503 Code of Massachusetts Regulations 2.00

Appendix 3

Underground Storage Tank Petroleum Product Cleanup Fund

Reimbursement Fee Schedule Policy

Massachusetts General Laws Chapter 21J

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503 CODE OF MASSACHUSETTS REGULATIONS 2.00
APPENDIX 3
UNDERGROUND STORAGE TANK PETROLEUM PRODUCT CLEANUP FUND
REIMBURSEMENT FEE SCHEDULE POLICY
MASSACHUSETTS GENERAL LAWS CHAPTER 21J

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PURPOSE AND SCOPE

1. The regulations in 503 CMR 2.00 govern the administration of reimbursement of the Underground Storage Tank Petroleum Cleanup Fund Administrative Review Board created by Chapter 524 of the Massachusetts Acts of 1990, which constitutes Chapter 21J of the Massachusetts General Laws (M.G.L. C. 21J).

2. The purpose of Appendix 3 to the regulations is to:
   a) Establish maximum, not to exceed reimbursement fees to eligible claimants for allowable costs, expenses and obligations incurred by taking response actions, meeting claims of third parties, or otherwise incurring expenses, as a result of releases of petroleum products from UST systems; and,
   b) Define the specific response actions for which reimbursements will be allowed.
   c) Provide an Application For Reimbursement Form to allow eligible claimants to be reimbursed for allowable costs, expenses, and obligations.

3. All response actions for which reimbursement will be requested, where conducted as a result of releases of petroleum products from UST systems, must be conducted in accordance with applicable Federal, State, and local statutes and regulations, nationally recognized codes and standard industry, e.g., ASTM, ASCE, API, AEG, AIPG, etc., practices, etc.

4. Time and Materials (T & M) are to be reimbursed at the rates provided in the Reimbursement Fee Schedule.

5. The Reimbursement Fee Schedule Policy (the Policy) is designed to provide a list of Tasks which must be selected in order to comply with the provisions of the Massachusetts Contingency Plan (MCP) found at 310 CMR 40.0000, and other applicable Department of Protection (DEP) regulations and policies. The implementation of the Tasks must also comply with other applicable Federal, State or Local statutes and regulations and recognized national codes. The Tasks are undertaken as a result of releases of petroleum products from underground storage tank (UST) systems.

   Therefore, complementary Tasks will need to be selected for implementation when conducting MCP related response, assessment, remedial, response action outcome, etc. activities. For example to complete a Phase I Initial Site Investigation and Report, the following, but not limited to, Tasks may be required:

TASK	DESCRIPTION
2.1	Phase 1 per 310 CMR 40.0480
2.1.2	File review fee
2.2	Phase 1 Completion statement per 310 CMR 40.0484
3.1	Prepare a site specific health and safety plan
4.1	Supervision & coordination of field activities, and acquisition of well/boring permits
4.2	Site Visit
9.1.1	Equipment mobilization/demobilization 1 - 50 miles (radius)
9.2.1	Project Disciplines - Full Day (up to and including 10 hours)
9.3.1.1	2" Monitoring well completed by hollow stem auger/split spoon sample every 5 feet. 1 - 30 ft. well
9.7.1.1.1	Well Surveying (un-licensed) 2 day 1 - 50 miles (radius)
10.1.1	Monitoring well development - Equipment mobilization/demobilization 1-50 miles (radius)
10.2	2" well development cost (includes all project disciplines cost)
11.1.1.1	Groundwater Gauging/Bailing and Sampling Disciplines/equipment and travel 1 - 50 miles (radius)
11.1.2.1	Well gauging (include all related costs) 1 to 10 Monitoring Wells
11.1.3.1	Well purging and sampling (incremental over gauging; include all related costs) 1 to 10 Monitoring Wells <35' deep
13.1.1	Rising or falling head (slug) test - Full day
23.4.10.2	NAPL Disposal
23.4.10.3	Disposal of development fluid
26.1.1	Out of scope travel 0-50 miles (radius)
26.1.3	DEP Requested Meetings 0 - 50 miles (radius)

27.1.1	Hydrocarbons, Petroleum by IR
27.4.1	Volatile Organic Analysis/GCMS
27.4.12.1	PCBs
29.3	Drum for storage of purge water (55 gallons)

In similar fashion, soil to be excavated during an UST removal or installation of remediation piping may be preclassified for acceptance into a virgin petroleum oil contaminated soil recycling facility. Tasks to perform the preclassification may include:

8.1.1	Equipment mobilization/demobilization 1 - 50 miles (radius)
8.2	Project Disciplines - Full day. Furnish labor (up to and including 10 hours) to conduct borehole logging, field screening, soil sampling, and site supervision. Includes PID, oxygen/explosion meter, and toxic gas monitoring equipment, sample jars, sampling incidentals, sample collection, sample preparation, field screening of soil samples, sample logging, sample storage, transportation of samples to laboratory, subcontractor coordination, field preparation, travel time and vehicle expenses.
8.3.1.1	Soil borings and sampling by hollow stem auger (includes drill rig, materials, labor, grouting, drums, drumming labor, and restoration of work area to original and de-contamination procedure; saw-cutting included in per ft. cost, units are per boring and including steam cleaner) (per DEP WSC 310-91.3)
27.1.1	Hydrocarbon, Petroleum by IR
27.1.5	Ph
27.3.30.1	RCRA 8 Metals AS/BA/CD/CR/PB/HG/SE/AG
27.5.6	TCLP Extraction - Add On
27.4.1	Volatile Organic Analysis/GCMS
27.4.12.1	PCBs
27.5.1.1	Ignitability (flash point)
27.5.3.1	Cyanide Reactivity
27.5.4.1	Sulfide Reactivity
27.5.5	Paint Filter
6.1	Furnish labor (up to and including 10 hours on site) to monitor excavated soils per DEP 310 CMR 40.0000. Includes PID, oxygen/explosion meter, toxic gas monitoring equipment, sample jars, sampling incidentals, field screening of soil samples, sample collection, sample preparation, sample logging, sample storage, transportation of samples to laboratory, subcontractor coordination, field preparation, travel time and vehicle expense.
6.2	Excavated Soils Management - Analyze laboratory results for waste characterization, prepare Manifest/Bill of Lading, LSP Certification.
6.3	Soil Disposal/Hot Recycling (maximum 2,500 tons/site)

The installation of soil vapor extraction wells, trenching for interconnecting piping, and piping may include, but not be limited to, the following tasks:

19.1.1	Equipment mobilization/demobilization 1-50 miles (radius)
19.2.1	Full day (up to and including 10 hours)
19.3.1.1	2" Extraction well completed by hollow stem auger, sampling cuttings every 5 feet. 0-30 ft. well.
19.6.1	Well head make up; pad installation for SVE well (all sawcutting included) 2 inch
18.1	Trenching and Installation of Underground Piping and Equipment Area for VES Extraction System. Full day (up to and including 10 hours)
18.4.2	Utility trench - including sawcutting, trenching, inspection, backfill and compaction (2 feet wide, minimum 36" burial). Over 100 ft. long
18.4.3.6.1	Stone-delivered >1/8" diameter
18.4.3.7	Clean fill
18.5.2.2	2" PVC SCH 40 pipe and installation.
18.4.3.2.1	Asphalt patch 4 inches deep
20.1	Installation of utilities for remediation systems - work shall be site specific.

Like-wise a site to be evaluated for a Response Action Outcome (RAO) which is contaminated with petroleum products may require a Method 1 and part of a Method 2 and/or Method 3 Risk Characterization. In addition, the Risk Characterization may have to address chemicals for which DEP has not yet established cleanup levels. This project might include the following Tasks:

2.12.1	Method 1 per 310 CMR 40.0973
2.12.2	Method 2 per 310 CMR 40.0980 - Add On
2.12.3	Method 3 per 310 CMR 40.0990 - Add On

Other sites may only require a Method 1 Risk Assessment or some other combination of risk assessment methods. The site specific parameters will dictate the appropriate method(s) to be selected.

As demonstrated in the examples above, the Tasks provided in the Policy are a la carte. Therefore, appropriate tasks must be combined to achieve the intended purpose.

The examples shown above are intended as examples only and are not intended to be all inclusive.

=>	Implies
>	Greater than
<	Less than
21C	Massachusetts Hazardous Waste Management Act, MGL c. 21C
21E	The Massachusetts Oil and Hazardous Materials Release Preventions and Response Act, MGL C.21E
21J	Underground Storage Tank Petroleum Product Cleanup Fund, MGL c. 21J
AC-1	First Administrative Completeness Review
AC-2	Second Administrative Completeness Review
ACEC	Area of Critical Environmental Concern
AEG	Association of Engineering Geologists
AIPG	American Institute of Petroleum Geologists
API	American Petroleum Institute
AS	Air Sparging
ASCE	American Society of Civil Engineers
ASPOE	American Society of Petroleum Operations Engineers
AST	Aboveground Storage Tank
ASTM	American Society of Testing Materials
AUL	Activity and Use Limitation
AWQC	Ambient Water Quality Criteria
BOARD	Underground Storage Tank Petroleum Cleanup Fund Administrative Review Board
BOH	Board of Health
BRAMA	Best Response Action Management Approach
BRP	DEP Bureau of Resource Protection
BTEX	Benzene, Toluene, Toluene, Ethyl Benzene and Xylenes
BWP	DEP Bureau of Waste Prevention
BWSC	DEP Bureau of Waste Site Cleanup
CERCLA	(U.S.) Comprehensive Environmental Response, Compensation, & Liability Act of 1980
CFM	Cubic Feet per Minute
CMO	Chief Municipal Officer
CMR	Code of Massachusetts Regulations
CU/YD	Cubic Yard
DAI	Direct Aqueous Injection
DAQC	DEP Division of Air Quality Control
DEP	Massachusetts Department of Environmental Protection
DOHS	(U.S.) Department of Occupation Health & Safety
EFR	Enhanced Fluids Recovery i.e. groundwater/NAPL and soil vapor gas
EPA	(U.S.) Environmental Protection Agency
EPH	Extractable Petroleum Hydrocarbons
GCFID	Gas Chromatography Flame Ionization Detector
GCMS	Gas Chromatography Masc Spectrophatometry
GFFT	Glass Fiber Filter Tube
GPM	Gallons per Minute
GW-1	Groundwater Category for Current or Potential Drinking Water Source
GW-2	Groundwater Category - Source of Volatiles to Indoor Air
GW-3	Groundwater Category - Everywhere else
Hg	Mercury
HR	Hour
IH	Imminent Hazard
IRA	Immediate Response Action
IWPA	Interim Wellhead Protection Area
LB	Pound
LEL	Lower Explosive Limit
LF	Linear Feet
LRA	Limited Removal Action

LS	Lump Sum
LSP	Licensed Site Professional
LTBI	Location to be Investigated
LUST	Leaking Underground Storage Tank
MCL	Maximum Contaminant Level
MCP	Massachusetts Contingency Plan
MEPA	Massachusetts Environmental Policy Act
MGL	Massachusetts General Law
MH	Manhole
MOHML	Massachusetts Oil & Hazardous Material List
MTBE	Methyl Tertiary Butyl Ether
MWRA	Massachusetts Water Resources Authority
NAPL	Non-Aqueous Phase Liquid
NEC	National Electrical Code
NFPA	National Fire Protection Association
NON	Notice of Noncompliance
NOR	Notice of Responsibility
NPDES	National Pollutant Discharge Elimination System
NPL	National Priority List
NRS	Numerical Ranking System
NTE	Not to Exceed
O&M	Operation and Maintenance
OHM	Oil and Hazardous Material
PC-1	Initial Public Comment Period
PC-2	Public Comment Period (only for proposed permit decision)
PE	Registered Professional Engineer
PID	Photoionization Detector
PIP	Public Involvement Plan
POE	Petroleum Operations Engineer
POTW	Publicly Owned Treatment Works
PPB	Parts Per Billion
PPD	Proposed Permit Decision
PPM	Parts Per Million
PRP	Potentially Responsible Party
PSIG	Pounds per Square Inch Gauge
PUF	Polyurethane Foam
RADDS	Remedial Action Design Documents
RAM	Release Abatement Measure
RAO	Response Action Outcome (Classes A, B, & C)
RC	Reportable Concentration
RCGW-1	Reportable Concentration for Groundwater Category 1 (groundwater resource areas)
RCGW-2	Reportable Concentration for Groundwater in Category 2 (everywhere, except RCGW-1)
RCRA	Resource Conservation and Recovery Act
RCS-1	Reportable Concentration for Soil in Category 1 (high exposure potential)
RCS-2	Reportable Concentration for Soil in Category 2 (everywhere, except RCS-1)
RFI	Request for Information
RP	Responsible Party
RQ	Reportable Quantity (for sudden releases)
S-1	Soil Category - High Exposure Potential
S-2	Soil Category - Medium Exposure Potential
S-3	Soil Category - Low Exposure Potential
SCAA	Spill Control Association of America

SF	Square Feet
SRM	Substantial Release Migration
SVE	Soil Vapor Extraction
T-1	Technical Review
T-2	Supplemental Technical Review (to review response to NON)
T&M	Time and Material
TAG	Technical Assistance Grant
TOR	Threat of Release
TPH	Total Petroleum Hydrocarbon
UCL	Upper Concentration Limit
UL	Underwriter's Laboratories
UOM	Unit of Measure
URAM	Utility-related Abatement Measure
UST	Underground Storage Tank
VES	Vapor Extraction System
VOC	Volatile Organic Compound
VPH	Volatile Petroleum Hydrocarbons

The following information is provided to clarify eligible tasks defined in the Reimbursement Fee Schedule. Where available, references have been made to the DEP regulations, standard methods or published DEP policies. Future policies will be incorporated into this text in the future as they become available. The Board shall reimburse costs or activities completed in accordance with these references or accepted industry or engineering practices.

1 LABOR CATEGORIES - Descriptions of applicable labor categories and qualifications are provided. Labor rates only apply to tasks not described in the fee schedule. The Claimant must provide documentation for all activities (e.g. time sheets, time & materials sheets, site plan, and proof of payment, i.e. copy of canceled check (front and back), Contractor/Payee Certification on contractor=s/payee=s letterhead or other documentation acceptable to the Board) with each Request for Reimbursement.

Costs directly related to the Response Action incurred by an employee of the Owner or Operator will be reimbursed at not more than the hourly rates listed under Task 1 for the Labor category applicable to the level of effort provided by the employee for Tasks 2-28. The hourly rate to be reimbursed for the employee of the Owner or Operator providing services directly related to the Response Action shall be calculated as the product of 1.33 times the employee=s hourly salary. A copy of the employee=s pay stub must accompany all time sheets submitted for reimbursement consideration by the Board.

2 REPORTS - Includes research, data evaluation and preparation of reports specified in Section 2.1 through 2.25 of Appendix 3. Report preparation per Tasks 2.1 through 2.25 does not include field related activities (e.g. drilling, and sampling or laboratory analysis). Status reports, e.g. Release Abatement Measure (RAM) Plan Status Report, required on a more frequent basis by DEP vs. MCP requirements, shall have a copy of the DEP letter, requiring the more frequent status reports, attached to the status report submitted to the Board with an Application for Reimbursement.

3 HEALTH AND SAFETY PLAN - Prepare one (1) site specific health and safety plan and one (1) update, in accordance with 29 CFR 1910.12 and any other applicable OSHA regulations.

A. The Plan shall cover all activities serviced and/or performed at a petroleum contaminated site (e.g., sampling, excavation and remediation of petroleum contaminated soil and groundwater). Include all disciplines that have direct involvement in task (e.g., project geologist, project manager, technical support, field support, etc.). The health and safety plan shall be developed from a general health and safety plan modified for the specifics of the site and each task to be performed.

B. The Plan is to include, but not be limited to, the following:
- $ Organizational structure for site activities
- $ Brief site history
- $ Tasks to be performed
- $ Hazard analysis for each task to be completed
- $ Employee assignments
- $ Personal protection equipment (PPE) to be used
- $ Medical surveillance
- $ Frequencies and types of air monitoring
- $ Description of site control methods
- $ Decontamination methods
- $ Emergency Response Plan and emergency phone numbers
- $ Description of confined space areas, if applicable
- $ Site Plan
- $ Hospital Route

C. Site visit necessary for plan completion to be completed under other sub-tasks.

D. CONFINED SPACE ENTRY - All work is to be performed in accordance with 310 CMR 40.0000 and OSHA regulations. The applicant must provide to the Board a copy of all completed confined space entry permits.

6. EXCAVATED SOILS MONITORING/HANDLING - All excavated soils must be managed in accordance with 310 CMR 40.0000. Includes all field work, equipment, and labor. The maximum volume of soil eligible for reimbursement shall be 8,000 tons per site, regardless of disposal/recycling method selected. Copies of Bills of Lading or Hazardous Waste Manifests and weight slips are to be attached to all invoices submitted for soil disposal/hot recycling, cold recycling or lined landfill.

6.7 A site plan shall be attached to each Application for Reimbursement Form when submitting expenses for bioremediation response activities. The site plan shall be delineated to show the horizontal area of soil and/or groundwater to be bioremediated. The depth of soil and/or groundwater to be bioremediated shall be indicated on the site plan. Then, the calculations shall be provided for the volume, in cubic yards, of soil or groundwater to be bioremediated.

7. PORTABLE GAS CHROMATOGRAPH - Includes a gas chromatograph, operator, materials and equipment. The instrument shall be appropriate for detection and quantification of petroleum hydrocarbons in soil, water and/or air.

8. DRILLING, SAMPLING GROUTING OF SOIL BORINGS - Drilling to be completed by means and methods described in DEP WSC 310-91.

8.1 MOBILIZATION/DEMOBILIZATION - This rate is applicable for portal to portal travel for all drilling methods and includes a steam cleaner. Mobilization and demobilization shall be reimbursed lump sum for each mobilization and demobilization.

9. GROUNDWATER MONITORING WELL INSTALLATION AND SOIL SAMPLING - Drilling shall be completed by means and methods described in DEP WSC 310-91.

9.1 MOBILIZATION/DEMOBILIZATION - This rate is applicable for portal to portal travel for all drilling methods and includes a steam cleaner. Mobilization and demobilization shall be reimbursed lump sum for each mobilization and demobilization.

10. MONITORING/RECOVERY WELL DEVELOPMENT - Development shall be completed utilizing applicable methods defined in DEP WSC 310-91, or equivalent.

10.1 Task includes equipment mobilization/demobiliation, oversight, drill rig, labor, materials, tools, related equipment, travel time and steam cleaner.
10.2 Task includes development tools, and equipment necessary to develop 2" diameter monitoring well(s). Travel is reimbursed at prices found at Task 11.1.1.1 or 11.1.1.2 Liquid disposal/treatment to be reimbursed at prices found under Task 28.
10.3 Task includes development tools, and equipment necessary to develop 4" diameter monitoring recovery well(s). Travel is reimbursed at prices found at Task 11.1.1.1 or 11.1.1.2 Liquid disposal/treatment to be reimbursed at prices found under Task 28.
10.4 Task includes development tools, and equipment necessary to develop 6"-10" diameter recovery wells. Mob/DeMob of drilling and oversight disciplines reimbursed at prices found under Task 19. Liquid disposal/treatment to be reimbursed at prices found under Task 28.
10.5 Task includes development tools necessary to develop 12"-26" diameter recovery wells. Mob/DeMob of drilling and oversight disciplines reimbursed at prices found under Task 19. Liquid disposal/treatment to be reimbursed at prices found under Task 28.

10.6 Task includes development tools, and equipment necessary to develop recovery wells >26" in diameter. Mob/DeMob of drilling and oversight disciplines reimbursed at prices found under Task 19. Liquid disposal/treatment to be reimbursed at prices found under Task 28.

11. GROUNDWATER GAUGING/BAILING AND SAMPLING - activities to be in accordance with procedure described in DEP WSC 310-91, or equivalent.

12. AQUIFER PUMP TEST - Aquifer pump test shall be performed in accordance with procedures described in DEP WSC 310-91, or equivalent. Reimbursement to be provided at a lump sum rate which includes all applicable disciplines, equipment, data evaluation and reporting.

13. RISING OR FALLING HEAD (SLUG) TEST - Slug tests shall be performed in accordance with procedures described in DEP WSC 310-91 and accepted industry standards. Furnish all labor, equipment (including data logger, if needed), and materials required to properly conduct slug test.

A. Travel shall include all work necessary to transport to and from the site all personnel, materials and equipment required for job in a 50 mile radius.

B. Include all work necessary to set up and break down equipment, decontamination of equipment, and ffinal clean up of site.

C. All extracted fluids shall be stored in an approved manner, i.e., 55 gallon D.O.T. approved drums, pending proper disposal or treatment, as required by state agency. Actual disposal or treatment is not included in this task. Disposal and/or treatment of fluids will be reimbursed at rates not to exceed those found under Tasks 23.4.10 or 28, as applicable.

D. Include all disciplines that have direct involvement in task (i.e., project geologist, project manager, technical support, field support). Use only qualified disciplines and subcontractors who are thoroughly trained, experienced and completely familiar with the specific methods required for proper completion of this task.

Generally speaking, rising or falling head (slug) tests will only be run on unconfined aquifers with relatively low permeability. Existing data on the site such as well logs, or time to recharge during well development, should always be checked prior to the start of the test. In many cases the data will indicate that a rising or falling (slug) head test is not appropriate.

Any equipment introduced into the well must be appropriately cleaned prior to the start of the test to insure that no foreign substances are introduced into the well. The depth to groundwater and the depths to the bottom of the well will be recorded before the start of the test.

The test method will be the rising head method, where either water is rapidly removed from the well, or a slug of water is inserted, the water level returns to equilibrium. The time it takes the well to reach equilibrium is measured. The maximum time limit for the test will be 30 minutes, whether equilibrium is reached or not. The data collection will be automated to the maximum extent possible. Data should be averaged using a geometric mean method. Extreme differences in results between wells should be discussed in the report.

Data reduction will be by a recognized method, such as Bower and Rice or by a commercially available computer program that is in widespread use. One or two pages of narrative will describe the conduct of the test and the data will be reported in tables, with the calculated hydraulic conductivity for each well tested. Any discrepancies or unusual conditions will be explained.

14.0 SOIL VAPOR EXTRACTION/AIR SPARGING TESTING -

A. Includes all work necessary to transport to and from the site all personnel, materials, and equipment for job within a 50 mile radius.

B. Include all work necessary to set up and break down equipment and final clean up of work area(s).

C. Equipment utilized for test purposes including, but not limited to: vacuum blower(s), sparge compressor(s), treatment equipment, vacuum/pressure gauges, monitoring devices, etc. are reimbursed at prices found in Task 28.

D. Laboratory analysis of air samples to be reimbursed at prices found in Task 27.

The duration of the soil vapor extraction pilot test is not to exceed 12 hours. During soil vapor extraction testing, the following minimum information is to be determined from the test:

- Radius of influence, of applied vacuum
- Extraction air-flow rate vs. applied vacuum
- Concentration of petroleum hydrocarbons in extracted air

In addition to the above, during combined soil vapor extraction/air sparging testing, the following minimum information is to be determined from the test:

- Formation air entry pressure
- Air injection flow rates
- Hydraulic mounding effects and durations
- Evidence of any preferred air pathways/channeling

The duration of a combined soil vapor extraction/air sparging pilot test is not to exceed 24 hours.

A report consisting of narrative describing the test procedure, apparatus, and findings will be prepared with data summarized in tabular and graphic formats. Any discrepancies of unusual conditions will be explained.

15.0 REMEDIATION FEASIBILITY STUDIES - Reimbursement shall be made for the preparation of studies including calculation of equipment cost, installation cost, operating and maintenance expenses, utility expenses, salvage value, and determination of the net present values of alternative remediation strategies/equipment investments. The net present value (NPV) method is a method of ranking investment alternatives. The NPV is equal to the present value of future returns, discounted at the cost of capital, plus the present value of the cost of the investment, minus the salvage value of the equipment at the end of the project.

The remediation strategy/equipment investment with the lowest NPV should be selected if this alternative is expected to achieve DEP required cleanup standards.

For example, two alternative strategies are available for the treatment of off-gas from an air tray stripper. The first alternative provides for the treatment of off-gas via catalytic incineration for a period of four years. The cost of the catalytic incinerator is $25,000. It will cost $10,000 to install the catalytic incinerator and $15,000 per year for operating and maintenance expenses, including electricity.

The second alternative is to treat the off-gas via vapor phase granular activated carbon. It will cost $5,000 to purchase the equipment and $5,000 to install it. Annual operating and maintenance expenses, including replacement carbon, are projected to be $25,000.

Therefore, assuming the equipment will be needed for a period of four (4) years, the NPV of the alternative remediation strategies/equipment investments are calculated as follows:

	Catalytic Incinerator			Vapor Phase Carbon		
Year	Net Cash Flow	PVIF (10%)	PV of Cash Flow	Net Cash Flow	PVIF (10%)	PV of Cash Flow
1	$15,000	0.9091	$13,637	$25,000	0.9091	$22,728
2	15,000	0.8624	12,936	25,000	0.8624	21,560
3	15,000	0.7513	11,270	25,000	0.7513	18,783
4	15,000	0.6830	10,245	25,000	0.6830	17,075
		PV of Outflows:	48,088			80,146
		Plus Equipment & Installation Costs:	35,000			10,000
			83,088			90,146
Less Salvage Value of Equipment at end of Project:						
	2,000	0.6830	-1,366	0	0.6830	0
		NPV =	81,722			90,146

Therefore, the alternative strategy/remediation equipment with the lowest NPV represents the least cost alternative for treating the air stripper off-gas. Thus, catalytic incineration would be selected to treat the air stripper off-gas.

In the example presented above, the cost of capital was assumed to be ten (10%) percent. For future analyses, the prime lending rate in effect at the time of the analysis shall be used as the cost of capital.

Note: PVIF => Present Value Interest Factor

16. REMEDIAL ACTION PLANS - Reimbursement shall be made for development of remedial action plans completed in compliance with 310 CMR 40.0000. Reimbursement for this task does not include field activities or analytical testing.

17. REMEDIATION PERMITTING - Reimbursement to be made for activities associated with obtaining local, state and federal permits to install, operate and maintain a remediation system(s) (excluding sampling and analysis). All permitting related activities such as communication with permit authority and preparation of applications are included in the reimbursement rate. Meeting and required public hearings shall be reimbursed at the appropriate rate described in Tasks 1.0 and 26.0. Senior level staff are the maximum labor category chargeable for this task. Permit fees to federal, state or local governmental agencies are not reimbursable.

18. TRENCHING AND INSTALLATION OF SVE, AIR SPARGING AND GROUNDWATER EXTRACTION SYSTEMS - Reimbursement of trenching and installation activities shall be made at the rates defined until 6/30/97. After 7/1/97, three (3) competitive bids may be obtained for work and/or materials covered by these tasks in place of the unit price(s), or in conjunction with the unit price(s).

When off-site backfill material must be brought to the site, it shall meet the following criteria as deemed appropriate for the overbearing load to be imposed:

A. Ordinary Fill: shall be friable soil containing no stone greater than two-thirds (2/3) the loose lift thickness. The material shall be essentially free of trash, ice, snow, tree stumps, roots, and organic material.

B. Granular Fill: shall be free from ice and snow, roots, sod, rubbish, and other deleterious or organic matter. Granular fill shall conform to the following gradation requirements:

Sieve Size	Percent Finer by Weight
2/3 of the loose lift thickness	100
No. 10	30 - 95
No. 40	10 - 70
No. 200	0 - 15

This granular fill is usually used for structural fill below buildings. On-site fill not meeting these criteria may be used to effect economy. For non-frost susceptible subbase or free draining fill, reduce the criteria on the No. 200 sieve to 0 - 10 percent.

C. Sand and Gravel: shall consist of hard, durable sand, and shall be free from ice and snow, roots, sod, rubbish, and other deleterious or organic matter. It shall conform to the following gradation requirements:

Sieve Size	Percent Finer by Weight
*	100
2 inch	50 - 85
No. 4	40 - 75
No. 10	30 - 60
No. 40	10 - 35
No. 100	5 - 20
No. 200	2 - 10

* => Four (4") inches where placed as base below slab and pavement; elsewhere two-thirds (2/3) the loose lift thickness.

Where gravelly, free draining fill is required, for example in an infiltration trench, use a cleaner (less than 5% passing a No. 200 sieve), coarser (boney) sand and gravel. Use sand and gravel as base course below pavement if commercially available.

D. Crushed Stone: shall consist of durable crushed rock or durable crushed gravel stone, free from ice and snow, sand, clay, loam, or other deleterious material. The crushed stone shall be uniformly blended and shall conform to Massachusetts DPW Specifications for (Insert stone size, e.g. 3/4 inch or 1-1/2 inch, etc.).

E. Blast Fill Rock: shall be well graded rock with minimum size as hereinafter specified. Well-graded means that at least twenty- five percent (25%) is less that six inches (6") in size, and at least ten percent (10%) is less than three-quarters inch (3/4") in size.

19. INSTALLATION AND SOIL SAMPLING OF VAPOR EXTRACTION GROUNDWATER EXTRACTION AND AIR SPARGING WELLS - Drilling activities shall be completed in accordance with DEP WSC 310-91 or accepted industry practices.

20. INSTALLATION OF UTILITIES FOR REMEDIATION SYSTEMS ONLY - Activities associated with the installation of utilities shall be performed in accordance with applicable codes, regulations and local ordinances. Reimbursement shall be made on a time and materials basis. Mark ups on subcontractors are not eligible for reimbursement from the Board. All utility connections for remediation equipment must be metered separately from other site utility connections to be eligible for reimbursement.

21. PURCHASE AND INSTALLATION OF NAPL AND GROUNDWATER PUMPING SYSTEMS - Reimbursement to be made for appropriately sized equipment installed in accordance with manufacture specifications until 6/30/97. After 7/1/97, three (3) competitive bids may be obtained for work and/or materials covered by these tasks in place of the unit price(s), or in conjunction with the unit price(s).

22. PURCHASE AND INSTALLATION OF SURFACE COMPONENTS OF REMEDIATION SYSTEMS - Reimbursement shall be made for appropriately sized equipment purchase and installed in accordance with manufacturer specifications until 6/30/97. After 7/1/97, three (3) competitive bids may be obtained for work and/or materials covered by these tasks in place of the unit price(s), or in conjunction with the unit price(s).

23. SVE AND GROUNDWATER REMEDIATION SYSTEMS OPERATION AND MAINTENANCE - Operation and maintenance activities shall be performed by disciplines appropriate for the activities.

    23.2 Actual, discrete, separately metered, utility costs associated with the operation of remedial technologies are eligible for reimbursement. Markups on utility costs are not eligible for reimbursement by the Board.

    23.3 REPAIR OF SYSTEM - For out of scope repairs not listed below, reimbursement will be made on a T & M basis in accordance with the labor categories found at Task 1, and other applicable tasks.

    23.4 GROUNDWATER REMEDIATION SYSTEMS - Repair and/or replacement of a pump or pumping system shall be included in this task provided the equipment has been installed in accordance with manufacturer's specifications.

    23.8.1 OPERATING DATA REPORT - Includes monthly discharge monitoring reports as required.

24. CONCRETE MONITORING WELL PAD REMOVAL AND REPLACEMENT - All repair/removal or replacement of pads shall conform to the specifications defined in DEP WSC 310-91.

25. WELL ABANDONMENT - Well abandonment procedures shall conform to the specification of DEP WSC 310-91.

26. OUT OF SCOPE TRAVEL - Includes disciplines appropriate for the activity and all necessary equipment.

27. LABORATORY ANALYSIS - Reimbursement of laboratory analysis to include parameters directly related to the assessment, evaluation and abatement of virgin petroleum products discharges or released from an underground storage tank system. Standard laboratory turnaround times of 7 - 10 business days apply to all laboratory analyses and prices. Includes sample jars, chain of custody forms, drop-off and pick-up samples. Surcharges for expedited laboratory turnaround are not eligible for reimbursement by the Board.

28. EQUIPMENT RENTAL - Reimbursement shall be provided for work related to the performance of response actions. Equipment rental rates are provided in the Reimbursement Fee Schedule at daily, weekly and monthly rates.

29. MISCELLANEOUS MATERIALS - Reimbursement for materials used for the completion of Immediate Response Actions. Materials used will be reimbursed at the rates described in the Reimbursement Fee Schedule. Time and Materials sheets must be supplied with each request for reimbursement.

30. SALES TAX - Sales tax paid must be shown as a separate line item on all invoices and will be reimbursed at actual cost.

31. FREIGHT - Freight paid must be shown as a separate line item with a shipper=s invoice attached and will be reimbursed at actual cost.

32. FIRMS AND EQUIPMENT NOT APPROVED FOR REIMBURSEMENT - RESERVED

33. APPLICATION FOR REIMBURSEMENT - APPENDIX 4 - All Claimants seeking reimbursement shall fully complete the Application For Reimbursement With the Listing of Costs, Expenses and Obligations. As many Listing of Costs, Expenses and Obligations Forms as necessary may be submitted to list the tasks completed for which reimbursement is requested. The Claimant must provide documentation for all tasks to be reimbursed with each Application for Reimbursement. Documentation which must be included, but not limited to, and attached to the Listing of Costs, Expenses and Obligations Form is as follows:

    A. Site Plan
    B. Consultant Time and Expense Sheets
    C. Material Vendor Invoices
    D. Subcontractor Invoices
    E. Copies of all correspondence to DEP including laboratory reports
    F. Proof of Payment, i.e., copy of canceled check (front and back), Contractor/Payee Certification on contractor=s/payee=s letterhead, or other documentation acceptable to the Board. For Utility Bills 23.2 electricity, natural gas, water or telephone, a copy of the utility bill showing a credit for the previous month(s) service(s) will be accepted in lieu of a copy of cancelled check (front and back) or contractor/payee certification, except as allowed in 503 CMR 2.02 Definitions: Proof of Payment

    NOTE: Eligible costs on subcontractor, vendor or laboratory invoices submitted to the Board for reimbursement will be reimbursed at the face cost shown on the invoices. Markups of subcontractor, vendor or laboratory invoices are not reimbursable by the Board.

34. NOTE: Reimbursement for Tasks 18, 21 and 22 shall be made at the unit rates defined therein until June 30, 1996. After July 1, 1997, three (3) competitive bids may be obtained for work and/or materials covered by these tasks in place of the unit price(s), or in conjunction with the unit price(s).

Principal - Owner, partner, associate, and/or corporate officer of the organization.

- Corporate responsibility.
- Ensure all organizational personnel comply with applicable federal, state or local statutes, regulations or policies.

Licensed Site Professional/Other Registered Professional - Degree in engineering, geology, hydrogeology or related science and greater than 8 years experience in investigation and remediation of contamination in soil and ground water. Professional registration by the Board of Registration of Hazardous Waste Cleanup Professionals. Professional registration when applicable (e.g. P.E., C.P.G., C.I.H., etc).

- Directs professional staff.
- Final review of project documents.
- Expert testimony.
- Evaluates and approves new technological innovations.
- Certifies DEP documents and renders professional opinion.

Project Manager - Engineering degree or related science and/or at least 5 years applicable experience. Senior technical leader. Usually performs limited field work.

- Aquifer characterization.
- Review of technical reports and remedial action plans.
- Develops technical and budgetary
- Supervises work activities of lower level professional staff.
- Coordinates and communicates with agency personnel and client regarding contracts, general direction and problems at site.
- Performs design and investigation work in technically complex situations requiring innovative applications.

Senior Scientist/Engineer/Geologist - Engineering degree or related science and/or at least 5 years applicable experience. Senior technical leader. Usually performs limited field work.

- Aquifer characterization.
- Review of technical reports and remedial action plans.
- Develops technical and budgetary
- Supervises work activities of lower level professional staff.
- Coordinates and communicates with agency personnel and client regarding contracts, general direction and problems at site.
- Performs design and investigation work in technically complex situations requiring innovative applications.

Staff Scientist/Engineer/Geologist/Hydrogeologist II - Degree in engineering, geology, hydrogeology or related science and at least 3 years experience. Consults with higher level professional staff member.

- Implements field work for on-site investigation and remediation activities including site characterization, drilling supervision, and monitoring well installation and sampling activities.
- Assists in modeling, hydrogeologic data analysis, report preparation.
- Prepares workplans, costs estimates and reports.
- Analyzes and interprets field data.
- Supervises lower level technical personnel during on-site drilling or remediation activities.

Scientist/Engineer/Geologist/Hydrogeologist I - Entry level position requiring a degree in engineering, geology, hydrogeology, or related science with 0-3 years experience. Works under close supervision to perform routine field tasks related to the projects (installation of monitoring wells, aiding in geological mapping, writing field notes, and basic geological analysis).

- Field work preparation and planning.
- Supervise site assessment activities.
- Site reconnaissance/mapping.
- Remedial system installation.
- Limited data review and analysis.
- Obtaining permission to access off-site properties.
- Monitoring activities.
- Supervise excavation activities.

Permits/Health & Safety Coordinator - Degrees in related science field and/or at least 2 years experience.

- Permit preparation and coordination.
- Waste and laboratory coordination.
- Prepares site specific Health and Safety Plan.
- Oversees H & S activities on-site when necessary.

Construction Foreman - Responsible for supervision and overall direction of moderate size routine field service operations. Has successfully been involved with at least 5 system installations as on-site supervisor and has assisted in cost estimates - time and materials.

- Develops staff assignments.
- Executes work requests.
- Schedules projects.
- Ensures compliance of field service operations within company procedures and safety standards.

Senior Technician/Technician III - Science or engineering degree, and/or 3 to 5 years experience, with high school diploma or trade school degree. Responsible for general on-site supervision of installation, maintenance, and repair of machinery and equipment, and sampling activities. May collect samples and maintain documentation of record logs pertaining to monitoring and maintenance of machinery and equipment. Works under appropriate supervision.

- Field work preparation and planning.
- Operation and maintenance of equipment.
- Well development.
- Waste handling.
- Decontamination.
- Environmental monitoring.
- Remedial system installations.
- Field contractor supervision (limited).
- Monitoring activities.
- NAPL removal (free product).

Technician II - Science or engineering degree, and/or 2 to 4 years experience, with high school diploma or trade school degree. Performs routine labor tasks related to on-site installations, maintenance and repair of machinery, and equipment. Performs routine tasks such as soil and groundwater sampling, bailing wells, etc. Performs under appropriate supervision.

- Field work preparation and planning.
- Operation and maintenance of equipment.
- Well development.
- Waste handling.
- Decontamination.
- Conducts sampling and monitoring.
- Maintains machinery and equipment.
- NAPL removal (free product).

Technician I - No degree required. Entry level position, under close supervision. Performs routine labor tasks related to on-site installation, maintenance and repair of machinery, and equipment. Performs routine tasks such as soil and groundwater sampling, bailing wells, etc.

- Field work preparation and planning.
- Operation and maintenance of equipment.
- Decontamination.
- Performs assigned field work and routine labor tasks related to equipment installation and maintenance.
- Conducts sampling and monitoring.
- Well development.
- Waste handling.

CADD Operator - Experience with Computer Assisted Design operations. Requires a Technical Drawing Certificate, AutoCad related cartography studies, and 2 - 5 years related experience. May have a BA/BS in Cartography. Includes CADD equipment and time.

- Generates new drawings.
- Works from provided plans and maps.
- Coordinates scales.
- Interfaces with all levels of technical and professional staff.
- Interpolates groundwater contour maps.

Draftsperson - Some experience with computer assisted design operations. Requires a Technical Drawing Certificate or a HS diploma and 0-3 years related experience.

- Makes and files copies of maps.
- Organizes and files drawings.
- Purchases department technical supplies.

Administrative Support - Operates computer for work processing, spreadsheets, and statistical typing, correspondence, report generation, creation of boring logs, hydrographs, etc.

- Word processing.
- Spreadsheets.
- Report generation.

LIST OF REFERENCES

Provided below is a list of references which provide statutes, regulations, policies, national codes, guidelines, industry standards, and recognized references which shall be followed when applicable at the time, while conducting response, assessment, remediation, and response action outcome activities for which reimbursement of such activities will be sought under the Underground Storage Tank Petroleum Product Cleanup Fund, 503 CMR 21.00. This list of references is provided as a minimum and is not intended to be all inclusive.

Commonwealth of Massachusetts Statutes & Related Regulations:

1. The Massachusetts Oil and Hazardous Materials Release Prevention and Response Act, M.G.L. 21E
2. M.G.L. c. 21A, & 16 and 19-19J, M.G.L. c. 30A, & 2 and 3
3. Board of Registration of Hazardous Waste Site Professionals, 309 CMR 1.00 - 8.00
4. Board of Registration of Professional Engineers and Land Surveyors, 250 CMR 1.00 - 6.00
5. Massachusetts Environmental Policy Act, 301 CMR 11.00; and areas of critical concern, 301 CMR 12.00
6. Massachusetts Board of Fire Prevention Regulations, 527 CMR 9.00, Tanks and Containers
7. Commonwealth of Massachusetts Department of Public Works, Application for Permit to Access State Highway

Department of Environmental Protection Regulations & Policies:

8. The Massachusetts Contingency Plan, 310 CMR 40.000 and 40.0000
9. The Massachusetts Hazardous Waste Regulations, 310 CMR 30.000
10. Massachusetts Drinking Water Quality Standards, 310 CMR 22.00
11. Wetlands Protection Act Regulations, 310 CMR 10.00
12. MA Discharge Regulations, 314 CMR 7.00
13. 21E Related Revisions to 310 CMR 4.00, Timely Action Schedule and Fee Revisions, DEP, July 30, 1993
14. Massachusetts Air Quality Standards, 310 CMR 6.00
15. Massachusetts Surface Water Quality Standards, 314 CMR 4.00
16. Bureau of Waste Prevention (BWP) BRP WP 42, Groundwater Reclamation Projects Permit
17. Policy for Discharges to Groundwater in Support of Remedial Actions Conducted in Accordance with M.G.L. c. 21E, DEP #Policy-91-001
18. Interim Guidance Manual for Petroleum Contaminated Media, July 1992
19. Construction/Excavation Related to Underground Storage Tanks at Motor Vehicle Fueling Facilities, DEP Policy #WSC-132-90
20. Management Procedures for Excavated Soils Contaminated with Virgin Petroleum Oils, DEP Policy #WSC-89-001
21. DRAFT Addendum to Management Procedures for Excavated Soils Contaminated with Virgin Petroleum Oils, DEP Policy #WSC-89-0019. Policy for the Investigation, Assessment, and Remediation of Petroleum Releases, DEP Publication #WSC-401-91
22. Fact Sheet for Underground Storage Tanks Storing Waste Oil, 310 CMR 30.325(1)(h) and 527 CMR 9.29
23. Guidance for Disposal Site Risk Characterization - In Support of the Massachusetts Contingency Plan, DEP, July 28, 1995, Interim Final Policy #WSC/ORS-95-11.
24. Guide to the Regulation of Toxic Chemicals in Massachusetts Waters, DEP, December 1990
25. Public Involvement Plan Interim Guidance For Waiver Sites, DEP, January 1991, Interim Policy # WSC-800-90
26. Minimum Standards for Analytical Data for Remedial Response Actions Under M.G.L.c.21E, DEP, January 19, 1989, Policy #WSC-300-89
27. Making No Further Action Decisions at Waiver Sites, DEP Policy # WSC-120-90
28. Suggested Outline, Content and Format for Phase II Human Health Risk Assessment Scope of Work, DEP Policy # WSC-140-91
29. Risk Assessment Short Form - Residential Scenario, DEP Policy # WSC/ORS-142-92
30. Minimum Standards for Analytical Data for Remedial Response Actions Under M.G.L. c. 21E, DEP Policy # WSC-300-89
31. Background Documentation for the Development of the MCP Numerical Standards, DEP, April 1994
32. MASSACHUSETTS Solid Waste Management Regulations, 310 CMR 19.000

33. Previously Non-participating and Newly Identified PRPs Who Wish to Assume Responsibility for Response Actions, DEP Policy # WSC-601-90
34. MCP Questions and Answers, Volume 1, Number 1, DEP, November 5, 1993
35. MCP Questions and Answers, Volume 1, Number 2, DEP, December 1993/January 1994
36. MCP Questions and Answers, Volume 1, Number 3, DEP, February/March 1994
37. MCP Questions and Answers, Volume 1, Number 4, DEP, April/May 1994
38. MCP Questions and Answers, Special Edition No. 1, May 1994
39. MCP Questions and Answers, Volume 1, Number 5, DEP June/July 1994
40. MCP Questions and Answers, Special Edition No. 2, June 1994
41. MCP Questions and Answers, Special Edition No. 3, September 1994
42. MCP Questions and Answers, Special Edition No. 4, February 1995
43. MCP Questions and Answers, Volume 2, Number 1, DEP July 1995
44. MCP Questions and Answers, Volume 3, Number 1, June 1996
45. MCP Questions and Answers, Volume 3, Number 2, December 1996
46. MCP Questions and Answers, Master Q&A, March 25, 1999
47. MCP Questions and Answers, Volume 7, Number 1, January 2001
48. Underground Storage Tank Closure Assessent Manual, DEP Policy #WSC-402-96, April 9, 1996.
49. Standard Reference for Monitoring wells, DEP Publication #WSC-310-91
50. Water Supply Protection Overlays, MA DEP
51. DRAFT Remedial Action Design Document RADD-0: Project Description/Cover Sheet
52. DRAFT Remedial Action Design Document RADD-1: Packed-Tower Air Stripper
53. DRAFT Remedial Action Design Document RADD-2: Aqueous Phase Granular Activated Carbon Adsorption
54. Off-Gas Treatment of Point Source Remedial Air Emissions Pursuant to MGL c.21E, DEP Policy #WSC-94-150
55. Certification and Operation of Environmental Analysis Laboratories, 310 CMR 42.00
56. Preservation Techniques for Volatile Organic Compound(VOC) Soil Sample Analyses, DEP Policy WSC #99-415
57. Method for the Determination of Volitile petroleum Hydrocarbons (VPH), January 1998 and subsequent revisions.
58. Characterizing Risks posed by Petroleum Contaminated Sites: *Implementation of the MADEP VPY/EPH Approach,* Final Draft, June 2001, and subsequent final policy and revisions.
59. Feasibility of Approaching Background, Pre-Final Draft, June 20, 1997, and subsequent Final policy and revisions.
60. Guidance on Implementing Activity and Use Limitations, Draft dated January 22, 1998, and subsequent final policy and revisions.
61. Interim Remediation Waste Management Policy for Petroleum Contaminated Soils, DEP Policy #WSC-94-400.
62. Guidance from Differentiating Disposal Sites from Spills, DEP Policy #WSC-89-002.
63. Short Term Measures Policy, DEP Policy #WSC-130-90
64. Interim Measures Policy, DEP Policy #WSC-131-90
65. Previously Non-participating and Newly Identified Parties Potentially Responsible #WSC-601-90.
66. Guidance on Implementing Activity and Use Limitations, Draft dated January 22, 1998 and subsequent final policy and revisions.
67. Construction of Buildings in Contaminated Areas, January 2000, DEP Policy #WSCO-00-425
68. Draft Indoor Air sampling and Evaluation Guide, February 1, 2001.

Federal Statutes, Regulations, Policies & Publications:

69. Short Term methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Fresh Water Organism, US EPA, EPA-600/4-89-001
70. "US EPA Region 1 Biomonitoring Protocol", US EPA Region 1, Boston, MA Letter dated July 1, 1990
71. Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms, latest edition, US EPA, EPA-600/4-90/027
72. Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 40 CFR 300-399
73. Resource Conservation and Recovery Act, 40 CFR 190-299
74. Toxic Substances Control Act, 40 CFR 700-END

75. Clean Water Act, 40 CFR 100-149 and 40 CFR 400-699
76. Superfund Amendments and Reauthorization Act, 40 CFR 300-399
77. Clean Air Act, 40 CFR 1-89
78. Test Methods for Evaluating Solid Waste, EPA Publication SW-846, Latest Edition
79. National Pollutant Discharge Elimination System, 40 CFR Part 110
80. Spill Prevention Control & Countermeasure Plans, 40 CFR Part 112
81. USGS Bedrock Geologic Map of Massachusetts, Department of the Interior, U.S. Geological Survey Society in cooperation with the Commonwealth of Massachusetts, E-an Zen, Editor, 1983
82. USGS Topographic May, Appropriate Quandrangle(s)
83. National Climatic Data Center, Local Climatological Data, Annual Summary and Comparative Data, Asheville, NC, 1992
84. "Element Concentrations in Soil and Other Surficial Materials of the Conterminous United States", U.S. Geological Survey Professional Paper 1270, U.S. Government Printing Office, Washington, D.C., 1984
85. Time Lag and Soil Permeability in Groundwater Observations, Hvorslev, M.J., U.S. Army Corps of Engineers, Waterways Experimental Station Bulletin 36, Vicksburg, MS
86. Superfund Public Health Evaluation Manual, USEPA, EPA 540/1-86/060, 1986
87. Drinking Water and Health, NRC, Volume 9, National Academy Press, 1989
88. US EPA Region 1 Biomonitoring Protocol Letter dated July 1, 1990. US EPA Region 1 Offices, Boston, Massachusetts, US EPA, 1990.
89. Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organics, US EPA. 1991, Fourth Edition. EPA-600/4-90/027
90. OSHA Safety and Health Standards, 29 CFR 1926/1919, Latest Edition
91. Standard Methods for Examination of Water and Wastewater, APHA. 1989, 17th Edition. Washington D.C.
92. Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Fresh Water Organisms, EPA-600/4-89/001
93. How to Evaluate Alternative Cleanup Technologies for Underground Storage Tank Sites, EPA 510-B-95-007

National Recognized Codes & Standards:

94. Flammable and Combustible Liquids Code, ANSI/NFPA, Latest Edition
95. Automotive and Marine Services Station Code, ANSI/NFPA Code 30A, Latest Edition
96. Flammable and Combustible Liquids Code Handbook, NFPA, Latest Edition
97. National Electrical Code, NFPA 70, Latest Edition
98. Handling Underground Releases of Flammable and Combustible Liquids, NFPA 329, Latest Edition
99. Recommended Practices for Installation of Underground Liquid Storage Systems, Petroleum Equipment Institute, Publication No. PEI/RP100-87
100. Specifications for Concrete Aggregates, ASTM Standard C33-85, Latest Edition

American Petroleum Institute Publications:

101. Installation of Underground Storage Systems, API Recommended Practice 1615, Latest Edition
102. Removal and disposal of Used Underground Storage Tanks, API Recommended Practice 1632, Latest Edition
103. Cathodic Protection of Underground Petroleum Storage Tank and Piping Systems, API Publication 2015, Latest Edition
104. Cleaning Petroleum Storage Tanks, API Publication 2015, Latest Edition
105. Management of Underground Petroleum Product Storage Systems at Marketing and Distribution Facilities, API Recommended Practice 1635, Latest Edition
106. Underground Spill Cleanup Manual, API Bulletin 1628, Latest Edition
107. A Guide to the Assessment and Remediation of Underground Petroleum Releases, API Publication 1628, Latest Edition
108. Feasibility Studies on the Use of Hydrogen Peroxide to Enhance Microbial Degradation of Gasoline, API Publication 4389, May 1985
109. Beneficial Stimulation of Bacterial Activity in Groundwater Containing Petroleum Products, API Publication 4427, March 1975
110. Enhancing the Microbial Degradation of Underground Gasoline by Increasing Available Oxygen, API Publication 4428, February 1982

111. Field Application of Subsurface Biodegradation of Gasoline in Sand Formation, API Publication 4430, August 1978
112. Field Study of Enhances Subsurface Biodegradation of Hydrocarbons Using Hydrogen Peroxide as an Oxygen Source, API Publication 4448, 1987
113. Solubility of BTEX from Gasoline/Oxygenate Mixtures, API Publication 4531, August 1991
114. Treatment Technology for Removal of Dissolved Gasoline Components from Groundwater, API Publication 4369, October 1983
115. Subsurface Venting of Hydrocarbons from an Underground Aquifer, API Publication 4410, September 1985
116. Cost Model for Selected Technologies for Removal of Gasoline Components in Groundwater, API Publication 4422, February 1986
117. Examination of Venting for Removal of Gasoline Vapors from Contaminated Soil, API Publication 4429, March 1980
118. Forced Venting to Remove Gasoline for a Large-Scale Model Aquifer, API Publication 4431, January 1984
119. Treatment System for the Reduction of Aromatic Hydrocarbons and Ethers Concentrations in Groundwater, API Publication 4471, June 1988
120. Phase Separated Hydrocarbon Contaminant Modeling for Corrective Action, API Publication 4474, October 1988
121. Rehabilitation of Groundwater: Removal of Petroleum Contamination through Soil Application, API Publication 4475, February 1989
122. Cost-Effective, Alternative Treatment Technologies for Reducing the Concentration of Ethers and Alcohols in Groundwater, API Publication 4479, May 1991
123. Technological Limits of Groundwater Remediation: A Statistical Evaluation Method, API Publication 4510, June 1991
124. A Compilation of Field-Collected Cost and Treatment Effectiveness for the Removal of Dissolved Gasoline Components from Groundwater, API Publication 4525, November 1990
125. User's Manual for Regress: Statistical Evaluation of Asymptotic Limits of Groundwater Remediation, API Publication 4543, April 1992
126. Pump and Treat: The Petroleum Industry Perspective, API Publication 4561, December 1992
127. Detection of Hydrocarbons in Groundwater by Analysis of Shallow Soil/Gas Vapor, API Publication 4394, May 1985
128. Field Evaluation of Well Flushing Procedures, API Publication 4405, June 1985
129. Proceedings: Sampling and Analytical Methods for Determining Petroleum Hydrocarbons in Groundwater and Soil, API Publication DR 214, 1984
130. An Evaluation of Soil Gas and Geophysical Techniques for Detection of Hydrocarbons, API Publication 4509, August 1991
131. Sampling and Analysis of Gasoline Range Organics in Soil, API Publication 4516, October 1991

General References:

132. Handbook of Hydrology, Maidment, David, R., McGraw-Hill, Inc., Latest Edition
133. Construction Site Dewatering, Powers, J. Patrick, John Wiley & Sons, Inc., Second Edition, 1992
134. Groundwater and Wells, Driscoll, F.G., John Filtration systems, 1986
135. Hydrocarbon Contaminated Soils and Groundwater, Volumes I, II and III, Kostecki, Paul T., and Calabrese, Edward, J., 1992, 1992 and 1990, respectively, Lewis Publishers
136. Principles and Practices for Petroleum Contaminated Soil, Calabrese, Edward, J., and Kostecki, Paul T., 1993, Lewis Publishers
137. Assessment and Remediation of Petroleum-Contaminated Sites, Cole, Mattney, G., November 1993, Lewis Publishers
138. Practical Techniques for Groundwater and Soil Remediation, Nyer, Evan K., Geraghty & Miller Science & Engineering Series, 1992, Lewis Publishers
139. Fate and Prediction of Environmental Chemicals in Soil, Plants, and Aquatic Systems, Mansour, Mohammed, June 1993, Lewis Publishers
140. Handbook of Environmental Fate and Exposure Data for Organic Chemicals, Volumes I and II, Lewis Publishers, Howard, Phillip, 1990
141. Handbook of Toxic and Hazardous Chemicals, Sittig, M., Noyes Publications, 1981
142. Health Aspects of the Disposal of Waste Chemicals, Grisham, J.W., Pergammon Press, 1986
143. Hawley's Condensed Chemical Dictionary, Lewis, R.J., Van Nostrand Reinhold Company, 1993

144. Dangerous Properties of Industrial Materials, Sax, I.J., Lewis, R.J., Van Nostrand Reinhold Company, 1989
145. Handbook on Environmental Data on Organic Chemicals, Verschuren, K., Van Nostrand Reinhold Company, 1983
146. The Soil Chemistry for Hazardous Materials, Dragun, J., Hazardous Material Research Institute, 1988
147. Contaminant Hydrogeology, Fetter, C.W., Macmillan Publishing Company, 1992
148. Handbook of Environmental Degradation Rates, Howard, P.H., Borthling, R.S., Jarvis, W.F., Maylan, W.M., Michalenko, E.M., Lewis Publishers, 1991
149. Standard Methods for Examination of Water and Wastewater, Latest Edition, American Public Health Association, Washington, DC

MASSACHUSETTS REIMBURSEMENT FEE SCHEDULE

TASKS				ITEM DESCRIPTION	UOM	PRICE	RSRVD
1				**LABOR CATEGORIES - Refer to Labor Qualifications and Descriptions**			
	1.1			Principal	Per Hour	$0	
	1.2			Licensed Site Professional /Other Registered Professional	Per Hour	$125	
	1.3			Project Manager	Per Hour	$90	
	1.4			Senior Scientist /Senior Engineer/ Senior Geologist	Per Hour	$90	
	1.5			Staff Scientist/ Engineer/ Geologist/ Hydrogeologist II	Per Hour	$70	
	1.6			Scientist/ Geologist/ Hydrogeologist I	Per Hour	$60	
	1.7			Permits/Health & Safety Coordinator	Per Hour	$50	
	1.8			Construction Foreman	Per Hour	$60	
	1.9			Senior Technician/ Technician III	Per Hour	$55	
	1.10			Technician II	Per Hour	$45	
	1.11			Technician I	Per Hour	$35	
	1.12			CADD Operator Including CADD Time	Per Hour	$45	
	1.13			Draftsperson	Per Hour	$35	
	1.14			Administrative Support	Per Hour	$35	

STANDARD MATERIALS PRICE LIST

The Prices for the Labor Categories listed above include the cost for supplies usual and customary in the performance of work related to the above labor categories. These are supplies utilized during the progress of the work which are not directly incorporated into any work of a temporary or permanent nature. It is understood that several items have multiple end uses and, therefore, in specific situations may be classified as materials of construction or consumable supplies, depending on the actual use. The following list is considered to be representative of usual and customary supplies:

Abrasives (paper, cloth, powder)
Air Fare
Badges
Bags (plastic trash, burlap)
Bags, Water
Bailers (non disposable)
Bands, Elastic
Barrels, Trash
Batteries, Flashlight
Belting
Brads
Brooms
Brushes, Scrub, Wire
Buckets (disposable)
Bulbs, light (elec., flashlight)
Cables
Camcorder
Camera
Cans
Chain
Chalk
Chamois
Chisels (all types)
Clamps, Gable
Clips
Cloth
Connectors
Cotter Pins
Crayons (Industrial)
Cups
Dies
Dippers
Disinfectants
Drills (< 3 hp)
Electrode Holders
Extractors, Screw
Extension cords
Face Shields
Fasteners
Faucets
Files
Film & Development
Filters
Filter Mask (Level D)
Fire Extinguishers/Port
Flashlights
Flints
Flux, Braising
Funnels
Fuses
Glasses
Globes, Lantern
Glove Liner, Wool
Gloves Cotton, work
Glue
Goggles
Graphite
Grinding Wheels
Hacksaws
Handles
Helmets
Hoods, Welder
Keys
Lanterns
Lantern Bulbs
Lashing (wire rope)
Levels
Lighters
Line, Chalk
Masks, Dust (Level D)
Mandrels
Measurers
Medical Supplies
Mirrors
Mops
Needles, Acetylene
Nuts
Office Supplies
Oils, Cutting
Packing
Pails
Paper, Sand, writing
Parking
Paste
Patterns
Pencils & Lead
Postage
Pulleys
Punches
Rags
Rain Gear
Rakes
Rollers
Rubber Boots
Safety Cones
Safety Goggles
Safety Vest
Salt Tablets & Dispenser
Sandpaper
Saws (< 3 hp)
Shields, Face/Side
Soap
Soapstone
Stencils
Supplies, Office
Supplies, Washroom
Tacks
Tags
Tapes
Taps, Bolt
Taxi Fare
Thimbles, Wire Rope
Tips, Cutting & Welding
Towels
Twine
Video Cassette Recorder
Video Tape
Washing Powder
Wastes, Wiping
Wedges
Wheels, Cutting, Grinding
Emery
Water Cooler

MASSACHUSETTS REIMBURSEMENT FEE SCHEDULE

TASKS				ITEM DESCRIPTION	UOM	PRICE	RSRVD
2				**REPORT PREPARATION**			
	2.1			Phase 1 Report per 310 CMR 40.0480 - Project disciplines include labor to conduct site review, background research, state and municipal file review, travel time, travel expenses, environmental database review, review of aerial photography, data evaluation and report preparation. Report to include site maps, groundwater contour map, boring/monitoring well logs, summary tables of analytical data, laboratory sheets with chain of custody, and other requirements as specified in 310 CMR 40.0480. Excludes file review fees.	L.S.	$4200	
		2.1.1		*Reserved.*			
		2.1.2		File Review Fees charged by State Agency or Local Municipality	Actual	< $201	
	2.2			Phase I Completion Statement per 310 CMR 40.0484	NTE	$320	
	2.3			Phase II Scope of Work per 310 CMR 40.0834	NTE	$1,500	
	2.4			Phase II per 310 CMR 40.0830	NTE	$10,275	
		2.4.1		Phase II Supplemental Addendum	NTE	$3,000	
	2.5			Phase II Completion Statement per 310 CMR 40.0836	NTE	$400	
	2.6			Phase III per 310 CMR 40.0850	NTE	$5,300	
	2.7			Phase III Completion Statement per 310 CMR 40.0836	NTE	$300	
	2.8			Phase IV per 310 CMR 40.0870	NTE	$6,625	
	2.9			Phase IV Completion Statement per 310 CMR 40.0879	NTE	$300	
	2.10			Phase V per 310 CMR 40.0890	NTE	$2,125	
		2.10.1		Phase V Operation, Maintenance and/or Monitoring Report per 310 CMR 40.0892	NTE	$1,200	
		2.10.2		Remedy Operation Status Report per 310 CMR 40.0893	Each	$1,200	
	2.11			Phase V Completion Statement per 310 CMR 40.0893	NTE	$645	
	2.12			**Risk Assessment per 310 CMR 40.0900**			
		2.12.1		Method 1 per 310 CMR 40.0973	Each	$2,650	
		2.12.2		Method 2 per 310 CMR 40.0980	Each	$6,950	
		2.12.3		Method 3 per 310 CMR 40.0990	Each	$30,000	
		2.12.4		Feasibility of Permanent Solutions; Feasibility of Restoration to Background per 310 CMR 40.0860 & 40.1020	NTE	$1,280	
	2.13			**Response Action Outcomes (RAO) per 310 CMR 40.1000**			
		2.13.1		Class A1	NTE	$1,650	
		2.13.2		Class A2	NTE	$1,650	
		2.13.3		Class A3	NTE	$1,650	
			2.13.3.1	Class A-4	NTE	$1,650	
		2.13.4		Class B1	NTE	$1,650	
		2.13.5		Class B2	NTE	$1,650	
			2.13.5.1	Class B3	NTE	$1,640	
		2.13.6		Class C	NTE	$1,450	
		2.13.7		LSP Periodic Review & Opinion per 310 CMR 40.0580	NTE	$1,200	
	2.14			Numerical Ranking System (NRS) Score sheet per 310 CMR 40.1500	NTE	$1,450	
		2.14.1		NRS (rescoring)	NTE	$850	
		2.14.2		Tier II Extension Request	Each	$1,200	
	2.15			Complete Tier 1 Permit Application per 310 CMR 40.0700	Each	$1,600	
		2.15.1		Tier I Permit Extension	Each	$1,400	
	2.16			Minor Permit Modification per 310 CMR 40.0725	Each	$800	
	2.17			Major Permit Modification per 310 CMR 40.0707	Each	$1,400	
	2.18			Release Abatement Measure Plan per 310 CMR 40.0444	Each	$1,800	
		2.18.1		Release Abatement Measure Plan Addendum per 310 CMR 40.0444	Each	$1,000	
		2.18.2		Release Abatement Measure Status Report per 310 CMR 40.0445	Each	$1,450	
		2.18.3		Release Abatement Measure Plan Completion Report per 310 CMR 40.0446	Each	$2,500	
		2.18.4		Release Abatement Measure Plan Design Specification	Each	$2,500	
		2.18.5		Combined Release Abatement Measure Plan and Completion Report per 310 CMR 40.0444 & 40.0446	Each	$4,000	
	2.19			Interim Measure Per DEP Policy #WSC-131-90	Each	$1,800	
		2.19.1		Interim Measure Status Report per DEP Policy #WSC-131-90	Each	$1,200	
		2.19.2		Interim Measure Completion Report per DEP Policy #WSC-131-90	Each	$2,500	
		2.19.3		Interim Measure Design Specification	Each	$2,500	
	2.20			Waiver Status Report per 310 CMR 40.537	Each	$1,200	
		2.20.1		Wavier Completion Statement per 310 CMR 40.537	Each	$1,200	
	2.21			Immediate Response Action Plan per 310 CMR 40.0424	Each	$1,800	

MASSACHUSETTS REIMBURSEMENT FEE SCHEDULE

TASKS				ITEM DESCRIPTION	UOM	PRICE	RSRVD
		2.21.1		Immediate Response Action Plan Addendum per 310 CMR 40.0424	Each	$1,000	
		2.21.2		Immediate Response Action Plan Status Report per 310 CMR 40.0425	Each	$1,450	
		2.21.3		Immediate Response Action Plan Completion Report per 310 CMR 40.0427	Each	$2,500	
		2.21.4		Immediate Response Action Plan Design Specification	Each	$2,500	
		2.21.5		Combined Immediate Response Action Plan & Completion Report per 310 CMR 40.0424 & 40.0427	Each	$4,000	
	2.22			Short-Term Measure Status Report per DEP Policy #WSC-130-90	Each	$1,200	
		2.22.1		Short-Term Measure Completion Report per DEP Policy #WSC-130-90	Each	$1,200	
	2.23			Imminent Hazard Evaluation per 310 CMR 40.0426	Each	$1,200	
		2.23.1		Substantial Hazard Evaluation per 310 CMR 40.0893 or 1050	Each	$1,800	
	2.24			LSP Opinion to remove off gas controls	Each	$1,000	
	2.25			Activity and Use limitations per 310 CMR 40.1000	Each	$3,000	
		2.25.1		Amendment to Activity and Use Limitations per 310 CMR 40.1000	Each	$1,200	
	2.26			Legal Fees for Activity and Use Limitations per 310 CMR 40.1000	Each	$0	
	2.27			Consultant/Client Project Review Per Year	T&M	$0	
	2.28			Public Involvement per 310 CMR 40.1400	T&M	$20,001	
	2.29			Police Detail	T&M	$0	
3				**HEALTH AND SAFETY PLAN**			
	3.1			Prepare a site specific health and safety plan	Each	$150	
	3.2			Update Health and Safety Plan	Each	$100	
	3.3			Level A Personal Protective Equipment	Per Person/ Per Hour	$39	
		3.3.1		Level A Fully Encapsulated Suite and Self Contained Breathing Apparatus	Per Day	$150	
	3.4			Level B Personal Protective Equipment	Per Person/ Per Hour	$26	
	3.5			Level C Personal Protective Equipment	Per Person/ Per Hour	$13	
	3.6			Confined Space Entry Equipment	Per Day	$150	
	3.7			**Air monitoring for petroleum product derived air contaminants. Project disciplines include labor to conduct air monitoring, field screening and supervision. Includes PID, oxygen/explosion meter, toxic gas monitoring and/or sampling equipment (air pump and calibrator), sample jars or bags, sampling incidentals, color metric sampling equipment, sample collection, sample preparation, sample logging, sample storage, transportation of samples to laboratory, subcontractor coordination, field preparation, travel time and vehicle expense.**			
		3.7.1		Full Day (up to and including 10 hours on site)	Per Day	$1,200	
		3.7.2		Half Day (up to and including 5 hours)	Per ½ Day	$600	
4				**PRE-FIELD AND PROJECT IMPLEMENTATION ACTIVITIES (for site assessment)**			
	4.1			Pre-drilling activities to obtain soil boring/monitoring well permits. Project disciplines include the scheduling of field activities with personnel conducting fieldwork and any other support operations, e.g. driller, and site owner/operator. Excludes obtaining soil boring/monitoring well permits due to variations in requirements set forth by different state and local agencies. Refer to Tasks 5.1 and 26.1	Per Drilling Event	$250	
	4.2			Site visit - Project disciplines include labor to inspect site and well borings/monitoring wells, travel time and vehicle expense.	Per Drilling Event	$300	
	4.3			Dig Safe site and mark all utilities. To include site visit to verify markings, if necessary.	Per Event	$400	
4				**PRE-FIELD AND PROJECT IMPLEMENTATION ACTIVITIES (for site assessment)**			
	4.1			Pre-drilling activities to obtain soil boring/monitoring well permits. Project disciplines include the scheduling of field activities with personnel conducting fieldwork and any other support operations, e.g. driller, and site owner/operator. Excludes obtaining soil boring/monitoring well permits due to variations in requirements set forth by different state and local agencies. Refer to Tasks 5.1 and 26.1	Per Drilling Event	$250	

MASSACHUSETTS REIMBURSEMENT FEE SCHEDULE

TASKS				ITEM DESCRIPTION	UOM	PRICE	RSRVD
	4.2			Site visit - Project disciplines include labor to inspect site and well borings/monitoring wells, travel time and vehicle expense.	Per Drilling Event	$300	
	4.3			Dig Safe site and mark all utilities. To include site visit to verify markings, if necessary.	Per Event	$400	
5				**OBTAIN OFF-SITE ACCESS**			
	5.1			Obtain off-site access - Project disciplines to include all labor, material, and documentation required for obtaining road opening/right of entry permits. To include contacting the property owner, local and/or state agencies by telephone with a maximum of four attempts, to coordinate off-site access. Submit a standard one-page access agreement letter and plan depicting proposed locations to the property owner, local and/or state agency. Provide standard installation guidelines and details for the proposed work. Provide copy (ies) of letters of denial to third parties when access denied.	Per Off-Site Agreement	$500	
6				**EXCAVATED SOILS MONITORING/HANDLING/REPORTING & BIOMEDIATION**			
	6.1			**Excavated Soil Field Monitoring - Project disciplines include labor to monitor excavated soils per 310 CMR 4000. Includes PID, oxygen/explosion meter, toxic gas monitoring equipment, sample jars, sampling incidentals, field screening of soil samples, sample collection, sample preparation, sample logging, sample storage, transportation of samples to laboratory, subcontractor coordination, field preparation, travel time, and vehicle expense.**			
		6.1.1		Full Day (up to and including 10 hours on site)	Per Day	$1,000	
		6.1.2		Half Day (up to and including 5 hours)	Per 1/2 Day	$500	
		6.1.3		Shoring Labor/Full Day (up to & including 10 hours on site)	Per Day	$600	
		6.1.4		Shoring Labor/Half Day (up to & including 5 hours on site)	Per Day	$300	
	6.2			Excavated Soils Management - Review laboratory results for waste characterization, prepare Manifest/Bill of Lading, LSP Certification, and contractor/client coordination.	Per BOL	$500	
	6.3			Soil Disposal/Hot Recycling and transportation (maximum 8,000 tons - see Page IX, Paragraph 6.) NOTE: 1 cubic yard equals approximately 1.5 tons of soil.	Per Ton	$40	
	6.4			Soil Disposal/Cold Recycling and transportation (Maximum 8,000 tons - see Page IX, Paragraph 6.) NOTE: 1 cubic yard equals approximately 1.5 tons of soil.	Per Ton	$38	
	6.5			Soil Disposal/Lined landfill and transportation (Maximum 8,000 tons - see Page IX, Paragraph 6.) NOTE: 1 cubic yard equals approximately 1.5 tons of soil.	Per Ton	$22	
		6.5.1		Soil Disposal/Unlined landfill and transportation (Maximum 5,000 tons - see Page IX, Paragraph 6.) NOTE: 1 cubic yard equals approximately 1.5 tons of soil.	Per Ton	$0	
	6.6			Clean, well graded gravel backfill, delivered. NOTE: 1 cubic yard equals approximately 1.5 tons of soil.	Per Ton	$8	
	6.7			Bioremediation - Ex or In-Situ Treatment includes all labor, material, equipment, bacteria, nutrients, water and other ingredients necessary for the bioremediation application. Project disciplines includes labor to conduct the bioremediation application, site supervision, subcontractor coordination, purchase of bioremediation application materials, e.g., bacteria, water, and nutrients, field preparation time and travel time. Volume of soil and/or groundwater to be treated is calculated on a cubic yard basis. NOTE: 1 cubic yard equals approximately 1.5 tons of soil. (See page 1X, Paragraph 6.7)	Cu/Yd	$18.75	
		6.7.1		Bioremediation Feasibility Bench Scale Evaluation and Report for Groundwater	NTE	$2,500	
		6.7.2		Bioremediation Feasibility Bench Scale Evaluation and Report for Groundwater and Soil	NTE	$4,000	
	6.8			Oxygen Filter Socks for Monitoring Wells			
		6.8.1		Oxygen Filter Socks for 2" diameter Monitoring Wells	Per Foot	$25	
		6.8.2		Oxygen Filter Socks for 4" diameter Monitoring Wells	Per Foot	$37.50	
		6.8.3		Oxygen Filter Socks for 8" diameter Monitoring Wells	Per Foot	$65	
		6.8.4		Labor to install Oxygen Filter Sock	NTE	$45	
	6.9			Oxygen Release Powder in Bulk			
		6.9.1		Oxygen Release Powder in Bulk	Per Pound	$10	
		6.10		Oxygen Cylinder (250 cubic feet)	Per Cylinder	$45	

MASSACHUSETTS REIMBURSEMENT FEE SCHEDULE

TASKS				ITEM DESCRIPTION	UOM	PRICE	RSRVD
7				**PORTABLE G.C.**			
	7.1			**Portable G.C. for use on site, including operator and equipment incidentals, e.g. sample jars, standards, syringes, printer, carrier gas, regulator, etc. Includes travel time and vehicle expense within a 50 mile radius. Analyses limited to total volatile hydrocarbons or aromatics in air, water or soil. All sample techniques and methods per DEP Policy WSC 310-91. Provide report containing all printed data and QA/QC procedure.**			
		7.1.1		2 Day Rate (4 hours per day on site)	Per Day	$683	
		7.1.2		Daily Rate (8 hours per day on site)	Per Day	$1,113	
		7.1.3		Weekly Rate (5 or more 8 hour days on site)	Per Week	$5,378	
		7.1.4		Report	NTE	$800	
		7.1.5		**Tedlar Bags**			
			7.1.5.1	1 liter	Each	$16	
			7.1.5.2	3 liter	Each	$19	
			7.1.5.3	5 liter	Each	$21	
	7.2			Passive Soil Gas Sensors, e.g. Gore Sorber or equivalent	Each	At Cost	
8				**DRILLING, SAMPLING AND GROUTING OF SOIL BORINGS**			
	8.1			**Equipment mobilization/demobilization (same for all drilling types, includes drill rig travel and steam cleaner) (Per Task)**			
		8.1.1		1 - 50 miles (radius)	Each	$260	
		8.1.2		51 - 100 miles (radius) or > 100 miles	Each	$350	
		8.1.3		Half Day Drilling Contingency due to, for example, unanticipated soil conditions, inclement weather conditions, drilling mechanical difficulties, injury and safety requiring upgrade.	NTE	$425	
	8.2			**Drilling, Sampling and Grouting of Soil Borings - Project disciplines include labor to conduct borehole logging, field screening, and site supervision. Includes PID, oxygen/explosion meter, toxic gas monitoring equipment, sample jars, sampling incidentals, field screening of soil samples, sample collection, sample preparation, sample logging, sample storage, transportation of samples to laboratory, subcontractor coordination, field preparation, travel time, and vehicle expense.**	NTE		
		8.2.1		Full Day (up to and including 10 hours)	Per Day	$1,000	
		8.2.2		Half Day (up to and including 5 hours)	Per 1/2 Day	$500	
	8.3			**<u>Soil borings and sampling by hollow stem auger</u> (includes drill rig, materials, labor, grouting, drums, drumming labor and restoration of work area to original and decontamination procedures; sawcutting included in per ft. cost, units are per boring and including steam cleaner) (per DEP WSC 310-91.3)**			
		8.3.1		**42" Inside diameter, hollow stem auger/split spoon sample every 5 feet**			
			8.3.1.1	1 - 30 ft. Boring	Per Foot	$15	
			8.3.1.2	31 - 50 ft. Boring	Per Foot	$11	
			8.3.1.3	> 50 ft. Boring	Per Foot	$12.50	
		8.3.2		**42" Inside diameter, hollow stem auger/split spoon continuous sample > 50 feet**			
			8.3.2.1	1 - 30 ft. Boring	Per Foot	$12.50	
			8.3.2.2	31 - 50 ft. Boring	Per Foot	$13.50	
			8.3.2.3	> 50 ft. Boring	Per Foot	$15	
		8.3.3		**63" Inside diameter, hollow stem auger/split spoon sample every 5 feet**			
			8.3.3.1	1 - 30 ft. Boring	Per Foot	$12	
			8.3.3.2	31 - 50 ft. Boring	Per Foot	$13	
			8.3.3.3	> 50 ft. Boring	Per Foot	$14.50	
		8.3.4		**6 1/4" Inside diameter, hollow stem auger/split spoon continuous sample > 50 feet**			
			8.3.4.1	1 - 30 ft. Boring	Per Foot	$14.50	
			8.3.4.2	31 - 50 ft. Boring	Per Foot	$15.50	
			8.3.4.3	> 50 ft. Boring	Per Foot	$17	
	8.4			**Soil borings and sampling by air rotary rig (includes drill rig, materials, labor, grouting, drums, drumming labor, restoration of work area to original and decontamination procedures; sawcutting included in per foot cost, units are per boring and including steam cleaner) (per DEP WSC 310-91)**			
		8.4.1		**42" Diameter, sampling cuttings every 5 ft.**			

MASSACHUSETTS REIMBURSEMENT FEE SCHEDULE

TASKS				ITEM DESCRIPTION	UOM	PRICE	RSRVD
			8.4.1.1	1 - 30 ft. Boring	Per Foot	$15	
			8.4.1.2	31 - 50 ft. Boring	Per Foot	$13	
			8.4.1.3	> 50 ft. Boring	Per Foot	$14.50	
		8.4.2		42" Diameter, continuous sampling of cuttings			
			8.4.2.1	1 - 30 ft. Boring	Per Foot	$14.50	
			8.4.2.2	31 - 50 ft. Boring	Per Foot	$15.50	
			8.4.2.3	> 50 ft. Boring	Per Foot	$17	
		8.4.3		**6" Diameter, sampling cuttings every 5 ft.**			
			8.4.3.1	1 - 30 ft. Boring	Per Foot	$14	
			8.4.3.2	31 - 50 ft. Boring	Per Foot	$15	
			8.4.3.3	> 50 ft. Boring	Per Foot	$16.50	
		8.4.4		**6" Diameter, continuous sampling of cuttings**			
			8.4.4.1	1 - 50 ft. Boring	Per Foot	$16.50	
			8.4.4.2	51 - 100 ft. Boring	Per Foot	$17.50	
			8.4.4.3	> 100 ft. Boring	Per Foot	$19.50	
	8.5			**Rock Coring/Sampling to assess competency of and classify bedrock, (includes drill rig, materials, labor, grouting, drums, drumming labor, restoration of work area to original and decontamination procedures; saw cutting included in per foot cost, units are per boring and including steam cleaner).**			
		8.5.1		HQ 2 7/8" or equivalent	Per Foot	$20	
		8.5.2		PQ 3 7/8" or equivalent	Per Foot	$36	
	8.6			Cone Penetrometer - Including decontamination, instrumentation, operator and field technician, data output and report describing equipment and field procedures.	Per Day	$4,000	
		8.6.1		Materials, e.g. steel drive points, monitor well casing and screen, monitor well caps, sand, bentonite, etc.	Actual	At Cost	
		8.6.2		Mobilization/Demobilization	Each Way	< $300	
		8.6.3		3 Dimensional plume and stratigraphy modeling	NTE	$500	
9				**GROUNDWATER MONITORING WELL INSTALLATION AND SOIL SAMPLING**			
	9.1			**Equipment mobilization/demobilization (same for all drilling types, includes drill rig travel and including steam cleaner)**			
		9.1.1		1 - 50 miles (radius)	Each	$300	
		9.1.2		51 - 100 miles (radius) or > 100 miles	Each	$400	
		9.1.3		Half day drilling contingency (up to and including 5 hours)	NTE	$450	
	9.2			**Groundwater Monitoring well Installation and Soil Sampling - Project Disciplines include labor to conduct borehole logging, field screening, and site supervision. Includes PID, oxygen/explosion meter, toxic gas monitoring equipment, sample jars, sampling incidentals, field screening of soil samples, sample collection, sample preparation, sample logging, sample storage, transportation of samples to laboratory, subcontractor coordination, field preparation, travel time, and vehicle expense. Does not include SVE testing. See Task 14.**			
		9.2.1		Full Day (up to andincluding10 hours)	Per Day	$1,000	
		9.2.2		Half Day (up to and including 5 hours)	Per 1/2 Day	$500	
	9.3			**Monitoring well installation and completion (includes drill rig, material, labor, well development, sawcutting, well head make-up and pad, drums, drumming labor, decontamination procedures, and general restoration included in per foot cost, units are per well) (per DEP WSC 310-91) Does not include air compressor for air rotary drilling. See task code 28.**			
		9.3.1		**2" Monitoring well completed by hollow stem auger/split spoon sample every 5 feet.**			
			9.3.1.1	1 - 30 ft. Well	Per Foot	$30	
			9.3.1.2	31 - 50 ft. Well	Per Foot	$32	
			9.3.1.3	> 50 ft. Well	Per Foot	$34	
		9.3.2		**2" Monitoring well completed by hollow stem auger/split spoon continuous sampling.**			
			9.3.2.1	1 - 30 ft. Well	Per Foot	$32	
			9.3.2.2	31 - 50 ft. Well	Per Foot	$34	
			9.3.2.3	> 50 ft. Well	Per Foot	$36	
		9.3.3		**4" Monitoring well completed by hollow stem auger/split spoon sample every 5 ft.**			
			9.3.3.1	1 - 30 ft. Well	Per Foot	$34	
			9.3.3.2	31 - 50 ft. Well	Per Foot	$36	

MASSACHUSETTS REIMBURSEMENT FEE SCHEDULE

TASKS				ITEM DESCRIPTION	UOM	PRICE	RSRVD
			9.3.3.3	> 50 ft. Well	Per Foot	$38	
		9.3.4		**4" Monitoring well completed by hollow stem auger/split spoon continuous sampling.**			
			9.3.4.1	1 - 30 ft. Well	Per Foot	$36	
			9.3.4.2	31 - 50 ft. Well	Per Foot	$38	
			9.3.4.3	> 50 ft. Well	Per Foot	$40	
		9.3.5		**2" Monitoring Well completed by air rotary (no soil sampling)**			
			9.3.5.1	1 - 30 ft. Well	Per Foot	$35	
			9.3.5.2	31 - 50 ft. Well	Per Foot	$37	
			9.3.5.3	> 50 ft. Well	Per Foot	$39	
		9.3.6		**2" Monitoring Well completed air rotary, sample cuttings every 5 ft.**			
			9.3.6.1	1 - 30 ft. well	Per Foot	$39	
			9.3.5.2	31 - 50 ft. well	Per Foot	$38	
			9.3.6.3	> 50 ft. well	Per Foot	$40	
		9.3.7		**4" Monitoring well completed by air rotary (no soil sampling)**			
			9.3.7.1	1 - 30 ft. Well	Per Foot	$36	
			9.3.7.2	31 - 50 ft. Well	Per Foot	$38	
			9.3.7.3	> 50 ft. Well	Per Foot	$40	
		9.3.8		**4" Monitoring well completed by air rotary, sampling cuttings every 5 ft.**			
			9.3.8.1	1 - 30 ft. Well	Per Foot	$38	
			9.3.8.2	31 - 50 ft. Well	Per Foot	$40	
			9.3.8.3	> 50 ft. Well	Per Foot	$42	
		9.3.9		**4" Monitoring well completed by mud rotary, sampling cuttings every 5 ft.**			
			9.3.9.1	1 - 30 ft. Well	Per Foot	$37	
			9.3.9.2	31 - 50 ft. Well	Per Foot	$39	
			9.3.9.3	> 50 ft. Well	Per Foot	$41	
		9.3.10		**4" Monitoring well completed by mud rotary, continuous sampling of cuttings**			
			9.3.10.1	1 - 30 ft. Well	Per Foot	$39	
			9.3.10.2	31 - 50 ft. Well	Per Foot	$41	
			9.3.10.3	> 50 ft. Well	Per Foot	$43	
		9.3.11		**2" Monitoring well completed by drive & wash, sampling cuttings every 5 feet**			
			9.3.11.1	1 - 30 ft. Well	Per Foot	$35	
			9.3.11.2	31 - 50 ft. Well	Per Foot	$37	
			9.3.11.3	> 50 ft. Well	Per Foot	$39	
		9.3.12		**4" Monitoring well completed by drive & wash, sampling cuttings every 5 feet**			
			9.3.12.1	1 - 30 ft. Well	Per Foot	$37	
			9.3.12.2	31 - 50 ft. Well	Per Foot	$39	
			9.3.12.3	> 50 ft. Well	Per Foot	$41	
	9.4			Hydropunch or equivalent device - Includes the cost of all labor and equipment to perform soil, soil gas and groundwater sample collection. NOTE: 9.4.1 - 9.4.3.3 effective until 6/30/97.	Per Day	$800	
		9.4.1		1 - 10 ft. Well/probe	Per Foot	$10	
			9.4.1.1	Soil sample collection	Per Sample	$5	
			9.4.1.2	Soil gas sample	Per Sample	$5	
			9.4.1.3	Groundwater sample	Per Sample	$15	
		9.4.2		11 - 30 ft. Well/probe	Per Foot	$12	
			9.4.2.1	Soil sample collection	Per Sample	$5	
			9.4.2.2	Soil gas sample	Per Sample	$5	
			9.4.2.3	Groundwater sample	Per Sample	$15	
		9.4.3		> 30 ft. Well/probe	Per Foot	$13.50	
			9.4.3.1	Soil sample collection	Per Sample	$5	
			9.4.3.2	Soil gas sample	Per Sample	$5	
			9.4.3.3	Groundwater sample	Per Sample	$15	
		9.4.4		Materials for soil, soil gas and groundwater sample collection. NOTE: Effective 7/1/97.	Actual	At Cost	
	9.5			Geoprobe or equivalent device - Includes the cost of all labor and equipment to perform soil, soil gas and groundwater sample collection. NOTE: 9.5.1 - 9.5.3.3 effective until 6/30/97	Per Day	$950	
		9.5.1		1 - 10 ft. Well/point	Per Sample	$11	
			9.5.1.1	Soil sample collection	Per Sample	$5	

MASSACHUSETTS REIMBURSEMENT FEE SCHEDULE

TASKS				ITEM DESCRIPTION	UOM	PRICE	RSRVD
			9.5.1.2	Soil gas sample	Per Sample	$5	
			9.5.1.3	Groundwater sample	Per Sample	$15	
		9.5.2		11 - 30 ft. Well/point	Per Foot	$13	
			9.5.2.1	Soil sample collection	Per Sample	$5	
			9.5.2.2	Soil gas sample	Per Sample	$5	
			9.5.2.3	Groundwater sample	Per Sample	$15	
		9.5.3		>30 ft. Well/point	Per Foot	$14.50	
			9.5.3.1	Soil sample collection	Per Sample	$5	
			9.5.3.2	Soil gas sample	Per Sample	$5	
			9.5.3.3	Groundwater sample	Per Sample	$15	
		9.5.4		Materials for soil, soil gas and groundwater sample collection. NOTE: Effective 7/1/97.	Actual	At Cost	
		9.5.5		Bioremediation Injection Pumping & Injection Equipment	Per Day	$1,500	
		9.5.6		Tripod Rig		$1,000	
			9.5.6.1	Materials		At Cost	
	9.6			Vibratory Hand-held Hammer - Includes the cost for all labor and equipment to perform soil, soil gas and groundwater sample collection.	Per Day	$550	
		9.6.1		Materials for soil, soil gas and groundwater sample collection for vibrating hand-held hammer.	Actual	At Cost	
		9.6.2		Hand Auger for soil sample collection.	Per Day	$500	
	9.7			**Well surveying**			
		9.7.1		**Surveying (unlicensed)**			
			9.7.1.1	**1/2 Day (up to and including 5 hours)**			
			9.7.1.1.1	1 - 50 miles (radius)	Per 1/2 Day	$405	
			9.7.1.1.2	51 - 100 miles (radius)	Per 1/2 Day	$485	
			9.7.1.1.3	Survey Calculations & Drafting	L.S.	$520	
			9.7.1.2	**Full Day (up to and including 10 hours)**			
			9.7.1.2.1	1 - 50 miles (radius)	Per Day	$725	
			9.7.1.2.2	51 - 100 miles or > 100 miles (radius)	Per Day	$805	
			9.7.1.2.3	Survey calculations and drafting	NTE	$520	
		9.7.2		**Professional survey (full day)**			
			9.7.2.1	**1/2 Day (up to and including 5 hours)**			
			9.7.2.1.1	1 - 50 miles (radius)	Per 1/2 Day	$565	
			9.7.2.1.2	51 - 100 miles (radius)	Per 1/2 Day	$625	
			9.7.2.1.3	> 100 miles (radius)	Per 1/2 Day	$625	
			9.7.2.1.4	Survey calculations and drafting	NTE	$720	
			9.7.2.2	**Full Day (up to and including 10 hours)**			
			9.7.2.2.1	1 - 50 miles (radius)	Per Day	$1,045	
			9.7.2.2.2	51 - 100 miles (radius)	Per Day	$1,165	
			9.7.2.2.3	> 100 miles (radius)	Per Day	$1,285	
			9.7.2.2.4	Survey calculations and drafting	NTE	$920	
	9.8			Professional Utility Survey - includes above and underground utilities, inverts, reference to NGVD and drafting.	NTE	< $2,501	
10				**MONITORING/RECOVERY WELL DEVELOPMENT (Per DEP WSC 310-91)**			
	10.1			**Equipment mobilization/demobilization (includes oversight, drill rig, labor, materials, travel and steam cleaner) See Tasks 28.18.4 & 28.18.5 for liquids disposal, for example.**			
		10.1.1		1-50 miles (radius)	Each	$300	
		10.1.2		51-100 miles (radius) or > 100 miles	Each	$400	
	10.2			2" Well development cost (include all project disciplines cost)	Per Hour	$81	
	10.3			4" Well development cost (include all project disciplines cost)	Per Hour	$81	
	10.4			6" - 10" Well development cost (include all project disciplines cost)	Per Hour	$255	
	10.5			12" - 26" Well development cost (include all project disciplines cost)	Per Hour	$285	
	10.6			> 26" Well development cost (include all project disciplines cost)	Per Hour	< $351	
11				**GROUNDWATER GAUGING/BAILING AND SAMPLING (per DEP WSC 310-91.6)**			

MASSACHUSETTS REIMBURSEMENT FEE SCHEDULE

TASKS				ITEM DESCRIPTION	UOM	PRICE	RSRVD
	11.1			**Labor and equipment to perform inspection, gauging, sampling of wells and product bailing (if required), all sampling equipment, all gauging equipment, sample jars, sampling incidentals, sample preparation, sample logging, sample storage, transportation of sample to laboratory, travel time and vehicle expenses, instruments, and decontamination materials. Do not combine Tasks for sites with multiple monitoring wells. For example, if 15 monitoring wells are purged and sampled, use Task 11.1.3.2 for all 15 monitoring wells; not 11.1.3.1 for 10 and 11.1.3.2 for the other 5 monitoring wells.**			
		11.1.1		**Disciplines/equipment and travel (1 person)**			
			11.1.1.1	0 - 100 miles or > 100 miles (radius)	NTE/Event	$210	
		11.1.2		**Well gauging (include all related costs)**			
			11.1.2.1	1 to 10 Monitoring Wells	Per Well	$25	
			11.1.2.2	11 to 25 Monitoring Wells	Per Well	$23.20	
			11.1.2.3	26 to 40 Monitoring Wells	Per Well	$22.30	
			11.1.2.4	> 40 Monitoring Wells	Per Well	$21.70	
		11.1.3		**Well purging and sampling (incremental cost over gauging; include all related costs)< 35' deep**			
			11.1.3.1	1 to 10 Monitoring Wells	Per Well	$55	
			11.1.3.2	11 to 25 Monitoring Wells	Per Well	$52	
			11.1.3.3	26 to 40 Monitoring Wells	Per Well	$49	
			11.1.3.4	> 40 Monitoring Wells	Per Well	$46	
		11.1.4		**Well purging and sampling (incremental cost over gauging; include all related costs) > 35' deep**			
			11.1.4.1	1 to 10 Monitoring Wells	Per Well	$60	
			11.1.4.2	11 to 25 Monitoring Wells	Per Well	$56	
			11.1.4.3	26 to 40 Monitoring Wells	Per Well	$52	
			11.1.4.4	.> 40 Monitoring Wells	Per Well	$48	
		11.1.5		Hand Bail NAPL	Per Well	$15	
		11.1.6		Field Filtration of Groundwater Samples	Per Sample	$30	
		11.1.7		Field Measurements (DO, pH, Turbidity, Conductivity, Temperature)	Per Well	$15	
		11.1.8		Micropurging and Sampling (incremental cost OVER gauging; include all Related Costs) <35' deep		N/A	
			11.1.8.1	1 to 10 Monitoring Wells	Per Well	$65	
			11.1.8.2	11 to 25 Monitoring Wells	Per Well	$63	
			11.1.8.3	26 to 40 Monitoring Wells		$61	
			11.1.8.4	> 40 Monitoring Wells	Per Well	$59	
		11.1.9		Micropurging and sampling (incremental cost over gauging; include all related costs > 35' deep)			
			11.1.9.1	1 to 10 Monitoring Wells	Per Well	$85	
			11.1.9.2	11 to 25 Monitoring Wells	Per Well	$83	
			11.1.9.3	26 to 40 Monitoring Wells	Per Well	$81	
			11.1.9.4	> 40 Monitoring Wells	Per Well	$79	
	11.2			**Groundwater Monitoring Report, first event (includes sampling data and analysis) NOTE: Tasks 11.2 - 11.3.3 effective until 6/30/97. Effective 7/1/97 see Tasks 2.18.2, 2.19.1, 2.20, 2.21.2 and 2.22.**			
		11.2.1		1 to 10 Monitoring Wells	Each	$750	
		11.2.2		1 to 25 Monitoring Wells	Each	$800	
		11.2.3		1 to 40 or more Monitoring Wells	Each	$850	
	11.3			**Groundwater Monitoring Report, subsequent events**			
		11.3.1		1 to 10 Monitoring Wells	Each	$400	
		11.3.2		1 to 25 Monitoring Wells	Each	$450	
		11.3.3		1 to 40 or more Monitoring Wells	Each	$500	
	11.4			Additional Person to Sample Monitoring Wells in Road Due to Safety Considerations	Per Hour	$35	
	11.5			Disposable Bailer with VOC Sampler	Each	$6.50	
	11.6			**Surface Water and/or Sediment Sampling**			
		11.6.1		Labor	Per Event	< $2,001	
		11.6.2		Equipment	Actual	At Cost	
		11.6.3		Catch Basin Sampling	Per Event	$450	
	11.7			Ground Penetrating Radar Survey	NTE	$1,200	
12				**AQUIFER PUMP TEST**			

MASSACHUSETTS REIMBURSEMENT FEE SCHEDULE

TASKS				ITEM DESCRIPTION	UOM	PRICE	RSRVD
	12.1			**Perform an 8 hour step and/or a 12, 24 or 48-hour constant discharge pumping test** **Subtasks shall include the following:** *** 2 Personnel to be on site at all times** *** Maximum of 10 data points to be evaluated** *** Equipment travel (within a given radius)** *** Equipment mobilization/demobilization** *** Disciplines travel (within a given radius)** *** Field preparation (inc. all material and equipment)** *** 8 hour step discharge test** *** 12/24/48-hour constant discharge test with recovery** *** Coordinate storage of extracted groundwater (if required)** *** Test analysis, documentation and report** *** Project disciplines cost**			
		12.1.1		**Aquifer Pump Test**			
			12.1.1.1	Step discharge (up to 8 hours)	NTE	$2,220	
			12.1.1.2	12 hour constant discharge	NTE	$2,900	
			12.1.1.3	24 hour constant discharge	NTE	$4,500	
			12.1.1.4	48 hour constant discharge	NTE	$8,155	
				NOTE: For storage, disposal, or treatment operation, the user is referred to sections: **7.0 Portable GC** **17.0 Permitting** **18.52 PVC Pipe** **23.4.3 Carbon Replacement** **23.10.5 Disposal** **25.4.10 Disposal** **27.0 Laboratory Analysis** **28.1.6 Oil Water Separator** **28.11 Discharge hose** **28.18.2 Liquid Phase Carbon Adsorber** **28.18.4 Disposal** **28.18.4.1 Frac Tank**			
13				**RISING OR FALLING HEAD (SLUG) TEST**			
	13.1			**Perform rising or falling head (slug) test;** **Subtasks shall include the following:** *** Equipment mobilization/demobilization and decontamination** *** Equipment set-up and breakdown** *** Disciplines travel** *** Field preparation (inc. all material and equipment)** *** Site Cleanup** *** Data evaluation, documentation and report** *** Project disciplines cost**			
		13.1.1		Full Day (8 hours on site)	Per Day	$1,925	
		13.1.2		Half Day (4 hours on site)	Per Day	$1,170	
14				**SOIL VAPOR EXTRACTION/AIR SPARGING TESTING**			
	14.1			**Labor and equipment to perform VES and/or air sparge testing;** **Subtasks shall include the following:** *** Equipment mobilization/demobilization** *** Disciplines travel (within a given radius)** *** Field preparation (inc. all material and equipment)** *** Data evaluation, documentation and report** *** Permitting** *** Project disciplines cost** *** Equipment Rental, found under Task 28** *** Laboratory Analyses found under Task 27** *** Vapor transport modeling** *** Travel time and vehicle expense** *** Fluids disposal found under Tasks 28.18.4 and 28.18.5, for example**			
		14.1.1		Perform extraction test with air emissions treatment (< 10" Hg)	NTE	$3,835	
			14.1.1.1	Perform High vacuum extraction test with air emissions treatment (> 10" Hg)	NTE	$4,800	
		14.1.2		Perform extraction test without air emissions treatment	NTE	$3,220	
		14.1.3		Conduct sparge test in conjunction w/SVE test with air emissions treatment	NTE	$4,035	
			14.1.3.1	Conduct sparge test in conjunction w/SVE test without treatment	NTE	$3,535	
			14.1.3.2	Conduct sparge test only w/existing SVE system	NTE	$2,920	
15				**REMEDIATION FEASIBILITY STUDIES (NET PRESENT VALUE)**			
	15.1			**Feasibility study**			

MASSACHUSETTS REIMBURSEMENT FEE SCHEDULE

TASKS				ITEM DESCRIPTION	UOM	PRICE	RSRVD
		15.1.1		NPV analysis on 2 options	NTE	$400	
		15.1.2		NPV analysis for each additional item	NTE	$150	
16				**REMEDIAL ACTION PLANS**			
	16.1			**Remedial action plan, 310 CMR 40.0861 in addition to 40.0850**			
		16.1.1		Excavation w/off-site disposal (soil)	NTE	$450	
		16.1.2		Excavation w/above-ground treatment (soil)	NTE	$800	
			16.1.2.1	Soil Vapor Extraction (< 10" Hg)	NTE	$1,000	
			16.1.2.2	Thermal destruction	NTE	$1,000	
			16.1.2.3	Bioremediation	NTE	$1,000	
		16.1.3		Soil Vapor Extraction (in-situ < 10" Hg)	NTE	$1,400	
		16.1.4		Soil Vapor Extraction (in situ > 10" Hg)	NTE	$1,900	
		16.1.5		Free product recovery	NTE	$800	
		16.1.6		Groundwater pump and treat	NTE	$1,600	
		16.1.7		Groundwater air-sparging	NTE	$1,600	
		16.1.8		Bioremediation (in-situ)	NTE	$1,600	
	16.2			**Reduction factor for remedial plan technologies**			
		16.2.1		Reduction factor for combination of 2 technologies	Factor	0.35	
		16.2.2		Reduction factor for combination of 3 technologies	Factor	0.35	
		16.2.3		Reduction factor for limited scope action plan	Factor	0.35	
		16.2.4		Lease vs. Purchase analysis per 503 CMR 2.10(c)	NTE	$300	
	16.3			Bid Specification Preparation Time effective 7/1/97.	NTE	< $3,001	
	16.4			Remedy Implementation Plan per 310 CMR 40.0874	Each	$3,000	
	16.5			As-Built Construction Report per 300 CMR 40.0875	Each	$1,000	
	16.6			Final Inspection Report per 310 CMR 40.0878	Each	$1,400	
17				**REMEDIATION PERMITTING**			
	17.1			**Discharge permits preparation, acquisition, and monitoring. Other permit preparation. Does not include cost of permits.**			
		17.1.1		**NPDES**			
			17.1.1.1	NPDES - Permit Exclusion	Each	$300	
			17.1.1.1.1	Initial Discharge Monitoring Report	Each	$345	
			17.1.1.1.2	Monthly Discharge Monitoring Report	Each	$275	
			17.1.1.1.2.1	Remedial Monitoring Transmittal Form – Monthly	Each	$150	
			17.1.1.1.2.2	Remedial Monitoring Transmittal Form – Quarterly	Each	$450	
			17.1.1.1.3	Quarterly Discharge Monitoring Report	Each	$345	
			17.1.1.1.4	**NPDES Permit Exclusion Remediation Dewatering - project disciplines include labor to monitor groundwater remediation pumping and treatment equipment per NPDES Permit Exclusion. Includes PID, oxygen explosion meter, toxic gas monitoring equipment, sample jars, sampling incidentals, field screening of water samples, transportation of samples to laboratory, subcontractor coordination, field preparation and travel time.**			
			17.1.1.1.4.1	Full Day (up to and including 25.5 hours of labor on site with 2 hour overlap between shifts)	Per Day	$1,300	
			17.1.1.2	NPDES - Formal Application	NTE	$1,400	
			17.1.1.3	MADEP - Surface Water Discharge Permit	NTE	$1,400	
			17.1.1.2.2	Monthly Discharge Monitoring Report		$450	
		17.1.2		Industrial discharge/POTW/MWRA Permit	NTE	$1,800	
		17.1.3		Groundwater discharge permit	NTE	$1,000	
		17.1.4		Air Emissions	NTE	$800	
		17.1.5		Building Permit	Each	$400	
		17.1.6		RADDS	Each	$800	
		17.1.7		Wetlands Approval and/or Rivers Protection Act - Includes DEP required sign	Each	$3,400	
		17.1.8		Local Discharge Permit	Each	$800	
		17.1.9		Electrical Permit	Each	$200	
		17.1.10		Road Opening Permit	Each	$600	
			17.1.10.1	Prepare and Submit Traffic Plan to the State Department of Public Works	Each	$500	
		17.1.11		Dye Test to Confirm Outfall Location	Each	$400	
		17.1.12		Natural Gas Utility Connection Permit	Each	$800	

MASSACHUSETTS REIMBURSEMENT FEE SCHEDULE

TASKS				ITEM DESCRIPTION	UOM	PRICE	RSRVD
18				**TRENCHING AND INSTALLATION OF UNDERGROUND PIPING AND EQUIPMENT AREA/ENCLOSURE FOR VES, AIR SPARGING AND/ OR GROUNDWATER EXTRACTION SYSTEM - Project Disciplines include labor to conduct field screening and site supervision. Includes PID, oxygen/explosion meter, toxic gas monitoring equipment, sample jars, sampling incidentals, field screening of soil samples, sample collection, sample preparation, sample logging, sample storage, transportation of samples to laboratory, subcontractor coordination, field preparation, travel time, and vehicle expense.**			
	18.1			Project disciplines cost - Full Day (up to and including 10 hours) (Supervision and oversight)	Per Day	$1,000	
	18.2			Project disciplines cost - Half Day (up to and including 5 hours) (Supervision and oversight)	Per 1/2 Day	$500	
	18.3			**Interceptor trench (< = 6 feet wide) NOTE: Tasks 18.3 -18.8.6 effective until 6/1/97. After 7/1/97 three (3) competitive bids may be obtained for work and materials covered by these tasks in place of the unit price(s) or used in conjunction with the unit price(s).**			
		18.3.1		0 to 5 ft. deep with min length of 100 ft. (including labor)	LF	$27	
		18.3.2		6 to 10 ft. deep with min length of 100 ft. (including labor)	LF	$50	
		18.3.3		11 to 15 ft. deep with min length of 100 ft. (including labor)	LF	$83	
		18.3.4		**Additional costs**			
			18.3.4.1	**Concrete patch**			
			18.3.4.1.1	6 inches deep	SF	$4.25	
			18.3.4.1.2	4 inches deep	SF	$4	
			18.3.4.2	**Asphalt patch (hot)**			
			18.3.4.2.1	4 inches deep	SF	$2	
			18.3.4.2.2	2 inches deep	SF	$1.75	
			18.3.4.3	Cold patch (2 inches)	SF	$1.75	
			18.3.4.4	Concrete curbing	LF	$24	
			18.3.4.5	Crush blend for asphalt sub base - Delivered	Ton	$15	
			18.3.4.6	**Stone - Delivered**			
			18.3.4.6.1	< 1/2" diameter	Ton	$16	
			18.3.4.6.2	> 1/2" – ¾" diameter	Ton	$16	
			18.3.4.6.3	3/4" diameter	Ton	$14.50	
			18.3.4.6.4	> 3/4" diameter	Ton	$13	
			18.3.4.7	Clean Fill - Delivered	Ton	$13	
			18.3.4.8	Trench box/pneumatic shoring	Per Day	$600	
	18.4			**Utility trench - including sawcutting, trenching, inspection, backfill and compaction (2 feet wide, minimum 36" burial)**			
		18.4.1		0 to 100 ft. long	LF	$22	
		18.4.2		Over 100 ft. long	LF	$20	
		18.4.3		**Additional costs**			
			18.4.3.1	**Concrete patch**			
			18.4.3.1.1	6 inches deep	SF	$4.25	
			18.4.3.1.2	4 inches deep	SF	$4	
			18.4.3.2	**Asphalt patch (hot)**			
			18.4.3.2.1	4 inches deep	SF	$2	
			18.4.3.2.2	2 inches deep	SF	$1.75	
			18.4.3.3	Cold patch (2 inches)	SF	$1.75	
			18.4.3.4	Concrete curbing	LF	$24	
			18.4.3.5	Crush blend for asphalt sub base - Delivered	Cu/Yd	$15	
			18.4.3.6	**Stone - Delivered**			
			18.4.3.6.1	< ½" diameter	Ton	$16	
			18.4.3.6.2	> ½" diameter	Ton	$16	
			18.4.3.7	Clean well graded gravel back fill, delivered. Note: 1 cubic yard equals approximately 1.5 tons of soil.	Ton	$13	
	18.5			**Piping and conduits**			
		18.5.1		**Electrical**			
			18.5.1.1	3/4 " rigid galvanized conduit and installation	LF	$3.50	
			18.5.1.2	1 " rigid galvanized conduit and installation	LF	$3.75	
			18.5.1.3	2 " rigid galvanized conduit and installation	LF	$6	
			18.5.1.4	Control Wire	LF	At Cost	
			18.5.1.5	Power Wire	LF	At Cost	
		18.5.2		**Non - electrical**			
			18.5.2.1	1.5 " PVC SCH 40 pipe and installation	LF	$2.61	

MASSACHUSETTS REIMBURSEMENT FEE SCHEDULE

TASKS				ITEM DESCRIPTION	UOM	PRICE	RSRVD
			18.5.2.2	2 " PVC SCH 40 pipe and installation	LF	$3.25	
			18.5.2.3	3 " PVC SCH 40 pipe and installation	LF	$5.60	
			18.5.2.4	4 " PVC SCH 40 pipe and installation	LF	$7.94	
			18.5.2.5	6 " PVC SCH 40 pipe and installation	LF	$8.20	
			18.5.2.6	2 " rubber pneumatic hose and installation	LF	$3.15	
			18.5.2.7	1 " rubber pneumatic hose and installation	LF	$3.25	
			18.5.2.8	1.25 " rubber pneumatic hose and installation	LF	$3.45	
			18.5.2.9	Copper trace wire, 10 gauge, and installation	LF	$0.28	
			18.5.2.10	2 " K type copper line and installation (coiled)	LF	$2.30	
		18.5.3		1 " SCH 80 PVC pipe and installation	LF	$3.45	
		18.5.4		2 " SCH 80 PVC pipe and installation	LF	$5	
		18.5.5		3 " SCH 80 PVC pipe and installation	LF	$5.85	
		18.5.6		4 " SCH 80 PVC pipe and installation	LF	$6.70	
		18.5.7		**Pitless adaptor and installation**			
			18.5.7.1	2 " outlet diameter	Per Well	$175	
			18.5.7.2	4 " outlet diameter	Per Well	$275	
			18.5.7.3	6 " outlet diameter	Per Well	$325	
			18.5.7.4	8 " outlet diameter	Per Well	$450	
	18.6			**Infiltration gallery (prices same as interceptor trench)**			
	18.7			**Remediation equipment compound and/or shed, including explosion proof lights & heater**			
		18.7.1		< 80 square foot - flat roof	Per Shed	$6,150	
		18.7.2		< 80 square foot - gable roof	Per Shed	$6,220	
		18.7.3		80 - 120 square foot - flat roof	Per Shed	$6,650	
		18.7.4		80 - 120 square foot - gable roof	Per Shed	$6,975	
		18.7.5		121 - 150 square foot - flat roof	Per Shed	$7,175	
		18.7.6		121 - 150 square foot - gable roof	Per Shed	$7,375	
		18.7.7		151 - 240 square foot - flat roof	Per Shed	$8,380	
		18.7.8		151 - 240 square foot - gable roof	Per Shed	$8,680	
		18.7.9		> 240 square foot - flat roof	Per Shed	$10,140	
		18.7.10		> 240 square foot - gable roof	Per Shed	$10,520	
		18.7.11		**Equipment pad**			
			18.7.11.1	**Concrete slab (6" deep, reinforced with wire mesh)**			
			18.7.11.1.1	< 80 square foot	SF	$7.50	
			18.7.11.1.2	80 - 120 square foot	SF	$5.80	
			18.7.11.1.3	121 - 150 square foot	SF	$4.75	
			18.7.11.1.4	151 - 240 square foot	SF	$4	
			18.7.11.1.5	> 240 square foot	SF	$3.75	
			18.7.11.2	Cast in place footing (1' x 1' reinforced concrete deadman)	LF	$14	
			18.7.11.3	Concrete berm (where required)	LF	$24	
		18.7.12		**Equipment compound fencing**			
			18.7.12.1	Fencing - 6 foot high stockade	LF	$20	
			18.7.12.2	Fencing - 6 foot high chain link	LF	$18	
			18.7.12.3	Fencing - Gates	LF	$25	
	18.8			**Monitoring well manholes and recovery well manways and well head make up (supply and install on well)**			
		18.8.1		Recovery well manway and well head make up, not done in conjunction with task (includes concrete pad and traffic rated manhole)	Per Well	$1,400	
		18.8.2		Recovery well manway and well head make up, done in conjunction with task (includes concrete pad and traffic rated manhole)	Per Well	$800	
		18.8.3		Monitoring well manhole (not done in conjunction with task), includes concrete pad and traffic rated manhole.	Per Well	$250	
		18.8.4		Monitoring well manhole (done in conjunction with task), includes concrete pad and traffic rated manhole.	Per Well	$125	
		18.8.5		Precast concrete access manway and well head make up (with watertight manhole)	Per Well	$2,000	
		18.8.6		Concrete block access manway and well head makeup (with watertight manhole)	Per Well	$2,300	
19				**INSTALLATION AND SOIL SAMPLING OF VAPOR EXTRACTION, GROUNDWATER EXTRACTION OR AIR SPARGING WELLS**			
	19.1			**Equipment mobilization/demobilization (same for all drill rig types, includes drill rig travel)**			
		19.1.1		1 - 50 miles (radius)	Each	$300	
		19.1.2		51 - 100 miles (radius)	Each	$400	

MASSACHUSETTS REIMBURSEMENT FEE SCHEDULE

TASKS				ITEM DESCRIPTION	UOM	PRICE	RSRVD
		19.1.3		> 100 miles (radius)	Each	$550	
	19.2			**Installation and Soil Sampling of Vapor Extraction, Groundwater Extraction or Air Sparging Wells - Project Disciplines include labor to conduct borehole logging, field screening, and site supervision. Includes PID, oxygen/explosion meter, toxic gas monitoring equipment, sample jars, sampling incidentals, field screening of soil samples, sample collection, sample preparation, sample logging, sample storage, transportation of samples to laboratory, subcontractor coordination, field preparation, travel time, and vehicle expense**			
		19.2.1		Full Day (up to and including 10 hours)	L.S.	$1,000	
		19.2.2		Half Day (up to and including 5 hours)	L.S.	$500	
	19.3			**Installation of soil vapor extraction or sparging well by hollow stem auger. Use overall depth of well to determine applicable Task.**			
		19.3.1		2" Extraction well completed by hollow stem auger, sampling cuttings every 5 feet.			
			19.3.1.1	0 - 30 ft. Well	Per Foot	$30	
			19.3.1.2	31 - 50 ft. Well	Per Foot	$32	
			19.3.1.3	> 50 ft. Well	Per Foot	$34	
		19.3.2		**2" Extraction well completed by hollow stem auger, continuous sampling.**			
			19.3.2.1	0 - 30 ft. Well	Per Foot	$32	
			19.3.2.2	31 - 50 ft. Well	Per Foot	$34	
			19.3.2.3	> 50 ft. Well	Per Foot	$36	
		19.3.3		**2" Sparge well completed by hollow stem auger, sampling cuttings every 5 feet.**			
			19.3.3.1	0 - 30 ft. Well	Per Foot	$30	
			19.3.3.2	31 - 50 ft. Well	Per Foot	$32	
			19.3.3.3	> 50 ft. Well	Per Foot	$34	
		19.3.4		**2" Sparge well completed by hollow stem auger, continuous sampling.**			
			19.3.4.1	0 - 30 ft. Well	Per Foot	$32	
			19.3.4.2	31 - 50 ft. Well	Per Foot	$34	
			19.3.4.3	> 50 ft. Well	Per Foot	$36	
		19.3.5		**4" Extraction well completed by hollow stem auger, sample every 5 feet.**			
			19.3.5.1	0 - 30 ft. Well	Per Foot	$36	
			19.3.5.2	31 - 50 ft. Well	Per Foot	$38	
			19.3.5.3	> 50 ft. Well	Per Foot	$40	
		19.3.6		**4" Extraction well completed by hollow stem auger, continuous sampling.**			
			19.3.6.1	0 - 30 ft. Well	Per Foot	$38	
			19.3.6.2	31 - 50 ft. Well	Per Foot	$40	
			19.3.6.3	> 50 ft. Well	Per Foot	$42	
		19.3.7		**6" Extraction well completed by hollow stem auger, sample every 5 feet.**			
			19.3.7.1	0 - 30 ft. Well	Per Foot	$42	
			19.3.7.2	31 - 50 ft. Well	Per Foot	$44	
			19.3.7.3	> 50 ft. Well	Per Foot	$46	
		19.3.8		**6" Extraction well completed by hollow stem auger, continuous sampling.**			
			19.3.8.1	0 - 30 ft. Well	Per Foot	$44	
			19.3.8.2	31 - 50 ft. Well	Per Foot	$46	
			19.3.8.3	> 50 ft. Well	Per Foot	$48	
		19.3.9		**8" Extraction well completed by hollow stem auger, sample every 5 feet.**			
			19.3.9.1	0 - 30 ft. Well	Per Foot	$47	
			19.3.9.2	31 - 50 ft. Well	Per Foot	$49	
			19.3.9.3	> 50 ft. Well	Per Foot	$51	
		19.3.10		**8" Extraction well completed by hollow stem auger, continuous sampling.**			
			19.3.10.1	0 - 30 ft. Well	Per Foot	$49	
			19.3.10.2	31 - 50 ft. Well	Per Foot	$51	
			19.3.10.3	> 50 ft. Well	Per Foot	$53	
	19.4			**Installation of extraction or sparging well by air rotary. Use overall depth of well to determine applicable Task.**			

MASSACHUSETTS REIMBURSEMENT FEE SCHEDULE

TASKS				ITEM DESCRIPTION	UOM	PRICE	RSRVD
		19.4.1		**2" Extraction well completed by air rotary, sampling cuttings every 5 feet**			
			19.4.1.1	0 - 30 ft. Well	Per Foot	$32	
			19.4.1.2	31 - 50 ft. Well	Per Foot	$34	
			19.4.1.3	> 50 ft. Well	Per Foot	$36	
		19.4.2		**2" Extraction well completed by air rotary, no sampling**			
			19.4.2.1	0 - 30 ft. Well	Per Foot	$30	
			19.4.2.2	31 - 50 ft. Well	Per Foot	$32	
			19.4.2.3	> 50 ft. Well	Per Foot	$34	
		19.4.3		**2" Sparge well completed by air rotary, sampling cuttings every 5 feet**			
			19.4.3.1	0 - 30 ft. Well	Per Foot	$32	
			19.4.3.2	31 - 50 ft. Well	Per Foot	$34	
			19.4.3.3	> 50 ft. Well	Per Foot	$36	
		19.4.4		**2" Sparge well completed by air rotary, no sampling**			
			19.4.4.1	0 - 30 ft. Well	Per Foot	$30	
			19.4.4.2	31 - 50 ft. Well	Per Foot	$32	
			19.4.4.3	> 50 ft. Well	Per Foot	$34	
		19.4.5		**4" Extraction well completed by air rotary, sampling cuttings every 5 feet**			
			19.4.5.1	0 - 30 ft. Well	Per Foot	$34	
			19.4.5.2	31 - 50 ft. Well	Per Foot	$36	
			19.4.5.3	> 50 ft. Well	Per Foot	$38	
		19.4.6		**4" Extraction well completed by air rotary, no sampling**			
			19.4.6.1	0 - 30 ft. Well	Per Foot	$34	
			19.4.6.2	31 - 50 ft. Well	Per Foot	$38	
			19.4.6.3	> 51 ft. Well	Per Foot	$40	
		19.4.7		**6" Extraction well completed by air rotary, sampling cuttings every 5 feet.**			
			19.4.7.1	1 - 30 ft. Well	Per Foot	$42	
			19.4.7.2	31 - 50 ft. Well	Per Foot	$44	
			19.4.7.3	> 51 ft. Well	Per Foot	$46	
		19.4.8		**6" Extraction well completed by air rotary, no sampling.**			
			19.4.8.1	1 - 30 ft. Well	Per Foot	$40	
			19.4.8.2	31 - 50 ft. Well	Per Foot	$42	
			19.4.8.3	> 51 ft. Well	Per Foot	$44	
		19.4.9		**8" Extraction well completed by air rotary, sampling cuttings every 5 feet.**			
			19.4.9.1	1 - 30 ft. Well	Per Foot	$48	
			19.4.9.2	31 - 50 ft. Well	Per Foot	$50	
			19.4.9.3	> 51 ft. Well	Per Foot	$52	
		19.4.10		**8" Extraction well completed by air rotary, no sampling.**			
			19.4.10.1	1 - 30 ft. Well	Per Foot	$46	
			19.4.10.2	31 - 50 ft. Well	Per Foot	$48	
			19.4.10.3	> 51 ft. Well	Per Foot	$50	
			19.4.10.1	1 - 30 ft. Well	Per Foot	$46	
		19.4.11		**2" Extraction well completed by cable tool rig, no sampling**			
			19.4.11.1	1 - 30 ft. Well	Per Foot	$27	
			19.4.11.2	31 - 50 ft. Well	Per Foot	$28	
			19.4.11.3	> 51 ft. Well	Per Foot	$29	
		19.4.12		**2" Extraction well completed by cable tool rig, sampling cuttings every 5 feet**			
			19.4.12.1	1 - 30 ft. Well	Per Foot	$29	
			19.4.12.2	31 - 50 ft. Well	Per Foot	$30	
			19.4.12.3	> 51 ft. Well	Per Foot	$31	
		19.4.13		**4" Extraction well completed by cable tool rig, no sampling**			
			19.4.13.1	1 - 30 ft. Well	Per Foot	$31	
			19.4.13.2	31 - 50 ft. Well	Per Foot	$32	
			19.4.13.3	> 51 ft. Well	Per Foot	$33	
		19.4.14		**4" Extraction well completed by cable tool rig, sample cutting every 5 feet**			
			19.4.14.1	1 - 30 ft. Well	Per Foot	$33	
			19.4.14.2	31 - 50 ft. Well	Per Foot	$34	
			19.4.14.3	> 51 ft. Well	Per Foot	$35	
		19.4.15		**6" Extraction well completed by cable tool rig, no sampling**			
			19.4.15.1	1 - 30 ft. Well	Per Foot	$37	

MASSACHUSETTS REIMBURSEMENT FEE SCHEDULE

TASKS				ITEM DESCRIPTION	UOM	PRICE	RSRVD
			19.4.15.2	31 - 50 ft. Well	Per Foot	$38	
			19.4.15.3	> 51 ft. Well	Per Foot	$39	
		19.4.16		**6" Extraction well completed by cable tool rig, sampling cuttings every 5 feet**			
			19.4.16.1	1 - 30 ft. Well	Per Foot	$39	
			19.4.16.2	31 - 50 ft. Well	Per Foot	$40	
			19.4.16.3	> 51 ft. Well	Per Foot	$41	
		19.4.17		**8" Extraction well completed by cable tool rig, no sampling**			
			19.4.17.1	1 - 30 ft. Well	Per Foot	$43	
			19.4.17.2	31 - 50 ft. Well	Per Foot	$44	
			19.4.17.3	> 51 ft. Well	Per Foot	$45	
		19.4.18		**8" Extraction well completed by cable tool rig, sampling cuttings every 5 feet**			
			19.4.18.1	1 - 30 ft. Well	Per Foot	$45	
			19.4.18.2	31 - 50 ft. Well	Per Foot	$46	
			19.4.18.3	> 51 ft. Well	Per Foot	$47	
	19.5			**Installation of extraction well by mud rotary. Use overall depth of well to determine applicable Task.**			
		19.5.1		**4" Extraction well completed by mud rotary, no sampling**			
			19.5.1.1	1 - 30 ft. Well	Per Foot	$75	
			19.5.1.2	31 - 50 ft. Well	Per Foot	$77	
			19.5.1.3	> 51 ft. Well	Per Foot	$79	
		19.5.2		**6" Extraction well completed by mud rotary, no sampling**			
			19.5.2.1	1 - 30 ft. Well	Per Foot	$90	
			19.5.2.2	31 - 50 ft. Well	Per Foot	$95	
			19.5.2.3	> 51 ft. Well	Per Foot	$94	
		19.5.3		**8" Extraction well completed by mud rotary, no sampling**			
			19.5.3.1	1 - 30 ft. Well	Per Foot	$125	
			19.5.3.2	31 - 50 ft. Well	Per Foot	$127	
			19.5.3.3	> 51 ft. Well	Per Foot	$129	
		19.5.4		**12" Extraction well completed by mud rotary, no sampling**			
			19.5.4.1	1 - 30 ft. Well	Per Foot	$245	
			19.5.4.2	31 - 50 ft. Well	Per Foot	$247	
			19.5.4.3	> 51 ft. Well	Per Foot	$249	
		19.5.5		**24 - 26" Extraction well completed by mud rotary, no sampling**			
			19.5.5.1	1 - 30 ft. Well	Per Foot	$280	
			19.5.5.2	31 - 50 ft. Well	Per Foot	$282	
			19.5.5.3	> 51 ft. Well	Per Foot	$284	
	19.6			**Well head make up; pad installation for SVE well (all sawcutting included)**			
		19.6.1		2 "	Per Well	$100	
		19.6.2		4 "	Per Well	$135	
		19.6.3		6 "	Per Well	$175	
		19.6.4		8 "	Per Well	$225	
	19.7			**Well head make; pad installation for GW extraction well (all sawcutting included)**			
		19.7.1		4 "	Per Well	$100	
		19.7.2		6 "	Per Well	$135	
		19.7.3		8 "	Per Well	$175	
		19.7.4		12 "	Per Well	$275	
		19.7.5		26 "	Per Well	$750	
	19.8			**Well head make up; pad installation for air sparging well (all sawcutting included)**			
		19.8.1		2 "	Per Well	$100	
20				**INSTALLATION OF UTILITIES FOR REMEDIATION SYSTEMS ONLY**			
	20.1			Work shall be site specific.. Remediation systems to be metered separately from all other uses. Reimbursement per utility.	Per Utility	< $2,700	
	20.2			Purchase and Installation of electrical circuit breaker and control panel for remediation system		< $5,000	

MASSACHUSETTS REIMBURSEMENT FEE SCHEDULE

TASKS				ITEM DESCRIPTION	UOM	PRICE	RSRVD
21				**PURCHASE AND INSTALLATION OF GROUNDWATER AND NAPL PUMPING SYSTEMS. NOTE: Tasks 21-21.12 effective until 6/30/97. After 7/1/97 three (3) competitive bids may be obtained for work and/or materials covered by these tasks in place of the unit price(s), or used in conjunction with the unit price(s).**			
	21.1			**Submersible Groundwater Pumping Equipment, Electric with Controls**			
		21.1.1		Nominal Flow Rate, 5 gpm	Per Pump	$2,800	
		21.1.2		Nominal Flow Rate, 7 gpm	Per Pump	$3,100	
		21.1.3		Nominal Flow Rate, 10 gpm	Per Pump	$3,400	
		21.1.4		Nominal Flow Rate, 16 gpm	Per Pump	$3,900	
		21.1.5		Nominal Flow Rate, 25 gpm	Per Pump	$4,500	
		21.1.6		Nominal Flow Rate, 40 gpm	Per Pump	$4,900	
		21.1.7		Nominal Flow Rate, 60 gpm	Per Pump	$5,300	
		21.1.8		Nominal Flow Rate, 75 gpm	Per Pump	$5,750	
	21.2			**Submersible Groundwater Pumping Equipment, Pneumatic with Controls**			
		21.2.1		Nominal Flow Rate, 5 gpm	Per Pump	$1,500	
		21.2.2		Nominal Flow Rate, 7 gpm	Per Pump	$1,800	
		21.2.3		Nominal Flow Rate, 10 gpm	Per Pump	$1,950	
		21.2.4		Nominal Flow Rate, 16 gpm	Per Pump	$2,200	
		21.2.5		Nominal Flow Rate, 25 gpm	Per Pump	$2,450	
		21.2.6		Nominal Flow Rate, 40 gpm	Per Pump	$2,600	
		21.2.7		Nominal Flow Rate, 60 gpm	Per Pump	$2,700	
		21.2.8		Nominal Flow Rate, 75 gpm	Per Pump	$2,900	
	21.3			**Surface Mounted Groundwater Pumping Equipment, Electric with Controls**			
		21.3.1		Nominal Flow Rate, 5 gpm	Per Pump	$1,500	
		21.3.2		Nominal Flow Rate, 7 gpm	Per Pump	$1,750	
		21.3.3		Nominal Flow Rate, 10 gpm	Per Pump	$2,200	
		21.3.4		Nominal Flow Rate, 16 gpm	Per Pump	$2,600	
		21.3.5		Nominal Flow Rate, 25 gpm	Per Pump	$3,000	
		21.3.6		Nominal Flow Rate, 40 gpm	Per Pump	$3,400	
		21.3.7		Nominal Flow Rate, 60 gpm	Per Pump	$3,800	
		21.3.8		Nominal Flow Rate, 75 gpm	Per Pump	$4,200	
	21.4			**Surface Mounted Groundwater Pumping Equipment, Pneumatic with Controls**			
		21.4.1		Nominal Flow Rate, 5 gpm	Per Pump	$900	
		21.4.2		Nominal Flow Rate, 7 gpm	Per Pump	$1,150	
		21.4.3		Nominal Flow Rate, 10 gpm	Per Pump	$1,250	
		21.4.4		Nominal Flow Rate, 16 gpm	Per Pump	$1,400	
		21.4.5		Nominal Flow Rate, 25 gpm	Per Pump	$1,550	
		21.4.6		Nominal Flow Rate, 40 gpm	Per Pump	$1,700	
		21.4.7		Nominal Flow Rate, 60 gpm	Per Pump	$1,850	
		21.4.8		Nominal Flow Rate, 75 gpm	Per Pump	$2,000	
	21.5			**Submersible NAPL Pump Equipment, Electric with Controls**			
		21.5.1		Nominal Flow Rate, 5 gpm	Per Pump	$3,200	
		21.5.2		Nominal Flow Rate, 10 gpm	Per Pump	$3,800	
	21.6			**Submersible NAPL Pump Equipment, Pneumatic with Controls**			
		21.6.1		Nominal Flow Rate, 5 gpm	Per Pump	$2,800	
		21.6.2		Nominal Flow Rate, 10 gpm	Per Pump	$3,500	
	21.7			**Oil/Water Separator with Electric Discharge Pump and Controls**			
		21.7.1		Nominal Flow Rate, 5 gpm	Unit	$2,500	
		21.7.2		Nominal Flow Rate, 7 gpm	Unit	$2,800	
		21.7.3		Nominal Flow Rate, 10 gpm	Unit	$3,150	
		21.7.4		Nominal Flow Rate, 16 gpm	Unit	$8,500	
		21.7.5		Nominal Flow Rate, 25 gpm	Unit	$10,000	
		21.7.6		Nominal Flow Rate, 40 gpm	Unit	$11,500	
		21.7.7		Nominal Flow Rate, 60 gpm	Unit	$13,000	
		21.7.8		Nominal Flow Rate, 75 gpm	Unit	$14,375	
	21.8			**Turbine Meters - Combined Totalizer and Flow Rate**			
		21.8.1		1/2" Diameter Turbine Meter	Each	$800	
		21.8.2		1@ Diameter Turbine Meter	Each	$750	
		21.8.3		1 1/2" Diameter Turbine Meter	Each	$800	
		21.8.4		2" Diameter Turbine Meter	Each	$1,250	

MASSACHUSETTS REIMBURSEMENT FEE SCHEDULE

TASKS				ITEM DESCRIPTION	UOM	PRICE	RSRVD
	21.9			**Passive Recovery Canisters**			
		21.9.1		2" Diameter	Each	$600	
		21.9.2		4" Diameter	Each	$700	
	21.10			Removal and reinstallation of groundwater and NAPL pumping system from site of original installation to another site, includes transportation	T & M	< $7,501	
	21.11			Remove and store equipment, includes transportation	T & M	< $3,001	
	21.12			Installation Crew, Travel Time and Vehicle Expense	Per Day	$250	
	21.13			Remote Telemetry System with Software		$6,000	
		21.13.4		Mechancial Installation of Equipment Purchased by Competitive Bid		< $7,500	
	21.14			Replacement Components per manufacturer's recommendation. Include manufacturer's invoice with submission		At Cost	
22				**PURCHASE AND INSTALLATION OF SURFACE COMPONENTS OF REMEDIATION SYSTEMS (INCLUDING PORTABLE, SKID-MOUNTED AND STAND ALONE SYSTEM COMPONENTS) NOTE: Tasks 22-22.1.8.5 effective until 6/30/97. After 7/1/97 three (3) competitive bids may be obtained for work and/or materials covered by these tasks in place of the unit price(s), or in conjunction with the unit price(s).**			
	22.1			**Stand alone (non-portable) installation**			
		22.1.1		Groundwater remediation system surface components installation. Mob/Demob. Two person crew including vehicle expense and tools.	NTE	$2,400	
			22.1.1.1	**Liquid-phase carbon canisters excluding granular activated carbon, unless otherwise noted. See Task 23.4.3.2 for carbon.**			
			22.1.1.1.1	55 gallon drum, 5 psig max design pressure, 0 -10 GPM, up to 185 lbs. of carbon included.	NTE	$450	
			22.1.1.1.2	Pressure vessel, 150 psig max design pressure, 0 - 25 GPM, 125 - 200 lbs. of carbon required to fill vessel.	NTE	$1,250	
			22.1.1.1.3	Pressure vessel, 150 psig max design pressure, 0 - 35 GPM, 400 - 600 lbs. of carbon required to fill vessel.	NTE	$3,400	
			22.1.1.1.4	Pressure vessel, 75 psig max design pressure, 0 - 50 GPM, 800 - 1,200 lbs. of carbon required to fill vessel.	NTE	$4,100	
			22.1.1.1.5	Pressure vessel, 75 psig max design pressure, 0 - 75 GPM, 1,500 - 2,000 lbs. of carbon required to fill vessel	NTE	$7,500	
			22.1.1.2	**Air stripper tower with controls**			
			22.1.1.2.1	1 - 10 gpm	L.S	$5,000	
			22.1.1.2.2	11 - 20 gpm	L.S	$5,500	
			22.1.1.2.3	21 - 30 gpm	L.S	$6,500	
			22.1.1.2.4	31 - 50 gpm	L.S	$8,500	
			22.1.1.3	**Air stripper tower only**			
			22.1.1.3.1	1 - 10 gpm	NTE	$4,000	
			22.1.1.3.2	11 - 20 gpm	NTE	$4,500	
			22.1.1.3.3	21 - 30 gpm	NTE	$5,000	
			22.1.1.3.4	31 - 50 gpm	NTE	$7,250	
			22.1.1.4	**Air stripper - Low Profile with controls**			
			22.1.1.4.1	1 - 10 gpm	NTE	$5,100	
			22.1.1.4.2	11 - 20 gpm	NTE	$5,700	
			22.1.1.4.3	21 - 30 gpm	NTE	$6,700	
			22.1.1.4.4	31 - 50 gpm	NTE	$8,100	
			22.1.1.5	**Low profile air stripper only**			
			22.1.1.5.1	1 - 10 gpm	NTE	$4,100	
			22.1.1.5.2	11 - 20 gpm	NTE	$4,700	
			22.1.1.5.3	21 - 30 gpm	NTE	$5,700	
			22.1.1.5.4	31 - 50 gpm	NTE	$6,850	
			22.1.1.6	**Air diffuser unit with controls**			
			22.1.1.6.1	1-10 gpm	Each	$10,500	
			22.1.1.6.2	11-20 gpm	Each	$13,500	
			22.1.1.6.3	21-30 gpm	Each	$16,500	
			22.1.1.6.4	31-50 gpm	Each	$20,500	
		22.1.2		**Soil vapor extraction system surface components installation**			
			22.1.2.1	**Extraction blower with moisture knock-out tank/drum, particulate filter and installation**			
			22.1.2.1.1	**3.5" Hg vacuum**			
			22.1.2.1.1.1	0 - 100 cfm	NTE	$1,700	
			22.1.2.1.1.2	101 - 300 cfm	NTE	$2,200	
			22.1.2.1.1.3	301 - 500 cfm	NTE	$2,800	

MASSACHUSETTS REIMBURSEMENT FEE SCHEDULE

TASKS				ITEM DESCRIPTION	UOM	PRICE	RSRVD
			22.1.2.1.2	**7.5" Hg vacuum**			
			22.1.2.1.2.1	0 - 100 cfm	NTE	$3,400	
			22.1.2.1.2.2	101 - 300 cfm	NTE	$3,800	
			22.1.2.1.2.3	301 - 500 cfm	NTE	$4,700	
			22.1.2.1.3	**27" Hg vacuum**			
			22.1.2.1.3.1	0 - 100 cfm	NTE	$27,500	
			22.1.2.1.3.2	101 - 300 cfm	NTE	$30,500	
			22.1.2.1.3.3	301 - 500 cfm	NTE	$35,500	
			22.1.2.1.3.4	Particulate Filter	Each	At Cost	
		22.1.3		**Vapor phase carbon canisters off-gas treatment system excluding granular activated carbon unless otherwise noted. See Task 23.5.1.1.2 - 23.5.1.1.4 for vapor phase carbon.**			
			22.1.3.1	55 gallon drum, 5 psig design pressure, 0 - 100 cfm of air flow, up to 185 lobs of carbon included	NTE	$560	
			22.1.3.2	Pressure vessel, 15 psig design pressure, 0 - 300 cfm of air flow, 300 - 500 lbs. of carbon required to fill vessel	NTE	$750	
			22.1.3.3	Pressure vessel, 15 psig design pressure, 0 - 1,000 cfm of air flow, 800 - 1,000 lbs. of carbon required to fill vessel	NTE	$4,400	
			22.1.3.4	Pressure vessel, 15 psig design pressure, 0 - 1,000 cfm of air flow, 1,800 - 2,000 lbs. of carbon required to fill vessel	NTE	$4,750	
			22.1.3.5	Pressure vessel, 15 psig design pressure, 0 - 1,500 cfm of air flow, 2,200 - 2,500 lbs. of carbon required to fill vessel	NTE	$6,000	
			22.1.3.6	Pressure vessel, 29.9 inches vacuum of mercury max, 0 - 1,000 cfm of air flow, 1,800 - 2,000 lbs. of carbon required to fill vessel	NTE	$5,200	
		22.1.4		**Catox or thermox off-gas treatment units and installation**			
			22.1.4.1	0 - 100 cfm	NTE	$31,000	
			22.1.4.2	101 - 300 cfm	NTE	$46,000	
			22.1.4.3	301 - 500 cfm	NTE	$63,000	
			22.1.4.4	501 - 700 cfm	NTE	$68,000	
			22.1.4.5	701 - 1,000 cfm	NTE	$82,000	
		22.1.5		**Free product recovery/separation system surface mounted components installation**			
			22.1.5.1	**Above ground product holding tank only**			
			22.1.5.1.1	290 gallon	NTE	$275	
			22.1.5.1.2	500 gallon	NTE	$550	
		22.1.6		Removal and reinstallation of surface components of remediation systems (including portable, skid-mounted and stand alone system components).	T & M	<$1,0001	
			22.1.6.1	Removal and storage of surface components (including portable, skid mounted and stand alone system components).	T & M	< $3,001	
		22.1.7		Installation crew, travel time and vehicle expense	Per Day	$250	
		22.1.8		**Air compressor for Air Sparging System**			
			22.1.8.1	2 Horse Power	Each	$2,500	
			22.1.8.2	3 Horse Power	Each	$2,650	
			22.1.8.3	4 Horse Power	Each	$2,800	
			22.1.8.4	5 Horse Power	Each	$3,000	
			22.1.8.5	7.5 Horse Power	Each	$3500	
		22.1.9		Mechanical installation of equipment purchased by competitive bid		< $7,500	
		22.1.10		Replacement components per manufacturer=s recommendation. Include manufacturer=s invoice with submission.		At Cost	
23				**SVE AND GROUNDWATER REMEDIATION SYSTEMS OPERATION AND MAINTENANCE**			
	23.1			Disciplines/equipment travel (incl. all related hours) and vehicle expenses	NTE/Event	$150	
		23.1.1		Compliance sampling of groundwater remediation system.	NTE/Event	$90	
	23.2			Utilities - Metered separately from all other uses.	Actual	At Cost	
	23.3			Repair of system per year from system start-up	T & M	< $3,001	
	23.4			**Groundwater remediation systems (including free product separator if present)**			
		23.4.1		**Air stripper-low profile system**			
			23.4.1.1	General operation and maintenance (no limit to gpm)	Per Visit	$150	
			23.4.1.2	**Cleaning trays**			
			23.4.1.2.1	1 - 10 gpm	Per Event	$125	
			23.4.1.2.2	11 - 20 gpm	Per Event	$145	
			23.4.1.2.3	21 - 50 gpm	Per Event	$165	
			23.4.1.2.4	> 50 GPM	Per Event	$200	

MASSACHUSETTS REIMBURSEMENT FEE SCHEDULE

TASKS				ITEM DESCRIPTION	UOM	PRICE	RSRVD
		23.4.2		**Air stripper packed tower system**			
			23.4.2.1	General operation and maintenance (no limit to gpm)	Per Visit	$120	
			23.4.2.2	**Packing replacement/disposal**			
			23.4.2.2.1	Labor	Per Day	$700	
			23.4.2.2.2	Material	Actual	At Cost	
			23.4.2.2.3	Disposal	Actual	At Cost	
			23.4.2.3	**Acid wash air stripper tower**			
			23.4.2.3.1	Labor	Per Day	$160	
			23.4.2.3.2	Material	Actual	At Cost	
			23.4.2.3.3	Disposal	Actual	At Cost	
		23.4.3		**Carbon treatment system**			
			23.4.3.1	General operation and maintenance (no limit to gpm)	Per Visit	$700	
			23.4.3.2	**Carbon replacement - liquid phase**			
			23.4.3.2.1	**Virgin carbon including transportation, disposal, labor and equipment to re-bed carbon vessel.**			
			23.4.3.2.1.1	< 200 lbs.	Per Pound	$3.25	
			23.4.3.2.1.2	201 - 500 lbs.	Per Pound	$2.55	
			23.4.3.2.1.3	501 - 2000 lbs.	Per Pound	$2	
			23.4.3.2.1.4	> 2000 lbs.	Per Pound	$1.75	
			23.4.3.2.2	**Reactivated carbon including transportation, re-activation, labor and equipment to re-bed carbon vessel.**			
			23.4.3.2.2.1	< 200 lbs.	Per Pound	$2.90	
			23.4.3.2.2.2	201 - 500 lbs.	Per Pound	$2.20	
			23.4.3.2.2.3	501 - 2000 lbs.	Per Pound	$1.70	
			23.4.3.2.2.4	> 2000 lbs.	Per Pound	$1.40	
			23.4.3.3	Disposal/Regeneration off-site	Actual	At Cost	
		23.4.4		**General O & M Submersible Groundwater Pumping Equipment, electric w/Controls**			
			23.4.4.1	Nominal Flow Rate, 5 gpm	Per Event	$120	
			23.4.4.2	Nominal Flow Rate, 7 gpm	Per Event	$120	
			23.4.4.3	Nominal Flow Rate, 10 gpm	Per Event	$120	
			23.4.4.4	Nominal Flow Rate, 16 gpm	Per Event	$120	
			23.4.4.5	Nominal Flow Rate, 25 gpm	Per Event	$160	
			23.4.4.6	Nominal Flow Rate, 40 gpm	Per Event	$160	
			23.4.4.7	Nominal Flow Rate, 60 gpm	Per Event	$160	
			23.4.4.8	Nominal Flow Rate, 75 gpm	Per Event	$160	
		23.4.5		**General O & M Submersible Groundwater Pumping Equipment, Pneumatic with Controls**			
			23.4.5.1	Normal Flow Rate, 5 gpm	Per Event	$120	
			23.4.5.2	Normal Flow Rate, 7 gpm	Per Event	$120	
			23.4.5.3	Normal Flow Rate, 10 gpm	Per Event	$120	
			23.4.5.4	Normal Flow Rate, 16 gpm	Per Event	$120	
			23.4.5.5	Normal Flow Rate, 25 gpm	Per Event	$160	
			23.4.5.6	Normal Flow Rate, 40 gpm	Per Event	$160	
			23.4.5.7	Normal Flow Rate, 60 gpm	Per Event	$160	
			23.4.5.8	Normal Flow Rate, 75 gpm	Per Event	$160	
		23.4.6		**General O & M Surface Mounted Pumping Equipment, Electric with Controls**			
			23.4.6.1	Normal Flow Rate, 5 gpm	Per Event	$80	
			23.4.6.2	Normal Flow Rate, 7 gpm	Per Event	$80	
			23.4.6.3	Normal Flow Rate, 10 gpm	Per Event	$80	
			23.4.6.4	Normal Flow Rate, 16 gpm	Per Event	$80	
			23.4.6.5	Normal Flow Rate, 25 gpm	Per Event	$120	
			23.4.6.6	Normal Flow Rate, 40 gpm	Per Event	$120	
			23.4.6.7	Normal Flow Rate, 60 gpm	Per Event	$120	
			23.4.6.8	Normal Flow Rate, 75 gpm	Per Event	$120	
		23.4.7		**General O & M Surface Mounted Pumping Equipment, Pneumatic with Controls**			
			23.4.7.1	Normal Flow Rate, 5 gpm	Per Event	$80	
			23.4.7.2	Normal Flow Rate, 7 gpm	Per Event	$80	
			23.4.7.3	Normal Flow Rate, 10 gpm	Per Event	$80	
			23.4.7.4	Normal Flow Rate, 16 gpm	Per Event	$80	
			23.4.7.5	Normal Flow Rate, 25 gpm	Per Event	$120	
			23.4.7.6	Normal Flow Rate, 40 gpm	Per Event	$120	
			23.4.7.7	Normal Flow Rate, 60 gpm	Per Event	$120	

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TASKS				ITEM DESCRIPTION	UOM	PRICE	RSRVD
			23.4.7.8	Normal Flow Rate, 75 gpm	Per Event	$120	
		23.4.8		**Submersible NAPL Pumping Equipment, Electric with Controls**			
			23.4.8.1	Normal Flow Rate, 5 gpm	Per Event	$120	
			23.4.8.2	Normal Flow Rate, 10 gpm	Per Event	$120	
		23.4.9		**Submersible NAPL Pumping Equipment, Pneumatic with Controls**			
			23.4.9.1	Normal Flow Rate, 5 gpm	Per Event	$120	
			23.4.9.2	Normal Flow Rate, 10 gpm	Per Event	$120	
		23.4.10		**Oil/Water Separator with Electric Discharge Pump and Controls**			
			23.4.10.1	Sludge Disposal	Per Gallon	$1.35	
			23.4.10.2	NAPL Disposal	Per Gallon	$1.35	
			23.4.10.3	Contaminated Water Disposal	Per Gallon	$1.35	
		23.4.11		Vacuum Truck with Operator	Per Hour	$110	
	23.5			**Soil Vapor Extraction Systems (SVES)**			
		23.5.1		**General operation and maintenance of SVES**			
			23.5.1.1	General O & M tasks for SVES	Per Visit	$150	
			23.5.1.1.1	Addition for off-gas treatment			
			23.5.1.1.1.1	Vapor-phase carbon	Per Visit	$40	
			23.5.1.1.1.2	Catalytic Oxidizer and/or Thermal Oxidizer	Per Visit	$40	
			23.5.1.1.2	**Carbon replacement - vapor phase, virgin carbon including transportation, disposal, labor, and equipment to re-bed carbon vessel**			
			23.5.1.1.2.1	0 - 200 pounds	Per Pound	$3.95	
			23.5.1.1.2.2	201 - 500 pounds	Per Pound	$3.25	
			23.5.1.1.2.3	501 - 2000 pounds	Per Pound	$2.75	
			23.5.1.1.2.4	> 2000 pounds	Per Pound	$2.50	
			23.5.1.1.3	**Regeneration/disposal (off-site) including transportation, re-activation, labor and equipment to re-bed carbon vessel**	**Cost**		
			23.5.1.1.3.1	0 - 200 pounds	Per Pound	$2.90	
			23.5.1.1.3.2	201 - 500 pounds	Per Pound	$2.20	
			23.5.1.1.3.3	500 - 2,000 pounds	Per Pound	$1.70	
			23.5.1.3.3.4	> 2,000 pounds	Per Pound	$1.40	
			23.5.1.3.4	**Regeneration on-site (NOTE: Cost of regeneration equipment not included)**			
			23.5.1.3.4.1	0 - 200 pounds	Per Event	$500	
			23.5.1.3.4.2	201 - 500 pounds	Per Event	$600	
			23.5.1.3.4.3	500 - 2,000 pounds	Per Event	$900	
			23.5.1.3.4.4	> 2,000 pounds	Per Event	$1,100	
		23.5.2		Compliance sampling of VES	Per Event	$200	
		23.5.3		**Operating data report for vapor extraction system NOTE: Tasks 23.5.3 - 23.5.3.2 effective until 6/30/97. Effective 7/1/97 see Tasks 2.18.2, 2.19.1, 2.20, 2.21.2 and 2.22.**			
			23.5.3.1	Initial report	NTE	$1,200	
			23.5.3.2	Subsequent reports	NTE	$700	
	23.6			**Air sparging systems**			
		23.6.1		**General operation and maintenance of air sparging system operated in conjunction with SVES and/or groundwater extraction system**			
			23.6.1.1	General O & M tasks for air sparging system	Per Visit	$120	
	23.7			**Automated free product recovery systems (liquid product recovery only)**			
		23.7.1		General operation and maintenance of automatic free product recovery system, (NOTE: Submersible pump system/compressor O&M under subtask 23.4.4 and 23.4.5)	Per Visit	$120	
		23.7.2		Operating and data report for free product recovery system NOTE: 23.7.2.1 and 23.7.2.2 effective until 6/30/97. Effective 7/1/97 see Tasks 2.18.2, 2.19.1, 2.20, 2.21.2 and 2.22.			
			23.7.2.1	Initial report	NTE	$1,200	
			23.7.2.2	Subsequent Reports	NTE	$400	
	23.8			**Multiple remediation systems-hydrocarbon recovery only (groundwater extraction w/SVES; groundwater extraction w/SVES and air sparging ; SVES w/air sparging; SVES w/air sparging and automatic F.P. recovery)**			
		23.8.1		**Operating data report for multiple remediation system NOTE: Tasks 23.8.1-23.8.1.2 effective until 6/30/97. Effective 7/1/97 see Tasks 2.18.2, 2.19.1, 2.20, 2.21.2 and 2.22.**			
			23.8.1.1	Initial report	NTE	$1,500	

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TASKS				ITEM DESCRIPTION	UOM	PRICE	RSRVD
			23.8.1.2	Subsequent reports	NTE	$800	
	23.9			Perform off-gas treatment removal efficiency testing in accordance with 310 CMR 7.03	Per Event	$200	
	23.10			**Iron Treatment NOTE: Tasks 23.10-23.10.4.3 effective until 6/30/97. Effective 7/1/97, three (3) competitive bids to be obtained for equipment covered by these tasks if the value of the equipment exceeds $5,000.**			
		23.10.1		**Bag Filter**			
			23.10.1.1	0 - 10 gpm	NTE	$1,200	
			23.10.1.2	11 - 25 gpm	NTE	$1,500	
			23.10.1.3	26 - 50 gpm	NTE	$3,200	
		23.10.2		**Sequestering Agents**			
			23.10.2.1	0 - 10 gpm	NTE	$750	
			23.10.2.2	11 - 25 gpm	NTE	$1,100	
			23.10.2.3	26 - 50 gpm	NTE	$1,600	
		23.10.3		**Hardness Treatment**			
			23.10.3.1	**Chemical Pre-Treatment**			
			23.10.3.1.1	0 - 10 gpm	NTE	$950	
			23.10.3.1.2	11 - 25 gpm	NTE	$1,150	
			23.10.3.1.3	26 - 50 gpm	NTE	$2,450	
		23.10.4		**Bio-Reactor**			
			23.10.4.1	0 - 10 gpm	NTE	$16,000	
			23.10.4.2	11 - 25 gpm	NTE	$22,000	
			23.10.4.3	26 - 50 gpm	NTE	$30,000	
		23.10.5		**Contaminated liquid removal and disposal**			
			23.10.5.1	Contaminated Water Disposal-Bulk - Includes labor	Per Gallon	$1.50	
			23.10.5.2	NAPL and Disposal	Per Gallon	$1.75	
			23.10.5.3	Sludge and Disposal-Bulk	Per Gallon	$10.50	
			23.10.5.4	Contaminated Water Disposal - 6 Drums Maximum	Per 55 Gal. Drum	$200	
			23.10.5.5	Transportation of Drum(s)	Per Site	$300	
			23.10.5.6	Mixed Media Disposal/Nonrecyclable or Characteristic Hazardous Waste - 10 Drums Maximum	Per 55 Gal. Drum	$1,200	
			23.10.5.7	Transportation of Drum(s)	Per Site	$1,000	
			23.10.5.8	Virgin Petroleum Oil Contaminated Soil - 30 Drums Maximum	Per Drum	$100	
			23.10.5.9	Transportation of Drum(s)	Per Site	$300	
		23.10.6		Liquid Vacuum Truck with Operator	Per Hour	$130	
24				**CONCRETE MONITORING WELL PAD REMOVAL AND REPLACEMENT**			
	24.1			**Remove and replace concrete pad**			
		24.1.1		**Pad replacement (old and new pad elevation shall remain consistent, if appropriate)**			
			24.1.1.1	1 - 3 Pads	Per Pad	$275	
			24.1.1.2	> 3 Pads	Per Pad	$245	
		24.1.2		**Replace traffic-rated manhole with pad**			
			24.1.2.1	1 - 3 Manholes	Per M.H.	$325	
			24.1.2.2	> 3 Manholes	Per M.H.	$300	
		24.1.3		**Locking Monitoring Well Plugs as Replacement**			
			24.1.3.1	2" Diameter	Each	$8	
			24.1.3.2	4" Diameter	Each	$15	
			24.1.3.3	6" Diameter	Each	$23	
		24.1.4		**Replacement monitoring well covers with O-rings**			
			24.1.4.1	4" Diameter	Each	$15	
			24.1.4.2	6" Diameter	Each	$20	
			24.1.4.3	8" Diameter	Each	$25	
			24.1.4.4	12" Diameter	Each	$60	
25				**WELL ABANDONMENT**			
	25.1			**Equipment mobilization/demobilization (includes equipment travel) (NOTE: use task 9.1 for equipment travel for task 25.4)**			
		25.1.1		1 - 50 miles (radius)	NTE/Job	$260	
		25.1.2		51 - 100 miles (radius)	NTE/Job	$350	
		25.1.3		> 100 miles (radius)	NTE/Job	$350	
	25.2			Project disciplines - Full Day (includes disciplines travel, equipment, project management and site supervision)	NTE	$400	

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TASKS				ITEM DESCRIPTION	UOM	PRICE	RSRVD
	25.3			**Well abandonment by pressure grouting**			
		25.3.1		2" Diameter well	Per Foot	$10	
		25.3.2		4" Diameter well	Per Foot	$12	
		25.3.3		6" Diameter well	Per Foot	$15	
		25.3.4		8" Diameter well	Per Foot	$20	
	25.4			**Well abandonment by drill out and grout method (all per foot costs include restoration of work area, clean-up)**			
		25.4.1		2" Diameter well	Per Foot	$12	
		25.4.2		4" Diameter well	Per Foot	$14	
		25.4.3		6" Diameter well	Per Foot	$18	
		25.4.4		8" Diameter well	Per Foot	$23	
	25.5			Well abandonment report	NTE	$225	
26				**OUT OF SCOPE TRAVEL**			
	26.1			Disciplines/equipment travel cost (including all related hrs.) for out of scope trips as approved.	Per Mile	$0.33	
		26.1.1		0 - 50 miles (radius)	T & M	< $256	
		26.1.2		51 - Maximum 100 miles (radius)	T & M	< $340	
		26.1.3		DEP Requested Meetings	T & M	< $1,001	
			26.1.3.1	DEP audit information gathering & response		$1,000	
			26.1.3.2	Audit Follow-up Plan per 310 CMR 40.1160		$1,800	
			26.1.3.3	Audit Follow-up Plan Completion Statement per 310 CMR 40.1170		$2,500	
		26.1.4		MCP Required Meetings	T & M	< $1,001	
		26.1.5		Post RAO DEP Audit	NTE	$1,000	

TASKS				ITEM DESCRIPTION	WATER	SOIL	UOM	PRICE	RSRVD
27				**LABORATORY ANALYSIS**					
	27.1			**General Chemistries**					
		27.1.1		Hydrocarbons, Petroleum By IR depending upon the availability of freon	418.1		Each	$110	
			27.1.1.1	Hydrocarbons, Petroleum by IR		418.1 (MOD)	Each	$110	
		27.1.2		Oil and Grease, Gravimetric	413.1		Each	$45	
			27.1.2.1	Oil and Grease, Gravimetric		9071/413.1	Each	$60	
		27.1.3		Hydrocarbons, petroleum by IR depending upon the availability of freon	413.2		Each	$110	
			27.1.3.1	Oil and Grease, IR		413.2 (MOD)	Each	$75	
		27.1.4		Oxygen, Dissolved	360.1		Each	$20	
		27.1.5		pH	150.1		Each	$10	
			27.1.5.1	pH		9045	Each	$10	
			27.1.5.1.1	Acidity	EPA 305.1		Each	$13	
		27.1.6		Total Organic Carbon	415.1		Each	$48	
			27.1.6.1	Total Organic Carbon		Army Corps of Engineers 81M or Equivalent	Each	$45	
		27.1.7		Total Organic Halides	9020/9076		Each	$70	
			27.1.7.1	Total Organic Halides		9020/9076	Each	$70	
		27.1.8		Turbidity	180.1	-	Each	$10	
			27.1.8.1	Total dissolved solids. This is an additional method applicable to water, only. Method 160.1			Each	$20	
			27.1.8.2	Total suspended solids. This is an additional method applicable to water, only. Method 160.2			Each	$20	
			27.1.8.3	Total suspended solids. This is an additional method applicable to water, only. Method 160.3			Each	$20	
			27.1.8.4	Total settleable solids. This is an additional method applicable to water, only. Method 160.5			Each	$20	

MASSACHUSETTS REIMBURSEMENT FEE SCHEDULE

TASKS				ITEM DESCRIPTION	WATER	SOIL	UOM	PRICE	RSRVD
		27.1.9		Temperature	170.1		Each	$5	
		27.1.10		Salinity	SM17		Each	$20	
		27.1.11		Total Kjeldahl Nitrogen	351.2		Each	$30	
		27.1.12		Nitrogen, Nitrate	353.2		Each	$30	
		27.1.13		Nitrogen, Nitrite	353.2		Each	$30	
		27.1.14		Nitrogen Ammonia	350.2		Each	$26	
		27.1.15		Total Phosphorous	365.3		Each	$20	
		27.1.16		Percent Moisture				$10.50	
		27.1.17		Sulfate US EPA Method 375.40 (Groundwater Only)				$15	
		27.1.18		Chloride US EPA Method 325.1 or Standard Methods 4500-CLB (Groundwater Only)				$12	
		27.1.19		Hardness US EPA Methods 130.1 & 130.2 or Standard Methods 2340B (Groundwater Only)				$7	
	27.2			**Microbiology**					
		27.2.1		**Bioremediation parameters**					
			27.2.1.1	Total Viable Organisms		Upon Request	Each	$50	
			27.2.1.2	Total & Non-Viable Organisms		Upon Request	Each	$50	
			27.2.1.3	Fluorescent Pseudomonads		Upon Request	Each	$50	
			27.2.1.4	Phenanthrene Degraders		Upon Request	Each	$50	
			27.2.1.5	Petroleum & BTEX Degraders		Upon Request	Each	$90	
	27.3			**Metals and minerals**					
		27.3.1		Aluminum	200.7		Each	$15	
			27.3.1.1	Aluminum		6010	Each	$15	
		27.3.2		Antimony	200.7/204.2		Each	$15 / $22	
			27.3.2.1	Antimony		6010/7041	Each	$15 / $22	
		27.3.3		Arsenic	200.7/206.2		Each	$15 / $22	
			27.3.3.1	Arsenic		6010/7060	Each	$15 / $22	
		27.3.4		Barium	200.7		Each	$15	
			27.3.4.1	Barium		6010	Each	$15	
		27.3.5		Beryllium	200.7		Each	$15	
			27.3.5.1	Beryllium		6010	Each	$15	
		27.3.6		Boron	200.7		Each	$15	
			27.3.6.1	Boron		6010	Each	$15	
		27.3.7		Cadmium	200.7		Each	$15	
			27.3.7.1	Cadmium		6010	Each	$15	
		27.3.8		Calcium	200.7		Each	$15	
			27.3.8.1	Calcium		6010	Each	$15	
		27.3.9		Chromium, Total	200.7		Each	$15	
			27.3.9.1	Chromium, Total		6010	Each	$15	
		27.3.10		Chromium, Hexavalent	7196		Each	$25	
		27.3.11		Cobalt	200.7		Each	$15	
			27.3.11.1	Cobalt		6010	Each	$15	
		27.3.12		Copper	200.7		Each	$15	
			27.3.12.1	Copper		6010	Each	$15	
		27.3.13		Iron	200.7/236.1		Each	$15 / $22	
			27.3.13.1	Iron		6010	Each	$15	
		27.3.14		Lead	200.7/239.2		Each	$15 / $22	
			27.3.14.1	Lead		7420	Each	$30	
			27.3.14.2	Tetra-ethyl Lead. This is an additional method applicable to water, only. Method ASTM E3341-91M				$110	
		27.3.15		Lithium	200.7		Each	$15	
			27.3.15.1	Lithium		6010	Each	$15	
		27.3.16		Magnesium	200.7		Each	$15	
			27.3.16.1	Magnesium		6010	Each	$15	
		27.3.17		Manganese	200.7		Each	$15	
			27.3.17.1	Manganese		6010	Each	$15	

MASSACHUSETTS REIMBURSEMENT FEE SCHEDULE

TASKS				ITEM DESCRIPTION	WATER	SOIL	UOM	PRICE	RSRVD
		27.3.18		Mercury	245.1		Each	$40	
			27.3.18.1	Mercury		7471	Each	$40	
		27.3.19		Molybdenum	200.7		Each	$15	
			27.3.19.1	Molybdenum		6010	Each	$15	
		27.3.20		Nickel	200.7		Each	$15	
			27.3.20.1	Nickel		6010	Each	$15	
		27.3.21		Potassium	200.7		Each	$15	
			27.3.21.1	Potassium		6010	Each	$15	
		27.3.22		Selenium	200.7/270.2		Each	$15 / $22	
			27.3.22.1	Selenium		6010/7740	Each	$15 / $22	
		27.3.23		Silver	200.7		Each	$15	
			27.3.23.1	Silver		6010	Each	$15	
		27.3.24		Sodium	200.7		Each	$15	
			27.3.24.1	Sodium		6010	Each	$15	
		27.3.25		Tin	200.7/282.1		Each	$15	
			27.3.25.1	Tin		6010/7870	Each	$15 / $22	
		27.3.26		Titanium	200.7		Each	$15	
			27.3.26.1	Titanium		6010	Each	$15	
		27.3.27		Thallium	200.7/279.2		Each	$15 / $22	
			27.3.27.1	Thallium		6010/7841	Each	$15 / $22	
		27.3.28		Vanadium	200.7		Each	$15	
			27.3.28.1	Vanadium		6010	Each	$15	
		27.3.29		Zinc	200.7		Each	$15	
			27.3.29.1	Zinc		6010	Each	$15	
		27.3.30		RCRA 8 Metals AS/BA/CD/CR/PB/HG/SE/AG	(Water)		Each	$140	
			27.3.30.1	RCRA 8 Metals AS/BA/CD/CR/PB/HG/SE/AG		(Soil)	Each	$160	
		27.3.31		Priority Pollutant Package (13) AS/SB/BE/CD/CR/CU/NI/PB/HG/SE/ AG/TL/ZN			Each	$195	
			27.3.31.1	Priority Pollutant Package (13) AS/SB/BE/CD/CR/CU/NI/PB/HG/SE/ AG/TL/ZN			Each	$215	
	27.4			**GAS CHROMATOGRAPHY**					
		27.4.1		Volatile Organic Analysis & MTBE/GCMS	624		Each	$155	
			27.4.1.1	Volatile Organic Analysis & MTBE/GCMS		8240	Each	$170	
		27.4.2		Purgeable Aromatics	602		Each	$85	
			27.4.2.1	Purgeable Aromatics		8020	Each	$105	
		27.4.3		Purgeable Halocarbons	601		Each	$85	
			27.4.3.1	Purgeable Halocarbons		8010	Each	$105	
		27.4.4		BTEX & MTBE	602		Each	$85	
			27.4.4.1	BTEX & MTBE		8020	Each	$105	
		27.4.5		Volatile Organic Analysis & MTBE/GCMS	8260		Each	$200	
			27.4.5.1	Volatile Organic Analysis & MTBE/GCMS		8260	Each	$200	
		27.4.6		Methanol	DAI		Each	$150	
			27.4.6.1	Methanol		DAI	Each	$150	
		27.4.7		Volatile Petroleum Hydrocarbons/GCFID	8015M		Each	$125	
			27.4.7.1	Volatile Petroleum Hydrocarbons/GCFID		8015M	Each	$125	
			27.4.7.2	Methane, Ethane & Ethene (ME&E) US EPA Method 8015/RSKERR					
			27.4.7.2.1	ME&E (water)				$150	
		27.4.8		Semi-volatile organic analysis (water)	625		Each	$400	
			27.4.8.1	2-Methylphenol (Add on)		8270	Each	$25	
			27.4.8.1.1	3-Methylphenol (Add on)				$25	
			27.4.8.1.2	4-Methylphenol (Add on)				$25	
			27.4.8.2	Semi-volatile Analysis (soil)				$450	
			27.4.8.2.1	2-Methylphenol (Add on)				$25	
			27.4.8.2.1.1	3-Methylphenol (Add on)				$25	
			27.4.8.2.1.2	4-Methylphenol (Add on)				$25	

MASSACHUSETTS REIMBURSEMENT FEE SCHEDULE

TASKS				ITEM DESCRIPTION	WATER	SOIL	UOM	PRICE	RSRVD
		27.4.9		Semi-Volatile Petroleum Hydrocarbons/GCFID	8100M		Each	$125	
			27.4.9.1	Semi-Volatile Petroleum Hydrocarbons/GCFID		8100M	Each	$125	
		27.4.10		GCFID Fingerprint	ASTM D3328-78		Each	$125	
			27.4.10.1	GCFID Fingerprint		ASTM D3328-78	Each	$125	
		27.4.11		Pesticides (Priority Pollutant)	608		Each	$125	
			27.4.11.1	Pesticides (Priority Pollutant)		8080	Each	$125	
		27.4.12		PCB's	608		Each	$125	
			27.4.12.1	PCB's		8080	Each	$125	
		27.4.13		Herbicides (2/4/D/Silvex)	615		Each	$175	
			27.4.13.1	Herbicides (2/4/D/Silvex)		8150	Each	$200	
		27.4.14		BTEX, Ethers (MTBE, DIPE) Add on	624		Each	$10	
			27.4.14.1	BTEX, Ethers (MTBE, DIPE) Add on		8240	Each	$10	
		27.4.15		Polynuclear Aromatic Hydrocarbons (PAH)	610/625		Each	$150	
			27.4.15.1	Polynuclear Aromatic Hydrocarbons (PAH)		810/8270	Each	$166.66	
		27.4.16		**Air Sample Analysis of VES Off-Gas**					
			27.4.16.1	BTEX & MTBE	EPA 602(M) or Equivalent		Each	$85	
			27.4.16.2	Volatile Petroleum Hydrocarbons/ Gasoline Range & Methane	EPA 8015(M) or Equivalent		Each	$95	
			27.4.16.3	Polynuclear Aromatic Hydrocarbons by GC/MS	EPA 8270(M) or Equivalent		Each	$340	
			27.4.16.4	Petroleum Hydrocarbons/Diesel Fuel Range	EPA 8100(M) or Equivalent		Each	$135	
		27.4.17		**Air Sample Analysis - Indoor Air Quality**					
			27.4.17.1	BTEX & MTBE - includes Summa Canister	EPA T014 or Equivalent		Each	$400	
			27.4.17.1.1	Add-on for composite valve			Each	$25	
			27.4.17.2	**Volatile Petroleum Hydrocarbons/ Gasoline Range**					
			27.4.17.2.1	Includes Tedlar Bag	EPA T03 or Equivalent		Each	$350	
			27.4.17.2.2	Includes Summa Canister	EPA T014 or Equivalent		Each	$425	
			27.4.17.3	Polynuclear Aromatic - Includes PUF with GFFT Hydrocarbons by GC/MS	EPA T013 or Equivalent		Each	$450	
			27.4.17.4	**DEP Air Petroleum Hydrocarbons (Draft Method)**					
			27.4.17.4.1	SUMMA Canister - DEP Method - Normal Turnaround.			Each	$400	
			27.4.17.4.2	Tedlar Bag - DEP Method - Normal Turnaround			Each	$350	
			27.4.17.4.3	Tenax Tubes - DEP Method - Normal			Each	$325	
		27.4.18		DEP VPH	Reserved	Reserved	Each	$150	
			27.4.18.1	Method 5035 Soil Preservation Kit for Unknown or Low Level Concentrations			Each	$30	
			27.4.18.2	Method 5035 Soil Preservation Quality Control Container for Unknown or Low Level Concentrations			Each	$30	
			27.4.18.3	Method 5035 Soil Preservation Kit for Medium Level Concentrations			Each	$25	
			27.4.18.4	Method 5035 Encore Sampler for Unknown or Low Level Concentrations with Laboratory Preparatiion			Each	$35	
			27.4.18.5	Method 5035 Encore Sampler Quality Control Container for Unknown or Low Level Concentrations			Each	$30	
			27.4.18.6	Method 5035 Encore Sampler for Medium to High Level Concentrations with Laboratory Preparation			Each	$25	
		27.4.19		DEP EPH	Reserved	Reserved	Each	$266	

MASSACHUSETTS REIMBURSEMENT FEE SCHEDULE

TASKS				ITEM DESCRIPTION	WATER	SOIL	UOM	PRICE	RSRVD
			27.4.20	Methane (US EPA Method 8015M/EP18/T03)			Each	$100	
	27.5			**RCRA Waste Characterization**					
		27.5.1		Ignitability (flash point)	1010/1020		Each	$30	
			27.5.1.1	Ignitability (flash point)		1010/1020	Each	$30	
		27.5.2		Corrosivity (as pH)	9045		Each	$10	
			27.5.2.1	Corrosivity (as pH)		9045	Each	$10	
		27.5.3		Cyanide Reactivity	1010		Each	$35	
			27.5.3.1	Cyanide Reactivity		9010	Each	$35	
		27.5.4		Sulfide Reactivity	1030		Each	$30	
			27.5.4.1	Sulfide Reactivity		9030	Each	$30	
		27.5.5		Paint Filter		9095	Each	$15	
		27.5.6		TCLP Extraction-Add on	1311	1311	Each	$75	
		27.5.7		Zero Headspace Extraction	1311		Each	$100	
			27.5.7.1	Zero Headspace Extraction		1311	Each	$100	
		27.5.8		Metal Extraction	3010			$22	
			27.5.8.1	Metal Extraction		3050	Each	$22	
		27.5.9		Alkalinity					
			27.5.9.1	US EPA Method 310.1 (water)			Each	$25	
			27.5.9.2	US EPA Method 310.1 (soil)			Each	$40	
	27.6			**DRINKING WATER ORGANICS**					
		27.6.1		Trihalomethanes	501.2		Each	$85	
		27.6.2		Organolialides	502.2		Each	$100	
		27.6.3		Volatile Aromatics	503.1		Each	$100	
		27.6.4		Ethylene Dibromide/1,2 Dibromo-3-Chloropropane	504		Each	$103.60	
		27.6.5		Pesticides	505		Each	$125	
		27.6.6		Pesticides	508		Each	$125	
		27.6.7		Pesticides & PCB's	508A		Each	$135	
		27.6.8		Chlorinated Herb.	515.1		Each	$200	
		27.6.9		Volatile Organic Analysis	524.2		Each	$175	
		27.6.10		Semi-Volatile Organic Analysis	525.1		Each	$375	
		27.6.11		Carbamates	531.4		Each	$160	
		27.6.12		Glyphosate	547		Each	$200	
		27.6.13		Endothal	548		Each	$175	
		27.6.14		Diquat	549		Each	$180	
	27.7			**DEFINITIVE ASSAYS**					
		27.7.1		**Daphnids-D.pulex and C.dubra**					
			27.7.1.1	48 Hour Static acute assay			Each	$525	
			27.7.1.2	7 Day Static renewal chronic assay			Each	$1,000	
		27.7.2		**Minnows-Fathead Minnows/ Pimephales promelas; sheepshead minnow/silver-side minnow**					
			27.7.2.1	48 hour static acute assay			Each	$550	
			27.7.2.2	96 hour static acute assay			Each	$575	
			27.7.2.3	96 hour static renewal assay			Each	$600	
			27.7.2.4	7 Day embryo/larval static renewal			Each	$1,000	
		27.7.3		**Trout-Brook trout/salvalinus fontenalis**					
			27.7.3.1	48 hour static acute assay			Each	$575	
			27.7.3.2	96 hour static acute assay			Each	$650	
			27.7.3.3	7 Day static renewal chronic assay			Each	$1,000	
			27.7.3.4	14 Day static renewal chronic assay			Each	$1,400	
		27.7.4		**Mysid Shrimp/Mysidopsis Bahia**					
			27.7.4.1	48 hour static acute assay			Each	$550	
			27.7.4.2	96 hour static acute assay			Each	$575	
			27.7.4.3	96 hour static renewal assay			Each	$600	
			27.7.4.4	7 Day static renewal assay			Each	$1,100	
		27.7.5		**Algae-Skeletonoma costatum, selenastrum sp., skeletonema costatum, selenastrum sp., champia parvula**					
			27.7.5.1	96 hour acute assay			Each	$750	
			27.7.5.2	7 Day recovery assay			Each	$1,400	
			27.7.5.3	5 Day reproductive assay			Each	$1,400	
		27.7.6		**Sea Urchin-Arbacia punctulata**					

MASSACHUSETTS REIMBURSEMENT FEE SCHEDULE

TASKS				ITEM DESCRIPTION	WATER	SOIL	UOM	PRICE	RSRVD
			27.7.6.1	Sperm immobilization assay			Each	$400	
		27.7.7		**Screening Assays-Fresh water species, marine species**					
			27.7.7.1	24 hour static assay			Each	$225	
	27.8			**Enzyme Immuno Assay (EIA) Screening Analysis**					
		27.8.1		**Total Petroleum Hydrocarbons (TPH)**					
			27.8.1.1	1-5 Samples	N/A	4030	Each	$75	
			27.8.1.2	6-10 Samples	N/A	4030	Each	$55	
			27.8.1.3	> 10 Samples	N/A	4030	Each	$45	
		27.8.2		**Total BTEX**					
			27.8.2.1	1-5 Samples	N/A	4031	Each	$75	
			27.8.2.2	6-10 Samples	N/A	4031	Each	$55	
			27.8.2.3	> 10 Samples	N/A	4031	Each	$45	
		27.8.3		**Polynuclear Aromatic Hydrocarbons**					
			27.8.3.1	1-5 Samples	N/A	4035	Each	$75	
			27.8.3.2	6-10 Samples	N/A	4035	Each	$55	
			27.8.3.3	> 10 Samples	N/A	4035	Each	$45	
		27.8.4		**EIA Screening AnalysOperator and Equipment for on-site analysis. Includes equipment, operator and equipment incidentals, e.g. sample jars, extraction materials, pipetts, gloves, balance, spectrometer, printer, reports, shipping etc.**					
			27.8.4.1		N/A	Soil	Per Day	$500	
			27.8.4.2	N/A	Soil	Per Week		$2,500	
	27.9			**Laboratory Add On**					
		27.9.1		Groundwater Sample Filtration	Each	$15			
		27.9.2		Sample Compositing	Each	$15			

TASKS				ITEM DESCRIPTION	UOM	PRICE	RSRVD
28			**28**	**EQUIPMENT RENTAL**			
	28.1			**Soil Vapor Extraction Module with vacuum blower, moisture separator and controls**			
		28.1.1		**100-150 cfm**			
			28.1.1.1	Daily		$35	
			28.1.1.2	Weekly		$140	
			28.1.1.3	Monthly		$315	
		28.1.2		**150-250 scfm**			
			28.1.2.1	Daily		$50	
			28.1.2.2	Weekly		$200	
			28.1.2.3	Monthly		$450	
		28.1.3		**250-400 scfm**			
			28.1.3.1	Daily		$60	
			28.1.3.2	Weekly		$240	
			28.1.3.3	Monthly		$550	
		28.1.4		**400-550 scfm**			
			28.1.4.1	Daily		$75	
			28.1.4.2	Weekly		$300	
			28.1.4.3	Monthly		$675	
	28.2			**Portable Air Compressor, Diesel or Gasoline Powered**			
		28.2.1		**100 - 299 CFM**			
			28.2.1.1	Daily		$185	
			28.2.1.2	Weekly		$525	
			28.2.1.3	Monthly		$1,600	
		28.2.2		**300 - 750 CFM**			
			28.2.2.1	Daily		$350	
			28.2.2.2	Weekly		$1,000	
			28.2.2.3	Monthly		$3,050	
		28.2.3		**751-900 CFM**			
			28.2.3.1	Daily		$425	

MASSACHUSETTS REIMBURSEMENT FEE SCHEDULE

TASKS				ITEM DESCRIPTION	UOM	PRICE	RSRVD
			28.2.3.2	Weekly		$1,200	
			28.2.3.3	Monthly		$3,400	
		28.2.4		**901-1,400 CFM**			
			28.2.4.1	Daily		$750	
			28.2.4.2	Weekly		$2,400	
			28.2.4.3	Monthly		$6,750	
	28.3			**Backhoe, rubber tire - with operator**			
		28.3.1		Hourly		$65	
		28.3.2		Daily		$480	
		28.3.3		Weekly		$2,600	
		28.3.4		Laborer	Per Hour	$40	
	28.4			**Backhoe, track - with operator**			
		28.4.1		Hourly		$150	
		28.4.2		Daily		$1,200	
		28.4.3		Weekly		$6,000	
		28.4.4		Laborer	Per Hour	$40	
	28.5			**Exhaust Fan, 10" Explosion Proof**			
		28.5.1		Daily		$20	
		28.5.2		Weekly		$60	
		28.5.3		Monthly		$100	
	28.6			**Exhaust Fan, 20" Explosion Proof**			
		28.6.1		Daily		$30	
		28.6.2		Weekly		$90	
		28.6.3		Monthly		$150	
	28.7			**Equipment Enclosure 8' x 20'**			
		28.7.1		Weekly		$100	
		28.7.2		Monthly		$400	
	28.8			**Flood Lights**			
		28.8.1		Daily		$25	
		28.8.2		Weekly		$100	
		28.8.3		Monthly		$300	
	28.9			**Generator (Excluding fuel)**			
		28.9.1		**3.5 kW**			
			28.9.1.1	Daily		$40	
			28.9.1.2	Weekly		$160	
			28.9.1.3	Monthly		$480	
		28.9.2		**6.5 kW**			
			28.9.2.1	Daily		$60	
			28.9.2.2	Weekly		$240	
			28.9.2.3	Monthly		$720	
		28.9.3		**10 kW**			
			28.9.3.1	Daily		$150	
			28.9.3.2	Weekly		$480	
			28.9.3.3	Monthly		$1,350	
		28.9.4		**50 kW**			
			28.9.4.1	Daily		$200	
			28.9.4.2	Weekly		$700	
			28.9.4.3	Monthly		$2,200	
		28.9.5		Fuel	Actual	At Cost	
		28.9.6		Motor Oil	Actual	At Cost	
	28.10			**Jack Hammer**			
		28.10.1		Hourly		$5	
		28.10.2		Daily		$40	
		28.10.3		Weekly		$160	
	28.11			**Discharge Hose**			
		28.11.1		**3/4" X 50'**			
			28.11.1.1	Daily		$1	
			28.11.1.2	Weekly		$5	
			28.11.1.3	Monthly		$15	
		28.11.2		**2" X 50'**			
			28.11.2.1	Daily		$2.50	
			28.11.2.2	Weekly		$17.50	
			28.11.2.3	Monthly		$75	
		28.11.3		**3" X 50'**			
			28.11.3.1	Daily		$3	

MASSACHUSETTS REIMBURSEMENT FEE SCHEDULE

TASKS				ITEM DESCRIPTION	UOM	PRICE	RSRVD
			28.11.3.2	Weekly		$21	
			28.11.3.3	Monthly		$90	
		28.11.4		**4" X 50'**			
			28.11.4.1	Daily		$3.50	
			28.11.4.2	Weekly		$24.50	
			28.11.4.3	Monthly		$105	
	28.12			**Loader, Bobcat or equivalent - with operator**			
		28.12.1		Daily		$440	
		28.12.2		Weekly		$2,200	
		28.12.3		Monthly		$9,240	
		28.12.4		Laborer	Per Hour	$40	
	28.13			**3-Yard Loader, Front-end - with operator**			
		28.13.1		Daily		$760	
		28.13.2		Weekly		$3,040	
		28.13.3		Monthly		$15,960	
		28.13.4		Laborer	Per Hour	$40	
	28.14			**Mounted LEL Sensor**			
		28.14.1		Daily		$35	
		28.14.2		Weekly		$100	
		28.14.3		Monthly		$230	
	28.15			**Pump, Construction/Dewatering**			
		28.15.1		**1 hp, Explosion Proof**			
			28.15.1	Daily		$40	
			28.15.2	Weekly		$160	
			28.15.3	Monthly		$415	
		28.15.2		**2 hp, Explosion Proof**			
			28.15.2.1	Daily		$60	
			28.15.2.2	Weekly		$240	
			28.15.2.3	Monthly		$415	
		28.15.3		**3 hp, Explosion Proof**			
			28.15.3.1	Daily		$75	
			28.15.3.2	Weekly		$300	
			28.15.3.3	Monthly		$415	
		28.15.4		**5 hp, Explosion Proof**			
			28.15.4.1	Daily		$80	
			28.15.4.2	Weekly		$320	
			28.15.4.3	Monthly		$415	
		28.15.5		**10 hp, Explosion Proof**			
			28.15.5.1	Daily		$250	
			28.15.5.2	Weekly		$500	
			28.15.5.3	Monthly		$650	
	28.16			**Oil/Water Separator**			
		28.16.1		**280 gallon**			
			28.16.1.1	Daily		$25	
			28.16.1.2	Weekly		$75	
			28.16.1.3	Monthly		$150	
		28.16.2		**550 gallon**			
			28.16.2.1	Daily		$30	
			28.16.2.2	Weekly		$120	
			28.16.2.3	Monthly		$240	
		28.16.3		**1,000 gallon**			
			28.16.3.1	Daily		$45	
			28.16.3.2	Weekly		$180	
			28.16.3.3	Monthly		$650	
		28.16.4		**Mobile Tanker (separator - 5,000-8,800 gallons)**			
			28.16.4.1	Daily		$250	
			28.16.4.2	Weekly		$600	
			28.16.4.3	Monthly		$1,800	
	28.17			**Internal Combustion Engine**			
		28.17.1		Daily		$250	
		28.17.2		Weekly		$1,600	
		28.17.3		Monthly		$5,000	
		28.17.4		Fuel	Actual	At Cost	
		28.17.5		**Thermal Oxidizer**			
			28.17.5.1	Daily		$250	

MASSACHUSETTS REIMBURSEMENT FEE SCHEDULE

TASKS				ITEM DESCRIPTION	UOM	PRICE	RSRVD
			28.17.5.2	Weekly		$1,050	
			28.17.5.3	Monthly		$3,100	
		28.17.6		**Thermal Oxidizer/Catalytic Converter**			
			28.17.6.1	Daily		$300	
			28.17.6.2	Weekly		$1,200	
			28.17.6.3	Monthly		$3,600	
		28.17.7		**Tractor**			
			28.17.7.1	Daily		$280	
			28.17.7.2	Weekly		$1,120	
			28.17.7.3	Monthly		$2,800	
		28.17.8		**Trailer/Low bed**			
			28.17.8.1	Daily		$120	
			28.17.8.2	Weekly		$480	
			28.17.8.3	Monthly		$1,200	
		28.17.9		**Water Tanker**			
			28.17.9.1	**2,500 - 4,500 gallon water tanker**			
			28.17.9.1.1	Daily		$280	
			28.17.9.1.2	Weekly		$1,120	
			28.17.9.1.3	Monthly		$2,800	
			28.17.9.2	**4,500 - 8,800 gallon water tanker**			
			28.17.9.2.1	Daily		$125	
			28.17.9.2.2	Weekly		$500	
			28.17.9.2.3	Monthly		$1,250	
			28.17.9.3	Potable, Spring or Well Water	Actual	At Cost	
		28.17.10		**Truck, 10 Yard Dump - with operator**			
			28.17.10.1	Daily		$440	
			28.17.10.2	Weekly		$2,200	
			28.17.10.3	Monthly		$9,240	
		28.17.11		**Truck, 20 Yard Dump - with operator**			
			28.17.11.1	Daily		$480	
			28.17.11.2	Weekly		$2,400	
			28.17.11.3	Monthly		$10,080	
		28.17.12		**Truck, Sampling Van - vehicle only**			
			28.17.12.1	Daily		$90	
			28.17.12.2	Weekly		$360	
			28.17.12.3	Monthly		$1,080	
		28.17.13		**Truck, Pick-Up - vehicle only**			
			28.17.13.1	Daily		$96	
			28.17.13.2	Weekly		$480	
			28.17.13.3	Monthly		$1,920	
		28.17.14		**Truck, Maintenance/Boom - with operator**			
			28.17.14.1	Daily		$760	
			28.17.14.2	Weekly		$3,800	
			28.17.14.3	Monthly		$15,960	
		28.17.15		**Truck, Mobil Shop/Box - vehicle only**			
			28.17.15.1	Daily		$200	
			28.17.15.2	Weekly		$800	
			28.17.15.3	Monthly		$2,000	
		28.17.16		**Reserved**			
	28.18			**Treatment Systems**			
		28.18.1		**Air Stripper with associated piping, flow controls, and flow meter**			
			28.18.1.1	**0 - 25 gpm**			
			28.18.1.1.1	Daily		$50	
			28.18.1.2.2	Weekly		$200	
			28.18.1.1.3	Monthly		$500	
			28.18.1.2	**26 - 50 gpm**			
			28.18.1.2.1	Daily		$65	
			28.18.1.2.2	Weekly		$260	
			28.18.1.2.3	Monthly		$650	
			28.18.1.3	**> 50 gpm**			
			28.18.1.3.1	Daily		$75	
			28.18.1.3.2	Weekly		$300	
			28.18.1.3.3	Monthly		$750	

MASSACHUSETTS REIMBURSEMENT FEE SCHEDULE

TASKS				ITEM DESCRIPTION	UOM	PRICE	RSRVD
		28.18.2		**Liquid Phase Carbon Canisters excluding granular activated carbon, unless otherwise noted. See TASK 23.4.3.2 for carbon.**			
			28.18.2.1	**55 gallon drum, 5 psig max design pressure, 0 - 10 gpm, up to 185 pounds of carbon included**			
			28.18.2.1.1	Daily		$15	
			28.18.2.1.2	Weekly		$185	
			28.18.2.1.3	Monthly - one month maximum reimbursement		$525	
			28.18.2.2	**Pressure vessel, 150 psig max design pressure, 0 - 25 gpm, 125 - 200 pounds of carbon required to fill vessel**			
			28.18.2.2.1	Daily		$35	
			28.18.2.2.2	Weekly		$140	
			28.18.2.2.3	Monthly		$475	
			28.18.2.3	**Pressure vessel, 150 psig max design pressure, 0 - 35 gpm, 400 - 600 pounds of carbon required to fill vessel**			
			28.18.2.3.1	Daily		$50	
			28.18.2.3.2	Weekly		$200	
			28.18.2.3.3	Monthly		$750	
			28.18.2.4	**Pressure vessel, 75 psig max design pressure, 0 - 50 gpm, 800 - 1200 pounds of carbon required to fill vessel**			
			28.18.2.4.1	Daily		$100	
			28.18.2.4.2	Weekly		$500	
			28.18.2.4.3	Monthly		$1,750	
			28.18.2.5	**Pressure vessel, 75 psig max design pressure, 0 - 75 gpm, 1500 - 2000 lbs. of carbon required to fill vessel**			
			28.18.2.5.1	Daily		$150	
			28.18.2.5.2	Weekly		$750	
			28.18.2.5.3	Monthly		$2,500	
			28.18.2.6	**Pressure Vessel, 75 psig max design pressure, 0 - 100 gpm, 1500 - 2500 lbs. of carbon required to fill vessel**			
			28.18.2.6.1	Daily		$75	
			28.18.2.6.2	Weekly		$300	
			28.18.2.6.3	Monthly		$750	
			28.18.2.7	**Pressure Vessel, 75 psig max design pressure, 0 - 150 gpm, 2000 - 3000 lbs. of carbon required to fill vessel**			
			28.18.2.7.1	Daily		$90	
			28.18.2.7.2	Weekly		$360	
			28.18.2.7.3	Monthly		$900	
		28.18.3		**Vapor phase carbon canisters offgas treat system excluding granular activated carbon unless otherwise noted. See Task 23.5.1.1.2 - 23.5.1.1.4**			
			28.18.3.1	**55 gallon drum, 5 psig design pressure, 0 - 100 cfm of air flow**			
			28.18.3.1.1	Daily		$20	
			28.18.3.1.2	Weekly		$200	
			28.18.3.1.3	Monthly - one month maximum reimbursement		$560	
			28.18.3.2	**Pressure vessel, 15 psig design pressure, 0 - 300 cfm of air flow, 300 - 500 lbs. of carbon required to fill vessel**			
			28.18.3.2.1	Daily		$25	
			28.18.3.2.2	Weekly		$100	
			28.18.3.2.3	Monthly		$250	
			28.18.3.3	**Pressure vessel, 15 psig design pressure, 0 - 1000 cfm of air flow, 800 - 1000 lbs. of carbon required to fill vessel**			
			28.18.3.3.1	Daily		$50	
			28.18.3.3.2	Weekly		$200	
			28.18.3.3.3	Monthly		$500	
			28.18.3.4	**Pressure vessel, 15 psig design pressure, 0 - 1000 cmf of air flow, 1800 - 2000 lbs. of carbon required to fill vessel**			
			28.18.3.4.1	Daily		$55	
			28.18.3.4.2	Weekly		$220	
			28.18.3.4.3	Monthly		$550	
			28.18.3.5	**Pressure vessel, 15 psig design pressure, 0 - 1500 cfm of air flow, 2200 - 2500 lbs. of carbon required to fill vessel**			
			28.18.3.5.1	Daily		$60	
			28.18.3.5.2	Weekly		$240	
			28.18.3.5.3	Monthly		$600	
			28.18.3.6	**Pressure vessel, 29.9 inches vacuum of mercury max, 0 - 1000 cfm of air flow, 1800 - 2000 lbs. of carbon required to fill vessel**			
			28.18.3.6.1	Daily		$55	

MASSACHUSETTS REIMBURSEMENT FEE SCHEDULE

TASKS				ITEM DESCRIPTION	UOM	PRICE	RSRVD
			28.18.3.6.2	Weekly		$220	
			28.18.3.6.3	Monthly		$550	
		28.18.4		Vacuum Truck with Operator (Portal to Portal)	$/hr	$130	
			28.18.4.1	Vactor Solids Excavator with Operator	$/hr	$175	
			28.18.4.2	Trailer Mounted Air Excavator	Per Hour	$110	
			28.18.4.3	Monthly EFR - Up to 2 Events	Per Event	$3,000	
		28.18.5		Liquid Disposal	Per Gallon	$1.50	
			28.18.5.1	**Frac Tanks (21,000 gallon)**			
			28.18.5.1.1	Daily		$125	
			28.18.5.1.2	Weekly		$500	
			28.18.5.1.3	Monthly		$1,800	
			28.18.5.1.4	Mob/DeMob Per Tank	NTE	$600	
			28.18.5.1.5	Decontamination of Frac Tank	T & M	< $3,001	
		28.18.6		**Mobile Groundwater Treatment Trailer with oil/water separator, liquid phase granular activated carbon vessels, transfer pump, heater and electrical controls. Up to 50 gallons per minute**			
			28.18.6.1	Daily		$100	
			28.18.6.2	Weekly		$525	
			28.18.6.3	Monthly		$2,500	
		28.18.7		**Mobile Groundwater Treatment Trailer with oil/water separator, liquid phase granular activated carbon vessels, up to 50 gallons per minute, transfer pump, heater and electrical controls. With soil vapor extraction module for 100 cfm flow rate with vapor phase granular activated carbon vessel.**			
			28.18.7.1	Daily		$150	
			28.18.7.2	Weekly		$800	
			28.18.7.3	Monthly		$3,200	
			28.18.8	30 cfm butane injector panel with air compressor, installation and rental for 12 mos.		$38,000	
			28.18.8.1	Butane	Actual	At Cost	
	28.19			**Turbine Meters - Combined totalizer and flow rate**			
		28.19.1		**1/2" Diameter Turbine Meter**			
			28.19.1.1	Daily		$30	
			28.19.1.2	Weekly		$45	
			28.19.1.3	Monthly		$90	
		28.19.2		**1" Diameter Turbine Meter**			
			28.19.2.1	Daily		$30	
			28.19.2.2	Weekly		$45	
			28.19.2.3	Monthly		$90	
		28.19.3		**1 1/2" Diameter Turbine Meter**			
			28.19.3.1	Daily		$30	
			28.19.3.2	Weekly		$47	
			28.19.3.3	Monthly		$95	
		28.19.4		**2" Diameter Turbine Meter**			
			28.19.4.1	Daily		$40	
			28.19.4.2	Weekly		$55	
			28.19.4.3	Monthly		$100	
	28.20			**10 Ton Vibratory Roller with Operator or Equivalent**			
		28.20.1		Daily		$520	
		28.20.2		Weekly		$,2600	
		28.20.3		Monthly		$10,920	
	28.21			**Portable Vibratory Compactor with Operator**			
		28.21.1		Daily		$400	
		28.21.2		Weekly		$2,000	
		28.21.3		Monthly		$8,400	
	28.22			**VCR Rental**			
		28.22.1		Daily		$10	
		28.22.2		Weekly		$50	
	28.23			**Traffic Controls**			
		28.23.1		Daily		$750	
		28.23.2		Weekly		$3,750	
		28.23.3		Monthly		$15,750	
		28.23.4		Fuel	Actual	At Cost	
		28.23.5		Delivery & Pick-up of Traffic Controls	Each	$300	
	28.24			**Electric or Pneumatic Submersible Pump Rental with Controls (9 months maximum rental**			

MASSACHUSETTS REIMBURSEMENT FEE SCHEDULE

TASKS				ITEM DESCRIPTION	UOM	PRICE	RSRVD
		28.24.1		Daily		$25	
		28.24.2		Weekly		$100	
		28.24.3		Monthly		$300	
	28.25			**Electric or Pneumatic non-aqueous phase liquid pump rental with controls (9 months maximum rental)**			
		28.25.1		Daily		$25	
		28.25.2		Weekly		$100	
		28.25.3		Monthly		$300	
	28.26			**Air sparging compressor rental with controls up to 30 cfm @ 15psi (up to 9 months maximum rental)**			
		28.26.1		Daily		$35	
		28.26.2		Weekly		$140	
		28.26.3		Monthly		$315	
	28.27			**Air sparging compressor rental up to 50 cfm @ 15 psi (up to 9 months maximum rental)**			
		28.27.1		Daily		$50	
		28.27.2		Weekly		$200	
		28.27.3		Monthly		$450	
29				**MISCELLANEOUS MATERIALS**			
	29.1			Adsorbent Boom, 10' x 8"	4/bale	$165	
	29.2			Adsorbent Pads 18" x 18"	100/bale	$63	
	29.3			Drums, 55 gallons	Each	$45	
	29.4			Drums, 35 gallons	Each	$30	
	29.5			Drum Liners	Each	$17	
	29.6			55 gallon Overpack Drum	Each	$235	
	29.7			Granular Absorbent	Pound	$0.12	
	29.8			Barrier Tape	100'	$2	
	29.9			Orange Safety Fence 30" - 48" high with posts	100'	$225	
	29.10			Hay Bales	Each	$4	
30				**SALES TAX**			
				State Sales Tax	Actual	At Cost	
31				**FREIGHT**			
				Freight	Actual	At Cost	
32				**FIRMS AND EQUIPMENT NOT APPROVED**			
				Reserved			