

Findings From FY '19 Historic Fill NOAFs

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In fiscal year 2019 (FY19), the Massachusetts Department of Environmental Protection (MassDEP) issued two Notices of Audit Findings (NOAFs) related to Historic Fill. Both NOAFs were also Notices of Noncompliance and cited one or more violations of the Massachusetts Contingency Plan (MCP).

The first NOAF was simple and straightforward. At this site, in the Western Region, 1,4-dioxane was detected in a groundwater sample collected from the bottom of a test pit, and the Permanent Solution Statement for the site (1) attributed the 1,4-dioxane in groundwater to the Historic Fill that was observed in the test pit and (2) excluded 1,4-dioxane from the site risk characterization (on the basis that it was Anthropogenic Background). The NOAF pointed out that the definition of Historic Fill in the MCP excludes volatile organic compounds (VOCs) and that the 1,4-dioxane detected in site groundwater therefore cannot be attributed to Anthropogenic Background conditions. Accordingly, the NOAF concluded that the assessment and evaluation of 1,4-dioxane detected in groundwater at the site was incomplete and required either revision or retraction of the Permanent Solution Statement. **Takeaway #1: The MCP definition of Historic Fill excludes VOCs, so the presence of VOCs at a site cannot be attributed to Anthropogenic Background conditions.**

The second NOAF related to Historic Fill was more complicated. The subject site, in the Southeast Region, is located on filled tideland and was historically used to support operations at an electrical power generating station located on an adjacent property. The report submitted in support of the Permanent Solution Statement (PSS) for this site asserted that “*pre-existing Historic Fill exhibiting concentrations of PAHs and metals consistent with Anthropogenic Background*” had been identified throughout the site, and for that reason certain data (metals in soil and groundwater) were excluded from the risk characterization used to support the Permanent Solution. In support of the assertion that the fill material and the associated metals were pre-existing, the PSS report provided the following lines of evidence:

- The property on which the site is located was largely occupied by water throughout the 1800s.
- Emplacement of significant quantities of fill material occurred at the site in the late 1910s/early 1920s, prior to construction of the electrical power generating station on the adjacent property.
- The footprint of the site property remained largely unchanged following the tideland filling activities and during the operation of the generating station.
- Although the property on which the site is located subsequently received some coal ash from the adjacent power station that was reused as fill, “such filling would have been ancillary to the previous filling of the tidelands...”

The PSS report also pointed out that the coal ash from the generating station used as fill at the site was “*received from an off-property source[,] as no power generating operations or activities associated with the [adjacent power station] occurred at the [property on which the site is located].*” Lastly, the report stated, “*The Historic Fill does not contain a generated hazardous waste, nor does it contain chemical production waste, manufacturing waste, or waste from the processing of metal or mineral ores, residual, slag or tailings.*”

These lines of evidence notwithstanding, the MassDEP stated in the NOAF, “*Given that the fill material originated from operations or activities at the location of emplacement and that the fill is a manufacturing waste, the fill cannot be considered Historic Fill.... As such, the nature and extent of metals in the soil and groundwater attributable to the fill must be assessed and considered when conducting the Risk Characterization.*” The basis for MassDEP’s position that the fill “*originated from operations or activities at the location of emplacement and that the fill is a manufacturing waste*” is not clearly stated in the NOAF, but it appears to rest on the fact that the property on which the site is located was once part of the adjacent power generating station and that at least some coal ash from operations at the power station were used as fill at the property (as was admitted in the PSS report). The depth of the coal ash (28 feet) also seems to have been a factor. For these and other, unrelated reasons, MassDEP required either revision of the PSS or retraction of the PSS and continued Comprehensive Response Actions. **Takeaway #2: If fill at a site contains any OHM whatsoever derived from site operations or is in any way a more recent manufacturing waste, it is not Historic Fill.**