



EDi No. 243



21. USACE FUSRAP Shpack Landfill Superfund Site, Radiological Technical Support Services

22. Year Completed Professional Service: 2010 Year Completed Construction: (if applicable) n/a 80 Union Road Norton, MA 02766

Contract Role: [] Prime Contractor [x] Subcontractor

CAGE Code: ID1U3 DUNS Number: 61.680.5073

23 a. Project Owner/Customer: 23 b. Point of Contact Name: 23 c. POC Contact Info.:

Conti Environmental & Infrastructure, Inc. Jeff Dulgarian 978.318.9095, phone 490 Virginia Road, #3 Technical Representative/Project Manager 978.562.7247, fax Concord, MA 01742-2747 jdulgarian@conticorp.com

Key Personnel:

Table with 4 columns: Name, Office, Email, Phone. Rows include Doug Beard, Mike Marable, John Rodell, and Stanley Waligora.

24. (Include scope, size, and cost) Brief Description of Project and Relevance to this Contract:

Awarded Price: \$280,000.00 Final/Projected Cost: \$3,496,600.00 Award Date: 7.01.2007 Contract No.: Subcontract #10001969 OS Period of Performance: 08.06.2007 – 12.30.2010 Final or Projected Schedule: 12.30.2010 Contract Type: [] Firm Fixed Price [] Cost Reimbursement [x] Time and Materials [] Cost Plus Award Fee [] Cost Plus Fixed Fee [] Performance Based Type of Work Performed: 562910, Environmental Remediation Services % of Work Self Performed: 70% % of Work by Subcontractor(s): 30%

Contracting Officer (if applicable): Kelly Landry Contracting Agency & Address: Conti Environmental & Infrastructure, Inc. 490 Virginia Road, # 3 Concord, MA 01742-2747 Contracting Officer Contact Info.: 978.318.9095, phone 978.561.9055, fax klandry@conticorp.com

Background

The Shpack Landfill covers 9.4 acres, most of which are within the Town of Norton, and the remaining 2 acres in the City of Attleboro. The landfill operated from 1946 until the 1970s. This landfill received domestic and industrial waste, including inorganic and organic chemicals, as well as radioactive waste. The area near the site includes a wooded swamp.

Threats and Contaminants

The groundwater contains volatile organic compounds (VOCs) including vinyl chloride and trichloroethylene (TCE), as well as heavy metals including chromium, barium, copper, nickel, manganese, arsenic, cadmium, and lead. Sediments on the edge of the swamp and soils contain radionuclides including radium and uranium. Surface water in the swampy area is contaminated with



Phase II @ Shpack Landfill Remediation

Shpack RAD Technical Support Services (continued)

radium and alpha and beta particles, as well as organic compounds. The intent of the remedial action, conducted as part of the Formerly Utilized Sites Remedial Action Program (FUSRAP), is to remove the radiologically impacted soils from the site.

Scope of Work

Under this \$4 million project, EDi has been responsible for the development and implementation of a comprehensive Radiation Protection Program and Radiation Protection Plan (RPP) to conduct the planned site remediation. EDi maintains and updates the RPP, as necessary, during the course of the work, consistent with any changing conditions in coordination with the client, Conti Environmental and Infrastructure, Inc. (Conti) or the authorized representative of the U.S. Corp of Engineers (USACE) New England District. The RPP is a “living” document and administrated by EDi at the direction of the project management team. This document is applicable to site remediation activities associated with soils, waste, and other debris contaminated with uranium (U-238, U-234, and U-235) and radium-226. EDi developed the radiation protection methods, programs, and procedures for the control of radiation contamination and exposure during site remediation. EDi also developed the Shpack Project Quality Assurance Project Plan and Field Sampling Plan for Conti and the USACE.

EDi performed all the baseline sampling, background determination, establishment of site boundaries and work areas, waste profiling, and sample management. EDi implements all radiation safety activities and operations relating to radioactive material sampling, radioactive material sample analysis, site radiological surveys, and handling and packaging of radioactive materials, waste management, and shipping operations. EDi ensures operations are conducted in accordance with the following documents:

- USACE-approved Site Safety & Health Plan
- USACE Radiological Safety (Radiation Protection Manual)
- USACE Safety and Health Requirements
- USACE Management Guidelines for Low-Level Radioactive Waste and Mixed Waste Site Remediation
- Multi-Agency Radiation Survey and Site Investigation Manual (MARRSIM)
- NUREG-1575
- EDi’s approved Radiation Protection Plan
- EDi Health Physics Operational Procedures
- EDi Quality Assurance Project Plan for the Shpack Landfill Project



EDi Mobile Survey & Sampling System



EDi’s performs the following tasks on the Shpack project:

- Quality control checks and operability checks of all radiation detection instrumentation
- All routine radiation contamination surveys and conduct airborne monitoring to include data reduction of results and reporting
- Control the access of tools, personnel, and equipment into and out of exclusion zones, including surveys for unrestricted release
- Sampling and measurements for screening and final MARRSIM survey of excavated areas
- All stockpile and site walkover surveys
- All radiation and contamination surveys for radioactive waste shipments
- Provides personnel decontamination as needed
- Maintains and posts all radiological signs and barriers
- Ensure compliance with the requirements of posted Radiation Work Permits (RWPs), including the issuance of personal protective equipment (PPE)
- Maintain required logbooks
- Escort visitors and inspectors allowed access into the exclusion zone and radiologically posted areas
- Evaluate airborne concentration data and determine Derived Air Concentrations-hour exposures for occupational workers
- Manage the Dosimetry Program to include the review and trending of Thermoluminescent Dosimeter (TLD) results and bioassay analytical data
- Review all radiological data and reports, including conducting Sum-of-Ratio results of soil data
- Provide all health physics staff including radiological control technicians (RCTs)

Shpack RAD Technical Support Services (concluded)

- ❑ Provide radiation protection instrumentation supported by EDi’s maintenance and calibration laboratory
- ❑ Provide on-site gamma spectroscopy laboratory services
- ❑ Perform radiation worker and radiation protection training to all site personnel including local emergency responders for nearby fire and police departments

EDi personnel prepare and approve RWPs; ensure controlled areas are correctly identified, posted and marked; and perform site radiation contamination surveys and safety audits to ensure compliance with the guidance documents. EDi also provides GPS/GIS operations and services to provide “real time” delineation of excavation units, stockpile areas, multi-media sampling locations, site features, and implementation of Final Status Survey/MARSSIM plans. EDi maintains and operates the supporting database for the GIS mapping overlay with field radiological information.



Soil Excavation at Shpack Landfill

EDi is required to log, assay and segregate each piece of enriched uranium found during remediation activities. To date, approximately 17 grams of enriched U-235 have been found. Enriched uranium requires more stringent radiological controls because of the higher isotopic concentrations of uranium-235 and uranium-234. The disposal site waste acceptance criteria include restrictions on uranium-235 concentrations tied to the neutron moderating and reflecting properties of the waste matrix. The enhanced concentrations of fissile uranium-235 would require assessment of the quantity with consideration for criticality controls. The onsite gamma spectrometry laboratory was used to determine uranium-238 concentrations using characteristic daughter gamma rays: (Th-234 at 63.29, 92.38, and 92.8 keV and Pa-234 at 1001 keV). With insignificant interference from any radium-226 that might be present, uranium-235 was determined through the characteristic gamma rays at energies of 143.76, 163.35 and 185.72 keV.

To date, estimated total volume of excavated soils range from 13,000 cubic yards to 15,000 cubic yards.

25. Firms/Subcontractors involved with this Project:

	(1) Firm Name	(2) City and State	(3) Role
a.	Aerotek E&E	7301 Parkway Drive Hanover, MD 20176	Staff Augmentation
b.	Eberline Services 510.235.2633 (p) • 510.235.0438 (f)	2030 Wright Avenue Richmond, CA 94804-3849	Sample Analysis
c.	Ion Technology 303.518.5935 (p)	12980 Glenn Road Lisbon, OH 44432	