

Request for Bid

Fixed-Price Defined Scope of Work

To Conduct Additional Site Investigation Activities.

Solicitor

Duquesne Light Company

McKeesport Service Center

139 Atlantic Avenue, City of McKeesport, Allegheny County, PA

PADEP Facility ID #: 02-13363 PAUSTIF Claim #: 2009-0156 (S)

Date of Issuance

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The Pennsylvania Underground Storage Tank Indemnification Fund (PAUSTIF), on behalf of the claimant who hereafter is referred to as the Client or Solicitor, is providing this Request for Bid (RFB) to prepare and submit a bid to complete the Scope of Work (SOW) for the referenced site. The Solicitor has an open claim with the PAUSTIF and the corrective action work will be completed under this claim. Reimbursement of Solicitor-approved, reasonable and necessary costs up to claim limits for the corrective action work described in this RFB will be provided by PAUSTIF. Solicitor is responsible to pay any applicable deductible and/or proration.

Each bid response will be considered individually and consistent with the evaluation process described in the PAUSTIF Competitive Bidding Fact Sheet, which can be downloaded from the PAUSTIF website <http://www.insurance.pa.gov>.

Calendar of Events

Activity	Date and Time
Notification of Intent to Attend Site Visit	July 8, 2013 by 5 p.m.
Mandatory Pre-Bid Site Visit	July 9, 2013 at 11 a.m.
Deadline to Submit Questions	July 23, 2013 by 5 p.m.
Bid Due Date and Time	July 30, 2013 by 3 p.m.

Contact Information

ICF International	Solicitor	Technical Contact
Bethany Smith ICF International, Inc. 4000 Vine Street Middletown, PA 17057 Phone: 800.888.7843 Bethany.Smith@icfi.com	John Bigi Duquesne Light Company McKeesport Service Center 139 Atlantic Avenue McKeesport, PA 15135	J. Neil Ketchum, P.G. Groundwater Sciences Corp. 2601 Market Place Street Suite 310 Harrisburg, PA 17110 Phone: 717.901.8197 nketchum@groundwatersciences.com

All questions regarding this Request for Bid (RFB) and the subject site conditions must be directed via e-mail to the Technical Contact identified above with the understanding that all questions and answers will be provided to all bidders. The email subject line must be **“Duquesne Light McKeesport Service Center PAUSTIF #2009-0156(S) – RFB QUESTION”**. Bidders must neither contact nor discuss this RFB with the Solicitor, PAUSTIF, the Pennsylvania Department of Environmental Protection (PADEP), or ICF International (ICF) unless approved by the Technical Contact. Bidders may discuss this RFB with subcontractors and vendors to the extent required for preparing the bid response.

Requirements

Mandatory Pre-Bid Site Meeting

The Solicitor, the Technical Contact, or their designee will hold a mandatory site visit on the date and time listed in the calendar of events to answer questions and conduct a site tour for one participant per bidding company. This meeting is mandatory for all bidders, no exceptions. This meeting will allow each bidding company to inspect the site and evaluate site conditions. **A notice of the bidder's intent to attend this meeting is requested to be provided to the Technical Contact via email by the date listed in the calendar of events with the subject "Duquesne Light McKeesport Service Center PAUSTIF #2009-0156(S) – SITE MEETING ATTENDANCE NOTIFICATION"**. The name and contact information of the company participant should be included in the body of the e-mail.

Submission of Bids

To be considered for selection, **one hard copy of the signed bid package and one electronic copy (one PDF file on a compact disk (CD) included with the hard copy) must be provided directly to the PAUSTIF's third party administrator, ICF, to the attention of the Contracts Administrator.** The Contracts Administrator will be responsible for opening the bids and providing copies to the Technical Contact and the Solicitor. Bid responses will only be accepted from those companies that attended the mandatory pre-bid site meeting. **The ground address for overnight/next-day deliveries is ICF International, 4000 Vine Street, Middletown, PA 17057, Attention: Contracts Administrator. The outside of the shipping package containing the bid must be clearly marked and labeled with "Bid – Claim # 2009-0156(S)".** Please note that the use of U.S. Mail, FedEx, UPS, or other delivery method does not guarantee delivery to this address by the due date and time listed in the Calendar of Events for submission. Companies mailing bids should allow adequate delivery time to ensure timely receipt of their bid.

The bid must be received by 3 p.m., on the due date shown in the Calendar of Events. Bids will be opened immediately after the 3 p.m. deadline on the due date. Any bids received after this due date and time will be time-stamped and returned. If, due to inclement weather, natural disaster, or any other cause, the PAUSTIF's third party administrator, ICF's office is closed on the bid due date, the deadline for submission will automatically be extended to the next business day on which the office is open. The PAUSTIF's third party administrator, ICF, may notify all companies that attended the mandatory site meeting of an extended due date.

The hour for submission of bids shall remain the same. Submitted bid responses are subject to Pennsylvania Right-to-Know Law.

Bid Requirements

The Solicitor wishes to execute a mutually agreeable contract with the selected consultant ("Remediation Agreement"). The Remediation Agreement is included as Attachment 1 to this Request for Bid. The bidder must identify and document in their bid any modifications that they wish to propose to the Remediation Agreement language in Attachment 1 other than obvious modifications to fit this RFB (e.g., names, dates and descriptions of milestones). The number and scope of any modifications to the standard agreement language will be one of the criteria used to evaluate the bid. **Any bid that does not clearly and unambiguously state whether the bidder accepts the Remediation Agreement language in Attachment 1 "as is", or that does not provide a cross-referenced list of requested changes to this agreement, will be considered non-responsive.** This statement should be made in a Section in the bid entitled "Remediation Agreement". Any proposed changes to the agreement should be specified in the bid; however, these changes will need to be reviewed and agreed upon by both the Solicitor and the PAUSTIF.

The selected consultant will be provided an electronic copy (template) of the draft Remediation Agreement in Microsoft Word format to allow agreement-specific information to be added. The selected consultant shall complete the agreement-specific portions of the draft Remediation Agreement and return the document to the Technical Contact within 10 business days from date of receipt.

The Remediation Agreement fixed costs shall be based on unit prices for labor, equipment, materials, subcontractors/vendors and other direct costs. The total cost quoted in the bid by the selected consultant will be the maximum amount to be paid by the Solicitor unless a change in scope is authorized and determined to be reasonable and necessary. There may be deviations from and modifications to this Scope of Work (SOW) during the project. The Remediation Agreement states that any significant changes to the SOW will require approval by the Solicitor, PAUSTIF, and PADEP. NOTE: Any request for PAUSTIF reimbursement of the reasonable costs to repair or replace a well will be considered on a case-by-case basis.

The bidder shall provide its bid cost using the Bid Cost Spreadsheet (included as Attachment 2) with descriptions for each task provided in the body of the bid document. Please note if costs are provided within the text of the submitted bid and there is a discrepancy between costs listed in the Bid Cost Spreadsheet and in the text, the costs listed within the Bid Cost Spreadsheet will

be used in the evaluation of the bid and in the Remediation Agreement with the selected consultant. Bidders are responsible to ensure spreadsheet calculations are accurate.

In addition, the bidder shall provide:

1. The bidder's proposed unit cost rates for each expected labor category, subcontractors, other direct costs, and equipment;
2. The bidder's proposed markup on other direct costs and subcontractors (if any);
3. The bidder's estimated total cost by task consistent with the proposed SOW identifying all level-of-effort and costing assumptions; and
4. A unit rate schedule that will be used for any out-of-scope work on this project.

Each bid will be assumed to be valid for a period of up to 120 days after receipt unless otherwise noted. The costs quoted in the Bid Cost Spreadsheet will be assumed to be valid for the duration of the Remediation Agreement.

Please note that the total fixed-price bid must include all costs, including those cost items that the bidder may regard as "variable". These variable cost items will not be handled outside of the total fixed price quoted for the SOW. Any bid that disregards this requirement will be considered non-responsive to the bid requirements and, as a result, will be rejected and will not be evaluated.

Each bid response document must include at least the following:

1. Demonstration of the bidder's understanding of the site information provided in this RFB, standard industry practices, and objectives of the project.
2. A clear description, specific details, and original language of how the proposed work scope will be completed for each milestone. The bid should specifically discuss all tasks that will be completed under the Remediation Agreement and what is included (e.g., explain groundwater purging/sampling methods, which guidance documents will be followed, what will be completed as part of the site specific work scope/SCR/RAP implementation). Recommendations for changes/additions to the Scope of Work proposed in this RFB shall be discussed, quantified, and priced separately; however, failure to bid the SOW "as is" may result in a bid not being considered.
3. A copy of an insurance certificate that shows the bidder's level of insurance consistent with the requirements of the Remediation Agreement. Note: The selected consultant shall submit evidence to the Solicitor before beginning work that they have procured and will maintain Workers Compensation; commercial general and contractual liability;

commercial automobile liability; and professional liability insurance commensurate with the level stated in the Remediation Agreement and for the work to be performed.

4. The names and brief resumes/qualifications of the proposed project team including the proposed Professional Geologist and Professional Engineer (if applicable) who will be responsible for overseeing the work and applying a professional seal to the project deliverables (including any major subcontractor(s)).
5. Responses to the following specific questions:
 - a. Does your company employ a Pennsylvania-licensed Professional Geologist that is designated as the proposed project manager? How many years of experience does this person have?
 - b. How many Pennsylvania Chapter 245 projects is your company currently the consultant for in the PADEP Region where the site is located? Please list up to ten.
 - c. How many Pennsylvania Chapter 245 Corrective Action projects involving an approved SCR, RAP and RACR has your company and/or the Pennsylvania-licensed Professional Geologist closed (i.e., obtained Relief from Liability from the PADEP) using any standard?
 - d. Has your firm ever been a party to a terminated PAUSTIF-funded Fixed-Price (FP) or Pay-for-Performance (PFP) contract without attaining all of the Milestones? If so, please explain.
6. A description of subcontractor involvement by task. Identify and describe the involvement and provide actual cost quotations/bids/proposals from all significant specialized subcontracted service (e.g., drilling/well installations, laboratory, etc.). If a bidder chooses to prepare its bid without securing bids for specialty subcontract services, it does so at its own risk. Added costs resulting from bid errors, omissions, or faulty assumptions will not be considered for PAUSTIF reimbursement.
7. A detailed schedule of activities for completing the proposed SOW including reasonable assumptions regarding the timing and duration of Solicitor reviews (if any) needed to complete the SOW. Each bid must provide a schedule that begins with execution of the Remediation Agreement with the Solicitor and ends with completion of the final Milestone proposed in this RFB. Schedules must also indicate the approximate start and end of each of the tasks/milestones specified in the Scope of Work, and indicate the timing of all proposed key milestone activities.
8. A description of how the Solicitor, ICF and the PAUSTIF will be kept informed as to project progress and developments, and how the Solicitor (or designee) will be informed of and participate in evaluating technical issues that may arise during this project.

9. A description of your approach to working with the PADEP. Describe how the PADEP would be involved proactively in the resolution of technical issues and how the PADEP case team will be kept informed of activities at the site.

10. Key exceptions, assumptions, or special conditions applicable to the proposed SOW and/or used in formulating the proposed cost estimate. Please note that referencing extremely narrow or unreasonable assumptions, special conditions and exceptions may result in the bid response being deemed “unresponsive”.

General Site Background and Description

Each bidder should carefully review the existing information and documentation provided in Attachment 3. The information and documentation has not been independently verified. Bidders may wish to seek out other appropriate sources of information and documentation specific to this site. If there is any conflict between the general site background and description provided herein and the source documents within Attachment 3, the bidder should defer to the source documents.

Site Name / Address / Location: Duquesne Light Company McKeesport Service Center, 139 Atlantic Avenue, City of McKeesport, Allegheny County, PA. The approximate latitude and longitude of the Site are: 40d 21m 05.95s / 79d 52m 20.42s.

PAUSTIF Eligibility: Following the documented release from the unleaded gasoline underground storage tank (UST) system in 2009, the Solicitor filed a claim with the PAUSTIF and eligibility was granted under PAUSTIF Claim No. 2009-0156(S). PAUSTIF has agreed to 100% reimbursement of Solicitor-approved reasonable and necessary costs up to claim limits for the corrective action work described in this RFB.

Site Use Description: The Site is currently used as a service center for Duquesne Light Company (an electrical utility company).

Current Petroleum Storage on Site: Based on the characterization activities conducted at the Site to date, there are no petroleum storage tanks on the Site.

Nature of Confirmed Release and Subsequent Activities: The following information is based on the documents provided in Attachment 3. This information has not been independently verified by ICF or the Technical Contact.

The site is situated on land between the Youghiogheny and Monongahela Rivers. According to the reviewed documents, two 10,000-gallon USTs and an associated dispenser island were closed by removal in November 2009. The USTs contained unleaded gasoline and diesel fuel at the time of closure. Ten soil samples were collected at the time of closure. One of these samples (A-Gas/3.5') had reported concentrations of analyzed substances that exceeded the used aquifer, non-residential Statewide Health Standard Medium Specific Concentrations (SHS MSCs) for 1,2,4- and 1,3,5-trimethylbenzene. This sample was located beneath the gasoline

dispenser at a depth of 3.5 feet below grade (fbg).

In April 2010, an interim remedial action (IRA) in the form of a soil excavation was conducted to address the soil contamination identified by the UST closure confirmation samples. Approximately 70 tons of soil was excavated during two excavations beneath the former dispenser area. The first excavation extended to approximately 11.5 fbg. The excavation depth following the second excavation was 17.5 fbg. According to the SCR text and SCR Figure 3, the excavation footprint was approximately 10 feet by 10 feet.

Six soil samples were collected during the IRA activities. The reported concentrations from two of the samples (Disp. E / 11.5' and Disp. F / 17.5') exceeded the SHS MSCs for multiple analyzed substances including 1,2,4- and 1,3,5-trimethylbenzene and benzene. The total of the reported concentrations in sample Disp. F / 17.5' was over 17,000,000 ug/kg or 1.7% analyzed petroleum substances by weight. Excavation activities were not continued below a depth of 17.5 fbg and the excavation was reportedly backfilled with clean material. During the backfilling, slotted PVC piping was installed in the excavation to assist with remedial activities following the completion of the Site characterization.

In August and September 2010, 19 soil samples were collected from 11 soil borings advanced at the Site. Sampling results from eight of these samples showed concentrations exceeding the SHS MSCs for petroleum substances.

Ten monitoring wells were constructed in the soil borings. Groundwater sampling results showed concentrations exceeding the SHS MSCs in samples collected from six of the ten monitoring wells.

A Site Characterization Report (SCR) for the Site was submitted on December 7, 2010 and a Remedial Action Plan (RAP) was submitted on January 21, 2011. The RAP specified the use of a combination of soil vapor extraction (SVE) and enhanced bioremediation to remediate the site and demonstrate attainment of the non-residential, used-aquifer, Statewide Health Standard for both soil and groundwater. The RAP proposed to install "approximately seven dual purpose wells" for the remediation. These wells were proposed to be connected to a one to three-horsepower vacuum/blower. The air discharge from the blower would be treated with granular activated carbon units. The enhanced bioremediation proposed in the RAP was to inject an "enhanced liquid mixture (ELM)" to stimulate biodegradation of contaminants in soil and groundwater. According to the RAP, the ELM will consist of a mixture of nutrients and oxygenated water and will be delivered through the proposed vapor extraction wells and through the piping already installed in the former excavation.

In a letter dated February 7, 2011, the PADEP approved the RAP as submitted. This letter did not reference the SCR and no documentation regarding the PADEP's review of, or action taken on, the SCR was provided. The PADEP approval letter stated, in part:

If at any time you wish to modify any part of this RAP, which you probably will

have to revise after a year, you must request approval for such a change with written correspondence to the Department.

After coordination with PADEP and ICF/PAUSTIF, an additional 12 soil borings (SB-13 through SB-24) and six monitoring wells (MW-13 through MW-18) were installed at the Site (September/October 2011). Twenty-two soil samples were collected from the 12 borings. Sampling results from 11 of these samples showed concentrations greater than the SHS MSCs for analyzed substances.

Separate Phase Liquid (SPL) was observed in monitoring well MW-7 on March 30, 2011 and has been present in this well since that time. Measured SPL thicknesses have reportedly range between 0.32 to 1.09 feet. SPL recovery has been conducted since discovery. From March 2011 through May 2012, SPL was recovered during quarterly Site visits using a disposable bailer. Since May 2012, a passive recovery device has been installed in MW-7. Reportedly, less than two gallons of SPL have been recovered in well MW-7 to date.

Current Conditions: Groundwater sampling has been conducted quarterly since August 2010. Remedial Action Progress Reports (RAPRs) have been included in Attachment 3. These documents include summaries of the chemistry, groundwater elevations, groundwater elevation and chemistry contour maps, and narratives of activities conducted during the reporting period. GSC has prepared and attached Figures 1 through 14 which summarize soil and groundwater (March and June 2012 events) sampling results at the Site.

Scope of Work (SOW)

This RFB seeks competitive bids from qualified contractors to perform the activities in the Scope of Work (SOW) specified herein. This defined SOW has been reviewed by the PADEP.

Objective

This defined SOW is designed to further the corrective action at the site with the installation of additional monitoring wells, continued quarterly sampling of groundwater, and the evaluation of potential vapor intrusion at the Site.

Constituents of Concern (COCs)

The constituents of concern (COCs) at this site are the substances on the current PADEP short list for unleaded gasoline (benzene, cumene, ethylbenzene, MTBE, naphthalene, toluene, total xylenes, 1,2,4-trimethylbenzene, and 1,3,5-trimethylbenzene).

General SOW Requirements

The bidder's approach to completing the SOW shall be in accordance with generally accepted industry standards/practices and all applicable federal, state, and local rules, regulations, guidance, and directives. The latter include, but are not limited to, meeting the applicable requirements of the following:

- The Storage Tank and Spill Prevention Act (Act 32 of 1989, as amended),
- Pennsylvania Code, Title 25, Chapter 245 - Administration of the Storage Tank Spill and Prevention Program,
- The Land Recycling and Environmental Remediation Standards Act of 1995 (Act 2), as amended),
- Pennsylvania Code, Chapter 250 - Administration of Land Recycling Program, and
- Pennsylvania's Underground Utility Line Protection Law, Act 287 of 1974, as amended by Act 121 of 2008.

During completion of the milestone objectives specified below and throughout implementation of the project, the selected consultant shall:¹

¹ As such, all bids shall include the costs of these activities and associated functions within the quote for applicable tasks/milestones.

- Conduct necessary, reasonable, and appropriate project planning and management activities until the project (i.e., Remediation Agreement) is completed. Such activities may include Solicitor communications/updates, meetings, record keeping, subcontracting, personnel and subcontractor management, quality assurance/quality control, scheduling, and other activities (e.g., utility location). Project planning and management activities will also include preparing and implementing plans for Health and Safety, Waste Management, Field Sampling/Analysis, and/or other plans that are necessary and appropriate to complete the SOW, and shall also include activities related to establishing any necessary access agreements. Project planning and management shall include identifying and taking appropriate safety precautions to not disturb site utilities; including but not limited to, contacting Pennsylvania One Call as required prior to any ground-invasive work. As appropriate, project management costs shall be included in each bidder's pricing to complete the milestones specified below.
- Be responsible for coordinating, managing, and completing the proper management, characterization, handling, treatment, and/or disposal of all impacted soils, water, and derivative wastes generated during the implementation of this SOW. The investigation-derived wastes, including purge water shall be disposed of in accordance with standard industry practices and applicable laws, regulations, guidance, and PADEP directives. Waste characterization and disposal documentation (e.g., manifests) shall be maintained and provided to the Solicitor and the PAUSTIF upon request.
 - **If the site is located in PADEP Southwest Region:** All investigation derived wastes shall be handled and disposed of per PADEP's Southwest Regional Office guidance. Investigation derived wastes include personal protective equipment, disposable equipment, soil and drill cuttings and groundwater obtained through monitoring well development and purging, as well as equipment decontamination fluids. Investigation derived wastes must be containerized in DOT-approved drums and staged on-site in a pre-determined location, pending results of laboratory analyses and selection of final disposal method(s). Each container must be labeled to indicate contents, site location and date of generation. It is the selected consultant's responsibility to conform with current PADEP Southwest Regional Office guidance requirements.
 - **If the site is located in any PADEP Region other than Southwest:** All investigation derived wastes shall be handled and disposed of per PADEP's Regional Office guidance. It is the selected consultant's responsibility to conform with current PADEP Regional Office guidance requirements in the region where the site is located.

- Be responsible for providing the Solicitor and facility operator with adequate advance notice prior to each visit to the property. The purpose of this notification is to coordinate with the Solicitor and facility operator to ensure that appropriate areas of the property are accessible. Return visits to the site will not constitute a change in the selected consultant's SOW or result in additional compensation under the Remediation Agreement.

Site –Specific Milestones

Milestone A. Initial Groundwater Sampling and Reporting:

Groundwater samples shall be collected from the sixteen (16) existing monitoring wells (MW-1, MW-2, MW-3, MW-4, MW-5, MW-7, MW-9, MW-10, MW-11, MW-12, MW-13, MW-14, MW-15, MW-16, MW-17, and MW-18) prior to the installation of the additional groundwater monitoring wells (Milestone B). NOTE: It is not required that well MW-7 be sampled if SPL is present in the well. However, well MW-7 shall be sampled if SPL is not present during the sampling event. The wells shall be purged and sampled in accordance with standard industry practices and applicable laws, regulations, guidance and PADEP directives (e.g., most-recent version of the PADEP Groundwater Monitoring Guidance Manual) and analyzed for the COCs by a PA-certified laboratory using EPA Method SW846 8260.

Prior to sample collection, all the wells on the Site shall be gauged. Depth-to-water measurements shall be completed using a probe capable of distinguishing water and/or the presence or absence of SPL to the nearest 0.01 feet. The depth to water shall be recorded and then used to determine the water level elevations within each well. The groundwater elevations in wells that contain SPL shall be corrected for product thickness.

A quarterly progress report shall be prepared and submitted to the PADEP in accordance with 25 PA Code 245.312(b) and (c) and document the results of the quarterly groundwater sampling including (1) depth to water (and/SPL if present) and groundwater elevation of the water surface in each of the wells; (2) results of the analytical testing of the groundwater in the wells; (3) groundwater elevation contour map; and (4) groundwater isoconcentration maps for each COC reported at a concentration exceeding the Nonresidential SHS MSC.

This groundwater sampling event shall be conducted within 30-days of the execution of the Remediation Agreement.

Additionally, the bidder shall provide an all-inclusive fixed unit cost (per well) for the reduction in the number of wells sampled. This unit rate will be used to adjust the milestone reimbursement in the event all of the proposed wells are not sampled.

Milestone B. Installation of Four (4) Additional Onsite Groundwater Monitoring Wells

Four additional groundwater monitoring wells shall be installed onsite to further characterize groundwater impacts. The proposed locations of the wells are shown on Figure 15 and are subject to appropriate clearance for utilities. The groundwater monitoring wells should be constructed in a manner similar to the existing monitoring wells on the Site. The exact well completion details shall be proposed by the bidder and will be used to evaluate the bidder's understanding of the Site and technical capabilities.

Continuous geological characterization (boring logs) and screening of soil from well borings using a photoionization detector (PID) (using headspace measurements) shall be conducted during installation. Continuous geological logs shall be prepared by or under the supervision of a Professional Geologist licensed in the Commonwealth for each boring using standard and consistent classification system procedures (Modified Burmister or USCS).

All monitoring wells shall be completed at the surface with a securable manhole, set in concrete flush with the ground surface. A locking, pressure fit, watertight cap shall be used to prevent the infiltration of surface runoff and rainwater and to restrict access by unauthorized individuals.

Following installation, the wells shall be developed in accordance with standard industry practices and applicable laws, regulations, guidance and PADEP directives (e.g., most-recent version of the PADEP Groundwater Monitoring Guidance Manual). The wells shall not be sampled within 14 days of development. Additionally, the wells shall be surveyed to identify their locations on a scaled base Site plan and to determine top of casing elevations (elevation above mean sea level). NOTE: The elevation of the Youghiogheny River shall be measured during the survey activities. Additionally, an elevation datum shall be established to allow for a determination of the Youghiogheny River elevation during groundwater gauging events so that the river elevation can be incorporated into the groundwater elevation contour maps.

Well installation, development, and surveying shall be completed within 60 days of the execution of the Remediation Agreement or within an alternative timeframe agreed to (in writing) with the Solicitor and ICF/PAUSTIF.

Milestone C. Performance of Single Well Aquifer Testing

Following the installation and development of the above-mentioned monitoring wells, single well aquifer testing ("slug" or "pulse" tests) shall be performed. Both rising head and falling head tests shall be performed in accordance with standard industry practices and applicable guidance on four of the Site monitoring wells. The aquifer test data should be analyzed by a Professional Geologist licensed in the Commonwealth using standard industry practices and applicable guidance. The specific wells to be tested shall be proposed by the bidder and will be used to evaluate the bidder's understanding of the Site and technical capabilities.

Milestone D. Installation and Sampling of Fourteen (14) Additional Soil Borings

Fourteen (14) additional soil borings shall be installed on the Site to further refine the soil characterization. The location of ten (10) of these borings is shown on Figure 2. The locations of the remaining four (4) borings shall be determined by the selected consultant.

The borings should be advanced to approximately 24 feet below grade (fbg) and continuous geological logs shall be prepared by or under the supervision of a Professional Geologist licensed in the Commonwealth for each boring using the same standard and consistent classification system procedure (Modified Burmister or USCS) used during the installation of the monitoring wells described in MILESTONE B. Soil samples shall be screened at two-foot intervals with a PID (using headspace measurements).

For each soil boring, a minimum of two discrete soil samples shall be collected. Based on historical sampling data (included in **Attachment 3**), it is anticipated that the soil samples will be collected from between 14 fbg and 24 fbg. Each sample should be collected from:

- A depth interval with a PID response significantly greater than the typical reading for that boring and that has a PID response greater than 100 ppm (if present), and/or
- A depth coincident with the water table

Assume for the purpose of this RFB, that 28 soil samples will be collected (2 soil samples from each of the 14 soil borings). Soil samples will be collected in laboratory-provided containers in accordance with EPA Method 5035 and analyzed for the COCs by EPA Method SW846 8260 by a PADEP-certified laboratory.

Milestone E. Quarterly Groundwater Sampling and Reporting

Following the installation and development of the additional groundwater monitoring wells described in MILESTONE B, two consecutive quarters of groundwater sampling shall be conducted. Each quarterly sampling event shall include all monitoring wells (including the additional monitoring wells from MILESTONE B). The first of these two quarterly groundwater sampling events shall occur during the quarter following the initial groundwater sampling event described in MILESTONE A.

Groundwater samples shall be collected from the 19 monitoring wells existing after the completion of MILESTONE B. The wells shall be purged and sampled in accordance with standard industry practices and applicable laws, regulations, guidance and PADEP directives (e.g., most-recent version of the PADEP Groundwater Monitoring Guidance Manual) and analyzed for the COCs by a PA-certified laboratory using EPA Method SW846 8260.

Prior to sample collection, all the wells on the Site shall be gauged. Depth-to-water measurements shall be completed using a probe capable of distinguishing water and/or the presence or absence of SPL to the nearest 0.01 feet. The depth to water shall be recorded and

then used to determine the water level elevations within each well. The groundwater elevations in wells that contain SPL shall be corrected for product thickness.

A quarterly progress report shall be prepared and submitted to the PADEP in accordance with 25 PA Code 245.312(b) and (c) and document the results of the quarterly groundwater sampling including (1) depth to water (and/SPL if present) and groundwater elevation of the water surface in each of the wells; (2) results of the analytical testing of the groundwater in the wells; (3) groundwater elevation contour map; and (4) groundwater isoconcentration maps for each COC reported at a concentration exceeding the Nonresidential SHS MSC.

Additionally, the bidder shall provide an all-inclusive fixed unit cost (per well) for the reduction in the number of wells sampled. This unit rate will be used to adjust the milestone reimbursement in the event all of the proposed wells are not sampled.

Milestone F. Evaluation of Potential Vapor Intrusion

Four (4) soil vapor sampling points (SVPs) shall be installed on the Site to evaluate the potential for vapor intrusion into current and potential future Site buildings. The locations of the proposed soil vapor points shall be determined by the selected consultant. The proposed locations, exact completion details, and the associated rationale for each shall be included in the bid and will be evaluated as part of the bid evaluation.

Each SVP shall be installed in a soil boring installed to a depth greater than three feet below grade but above the water table. The SVP assembly shall consist of small diameter Teflon tubing, connected to a six-inch long stainless steel mesh screen by a barbed or compression-type fitting, and an anchor that is threaded onto the bottom of the screen. The assembly shall be lowered into the borehole until the anchor is set in a six-inch deep sand sump placed at the bottom of the borehole. Sand is then poured into the boring to no more than six inches above the top of the screen. Granular bentonite shall then be poured on top of the sand and hydrated to a depth of about six inches below grade. A flush-mounted manhole shall be installed to protect the points from damage. An alternative completion may also be proposed that will allow for the collection of discrete samples.

Two rounds of soil vapor samples shall be collected from each point. The first sampling event shall be no sooner than seven days after the installation of the SVP and the second sampling event shall be at least 30 days after the first. Soil vapor samples shall be collected in 6-liter laboratory-provided stainless steel evacuated cylinders connected to laboratory-calibrated flow controllers set to a maximum flow rate of 200 ml/min. QA/QC will consist of one ambient air sample and one duplicate. All samples shall be analyzed for the COCs by EPA Method TO-15 by a NELAP-certified laboratory.

Soil vapor sampling results will be compared to PADEP soil gas MSCs. The soil gas MSCs represent an attenuation factor of 100 times the Residential Indoor Air Medium-Specific

Concentrations (MSCs) referenced in Table 3 (Appendix D) of the *Land Recycling Program Technical Guidance Manual – Section IV.A.4 – Vapor Intrusion in Buildings from Groundwater and Soil under the Act 2 Statewide Health Standard*.

The results of this milestone shall be reported in the second Remedial Action Progress Report in Milestone E above.

Additional Information

In order to facilitate PAUSTIF's review and reimbursement of invoices submitted under this claim, the Solicitor requires that project costs be invoiced by the milestone tasks identified in the bid. The standard practice of tracking total cumulative costs by milestone will also be required to facilitate invoice review. Actual milestone payments will occur only after successful and documented completion of the work defined for each milestone. The selected consultant will perform only those tasks/milestones that are necessary to reach the Objective identified in this RFB. Selected consultant will not perform, invoice, or be reimbursed for any unnecessary work completed under a Milestone.

Any "new conditions", as defined in Attachment 1, arising during the execution of the SOW for any of the milestones may result in termination of or amendments to the Remediation Agreement. All necessary modifications to the executed Remediation Agreement will require the prior written approval of the Solicitor and the PAUSTIF. PADEP approval may also be required.

List of Attachments

1. Remediation Agreement
2. Bid Cost Spreadsheet
3. Site Information/Historic Documents
 - a. GSC Figures 1 through 15
 - b. UST Closure Report (November 30, 2009)
 - c. Site Characterization Report (December 07, 2010)
 - d. Remedial Action Plan (January 10, 2011)
 - e. PADEP RAP Approval (February 7, 2011)
 - f. Remedial Action Progress Report (April 29, 2011)
 - g. Remedial Action Progress Report (July 29, 2011)
 - h. Remedial Action Progress Report (May 15, 2012)
 - i. Remedial Action Progress Report (August 15, 2012)
 - j. Remedial Action Progress Report (November 20, 2012)
 - k. Remedial Action Progress Report (February 11, 2013)
 - l. Remedial Action Progress Report (May 7, 2013)