

As part of the Tier III sediment testing conducted by Weaver's Cove Energy, new sediment cores were collected and analyzed from the East Channel area. The analytical results from these cores allow an additional comparison of the East Channel sediment with sediment from the adjacent dredging segment. Four individual cores collected from the East Channel area were composited to create a single representative sample which was then analyzed (for details see appendix K). The recent Tier III sample also indicates that the East Channel sediments are similar to both the sediments in the adjacent dredging segment and the samples reported by OCZM. The concentration of PAHs ranged from 1.2 to 2.6 times the average values in the dredging segment upstream of the Braga Bridge, and 0.6 to 2.6 times the concentrations reported by OCZM. Metal concentrations ranged from 0.6 to 1.5 times those in the adjacent dredging segment, and 0.8 to 1.9 times those reported by OCZM. The majority (15 of 19) of pesticides analyzed were not detected; however, dichlorodiphenyltrichloroethane (DDT) and its daughter products DDE and dichlorodiphenyldichloroethane (DDD) were detected at relatively low concentrations, similar to those reported by OCZM. The Tier III analysis also identified cis-Nonachlor at very low concentration (about 2 times the detection limit). Total PCBs in the Tier III core were about 1.4 times the concentration reported by OCZM and 1.7 times the average in the adjacent dredging segment. Although the Tier III sediment analyses continue to suggest a moderate degree of variability between the sediments in the East Channel and the adjacent dredging segment, we still believe the sediments are not significantly different from the sediment in the adjacent dredging segment.

Elutriate Testing Results

Weaver's Cove Energy conducted a series of elutriate tests in accordance with the guidelines in the Ocean Testing Manual, Inland Testing Manual, Upland Testing Manual, and the Draft Regional Implementation Manual (COE, 2003; EPA and COE, 1991, 1998; EPA-New England and COE-New England, 2002). Elutriate testing simulates the potential transfer of chemicals from the dredged sediments into the water column during dredging or in-water disposal operations. There are two types of elutriate tests, the standard elutriate and the effluent elutriate. Both tests were developed by the COE and are applied in different dredged material disposal situations. In both testing protocols, a volume of dredged material is vigorously mixed with a larger volume of water. The solids are allowed to settle out and the resulting water is then chemically analyzed. If the COCs remain adsorbed (i.e., chemically attached) to the solids, they simply settle out of the water with the solids. However, if the COCs go into solution in the water, they could be transported in the water column.

The analytical results of the elutriate tests were compared to two data sets: the bulk sediment data and the appropriate water quality criteria. When compared to the bulk sediment chemistry, the elutriate results indicated that nearly all of the detected constituents were adsorbed to the sediment particles because the constituent concentrations in the elutriate water were identified at low and often undetectable levels. This implies that most of the constituents identified in the bulk sediments would be expected to remain attached to the sediment particles and would not be released into the water column during dredging operations. A comparison of the elutriate test results with the EPA National Recommended Water Quality Criteria (EPA, 2002b), yielded the following conclusions:

- All PAHs analyzed were not detected and thus were below the published Aquatic Life Criteria Maximum Concentration (AL-CMC), an acute exposure-based screening criteria, and the Aquatic Life Criterion Continuous Concentration (AL-CCC), a chronic exposure-based screening criteria;
- All PCB compounds analyzed, individually and in total, were not detected and thus were below the published AL-CMC and AL-CCC screening criteria;

- All pesticides analyzed were not detected and thus were below the published AL-CMC and AL-CCC screening criteria; and
- Of the 10 metals analyzed, eight were found to have average concentrations below the published AL-CMC and AL-CCC screening criteria. The two exceptions were copper and zinc.

Average copper concentrations for both the standard and effluent elutriates were greater than both water quality criteria (28 and 20 ppm versus water quality standards of 4.8 and 3.1 ppm for acute and chronic exposure criteria, respectively). However, river water also contained background concentrations of copper greater than both water quality criteria (37 ppm versus water quality standards of 4.8 and 3.1 ppm for acute and chronic exposure criteria, respectively).

Average zinc concentrations for both the standard and effluent elutriates were greater than both water quality criteria. The standard elutriate zinc compliance average was 1.4 times greater than the acute exposure criterion and 1.6 times greater than the chronic exposure criterion. The effluent elutriate zinc compliance average was 1.2 times the AL-CMC and 1.3 times the AL-CCC. Background levels of zinc in the river water were below both water quality criteria (23 ppm versus 90 and 81 ppm for acute and chronic exposure criteria, respectively).

Weaver's Cove Energy conducted additional elutriate testing as part of the Tier III sampling and analysis program; however, the results of this set of elutriate tests were not available when this final EIS was published.

Dredged Material Reuse and MCP Guidelines

Dredged material placed in uplands must meet the MCP requirements in 310 CMR 40.0000. Weaver's Cove Energy's plan for handling and stabilizing the dredged material is to increase the bearing capacity and simplify the handling of the sediments by dewatering the dredged material and then mixing with portland cement. The stabilized material then would be placed and compacted in lifts on the LNG terminal site.

In accordance with the MCP requirements, the sediments were comprehensively sampled and analyzed for COCs to evaluate potential risks from the reuse of the sediment on an upland site. We received a comment from the DEP indicating that they did not concur with our statement that the sediments had been comprehensively sampled and analyzed with respect to MCP reuse guidelines. Our review of the samples that were chosen for MCP-related analyses indicates that based on the complete dataset of COE-requested analysis for all 55 sediment core samples, the 14 cores chosen for MCP analyses include the complete range of contaminant concentrations and include sediments from portions of all three proposed dredging segments. As a result, we believe that the analytical results provided by Weaver's Cove Energy for the MCP upland reuse parameters provide a representative range of potential contaminant concentrations and allow an adequate evaluation of the potential impacts of upland reuse of the stabilized dredged material.

In this same comment, the DEP indicated that Weaver's Cove Energy should prepare a conceptual site model to demonstrate that adequate background review was undertaken, and sufficient understanding of the potential sources of sediment contamination exists, to justify the sediment sampling and analysis conducted by Weaver's Cove Energy pursuant to MCP dredged material reuse guidelines. Weaver's Cove Energy's SAP was developed using the tiered process required by the COE and EPA for characterizing proposed dredged sediments. The Tier I review identified the potential sources of point (e.g., direct spills or permitted discharges) and non-point (e.g., runoff from agricultural land and other open spaces) pollution. The Tier I review data were used to assist in the development of the list of