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**Project: Alameda Point – 13 Former Military Buildings
Orion Street, West Tower Ave (Ave F), and Stardust Place
Asbestos Related Demolition & Clean-Up**

Project Objective:

The primary objective of this work plan is to provide work procedures to safely demolish buildings containing asbestos, remove and clean-up asbestos-containing/contaminated materials and related debris, and properly dispose and transport the waste materials. The work area is identified 13 Former Military Buildings on the property bounded by Orion Street, West Tower Ave (Ave F), and Stardust Place (Project Site) of Alameda Point, Alameda, California. These work procedures are intended to comply with all applicable Federal, State and local rules and regulations, ensure the safety of all workers, and control emissions to the environment while completing the clean-up of the damaged asbestos-containing/contaminated materials (ACM) and related debris.

Background:

The Project Site consists of 13 Former Military Buildings on the property bounded by Orion Street, West Tower Ave (Ave F), and Stardust Place in Alameda Point, Alameda, California. The buildings have been abandoned since the base was closed. The buildings have been vandalized and used for practice by the fire department which has cut holes in the roof and floors. Water has penetrated the building envelopes and caused rotting of the wooden structural members. Some roofing and second floors have collapsed to the first floor units and carports. All buildings are considered not structurally sound to perform traditional abatement activities. The Project Site has been fenced in, and an initial assessment of the buildings has been performed.

The scope of work for this project is as follows:

1. Demolish the buildings and dispose of all materials as Regulated Asbestos-containing Materials (RACM). For a listing of asbestos identified at the Project Site refer to Vista Environmental Consulting's (Vista) report titled "*Limited Pre-Demolition Asbestos and Lead Survey Report Alameda Point – 13 Former Military Buildings Orion Street, West tower Ave (Ave F), and Stardust Place Alameda, CA*" dated April 25, 2015 (Report).
2. Surrounding the Building Footprint - clean-up the surface soil of any and all debris and dispose of all materials as Regulated Asbestos-containing Materials (RACM).

ACM Demolition & Debris Clean-Up:

Prior to initiation of any abatement activities, contractor shall submit any required notifications:

1. California Division of Occupational Safety and Health (Cal/OSHA)
2. Bay Area Air Quality Management District (BAAQMD)

Contractor shall maintain on-site and supply Vista a copy of each notification as well as the following information:

1. Registration: Submit copy of the registration for Asbestos-Related Work from the Division of Occupational Safety and Health in accordance with Title 8, Chapter 3.2, Subchapter 2, Article 2.5 of the California Code of Regulations.
2. License: Submit copy of State of California, Contractors State License Board license with C-22 and ASB classifications.
3. Submit documentation that Contractor's employees and sub-contractors, including foreman, supervisor, operators, truck drivers entering regulated area, and any other company personnel or agents who may be exposed to airborne asbestos or who may be responsible for any aspects of abatement activities, have received training as required by Title 8 California Code of Regulations (CCR) 1529.
 - A. Personnel Training for Abatement Superintendent and Foreman: Submit copy of current certificates which verifies that each superintendent and foreman has successfully completed an EPA approved Asbestos Abatement Contractor/Supervisor Course.
 - B. Personnel Training for Abatement Workers: Submit copy of the asbestos abatement employee training program, and current certificates which verify that each employee has successfully completed an EPA approved Asbestos Abatement Worker Course.
 - C. Personnel Training for all Non-Abatement: Submit copy of the asbestos abatement employee training program, and current certificates which verify that each employee has successfully completed an Asbestos Awareness Course meeting the requirements of 8 CCR 1529 and 8 CCR 5208.
4. Submit documentation from Physician that all employees or agents who may be exposed to airborne asbestos fibers have received medical monitoring to determine whether they are physically capable of working while wearing the respiratory protection required without suffering adverse health effects.

The Contractor must be aware of and provide information to the examining physician about unusual conditions in the workplace environment (e.g. high temperatures, humidity, chemical contaminants) that may impact on the employee's ability to perform work activities.

5. Submit documentation of respirator fit-testing for all Contractor employees and agents who must enter the work area. This fit-testing shall be in accordance with qualitative procedures as required by OSHA regulations or be quantitative in nature.
6. Contractor is responsible to assure that any visitors, not employed by the contractor, who enter the regulated area, comply with the above requirements.

Asbestos Related Demolition

1. Post warning signs meeting the specifications of Cal/OSHA General Industry Safety Order Section 5208 and 8 CCR 1529 at any location and approaches to a location where airborne concentrations of asbestos fibers may exceed regulated levels. Signs shall be posted at a distance sufficiently far enough away from a work area to permit a person to read the sign and take necessary protective measures to avoid exposure.
2. Post all emergency numbers, contacts and any other items required by the Department of Labor.
3. Install a remote three-stage worker decontamination unit including a shower at ingress/egress to each of the work areas.
4. All employees conducting asbestos related work activities shall don personnel protective equipment that includes two disposable protective coveralls with integral head and foot coverings, half-face negative pressure and powered air purifying respirators equipped with P-100 and, as necessary, organic vapor filter cartridges, appropriate eye, head and foot and fall protection, and any other PPE as required by Safety Data Sheet (SDS) or applicable regulations.
5. The Contractor shall adequately wet all materials in order to reduce airborne fiber concentrations when the material is disturbed. Saturate the material to its maximum absorption capacity; however, do not allow excessive water to accumulate in the Work Area. Keep all material wet enough to prevent fiber release until it can be collected and containerized for disposal.
6. Materials to be removed shall be adequately wetted and removed directly into properly labeled double six-mil polyethylene lined waste bins.
7. During removal operations the ground surrounding the area shall be constantly maintained by appropriately protected workers through the use of HEPA vacuuming and wet wiping techniques. At no time will asbestos-containing debris be allowed to remain on the ground while work progresses to other areas. All debris shall be immediately cleaned-up.
8. Wind Conditions – At any time during the removal process wind speed exceeds 20 mph all asbestos removal and demolition operations shall be immediately halted until winds subside to below this mark.

Post Demolition:

1. The Contractor shall clean the Project Site of all visible debris through the collection of adequately wetted bulk materials and HEPA vacuuming.
 - A. All areas shall be visually inspected by Vista and all debris will be collected and containerized. Materials shall be collected and properly containerized as RACM.
 - B. Remaining non-porous materials such as metals and concrete that can be decontaminated may be segregated at the discretion of the abatement contractor.
 - C. When no debris is identified the clean-up of the area will be considered complete. Verification sampling shall be performed by Vista at the completion of the project.
2. The Contractor shall carry out all asbestos clean-up in a manner that will minimize pulverizing, breaking or abrading of the materials to minimize the release of asbestos into the air and surrounding unregulated areas.

3. The Contractor shall adequately wet all debris and identifiable ACM material in order to reduce airborne fiber concentrations when the material is disturbed. Saturate the material to its maximum absorption capacity; however, do not allow excessive water to accumulate in the Work Area. Keep all material wet enough to prevent fiber release until it can be collected and containerized for disposal.
4. Asbestos Containing Materials that have been adequately wet shall be cleaned-up and containerized in impermeable, leak-tight properly labeled six-mil polyethylene bags before moving to a new location for continuance of work. Each bag shall be placed into a second properly labeled bag. Bags shall not be overfilled as they must be hand carried to the appropriately labeled, poly-lined, lockable, dumpsters. Larger materials such as wood beams and other asbestos containing/contaminated debris shall be placed directly into appropriately labeled, lockable, dumpsters lined with two layers of polyethylene sheeting. Surrounding areas shall be periodically sprayed and maintained in a wet condition until all visible material is cleaned up.
5. After the Work Area has been rendered free of visible residues the work areas shall be final cleaned through the use of HEPA vacuuming, wet wiping and power washing (as necessary).
6. Barriers will be placed around the building perimeter to collect and contain water used for wetting and/or cleaning. No water, unfiltered or filtered, shall be allowed to enter the storm drain. Work at this site shall be performed in accordance with storm water pollution prevention programs which may be in effect at the Project Site. Appropriately filtered water may be released into the sanitary sewer system or released on-site with a written authorization signed by the City of Alameda's Environmental Department or other authorized representative.
7. Upon completion of these operations the Vista will review the work for general conformance with the current Federal, State and local regulations governing said removed materials. Any non-conformance of the work shall be corrected by the Contractor.
8. Decontaminate all tools and equipment and remove at the appropriate time in the cleaning sequence.
9. Vista will inspect the work area for visible residue as a result of the clean-up operations. If any accumulation of residue is observed, it will be assumed to be asbestos and a second cleaning cycle repeated.
10. Areas in which soil is present and that have visible debris shall have all visible debris properly removed. Upon completion of the removal of the debris from the soil areas, representative soil samples shall be collected by Vista and analyzed for the determination of asbestos content. The soil sampling shall be conducted as follows:
 - A. One sample (made up of a 4-point composite) from within 20' of the building footprint. The samples shall be collected from the top 1" of soil. If demolition activities cause debris to fall further than 20' from the building footprint, additional samples will be taken from those areas.
 - B. Samples shall be analyzed by a laboratory accredited under the National Voluntary Laboratory Accreditation Program (NVLAP) and the California Environmental Laboratory Accreditation Program (Cal-ELAP). The samples will be submitted for analysis by Polarized Light Microscopy (PLM) utilizing dispersion staining techniques in accordance with the EPA's "Method for the Determination of Asbestos in Bulk Building Materials" U.S. EPA/600/R-93/116, Visual Area Estimate, dated July 1993 and adopted by the NVLAP as Test Method Code 18/A01.

- C. If the bulk samples indicate that asbestos is present, the soil shall be removed and/or cleaned from the specific grid until it is determined via additional bulk sampling that the soil is free from detectable concentrations of asbestos.

Waste

1. Containers (6-mil polyethylene bags or polyethylene lined dumpsters) shall be transparent, leak tight, and have the appropriate labels as required by EPA regulation 40 CFR 61.152 (b) (I) (iv), BAAQMD, Cal/OSHA Title 8 CCR Section 5208, 8 CCR 1529, and if applicable Title 22 CCR Section 66504. This includes the asbestos warning label and a generator's label that must have the generator's name, address of generation and traceable manifest number.
2. All aforementioned containers shall be sealed (leak-tight) when full. Double bagging of waste material is required. Bags and containers shall not be overfilled. They should be securely sealed to prevent accidental opening and leakage by tying tops of bags in an overhand knot, by taping in gooseneck fashion or sealed with duct tape for the larger components. Do not seal bags with wire or cord.
3. All asbestos-containing/contaminated waste shall be disposed of as RACM for the cleaned-up debris and as additionally required by the landfill for the waste characterization profiling. Preliminary waste characterization documented in the Report showed the lead levels to be below Title 22 and RCRA hazardous waste levels for Lead. The Contractor is responsible for waste characterization to meet landfill requirements.
4. All manifests will be signed by a representative for the building owner, when utilized. An EPA ID Number is required and will be supplied by the owner.
5. All hazardous waste manifests shall be delivered to Vista. Record keeping format shall utilize a chain of custody form which includes the names and addresses of the Generator (Owner), Contractor, Waste Hauler, pickup site, disposal site, the estimated quantity of the asbestos waste and the type of containers used. The form shall be signed by the Generator, Contractor, Waste Hauler and the Disposal Site Operator, as the responsibility for the material changes hands.
6. Waste hauling trucks should be routed outside the regulated areas where feasible. Trucks should be cleaned prior to leaving the Project Site so as to not track out any debris. If water is used for cleaning it shall be collected as per this work plan. The Contractor shall provide a written vehicle decontamination plan for approval prior to start of hauling.

Air Sampling

1. During the abatement operations, Vista will collect daily perimeter air samples for the determination of asbestos airborne fiber concentrations from the following areas:
 - A. Fence line of the regulated area down wind
 - B. Fence line of the regulate area upwind
 - C. Adjacent to the building be demolished upwind and downwind.

2. All air samples shall be collected and analyzed by Phase Contrast Microscopy (PCM) in accordance with NIOSH Method 7400. Air samples shall not exceed the established EPA's recommended level of 0.01 fibers per cubic centimeters (f/cc) of air. Elevated samples shall be re-analyzed by Transmission Electron Microscopy (TEM), NIOSH Method 7402.
3. Personal air monitoring required by Cal/OSHA is work of the contractor. The contractor is responsible for providing daily OSHA compliance monitoring as per Title 8 CCR 1529 for asbestos.
 - A. At minimum, Contractor shall perform representative (25% of crew) breathing zone personal air monitoring of its employees twice each shift and repeated daily or until a "negative exposure assessment", as derived in accordance with Title 8 CCR 1529 can be established.
 - B. Monitoring shall be performed by a qualified air professional experienced and knowledgeable about the methods of air monitoring and in accordance with Title 8 CCR 1529,
 - C. Monitoring results and appropriate laboratory analysis work shall be submitted to Vista within twenty-four (24) hours of the completion of the shift the monitoring represents.
4. Fugitive (Particulate) Dust Monitoring - Fugitive dust monitoring will be conducted by visual and mechanical means throughout the duration of demolition activities. Daily visual and mechanical monitoring is the responsibility of the contractor. The Contractor shall provide a written Dust Mitigation Plan for review and approval.

In the event visible dust from demolition activities is observed crossing the property boundary, the following procedures will be followed to ensure adequate mitigation measures are in place to address the dust:

- A. The specific source of the emissions will be immediately shut down and a more aggressive application of the existing mitigation measures will be directed.
- B. Once the mitigation measures have been applied, the source of emissions will resume and observations will be conducted to verify that the mitigation measures were successful.

In the event visible dust from demolition activities is observed on-site, but does not cross the property boundary, the following procedures will be followed to ensure adequate mitigation measures are in place to address the dust:

- A. A more aggressive application of the existing mitigation measures or additional methods of dust suppression will be directed to the specific source of emissions within 60 minutes of the initial observation.
- B. If, despite these more aggressive and/or additional measures, the visible dust emissions continue for 90 minutes from the time of the initial observation, the specific source of emissions will be temporarily shut down until the implemented dust control mitigation is effective or, due to changed conditions, no longer necessary.

Mechanical monitoring locations will initially coincide with those selected for the airborne asbestos dust monitoring program. Fugitive dust monitoring locations will be checked regularly and adjusted if necessary to maintain downwind coverage. Real-time particulate dust monitors (Thermo Scientific MIE ADR-1500, Thermo Scientific pDR 1500, or equivalent) will be used to monitor for particulates.

The fugitive dust action level shall be PM-10: 75 micrograms per cubic meter for a 30 minute time weighted average. If the action level is exceeded the procedures used for visible dust crossing the property boundary shall be implemented.

5. Following the satisfactory completion of the visual inspection, any remaining signs, barriers, etc. shall be removed. A final visual inspection by Vista and Contractor will be performed. Unsatisfactory conditions shall require additional cleaning.
6. Following completion and acceptance of the clean-up/removal operation, Vista will submit one copy of the final closeout documentation to PM Realty Group outlining the work performed, the results of all air samples collected, and copies of all applicable notifications, training certificates, medical approvals, fit tests and hazardous waste manifests.

If you should have any questions, or if I can be of further assistance, please feel free to contact me on my mobile phone at 925.348.5361

Christopher R. Burns
Senior Project Manager
CAC #92-0224

Contractor agrees to conduct all asbestos operations in accordance with these established procedures and all applicable Federal, State, and local regulations:

Contractor Name

Signature & Title

Date