

EXCAVATION, MANAGEMENT, AND DISPOSAL OF CONTAMINATED SOILS AND  
GROUNDWATER

**\*\*From Barre City FEGC F 026-1(34) C/2**

- xx. DESCRIPTION. This work shall consist of excavating and properly disposing of contaminated soils from roadways, sidewalks, railways, and stormwater treatment facilities in reasonably close conformity with the lines, grades, and typical cross sections shown on the Plans or established by the Engineer. The work shall include proper identification, classification, excavation, removal, treatment, transportation, and final placement of the contaminated soils.

This work may also include management, treatment, and disposal of contaminated groundwater, if encountered.

- xx. CLASSIFICATION. The work shall be classified as follows:

- (a) Petroleum Contaminated Soils. Petroleum contaminated soils will be classified in accordance with the latest edition of the Vermont Agency of Natural Resources *Agency Guidelines for Petroleum Contaminated Soil and Debris* (ANR Guidelines).

Petroleum contaminated soils requiring either on-site or off-site remediation shall be identified as Class I Contaminated Soils, defined as follows:

Class I contaminated soils exhibit a volatile organic compound (VOC) concentration ranging from 1.0 to 100 parts per million (ppm) as measured by a properly calibrated photo ionization detector (PID) following the field screening guidelines outlined in the ANR Guidelines.

Petroleum contaminated soils not suitable for on-site or off-site remediation shall be identified as Class II Contaminated Soils, defined as follows:

Class II contaminated soils exhibit a VOC concentration ranging from 100 to 1000 ppm as measured by a properly calibrated PID following the field screening guidelines outlined in the ANR Guidelines.

- (b) Contaminated Soils Designated as Hazardous Waste. Soils classified as Hazardous Waste shall be identified as Class III Contaminated Soils, defined as follows:

Class III contaminated soils include petroleum contaminated soils which exhibit a VOC concentration greater than 1000 ppm as measured by a properly calibrated PID following the field screening guidelines outlined in the ANR Guidelines, as any soils containing Listed or Characteristic hazardous waste. These soils include coal tar, heavy and toxic metals, solvents, chemicals, and/or any other classified or unclassified contaminant.

The ANR Guidelines can be found at the following website address:

[http://www.anr.state.vt.us/dec/wastediv/sms/pubs/Petro\\_soils96.pdf](http://www.anr.state.vt.us/dec/wastediv/sms/pubs/Petro_soils96.pdf)

For information regarding the remediation and/or disposal plan, contact the Agency's Hazardous Materials and Waste Coordinator. The information provided to the Contractor by the Hazardous Materials and Waste Coordinator is presented in good faith and is not intended to be a substitute for any investigation that the Contractor may conduct on their own. The Contractor is encouraged to conduct an investigation to define the degree and extent of soil and groundwater contamination in an effort to establish the parameters of the required remediation and/or disposal plan.

- (c) Contaminated Groundwater. If contaminated groundwater is encountered and must be dewatered to complete construction of subsurface infrastructure, the Contractor shall engage an environmental consultant to develop and implement a wastewater management plan. The wastewater management plan shall be submitted to, and approved by, ANR and the City of Barre in conjunction with the Engineer.

The wastewater management plan shall include storage, sampling, monitoring, and treatment methods for contaminants of concern.

Contaminated groundwater shall be stored in container(s) constructed of materials compatible with the contaminants encountered. Additionally, the container(s) shall be of adequate volume to store all contaminated groundwater generated during dewatering efforts. A FRAC Tank with a minimum capacity of 18,000 gallons is commonly used for excavation dewatering storage and is considered to meet the storage requirements above.

The sampling and monitoring methodology will be dependent on the treatment method selected. Treatment methods include reinjection, carbon filtration, air stripping, fractionation tank storage, and carbon filtration, or disposal at a wastewater treatment plant.

If treated wastewater is destined to be discharged to surface water, the engaged consultant shall apply for and receive a wastewater discharge permit (General Permit 3-9004). The permit application shall be reviewed and authorized by the Agency of Natural Resources and the City of Barre prior to implementation.

All contaminated groundwater shall be managed, stored, treated, and/or disposed in accordance with ANR *Guidance for Construction of Public Works Projects in Areas Where Contamination is Suspected or Known*.

This guidance can be found at the following website address:

[http://www.anr.state.vt.us/dec/wastediv/sms/pubs/waterline\\_guide.pdf](http://www.anr.state.vt.us/dec/wastediv/sms/pubs/waterline_guide.pdf).

For information regarding guidance in developing the remediation and/or disposal plan, the Contractor shall contact the Agency of Natural Resources, Waste Management Division.

xx. GENERAL CONSTRUCTION REQUIREMENTS. The Contractor shall either follow the remediation and/or disposal plan developed by ANR or submit an alternate remediation and/or disposal plan which must be approved by ANR and the Engineer prior to implementation.

Unless otherwise directed in writing by the Engineer, the Contractor shall comply with all provisions of the remediation/disposal plan.

All changes to the remediation/disposal plan ordered in writing by the Engineer will be paid for as Extra Work.

The Contractor shall hire a qualified consultant who shall prepare a site specific Health & Safety Plan, train site workers, monitor contamination levels of excavated soils, and ensure that the remediation/disposal plan is followed. Complete copies of the details of the plan and program shall be provided to the Engineer.

The Agency's Hazardous Materials and Waste Coordinator, or his/her representative, may also monitor the contamination levels of the excavated soils for the Engineer and ensure that the remediation and/or disposal plan is fully followed.

If during the excavation of petroleum contaminated soil, the Contractor encounters any condition or situation which is different from that expected, the Contractor shall immediately notify the Engineer. All excavation operations in the contaminated area shall cease until the condition or situation can be evaluated. The evaluation shall include, but is not limited to, the determination of health or other hazards to the Contractor's personnel and the immediate neighborhood, the possibility of explosion, requirements for protective clothing, and special excavation or transportation requirements.

In the event that unidentified hazardous waste or contaminated soils are encountered during construction beyond those areas identified in the plans, the Contractor shall excavate and properly dispose of the contaminated soils as necessary and be compensated under the same Contract items applied to those areas of identified contamination.

All compensation for groundwater management requirements will be made under a Supplemental Agreement in accordance with Subsection 109.06.

The Engineer will decide whether to leave the excavation open and exposed, whether barrier fence shall be erected around the excavation to act as a visible barrier, or whether to backfill it while the Agency and the Contractor are evaluating the situation and negotiating the Supplemental Agreement(s). The cost of installing barrier fence or backfilling the excavated area, if either is required, will be included in the Supplemental Agreement(s).

No additional compensation or allowance for additional Contract time will be made for any delays incurred waiting for an agreement(s) to be executed, for failure to make an agreement(s), nor for any delays incurred in executing the remediation and/or disposal plan(s).

xx. METHOD OF MEASUREMENT. The quantities of Special Provision (Excavation of Petroleum Contaminated Soils, Class I), Special Provision (Excavation of Petroleum Contaminated Soils, Class II), and Special

Provision (Excavation of Contaminated Soils, Class III) to be measured for payment will be the number of cubic meters (cubic yards) of material removed and designated for remediation and/or disposal, as indicated on the Plans or as directed by the Engineer, as measured in its original position by cross sections, in the complete and accepted work. The quantity shall be computed by the method of average end areas, or when impractical, by other acceptable methods involving three-dimensional measurement. The limits for payment shall not exceed those indicated on the Plans or designated by the Engineer in writing. The method of mass centers for computing volumes will be allowed only when the method has been used in the original design computations.

Excavation requiring more than one handling prior to final placement will not be measured for payment for the additional handling unless specifically called for in the Contract Documents.

- xx. BASIS OF PAYMENT. The accepted quantities of Special Provision (Excavation of Petroleum Contaminated Soils, Class I), Special Provision (Excavation of Petroleum Contaminated Soils, Class II), and Special Provision (Excavation of Contaminated Soils, Class III) will be paid for at the Contract unit price per cubic meter (cubic yard). Payment shall be full compensation for performing the work specified, including research; employee training; monitoring; and developing and complying with the Health and Safety Plan; classifying, segregating, and stockpiling soil materials; performing any testing required; satisfactorily transporting and disposing of contaminated **soils** and for providing all materials, labor, tools, equipment, and incidentals necessary to complete the work.

Payment for petroleum contaminated soils re-used on the project will be made as follows:

- (a) The first payment of 50% of the actual quantity will be paid when the material is placed at the treatment site.
- (b) The remaining 50% of the actual quantity will be paid when the material has been incorporated back into the project.

Payment for petroleum contaminated soils not re-used on the project will be made as follows:

- (a) The first payment of 67% of the actual quantity will be paid when the material is placed at a treatment site or otherwise properly removed from the project.
- (b) The remaining 33% of the actual quantity will be paid when proper disposal in accordance with the remediation and/or disposal plan has been completed. The remaining 33% of the actual quantity will not be paid if proper disposal of the petroleum contaminated soil is not accomplished prior to Final Inspection.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
900.608 Special Provision (Excavation of Petroleum Contaminated Soils, Class I)	Cubic Meter (Cubic Yard)

900.608	Special Provision (Excavation of Petroleum Contaminated Soils, Class II)	Cubic Meter (Cubic Yard)
900.608	Special Provision (Excavation of Contaminated Soils, Class III)	Cubic Meter (Cubic Yard)