COMPETITIVE BID SOLICITATION FOR THE COMPLETION OF A SITE CHARACTERIZATION REPORT AND A REMEDIAL ALTERNATIVES EVALUATION

Bethlehem Municipal Garage
540 Stefko Boulevard
Bethlehem, PA 18017
PADEP FACILITY ID #48-19594
USTIF CLAIM #99-0083(F)

January 7, 2013

The Pennsylvania Underground Storage Tank Indemnification Fund (USTIF) on behalf of the claimant for the above referenced claim is soliciting bidders for a fixed price contract project. Specifically, this Request for Bid (RFB) is seeking qualified firms to prepare and submit a fixed price proposal to complete a Site Characterization Report (SCR) and a remedial alternatives evaluation for the Bethlehem Municipal Garage (Site) in Bethlehem, Pennsylvania. A petroleum release has been confirmed at the Site and a SCR is still needed to meet the Pennsylvania Department of Environmental Protection (PADEP) characterization requirements. The Solicitor has an open claim (Claim #1999-0083(F)) with the USTIF and the work outlined in this RFB will be completed under this aforementioned claim. The claim is subject to 85% proration and as such 85% of the reimbursement of Solicitor-approved reasonable, necessary and appropriate costs (within claim limits) for the work described in this RFB will be provided by USTIF with the remaining 15% to be paid by the solicitor.

This RFB includes five (5) major components with subtasks presented in an outline format for cost analysis and implementation. The fixed costs proposed by the consultant bidder shall be based on the scope of work provided in the RFB. Expenses in excess of the quoted price for the contract shall be the consultant's responsibility. The scope and budget for any identified out of scope activities must be pre-approved to be eligible for payment. Any costs associated with deviations from the scope that did not receive prior approval from the solicitor and USTIF, or its representatives, will not be reimbursed.

Specifically, this RFB seeks competitive bids from qualified consultants to complete additional characterization activities, prepare an appropriate SCR, evaluate potential remedial strategies, and facilitate progress towards site closure in a timely, efficient, and cost effective manner.

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 Fund's third party administrator, ICF International (ICF), to the attention of Deb Cassel, Contracts Administrator.** She 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 firms who 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: Deb Cassel. The outside of the shipping package containing the bid response must be clearly marked and labeled with "Bid – Claim #1999-0083(F)". 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 below for submission. Firms mailing bid responses should allow adequate delivery time to ensure timely receipt of their bid package.

The bid response must be received by 3:00 PM, on Wednesday, February 13, 2013. Bids will be opened immediately after the 3:00 PM deadline on the due date. Any bid packages 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 Fund's third party administrator, ICF's office is closed on the bid response due date, the deadline for submission will automatically be extended to the next business day on which the office is open. The Fund's third party administrator, ICF, may notify all firms who attended the mandatory site meeting of an extended due date. The hour for submission of bid responses shall remain the same. Submitted bid responses are subject to Pennsylvania Right-to-Know Law.

On behalf of ICF and USTIF, the Technical Contact will assist the Solicitor in evaluating the bids but the Solicitor will ultimately choose with whom to negotiate the mutually agreeable contract. The bid evaluation will consider, among other factors, total bid cost, unit costs, schedule, qualifications, and contract terms and conditions (no priority or relative weighting is implied by the order of these factors). The Solicitor anticipates informing the selected consultant with an approval to proceed within twelve (12) weeks of the bid response deadline. Please note that when the contract is in place with the consultant selected by the Solicitor, all other firms submitting bid packages will be notified that the contract was awarded.

ICF REPRESENTATIVE AND TECHNICAL CONTACT INFORMATION

ICF Representative

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NOTE: All questions regarding this RFB solicitation and the subject site conditions must be directed to the Technical Contact and submitted in writing with the understanding that all questions and answers will be provided to all bidders. If questions are to be submitted via email, please note the following in the subject line of the email: Bethlehem Municipal Garage RFB Questions Claim No. 99-0083(F). Bidders must neither contact nor discuss this RFB Solicitation with the Solicitor, USTIF, or ICF unless approved by the Technical Contact. Bidders may

discuss this RFB solicitation with subcontractors and vendors to the extent required for preparing the bid response.

SITE LOCATION, OPERATION, AND BACKGROUND INFORMATION

The following information summarizes, and is derived from, relevant information provided in previous environmental reports, including the reports attached to this RFB. If there is any conflict between the summary provided herein and the source documents, the bidder should defer to the source documents. The information included in this section has not been independently verified by ICF or the Technical Contact.

Site Address

Bethlehem Municipal Garage
540 Stefko Boulevard
Bethlehem, PA 18017
City of Bethlehem, Northampton County

Site Location and Operation Information

The Site is a maintenance garage and office facility for the City of Bethlehem (claimant). The Site is located at the intersection of Broad Street and Stefko Boulevard in Bethlehem, Pennsylvania. The Site has two (2) buildings and is mostly paved with some small grass and wooded areas. The surrounding properties are a mix of residential properties and commercial properties. Available information indicates Bethlehem Water Authority provides public water to the Site and surrounding properties.

Site Background Information

An UST System Closure Report Form and a Notification of Reportable Release (NORR) dated November 23, 1998, was completed by Skelly and Loy, Inc. (S&L). A summary of key facts included in these forms follows:

- The Site was constructed in 1978 as a municipal garage and four (4) USTs (Tanks 001 through 004) were installed at this time. Tanks 001 and 002 were 10,000 gallon unleaded gasoline USTs, Tank 003 was a 10,000 gallon diesel UST and Tank 004 was a 1,000 gallon used motor oil UST.

- Tanks 001 – 004 were excavated and removed from the Site on November 19, 1998 & November 20, 1998. The USTs and product piping were indicated to be in "good to fair condition". However, Tanks 002 and 003 were indicated as being "leakers". S&L indicates that "all of the soil surrounding Tank 004 was uncontaminated", but contaminated soil was encountered during the removal of the other three (3) USTs.

- Contaminated soil was also found beneath the gasoline dispensers in the fueling area. A total of 620.72 tons of contaminated soil was removed from the excavation of the gasoline and diesel USTs and the gasoline dispenser area. Bedrock, groundwater and free product were not encountered during the excavation activities. New gasoline and diesel USTs and product piping were placed in the excavation after the old tanks were disposed of. The used motor oil UST was not replaced.

- At the bottom of the waste oil UST excavation, seven (7) feet below surface grade (ftbsg), was a concrete pad used to hold the tank in place. On November 19, 1998, four (4) confirmatory soil samples (SS#1U through SS#4U) were collected, one (1) soil sample from each edge of the concrete pad. One (1) soil sample (SS#5) was also collected on this date from below the former remote fill at approximately three (3) ftbsg. The samples were analyzed for used motor oil parameters utilizing EPA methods 5035/8021B and 8270, and ICP in accordance with PADEP guidance for the closure of underground storage tank systems. No compounds of concern (COCs) were detected in any of the soil samples analyzed.

- At the bottom of the gasoline and diesel USTs excavation (fifteen (15) feet below surface grade (ftbsg)) was a concrete pad used to hold the tanks in place. Four (4) confirmatory soil samples (SS#1 through SS#4), one (1) soil sample from each edge of the concrete pad, were collected on November 20, 1998. The soil samples were analyzed for unleaded gasoline and diesel parameters utilizing EPA methods 5035/8260B and 8270 in accordance with PADEP guidance for the closure of underground storage tank systems. None of the COCs were detected in any of the soil samples above the selected PADEP Statewide Health Standards (SHS).

- Three (3) confirmatory soil samples (DSS-1, DSS-2 and DSS-3) were collected from the bottom of the product piping/dispenser island excavation on December 2, 1998. DSS-1 was collected from below the former gasoline dispensers at 14 ftbsg, DSS-2 was collected from under the product piping at 3.5 ftbsg, and DSS-3 was collected below the former diesel dispenser at 3.5 ftbsg and. The soil samples were analyzed for unleaded gasoline and diesel parameters. Sample DSS-1 exhibited concentrations of naphthalene detected above the selected PADEP SHS. DSS-2 and DSS-3 had laboratory reporting limits which were higher than the selected MSCs for benzene and MTBE, leaving the results for these two (2) COCs inconclusive.

A UST Site Characterization Report (SCR), dated October 20, 2000, was prepared by URS Corporation (URS). A summary of key facts included in the SCR follows:

- A soil boring investigation was completed at the Site on March 28, 2000 utilizing a Geoprobe® direct push unit. Six (6) soil borings (MG B-1 through MG B-6) were advanced to a maximum depth of sixteen (16) ftbsg. The borings were advanced to refusal into limestone bedrock from four (4) to sixteen (16) ftbsg. Soil boring logs can be found in Appendix B of the SCR. Groundwater was not encountered. The soil samples

were analyzed for unleaded gasoline and diesel parameters utilizing EPA methods 5035/8260B and 8270 in accordance with PADEP Guidance for the Closure of Underground Storage Tank Systems. None of the COCs were detected in any of the soil samples collected.

- Monitoring well MW-1 was drilled utilizing air-rotary methods and installed at the Site to a total depth of 76 ftbsg on May 11, 2000. MW-1 is constructed of two-inch, schedule 40 PVC with a 0.010 slot screen from 56 – 76 ftbsg. The depth to groundwater was first recorded on May 12, 2000 at 50.78 ftbsg.

- MW-1 was sampled on May 12, 2000 and the groundwater samples were sent for laboratory analysis of unleaded gasoline and diesel parameters utilizing EPA methods 8260 and 8270 in accordance with PADEP guidance for the closure of underground storage tank systems. None of the COCs were detected in the groundwater sample above the selected PADEP SHS.

- Based on a well database search and an interview with the City of Bethlehem Water Department, the Site is connected to public water and no public water supply wells exist within a one-half mile radius of the Site.

- "Based on the groundwater and soil analytical results of the UST Site Characterization, URS recommends no additional work in relation to the two (2) removed 10,000 gallon unleaded gasoline, 10,000 gallon diesel fuel UST or the 1,000 used motor oil USTs."

In a letter dated June 23, 2003, URS summarizes additional site characterization work that was recommended by PADEP during an April 2, 2003 site meeting. URS planned the following site characterization activities:

1. The City of Bethlehem (City) will evaluate their records to assess whether or not the former used oil UST contained strictly waste oil or if other potential substances have been placed in the UST.

2. No COCs have been detected in groundwater therefore, assuming that the target COCs correctly characterize the tank contents, URS proposes no further groundwater characterization at the Site.

3. URS confirmed that the water table in MW-1 is within the screened interval of the well indicating that the primary recharge to this well is from the water-bearing zone located within the screened interval.

4. Additional soil delineation around the existing UST dispenser and product piping will be performed. URS will also revisit former soil sample locations around the UST field for further vertical delineations. Soil samples will be collected and analyzed for priority

pollutants based on acknowledgement from the City to the presence of chlorinated compounds identified during waste removal.

5. The City confirmed that leaded gasoline was discontinued at their facilities in 1976. URS proposed three (3) soil sampling locations to satisfy the delineation requirements of the Act 2 program.

6. URS will prepare a SCR addendum to finalize site characterization.

A UST SCR Addendum and Remedial Action Completion Report (SCRA/RACR) were completed by URS and dated March 20, 2006. A summary of key facts included in this report follows:

- The City confirmed that the waste oil UST stored waste motor oil only and was always tested prior to off-site disposal. The City reported that on one (1) occasion chlorine was present in the analyses. As a result, the City changed to a non-chlorinated brake cleaning agent.

- On January 31, 2006, URS advanced seven (7) soil borings (MG-3 through MG-9) utilizing a Geoprobe® direct push unit. Borings MG-3 through MG-6 were advanced around the former UST excavation to revisit previous sampling locations in an attempt to provide additional vertical delineation of the soil surrounding the former UST excavation. Borings MG-7 through MG-9 were advanced around the existing dispenser island to provide additional delineation of soil quality in the vicinity of the former dispenser where COCs were present above the selected PADEP SHS. The borings were advanced to refusal, which ranged from six (6) ftbsg to sixteen (16) ftbsg. The boring logs were included in Appendix A of the SCRA/RACR. No water or saturated soil conditions were encountered in any of the soil borings. Soil samples were collected from the bottom two (2) feet of each boring and submitted for laboratory analysis of unleaded gasoline and diesel parameters and lead utilizing EPA methods 8260B, 8270D and 6010B. None of the COCs were detected in any of the soil samples above the selected PADEP SHSs.

In a letter dated May 19, 2006, the PADEP sent a letter to the City stating that the March 20, 2006 SCRA/RACR prepared by URS was disapproved for the following reasons:

1. "A minimum of three (3) monitoring wells will be necessary in order to determine groundwater flow direction. The groundwater samples should be analyzed for the full range of volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs) and dissolved lead. Evaluation of the groundwater data collected from the monitoring wells will determine the need for additional contaminant delineation."

2. "If attainment of the SHS is being pursued for soil, attainment samples must be collected in accordance with the Pennsylvania Code Title 25 §250.703. The soil samples should be

representative of the remediated area with laboratory analysis for the compounds contained in the USTs."

3. "Provide the (PADEP) with information concerning soil samples that were collected under the UST dispenser and piping systems."

A second UST SCRA (SCRA-2) was completed by URS and dated May 29, 2008. A summary of key facts included in this report follows:

- On January 31, 2008, monitoring wells MW-2 and MW-3 were drilled and installed at the Site utilizing air-rotary drilling methods. MW-2 was drilled to a total depth of 70 ftbsg and was constructed of two-inch, schedule 40 PVC with 25 feet of screen and 45 feet of riser. MW-3 was drilled to a total depth of 72 ftbsg and was constructed of two-inch, schedule 40 PVC with 25 feet of screen and 47 feet of riser. Monitoring Well Construction Logs were included in Appendix A of the SCRA-2.

- On March 3, 2008, a four (4) hour pump test was conducted utilizing monitoring well MW-1 as the "pumping well". An estimated total of 24.225 gallons of water were pumped from MW-1 during the test with an average pumping rate of 0.101 gallons per minute (gpm). "No obvious response to the pumping, or cessation of pumping at MW-1 in the non-pumping observation wells MW-2 and MW-3" was indicated.

- On March 3, 2008, groundwater samples were collected from monitoring wells MW-1 through MW-3. The samples were laboratory analyzed for benzene, toluene, ethylbenzene, xylene (BTEX), cumene, naphthalene and MTBE via EPA Method 8260B. The laboratory analytical results indicated all COCs present in MW-3 with benzene and naphthalene detected above the PADEP SHS at 130 micrograms per liter (µg/L) and 120 µg/L, respectively.

In a letter dated August 14, 2008, the PADEP sent a letter to the City stating that the May 29, 2008 SCRA-2 prepared by URS was disapproved for the following reasons:

1. "Based on the Department's review of the report, the one (1) comprehensive groundwater sampling event conducted on March 3, 2008 on monitoring wells MW-1 through MW-3 is not adequate in defining the extent of contamination at the Site. In order to confirm the initial round of groundwater sampling and to determine if additional monitoring wells are needed, an additional round of sampling is warranted."

2. "The Department recommends additional groundwater sampling at the Site should include the parameters on the revised short list (effective March 15, 2008) for petroleum products for unleaded gasoline, specifically, 1,2,4- and 1,3,5-trimethylbenzene."

3. "Provide more information on the monitoring well construction differences between MW-2, MW-3 and MW-1. The Department's review of the geologic cross sections

indicate that monitoring well MW-1 may not be monitoring the same intervals/fractures as monitoring wells MW-2 and MW-3. The aquifer test indicates that there wasn't any influence in MW-2 and MW-3 when pumping from MW-1."

URS prepared a Remedial Action Progress Report dated August 24, 2010. The report summarizes the 2009 and 2010 groundwater sampling program for the Site. A total of five (5) groundwater sampling events were completed at the Site from the start of the quarterly well sampling on May 13, 2009 through June 8, 2010. The groundwater samples collected during each event were laboratory analyzed for PA unleaded gasoline parameters. Groundwater concentrations in wells MW-1 and MW-2 have been below the selected PADEP SHS in all five (5) events. The concentrations of benzene and 1,2,4-trimethylbenzene (1,2,4-TMB) in MW-3 have been above the selected PADEP SHSs in all five (5) events. Benzene concentrations ranged from 29 µg/l (06/08/10) to 53 µg/l (07/22/09) and 1,2,4-TMB concentrations ranged from 48 (06/08/10) to 120 µg/l (07/22/09).

Groundwater samples were collected on August 25, 2010 and laboratory analyzed for PA unleaded gasoline parameters. COC concentrations in MW-1 and MW-2 were below the selected PADEP SHSs. In addition, 1,2,4-TMB was not detected above the PADEP SHS in MW-3 for the first time since the start of the quarterly sampling program on May 14, 2009. Benzene was detected in MW-3 at 11 µg/l, which is considerably less than it was during the previous five (5) sampling events, but still above the applicable PADEP SHS for benzene of 5 µg/l.

In September 2010, URS attempted to install a new monitoring well along the down-gradient property boundary utilizing an air rotary drill rig. The borehole was advanced to 80 ftbsg with bedrock encountered at 57 ftbsg. The bedrock was "extensively fractured throughout the entire length of the boring." The borehole collapsed to approximately 61 ftbsg and groundwater was not encountered in the boring. The borehole was properly abandoned and no monitoring well was installed.

URS prepared a Remedial Action Progress Report dated November 30, 2010. The report summarizes a groundwater sampling event on August 25, 2010 and URS's attempt to install a new downgradient monitoring well.

On November 5, 2012, a workplan was prepared and submitted to PADEP for review and comment. The workplan was prepared to address PADEP's concerns with the Site and complete the characterization. No response was received.

Bidders are directed to the pertinent available documentation (including reports, figures, correspondence and analytical data) that has been provided in Attachment 1 for additional site background details.

PROPOSED SCOPE OF WORK

The scope of work has been prepared using the guidelines of Pennsylvania Code Title 25, Chapter 245 (The Storage Tank and Spill Prevention Program) and Chapter 250 (The Land

Recycling Program). There are several key elements that must be completed in order for the approach outlined in this RFB to be successful. The critical elements include the following:

- Prepare the appropriate project guidance documents;
- Complete a full Sensitive Receptor Survey;
- Complete a site survey, map the important features of the Site and evaluate groundwater flow (Please note that a digital version of the map is not available and as such will not be provided to the selected consultant);
- Conduct a soil boring investigation;
- Complete a fracture trace analysis and geophysical investigation;
- Install overburden/weathered rock monitoring wells;
- Install bedrock monitoring wells;
- Complete aquifer testing on the monitoring well network;
- Complete soil gas sampling;
- Conduct groundwater monitoring and sampling events;
- Complete fate and transport modeling to assess soil, groundwater, and vapor intrusion media pathways to determine if and the extent to which dissolved phase hydrocarbons have or may be expected to migrate beyond the property boundary now or in the future;
- Prepare and submit a SCR;
- Complete a risk assessment evaluation using the applicable guidance documents in an effort to appropriately evaluate exposure pathways;
- Remedial Alternatives Analysis should be completed for the Site to compare cleanup alternatives and evaluate which remedial action is most appropriate for the Site; and
- Prepare a Risk Assessment and Feasible Remedial Alternatives Analysis Report for the Site.

In addition to the above base Scope of Work, the following ***Optional Cost Adders*** need to be addressed in your bid response. These costs adders will not be part of your initially approved

contract. However, if it becomes necessary to complete any of these activities, they will be completed under the Remediation Agreement signed as part of this project.

- ***Optional Cost Adder #1*** – Provide a Unit Cost to complete an additional groundwater monitoring and sampling event. The scope of work for this cost adder should follow Task 3.0.
    - ***Optional Cost Adder #1a -*** The cost provided should be to complete only one (1) event with all wells (proposed and current) in the network being sampled.
    - ***Optional Cost Adder #1b -*** The cost provided should be to sample one (1) additional overburden/weathered bedrock monitoring well during a groundwater sampling event. The provided cost would be to cover all labor, equipment, laboratory, waste, etc.
    - ***Optional Cost Adder #1c -*** The cost provided should be to sample one (1) additional bedrock monitoring well during a groundwater sampling event. The provided cost would be to cover all labor, equipment, laboratory, waste, etc.

- ***Optional Cost Adder #2*** – Provide a Unit Cost to Prepare a Summary Progress Report for submittal to the PADEP. The Progress Report should detail the observations documented during the event, summarize the analytical results, map the groundwater flow direction for the Site, provide iso-concentration maps for compounds exceeding the SWHS, provide hydro-graphs, discuss the interim remediation efforts (if any), and provide additional scheduling details for upcoming events. Once the report is approved by the Solicitor, the report can be finalized and submitted to the PADEP. The progress reports discussed are being proposed to meet the PADEP obligation on progress reporting before RAP approval.

- ***Optional Cost Adder #3*** – Provide a Unit Cost to extend the Pump test for four (4) additional hours at the Site. The pump test would be extended if stabilization does not occur by the end of the eight (8) hour pump test.

- ***Optional Cost Adder #4*** – Provide a Unit Cost to abandon monitoring well(s) in accordance with Pennsylvania Act 610 and the Groundwater Monitoring Guidance Manual dated February 29, 1996. Upon completion, a well abandonment report will be prepared and submitted to the DCNR on behalf of the claimant. Bidders should specify in the bid packages how the wells will be abandoned and the site restoration activities included in the specified costs. Following the installation of the proposed bedrock monitoring wells, the Professional Geologist at the selected consulting firm will review the available construction logs for the current monitoring well network and make a determination as to whether some, none, or all of the wells need to be appropriately abandoned and possibly replaced. Due to the uncertainty as to how many wells may need to be abandoned, please provide costs for the following:

    - ***Optional Cost Adder #4a -*** Abandonment of one (1) of the current monitoring wells.

- ***Optional Cost Adder #4b -*** Abandonment of two (2) of the current monitoring wells during one (1) event.
- ***Optional Cost Adder #4c -*** Abandonment of three (3) of the current monitoring wells during one (1) event.

- ***Optional Cost Adder #5 – Provide a Unit Cost to install one (1) additional overburden/weathered bedrock monitoring well.*** The scope of work for this cost adder should follow Task 2.2.2 construction guidelines. Please provide costs for the following:

  - ***Optional Cost Adder #5a –*** Installation of one (1) additional overburden/weathered bedrock monitoring well during a separate event. The provided cost would be to cover all labor, equipment, subcontractors, waste, etc.
  - ***Optional Cost Adder #5b -*** Installation of one (1) additional overburden/weathered bedrock monitoring well as an add-on to a drilling investigation. The provided cost would be to cover all labor, equipment, subcontractors, waste, etc.

- ***Optional Cost Adder #6 – Provide a Unit Cost to install one (1) additional bedrock monitoring well.*** The scope of work for this cost adder should follow Task 2.2.2 construction guidelines. Please provide costs for the following:

  - ***Optional Cost Adder #6a –*** Installation of one (1) additional bedrock monitoring well during a separate event. Assume the bedrock monitoring well will be installed to a depth of 50 feet. The provided cost would be to cover all labor, equipment, subcontractors, waste, etc.
  - ***Optional Cost Adder #6b -*** Installation of one (1) additional bedrock monitoring as an add-on to a drilling investigation. Assume the bedrock monitoring well will be installed to a depth of 50 feet. The provided cost would be to cover all labor, equipment, subcontractors, waste, etc.
  - ***Optional Cost Adder #6c –*** Per foot cost for drilling and constructing a monitoring well that extends past the 50 foot depth assumed in Optional Cost Adder #6a and #6b. The provided cost would be to cover all labor, equipment, subcontractors, waste, etc.

- ***Optional Cost Adder #7 –*** Provide a Unit Cost to update the Site's survey to include the additional well location(s). The scope of work for this cost adder should follow Task 2.3.

- ***Optional Cost Adder #8 –*** Provide a Unit Cost to secure offsite access on one (1) adjacent residential/commercial property in an effort to install a groundwater monitoring well. The cost should cover the necessary time and materials needed to contact the off-site property owner, draft an access agreement, and obtain approval with one (1) draft revision to the access agreement. The cost does not include any legal fees, payments or permitting costs. Providing this Unit Cost does not commit the consultant to obtain the access agreement.

If necessary, the cost should also cover the necessary time and material needed to provide the PADEP with the information they will require to facilitate access to the property.

The bid package should follow the task format outlined below. Proposals should also include a detailed description of the anticipated costs for each task including labor rates, time requirements, and equipment costs as broken out in the detailed cost sheet included as Attachment 2. The scope of work that we are requesting is provided below:

Task 1.0 Project Planning / Management:

Task 1.1 Preparation of Project Guidance Documents – Proposed documents to be prepared include a site specific health and safety plan, a field sampling and analysis plan, and a quality assurance/quality control plan. Where applicable, the pertinent project guidance documents should be prepared in accordance with Chapter 245.

Task 1.2 Project Management – The successful bidder shall complete necessary, reasonable, and appropriate project management activities for the duration of the contract period consistent with release investigation projects. Such activities would be expected to include client communications / updates, meetings, permitting, record keeping, subcontracting, personnel and subcontractor management, quality assurance / quality control, scheduling and other activities.

Task 1.3 Sensitive Receptor Survey – A Sensitive Receptor Survey (SRS) should be conducted for this Site. Sensitive receptors evaluated for this Site should include area water usage, surface water bodies, and subsurface underground utilities and basements. Submitted bids should specify what activities will be included in the SRS activities (i.e. review of tax maps and property assessment records; area canvass; PNDI search, etc.). A 1,000-foot radius water usage survey should be completed as part of the SRS in an effort to document the area water use. As part of the water usage survey, the selected consultant should complete the following:

1. Conduct a private and public well search by obtaining an area specific report;
2. Obtain and review tax maps for the area;
3. Contact the local municipality and water authority to confirm water usage in the area of the Site and any local restrictions on water usage;
4. Review of previously completed sensitive receptor surveys;
5. Review of county property assessment records;
6. Canvass of the area; and
7. Field verification of water supply to surrounding properties.

Results of the SRS are to be taken into consideration during the execution of the project and are to be summarized and included in the SCR to be submitted to PADEP.

Task 1.4 Fracture Trace Analysis and Geophysical Investigation – In an effort to collect sufficient data to confirm and/or position the bedrock monitoring wells in appropriate locations, the selected consultant will complete a fracture trace analysis as well as a geophysical investigation. A Professional Geologist will attempt the fracture trace analysis; however, there are concerns that the development of the site and surrounding properties may prohibit the collection of sufficient defendable data. As such, a geophysical investigation that includes electrical resistivity imaging and seismic refraction should be completed. The fracture trace analysis and geophysical investigation must be completed prior to the installation of the five (5) bedrock monitoring wells (MW-7, MW-8, MW-9, MW-10 and MW-11). The Professional Geologist will utilize the information from the analysis and investigation as well as actual site conditions to determine the locations of the five (5) proposed bedrock monitoring wells. The SCR will discuss the efforts completed and provide the locations in which the five (5) bedrock monitoring wells were installed.

Task 2.0 Additional Site Characterization and Interim Remedial Activities:

Task 2.1 Soil Boring Investigation – In an effort to delineate the soil at the Site, a soil boring investigation is being proposed at the Site. As part of the investigation, the selected consultant will advance a total of seven (7) soil borings (B-1 through B-7) using direct push sampling approach (e.g., Geoprobe®). Specifics on the proposed investigation are provided below:

- Soil borings will be advanced to groundwater, bedrock, or refusal, whichever is encountered first. However, in the event that there is no evidence of petroleum hydrocarbon impact (includes olfactory, visual, and field instrument detections) for more than 25 feet, then the boring maybe terminated. Soil samples will be collected continuously in five (5) foot intervals and will be logged by an on-site geologist for soil classification and structure, odor, soil moisture, soil texture, color, and screened with a photoionization detector (PID).

- With regards to soil borings SB-1 through SB-7, soils exhibiting the highest PID reading in each borehole will be collected for submittal to a laboratory for analysis. An additional soil sample will be collected at the bedrock interface or just above groundwater in an effort to delineate the soil sample with the highest PID reading. If a boring exhibits no PID readings, a soil sample will be collected from approximately five (5) to six (6) feet below surface grade of the boring and then again at the base or refusal.

- A total of 14 soil samples are proposed to be collected both in laboratory-sterilized sample jars and using the Encore (or equivalent) sampling method. The samples will then be placed on ice and delivered to an accredited laboratory for chemical analysis. Soil samples will be collected and analyzed for the PADEP unleaded gasoline short list (benzene, toluene, ethylbenzene, total xylenes,

MTBE, naphthalene, isopropylbenzene, 1,3,5-trimethylbenzene, and 1,2,4-trimethylbenzene). The analytical data, field results, boring logs, and sampling map from the event will be summarized and included in a SCR.

- The locations of the seven (7) soil borings (B-1 through B-7) are provided on the attached figure for your review. All soil boring locations will be advanced in the locations proposed in the RFB, unless the presence of utilities, obstructions, or safety concerns requires a change in the location. Prior to the advancement of the soil borings, the selected consultant will be required to complete a private markout at the Site to identify the location of obstructions and underground utilities. If due to valid concerns the general locations of the proposed borings need to be altered more than eight (8) feet from the approximate locations provided on the attached figure, then the selected consultant will be required to contact the PADEP, discuss the need for the changes, and provide the PADEP with a revised soil boring location map.

- If a consultant feels it is appropriate and necessary to complete hole clearing activities before advancing the borings, the cost should be included in their proposal and costs. If a consultant includes the cost to complete air-knifing, they should state it in their proposal and discuss why it is appropriate and necessary. As discussed in the RFB, cost is not the only factor when evaluating proposals and other factors are taken into consideration during the review process, including appropriate safety measures.

- In addition, one (1) duplicate sample and one (1) equipment blank sample will be collected and submitted per day of sampling.

- Samples should be properly handled under chain of custody documentation protocol and kept cold from sample collection until the samples are relinquished to the accredited laboratory.

- One (1) soil sample should also be analyzed for fraction of organic carbon and porosity to facilitate modeling efforts (Please make sure you choose the appropriate porosity parameter based on the predictive model selected as part of Task 4.1).

- The laboratory to be utilized should be identified in the bid package. Upon receipt of the results, the consultant should forward a copy of the analytical data to the Solicitor and USTIF (or its designated representative).

- Compile the field findings and laboratory data into a summary table and comprehensive soil boring logs.

Task 2.2 Monitoring well installation activities- For this RFB, a total of five (5) additional bedrock monitoring wells and three (3) overburden/weathered rock monitoring wells are proposed.

Task 2.2.1 Installation of overburden/weathered rock monitoring wells - A total of three (3) monitoring wells (MW-4, MW-5, and MW-6) are proposed for installation to investigate whether a shallow water bearing zone is present in the overburden/weathered rock at the Site. Drilling will be conducted under the supervision of a Pennsylvania-licensed Professional Geologist and the construction specifications will be determined by the Professional Geologist and dictated by actual site conditions (i.e. actual depth to competent bedrock, actual depth to groundwater, etc.).

The wells will be drilled and constructed in accordance with generally accepted practices as outlined in the PADEP Groundwater Monitoring Guidance Manual, dated January 1, 1999 (Document # 383-3000-001). The overburden/weathered rock monitoring wells will be constructed using schedule 40 PVC flush threaded casing and schedule 40 PVC flush threaded 0.010 slot size screening in the well column. The selected consultant will install the wells to a depth above or slightly into the competent rock, but no more that five (5) feet into competent bedrock. A protective flush-mounted manhole will be cemented in place around the PVC riser and finished flush with surface grade. Each monitoring well will be completed with a watertight locking cap for security.

Task 2.2.2 Installation additional bedrock monitoring wells - As part of the characterization activities, the installation of five (5) additional bedrock monitoring wells (MW-7, MW-8, MW-9 MW-10, and MW-11) are being proposed in an effort to complete the delineation efforts in the bedrock aquifer. The Professional Geologist will utilize the information from the fracture trace analysis and geophysical investigation as well as actual site conditions to determine the locations of the five (5) proposed bedrock monitoring wells. The SCR will discuss the efforts completed and provide the locations in which the bedrock monitoring wells were installed.

The five (5) bedrock wells are anticipated to be advanced to a total estimated depth of 70 feet below surface grade. However, based on available information, it is possible that water bearing fractures may be present in the bedrock at shallower depths. As such, the consulting firm selected during the bidding process will be instructed that if water is encountered at a shallower bedrock depth, then it needs to be appropriately investigated. In addition, B&B will remind the selected consulting firm that careful consideration needs to be taken when installing the five (5) proposed bedrock monitoring wells. Specifically, the wells should not be over drilled, under screened, or screened across the overburden and bedrock.

During the installation of the five (5) proposed bedrock monitoring wells, the Professional Geologist may determine that water is present at a shallower bedrock depth and needs to be investigated with additional, appropriately constructed monitoring well(s). The shallower bedrock wells would be constructed as determined appropriate by the Professional Geologist and dictated by actual site conditions.

Drilling is to be conducted under the supervision of a Pennsylvania-licensed Professional Geologist and the construction specifications will be determined by the Professional Geologist and dictated by actual site conditions (i.e. actual depth to bedrock, actual depth to groundwater, etc.). The wells should be drilled and constructed in accordance with generally accepted practices as outlined in the PADEP Groundwater Monitoring Guidance Manual, dated January 1, 1999 (Document # 383-3000-001). Based on anticipated drilling conditions, a Pennsylvania-licensed driller should install the wells using air-rotary methods.

As part of the installation of the additional monitoring wells, the selected consultant should consider the following:

- All monitoring wells will be advanced in the locations proposed in the RFB, unless the presence of utilities, obstructions, or safety concerns requires a change in the location with the exception of the bedrock monitoring wells. The fracture trace analysis and geophysical investigation will be completed prior to the installation of the five (5) bedrock monitoring wells (MW-7, MW-8, MW-9, MW-10 and MW-11). The Professional Geologist will utilize the information from the analysis and investigation as well as actual site conditions to determine the locations of the five (5) aforementioned bedrock monitoring wells. The Site SCR will discuss the efforts completed and provide the locations in which the five (5) bedrock monitoring wells were installed. The proposed locations of the monitoring wells are provided in Attachment 1;

- The wells should be drilled and constructed in accordance with generally accepted practices as outlined in the PADEP Groundwater Monitoring Guidance Manual, dated January 1, 1999 (Document # 383-3000-001);

- Drilling should be conducted under the supervision of a Pennsylvania-licensed Professional Geologist, although a field supervisor may be used in the field on a day-to-day basis. The field supervisor should visually inspect subsurface materials encountered during drilling, screen cuttings with a PID, and complete field well construction logs. When encountered, soils should be described using the Unified Soil Classification System. Bedrock should be described using USGS descriptive protocol, with the identification of the depth of and size of potential fractures and/or other subsurface anomalies;

- The newly installed monitoring wells should be developed to promote adequate hydraulic connection between the aquifer and the well. Depending on the depth and amount of sediment in the well, development should be completed via mechanical surging using either a bailer or an electric submersible pump, or by airlift techniques. The IDW waste and purge water should be disposed of per the PADEP Northeast Regional Office (NERO) guidance; check with the NERO for current requirements. Bidders will be responsible for arranging any offsite waste disposal (if required) and including costs in their bid response to cover the disposal of all potential waste related to the tasks included in the SOW. Please estimate the volume of waste using your professional opinion, experience, and the data provided. Invoices submitted to cover additional costs on waste generated as part of activities included under the fixed price contract for this Site will not be paid. The groundwater may be temporarily stored on site, but should be removed from the Site in a timely manner;

- Soil/rock cuttings and liquids generated during the drilling activities should be disposed of offsite in a manner consistent with the protocols set forth by the PADEP. Disposal of soil/rock cuttings should be arranged through a certified waste disposal subcontractor. In an effort to eliminate or minimize the need for change orders on a fixed price contract, please include costs to dispose of all anticipated volumes of waste in your bid response. ICF and USTIF will not entertain any assumptions on the contract with regards to a volume of waste (i.e. project costs assume that no more than one (1) ton of soil cuttings will require disposal after the installation of the additional monitoring wells). Bidders will be responsible for including costs in their bid response to cover the disposal of all potential waste related to the tasks included in the SOW. Please estimate the volume of waste using your professional opinion, experience, and the data provided. Invoices submitted to cover additional costs on waste generated as part of activities included under the fixed price contract for this Site will not be paid;

- Compile the field findings into comprehensive monitoring well construction diagrams and logs; and

- Following the installation of the proposed bedrock monitoring wells, the Professional Geologist at the selected consulting firm will review the available construction logs for the current monitoring well network and make a determination as to whether some, none, or all of the current wells (MW-1, MW-2, and MW-3) need to be appropriately abandoned and possibly replaced.

Task 2.3 Soil Gas Sampling – During the characterization of the Site, a total of three (3) soil gas samples are proposed to be collected during each of the two (2) soil gas sampling events. Please note that USTIF will only pay the selected firm for the actual number of events conducted (i.e. if a firm includes the costs to complete two (2) events, but only one (1) event is conducted; then the firm will only be paid for the one (1) event completed). The selected consultant should be

prepared to conduct the first soil gas sampling event at the Site within two (2) weeks of the execution of the contract and conduct the second event approximately six (6) weeks after the first event. As part of the soil gas investigation, the selected consultant should consider the following:

- All soil gas points will be advanced in the locations proposed in the RFB, unless the presence of utilities, obstructions, or safety concerns requires a change in the location. The proposed locations of the soil gas points are provided on the attached Site Plan (Figure 1) in Attachment 1.

- The vapor intrusion investigation should be completed in a manner consistent with the Land Recycling Technical Guidance Manual – Section IV.A.4 Vapor Intrusion Into Buildings from Groundwater and Soil under the Act 2 Statewide Health Standards, Document 253-0330-100, dated January 24, 2004.

- Samples should be collected in laboratory provided Summa canisters equipped with laboratory calibrated flow regulators and analyzed for the PADEP Constituents list for unleaded gasoline via TO-15.

- The laboratory to be utilized should be identified in the bid package. Upon receipt of the results, the consultant should forward a copy of the analytical data to the solicitor and USTIF (or its designated representative).

Results from soil gas sampling events will be summarized and presented to the PADEP in the SCR.

Task 2.4 Site Survey – Following the installation of the proposed soil borings, soil gas sampling points, and monitoring wells, a professional survey of the Site by a Pennsylvania-licensed surveyor including all current site features (e.g., buildings, property boundaries, monitoring wells, etc.) shall be completed. All monitoring wells, soil gas sampling points, borings, the Site building, property boundaries and other important Site features are to be surveyed with the purpose of placing their horizontal coordinates on a scaled site map. In addition, the vertical coordinates of the new monitoring well top of casings and surface grade are to be surveyed. The benchmark elevation shall be obtained by referencing the approximate ground surface elevation of the property or from an available benchmark from a USGS topographic map or benchmark elevation marker located at the Site. In conjunction with collecting depth to groundwater readings during sampling events and in an effort to establish groundwater flow in each of the identified water bearing zones at the Site. Tops of casing for the existing monitoring wells will also be surveyed to facilitate the construction of Site wide groundwater flow maps. In addition, the presence of SPL (if detected) will be taken into consideration when calculating the static water levels in the wells and constructing Site wide groundwater flow maps (a groundwater flow map will be generated for each identified aquifer). Groundwater elevation data collected following the installation of the additional monitoring wells along with data from the site survey will be utilized to produce a series of summary figures to be included in the SCR which will

provide additional information as to the groundwater flow direction in each aquifer identified (both overburden and bedrock) at the Site.

Task 2.5 Aquifer testing – Slug tests, Step test and Pump test –

Task 2.5.1 Slug Tests – Rising head slug testing will be conducted on three (3) of the bedrock monitoring wells at the Site. A PVC slug will be used to displace the static water level in the well while a transducer will record water levels before the slug is placed in the well, during the recovery of the water level back to the original static water level, and following the removal of the slug. Transducers should be used to monitor the water levels in the wells during each of the slug tests. The data collected by the transducer during the slug tests, the selected consultant will calculate Site-specific hydrogeologic values including permeability. All of the calculated values will allow for the modeling efforts and risk assessment activities to be conducted with Site specific data rather than using published values. In addition, the data collected during the slug testing of the monitoring wells will be evaluated to determine the appropriate monitoring well to be used for the step test and the eight (8) hour pump test. Results from the slug testing activities are to be summarized and included in the SCR to be submitted to PADEP.

Task 2.5.2 Step Test – The bedrock monitoring well demonstrating the highest permeability during the slug test will be used for the step test and the subsequent eight (8) hour pump test. The selected consultant will conduct a two-hour step test on the well determined by the slug test results to have the highest permeability. The data collected during the step drawdown test will be used to determine an optimal pumping rate and yield for the constant rate pumping test. Results from the step testing activities are to be summarized and included in the SCR to be submitted to PADEP.

Task 2.5.3 Pump Test – Once the pumping rate has been determined, an eight (8) hour constant rate pumping test will be conducted by the selected consultant on the selected bedrock monitoring well at the Site. Transducers will be used to monitor the resultant water levels in the pumping well and surrounding overburden and bedrock monitoring wells to be determined at a later date. Also, the remaining monitoring well network should be gauged periodically throughout the test to provide additional aquifer characterization data. Data collected during the constant rate pumping test will be analyzed and used to calculate Site specific aquifer values including hydraulic conductivity, transmissivity, storage capacity, and groundwater seepage velocity. All of the calculated values will allow for the modeling efforts and risk assessment activities to be conducted with Site specific data rather than using published values. Results from the pump testing activities are to be summarized and included in the SCR to be submitted to PADEP. The IDW waste and purge water should be disposed of per the PADEP Northeast Regional Office (NERO) guidance; check with the NERO for current requirements. Bidders will be responsible for arranging any offsite

waste disposal (if required) and including costs in their bid response to cover the disposal of all potential waste related to the tasks included in the SOW. In an effort to eliminate or minimize the need for change orders on a fixed price contract, please include costs to dispose of all anticipated volumes of waste in your bid response. ICF and USTIF will not entertain any assumptions on the contract with regards to a volume of waste (i.e. Project costs assume that no more than 1,000 gallons of groundwater will require disposal after the completion of the pump test). Bidders will be responsible for including costs in their bid response to cover the disposal of all potential waste related to the tasks included in the SOW. Please estimate the volume of waste using your professional opinion, experience, and the data provided. Invoices submitted to cover additional costs on waste generated as part of activities included under the fixed price contract for this Site will not be paid. The groundwater may be temporarily stored on site, but should be removed from the Site in a timely manner.

Task 3.0 Groundwater Monitoring and Sampling:

Following the installation and development of the five (5) additional bedrock monitoring wells and three (3) shallow monitoring wells, the selected consultant will gauge and sample the expanded monitoring well network. For this RFB, please assume the total number of groundwater monitoring and sampling events that will be needed is two (2) events. Please note that USTIF will only pay the selected firm for the actual number of events conducted (i.e. if a firm includes the costs to complete two (2) events, but only one (1) event is conducted; then the firm will only be paid for the one (1) event completed). The selected consultant should be prepared to conduct the first groundwater sampling event at the Site approximately two (2) weeks after the installation of the proposed monitoring wells and conduct the second event approximately four (4) weeks after the first event. Each event should include the following:

- Collect water level readings from each of the monitoring wells using an interface probe capable of distinguishing water and/or the presence or absence of product to the nearest 0.01 feet;

- Record the depth to water readings from the monitoring wells and then use the data to determine water level elevations such that groundwater flow direction can be confirmed;

- Groundwater sampling activities should be conducted in accordance with generally accepted practices as outlined in the final version of the PADEP Groundwater Monitoring Guidance Manual;

- Prior to the collection of groundwater samples, the water column in each of the monitoring wells should be purged by either the removal of approximately three (3) volumes of the water column or via low flow sampling method;

- Sampling equipment should be decontaminated prior to sample collection in accordance with generally accepted industry practices;

- Following purging activities, groundwater samples should be collected as quickly as practical from each of the wells directly from a bailer into laboratory supplied bottleware;

- The IDW waste and purge water should be disposed of per the PADEP Northeast Regional Office (NERO) guidance; check with the NERO for current requirements. Bidders will be responsible for arranging any offsite waste disposal (if required) and including costs in their bid response to cover the disposal of all potential waste related to the tasks included in the SOW;

- Samples should be properly handled under chain of custody documentation protocol and kept cold from sample collection until the samples are relinquished to the accredited laboratory;

- Groundwater samples collected during each of the events will be sent to an accredited laboratory to be tested for the required constituents of concern in accordance with Pennsylvania's Storage Tank Regulation procedures and cleanup standard criteria as specified in Pennsylvania's Act 2. Specifically, each sample will be analyzed for PADEP unleaded gasoline short lists (benzene, toluene, ethylbenzene, total xylenes, MTBE, naphthalene, isopropylbenzene, 1,3,5-trimethylbenzene, and 1,2,4-trimethylbenzene);

- In addition to the samples collected from the monitoring wells, one (1) duplicate sample and one (1) equipment blank sample will be collected and submitted per day of sampling; and

- The laboratory to be utilized should be identified in the bid package. Upon receipt of the results, the consultant should forward a copy of the analytical data to the solicitor and USTIF (or its designated representative). Following collection of the second round of groundwater monitoring and sampling data, a determination will be made whether additional characterization efforts will be needed or if the completed efforts have fully characterized and delineated the groundwater and soil at the Site. The selected consultant will keep the PADEP updated on the progress of the investigation.

- The laboratory to be utilized should be identified in the bid package. Upon receipt of the results, the consultant should forward a copy of the analytical data to the solicitor and USTIF (or its designated representative). Following collection of the second round of groundwater monitoring and sampling data, a determination will be made whether additional characterization efforts will be needed or if the completed efforts have fully characterized and delineated the groundwater and

soil at the Site. The selected consultant will keep ICF and the Technical Contact updated on the progress of the investigation.

Task 4.0 Fate and Transport Modeling and Site Characterization Report:

Task 4.1 Fate and Transport Modeling – Fate and Transport evaluations shall be completed as appropriate and consistent with Act 2 guidance documents in order to assess the potential for contaminant migration. This evaluation should take into consideration both the groundwater and soil exceedances at the Site. Each firm should evaluate the data and site specific information provided and determine the most applicable model or models needed to complete appropriate fate and transport modeling for the Site. Please specify which modeling software will be used to predict fate and transport of the constituents of concern exceeding the PADEP statewide health standards in groundwater at the release location and its applicability to the Site.

Task 4.2 Preparation of a Site Characterization Report - Following the completion of the activities proposed in Task 1.0 and Task 2.0 as well as the two (2) groundwater sampling events from Task 3.0 and the Fate and Transport Modeling noted in Task 4.1, the selected consultant will prepare a SCR for the Site. The information gathered during the aforementioned tasks should be incorporated into a comprehensive SCR that will be submitted to the PADEP and will facilitate the objective to complete regulatory requirements governing the SCR and gain PADEP approval for the report. Specifically, the report should summarize the results of the recent investigations, the findings of the previous investigations, a comprehensive Site history, sensitive receptor information, risk assessment, geologic data, results and analysis of the aquifer testing, discussion on the completed remediation efforts, summary of the predictive modeling efforts completed, and a series of summary tables, appendices, and figures illustrating the information provided in the report.

The Report will be completed following the guidelines specified in Pennsylvania Code, Title 25, Chapter 245 and the Land Recycling Program (Act 2) Technical Guidance Manual for a Site Characterization Report. The selected consultant will also present significant conclusions and make recommendations for future work at the Site in the SCR. The report will be appropriately signed and sealed by a licensed Professional Geologist.

Within 120 days of contract execution, a draft SCR and all AutoCAD maps / plans included in the report (e.g., site plan / base map, groundwater elevation maps, dissolved plume maps, soil contaminant distribution maps, etc.) and appendices (e.g., boring logs, tables, waste disposal documentation, aquifer testing and analysis, transducer survey results and analysis, and sensitive receptor information) shall be submitted electronically (in Adobe PDF format) and in hard copy to the Solicitor, ICF / USTIF and the Technical Contact for review / comment prior to finalizing the SCR. Once the selected consultant

has addressed comments on the draft, the selected consultant shall finalize and issue the report to the PADEP. The draft report is to be submitted no later than the date specified in the schedule presented by the selected bidder.

Task 5.0 Risk Assessment and Feasible Remedial Alternatives Analysis:

Task 5.1 Risk Assessment Evaluation – A risk assessment evaluation shall be completed consistent with the guidelines provided in the Act 2 Guidance Manual (applicable portions of *Sections II.C.4 IV.G and IV.H*). These sections provide general information on risk assessment; developing site appropriate standards; discuss potential for pathway elimination; and guidance on site-specific human health assessment procedures. This guidance should be followed to conduct a risk assessment. Results of the risk assessment should be taken into consideration when developing a feasible remedial strategy and determining which standards would be appropriate for the Site. Results of the evaluation should be discussed in the Risk Assessment and Feasible Remedial Alternatives Analysis Report.

Task 5.2 – Remedial Alternatives Analysis - A Remedial Alternatives Analysis should be completed for the Site to compare cleanup alternatives and evaluate which remedial action is most appropriate for the Site. The evaluation should specifically focus on eight (8) key considerations including cost-effectiveness, proven performance, public and environment protectiveness, regulatory compliance, reliability, practical implementation, health & safety and effects on public health and the environment. The findings of the Remedial Alternatives Analysis will be summarized and presented as part of the Risk Assessment and Feasible Remedial Alternatives Analysis Report. Information/data generated during the interim remedial activities conducted at the Site should be taken into consideration.

Task 5.3 – Risk Assessment and Feasible Remedial Alternatives Analysis Report - Following the completion of the proposed Risk Assessment Evaluation and Remedial Alternatives Analysis, a Risk Assessment and Feasible Remedial Alternatives Analysis Report should be prepared for the Site. The report should detail the procedures and findings from the completed baseline risk assessment and describe the calculations and resultant estimate of the amount of hydrocarbon mass present in the Site's subsurface. It should also take into consideration and summarize the assumption, parameters, and predictions from the predictive modeling scenarios included in the SCR. Figures and appendices supporting the findings of the report should be attached to further illustrate the current condition of the Site. The report should appropriately evaluate the Site and assess the risks as well as provide a proper closure strategy and remedial alternative for the Site. Information/data generated during the interim remedial activities conducted at the Site should be incorporated into this task.

All AutoCAD maps / plans included in the report (e.g., site plan / base map, proposed remediation location map, dissolved plume maps, soil contaminant distribution maps,

etc.) and appendices (e.g., boring logs, tables, remediation technology information, fate and transport modeling, risk assessment and sensitive receptor information) shall also be submitted electronically on CD and in hard copy to Solicitor and Technical Contact for review / comment prior to finalizing it. Once the selected consultant has addressed comments on the draft, the selected consultant shall finalize and issue the report to the PADEP.

Optional Cost Adders:

Task 1.0 through Task 5.0 above represents the base Scope of Work for this RFB solicitation. These tasks have been specifically developed in an effort to complete the PADEP's site characterization requirements. In addition to the base Scope of Work tasks, ***Optional Cost Adders*** are being requested for the following tasks:

- ***Optional Cost Adder #1*** – Provide a Unit Cost to complete an additional groundwater monitoring and sampling event. The scope of work for this cost adder should follow Task 3.0.
    - ***Optional Cost Adder #1a -*** The cost provided should be to complete only one (1) event with all wells (proposed and current) in the network being sampled.
    - ***Optional Cost Adder #1b -*** The cost provided should be to sample one (1) additional overburden/weathered bedrock monitoring well during a groundwater sampling event. The provided cost would be to cover all labor, equipment, laboratory, waste, etc.
    - ***Optional Cost Adder #1c -*** The cost provided should be to sample one (1) additional bedrock monitoring well during a groundwater sampling event. The provided cost would be to cover all labor, equipment, laboratory, waste, etc.

- ***Optional Cost Adder #2*** – Provide a Unit Cost to Prepare a Summary Progress Report for submittal to the PADEP. The Progress Report should detail the observations documented during the event, summarize the analytical results, map the groundwater flow direction for the Site, provide iso-concentration maps for compounds exceeding the SWHS, provide hydro-graphs, discuss the interim remediation efforts (if any), and provide additional scheduling details for upcoming events. Once the report is approved by the Solicitor, the report can be finalized and submitted to the PADEP. The progress reports discussed are being proposed to meet the PADEP obligation on progress reporting before RAP approval.

- ***Optional Cost Adder #3*** – Provide a Unit Cost to extend the Pump test for four (4) additional hours at the Site. The pump test would be extended if stabilization does not occur by the end of the eight (8) hour pump test.

- ***Optional Cost Adder #4*** – Provide a Unit Cost to abandon monitoring well(s) in accordance with Pennsylvania Act 610 and the Groundwater Monitoring Guidance Manual dated February 29, 1996. Upon completion, a well abandonment report will be

prepared and submitted to the DCNR on behalf of the claimant. Bidders should specify in the bid packages how the wells will be abandoned and the site restoration activities included in the specified costs. Following the installation of the proposed bedrock monitoring wells, the Professional Geologist at the selected consulting firm will review the available construction logs for the current monitoring well network and make a determination as to whether some, none, or all of the wells need to be appropriately abandoned and possibly replaced. Due to the uncertainty as to how many wells may need to be abandoned, please provide costs for the following:

- ***Optional Cost Adder #4a -*** Abandonment of one (1) of the current monitoring wells.
- ***Optional Cost Adder #4b -*** Abandonment of two (2) of the current monitoring wells during one (1) event.
- ***Optional Cost Adder #4c -*** Abandonment of three (3) of the current monitoring wells during one (1) event.

- ***Optional Cost Adder #5 – Provide a Unit Cost to install one (1) additional overburden/weathered bedrock monitoring well.*** The scope of work for this cost adder should follow Task 2.2.2 construction guidelines. Please provide costs for the following:

  - ***Optional Cost Adder #5a –*** Installation of one (1) additional overburden/weathered bedrock monitoring well during a separate event. The provided cost would be to cover all labor, equipment, subcontractors, waste, etc.
  - ***Optional Cost Adder #5b -*** Installation of one (1) additional overburden/weathered bedrock monitoring well as an add-on to a drilling investigation. The provided cost would be to cover all labor, equipment, subcontractors, waste, etc.

- ***Optional Cost Adder #6 – Provide a Unit Cost to install one (1) additional bedrock monitoring well.*** The scope of work for this cost adder should follow Task 2.2.2 construction guidelines. Please provide costs for the following:

  - ***Optional Cost Adder #6a –*** Installation of one (1) additional bedrock monitoring well during a separate event. Assume the bedrock monitoring well will be installed to a depth of 50 feet. The provided cost would be to cover all labor, equipment, subcontractors, waste, etc.
  - ***Optional Cost Adder #6b -*** Installation of one (1) additional bedrock monitoring as an add-on to a drilling investigation. Assume the bedrock monitoring well will be installed to a depth of 50 feet. The provided cost would be to cover all labor, equipment, subcontractors, waste, etc.
  - ***Optional Cost Adder #6c –*** Per foot cost for drilling and constructing a monitoring well that extends past the 50 foot depth assumed in Optional Cost Adder #6a and #6b. The provided cost would be to cover all labor, equipment, subcontractors, waste, etc.

- ***Optional Cost Adder #7*** **–** Provide a Unit Cost to update the Site's survey to include the additional well location(s). The scope of work for this cost adder should follow Task 2.3.

- ***Optional Cost Adder #8*** **–** Provide a Unit Cost to secure offsite access on one (1) adjacent residential/commercial property in an effort to install a groundwater monitoring well. The cost should cover the necessary time and materials needed to contact the off-site property owner, draft an access agreement, and obtain approval with one (1) draft revision to the access agreement. The cost does not include any legal fees, payments or permitting costs. Providing this Unit Cost does not commit the consultant to obtain the access agreement. If necessary, the cost should also cover the necessary time and material needed to provide the PADEP with the information they will require to facilitate access to the property.

SCHEDULING

As part of this RFB, the selected consultant shall be prepared to install the new monitoring wells at the Site within 21 days of the project award date and submit the draft SCR to the Solicitor, ICF / USTIF and the Technical Contact within 120 days of the project award date. In addition, a detailed schedule indicating when specific activities and reports (soil investigation, aquifer testing, report submittal, groundwater sampling, well installation activities, etc.) will be completed needs to be prepared and included in the bid response. All on-site work should be completed during the normal working days and hours of 8 am to 5 pm from Monday through Friday.

RESPONSIBILITY

The selected consultant will be the consultant of record for the Site. They will be required to take ownership and responsibility for the project and will be responsible for representing the interests of the Solicitor and ICF/USTIF with respect to the project. This includes utilizing their professional judgment to ensure reasonable and appropriate actions are recommended and undertaken to protect sensitive receptors, adequately characterize the Site, and move the Site towards closure.

QUALIFICATION QUESTIONS

Proposals need to provide answers to the five (5) qualifications and experience questions provided below:

- Does your company employ the Pennsylvania licensed Professional Geologist (P.G.) that is designated as the proposed project manager? How many years of experience does this person have?

- How many Chapter 245 projects are your company currently consultant on record for in the Northeast region and all regions of Pennsylvania?

- How many Chapter 245 projects have your company and/or the proposed Pennsylvania licensed P.G. worked on in the Northeast region and all regions of Pennsylvania during the last five (5) years?

- How many Chapter 245 projects have your company and/or the Pennsylvania licensed P.G. closed (i.e., obtained relief from liability from the PADEP) using either the Statewide Health Standards or Site Specific Standards? Please list.

- Has your company ever walked away from a USTIF Fixed Price Contract or Pay For Performance contract without attaining all of the Milestones? If so, please explain why the contract was not fulfilled?

CONTRACT INFORMATION AND BID INSTRUCTION

The Solicitor wishes to execute a mutually agreeable fixed price contract based on unit prices for labor, equipment, materials, subcontractors/vendors and other direct costs. The prices provided in the bid will remain in effect for the duration of the project (i.e. no escalation clause). The total fixed cost quoted by the selected consultant will be the maximum amount to be paid by the Solicitor unless a change of scope is authorized and determined to be reasonable, necessary, and appropriate. *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 response 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.* A copy of the proposed fixed price contract is included in Attachment 3.

The bidding firm will need to include the following in their proposal:

- A demonstration of the bidder's understanding of the objectives of the project and the bidders approach to achieving those objectives efficiently based on the existing site information provided in this RFB;

- Provide a clear description, specifics, and original language of how the proposed work scope will be completed. The bid package should specifically discuss all tasks that will be completed under the fixed price contract and what is included (i.e. explain your groundwater sampling method, which guidance documents will be prepared, what will be completed as part of the SRS, etc.);

- A fixed price cost estimate for work through the completion of the characterization activities;

- Provide a detailed schedule of activities for completing the proposed scope of work inclusive of reasonable assumptions regarding the timing and duration of Solicitor reviews (if any) needed to complete the scope of work;

- Indication of whether the bidder accepts or seeks changes to the proposed contract / terms and conditions;

- The bidder's level of insurance;

- The bidder's proposed unit cost rates for each expected labor category, subcontractors, other direct costs and equipment;

- The bidder's proposed markup on other direct costs and subcontractors (if any);

- Identify and describe the involvement of subcontractors;

- Identify any exceptions, assumptions, or special conditions applicable to scope;

- Cost by task and total costs must be defined within the proposal text and on the cost spreadsheet (Attachment 2);

- The bidder's total cost by task consistent with the proposed scope of work identifying all level-of-effort and costing assumptions;

- A statement of qualifications including that of any major subcontractor(s);

- Describe your approach to working with the PADEP from project inception to submittal of the SCR. 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;

- Describe how the Solicitor and ICF/USTIF 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;

- Answers to the qualification questions discussed in the RFB;

- Identify the names of the proposed project team for the key project staff, including the proposed Professional Geologist of Record who will be responsible for overseeing the work and applying a professional geologist's seal to the project deliverables;

- If a firm feels it is appropriate and necessary to complete hole clearing activities, the cost should be included in their proposal and costs. More importantly, if a firm includes the cost to complete hole clearing, they should specify it in their proposal

and discuss why it is appropriate and necessary and indicate which methods will be utilized and to what extent. As discussed in the RFB, cost is not the only factor when evaluating proposals and other factors are taken into consideration during the review process, including appropriate safety measures;

- Bids should provide an appropriate total cost in the detailed cost spreadsheets, a schedule, and text to cover the SOW presented in the RFB text. Specifically, if the bid proposes the completion of 2 quarterly groundwater sampling events then the costs to complete both events should be included in cost listed on the detailed cost spreadsheet for that task. The total costs provided on the detailed cost spreadsheet should not just include the completion of one (1) quarterly event; and

- Please make sure that costs provided for each task are consistent between the submitted text and submitted attachments (i.e. cost provided for the soil boring investigation is listed as $4,000.00 in the detailed cost sheet and the text of the submitted bid). If a discrepancy in costs is noted during the review of the bids, the costs listed in the detailed cost sheet (Attachment 2) will be used as the costs during the bid evaluation.

The bidder shall provide its bid using the format identified in this RFB and will provide brief descriptions of each task in the body of the bid document. In addition, the bidder will complete the detailed cost sheet included as Attachment 2. An electronic version of the cost spreadsheets included in Attachment 2 (in Microsoft Excel Format) has been provided. Please note that bidders are responsible for confirming that the equations and totals calculated in the provided spreadsheet are correct.

Please bid the scope of work as provided in the RFB. Consultants are welcome to propose or suggest a change in the SOW; however the consultant should bid the SOW as presented in the RFB and provide any suggested modification to the SOW and provide the cost difference (+ or -) separately in the proposal.

The scope of work, as described in this RFB, shall be conducted in accordance with industry standards / practices, and consistent with the PADEP requirements and guidelines. The selected consultant's work to complete the tasks discussed will be subject to ongoing review by the USTIF or its representatives to assess whether the work actually completed and the associated incurred costs are reasonable, necessary, and appropriate.

In order to facilitate USTIF's review and reimbursement of invoices submitted under this claim, the Solicitor requires that project costs be invoiced by the tasks identified in the bid. The standard practice of tracking total cumulative costs by bid task will also be required to facilitate invoice review.

The bid responses must clearly and unambiguously accept the provided contract or must clearly cross reference any requested changes.

In an effort to eliminate or minimize the need for change orders on a fixed price contract, please include costs to dispose of all anticipated volumes of waste in your bid response. ICF and USTIF will not entertain any assumptions on the contract with regards to a volume of waste (i.e. Project costs assume that no more than 500 gallons of groundwater will extracted during the aquifer testing and require disposal). Bidders will be responsible for including costs in their bid response to cover the disposal of all potential waste related to the tasks included in the SOW. All waste generated during the completion of tasks related to the SOW may be temporarily stored on site, but must be disposed of offsite in a timely manner. Please estimate the volume of waste using your professional opinion, experience, and the data provided. Invoices submitted to cover additional costs on waste generated as part of activities included under the fixed price contract for this Site will not be paid.

Each bid package received will be assumed to be good for a period of 120 days after receipt unless otherwise noted. Please note that ICF, USTIF, and B&B will treat the bids as confidential, but that limited general information may be released by the solicitor and/or B&B after the bid selection process is completed.

MANDATORY SITE VISIT

On January 24, 2013, the Technical Contact (or designee) will be at the site at 10:00 am to answer questions and conduct a site tour for a limited number of participants per firm. Please inform the Technical Contact at least five (5) business days in advance of the aforementioned meeting date as to whether your firm will be in attendance. In order to accurately track meeting participants, the subject line of the email must state the following: Bethlehem Municipal Garage Bid Walk Claim No. 99-0083(F). **Any firm that does not attend the January 24, 2013 mandatory site visit will not be eligible to submit a bid response.**

ATTACHMENTS

Attachment 1 - Figure, Historical Documentation and Correspondence

- Attachment 1a – Figure 1 - Proposed Monitoring Well and Sample Location Map
- Attachment 1b – UST System Closure Report Form and Notice of Reportable Release dated November 23, 1998
- Attachment 1c – UST Site Characterization Report dated October 20, 2000
- Attachment 1d – Portion of the correspondence to PADEP date June 23, 2003 relevant to subject site.
- Attachment 1e – UST Site Characterization Report Addendum and Remedial Action Completion Report dated March 20, 2006
- Attachment 1f – PADEP Correspondence dated May 19, 2006
- Attachment 1g – Appeal Request dated June 5, 2006
- Attachment 1h – UST Site Characterization Report Addendum No. 2 dated May 29, 2008
- Attachment 1i– PADEP Correspondence dated August 14, 2008
- Attachment 1j –Progress Report dated November 30, 2010
- Attachment 1k – Workplan dated November 5, 2012

Attachment 2 – Detailed Cost Sheet
Attachment 3 – Draft Fixed Price Contract