011150

ENVIRONMENTAL SOILS HANDLING

PART 1 – GENERAL

1.1 SCOPE OF WORK

A. This specification outlines the required tasks and procedures involved with the characterization, handling and disposal of unsuitable soil and related debris.

B. The Contractor is to assume that all soils, not cleared for on-site reuse, are to be transported offsite.

C. Soils that will be removed from the site are to be managed in accordance with the Pennsylvania Department of Environmental Protection (PADEP) Management of Fill Policy (2020).

D. Contractor shall supply all labor, materials and equipment to do all site preparation, clearing of work areas, excavation to the depth shown and/or indicated, support of utilities, maintenance of excavation, removal of all water, backfilling, disposal of excess material, grading, compaction, removal of contaminated materials/debris, contaminated liquids and all incidental work for the removal, transportation and disposal or treatment of excess or unusable material as shown on drawings, as specified and/or as recommended by the Owner's Representative

E. The prices bid for the items shall include all excavation, backfill, transportation and disposal. Excavation shall be in open cut, unless otherwise required due to safety reasons, protection of existing utilities, or other substantiated reason. Following bid submittal, no extra compensation will be allowed where hand excavation and backfill are employed. The Contractor shall be responsible for planning the work to avoid conflicts, obstructions, and other potential impediments to excavation identified in the project documents or visible at the work site prior to bid submittal.

F. Included in the excavation are concrete slabs, footings and foundations, asphalt paving, curbing, and road base materials as shown within the area depicted on project plans. Removal of these structures and materials is depicted on contract drawings.

G. If testing indicates that the volume of excavated materials meet the criteria of clean fill as per the Management of Fill Policy, no special handling requirements are imposed.

H. If localized petroleum or substances of potential human health or environmental concern are encountered in site soils beyond the limits provided in the attached drawings, at the recommendation of the Owner's Representative, the Contractor will excavate no more than an additional five (5) feet in any direction from the limits of the excavation. The contaminated soils, as identified on the drawings or recommended by the Owner's Representative, shall be excavated and stockpiled as described in 1.01, prior to loading into dump trailers for export and disposal or treatment. The Contractor may load directly into dump trailers if a permitted treatment or disposal facility has approved receipt of the materials for disposal. Analysis of contaminated soils shall be performed as required by the disposal facility by the Owner's Representative. This material shall be managed in accordance with all applicable federal, state and local regulations. Any additional excavation of contaminated materials will be at the direction of the Owners Representative.

I. All soil stockpiles shall be placed on 15-mil plastic sheeting and covered with 15-mil polyethylene plastic sheeting at the end of each working day. The plastic cover sheeting shall be weighted utilizing hay bales to prevent the 15-mil polyethylene plastic from blowing off these soil stockpiles and to prevent stormwater runoff from eroding these soil stockpiles.

J. The Contractor shall separate concrete, asphalt and construction debris from soil. The Contractor shall remove concrete, asphalt and construction debris immediately after excavation activities are completed. Debris shall be managed off-site in accordance with all applicable federal, state and local regulations.

K. The excavation shall be backfilled by the Contractor in accordance with the provisions of the Contract Specifications. Backfill material will meet the definition of Clean Fill as defined by the PADEP Management of Fill Policy. Certificates of Clean Fill or testing results will be required to demonstrate the materials are clean fill. All materials shall be approved by the Owner's Representative before being brought on-site.

1.2 CODES AND REGULATIONS

A. All work and disposal or treatment shall be performed in compliance with all applicable Federal, State, and City regulations including, but not limited to:

1. Pennsylvania Department of Transportation Officials (PennDOT)

    a. PennDOT Publication 408 - Standard Specification for Construction

2. United States Environmental Protection Agency (USEPA)

a. Test Method for Evaluating Solid Waste (SW-846)

b. Resource Conservation and Recovery Act (RCRA), 42 U.S.C. §6901 et seq.

3. Pennsylvania Department of Environmental Protection (PADEP)

a. 2020 Management of Fill Policy (Document 258-2182-773)

b. Residual Waste and Special Handling Waste Streams (Document 258-2000-764)

c. 25 Pa. Code Chapters 287 to 299 (residual waste regulations)

d. 25 Pa. Code Chapters 271 to 285 (municipal waste regulations) Solid Waste Management Act, 35 P.S. §§ 6018.101 et seq.

e. Land Recycling and Environmental Remediation Standards Act, 35 P.S. §§ 6026.101 et seq.

4. Code of Federal Regulations (CFR) – 40 CFR Part 261 Subpart C

1.3 PERMITS

A. The Contractor shall be responsible for obtaining all necessary permits and approvals required for the performance of the work. Permits shall include at a minimum construction permits, waste hauling and disposal permits and all other permits required to complete the work in compliance with all applicable regulations. The Contractor will be required to submit proof of such compliance prior to starting the work.

1.4 SUBMITTALS

A. Submit at the pre-construction meeting the name, address and sampling requirements of the proposed facility to receive fill.

B. Submit tickets/receipts/records/manifests/bills of lading for any material shipped offsite. These documents shall be required for payment.

1.5 OWNER RESPONSIBILITIES

A. Owners Representative will conduct soil sampling to support the characterization and disposal of materials to be transported offsite. Sample collection will be based on Contractors volume estimate, the Management of Fill Policy, and the selected disposal facility described in Section 1.04.A.

B. Owners Representative will provide to Contractor soil sampling diagram, chain-of-custody for samples, and laboratory report.

C. If excavated materials characterize as clean fill, the Owner's Representative will prepare and provide a Clean Fill Certificate, if requested by the receiving facility/site.

1.6 MEASUREMENT AND PAYMENT

A. The measurement of soils deemed unsuitable for use on site and requiring disposal or treatment at a permitted facility, will be based on the unit rate per ton of soil delivered to the receiving facility. Weights shall be measured at the receiving facility scale or other means acceptable to the Owner and confirmed in writing. Payment for disposal or treatment will not be made until final tickets/receipts/records/manifests/bills of lading are provided.

1.7 DEFINITIONS

A. Clean Fill– Uncontaminated, non water-soluble, non-decomposable, inert solid material used to level an area or bring an area to grade. Uncontaminated means that no regulated substance concentrations exceed the Clean Fill Concentration Limits as per the Management of Fill Policy. The term includes soil, rock, stone, dredged material, used asphalt, and brick, block or concrete from construction and demolition activities that is separate from other waste and recognizable as such (25 Pa. Code §§ 271.101 and 287.101).

B. Contaminated (Regulated, Non-hazardous) Fill - Soil, rock, stone, dredged material, used asphalt, historic fill, and brick, block or concrete from construction and demolition activities that is separate from other waste and recognizable as such that has been affected by a spill or release of a regulated substance and the concentrations of regulated substances exceed the Clean Fill Concentration Limits.

PART 2 – PRODUCTS

2.1 FILL TRANSPORT

A. The Contractor shall provide transport fill material in a using equipment or containers that are free and clear of deleterious material, sealed or lined such that no spillage or leakage can occur between locations during transport. Equipment or containers used for transport of material shall be managed to prevent cross contamination of clean fill.

PART 3 -- EXECUTION

3.1 GENREAL REQUIREMENTS

A. The contractor shall handle, transport, reuse or dispose of all excess fill material consistent with all applicable regulations.

B. The Contractor shall clearly define, in writing, the means and methods to manage fill material prior to the start of work and clearly document the conformance during the completion of the work.

C. The Contractor shall be responsible for providing a clean work area. Debris, soil and other materials dislodged from equipment onto access roads or adjacent properties shall be immediately collected and removed by the Contractor.

D. Testing and ultimate disposal documentation shall be retained and copies provided to the Owner, consistent with the Submittals Section.

END OF SECTION 011150