

August 10, 2016



Carolyn Minnich  
Brownfields Project Manager  
Division of Waste Management  
Department of Environmental Quality  
1646 Mail Service Center  
Raleigh, NC 27699-1646

Subject: Procedures for Removal of Asbestos-Contaminated Soil  
Davidson Depot Site  
Davidson, North Carolina  
Terracon Project Number: 71167233

Dear Ms. Minnich:

Based on the previous asbestos soil sampling activities, on-site soils characterized as asbestos-contaminated waste will be properly removed and disposed. Attached you will find a summary of the proposed procedures for removal of asbestos-contaminated soils at the Davidson Depot site in Davidson, North Carolina. The attached summary addresses:

- Site Security
- Training and Worker Accreditation
- Personnel and Equipment Decontamination
- Regulated Work Areas
- Personal Protective Equipment
- Removal and Disposal of Asbestos Debris and Contaminated Soil
- Deep Foundation Installation
- Asbestos Air Monitoring

Our geotechnical engineers are currently evaluating several deep foundation options (piles/rammed aggregate piers) that would limit the amount of asbestos-contaminated soils that would be disturbed at the site. Once construction is complete on this project, the owner will complete and submit a certification of compliance with the Brownfields Agreement annually.

Please let us know if you have any questions or comments regarding the attached procedures.

Sincerely,

Terracon Consultants, Inc.

  
Christopher L. Corbitt, PG  
Senior Geologist

  
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NC Accredited Asbestos Designer No. 14029



**PROCEDURES FOR REMOVING ASBESTOS-CONTAMINATED SOIL/DEBRIS  
DAVIDSON DEPOT SITE  
DAVIDSON, NORTH CAROLINA  
AUGUST 2016**

**Site Security**

- Prior to beginning site activities, a six foot (minimum) fence should be erected along the perimeter of the site. Several gates should be installed for controlled entry and egress.
- It is recommended that a wind screen be installed on the fence to serve as a visual barrier.
- Contractor performing site excavation activities will be responsible for controlling site entry and egress.

**Training and Worker Accreditation**

- Each worker utilized on the site during excavation activities or deep foundation installation should have the two hour asbestos awareness training required by the OSHA Asbestos Construction Standard, 29 CFR 1926.1101.
- Each worker/supervisor involved in regulated removal of asbestos should be accredited by the North Carolina Health Hazards Control Unit (HHCU).

**Personnel and Equipment Decontamination**

- Personnel and equipment decontamination facilities should be installed on the site. Personnel decontamination facilities should consist of an equipment room used to remove contaminated clothing/equipment, a shower room equipped with multiple shower heads, and a clean room to don street clothes at the end of work shifts. The equipment decontamination unit should consist of a wash room used to decontaminate equipment, a holding area that serves as an air lock, and a clean room used to store clean and decontaminated equipment.
- Water from the personnel and equipment decontamination facilities should be filtered through a 5 micron filter in series with a 20 micron filter before discharge to the sanitary sewer system.
  - **Note:** Most contractors have a mobile trailer that can be set up on the site and provide decontamination facilities that meet these requirements.

- It is also recommended that a truck washing station be constructed so that trucks, disposal containers and heavy equipment can be decontaminated prior to leaving the site. Water from the truck washing station should be collected and properly disposed based on levels of asbestos contamination and other contaminants.

### **Regulated Work Areas**

- Prior to excavation activities, regulated work areas should be established using barrier tape and required asbestos warning signs. Regulated work areas should be manageable areas of excavation with adequate room for staging.
- Only trained/accredited workers with proper personal protective equipment will be allowed inside the regulated areas.
- Equipment operators inside enclosed cabs should also be trained/accredited workers.

### **Personal Protective Equipment (PPE)**

- Workers and supervisors within regulated work areas will be required to wear disposable clothing and respiratory protection in accordance with the OSHA Asbestos Construction Standard, 29 CFR 1926.1101 and the OSHA Respiratory Protection Standard 29 CFR 1910.134.
- Upon leaving the regulated work area, workers and supervisors should proceed directly to the personnel decontamination facility for showers/decontamination prior to donning street clothes.

### **Removal and Disposal of Asbestos Debris and Contaminated Soil**

- The contractor should remove asbestos debris and contaminated soil using wet methods. Misting stations as well as hoses should be used to wet materials being removed.
- Contractor should take precautions to control runoff during removal activities.
- No soil excavation activities should occur when sustained wind speeds exceed 15 MPH.
- Once excavated, soil and debris should be placed directly in a dumpster lined with six mil polyethylene sheeting.
- Once the dumpster is filled, the polyethylene sheeting should be sealed air-tight using a burrito wrap technique.

- Once sealed, the dumpster should be removed from the site for proper disposal as asbestos waste.
- Once excavations are complete, Terracon recommends installing a geotextile liner, covered by a minimum of two feet of clean fill (cap). The liner will serve as a barrier/ marker between clean soils and in-place potentially asbestos-contaminated soils for construction and future development activities. Prior to installation of the cap, clean fill will be tested for the presence of VOC's, SVOC's, and asbestos.

### **Deep Foundation Installation**

- The installation of deep foundations (piles/rammed aggregate piers) will result in little to no disturbance of asbestos contaminated soil.
- The piles will be driven through the two foot cap, the geotextile liner, and soft asbestos-contaminated soils.
- Wet methods will be used to control dust and prevent the release of asbestos fibers. Spoils that are created, if any, will be disposed as asbestos-contaminated waste.

### **Asbestos Air Monitoring**

- Daily air monitoring by a North Carolina accredited air monitor for each day of excavation activities is recommended. Sampling stations should be set up at regular intervals along the perimeter of the site. Each station would consist of two sampling pumps, one for collecting samples for PCM (Phase Contrast Microscopy) analysis and one for collecting samples for TEM (Transmission Electron Microscopy) analysis.
- PCM sample analysis would be available within 24 hours after collection of the sample. TEM samples were be held and analyzed if necessary.
  - PCM analysis does not distinguish between asbestos and non- asbestos fibers and is less sensitive than TEM analysis.
  - TEM analysis is specific for asbestos fibers and more sensitive than PCM analysis.
- Additionally, a weather station capable of recording significant weather data such as temperature, relative humidity, wind speed, and wind direction should be installed on the site. Data should be recorded daily.
- The contractor would be responsible for collecting and analyzing personnel samples, required by OSHA. This data should be made available to the owner to review and document the quality of contractor work practices.