BEFORE THE POLLUTION CONTROL BOARD
OF THE STATE OF ILLINOIS

IN THE MATTER OF:	)	
	)	
PROPOSED AMENDMENTS TO REGULATION OF	)	
PETROLEUM LEAKING UNDERGROUND STORAGE	)	
TANKS (35 ILL.ADM.CODE 732)	)	R04-22
	)	(Rulemaking-Land)

N O T I C E

Dorothy Gunn, Clerk
Pollution Control Board
James R. Thompson Center
100 W. Randolph, Ste. 11-500
Chicago, Illinois 60601
(Overnight Mail)

Marie Tipsord, Hearing Officer
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See Attached Service List

PLEASE TAKE NOTICE that I have today filed with the Office of the Clerk of the Pollution Control Board the Errata Sheet and Prefiled Testimony of Doug Clay, Hernando Albarracin, Doug Oakley, Brian Bauer and Harry Chappel of the Illinois Environmental Protection Agency, a copy of which is herewith served upon you.

ENVIRONMENTAL PROTECTION AGENCY
OF THE STATE OF ILLINOIS

By: _____
Kyle Rominger
Assistant Counsel

DATE: March 05, 2004
Agency File #:
Illinois Environmental
Protection Agency
1021 North Grand Ave. East
P.O. Box 19276
Springfield, IL 62794-9276

THIS FILING IS SUBMITTED ON RECYCLED PAPER

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	
PROPOSED AMENDMENTS TO	)	R04-22
REGULATION OF PETROLEUM	)	(Rulemaking – Land)
LEAKING UNDERGROUND STORAGE	)	
TANKS (35 ILL. ADM. CODE 732)	)	

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY'S FIRST ERRATA SHEET TO ITS PROPOSAL FOR THE AMENDMENT OF 35 ILL. ADM. CODE 732

NOW COMES the Illinois Environmental Protection Agency ("Illinois EPA"), by and through its attorneys Kyle Rominger and Gina Roccaforte, and submits this First Errata Sheet to its proposal for the amendment of 35 Ill. Adm. Code 732. The Illinois EPA proposes the following amendments to the text of the rules submitted in its proposal to the Board dated January 1, 2004:

1. Amend Section 732.110(e) to the following to replace "Section 732.703(d)" with "Section 732.703(c) or (d)" in the first sentence. A form addressing site ownership is not necessary for sites subject to Section 732.703(c).

e) Except in the case of sites subject to Section 732.703(c) or (d) of this Part, reports documenting the completion of corrective action at a site must contain a form addressing site ownership. At a minimum, the form shall identify the land use limitations proposed for the site, if land use limitations are proposed; the site's common address, legal description, and real estate tax/parcel index number; and the names and addresses of all title holders of record of the site or any portion of the site. The form shall also contain the following certification, by original signature, of all title holders of record of the site or any portion of the site, or the agent(s) of such person(s):

I hereby affirm that I have reviewed the attached report entitled _____ and dated _____, and that I accept the terms and conditions set forth therein, including any land use limitations, that apply to property I own. I further affirm that I have no objection to the recording of a No Further Remediation Letter containing the terms and conditions identified in the report upon the property I own.

2. Amend Section 732.202(h)(1)(B) to the following to add a sentence at the end that allows the Illinois EPA to require more than two excavation floor samples from below underground storage tanks with a volume of 15,000 gallons or more. The prescribed two floor samples may be inadequate to determine whether the soil below such larger tanks exceeds the applicable remediation objectives.

B) Two samples shall be collected from the excavation floor below each UST with a volume of 1,000 gallons or more. One sample shall be collected from the excavation floor below each UST with a volume of less than 1,000 gallons. The samples shall be collected from locations representative of soil that is the most contaminated as a result of the release. If areas of contamination cannot be identified, the samples shall be collected from below each end of the UST if its volume is 1,000 gallons or more, and from below the center of the UST if its volume is less than 1,000 gallons. The Agency may require the collection of more than two samples from the excavation floor below USTs with a volume of 15,000 gallon or more.

3. Amend Section 732.202(h)(1)(D) to the following to allow the Illinois EPA to require more than two backfill samples for larger underground storage tanks, and, for the purposes of consistency, to mirror the tank size delineations in Section 732.202(h)(1)(B).

D) If backfill is returned to the excavation, one representative sample of the backfill shall be collected for each UST with a volume of less than 1,000 gallons and two representative samples of the backfill shall be collected for each UST with a volume of 1,000 gallons or more. The Agency may require the collection of more than two representative samples of the backfill for each UST with a volume of 15,000 gallon or more.

4. Amend Section 732.203(d) to the following by removing "a copy of the eligibility and deductibility determination of the OSFM and" from the second sentence so an owner's or operator's ability to submit a free product removal budget plan in a timely manner is not dependant upon obtaining an eligibility and deductibility determination from the OSFM.

d) Any owner or operator intending to seek payment from the Fund shall, prior to conducting free product removal activities more than 45 days after the confirmation of the presence of free product, submit to the Agency a free product removal budget plan with the corresponding free product removal plan. The budget plan shall include, but shall not be limited to, an estimate of all costs associated with the development, implementation, and completion of the free product removal plan, excluding handling

charges. The budget plan should be consistent with the eligible and ineligible costs listed in Sections 732.605 and 732.606 of this Part and the maximum payment amounts set forth in Subpart H of this Part. As part of the budget plan the Agency may require a comparison between the costs of the proposed method of free product removal and other methods of free product removal.

5. Amend Section 732.307(j)(5)(C)(i) to the following by adding "most stringent" prior to "objectives or detection levels" to ensure proper practical quantitation limits in sample analyses.

i) The methodology shall have a practical quantitation limit (PQL) at or below the most stringent objectives or detection levels set forth in 35 Ill. Adm. Code 742 or as set for mixtures or degradation products as provided in Section 732.310 of this Part; and

6. Amend Section 732.601(j) to the following to remove references to budgets plans and budget plan amendments because those documents must be submitted prior to the issuance of a No Further Remediation Letter.

j) All applications for payment of corrective action costs shall be submitted no later than one year after the date the Agency issues a No Further Remediation Letter pursuant to Subpart G of this Part. For releases for which the Agency issued a No Further Remediation Letter prior to the effective date of this subsection (j), all applications for payment shall be submitted no later than one year after the effective date of this subsection (j).

7. Amend Section 732.605(a)(18) (renumbered to Section 732.605(a)(17)) and Section 732.840(b) by replacing the addition of "$10,000 per site" with the addition of "$10,000 per occurrence."

8. Amend Section 732.606(kk) to the following to add "costs associated with the replacement of concrete, asphalt, or paving in accordance with Section 732.605(a)(17) of this Part,". Some owners and operators may not replace concrete, asphalt, or paving until after they receive a No Further Remediation Letter.

kk) Costs incurred ~~for additional remediation~~ after receipt of a No Further Remediation Letter for the occurrence for which the No Further Remediation Letter was received, except costs incurred for MTBE remediation pursuant to Section 732.310(i)(2) of this Part, costs associated with the replacement of concrete, asphalt, or paving in accordance with Section 732.605(a)(17) of this Part, monitoring well abandonment costs, county recorder or registrar of titles fees for recording the No Further

Remediation Letter, and costs associated with seeking payment from the Fund;

9. Amend Section 732.606(ccc) to the following to remove "or sample analysis." The Illinois EPA pays for the analysis of a second sample when the first sample cannot be used due to improper collection, transportation, or analysis.

ccc) Costs associated with sample collection or transportation required as a result of improperly collected, transported, or analyzed laboratory samples;

10. Delete the proposed amendment to Section 732.608(b).

11. Amend Section 732.820 to the following to provide maximum payment amounts for direct-push platform drilling conducted for injection purposes (e.g., for the injection of oxygen releasing compounds as part of an alternative technology) and for recovery well installation, and to increase the maximum payment amount for well abandonment.

Section 732.820 Drilling, Well Installation, and Well Abandonment

Payment for costs associated with drilling, well installation, and well abandonment shall not exceed the amounts set forth in this Section.

a) Payment for costs associated with each round of drilling shall not exceed the following amounts. Such costs shall include, but not be limited to, those associated with mobilization, drilling labor, decontamination, and drilling for the purposes of soil sampling or well installation.

Type of Drilling	Maximum Total Amount
Hollow-stem auger	greater of $23.00 per foot or $1,500.00
Direct-push platform	
- for sampling or other non-injection purposes	greater of $18.00 per foot or $1,200.00
- for injection purposes	greater of $15.00 per foot or $1,200.00

b) Payment for costs associated with the installation of monitoring wells, excluding drilling, shall not exceed the following amounts. Such costs shall include, but not be limited to, those associated with well construction and development.

Type of Borehole	Maximum Total Amount
Hollow-stem auger	$16.50/foot (well length)
Direct-push platform	$12.50/foot (well length)

c) Payment for costs associated with the installation of recovery wells, excluding drilling, shall not exceed the following amounts. Such costs

shall include, but not be limited to, those associated with well construction and development.

Well Diameter	Maximum Total Amount
4 or 6 inches	$25.00/foot (well length)
8 inches or greater	$41.00/foot (well length)

d) Payment for costs associated with the abandonment of monitoring wells shall not exceed $10.00 per foot of well length.

12. Amend Section 732.865 by replacing it in its entirety with the following:

Section 732.865 Increase in Maximum Payment Amounts

The maximum payment amounts set forth in this Subpart H shall be adjusted annually by an inflation factor determined by the annual Implicit Price Deflator for Gross National Product as published by the U.S. Department of Commerce in its Survey of Current Business.

a) The inflation factor shall be calculated each year by dividing the latest published annual Implicit Price Deflator for Gross National Product by the annual Implicit Price Deflator for Gross National Product for the previous year. The inflation factor shall be rounded to the nearest 1/100th. In no case shall the inflation factor be more than five percent in a single year.

b) Adjusted maximum payment amounts shall become effective on July 1 of each year and shall remain in effect through June 30 of the following year. The first adjustment shall be made on July 1, 2006, by multiplying the maximum payment amounts set forth in this Subpart H by the applicable inflation factor. Subsequent adjustments shall be made by multiplying the latest adjusted maximum payment amounts by the latest inflation factor.

c) The Agency shall post the inflation factors on its website no later than the date they become effective. The inflation factors shall remain posted on the website in subsequent years to aid in the calculation of adjusted maximum payment amounts.

d) Adjusted maximum payment amounts shall be applied as follows:

1) For costs approved by the Agency in writing prior to the date the costs are incurred, the applicable maximum payments amounts shall be the amounts in effect on the date the Agency received the budget in which the costs were proposed. Once the Agency approves a cost, the applicable maximum payment amount for the cost shall not be increased (e.g, by proposing the cost in a subsequent budget).

2) For costs not approved by the Agency in writing prior to the date the costs are incurred, including but not limited to early action costs, the applicable maximum payments amounts shall be the amounts in effect on the date the costs were incurred.

3) Owners and operators shall have the burden of requesting the appropriate adjusted maximum payment amounts in budgets and applications for payment.

Respectfully submitted,

ILLINOIS ENVIRONMENTAL
PROTECTION AGENCY

Kyle Rominger
Assistant Counsel

Gina Roccaforte
Assistant Counsel

DATED: 3.4.04

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ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	
PROPOSED AMENDMENTS TO	)	R 04-022
REGULATION OF PETROLEUM	)	(Rulemaking – Land)
LEAKING UNDERGROUND STORAGE	)	
TANKS (35 ILL. ADM. CODE 732)	)	

TESTIMONY OF HERNANDO ALBARRACIN IN SUPPORT OF THE ENVIRONMENTAL PROTECTION AGENCY'S PROPOSAL TO AMEND 35 ILL. ADM. CODE 732

My name is Hernando Albarracin. I am a Unit Manager in the Leaking Underground Storage Tank Section within the Bureau of Land of the Illinois Environmental Protection Agency. I have been in my current position since January 1996. Prior to assuming my current position, I was a permit reviewer in the Permit Section in the Bureau of Land beginning in April 1989. I received a B.S. in Mining Engineering in 1986 from Southern Illinois University at Carbondale. My resume is attached. Today, I will be testifying in support of amendments to 35 Ill. Adm. Code Part 732, specifically Subparts A, B, and C (except 732.306).

Subpart A: General

Section 732.100 – Applicability. Subsections 732.100(a) and (b) are amended to make Part 732 applicable to releases reported on or after September 24, 1994, but prior to June 24, 2002, the effective date of Public Act 92-0554. Subsection 732.100(a) is further amended to make Part 732 applicable to releases reported prior to September 12, 1993, if the owner or operator elected prior to June 24, 2002, to proceed in accordance with Part 732 (i.e., elected to proceed in accordance with Title XVI of the Environmental Protection Act ("Act") ("Title XVI")). Owners and operators electing on or after June 24, 2002, to proceed in accordance with Title XVI are subject to Title XVI as amended by Public Act 92-0554, and therefore are subject

to the site investigation and corrective action requirements in proposed Part 734. The applicability provisions of proposed Part 734 dovetail with the amended applicability provisions of Part 732 so that releases subject to Title XVI fall under either Part 732 or Part 734.

Subsection 732.100(e) has been added to inform owners or operators that they may elect to proceed in accordance with 35 Ill. Adm. Code Part 734.

Section 732.101 – Election to Proceed under Part 732. Subsections 732.101(a), (b), and (d) are amended to reflect the fact that owners and operators could elect to proceed in accordance with Part 732 (i.e., in accordance with Title XIV as it existed prior to Public Act 92-0554) only until June 23, 2002. Proposed Part 734 contains corresponding provisions that allow owners and operators to elect to proceed in accordance with Part 734 (i.e., in accordance with Title XVI as amended by Public Act 92-0554) on or after June 24, 2002. Subsections 732.101(a) and (b) are further amended to clarify that owners and operators who elected to proceed in accordance with Part 732 may subsequently elect to proceed in accordance with Part 734.

In subsection 732.101(d), language has been added to clarify that costs incurred on or after the effective date of an election to proceed in accordance with Part 734 shall be payable from the UST Fund in accordance with Part 734.

Section 732.103 – Definitions. The following definitions of terms have been added: Board, community water supply, confirmation of release, county highway, district road, financial interest, half-day, highway authority, indicator contaminants, Licensed Professional Engineer, Licensed Professional Geologist, non-community water supply, practical quantitation limit, public water supply, right-of-way, state highway, street, toll highway, township road, and wellhead protection area. In addition, the following definitions of terms have been deleted: line item estimate. Minor changes have been made to several definitions to clarify citations or to

correct grammatical errors.

Section 732.104 – Incorporation by Reference. The following reference materials have been deleted in subsection 732.104(a) because they are not cited in the regulations: Methods for Chemical Analysis of Water and Wastes; Practical Guide for Ground Water Sampling; Rapid Assessment of Exposure to Particulate Emissions from Surface Contamination Sites; and USGS (United States Geological Survey), Techniques of Water Resources Investigations of the United States Geological Survey, Guidelines for Collection and Field Analysis of Ground Water Samples for Selected Unstable Constituents.

The following reference materials have been added to subsection 732.104(a) to update the list of reference materials: Methods for the Determination of Metals in Environmental Samples; Methods for the Determination of Metals in Environmental Samples, Supplement I; Methods for the Determination of Organic Compounds in Drinking Water; Methods for the Determination of Organic Compounds in Drinking Water, Supplement II; and Methods for the Determination of Organic Compounds in Drinking Water, Supplement III.

Subsection 732.104(b) has been deleted because the Code of Federal Regulations is not referenced in the regulations, and subsection 732.104(c) was renumbered subsection 732.104(b).

Section 732.106 – Laboratory Certification. Language has been added to this section to clarify that a certification from the accredited laboratory stating that the samples were analyzed in accordance with the requirements of this section shall be included with the sampling results submitted to the Illinois EPA. The Illinois EPA wants the accredited laboratory, rather than the Licensed Professional Engineer or Licensed Professional Geologist, to certify in accordance with 732.106.

Section 732.108 – Licensed Professional Engineer or Licensed Professional Geologist

Supervision. This section has been added to clarify that all plans, budget plans, and reports, excluding High Priority Corrective Action Completion Reports submitted pursuant to Section 732.409, conducted or prepared under Part 732 shall be conducted or prepared under the supervision of a Licensed Professional Engineer or Licensed Professional Geologist. High Priority Corrective Action Completion Reports submitted pursuant to Section 732.409 shall be prepared under the supervision of a Licensed Professional Engineer. These changes are necessary as a result of Public Act 92-0735.

Section 732.110 – Form and Delivery of Plans, Budgets, and Reports; Signatures and Certifications. This section is proposed to consolidate general requirements for plans, budget plans, and reports, which are currently stated in numerous sections of Part 732. Such requirements include how plans and reports shall be submitted to the Illinois EPA, where they shall be mailed or delivered, and the type of certification they shall contain.

Subsection 732.110(e) was amended to include a reference to 732.703(c). Please refer to the First Errata Sheet for additional information.

Subpart B: Early Action

Section 732.200 – General. Wording has been added to clarify that a budget plan is not required for early action activities. This is consistent with current Illinois EPA practices. A budget plan is not required since a work plan is not required (except for removal of free product).

Section 732.202 – Early Action. Subsections 732.202(b), (c), (d), and (e) are amended to clarify that the time frame to complete the required activities within the 20 days after initial notification to IEMA and within the 45 days after initial notification to IEMA, as well as the submission of the corresponding report, is 20 days plus 14 days and 45 days plus 14 days, respectively. This change is necessary to reflect the changes to the OSFM's release investigation

and confirmation requirements in 41 Ill. Adm. Code 170.580, which became effective May 1, 2003.

Statutory wording has been added to subsection 732.202(f) to clarify that, for the purpose of payment for early action costs, fill material shall not be removed in excess of 4 feet from the outside dimensions of the tank.

Subsection 732.202(g) and its subsequent Board Note are amended in response to changes to the OSFM's release investigation and confirmation requirements in 41 Ill. Adm. Code 170.580. Effective May 1, 2003, owners and operators have 14 days instead of seven to confirm a release.

A new subsection 732.202(h)(1) is proposed to specify the locations where early action soil samples must be collected when a UST is removed. In accordance with current Illinois EPA practice, the following soil sampling requirements are considered adequate to identify contamination in the subsurface.

Wall samples. One sample shall be collected from each excavation wall. For walls that exceed 20 feet in length, one sample shall be collected for each 20 feet of wall length, or fraction thereof, and the samples shall be evenly spaced along the length of the wall.

Floor samples. Two samples shall be collected from the excavation floor below each UST with a volume of 1,000 gallons or more. One sample shall be collected from the excavation floor below each UST with a volume of less than 1,000 gallons. Please note that in the Agency's First Errata Sheet subsection 732.202(h)(1)(B) is amended to allow the Agency to require additional floor samples for tanks with a volume of 15,000 gallons or more if additional samples are needed to help determine whether contamination is present in the subsurface. Please refer to the Agency's First Errata Sheet for additional

information.

Piping samples. One sample shall be collected from the floor of each 20 feet of UST piping run excavation, or fraction thereof. For UST piping abandoned in place, the samples shall be collected in accordance with the requirements for subsection 732.202(h)(2)(B).

Backfill samples. If backfill is returned to the excavation, one representative sample of the backfill shall be collected for each UST with a volume of less than 12,000 gallons and two representative samples of the backfill shall be collected for each UST with a volume of 12,000 gallons or more. Please note that in the Agency's First Errata Sheet subsection 732.202(h)(1)(D) is amended to allow the Agency to require additional backfill samples for tanks with a volume of 15,000 gallons or more if additional samples are needed to help determine whether contamination is present in the subsurface. Please refer to the Agency's First Errata Sheet for additional information.

A new subsection 732.202(h)(2) is added to specify the locations where the samples must be collected when a UST is not removed. In accordance with current Illinois EPA practice, the following soil sampling requirements are considered adequate to identify contamination in the subsurface.

Side samples. One boring shall be drilled at the center point along each side of each UST, or along each side of each cluster of multiple USTs, remaining in place. If a side exceeds 20 feet in length, one boring shall be drilled for each 20 feet of side length, or fraction thereof, and the borings shall be evenly spaced along the side. The borings shall not be drilled more than five feet from the backfill material surrounding the UST(s). Each boring shall be drilled to a depth of 30 feet, or until groundwater or bedrock is

encountered, whichever occurs first.

Piping samples. For UST piping that is removed, samples shall be collected from the floor of the piping run in accordance with the requirements for piping runs in subsection 732.202(h)(1). For UST piping that remains in place, two borings (one on each side of the piping) shall be drilled for every 20 feet of UST piping, or fraction thereof. The borings shall be drilled as close practicable to, but not more than five feet from, the locations of suspected piping releases. If no release is suspected within a length of UST piping being sampled, the borings shall be drilled in the center of the length being sampled. Each boring shall be drilled to a depth of 15 feet, or until groundwater or bedrock is encountered, whichever occurs first.

If auger refusal occurs during the drilling of a boring required under subsection 732.202(h), the boring shall be drilled in an alternate location that will allow the boring to be drilled to the required depth. The alternate location shall not be more than five feet from the boring's original location. If auger refusal occurs during drilling of the boring in the alternate location, drilling of the boring shall cease and the soil samples collected from the location in which the boring was drilled to the greatest depth shall be analyzed for the applicable indicator contaminants.

Soil sample collection. One soil sample shall be collected from each five-foot interval of each boring required under subsection 732.202(h). A five-foot interval was selected because drill rigs typically use five-foot sections to collect a soil boring. Each sample shall be collected from the location within the five-foot interval that is the most contaminated as a result of the release. This should be determined with the use of a field-screening device, such as a photoionization detector, or visually. If an area of contamination cannot be identified within a

five-foot interval, the sample shall be collected from the center of the five-foot interval, provided, however, that soil samples shall not be collected from soil below the groundwater table. The reason for this is that contamination in the saturated zone will be addressed through the investigation and remediation of the groundwater. All samples shall be analyzed for the applicable indicator contaminants.

Renumbered subsection 732.202(h)(3) is amended to require owners and operators to submit a report demonstrating compliance with the most stringent Tier 1 remediation objectives of 35 Ill. Adm. Code 742 ("Tier 1 remediation objectives") if the remediation objectives have not been exceeded and a groundwater investigation is not required. The report shall include a characterization of the site that demonstrates compliance with the Tier 1 remediation objectives for the applicable indicator contaminants and supporting documentation that includes a site map meeting the requirements of subsection 732.110(a)(1), analytical results, chain of custody forms, laboratory certifications, and a table comparing the analytical results of all samples collected to the Tier 1 remediation objectives. Having the ability to request a No Further Remediation Letter from the Illinois EPA after the completion of early action activities allows tank owners and operators to obtain expedited closure of the release, and prevents clean sites from being investigated and remediated unnecessarily. For the purpose of payment from the UST Fund, the report is not a Corrective Action Completion Report.

Renumbered subsection 732.202(h)(4) is amended to require owners and operators to continue with a site evaluation under Subpart C of Part 732 if the Tier 1 remediation objectives are exceeded or a groundwater investigation is necessary. The criteria for determining when a groundwater investigation is necessary have been added in new subsections 732.202(h)(4)(A) through (C). The criteria are taken from subsection 732.300(b)(2).

Section 732.203 – Free Product Removal. Subsection 732.203(a) has been amended to specify the amount of free product that must be present in order to trigger the free product removal requirements. The Illinois EPA conducted a survey of the states to determine what other states require for free product removal. The Illinois EPA asked what the minimum amount of free product is that requires removal and how it is measured. Fifteen states responded and the results of the survey are shown on Attachment A. Based on experience and the results of the survey, the Illinois EPA determined that free product exceeding one-eighth of an inch in depth, measured in a groundwater monitoring well, must be removed as free product because it can be accurately measured and practically removed with currently available equipment in the marketplace. In addition, in accordance with statutory requirements, free product must be removed when it is present as sheen on groundwater in the tank excavation or on surface water.

Subsection 732.203(a)(4) has been amended to include two additional requirements. The free product removal report must contain the steps taken to identify the source and extent of the free product and a schedule of future actions necessary to finish the recovery of free product.

Subsection 732.203(c) has been added to require the submission of a free product removal plan for free product removal activities conducted more than 45 days after the confirmation of the presence of free product, and to clarify that such activities are not considered early action activities. The Illinois EPA feels a free product plan is necessary to keep free product removal activities on a schedule and to clarify what activities are consistent with early action work. The plan also is consistent with other corrective action requirements.

Subsection 732.203(d) has been added to specify that if payment from the Fund is desired for free product removal activities, the owner or operator shall submit a budget plan to the Illinois EPA for review and approval with the corresponding free product removal plan. The

budget plan is necessary to keep a handle on free product removal costs that are incurred beyond the early action period and is consistent with other corrective action requirements.

In the Agency's First Errata Sheet the reference to a copy of the eligibility and deductibility determination was removed from subsection 732.203(d) to allow free product removal to proceed without delay. Please refer to the Agency's First Errata Sheet for additional information.

As with other plans and budget plans, new subsection 732.203(f) provides that owners and operators may conduct free product removal activities without first submitting a plan or budget plan, but that a plan and a budget plan must be submitted prior to the payment of the free product removal costs. If an owner or operator determines that an approved free product removal plan or budget plan needs to be revised, new subsection 732.203(g) requires the submission of an amended plan or budget plan.

Section 732.204 – Application for Payment for Early action Costs. In conjunction with the amendments to Section 732.200, Section 732.204 is amended to reflect that budget plans are not required for early action activities at any time. As in Section 732.200, an exception is provided for free product removal activities conducted more than 45 days after the confirmation of the presence of free product.

Subpart C: Site Evaluation and Classification

Section 732.300 – General. Subsection 732.300(a) is amended to clarify that owners and operators do not need to evaluate and classify their sites in accordance with Subpart C if, after early action, they submit a report demonstrating that the most stringent Tier 1 remediation objectives of 35 Ill. Adm. Code 742 for the applicable indicator contaminants have been met.

Subsection 732.300(b)(1) is amended by adding provisions addressing the contents of the

corrective action completion report for tank owners and operators who are proceeding under subsection 732.300(b). These provisions are repeated from Section 732.409. The Illinois EPA requires the report if the tank owner or operator wishes to obtain a No Further Remediation Letter without having to follow the classification requirements of Subpart C.

The corrective action completion report shall include, but not be limited to, a narrative and timetable describing the implementation and completion of all elements of the remediation and the procedures used for the collection and analysis of samples, soil boring logs, actual analytical results, laboratory certification, site maps, well logs, and any other information or documentation relied upon by the Licensed Professional Engineer in reaching the conclusion that the requirements of the Act and regulations have been satisfied and that no further remediation is required at the site.

In addition, subsections 732.300(b)(1)(A) and (b)(3) are added in conjunction with the addition of water supply well survey requirements in other areas of Part 732. The Illinois EPA proposes to amend the Board Note following Section 732.300(b) to clarify that owners and operators proceeding under subsection 732.300(b) are not entitled to payment from the UST Fund for costs incurred after completion of early action activities in accordance with Subpart B, and to remind tank owners and operators of this limitation.

Section 732.307 – Site Evaluation. In the Agency's First Errata Sheet the words "most stringent" were added prior to "objectives or detection levels" in subsection 732.307(j)(5)(C)(i) to ensure that proper practical quantitation limits are used when samples are analyzed. Please refer to the Agency's First Errata Sheet for additional information.

Attachment A
Free Product Survey

State	Free Product Thickness (in.)	Measurement Method
Indiana	> 0.039	Interface probe or tape
Iowa	> 0.12	Not provided
Michigan	0.125	Interface probe or bailer
Nebraska	> 0.12	Not provided
Nevada	0.5	Not provided
New Mexico	> 0.12	Interface probe or tape
New York	0.125	Interface tape
South Carolina	> 0.12	Interface probe or tape
South Dakota	0.0625	Interface probe
Virginia	> 0.12	Not provided

Hernando A. Albarracin

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Education

Southern Illinois University, Carbondale, Illinois – May 1986
Bachelor of Science in Mining Engineering

Employment

Illinois Environmental Protection Agency, Springfield, Illinois – 1996 to present

Public Service Administrator

As Unit Manager in the Leaking Underground Storage Tank Section, manage and direct activities of seven project managers in the unit.

- Assign workload and provide technical guidance and assistance to project managers in the review and evaluation of projects.
- Perform annual performance evaluations.
- Coordinate Site Remediation Program activities for the Leaking Underground Storage Tank Section.
- Manage special projects, such as the remediation of abandoned gas stations funded by U.S. EPA grants, for the Leaking Underground Storage Tank Section.
- Respond to oral and written inquiries, including inquiries of a controversial or sensitive nature.
- Speak at Illinois Brownfields Conferences and other public forums regarding the remediation of underground storage tank releases.
- Coordinate and facilitate the development of Leaking Underground Storage Tank Section documents for posting on the Internet.

Illinois Environmental Protection Agency, Springfield, Illinois – 1989-1996

Environmental Protection Engineer

As permit engineer in the Permit Section, reviewed hazardous waste management permit applications for compliance with the Resource Conservation and Recovery Act and Illinois regulations.

- Attended inspections of hazardous waste management facilities in Illinois.
- Attended public hearings concerning the issuance of RCRA permits.

- Responded to oral and written inquiries regarding hazardous waste management regulations in Illinois.
- Completed continuing education courses related to hazardous waste management.
- Assisted with the training of new employees.

Southern Illinois University, Carbondale, Illinois – 1988-1989

Researcher I

Performed work on rock mechanics research projects in the Department of Mining Engineering.

- Conducted experiments in the laboratory and analyzed data.
- Installed instrumentation in Illinois coal mines and monitored data.
- Assisted with writing of reports to project sponsors.

Southern Illinois University, Carbondale, Illinois – 1986-1988

Graduate Assistant

Conducted research on rock mechanics and ground control in the Department of Mining Engineering, utilizing finite element computer software while pursuing a master's degree.

Special Skills

Translate Illinois EPA documents to Spanish to assist Hispanic communities in Illinois with environmental issues.

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	
PROPOSED AMENDMENTS TO	)	
REGULATION OF PETROLEUM	)	R 04-22
LEAKING UNDERGROUND STORAGE	)	(Rulemaking – Land)
TANKS (35 ILL. ADM. CODE 732)	)	

TESTIMONY OF DOUGLAS W. CLAY IN SUPPORT OF THE ENVIRONMENTAL PROTECTION AGENCY'S PROPOSAL TO AMEND 35 ILL. ADM. CODE 732

My name is Doug Clay. I am the manager of the Leaking Underground Storage Tank ("LUST") Section within the Bureau of Land of the Illinois Environmental Protection Agency. I have been in my current position since September of 1994. The LUST Section is primarily responsible for reviewing the technical adequacy of plans, reports and associated budgets for the remediation of releases from underground storage tanks regulated under Title XVI of the Environmental Protection Act ("Act") and 35 Ill. Adm. Code, Parts 731 and 732.

Prior to assuming my current position, I was the manager of the Disposal Alternative Unit within the Permit Section of the Bureau of Land. I have also worked in the Permit Section in the Bureau of Water. I have been employed at the Illinois EPA since 1983 following the receipt of a B.S. degree in Civil Engineering from the University of Illinois. I have been a Registered Professional Engineer in Illinois since 1989. A copy of my resume is attached.

Today I will be testifying in support of the proposed amendments to 35 Ill. Adm. Code, Part 732. These amendments are the result of: (1) modification to the Illinois Environmental Protection Act by Public Acts 92-0554 and 92-0735; (2) the need to

reform the current budget and reimbursement process; and (3) to clarify issues that have arisen since Part 732 was last amended. My testimony will provide a brief overview and focus on a portion of Subpart C (Section 732.306 only), Subpart D, Subpart E, portions of Subpart F and Subpart G.

Overview – The proposed regulatory amendments are intended to streamline the leaking underground storage tank remediation process, clarify remediation requirements and most notably reform the budget and reimbursement process. The new budget and reimbursement process would eliminate the majority of budgets and reimbursement packages submitted based on a time and material basis and replace them with submittals based on unit rates and lump sums for specific tasks established in the regulations. We believe that this will streamline the approval of budgets and the processing of reimbursement claims. Currently, there is a tremendous amount of time spent reviewing budgets and reimbursement packages. Furthermore, the majority of plan and report denials, amendments to plans and reports submitted by consultants, and appeals before the Illinois Pollution Control Board are related to budget and reimbursement issues, as opposed to technical issues. The Agency believes that the proposed amendments will allow more efficient use of Board and Agency resources, improve consistency, lower remediation costs, expedite cleanups and allow tank owners and operators to be reimbursed in a more timely manner. The proposed costs in Subpart H were developed with input from the consulting industry and other trade organizations plus nearly 15 years of Agency experience administering the leaking underground storage tank reimbursement program, and are generally consistent with the rates we currently approve for reimbursement. Over the past 15 years, the Agency has approved over one-half billion

dollars for reimbursement. This involved reviewing over 12,800 budgets and over 18,300 applications for payments. In addition, it should be noted that our current rates and the approach to the development of our current rates have been upheld in Board decisions.

Section 732.306 – Deferred Site Classification; Priority List for Payment. Wording has been changed to clarify the administrative procedures with regard to deferring site classification due to insufficient funds being available for reimbursement from the UST Fund. In addition, the minimum criteria that must be met before an owner or operator is allowed to defer has been modified and would require that the extent of soil and groundwater contamination be determined. The Agency believes that the proposed additions are required to be able to determine that the deferral of site investigation for the subject release would not pose a threat to human health or the environment. This is the same wording that is being proposed in Section 732.406.

Section 732.404 – High Priority Site. Wording was added in subsection 732.404(e) requiring the potable water well survey identified in subsection 732.307(f) to be extended if the contamination has migrated beyond the property boundary or if the soil and/or groundwater is going to be left in place and the groundwater is modeled to migrate beyond the property boundary. The same sources of information previously required must be contacted and documentation provided to help ensure the adequate protection of potable water supply wells.

In addition, the Agency may require a more extensive well survey, which may include a physical survey of wells in the area if site-specific circumstances warrant. For example, if the original well survey is conducted and identifies that some, but not all, of

the homes in a subdivision adjacent to the site are hooked up to the community water supply well and the remaining homes were not identified as having potable wells. This would be a reason to conduct further investigations, such as a physical well survey, as to how these home get their potable water. A physical well survey could include interviewing property owner regarding the existence of wells on site or in the area, inspection of properties to identify wellheads, distributing door hangers to collect information on potable wells in the area, etc.

Section 732.405 – Plan Submittal and Review. Wording was changed in subsection 732.405(b) to eliminate line item estimates of corrective action costs since this is no longer required as part of the new budget and reimbursement process, and to reference Subpart H of Part 732 for maximum payment amounts for corrective action.

In addition, wording was added that the Agency may require and take into consideration the cost of a proposed remediation, as compared to other methods of remediation available, not just conventional (dig and haul) remediation. We do not intend to require cost comparisons to other types of remediation as a standard requirement. However, if a costly methodology is proposed, the Agency may require comparison to other technology that has proven to be effective in similar situations at a much lower cost. This will be evaluated on a case-by-case basis.

Wording was changed in subsection 732.405(d) to require that a budget be approved by the Agency prior to seeking payment from the UST Fund. This is needed for administrative purposes. LUST Section technical staff review and approve the budgets, while the LUST Claims Unit (LCU) staff reviews the actual payment requests. LCU staff relies on the approved budget to determine that the reimbursement requested

will not exceed the approved amount. Without an approved budget, payment requests must be forwarded to the technical staff for review and then sent back to LCU for final processing, delaying the time it takes to issue reimbursement payments.

In addition, wording was added to subsection 732.405(d) in the Board Note that highlights that all reimbursement requests must be submitted to the Agency no later than one year after issuance of the No Further Remediation letter. This is consistent with wording added at subsection 732.606(rr). This will give owner and operators ample time to submit reimbursement claims to the Agency, while setting a specific deadline for reimbursement for a given occurrence. The deadline in needed to help the Agency manage the UST Fund and have better handle on the outstanding liability.

Section 732.406 – Deferred Corrective Action; Priority List for Payment. Wording has been changed to clarify the administrative procedures with regard to deferring corrective action due to insufficient funds being available for reimbursement from the UST Fund. In addition, the minimum criteria that must be met before an owner or operator is allowed to defer has been modified and would require that the extent of soil and groundwater contamination be determined. The Agency believes that the proposed additions are required to be able to determine that the deferral of corrective action for the subject release would not pose a threat to human health or the environment. This is the same wording as proposed in Section 732.306.

Section 732.407 – Alternative Technology. Wording was added to subsection 732.407(b) to ensure that a proposed alternative technology does not substantially exceed the cost of other readily available alternative technologies. This is needed to help prevent excessive remediation costs and to ensure the solvency of the UST Fund.

Subsection 732.407(d) was added to allow the Agency the ability to require remote monitoring of alternative technology. This may result in remote monitoring by the Agency, the consultant or both. If required, this would allow the Agency and/or the consultant to monitor the effectiveness and efficiency of an alternative technology without having to make frequent trips to the site (if that is being proposed). This would be a cost that would be reimbursable on a site-specific basis pursuant to 732.850 if approved by the Agency as part of a corrective action plan, and would be expected to reduce operation and maintenance costs by limiting personnel time on the site to inspect whether the system is operating.

Section 732.409 – Groundwater Monitoring and Corrective Action Reports. Wording was added to identify the documentation of the water supply well survey conducted pursuant to subsection 732.404(e) that the Agency needs to ensure that potable water supply wells are adequately protected from contamination left in place as part of the remediation plan. This is consistent with the documentation that is required in subsection 732.309(a).

Section 732.500 through Section 732.505 - Wording has been added throughout Subpart E to clarify Agency review procedures. An explanation of the specific wording changes is provided in the Statement of Reasons.

Section 732.605 – Eligible Corrective Action Costs. Wording has been added to subsection 732.605(a)(17) to clarify that cost associated with the destruction or dismantling and reassembly of above grade structures must be approved by the Agency prior to such activity to be eligible for reimbursement. Furthermore, such costs in excess of $10,000 are not eligible for reimbursement. This limit is what the Agency believes is

reasonable for destruction or dismantling and reassembly of a structure and reflects historical practice. In the Agency's First Errata Sheet the wording in subsection 732.605(a)(17) is changed so that the $10,000 limit applies per occurrence rather than per site. There could be situations where destruction or dismantling and reassembly costs would be appropriate at a site more than once. For example, when a cleanup is completed and the owner receives an NFR letter, then two years later a second occurrence is reported. As part of this second occurrence, a building must be demolished. Up to $10,00 in costs associated with the second occurrence would be reimbursable with the proposed change in the First Errata Sheet.

Wording has been added at subsection 732.605(a)(19) to clarify that removal/abandonment of a potable water supply well, and replacement of the well or connection to a public water supply, whichever is less, may be an eligible cost. This addition is made to codify current Agency practice.

Wording has been added at 732.605(a)(20) to clarify that costs associated with the repair or replacement of potable water supply lines damaged to the point of requiring repair or replacement as a direct result of the release may be an eligible cost. The key here is that it is the "direct result of the release" that requires the action. This addition is to codify current Agency practice.

Section 732.606 – Ineligible Corrective Action Costs. Wording has been added to subsection 732.606(kk) to expand the list of costs that are eligible for reimbursement after issuance of a No Further Remediation (NFR) Letter. In addition to cost incurred for MTBE remediation pursuant to subsection 732.310(i)(2), the activities identified would not be expected to be performed prior to issuance of the NFR Letter. Therefore, these

costs should be reimbursed, if reasonable, if incurred after issuance of the NFR Letter. However, they must still be incurred and submitted for payment within one year of issuance of the NFR Letter in accordance with subsection 732.601(j).

Subsection 732.606(pp) was added as an ineligible item under Part 732 since eligible cost incurred after election into Part 734 would be reimbursed under Part 734. In addition, subsection 732.606(qq) was added to make it clear that free product reports that are not submitted in accordance with the schedule pursuant to 732.203(a)(5) are not reimbursable.

Subsections 732.606(tt), (uu), (vv), (xx), (bbb), (ccc) and (eee) were added to make it clear that these costs are ineligible and to codify current Agency practice.

Subsection 732.606(yy) was added to clarify that treatment or disposal of soil not exceeding the applicable remediation objectives is not reimbursable. This is an issue when the contamination is at some depth from the surface, but between the surface and the contamination there is a significant amount of clean overburden. The UST Fund should not pay for disposal of soil if it is not needed and the overburden could be removed, set aside and put back as backfill once the contaminated soil is removed. There may be some cases when it is more cost effective to remove and dispose of the overburden with the contaminated soil. These situations would only be reimbursed with prior approval by the Agency.

Subsection 732.606(zz) and (aaa) was added to clarify when the removal and replacement of a potable water supply source is eligible for reimbursement. This is tied back to subsections 732.605(a)(19) and (20).

Subsection 732.606(bbb) was added as a counterpart to subsections 732.605(a)(19) and (20) and to codify current Agency practice.

Subsection 732.606(ccc) was added as a counterpart to subsection 732.606(q) and to codify current Agency practice.

Subsection 732.606(ddd) was added to make it clear that fees or payments to government entities or other persons for corrective action related activities, such as fees to gain access to property for investigation or remediation, to secure institutional controls, or to obtain permits, are not reimbursable. The Agency has approved reimbursement of some reasonable fees and payments for state, county or local permits. However, these have become more and more variable and have become very hard to justify as reasonable. We have not reimbursed fees or payments for access to property, or for agreeing to an institutional control. Fees and payments identified above would be the responsibility of the owner or operator, would not be reimbursed from the UST Fund, and should be taken into consideration when evaluating remediation options.

Subsection 732.606(eee) is added to codify current Agency practice.

Section 732.614 – Audits and Access to Records; Records Retention. This Section was added to reflect statutory language giving the Agency authority to audit records associated with corrective action pursuant to Title XVI of the Act. This section provides more specifics regarding the Agency's audit authority and identifies specific record retention time frames. This section is based upon other Board and Agency rules addressing record retention and inspection. The Agency plans to perform periodic audits of owners, operators and consultants associated with the remediation of leaking underground storage tanks.

Section 732.703 – Duty to Record a No Further Remediation Letter. Subsection 732.703(c) was changed to allow any highway authority, not just the Illinois Department of Transportation (IDOT), to enter into a Memorandum of Agreement (MOA) with the Agency to perfect the No Further Remediation Letter. Subsection (c) was originally put in at IDOT's request, since there was no specific property title for IDOT right-of-ways on which to record a No Further Remediation Letter. This issue has surfaced for other highway authority entities (e.g. counties and municipalities). Therefore, the Agency is proposing that the use of an MOA be expanded to any highway authority.

Douglas W. Clay, P.E.

Professional experience

1995 - Present Illinois Environmental Protection Agency

Section Manager

- Responsible for managing the Leaking Underground Storage Tank Program in Illinois, which oversees the cleanup of releases from underground storage tanks throughout the state.
- Directly and indirectly manager 42 staff and managers
- Responsible for partial administration of the UST Fund, which is used to reimburse of underground storage tank owners and operators.

1994 - 1995 Illinois Environmental Protection Agency

Section Manager (Acting)

- Responsible for managing the Leaking Underground Storage Tank Program in Illinois, which oversees the cleanup of releases from underground storage tanks throughout the state.
- Directly and indirectly manager 42 staff and managers
- Responsible for partial administration of the UST Fund, which is used to reimburse of underground storage tank owners and operators.

1990 - 1994 Illinois Environmental Protection Agency

Unit Manager

- Responsible for managing the Disposal Alternative Unit in the Bureau of Land, Permit Section
- The unit reviews permit applications for solid and hazardous waste treatment and storage facilities.

1988 - 1990 Illinois Environmental Protection Agency

Environmental Protection Engineer IV

- Review permit applications for solid waste disposal and transfer facilities in the Bureau of Land, Permit Section, Solid Waste Unit.
- Act as lead worker in the Solid Waste Unit.

1985 - 1988 Illinois Environmental Protection Agency

Environmental Protection Engineer III

- Review permit applications for sewage treatment plants, pump stations and sewer connections.

1984 - 1985 Illinois Environmental Protection Agency

Environmental Protection Engineer II

- Review permit applications for sewage treatment plants, pump stations and sewer connections.

1983 - 1984 Illinois Environmental Protection Agency

Environmental Protection Engineer I

- Review permit applications for sewage treatment plants, pump stations and sewer connections.

Education

1978 - 1982 University of Illinois Champaign-Urbana

- Received a B.S. in Civil Engineering

ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	
PROPOSED AMENDMENTS TO	)	R04-22
REGULATION OF PETROLEUM	)	(Rulemaking - Land)
LEAKING UNDERGROUND STORAGE	)	
TANKS (35 ILL. ADM. CODE 732)	)	

TESTIMONY OF DOUGLAS E. OAKLEY IN SUPPORT OF
THE ENVIRONMENTAL PROTECTION AGENCY'S PROPOSAL
TO AMEND 35 ILL. ADM. CODE 732

1. Background

My name is Doug Oakley. I have been the official manager of the LUST Claims Unit for the past 5 years. However, I have worked in the reimbursement / payment side of the program in various capacities since January of 1990. The primary function of the LUST Claims Unit is to review claims submitted for payment from the Underground Storage Tank (UST) Fund to determine if the costs are eligible, reasonable, and, if necessary, approved in a Corrective Action Plan and Budget. I am a U.S. Army Veteran and in 1980 received an Associate Degree From Lincoln Land Community College. My resume is attached. I will be testifying in support of amendments to 35 Ill. Admin. Code Part 732.

2. Description of the Proposed Regulations

Subpart F: Payment From The Fund

Section 732.601 – Applications for Payment. Subsection 732.601(b)(9) has been added to clarify that requests for payment must be accompanied by legible invoices, receipts and supporting documentation allowing the Agency to make a clear determination of what sorts of activities are being requested for payment. This information has always been requested by the Agency as part of the application for payment.

New subsection 732.601(b)(10) has been added as a result of an alarming number of phone calls to the LUST Claims Unit from subcontractors who claim not to have been paid for the work they performed at LUST sites. In order to claim handling charges, the primary contractor must pay the subcontractor. The Agency feels that by requiring lien waivers, cancelled checks or signed and notarized affidavits from subcontractors, this problem should be resolved.

Language in Subsection 732.601(b)(11) was added to ensure that laboratories that are accredited in Illinois perform Lab Analysis work submitted for payment from the fund.

Wording has been deleted from Subsection 732.601(f) and (g) to clarify that the Agency intends to review all amended plans, budgets and claims prior to payment.

New subsection 732.601(i) was added to ensure that all corrective action that is deferred due to insufficient funds would have to be performed and approved by the Agency before payment can occur.

New subsection 732.601(j) was added to encourage prompt submittals of claims against the UST Fund. Long delays in claim submittals can and have led to numerous problems involving proper documentation of costs. Avoiding such delays should help to streamline the claim review process and result in prompter payments. In addition, this is needed to better predict outstanding liability against the UST Fund, plan for future claims and properly manage the UST Fund to ensure its solvency. Please note that in its First Errata Sheet the Agency has removed references to budget plans and amendments.

Section 732.602 – Review of Applications for Payment. This section has been clarified to reflect the fact that the Agency conducts a full review of all applications for payment.

Section 732.605 – Eligible Corrective Action Costs. Wording has been added to Subsection 732.605(a)(16) to clear up confusion regarding when concrete replacement should

occur. In the past, situations arose where owners/operators replaced concrete after early action activities, before all remediation was complete. The Agency believes that paying for concrete/asphalt replacement after the issuance of an NFR ensures that costs associated with these activities will only be paid once.

Section 732.606 – Ineligible Corrective Action Cost. Language in Subsection 732.606(g) was added to this Section to clarify that legal fees are ineligible for payment from the UST Fund unless the owner/operator prevails before the Board and the Board authorizes payment of such costs. "Legal Defense Costs" was a somewhat ambiguous term when used in the context of LUST clean ups.

Language in Subsection 732.606(mm) was modified to clarify the intent of subsection 732.601(b)(10).

Language in Subsection 732.606(rr) was added to clarify the intent of Subsection 732.601(j).

Language in Subsection 732.606(ss) is proposed to prohibit companies from adding handling charges to the fees of their associated entities. It does not prohibit hiring one's own company to do the work and be paid a fair and reasonable price including profit. It simply disallows handling charges.

Language in Subsection 732.606(ww) was added to prevent multiple layers of subcontracting and handling charge assessments. This change reflects current Agency practice.

Section 732.610 – Indemnification. Language in Section 732.610 was added to further clarify and define the steps and procedures necessary to access the UST Fund for indemnification purposes.

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Doug.Oakley@epa.state.il.us

Douglas E. Oakley

Professional experience

Illinois Environmental Protection Agency.

Public Service Administrator (July 1999 to present) Manage, direct, organize and supervise the Unit activities of all staff responsible for auditing and tracking claims against the Leaking Underground Storage Tank Fund; assist the Division Manager in Leaking Underground Storage Tank and Brownfields accounting issues, including appearing at hearings before the Illinois Pollution Control Board.

Accountant III / Accountant Advanced (July 1993 to July 1999) Assign, supervise and review the Unit activities of a staff of twelve professional and sub-professional personnel in maintaining accounting records regarding the Leaking Underground Storage Tank Fund; work daily with the accounting section head in the development of complex new procedures and program changes.

Accountant II (February 1992 thru July 1993) Independently perform complex accounting and auditing work in regards to the Leaking Underground Storage Tank Fund, assist in converting manual financial operations to data processing, train lower level accountants and office assistants, prepare complex audit findings and give testimony in legal hearings and proceedings on such findings.

Accountant I (January 1990 thru February 1992) Maintained general account books, prepared financial statements and reports in regards to the Illinois Leaking Underground Storage Tank Fund, assisted upper level accountants in the preparation of detailed reports to the Agency Division Manager and Director, attended public seminars as required.

Office Assistant (May 1986 thru January 1990). Maintained a complex complete set of general account books and files pertaining to special waste stream applications, reviewed and examined entries of various types of files, documents and records, maintained log book associated with special waste generator identifications numbers.

Illinois Department of Revenue (June 1984 thru May 1986). Validated, tracking check perfecting and processing over 300 different varieties of tax forms and checks. Supervised staff of check perfecters during tax season.

Additional Background	United States Army – Veteran Former Commander and present member of American Legion Post 442
Education	Lincoln Land Community College, Springfield, Il. – 1980, Associate degree in Business Administration Graduate of United States Army School of Transportation located in Ft. Eustis, Va. - 1967
Awards received	Certificate of Merit – Illinois Department of Revenue, 1985 Superior Performance Award – Illinois Environmental Protection Agency, 1991 Bureau of Land Employee of the Month – Illinois Environmental Protection Agency, July 1992 Ten Year Service Award – State Of Illinois – 1994 Fifteen Year Service Award – State of Illinois - 1999

ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	
PROPOSED AMENDMENTS TO	)	R04-22
REGULATION OF PETROLEUM	)	(Rulemaking – Land)
LEAKING UNDERGROUND STORAGE	)	
TANKS (35 ILL. ADM. CODE 732)	)	

TESTIMONY OF BRIAN BAUER IN SUPPORT OF
THE ENVIRONMENTAL PROTECTION AGENCY'S PROPOSAL TO AMEND
35 ILL. ADM. CODE 732

My name is Brian Bauer. I am a Project Manager in the Leaking Underground Storage Tank Section within the Bureau of Land of the Illinois Environmental Protection Agency. I have worked in my current position since April 1992. I received a B.S. in Biology in 1990 from Northland College and a M.A. in Environmental Studies in 1998 from the University of Illinois at Springfield. My resume is attached.

Today I will testify in support of the proposal to adopt amendments to 35 Ill. Adm. Code 732. This proposal is the result of modifications to the Illinois Environmental Protection Act by Public Acts 92-0554 and 92-0735, and the need to reform the current reimbursement procedures. My testimony will focus on the following maximum payment amounts proposed in Subpart H, as well as Appendix E, of Part 732:

Section 732.810	UST Removal or Abandonment Costs
Section 732.815	Free Product or Groundwater Removal and Disposal
Section 732.820	Drilling, Well Installation, and Well Abandonment
Section 732.840	Replacement of Concrete, Asphalt, or Paving; Destruction or Dismantling and Reassembly of Above Grade Structures
Section 732.845	Professional Consulting Services
Section 732.APPENDIX E	Personnel Titles and Rates

Harry Chappel will discuss the remaining portions of Subpart H in his testimony.

Since 1989 the Agency has reviewed over 18,300 applications for payment and paid more than $565,000,000.00 from the Underground Storage Tank Fund. Since September 13, 1993, the Agency has reviewed over 12,800 budgets for proposed corrective action activities. Based on this collective experience, the Agency believes that the following proposed maximum costs are reasonable and fair. The Agency realizes that the amount of data used to calculate the proposed maximum payment amounts may appear small, however these averages are consistent with the Agency's historical data and the rates the Agency is presently approving in budgets and applications for payment.

Subsection 732.810 UST Removal or Abandonment Costs

The allowable costs for the excavation, removal, and disposal or abandonment of an UST system are listed in the table below. The maximum cost is based on the size of each UST being removed or abandoned.

UST Volume	Maximum Total Amount per UST
110 – 999 gallons	$2,100.00
1,000 – 14,999 gallons	$3,150.00
15,000 or more gallons	$4,100.00

The above rates include all costs associated with the excavation, removal, and disposal or abandonment of an UST system. Costs for consultant oversight and the disposal of waste other than the UST itself are not included in this rate.

An evaluation of twenty LUST sites, nine of which had tank removal or abandonment charges broken out as separate charges, was conducted. At the nine LUST sites a total of 34 USTs were either removed or abandoned in place. The evaluation revealed that the average cost to remove each of the USTs was $3,152.71. Based on the Agency's experience, this average cost is consistent with the amounts the Agency has

seen historically for the removal of USTs within the typical range of 6,000-gallons to 10,000-gallons in size. During conversations with UST removal contractors it was determined that smaller tanks (110-gallons to 999-gallons) cost less and that larger tanks (15,000-gallons or more) cost more to remove or abandon than medium-sized tanks (1,000-gallons to 14,999-gallons). However, not proportionally more.

Section 732.815 Free Product or Groundwater Removal and Disposal

The maximum allowable costs for the removal, transportation, and disposal of free product or groundwater shall not exceed $0.68 per gallon. This rate includes, but is not limited to, all costs associated with the removal, transportation and mobilization, and the disposal of free product or groundwater. The rate is for the removal of free product or groundwater from an excavation, monitoring well, sump, or other location via a vacuum truck as well as the removal of free product or groundwater from drums collected via hand bailing of free product from a monitoring well or sump or other approved method. Contaminated groundwater collected during monitoring well development or purging activities may also be disposed and reimbursed through this method instead of disposing of contaminated groundwater in drums, which will be discussed later.

An evaluation of fifty-seven LUST sites where free product and/or contaminated groundwater was removed via one of the methods discussed above revealed that the average cost to remove, transport, and dispose free product and/or contaminated groundwater was $0.68 per gallon. Based on discussions with consultants and contractors it was determined that a minimum amount needed to be established since it would not be economically feasible to dispose of small amounts of free product and groundwater at the per-gallon rate. The Agency conducted a survey of vacuum truck contractors and determined that a $200.00 minimum charge should be available for

instances where small amounts of free product and groundwater were being removed, transported, and disposed.

Section 732.820(a) Drilling, Well Installation, and Well Abandonment

The allowable maximum costs for drilling for the purpose of collecting soil samples and/or the installation of a monitoring well and for borings advanced for the purpose of injecting a compound for a remediation activity are listed in the table below. The table establishes a rate per linear foot of drilling advanced based on the type of drilling that is conducted and the reason for the drilling.

Type of Drilling	Maximum Total Amount
Hollow-stem auger	$23.00 per foot
Direct-push platform	$18.00 per foot
Direct-push platform for injection	$15.00 per foot

The above rate includes, but is not limited to, all costs for mobilizing and demobilizing the drill rig or direct-push platform to and from the site, drilling labor, which usually consists of two people (a driller and a laborer), decontamination of the drilling equipment, the actual act of drilling, soil boring abandonment, and incidental expenses or charges such as 55-gallon drums, bentonite to backfill the soil boring, liners, sleeves, or concrete coring. The rates do not include costs associated with consultant oversight of the drilling or monitoring well installation.

The rates are broken down into two different drilling types: hollow-stem auger and direct-push platform. Hollow-stem auger drilling is considered the conventional drilling method for collecting soil samples and installing monitoring wells that uses, as the name implies, a hollow-stem auger. A drill rig rotates the auger, and a bit on the end of the auger loosens the soil, which then brings the soil to the surface by the rotating auger flights. Direct-push is a method that employs hollow steel rods that are driven,

pushed, and/or vibrated into the ground. Some direct-push platforms are capable of using an auger tool for the installation of a monitoring well. Since there is an additional amount of drilling that is required to install a monitoring well via a direct-push platform with an auger attachment (more so than just installing a direct–push monitoring well), the applicable drilling rate for a direct-push platform with an auger attachment will be the hollow-stem auger rate rather than the direct-push platform rate.

A. Hollow-stem Auger Drilling

An evaluation of forty-nine LUST sites revealed the average for hollow-stem auger drilling to be $16.72 per linear foot of soil boring drilled. Additional average costs associated with hollow-stem auger drilling are as follows:

Activity	Average
Mobilization / Demobilization	$307.72 per event
Decontamination	$136.18 per event

Based on the Agency's experience and the amount of drilling required to satisfy the proposed regulation changes it was determined that the average amount of feet drilled at one event ranges from 100 to 120 feet. Assuming an average of 100 feet of drilling per event, eight soil borings advanced to a depth of 10 to 15 feet, an average cost per linear foot drilled for mobilization and demobilization, decontamination, and well abandonment would be as follows:

Activity	Cost per foot
Mobilization / Demobilization	$3.08
Decontamination	$1.36

Adding the above costs to the average for hollow-stem auger drilling of $16.72 per linear foot of soil boring drilled, the total cost per linear foot drilled is $21.16. To

cover incidental expenses or charges, $1.84 per foot was added for a total cost of $23.00 per linear foot drilled using a hollow-stem auger.

Based on conversations with consultants it was determined that drilling events where only a limited number of soil borings or monitoring wells would be installed would not be economically possible since certain costs such as mobilization, demobilization, and decontamination were at a fixed rate regardless of the number of feet being drilled. The Agency determined that a $1,500.00 minimum charge should be available for instances when limited hollow-stem auger drilling was needed.

B. Direct-push Platform

An evaluation of nine LUST sites revealed the average daily rate for the use of a direct-push platform ranged from $1,000.00 to $1,200.00. Based on the Agency's experience this range is typical of what the Agency would normally see. Again, assuming an average of 100 feet of drilling per event, eight soil borings advanced to a depth of 10 to 15 feet, an average cost per linear foot pushed would be $10.00 to $12.00. The Agency assumed that the same additional cost as hollow-stem auger drilling would be incurred with direct-push. These costs are as follows:

Activity	Cost per foot
Mobilization / Demobilization	$3.08
Decontamination	$1.36

Adding the above costs to the upper limit value of the average range for direct-push platform drilling of $12.00 per linear foot of direct-push soil boring, the total cost per linear foot drilled is $16.44. To cover incidental expenses or charges, $1.56 per foot was added for a total cost of $18.00 per linear foot drilled using a direct-push platform.

Based on conservations with consultants it was determined that drilling events where only a couple of direct-push soil borings or monitoring wells would be installed

would not be economically possible since certain costs such as mobilization, demobilization, and decontamination were at a fixed rate regardless of the number of feet being drilled. The Agency determined that a $1,200.00 minimum charge should be available for instances when limited direct-push soil borings were needed.

C. Direct-push Platform for Injection

The rate for direct-push platform for injection is included the Agency's First Errata Sheet to 35 Ill. Adm. Code 732. The direct-push platform for injection of compounds for remedial purposes rate used the same evaluation of nine LUST sites mentioned above that revealed the average daily rate for the use of a direct-push platform ranged from $1,000.00 to $1,200.00. Again, assuming an average of 100 feet of drilling per event, eight soil borings advanced to a depth of 10 to 15 feet, an average cost per linear foot pushed would be $10.00 to $12.00. The Agency assumed that the same additional mobilization costs, as hollow-stem auger drilling would be incurred with direct-push for injection. These costs are as follows:

Activity	Cost per foot
Mobilization / Demobilization	$3.08

Adding the above cost to the upper limit value of the average range for direct-push platform drilling of $12.00 per linear foot of direct-push soil boring, the total cost per linear foot drilled is $15.00. Since soil sampling or the installation of a monitoring well would be conducted at the same time as the injection of a compound, neither incidental expenses nor decontamination charges were included in this rate.

Based on conversations with consultants it was determined that drilling events where only a couple of direct-push soil borings or monitoring wells would be installed would not be economically possible since certain costs such as mobilization and demobilization were at a fixed rate regardless of the number of feet being drilled. It was

also assumed that direct-push platform drilling for injection would have similar economic restraints; therefore, the Agency determined that a $1,200.00 minimum charge should be available for instances when limited direct-push for injection soil borings were needed.

Section 732.820(b) Drilling, Well Installation, and Well Abandonment

Groundwater-monitoring Wells

If a permanent monitoring well were installed in a soil boring advanced in conjunction with Subsection 732.820(a) the maximum rates listed in the following table would be applicable:

Type of Borehole	Maximum Total Amount
Hollow-stem auger	$16.50/foot
Direct-push platform	$12.50/foot

The above rates include, but are not limited to, all costs for the installation of a groundwater-monitoring well except for costs associated with drilling or consultant oversight of the drilling or monitoring well installation.

The rates are broken down into two different drilling types: hollow-stem auger and direct-push platform. Some direct-push platforms are capable of using an auger tool for the installation of a monitoring well. Since the materials used to install monitoring wells via a direct-push platform with an auger attachment are similar to the materials used to install monitoring wells via a hollow-stem auger, the applicable rate for monitoring wells installed via a direct-push platform with an auger attachment will be the hollow-stem auger rate rather than the direct-push platform rate.

An evaluation of thirty-seven LUST sites revealed the following cost averages for the components of a monitoring well:

Material	Hollow-stem auger	Direct-push platform
PVC Screen 10-foot	$35.00	$30.00

PVC Riser 10-foot	$20.00	$15.00
Well Box	$87.00	$87.00
Bottom Cap	$9.00	$7.00
Locking Cap	$22.00	$18.00
Lock	$7.00	$7.00
Bailer/rope	$16.00	$14.00
Concrete	$10.00	$10.00
Sand	$70.00	$40.00
Bentonite	$45.00	$15.00
Incidentals	$9.00	$7.00
Total	$330.00	$250.00

The above averages are based on a monitoring well installed to a depth of 20 feet below ground surface. The hollow-stem auger monitoring well is based on a 2-inch diameter for the screen and riser. The direct-push platform monitoring well is based on a 1 to 1.5-inch diameter screen and riser. The rates for the installation of a monitoring well were determined by dividing the totals from the above table by 20 feet.

Section 732.820(c) Drilling, Well Installation, and Well Abandonment

Groundwater-recovery Wells

The rates for groundwater-recovery wells are included the Agency's First Errata Sheet to 35 Ill. Adm. Code 732. The maximum rates listed in the following table would be applicable based on the diameter of the finished recovery well:

Well Diameter	Maximum Total Amount
4 or 6 inches	$25.00/foot
8 inches or greater	$41.00/foot

The above rates include, but are not limited to, all costs for the installation of a groundwater recovery well except for costs associated with drilling or consultant oversight of the drilling or monitoring well installation.

An evaluation of seven LUST sites and extrapolation of the data for the 2-inch monitoring well revealed the following values and cost averages for the components of a groundwater-recovery well:

Material	4 or 6 inches	8 inches or greater
PVC Screen 10-foot	$65.00	$110.00
PVC Riser 10-foot	$40.00	$80.00
Well Box	$87.00	$87.00
Bottom Cap	$12.00	$12.00
Locking Cap	$23.00	$25.00
Lock	$7.00	$7.00
Bailer/rope	$16.00	$16.00
Concrete	$10.00	$10.00
Sand	$140.00	$280.00
Bentonite	$90.00	$180.00
Incidentals	$10.00	$13.00
Total	$500.00	$820.00

The above averages are based on a groundwater-recovery well installed to a depth of 20 feet below ground surface. The rates for the installation of a groundwater-recovery well were determined by dividing the totals from the above table by 20 feet.

Section 732.820(d) Drilling, Well Installation, and Well Abandonment

Groundwater-monitoring Well Abandonment

The rates for groundwater-monitoring well abandonment are included in the Agency's First Errata Sheet to 35 Ill. Adm. Code 732. The regulations require that all groundwater-monitoring wells be abandoned pursuant to the regulations promulgated by the Illinois Department of Public Health at 77 Ill. Adm. Code 920.120. These regulations require that the well be filled with a substance such as bentonite and that the top two feet of the well casing be removed.

The average cost to abandon a groundwater-monitoring well is about $150.00. The average depth to which a groundwater-monitoring well is installed ranges from 15 to 20 feet below ground. Dividing the average abandonment cost by 15 feet, the allowable maximum cost for abandoning a groundwater-monitoring well is $10.00 per linear foot of well. This rate would not apply to groundwater-monitoring wells that were destroyed or removed during an excavation and were unable to be properly abandoned.

Section 732.840(a) Replacement of Concrete, Asphalt, or Paving; Destruction or Dismantling and Reassembly of Above Grade Structures

The allowable maximum costs for paving or the replacement of asphalt or concrete are listed in the table below. The table establishes a rate based on the thickness of the asphalt being applied to the site.

Depth of Replacement Material	Maximum Total Amount per Square Foot
Two inches of asphalt	$1.51
Three inches of asphalt	$1.70
Four or more inches of asphalt	$2.18
Any depth of concrete	$2.18

The above rate includes all costs associated with the replacement of asphalt or concrete in accordance with Section 732.605(a)(16). The square foot rates for the installation of asphalt are from the 2003 National Construction Cost Estimator, 51st Edition. The Agency proposes to use the same four or more inches of asphalt rate for the concrete rate. Concrete installed at the same thickness typically costs about 1/3 more than asphalt; therefore, the Agency believes the most cost-effective approach is to limit the amount of concrete replacement by limiting the concrete rate to the four or more inches of asphalt rate.

Section 732.840(b) Replacement of Concrete, Asphalt, or Paving; Destruction or Dismantling and Reassembly of Above Grade Structures

The total cost for the destruction or the dismantling and reassembly of above grade structures shall not exceed $10,000.00. Please note that in the Agency's First Errata Sheet this limit is changed from $10,000 per site to $10,000 per occurrence. Costs for these activities must be submitted to the Agency in a time and materials breakdown. This is a clarification of a policy by which the Agency has always abided. Doug Clay will provide additional testimony on this subject as he addresses Section 732.605(a)(17).

Section 732.845(a)(2) Professional Consulting Services

Early Action

The allowable maximum costs for fieldwork or oversight for early action shall not exceed a total of $500.00 per half-day. The Agency, based on conservation with the Consulting Engineer Council of Illinois (CECI), determined that fieldwork would be best billed at a half-day rate. The half-day rate is 5 hours of work at $80.00 per hour, the average hourly wage (please refer to Mr. Chappel's testimony for further information on the average hourly wage) and the additional expenses listed in the table below.

Item	Rate
Vehicle or Mileage	$30.00
Photo Ionization Detector (PID)	$50.00
Miscellaneous Supplies	$20.00

The additional expenses are one-half of the average daily rates the Agency typically sees in budget and reimbursement claim submittals for the items listed above. The miscellaneous supplies charge is to cover such things as gloves, sampling jars, plastic bags, and all other incidental materials.

Subsection 732.845(a)(2)(A) allows for one half-day for UST removal oversight and one half-day for each 250 cubic yards of visibly contaminated fill material removed and disposed of in accordance with 732.202(f). Based on conversations with underground storage tank removal contractors it appears that consultants are not always present when the USTs are actually being removed. Consultant participation during part of the UST removal would be beneficial since soil sampling from the limits of the excavation is required pursuant to Section 732.202(h)(1). Consultant oversight of the removal of contaminated fill material is standard practice; most soils can be excavated into a truck via a 1 cubic yard backhoe at a rate of 57 cubic yards per hour (2003 National Construction Cost Estimator, 51st Edition). The rate was rounded down to 250 cubic yards per half-day, or 5 hours, to allow for a conservative estimate.

Subsection 732.845(a)(2)(B) allows for one half-day of consultant oversight for every 4 soil borings that are conducted as part of measuring for the presence of the release in accordance with Section 732.202(h)(2). One half-day rate will apply to sites where 1 to 4 soil borings are conducted, two half-day rates will be applicable for sites where 5 to 8 soil borings are conducted, and so on. Based on conversations with former

members of the Agency's drill rig team, 8 to 10 hollow-stem auger soil borings to a depth of 20 feet could be conducted within a one-day period of 8 hours. The half-day rate allows for 5 hours per half-day for such things logging the boring, collecting samples, and screening with a PID while the boring is being advanced, and allows an additional hour of field time that should account for travel time and/or any other incidental time that is needed.

Subsection 732.845(a)(2)(C) allows for one half-day of consultant oversight if a line release is repaired. Line releases are typically repaired by a UST installation contractor and the costs to repair the UST system are not reimbursable (Section 732.630(l)); however, the cost to sample the soil while the repair is being conducted and document the repair is an eligible remediation cost. The Agency believes this work can be conducted within the half-day time frame.

Section 732.845(a)(5) Professional Consulting Services

Free Product Removal

The allowable maximum costs for free product removal, fieldwork or field oversight shall not exceed a total of $500.00 per half-day. The number of half-days shall be determined by the Agency on a site-specific basis.

Section 732.845(c)(2) Professional Consulting Services

Low Priority Corrective Action

Subsection 732.845(c)(2) allows for one half-day of consultant fieldwork per-groundwater sampling event. The minimum requirements for low priority corrective action requires the sampling of four groundwater monitoring wells quarterly the first year, semi annually the second year, and annually the third year for a total of seven sampling events. Based on the Agency's experience, an event that consists of sampling 4 groundwater monitoring wells could be completed within the proposed half-day time

frame. The one half-day per sampling event allows for 1 hour for each monitoring well required to be sampled and one additional hour for of field time that should account for travel time and/or any other incidental time that is needed.

Section 732.845(d)(2) Professional Consulting Services

High Priority Corrective Action

Subsection 732.845(d)(2)(A) allows for one half-day for each 250 cubic yards of contaminated soil removed and disposed. The basis for this rate is explained in the paragraphs above for Subsection 732.845(a)(2)(A).

Section 732.APPENDIX E Personnel Titles and Rates

The appendix of personnel titles and rates is designed to be used whenever payment is allowed on a time and materials basis. As noted in Agency testimony, there are certain times when a site-specific time and materials budget or reimbursement claim breakdown is warranted-for example alternate technology corrective action. As part of the time breakdown in the budget or reimbursement claim the maximum hourly rate for a particular title is listed in Appendix E. A consultant that proposes a time and material budget must use the titles, and their personnel must be able to meet the title requirements listed in Appendix E. The reimbursed personnel rate is based on the task performed, not necessarily the title of the person performing the task (e.g., the proper rate for a Professional Engineer or Professional Geologist collecting a sample from a groundwater-monitoring well is a technician rate, not a Professional Engineer or Professional Geologist rate).

The consolidation of titles used in the reimbursement process is essential to maintaining consistency in Agency reviews and to expediting the review process. The Agency has counted 136 different titles used in budgets and reimbursement claims.

Appendix E, excluding the maximum hourly rates, the addition of the Draftsperson/CAD titles and the clarification on the minimum years of experience, was prepared by CECI.

The maximum hourly rates are based on the average rate the Agency has seen on budgets and reimbursement claims submitted to the Agency. The rates were then rounded off and adjusted to allow for Illinois license requirements and/or minimum years of experience. The average hourly rate and the number of entries used to calculate the average is as follows:

Title	Number of Entries	Average Hourly Rate
Engineer	132	$78.25
Professional Engineer	205	$102.01
Geologist	174	$70.69
Professional Geologist	150	$91.74
Scientist	115	$69.10
Project Manager	222	$85.00
Senior Project Manager	42	$94.24
Technician	391	$54.58
Account Technician	31	$50.80
Administrative Assistant	252	$37.13
Draftsperson/CAD	146	$51.51

Brian P. Bauer
(217) 782-3335

EXPERIENCE:

Illinois Environmental Protection Agency, Springfield, Illinois
Environmental Protection Specialist III, April 1992 to Present
In the Leaking Underground Storage Tank Section:

- Acted as the technical Project Manager for over 400 remediation projects;
- Reviewed over 600 Applications for Reimbursement from the LUST Fund;
- Was a member of numerous committees that include drafting proposed regulations, developing standardized budget reviews, and developing standard word processing documents;
- Mentor new staff;
- Temporarily assigned as a Unit Manager in the LUST Section (July 2001 through March 2002).

Design Ideas, Springfield Illinois
Production Manager, April 1991 to April 1992
Supervise the production and packaging of products.

Superior National Forest, Isabella, Minnesota
Forestry Aid, May 1989 to August 1989
Main duties included stocking and survival surveys of tree plantations, data calculation, recommendations for herbicidal spraying, and fire fighting.

Mt. Baker-Snoqualmie National Forest, Northbend, Washington
Trail Crew, May 1987 to August 1987
Main duties included trail maintenance, backcountry patrol, and trail construction.

Payette National Forest, McCall, Idaho
Trail Crew, May 1986 to August 1986
Main duties included trail maintenance, backcountry patrol, and trail construction.

EDUCATION:

University of Illinois, Springfield, Illinois
Master of Arts in Environmental Studies, Emphasis is Environmental Risk Assessment, 1998

Northland College, Ashland, Wisconsin
Bachelor of Science, Major: Biology, Minor: Earth Science, 1990

Oakton Community College, Des Plaines, Illinois
Associates of Arts, Major Liberal Arts, 1987

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	
PROPOSED AMENDMENTS TO	)	R04-022
REGULATION OF PETROLEUM	)	(Rulemaking – Land)
LEAKING UNDERGROUND STORAGE	)	
TANKS (35 ILL.ADM. CODE 732)	)	

TESTIMONY OF HARRY A CHAPPEL, P.E.
IN SUPPORT OF THE ENVIRONMENTAL PROTECTION AGENCY'S PROPOSAL TO AMEND 35 ILL. ADM. CODE 732

My name is Harry Chappel. I am a Unit Manager in the Leaking Underground Storage Tank (UST) Section within the Bureau of Land of the Illinois Environmental Protection Agency (EPA). I have been in my current position since March of 2002. I was employed by the Illinois EPA from 1976 to 1995. From 1995 to 2001 I was in private practice as a co-owner in two environmental consulting firms located in Springfield, Illinois. I was the Manager of the Leaking UST Section from 1991 to 1994. I received a B.S. degree in Civil Engineering from the University of Missouri at Rolla in 1975 and a M.S. in Thermal and Environmental Engineering from Southern Illinois University at Carbondale in 1979. I have been a Registered Professional Engineer in Illinois since 1979. A copy of my current resume is provided as Attachment 1.

Today I will be testifying in support of the proposal to amend 35 Ill. Adm. Code, Part 732. This proposal is the result of modifications to the Illinois Environmental Protection Act by Public Acts 92-0554 and 92-0735, and the need to reform the current reimbursement procedures. My testimony will focus on the following reimbursement requirements proposed in Subpart H of Part 732:

732.800 Applicability

732.825 Soil Removal and Disposal

732.835 Sample Handling and Analysis

732.845 Professional Consulting Services

732.850 Payment on Time and Material Basis

732.855 Unusual or Extraordinary Expenses

732.865 Agency Review of Payment Amounts

The remaining portions of Subpart H will be discussed by Brian Bauer in his testimony.

732.800 - Applicability

This section specifies that all reimbursable tasks and/or activities under Part 732 will be limited to a maximum amount specified therein. Illinois EPA has grouped all activities which may be reimbursable into the following categories:

732.810 – UST Removal or Abandonment

732.815 – Free Product or Groundwater Removal and Disposal

732.820 – Drilling, Well Installation and Abandonment

732.825 – Soil Removal and Disposal

732.830 – Drum Disposal

732.835 – Sample Handling and Analysis

732.840 – Replacement of Paving; Above Grade Structures

732.845 – Professional Consulting Services

732.850 – Time and Material Payments

732.855 – Unusual or Extraordinary Expenses

732.860 – Handling Charges

In support of these proposed allowable amounts, I have attached copies of allowable amounts from other states with similar programs. These attachments are as follows:

Attachment 2 – Summary of Information

Attachment 3 – Arizona

Attachment 4 – Indiana

Attachment 5 – Colorado

Attachment 6 – Texas

Attachment 7 – Oklahoma

Attachment 8 – South Carolina

732.825 – Soil Removal and Disposal

The Illinois EPA is proposing to allow a maximum of $57.00 per cubic yard for soil excavation, transportation and disposal costs. Attachment 9 provides a summary of randomly selected projects, which were reviewed in developing this figure. The $57 per cubic yard figure proposed in the regulations is the sum of the cost to excavate, transport and dispose ($47.58) plus one standard deviation ($8.22), rounded up to $57 to allow for incidental expenses. The Illinois EPA is proposing $20/cubic yard be allowed for backfill costs. The $20/cubic yard figure is the sum of the costs to backfill ($15.89) plus one standard deviation ($4.38), rounded to the nearest whole dollar. The Illinois EPA is proposing separate amounts for these activities since the amount of soil excavated and disposed does not always equal the amount of backfill required. The Illinois EPA has historically allowed $55 per cubic yard for excavation, transportation, and disposal of contaminated soil.

These costs include all equipment, personnel, trucking and disposal fees. They do not include a consultant's oversight of the removal operation.

To determine the volume of soil, a simple volume calculation is provided in the proposal. To account for the fact that the in-place volume is less than the excavated volume of soil, a "fluff" factor of 5 percent has been added to the equation. This 5 percent allowance applies to excavation, transportation, disposal, and backfill volumes. Also, the conversion factor for converting tons to cubic yards has been specified. This conversion factor is also proposed for early action excavation amounts specified in Appendix C of the amended rules.

Likewise, the volume of backfill allowed to be reimbursed has been specified. The $20 per cubic yard figure again includes materials, trucking, equipment and personnel. This figure does not include costs for a consultant's oversight of the operation.

There will be situations where soil at the excavation may not be contaminated, but must be removed to access the contaminated soil. A cost per cubic yard to excavate, stockpile and replace this soil has been specified to account for these situations. This $6.50 per cubic yard figure was obtained from the 2003 National Construction Cost Estimator, 51st Edition.

732.835 – Sampling Handling and Analysis

Proposed Appendix D will set the maximum amounts to be reimbursed for various chemical and physical tests on soil and groundwater. The Illinois EPA met with the Illinois Association of Environmental Laboratories (IAEL) regarding reasonable reimbursement amounts for these types of tests. In response to the Agency's request, the IAEL provided a survey of 5 labs which is included in Attachment 10. The IAEL suggested the Illinois EPA use the highest rate reported by any of the 5 laboratories. The Illinois EPA rejected this approach. The Illinois

EPA instead opted to use the average amounts provided on the IAEL data contained in Attachment 10. Attachment 11 breaks down how the average amounts provided in Appendix D were calculated from the IAEL data. The following variations from the IAEL data should also be noted:

1. The cost per sample for chemical oxygen demand (COD) was based on the IAEL data for the biological oxygen demand (BOD) test. It was assumed the cost for these two tests would be similar. A cost for BOD has not been provided in Appendix D as this test is not required in most UST applications;

2. Dollar amounts on the IAEL table (Appendix 10) were rounded to the next higher total dollar amount;

3. A cost for "Iron Total Soil" is included in the Illinois EPA proposal that is not on the IAEL spreadsheet. The cost of this test was assumed to be equal to the test for "Iron TCLP Soil," or $10;

4. The geotechnical cost for porosity and soil classification are based on historical results from previous budgets and billing packages reviewed by the Illinois EPA. The average cost for a porosity test was $30. The average cost for soil classification was $68.

732.845 – Professional Consulting Services

This section provides limits for the fees that consultants may be reimbursed for various tasks conducted as part of Leaking UST remediation. The Illinois EPA has coordinated with the Consulting Engineers Council of Illinois (CECI) to develop the activities that are conducted by the consultant in each step of the process and the estimated personnel time (hours) required for

each activity within a task. Once the hours required to perform a task and/or activity were determined, the Illinois EPA developed an average hourly rate to establish the limits specified in this section. The Illinois EPA developed an average hourly rate by reviewing the historical records of the Illinois EPA for previous reimbursements. By averaging the maximum hourly rates for each title in Appendix E of the proposed rules, an average hourly rate of $81.25/hour is derived as follows:

	Appendix E
Engineer	$130.00
Geologist	$110.00
Scientist	$85.00
Project Manager	$100.00
Technician	$65.00
Account Technician	$55.00
Administrative Assistant	$45.00
Draftsperson	$60.00
Staff Engineer	--
Staff Geologist	--
Total	$650.00
Average	$81.25/hour

In addition, the Illinois EPA randomly selected 19 reimbursement requests to review in an attempt to determine if the rate was reasonable. This information is summarized in Attachment 12. This data would indicate an average rate for consultant services around $68/hour.

Using this information, the Illinois EPA determined an average hourly personnel cost of $80/hour would be used for budgeting purposes. This figure is roughly 15% higher than the average derived from the reimbursement requests summarized in Attachment 12. Unless stated otherwise in the testimony for specific sections, a workday of ten hours was assumed. The limits specified include all costs incurred by a consultant for completing the specified activity,

including, but not limited to, project planning and oversight, travel, per diem, mileage, transportation, lodging, all miscellaneous equipment, as well as the preparation of plans, reports, applications for payment and other documentation. There will be no additional monies provided if multiple submittals are required to provide the required information. For example, a consultant may be reimbursed up to $4,800 for the preparation and submission of the 20-Day and 45-Day Reports, and any amendments or revisions to those reports.

The hours estimated for the various activities discussed were derived in consultation with the Consulting Engineers Council of Illinois (CECI).

a. Early Action – the proposed fee (allowed if the consultant is involved with the preparation for the abandonment or removal of USTs) is derived as follows:

Personnel –12 hours x $80/hour = $960.00

20 and 45-Day Reports – the proposed fee for preparation of the 20-Day and 45-Day Reports is derived as follows:

Personnel – 60 hours x $80/hour = $4,800.00

Free Product Reports – the proposed fee is for initial site visit and preparing a Free Product Report for submittal. The fee is derived as follows:

Personnel – 2 people x 1 day x 10 hour day x $80/hour = $1,600.00

Free Product Recovery Systems – the cost for design, installation, and operation of Free Product Recovery Systems will be determined based on a time and material basis, in accordance with proposed Section 732.850.

The final proposed fee specified under this section allows $500 for a Professional Engineer's closure certification, if remediation is complete following early action activities. This fee is derived as follows:

2 hours x $130/hour = $260.00

The remaining $240 is to cover the additional costs for clerical support, preparation and submittal of the Owner/Operator Summary form and recording fees for the No Further Remediation Letter.

b. Site Evaluation and Classification – Consulting fees for site classification pursuant to Section 732.307 (Method 1 and Method 2) include preparation of the Site Classification Plan, oversight of the field work and preparation of the Site Classification Completion Report. To develop this fee the Illinois EPA reviewed 32 reimbursement requests containing personnel costs for Method 1 and 2 site classifications. Attachment 13 is a summary of the data developed and provides the proposed average cost of $9,870.00 for these two methods of site classification. Owners/operators choosing to classify using Section 732.312 will propose personnel budgets based on a time and materials breakdown under 732.850.

c. Low Priority Corrective Action – The consultant fees allowed for low priority corrective action are derived as follows:

Monitoring Plan	40 hours x $80/hour =	$3,200
1st Year Report	32 hours x $80/hour =	$2,560
2nd Year Report	32 hours x $80/hour =	$2,560
Completion Report	32 hours x $80/hour =	$2,560
	Total =	$10,880

Consultant fees for low priority field oversight and monitoring will be discussed by Mr. Bauer.

d. Corrective Action – the corrective action requirements will consist of the preparation of the Corrective Action Plan (CAP) and Budget, the field work associated with conducting corrective action, the preparation of the Corrective Action Completion Report (CACR) and all reimbursement requests. For conventional technology the rules establish set fees for these activities. The fees established for the office work involved in developing the conventional technology CAP and Budget, the CACR and reimbursement submittals for conventional technology, and a CACR for alternative technologies are derived as follows:

64 hours x $80/hour = $5,120

The fees established for the consultant's field work will be discussed by Mr. Bauer.

The consultant fee reimbursement amount for alternative technologies will be based on a time and material justification, which will be discussed later.

A consultant would not be entitled to the $5,120 for CAP preparation if no active remediation will occur. For example, if, following site investigation, the CAP consists only of placing asphalt over the remaining contamination and performing a Part 742 model, the reimbursement proposing to use only Part 742 (TACO) barriers, models, and institutional controls would be limited to $800 [732.845(c)(3)] plus the Corrective Action Completion Report (CACR) costs of $5,120 for a total of $5,920 for the CAP and CACR.

Additional monies have been allowed for the consultant's development of Tier 2 or Tier 3 remediation objectives under 35 Ill. Adm. Code 742 and the preparation of Environmental Land Use Controls and Highway Authority Agreements as follows:

10 hours x $80/hour = $800.00

732.850 – Payment on Time and Material Basis

In developing the reimbursement amounts under Subpart H the Agency realized there were activities for which a specific set fee could not be developed. This section of Subpart H provides a method for developing a budget and reimbursement amount for such activities. The estimated budgets and reimbursement amounts for the activities will be based on a time and materials basis for each site. For example, the development and implementation of CAPs proposing alternative technologies will require a breakdown of all proposed activities which do not have set amounts previously established (e.g., analytical costs listed in Appendix D). It should be noted the cost for the alternative technology proposal cannot exceed the cost for conventional technology or be substantially higher than other available alternative technologies. All plans and budgets will be reviewed for reasonableness.

Section 732.855 – Unusual or Extraordinary Expenses

This section provides an opportunity for an owner/operator to demonstrate their site presents unusual or extraordinary circumstances. If the owner or operator can demonstrate such circumstances to the Agency, the Agency can allow exceedances of the Subpart H amounts on a site-specific basis.

Section 732.865 – Increase in Maximum Payment Amounts

Section 732.865 is amended in the Agency's First Errata Sheet. As amended, this section will increase the amounts set forth in Subpart H every year based on inflation. The amount of the increase is based upon the annual Implicit Price Deflator for Gross National Product and will be published by the Agency on, or before, July 1 of each year on the Agency's web site. The annual adjustment may not exceed 5% in any one year, and the first adjustment will be effective July 1, 2006. In addition, as always, the Agency or anyone else may propose changes to the rules at any time as needed.

The inflation factor used by the Agency in reviewing budget proposals will be based on the amounts in effect on the date the budget was received. For billing packages not based on an approved budget, the maximum allowable amounts will be based on the date the costs were incurred.

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ATTACHMENT

1

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OVERVIEW

Over twenty seven years of experience in environmental engineering and management. Includes work with State and Federal laws, regulations and guidance in the areas of water pollution, solid waste, hazardous waste, and leaking underground storage tanks. Established the Underground Storage Tank Section in the Bureau of Land at the Illinois Environmental Protection Agency. This Section grew from a unit of four personnel to a staff of over fifty. The budget for this Section exceeded fifteen million dollars annually.

Six years spent in private practice as an environmental consultant and small business owner. Responsibilities included client relations, job estimating, invoicing, payroll, personnel, project design, engineering management, and project management.

WORK EXPERIENCE

Private Practice

12/99 to 7/01	Vice President and co-owner of Inland/Chappel Environmental, a Division of Inland Environmental, Inc.
5/95 to 12/99	Vice President and co-owner of CSD Environmental Services, Inc.

Illinois Environmental Protection Agency

3/02 to Present	Illinois Environmental Protection Agency, Unit Manager, Leaking Underground Storage Tank Section, Bureau of Land
7/01 to 3/02	Illinois Environmental Protection Agency, Permit Review Engineer, Permit Section, Bureau of Land
9/94 to 5/95	Illinois Environmental Protection Agency – Manager, Hazardous Waste Branch, Permit Section, Bureau of Land
6/90 to 9/94	Illinois Environmental Protection Agency, Manager, Leaking Underground Storage Tank Section, Bureau of Land
2/87 to 6/90	Illinois Environmental Protection Agency, Manager, Compliance Section, Bureau of Land
4/83 to 2/87	Illinois Environmental Protection Agency, Unit Manager, Permit Section, Bureau of Land
12/79 to 4/83	Illinois Environmental Protection Agency, Manager, Permit Section, Mine Pollution Control Program
9/78 to 12/79	Illinois Environmental Protection Agency, Permit Review Engineer, Permit Section, Mine Pollution Control Program
2/76 to 9/78	Illinois Environmental Protection Agency, Permit Review Engineer, Permit Section, Bureau of Water
12/75	Graduated from University of Missouri @ Rolla

HARRY A. CHAPPEL, P.E.
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EDUCATION

B.S. – Civil Engineering, University of Missouri @ Rolla, December 1975

M.S. – Thermal & Environmental Engineering, Southern Illinois University @ Carbondale, June 1979

PROFESSIONAL REGISTRATION

Professional Engineer	IL #062-03895	(current)
	MO #EN 028019	(inactive)
	OH #E 63580	(inactive)
Asbestos	#100-7207	Management Planner, Project Designer, and Inspector (current)

AWARDS

Certificate of Commendation - Illinois Environmental Protection Agency - 1995
Certificate of Appreciation – Bureau of Land – 1995

ATTACHMENT

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STATE SUMMARIES
JULY 2003

PERSONNEL

	STATE	$/HOUR	
PRINCIPAL LEVEL	AZ	$120.00	
PRINCIPAL	IND	$110.00	
PRINCIPAL	TEX	$110.00	
PRINCIPAL	OK	$100.00	
SENIOR LEVEL	AZ	$103.00	
SR. PROJ. MGR.	IND	$102.00	
PRINCIPAL ENGINEER	TEX	$110.00	
SEN. ENGR./GEOL	TEX	$95.00	
PROJECT LEVEL	AZ	$88.00	
PROJECT MANAGER	IND	$83.00	
PROJECT MANAGER	TEX	$80.00	
ASSOC. ENGR/GEOL.	TEX	$85.00	
PROJECT MANAGER	OK	$75.00	
STAFF LEVEL	AZ	$74.00	
STAFF PROJ. PERS.	IND	$70.00	
STAFF GEOLOG/ENGR	TEX	$70.00	
FIELD LEVEL	AZ	$62.00	
SR. TECHNICIAN	IND	$55.00	
FIELD LEVEL	TEX	$65.00	
FILED TECH	OK	$45.00	
TECHNICAL (CAD,ETC.)	AZ	$55.00	
DRAFTING	IND	$35.00	
DRAFTING	TEX	$22.5 - $50	(DIFFERENT LEVELS)
DRAFTING	OK	$45.00	
TECHNICIAN	IND	$38.00	

ADMINISTRATIVE	AZ	$45.00
WORD PROC/CLERICAL	IND	$28.00
WORD PROCESSOR	AZ	$39.00
WORD PROCESSOR	TEX	$35.00
CLERICAL	OK	$35.00

STATE SUMMARIES
JULY 2003

UST REMOVAL

UNDER 1000 GAL	IND	PER TANK	$1,000.00	(IND ADDS $1.34/TON FOR LOADING
1000 TO 4999 GAL	IND	PER TANK	$1,500.00	AND $.37/MILE FOR TRANSPORT)
5000 TO 10000 GAL	IND	PER TANK	$2,000.00	
>10000 GAL	IND	PER TANK	$2,500.00	
< OR = 4000 GAL.	AZ	PER TANK	$5,852.00	(AZ ADDS $4 TO $12/MILE FOR TRANSPORT
	AZ	ADDL TANK	$2,978.00	DEPENDING ON SIZE OF TANK)
4000<X<15000 GAL	AZ	PER TANK	$11,183.00	
	AZ	ADDL TANK	$5,722.00	
> 15000 GAL	AZ	PER TANK	$12,838.00	
	AZ	ADDL TANK	$7,988.00	
5000 GAL OR LESS	TEX	PER TANK	$1,000.00	(MAX $8,000)
GREATER THAN 5000 GAL	TEX	PER TANK	$2,000.00	(MAN $8,000)

BORINGS

HOLLOW STEM AUGER	AZ	PER FT.	$22.00	
AIR ROTARY	AZ	PER FT.	$38.00	
<16 FT	IND	PER FT.	$20.00	
16 T0 26 FEET	IND	PER FT.	$25.00	
>26 FT	IND	PER FT.	$30.00	
2 INCH AUGER	COLO	PER FT.	$16.41	
4 INCH AUGER	COLO	PER FT.	$19.15	
2 INCH ROTARY	COLO	PER FT.	$21.06	
2 INCH ROTARY	COLO	PER FT.	$27.35	
2 INCH HOLLOW ST.	TEX	0 - 25 FT	$775.00	($31/FT @25 FT)
10 INCH	OK	PER FT.	$21.00	(+MOB, +DECON, +MILEAGE)
PUSH-PULL PROBE	OK	PER DAY	$1,400.00	(+MOB, +DECON, +MILEAGE)
BORING (PUSH OR DRILL)	SC	PER FT.	$17.00	(+MOB)

STATE SUMMARIES
JULY 2003

WELLS

2 INCH HOLLOW STEM	AZ	PER FT.	$38.00	
4 INCH HOLLOW STEM	AZ	PER FT.	$47.00	
2 INCH AIR ROTARY	AZ	PER FT.	$54.00	
4 INCH AIR ROTARY	AZ	PER FT.	$63.00	
2 INCH	IND	PER FT.	$10.00	
4 INCH	IND	PER FT.	$12.00	
2 INCH	COLO	PER FT.	$15.14	
4 INCH	COLO	PER FT.	$21.67	
2 INCH	TEX	0 - 25 FT	$1,025.00	($41/FT @ 25 FT) INCLUDES BORING
4 INCH	TEX	0 - 25FT	$1,187.50	($47.5/FT @ 25 FT) INCLUDES BORING
2 INCH OR 4 INCH	OK	PER FT.	$32.00	(+MOB, +DECON, +MILEAGE)
DIRECT PUSH	TEX	PER FOOT	$12.50	(195 FT IN 10 HOUR DAY)
DIRECT PUSH	TEX	PER DAY	$1,480.00	(195 FT IN 10 HOUR DAY)
ABANDON 2 INCH	COLO	PER FT.	$7.47	
ABANDON 4 INCH	COLO	PER FT.	$11.08	
0 - 25 FEET DEEP	TEX	PER WELL	$300.00	
ANY WELL	OK	PER WELL	$300.00	(+MOB, +DECON, +MILEAGE)
WELL INSTALL	SC	PER FT.	$38.00	(+MOB)_

STATE SUMMARIES
JULY 2003

REMEDIATION

EXCAVATION	AZ	$/CY	$11.00	
EXCAVATION	IND	$/CY	$1.50	
EXCAVATION	TEX	$/CY	$9.00	
TRANSPORT	AZ	$/CY	$12.00 (1.5 TON/CY)	
TRANSPORT	IND	$/CY	$0.90 (1.5 TON/CY)	
TRANSPORT	TEX	$/CY	$14.00	
SOIL DISPOSAL	TEX	$/CY	$45.00	
BACKFILL & **COMPACTION**	AZ	$/CY	$13.35 (1.5 TON/CY)	
BACKFILL & **COMPACTION**	TEX	$/CY	$20.00 ($11- BACKFILL = $9 COMPACT)	
DISPOSAL	IND	LF RATES		
DISPOSAL	TEX	$/CY	10.5 (<1500TPH)	
	TEX	$/CY	$45.00 (>1500TPH)	
SOIL TREAT/DISP	SC	$/CY	$33.33 ($50/TON) (+MOB)	
BACKFILL - STONE	IND	$/CY	$8.67 (1.5 TON/CY)	IND ADDS $.26/CY/MILE
BACKFILL - SOIL	IND	$/CY	$4.34 (1.5 TON/CY)	
DRUM DISPOSAL - SOIL	AZ	PER DRUM	$308.00	
DRUM DISPOSAL - SOIL	AZ	PER DRUM	$134.00	
DRUM DISPOSAL - SOIL	OK	1ST DRUM	$200.00 ($65 EACH ADD. DRUM)	
DRUM DISPOSAL - WATER	OK	1ST DRUM	$200.00 ($2/GALLON THEREAFTER)	

FLUID DISPOSAL

	TEX	PER GAL	$0.40
VAC TRUCK	TEX	PER HOUR	$75.00
	OK	PER GAL	$0.45

ATTACHMENT

3

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

State Assurance Fund 2003 Cost Ceilings

Cost Ceiling Item Code	Item Description	Unit of Measure	2003 Cost Ceiling Amount

* T & M = Time & Material Detail. See 2003 Cost Ceiling Descriptions.

SUPPLEMENTAL UNIT RATES

PERSONNEL RATES

1	Professional Services Rates: Principal Level	$/Hour	$124
2	Professional Services Rates: Senior Level	$/Hour	$107
3	Professional Services Rates: Project Level	$/Hour	$91
4	Professional Services Rates: Staff Level	$/Hour	$76
5	Professional Services Rates: Field Level	$/Hour	$64
6	Professional Services Rates: Technical Personnel (Computer Included)	$/Hour	$56
7	Professional Services Rates: Administrative Assistant	$/Hour	$47
8	Professional Services Rates: Word Processor (Computer Included)	$/Hour	$40

CONSTRUCTION/CONTRACTING PERSONNEL RATES

9	Construction/Contracting Services Rates: Construction Field Supervisor	$/Hour	$81
10	Construction/Contracting Services Rates: Skilled Laborer	$/Hour	$51
11	Construction/Contracting Services Rates: Unskilled Laborer	$/Hour	$40
12	Construction/Contracting Services Rates: Equipment Operator (Avg. Rate to Operate a Std. Piece of Equip)	$/Hour	$60

PER DIEM RATES

13	Per Diem Requirement (# Miles Required)	50 Miles	
14	Fieldwork Per Diem Without Overnight Stay	$/Day	$40
15	Fieldwork Per Diem With Overnight Stay (Incl. Lodging)	$/Day	$106

CONSULTANT MILEAGE RATE

16	Consultant Mileage Rate (single person)	$/Mile	$2
17	Consultant Mileage Rate (two persons)	$/Mile	$4

PROJECT SET-UP AND ADMINISTRATION

18	Initial Project Set-up	Lump Sum	$1,015
19	Previously Assessed Project Review	Lump Sum	$1,873
20	Agency Data Analysis	Lump Sum	$1,586
21	Site Reconnaissance and Field Receptor Survey [1/4 Mile]	Lump Sum	$1,612
22	Agency Receptor Survey [1/4 Mile]	Lump Sum	$1,016
23	Historical Research	Lump Sum	$1,363
24	Pursuit of Off-Site Access Agreement with a Private Entity Only	Lump Sum	$1,260

WORK PLAN PREPARATION

25	Approved Site Characterization Work Plan Scenario 1: Soil Only	$/Report	$3,980
26	Approved Site Characterization Work Plan Scenario 2: Soil and Groundwater	$/Report	$5,206
27	Initial Health and Safety Plan	$/Report	$703

REMEDIAL PLANS

28	ADEQ-Approved CAP for Active Remedial Treatment	Per CAP	$7,095
29	ADEQ-Approved CAP for Natural Attenuation	Per CAP	$6,866
30	Pre-Built Remedial Engineering Design	Per Design	$5,983
31	Consultant Preparation of SAF Work Plan to Implement approved CAP	Per Plan	$3,809
32	Remediation Health & Safety Plan	Per Plan	$1,153

FIELD ACTIVITIES

33	Consultant's Full Day Rate	DO NOT USE
34	Consultant's Half Day Rate	DO NOT USE

CONTRACTOR UST REMOVAL AND CLOSURE

35	Contractor Mobilization/Demobilization	Per Event	$720
36	Contractor Mobilization/Demobilization Incremental Travel Rate	Per Mile	$5
37	Contractor Daily Travel Costs	Per Mile	$5

UST REMOVAL

38	One UST Less than or Equal to 4,000-gallons	Per Tank	$6,047
39	Cost for Each Additional Tank	Per Tank	$3,077
40	One UST Greater than 4,000-gallons and Less than or Equal to 15,000-gallons	Per Tank	$11,556
41	Cost for Each Additional Tank	Per Tank	$5,913
42	One UST Greater than 15,000-gallons	Per Tank	$13,265
43	Cost for Each Additional Tank	Per Tank	$8,254

OFF-SITE TRANSPORTATION OF TANKS

44	One UST Less Than or Equal to 4,000-gallons	*T & M
45	Cost for Each Additional Tank	*T & M
46	One UST Greater than 4,000-gallons and Less than or Equal to 15,000-gallons	*T & M
47	Cost for Each Additional Tank	*T & M
48	One UST Greater than 15,000-gallons	*T & M
49	Cost for Each Additional Tank	*T & M

CONTRACTOR DRILLING-RELATED ACTIVITIES

SOIL BORING AND SAMPLING Mobilization/Demobilization

50	Hollow Stem Auger Drilling Method	Per Event	$515
51	All other Drilling Methods	Per Event	$611

SOIL BORING AND SAMPLING TRAVEL RATE

52	Hollow Stem Auger Drilling Method	Per Mile	$4
53	All other Drilling Methods	Per Mile	$5
54	Soil Boring and Sampling Travel Rate	Per Mile	$4

SOIL BORING AND SAMPLING

55	Hollow Stem Auger Drilling Method-Vertical Boring	Per Foot	$22
56	Hollow Stem Auger Drilling Method-Angle Boring	Per Foot	$29
57	Limited Access Drilling Method-Vertical Boring	Per Foot	$37
58	Air Rotary Drilling Method-Vertical Boring	Per Foot	$39
59	Rotosonic Drilling Method-Vertical Boring	Per Foot	$43
60	Dual Wall Percussion Drilling Method-Vertical Boring	Per Foot	$42
61	Dual Wall Percussion Drilling Method-Angle Boring	Per Foot	$60
62	Soil Boring Abandonment by Grout [all boring diameters]	Per Foot	$11

CONTRACTOR STANDBY RATE

63	Hollow Stem Auger	*T & M
64	All Other Rig Types	*T & M

CONTRACTOR WELL INSTALLATION-RELATED ACTIVITIES

WELL INSTALLATION

65	2 inch Hollow Stem Auger	Per Foot	$39
66	4-inch Hollow Stem Auger	Per Foot	$49
67	6-inch Hollow Stem Auger	Per Foot	$68
68	2-inch Air Rotary	Per Foot	$56
69	4-inch Air Rotary	Per Foot	$65
70	6-inch Air Rotary	Per Foot	$87
71	2-inch Rotosonic	Per Foot	$63
72	4-inch Rotosonic	Per Foot	$66
73	6-inch Rotosonic	Per Foot	$82
74	2-inch Dual Wall Percussion	Per Foot	$58

75	4-inch Dual Wall Percussion	Per Foot	$69
76	6-inch Dual Wall Percussion	Per Foot	$89
77	Surface Completion / Access Vault <= 12"	$/Well	$307
78	Surface Completion / Access Vault >12" to <=24"	$/Well	$518

MONITOR WELL DEVELOPMENT

79	Contractor Mobilization/Demobilization	Per Event	$499
80	Contractor Travel Cost	Per Mile	$3
81	2-inch Monitor Well: Depth to Water Less Than 100 Feet	$/Well	$484
82	2-Inch Monitor Well: Depth to Water Equal To or Greater Than 100 Feet	$/Well	$601

83	4-Inch Monitor Well: Depth to Water Less Than 100 Feet	$/Well	$523
84	4-Inch Monitor Well: Depth to Water Equal To or Greater Than 100 Feet	$/Well	$630
85	6-Inch Monitor Well: Depth to Water Less Than 100 Feet	$/Well	$642
86	6-Inch Monitor Well: Depth to Water Equal To or Greater Than 100 Feet	$/Well	$739

GROUNDWATER MONITORING AND SAMPLING - RELATED ACTIVITIES

87	Consultant Make Ready	*T & M
88	Groundwater Monitoring Field Equipment Day Rate [Purging]	*T & M
89	Groundwater Monitoring Field Equipment Day Rate [Non-Purging]	*T & M
90	2-inch Monitor Well: Depth to Water Less Than 100 Feet [Purging]	*T & M
91	2-Inch Monitor Well: Depth to Water Equal To or Greater Than 100 Feet [Purging]	*T & M
92	4-Inch Monitor Well: Depth to Water Less Than 100 Feet [Purging]	*T & M
93	4-Inch Monitor Well: Depth to Water Equal To or Greater Than 100 Feet [Purging]	*T & M
94	6-Inch Monitor Well: Depth to Water Less Than 100 Feet [Purging]	*T & M
95	6-Inch Monitor Well: Depth to Water Equal To or Greater Than 100 Feet [Purging]	*T & M
96	Investigative Sampling Methodology [Purging is *not* required] All depths to water	*T & M
97	Consultant Fluid Level Monitoring	*T & M
98	Free Product Removal Via Hand Bailing or Hand Pumping	*T & M
99	Free Product Removal Via Dedicated Removal Device	*T & M

PILOT AND FEASIBILITY TESTING

100	Aquifer Pump Test	*T & M
101	Aquifer Slug Test	*T & M
102	Soil Vapor Extraction Test	*T & M
103	SVE/Air Sparge Test	*T & M
104	Bioremediation Test	*T & M

REMEDIATION ACTIVITIES

105	Remedial Excavation	Per Cubic Yard	$12
106	Bulk Soil Transportation	*T & M	
107	Backfill and Compaction Excavation	$/Ton	$20
108	Containerized Contaminated Water Disposal	Per Drum	$139
109	Containerized Contaminated Soil Disposal	Per Drum	$318
110	Waste Characterization	* T & M	
111	Landfill Disposal of Petroleum Contaminated Soil (PCS)	$/Ton	$40
112	Thermal Remediation of PCS (Ex-Situ, On-Site, Portable Facility)	$/Ton	$54
113	Thermal Remediation of PCS (Ex-Situ, Off-Site, Fixed Facility)	$/Ton	$34
114	Bioremediation of PCS (Off-Site, Fixed Facility)	$/Ton	$36
115	Construction and Installation of Soil and/or Groundwater Remedial System	DO NOT USE	
116	Consultant Cost: Remediation System Operation and Maintenance	$/Month	$2,142

REPORTING ACTIVITIES

117	14-Day Release Confirmation Report	Per Report	$551

ADEQ-APPROVED STANDARD SITE CHARACTERIZATION REPORT (SCR)

118	ADEQ-Approved SCR; Up To 4 Soil Borings	$/Report	$4,170
119	ADEQ-Approved Standard SCR; Incremental Cost Increase Per Soil Boring	$/Boring	$291
120	ADEQ-Approved Standard SCR; Up To 4 Groundwater Monitor Wells	$/Report	$5,181
121	ADEQ-Approved Standard SCR; Incremental Cost Increase Per Groundwater Monitor Well	$/Well	$320
122	ADEQ-Approved Standard SCR; Up to 4 Soil Borings and 4 Groundwater Monitor Wells	$/Report	$6,012

REMEDIAL REPORTS

123	First Periodic Groundwater Monitoring Report: Up to 4 Groundwater Monitoring Wells (Includes first sampling event)	$/Report	$2,458
124	Initial Periodic Monitoring Report; Incremental Cost for Each Additional Groundwater Monitor Well	Per Well	$183
125	Subsequent Groundwater Monitoring Report: Up To 4 Groundwater Monitoring Wells (Includes subsequent sampling events)	$/Report	$1,625
126	Subsequent Periodic Monitoring Report; Incremental Cost for Each Additional Groundwater Monitor Well	Per Well	$159
127	Initial Remedial Progress Report (Soil and Groundwater)	$/Report	$2,846
128	Subsequent Remedial Progress Report (Soil and Groundwater)	$/Report	$2,025
129	Post Remediation Closure Report	$/Report	$3,803
130	Site De-Commissioning Letter Report	$/Report	$1,320

SAF APPLICATION PREPARATION

131	Pre-approval Application	Per Application	$1,001
132	Reimbursement/Direct Pay Application [Less than or Equal to 2 Primary Invoices]	Per Application	$919
133	Reimbursement/Direct Pay Application [Greater than 2 Less than or Equal to 5 Primary Invoices]	Per Application	$1,108
134	Reimbursement/Direct Pay Application [Greater than or Equal to 6 Primary Invoices]	Per Application	$1,348

EQUIPMENT RENTAL RATES

135	SVE System with Thermal Oxidizer (100 cfm)	$/Month	$3,224
136	SVE System with Thermal Oxidizer (250 cfm)	$/Month	$3,962
137	SVE System with Thermal Oxidizer (500 cfm)	$/Month	$4,587
138	SVE System With Thermal Oxidizer [700 cfm]	$/Month	$5,515
139	SVE System with Catalytic Oxidizer (100 cfm)	$/Month	$3,261
140	SVE System with Catalytic Oxidizer (250 cfm)	$/Month	$4,206
141	SVE System with Catalytic Oxidizer (500 cfm)	$/Month	$4,995
142	Air Sparge System [up to 100 cfm and up to 12 psi]	$/Month	$1,013
143	Air Sparge System [up to 100 cfm and 13 psi to 100 psi]	$/Month	$1,278
144	SVE/Air Sparge Portable Pilot Test Unit	*T & M	
145	Blower, 160 CFM	$/Month	$1,040
146	Blower, 280 CFM	$/Month	$1,333
147	Manual-Operated Hand Auger Sampling Kit (Hand Auger/Brass Sleeves)	$/Day	$67

148	50 Gallon DOT-approved Drum	$/Drum	$59

LABORATORY RATES

MOBILE LABORATORY RATES

149	Mobile Lab Mobilization/Demobilization Rate for a One Person Crew	Per Event	$561
150	Mobile Lab Mobilization/Demobilization Rate for a Two Person Crew	Per Event	$390
151	Mobile Lab - Mobilization/Demobilization Incremental Travel Rate for a One Person Crew	Per Mile	$2
152	Mobile Lab - Mobilization/Demobilization Incremental Travel Rate for a Two Person Crew	Per Mile	$2
153	On-Site Mobile Lab Rate for a One Person Crew (Includes Soil and GW analyses)	$/Hour	$174
154	On-Site Mobile Lab Rate for a Two Person Crew (Includes Soil and GW analyses)	$/Hour	$259

ORGANIC ANALYSIS

155	Total Petroleum Hydrocarbons (TPH) by ADHS Method 418.1 AZ (Soil Only)	$/Sample	$71
156	Hydrocarbons by ADHS Method 8015AZR1 (Soil Only)	$/Sample	$94

157	Hydrocarbons by ADHS Method 8015AZR1-Modified (Air Only)	$/Sample	$107
158	Hydrocarbons/BTEX by EPA Method 8015AZR1(Modified)/8021B (Air Only)	$/Sample	$129

159	Aromatic VOC's (BTEX) By EPA Method 8021B (Soil Only)	$/Sample	$94
160	Halogenated VOC's (BTEX) by EPA Method 8021B Arizona Target Compounds (Soil Only)	$/Sample	$135
161	EPA Method 8021B; Arizona Target Compounds (Soil Only)	$/Sample	$160
162	Full List VOC's by EPA Method 8021B (Soil Only)	$/Sample	$209

163	Aromatic VOC's (BTEX) by EPA Method 8021B (Groundwater Only)	$/Sample	$98
164	Halogenated VOC's (BTEX) by EPA Method 8021B Arizona Target Compounds (Groundwater Only)	$/Sample	$141
165	EPA Method 8021B; Arizona Target Compounds (Groundwater Only)	$/Sample	$165
166	Full List VOC's by EPA Method 8021B (Groundwater Only)	$/Sample	$202

167	Aromatic VOCs (BTEX) by EPA Method 8021B (Air Only)	$/Sample	$143
168	Halogenated VOCs by EPA Method 8021B Arizona Target Compounds (Air Only)	$/Sample	$177

169	EPA Method 8260B; Arizona Target Compounds (Soil Only)	$/Sample	$223
170	Full List VOCs by EPA Method 8260B (Soil Only)	$/Sample	$239

171	EPA Method 8260B; Arizona Target Compounds (Groundwater Only)	$/Sample	$225
172	Full List VOCs by EPA Method 8260B (Groundwater Only)	$/Sample	$240

POLYNUCLEAR AROMOATIC HYDROCARBONS (PAHs)

173	Semi-Volatile Organics by EPA Method 8270C - base neutral (Soil Only)	$/Sample	$234
174	Semi-Volatile Organics by EPA Method 8270C - base neutral (Groundwater Only)	$/Sample	$253
175	Polynuclear Aromatic Hydrocarbons (PAHs) by EPA Method 8310 (Soil Only)	$/Sample	$176
176	Polynuclear Aromatic Hydrocarbons (PAHs) by EPA Method 8310 (Groundwater Only)	$/Sample	$174

WASTE CHARACTERIZATION ANALYSIS

177	TPH by EPA Method 418.1 (Groundwater Only) - FOR WASTE CHARACTERIZATION AND PERMIT REQUIREMENT PURPOSES ONLY	$/Sample	$75
178	TCLP Extraction Lead (Pb) Analysis by EPA Method 1311 and the appropriate SW846 EPA Method	$/Sample	$113
179	TCLP Extraction by EPA Method 1311 - Analysis of 8 RCRA Metals by appropriate SW846 EPA Method	$/Sample	$251
180	Ignitability Test by EPA Method 1010 (Liquid Only)	$/Sample	$46
181	Ignitability Test by EPA Method 1010 Modified (Soil Only)	$/Sample	$47
182	Corrositivity pH by EPA Method 9045 (Soil Only)	$/Sample	$20
183	Corrositivity pH by EPA Method 9040 (GW Only)	$/Sample	$19
184	Paint Filter Free Liquids by EPA Method 9095	$/Sample	$21

185	PCB's by EPA Method 8082 (Soil Only]	$/Sample	$121
186	Lead (Pb) by an approved SW846 EPA Method (Soil Only)	$/Sample	$35

BIOFEASIBILITY / BIOTREATABILITY ANALYSIS

187	Phosphate-P by an approved EPA/ASTM Method (Soil Only)	$/Sample	$38
188	Nitrate + nitrite-N by an approved EPA/ASTM Method (Soil Only)	$/Sample	$42
189	Nitrogen (Soil Only)	$/Sample	$44
190	Alkalinity by EPA Method 310.1 (Groundwater Only)	$/Sample	$21
191	Total Organic Carbon by EPA Method 415.1	$/Sample	$51
192	Total Organic Carbon by EPA Method 9060	$/Sample	$64
193	Ammonia by EPA Method 350.3 or other ASTM Method (Groundwater Only)	$/Sample	$30
194	Sulfate by EPA Method 375.2 or other ASTM Method (Groundwater Only)	$/Sample	$26
195	Nitrate by EPA Method 353.2 (Groundwater Only)	$/Sample	$26
196	Alkalinity by EPA Method 310.1 Modified (Soil Only)	$/Sample	$22
197	Total Dissolved Solids by EPA Method 160.1	$/Sample	$20
198	Total Dissolved Solids by EPA Method 160.3	$/Sample	$19
199	Biochemical Oxygen Demand (BOD) by EPA Method 405.1 (Aqueous Matrices Only)	$/Sample	$48

RELEASE REPORTING/CORRECTIVE ACTION FORMS

200	Release Reporting Form	*T & M
201	Conformed Release 14-day Report	*T & M
202	Initial Site Characterization Report	*T & M
203	LUST Site Classification Form	*T & M
204	Free Product Report	*T & M
205	LUST Site Characterization Report	*T & M
206	Notice of Soil Remediation Form	*T & M
207	Corrective Action Plan	*T & M
208	Periodic Site Status Report (Soil Only)	*T & M
209	Periodic Site Status Report (Soil and Groundwater)	*T & M
210	Corrective Action Completion Report	*T & M

NOTES: 1 Source - Bureau of Labor of Statistics Producer Price Indix for Finished Goods Less Food and Energy Not Seasonally Adjusted.

Unadjusted percent change for Fiscal Year 2002 (July 2001 through June 2002).

ATTACHMENT

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TITLE 328 UNDERGROUND STORAGE TANK FINANCIAL ASSURANCE BOARD

ARTICLE 1. PAYMENT OF CORRECTIVE ACTION AND THIRD PARTY LIABILITY CLAIMS FROM THE EXCESS LIABILITY TRUST FUND

Rule 1. Definitions and References

328 IAC 1-1-1 Application of definitions
Authority: IC 13-23-8-1; IC 13-23-8-4.5; IC 13-23-8-5; IC 13-23-11-7
Affected: IC 13-11-2; IC 13-23

Sec. 1. The definitions in IC 13-11-2 apply to this article. In addition to the definitions in IC 13-11-2, the definitions in this rule apply throughout this article. *(Underground Storage Tank Financial Assurance Board; 328 IAC 1-1-1; filed Dec 4, 1992, 11:00 a.m.: 16 IR 1051; readopted filed Jan 10, 2001, 3:21 p.m.: 24 IR 1534; filed Oct 17, 2001, 4:30 p.m.: 25 IR 787)*

328 IAC 1-1-2 "Administrator" defined
Authority: IC 13-23-8-1; IC 13-23-8-4.5; IC 13-23-8-5; IC 13-23-11-7
Affected: IC 13-23

Sec. 2. "Administrator" refers to the administrator of the fund. *(Underground Storage Tank Financial Assurance Board; 328 IAC 1-1-2; filed Dec 4, 1992, 11:00 a.m.: 16 IR 1051; readopted filed Jan 10, 2001, 3:21 p.m.: 24 IR 1534; filed Oct 17, 2001, 4:30 p.m.: 25 IR 787)*

328 IAC 1-1-3 "Corrective action" defined
Authority: IC 13-23-8-1; IC 13-23-8-4.5; IC 13-23-8-5; IC 13-23-11-7
Affected: IC 13-23

Sec. 3. "Corrective action" means action taken to minimize, contain, eliminate, remediate, mitigate, or clean up a release, including emergency measures taken as part of an initial response to the release under rules of the solid waste management board at 329 IAC 9-5-2. *(Underground Storage Tank Financial Assurance Board; 328 IAC 1-1-3; filed Dec 4, 1992, 11:00 a.m.: 16 IR 1051; readopted filed Jan 10, 2001, 3:21 p.m.: 24 IR 1534; filed Oct 17, 2001, 4:30 p.m.: 25 IR 787)*

328 IAC 1-1-3.1 "Corrective action plan" or "CAP" defined
Authority: IC 13-23-8-1; IC 13-23-8-4.5; IC 13-23-8-5; IC 13-23-11-7
Affected: IC 13-23-7; IC 13-23-8-3

Sec. 3.1. "Corrective action plan" or "CAP" means the corrective action plan described by rules of the solid waste management board at 329 IAC 9-5-7(a) and 329 IAC 9-5-7(b). *(Underground Storage Tank Financial Assurance Board; 328 IAC 1-1-3.1; filed Oct 17, 2001, 4:30 p.m.: 25 IR 788)*

328 IAC 1-1-4 "Deductible amount" defined
Authority: IC 13-23-8-1; IC 13-23-8-4.5; IC 13-23-8-5; IC 13-23-11-7
Affected: IC 13-23-7; IC 13-23-8-3

Sec. 4. "Deductible amount" means the amount set forth in IC 13-23-8-3 applicable to each incident number assigned by the department. A person applying to the fund under 328 IAC 1-3-1 must provide evidence of payment of the deductible amount under IC 13-23-8-4(a)(3). *(Underground Storage Tank Financial Assurance Board; 328 IAC 1-1-4; filed Dec 4, 1992, 11:00 a.m.: 16 IR 1051; filed Jan 9, 1997, 4:00 p.m.: 20 IR 1103; readopted filed Jan 10, 2001, 3:21 p.m.: 24 IR 1534; filed Oct 17, 2001, 4:30 p.m.: 25 IR 788)*

328 IAC 1-1-5 "Department" defined (Repealed)

Sec. 5. *(Repealed by Underground Storage Tank Financial Assurance Board; filed Oct 17, 2001, 4:30 p.m.: 25 IR 803)*

328 IAC 1-1-5.1 "Emergency measures" defined

Authority: IC 13-23-8-1; IC 13-23-8-4.5; IC 13-23-8-5; IC 13-23-11-7
Affected: IC 13-23

Sec. 5.1. "Emergency measures" means any action that is taken at or near a petroleum release to abate an immediate threat of harm to human health, property, or the environment. The actions taken must be approved by the department prior to payment from the fund. *(Underground Storage Tank Financial Assurance Board; 328 IAC 1-1-5.1; filed Oct 17, 2001, 4:30 p.m.: 25 IR 788)*

328 IAC 1-1-6 "Fund" defined

Authority: IC 13-23-8-1; IC 13-23-8-4.5; IC 13-23-8-5; IC 13-23-11-7
Affected: IC 13-23-7-1; IC 13-23-8

Sec. 6. "Fund" means the underground petroleum storage tank excess liability trust fund established at IC 13-23-7-1. *(Underground Storage Tank Financial Assurance Board; 328 IAC 1-1-6; filed Dec 4, 1992, 11:00 a.m.: 16 IR 1051; filed Jan 9, 1997, 4:00 p.m.: 20 IR 1103; readopted filed Jan 10, 2001, 3:21 p.m.: 24 IR 1534; filed Oct 17, 2001, 4:30 p.m.: 25 IR 788)*

328 IAC 1-1-7 "Occurrence" defined

Authority: IC 13-23-8-1; IC 13-23-8-4.5; IC 13-23-8-5; IC 13-23-11-7
Affected: IC 13-23

Sec. 7. "Occurrence" means an incident that results in a release of petroleum, including a continuous or repeated release of petroleum, from an underground storage tank system. *(Underground Storage Tank Financial Assurance Board; 328 IAC 1-1-7; filed Dec 4, 1992, 11:00 a.m.: 16 IR 1051; readopted filed Jan 10, 2001, 3:21 p.m.: 24 IR 1534; filed Oct 17, 2001, 4:30 p.m.: 25 IR 788)*

328 IAC 1-1-8 "Reasonable costs" defined

Authority: IC 13-23-8-1; IC 13-23-8-4.5; IC 13-23-8-5; IC 13-23-11-7
Affected: IC 13-23

Sec. 8. "Reasonable costs" means a monetary amount or range, as determined by the department, which is commensurate with a corrective action when the corrective action was taken. Reasonable costs shall be determined by the department by a review of the following:

(1) The activities outlined in the approved or deemed approved corrective action plan and those activities in fact performed.
(2) The approved site characterization and those activities in fact performed.
(3) The emergency measures and those activities in fact performed.
(4) The scope, complexity, and timing of the corrective action activities.
(5) The fair market value of the costs for services or goods within the particular market or industry where the work is performed as provided, in part, in 328 IAC 1-3-5(c).

(Underground Storage Tank Financial Assurance Board; 328 IAC 1-1-8; filed Dec 4, 1992, 11:00 a.m.: 16 IR 1051; filed Nov 1, 1995, 8:30 a.m.: 19 IR 342; readopted filed Jan 10, 2001, 3:21 p.m.: 24 IR 1534; filed Oct 17, 2001, 4:30 p.m.: 25 IR 788)

328 IAC 1-1-8.5 "Site characterization" defined

Authority: IC 13-23-8-1; IC 13-23-8-4.5; IC 13-23-8-5; IC 13-23-11-7
Affected: IC 13-23

Sec. 8.5. "Site characterization" means the initial site characterization described in rules of the solid waste management board at 329 IAC 9-5-5.1 and investigations described in 329 IAC 9-5-6 and may include, as necessary, quarterly monitoring and pilot

studies to determine the feasibility of remediation alternatives. *(Underground Storage Tank Financial Assurance Board; 328 IAC 1-1-8.5; filed Oct 17, 2001, 4:30 p.m.: 25 IR 788)*

328 IAC 1-1-9 "Substantial compliance" defined

Authority: IC 13-23-8-1; IC 13-23-8-4.5; IC 13-23-8-5; IC 13-23-11-7
Affected: IC 13-23-8-4

Sec. 9. "Substantial compliance" means that, at the time a release was discovered, the owner or operator had taken affirmative steps to comply with the requirements of IC 13-23-8-4. *(Underground Storage Tank Financial Assurance Board; 328 IAC 1-1-9; filed Dec 4, 1992, 11:00 a.m.: 16 IR 1052; filed Nov 1, 1995, 8:30 a.m.: 19 IR 343; readopted filed Jan 10, 2001, 3:21 p.m.: 24 IR 1534; filed Oct 17, 2001, 4:30 p.m.: 25 IR 789)*

328 IAC 1-1-10 "Third party liability" defined

Authority: IC 13-23-8-1; IC 13-23-8-4.5; IC 13-23-8-5; IC 13-23-11-7
Affected: IC 13-23

Sec. 10. "Third party liability" is the damage a tank owner or operator is legally obligated to pay for injury, expense, and damage suffered by a third party as the result of a release. Third party liability includes bodily injury and property damage. Third party liability does not include punitive or exemplary damages. *(Underground Storage Tank Financial Assurance Board; 328 IAC 1-1-10; filed Dec 4, 1992, 11:00 a.m.: 16 IR 1052; readopted filed Jan 10, 2001, 3:21 p.m.: 24 IR 1534; filed Oct 17, 2001, 4:30 p.m.: 25 IR 789)*

328 IAC 1-1-11 Incorporation by reference (Repealed)

Sec. 11. *(Repealed by Underground Storage Tank Financial Assurance Board; filed Oct 17, 2001, 4:30 p.m.: 25 IR 803)*

Rule 2. Scope and Fund Management

328 IAC 1-2-1 Applicability

Authority: IC 13-23-8-1; IC 13-23-8-4.5; IC 13-23-8-5; IC 13-23-11-7
Affected: IC 13-23

Sec. 1. This article implements provisions of IC 13-23 for the administration of the fund. This article establishes procedures by which persons listed in 328 IAC 1-3-1 may apply to the fund for payment of corrective action costs and third party liability claims arising from petroleum releases. Payment of corrective action costs and third party liability claims shall be made in accordance with the following:

(1) 328 IAC 1-3-4(b) applies to any one (1) site, upon which:
  (A) an occurrence has not been reported to the department; or
  (B) the corrective action has not been completed as of the effective date of this rule.
(2) The cost range or amount of the expenditure to be reimbursed by the fund, as set forth in 328 IAC 1-3-5, shall be determined as of the date the expense was initially incurred by the applicant to the fund.

(Underground Storage Tank Financial Assurance Board; 328 IAC 1-2-1; filed Dec 4, 1992, 11:00 a.m.: 16 IR 1052; readopted filed Jan 10, 2001, 3:21 p.m.: 24 IR 1534; filed Oct 17, 2001, 4:30 p.m.: 25 IR 789)

328 IAC 1-2-2 Fund management

Authority: IC 13-23-8-1; IC 13-23-8-4.5; IC 13-23-8-5; IC 13-23-11-7
Affected: IC 13-23

Sec. 2. The administrator of the fund shall prepare an annual report to the financial assurance board by September 1 of each

year. The report shall include the following:

(1) A financial statement detailing information for the management and oversight of the fund, including facts concerning the amount of money currently in the fund, the amount of money obligated for corrective actions and third party liability claims, and estimates of future revenue for and demands on the fund.

(2) An overview of the fund claims process.

(3) A report of the number of claims made against the fund that were approved and denied during the reporting year.

(Underground Storage Tank Financial Assurance Board; 328 IAC 1-2-2; filed Dec 4, 1992, 11:00 a.m.: 16 IR 1052; readopted filed Jan 10, 2001, 3:21 p.m.: 24 IR 1534; filed Oct 17, 2001, 4:30 p.m.: 25 IR 789)

328 IAC 1-2-3 Obligation of monies

Authority: IC 13-23-8-1; IC 13-23-8-4.5; IC 13-23-8-5; IC 13-23-11-7
Affected: IC 13-23

Sec. 3. (a) Claims shall be paid in the order received by the department unless the procedure set forth in 328 IAC 1-4-1 is applicable.

(b) At the beginning of each state fiscal year, the administrator shall obligate sufficient monies for administering the fund. This amount shall be approved by the financial assurance board. *(Underground Storage Tank Financial Assurance Board; 328 IAC 1-2-3; filed Dec 4, 1992, 11:00 a.m.: 16 IR 1052; filed May 25, 1999, 4:31 p.m.: 22 IR 3103; readopted filed Jan 10, 2001, 3:21 p.m.: 24 IR 1534; filed Oct 17, 2001, 4:30 p.m.: 25 IR 789)*

Rule 3. Fund Coverage and Eligibility

328 IAC 1-3-1 Fund access

Authority: IC 13-23-8-1; IC 13-23-8-4.5; IC 13-23-8-5; IC 13-23-11-7
Affected: IC 13-23-7; IC 13-23-8-4

Sec. 1. The following persons may apply to the fund for payment of expenditures arising from corrective action and for indemnification of third party liability:

(1) Eligible tank owners and operators, including transferees as described in IC 13-23-8-4.

(2) Persons assigned the right of reimbursement by any person described in subdivision (1).

(3) Subsequent owners of the property upon which tanks were located, if the tanks were closed by a previous property owner, tank owner, or operator who is eligible.

(Underground Storage Tank Financial Assurance Board; 328 IAC 1-3-1; filed Dec 4, 1992, 11:00 a.m.: 16 IR 1053; filed Jan 9, 1997, 4:00 p.m.: 20 IR 1103; readopted filed Jan 10, 2001, 3:21 p.m.: 24 IR 1534; filed Oct 17, 2001, 4:30 p.m.: 25 IR 790)

328 IAC 1-3-2 Fund coverage

Authority: IC 13-23-8-1; IC 13-23-8-4.5; IC 13-23-8-5; IC 13-23-11-7
Affected: IC 13-23-8-4; IC 13-23-9-2; IC 13-23-9-3

Sec. 2. (a) Monies may be disbursed from the fund to persons listed in section 1 of this rule, for payment of corrective action costs in compliance with IC 13-23-8-4(a)(4) through IC 13-23-8-4(c) and IC 13-23-9-2(a) through IC 3-23-9-2(c). Site characterization costs may be disbursed from the fund to persons listed in section 1 of this rule prior to an approved or deemed approved CAP, if the work for which payment is sought is completed in accordance with rules of the solid waste management board at 329 IAC 9 or the risk integrated system of closure (RISC) standards.

(b) Monies may be disbursed to persons listed in section 1 of this rule for payment of claims of liability to third parties in compliance with IC 13-23-9-3. *(Underground Storage Tank Financial Assurance Board; 328 IAC 1-3-2; filed Dec 4, 1992, 11:00 a.m.: 16 IR 1053; readopted filed Jan 10, 2001, 3:21 p.m.: 24 IR 1534; filed Oct 17, 2001, 4:30 p.m.: 25 IR 790)*

328 IAC 1-3-3 Eligibility requirements

Authority: IC 13-23-8-1; IC 13-23-8-4.5; IC 13-23-8-5; IC 13-23-11-7
Affected: IC 6-8.1-10-1; IC 13-23-7; IC 13-23-8-4; IC 13-23-12

Sec. 3. (a) Persons listed in section 1 of this rule must do the following to be eligible for reimbursement from the fund:

(1) Meet the requirements set forth in IC 13-23-8-4(a)(1) through IC 13-23-8-4(a)(4).

(2) In accordance with rules of the solid waste management board at 329 IAC 9-4 and rules of the water pollution control board at 327 IAC 2-6.1, communicate a spill report to the department of environmental management.

(3) Current tank owners or operators who have failed to pay all tank fees that are due under IC 13-23-12-1 by the date that the fees are due shall be eligible for reimbursement from the fund in accordance with subsection (b) upon payment of all past due fees, interest, and penalties.

(4) A person who acquires ownership in accordance with subsection (e) shall be eligible for reimbursement from the fund upon timely payment of all past due tank fees, interest, and penalties in accordance with subsection (h).

(b) A tank owner or operator who fails to pay all tank fees that are due under IC 13-23-12-1 by the date that the fees are due shall be eligible for reimbursement from the fund according to the following formula:

(1) Determine the number of payments that were owed under IC 13-23-12-1 on all regulated tanks at the facility from which a release occurred, beginning with the date that the fees for each tank first became due under IC 13-23-12 and continuing until the date on which the release occurred.

(2) Determine the number of payments actually made under IC 13-23-12-1 on all regulated tanks at the facility from which a release occurred, beginning with the date each tank became regulated under IC 13-23 and continuing until the date on which the release occurred. Divide the number of payments actually made by the number of payments due as determined in subdivision (1).

(3) Determine the amount of money the person would have received from the fund if all payments due on the date the release occurred had been paid when due, and multiply the amount by:

(A) the percentage determined in subdivision (2), if the percentage is fifty percent (50%) or more; or

(B) zero (0), if the percentage determined in subdivision (2) is less than fifty percent (50%).

(c) Payments that were made or could have been paid four (4) times per year under IC 13-23-12-3 count as one (1) payment for purposes of this section. Each payment made or due on each tank at a facility shall count as an additional payment for purposes of this section in figuring the total payments made or due.

(d) Persons listed in section 1 of this rule who have had a claim denied for failure to register an underground petroleum storage tank from which a release has occurred or for failure to pay all registration fees that are due under IC 13-23-12-1 by the date the fees are due may resubmit the claim, regardless of whether the denial was appealed, under subsection (a). The resubmission must be in the form of a letter providing the facility identification number, the incident number, and, if an appeal was filed, a copy of a document demonstrating the resolution of the appeal. The department has the option to settle any pending appeals and resubmitted claims.

(e) A person who acquires ownership or operation of an underground petroleum storage tank under IC 13-23-8-4.5(2) may become eligible for reimbursement from the fund by complying with subsection (f).

(f) A person described under subsection (e) may become eligible for reimbursement from the fund for any releases reported after the date that the department receives the "Intent to Acquire UST and Reinstate Eligibility" form by doing the following:

(1) Submitting a fund "Intent to Acquire UST and Reinstate Eligibility" form (Form) as prescribed by the commissioner at least sixty (60) days prior to acquiring ownership or operation of an underground petroleum storage tank. This form will be kept confidential up to the earlier of the following:

(A) The date of the transfer of the property.

(B) The department's receipt of the monies provided in subsection (g).

(C) For up to ninety (90) days after the projected date of closure listed in the Form.

The department will provide a listing of environmental penalties, interest due to the fund, and fees due, to the prospective purchaser and the property owner within forty-five (45) days of receipt of the Form.

(2) Paying all applicable tank fees, including past due fees, interest, and penalties for each tank not more than thirty (30) days after the transaction whereby the person acquires ownership or operation of each tank.

(3) The seller of the underground petroleum storage tank site is liable for any and all unpaid tank fees, interest, and penalties that are assessed by the department in accordance with subsection (g). The purchaser is to collect all past due tank fees, interest, and penalties from the noncompliant seller and remit to the department the full amount of the assessment for the subject underground petroleum storage tank provided by the department in accordance with subsection (g) prior to an occurrence. The timely remittance of these monies is a condition of fund eligibility for the purchaser.

(g) Persons listed in section 1 of this rule and described in subsection (e) who fail to pay tank fees when due are subject to payment of interest and penalties on those fees in order to become eligible for the fund under subsection (f). Interest and penalties due will include the following:

(1) Penalties and interest due the department of revenue.

(2) All past due underground storage tank fees under IC 13-23-12.

(3) An environmental penalty as specified in subsection (h)(2). This penalty will be distributed into the fund and into the Petroleum Trust Fund in accordance with IC 13-23-12-7(b).

(4) Interest will be charged for the missed fee(s) at the percent per year based on subsection (h) and IC 6-8.1-10-1 until all fees due have been paid in full for each tank. This interest will be deposited into the fund.

Payment of all fees, interest, and penalties due within thirty (30) days of the date of transfer of the subject property is a requirement for fund eligibility for the purchaser.

(h) In addition to all past due fees owed, the amount of interest and penalties owed by a particular owner or operator is to be determined by the following formula:

(1) Interest as follows:

Number of Delinquent Days × Daily Interest Rate = Interest Due

Interest will be calculated according to IC 6-8.1-10-1.

(2) Penalty as follows:

(A) For sites that were never registered, or sites for which no tank fees were paid when due, the penalty will be calculated at two thousand dollars ($2,000) under IC 13-23-12-7(a) per petroleum underground storage tank.

(B) For all other sites, the penalty will be calculated at one thousand dollars ($1,000) per petroleum underground storage tank for each year that passes after the fee becomes due and before the fee is paid.

(Underground Storage Tank Financial Assurance Board; 328 IAC 1-3-3; filed Dec 4, 1992, 11:00 a.m.: 16 IR 1053; filed Jan 9, 1997, 4:00 p.m.: 20 IR 1104; errata, 20 IR 1593; readopted filed Jan 10, 2001, 3:21 p.m.: 24 IR 1534; filed Oct 17, 2001, 4:30 p.m.: 25 IR 790; errata filed Feb 27, 2002, 9:58 a.m.: 25 IR 2254)

328 IAC 1-3-4 Amount of coverage

Authority: IC 13-23-8-1; IC 13-23-8-4.5; IC 13-23-8-5; IC 13-23-11-7
Affected: IC 13-23

Sec. 4. (a) After payment of the applicable deductible amount, the fund may pay for costs incurred by persons listed in section 1 of this rule, for corrective action and third party liability as specified in IC 13-23-8-1.

(b) Regardless of the number of eligible persons listed in section 1 of this rule at one (1) site, no more than two million dollars ($2,000,000) may be reimbursed for the costs, including third party liability claims, associated with a single occurrence. *(Underground Storage Tank Financial Assurance Board; 328 IAC 1-3-4; filed Dec 4, 1992, 11:00 a.m.: 16 IR 1054; readopted filed Jan 10, 2001, 3:21 p.m.: 24 IR 1534; filed Oct 17, 2001, 4:30 p.m.: 25 IR 792)*

328 IAC 1-3-5 Reimbursable expenditures

Authority: IC 13-23-8-1; IC 13-23-8-4.5; IC 13-23-8-5; IC 13-23-11-7
Affected: IC 13-23-3-2

Sec. 5. (a) Persons listed in section 1 of this rule may seek payment from the fund for the following costs related to necessary costs actually incurred in the performance of corrective action:

(1) Investigation, which includes research, field time, report writing, and clerical support.

(2) Lodging and per diem costs will be paid in accordance with the most current Indiana department of administration

financial management circular covering state travel policies and procedures. Mileage shall be calculated at the federal rate for a privately owned automobile under 41 CFR 301-10.303, in effect on September 6, 2000. Sales of the Code of Federal Regulations are handled by the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402.

(3) Persons listed in section 1 of this rule may employ a certified contractor under IC 13-23-3-2 or may use the owner's or operator's personnel to perform all or part of a corrective action.

(4) Soil and water sampling for petroleum and petroleum constituents shall be performed in accordance with rules of the solid waste management board at 329 IAC 9 or the risk integrated system of closure (RISC) standards.

(5) Expenditures for machinery and equipment must be prorated based on the normal expected life of the item and the length of time the item was used for a single corrective action. In no event will the fund pay for purchases of machinery and equipment in excess of the market cost of leasing the item for a corrective action. Examples of equipment charges which can be made to the fund are disposable bailers and sample bottles.

(6) Persons listed in section 1 of this rule may be reimbursed for expenditures for materials and supplies, such as disposable protective equipment, building materials (piping, cement), and preservatives.

(7) Attorney fees, not to exceed twenty-five percent (25%) of the total claim or thirty thousand dollars ($30,000), whichever is less, shall only be payable if incurred by the owner or operator in defense of a third party liability claim.

(8) Governmental administrative fees for local, state, or federal permits necessary for corrective action.

(9) Provision of alternate water supply. This cost must have been previously approved by the department.

(10) Any other reasonable costs the department finds to be necessary for corrective action or payment of a third party liability claim.

(11) Costs associated with transitioning a site to RISC will be paid if these costs would be less than the costs to complete the remediation under rules of the solid waste management board at 329 IAC 9.

(12) Markup of no more than fifteen percent (15%) will be reimbursed on all eligible costs except for the following:

(A) Travel costs, including mileage, per diem, and lodging.

(B) Personnel costs.

(C) Utilities for temporary facilities.

(D) Governmental administrative fees for local, state, or federal permits.

(E) Equipment and supplies not purchased or rented specifically for use at a facility or that are not part of the approved remedial technology.

(b) The following expenditures are ineligible for reimbursement from the fund:

(1) Costs incurred before April 1, 1988.

(2) Costs of repair, upgrading, or replacement of an underground petroleum storage tank or its associated equipment.

(3) Costs of environmental investigation and remediation not directly related to a release from a qualifying underground storage tank. Ineligible costs include the cost of testing for nonpetroleum contamination and the cost of vapor or ground water monitoring devices that are not associated with corrective action.

(4) The cost of equipment purchases other than those expenditures routinely required to implement a corrective action plan. Examples of equipment purchases that cannot be charged to a specific site include drilling rigs, earth moving equipment, photoionization detectors, explosimeters, and hand tools.

(5) The cost of cosmetic improvements, including the repair or replacement of blacktop or concrete, unless directly associated with corrective action.

(6) Lost income or reduced property values, unless part of a third party liability claim.

(7) Interest or finance charges.

(8) Contractor costs not directly related to corrective action activities, such as preparing cost estimates.

(9) Fines or penalties imposed by local, state, or federal governmental agencies.

(10) Punitive or exemplary damages.

(11) Any costs for remediation of contamination not shown to be above the concentrations listed in the Indiana Department of Environmental Management Underground Storage Tank Guidance Manual (1994), rules of the solid waste management board at 329 IAC 9, and the RISC standards.

(12) Any costs related to the excavation and disposal of more than one thousand five hundred (1,500) tons of soil, unless:

(A) alternative remediation techniques have been considered;

(B) excavation and disposal was shown to be the most cost effective remediation option; and

(C) the soil removal is part of a CAP approved or deemed approved by the commissioner.

(13) Any other cost not directly related to corrective action or third party liability or otherwise determined not to be reimbursable under this rule as a result of a financial or technical review.

(c) Appropriate expenditures which may be considered for reimbursement are set forth in the following reimbursable expenditure chart. Sampling and analysis must be conducted in accordance with "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", United States Environmental Protection Agency Publication SW-846, Third Edition (November 1986) as amended by Updates I (July 1992), II (September 1994), IIA (August 1993), IIB (January 1995), III (December 1996), and IIIA (May 1999). Publication SW 846 is available from the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402.

Activity	Cost Range or Maximum Amount
SITE INVESTIGATION	
Mobilization and demobilization within a 50 mile radius. This includes the cost of moving general contractor owned equipment, set-up, and removing equipment.	$300
Soil borings	
Number of feet in incremental amounts	
Less than 16 feet	$20 per foot
16 through less than 26 feet	$25 per foot
26 feet or more	$30 per foot
Decontamination and equipment cleaning	$10 per each 5 feet of boring
Cutting holes in concrete or asphalt (12 inches in diameter)	$90 per hole
Materials	
Well casing and screen (including riser) filter pack, annular and surface seal:	
2 inch well	$10 per foot
4 inch well	$12 per foot
6 inch well	$15 per foot
Flush-grade well covers	$75 per cover
Laboratory services, including containers, packaging, and postage.	
Soil analysis methods	
TPH–8015	$75 per sample
TPH–418.1	$100 per sample
VOC–8260	$200 per sample
SVOC–8270	$325 per sample
PAH–8310	$185 per sample
PCB–8080	$110 per sample
Metals–(13)	$170 per sample
BTEX/MTBE–8021	$75 per sample
BTEX/MTBE–8260	$200 per sample
Water analysis methods	
TPH–8015	$75 per sample
VOC–8260	$200 per sample
BTEX/MTBE–8021	$75 per sample
BTEX/MTBE–8260	$200 per sample

SVOC–8270	$325 per sample
PAH–8310	$185 per sample
Metals–(13)	$170 per sample
Monitored natural attenuation parameters	
Nitrates	$15 per sample
Nitrites	$15 per sample
Sulfate	$15 per sample
Dissolved methane	$50 per sample
Use of RISC will require DQO–Level IV, including raw data, internal chain of custody, and QA/QC.	20% markup allowed per sample
When submitting a claim for reimbursement, the claimant shall be required to give the personnel classification, task being performed, and the name of the individual performing the task. Rates will be paid based on the task performed by an employee rather than the qualifications of the employee. Refer to subsection (d) for task descriptions for personnel classifications.	
Principal	$110 per hour
Senior project manager	$102 per hour
Project manager	$83 per hour
Staff project person	$70 per hour
Senior technician	$55 per hour
Technician	$38 per hour
Drafting person	$35 per hour
Word processor/clerical	$28 per hour
Toxicologist	$125 per hour
INITIAL ABATEMENT AND FREE PRODUCT REMOVAL	
Except where provided in this rule, approval of costs will be on a case-by-case basis.	
SITE SET-UP PREPARATION	
Trailer rental	$300 per month ($10 per day)
Portable toilet	$150 per month ($5 per day)
Utility check, the date and time of the utility check must be documented.	$400
Utilities for temporary facilities	
Temporary power	$500 per month ($16.67 per day)
Temporary water	$150 per month ($5 per day)
Temporary phone	$200 per month ($6.67 per day)
DEMOLITION	
Concrete and asphalt removal	
Saw concrete, prices are per linear foot	

	4 inch concrete	6 inch concrete
Under 200 feet	$1.60 per foot	$2 per foot
200 through 400 feet	$1.40 per foot	$1.81 per foot
400 through 600 feet	$1.33 per foot	$1.70 per foot

600 through 1,000 feet	$1.20 per foot	$1.66 per foot	
Over 1,000 feet	$1.08 per foot	$1.60 per foot	
Saw asphalt, prices are per linear foot			
	3 inch asphalt	4 inch asphalt	6 inch asphalt
Under 450 feet	$1.75 per foot	$1.90 per foot	$3 per foot
450 through 600 feet	$1.50 per foot	$1.75 per foot	$2.75 per foot
600 through 1,000 feet	$1.35 per foot	$1.50 per foot	$2.25 per foot
Over 1,000 feet	$1.25 per foot	$1.35 per foot	$2 per foot
Concrete removal, including the cost of loading and hauling to a legal landfill within 6 miles, but does not include landfill fees			
4 inch concrete	$3 per ton		
6 inch concrete	$5.77 per ton		
7 inch through 9 inch concrete	$17.47 per ton		
10 inch and over	$43.96 per ton		
With rebar	Add 15%		
For less than 500 square feet	Add 35%		
Concrete curb	$5.04 per linear foot		
Asphalt removal, including the cost of loading and hauling to a legal landfill within 6 miles, but does not include landfill fees			
Removal asphalt pad (3 inches)	$0.25 per square foot		
Removal asphalt curb	$1.41 per linear foot		
For less than 500 square feet	Add 35%		
EXCAVATION			
Equipment costs and labor	$2.22 per ton		
Mobilization	$300		
Supplies, for example, visqueen.			
Stockpiling soil on-site	$1.34 per ton		
Tank removal, decommissioning, cutting, and disposal are not eligible for reimbursement unless necessary as part of corrective action.			
Costs for pumping, testing, and disposal of tank contents are not eligible for reimbursement			
Under 1,000 gallons	$1,000 per tank		
1,000 through 4,999 gallons	$1,500 per tank		
5,000 through 10,000 gallons	$2,000 per tank		
Above 10,000 gallons	$2,500 per tank		
TRANSPORTATION			
Loading	$1.34 per ton		
Hauling, mileage must be documented	$0.37 per ton for each mile		
DISPOSAL OF SOIL, GROUND WATER, AND TRASH			
Landfill fees			
Sampling required by landfill. Must include receipts and analytical results from local municipality.			

Sanitary sewer, if approved for disposal of treated ground water. Must include receipts.	
Contaminated or disposable equipment and decontamination fluids.	
Landfill reimbursement will be based on the least expensive combination of documented transportation costs and documented disposal costs at a permitted landfill.	
Trash	$15 per ton
APPROVED TECHNOLOGIES	
Reimbursement for corrective action costs will be reimbursed on the basis of the lowest of three (3) competitive bids on the work specified in the corrective action plan that is approved or deemed approved by the department. If the claimant can provide sufficient technical justification for the selection of another bid, the corrective action costs associated with the higher bid will be reimbursed.	
Lease or rental on equipment will not be reimbursed above the purchase price.	
SITE RESTORATION	
Backfill hauling	$0.37 per ton for each mile
Backfill material	$13 per ton/stone $6.50 per ton/soil
Backfill placement, compaction, and density verification	$4 per ton
Resurfacing	
4 inch concrete	$3.25 per square foot
For each additional inch of concrete	Add $0.40 per square foot
For rebar	Add 15%
Asphalt pad, 4 inch thickness	$2.15 per square foot
Asphalt curb and gutter	$4.75 per linear foot
Island forms	
4 feet by 10 feet with 2 foot bumpers	$725 each
4 feet by 16 feet with 2 foot bumpers	$1,100 each
Equipment rental (based on daily rate; not an inclusive list)	
Decontamination equipment (bucket, brushes, detergent)	$10
Power auger	$50
Hand auger sampling kit (hand auger/ brass sleeves)	$35
Slide hammer core sampler	$35
Photoionization detector	$75
Flame ionization detector	$95
LEL/O2 meter	$50
pH and conductivity meter	$20
Dissolved oxygen meter	$30
2" submersible pump	$115
4" submersible pump	$95

Direct push technology	$1,200 per day
	$750 per ½ day
Steam cleaner/pressure washer	$75
Water level indicator	$12
Oil/water interface probe	$55
Bailer rental	$15
Anemometer	$35
Carbon dioxide meter	$25
Portable generator, generator ≤ 5kW	$50
Portable generator, generator > 5kW	$90
Portable generator, generator ≤10kW	$100
Portable generator, generator > 10kW	$125

(d) The following categories describe the personnel classification activity descriptions:

(1) Principal will do the following:

(A) Supervise professional staff.

(B) Serve as technical expert on sites.

(C) Provide final review of project documents.

(D) Limit site visits on projects.

(E) Handle legal matters.

(F) Coordinate with attorneys.

(2) Senior project manager (includes professional geologist, engineer, and hydrogeologist) will provide the following:

(A) Project management/oversight.

(B) Technical document preparation/review.

(C) Coordination with the department, client, and contractors.

(D) Hydrogeologic and contaminant modeling.

(E) Supervision of investigation/remediation activities.

(F) Site access/permitting.

(3) Project manager will provide the following:

(A) Remediation work plan preparation (CAP, ISC, FSI, pilot study).

(B) Site work preparation and planning.

(C) Supervision of remediation activities.

(D) Oversight of waste characterization, transportation, and disposal.

(E) RISC statistics and equations.

(F) Coordination of subcontractor work (drillers, plumbers, and electricians).

(G) Coordination of heavy equipment mobilization.

(4) Staff project person will do the following:

(A) Implement remediation system installation, operation, and maintenance.

(B) Conduct site mapping.

(C) Assist with waste characterization, transportation, and disposal.

(D) Oversee installation of soil borings and monitoring wells.

(E) Provide on-site supervision and/or perform site characterization and remediation activities.

(F) Oversee well water records searches.

(G) Define how site utilities are marked.

(H) Survey wells.

(I) Oversee free product removal.

(J) Conduct quarterly sampling.

(K) Provide drilling/sampling support.

(5) Senior technician will oversee the following:
(A) Activities associated with operation and maintenance of remediation system.
(B) Equipment installation.
(6) Field technician will oversee the following:
(A) Well purging and development.
(B) Sample collection.
(C) Drum labeling/disposal.
(D) Decontamination/site clean-up tasks.
(E) Sample preparation and delivery.
(7) Drafting person will do the following:
(A) Provide CADD work.
(B) Generate drawings, maps and plans, boring logs, and monitoring well installation logs.
(C) Revise drawings and maps and plans.
(8) Word processor/clerical will provide the following:
(A) Word processing/data input.
(B) General clerical duties.
(C) Documentation reproduction, report binding, and filing.
(D) Proofreading/editing.
(9) Toxicologist will provide guidance for nondefault risk-based closures utilizing nondefault toxicological parameters.
(Underground Storage Tank Financial Assurance Board; 328 IAC 1-3-5; filed Dec 4, 1992, 11:00 a.m.: 16 IR 1054; filed Nov 1, 1995, 8:30 a.m.: 19 IR 343; filed Jan 9, 1997, 4:00 p.m.: 20 IR 1105; readopted filed Jan 10, 2001, 3:21 p.m.: 24 IR 1534; filed Oct 17, 2001, 4:30 p.m.: 25 IR 792; errata filed Feb 27, 2002, 9:58 a.m.: 25 IR 2255)

328 IAC 1-3-6 Limitation of liability
Authority: IC 13-23-8-1; IC 13-23-8-4.5; IC 13-23-8-5; IC 13-23-11-7
Affected: IC 13-23

Sec. 6. The application for or receipt of payment for corrective action does not limit the legal responsibility of persons listed in section 1 of this rule for damages incurred by another person as a result of a release. *(Underground Storage Tank Financial Assurance Board; 328 IAC 1-3-6; filed Dec 4, 1992, 11:00 a.m.: 16 IR 1055; readopted filed Jan 10, 2001, 3:21 p.m.: 24 IR 1534; filed Oct 17, 2001, 4:30 p.m.: 25 IR 798)*

Rule 4. Prioritization of Claims

328 IAC 1-4-1 General procedure
Authority: IC 13-23-8-1; IC 13-23-8-4.5; IC 13-23-8-5; IC 13-23-11-7
Affected: IC 13-23

Sec. 1. (a) The procedure set forth in this rule shall be followed in the event the unencumbered balance of funds in the fund falls below twenty-five million dollars ($25,000,000) or by the discretion of the administrator.
(b) Each qualifying claim shall be assigned a priority score based on a ranking system designed to address the following:
(1) Initial prioritization of all claims shall be based on the degree of environmental threat existing at the time the occurrence was discovered. The administrator shall assign a priority score upon evaluation of the following technical criteria (listed in descending order, from highest priority to lowest priority, clause (A) having the highest priority):
(A) Impacts to public and private water supply.
(B) Type of petroleum.
(C) Health standards and explosivity hazard.
(D) Corrective action taken.
(E) Number of gallons released.

(F) Degree of access to contaminated soil.

(G) Designated use of surface water.

(H) Site geology and hydrology.

(2) For purposes of scoring claims resulting from occurrences before December 4, 1992, and after March 31, 1988, the administrator shall give additional consideration for when the corrective action was taken.

(3) Scoring of claims shall be determined by application of the following site assessment model:

Site Assessment Scoring Model for Prioritization of Claims

Criteria		Value
Site assessment information.		
Public drinking water supply or well within 1 mile:		
Is contamination present in drinking water?	YES	15
	NO	1
Number of wells within 1 mile		
	1	1
	2 through 3	2
	4 through 6	3
	6 or more	4
	Public water total ____ times 24 equals____	
Private drinking water supply or well within 1 mile:		
Is contamination present in drinking water?	YES	15
	NO	0
Number of wells within 1 mile		
	1 through 10	1
	11 through 25	2
	26 through 100	3
	greater than 100	4
	Private drinking water total ____ times 12 equals____	
Type of petroleum		
Mixed products or waste oil		15
Leaded gasoline		13
Gasoline		12
Jet fuels		10
Diesel fuels		9
Heating fuels		8
Kerosene fuels		7
Crude oil		5
Other		–
	Type of petroleum total ____ times 10 equals ____	
Health standards and explosivity hazards		
Contamination phase		
Vapors present at the time release discovered		10
Free product present at the time the release was discovered		7
Surface contamination present at the time the release was discovered		5
Structures affected		
Residential housing		7
Municipal, commercial, or industrial		5
Utility lines or trenches		1
Area designation		
Large municipality or urban area		7

Small municipality or suburban area	5
Rural, agricultural, or livestock area	1
Health standards total ____ times 6 equals ____	
Corrective action taken	
Corrective action complete	5
Corrective action over 50% complete	5
Corrective action initiated	5
Corrective action approved by the department	5
Site characterization complete	5
Release response measures complete	5
Corrective action total ____ times 4 equals ____	
Number of gallons released	
Over 12,000	10
5,000 through 11,999	8
2,000 through 4,999	6
500 through 1,999	4
100 through 500	2
Under 100	1
Number of gallons released total____times 5 equals ____	
Degree of access to contaminated soil	
Contamination access	
Surface (0 to 2 feet below surface)	10
Subsurface (over 2 feet below surface)	5
Access total ____ times 4 equals ____	
Designated use of surface water	
Surface waters within ½ mile	
Lake or river	3
Swamp or wetlands	3
Pond or canal	2
Stream, creek, or active drainage ditch	1
Distance to surface waters	
Under 500 feet	3
500 feet to ¼ mile	2
Over ¼ mile	1
Designated use of surface water	
Drinking water	4
Recreational or full body human contact	3
Aquatic, wildlife, or partial human contact	3
Agriculture or livestock	2
Designated use of surface water total _____ times 4 equals _____	
Site geology and hydrogeology	
Soil type	
Sand	4
Clay	1
Depth to water table in feet	
0 through 10	4
11 through 20	3
21 through 40	2
Over 40	1

Unusual geologic factors, for example, fractured bedrock, sand or gravel veins, perched aquifers, or geological outcroppings

YES	5
NO	0

Site geology and hydrogeology total _____ times 3 equals _____

(c) To assure the efficient administration of the fund, the administrator may reclassify a claim at any time that it is determined a claim has been incorrectly ranked.

(d) Placement of a claim on a priority list does not constitute a commitment to reimburse corrective action or third party liability costs. *(Underground Storage Tank Financial Assurance Board; 328 IAC 1-4-1; filed Dec 4, 1992, 11:00 a.m.: 16 IR 1055; filed Nov 1, 1995, 8:30 a.m.: 19 IR 347; readopted filed Jan 10, 2001, 3:21 p.m.: 24 IR 1534; filed Oct 17, 2001, 4:30 p.m.: 25 IR 799)*

328 IAC 1-4-2 Creation of the initial priority list (Repealed)

Sec. 2. *(Repealed by Underground Storage Tank Financial Assurance Board; filed Nov 1, 1995, 8:30 a.m.: 19 IR 350)*

328 IAC 1-4-3 Creation of subsequent priority lists

Authority: IC 13-14-8
Affected: IC 13-23-9-2; IC 13-23-9-4

Sec. 3. (a) Except for environmental emergencies, initial claims shall be ranked according to those conditions which existed at the time the corrective action was commenced. Claims determined to be of identical priority shall be ranked according to the date that an acceptable claim was received by the fund.

(b) Subsequent claims may be reprioritized based on the environmental threat present during the time period for which additional reimbursement is being claimed.

(c) The administrator shall notify claimants within sixty (60) days after the receipt of their claims whether their claims shall be approved for payment. If a claim is determined to be unacceptable or ineligible after reviewing the submitted information in accordance with IC 13-23-9-2, the administrator shall notify the owner or operator within ten (10) days of the denial and inform the claimant of the reasons for which the claim was rejected.

(d) Claims determined to be unacceptable may be revised and resubmitted to the fund. The priority ranking process of the revised claim shall be based on the date that the fund receives the revised claim.

(e) A claimant may request a review of a denial of payment using the procedures set forth in IC 13-23-9-4. *(Underground Storage Tank Financial Assurance Board; 328 IAC 1-4-3; filed Dec 4, 1992, 11:00 a.m.: 16 IR 1055; filed May 25, 1999, 4:31 p.m.: 22 IR 3103; readopted filed Jan 10, 2001, 3:21 p.m.: 24 IR 1534)*

Rule 5. Corrective Action Claims

328 IAC 1-5-1 Applications for payment of corrective action

Authority: IC 13-23-8-1; IC 13-23-8-4.5; IC 13-23-8-5; IC 13-23-11-7
Affected: IC 13-23

Sec. 1. (a) Claim applications for reimbursement of corrective action costs shall be submitted on forms adopted by the administrator. Claimants shall itemize all charges as required by the application package. Documentation of expenses as required by the administrator must be submitted as part of the application.

(b) The application shall contain the following statement, which shall be signed and attested by the person applying to the fund:

"I swear or affirm to the best of my knowledge and belief that the costs presented herein represent the actual costs incurred in the performance of corrective action related to this site during the period of time indicated on this application. I also swear

or affirm that all charges presented as part of this application were necessary to the performance of corrective action.".

(c) Two (2) copies of all documents required by the administrator shall be submitted by the person applying to the fund to support the application. Original documents must be kept by the person applying to the fund for a minimum of four (4) years after the date the application for payment was submitted, or four (4) years after completion of corrective action, whichever is later.

(d) A single claim application may not be submitted to the fund for reimbursement in an amount less than the following:

(1) Initial claim may be submitted for any amount, including $0/eligibility preapproval claims.

(2) Subsequent claims, five thousand dollars ($5,000) unless the claim is:

(A) the final application for that incident;

(B) for a third party liability claim; or

(C) for costs incurred over a period of four (4) months or longer.

(3) Persons applying to the fund may resubmit claims in any amount if the costs were disallowed for lack of backup documentation.

Persons applying to the fund shall identify the final application as such. *(Underground Storage Tank Financial Assurance Board; 328 IAC 1-5-1; filed Dec 4, 1992, 11:00 a.m.: 16 IR 1056; filed Nov 1, 1995, 8:30 a.m.: 19 IR 349; readopted filed Jan 10, 2001, 3:21 p.m.: 24 IR 1534; filed Oct 17, 2001, 4:30 p.m.: 25 IR 801)*

328 IAC 1-5-2 Fund payment procedures for corrective action

Authority: IC 13-23-8-1; IC 13-23-8-4.5; IC 13-23-8-5; IC 13-23-11-7
Affected: IC 13-23-9-2

Sec. 2. (a) Contingent on the availability of monies as determined by 328 IAC 1-2-3, the administrator shall authorize payment upon determining that the requirements of IC 13-23-9-2 have been met.

(b) Processing and payment of claims are contingent upon the availability of monies.

(c) When a person applying to the fund submits an application under section 1 of this rule, which includes expenses for which that person has not made payment, then payment shall be made by check jointly to the person applying to the fund and the contractor involved.

(d) When a person applying to the fund submits documentation verifying that that *[sic.]* person has paid for costs of corrective action, payment shall be made by check directly to that person.

(e) A person who may apply to the fund under 328 IAC 1-3-1 may seek preapproval of a site's eligibility to have corrective action costs reimbursed from the fund. *(Underground Storage Tank Financial Assurance Board; 328 IAC 1-5-2; filed Dec 4, 1992, 11:00 a.m.: 16 IR 1056; filed May 25, 1999, 4:31 p.m.: 22 IR 3103; readopted filed Jan 10, 2001, 3:21 p.m.: 24 IR 1534; filed Oct 17, 2001, 4:30 p.m.: 25 IR 801)*

328 IAC 1-5-3 Deemed approved; reimbursement of costs

Authority: IC 13-23-8-1; IC 13-23-8-4.5; IC 13-23-8-5; IC 13-23-11-7
Affected: IC 13-23-8-4

Sec. 3. "Deemed approved", under IC 13-23-8-4, means that the department shall consider the CAP approved solely for purposes of reimbursement of reasonable costs from the fund. A CAP having been deemed approved shall in no way relieve the person applying to the fund of the obligation to comply with all applicable rules or department standards. *(Underground Storage Tank Financial Assurance Board; 328 IAC 1-5-3; filed Oct 17, 2001, 4:30 p.m.: 25 IR 802)*

Rule 6. Third Party Liability Claims

328 IAC 1-6-1 Applications for payment of third party liability claims

Authority: IC 13-23-8-1; IC 13-23-8-4.5; IC 13-23-8-5; IC 13-23-11-7
Affected: IC 13-23-8-3

Sec. 1. (a) Applications for reimbursement of third party liability claims against owners or operators shall be submitted on

approved forms established by the department. The claimant must attach either a certified copy of a legally enforceable final judgment against the owner or operator or a reasonable settlement between the owner or operator and the third party.

(b) The owner or operator must submit proof of payment of the deductible amount under IC 13-23-8-3.

(c) When submitting an application to the administrator under subsection (a), the owner or operator must also forward a copy of the request to the attorney general. *(Underground Storage Tank Financial Assurance Board; 328 IAC 1-6-1; filed Dec 4, 1992, 11:00 a.m.: 16 IR 1057; readopted filed Jan 10, 2001, 3:21 p.m.: 24 IR 1534; filed Oct 17, 2001, 4:30 p.m.: 25 IR 802)*

328 IAC 1-6-2 Fund payment procedures for third party liability

Authority: IC 13-23-8-1; IC 13-23-8-4.5; IC 13-23-8-5; IC 13-23-11-7
Affected: IC 13-23-9-3

Sec. 2. (a) If the attorney general determines that the requirements under IC 13-23-9-3 have been met, the attorney general shall approve a request for indemnification of a third party not later than sixty (60) days after receiving the request:

(1) if sufficient monies exist after other obligations have been met under 328 IAC 1-2-3;

(2) based upon priority ranking of the site under 328 IAC 1-4 if applicable; and

(3) if the administrator determines that the owner or operator is in compliance with the requirements of IC 13-23 and rules adopted thereunder.

(b) When an owner or operator submits an acceptable application for indemnification of a third party but the claim has not already been paid by the owner or operator, then payment shall be made jointly by check to the eligible owner or operator and the third party.

(c) When an eligible owner or operator submits an acceptable application for indemnification of a third party along with documentation verifying that the owner or operator has paid the third party liability claim, payment shall be made directly to the eligible owner or operator.

(d) Third party liability claims subject to review by the attorney general shall include the reasonable fees or compensation paid to obtain:

(1) access to properties not controlled by the claimant;

(2) institutional controls, including, but not limited to, deed restrictions required by risk integrated system of closure (RISC); or

(3) subdivisions (1) and (2).

(Underground Storage Tank Financial Assurance Board; 328 IAC 1-6-2; filed Dec 4, 1992, 11:00 a.m.: 16 IR 1057; readopted filed Jan 10, 2001, 3:21 p.m.: 24 IR 1534; filed Oct 17, 2001, 4:30 p.m.: 25 IR 802)

Rule 7. Financial Assurance

328 IAC 1-7-1 Financial assurance certificate

Authority: IC 13-23-8-1; IC 13-23-8-4.5; IC 13-23-8-5; IC 13-23-11-7
Affected: IC 13-23

Sec. 1. (a) In accordance with 40 CFR 280.101, the department shall issue a certificate of financial assurance upon request to each eligible tank owner or operator, as defined in 328 IAC 1-3-3, within sixty (60) days after the effective date of this rule. Under IC 13-23 and the rules promulgated thereunder, this state issued certificate shall fulfill the federal financial assurance requirements.

(b) The certificate of financial assurance shall contain the following information:

(1) Facility name and address.

(2) Facility identification number issued by the department.

(3) Amount of funds for corrective action and compensating third parties that is assured by the fund.

(c) The owner or operator shall maintain the certificate of financial assurance in compliance with rules of the solid waste management board at 329 IAC 9-8-21. *(Underground Storage Tank Financial Assurance Board; 328 IAC 1-7-1; filed Dec 4, 1992, 11:00 a.m.: 16 IR 1055; readopted filed Jan 10, 2001, 3:21 p.m.: 24 IR 1534; filed Oct 17, 2001, 4:30 p.m.: 25 IR 802)*

328 IAC 1-7-2 Termination of financial assurance by the department
Authority: IC 13-23-8-1; IC 13-23-8-4.5; IC 13-23-8-5; IC 13-23-11-7
Affected: IC 13-23

Sec. 2. If, after consultation with the financial assurance board, the department determines that insufficient monies exist to provide owners or operators evidence of financial assurance, the department shall notify all fund participants by certified mail. The fund coverage will continue for sixty (60) days after notice of termination of coverage. Owners or operators shall have sixty (60) days after receipt of termination of financial assurance to acquire financial assurance by other means. *(Underground Storage Tank Financial Assurance Board; 328 IAC 1-7-2; filed Dec 4, 1992, 11:00 a.m.: 16 IR 1057; readopted filed Jan 10, 2001, 3:21 p.m.: 24 IR 1534; filed Oct 17, 2001, 4:30 p.m.: 25 IR 803)*

328 IAC 1-7-3 Revocation of certificate by the department
Authority: IC 13-23-8-1; IC 13-23-8-4.5; IC 13-23-8-5; IC 13-23-11-7
Affected: IC 13-23

Sec. 3. If the department determines that the owner or operator has not maintained eligibility for participation in the fund, the certificate of financial assurance issued by the department shall be revoked. The owner or operator shall have fifteen (15) days after revocation of a certificate to reinstate eligibility. *(Underground Storage Tank Financial Assurance Board; 328 IAC 1-7-3; filed Dec 4, 1992, 11:00 a.m.: 16 IR 1057; readopted filed Jan 10, 2001, 3:21 p.m.: 24 IR 1534; filed Oct 17, 2001, 4:30 p.m.: 25 IR 803)*

*

ATTACHMENT

5

Colorado Department of Labor and Employment

Division of Oil and Public Safety

Colorado Petroleum Storage Tank Fund	*Maximum Reasonable Costs - Direct Push Technology Article 4, Part 1*

4-1-1. MINIMUM AND MAXIMUM REIMBURSEMENT PER DAY
Minimum reimbursement: $766/day, plus mileage @ 98.5¢/mile

Maximum reimbursement: The greater of $766/day or $9/foot, not to exceed $1,422/day, plus mileage @ 98.5¢/mile

These rates include mobilization, demobilization, rig up, rig down, decontamination, and all non-consultant labor.

4-1-2. INSTALL TEMPORARY WELL IN DIRECT PUSH BORING
$22.00/well (includes all materials)

4-1-3. INSTALL PERMANENT WELL IN DIRECT PUSH BORING
$8.00/ft. The $8/ft rate includes all materials except locks and permits. Locks and permits should be billed separately at cost plus applicable markup.

Permanent well means: 1" inside diameter casing, capable of accepting 3/4" diameter bailer, pre-slotted screen, adequate filter pack, bentonite seal, locking cap, street box with traffic-rated cover.

4-1-4. WELL ABANDONMENT (closure)
$44.00/well (includes materials and labor)

4-1-49. CONSULTANT LABOR AND FIELD INSTRUMENTATION
Consultant on-site labor allowable for the duration of the direct push boring time, plus two hours.Field instruments such as PIDs (photo-ionization detectors) may be billed separately.

4-1-50. MISCELLANEOUS FIELD SUPPLIES
$22/day/site. This includes such items as gloves, baggies, ice, water, rope, pens, etc. No receipts are required.

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Last modified: November 16, 2001

Colorado Department of Labor and Employment

Division of Oil and Public Safety

Colorado Petroleum Storage Tank Fund	***Maximum Reasonable Costs - Drilling Article 4, Part 2***

4-2-1. RATES PER FOOT. The following per-foot costs include all materials, equipment, and non-consultant labor necessary to drill a boring for either a 2" or 4" diameter well. The rates shown for rotary drilling apply to either air or fluid rotary drilling. The costs include decontamination, collecting split spoon samples in liners at 5' intervals, and backfilling borings with bentonite grout. The costs do not include miscellaneous small items (see Miscellaneous Field Supplies).

Drilling for a 2" monitoring well				Drilling for a 4" monitoring well		
Auger	0 - 50'	$16.41/ft		Auger	0 - 50'	$19.15/ft
Auger	>50'	$18.41/ft		Auger	>50'	$21.33/ft
Rotary	0 - 50'	$21.06/ft		Rotary	0 - 50'	$27.35/ft
Rotary	>50'	$23.52/ft		Rotary	>50'	$30.09/ft

4-2-2. MOBILIZATION/DEMOBILIZATION
$3.03/mile

4-2-3. SOIL SAMPLING (split spoon)
$17.10/sample. This includes decontamination, labor, materials, and equipment. This cost is reimbursable only when samples are necessary more frequently than the 5' intervals included in the per-foot drilling rate. Examples of when more frequent samples may be necessary, such as when drilling the first boring and trying to locate the contamination zone or the water level, or when there is a high fluctuation in groundwater level. No additional consultant fees will be reimbursed. Unless OIS requires or pre-approves a soil sampling method other than split spoon, the Fund will not reimburse additional costs for a more expensive soil sampling method.

4-2-4. COMPLETION OF BOREHOLE AS MONITORING WELL
2" well: $15.14/ft 4" well: $21.67/ft
These rates include all associated labor and materials

4-2-5. WELL ABANDONMENT (closure)
2" well: $7.47/ft 4" well: $11.08/ft
These rates include all associated labor and materials.

4-2-48. MARKUP
No markup is permitted if the consultant does his own drilling, using his own equipment and labor.

4-2-49. CONSULTANT LABOR AND FIELD INSTRUMENTATION Consultant on-site labor allowable for the duration of the drilling time, plus two hours. Field instruments such as PIDs (photo-ionization detectors) may be billed separately.

4-2-50. MISCELLANEOUS FIELD SUPPLIES
$22/day/site. This includes such items as gloves, baggies, ice, water, rope, pens, etc. No receipts are required.

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Colorado Petroleum Storage Tank Fund	***Maximum Reasonable Costs - Excavation & Disposal Article 4, Part 3***

4-3-1. RATES FOR ACTIVITIES ASSOCIATED WITH THE EXCAVATION, TRANSPORTATION AND DISPOSAL OF PETROLEUM-CONTAMINATED SOILS.

ACTIVITY	MAXIMUM RATE
Excavation and loading	$10.67/cu yd
Transportation of contaminated soil	$8.75/cu yd
Disposal of contaminated soil	$13.13/cu yd
Backfill and compaction (purchase, transport, compact backfill material)	$7.66/cu yd
Backfill and compaction (clean excavated material)	$5.07/cu yd
Remove and dispose of asphalt or concrete	$2.19/sq ft
Replace asphalt	$2.74/sq ft
Replace concrete	$4.92/sq ft
Traffic control	actual cost
Permits	actual cost

4-3-2. MILEAGE.

11¢/mile/cubic yard for each mile over 40 miles from excavation site to disposal site, not to exceed 200 miles total one-way.

4-3-3. LABORATORY ANALYSIS.

Laboratory analysis is recommended for each 100 cubic yards excavated to confirm the level of contamination.

4-3-4. MANIFESTS.

All transportation and waste manifests are required

4-3-5. CONVERSION FACTOR.

If any excavation, transportation or disposal activities are billed by the ton instead of cubic yard, use this conversion factor: 1.4 tons = 1 cu yd

4-3-6. APPLICANT-PERFORMED.

Fund Applicants who perform their own work are entitled to reimbursement at the maximum rates established at §4-3-1.

4-3-48. MARKUP.

Consultants may mark up pass-through (subcontracted) charges, subject to any limitations established by these reasonable cost guidelines. Applicants who perform their own work may not mark up any costs.

4-3-49. CONSULTANT LABOR AND FIELD INSTRUMENTATION.

Consultant on-site labor allowable for the duration of the excavation, plus two hours. Field instruments such as PIDs (photo-ionization detectors) may be billed separately.

4-3-50. MISCELLANEOUS FIELD SUPPLIES. $22/day/site. This includes such items as gloves, baggies, ice, water, rope, pens, etc. No receipts are required.

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Colorado Petroleum Storage Tank Fund	***Maximum Reasonable Costs - Groundwater Sampling Article 4, Part 4***

4-4-1. RATE PER WELL SAMPLED
$116.00 per well. This includes all labor and materials (bailer, non-disposable bailer, water-level indicator). It does not include analytical testing or disposal of purge water. No additional consultant labor will be reimbursed.

4-4-49. CONSULTANT LABOR AND FIELD INSTRUMENTATION
No additional on-site consultant labor will be reimbursed. Field instruments may be billed separately.

4-4-50. MISCELLANEOUS FIELD SUPPLIES
$22/day/site. This includes such items as gloves, baggies, ice, water, rope, pens, etc. No receipts are required.

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Colorado Petroleum Storage Tank Fund	***Maximum Reasonable Costs - Labor Rate Schedule*** ***Consultant's Labor*** ***Article 4, Part 5-1***

4-5-1-1. APPLICATION OF RATES
These rates apply to environmental consultants. Reimbursement will be according to task performed (*see* "Responsibilities and Duties" on chart below), not job title of person performing it. Listing as an environmental consultant is required for any labor billed above the staff engineer/scientist rate. Refer to the *Listed Environmental Consultant* portion of the Colorado Reasonable Cost Guidelines (Article 2) for more information.

4-5-1-2. 10% LIMITATION
Total hours in top 3 categories (Principal, Senior Engineer/Scientist, and Project Manager) cannot exceed 10% of consultant's total project labor hours.

4-5-1-3. COMPLEX SITE
A complex site is one with extensive groundwater and soil contamination, difficult hydrogeology, multiple contaminants, or above-ground complications.

4-5-1-4. CONSULTANT LABOR RATES

Pursuant to C.R.S. 12-25-105, some of the following responsibilities and duties may require either licensure as a professional engineer or the proper level of supervision from a professional engineer. It is the responsibility of the consultant to comply with state law on this issue.

POSITION	MAXIMUM HOURLY RATE		RESPONSIBILITIES and DUTIES
	Listed consultant	Unlisted consultant	
PRINCIPAL	$115	$60	Review complex sites Authorize new technology Project-related budget approval Corrective action plan review Project-related contract review and approval
SENIOR ENGINEER/SCIENTIST *(Involvement limited to projects requiring highly specialized training)*	$93	$60	New technology innovations Complex site characterizations Aquifer characterization (complex sites) Review complex technical reports Review complex corrective action plans
PROJECT MANAGER	$88	$60	Project management Approve health and safety plan Review and approve reports and field data Review and approve work plan Approve on-site activities Perform periodic site inspections

			Prepare proposals Manage subcontractors Represent client in dealings with governmental/regulatory agencies
PROJECT *ENGINEER/SCIENTIST*	$71	$60	Remediation feasibility studies and pilot testing Engineering/remedial equipment design Aquifer characterization Prepare final technical reports Prepare corrective action plans Data review and analysis Prepare work plan Site inspection
STAFF ENGINEER/SCIENTIST	$60	$60	Supervise on-site activities Field work preparation/planning Oversee outside contractors Site reconnaissance and mapping Permitting On-site assessment activities Obtain off-site access permission Prepare draft reports Health and safety coordination and monitoring Develop site safety plan
SENIOR TECHNICIAN	$49	$49	Operate and maintain remedial equipment Operate field and monitoring equipment Well developing and sampling
DRAFTS PERSON	$44	$44	Drafting CAD work Cartography
STAFF TECHNICIAN	$38	$38	Waste handling Decontamination Free product removal Maintain field monitoring equipment Assist senior technician
CLERICAL/COURIER	$33	$33	Project-related word processing Project-related filing and mailing Project-related photocopying Travel to deliver or pick up job-related samples, supplies, etc.

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Colorado Petroleum Storage Tank Fund	***Maximum Reasonable Costs - Laboratory Analysis*** ***Article 4, Part 6***

4-6-1. LABORATORY ANALYSIS
The Fund will reimburse actual laboratory charges not to exceed the rates shown in the following chart. These rates include all supplies, sample handling, and disposal fees.

4-6-2. INVOICES
Invoices for laboratory analysis must be provided, regardless of the invoice amount.

4-6-3. RUSH CHARGES
Rush charges up to an additional 100% of a laboratory analysis rate that does not exceed these *Guidelines* will be reimbursed if justified economically by reducing overall remediation costs or if incurred because of emergency health or environmental issues. "Rush" means performing the analysis by the next laboratory working day.

4-6-4. INDIVIDUAL LAB TEST RATES

LABORATORY TEST	METHOD	MAXIMUM RATE
BTEX	8020	$63.00
TVPH	8015 MOD	$63.00
TEPH	8015 MOD	$81.00
TRPH	418.1 1664	$60.00 to be determined
MTBE (separate test)	8020	$69.00
Oil & grease	413.1 1664	$60.00 to be determined
BTEX/TVPH	8020/8015 MOD	$103.00
BTEX/MTBE	8020	$77.00
BTEX/MTBE/TVPH	8020/8015 MOD	$115.00
PCB screen	8080 MOD	$113.00
VOA	8260	$193.00
Semi-VOA	8270	$382.00

Total lead	6010	$22.00
TCLP Pb (includes extraction)	1311/6010	$71.00
TCLP Pb & Cr (includes extraction)	1311/6010	$78.00
TCLP VOA	8260	$193.00
Zero headspace extraction	1311	$137.00
Filtration (liquid)		$36.00
TCLP (8 RCRA metals)	6010/7000 series	$113.00
Extraction (solid)	1311	$104.00
Filtration (liquid)		$36.00
Ignitability/flashpoint	1010	$37.00
Corrosivity	9040/9045	$10.00
Paint filter test	9095	$16.00
Reactivity - sulfide	SW 7.3.4.2	$39.00
Reactivity - cyanide	SW 7.3.3.2	$39.00
WET test (acute test)	2 species run at 5 dilution concentrations	$821.00

4-6-48. MARKUP
The consultant may mark up laboratory rates if the laboratory analysis is performed by a laboratory that is not owned by nor affiliated with the consultant.

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Colorado Petroleum Storage Tank Fund	***Maximum Reasonable Costs - Level of Effort*** ***Article 4, Part 7***

4-7-1. OFFSITE ACCESS
Maximum hours: Actual, not to exceed 8 hours per project for off-site access of up to three properties. Any additional hours should be clearly identified.

4-7-2. WELL DEVELOPMENT
Maximum hours: Actual, not to exceed 1.5 hours per well. Any additional hours should be clearly identified.

4-7-3. UTILITY LOCATE
Maximum hours: Actual, not to exceed 8 hours per site. Any additional hours should be clearly identified.

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Colorado Petroleum Storage Tank Fund	***Maximum Reasonable Costs - Rental vs. Purchase Article 4, Part 8***

4-8-1. FUND REIMBURSEMENT
The Fund will reimburse the lower of the cost to rent or purchase remediation equipment. In most instances, the burden will be on the Fund Applicant to prove that purchase was more economically feasible than leasing or renting the equipment, or to prove that it was not possible to rent/lease the equipment, such that purchase was the only option.

4-8-2. COMPARING RENTAL AND PURCHASE COSTS
When determining whether to rent or purchase equipment, all costs should be factored into the decision, including operation and maintenance costs. If the prime contractor or consultant leases its own equipment to the Applicant, no operation and maintenance costs will be reimbursed.

Rental rates should factor in the following:

- purchase price of the equipment + markup, if applicable
- salvage value of the equipment
- expected economic life of the equipment (assumed to be 30 months unless manufacturer states otherwise)
- cost of capital (interest)

4-8-3. PARTIAL REIMBURSEMENT
If a Fund Applicant purchases remediation equipment and uses it for only a few months, the Fund may reimburse only a portion of the purchase price, adjusted to factor in the economic life of the equipment and the number of months the equipment was used at the remediation site.

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Colorado Petroleum Storage Tank Fund	***Maximum Reasonable Costs - Travel*** ***Article 4, Part 9***

4-9-1. AIRLINE TRAVEL
Airline travel will be reimbursed only to the extent it does not exceed the per-mile rate. The maximum reimbursement for airline travel will be $138 each way, or $276 round-trip.

4-9-2. LODGING
The Fund will reimburse lodging at a rate that is actual and reasonable for the area. A receipt is required. The maximum reimbursement will be $66 per room per night. Lodging will not be reimbursed unless the job site is at least 50 miles from the office.

4-9-3. MEALS
No meals will be reimbursed without an allowable overnight stay. Three meals will be reimbursed for each allowable overnight stay. No receipt is required for meal reimbursement. Meals will be reimbursed at Colorado the following per diem rate: $33 per day.

4-9-4. MILEAGE
The Fund will reimburse round-trip mileage from office to job site at 34.5 ¢/mile/vehicle/trip for standard and 4-wheel drive vehicles. The Fund will reimburse for a maximum of 400 miles one way ($138), or 800 miles round trip ($276), per vehicle trip. Mileage reimbursement will not be allowable for more than one vehicle per trip unless the use of multiple vehicles is justified.

4-9-5. OUT-OF-STATE TRAVEL
Out-of-state travel will be reimbursed, subject to the limits established by these guidelines, if the company does not have a Colorado office.

4-9-6. TRAVEL TIME
The Fund will reimburse for actual travel hours per employee, billed at the appropriate activity rate, for round-trip travel to and from the job site.

4-9-7. VEHICLE RENTAL
The Fund will not reimburse vehicle or company car rental charges, other than the standard reimbursement rate for mileage.

4-9-48. MARKUP
No markup is allowed on any travel charge.

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Colorado Petroleum Storage Tank Fund	***Maximum Reasonable Costs- Miscellaneous Article 4, Part 11***

4-11-1. EQUIPMENT REPAIR OR REPLACEMENT
The Fund will not reimburse the cost to repair or replace equipment that is damaged, lost, stolen, or destroyed due to negligence or vandalism.

4-11-2. MATERIALS PROVIDED BY APPLICANT
Materials provided by the Applicant will be reimbursed at the Applicant's cost. No markup by Applicant or consultant is permitted.

4-11-3. PHOTOCOPYING
11¢/page. Only job-related photocopying will be reimbursed. No reimbursement will be paid for photocopying the Fund application, any attachments to the application, or any documents or correspondence submitted pursuant to the application process. The actual cost for color or enlarged photocopies requested by the OIS is reimbursable.

4-11-4. RUSH CHARGES
The Fund will not reimburse rush charges unless they (1) are justified by an environmental or public health and safety emergency, or (2) reduce overall remediation costs.

4-11-5. VEHICLE RENTAL
The Fund will not reimburse vehicle rental charges with respect to a vehicle used to transport personnel or small equipment. This includes the cost of renting a vehicle from a rental company, as well as rental charges for consultant-owned vehicles.

4-11-50. MISCELLANEOUS FIELD SUPPLIES
$22.00/day/site. This includes such items as gloves, baggies, ice, water, rope, pens, etc. No receipts are required.

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ATTACHMENT

6

PETROLEUM STORAGE TANK DIVISION

Reimbursable Cost Guidelines

the
Texas Natural Resource
Conservation Commission P.O. Box 13087, Austin, Texas 78711-3087

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INTRODUCTION

The objective of this document is to provide guidance for the evaluation of costs incurred in the performance of corrective action activities associated with Leaking Petroleum Storage Tank (LPST) sites.

The guidelines are not intended to set pricing for specific activities or to remove an element of competition for the petroleum storage tank industry. Rather, the guidelines reflect the amount that the TNRCC will reimburse for activities in all but extraordinary cases. Only costs that are at or below the published values in these guidelines will be reimbursed unless a site-specific justification for costs exceeding the guidelines is submitted and approved.

The Reimbursable Cost Guidelines will be utilized by the TNRCC to evaluate and process all cost proposals and reimbursement claims for corrective action activities associated with LPST sites. The evaluation will utilize the guidelines in effect at the time the activities were performed.

The format of this document will allow individuals who are creating workplans and cost proposals for various corrective action activities to arrive at nearly the same total cost that the TNRCC would approve on a review of a workplan and cost proposal.

SECTION 1: ACTIVITIES

The following section presents the various corrective action activities, or phases/subphases of work, normally conducted at an LPST site. Every effort has been made to put the reimbursable costs for these activities into a format that is usable by owner/operators, contractors and consultants, and the TNRCC to preapprove workplans and cost proposals and to review applications for reimbursement.

The maximum reimbursable cost for the generation of a workplan and cost proposal is $115.00. This amount is applicable to the first approved workplan and cost proposal for a given activity. If the original workplan and cost proposal submitted to the TNRCC is unacceptable, the costs associated with that workplan and cost proposal are not reimbursable.

In addition, please be aware that the submission of a new cost proposal to gain preapproval for a portion of an activity omitted from a previous workplan and cost proposal is not reimbursable.

Each activity that follows will contain, where appropriate, a worksheet for that specific activity. In addition, each worksheet will contain the reimbursable costs for the various subphases of each activity, with accompanying notes. These costs are condensed from the unit costs in Appendix A. For your reference, definitions and acronyms used in this document are contained in Appendix B.

ACTIVITY 00: TANK REMOVAL

This section is effective for tanks removed on or after March 12, 1993.

A tank removal is defined as the physical removal of an underground storage tank (UST) from the subsurface. Tank removals normally include the following activities: removal and replacement of surface material; excavation, disposal, and replacement of backfill material (see Note 1); tank removal and disposal; backfilling and compaction of the excavation; and any other activity typically associated with the tank removal process. Please note that overexcavation is not part of the tank removal process. This activity is covered in Activity 03: Excavation/Waste Management.

Eligibility for the reimbursement of a tank removal is based on two factors. First, the performance of necessary corrective action as defined by Title 30, Texas Administrative Code (TAC), Chapter 334, Subchapter H, §334.302 (a) (1) and (2) and second by §334.308 (b) and (c) (14) (see Note 2). The reimbursable amount will be based on the volume of the tanks removed as shown in the table below.

Reimbursement of tank removals will be based on the volume of the tank(s) removed and will have a maximum reimbursement limit of $8,000.00 per LPST site. For underground storage tanks having a volume of 5,000 gallons or less, the reimbursable cost for removal will be $1,000.00. For underground storage tanks having a volume of more than 5,000 gallons, the reimbursable cost for removal will be $2,000.00.

TANK VOLUME (GALLONS)	REIMBURSABLE COST (PER TANK)	TOTAL MAXIMUM PER LPST SITE
5000 OR LESS	$1,000.00	$8,000.00
GREATER THAN 5000	$2,000.00	$8,000.00

Notes:

1: If the backfill from an eligible tank removal has been stored at the site and analytical results indicate that those soils are above levels that the TNRCC will approve for return to the tankhold, the owner/operator may request preapproval for the disposal of those soils under Activity 03: Excavation/Waste Management. If granted, the disposal of those soils will fall outside of the $8,000.00 maximum for a site. Contact your TNRCC Region inspector or the TNRCC Central Office Project Coordinator for assistance.

2: On occasion, a tank removal will occur where contamination has not penetrated beyond the excavation zone of native soils of the tankhold, but where the backfill is contaminated above levels that the TNRCC will approve for return to the tankhold. While the tank removal will not be eligible for reimbursement as required in 30 TAC §334.302 (a) (1) and (2) and §334.308 (b) and (c)(14), the disposal or treatment of the backfill may be reimbursable under §334.308 (f) if the TNRCC directs and preapproves in writing the disposal or treatment of the backfill. Contact your Region inspector or the Central Office Project Coordinator for assistance.

ACTIVITY 01: INITIAL ABATEMENT

Initial abatement measures are those activities performed to reduce risk or threat to human health, safety, and the environment. These activities, as outlined in 30 TAC §334.77 (relating to Initial Abatement Measures and Site Check) can include any or all of the following:

Monitor and mitigate any fire and safety hazard posed by vapors or free product;

Removal of product from tanks to prevent further release; and/or

Continuous free product removal (see note below).

Please note that reimbursement is based, in part, on the requirement that contamination must have penetrated the native soils around the tankhold and that the contamination be above action levels [30 TAC §334.302(a)(1), (2), and (3)].

Pursuant to 30 TAC §334.310(f) and §334.322, all initial abatement and emergency measures that continue after 72 hours, including continuous phase-separated product recovery, must be preapproved by the TNRCC prior to implementation. Contact the TNRCC Central Office Project Coordinator or the local TNRCC Region inspector for assistance. Costs for initial abatement submitted in the Application for Reimbursement should be identified and submitted with justification to the TNRCC. All costs associated with initial abatement are subject to verification. All unit costs incurred during Initial Abatement will be reimbursed based on these Reimbursable Cost Guidelines.

Costs for Initial Abatement must be preapproved after 72 hours. Use the worksheet under Activity 02: PSH Recovery to prepare cost proposals for additional abatement work.

Note: Please refer to the definition of "free product," "recoverable free product," and "free product migration" in Appendix B.

ACTIVITY 02: PHASE-SEPARATED HYDROCARBON (PSH) RECOVERY

This subsection will be used for the recovery of Phase Separated Hydrocarbons (PSH, Phase Separated Petroleum, or free product- See Note below) after the Initial Abatement phase. In addition, the worksheet in this section will be used for preapproval of Initial Abatement activities after the first 72 hours of site work.

30 TAC §334.310 (f) states that the continuous recovery of PSH needs preapproval after the Initial Abatement period of 72 hours. In cases where free product poses an imminent danger to human health, safety, and the environment, 30 TAC §334.79 requires that the owner/operator remove PSH to "the maximum extent practicable." If an emergency situation extends beyond 72 hours, contact the TNRCC Central Office Project Coordinator or the local TNRCC Region inspector for assistance. For non-emergency situations, the Release Report required by §334.77 (b) should be submitted with a workplan and cost proposal either for the continued recovery of free product, or for the preparation of an Interim Corrective Action Plan (ICAP) for the installation of a free product recovery system. If the development of an ICAP is approved, and the ICAP itself is approved, the actual installation of the recovery system is discussed under Activity 09: Remediation System Installation.

Note: Please refer to the definitions of "free product," "free product migration," "LNAPL," and "recoverable free product" in Appendix B.

WORKSHEET FOR THE MANUAL RECOVERY OF PSH AND CONTINUING INITIAL ABATEMENT

Part A: Personnel Costs

Section 1: ICAP Generation - See Note 1

ITEM	ACTIVITY	HOURS/UNITS	RATE	TOTAL
ICAP	Preparation and Submission	Lump	$1,825.00	$1,825.00
			Total, Section 1	**$1,825.00**

Section 2: Office Costs (See Note 2)

ITEM	ACTIVITY	HOURS/UNITS	RATE	TOTAL
FAR- PSH Recovery or System O&M	Report Preparation & Submission	1	$260.00	$260.00
Project Manager (PM)	Management/Regulatory Interaction	.5/Month	$80.00	
Staff E/G/H (SF)	Data Review/Update Files	.5/Month	$70.00	
Cost Proposal/Workplan	Cost Proposal/Workplan Preparation & Submission	1	$115.00	$115.00
			Total, Section 2	

Section 3: Field Personnel Costs

ITEM	ACTIVITY	# OF WELLS	$/WELL	TOTAL
Technician I (T1)	Measure PSH, Remove PSH - <75' deep		$40.00	
Technician I (T1)	Measure PSH, Remove PSH - 76' To 110' deep		$60.00	
Technician I (T1)	Measure PSH, Remove PSH - > 110' deep		$80.00	
			Subtotal, Section 3	
			# of Site Visits	
			Total, Section 3	
				TOTAL, PART A

Part B: Equipment Costs - See Note 3

ITEM	UNITS	UNIT COST	TOTAL
Absorbent Socks		$10.00	
Passive Skimmer (Small)		$350.00	
Passive Skimmer (Large)		$750.00	
Dedicated PVC Bailer		$15.00	
Drums		$40.00	
Small Items		$20.00/Site/Day	
(Other)			
(Other)			
(Other)			
		Subtotal, Part B	
		15% Mark-up	
			TOTAL, PART B

Part C: Waste Management Costs

ITEM	UNIT COST	UNITS	TOTAL
Vacuum Truck	$75.00/Hour		
Fluid Disposal	$0.40/Gallon		
		Subtotal	
		10% Mark-up	
			TOTAL, PART C

Part D: Travel Costs - See Note 4

ITEM	UNITS/HOURS	RATE	TOTAL
Equipment Truck		$140.00/Day	
Mileage (Over 100 Miles, Round Trip)		$0.31	
Travel Time		$40.00/Hour	

Airfare		By Need	
Per Diem		$80.00/Day	
		TOTAL, PART D	

Part E: Other Costs - See Note 3

ITEM	UNITS	RATE	TOTAL
		Subtotal	
		15% Mark-up	
		TOTAL, PART E	
		TOTAL ACTIVITY COSTS, PARTS A-E	

Notes:

1: Please refer to Appendix A: Unit Costs for a breakdown of report generation costs.

2: Please refer to Appendix A: Unit Costs for a breakdown of personnel costs.

3: Mark-up is for subcontracted expenses only.

4: Please refer to the travel section of Appendix A: Unit Costs before preparing this Section.

ACTIVITY 03: EXCAVATION/WASTE MANAGEMENT

This subsection will be used when contaminated soils will be excavated, transported, and disposed, or when a significant quantity of contaminated water collects in an excavation. Do not use this section for the disposal of soil or water generated as a result of other activities, such as drilling, remedial system installation, groundwater monitoring, or operation, maintenance, and performance. That waste management is included as a line item in those activities. The worksheet presented below has been divided based on sub-phases of the overall activity. Not all parts may be applicable to all situations, so use only those sections that are specific to your needs to determine reimbursable costs.

WORKSHEET FOR EXCAVATION/WASTE MANAGEMENT

SOILS TABLE - Determining the Quantities to be Used in the Worksheet

EXCAVATED UNIT	WIDTH (FT)	LENGTH (FT)	SURFACE AREA (SQFT)	DEPTH (FT)	IN SITU VOL (CFT)	IN SITU VOL (CY)
Original Excavation						
Overexcavation Area 1						
Overexcavation Area 2						
Overexcavation Area 3						
Overexcavation Area 4						
				Total Surface Area, Areas 1-4, in Square Feet		
				Total In Situ Volume, areas 1-4, in Cubic Yards		

Part A: Personnel Costs

Section 1: Office and Fixed Field Costs

ITEM	ACTIVITY	UNITS	UNIT COST	TOTAL
Project Manager (PM)	Management, Regulatory Interaction	2	$80.00	$160.00
Field E/G/H (FD)	Initial site set-up and coordination	3	$65.00	$195.00
Field Activity Report	Preparation and Submission	1	$485.00	$485.00
Workplan/Cost Proposal	Preparation and Submission	1	$115.00	$115.00
			Total, Section 1	**$995.00**

Section 2: Field Oversight Costs - See Note 1

ITEM	UNITS	UNIT COST	TOTAL
Field E/G/H (FD), Technician II (T3)	(Total From Soils Table)	$5.00/CY	
		Total, Section 2	
		TOTAL, PART A	

Part B: Excavation and Remove/Replace Cover - See Note 2

ACTIVITY	UNITS	UNIT COST	TOTAL
Remove Cover (Asphalt) - Total From Soils Table		$2.50/SqFt	
Remove Cover (Concrete) - Total From Soils Table		$4.00/SqFt	

Excavate Soils - Total In Situ Volume From Soils Table		$9.00/CY	
Visqueen, 1 20' x 100' roll/100 cy, 1 roll minimum		$60.00/Roll	
Import Backfill - Total In Situ Volume from Soils Table X 1.3		$11.00/CY	
Compact Backfill		$9.00/CY	
Replace Cover (Asphalt) - From Soils Table		$3.50/SqFt	
Replace Cover (Concrete) - From Soils Table		$5.50/SqFt	
Disposables (1 unit per site day)		$20.00	
		Subtotal, Part B	
		15% Mark-up	
		TOTAL, PART B	

Part C: Waste Management Costs- See Note 3

ACTIVITY	UNITS	UNIT COST	TOTAL
Load & Haul Excavated Soils - Total In Situ Volume from Soils Table X 1.3		$14.00/CY	
Mileage for Soils Disposal, > 50 miles one way	Loaded Mile	$2.50/mile	-
Dispose Soils <1500 TPH in Landfill - See Note 4		$10.50/CY	
Dispose Soils >1500 TPH in Landfill		$45.00/CY	
Dispose Soils >1500 TPH by Asphalt Recycling		$35.00/CY	
Dispose Soils >1500 TPH by Bioremediation		$35.00/CY	
Dispose Soils >1500 TPH by Thermal Desorption		$45.00/CY	
Vacuum Truck (Fluids Transport for Disposal)		$75.00/Hr	
Fluids Disposal		$0.40/Gal	
Subchapter H Discharge or Alternate Disposal Method (Describe in Work plan)		As Needed	
		Subtotal, Part C	
		10% Mark-up	
		TOTAL, PART C	

Part D: Analytical Costs - See Note 5

ITEM	UNITS	UNIT COST	TOTAL	ITEM	UNITS	UNIT COST	TOTAL
TPH - Soil		$47.50		TCLP Lead		$93.00	
TPH (Rush) - Soil		$71.25		TCLP Benzene		$152.00	
BTEX - Soil		$62.50		TPH - Water		$49.00	
BTEX (Rush) - Soil		$93.75		TPH (Rush) - Water		$73.50	
PAH (8100) - Soil		$148.00		BTEX - Water		$62.50	
PAH (8270) - Soil		$222.00		BTEX (Rush) - Water		$93.75	
Total Lead - Soil		$31.00		Total Lead - Water		$31.00	
Total Lead (Rush) - Soil		$46.50		Total Lead (Rush) - Water		$46.50	
TOX - Soil		$98.00		Shipping		$5.00/Sample	

8 RCRA Metals - Soil		$150.00		(Other)			
						Subtotal, Part D	
						10% Mark-up	
						TOTAL, PART D	

Part E: Travel Costs - See Note 6

ITEM	UNIT COST	UNITS/HOURS	TOTAL
Equipment Truck	$140.00/Day		
Mileage (over 100, Round Trip)	$0.31/Mile		
Travel Time	$50.00 or $65.00/Hour		
Per Diem	$80.00/Day		
Airfare	By Need		
		TOTAL, PART E	
		TOTAL ACTIVITY COSTS, PARTS A-E	

Notes:

1: Preapproval and reimbursement will be based on the expectation that 300 CY of soils can be excavated, staged and sampled in a 10-hour day, and that 300 CY of soils can loaded, hauled, and disposed while 300 CY of soils can be imported and compacted, again in a single day. Oversight time may be split among personnel in any way the RCAS desires. The $5.00 per cubic yard of excavated soils is the maximum reimbursable cost for all phases of the activity. If the activity consists of only disposing of previously stockpiled soils and/or importing and compacting fill, the oversight cost will be $2.50/CY.

2: Refer to Appendix A, Part 6 for a breakdown of these costs. Mark-up is allowed on subcontracted costs only.

3: Refer to Appendix A, Part 7 for a breakdown of these costs.

4: The noted cost for disposal of impacted soils is a maximum without justification. Reimbursable costs will be actual landfill receipts, plus allowable mark-up. Transport and landfill receipts must be submitted with the application for reimbursement.

5: Refer to Appendix A, Part 2 for a breakdown of analytical costs.

6: Refer to Appendix A, Part 4 for a breakdown of travel costs

ACTIVITY 04: SITE ASSESSMENT

This subsection will be used for the installation of wells or borings to define the impact of a release or when the installation of a remediation system is approved by the TNRCC. The worksheet is divided to allow the preparation of numerous types of cost proposals based on need. Use only those sections that are required for the specific phase of work. A Risk Assessment (RA) will normally be done in conjunction with Site Assessment work, and those report generation costs are included here. **If a site does not require additional field work to complete an RA, refer to Activity 05: Risk Assessment.**

WORKSHEET FOR SITE ASSESSMENTS

Part A: Personnel Costs - See Note 1

Section 1: Planning, Fixed Field and Office Costs, Gaining Off-site Access - See Note 2

ITEM	ACTIVITY	UNIT COST	HOURS/UNITS	TOTAL
Preliminary Planning - See Note 3	Site Familiarization	$390.00	1	
Water Well/ Other Facility Search	Identify Other Wells/Facilities Near Site	$300.00	1	
Walking Receptor Survey	Field Time to Identify Receptors	$300.00	1	
Site/Monitoring Well Survey	Determine Well Elevations	$300.00	1	
Workplan/Costs Proposal	Preparation and Submission	$115.00	1	$115.00
Offsite Access- See Note 3	Research ownership and make initial written request for Offsite Drilling	$320.00/Offsite Property		
			Total, Section 1	

Section 2: Variable Office and Field Personnel Costs - See Note 4

Subsection 2A: Basic Report Generation Costs

ITEM	ACTIVITY	UNIT COST	HOURS/UNITS	TOTAL
No Report Required	Submit Results (Labs and Drillers' Logs) Only	$0.00	0	
FAR - Site Assessment	Preparation and Submission	$485.00	1	
Plan A Risk Assessment Report Form	Preparation and Submission	$2,140.00	1	
Plan B Risk Assessment	Preparation and Submission	$5,715.00	1	
RA Update	Preparation and Submission	$485.00	1	
			Total, Subsection 2A	

Subsection 2B: Additional Office Personnel Costs, Conventional Drilling, > 3 Wells/Borings per event

ITEM	ACTIVITY	UNIT COST	UNITS	TOTAL
Project Manager (PM)	Project Oversight	$40.00/Well or Boring		
Draftsperson I (D1)	Boring & Well Logs, CAD	$22.50/Well or Boring		
Word Processor (WP)	Report Prep	17.50/Well or Boring		
			Total, Subsection 2B	

Subsection 2C: Additional Office Personnel Costs, Direct Push

ITEM	ACTIVITY	UNIT COST	UNITS	TOTAL
Project Manager (PM), 1st Day	Project Oversight	$80.00	2	$160.00
Draftsperson I (D1), 1st Day	Boring & Well Logs, CAD	$45.00	2	$90.00
Word Processor (WP), 1st Day	Report Prep	$35.00	1	$35.00
Project Manager (PM), Each Addt'l ½ Day	Project Oversight	$40.00		
Draftsperson I (D1), Each Addt'l ½ Day	Boring & Well Logs, CAD	$22.50		
Word Processor (WP), Each Addt'l ½ Day	Report Prep	$17.50		
			Total, Subsection 2C	

Subsection 2D: Drilling in Sand/Silt/Clay with Hollow Stem Augers

ITEM	ACTIVITY	UNIT COST	UNITS	TOTAL
Field Engineer/Geologist (FD) & Technician I (T1)	Install Borings, 25' Minimum, Lump Sum, 2 Hrs./Boring	$220.00/Boring		
Field Engineer/Geologist (FD) & Technician I (T1)	Install Wells, 25' Minimum, Lump Sum, 2.5 Hrs./Well	$275.00/Well		
Field Engineer/Geologist (FD) & Technician I (T1)	Install Borings, Sum of Footage Over 25', All Borings	$7.69/Foot		
Field Engineer/Geologist (FD) & Technician I (T1)	Install Wells, Sum of Footage Over 25', All Wells	$9.91/Foot		
			Total, Subsection 2D	

Subsection 2E: Drilling with Air/Mud Rotary

ITEM	ACTIVITY	UNIT COST	UNITS	TOTAL
Field Engineer/Geologist (FD) & Technician I (T1)	Install Borings, 25' Minimum, Lump Sum, 1.25 Hrs./Boring	$138.00/Boring		
Field Engineer/Geologist (FD) & Technician I (T1)	Install Wells, 25' Minimum, Lump Sum, 2.5 Hrs./Well	$275.00/Well		
Field Engineer/Geologist (FD) & Technician I (T1)	Install Borings, Sum of Footage Over 25', All Borings	$5.12/Foot		
Field Engineer/Geologist (FD) & Technician I (T1)	Install Wells, Sum of Footage Over 25', All Wells	$9.40/Foot		
			Total, Subsection 2E	

Subsection 2F: Drilling with Air Coring

ITEM	ACTIVITY	UNIT COST	UNITS	TOTAL
Field Engineer/Geologist (FD) & Technician I (T1)	Install Borings, 25' Minimum, Lump Sum, 2 Hrs./Boring	$220.00/Boring		
Field Engineer/Geologist (FD) & Technician I (T1)	Install Wells, 25' Minimum, Lump Sum, 2.5 Hrs./Well	$275.00/Well		
Field Engineer/Geologist (FD) & Technician I (T1)	Install Borings, Sum of Footage Over 25', All Borings	$7.33/Foot		
Field Engineer/Geologist (FD) & Technician I (T1)	Install Wells, Sum of Footage Over 25', All Wells	$9.57/Foot		
			Total, Subsection 2F	

Subsection 2G: Direct Push

ITEM	ACTIVITY	UNIT COST	UNITS	TOTAL
Field Engineer/Geologist (FD) & Technician I (T1)	First Day, Lump Sum	$1,100.00	1	$1,100.00
Field Engineer/Geologist (FD) & Technician I (T1)	Each Additional ½ Day	$550.00		
			Total, Subsection 2G	
			Total, Section 2	

TOTAL, PART A	

Part B: Drilling Costs - See Note 5

Section 1: Conventional Drilling Costs

Subsection 1A: Worksheet For Conventional Drilling Costs Drilling Method: __ Hollow Stem Augers __ Air/Mud Rotary __ Air Coring

BORINGS			
ITEM	UNITS	$/UNIT	TOTAL
First 25 Feet			
26 - 50 Feet			
51 - 100 Feet			
> 100 Feet			
SUBTOTAL			

2" WELLS			
ITEM	UNITS	$/UNIT	TOTAL
First 25 Feet			
26 - 50 Feet			
51 - 100 Feet			
> 100 Feet			
SUBTOTAL			

4" WELLS			
ITEM	UNITS	$/UNIT	TOTAL
First 25 Feet			
26 - 50 Feet			
51 - 100 Feet			
> 100 Feet			
SUBTOTAL			

6" WELLS			
ITEM	UNITS	$/UNIT	TOTAL
First 25 Feet			
26 - 50 Feet			
51 - 100 Feet			
> 100 Feet			
SUBTOTAL			

OTHER _____			
ITEM	UNITS	$UNIT	TOTAL
First 25 Feet			
26 - 50 Feet			
51 - 100 Feet			
> 100 Feet			
SUBTOTAL			

SUBTOTALS	
BORINGS	
2" Wells	
4" Wells	
6" Wells	
Other	
Total, Subsection 1A	

Subsection 1B: Other Costs, Conventional Drilling

ITEM	ACTIVITY	UNIT COSTS	UNITS	TOTAL COST
Mobilization/Demobilization	First 50 Miles, One Way	$245.00	1	
Mobilization/Demobilization	Mileage> 50, Maximum Additional 200 One Way	$2.50/Mile		
Drill Crew Per Diem	Each Overnight Stay, If Required	$190.00/Day		
Small Items (1 unit/ site day)		$20.00		
			Total, Subsection 1B	
			Subtotal, Section 1	
			15% Mark-up	
			Total, Section 1	

Section 2: Direct Push Technology

ITEM	ACTIVITY	UNIT COST	UNITS	TOTAL
Direct Push Unit	Install Borings	$1,480.00/Day		
Direct Push Unit	Install Wells, Over Standard Unit Cost	$12.50/Foot		
Direct Push Unit	Install Borings, if Total Footage < 118 Feet	$12.50/Foot		
Mobilization/Demobilization	First 50 Miles, One Way	$145.00	1	
Mobilization/Demobilization	Mileage > 50, Maximum Additional 200, One Way	$1.90/Mile		

Drill Crew Per Diem	Each Overnight Stay, If Required	$150.00/Day		
Small Items (1 unit/ site day)		$20.00		
			Subtotal, Section 2	
			15% Mark-up	
			Total, Section 2	
			TOTAL, PART B	

Part C: Waste Management Costs - See Note 7

ITEM	UNIT COST	UNITS	TOTAL
Vacuum Truck	$75.00/Hour		
Fluids Disposal	$0.40/Gallon		
Soils Disposal	$250.00 Base + $10.50/CY		
Soils Disposal	$250.00 Base + $45.00/Drum		
Subchapter H Discharge or Alternate Disposal Method	As Needed		
		Subtotal, Part C	
		10% Mark-up	
		TOTAL, PART C	

Part D: Analytical Costs - See Note 6

ITEM	UNITS	UNIT COST	TOTAL
TPH - Soil		$47.50	
BTEX - Soil		$62.50	
TPH - Water		$49.00	
BTEX - Water		$62.50	
BTEX /MTBE - Water		$85.00	
Total Lead - Soil		$31.00	
PAH (8100) - Soil		$148.00	
PAH (610) - Water		$158.00	
PAH (8270) - Soil		$222.00	
PAH (8270) - Water		$249.00	
TDS - Water		$15.00	
VOC - Soil		$295.00	
VOC - Water		$295.00	
8 RCRA Metals - Soil		$150.00	
Soil Parameters		$300.00	
Shipping		$5.00/Sample	
(Other)			
(Other)			

	Subtotal, Part D	
	10% Mark-up	
	TOTAL, PART D	

Part E: Travel Costs - See Note 8

ITEM	UNIT COST	UNITS/HOURS	TOTAL
Equipment Truck	$140.00/Day		
Mileage (over 100, Round Trip)	$0.31/Mile		
Travel Time (Field Engineer/Geologist and/or Technician I)	$65.00 and/or $40.00/Hour		
Per Diem	$80.00/Day/Person		
Airfare	By Need		
Disposable Bailers	$8.00/Well		
Drums	$40.00		
		TOTAL, PART E	
		TOTAL ACTIVITY COSTS, PARTS A-E	

Notes:

1: Please refer to Appendix A, Part 1 for a breakdown of personnel costs.

2: Not all of these activities are applicable to all sites. Use only the items that relate directly to the site for which this worksheet is being used. If a licensed surveyor needs to be subcontracted and that cost exceeds the noted maximum of $300.00, submit quotes with the cost proposal.

3: "Preliminary Planning" charges apply only to sites where a Risk Assessment has not been performed. Preliminary Planning activities should include a site history review, area geology/hydrogeology/ lithology research, and the incorporation of the sensitive receptor survey data into the proposal for the risk assessment. Time for the Preliminary Planning consists of two hours each of Project Manager, Staff Geologist/Engineer, and Technician II time. These costs do not need preapproval prior to completing the activities because they are used to prepare the Site Assessment workplan and cost proposal. Preliminary Planning costs must be included in that cost proposal and be approved by the TNRCC to be reimbursable. "Offsite Access" costs include activities through the initial written request for access. If the initial written request is denied, an additional $320.00 is available for the increased level of effort. If these costs are incurred, they must be documented up by submitting all written correspondence with the offsite landowner to the TNRCC with the application for reimbursement. All offsite access costs that exceed $640.00 must be preapproved through a change order.

4: Not all of these activities are applicable to all sites. Use only the items that relate directly to the site for which this worksheet is being used. Refer to Appendix A, Part 8 for Report Generation Costs.

5: Please refer to Appendix A, Part 3 for cost broken out by media. Use only one conventional drilling method for Section A. Use only the items that relate directly to the site for which this worksheet is being used. Mark-up may only be applied to subcontracted costs.

6: Please refer to Appendix A, Part 2 for additional laboratory analyses and costs. Mark-up is allowed only on subcontracted items.

7: Please refer to Appendix A, Part 7 for a breakdown of waste management costs.

8: Please refer to Appendix A, Part 4 for a breakdown of travel policy and costs. "Travel Time" costs are based on the individual(s) traveling to the site on specific days to perform specific tasks. Define the work schedule in the workplan to back up all travel requests.

ACTIVITY 05: RISK ASSESSMENT

This subsection will be used when the need exists to quantify the risk of the contamination at a site. There are two Risk Assessments (RAs) that will normally be conducted, and are known as "Plan A" and "Plan B" RAs. If sufficient assessment work has been done at a site, it may be possible to generate either a Plan A or a Plan B RA without conducting further field work. **If additional field work is necessary to generate an RA, please refer to "Activity 04: Site Assessment."** The costs noted here are for report generation only.

PLAN A RISK ASSESSMENT REPORT GENERATION COSTS - See Note 1

PERSONNEL TYPE	RATE/HOUR	HOURS	TOTAL
Principal Engineer (P3)	$110.00	1	$110.00
Project Manager (PM)	$80.00	12	$960.00
Staff Geologist/Engineer (SF)	$70.00	8	$560.00
Draftsperson II (D2)	$50.00	6	$300.00
Word Processor (WP)	$35.00	6	$210.00
		TOTAL	$2,140.00

PLAN B RISK ASSESSMENT REPORT GENERATION COSTS - See Note 1

PERSONNEL TYPE	RATE/HOUR	HOURS	TOTAL
Principal Engineer (P3)	$110.00	6	$660.00
Project Manager (PM)	$80.00	32	$2,560.00
Staff Geologist/Engineer (SF)	$70.00	25	$1,750.00
Draftsperson II (D2)	$50.00	10	$500.00
Word Processor (WP)	$35.00	7	$245.00
		TOTAL	$5,715.00

Notes:

1: A total of $115.00 above the noted costs is available for reimbursing the cost of the workplan and cost proposal to generate a "stand alone" risk assessment. Please refer to TNRCC Guidance Manuals when performing Risk Assessments.

ACTIVITY 06: CORRECTIVE ACTION PLAN (CAP) FEASIBILITY TESTING

This subsection will be used when testing is required to complete a CAP. This testing may include aquifer pump tests, slug and bail tests, soil vapor extraction tests, or a combination of any of these tests. Costs are included in this activity to format information gained in the field for inclusion into the CAP Testing Report. For the cost of generating the CAP, use the section entitled "Activity 08: Corrective Action Plan (CAP) Preparation."

Part 1 of the worksheet is designed to provide reimbursable personnel costs for the various kinds of tests to be conducted at the site, whether 6-hour, 12-hour, or 24-hour tests. The costs for each kind of test should be added together to reflect total personnel costs for the activity. Then complete the subsequent parts of the worksheet relating to equipment, lab testing, waste disposal, and travel time for the specific tests being conducted to obtain total activity costs.

WORKSHEET FOR CAP TESTING

Part A: Personnel Costs - See Note 1

Section 1: Slug and Bail Testing

ITEM	ACTIVITY	RATE	HOURS/UNITS	TOTAL
Senior Engineer/Geologist(P2)	Office Preparation, Project Management, Debriefing	$95.00	3	$285.00
Field Engineer/Geologist (FD)	Office Preparation, Field Work, Debriefing	$65.00	10	$650.00
Associate Engineer/Geologist (P1)	Data Analysis, Report Preparation	$85.00	5	$425.00
Technician II (T2)	Office Preparation, Field Work, Debriefing	$45.00	10	$450.00
Draftsperson II (D2)	Data Formatting	$50.00	1	$50.00
Word Processor (WP)	Data Formatting	$35.00	2	$70.00
Additional time over 6 hours	Field time, including FD and T2	$110.00		
PI-7 Standard Exemption Form	Preparation and submission	$195.00	If Required	
Workplan & Costs Proposal		$115.00	1	$115.00
			Total, Section 1	

Section 2: Aquifer Pump Testing

ITEM	ACTIVITY	RATE	HOURS/UNITS	TOTAL
Senior Engineer/Geologist (P2)	Office Preparation, Project Management, Debriefing	$95.00	3	$285.00
Field Engineer/Geologist (FD)	Office Preparation, Field Work, Debriefing	$65.00	10	$650.00
Associate Engineer/Geologist (P1)	Data Analysis, Report Preparation	$85.00	5	$425.00
Technician II (T2)	Office Preparation, Field Work, Debriefing	$45.00	10	$450.00
Draftsperson II (D2)	Data Formatting	$50.00	1	$50.00
Word Processor (WP)	Data Analysis, Report Preparation	$35.00	2	$70.00
Additional time over 6 hours, per hour	Field time, including FD and T2	$110.00		
PI-7 Standard Exemption Form	Preparation and submission	$195.00	If Required	
Workplan & Cost Proposal		$115.00	1	$115.00

			Total, Section 2	
Section 3: Soil Vapor Extraction Testing				
ITEM	ACTIVITY	RATE	HOURS/UNITS	TOTAL
Senior Engineer/Geologist (P2)	Office Preparation, Project Management, Debriefing	$95.00	3	$285.00
Field Engineer/Geologist (FD)	Office Preparation, Field Work, Debriefing	$65.00	10	$650.00
Associate Engineer/Geologist (P1)	Data Analysis, Report Preparation	$85.00	5	$425.00
Technician II (T2)	Office Preparation, Field Work, Debriefing	$45.00	10	$450.00
Draftsperson II (D2)	Data Formatting	$50.00	1	$50.00
Word Processor (WP)	Data Analysis, Report Preparation	$35.00	2	$70.00
Additional time over 6 hours, per hour	Field time, including FD and T2	$110.00		
P1-7 Standard Exemption Form	Preparation and submission	$195.00	If Required	
Workplan & Cost Proposal		$115.00	1	$115.00
			Total, Section 3	
Section 4: Dual-Phase Extraction Testing				
ITEM	ACTIVITY	RATE	HOURS/UNITS	TOTAL
Senior Engineer/Geologist (P2)	Office Preparation, Project Management, Debriefing	$95.00	3	$285.00
Field Engineer/Geologist (FD)	Office Preparation, Field Work, Debriefing	$65.00	15	$975.00
Associate Engineer/Geologist (P1)	Data Analysis, Report Preparation	$85.00	8	$680.00
Technician II (T2)	Office Preparation, Field Work, Debriefing	$45.00	15	$675.00
Draftsperson II (D2)	Data Formatting	$50.00	2	$100.00
Word Processor (WP)	Data Analysis, Report Preparation	$35.00	3	$105.00
Additional time over 6 hours, per hour	Field time, including FD and T2	$110.00		
P1-7 Standard Exemption Form	Preparation and submission	$195.00	If Required	
Workplan & Cost Proposal		$115.00	1	$115.00
			Total, Section 4	
			TOTAL, PART A	

Part B: Equipment Costs - See Note 2

ITEM	UNIT COST/DAY	UNITS	TOTAL
Datalogger (2 channel)	$65.00		
Datalogger (8 channel)	$115.00		
Generator (3500 Watt)	$75.00		
Compressor (5 Horsepower)	$25.00		
Pressure Transducer	$35.00		
185 cfm Compressor	$95.00		
Regenerative blower (1.5 Horsepower)	$20.00		
Liquid ring pump (for dual-phase extraction test) - See Note 3	$650.00		

SVE Trailer (contains all equipment)	$500.00		
Air stripper	$250.00		
Holding tank (1,000 Gallon)	$25.00		
Carbon Canister, includes installation, recycling, and/or disposal	$750.00		
Holding Tank (5,000 Gallon)	$35.00		
Small Items	$20.00/Site/Day		
Miscellaneous Supplies	$50.00/Test		
(Other)			
(Other)			
		Subtotal, Part B	
		15% Mark-up	
		TOTAL, PART B	

Part C: Waste Management Costs - See Note 4

ITEM	UNIT COST	UNITS	TOTAL
Vacuum Truck	$75.00/Hour		
Fluids Disposal	$0.40/Gallon		
Subchapter H Discharge or Alternate Disposal Method (Describe in Work Plan.)	As Needed		
		Subtotal, Part C	
		10% Mark-up	
		TOTAL, PART C	

Part D: Analytical Costs - See Note 5

ITEM	UNIT COST	UNITS	TOTAL
TPH (Water)	$49.00		
BTEX (Water)	$62.50		
BTEX (Air)	$62.50		
Total Lead (Water)	$31.00		
(Other)			
(Other)			
Tedlar Bags for Air Samples	$7.50		
Shipping	$5.00/Sample		
		Subtotal, Part D	
		10% Mark-up	
		TOTAL, PART D	

Part E: Travel Costs- See Note 6

ITEM	UNIT COST	UNITS/HOURS	TOTAL
Equipment Truck	$140.00/Day		
Mileage (over 100, Round Trip)	$0.31		
Travel Time (FD and T2 combined)	$110.00/Hour		
Per Diem	$80.00/Person/Day		
Airfare	By Need		
		TOTAL, PART E	
		TOTAL ACTIVITY COSTS, PARTS A-E	

Notes:

1: Please refer to Appendix A, Part 1 for a breakdown of personnel costs.

2: Please refer to Appendix A, Part 5 for a breakdown of equipment costs. Mark-up is allowed for rented items only and rental receipts must accompany the application for reimbursement.

3: Every effort should be made to schedule two sites consecutively for testing with a liquid-ring pump due to the high rental costs for this equipment.

4: Please refer to Appendix A, Part 7 for a breakdown of waste management costs.

5: Please refer to Appendix A, Part 2 for additional laboratory analyses and costs. Mark-up is allowed only on subcontracted items.

6: Please refer to Appendix A, Part 4 for a breakdown of travel policy and costs.

ACTIVITY 07: GROUNDWATER MONITORING

This subsection will be used at sites where no remediation system is in operation but periodic groundwater monitoring will be conducted, or when groundwater testing is necessary to determine if natural attenuation is an appropriate remedial option for a site. Sites where a remediation system is in operation and groundwater monitoring is also required will use the section entitled "Activity 10: Operation, Monitoring, & Performance" to develop cost proposals.

WORKSHEET FOR GROUNDWATER MONITORING

Part A: Personnel Costs - See Note 1

Section 1: Fixed Annual Costs

ITEM	ACTIVITY	UNIT COST	UNITS/HOURS	TOTAL
Project Manager (PM)	Management, Regulatory Interaction	$80.00	5	$400.00
FAR- Annual Groundwater Monitoring Report	Preparation and Submission	$440.00	1	
FAR - Single Monitoring Event	Preparation and Submission	$260.00	1	
Workplan & Cost Proposal	Preparation and Submission	$115.00	1	$115.00
			Total, Section 1	

Section 2: First Quarter Personnel Costs or Single Monitoring Event

ITEM	ACTIVITY	UNIT COST	UNITS/HOURS	TOTAL
Staff Engineer/Geologist (SF)	Field Preparation, Data Formatting	$70.00	2	$140.00
Technician I (T1)	Purge and Sample Wells, First 25'	$40.00/ Well		
Technician I (T1)	Purge and Sample Wells, Each Additional 25' (75' Max)	$10.00/Additional 25'/Well		
			Total, Section 2	

Section 3: Second Quarter Personnel Costs

ITEM	ACTIVITY	UNIT COST	UNITS/HOURS	TOTAL
Staff Engineer/Geologist (SF)	Field Preparation, Data Formatting	$70.00	2	$140.00
Technician I (T1)	Purge and Sample Wells, First 25'	$40.00/ Well		
Technician I (T1)	Purge and Sample Wells, Each Additional 25' (75' Max)	$10.00/Additional 25'/Well		
			Total, Section 3	

Section 4: Third Quarter Personnel Costs

ITEM	ACTIVITY	UNIT COST	UNITS/HOURS	TOTAL
Staff Engineer/Geologist (SF)	Field Preparation, Data Formatting	$70.00	2	$140.00
Technician I (T1)	Purge and Sample Wells, First 25'	$40.00/ Well		
Technician I (T1)	Purge and Sample Wells, Each Additional 25' (75' Max)	$10.00/Additional 25'/Well		
			Total, Section 4	

Section 5: Fourth Quarter Personnel Costs

ITEM	ACTIVITY	UNIT COST	UNITS/HOURS	TOTAL

Staff Engineer/Geologist (SF)	Field Preparation, Data Formatting	$70.00	2	$140.00
Technician I (T1)	Purge and Sample Wells, First 25'	$40.00/ Well		
Technician I (T1)	Purge and Sample Wells, Each Additional 25' (75' Max)	$10.00/Additional 25'/Well		
			Total, Section 5	
			TOTAL, PART A	

Part B: Equipment Costs - See Note 2

ITEM	UNIT COST	UNITS	TOTAL
Disposable bailers	$8.00/well		
Small items	$20.00/site/day		
Drums (55-gallon, for purge water)	$40.00		
(Other)			
(Other)			
		Subtotal, Part B	
		15% Mark-up	
		TOTAL, PART B	

Part C: Waste Management Costs - See Note 3

ITEM	UNIT COST	UNITS	TOTAL
Vacuum Truck	$75.00/Hour		
Fluid Disposal	$0.40/Gallon		
Subshapter H Discharge or Alternate Disposal Method (Describe in Workplan)	As Needed		
		Subtotal, Part C	
		10% Mark-up	
		TOTAL, PART C	

Part D: Analytical Costs - See Note 4

ANALYTICAL TEST	UNIT COST	UNITS	TOTAL
TPH/BTEX	$111.50		
TPH/BTEX w/ MTBE	$134.00		
TDS	$15.00		
PAH (610)	$158.00		
PAH (8270)	$249.00		
Chlorides	$18.00		
Iron	$10.00		
Nitrates	$24.00		
Phosphates	$24.00		
Sulfates	$24.00		
Total Organic Carbon (TOC)	$32.00		

Shipping	$5.00/Sample		
(OTHER)			
(OTHER)			
		Subtotal, Part D	
		10% Mark-up	
		TOTAL, PART D	

Part E: Travel Costs - See Note 5

ITEM	UNIT COST	UNITS/HOURS	TOTAL
Equipment Truck	$140.00/day		
Mileage (over 100 miles, round trip)	$0.31/mile		
Travel Time	$40.00/hour		
Per Diem	$80.00/day		
Air Fare	By Need		
		TOTAL, PART E	-
		TOTAL ACTIVITY COSTS, PARTS A-E	

Notes:

1: Please refer to Appendix A, Part 1 for a breakdown of personnel costs. If Groundwater Monitoring is recommended as a result of a CAP - No Remediation System, the cost for the workplan and cost proposal will be included in the reimbursable cost for that CAP.

2: Please refer to Appendix A, Part 5 for a breakdown of equipment costs. Mark-up is allowed for subcontracted items only and receipts must accompany the application for reimbursement.

3: Please refer to Appendix A, Part 7 for a breakdown of waste management cost.

4: Please refer to Appendix A, Part 2 for additional laboratory analyses and costs. Mark-up is allowed only on subcontracted items. Sampling for inorganic components in groundwater can and should be conducted using field sensors and meters. An explanation for the use of an analytical laboratory to perform these tests must accompany the workplan and cost proposal.

5: Please refer to Appendix A, Part 4 for a breakdown of travel policy and costs. The TNRCC will reimburse for a single T1 to perform all purging and sampling duties, both in site time and travel time.

ACTIVITY 08: CORRECTIVE ACTION PLAN (CAP) PREPARATION

This subsection will be used at sites where corrective action is necessary. The CAP will fall into one of two broad categories. The first category is a CAP that seeks to passively remediate the site by means of natural attenuation, the effectiveness of which will be confirmed by groundwater monitoring. This CAP may be developed following either a Plan A or a Plan B risk assessment. The second category is a CAP that recommends the installation of a remediation system to actively reduce the contaminant levels to the point where closure following a program of groundwater monitoring can be achieved. This CAP will be developed following the submission of a Plan B risk assessment.

Please note that some portions of these CAPs may require the participation of a Registered Professional Engineer. Please refer to 30 TAC §334.308 (g) (21) for information on when this participation is necessary.

CORRECTIVE ACTION PLAN - NO REMEDIATION SYSTEM

PERSONNEL TYPE	RATE/HOUR	HOURS	TOTAL
Senior Engineer/Geologist (P2)	$95.00	1	$95.00
Project Manager (PM)	$80.00	2	$160.00
Staff Engineer/Geologist (SF)	$70.00	4	$280.00
Word Processor (WP)	$35.00	3	$105.00
Project Manager-OM&P Plan	$80.00	2	$160.00
Staff Engineer/Geologist-OM&P Plan	$70.00	4	$280.00
Word Processor (WP)-OM&P Plan	$35.00	2	$70.00
		TOTAL	$1,150.00

CORRECTIVE ACTION PLAN - WITH REMEDIATION SYSTEM (See Notes)

PERSONNEL TYPE	RATE/HOUR	HOURS	TOTAL
Principal Engineer (P3)	$110.00	4	$440.00
Associate Engineer (P1)	$85.00	30	$2,550.00
Project Manager (PM)	$80.00	8	$640.00
Staff Engineer/Geologist (SF)	$70.00	24	$1,680.00
Draftsperson II (D2)	$50.00	20	$1,000.00
Word Processor (WP)	$35.00	10	$350.00
		TOTAL	$6,660.00

Notes:

1: The listed costs include generation of maps and design drawings (to scale). They do not include the $115.00 available for the generation of the workplan and cost proposal to produce these plans.

2: The listed costs are for a baseline CAP with the installation of one remediation system (i.e., groundwater pump & treat, dual-phase extraction, or soil vapor extraction). Justification should be provided in the workplan and cost proposal, based on site-specific circumstances and the result of CAP testing, for out-of-scope costs. Requests for preapproval will be reviewed on a case-by-case basis.

3: Quote/bid preparation costs are included in the CAP generation costs.

ACTIVITY 09: REMEDIATION SYSTEM INSTALLATION

This subsection will be used to submit a workplan and cost proposal with either an Interim Corrective Action Plan (ICAP) (see Activity 02) or Corrective Action Plan (CAP) (see Activity 08). Each of the first four parts of the worksheet (Parts A1-A4) are constructed around one of four basic systems: PSH recovery, groundwater pump-and-treat, soil vapor extraction, and dual-phase extraction. Each of these systems has a baseline of three recovery wells. Each of the parts will have the option of combining other systems and adding or subtracting recovery wells. This will allow the development of an installation and start-up cost that is relevant to the needs of your site. **Only use the one of the first four parts that is most appropriate to your site.**

Because of the variable nature of remediation systems, the TNRCC has not developed standardized system costs. Each system will be constructed to meet site-specific remediation needs. The TNRCC has supplied various equipment types and equipment costs in Appendix A, Section 5, Equipment and Supplies. This section may be referred to when acquiring quotes for costing out the system designed in the ICAP or CAP. If necessary equipment differs from that contained in Appendix A, the preparer should supply three quotes with the cost proposal. If the tank owner/operator is in possession of appropriate and functional remediation equipment previously reimbursed by the TNRCC at another site, that equipment should be reused. The cost effectiveness of the proposed remediation system must be supported by documentation such as comparative quotes and technical statistics.

If the remediation program designed in the CAP is of short duration (9 months or less), or if the use of a capital component in the remediation system is expected to be of short duration, the option of renting or leasing the remediation system or the individual component should be evaluated. Sufficient quotes (at least three per option) for equipment lease/rental should be included with a cost-benefit analysis in the installation cost proposal to allow a determination of the most cost effective option to be made. When the remediation program designed in the CAP is of intermediate length (9 to 24 months), the option of purchasing and leasing or leasing-to-own the remediation equipment should be evaluated. Again, sufficient quotes (at least three per evaluated option) for equipment purchase/lease/lease-to-own should be included with a cost-benefit analysis in the installation cost proposal to allow a determination of the most cost effective option to be made. If the remediation program designed in the CAP is planned to last in excess of two years, remediation equipment purchase will be considered the most cost effective option. At least three quotes for equipment purchase should be included with the installation cost proposal. The cost of rented/leased/leased-to-own equipment will be reimbursed in the preapproved costs for Operation, Monitoring, & Performance (see Activity 10). The cost for purchased remediation systems will be reimbursed after the successful completion of the installation and start-up of the system in this Activity.

Please note that some portions of the installation process may require the participation of a Registered Professional Engineer. Please refer to 30 TAC §334.308 (g) (21) for information on when this participation is necessary.

WORKSHEET FOR REMEDIATION SYSTEM INSTALLATION AND START-UP

Part A1: Consultant Office and Field Costs, PSH Recovery System - See Note 1

Section 1: Installation and Startup of Basic 3-well System

ITEM	ACTIVITY	UNIT COST	UNITS/HOURS	TOTAL
Senior Engineer (P2)	Project Oversight	$95.00	1	$95.00
Associate Engineer (P1)	Management, Regulatory Interaction, Field Oversight	$85.00	7	$595.00
Staff E/G/H (SF)	Field Preparation, Installation and Startup	$70.00	20	$1,400.00
Technician II (T2)	Field Preparation, Installation and Startup	$45.00	32	$1,440.00

PI-7 Standard Exemption Form	Preparation and Submission	$195.00	If Required	
FAR- System Installation	Preparation and Submission	$855.00	1	$855.00
Workplan and Cost Proposal	Preparation and Submission	$115.00	1	$115.00
			Total, Section 1	

Section 2: Add/Delete Wells (Any System) - Per Well

ITEM	ACTIVITY	UNIT COST	UNITS/HOURS	TOTAL
Associate Engineer (P1)	Management, Regulatory Interaction	$85.00	1	$85.00
Staff Engineer (SF)	Office Planning	$70.00	1	$70.00
Staff Engineer (SF)	Installation and Startup	$70.00	4	$280.00
Technician II (T2)	Office Preparation	$45.00	1	$45.00
Technician II (T2)	Installation and Startup	$45.00	8	$360.00
			Subtotal, Section 2	**$840.00**
			# of Wells to Add/Delete	
			Total, Section 2	
			TOTAL, PART A1	

Part A2: Consultant Office and Field Costs, Groundwater Pump-and-Treat System - See Note 1

Section 1: Installation and Startup of Basic 3-well System

ITEM	ACTIVITY	UNIT COST	UNITS/HOURS	TOTAL
Senior Engineer (P2)	Project Oversight	$95.00	3	$285.00
Associate Engineer (P1)	Management, Regulatory Interaction, Field Oversight	$85.00	8	$680.00
Associate Engineer (P1)	Field Oversight	$85.00	9	$765.00
Staff Engineer (SF)	Office Planning	$70.00	4	$280.00
Staff Engineer (SF)	Installation and Startup	$70.00	20	$1,400.00
Technician II (T2)	Office Preparation	$45.00	2	$90.00
Technician II (T2)	Installation and Startup	$45.00	32	*$1,440.00*
PI-7 Standard Exemption Form	Preparation and Submission	$195.00	If Required	
FAR- System Installation	Preparation and Submission	$2,300.00	1	$2,300.00
Workplan and Cost Proposal	Preparation and Submission	$115.00	1	$115.00
			Total, Section 1	

Section 2: Add Soil Vapor Extraction (SVE) System (3-well)

ITEM	ACTIVITY	UNIT COST	UNITS/HOURS	TOTAL
Senior Engineer (P2)	Project Oversight	$95.00	1	$95.00
Associate Engineer (P1)	Management, Regulatory Interaction	$85.00	2	$170.00
Associate Engineer (P1)	Field Oversight	$85.00	2	$170.00
Staff Engineer (SF)	Office Planning	$70.00	2	$140.00

Staff Engineer (SF)	Installation and Startup	$70.00	8	$560.00
Technician II (T2)	Office Preparation	$45.00	2	$90.00
Technician II (T2)	Installation and Startup	$45.00	16	$720.00
			Total, Section 2	**$1,945.00**

Section 3: Add Off-gas Treatment System

ITEM	ACTIVITY	UNIT COST	UNITS/HOURS	TOTAL
Associate Engineer (P1)	Management, Regulatory Interaction	$85.00	2	$170.00
Staff Engineer (SF)	Office Planning	$70.00	1	$70.00
Staff Engineer (SF)	Installation and Startup	$70.00	6	$420.00
Technician II (T2)	Office Preparation	$45.00	1	$45.00
Technician II (T2)	Installation and Startup	$45.00	12	$540.00
			Total, Section 3	**$1,245.00**

Section 4: Add/Delete Wells (Any System) - Per Well

ITEM	ACTIVITY	UNIT COST	UNITS/HOURS	TOTAL
Associate Engineer (P1)	Management, Regulatory Interaction	$85.00	1	$85.00
Staff Engineer (SF)	Office Planning	$70.00	1	$70.00
Staff Engineer (SF)	Installation and Startup	$70.00	4	$280.00
Technician II (T2)	Office Preparation	$45.00	1	$45.00
Technician II (T2)	Installation and Startup	$45.00	8	$360.00
			Subtotal, Section 4	**$840.00**
			# of Wells to Add/Delete	
			Total, Section 4	
				TOTAL, PART A2

Part A3: Consultant Office and Field Costs, SVE System - See Note 1

Section 1: Installation and Start-up of Basic 3-well System

ITEM	ACTIVITY	UNIT COST	UNITS/HOURS	TOTAL
Senior Engineer (P2)	Project Oversight	$95.00	3	$285.00
Associate Engineer (P1)	Management, Regulatory Interaction	$85.00	8	$680.00
Associate Engineer (P1)	Field Oversight	$85.00	9	$765.00
Staff Engineer (SF)	Office Planning	$70.00	4	$280.00
Staff Engineer (SF)	Installation and Startup	$70.00	8	$560.00
Technician II (T2)	Office Preparation	$45.00	2	$90.00
Technician II (T2)	Installation and Startup	$45.00	20	$900.00
PI-7 Standard Exemption Form	Preparation and Submission	$195.00	If Required	
FAR- System Installation	Preparation and Submission	$2,300.00	1	$2,300.00
Workplan and Cost Proposal	Preparation and Submission	$115.00	1	$115.00

			Total, Section 1	
Section 2: Add Off-gas Treatment System				
ITEM	ACTIVITY	UNIT COST	UNITS/HOURS	TOTAL
Associate Engineer (P1)	Management, Regulatory Interaction	$85.00	2	$170.00
Staff Engineer (SF)	Office Planning	$70.00	1	$70.00
Staff Engineer (SF)	Installation and Startup	$70.00	6	$420.00
Technician II (T2)	Office Preparation	$45.00	1	$45.00
Technician II (T2)	Installation and Startup	$45.00	12	$540.00
			Total, Section 2	**$1,245.00**
Section 3: Add/Delete Wells - Per Well				
ITEM	ACTIVITY	UNIT COST	UNITS/HOURS	TOTAL
Associate Engineer (P1)	Management, Regulatory Interaction	$85.00	1	$85.00
Staff Engineer (SF)	Office Planning	$70.00	1	$70.00
Staff Engineer (SF)	Installation and Startup	$70.00	4	$280.00
Technician II (T2)	Office Preparation	$45.00	1	$45.00
Technician II (T2)	Installation and Startup	$45.00	8	$360.00
			Subtotal, Section 3	**$840.00**
			# of Wells to Add/Delete	
			Total, Section 3	
			TOTAL PART A3	
Part A4: Consultant Office and Field Costs, Dual Extraction System - See Note 1				
Section 1: Installation and Start-up of Basic 3-well System				
ITEM	ACTIVITY	UNIT COST	UNITS/HOURS	TOTAL
Senior Engineer (P2)	Project Oversight	$95.00	3	$285.00
Associate Engineer (P1)	Management, Regulatory Interaction	$85.00	8	$680.00
Associate Engineer (P1)	Field Oversight	$85.00	13	$1,105.00
Staff Engineer (SF)	Office Planning	$70.00	4	$280.00
Staff Engineer (SF)	Installation and Startup	$70.00	24	$1,680.00
Technician II (T2)	Office Preparation	$45.00	4	$180.00

Technician II (T2)	Installation and Startup	$45.00	40	$1,800.00
PI-7 Standard Exemption Form	Preparation and Submission	$195.00	If Required	

FAR- System Installation	Preparation and Submission	$2,300.00	1	$2,300.00
Workplan and Cost Proposal	Preparation and Submission	$115.00	1	$115.00
			Total, Section 1	

Section 2: Add Off-gas Treatment System

ITEM	ACTIVITY	UNIT COST	UNITS/HOURS	TOTAL
Associate Engineer (P1)	Management, Regulatory Interaction	$85.00	2	$170.00
Staff Engineer (SF)	Office Planning	$70.00	1	$70.00
Staff Engineer (SF)	Installation and Startup	$70.00	6	$420.00
Technician II (T2)	Office Preparation	$45.00	1	$45.00
Technician II (T2)	Installation and Startup	$45.00	12	$540.00
			Total, Section 2	**$1,245.00**

Section 3: Add/Delete Wells - Per Well

ITEM	ACTIVITY	UNIT COST	UNITS/HOURS	TOTAL
Associate Engineer (P1)	Management, Regulatory Interaction	$85.00	1	$85.00
Staff Engineer (SF)	Office Planning	$70.00	1	$70.00
Staff Engineer (SF)	Installation and Startup	$70.00	4	$280.00
Technician II (T2)	Office Preparation	$45.00	1	$45.00
Technician II (T2)	Installation and Startup	$45.00	8	$360.00
			Subtotal, Section 3	**$840.00**
			# of Wells to Add/Delete	
			Total, Section 3	
			TOTAL, PART A4	

Part B: Capital Equipment Costs - See Note 2

ITEM	UNIT COST	UNITS	TOTAL
Air Compressor			
Air Stripping Tower			
Catalytic Oxidizer			
Control Panel			
Oil/Water Separator			
Pneumatic Pump			
Electric Downhole Pumps			
Regenerative Blowers			
Holding Tanks			
Carbon Polishing Units			
(Other)			
(Other)			

(Other)			
		Subtotal, Part B	
		15% Mark-up	
		TOTAL, PART B	

Part C: Installation Costs - See Note 3

ITEM	ACTIVITY	UNIT COST	UNITS	TOTAL
Trenching	Sawcut and excavate trench lines	15.00/LF		
Plumbing	Install Piping (Air, Water, Electric) in trenches	15.00/LF		
Resurface Excavations	Recover trench lines	$6.00/LF		
Wellhead Modification	Install wellhead access boxes	At Cost		
Well Electrics	Install switches & drop tubes	$200.00/Well		
Well Plumbing	Install air/water tubing & pumps	$200.00/Well		
Concrete slab	Install slab for remediation system	$5.50/SqFt		
Remediation compound fence	Install protective fence around system	$850.00	1	$850.00
Small Items		$20.00/Site/Day		
Miscellaneous	Fittings, locks, etc.	$100.00	1	$100.00
(Other)				
(Other)				
(Other)				
			Subtotal, Part C	
			15% Mark-up	
			TOTAL, PART C	

Part D: Waste Management Costs- See Note 4

ITEM	UNIT COST	UNIT/HOURS	TOTAL
Load and Haul Excavated Soils and Concrete	$14.00/CY		
Dispose Excavated Soils and Concrete	$10.25/CY		
Vacuum Truck	$75.00/HR		
Dispose Fluids	$0.40/Gal		
Subchapter H Discharge or Alternative Disposal Method (Describe in Work Plan)	As Needed		
		Subtotal, Part D	
		10% Mark-up	
		TOTAL, PART D	

Part E: System Performance Analytical Costs- See Note 5

ITEM	UNIT COST	UNITS	TOTAL

TPH (Water)	$49.00		
BTEX (Water)	$62.50		
BTEX (Air)	$62.50		
BTEX w/ MTBE (Water)	$85.00		
TOTAL LEAD (Water)	$31.00		
Shipping	$5.00/Sample		
(OTHER)			
(OTHER)			
		Subtotal, Part E	
		10% Mark-up	
		TOTAL, PART E	

Part F: Travel Costs- See Note 6

ITEM	UNIT COST	UNITS/ HOURS	TOTAL
Equipment Truck	$140.00/day		
Mileage (over 100 miles, round trip)	$0.31/mile		
Travel Time	$115.00/hour		
Per Diem	$80.00/day/person		
Air Fare	By Need		
		TOTAL, PART F	

TOTAL ACTIVITY COSTS, PARTS A1, A2, A3, or A4 and B-F	

Notes:

1: Please refer to Appendix A, Part 1 for a breakdown of personnel costs.

2: Equipment purchased for the installation of a remediation system will be costed out by quote by the RCAS in the Interim Corrective Action Plan (ICAP) (see Activity 02), the Corrective Action Plan (CAP) (see Activity 08), or the workplan and cost proposal submitted for Remedial System Installation (see Activity 09). These quotes must be included when these documents are submitted to the TNRCC. Because of the unique nature of each individual site, and the range of equipment types available in the industry, the RCAS should design the remediation system with both efficiency and cost in mind. The cost proposals for remediation systems will be reviewed on a case-by-case basis.

3: Mark-up is allowed for subcontracted items only and rental or purchase receipts must accompany the application for reimbursement.

4: Please refer to Appendix A, Part 7 for a breakdown of waste management costs.

5: Please refer to Appendix A, Part 2 for additional laboratory analyses and costs. Mark-up is allowed only on subcontracted items.

6: Please refer to Appendix A, Part 4 for a breakdown of travel policy and costs. Travel time for this section includes total costs for a two-man crew consisting of a Staff Engineer and a Technician II.

ACTIVITY 10: OPERATION, MONITORING, & PERFORMANCE

This subsection will be used at sites after the installation and successful start-up of the remediation system. Please note that this subsection allows both Groundwater Monitoring and Operation and Maintenance to be submitted as a single activity at sites with an operating remediation system. This subsection should also be used for the costs for a rented/leased remediation system or any rented/leased capital component(s) of the remediation system. If the rental/lease agreement contains costs for the maintenance of systems or components, duplicate costs for the maintenance of those systems/components are not reimbursable. Rental/lease agreements **must** be included with the workplan and cost proposal submitted for this Activity to be considered for preapproval. The timing of the annual OM&P cycle at a site will depend on the date of successful start-up of the remediation system installed in Activity 09.

Please note that some portions of the OM&P process may require the participation of a Registered Professional Engineer. Please refer to 30 TAC §334.308(g)(21) for information on when this participation is necessary.

WORKSHEET FOR OPERATION, MONITORING, AND PERFORMANCE

Part A: Personnel Costs - See Note 1

Section 1: Fixed Annual Office Costs

ITEM	ACTIVITY	UNIT COST	HOURS/UNITS	TOTAL
OMP Plan for Existing Systems - See Note 2	Preparation and Submittal	$500.00	1	
Principal Engineer (P3)	Oversight, Regulatory Interaction	$110.00	4	$440.00
Project Manager (PM)	Management, Planning, Data Review	$80.00	12	$960.00
OM&P Report	Preparation and Submission	$1,295.00	1	$1,295.00
Workplan and Cost Proposal	Preparation and Submission	$115.00	1	$115.00
			Total, Section 1	

Section 2: Quarterly Monitoring Personnel Costs

Subsection 2A: First Quarter

ITEM	ACTIVITY	UNIT COST	HOURS/UNITS	TOTAL
Staff Engineer/Geologist (SF)	Field Prep, Data Formatting	$70.00	1	$70.00
Technician III (T3)	Purge and Sample Wells, First 25'	$40.00/Well		
Technician III (T3)	Purge and Sample Wells, Each Additional 25' (Max 75')	$10.00/Additional 25'/Well		
			Total, Subsection 2A	

Subsection 2B: Second Quarter

ITEM	ACTIVITY	UNIT COST	HOURS/UNITS	TOTAL
Staff Engineer/Geologist (SF)	Field Prep, Data Formatting	$70.00	1	$70.00
Technician III (T3)	Purge and Sample Wells, First 25'	$40.00/Well		
Technician III (T3)	Purge and Sample Wells, Each Additional 25' (Max 75')	$10.00/Additional 25'/Well		
			Total, Subsection 2B	

Subsection 2C: Third Quarter

ITEM	ACTIVITY	UNIT COST	HOURS/UNITS	TOTAL
Staff Engineer/Geologist (SF)	Field Prep, Data Formatting	$70.00	1	$70.00
Technician III (T3)	Purge and Sample Wells, First 25'	$40.00/Well		
Technician III (T3)	Purge and Sample Wells, Each Additional 25' (Max 75')	$10.00/Additional 25'/Well		
			Total, Subsection 2C	

Subsection 2D: Fourth Quarter

ITEM	ACTIVITY	UNIT COST	HOURS/UNITS	TOTAL
Staff Engineer/Geologist (SF)	Field Prep, Data Formatting	$70.00	1	$70.00
Technician III (T3)	Purge and Sample Wells, First 25'	$40.00/Well		
Technician III (T3)	Purge and Sample Wells, Each Additional 25' (Max 75')	$10.00/Additional 25'/Well		
			Total, Subsection 2D	
			Total, Section 2	

Section 3: Operation and Monitoring Personnel Costs for the Remediation System, Per Site Visit

ITEM	ACTIVITY	UNIT COST	HOURS/UNITS	TOTAL
Technician III (T3)	O&M, 1st System, Up To 3 Wells	$75.00	1	$75.00
Technician III (T3)	O&M, Air Emissions Control	$25.00 Each Device		
Technician III (T3)	O&M, Each Additional System, Up To 3 Wells	$37.50		
Technician III (T3)	O&M, Each Additional Well Per System Over 3, All Systems	$12.50/Well		
Staff Engineer (SF)	Field Prep, Data Formatting	$70.00	.5	$35.00
Staff Engineer (SF)	Field Prep, Data Formatting, Each Additional 3 System Wells	$70.00	.5	$35.00
			Subtotal, Section 3	
			Number of Site Visits	
			Total, Section 3	
			TOTAL, PART A	

Part B: Equipment Costs- See Note 3

ITEM	UNIT COST	UNITS	TOTAL
System/Component Rental/Lease Costs - See Note 4			
Disposable bailers	$8.00/Well		
Small items for Groundwater Monitoring	$20.00/Event	4	$80.00
Carbon Canisters, includes installation, recycling, and/or disposal	$750.00		

Electrical Service		12	
Natural Gas Service		12	
Water/Wastewater Service		12	
Telecommunications (for off-site system monitoring)		12	
(Other)			
(Other)			
Small items for System Maintenance	$50.00/Month/System	12	
		Subtotal, Part BI	
		10% or 15% Mark-up	
		TOTAL, PART B	

Part C: Analytical Costs - See Note 3

Section 1: Groundwater Testing

ANALYTICAL TEST	UNIT COST	UNITS	TOTAL
TPH/BTEX	$111.50		
TPH/BTEX w/ MTBE	$134.00		
TDS	$15.00		
PAH (610)	$158.00		
PAH (8270)	$249.00		
Shipping	$5.00/Sample		
(OTHER)			
		Subtotal, Section 1	
		10% Mark-up	
		Total, Section 1	

Section 2: System Performance Analytical Testing

ANALYTICAL TEST	UNIT COST	UNITS	TOTAL
TPH (Water)	$49.00		
BTEX (Water, Air)	$62.50		
BTEX w/ MTBE (Water)	$85.00		
TOTAL LEAD (Water)	$31.00		
Shipping	$5.00/Sample		
(OTHER)			
(OTHER)			
		Subtotal, Section 2	
		10% Mark-up	
		Total, Section 2	
		TOTAL, PART C	

Part D: Waste Management Costs - See Note 5

ITEM	UNIT COST	UNITS	TOTAL
Vacuum Truck	$75.00/Hour		
Fluid Disposal	$0.40/Gallon		
Subchapter H Discharge or Alternate Disposal Method (Describe in Work Plan.)	As Needed		
		Subtotal	
		10% Mark-up	
		TOTAL, PART D	

Part E: Travel Costs - See Note 6

ITEM	UNIT COST	UNITS/ HOURS	TOTAL
Equipment Truck	$140.00/day		
Mileage (over 100 miles, round trip)	$0.31/mile		
Travel Time	$50.00/hour		
Per Diem	$80.00/day		-
Air Fare	By Need		
		TOTAL, PART E	

TOTAL ACTIVITY COSTS, PARTS A-E

Notes:

1: Please refer to Appendix A, Part 1 for a breakdown of personnel costs.

2: An OMP Plan for existing systems should be submitted for any site where a remediation system was in operation at the time the system performance reporting requirements were adopted by the TNRCC.

3: Please refer to Appendix A, Part 5 for a listing of equipment costs. Mark-up for subcontracted costs vary. Refer to Appendix A: Part 9.

4: This line will be used if a remediation system or a component(s) of the remediation will be reimbursed in this Activity. See Activity 09: Remediation System Installation

5: Please refer to Appendix A, Part 2 for additional laboratory analyses and costs. Mark-up is allowed only on subcontracted items.

6: Please refer to Appendix A, Part 7 for a breakdown of waste management costs.

7: Please refer to Appendix A, Part 4 for a breakdown of travel policy and costs. The TNRCC will pay for one Technician to travel to the site and perform O&M and Groundwater Sampling events. The TNRCC will reimburse this individual at the T3 rate when O&M is performed and at the T1 rate when sampling is performed. Travel will be paid at the T3 rate.

ACTIVITY 11: SITE CLOSURE

This subsection will be used after a Site Closure Request has been reviewed and approved by the TNRCC.

WORKSHEET FOR SITE CLOSURE

Part A: Personnel Costs - See Note 1

Section 1: Office Costs

ITEM	ACTIVITY	UNIT COST	HOURS/UNITS	TOTAL
Site Closure Request	Preparation and Submission	$275.00	1	$275.00
Project Manager (PM)	Management and Oversight	$80.00	2	$160.00
Final Closure Report	Preparation and Submission	$195.00	1	$195.00
Workplan and Cost Proposal	Preparation and Submission	$115.00	1	$115.00
			Total, Section 1	**$745.00**

2: Field Personnel Costs

ITEM	ACTIVITY	UNIT COST	HOURS/ UNITS	TOTAL
Technician II (T2)	Plug First Well	$135.00	1	$135.00
Technician II (T2)	Plug Additional Well, <100' Deep	$90.00		
Technician II (T2)	Plug Additional Well, >100' Deep	$135.00		
Remediation System Removal- See Note 2	Remove and dispose of system capital components	$500.00		
			Total, Section 2	
			TOTAL, PART A	

Part B: Rig Costs - See Note 3

ITEM	ACTIVITY	UNIT COST	UNITS	TOTAL
Mobilization (less than 50 miles)	Transport Rig & Crew to Site	$245.00	1	$245.00
Mileage (over 50, max 450)	Additional Mileage to Site, Round Trip	$2.50		
Plug & Abandon Wells	P&A first 25', per well	$300.00		
Plug and Abandon Wells	P&A additional footage, 26' to 100', per foot per well	$8.00		
Plug and Abandon Wells	P&A additional footage, >100', per foot per well	$10.00		
Drill Crew Per Diem	Overnight Stay	$190.00		
			Subtotal, Part B	
			15% Mark-up	
			TOTAL, PART B	

Part C: Other Costs - See Note 3

ITEM	UNIT COST	UNITS	TOTAL
Disposal of Waste Material	$250.00 + $10.50/CY		
Small Items	$20.00/Site/Day		
(Other)			
(Other)			
(Other)			
		Subtotal, Part C	
		15% Mark-up	
		TOTAL, PART C	

Part D: Travel Costs - See Note 4

ITEM	UNIT COST	UNITS/HOURS	TOTAL
Equipment Truck	$140.00/Day		
Mileage (over 100, Round Trip)	$0.31		
Travel Time	$45.00		
Per Diem	$80.00		
Airfare	By Need	1	
		TOTAL, PART D	

TOTAL ACTIVITY COSTS, PARTS A-D	

Notes:

1: Please refer to Appendix A, Part 1 for a breakdown of personnel costs.

2: Capital equipment consists of the major individual components of the remediation system including pumps, compressors, aeration trays, stripping towers, oil/water separators, catox units, etc. It does not include wiring, tubing, piping, etc. Every effort should be made to reuse functional components of a remediation system at other sites to control costs.

3: Mark-up is allowed for subcontracted costs only. Costs for plugging and abandoning wells includes resurfacing the well points. Waste material includes well casing, concrete, surface completions, compound fencing, etc.

4: Please refer to Appendix A, Part 4 for a breakdown of travel policy and costs.

APPENDIX A
REIMBURSABLE UNIT COSTS

PART 1: PROFESSIONAL PERSONNEL/LABOR RATES

PERSONNEL TITLE	MAXIMUM RATE/HOUR
Principal (PR)	$110.00
Principal Engineer/Geologist/Hydrogeologist III (P3)	$110.00
Senior Engineer/Geologist/Hydrogeologist II (P2)	$95.00
Associate Engineer/Geologist/Hydrogeologist I (P1)	$85.00
Project Manager (PM)	$80.00
Staff Engineer/Geologist/Hydrogeologist (SF)	$70.00
Field Engineer/Geologist/Hydrogeologist (FD)	$65.00
Environmental Scientist (ES)	$70.00
Health Scientist (HS)	$80.00
Technician III (T3)	$50.00
Technician II (T2)	$45.00
Technician I (T1)	$40.00
Draftsperson II (D2)	$50.00
Draftsperson I (D1)	$45.00
Word Processor (WP)	$35.00
Clerical (CL)	$30.00

Notes:

1: The Personnel Titles in this table correspond with the Personnel Qualifications and Task Descriptions in the table immediately following.

2: Personnel Costs for office staff includes the cost of the equipment they normally use to complete their tasks. Separate costs for computers (including CADD machines), office supplies, etc. are not reimbursable.

3: Reimbursement is based on the maximum rate of the corrective action task being performed, not the rate of the individual performing the task. For instance, an individual at the level of a Technician I (T1) or higher is required to perform normal monitoring well sampling activities, but there is no injunction against a Senior Engineer (P2) performing this task. The maximum reimbursable rate for this task, regardless of who is actually performing the work, however, is at the rate of a T1, which is $40.00/ hour. (In other words, any individual with minimum qualifications*or higher* may perform a given corrective action task, but reimbursement will be based on the hourly or unit rate for the task, not the pay rate of the individual performing it.)

4: Mark-up for professional personnel employed by the RCAS is not allowed. If the RCAS does not have an individual with the qualifications necessary to perform a task the RCAS may subcontract out for this service. Reimbursable costs for these individuals will be cost plus 10%.

PERSONNEL QUALIFICATIONS AND TASK DESCRIPTIONS

The following qualifications and task descriptions are for those personnel who will be involved in activities for which preapproval is required.

PERSONNEL AND QUALIFICATIONS	TASK DESCRIPTION
Principal (PR) Administrative and\or professional head of the organization. Responsible for conceiving and executing plans and functions of the organization. Directs the professional staff. Normally has a financial interest in the company as partial owner, major investor, or major stockholder. Charges an extremely limited number of hours per site as the Principal. This position should never bill field hours.	- Expert testimony - Legal strategies - Depositions - Organizational oversight
Principal Engineer/Geologist/Hydrogeologist III (P3) A Principal must be professionally registered when applicable, be in compliance with Subchapter J rules, have an advanced engineering or science degree, and at least ten years experience in conducting corrective action. Administrative and/or professional head of an organization with authority and responsibility for conceiving and executing plans and functions of the organization and directing a professional staff. Charges a very limited number of hours per site, as in review of the project documents. A Principal should almost never bill field work.	- Expert testimony - Program management - Project oversight - Depositions - Reviews most complex sites - Develops or advances new technology innovations
Senior Engineer/Geologist/Hydrogeologist II (P2) Typically requires an advanced degree. Requires professional registration when applicable, 8 years of experience in technical or managerial roles, and compliance with Subchapter J. Serves as senior technical leader for environmental remediation projects of medium to large scope and/or complexity and has developed substantial expertise in the field of practice. May supervise or direct the work activities of lower level professionals and technicians. Will perform very limited field work, and have limited involvement in projects. Duties typically include reviewing reports, developing strategies, and attending client and/or Agency meetings. Responsible for approving designs, reports, plans, and specifications before submittal to clients or regulatory agencies. If significantly involved in a highly technical project, should have substantial technical expertise directly related to the project.	- Program management - Project oversight - Project management - Aquifer characterization - Reviews technical reports - Reviews RAPs - Data review and analysis - Prepares proposals
Associate Engineer/Geologist/Hydrogeologist I (P1) Typically requires a Bachelor's degree in engineering, geology, hydrogeology, or related science and professional registration when applicable. Complies with Subchapter J, and has 5 to 7 years of experience or an advanced degree and more than 4 years of experience. Leads and supervises teams of lower level personnel, but would have a limited number of hours charged to each site, and only a small percentage of total field hours. Generally supervises Project Managers and oversees several projects. May prepare proposals. Under general direction, prepares environmental programs and plans specifications for site remediation activity.	- Project management - Engineering/remedial equipment design - Aquifer characterization - Review technical reports - Review remedial action plans - Data review & analysis - Report preparation - Prepare proposals - Site inspection (occasional)
Project Manager (PM) Typically possesses a bachelor of science degree in engineering, geology, hydrogeology, or a directly related field. Serves as manager for entire projects. Complies with Subchapter J and has at least three years of experience in the environmental field. Under general supervision, prepares environmental programs and plans specifications for site remedial activities. Is responsible for gathering field data and is competent at data analysis. Serves as on-site technical expert and may do hydrological site characterizations, supervise hydraulic tests, and write sections of reports.	- Project management - Data review and analysis - Report preparation - Report review - Engineering/equipment design - On-site supervision - Workplan preparation - Site assessment planning - Field work planning - Site inspection (periodic) - Obtains permission for off-site access
Staff Engineer/Geologist/Hydrogeologist (SF) Requires a bachelor's degree in engineering, geology, hydrogeology, or related science and one to three years of experience in the environmental field. Works under supervision to perform routine tasks related to environmental remediation system design and aquifer testing. Must be able to conduct assessment and remedial activities including drilling and monitoring well installation, sampling, and compiling data. Must have knowledge of QA/QC procedures and protocol. This position will normally be highest in the number of hours billed to field work.	- Report preparation - Field work preparation/planning - Supervises site assessment activities and overexcavation - Site reconnaissance and mapping - Remedial system installation - Limited data review and analysis - Obtains permission for off-site access - Monitoring activities
Environmental Scientist (ES) Typically requires a degree in biology, chemistry, microbiology, or related environmental science degree and 2-6 years of related experience. An individual with an advanced degree should have 2 years of related experience. Performs assignments related to site assessments and bioremediation projects, risk analysis methodologies, and analytical data reduction.	- Data review and analysis - Bioremediation feasibility studies - Report preparation and overview - Report review - Onsite supervision - Site assessment planning
Health Scientist (HS) Typically requires a degree in Industrial Hygiene, Toxicology, or a related health science degree, and requires 1-3 years of related experience. Ensures compliance with of field service operations with OSHA safety standards. Addresses public health concerns.	- Health and safety coordinator - Develops site safety plan - Periodically oversees health and safety monitoring
Field Engineer/Geologist/Hydrogeologist (FD) Entry level position requiring a degree in engineering, geology, hydrogeology, or related science and less than a year of experience. Under close supervision, performs routine field tasks related to environmental projects including drilling and monitoring well installation, sampling, site layout and geologic mapping, writing field notes, and basic analysis.	- Field work preparation - Assist in site assessment activities - Site reconnaissance & mapping - Remedial system installation - Limited data review and analysis - Monitoring and sampling - Supervise overexcavation

Technician III (T3) Typically requires a high school diploma, certified or licensed trades-person, or an Associates degree. Requires more than 4 years of experience in the environmental field. Responsible for general supervision of the installation, maintenance, and repair of on-site equipment. Collects samples and maintains operating logs.	- Field work preparation - Operation & maintenance of equipment - Well development & sampling - Soil Sampling - Waste handling - Remedial system installation - Limited contractor supervision - Free product (PSH) removal - Monitoring
Technician II (T2) Typically requires a high school diploma. Requires 2 to 4 years of on-the-job training. Under appropriate supervision, performs routine labor tasks associated with on-site installation, maintenance, and repair of remediation equipment. Bails wells and collects soil and groundwater samples.	- Field work preparation - Operation & maintenance of equipment - Well development & sampling - Soil Sampling - Waste handling - PSH removal - Monitoring
Technician I (T1) Typically requires a high school diploma. Entry level position, under close supervision. Performs routine labor associated with system installation, maintenance and repair of machinery, monitoring, and sampling.	- Operation and maintenance of equipment - Well development and sampling - Soil sampling - PSH removal - Monitoring
Draftsperson II (D2) Typically requires a high school diploma. Requires 4 to 8 years of experience or two years of related college and more than one year of experience. Generally requires a Technical Drawing Certificate, and advanced drafting skills such as Computer Aided Drafting (& Design) operations.	- Advanced drafting - CAD/CADD work - Cartography
Draftsperson I (D1) Typically requires a high school diploma with up to 4 years of experience. Generally requires a Technical Drawing Certificate and some familiarity with Computer Aided Drafting. Performs entry to mid-level drafting such as minor edits to existing CAD or board drawings.	- Mid-level drafting - CAD editing
Word Processor (WP) Operates computer for word processing, spreadsheets, and statistical typing, correspondence report generation, etc. Higher billing rates imply experienced, efficient work.	- Spreadsheets - Report generation - Word processing
Clerical (CL) General office work, typing, and filing.	- Typing - Filing - General secretarial - Document reproduction

PART 2: LABORATORY ANALYSIS COSTS

Test/Method	Standard Rate	Rush Rate		Test/Method	Standard Rate	Rush Rate

TPH- EPA 418.1			**8 RCRA Metals- EPA 1131**		
Soil	$47.50	$71.25	Soil	$150.00	n/a
Water	$49.00	$73.50			
Air	$47.50	$71.25	**Total Organic Halogens- TOX EPA 9020**		
BTEX- EPA 8021B			Soil	$98.00	$147.00
Soil	$62.50	$93.75			
Water	$62.50	$93.75	**Volatile Organic Compounds- VOCs EPA 8260B**		
Air	$62.50	$93.75	Soil	$220.00	$330.00
			Water	$220.00	$330.00
BTEX w/ MTBE- EPA 8021B					
Soil	$80.00	$120.00	**Semi-V.O.C.s- EPA 8270**		
Water	$85.00	$127.50	Soil	$295.00	$570.00
			Water	$295.00	$570.00
PAH					
Soil - EPA 8100	$148.00	$222.00	**TCLP Benzene- EPA 1311 w/ 8020**		
Water - EPA 610	$158.00	$237.00	Soil	$152.00	n/a
PAH			**Total Lead- EPA 7420**		
Soil - EPA 8270	$222.00	$333.00	Soil	$31.00	$46.50
Water - EPA 625/8270	$249.00	$373.50	Water	$31.00	$46.50
Total Dissolved Solids- EPA 160.1			**TCLP Lead- EPA 1311 w/ 7420**		
Water	$15.00	$22.50	Soil	$93.00	n/a
Soil Parameters- (see Note 2)	$300.00	n/a	**Reactivity, Corrosivity, Ignitability (RCI)**		
			Soil	$35.00	n/a
Total Organic Carbon					
Soil - SW 9060	$40.00	$60.00	**Iron (Fe)- EPA 200.7**		
Water - EPA 415.1/9060	$32.00	$48.00	Water	$10.00	$15.00
Chlorides- EPA 325.3			**Nitrates- EPA 353.2**		
Soil/Water	$18.00	$27.00	Water	$24.00	$36.00
Moisture- ASTM D-2216			**Phosphates- EPA 365.2**		
Soil	$12.00	$18.00	Water	$24.00	$36.00
Sulfates- EPA 375.4			**Mobile Laboratory**	$1650.00/day	
Water	$24.00	$36.00			

Notes:

1: The above prices include all charges associated with lab analysis including but not limited to preparation and disposal.

2: Includes Total Organic Carbon, Porosity, Intrinsic Permeability, Bulk Density, and Volumetric Water Content.

3: Justification for anything other than the Standard Rate should be included in the work plan and/ or the reimbursement application. The Standard Rate is for a turnaround time greater than 48 hours. Rush Rate is for a turnaround time of less than 48 hours. If an analytical test cannot be completed in less than 48 hours, Rush Rate will not be allowed.

4: Allowable shipping costs are $5.00 per sample container (or sample set in the case of BTEX/V.O.C. samples), regardless of the method of delivery. Labor for the collection of samples is included in site personnel costs.

5: A mobile laboratory is expected to conduct 18-20 TPH/BTEX analyses on soils each day or 15-18 TPH/BTEX water/soil analyses each day. For sites where a small number of samples will need to be analyzed, the TNRCC may allow ½ of one day of use for the mobile laboratory (at $825.00) if this is the most cost-effective option. Mob/Demob costs for a mobile lab are $145.00 for the first 50 miles (or less) plus $1.90/mile for each additional mile up to a total of 450 additional miles.

6: Method 8021B replaces Method 8020. Method 8260B replaces Method 8240.

PART 3: DRILLING, WELL INSTALLATION, AND DIRECT PUSH TECHNOLOGY COSTS

The following costs are for various drilling activities. Please note that the costs are set up so that any boring or monitoring well that is twenty-five deep **or less** will be reimbursed at a lump sum rate. Costs after the first twenty-five feet should be calculated on a per-foot (beyond twenty-five feet) basis. Boring costs include decon, coring, plugging, and Water Well Report generation costs. Monitoring well installation costs include drilling, decon, coring, all well materials, surface completion, cap, lock, and Water Well Report Generation.

SECTION A: CONVENTIONAL DRILLING - See Notes

Sand/Silt/Clay with Hollow-Stem Augers and Continuous Sampling

Depth Interval	Boring	2" Well	4" Well	6" Well
	Lump Sum	Lump Sum	Lump Sum	Lump Sum
0' to 25'	$775.00	$1,025.00	$1,187.50	$1,925.00
	Per Additional Foot	Per Additional Foot	Per Additional Foot	Per Additional Foot
26' to 50'	$25.00	$43.50	$54.00	$76.00
51' to 100'	$43.00	$51.50	$61.50	$76.00
> 100'	$61.50	$54.00	$80.00	$88.00

Limestone/Hard Rock using Air or Mud Rotary, Surface Sampling Only

Depth Interval	Boring	2" Well	4" Well	6" Well
	Lump Sum	Lump Sum	Lump Sum	Lump Sum
0' to 25'	$1,025.00	$1,275.00	$1,450.00	$1,950.00
	Per Additional Foot	Per Additional Foot	Per Additional Foot	Per Additional Foot
26' to 50'	$42.00	$46.00	$59.00	$78.00
51' to 100'	$48.00	$53.00	$62.00	$79.00
> 100'	$61.00	$63.00	$70.00	$89.00

Limestone/Hard Rock using Air Coring and Continuous Sampling

Depth Interval	Boring	2" Well	4" Well	6" Well
	Lump Sum	Lump Sum	Lump Sum	Lump Sum
0' to 25'	$1,078.00	$1,562.50	$1,825.00	$2,075.00
	Per Additional Foot	Per Additional Foot	Per Additional Foot	Per Additional Foot
26' to 50'	$38.50	$57.50	$72.00	$87.50
51' to 100'	$44.00	$65.00	$79.00	$96.00
> 100'	$53.00	$76.00	$92.00	$118.00

Completion Footage Rates Expected in a Standard (10-Hour) Work Day

	Borings	Monitoring Wells
Sand/Silt/Clay using HSAs, Continuous Sampling	143	111
Limestone/Hard Rock w/ Air/Mud Rotary, Surface Sampling	215	117
Limestone/Hard Rock w/ Air Coring, Continuous Sampling	150	115

Mobilization/Demobilization and Per Diem

Mob/Demob <50 Miles	$245.00 Lump Sum
Mob/Demob >50 Miles	$2.50/Mile > 50 Miles one-way (max 450 additional miles)
Drill Crew (3 Person) Per Diem	$190.00

SECTION B: DIRECT PUSH TECHNOLOGY

Day Rate for a Direct Push Unit	$1480/Day - See Note 4
Per Foot Charge	$12.50/Foot
Expected Footage per Standard (10-hour) Day	195 Feet/Day
Additional amount/foot for 1" well completion	$12.50

Mobilization/Demobilization and Per Diem

Mob/Demob <50 Miles	$145.00 Lump Sum
Mob/Demob >50 Miles	$1.90/Mile > 50 Miles one-way (max 450 additional miles)
Drill Crew (2 Person) Per Diem	$130.00

Notes:

1: At some sites, the need may arise for the installation of a well that isolates an upper saturated zone in order to define the contaminant plume in a lower saturated zone. When the need for such a dual-cased well is agreed upon between the owner/operator and the TNRCC, the workplan and cost proposal submitted to the TNRCC for preapproval should contain three bids for the installation of these wells. Submitted costs will be reviewed on a case-by-case basis.

2: In situations where a low total footage of borings are to be installed or a second day of utilization of direct push technology is required, the per foot charge will be used, not to exceed the day rate.

3: Per Diem requirements for drill crews is described in the "Travel" section of this Appendix.

4: For sites where the footage of direct of direct push borings needing to be installed is small, the TNRCC may allow ½ of one day for Direct Push Unit rental (at $740.00/day), plus $12.50 per foot after the first 98 feet have been installed.

PART 4: TRAVEL COSTS

Travel By Air vs. Travel by Surface Vehicle

The TNRCC will reimburse for 500 miles round-trip mileage plus 10 hours of travel time **or** round-trip coach airfare plus 1½ hours of travel time per site visit, whichever is smaller. Personnel rates allowed for travel time will be determined by the field personnel required to complete the activity as described in the cost guidelines for each activity. The number of personnel allowed for travel will also be determined by the number of field personnel in the cost guidelines.

Travel costs will only be paid from the closest office of the RCAS to the site. Mileage rates will be tied to the applicable Internal Revenue Service rate for mileage, rounded to the next highest cent. As of November 1, 1996, that rate is 31 cents per mile.

To simplify the preapproval process, a flat rate of $140.00 per day will be allowed for the use of an "equipment truck". This can be any vehicle, of any size, either company owned or rented. This vehicle comes with all of the equipment normally used by the operator for field work, and may include purging and sampling gear (including pumps and generators), coolers, environmental monitoring devices, and tools. The only equipment not included in the day rate for this truck are disposables such as PPE, bailers, visqueen, ice, cameras, film, etc. These disposables are costed out on a per well, per cubic yard, or per day basis, as appropriate to the specific activity. Included in the $140.00 cost of the equipment truck is the first 100 miles of travel. If a vehicle is going to be utilized to conduct work on more than one site on a given day, the operator **must** split travel time between the sites, or lump all travel costs on a single site.

Per Diem and Non-reimbursable Costs

Per diem (meals and lodging) will be paid for site activities requiring more than one day of field work ***and*** occurring at a site greater than 90 miles (one way) from the closest office of the RCAS. The per diem will be a maximum of $80.00 or actual cost, whichever is lower, per individual required for the activity. All receipts for lodging and food must be submitted with the reimbursement application for per diem to be reimbursed. Per diem for drill crews will be $190.00 for a standard three-person crew (rotary rig) or $130.00 for a two-person direct push crew. Lodging receipts must be submitted with the drilling invoice(s) for drill crew per diem to be reimbursed. Other travel costs for drill rigs and crews are discussed in the "Drilling and Well Installation" unit costs in this Appendix.

The following travel expenses are not reimbursable:

- Personal trips;
- Overtime;
- Entertainment; and
- Travel for any purpose not directly related to the performance of necessary corrective action.

PART 5: EQUIPMENT AND SUPPLY COSTS

The following tables contain maximum reimbursable costs for a variety of large and small equipment, along with commonly used supplies. The total reimbursable cost for leased/rented equipment will not exceed the normal retail price for that piece of equipment, plus mark-up.

Equipment (Small)	Daily	Weekly	Monthly	Purchase
Absorbent Booms				
4" X 36"- each				$5.00
6" X 10'- each				$30.00
8" X 10'- each				$40.00
Aeration Trays- See Note 1			$100.00	$2,400.00
Air Compressors & Generators				
AC- 3/4 Horsepower	$15.00	$70.00	$200.00	
AC- 2 Horsepower	$20.00	$75.00	$250.00	
AC- 5 Horsepower	$25.00	$100.00	$300.00	$7,200.00
AC- 150 CFM & Paving Breaker (Jackhammer)	$85.00	$325.00	$950.00	
GEN- 400 Watt	$50.00			
GEN- 3500 Watt	$75.00			
Air Strippers- See Note 1				$15,250.00
Bailers				
Bailer (Teflon or polypropylene, disposable)				$8.00
Bailer (PVC, dedicated)				$15.00
Carbon Absorbers, Drum Type- See Note 1. (Includes installation, recycling, and/or disposal.)				$750.00
Data Collectors				
Datalogger (2 channel)	$65.00	$325.00		
Datalogger (8 channel)	$115.00	$575.00		
Pressure Transducer	$35.00	$175.00		
OVM Meter (PID, FID) - See Note 2				
Combustible Gas Meter- See Note 2				
pH, Conductivity, Temperature Meter- See Note 2				
Dissolved Oxygen Meter- See Note 2				
Oxygen, Carbon Dioxide, Methane Gas Meter- See Note 2				
Interface Probe- See Note 2				
Field Test Kits and/or Meters for Water Alkalinity, Redox, Chloride, Iron, Nitrate, Sulfate, Phosphate- See Note 2				
Concrete				$55.00/cy

	Concrete Saw	$50.00	$75.00		
	Fences				
	Compound Fence (Wood/Chain)				$850.00
	Chain Link, $/Foot			$3.50	$9.00
	Temporary Construction Barrier, $/100 Feet		$1.00	$8.00	$100.00
	Hand Augers				
	Manual	$15.00	$60.00		
	Power	$45.00	$180.00		
	Jackhammer(electric)	$40.00	$150.00	$500.00	
	Oil/Water Separator, Gravity Type- See Note 1				$2,000.00
	Pumps				
	Gas Powered, 2" Diameter, 150 GPM	$50.00	$200.00		
	Pneumatic	$75.00	$225.00		$2,000.00
	2", Electric Submersible, 10 GPM	$45.00	$180.00		See Note 1
	4", Electric Submersible, 20 GPM	$50.00	$200.00		See Note 1
	Skimmers				
	Passive (1 Liter)		$10.00	$30.00	$350.00
	Electric		$75.00	$265.00	$3,200.00
	Holding Tanks- See Note 1				
	55 Gallon Barrel or Drum				$40.00
	1,000 Gallon	$25.00	$75.00	$225.00	$700.00
	5,000 Gallon	$35.00	$105.00	$315.00	$3,750.00
	21,000 Gallon	$100.00	$300.00	$900.00	
	Stripping Towers- See Note 1				$14,750.00
	SVE Pilot TestEquipment				
	Blower, 1.5 Horsepower	$20.00			
	Blower, 5 Horsepower	$35.00			
	Blower, 15 Horsepower	$50.00			
	Pressure Gauges	$75.00			
	Carbon Canister (drum type)	$45.00			$500.00
	SVE Probe	$250.00			
	An SVE Trailer w/ all necessary equipment	$500.00			
	Survey Equipment	$30.00	$120.00		
	Traffic Control Components				
	Barricades	$1.00	$4.00	$14.00	$85.00
	Cones/Delineators (per 25)	$5.00	$20.00	$50.00	$115.00

	Signs	$1.00	$3.00	$11.00	$35.00
	Well Materials- See Note 3				
	2" PVC Casing, Schedule 40, Per Foot				$2.00
	2" PVC Screen, Schedule 40, Per Foot				$4.00
	2" PVC Threaded Cap				$5.00
	4" PVC Casing, Schedule 40, Per Foot				$4.00
	4" PVC Screen, Schedule 40, Per Foot				$8.00
	4' PVC Threaded Cap				$9.00
	Filter Sand, 100 Lb. Bag				$5.00
	Concrete, Ready Mix, 90 Lb. Bag				$3.50
	Concrete, Portland Cement, 90 Lb. Bag				$7.50
	Sand Cement Slurry Backfill w/ Delivery, Per cy				$40.00
	Bentonite Grout, 50 Lb. Bag				$23.00
	Bentonite Chips, 50 Lb. Bag				$7.50
	Bentonite Tablets, 50 Lb. Bag or Bucket				$31.00
	Miscellaneous				
	Small Items- See Note 4	$20.00			
	Tedlar Bags				$7.50
	Visqueen, 6 mil, 20' X 100'				$60.00
Equipment (Large)			**Hourly**	**Daily**	**Weekly**
	Backhoes (operated)- See Note 5				
	Light-duty (12'-18' digging depth)	($35/hr rental & $40/hr operator)	$75.00	$495.00	$2,125.00
	Medium-duty (15'-20' digging depth)	($50/hr rental & $40/hr operator)	$90.00	$570.00	$2,300.00
	Heavy-duty (17'-21' digging depth)	($70/hr rental & $40/hr operator)	$110.00	$670.00	$2,650.00
	Compactors (operated)				
	Walk-behind	($20/hr rental & $30/hr operator)	$50.00	$340.00	$1,500.00
	Riding	($25/hr rental & $30/hr operator)	$55.00	$365.00	$1,575.00
	Loaders (operated)				
	Bobcat	($20/hr rental & $40/hr operator)	$60.00	$420.00	$1,900.00
	Light-duty (up to 100 hp)	($30/hr rental & $40/hr operator)	$70.00	$470.00	$2,050.00
	Heavy-duty (greater than 100 hp)	($50/hr rental & $40/hr operator)	$90.00	$570.00	$2,350.00
	Tracked Excavators (operated)				
	Light-duty (20'-22' digging depth)	($85/hr rental & $40/hr operator)	$125.00	$745.00	$2,875.00
	Medium-duty (24'-26' digging depth)	($100/hr rental & $40/hr operator)	$140.00	$820.00	$3,100.00
	Heavy-duty (>26' digging depth)	($120/hr rental & $40/hr operator)	$160.00	$920.00	$3,400.00
	Trucks				

	Equipment Truck - See Note 6		$140.00	
	10 cy Dump (operated)	$50.00		
	14 cy Dump (operated)	$55.00	Bill time	
	20 cy Dump w/ trailer (operated)	$60.00	actually used.	
	Vacuum Truck (operated)	$65.00		

Notes:

1: Equipment purchased for the installation of a remediation system will be costed out by quote by the RCAS in the Interim Corrective Action Plan (ICAP) (see Activity 02), the Corrective Action Plan (CAP) (see Activity 08), or the workplan and cost proposal submitted for Remedial System Installation (see Activity 09). These quotes must be included when these documents are submitted to the TNRCC. Because of the unique nature of each individual site, and the range of equipment types available in the industry, the RCAS should design the remediation system with both efficiency and cost in mind. The cost proposals for remediation systems will be reviewed on a case-by-case basis.

2: The majority of data collection devices are consultant-owned and will be included in the cost of the Consultant's Equipment Truck, which is reimbursed at the rate of $140.00 per day, plus mileage over 100 miles round trip. Please refer to the "Travel" section in this Appendix.

3: Well materials are included for reference. The reimbursement of the cost of installing monitoring wells is done on a per-foot basis, in which the cost of well materials is included. Please refer to the "Drilling and Direct Push Technology" section in this Appendix.

4: Small items are those disposables normally used at an LPST site. They would include string, gloves, decon supplies, and distilled water. Other small items may include tape, pens, paint, ice, and warning tape.

5: Costs for heavy equipment are based on a rental charge of five hours per day and fifteen hours per week, and an operator charge of eight hours per day and forty hours per week.

6: See Appendix A, Part 4: Travel Costs for a description of the Equipment Truck and its use.

PART 6: EXCAVATION, BACKFILLING, AND RESURFACING COSTS

The following tables should be used to calculate all excavation and over-excavation costs, along with the replacement of excavated soils with imported fill, compacting that fill, and resurfacing areas affected by these activities. Please note that all personnel costs, except for stockpile sampling and report generation, have been built into these flat rates. Also note that the disposal of impacted soils discovered during a tank removal must be preapproved independent of tank removal activities.

ITEM	2" ASPHALT	6" CONCRETE	PER CUBIC YARD
Remove Pavement Over Affected Area, per sq ft	2.50	4.00	
Excavate Impacted Soils, per cy			9.00
Import Fill, per cy			11.00
Compact Fill, per cy			9.00
Resurface Affected Area, per sq ft	3.50	5.50	

Notes:

1: If concrete cover is greater than 6", please note this fact on the workplan and cost proposal. A TNRCC coordinator has the ability to adjust reimbursable costs for site-specific circumstances.

2: Imported fill volume will be calculated at the rate of 1.3 times the *in situ* volume of the excavated soils.

3: Compaction costs include in-place density tests.

4: On rare occasions, shoring may be necessary to conduct excavation activities. If you encounter such a situation, justification for increased cost must be submitted with the workplan and cost proposal.

PART 7: SOILS AND WASTEWATER MANAGEMENT COSTS

This section should be used to determine the cost of loading, hauling, and disposing excavated soils or generated groundwater.

DISPOSAL RESULTING FROM ANY SITE ACTIVITY			
MEDIA	**METHOD**		
ALL SOILS	**LOAD AND HAUL**	**DISPOSE IN LANDFILL**	
	$14.00/CY	>1500 PPM TPH: $45.00/CY; <1500 PPM TPH: $10.50/CY; See Note 1	
>1500 PPM TPH SOILS ONLY	**ASPHALT RECYCLING**	**THERMAL DESORPTION**	**BIOREMEDIATION**
	$35.00/CY; See Note 2	$45.00/CY; See Note 2	$35.00/CY; See Note 2
GROUNDWATER AND PSH	**LOAD, HAUL, & DISPOSE**	**ON-SITE TREATMENT & DISCHARGE**	
	$75.00/HR for Truck plus $00.40/GAL Disposal	See Note 3	

Notes:

1: Noted costs for landfill disposal are maximum costs. The TNRCC will reimburse actual costs (landfill receipts must be included with the Application for Reimbursement) plus allowable mark-up.

2: The noted alternative technologies for soils with >1500 PPM TPH are maximum reimbursable costs but do not include loading and hauling costs. Where appropriate, onsite use of these technologies should be considered to avoid loading and hauling costs. If the owner/operator decides to use these technologies on soils with <1500 TPH when a less expensive disposal option is available, the TNRCC will reimburse the cost of the least expensive option and the owner/operator will absorb the remaining costs.

3: The TNRCC will not pay for the disposal of water that collects in an excavation because that excavation was improperly bermed. Such water must be sampled, at the owner/operator's cost, to determine if it is impacted and special handling is necessary. The cost of testing and subsequent disposal of groundwater recharging into an excavation is reimbursable. Once the determination has been made that special handling is required, the owner/operator should select the most cost effective method of waste disposal. For the majority of sites in Texas, this method will be the use of vacuum trucks. In certain areas of the state that are isolated by distance from companies that provide this service, on-site treatment and discharge may be appropriate. A cost comparison should be made in the cost proposal and workplan and these costs will be reviewed on a case-by-case basis.

4: Soils generated during Site Assessments should be drummed or covered and held onsite pending the receipt of analytical results. If landfill disposal is necessary, the TNRCC will pay $45.00/drum or $45.00/CY maximum disposal costs. See Note 1.

PART 8: REPORT GENERATION COSTS

This section should be used to determine the reimbursable costs for all report forms except Risk Assessments and Corrective Action Plans.

REPORT FORM TYPE	PERSONNEL TYPE	RATE/HR	HOURS	TOTAL
RELEASE DETERMINATION REPORT				
	Project Manager (PM)	$80.00	2	$160.00
	Word Processor (WP)	$35.00	1	$35.00
			TOTAL	**$195.00**
FIELD ACTIVITY REPORT (FAR) - SEMI-ANNUAL PSH RECOVERY, PSH RECOVERY SYSTEM O&M				
	Associate Engineer (P1)	$85.00	1	$85.00
	Staff Engineer/Geologist (SF)	$70.00	2	$140.00
	WP	$35.00	1	$35.00
			TOTAL	**$260.00**
INTERIM CORRECTIVE ACTION PLAN (ICAP)				
	Principal Engineer (P3)	$110.00	1	$110.00
	P1	$85.00	3	$255.00
	PM	$80.00	2	$160.00
	SF	$70.00	12	$840.00
	Draftsperson II (D2)	$50.00	5	$250.00
	WP	$35.00	6	$210.00
			TOTAL	**$1,825.00**
FAR- PSH RECOVERY SYSTEM INSTALLATION				
	P3	1	$110.00	$110.00
	SF	8	$70.00	$560.00
	D2	3	$50.00	$150.00
	WP	1	$35.00	$35.00
			TOTAL	**$855.00**
RISK ASSESSMENT UPDATE or FAR - SITE ASSESSMENT - See Note				
	PM	$80.00	1	$80.00
	SF	$70.00	4	$280.00
	WP	$35.00	1	$35.00
	D2	$45.00	2	$90.00
			TOTAL	**$485.00- See Note 1**

FAR- REMEDIATION SYSTEM INSTALLATION (EXCEPT PSH RECOVERY SYSTEM)

	Senior Engineer (P2)	$95.00	2	$190.00
	P1	$85.00	4	$340.00
	SF	$70.00	20	$1,400.00
	WP	$35.00	2	$70.00
	D2	$50.00	6	$300.00
			TOTAL	$2,300.00
FAR- CORRECTIVE ACTION PLAN ADDENDUM				
	P1	$85.00	2	$170.00
	WP	$35.00	1	$35.00
	D2	$50.00	2	$100.00
			TOTAL	$305.00
ANNUAL REPORT- GROUNDWATER MONITORING ONLY				
	PM	$80.00	1	$80.00
	SF	$70.00	4	$280.00
	WP	$35.00	1	$35.00
	D1	$45.00	1	$45.00
			TOTAL	$440.00
ANNUAL REPORT- OPERATION, MONITORING, AND PERFORMANCE				
	P2	$95.00	2	$190.00
	PM	$80.00	5	$400.00
	SF	$70.00	6	$420.00
	WP	$35.00	3	$105.00
	D1	$45.00	4	$180.00
			TOTAL	$1,295.00
SITE CLOSURE REQUEST				
	PM	$80.00	3	$240.00
	WP	$35.00	1	$35.00
			TOTAL	$275.00
FINAL SITE CLOSURE REPORT				
	PM	$80.00	2	$160.00
	WP	$35.00	1	$35.00
			TOTAL	$195.00

Notes:

1: This cost is for a Risk Assessment Update or for an FAR in which one boring or monitoring well was installed. DI, WP, and PM time may be increased ½ hour ($80.00) for every monitoring well or soil boring installed during a given event. In addition, the RCAS may bill PM (2 hrs.), DI (2 hrs.), and WP (1 hr.) time totaling $285.00 for the first day of Direct Push, and $142.50 for every additional ½ day of Direct Push.

PART 9: MARK-UP

ITEM	MAXIMUM ALLOWABLE MARK-UP
LABORATORY COSTS	10%
WASTE MANAGEMENT	10%
UTILITIES	10%
SUBCONTRACTED PROFESSIONAL PERSONNEL	10%
ALL OTHER SUBCONTRACTOR INVOICES	15%

Notes:

1: Mark-up is allowed for the primary contractor and/or the Registered Corrective Action Specialist (consultant). It may only be added to subcontractor invoices. It may applied only once (for instance, a consultant may not charge a mark-up upon a cost which has been marked-up by a subcontractor).

2: Consultants and contractors may not charge a mark-up on their own internal expenses.

3: Retail mark-up is not allowed. All invoices on which a mark-up is being applied must be submitted with the Application for Reimbursement.

PART 10: CHANGE ORDERS

The preapproved workplan and cost proposal represent the accepted activity to be performed and the maximum reimbursable cost for that activity (including allowable markup). Modifications to the preapproved workplan and cost proposal can be made only as follows:

Field Activity Change Orders

On occasion, site specific circumstances and unforeseeable developments can result in an owner/operator incurring expenses exceeding the preapproved maximum cost. Examples of situations where this can occur are costs associated with drilling delays due to bad weather, or additional costs associated with hitting an unanticipated rock layer while drilling. Please note that these situations are related to field activities and not office associated activities. Depending on the magnitude of the unforseen problem, the owner/operator should proceed as follows:

Field activity changes resulting in a cost change greater than 7% of the preapproved amount:

If unanticipated events occur in the field during the performance of a preapproved activity which cause an additional expense exceeding 7% of the total preapproved amount (e.g., an amount greater than $1,400.00 on an activity preapproved for $20,000.00), then preapproval must be obtained from the TNRCC before continuing the activity. Failure to obtain the infield approval will result in the additional costs being nonreimbursable. Conditional verbal approval can be obtained from the TNRCC to continue with the activity while in the field, however, final approval of the activity and costs will be granted only after the review of a submitted field change order. The change order must detail the additional field activities and associated costs and must conform to the standard workplan and cost proposal format.

Field activity changes resulting in a cost change exceeding the preapproved amount, but is less than or equal to 7%:

If unanticipated events occur in the field during the performance of a preapproved activity which cause an additional expense exceeding the total preapproved amount, but is less than or equal to 7% of the total preapproved amount (e.g., an amount less than or equal to $1,400.00 on an activity preapproved for $20,000.00), then a change order detailing the additional field activities and associated costs must be submitted at the completion of the activity and must conform to the standard workplan and cost proposal format. Infield approval prior to continuing the activity is not required. Approval of the change order will be granted only after the review of a submitted field change order.

Field activity changes resulting in a cost change which is less than the preapproved amount:

If unanticipated events occur in the field during the performance of a preapproved activity which cause some of the scope of work items to be eliminated or not performed, then the associated costs should be reduced. A change order does not need to be submitted for approval; however, documentation should be submitted to document the change in work scope and indicating that this activity has been completed. Should it be determined that the activity is incomplete and the original scope of work should be performed, then that scope of work should be completed for the original preapproved amount.

General Change Orders

During the performance of a preapproved activity, should any unanticipated non-field-activity events occur which cause an additional expense exceeding the total preapproved amount (e.g., additional personnel hours needed to handle a change in municipal permit requirements), a change order detailing the additional activities and associated costs must be submitted and must conform to the normal workplan and cost proposal format. Preapproval must be obtained from the TNRCC prior to initiating the additional activities. Failure to obtain the preapproval will result in the additional costs being nonreimbursable. Final approval will be granted only after the review of a submitted general change order.

For any of the above-referenced change orders, a copy of the change order documentation detailing the additional activities and associated costs along with a copy of the original preapproved cost proposal must be submitted with the application for reimbursement to be considered for reimbursement. In all cases, the change order should document only the additional scope of work and the additional expenses (e.g., the additional $1,400.00 on an activity preapproved for $20,000.00), not the total activity. If the owner/operator continues to complete the activity without preapproval of the additional activities, then the excess costs are nonreimbursable.

Change orders are intended for costs for unforseen or unanticipated events and are not to be used for adding profit, forgotten items, etc. All change orders must be documented and justified. If it is determined that the change order is not warranted or sufficient justification has not been provided, the change order will not be approved.

APPENDIX B
DEFINITIONS and ACRONYMS

PART 1: DEFINITIONS

FREE PRODUCT MIGRATION- The continuous movement of free product from the subsurface of the ground to the surface or from the subsurface into a subsurface receptor.

FREE PRODUCT- (Also, phase-separated product. Also phase-separated hydrocarbon. Also phase separated petroleum. Also LNAPL.) A regulated substance in its free-flowing non-aqueous liquid phase at standard conditions of temperature and pressure (i.e., liquid not dissolved in water or adhering to soil) **that is also a "recoverable free product" by the definition in this section.** It is distinct and visually separable from the surrounding media. This definition does not including hydrocarbon "sheens."

LNAPL- Light non-aqueous phase liquid- See "Free Product."

PHASE-SEPARATED PRODUCT- See "Free product."

PHASE-SEPARATED HYDROCARBON- See "Free product."

PHASE SEPARATED PETROLEUM- See "Free Product."

RECOVERABLE FREE PRODUCT- (Also, Recoverable Phase -Separated Product. Also Recoverable Phase-Separated Hydrocarbon) (1) Any free product in continuous movement from the subsurface of the ground to the surface. (2) Free product in a subsurface receptor with a thickness greater than 1/10th of one foot. For reimbursement purposes, this does not include free product in tankhold observation wells unless the site meets the requirements of 30 TAC 334.302 (a)(1).

RECOVERABLE PHASE-SEPARATED HYDROCARBON- See "Recoverable free product."

RECOVERABLE PHASE-SEPARATED PRODUCT- See "Recoverable free product."

NOTE: SEE 30 TAC §334.322, CONCERNING SUBCHAPTER H DEFINITIONS, FOR ADDITIONAL DEFINITIONS.

PART 2: ACRONYMS

§	Section
AST	Aboveground Storage Tank
BOD	Biological Oxygen Demand
BTEX	Benzene, Toluene, Ethylbenzene, Total Xylenes
CAD/CADD	Computer Aided Drafting/Computer Aided Drafting & Design
CAP	Corrective Action Plan
CAPM	Corrective Action Project Manager
COD	Chemical Oxygen Demand
cft	Cubic Feet (volume)
cy	Cubic Yard (volume)
cfm	Cubic Feet per Minute (air flow)
DNAPL	Dense Non-Aqueous Phase Liquid (sinks in water)
DO	Dissolved Oxygen
EPA	United States Environmental Protection Agency
FAR	Field Activity Report
FID	Flame Ionization Detector
ft	Feet (length)
GC	Gas Chromatograph
gpm	Gallons per Minute
hp	Horsepower
hr	Hour
ICAP	Interim Corrective Action Plan
ICU	Internal Combustion Unit
kg	Kilogram
l	Liter
lbs	Pounds
LF	Linear Feet
LEL	Lower Explosive Limit
LNAPL	Light Non-Aqueous Phase Liquid (floats on water)
LPST	Leaking Petroleum Storage Tank
mg	Milligram
MTBE	Methyl Tertiary Butyl Ether
MW	Monitoring Well
NAPL	Non-Aqueous Phase Liquid
O&M	Operation and Maintenance
OMP/OM&P	Operation, Maintenance, and Performance
OVM	Organic Vapor Meter (see FID, PID)
PAH	Polynuclear Aromatic Hydrocarbon
PE	Professional Engineer
PID	Photo-Ionization Detector
PM	Project Manager
ppb	Parts per Billion
PPE	Personal Protective Equipment
ppm	Parts per Million
PSH	Phase-Separated Hydrocarbon
PST	Petroleum Storage Tank
QA/QC	Quality Assurance/Quality Control
RA	Risk Assessment
RAP	Remedial Action Plan
RBA	Risk Based Assessment
RBCA	Risk Based Corrective Action
RCAS	Registered Corrective Action Specialist
RCG	Reimbursable Cost Guidelines
RP	Responsible Party
Semi-VOA	Semi-Volatile Organic Aromatic
Semi-VOC	Semi-Volatile Organic Compound
SqFt, sf	Square Foot (area)
SVE	Soil Vapor Extraction
TCLP	Toxicity Characteristic Leaching Procedure
TDS	Total Dissolved Solids
TOC	Total Organic Carbon
TOX	Total Organic Halogen
TPH	Total Petroleum Hydrocarbons
TNRCC	Texas Natural Resource Conservation Commission
TWC	Texas Water Commission (now the TNRCC)
ug	Microgram
UST	Underground Storage Tank
VES	Vapor Extraction System
VOA	Volatile Organic Aromatic
VOC	Volatile Organic Compound
yd	Yard (length)

ATTACHMENT

7

Recommended Reimbursement Guidelines for Oklahoma Leaking Storage Tank Facilities

II. RELEASE REPORTING

Task	Unit Cost	Total Units	Estimated Cost
II. Release Reporting			
Prepare proposal, Meet With Client, Travel to site, Communicate with OCC			
Principal			
A. Review/QAQC Report	$100.00 /hr	1 hours	$100.00
Project Manager			
A. Project Management/Prepare Proposal to Client	$75.00 /hr	1.5 hours	$112.50
B. Meeting w/ Client	$75.00 /hr	1.5 hours	$112.50
C. Travel	$75.00 /hr	2 hours	$150.00
D. Mileage	$1.00 /mi	100 miles	$100.00
Clerical			
A. Correspondence/Filing	$35.00 /hr	1 hours	$35.00
Additional Costs			
A. Mileage Over 100 Miles Roundtrip	$2.50 /mi	miles	$0.00
Total Cost for Release Reporting			**$610.00**

Recommended Reimbursement Guidelines for Oklahoma Leaking Storage Tank Facilities

III. INITIAL RESPONSE & ABATEMENT

Task	Unit Cost	Total Units	Estimated Cost
III. Initial Response & Abatement			
Prepare report(s), Other requirements			
Principal			
A. Review/QAQC Report	$100.00 /hr	1 hours	$100.00
Project Manager			
A. Prepare Report	$75.00 /hr	3 hours	$225.00
B. Prepare Required Checklist	$75.00 /hr	1 hours	$75.00
C. Review for Need of Public Notice	$75.00 /hr	2 hours	$150.00
Clerical			
A. Correspondence/Filing	$35.00 /hr	1 hours	$35.00
Total Cost for Initial Response & Abatement			**$585.00**

Recommended Reimbursement Guidelines for Oklahoma Leaking Storage Tank Facilities

IV. SITE CHECK & ISCR

Task	Unit Cost	Total Units	Estimated Cost
IV. Site Check & ISCR/CAP			
Prepare reports, Other requirements			
Principal			
A. Review/QAQC Report	$100.00 /hr	2 hours	$200.00
Project Manager			
A. Prepare Report	$75.00 /hr	8 hours	$600.00
B. Prepare Required Checklist	$75.00 /hr	1 hours	$75.00
C. Project Management	$75.00 /hr	2 hours	$150.00
D. Regulatory/Client Coordination	$75.00 /hr	1 hours	$75.00
Staff Hydrologist			
A. Perform Sensitive Receptor Survey (660')	$55.00 /hr	6 hours	$330.00
B. Site Sketch	$55.00 /hr	2 hours	$110.00
C. Travel	$55.00 /hr	2 hours	$110.00
D. Mileage	$1.00 /mi	100 miles	$100.00
Drafting			
A. Site Sketch	$45.00 /hr	1 hours	$45.00
Clerical			
A. Correspondence/Filing	$35.00 /hr	1 hours	$35.00
Additional Costs			
A. Mileage Over 100 Miles Roundtrip	$2.10 /mi	miles	$0.00
Per Diem (check if applicable)			
B. Enter Total Roundtrip Mileage in Third Column		miles	$0.00
Total Cost for Site Check & ISCR/CAP			**$1,830.00**

Recommended Reimbursement Guidelines for Oklahoma Leaking Storage Tank Facilities

VI. ORBCA TIER 2

Task	Unit Cost	Total Units	Estimated Cost
VI. ORBCA Tier 2			
Data compilation, Report preparation			
Principal			
A. Review/QAQC Report	$100.00 /hr	6 hours	$600.00
Project Manager			
A. Project Management	$75.00 /hr	10 hours	$750.00
B. Regulatory/Client Coordinatior	$75.00 /hr	10 hours	$750.00
C. Risk Analysis/Report	$75.00 /hr	24 hours	$1,800.00
Drafting			
A. ORBCA Maps/Logs	$45.00 /hr	10 hours	$450.00
Clerical			
A. Correspondence & Filing	$35.00 /hr	10 hours	$350.00
	☐ Check here if ORBCA Tier 2 New Case (See Guidance)		$4,700.00
	☐ Check here if ORBCA Tier 2 Cases With Partial or All Delineation (See Guidance)		$3,500.00
	☐ Check here if Tier 2 Modified Addendum		$1,500.00

Recommended Reimbursement Guidelines for Oklahoma Leaking Storage Tank Facilities

VII. SOIL BORING INSTALLATION

Task	Unit Cost	Total Units	Estimated Cost
VII. Soil Boring Installation			
Project Management			
A. Principal Oversight	$100.00 /hr	2 hours	$200.00
B. Project Manager	$75.00 /hr	5 hours	$375.00
Field Work Personnel & Equipment			
A. Supervise Drilling	$55.00 /hr	2 hours	$110.00
B. Travel Time	$55.00 /hr	2 hours	$110.00
C. Mileage	$1.00 /mi	100 miles	$100.00
D. Organic Vapor Monitor	$80.00 /day	1 day	$80.00
E. Decon Unit	$10.00 /day	1 day	$10.00
Subcontracted Services & Equipment			
A. Drill & Continuous Sample a 10" Diameter Hole	$21.00 /ft	20 feet	$420.00
B. Mobilization/Demobilization	$300.00 /ea.	1 ea.	$300.00
C. Decon	$125.00 /ea.	1 ea.	$125.00
D. Mileage	$4.00 /mi	100 miles	$400.00
E. Drums	$30.00 /drum	1 drums	$30.00
F. Supplies	$20.00 /unit	1 units	$20.00
G. Laboratory Analyses (BTEX, TPH (GRO or DRO))	$105.00 /sample	1 samples	$105.00
H. Markup			$140.00
Report Preparation			
A. Project Manager - Report Preparation	$75.00 /hr	2 hours	$150.00
B. Clerical	$35.00 /hr	2 hours	$70.00
C. CADD Drafting	$45.00 /hr	1 hours	$45.00
Disposal			
A. Field Tech Time	$45.00 /hr	1 hours	$45.00
B. Field Tech Travel	$45.00 /hr	2 hours	$90.00
C. Field Tech Mileage	$1.00 /mi	100 miles	$100.00
Total Cost for One Boring			**$3,025.00**
☐	**Check here if Stand-Alone Boring Installation**		**$710.00**
Initial Soil Boring Installation			**$3,025.00**
Additional Costs			
A. Additional Borings	$710.00 /boring	borings	$0.00
B. Mileage Over 100 Miles Roundtrip	$8.00 /mi	miles	$0.00
C. Footage Over 20 ft (per boring/ft)	$40.00 /boring/ft	total extra ft	$0.00
Per Diem (Check Mileage if Applicable)			
D. Enter Total Roundtrip Mileage in Third Column		miles	$0.00
E. Enter Total Footage in Third Column		ft	$0.00
F. Deduction of $40/ft for Borings < 10 ft	$40.00 /boring/ft	total ft	$0.00
Total Cost for Soil Boring Installation (rounded to nearest dollar)			**$3,025.00**

The Stand-Alone Boring cost to be used when mobbing with other drilling activities.

Recommended Reimbursement Guidelines for Oklahoma Leaking Storage Tank Facilities

VIII. PUSH-PULL PROBE

Task	Unit Cost	Total Units	Estimated Cost
VIII. Push-Pull Probe (160 Feet Per Day)			
Project Management			
A. Principal	$100.00 /hr	2 hours	$200.0(
B. Project Manager	$75.00 /hr	5 hours	$375.0(
Staff - Hydrologist			
A. Field - Day	$55.00 /hr	8 hours	$440.0(
B. Travel	$55.00 /hr	2 hours	$110.0(
C. Mileage	$1.00 /mi	100 miles	$100.0(
Other Staff			
D. Report Preparation	$75.00 /hr	2 hours	$150.0(
E. Clerical	$35.00 /hr	2 hours	$70.0(
F. Drafting	$45.00 /hr	7 hours	$315.0(
Field Supplies			
A. Drums	$30.00 /drum	2 drums	$60.00
B. Misc.	$25.00 /ea.	1 ea.	$25.00
D. Vapor Meter (ie PID, OVA)	$80.00 /day	1 days	$80.00
F. Decon	$10.00 /day	1 days	$10.00
SubTotal I			**$1,935.00**
A. Rig	$1,400.00 /day	1 days	$1,400.00
B. Mob	$200.00 /day	1 days	$200.00
C. Decon	$125.00 /day	1 days	$125.00
D. Mileage	$3.00 /mi	100 miles	$300.00
E. Markup			$203.00
Disposal			
A. Field Tech Time	$45.00 /hr	1 hours	$45.00
B. Field Tech Travel	$45.00 /hr	2 hours	$90.00
C. Field Tech Mileage	$1.00 /mi	100 miles	$100.00
SubTotal II			**$2,463.00**
Additional Costs			
A. Additional Days	$2,463.00 /day	days	$0.00
B. Mileage Over 100 Miles Roundtrip	$6.80 /mi	miles	$0.00
Per Diem			
C. Enter Total Roundtrip Mileage in Third Column		miles	$0.00
D. Enter Total Footage in Third Column		ft	$0.00
Total for Push-Pull Probe (rounded to nearest dollar)			**$4,398.00**

Recommended Reimbursement Guidelines for Oklahoma Leaking Storage Tank Facilities

IX. VAPOR WELL INSTALLATION

Task	Unit Cost	Total Units	Estimated Cost
IX. Vapor Well Installation			
Principal			
A. Oversight	$100.00 /hr	0.5 hours	$50.00
Project Manager			
A. Project Management	$75.00 /hr	4 hours	$300.00
Staff Hydrologist			
A. Supervise drilling	$55.00 /hr	3 hours	$165.00
B. Travel	$55.00 /hr	2 hours	$110.00
C. Mileage	$1.00 /mi	100 miles	$100.00
Field Technician			
A. Sample/Survey(2 People)/Disposal	$45.00 /hr	4 hours	$180.00
B. Travel (3 man-hour trips)	$45.00 /hr	6 hours	$270.00
C. Mileage (2 trips)	$1.00 /mi	200 miles	$200.00
Vapor Well Report			
A. Project Management	$75.00 /hr	2 hours	$150.00
B. Map/Log	$45.00 /hr	2 hours	$90.00
C. Clerical	$35.00 /hr	2 hours	$70.00
Field Supplies			
A. Drums	$30.00 /ea.	2 ea.	$60.00
B. Misc.	$25.00 /ea.	1 ea.	$25.00
Rental Equipment			
A. Organic Vapor Monitor	$80.00 /ea.	1 ea.	$80.00
B. Decon	$10.00 /ea.	1 ea.	$10.00
Analytical Samples			
A. BTEX, TPH (8020/8015 or 8100)	$105.00 /ea.	1 ea.	$105.00
B. Soil Vapor Sample	$175.00 /ea.	1 ea.	$175.00
C. Mark-up			$28.00
Drilling and Completion			
A. 2" or 4" PVC VaporWell	$32.00 /foot	20 feet	$640.00
B. Mob/Demob	$300.00 /ea.	1 ea.	$300.00
C. Decon	$125.00 /ea.	1 ea.	$125.00
D. Mileage	$4.00 /mi	100 miles	$400.00
E. Mark-up			$150.00
Total Cost for 1 Vapor Well		**1 VW**	**$3,783.00**
Additional Costs			
A. Additional Vapor Wells	$1,795.00 /well	wells	$0.00
(Includes Lab)			
B. Mileage Over 100 Miles Roundtrip	$8.00 /mile	miles	$0.00
C. Footage Over 20 ft (per well)	$75.00 /ft /well	total extra ft	$0.00
D. Footage < 10 ft per well deduct	$75.00 /ft /well	total ft	$0.00
Per Diem			
E. Enter Total Roundtrip Mileage in Third Column		miles	$0.00
Total Cost For All Vapor Wells (rounded to nearest dollar)			**$3,783.00**

Recommended Reimbursement Guidelines for Oklahoma Leaking Storage Tank Facilities

X. MONITORING WELL INSTALLATION

Task	Unit Cost	Total Units	Estimated Cost
X. Monitoring Well Installation			
Principal			
A. Oversight	$100.00 /hr	0.5 hours	$50.00
Project Manager			
A. Project Management	$75.00 /hr	4 hours	$300.00
Staff Hydrologist			
A. Supervise drilling	$55.00 /hr	3 hours	$165.00
B. Travel	$55.00 /hr	2 hours	$110.00
C. Mileage	$1.00 /mi	100 miles	$100.00
Field Technician			
A. Develop/Sample/Survey(2 People)/Disposal	$45.00 /hr	6 hours	$270.00
B. Travel (4 man-hour trips)	$45.00 /hr	8 hours	$360.00
C. Mileage (3 trips)	$1.00 /mi	300 miles	$300.00
Monitoring Well Report			
A. Project Management	$75.00 /hr	2 hours	$150.00
B. Map/Log	$45.00 /hr	2 hours	$90.00
C. Clerical	$35.00 /hr	2 hours	$70.00
Field Supplies			
A. Drums	$30.00 /ea.	2 ea.	$60.00
B. Bailer	$10.00 /ea.	1 ea.	$10.00
C. Misc.	$25.00 /ea.	1 ea.	$25.00
Rental Equipment			
A. Organic Vapor Monitor	$80.00 /ea.	1 ea.	$80.00
B. Oil/Water Interface Probe	$45.00 /ea.	1 ea.	$45.00
C. Survey Equipment	$25.00 /ea.	1 ea.	$25.00
D. Decon	$10.00 /ea.	1 ea.	$10.00
Analytical Samples			
A. BTEX, TPH (8020/8015 or 8100)	$105.00 /ea.	3 ea.	$315.00
B. Mark-up			$31.50
Drilling and Completion (20 ft)			
A. 2" or 4" PVC Monitoring Well	$32.00 /ft	20 feet	$640.00
B. Mob/Demob	$300.00 /ea.	1 ea.	$300.00
C. Decon	$125.00 /ea.	1 ea.	$125.00
D. Mileage	$4.00 /mi	100 miles	$400.00
E. Mark-up			$150.00
Total Cost for 1 Monitoring Well		**1 MW**	**$4,181.50**
Additional Costs			
A. Additional Monitoring Wells (Includes Lab)	$2,185.00 /well	wells	$0.00
B. Mileage Over 100 Miles Roundtrip	$12.70 /mi	miles	$0.00
C. Footage Over 20 ft (per well)	$75.00 /ft/well	total extra ft	$0.00
D. Footage < 10 ft per well deduct	$75.00 /ft/well	total ft	$0.00
Per Diem			
E. Enter Total Roundtrip Mileage in Third Column		miles	$0.00
F. Enter Total Installation Footage in Third Column		ft	$0.00
Total Cost For All Monitoring Wells (rounded to nearest dollar)			**$4,182.00**

Recommended Reimbursement Guidelines for Oklahoma Leaking Storage Tank Facilities

XI. MONITORING WELL SAMPLING

Task	Unit Cost	Total Units	Estimated Cost
XI. Monitoring Well Sampling			
Project Management			
A. Project Manager	$75.00 /hr	6.5 hours	$487.50
Gauging, Purging, & Sampling			
A. Technician	$45.00 /hr	1 hours	$45.00
B. Technician Travel Time	$45.00 /hr	2 hours	$90.00
C. Technician Mileage	$1.00 /mi	100 miles	$100.00
D. Diaphragm Pump For Well Purging	$45.00 /day	1 days	$45.00
E. Oil/Water Interface Probe	$40.00 /day	1 days	$40.00
F. Decon Unit	$10.00 /day	1 days	$10.00
Equipment & Subcontracted Services			
A. 55-Gallon Drums	$30.00 /drum	1 drums	$30.00
B. Disposable Bailers	$10.00 /unit	1 units	$10.00
C. Supplies	$23.50 /unit	1 units	$23.50
D. Laboratory Analyses (BTEX, TPH(GRO or DRO))	$105.00 /sample	1 samples	$105.00
E. Markup			$16.50
Purge Water Disposal			
A. Technician	$45.00 /hr	2 hours	$90.00
B. Technician Travel Time	$45.00 /hr	2 hours	$90.00
C. Technician Mileage	$1.00 /mi	100 miles	$100.00
Monitoring Report			
A. Principal - QA/QC	$100.00 /hr	2 hours	$200.00
B. Project Manager - Report Preparation	$75.00 /hr	8 hours	$600.00
C. Project Manager - Preparation for Graphs, Figures, Tables, and Maps	$75.00 /hr	2 hours	$150.00
D. Clerical	$35.00 /hr	4.5 hours	$157.50
E. CAD Drafting	$45.00 /hr	4 hours	$180.00
Total Cost for Sampling 1 Monitoring Well			**$2,570.00**
☐	**Check here if separate report**		**$1,287.50**
Additional Costs			
A. Additional Wells (includes lab)	$220.00 /well	wells	$0.00
B. Mileage Over 100 Miles Roundtrip	$3.80 /mi	miles	$0.00
Per Diem (Check Mileage If Applicable)			
C. Enter Total Roundtrip Mileage in Third Column		miles	$0.00
D. Enter Total Footage in Third Column		ft	$0.00
Total Cost for Monitoring Well Sampling (rounded to nearest dollar)			**$2,570.00**

Recommended Reimbursement Guidelines for Oklahoma Leaking Storage Tank Facilities

XII. OTHER LAB ANALYSIS RATES

XII. Other Lab Analysis Rates

Analysis	Unit	Total	Units	Overnight	Estimated Cost
Acetone	$62.50		samples	☐	$0.00
Ammonia	$15.00		samples	☐	$0.00
BTEX and TPH Combined (Mod 8020/8015) (Gasoline)	$105.00		samples	☐	$0.00
BTEX and TPH Combined (Mod 8020/8015) (Diesel)	$105.00		samples	☐	$0.00
BTEX/TPH-G/Naphthalene (Gasoline)	$150.00		samples	☐	$0.00
BTEX, TPH - Gas & Diesel (Mod 8020/8015, Mod 8000/8100) (Diesel, Used Oil)	$155.00		samples	☐	$0.00
BTEX/TPH (Air)	$175.00		samples	☐	$0.00
Chloride	$10.00		samples	☐	$0.00
Bulk Density (Dry) ASTM Method D2937-83	$20.00		samples	☐	$0.00
CO2 (Air)	$50.00		samples	☐	$0.00
EPTOX	$35.00		samples	☐	$0.00
Grain Size Analysis (Distribution) Seive Analysis	$135.00		samples	☐	$0.00
Flashpoint	$25.00		samples	☐	$0.00
FOC (Walkley Black Method)	$50.00		samples	☐	$0.00
Hydrocarbon Scan	$100.00		samples	☐	$0.00
Iron	$15.00		samples	☐	$0.00
Hydraulic Conductivity ASTM Method D5084-90	$180.00		samples	☐	$0.00
Lead (Total Lead)	$35.00		samples	☐	$0.00
Hydrometer Grain Size plus Sieve Analysis	$90.00		samples	☐	$0.00
MBE	$50.00		samples	☐	$0.00
MPK	$30.00		samples	☐	$0.00
MTBE (8020)	$50.00		samples	☐	$0.00
MTBE (8260A)	$250.00		samples	☐	$0.00
Nitrate	$24.00		samples	☐	$0.00
Oil & Grease	$35.00		samples	☐	$0.00
Oxygen	$20.00		samples	☐	$0.00
Naphthalene (Mod 8020/8015) (Gasoline or Diesel)	$45.00		samples	☐	$0.00
% Moisture	$10.00		samples	☐	$0.00
pH	$10.00		samples	☐	$0.00
PAH	$144.00		samples	☐	$0.00
Total Phenolic (EPA 420.1)	$40.00		samples	☐	$0.00
Phenol (Gaschrom/MS Method 625)	$80.00		samples	☐	$0.00
Phosphorous	$25.00		samples	☐	$0.00
Porosity (Wet and/or Dry)	$50.00		samples	☐	$0.00
Potassium Analyses	$17.25		samples	☐	$0.00
Purgeable Halocarbon	$65.00		samples	☐	$0.00
Permeability	$180.00		samples	☐	$0.00
Sieve Analysis	$45.00		samples	☐	$0.00
Specific Gravity	$50.00		samples	☐	$0.00

Recommended Reimbursement Guidelines for Oklahoma Leaking Storage Tank Facilities

XII. OTHER LAB ANALYSIS RATES, PG 2 OF 2

XII. Other Lab Analysis Rates, Page 2 of 2

Analysis	Unit	Total Units		Overnight	Estimated Cost
Sulfide	$10.00		samples	☐	$0.00
TCLP Metals TOX Characteristics (Leaching Procedures)	$200.00		samples	☐	$0.00
-Lead Only	$50.00		samples	☐	$0.00
- 8 Metal	$325.00		samples	☐	$0.00
- 1 Volatiles EPA 624, 8249, 8260	$315.00		samples	☐	$0.00
- 1 Semi-Volatiles EPA 625, 8270	$525.00		samples	☐	$0.00
TDS (Total Dissolved Solids)	$10.00		samples	☐	$0.00
TEH Method 8015 Modified (DRO)	$50.00		samples	☐	$0.00
TOX (Total Organic Halogen)	$50.00		samples	☐	$0.00
TPH Method 8020 Modified (GRO)	$50.00		samples	☐	$0.00
Treated H20 (BTEX, Phenols, PH, TOC) Effluent	$165.00		samples	☐	$0.00
TW-1 Phenol, O & G, PH	$85.00		samples	☐	$0.00
Preparation	$10.00		samples	☐	$0.00
TOC (Soil)	$60.00		samples	☐	$0.00
TOC (Water) (EPA Yr.5.1)	$55.00		samples	☐	$0.00
Volumetric Water Content ASTM Method D2216-90	$20.00		samples	☐	$0.00
Hydrocarbon Analysis:					
BTEX 8020/8015	$55.00		samples	☐	$0.00
BTEX & Naphthalene Mod 8020/8015	$105.00		samples	☐	$0.00
TPH (GRO) Mod 8020/8015	$50.00		samples	☐	$0.00
BTEX 8020/8015	$55.00		samples	☐	$0.00
BTEX-Naphthalene Mod 8020/8015	$105.00		samples	☐	$0.00
TPH (DRO) Mod 8000/8100	$50.00		samples	☐	$0.00
PAH 8100/8270/8310 HPLC	$144.00		samples	☐	$0.00
TPH (GRO & DRO) Mod 8000/8100	$100.00		samples	☐	$0.00
TCLP	$200.00		samples	☐	$0.00
TCLP Set Up	$50.00		samples	☐	$0.00
Total Cost for Additional Lab Analyses (With 10% Markup)					**$0.00**

Recommended Reimbursement Guidelines for Oklahoma Leaking Storage Tank Facilities

XVI. DISPOSAL

Task	Unit Cost	Total Units	Estimated Cost
XVI. Disposal			
A. Water Disposal - First Drum ☐	$200.00 /drum	0 drum	$0.00
B. Water Disposal - Every Gallon Thereafter	$2.00 /gal	gallons	$0.00
C. Water Disposal Sample[BTEX, TPH, (GRO or DRO), Flashpoint, Total Lead]; 1 composite water sample per disposal event (markup included) ☐	$180.00 /sample	0 sample	$0.00
D. Soil Disposal - First Drum ☐	$200.00 /drum	0 drum	$0.00
E. Soil Disposal - Every Drum Thereafter	$65.00 /drum	drums	$0.00
F. Soil Disposal Sample [BTEX, TPH, (GRO or DRO), Total Lead] One Composite Sample per event, Includes Markup ☐	$154.00 /sample	0 sample	$0.00
G. Bulk Waste Water	$0.45 /gal	gallons	$0.00
H. Bulk Rate Free Product	$0.95 /gal	gallons	$0.00
Additional Costs			
A. Mileage over 100 Miles Roundtrip (do not use in Bulk Rate Disposal)	$3.25 /mi	miles	$0.00
B. Hourly charge for bulk rate pick-up and disposal (includes mileage)	$75.00 /hr	hours	$0.00
☐ **Check here if Disposal Costs not included in other tasks (Stand-Alone Disposal).**			
For Stand-Alone Disposal (When Box is Checked), Use Additional Mileage Rate Below			
Project Management			
A. Principal	$100.00 /hr	1 hours	$100.00
B. Project Manager	$75.00 /hr	2 hours	$150.00
Field Work Technician			
A. Technician Work Time	$45.00 /hr	2 hours	$90.00
B. Travel Time (2 Trips)	$45.00 /hr	4 hours	$180.00
C. Mileage	$1.00 /mi	200 miles	$200.00
Additional Costs			
A. Mileage over 100 Miles Roundtrip	$6.05 /mi	miles	$0.00
Total Costs for Disposal			**$0.00**

Recommended Reimbursement Guidelines for Oklahoma Leaking Storage Tank Facilities

XIX. HIGH VACUUM-MULTI PHASE EXTRACTION

Task	Unit Cost	Total Units	Estimated Cost
XIX. High-Vac/Low-Vac			
Project Management			
A. Principal	$100.00 /hr	2 hours	$200.00
B. Project Manager	$75.00 /hr	5 hours	$375.00
Field Tech			
A. Field - Day	$45.00 /hr	8 hours	$360.00
B. Travel	$45.00 /hr	2 hours	$90.00
C. Mileage	$1.00 /mi	100 miles	$100.00
Other Staff			
D. Report Preparation	$75.00 /hr	2 hours	$150.00
E. Clerical	$35.00 /hr	2 hours	$70.00
SubTotal I			**$1,345.00**
Vacuum Truck			
A. High Vac (includes markup)	$2,750.00 /day	days	$0.00
B. Low Vac (includes markup)	$77.00 /hour	hours	$0.00
SubTotal II			**$0.00**
Additional Costs			
A. Mileage Over 100 Miles Roundtrip, Incl. Rig Mileage (only applicable on High-Vac)	$3.45 /mi	miles	$0.00
Per Diem			
B. Enter Total Roundtrip Mileage in Third Column		miles	$0.00
Total for High-Vac/Low-Vac (rounded to nearest dollar)			**$1,345.00**

Recommended Reimbursement Guidelines for Oklahoma Leaking Storage Tank Facilities
Appendix A: Stand-Alone Time And Materials

Task	Unit Cost	Total Units	Estimated Cost
Appendix A. Stand-Alone Time and Materials			
Professional Hourly Rates			
A. Principal	$100.00 /hr	hours	$0.00
B. Senior Hydrologist/Engineer	$85.00 /hr	hours	$0.00
C. Project Manager	$75.00 /hr	hours	$0.00
D. Senior Technician/Staff Hydrologist	$55.00 /hr	hours	$0.00
E. Draftsman/Field Technician	$45.00 /hr	hours	$0.00
F. Clerical/General Laborer	$35.00 /hr	hours	$0.00
Units and Costs			
A. Bailers	$10.00 /bailer	bailer	$0.00
B. Barricades (rental)	$7.00 /barricade	barricade	$0.00
C. Base Map			
{Standard Time = 4 hours}	$75.00 /hr	hours	$0.00
D. Data Logger and Trans (rental)	$200.00 /day	days	$0.00
E. Decon Unit (rental)	$10.00 /day	days	$0.00
F. Develop/Sample/Survey(2 People)/Disposal			
{Standard Time = 6 hours}	$45.00 /hr	hours	$0.00
G. Diaphragm Pump (rental)	$45.00 /day	days	$0.00
H. Drums	$30.00 /drum	drums	$0.00
I. FID (rental)	$80.00 /day	days	$0.00
J. Historical Research/Site Visit/Safety Plan			
{Standard Time = 6 hours}	$75.00 /hr	hours	$0.00
K. Monitoring Well (2 or 4 ")	$32.00 /ft	ft	$0.00
L. Oil/Water Interface Probe (rental)	$45.00 /day	days	$0.00
M. ORBCA Maps/Logs (Drafting)			
{Standard Time = 10 hours}	$45.00 /hr	hours	$0.00
N. Organic Vapor Monitor (rental)	$80.00 /day	days	$0.00
O. OVA (rental)	$80.00 /day	days	$0.00
P. OWRB Search			
{Standard Time = 4 hours}	$75.00 /hr	hours	$0.00
Q. PID (rental)	$80.00 /day	days	$0.00
R. Research (Public Notification - Staff Hydro)			
{Standard Time = 1 hour}	$55.00 /hr	hours	$0.00
S. Risk Analysis Report (Tier 1/1A)			
{Standard Time = 30 hours}	$75.00 /hr	hours	$0.00
T. Risk Analysis Report (Tier 2)			
{Standard Time = 24 hours}	$75.00 /hr	hours	$0.00
U. Sensitive Receptor Survey (660')			
{Standard Time = 6 hours}	$55.00 /hr	hours	$0.00
V. Sign (Public Notification)	$150.00 /ea.	ea.	$0.00
W. Site Sketch (Drafting)			
{Standard Time = 1 hour}	$45.00 /hr	hours	$0.00
X. Site Sketch (Hydrologist)			
{Standard Time = 2 hours}	$55.00 /hr	hours	$0.00
Y. Survey Equipment (rental)	$25.00 /day	days	$0.00
Z. Water Depth Gauge (rental)	$40.00 /day	days	$0.00
Mileage Rates			$0.00
A. Car	$0.50 /mi	miles	$0.00
B. Truck (all trucks)	$1.00 /mi	miles	$0.00
C. Disposal, etc.	$2.50 /mi	miles	$0.00
Per Diem			
Per Diem Days	$65.00 /day	days	$0.00

Total Cost for Time and Materials	$0.00

Recommended Reimbursement Guidelines for Oklahoma Leaking Storage Tank Facilities

XVII. PASSIVE FREE PRODUCT RECOVERY/REMOVAL WORKSHEET

Task (Based on 200 ft/day)	Unit	Cost	Total	Units	Estimated Cost
Free Product Recovery/Removal					
☐ Click Here for 45 day report					$0.00
Project Management					
A. Project Manager	$75.00	/hr	1	hours	$75.00
B. Tech Travel	$45.00	/hr	2	hours	$90.00
C. Tech (Sock Replacement, Bailing, Gauging, Decon)	$45.00	/hr	2	hours	$90.00
D. Tech Mileage	$1.00	/mileage	100	miles	$100.00
Equipment Per Event					
A, Oil/Water Probe	$45.00	/day	1	days	$45.00
B. Decon	$10.00	/day	1	days	$10.00
C. Drum	$30.00	/each	1	drums	$30.00
D. Supplies	$50.00	/each	1	unit	$50.00
Additional Costs Per Event					
A. Additional Wells	$50.00	/well		wells	$0.00
B. Mileage Over 100 miles Roundtrip	$2.50	/mile		miles	$0.00
Per Diem					
C. Enter Total Roundtrip Mileage			30	miles	$0.00
D. Enter Total Footage in Third Column (200')				feet	$0.00
Number of Events per Quarter				events	$0.00
Quarterly (One Time) Disposal:					
A. Tech	$45.00	/hr	1	hours	$45.00
B. Tech Travel	$45.00	/hr	2	hours	$90.00
C. Mileage	$1.00	/mi	100	miles	$100.00
Total					$235.00
Quarterly (One Time) Report					
A. Principal	$100.00	/hr	1	hours	$100.00
B. Project Manager	$75.00	/hr	6	hours	$450.00
C. Clerical	$35.00	/hr	3	hours	$105.00
D. Drafting	$45.00	/hr	2	hours	$90.00
Total					$745.00
Quarterly Additional Cost					
A. Passive Skimmer (2" or 4")	$150.00	/well		wells	$0.00
Total Cost for Free Prodct Recovery/Removal					**$980.00**

Recommended Reimbursement Guidelines for Oklahoma Leaking Storage Tank Facilities XXV.BF (Back-Fill)

Task	Unit Cost	Total Units	Estimated Cost
A. All inclusive professional time (including worksheet, phonecalls, etc.)	$75.00 /hour	4 hours	$300.00
B. Sampling Backfill (1 composite sample per 50yd3	$13.75 /sample	samples	$0.00
C. Report: includes Site & Sample Map, Measured Pit Dimensions, Sample Analysis, etc.	$75.00 /hour	1 hours	$75.00
D. When Backfill is Contaminated, See Guidance-Excavating, Hauling, Replacing	**Run Tank Racer**		
Total for BF			**$375.00**

ATTACHMENT

8

D H E C
PROMOTE PROTECT PROSPER
South Carolina Department of Health and Environmental Control

Bureau of Land and Waste Management
Underground Storage Tank Program
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SUPERB ACCOUNT ALLOWABLE COSTS

Underground Storage Tank (UST) owners or operators, who are responsible for releases that are qualified to receive monies from the State Underground Petroleum Environmental Response Bank (SUPERB) Account, will be notified when monies are available to perform necessary site rehabilitation actions. Those releases posing the greatest identified risk to human health and the environment receive funding priority. The classification system by which the risk and funding priority is determined is outlined in the SUPERB Site Rehabilitation and Fund Access Regulations, R.61-98.

The SUPERB Act requires that all costs for site rehabilitation receive prior approval from the Department. If the UST owner or operator wishes to proceed with site rehabilitation actions for a release that is not currently funded due to its low classification, the Department has a deferred compensation contract that allows the UST owner or operator to receive approval for reasonable costs with possible future compensation from the SUPERB Account.

UST owners or operators may select their own site rehabilitation contractor to perform necessary actions in accordance with the criteria and allowable costs established by the Department. As a customer service, the Department can directly procure the services of a site rehabilitation contractor for UST owners and operators upon their request. Any contractor who performs UST site rehabilitation work in South Carolina must be certified by the Department.

Allowable costs for site assessment, abandonment, and monitoring tasks are outlined below. For active corrective action, the Department's criteria requires notice in South Carolina Business Opportunities to obtain technically acceptable proposals and establish the SUPERB allowable cost.

Established Scopes of Work

See applicable guidance document for required tasks

Scope of Work	Southeast Region	All Other Counties
Initial Ground-Water Assessment	$1,195.00	$1,395.00
Tier I Assessment	$9,880.00	$10,880.00

Notes:

(1) The Southeast region includes the following counties: Beaufort, Berkeley, Charleston, Colleton, Dorchester, Georgetown, Hampton, Horry, Jasper, Marion, and Williamsburg

(2) If the total well footage exceeds 25 feet for an Initial Ground-Water Assessment (IGWA) or 75 feet for a Tier I Assessment, the additional footage can be charged to the account at the component rate listed below. Costs associated with sampling of receptors (ground-water wells) within a 500 foot radius of the source, and sampling for metals at waste oil USTs can be charged by submitting an assessment component invoice with the IGWA, or Tier I invoice. As the price for the standard scope includes all project coordination and report preparation costs, a 15 percent markup or handling fee will not be allowed for additional items added to the IGWA or Tier I invoice.

SUPERB Allowable Assessment Costs Per Component

ITEM	UNIT	UNIT PRICE
1. Plan Preparation		
A.Tier II or Monitoring Plan	each	$ 100.00*
B. Tax Map	each	$ 50.00
2. Receptor Survey	each	$ 500.00*
3. Comprehensive Survey	each	$ 1,000.00
4. Mob/Demob		
A. Equipment	each	$ 500.00
B. Personnel	each	$ 250.00
5. Soil Borings (hand auger)	per foot	$ 14.00*
6. Soil Borings (requiring equipment, push technology, etc.) or Field Screening (i.e., water sample, soil sample, or soil gas sample)	per foot	$ 17.00*
7. Soil Leachability Model	each	$ 200.00
8. Abandonment	per foot	$ 4.00*
9. Well Installation		
A. Water Table (hand auger)	per foot	$ 20.00*
B. Water Table (drill rig)	per foot	$ 38.00*
C. Telescoping	per foot	$ 58.00*
D. Rock Drilling	per foot	$ 58.00*
10. Sample Collection		
A. Ground-Water	per well or receptor	$ 55.00
B. Air or Vapors	per receptor	$ 90.00
11. Analyses-Groundwater		
A. BTEX+Napth. +MTBE	per sample	$ 100.00
B. BTEX+Napth. +MTBE	per rush sample	$ 120.00
C. BTEX+Napth. +MTBE+ Trimethylbenzene	per sample	$ 135.00
D. PAHs	per sample	$ 120.00
E. Lead	per sample	$ 20.00
F. EDB	per sample	$ 55.00
G. 8 RCRA Metals	per sample	$ 140.00
H. TPH (9070)	per sample	$ 55.00
I. pH	per sample	$ 10.00
J. BOD	per sample	$ 40.00
K. Nitrate	per sample	$ 20.00
L. Sulfate	per sample	$ 20.00
M. Ferrous Iron	per sample	$ 20.00
N. Methane	per sample	$ 110.00
O. Organic Lead	per sample	$ 100.00
P. 8 Oxygenates	per sample	$ 85.00
Analyses-Soil		
Q. BTEX +Napth.	per sample	$ 100.00
R. PAHs	per sample	$ 120.00
S. 8 RCRA Metals	per sample	$ 150.00
T. TPH (9071)	per sample	$ 60.00

ITEM	UNIT	UNIT PRICE
Analyses-Soil Continued		
U. TPH (3550B/8015B)	per sample	$ 65.00
V. TPH (5030B/8015B)	per sample	$ 65.00
W. Grain size / hydrometer	per sample	$ 75.00
X. Total Organic Carbon	per sample	$ 35.00
12. Aquifer Characterization		
A. Pumping Test	per hour	$ 120.00*
B. Slug Test	per test	$ 150.00*
13. Free Prod Recovery Rate Test	each	$ 120.00*
14. Fate/Transport Modeling		
A. Mathematical Model	each	$ 300.00
B. Computer Model	each	$ 500.00
15. Tier I Risk Evaluation	each	$ 300.00
Tier II Risk Evaluation	each	$ 500.00
16. Subsequent Survey	each	$ 260.00*
17. Disposal		
A. Wastewater		
1. Purging/sampling	drum	$ 90.00*
2. Pumping Test	gallon	$ 0.60*
B. Free Product	drum	$ 110.00*
C. Soil Treatment/Disposal	ton	$ 50.00*
	drum	$ 50.00*
18. Miscellaneous	each	preapproved
19. Report Preparation and Project Coordination	%	15% of total for non-standard scopes

*The appropriate mobilization cost can be added to complete these tasks, as necessary.

Description of Tasks Associated with Allowable Costs

1. PLAN PREPARATION includes all tasks associated with the preparation and submittal of a Tier II Assessment, well abandonment, monitoring, or other plan requested by the Department. One personnel mobilization shall be allowed to conduct a survey of site conditions and to obtain the tax map prior to plan preparation. An additional $50.00 may be allowed to obtain and report the information from the applicable tax map, if the information has not previously obtained as part of the Tier I, Tier II, or other report.

2. RECEPTOR SURVEY includes all tasks associated with the location, documentation (on an approximately scaled site map), and screening of all potentially impacted receptors within 1,000 feet of the facility being investigated. A receptor includes any person, structure, surface water body, basement, utility, sensitive habitat, and/or water supply well that are or may be affected by a release. Screening means semi-quantitative measurement for hydrocarbons using properly calibrated field instruments such as organic vapor analysis, immunoassay, and/or explosive limit indicator. One personnel mobilization may be added to this item if it shall be conducted independent of other tasks.

3. COMPREHENSIVE SURVEY includes all tasks associated with the spatial location (both horizontal and elevations) of all existing and former underground storage tanks, lines, dispensers, above and below ground structures, and potential receptors (identified during the receptor survey). This survey shall be performed by a S.C. Certified Surveyor. The cost for travel to and from the site by the certified surveyor and completion of the S.C. Certified Survey Map are included in the rate. The report will include a plat or map signed or certified by the surveyor. Mobilization may not be added to this task. Only one comprehensive survey will be allowed per site.

4. MOBILIZATION / DEMOBILIZATION

a) Drilling or field screening equipment - includes all costs and mileage to transport equipment, materials, and personnel to and from the site to include all hotel, motel, meals, and other per diem costs. One mobilization may be allowed to conduct the field screening using direct push equipment and a second equipment mobilization may be allowed for the drill rig to install permanent monitoring wells. Additional equipment mobilizations will not be allowed for mobilization of drilling support trucks or equipment. More than two equipment mobilizations at any site shall require justification and preapproval by the Department for payment. If the geologist that will oversee field screening or well installation is not associated with the well driller's firm or company, a personnel mobilization, in addition to the equipment mobilization, shall be allowed. The plan shall document and justify more than two equipment mobilizations for a site. If the vertical and horizontal extent of chemicals of concern are not fully defined by the tier report, additional mobilizations may not be approved by the Department.

b) Personnel mobilization includes all personnel travel time, per diem, hotel, motel, food, mileage, equipment, and materials necessary for completion of site activities that do not include mobilization of heavy equipment such as direct push vehicles or drill rigs. As many components as possible should be conducted simultaneously so that unnecessary mobilizations are not conducted (e.g., Aquifer testing can be completed during the same mobilization event as ground-water sample collection, subsequent survey, and a receptor survey.). Additional mobilizations shall not be allowed for several persons or several vehicles all going to the site at the same time. The item number for each personnel mobilization shall be shown on the assessment component cost proposal form.

5. SOIL BORINGS (hand auger) includes all costs to advance the boring(s), collect soil, ground-water or vapor samples as necessary, describe the soil lithology, screen for organic volatiles, and complete the soil boring logs. Soil sample shipping and analytical cost is included in component #10. Boring abandonment may be billed separately. Boring logs or DHEC form 1903s will indicate if installation was by hand auger or machinery e.g., drill rig. Any boring converted to a permanent monitoring well will be compensated only for the installation of the permanent well.

6. FIELD SCREENING/ SOIL BORINGS (requiring equipment - e.g., drilling rig, push technology) includes all personnel, equipment, and materials associated with the advancement of temporary borings/wells, collection of soil, gas, or water samples, and analysis of the samples using field calibrated instruments or test kits e.g., organic vapor analysis, immunoassay, and completion of boring/ well completion logs or DHEC form 1903. If the geologist that will oversee field screening is not associated with the well driller's firm or company, a personnel mobilization, in addition to the equipment mobilization, shall be allowed. Boring or screening logs will indicate the name of the SC Certified Well Driller and if installation was by hand auger or machinery e.g., drill rig, push technology. Any screening point converted to a permanent monitoring well will be compensated only for the installation of the permanent well.

7. SOIL LEACHABILITY MODEL includes all costs associated with the prediction of the fate and transport of petroleum through the soil to the ground water using either the Department's leachability model or any other equivalent method and completion of the Department's form.

8. ABANDONMENT includes all personnel, equipment, and material costs associated with the proper abandonment of temporary or permanent monitoring wells or borings with a borehole diameter exceeding one inch in accordance with the S.C. Well Standards and Regulations R.61-71 under the direct supervision of a certified SC well driller. One mobilization may be added to this task, as appropriate (see #4b above).

9. WELL INSTALLATION includes all personnel, equipment, and materials to install permanent water table, rock wells, and telescoping wells in accordance with the S.C. Well Standards and Regulations R.61-71 under the supervision of a S.C. certified well driller, describe the soil lithology, screen for organic volatiles, develop the well, determine the depth to ground water and free product, containerize all generated drill cuttings and development/purge waters, and complete well completion logs. If the geologist that will oversee field screening is not associated with the well driller's firm or company, a personnel mobilization, in addition to the equipment mobilization, may be allowed. A separate mobilization shall not be allowed for well drilling or other support trucks. A single per rate foot will be charged for each drilled well e.g., a well drilled 20 feet in saprolite and 20 foot in bedrock will be considered 40 feet of rock drilling with only one equipment mobilization. A completed DHEC Form 1903 or similar form indicating the method of well installation e.g., hand auger, air rotary, hollow stem auger will be submitted with the final report.

10. SAMPLE COLLECTION includes all personnel, equipment, and materials necessary for purging, collection of samples, preparation of vapor or ground-water samples, and shipment to a laboratory. The collection cost includes all instruments required to document well purging has been accomplished (e.g., pH meter, conductance meter, thermometer, water probe) and/or dissolved oxygen levels. Additionally, sample collection shall include collection of free phase product in a well provided the collection of free product is not part of a free product recovery test (component #13). Analytical cost (component #11) is not included in this rate. This rate does not apply to more than three downgradient ground water samples collected for field screening (component #6). The three downgradient ground water samples will be sent to a certified laboratory. One collection event shall be allowed for each media collected at a well or receptor e.g., one ground-water and one vapor sample, both from the basement of a building adjacent to a UST site, shall be considered two separate sample collection events. Sampling ground water in a monitoring well for dissolved oxygen and obtaining a ground water sample for BTEX, MtBE, and RCRA Metals shall all be one sample collection event. Air or vapor samples must be collected in a metal cylinder. The soil sample collection fee is included in the boring, screening, or well rate.

11. ANALYSES includes all personnel, sample containers, coolers, ice, equipment for analysis by a S.C. certified laboratory and reporting of the results using appropriate chain of custody, field notes, and certificates of analysis in accordance with the latest RBCA, Analytical Methodology for Petroleum Releases document, and SW-846. Chain of custody and field notes should be included with the final report. The eight (8) oxygenates are: ethanol, ethyl tert-butyl alcohol (ETBA), ethyl tert-butyl ether (ETBE), tert-amyl methyl ether (TAME), diisopropyl ether (DIPE), tert-butyl formate (TBF), tert-butyl alcohol (TBA), and tert-amyl alcohol (TAA). The eight (8) RCRA metals are: arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver. Rush analysis will be 24 hour analysis by the laboratory, with written results provided to the UST project manager within 48 hours of sample collection. Mobilization may not be added to this task.

12. AQUIFER CHARACTERIZATION includes all personnel, equipment, and materials to complete a pumping test or slug test, record and report all data, reduce the data, and summarize it on the Department's pumping test or slug test report forms. Mobilization may be added to this task when not combined with other tasks (see #4b above).

13. FREE PRODUCT RECOVERY RATE TEST includes all personnel, equipment, and materials to perform a free product recovery, bail down, or bail out test, calculate the free product recharge rate and true thickness, summarize the data in a tabular format, and discuss the results in a succinct narrative. Mobilization may be added to this task where appropriate (see #4b above).

14. FATE/TRANSPORT MODELING includes all personnel, equipment or materials, and computer software to complete fate and transport modeling of petroleum in soil, ground water, and /or vapors using mathematical or computer models, as appropriate. Mobilization may not be added to this task.

    A) A mathematical model is one where calculations are completed using either a hand calculator or a computer spreadsheet and the final output solely results in a set of calculated numbers e.g., Domenico, MODFLOW, or AT 123D output in tabular data or a computer spread sheet. Calculation of several chemicals of concern using the same model e.g., Domenico shall be considered one model. Calculation for several exposure pathways in the same medium e.g., ground-water, shall be considered one model since only a distance to each exposure point would change.

    B) A computer model includes any computer software and the calibration of the model to the current site conditions which uses an iterative or complex approach to solve mathematical expressions, and produces computer generated input and output data summaries, figures, or charts to interpret fate and transport of chemicals of concern through a medium e.g., DSS, BIOPLUME II, BIOSCREEN. Natural attenuation measurements and calibration to existing analytical data must be included as part of the modeling effort. A separate model will be allowed for each medium if a separate model was used e.g., using AT 123D, SESOIL and Box models for ground water, soil, and vapors would be three models; using the RBCA tool kit that calculates soil, ground water, and vapors with a single entry of field or laboratory data would be one computer model. Calculation of several chemicals of concern and/ or calculation for several exposure pathways in the same medium e.g., ground-water, will be considered one computer model.

15. TIER I RISK EVALUATION includes all personnel, equipment, and materials necessary to evaluate the site data and potential receptors in order to determine the most appropriate action in accordance with the Department's Risk-Based Corrective Action Guidance. Either a Tier I OR a Tier II evaluation (not both for the same report) shall be requested. Mobilization may not be added to this task.

    TIER II RISK EVALUATION includes all personnel, equipment, and materials necessary to evaluate the site data and potential receptors in order to determine the most appropriate action for the site in accordance with the Department's Risk-Based Corrective Action Guidance. Tier II evaluation includes all Tier I evaluation tasks. Mobilization may not be added to this task.

16. SUBSEQUENT SURVEY includes all personnel, equipment, and materials necessary for a person to determine the location and elevation of screening points and permanent wells to be included in an existing comprehensive survey. A subsequent survey may be performed by a South Carolina certified surveyor or a person trained in surveying procedures. Mobilization may be added to this task, where appropriate (see #4b above).

17. DISPOSAL includes all personnel, equipment, and materials to obtain signatures on manifests, load, transport, and treat wastewater, free product, and soil. Only one personnel mobilization may be added for this task. All disposal tasks (soil and ground water) shall occur at the same time.

18. MISCELLANEOUS includes all tasks or items not included in any of the defined components which shall be needed on a site-specific basis. Actual expenditures documented by vendor receipts or employee rate without fringes must be submitted with the invoice, e.g., laboratory invoice for special analytical method, rental contract for free product recovery equipment. All costs for the environmental contractor or any subcontractor must be preapproved. Items will receive no markup or handling fee other than item 19. If a geologist or technician will oversee a task and is not associated with the firm or company conducting the task, a personnel mobilization for the geologist or technician may be allowed.

19. ASSESSMENT REPORT/PROJECT COORDINATION includes all personnel, equipment, and material cost to complete a report documenting the data, results, and conclusions of all components completed during that phase of work. Also includes all personnel oversight and miscellaneous costs associated with procuring subcontractors, coordination of the project to include disposal of generated waste and off site access, verification of work, communication with any parties, invoicing, and coordination with the department. The sum of all components may be multiplied by this percentage and then added to the total for a Tier II Assessment Report, Monitoring Report, or Well Abandonment Report. Any report that interprets the geology or ground water flow will be signed and sealed by a professional geologist or engineer licensed to practice in the state of South Carolina. Any report must be submitted by a DHEC certified site rehabilitation contractor. Mobilization may not be added to this task. If the UST owner or operator and the site environmental contractor have a familial or financial relationship, this item shall not be allowed.

ATTACHMENT

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EXCAVATION/TRANSPORTATION/DISPOSAL/BACKFILL
COSTS

Site		Excavation		Transportation		Disposal		E+T+D		Backfill
1		$ 20.00		$ 15.00		$ 15.00		$ 50.00		$ 15.00
2		$ 16.85		$ 7.63		$ 27.55		$ 52.03		$ 11.79
3		$ 12.00		$ 10.00		$ 22.50		$ 44.50		$ 16.00
4		$ 11.24		$ 11.24		$ 35.21		$ 57.69		$ 14.94
5		$ 16.82		$ 13.42		$ 27.00		$ 57.24		$ 9.00
6		$ 4.80		$ 22.00		$ 27.00		$ 53.80		$ 15.00
7		$ 9.75		$ 10.00		$ 22.25		$ 42.00		
8								$ 51.00		$ 18.50
9								$ 49.86		$ 15.71
10								$ 50.00		$ 18.00
11		$ 10.00		$ 15.00		$ 21.00		$ 46.00		$ 18.00
12		$ 15.00		$ 8.00		$ 12.00		$ 35.00		
13		$ 2.75		$ 18.50		$ 20.00		$ 41.25		$ 19.90
14		$ 11.00		$ 4.29		$ 8.60		$ 23.89		$ 6.90
15		$ 12.00		$ 13.00		$ 25.00		$ 50.00		$ 26.00
16		$ 15.00		$ 12.00		$ 21.00		$ 48.00		$ 15.00
17								$ 36.20		
18		$ 8.00		$ 22.00		$ 27.00		$ 57.00		$ 15.00
19		$ 10.86		$ 14.00		$ 24.50		$ 49.36		$ 22.50
20		$ 10.00		$ 10.00		$ 32.00		$ 52.00		$ 16.00
21		$ 16.00		$ 10.00		$ 12.00		$ 38.00		$ 17.50
22		$ 10.00		$ 10.00		$ 32.00		$ 52.00		$ 16.00
23		$ 5.00		$ 10.00		$ 25.00		$ 40.00		$ 10.00
24		$ 20.00		$ 15.00		$ 25.00		$ 60.00		$ 25.60
25		$ 25.20		$ 6.00		$ 21.60		$ 52.80		$ 7.20
	TOTAL	$ 262.27		$ 257.08		$ 483.21		$ 1,189.62		$ 349.54
	Average	$ 12.49		$ 12.24		$ 23.01		**$ 47.58**		**$ 15.89**
	STD DEV							**$ 8.22**		**$ 4.38**
										$ 76.07

ATTACHMENT

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Laboratory Analysis

Chemical	Note	LAB 1	LAB 2	LAB 3	LAB 4	LAB 5	Average	Propsed Rate
Arsenic TCLP Soil	1	$ 112.00	$ 70.00	$ 85.75	$ 115.75	$ 85.00	$ 93.70	**$ 115.75**
Arsenic Total Soil	2	$ 24.00	$ 25.00	$ 23.25	$ 43.50	$ 40.00	$ 31.15	**$ 43.50**
Arsenic Water	3	$ 24.00	$ 25.00	$ 23.25	$ 33.50	$ 34.00	$ 27.95	**$ 34.00**
Barium TCLP Soil	1	$ 112.00	$ 70.00	$ 78.00	$ 107.75	$ 72.00	$ 87.95	**$ 112.00**
Barium Total Soil	2	$ 24.00	$ 25.00	$ 15.50	$ 35.50	$ 27.00	$ 25.40	**$ 35.50**
Barium Water	3	$ 24.00	$ 25.00	$ 15.50	$ 25.50	$ 22.00	$ 22.40	**$ 25.50**
BETX Soil with MTBE (EPA 8260)	4	$ 90.00	$ 82.00	$ 91.25	$ 87.00	$ 70.00	$ 84.05	**$ 91.25**
BETX - Water with MTBE (EPA 8260)	4	$ 90.00	$ 70.00	$ 85.00	$ 87.00	$ 70.00	$ 80.40	**$ 90.00**
BOD (Biological Oxygen Demand)		$ 24.00	$ 18.00	$ 42.00	$ 36.00	$ 28.00	$ 29.60	**$ 42.00**
Cadmium TCLP Soil	1	$ 112.00	$ 70.00	$ 85.75	$ 115.75	$ 85.00	$ 93.70	**$ 115.75**
Cadmium Total Soil	2	$ 24.00	$ 25.00	$ 23.25	$ 43.50	$ 40.00	$ 31.15	**$ 43.50**
Cadmium Water	3	$ 24.00	$ 25.00	$ 23.25	$ 33.50	$ 34.00	$ 27.95	**$ 34.00**
Chromium TCLP Soil	1	$ 112.00	$ 70.00	$ 78.00	$ 107.75	$ 72.00	$ 87.95	**$ 112.00**
Chromium Total Soil	2	$ 24.00	$ 25.00	$ 15.50	$ 35.50	$ 27.00	$ 25.40	**$ 35.50**
Chromium Water	3	$ 24.00	$ 25.00	$ 15.50	$ 25.50	$ 22.00	$ 22.40	**$ 25.50**
Corrosivity		$ 12.00	$ 10.00	$ 13.00	$ 15.50	$ 20.00	$ 14.10	**$ 20.00**
Cyanide TCLP Soil	1	$ 130.00	$ 80.00	$ 101.00	$ 123.00	$ 95.00	$ 105.80	**$ 130.00**
Cyanide Total Soil		$ 30.00	$ 35.00	$ 38.50	$ 30.75	$ 35.00	$ 33.85	**$ 38.50**
Cyanide Water		$ 30.00	$ 35.00	$ 38.50	$ 30.75	$ 35.00	$ 33.85	**$ 38.50**
Flash Point or Ignitability Analysis EPA 1010		$ 30.00	$ 25.00	$ 31.75	$ 46.00	$ 30.00	$ 32.55	**$ 46.00**
FOC (Fraction Organic Carbon)		$ 24.00	-	$ 24.25	$ 51.25	$ 50.00	$ 37.38	**$ 51.25**
Fat, Oil, & Grease (FOG)		$ 36.00	$ 50.00	$ 100.00	$ 61.50	$ 50.00	$ 59.50	**$ 100.00**
Iron TCLP Soil	1	$ 112.00	$ 70.00	$ 78.00	$ 107.75	$ 72.00	$ 87.95	**$ 112.00**
Iron Water	3	$ 24.00	$ 25.00	$ 15.50	$ 25.50	$ 22.00	$ 22.40	**$ 25.50**
Lead TCLP Soil	1	$ 112.00	$ 70.00	$ 86.00	$ 115.75	$ 85.00	$ 93.75	**$ 115.75**
Lead Total Soil	2	$ 24.00	$ 25.00	$ 23.50	$ 43.50	$ 40.00	$ 31.20	**$ 43.50**
Lead Water	3	$ 24.00	$ 25.00	$ 23.50	$ 33.50	$ 35.00	$ 28.20	**$ 35.00**
LUST (Priority) Pollutants Soil	5	$ 660.00	$ 710.00	$ 656.25	$ 711.75	$ 725.00	$ 692.60	**$ 725.00**
Mercury TCLP Soil	1	$ 130.00	$ 70.00	$ 86.00	$ 115.75	$ 85.00	$ 97.35	**$ 130.00**
Mercury Total Soil		$ 30.00	$ 25.00	$ 23.50	$ 23.50	$ 25.00	$ 25.40	**$ 30.00**
Mercury Water		$ 30.00	$ 25.00	$ 23.50	$ 23.50	$ 25.00	$ 25.40	**$ 30.00**
Metals TCLP Soil (a combination of all metals) RCRA	6	$ 226.00	$ 175.00	$ 178.50	$ 240.75	$ 217.00	$ 207.45	**$ 240.75**
Metals Total Soil (a combination of all metals) RCRA	6	$ 126.00	$ 130.00	$ 116.00	$ 148.50	$ 172.00	$ 138.50	**$ 172.00**
Metals Water (a combination of all metals) RCRA	6	$ 126.00	$ 130.00	$ 116.00	$ 148.50	$ 167.00	$ 137.50	**$ 167.00**

Laboratory Analysis

Chemical	Note	LAB 1	LAB 2	LAB 3	LAB 4	LAB 5	Average	Propsed Rate
Organic Carbon (ASTM-D 2974-87)		$ 24.00	-	$ 24.25		$ 50.00	$ 32.75	**$ 50.00**
Oxygen (Dissolved)		$ 24.00	-	$ 13.00	$ 36.00	$ 20.00	$ 23.25	**$ 36.00**
Paint Filter (Free Liquids)		$ 12.00	$ 10.00	$ 13.00	$ 15.50	$ 15.00	$ 13.10	**$ 15.50**
PCB / Pesticides (combination)		$ 180.00	$ 240.00	$ 212.75	$ 225.00	$ 250.00	$ 221.55	**$ 250.00**
PCBs		$ 120.00	$ 100.00	$ 90.25	$ 92.25	$ 150.00	$ 110.50	**$ 150.00**
Pesticides		$ 120.00	$ 140.00	$ 122.50	$ 138.25	$ 175.00	$ 139.15	**$ 175.00**
pH		$ 12.00	$ 10.00	$ 13.00	$ 15.50	$ 15.00	$ 13.10	**$ 15.50**
phenol		$ 30.00	$ 25.00	$ 39.75	$ 36.00	$ 35.00	$ 33.15	**$ 39.75**
Poly Nuclear Aromatics PNA, or PAH SOIL EPA 8270	7	$ 150.00	$ 210.00	$ 126.00	$ 138.25	$ 135.00	$ 151.85	**$ 210.00**
Poly Nuclear Aromatics PNA, or PAH WATER EPA 8270	7	$ 150.00	$ 210.00	$ 126.00	$ 138.25	$ 135.00	$ 151.85	**$ 210.00**
Reactivity		$ 60.00	$ 65.00	$ 78.00	$ 66.75	$ 70.00	$ 67.95	**$ 78.00**
Selenium TCLP Soil	1	$ 112.00	$ 70.00	$ 86.00	$ 115.75	$ 85.00	$ 93.75	**$ 115.75**
Selenium Total Soil	2	$ 24.00	$ 25.00	$ 23.50	$ 43.50	$ 40.00	$ 31.20	**$ 43.50**
Selenium Water	3	$ 24.00	$ 25.00	$ 15.50	$ 25.50	$ 35.00	$ 25.00	**$ 35.00**
Silver TCLP Soil	1	$ 112.00	$ 70.00	$ 78.00	$ 107.75	$ 72.00	$ 87.95	**$ 112.00**
Silver Total Soil	2	$ 24.00	$ 25.00	$ 15.50	$ 35.50	$ 27.00	$ 25.40	**$ 35.50**
Silver Water	3	$ 24.00	$ 25.00	$ 15.50	$ 25.50	$ 22.00	$ 22.40	**$ 25.50**
SVOC - Soil (Semi Volatile Organic Compounds)		$ 300.00	$ 350.00	$ 281.25	$ 307.50	$ 325.00	$ 312.75	**$ 350.00**
SVOC - Water (Semi Volatile Organic Compounds)		$ 300.00	$ 350.00	$ 281.25	$ 307.50	$ 325.00	$ 312.75	**$ 350.00**
TKN (Total Kjeldahl) "nitrogen"		$ 48.00	$ 35.00	$ 38.50	$ 56.00	$ 40.00	$ 43.50	**$ 56.00**
TOC (Total Organic Carbon) EPA 9060A		$ 30.00	$ 25.00	$ 33.00	$ 36.00	$ 30.00	$ 30.80	**$ 36.00**
TPH (Total Petroleum Hydrocarbons)	8	$ 100.00	$ 160.00	$ 87.50	$ 102.50	$ 160.00	$ 122.00	**$ 160.00**
VOC (Volatile Organic Compound) - Soil (Non-Aqueous)		$ 180.00	$ 192.00	$ 170.00	$ 179.50	$ 150.00	$ 174.30	**$ 192.00**
VOC (Volatile Organic Compound) - Water		$ 180.00	$ 180.00	$ 154.50	$ 179.25	$ 150.00	$ 168.75	**$ 180.00**
Waste Characterization (Landfill Analysis)	9							
Geo-Technical								
Bulk Density ASTM D4292 / D2937		$ 12.00	-	$ 18.25		$ 35.00	$ 21.75	**$ 35.00**
Ex-Situ Hydraulic Conductivity / Permeability		$	-	$ 255.00			$ 255.00	**$ 255.00**
Moisture Content ASTM D2216-90 / D4643-87		$ 12.00	-	$ 12.50		$ 10.00	$ 11.50	**$ 12.50**
Porosity		$	-	$ 105.00			$ 105.00	**$ 105.00**
Rock Hydraulic Conductivity Ex-situ		$	-	$ 350.00			$ 350.00	**$ 350.00**
Sieve / Particle Size Analysis ASTM D422-63 / D1140-54		$	-	$ 140.00		$ 150.00	$ 145.00	**$ 150.00**
Soil Classification ASTM D2488-90 / D2487-90								

Laboratory Analysis

Chemical	Note	LAB 1	LAB 2	LAB 3	LAB 4	LAB 5	Average	**Propsed Rate**
Dry Weight Reporting (per sample)	10		$ 10.00	$ 12.50	$ 8.00	$ 10.00	$ 10.13	**$ 12.50**
Turnaround Surcharge	11							
4 Day			50%	25%	25%	25%	31%	**50%**
3 Day		50%	100%	50%	50%	50%	60%	**100%**
2 Day		100%	100%	100%	75%	100%	95%	**100%**
1 Day		100%	100%	125%	100%	200%	125%	**200%**
Note 1: Price incudes preparation at the rate of:		$ 100.00		$ 62.50	$ 92.25	$ 60.00	$ 78.69	**$ 100.00**
Note 2: Price incudes preparation at the rate of:		$ 12.00			$ 20.00	$ 15.00	$ 15.67	**$ 20.00**
Note 3: Price incudes preparation at the rate of:		$ 12.00			$ 10.00	$ 10.00	$ 10.67	**$ 12.00**

Note 4: BTEX by method 8021 approved but not listed
Note 5: Volatiles, semivolitiles, pesticides and PCBs
Note 6: Seven LUST Metals including all Preps
Note 7: PNAs by 8310 approved by not listed
Note 8: TPH includes GRO and DRO
Note 9: Specific analyses not defined
Note 10: Only applys to soil samples
Note 11: Normal TAT is 5-7 work days

ATTACHMENT

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TCLP IN SOILS

CONSTITUENT	LAB MAX	PREP FEE	USED IN RULE	AMOUNT ALLOWED	USED IN RULE
Arsenic	$93.70	$78.69	$79.00	$15.01	$16.00
Barium	$87.95	$78.69	$79.00	$9.26	$10.00
Cadmium	$93.70	$78.69	$79.00	$15.01	$16.00
Chromium	$87.95	$78.69	$79.00	$9.26	$10.00
Cyanide	$105.80	$78.69	$79.00	$27.11	$28.00
Iron	$87.95	$78.69	$79.00	$9.26	$10.00
Lead	$93.75	$78.69	$79.00	$15.06	$16.00
Mercury	$97.35	$78.69	$79.00	$18.66	$19.00
Selenium	$93.75	$78.69	$79.00	$15.06	$16.00
Silver	$87.95	$78.69	$79.00	$9.26	$10.00

TOTAL IN SOILS

CONSTITUENT	LAB MAX	PREP FEE	USED IN RULE	AMOUNT ALLOWED	USED IN RULE
Arsenic	$31.15	$15.67	$16.00	$15.48	$16.00
Barium	$25.40	$15.67	$16.00	$9.73	$10.00
Cadmium	$31.15	$15.67	$16.00	$15.48	$16.00
Chromium	$25.40	$15.67	$16.00	$9.73	$10.00
Cyanide	$33.85	$0.00		$33.85	$34.00
Iron*	$31.15	$15.67	$16.00	$15.48	$16.00
Lead	$31.20	$15.67	$16.00	$15.53	$16.00
Mercury	$25.40	$15.67	$16.00	$9.73	$10.00
Selenium	$31.20	$15.67	$16.00	$15.53	$16.00
Silver	$25.40	$15.67	$16.00	$9.73	$10.00

TOTAL IN WATER

CONSTITUENT	LAB MAX	PREP FEE	USED IN RULE	AMOUNT ALLOWED	USED IN RULE
Arsenic	$27.95	$10.67	$11.00	$17.28	$18.00
Barium	$22.40	$10.67	$11.00	$11.73	$12.00
Cadmium	$27.95	$10.67	$11.00	$17.28	$18.00
Chromium	$22.40	$10.67	$11.00	$11.73	$12.00
Cyanide	$33.85	$0.00	$0.00	$33.85	$34.00
Iron	$22.40	$10.67	$11.00	$11.73	$12.00
Lead	$28.20	$10.67	$11.00	$17.53	$18.00
Mercury	$25.40	$0.00	$0.00	$25.40	$26.00
Selenium	$25.00	$10.67	$11.00	$14.33	$15.00
Silver	$22.40	$10.67	$11.00	$11.73	$12.00

*Iron Total Soil assumed from other metals

ATTACHMENT

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AVERAGE $/HOUR COST
PERSONNEL

SITE		20&45 DAY		HOURS		OVERSIGHT		HOURS
1		-$8,500.00				$7,200.00		100
2		$12,360.00		138		$4,550.00		63
3		$12,342.00		164.5		$6,652.50		120.5
4		$3,780.00		54		$2,250.00		25
5		$12,059.00		148.4				
6		$5,122.75		64.75		$4,198.15		65
7		$2,685.00		43		$975.00		13
8		$1,250.00		25		$1,700.00		34
9		$3,200.00		42		$2,287.50		30.5
10		$3,722.70		50		$2,870.00		41
11		$7,257.00		90		$13,167.00		151
12		-$6,625.00				-$6,270.00		
13		$8,377.50		103.5		$7,600.00		80
14		$6,320.00		78		$800.00		10
15		$2,195.00		35				
16		$4,044.75		48.5				
17		$3,800.00		53		$8,236.00		96
18		$3,439.50		45.5				
19		$2,205.75		29.5		$740.00		9
	TOTAL	$79,035.95		1212.65		$56,956.15		838
	AVERAGE	$4,649.17		71.33235		$3,797.08		55.86667
	AVERAGE $/HOUR =			$65.18		AVERAGE $/HOUR =		$67.97
INCLUDES UST REMOVAL OVERSIGHT				AMOUNTS NOT INCLUDED (# OF HOURS UNKNOWN)				

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METHOD 1 AND 2 SITE INVESTIGATIONS
PERSONNEL COSTS

SITE #	Personnel
1	$ 12,370.00
2	$ 16,050.00
3	$ 11,540.00
4	$ 6,624.00
5	$ 11,425.00
6	$ 9,760.00
7	$ 11,835.00
8	$ 9,760.00
9	$ 2,800.00
10	$ 6,660.00
11	$ 3,310.00
12	$ 10,455.00
13	$ 11,350.00
14	$ 13,080.00
15	$ 14,890.00
16	$ 6,140.00
17	$ 6,736.00
18	$ 13,165.00
19	$ 10,992.00
20	$ 3,830.00
21	$ 3,830.00
22	$ 13,165.00
23	$ 5,600.00
24	$ 13,465.00
25	$ 10,675.00
26	$ 9,770.00
27	$ 12,590.00
28	$ 9,440.00
29	$ 10,795.00
30	$ 14,650.00
31	$ 9,975.00
32	$ 9,130.00
AVERAGE	**$ 9,870.53**

Brenda Boehner
Notary Public

OFFICIAL SEAL
BRENDA BOEHNER
NOTARY PUBLIC, STATE OF ILLINOIS
MY COMMISSION EXPIRES 11-14-2005

STATE OF ILLINOIS)
)
COUNTY OF SANGAMON)

PROOF OF SERVICE

I, the undersigned, on oath state that I have served the attached Errata Sheet and Prefiled Testimony of Doug Clay, Hernando Albarracin, Doug Oakley, Brian Bauer and Harry Chappel on behalf of the Illinois Environmental Protection Agency upon the person to whom it is directed, by placing a copy in an envelope addressed to:

Dorothy M. Gunn, Clerk
Pollution Control Board
James R. Thompson Center
100 West Randolph St., Ste 11-500
Chicago, Illinois 60601
(Overnight Mail)

Marie Tipsord, Hearing Officer
Pollution Control Board
James R. Thompson Center
100 W. Randolph, Ste 11-500
Chicago, Illinois 60602
(Overnight Mail)

See Attached Service List

and mailing it from Springfield, Illinois on 3-5-04

SUBSCRIBED AND SWORN TO BEFORE ME
this 5th day of March, 2004

Brenda Boehner
Notary Public

OFFICIAL SEAL
BRENDA BOEHNER
NOTARY PUBLIC, STATE OF ILLINOIS
MY COMMISSION EXPIRES 11-14-2005

THIS FILING IS SUBMITTED ON RECYCLED PAPER

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	Joe Kelly, PE		
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	Lisa Frede		
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	Tom Herlacher, P.E., Principal Engineer		
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	Dorothy M. Gunn, Clerk of the Board		
	Marie Tipsord, Hearing Officer		
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	James E. Huff, P.E.		
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	Melanie LoPiccolo, Office Manager		

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Illinois Department of Natural Resources Interested Party	One Natural Resources Way Jonathan Furr, General Counsel	Springfield IL 72702-1271	217/782-1809 217/524-9640
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MACTEC Engineering & Consulting, Inc. Interested Party	8901 N. Industrial Road Terrence W. Dixon, P.G.	Peoria IL 61615	
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	Ken Miller, Regional Manager		
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	Russ Goodiel, Project Manager		
Secor International, Inc. Interested Party	400 Bruns Lane	Springfield IL 62702	
	Daniel J. Goodwin		