

AGREEMENT EXHIBIT 17

EXCAVATION OF CONTAMINATED SOIL

PART 1 GENERAL

1.01 CONTRACT REFERENCES

- A. Attention is directed to the CONTRACT DOCUMENTS which are hereby made a part of this Section of the Specifications.

1.02 WORK DESCRIPTION

The work covered by this specification includes all work required for the removal of contaminated soils (including without limitation excavation, loading, transportation and disposal thereof) from the former Morocco Factory located (also known as the former Caouette Property (DEP RTN 2-0018007)) and from the abutting portion of the former MBTA Property (DEP RTN 2-0017998) in Acton, MA, and any associated incidental work as deemed appropriate by the Engineer and Owners Licensed Site Professional (LSP) in individual delivery orders. The work shall be conducted under a Release Abatement Measure (RAM), consistent with the Massachusetts Contingency Plan (MCP). The Owner's LSP for the work will be O'Reilly, Talbot & Okun Associates, Inc. All work shall be conducted in accordance with all applicable Federal, State and local regulations and the provisions of this and accompanying specifications. The RAM Plan is Exhibit A to the RFB and is available at

1.03 SECTION INCLUDES

- A. Contractor Services
- B. Regulatory Requirements
- C. Contaminates
- D. Permits and Certifications
- E. Mobilization and Demobilization
- F. Payment
- G. Removal of Contaminated Soil
- H. Visual Field Inspection
- I. Excavation, Removal and Disposal of Materials
- J. Demolition and Cleanup
- K. Restoration

1.04 RELATED WORK

- A. EXHIBIT 15: Site Preparation
- B. EXHIBIT 16: Earthwork

1.05 REFERENCES

The publications listed below are incorporated into this specification and shall be read as if printed herein. In the case of conflict between the referenced documents and the following text, the stricter requirements shall apply.

Massachusetts Contingency Plan 310 CMR 40.0000	
AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)	
ANSI Z-88.2	Practices for Respiratory Protection
ANSI Z-358.1	Emergency Eyewash and Shower Equipment
AMERICAN PETROLEUM INSTITUTE (API)	
Supplement Bulletin 1628	Underground Spill Cleanup Manual Protection Against Ignitions Arising out of Static, Lightning and Stray Currents
AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)	
ASTM D 2487	(1985) Classification of Soils for Engineering Purposes
CODE OF FEDERAL REGULATIONS (CFR)	
40 CFR 260 Through 270	EPA's Hazardous Waste Requirements
40 CFR 136	Guideline for Establishing Test Procedures for the Analysis of Pollutants
NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)	
NFPA 30	Flammable and Combustible Liquids Codes
NFPA 327	Recommended Practice for Handling Underground Leakage of Flammable and Combustible Liquids
NIOSH/OSHA/USGA/EPA	Safety and Health Guidance Manual for Hazardous Waste Site Activities, October 1985

OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA)	
29 CFR 1910.120	Hazardous Waste Operations and Emergency Response, Interim Final Rule December 1986
29 CFR 1910.134	Respiratory Protection
29 CFR 1910.1200	Hazard Communication Standard
29 CFR 1926	Standards for Construction Industry
3071	Job Hazard Analysis, Reprint 1988
U.S. ARMY CORPS OF ENGINEERS (COE)	
EM 385-1-1	Safety and Health Requirements Manual Revised October 1987
ER 1110-1-263	Chemical Data Quality Management for Hazardous Waste Remedial Activities, Appendix F, October 1986 (Attached as an Appendix to Section 02087)
U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)	
EPA-SW-846	Test Methods for Evaluating Solid Waste, Physical/Chemical Methods. Third Edition. November 1986
EPA	Standard Operating Guide. July 1988
MANIFESTING AND TRANSPORTATION (DOT)	
49 CFR	Hazardous Materials Transportation Regulations

1.06 CONTRACTOR SERVICES

The Contractor shall furnish all materials, labor, tools, equipment, utilities, water and fuel supply, vehicular transportation, field log preparation, and necessary incidental services for:

- A. Excavation of contaminated soil;
- B. Removal and transport of contaminated soils;
- C. Soil disposal or recycling of PAH, lead and arsenic contaminated soil at a permitted landfill or soil recycling facility;
- D. Field sampling for contamination;
- E. Transport and disposal of all cleaning wastes;
- F. Restoration of the temporary stockpile areas as specified in individual delivery orders;
- G. All necessary incidental services not specifically noted but which are required for completion of the specified work; and
- H. Environmental reporting. This includes submittal of the following:
 1. Proof of qualification credentials;

2. Copies of transport manifests;
3. Contaminated Stockpiled Soil Field Report;
4. Logs, reports and record keeping, as required by the Owner's Project Manager.
5. Bills of lading, Certified Weight Tickets

Any single delivery order may require a combination of any of the above tasks. The Contractor shall, at no time, perform work outside of the scope of work without written authorization from the Engineer and LSP.

1.07 REGULATORY REQUIREMENTS

- A. All work included in this contract shall be conducted in strict compliance with all applicable Federal, State and Local regulations, statutes, codes and policies, as well as the Release Abatement Measure (RAM) Plan prepared for the work.
- B. The Contractor shall document that the disposal facilities proposed have all certifications and permits as required by Federal, State and local regulatory agencies to receive and dispose of the contaminated material.

1.08 CONTAMINANTS

Available soil sampling results shall be furnished to the Contractor by the Owner's LSP. Soils which are contaminated with hazardous or dangerous wastes and/or petroleum products will be identified in individual delivery orders by the LSP. Hazardous or dangerous contaminants which may be found include lead, arsenic and PAH's. The Contractor shall be prepared to work with any materials as necessary and at all levels of OSHA mandated personal protection.

1.09 PERMITS AND CERTIFICATIONS

The Contractor shall be responsible for obtaining all of the necessary Federal, State and local permits required for contaminated soil excavation, removal, transport, and remediation. The Contractor shall have a minimum of 3 years of contaminated soil cleanup experience. The contractor shall submit proof of these credentials to the Owner. In the event that an EPA/State Hazardous Waste Site Identification Number is required for soil transport and disposal, the Owner will be responsible for obtaining the identification number and the Contractor shall be responsible for obtaining the transportation manifest.

1.10 MOBILIZATION AND DEMOBILIZATION

- A. Mobilization

The Contractor shall mobilize all personnel, supplies, and equipment to the project site within 5 days of the scheduled day. Mobilization shall consist of:

1. The delivery to the site of all labor, equipment and materials needed from the Contractor's place of business to the job site; and,
2. Complete assembly in satisfactory working order of all such equipment on the site.

B. Demobilization

Demobilization shall consist of the removal from the site of all equipment and surplus materials after completion of the work. The Contractor shall not be reimbursed for costs associated with temporarily vacating the site before completion of work.

1.11 PAYMENT

- A. The Contractor shall be paid for the excavation and off site disposal/recycling of contaminated soil on a per ton basis. The unit price(s) for the excavation and disposal/recycling of contaminated soil shall be per the project Bid Form. The unit price shall include all work set forth in this section; including but not limited to, contaminated soil excavation, handling, managing, stockpiling, transportation and disposal. Any fees or taxes associated with the transport or disposal of contaminated soils shall be included under this unit price.
- B. Payment shall be based on weight slips provided by the disposal/recycling or backfill source facility. Certified weight receipts are required to document quantities subject to unit pricing. Payment shall be made only for quantities where Owner and Engineer have signed copies of receipts (weight slips) from hauling vehicles entering or leaving the Site.

PART 2 EXECUTION

3.01 REMOVAL OF CONTAMINATED SOIL

- A. Removal and Transport of Contaminated Soil: The Contractor shall remove and transport contaminated soil by means of either directly loading into trucks outside of the limits of excavation and transported off-site for disposal or temporarily stockpiled prior to loading and off-site transport and disposal.
- B. Security of Materials during Transport: The Contractor shall ensure that all materials are secured during transport.
- C. Transport Manifests, Bills of Lading, Certified Weight Tickets
 1. The Owner's LSP will prepare Bills of Lading for the transportation and disposal of contaminated soil. The costs associated with soil analyses and preparation shall be borne by the Owner.

2. The Contractor shall obtain and submit two (2) copies of all transport manifests, bills of lading, and certified weight tickets for recycling and/or disposal of all materials to the Owner within 7 calendar days after the transport of any material.
3. Soils shall be transported to either a landfill or MassDEP permitted facility for the recycling of lead, arsenic and PAH impacted soils.
4. Receipts shall indicate at a minimum the following information: date, time, driver, remediation or recycling facility, quantity and type of material delivered, remediation method, facility permit number, as appropriate, and roundtrip travel mileage from the work site to the facility.

D. Maintenance of Soil Stockpile Containment Structures during Construction

The Contractor shall ensure during all stages of field work that contaminated soil is properly isolated from the surrounding environment to prevent contamination migration. Soil stockpiles and staging shall be within the area designated on the Plans. The Contractor shall at no time leave stockpiled materials uncovered and unattended. The Contractor shall replace, secure and maintain soil containment structures (straw wattles, poly sheeting, hold down tires, etc.) whenever the site is left unattended, until such time as the entire quantity of stockpiled material is safely removed and the site has met final restoration requirements.

1. Plastic or Polyethelene Liner: All stockpiled soils shall be secured against contamination migration due to wind, rain, etc. through the use of polyethelene liners and covers. The Contractor shall inspect the integrity of the polyethelene on any existing stockpiles upon arrival at the site. In the event that damage to the polyethelene lining or cover is identified, or the liner or cover is not present, the Contractor shall notify the Owner immediately. If the Contractor's activities, prior to start of removal of soil, including operation of equipment on liners and/or covers, damages plastic or polyethelene liners or covers, the Contractor shall be responsible for replacement of liners and/or covers. Replacement material shall consist of a 6 mil minimum plastic liner (Polyethelene) which shall be used to line the bottom of the soil storage areas and to cover the stockpiled soils. If more than one continuous piece of plastic is used for the liner or cover, it shall be sealed at the edges with an appropriate sealer (duct tape, etc.). The liner and cover shall be sufficiently larger than the area of stored soil to cover the stored soil plus 2 feet of excess on all sides.
2. Removal, Transport and Disposal of Soil Containment Structures: The Contractor shall be responsible for all work associated with removal, transport and disposal and/or final deposition of soil containment structures.

3.02 VISUAL FIELD INSPECTION

A. Visual Inspection for Soil Contamination Migration

The Contractor shall perform a visual inspection of the ground surface beneath and around the excavation/stockpiled area during field work. Initial inspections and subsequent unusual observations shall be recorded in the field notes and in photographs. If at any time during field work, contamination migration is suspected, the Contractor shall immediately notify the Owner and provide recommendations to address the potential release.

3.03 EXCAVATION, REMOVAL, AND DISPOSAL OF MATERIALS

A. The Contractor shall excavate the contaminated soils to the approximate limits shown on the plans or as directed by the Owner's Licensed Site Professional (LSP). The Contractor shall be responsible for transporting and disposing of any contaminated and uncontaminated excavated soils, as required in accordance with the technical specification described herein. The Contractor shall not excavate any soils without the express written direction of the Owner's LSP.

B. The Contractor shall excavate the contaminated soils to an approximate depth of two feet below ground surface or until impacted soils are removed. Confirmation sampling of the limits of excavation will be performed for the contaminants of concern.

C. The Contractor shall place and maintain temporary devices and structures around the excavation to control erosion and transportation of impacted soils.

D. The Contractor shall construct a truck wheel wash station in accordance with the specifications herein, the Order of Conditions and as shown on the Drawings.

1. The truck wheel wash station shall consist of a crushed stone pad out of the buffer zone. Wheel washing will be performed either with a high pressure hose (power washer) or with buckets and long handled brushes if a source of running water is not available.

2. Water resulting from the wheel wash station shall be contained and removed per the Order of Conditions

E. The Contractor shall place high visibility safety fencing around the excavation holes anytime the site is left unattended by the Contractor until such time as the excavation hole is backfilled to the original surface level.

3.04 FIELD NOTES

All field notes shall be maintained in a bound book. The Contractor shall document all field activities, location of all stockpiled material, air monitoring, suspected additional contamination due to leaching and observations. The field notes shall also include a tabulated field conditions sheet for each stockpile which includes at a minimum:

GENERAL INFORMATION

- Date, Time of Entry, Weather Conditions
- Name and Signature of Person making Entry

MATERIAL STOCKPILE INFORMATION

- Stockpile Identification Number
- Date Material was Stockpiled
- Contamination Type
- Contamination Degree
- Stockpile Soil Analysis

FIELD SCREENING (SAMPLING) INFORMATION

- Location and results of screening
- Location and results of correlational and conformational analysis
- Screening and sampling results shown on a near-scale map relative to a fixed landmark
- Equipment calibration documentation

SITE INFORMATION

- Type of Ground Cover
- Condition of Polyethelene Protection (Stability, Coverage, etc.)
- Visual Characterization of Soil (Sheen, stains, organic matter, sand, clay, etc.)
- Perched Water (or puddles, groundwater, rainwater)
- Unusual Observations

CONTAMINATION INFORMATION

- Any Characteristic Odors (Gasoline, Diesel, Kerosene, etc.)
- Evidence of Contamination Migration

A copy of the field notes shall be submitted to the Engineer and LSP within 3 calendar days of completion of soil removal. The original field notes shall be submitted to the Owner's Project Manager and LSP as part of the final field report.

3.05 DEMOLITION AND CLEANUP

- A. After completion of the excavation and restoration, all tools, appliances, surplus materials, temporary drainage, rubbish and other debris incidental to work shall be removed in accordance with this section.

- B. Burning of Debris: Burning for disposal of refuse and debris shall not be permitted.
- C. Containment during Transport: All materials shall be contained during transport in a manner so as to prevent spillage and materials from reaching streets or adjacent areas. All materials shall be transported in accordance with all Federal, State and local regulations.

3.06 RESTORATION

- A. Materials for backfilling and surface restoration shall conform to the applicable requirements in Exhibit 16: EARTHWORK. Contaminated materials shall not be used for restoration.
- B. The Contractor shall backfill to the appropriate subgrade for the final surface preparation as shown on the plans. The Contractor shall furnish all backfill and topsoil material for surface restoration.
- C. The Contractor shall finish the surface of all backfilled excavations, as required, in accordance with Exhibit 18: TOPSOIL PLACEMENT, SEEDING AND PLANTINGS.

3.07 LOGS, REPORTS, AND RECORD KEEPING

The following logs, reports and records shall be developed, retained and submitted to the Engineer and LSP and/or entitled regulatory agencies upon request (unless otherwise noted in previous sections):

1. Training logs including employees' printed names and signatures in addition to training subject and date or copy of applicable training certificate;
2. Daily safety inspection logs;
3. Employee/visitor register;
4. Medical opinions/certifications;
5. Environmental and personal exposure monitoring records;
6. Phase out reports (final decontamination verification certificates, summary of air monitoring data, final medical certificates, etc.); and
7. A copy of all State licensing certificates required to conduct all required activities.

All personnel exposure and medical monitoring records shall be maintained in accordance with applicable OSHA standards, 29 CFR 1910 and 1926 (including OSHA 200 log and accident/first aid reports.)