

## Appendix C

*United States and the Commonwealth of Virginia v. Atlantic Wood Industries, Inc., et al.*  
**Atlantic Wood Industries (AWI) Superfund Site, Portsmouth, VA**  
**Operation and Maintenance (O&M) Performance Standards**  
**Rev. 0: 9/12/2018**

This document contains Operation and Maintenance (O&M) Performance Standards that AWI and/or Atlantic Metrocast, Inc. (AMI) must meet to operate and maintain the remedial action at the AWI Superfund site. The purpose of these O&M Performance Standards is to preserve the effectiveness of the AWI site selected remedy. In implementing the 2007 Record of Decision, the 2012 Explanation of Significant Differences (ESD), and the 2018 ESD, EPA is constructing a cap on AWI property (which is part of the AWI site) that will prevent direct contact with contaminated material, minimize the infiltration of precipitation through the contaminated subsurface to the groundwater. Reducing the migration of contamination to groundwater will also aide in the natural attenuation of ground water. The remedy as modified by the 2018 ESD, will allow AMI to continue the operation of its pre-cast concrete manufacturing business. These O&M Performance Standards apply to all the AWI property as well as land on which the remedy is located and where AWI operates such as the City of Portsmouth right of way (ROW) and the Portsmouth Norfolk Beltline Railroad ROW.

In AWI operating areas, the cap generally consists of a 12-inch thick low-permeable gravel cap (compacted Virginia Department of Transportation [VDOT] 21A stone) that has a permeability no greater than  $1 \times 10^{-5}$  centimeters per second, and is underlain by an orange marker geotextile to warn anyone who may dig into this material in the future that contaminated material exists below. To protect the gravel cap and to allow the cap to provide the bearing load requirements for equipment used by AWI, a geotextile was placed on top of the low-permeable layer,<sup>1</sup> followed by a geogrid, and a 4-inch wear surface layer of 21A stone.

In drainage swales and steep slopes, the cap generally consists of a 12-inch clay layer compacted to yield a permeability of no greater than  $1 \times 10^{-5}$  centimeters per second underlain by an orange marker geotextile to warn anyone who may dig into this material in the future that contaminated material exists below. To protect the clay layer, it is overlain by a 6-inch topsoil layer with permanent vegetation (gravel cover was placed in the bottom of the swales in lieu of topsoil).

The cap over dredged sediment west of Burtons Point Road was designed to support operation of a rubber tired gantry crane with a maximum allowable ground pressure of 78 pounds per square inch or (psi) based on a certain amount of traffic loading over a 25-year period. The cap over areas without dredged sediment both on the east and west parcels was designed to support a rubber tired gantry crane with a maximum allowable ground pressure of 120 psi based on a certain amount of traffic loading over a 25-year period. The cap over dredged sediment at the eastern-most end of the parcel east of Burtons Point Road does not have the 4-inch protective

---

<sup>1</sup> There are some areas that do not have a geotextile placed on top of the low-permeability stone. These areas include the two ramps west of Burtons Point Road and the western-most approximately 125 feet of the cap west of Burtons Point Road.

layer. Furthermore, without additional material added to the cap, it cannot support AMI's equipment.

EPA constructed a sealed pile wall adjacent to the Southern Branch of the Elizabeth River to contain contaminated dredged sediment and to prevent the discharge of contaminated ground water to the river.

AWI shall submit an O&M Manual for EPA and DEQ review and approval prior to operating on any capped area. The manual detailing how AMI intends to meet the below performance standards:

The O&M Manual, at a minimum, shall include:

- a) Inspection and EPA/DEQ reporting schedule (reporting period to start at quarterly, but can be shortened or lengthened [but to no longer than annually] by agreement of EPA and DEQ)
- b) Report format
- c) Planned activities to ensure compliance with the Performance Standards, including a schedule where appropriate
- d) Training requirements

## **Performance Standards**

- 1) Stone cap
  - a) Maintain the integrity and function of the stone cap:
    - i) Do not allow penetration of vegetation into the 12-inch low-permeable layer
    - ii) Maintain at all times a minimum of four (4) inches of VDOT 21A or other approved material on top of the low permeable layer
    - iii) At the very east end of AWI's east parcel where EPA is not adding the 4-inch protective stone layer:
      - (1) Do not operate in this area until adding a protective layer as approved by EPA and DEQ
      - (2) The cap in this area cannot be used until a Professional Engineer registered in the State of Virginia (PE) states that the cap has the bearing capacity for the planned use
    - iv) Do not allow ponded water to remain on the cap after 48 hours of the end of rainfall
  - b) If the low-permeable stone layer is damaged and/or disturbed, repairs must be:
    - i) Reported to EPA and DEQ within 24 hours of occurrence
    - ii) Completed within two weeks of the occurrence
    - iii) Completed in accordance with the material and design specifications for the cap
      - (1) Stone used for this purpose must meet the VDOT 21A specification at the time of placement (i.e., stone stored for this purpose must be protected to maintain its properties)

- iv) Documented as meeting the design specifications by the PE
  - (1) The repair documentation must be submitted to EPA and DEQ within seven days of the completion of the work
- c) Any area where the protective stone is less than 4 inches and/or areas where the low-permeable layer is not fully functioning cannot be used until repaired.
- d) No initiation of any new activities (i.e., those activities other than the existing pre-stressed/precast concrete manufacturing operations) including applying loads in excess of the design capacity, shall be permitted on capped areas prior to AMI obtaining written EPA and/or DEQ approval for such activities. Any request submitted to EPA and/or DEQ for approval must include a statement by a PE that the activity can be conducted in such a way as to maintain the integrity and function of the cap.

2) Clay cap

- a) Maintain the integrity and function of the clay cap
  - i) Maintain vegetation (or stone in high drainage areas) to prevent erosion
  - ii) Do not allow woody vegetation larger than a 3/4-inch diameter
- b) If the low-permeable clay layer is damaged and/or disturbed, repairs must be:
  - i) Reported to EPA and DEQ within 24 hours of occurrence
  - ii) Completed within two weeks of occurrence
  - iii) Completed in accordance with the material and design specifications
  - iv) Documented as meeting the material and design specifications by the PE
    - (1) The documentation must be submitted to EPA and DEQ within seven days of the completion of the repair.
- c) Maintenance of drainage swales constructed on AWI property in accordance with Section 11.2.12 of the 2007 ROD
  - i) Remove vegetation (as approved by EPA and DEQ) during July of each year that is hindering flow and/or impairing the function of the swales
  - ii) Remove accumulated sediment from erosion as necessary for the swales to provide adequate drainage
  - iii) Replace and/or repair as appropriate the rock check dam at the northwest corner of the west parcel where surface water discharges from the property to ensure the check dam allows adequate drainage and filters sediment from the water

3) South Bulkhead on AWI property

- a) Maintain the four-part coating of concrete pile cap at South Bulkhead
  - i) Repair the coating yearly if any layers other than the surface layer are visible-using the coating system applied by EPA (or approved equivalent)
- b) Inspect monthly for signs of cracking or spalling of concrete, wear of concrete coating or any visible signs of collision-type damage
  - i) Record any cracking or spalling of concrete, wear of concrete, or any visible signs of collision-type damage in the monthly inspection log.
  - ii) Report any visible signs of collision-type damage to EPA and DEQ within 24 hours of discovery.

- c) Annually, unless directed otherwise by EPA or DEQ, repair any damage to the concrete caused by AMI
- d) Conduct and/or coordinate, as determined by EPA or DEQ, the repair of damage to the South Bulkhead caused by an AMI customer and/or contractor.

4) Wetlands

- a) Preserve the wetland area at the inlet from the Southern Branch of the Elizabeth River within the metes and bounds of property currently owned by AWI
- b) Maintain by inspecting annually
- c) Remove Phragmites, or other invasive species identified by DEQ or EPA and that DEQ or EPA requests AWI to remove, if a single species makes up more than 10% of the area between the sheet pile barrier and the property boundary
- d) Report to EPA and DEQ the estimated area of Phragmites every May
- e) Remove Phragmites (or other invasive species as requested), if necessary, during July each year

5) Other

- a) Survey every April the four corners of the pile cap on the Southern Bulkhead located on AWI property and the four corners of the concrete Junction Box 1 to track any movement of these structures over time:
  - i) Collect elevation and coordinate values of each corner
  - ii) Datums shall be North American Vertical Datum 1988 for vertical, and North American Datum 1983 for horizontal.
  - iii) The survey must be conducted by a surveyor licensed in the Commonwealth of Virginia.
  - iv) Submit to EPA and DEQ an electronic table indicating the points surveyed, horizontal coordinates, and elevations of each point within 30 calendar days of the completion of the field survey.
- b) Maintain the function of underground drainage structures on the AWI property that are installed as part of the remedy and not maintained by the City of Portsmouth:
  - i) Remove sediment (or repairing damage caused by AWI) that hinders adequate drainage of water from the top of the cap.

The plan can be updated as necessary. Updates can be initiated by an AWI proposal to EPA and DEQ or a request from EPA or DEQ to AWI. Any proposed or requested update must include the rational for the desired change.