

October 26, 2009
Request for Bid (RFB)
Supplemental Site Characterization Report including
Fate and Transport and Risk Assessment
(SSCR including FT/RA)

Prepared on Behalf of ICF International and USTIF

Project

Convenient Food Marts of PA, Inc. CF Mart #3022
Wyoming Avenue and Pringle Street, Kingston, PA 18704
USTIF Claim No. 2005-0037(M)
PaDEP Facility ID #40-08512

ICFI, on behalf of USTIF is providing this Request for Bid (RFB) for a project to prepare and submit a fixed price proposal for the defined scope of work to complete a supplemental site characterization for the CF Mart (Site). A petroleum release from an active UST has been confirmed at the Site and the Pennsylvania Department of Environmental Protection (PaDEP) is requesting an expanded investigation to confirm whether the soil media was impacted and a groundwater investigation to determine the extent of contamination migration offsite. The Solicitor has an open claim (Claim #2005-0037(M)) with the Pennsylvania Underground Storage Tank Indemnification Fund (PAUSTIF) and the work outlined in this RFB will be completed under this aforementioned claim. Reimbursement of Solicitor-approved reasonable, necessary and appropriate costs (within claim limits) for the work described in this RFB will be provided by PAUSTIF and the Solicitor.

While certain characterization activities and interim remedial actions have previously been completed at the Site, the existing data-base has been determined to be incomplete for Site characterization approval or for development of a remedial action program capable of Site cleanup due to unresolved regulatory requirements for the Site.

Austin James Associates, Inc. (AJA) on behalf of the PAUSTIF and ICF International (ICFI), will serve as the technical contact for this RFB solicitation process. As such, any questions related to the Site or the bid should be submitted to the technical contact in writing via email with the understanding that all questions and answers will be provided to all bidders. Bidders must not discuss this RFB Solicitation directly with the Solicitor, PaDEP, PAUSTIF, or ICFI unless approved by the Technical Contact. Questions for any of these parties should also be submitted via email to the technical contact who will seek the answers and relay the results to all bidders (typically via email). In addition, as technical contact, AJA will be facilitating a mandatory pre-bid Site meeting on **Thursday, November 12, 2009 at 1:00 PM** and assisting the Solicitor in evaluating the received bid responses. The Site meeting is mandatory and if not attended, then a received bid response will not be considered.

While not mandatory, AJA respectfully requests that you send an email to ajarebecca@epix.net indicating whether your firm expects to attend the meeting and how many representatives from your firm are expected. Please limit the number of representatives to no more than two (2) per bidding firm.

The attached RFB package provides the information needed to complete an appropriate bid response. The successful bidder will be expected to sign a contract with the Solicitor which is very similar to one in the Draft Example provided.

This RFB includes four (4) major components with subtasks presented in an outline format for cost analysis. The costs presented in your proposal will be considered fixed unit costs per task. These tasks will be identified for payment and implemented, in accordance with, and subsequent to, the execution of a fixed price contract (Contract). Expenses in excess of the quoted price for the Contract shall be the consultant's responsibility. The scope and budget for identified out of scope activities must be pre-approved to be eligible for consideration of reimbursement. Any costs associated with deviations from the scope that did not receive prior approval from PAUSTIF or its representatives will not be reimbursed.

It is expected that the selected consultant's approach to completing the bid tasks will be in accordance with generally accepted industry standards / practices and all applicable federal, state, and local rules and regulations, including the requirements of the Storage Tank and Spill Prevention Act (Act 32 of 1989, as amended) and Pa. Code, Title 25, Chapter 245, the Land Recycling and Environmental Remediation Standards Act (Act 2 of 1995) and Pa. Code, Chapter 250 (Administration of Land Recycling Program). Any modification to the selected consultant's authorized SOW will require prior written approval by the Solicitor and PAUSTIF through its third-party administrator.

It is currently anticipated that the successful bidder will be directly reimbursed by PAUSTIF for approved, reasonable, necessary, and appropriate costs (up to the limits of the claim). The Solicitor, USTIF/ICFI Technical Contact, and ICFI Representative information is provided below.

SOLICITOR

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All completed bid responses are due to the specified ICFI representative no later than **Friday, December 11, 2009 at 5:00 PM**. Any bid responses not received electronically by this time will not be considered. Please note that each bidder will need to submit one (1) hard copy and one electronic copy to the ICF representative at the contact information provided in the package. The received bids will be opened and evaluated after the aforementioned deadline expires and the solicitor anticipates contacting the winning bidder within four (4) weeks.

Site Setting and Background Information

Kingston Site

Site Setting

The Site is located on the northwest corner of Wyoming Avenue and Pringle Street, Kingston, Luzerne County Pennsylvania (See **Figure 1** in **Attachment 2**). The Site consists of an active convenience store and gas station in Kingston Borough. The Site is bordered by residences to the north, Kost Tire and Muffler to the northeast across Pringle Street, Kingston Veterinary Clinic to the south, Williams Floors to the southwest, and by residences to the west/northwest. The CF Mart and the surrounding properties are shown on **Figure 3**. The present CF Mart Site location previously contained row homes that have since been demolished. PaDEP has requested a determination of the presence/absence of foundations related to these historic structures and if present, to determine their potential contribution to the dispersion of hydrocarbons at the Site.

The site is a 0.4-acre parcel zoned for commercial use. The existing structures include a one story building, two gasoline dispenser islands, and a canopy over the pump islands. There are 6 gasoline USTs located on the property. The USTs and pump island area are covered in concrete. The remainder of the property is covered in asphalt. The Site is connected to public sewer and water.

Hydrocarbon Release in UST System

In January 2005, a reportable release was discovered upon the repair of a concrete tank pad over the gasoline underground storage tanks (USTs). The vent pipe cracked because it was supported by a concrete block. Storm water runoff had flowed through the crack and migrated into the broken vent pipe. Water was then detected within the USTs. The 2005 release was reported to USTIF and the claim was awarded 100% funding.

Other Potential Off-Site Sources Within the Study Area

Located across the street from the Site is a small quantity hazardous waste generator, Kost Tire. Down-gradient from the Site is the Pompey Dodge Property. This property is being evaluated by a separate consultant for possible contamination from the Site. The Kost Tire, Monroe Muffler, and Pompey Dodge properties are shown on **Figure 3** in **Attachment 2**.

Records for any other potential source area(s) were not evaluated, because their physical locations are likely not to impact groundwater within the area encompassing the Site.

Site Geology, Topography, and Drainage

Area Geology

Geology for the area is indicated as the late-Middle to Late Pennsylvanian aged Llewellyn Formation (LPI). The formation may be described as inter-bedded siltstone, sandstone, and

conglomerate. The formation is moderately resistant to weathering and good surface drainage exists. Moderate joint cleavage provides secondary porosity and the median well yield is 38 gallons per minute (Geyser and Wilhusen, 1982).

Site Geology

Based on review of the available monitoring well logs, bedrock was not encountered on the Site. The unconsolidated alluvium/colluvium rests unconformably atop the bedrock contact. The static water level occurs within the unconsolidated media (11 to 12 feet bgs) with sufficient saturated thickness such that the expected dispersion pathway is primarily within the unconsolidated geologic media.

Topography/Drainage for the Area

A satellite image identifying the Site and is shown on **Figure 2 in Attachment 2**. The Site is situated at approximately 539 feet above mean sea level (msl). Topography is primarily flat across the site and the surrounding properties. The static water at the Site is at a higher elevation than the Susquehanna River.

Previous Report Submitted

On February 19, 2009, The PADEP responded to the amended SCR prepared and submitted by Phoenix Geo-Environmental, LLC (Phoenix) dated November 2008. A copy of the report and aforementioned PADEP correspondence is included in **Attachment 3**.

Recommendations consistent with completing the Site characterization in order to facilitate Site closure includes a work scope with elements consisting of the following:

1. Collect 12 soil samples from the saturated zone (15-17' bgs) around the Site, as shown on **Figure 4 in Attachment 2**.
2. Install six additional vapor monitoring points on and off the Site, as shown on **Figure 5 in Attachment 2**.
3. Install four shallow piezometers on site, as shown on **Figure 6 in Attachment 2**.
4. Install and develop four off site shallow groundwater monitoring wells. Proposed locations for the shallow monitoring wells are shown on **Figure 7 in Attachment 2**.
5. Conduct a forensic analysis of the groundwater analytical data from both the CF Mart site and the Pompey Dodge property, as shown on **Figure 8 in Attachment 2**.
6. Perform rising head slug testing on 16 monitoring wells, as shown on **Figure 9 in Attachment 2**.
7. Conduct Fate and Transport Modeling and a Risk Evaluation Assessment (FT/RA).

8. Complete two full rounds of groundwater samples, at least 30 days apart, collected from all wells (including the four newly installed wells) associated with the CF Mart and the Pompey Dodge sites. Property access requests will be required.

These supplemental Site characterization activities are intended to confirm/discount the Pompey Dodge property as a potential source area. The attached RFP specifies preparation of a Supplemental Site Characterization Report (SSCR) to be submitted within four months of the bid award date, pending PaDEP approval of the work plan and the schedule for implementation. The SSCR should document and discuss the data obtained and the conclusions drawn from the completion of Tasks 2.1 through 2.9, incorporating historical groundwater and/or soil data as appropriate. The RFB also requires submittal of a Fate and Transport and Risk Assessment (FT/RA) to be completed as part of the SSCR. The FT/RA work is to be completed concurrently with the Site characterization work to determine the horizontal and vertical extent of gasoline hydrocarbon material emanating from the tank field area, evaluate the Pompey Dodge property as a potential source, and evaluate the potential risk to the Site and adjacent properties. The FT/RA will document and discuss the data obtained and the conclusions drawn from the completion of Tasks 3.1 through 3.3.

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:

- Meet with the PaDEP to discuss and obtain approval of the suggested work-scope;
- Complete slug tests within the shallow monitoring well(s) to evaluate the hydrologic characteristics of the shallow groundwater;
- Complete the Site characterization providing documentation of the source area(s) and the vertical and horizontal limits of impacted soil and groundwater with adequate documentation in a comprehensive Supplemental Site Characterization Report;
- Complete an exposure pathway assessment and risk assessment to demonstrate or eliminate exposure pathways and determine Site-specific closure goals for regulated gasoline components in soils and groundwater at the Site;
- Complete fate and transport modeling to assess, as necessary, 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; and,

Itemized Proposal Tasks

The proposal should follow the task format outlined herein. Proposals should include a detailed description of the anticipated costs for each task including labor rates, time requirements and

equipment costs. A Cost Summary Sheet, to be attached to your proposal, is included as **Attachment 1**.

Task 1 - Project Management

Task 1.1 Preparations of Project Guidance Documents

Task 1.2 Project Management

Task 2 - Supplemental Site Characterization Activities

Task 2.1 Meet with PaDEP to Discuss and Obtain Approval of the Work Scope

Task 2.2 Site Documentation

Task 2.2.1 -Site Layout/Historic Property Use/Area Water Supply Documentation

Task 2.2.2 -Geology Documentation

Task 2.3 - Utility Clearance and Soil/Well/Vapor Point Boring Pre-Clearance

Task 2.4 - Soil Characterization/Collection of Soil Samples

Task 2.5 - Vapor Monitoring Point Installation and Sampling

Task 2.6 - Piezometer Installation

Task 2.7 - Monitoring Well Installation and Development

Task 2.8 - Initial Water Level Data Collection and Confirmatory Groundwater Sampling

Task 2.8.1 -Liquid Level Elevation Data Collection

Task 2.8.2 -Groundwater Sampling from Monitoring Wells

Task 2.8.3 -Forensic Analysis of Groundwater Samples from Select Monitoring Wells

Task 2.9 - Hydraulic Parameter Estimates and Aquifer Characterization

Task 3 - Fate and Transport/Risk Assessment, and Remedial Alternatives Evaluations

Task 3.1 - Fate and Transport Evaluation (Includes evaluation of the presence or absence of foundations related to the historic row homes that have since been demolished at the current CF Mart location)

Task 3.2 - Hydrocarbon Mass Estimate Documentation

Task 3.3 - Risk Assessment Evaluation

Task 4 - Preparation of Supplemental Site Characterization Report

In addition to the **Attachment 1** Cost Summary Sheet, additional information is provided in **Attachments 2** and **3** to assist in the bidding process. **Attachment 2** provides various figures either recently generated or reproduced from existing files. These include:

Figure 1 – USGS Topographic Map Showing Site location

Figure 2 – Satellite Image Map Showing Site Location

Figure 3 – Base Map

Figure 4 – Proposed Soil Boring Location Map

Figure 5 – Proposed Vapor Monitoring Point Location Map

Figure 6 – Proposed Piezometer Location map
Figure 7 – Proposed Additional Monitoring Well Location Map
Figure 8 – Forensic Analysis Monitoring Well Location Map
Figure 9 – Proposed Slug Test Sampling Location Map

Attachment 3 provides a copy of the *Amended Site Characterization Report, November 2008*, submitted by Phoenix and the PaDEP response letter to that report, dated February 19, 2009.

Task 1.0 - PROJECT 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. A Project Manager should be identified who is responsible for oversight of the project and communications with ICFI, its representatives, USTIF, and PaDEP.

Task 2.0 - SUPPLEMENTAL SITE CHARACTERIZATION ACTIVITIES

Task 2.1 - Meet with PaDEP to Discuss and Obtain Approval of the Proposed Work Scope

A meeting with PaDEP has been proposed to present and discuss the elements of the proposed Work-plan. We anticipate scheduling the meeting with PaDEP's Northeast Regional Office prior to initiation of Site activity. The consultant should assume the meeting would include ICFI and/or its representatives. Your budget for this activity should include time to prepare for the meeting and should assume the meeting will be held at the Site or the PaDEP's Northeast Regional Office.

Task 2.2 - Site Documentation

Task 2.2.1 - Site Layout/Historic Property Use/Area Water Supply Documentation

This task involves the completion of general Site documentation that includes, but is not limited to the following:

- Review of Site history through review of historic files and previous reports including files in possession of ICF and PaDEP files.
- Documentation/confirmation of area water supply locations.
- Interviews with ICF's third party consultant PaDEP's Mr. Kevin Walker, and CF Mart representatives as necessary to obtain facts concerning Site characterization history and Site history, respectively.
- Documentation of all Site features that may have an impact on the dispersion of regulated dissolved phase unleaded gasoline components at the Site (i.e. Site supply wells, drainage features, wetlands, streams, septic or drain fields, utilities, etc.).
- Research of County Courthouse records to obtain a property tax map to determine property boundaries and other appropriate information.
- Documentation/confirmation of the area water use (both domestic and public), including documentation of the absence or presence of municipal, township, or county restrictions for the future installation of supply wells.
- Any other applicable information and documentation to comply with Title 25, Chapter 245, Administration of the Storage Tank and Spill Prevention Program, 245.309; Site Characterization, and, 245.310; Site Characterization Report.

This information will be incorporated into the SSCR to aid in the determination of the best alternative remedial strategy for the Site.

Task 2.2.2 - Geology Documentation

This task involves the evaluation and documentation of the structural features inherent to the shallow groundwater formation. Evaluations of the structural orientation (strike, dip, cleavage features, etc.) of the underlying bedrock formation should be included and generated using accepted geologic practices/interpretation as well. This information should be incorporated into the SSCR as applicable, to aid in the determination of the dispersion and migration pathways for dissolved phase hydrocarbon components in groundwater emanating from the source area(s) at the Site.

Task 2.3 - Utility Clearance and Soil/Well/Vapor Point Boring Pre-Clearance

Due to the proximity of the proposed soil borings, vapor instruction points, and piezometer locations to an active UST system, the successful bidder will need to complete a private mark-out at the Site prior to the subsurface investigation. A private mark-out will need to be conducted with appropriate equipment in the area of the UST field and the proposed boring locations to locate any underground utilities, the edges of the USTs, the associated piping to the dispensing

equipment, and/or obstructions in the area of the proposed boring locations. If necessary to the utility locating, each boring location may need to be cleared by pre-excavating the location either by hand or by mechanical means.

Task 2.4 - Soil Characterization/Collection of Soil Samples

Twelve (12) soil borings are to be completed using the geo-probe direct push or other suitable method at the locations shown on **Figure 4**. One sample will be collected from each boring. During advancement of the soil borings, the soil should be field screened using a Photo-ionization Detector (PID) or other suitable detection methodology at one to two (2) foot intervals. A soil sample should be collected from the 15-17 foot bgs interval that exhibits saturation. The soil sample should not be collected at a depth greater than 17 feet bgs. The purpose of the soil boring activity is to collect soil samples and delineate the vertical limit of potentially impacted soils relative to historical storage and transfer or potential sources of hydrocarbons identified at the Site. While previous soil sampling has been conducted, the results have not adequately characterized the Site sufficiently to determine the best remedial options for the Site. The approximate locations specified for these soil borings are subject to field verification of utility lines, PA One-Call calls and access issues. Proposed soil sampling locations, shown on **Figure 4**, must be cleared with an air knife or similar technology to ensure utility clearance.

The twelve (12) samples specified here should provide a sufficient database as supporting documentation for the evaluation of remedial options and for incorporation into the FT/RA evaluation. The results are intended to simplify the selection of future remedial and closure options. Following collection of each soil sample, the soil sample should be secured and preserved using appropriate methods as specified in the regulations for samples to be analyzed for the PaDEP required regulated shortlist unleaded gasoline parameters including:

- *BTEX, MTBE, Naphthalene, Cumene, 1,3,5-TMB, and 1,2,4-TMB*

The consultant shall be sure to include sufficient sample with added containers and preservation if and as indicated necessary by the analyzing laboratory and by regulatory requirements for each of the samples.

The "methanol preservation" or other appropriate method is to be used where applicable (for VOCs), as specified by current regulatory soil sampling procedures. The samples should be collected and sent to a Pennsylvania certified analytical laboratory for appropriate analysis. Upon receipt of the analytical results, the Consultant shall forward a copy of the analytical results to ICF and its designated representative(s).

Task 2.5 - Vapor Monitoring Point Installation and Sampling

In order to further characterize the vapor phase and obtain the data necessary to evaluate remedial options and exposure pathways for the risk assessment, an additional six (6) shallow vapor monitoring points are to be drilled at locations shown on **Figure 5**.

The six (6) shallow vapor monitoring points are to be installed to an estimated depth of approximately 7-11 feet below ground surface (bgs) at a depth equal to or below the lowest expected vapor intrusion source. Each borehole shall have one soil gas collection point with a screen interval not to exceed one foot in length. One soil gas sample shall be collected from each vapor point consistent with the guidance for the collection of soil gas samples as specified in the PaDEP Air Vapor Intrusion Guidance Document. The approximate locations specified for these points are subject to field verification of utility lines, PA One-Call calls and access issues. Proposed vapor monitoring locations, shown on **Figure 5**, must be cleared, as necessary, with an air knife or similar technology to ensure utility clearance.

The vapor samples should be analyzed for regulated unleaded gasoline short list components (including 1,2,4-TMB, 1,3,5-TMB, and total petroleum hydrocarbons (TPH)) according to NIOSH (TOX15) specifications. The locations of the soil gas probes/samples are shown on **Figure 5** in **Attachment 2**. The PaDEP draft guidance document entitled "*Vapor Intrusion into Buildings from Groundwater and Soil under PA Act 2 Statewide Health Standard (SHS)*", dated February 15, 2002, should be used to assist in evaluating the soil gas sample results. The guideline specifies that soil gas results should be compared to 100 X the residential indoor air quality (CIAQ) MSC values to account for dilution effects.

The consultant who wins the bid will be required to obtain all necessary permits and access agreements to drill any vapor monitoring point or any other subsequent intrusive well/probe/investigation point that are deemed critical in order to obtain the information necessary to determine the extent and magnitude of the release related to (or to document that certain contamination is not related to) the CF Mart facility. PaDEP will be involved to the extent necessary to ensure access is granted at any location where that location is determined critical to gain an understanding of the relationship between the CF Mart Site release and adjacent properties. The locations identified in the RFB are considered critical locations and the technical data identified critical to the understanding of the site .

Task 2.6 - Piezometer Installation

In order to further characterize the dissolved phase plume and obtain the data necessary to evaluate remedial options and exposure pathways for the risk assessment, four (4) shallow piezometers are to be installed at locations shown on **Figure 6**.

The four (4) shallow 2" piezometers are to be installed and screened below the water table at an estimated depth of approximately 15-20 feet below ground surface (bgs) with a five feet screen interval extending from approximately 20 feet (bottom of borehole) to 15 feet bgs. Casing shall be extended from the top of the screen to approximately 4 inches bgs, and protected within a flush mounted manhole. The annular space between the casing and the well bore shall be pressure grouted to ensure isolation of the 15 to 20 foot interval. The approximate locations specified for these wells (subject to field verification of utility lines, PA One-Call calls and access issues) are shown on **Figure 6**.

The piezometers 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.

Piezometers should be constructed of 2-inch diameter, threaded, flush-joint, schedule 40 PVC riser and .02 inch slot width well screen. A sand filter pack of appropriate grain size shall be placed in the annulus from the bottom of the borehole to not more than 1'-2' above the screened interval. Hydrated bentonite, bentonite cement slurry or another acceptable sealant combination shall be used to seal the annulus above the filter pack up to grade.

A flush-mounted manhole shall be cemented into place to complete the well at grade level. A locking, pressure fit, watertight cap will be used to prevent the infiltration of surface runoff and rainwater and to restrict access by unauthorized individuals.

Task 2.7 - Monitoring Well Installation and Development

In order to further characterize the dissolved phase plume and obtain the data necessary to evaluate remedial options and exposure pathways for the risk assessment, four (4) additional shallow monitoring wells shall be drilled at the locations shown on **Figure 7**.

The four (4) shallow 2" wells shall be installed to an estimated depth of approximately 25-30 feet below ground surface (bgs) with a screen interval starting from approximately 5 feet bgs to the base of the borehole (to intersect the shallow water table throughout the hydrologic cycle with a minimum 5 feet depth to top of screen to minimize surface infiltration). If competent bedrock is encountered, the depth to bottom for the well should be adjusted so that the bottom the well does not extend more than six inches to one foot into the underlying bedrock. The approximate locations specified for these wells (subject to field verification of utility lines, PA One-Call calls and access issues) are shown on **Figure 7**. The wells shall 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. 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 photo-ionization detector (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.

Monitoring wells should be constructed of 2-inch diameter, threaded, flush-joint, schedule 40 PVC riser and 0.01 or .02 inch slot width well screen. A sand filter pack of appropriate grain size shall be placed in the annulus from the bottom of the borehole to not more than 12 feet above the screened interval. Hydrated bentonite, bentonite slurry or another acceptable sealant combination shall be used to seal the annulus above the filter pack up to grade. A flush-mounted manhole shall be cemented into place to complete the well at grade level. A locking, pressure fit, watertight cap will be used to prevent the infiltration of surface runoff and rainwater and to restrict access by unauthorized individuals.

Based on field screening with the PID, drill cuttings shall be segregated into impacted and non-impacted stockpiles at a location designated by the property owner at the Site. Those materials exhibiting PID readings above 10 parts per million (ppm) should be considered impacted and shall be properly containerized or stockpiled on and beneath plastic sheeting pending subsequent characterization and disposal. "Clean" material shall be segregated from the impacted material and shall also be properly containerized, or stockpiled on, and beneath plastic sheeting, pending subsequent characterization and disposal. Soil/rock cuttings and liquids generated during the drilling activities will be managed in a manner consistent with the protocols set forth by PaDEP. Disposal of soil/rock cuttings, if necessary, should be arranged through an approved disposal facility. The volume of the soil/rock cuttings and/or drilling fluids (i.e., impacted water) may be estimated at approximately four (4) tons, and costs for containment, treatment, and/or disposal should be included in your proposal.

PaDEP has requested that the entire monitoring well network be developed following the installation of the new wells. 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. Groundwater removed from the well during development should be treated with a portable granular activated carbon (GAC) treatment system (or other PADEP approved method) and discharged to the surface following treatment in accordance with PaDEP guidance and approval. Assume four effluent discharge samples will be required to evaluate the effectiveness of the development water during the well development process.

As with the piezometer locations, the consultant who wins the bid will be required to obtain all necessary permits and access agreements to drill any monitoring well or any other subsequent intrusive well/probe/investigation point that are deemed critical in order to obtain the information necessary to determine the extent and magnitude of the release related to (or to document that certain contamination is not related to) the CF Mart facility. PaDEP will be involved to the extent necessary to ensure access is granted at any location where that location is determined critical to gain an understanding of the relationship between the CF Mart Site release and adjacent properties. The locations identified in the RFB are considered critical locations and the technical data identified critical to the understanding of the site .

Task 2.8 - Initial Water Level Data Collection and Confirmatory Groundwater Sampling

2.8.1 Liquid Level Elevation Data Collection

Water level measurements shall be taken from each of the existing and four new monitoring wells. Measurements should 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 data shall be recorded and then used to determine water level elevations such that shallow groundwater flow direction across the Site may be determined. Casing elevations shall be surveyed within +/- 0.01 foot relative to an arbitrary benchmark established at the Site (it is recommended that all of the monitoring wells be re-surveyed following the installation of the new wells at the Site. 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 if one exists. Water level depth data (measured from the top of the casing) shall then be subtracted (with appropriate corrections made for the presence of SPL) from respective casing elevations to determine water level elevations relative to the arbitrary benchmark such that shallow groundwater elevations and groundwater flow direction across the property may be determined. Monitoring wells that contain SPL should be corrected for product thickness when calculating the static water levels in these wells.

2.8.2 Groundwater Sampling from Monitoring Wells and Piezometers

The Consultant shall conduct initial monitoring and sampling from the entire well network (38 wells) listed above approximately two to four weeks after the new wells are completed. Liquid level data shall be measured and recorded for the wells using an electronic water level probe or oil/water interface probe, as appropriate and recorded to the nearest 0.01 foot. Liquid levels shall be collected on the same day with the first and last recording collected as close as practical to ensure the collection of representative static water levels in the wells. The SPL thickness (if any) and volume of standing water in the well column should also be calculated. Wells exhibiting measurable SPL should not be sampled. SPL with accumulations of more than 0.10 feet should be removed by bailing and should be collected in a 55-gallon drum to be staged on-site. In the event that the wells do not contain SPL, each well should be sampled to determine the concentration of dissolved unleaded gasoline type hydrocarbons as indicated below. A second confirmatory sampling event shall be conducted approximately 30-45 days later.

Monitoring wells on the Pompey Dodge property will need to be sampled in addition to all onsite and offsite monitoring wells. Access to the Pompey Dodge property should be arranged through the PaDEP and the property owner.

Groundwater sampling and analysis shall be conducted in accordance with generally accepted practices as outlined in the PaDEP Groundwater Monitoring Guidance Manual, dated January 1, 1999 (Document # 383-3000-001).

Sampling equipment should be decontaminated prior to sample collection in accordance with generally accepted industry practices. Approximately three times the volume of the standing

water column shall be purged from the wells prior to sample collection to ensure a representative sample is collected. Purging should be accomplished by using a bailer, peristaltic pump, or a variable-rate, electric, submersible pump. For low volume purge methods, field parameters such as temperature, pH, specific conductance and dissolved oxygen should be monitored to ensure that the well is adequately purged to draw formation groundwater into the well. At the conclusion of purging, groundwater samples shall be collected as soon as practical. If the well is purged dry, it should generally be allowed to recover to 75%, or for a maximum of 24 hours prior to sampling.

Samples should be collected directly from the bailer. All volatile samples should be collected directly into laboratory-supplied bottle-ware and kept cold (<4° C) through delivery to the analytical laboratory. The groundwater samples should be submitted under chain-of-custody documentation protocols set forth by the laboratory, and consistent with PaDEP protocol. All purge liquids generated during sampling should be treated onsite with a portable GAC treatment system.

Analyses will consist of PaDEP required regulated short-list unleaded gasoline parameters using the approved laboratory methods capable of reporting to levels which include the SHS criteria for each component.

- *BTEX, MTBE, Naphthalene, Cumene, and TMBs*

The laboratory to be utilized should be identified in the bid package. Upon receipt of the analytical results, the Consultant should forward a copy of the analytical results to ICF and its designated representative(s).

The Successful bidder for the CF Mart Site will be required to reach an agreement with the prevailing consultant on the Pompey Dodge and the owner of Pompey Dodge property to access and sample those wells at the insistence of the PaDEP. PaDEP will be involved to the extent necessary to ensure cooperation. Execution of the work scope in the RFB is focusing on a determination of the extent of the responsibility of CF Mart release relative to other inferred off-site sources. An understanding of the relationship of the CF Mart Site relative to adjacent properties is critical to the development of a remedial solution. In any event, the technical data generated from this activity is intended to determine the nature and extent of the plume emanating from the CF Mart property as a result of its release. Ultimately the remedial response (passive or active) will be designed and implemented consistent with those results.

2.8.3 Forensic Analysis of Groundwater Samples from Select Monitoring Wells

Concurrent with the initial groundwater sampling events, nineteen of the monitoring wells, (select monitoring wells shown on **Figure 8** in **Attachment 2**) shall be forensically evaluated to identify the chemical composition of hydrocarbon components in groundwater at each well location to determine whether or not there are additional source(s) and whether those source(s), if present, are related to the historic storage and transfer of hydrocarbons at the CF Mart Site,

and/or from other off-site source(s). Groundwater samples collected for forensic evaluation shall be sent to a qualified forensic laboratory for analysis. It is intended that the single forensic sampling activity and subsequent analysis be completed concurrently with the first full round of groundwater sampling following the installation of the new monitoring wells and piezometers at the site.

Task 2.9 - Hydraulic Parameter Estimates & Aquifer Characterization

Rising-head slug tests should be performed at the sixteen (16) shallow monitoring wells shown on **Figure 9**. An instantaneous displacement of the water level in each well may be accomplished by quickly removing a known volume of water or a pre-installed solid “slug” of known volume. Measurements should be taken as soon as possible following the extraction of the “slug” until achievement of the initial static water level (within 10%) in the well recorded prior to its placement. The water level response should be measured using a pressure transducer and electronic data logger.

TASK 3.0 - Fate & Transport/Risk Assessment and Remedial Alternatives Evaluations

Task 3.1 - Fate and Transport Evaluation

A Fate and Transport (FT) evaluation shall be completed as appropriate and consistent with Act 2 guidance in order to address contaminant migration scenarios. This evaluation should include dissolved phase concentration trend analysis and groundwater modeling as appropriate for constituents of concern at the site. The FT evaluation should be sufficient to determine the current and future extent of the dissolved phase plume for constituents of concern in groundwater for use in the development of a remedial action plan. It should also consider the degree of attenuation with respect to any down-gradient receptors and evaluate any supply well impacts (including the possibility/likelihood of offsite sources).

Fate and Transport groundwater modeling should be completed using the Quick_Domenico Model. This is one of the PaDEP approved models referenced in Act 2. Quick_Domenico should be well suited for use at the subject Site given the overburden aquifer (and PaDEP has acknowledged that it can be utilized on fractured rock sites as long as the biodegradation factor is set to zero when significant characterization data exists).

Task 3.2 - Hydrocarbon Mass Estimate Documentation

An estimate of the mass of hydrocarbons remaining in the subsurface shall be provided. This estimate should use available site data and may take advantage of accepted approximations, however if used such approximations and estimates must be explained and justified.

Task 3.3 - Risk Assessment Evaluation

A risk assessment 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-specific standards and pathway elimination, and guidance on site-specific human health assessment procedures. This guidance should be followed to conduct a baseline risk assessment or to develop site-specific standards. If complete exposure pathways exist, the fate and transport analysis, which is a part of the exposure assessment, should be documented in the SCCR.

The results of the FT/RA evaluation will be utilized to develop closure goals for the Site so that an appropriate RAP consistent with subsurface conditions may be developed.

Task 4.0 - Preparation of Supplemental Site Characterization Report

The consultant shall prepare a Supplemental Site Characterization Report that documents and discusses the data obtained and the conclusions drawn from the completion of Tasks 2.0 and 3.0. At a minimum, Figures that support the text should include the following:

- USGS Topographic Map of Study Area
- Aerial Photo or Satellite Image of the Site Area
- Site Map (showing Site boundaries and pertinent Site features)
- Area Map (showing Site and adjacent properties, property boundaries, and property features; should be based on tax map)
- Geologic map (showing area bedrock geology and overburden, if available)
- Local Geologic Features Map (showing Site geology and pertinent structural features [strike and dip])
- Soil Sampling Location Map
- Soil Sampling Results Map (showing source areas or inferred source areas at the Site; iso-concentration maps should be prepared based on the available data)
- Monitoring Well Location Map (showing existing and new well locations)
- Groundwater Elevation Contour Map(s) for each sampling event
- Groundwater Sampling Results Map(s) for each sampling event (with results tabulated on the map)
- Groundwater Iso-concentration Maps (showing source areas or inferred source areas at the Site; iso-concentration contours should be prepared for benzene and MTBE, as appropriate, based on the available data)
- Fate and Transport Figures, as appropriate, based on the results obtained from Quick_Domenico Modeling
- A figure to support text discussing a Site conceptual model
- Other Figures as appropriate

Figures should be located in the first Appendix for ease of reference. Additional Appendices should be provided to include well and soil-boring logs, soil results tables and data, groundwater results tables and data, pump test data and results, soil disposal documentation, as applicable, a recent EDR-type report detailing nearby potential receptors and sources, etc, and documentation of Quick Domenico input parameters (including justification where de-fault values were not utilized) and the resulting spreadsheet output pages, risk assessment program (such as RBCA) input and output documentation sufficient for evaluation as required by PaDEP. Other Attachments should be provided as appropriate.

The SSCR must comply with the provisions of Chapter 245 Section 245.309 Site Characterization, and, Section 245.310, Site Characterization Report. The report shall provide a detailed summary of the tasks completed and provide an interpretation of the results. The report shall be submitted to PaDEP no later than November 30, 2009. A draft report is requested by ICFI and USTIF 15 days prior to PaDEP submittal (November 15, 2009).

QUALIFICATION QUESTIONS

In order for proposals to be considered administratively complete, the proposals need to provide answers to the five (5) qualifications and experience questions provided below:

- 1) 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?
- 2) How many Chapter 245 projects are your company currently consultant on record for in the Northeast region of Pennsylvania? Please List.
- 3) How many Chapter 245 projects have your company and/or the proposed Pennsylvania licensed P.G. worked on in the Northeast region of Pennsylvania during the last five (5) years?
- 4) 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.
- 5) 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 successful bidder 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. A draft copy of the proposed fixed price contract is included in **Attachment 4**.

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 bidder's approach to achieving those objectives efficiently based on the existing site information provided in this RFB;
- A fixed price cost estimate for work through the completion of the work plan activities;
- Provide a detailed schedule of activities for completing the proposed scope of work inclusive of reasonable assumptions regarding the timing and duration of client 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 spreadsheets (Attachment 1);
- 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/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;
- 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; and
- Provide a description of how the proposed work scope will be completed.

In addition, 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 successful bidder will complete both the cost summary sheet and the detailed cost sheet included in **Attachment 1**. An electronic version of the detailed cost spreadsheet included in **Attachment 1** (in Microsoft Excel Format) has been provided on the accompanying compact disk. In addition to the cost spreadsheet, each bidder should modify the Milestone/Proposed Payment Schedules included as Exhibit B and Exhibit C of the fixed price contract in **Attachment 4** to reflect the Bidder's anticipated time schedule. The detailed cost spreadsheet and the RFB

SOW will be will be incorporated as attachments to the Fixed Price Contract (also included in **Attachment 4**). Actual milestone payments will occur after all tasks in the milestone (as documented in Exhibit B and Exhibit C in the Fixed Price Contract) have been successfully completed and results (reports, analytical data package, boring logs, etc.) have been provided to the claimant and USTIF. 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 bidder's work to complete the tasks discussed will be subject to ongoing review by the PAUSTIF or its representatives to assess whether the work actually completed and the associated incurred costs are reasonable, necessary, and appropriate. 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 tasks identified in the bid. The bid responses must clearly and unambiguously accept the provided contract or must clearly cross reference any requested changes. Proposed changes to the contract, other than those necessary to create it (i.e., Exhibits A-D; 2A and 17 as examples), those may be grounds for rejection of the bid. Also, bid responses referencing extremely narrow or unreasonable assumptions, special conditions, and exemptions may be rejected prior to evaluation.

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 AJA 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. In addition for your reference, a copy of the USTIF Competitive Bidding Fact Sheet is provided in Attachment 5. The aforementioned guidance document will provide you with additional information regarding the bidding process.

MANDATORY SITE VISIT

On **November 12, 2009**, the Technical Contact (or designee) will be at the site at 1:00 PM 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. **Any firm that does not attend the November 12, 2009 mandatory site visit will not be eligible to submit a bid response.**

Attachment 1

Cost Summary Sheet

Attachment 2

Maps and Figures

Attachment 3

**Amended Site Characterization Report,
November 2008**

And

PaDEP Response, dated February 19, 2009

Attachment 4

Draft Proposed Fixed Price Contract

Attachment 5

Competitive Bidding Procedures (5/13/08)