Mobilization activities commenced in late February 2001. Site preparation activities included: construction of haul roads to and around the material handling area staged at Tank Farm 5; installation of silt and chain link fencing; and construction of the material handling area. The material handling area and a water collection pond at Tank Farm 5 were constructed in accordance with the agency-approved design documents; the pond included a geotextile membrane liner, sand and gravel layers. Turbidity curtains were installed at the perimeter of the nearshore and elevated risk offshore areas to minimize the migration of sediments during the dredging activities. Turbidity curtains were also used as the dredging progressed to separate confirmed clean areas from active dredging areas.

The thickness of the landfill debris layer in the nearshore area generally ranged from 1 to 10 feet thick. Dredging was performed from a haul road constructed along the shore line. The debris dredged from this area included bricks, scrap metal, glass, submarine netting, automobile tires, a safe, ash, sandblast grit, and a decayed metal storage tank; no drums were found (Foster Wheeler, 2003a). Once the landfill debris layer had been removed and the bottom of contaminated sediment reached, based on visual inspection of the material, confirmation samples were collected. After an area was confirmed clean, the area was backfilled with materials appropriate to the area and graded.

Dredging of the sediment from the "elevated risk offshore" area was performed from a barge. Once the bottom extent of the landfill debris material was reached and the material in the clamshell bucket was visually clean, confirmation samples were collected (Foster Wheeler, 2003a). After an area was confirmed clean, the area was backfilled with materials appropriate to the area and graded.

The confirmation samples from both the nearshore and elevated risk offshore areas were analyzed for total anthracene, pyrene, fluorene, and PCBs. Porewater copper and nickel samples were collected from every 2,000 square foot area, or every other sample grid (Foster Wheeler, 2003a). Once the confirmation sample results met the RGs (see table in Section 2.3.1) the area was considered clean. Areas that did not initially meet the RGs were excavated further and the sampling process repeated until the area was determined to be clean (Foster Wheeler, 2003a). The confirmation sampling program included collection of field duplicates, equipment rinsates, and other QA/QC samples.

The dredged materials were staged in the material handling area and stockpiled in 500 cubic yard piles. Samples were taken from each stockpile for waste characterization; based on the analytical results an appropriate off-site disposal facility was selected. Dredged sediment and landfill debris were disposed as follows: non-hazardous materials were taken to two RCRA Subtitle D facilities in Massachusetts; non-TSCA PCB material was disposed of in New Hampshire; and non-hazardous material with lead concentrations greater than 2000 ppm and non-TSCA PCB material were disposed of in South Carolina. Approximately 46,263 tons of contaminated sediment, 86 tons of scrap metal, and 18.5 tons of steel

submarine netting were removed during the remedial action (Foster Wheeler, 2003a). A small amount of material was found that emitted low level radioactivity identified by standard screening processes. This material was containerized into three 55-gallon steel drums, which were removed and properly disposed of by Navy personnel.

Approximately 895,540 gallons of water from the water collection pond were treated and discharged to the Newport publicly-owned treatment works (POTW) under an industrial user wastewater discharge permit. The treatment system installed to treat contaminated groundwater from the Tank 53 area was modified to treat the water from the collection pond. The treatment system included pH adjustment, bag filter units, and carbon units. The treated water was sampled to confirm that the water discharged to the POTW met the RGs.

Prior to the removal of contaminated sediment, a habitat mitigation plan was developed to restore habitat destroyed during the dredging operations to the conditions documented during the baseline habitat survey. The mitigation plan included replacement of dredged sediments with clean backfill, construction of fish habitat structures, and off-site eelgrass restoration (including transplanted and seeded eelgrass). The work was completed in 2001; monitoring in July 2002 found poor survival of the planted eelgrass (SAIC, 2004). Habitat monitoring and eelgrass monitoring was discontinued after the events in 2003 and 2004.

A site inspection completed in November 2001 identified an area along the shoreline containing miscellaneous metal debris. This material was removed in December 2001. Demobilization, including removal of all temporary facilities and equipment, was completed on December 14, 2001. Additional areas with vitrified landfill debris were observed in January and March 2002. These materials were removed in March 2002 (Foster Wheeler, 2003a). Confirmation samples were collected, and after the area was determined to be clean, the area was backfilled. A final inspection conducted on March 28, 2002, verified that all debris had been removed (Foster Wheeler, 2003a).

2.3.3 Operations and Maintenance

Source Control

In 1997 Foster Wheeler Environmental Corporation (FWENC) completed an O&M plan which outlined site monitoring activities for the on-shore portions of the landfill, as described in the ROD for OU1. In October 2005, Tetra Tech NUS, Inc. completed a Long Term Monitoring (LTM) work plan, for marine sediment under OU 4. The new work plan incorporated the original source control work plan elements and the marine sediment LTM work plan for the site. Section 4.1 of the 2005 work plan describes the source

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