

# COMPETITIVE FIXED-PRICE BID SOLICITATION

## SITE CHARACTERIZATION ACTIVITIES, REMEDIAL ALTERNATIVES ANALYSIS, AND SITE CHARACTERIZATION REPORT / REMEDIAL ACTION PLAN PREPARATION

**BRUCETON FARM SERVICES, INC.  
BFS FOODS UNIONTOWN  
456 MORGANTOWN ROAD  
UNIONTOWN, FAYETTE COUNTY, PENNSYLVANIA 15401**

**PADEP FACILITY ID #26-31136  
PAUSTIF CLAIM #2002-0198(F)**

*October 26, 2010*

This Request for Bid (RFB) Solicitation has been issued by the Pennsylvania Underground Storage Tank Indemnification Fund (PAUSTIF or "Fund") on behalf of the Claimant, Mr. Howard Goodstein of Bruceton Farm Services, Inc. (BFS), who hereafter is referred to as the client or Solicitor. In general, this RFB references a scope of work (SOW) for completing site characterization activities, a remedial alternatives analysis, and preparation / submittal of a combination Site Characterization Report (SCR) / Remedial Action Plan (RAP) for this active retail gasoline, diesel fuel, and kerosene sales and convenience store facility. The facility is known as BFS Foods Uniontown and is located at 456 Morgantown Rd., Uniontown, Fayette County, PA.

At the present time, the Solicitor has elected to pursue an Act 2 closure based on demonstrating attainment of the used aquifer Statewide Health Standard (SHS) Medium-Specific Concentrations (MSCs) for soil and groundwater in a residential setting.

The purpose of this assignment is to provide sufficient data that supports identifying and subsequently implementing an effective remedial solution leading to site closure and a relief of liability under Pennsylvania Department of Environmental Protection (PADEP or Department) Act 2 regulations. However, implementing the RAP, once it is approved by the PADEP, will be performed under a separate agreement.<sup>1</sup>

The SOW (Tasks 1 through 12) described below will be subject to a Fixed-Price Agreement (see Attachment 2) to be executed by the Solicitor and the selected consultant. The Solicitor requests a written approach, schedule, and firm fixed-price bid to complete these tasks, which are to be completed in accordance with all applicable PADEP rules and regulations. Although not a party to this Agreement, the Fund will reimburse 100 percent of the reasonable, necessary, and appropriate costs referenced in the Milestone Payment Schedule specified in Section 4 below and as incorporated into the signed Fixed-Price Agreement.

- Task 1. Additional Background Research
- Task 2. Professional Site Survey
- Task 3. On-Property Geophysical Survey
- Task 4. Soil Gas Survey
- Task 5. Soil Vapor Intrusion Sampling
- Task 6. Source Soil Delineation

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<sup>1</sup> This separate agreement will either be negotiated with the consultant selected pursuant to this RFB or will be the subject of a separate competitive bid solicitation.

- Task 7. Installation of Additional Groundwater Monitoring Wells
- Task 8. Groundwater Quality Monitoring and Sampling
- Task 9. Aquifer Characterization Testing
- Task 10. Contaminant Fate-and-Transport Modeling
- Task 11. Conceptual Site Model
- Task 12. Prepare a Draft and Final Combined SCR / RAP

**Please note that a bidder's response to this RFB Solicitation Package means it has accepted all the contractual terms and SOW requirements (for example, but not limited to, any report submittal deadlines) unless explicitly stated to the contrary in the bid response.** However, bidders are still expected to describe their approach to completing the SOW in full and in detail.

**Should your company elect to respond to this RFB Solicitation, one copy of the signed bid package must be provided directly to the Funds' third-party administrator, ICF International (ICFI), at the address and to the attention of the person identified in Section 1 below. In addition to this one hard copy submittal, the complete bid response must be submitted to ICFI electronically (Adobe PDF format) on a compact disk (CD) to be included with the hard copy bid response. The outside of the hard copy bid response package must be clearly marked and labeled with "Bid – Claim #2002-0198(F)."**

Please note that **the bid response (hard copy and digital version) is to be sent only to ICFI** who will be responsible for opening the bids and providing copies to the Technical Contact and the Solicitor. No bid responses will be opened for review until the due date and time elapses. No portion or element of any bid response will be distributed by ICFI to any party other than the Solicitor, the Technical Contact, and PAUSTIF.

**The signed bid package (hard copy and electronic copy) sent to ICFI must arrive no later than close of business (5 p.m.) on November 30, 2010.** Please note that if your bid response is not received by ICFI by this due date and time, it will not be considered, i.e., only those bid responses received by the specified due date and time from those bidders who also attended the mandatory pre-bid site visit (see Section 6) will be considered.

Each bid response will be considered individually and consistent with the evaluation process described in the PAUSTIF Competitive Bidding Fact Sheet, which can be downloaded from the PAUSTIF web site (see [www.ins.state.pa.us](http://www.ins.state.pa.us)). Key considerations for the bid evaluation shall include, but are not necessarily limited to the following:

- Conducting a thorough review of the prior site documentation, including the 5/3/04, 4/11/06, 8/22/08, and 9/29/09 Notice of Violation (NOV) letters issued by the PADEP notifying the tank owner of its obligation to address the unleaded gasoline release and disapproval of the SCR / RAP and Expanded SCR / RAP.
- Demonstrating a well-supported understanding of site hydrogeologic conditions that shall include the bidder's assessment of the dissolved-phase contaminant plume.
- Addressing the requirement to identify all current and potential future migration / exposure pathways, including the vapor intrusion pathway associated with the release.
- Addressing the requirement to delineate the horizontal and vertical extent of residual contaminant mass in soil in the current dispenser, fuel conveyance lines, and UST areas, and in other potential historical source areas that may be identified during the investigation work.
- Addressing all requirements of Tasks 1 through 12, including the requirement to prepare a combined SCR / RAP.

- Designing a project approach and schedule that periodically takes stock of whether the remedial goal of demonstrating attainment with the residential used aquifer SHS-MSCs for soil and groundwater can be reasonably achieved at this site.

While the Technical Contact will assist ICFI, PAUSTIF, and the Solicitor in evaluating the bid responses, it is up to the Solicitor to select his consultant from those bid responses deemed acceptable to PAUSTIF as reasonable, necessary, and appropriate. The Technical Contact will assist the Solicitor in communicating its choice of the successful bidder, which is anticipated to occur within six (6) weeks after receiving the bid responses.

## 1. ICFI, SOLICITOR, AND TECHNICAL CONTACT INFORMATION

<u>ICF International</u>	<u>Solicitor</u>	<u>Technical Contact</u>
Ms. Bonnie Mackewicz ICF International 4000 Vine Street Middletown, PA 17057	Mr. Howard Goodstein Bruceeton Farm Service, Inc. 1766 Mileground Road Morgantown, WV 26505	Mr. R. Michael Lowe Excalibur Group, LLC 4127 Bennett Drive Annandale, VA 22003 <a href="mailto:mlowe@excaliburgrpllc.com">mlowe@excaliburgrpllc.com</a>

**Please note that there is a single point of contact regarding this RFB Solicitation.** All questions regarding this RFB Solicitation and the site conditions must be directed **in written form only** to the Technical Contact and must be received no later than seven (7) calendar days prior to the due date for the bid response. Bidders must neither contact nor discuss this RFB Solicitation with the Solicitors, PAUSTIF, or ICFI unless approved by the Technical Contact. This RFB Solicitation may be discussed with subcontractors and vendors to the extent required for preparing the bid response. If a bidder has specific questions it wishes to discuss with the PADEP, these questions should be provided to the Technical Contact who will forward them to the PADEP, but the PADEP may elect not to reply to any questions it receives.

Please note that unless a question can be successfully demonstrated to be proprietary in nature, all submitted questions and responses submitted during and after the pre-bid site visit will be shared with all bidders on a non-attributable basis. A bidder shall specify any questions it regards as proprietary upon submitting these questions to the Technical Contact. If said question(s) is (are) determined to be non-proprietary by the Solicitor and the Technical Contact, the bidder will be given the option of withdrawing its question(s) before it is answered and a response distributed.

## 2. GENERAL SITE BACKGROUND AND DESCRIPTION

The BFS site is located at 456 Morgantown Road in Uniontown, PA and is situated on an approximate 0.5 acre lot at the intersection of Albion Street and Morgantown Road. The consultants of record, Ryan Environmental / DHI Engineering and Environmental Services (Ryan/DHI) reported that the retail fuel sales and convenience store facility has been in operation since 1987. Ryan/DHI also reported that before 1987, the facility had been a residential property since 1924 and was later developed as a commercial property at an unspecified date. In addition to supporting the convenience store, the property building also houses a separate commercial space which is currently leased to a restaurant.

The retail fueling and convenience store facility currently operates five fiberglass-constructed underground storage tanks (UST) that include three 10,000-gallon unleaded gasoline USTs, one 6,000-gallon diesel fuel UST, and one 2,000-gallon kerosene UST. The USTs were reported to have been installed in 1987, presumably when BFS opened their facility and are located between the convenience store and the dispenser island/canopy.

The facility has three dispensers (two unleaded gasoline and one diesel) located on pump islands beneath a canopy situated to the southeast of the convenience store fronting Morgantown Street. There is also a kerosene dispenser located off the east corner of the convenience store fronting Albion Street. There is no canopy over the kerosene dispenser but it is protected by bollards.

An unleaded gasoline release of an undetermined volume was discovered as a result of a failed line tightness test conducted in 1992 by Bolger Brothers, Inc. (BBI). Following the failed test, BBI excavated

and replaced the conveyance piping from the UST systems to the dispensers in April 2002 and reported that the steel-constructed piping was in poor condition and that a pinhole leak was discovered in the premium gasoline conveyance pipe near the premium gasoline dispenser. BBI also excavated presumably contaminated soil to the top of the USTs where the conveyance piping connects to the USTs.<sup>2</sup>

BBI collected 12 soil samples (L-1 through L-3, L-5 through L-9, and S-1 through S-4) on 4/12/02 from the areas where soil was excavated. However, it is unclear whether the samples collected by BBI were obtained before, during or after the excavation of contaminated soil. Laboratory analyses of the soil samples indicated that eight of the twelve samples contained unleaded gasoline constituents that exceeded applicable PADEP SHS MSCs.

On 4/30/02, BMS Environmental, Inc. (BMSE) installed additional on-property soil borings B-1 through B-6 in the area southeast of the dispensers and UST field. Concentrations of gasoline compounds in the soil samples collected from those borings were reportedly found to be less than the SHS MSCs. Additionally, in May 2002, BMSE installed on-property groundwater monitoring wells MW-1 through MW-5 and subsequently initiated a quarterly groundwater monitoring and sampling program. BMSE collected eight soil samples during the installation of these wells and reported that no PADEP unleaded gasoline constituents were found in the samples at concentrations greater than the SHS MSCs.<sup>3</sup>

On 6/12/02, following BBI's soil excavation/sampling work and BSME's subsequent soil sampling and groundwater monitoring well installations, the PADEP issued a letter to BFS requiring it to complete and submit a SCR / RAP no later than 10/12/02 to address the obvious and localized contamination that was reported by BBI in the UST Closure Report.

BMSE reportedly submitted a SCR to the PADEP on behalf of BFS in early 2004.<sup>4</sup> In their 5/3/04 response, the PADEP disapproved the SCR and issued BFS their first of four Notice of Violations (NOVs). The PADEP's NOV / SCR disapproval letter cited that obvious, localized soil contamination was reported in the UST Closure Report and that "...no documentation that remedial activities were conducted to address these impacts have been submitted to the Department...". The PADEP also stated that the MTBE plume was inadequately delineated downgradient of the property line and, for the three quarterly groundwater sampling events conducted at the site to date, there was inadequate groundwater recovery in at least one of the five wells sampled.

In response to the PADEP's comments on the SCR, BMSE installed additional on- and off-property delineation wells MW-6 through MW-10 in May 2004. MW-6 through MW-8 were located on-property near the northern property boundary and MW-9 and MW-10 were located off-property to the north across Albion Street.<sup>5</sup>

Following the additional well installation and sampling work, BMSE reportedly submitted a revised SCR / RAP to the PADEP in December 2005.<sup>6</sup> In the PADEP's subsequent 4/11/06 letter to BFS, the

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<sup>2</sup> The only available information regarding the depth of excavation beneath the conveyance piping and over the USTs was included in the UST Closure Reports.

<sup>3</sup> The Expanded SCR / RAP stated that the five wells were installed to a depth of only 27 feet below grade because the driller did not have the necessary equipment in the field to drill the wells deeper.

<sup>4</sup> Excalibur was unable to evaluate this document because it was not contained in the claim file.

<sup>5</sup> The data in the RAPs indicate that the average static groundwater elevation across the site ranges from 23.12 feet (MW-1) to 35.41 feet (MW-8) below grade. During at least three quarterly groundwater sampling events conducted in May, July and September 2003, one or more of the wells had an inadequate volume of groundwater to recover samples and Ryan/DHI has been unable to collect a quarterly groundwater sample from MW-5 since 3/31/05, reportedly due to an inadequate volume of groundwater in the well.

<sup>6</sup> Excalibur was unable to evaluate this document because it was not contained in the claim file.

Department disapproved the December 2005 SCR / RAP and BFS was issued a second NOV. The PADEP specified the following deficiencies in the SCR / RAP:

1. The MTBE plume in groundwater was not adequately delineated in the downgradient direction beyond wells MW-8 and MW-9.
2. Values for hydraulic gradient and hydraulic conductivity that could aid in fate and transport (F&T) modeling of the MTBE plume had not been measured.
3. Soil samples collected after the conveyance line replacement was completed (soil samples B-1 through B-6 on 4/30/02) and soil samples collected from monitoring well installations did not contain unleaded gasoline constituents greater than the SHS MSCs. Therefore, the extent of contamination in soil has been delineated.<sup>7</sup> However, the RAP failed to identify how contaminated soil found during UST conveyance line repairs would be addressed.
4. The SCR / RAP specified monitored natural attenuation (MNA) as the sole remedy for the dissolved phase MTBE plume in groundwater. To use MNA as the sole remedy, BMSE would have needed to demonstrate that the MTBE plume in groundwater is either stable or shrinking. Furthermore, BMSE did not include monitoring for MNA parameters in groundwater (e.g., dissolved oxygen, ORP, nitrate, sulfate, etc.) that could verify whether natural attenuation is occurring at the site at rates that are sufficient to remediate the MTBE plume to the SHS in a reasonable timeframe.

In light of the comments defined in the PADEP's second NOV as listed above, the Department required that a revised SCR / RAP be submitted no later than 6/12/06.

On 6/14/06, BMSE submitted a letter response to the PADEP's 4/11/06 NOV and SCR / RAP disapproval letter wherein they asserted that the MTBE plume in groundwater had been adequately delineated in the area around MW-8 and MW-9. BMSE also presented MTBE concentration trend-line graphs depicting decreasing concentrations of dissolved phase MTBE over time. BMSE further suggested that it would install additional groundwater monitoring wells, determine natural attenuation parameters through field measurement and sample analysis, and conduct slug tests for the purpose of calculating hydraulic conductivity if requested by the PADEP.

It is unknown whether the PADEP ever responded to BMSE's 6/14/06 letter, but in October 2007 BMSE installed additional off-property delineation wells MW-11 and MW-12. MW-11 was installed to the northeast of the property in the right of way (ROW) of Morgantown Road and MW-12 was installed to the north of the property in an alley off of Albion Street.

On 10/19/07, the PADEP issued a letter to BFS stating that they had received BMSE's quarterly monitoring report for September 2007 and, because there was no approved SCR / RAP for the site, additional quarterly monitoring of the site was not required unless:

1. Data was being gathered in support of the RAP;
2. Attainment monitoring was being performed under an approved RAP; or,

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<sup>7</sup> While the PADEP states in their letter that from a regulatory perspective, soil delineation is complete, it is believed that the soil delineation was likely inadequate for developing a cost effective remedial solution for the site. It was noted that only one soil sample (S-1 at 4 ft.) was collected outside the perimeter of the UST field. Moreover, all of the samples collected by BBI and BMSE were relatively shallow ranging from 1 to 7.8 feet below grade. It was also noted in the monitoring well boring logs that the depth to fractured bedrock in some areas of the site is 7 - 9 feet below grade and that Ryan/DHI had later reported collecting soil samples (SS-1 through SS-4) from 12 - 16 ft. below grade. Therefore, additional excessively contaminated soil serving as a source of groundwater impacts may be potentially present at the site, particularly in the areas beneath and surrounding the USTs, conveyance piping, and product dispensers at depths from 7 to potentially 16 feet below grade.

3. The Owner/Operator had received explicit instructions from the Department to perform quarterly or periodic groundwater monitoring.

The letter asked that BFS check their records to see if any of the conditions stated above were in effect and, if not, no further quarterly monitoring was required for the site at that time. Moreover, the letter stated that the USTIF may not reimburse BFS for costs associated with quarterly groundwater monitoring unless directed to do so by the PADEP.

In May 2008 Ryan/DHI (DHI was formerly BMSE) submitted their *Expanded Site Characterization Report / Remedial Action Plan* to the PADEP. On 8/22/08, the PADEP responded to that report by issuing a third NOV and SCR / RAP disapproval letter to BFS. The PADEP stated in their letter that the SCR portion of the Expanded SCR / RAP was disapproved because it was determined to be incomplete for the following reasons:

1. Input parameters for F&T modeling that include fractional organic carbon and hydraulic conductivity were not measured at the site.
2. Ryan/DHI did not evaluate all potential current or future exposure pathways including the vapor intrusion pathway.
3. Point of Compliance (POC) wells were not identified at the site.

The RAP portion of the Expanded SCR / RAP was disapproved and was found to be incomplete for the following reasons:

1. Documents submitted to the Department to date did not indicate that contaminated soil was ever removed from the site. Ryan/DHI did not present a remedy in the RAP to address contaminated soil at the site.
2. After conducting their own statistical analysis of dissolved phase MTBE data for wells MW-6, MW-7 and MW-9, the Department did not concur that MNA will remediate the MTBE plume in a reasonable timeframe. The PADEP also cited that the RAP did not specify the collection of MNA parameters to determine if MTBE degradation rates are sufficient to remediate the MTBE plume to the SHS in a reasonable timeframe nor did it present data from treatability, bench-test or pilot test studies that would support the proposed MNA remedy.

The PADEP did not specify a due date for submitting a revised SCR / RAP in the NOV letter, but based on typical Departmental procedure, it is probable that a revised SCR / RAP would have been expected within 45 days from the date of the NOV letter.

On 5/8/09, the PADEP issued a Notice of Proposed Assessment (NPA) letter to BFS summarizing the dates that the SCR, SCR / RAP and Expanded SCR / RAP were submitted to the PADEP and when their respective NOVs/disapprovals were sent to BFS. The NPA specified the same deficiencies for the SCR and RAP portions of the Expanded SCR / RAP that were cited in the Department's 8/22/08 disapproval letter to BFS. The NPA also provided notification that BFS was subject to an \$8,000 civil penalty with increasing penalty amounts for accrued days of noncompliance with the regulations.

Ryan/DHI responded to the NPA in a letter dated 5/21/09 which indicated that Ryan would be working with DHI to resolve the deficiencies cited by the PADEP in the Expanded SCR / RAP. The letter included a general work plan that specified the following activities:

- Conducting slug tests within wells MW-6, MW-7 and MW-8;
- Sampling wells for total organic carbon and MNA parameters;

- Installing additional soil borings near the former conveyance line excavation;
- Collecting/analyzing soil samples from the new soil borings (SS-1 through SS-4);<sup>8</sup>
- Collecting field parameters and samples for the development of a F&T model;
- Evaluating potential current and future exposure pathways;
- Identifying POC wells; and,
- Developing and submitting a revised SCR/RAP.

Ryan/DHI's response letter also included a decision matrix from which they concluded that indoor air quality sampling was not required at the site.

On 9/29/09, the PADEP issued BFS a fourth NOV indicating disapproval of the SCR / RAP that was submitted by Ryan/DHI in July 2009.<sup>9</sup> The SCR portion was disapproved as being incomplete because:

1. The SCR did not include measurements for fractional organic carbon for F&T modeling;
2. There was no interpretation of calculated hydraulic conductivity values that apparently fluctuated widely between the wells tested;
3. Potential current or future exposure pathways were not evaluated and Ryan/DHI had not identified the locations of underground utilities beneath the site; and,
4. Specifics regarding the input parameters for the Quick Dominico (QD), Modflow 2000 and MT3D models were not provided.

The RAP portion was disapproved as being incomplete because:

1. Attainment of the SHS for soil had not been demonstrated;
2. The Department did not concur that MNA will remediate the dissolved phase MTBE plume in a reasonable timeframe and, although Ryan/DHI collected MNA parameters at the site, they provided no interpretation of the results; and,
3. No treatability, bench or pilot test results were provided that would indicate the proposed installation of ORC socks in select wells would be effective in the remediation of the dissolved phase MTBE plume.

Ryan/DHI provided a detailed response to the PADEP's NOV and SCR / RAP disapproval letter on 10/7/09 which included a rebuttal to each of the issues identified in the PADEP's NOV letter and requested further evaluation of the SCR / RAP by the PADEP based on their response. However, Ryan/DHI did not indicate in their letter that they would conduct further activities at the site to resolve the deficiencies identified in the PADEP's 9/29/09 NOV and SCR / RAP disapproval letter.

On 10/20/09, the PADEP issued a Consent Assessment of Civil Penalty to BFS in the amount of \$4,000 for its failure to submit a complete and concise SCR. There are no records indicating that Ryan/DHI responded to the Consent Assessment of Civil Penalty or that BFS paid the civil penalty of \$4,000.

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<sup>8</sup> The collection methods and sampling results for the four soil samples (SS-1 through SS-4) Ryan/DHI collected beneath the former conveyance line excavation are not documented in any of the available files. A request was made that Ryan/DHI submit the soil sampling results, the depths at which the soil samples were collected and a site map depicting the locations of the samples. Ryan/DHI forwarded the sample results (all non-detect) and the depths at which the samples were collected (12 - 16 ft. below grade) but a sample location map was not provided.

<sup>9</sup> Excalibur was unable to evaluate this document because it was not contained in the claim file.

Additional background information available for this site is included in Attachment 1.<sup>10</sup> In light of the list of deficiencies identified by the PADEP in its SCR disapproval letters, bidders should carefully consider what information, analyses, and interpretations contained in the May 2008 Expanded SCR/RAP and other background documents can be relied upon in formulating a **new** comprehensive SCR/RAP submittal.

### 3. SCOPE OF WORK OBJECTIVES

This RFB seeks competitive, fixed-price bids to complete the 12 tasks outlined below. To be deemed responsive, each bid must respond in detail to each of the scope of work tasks, as well as describe and apply the bidder's conceptual site model interpretation as it pertains to conduct of the proposed SOW. Any modification to the selected consultant's SOW for Tasks 1 through 12 will require prior written approval by the Solicitor **and PAUSTIF** through its third-party administrator, and may also require PADEP pre-approval. Bidders should note that this SOW was provided to the PADEP-SWRO case manager in the process of developing the RFB Solicitation package.

It is expected that the selected consultant's approach to completing the SOW will be in accordance with generally accepted industry standards / practices and all applicable federal, state, and local rules, guidance, directives, and regulations, including (but not limited to) satisfying the requirements of the Storage Tank and Spill Prevention Act (Act 32 of 1989, as amended), Pa. Code, Title 25, Chapter 245, and meeting and demonstrating attainment of the standards established under the Land Recycling and Environmental Remediation Standards Act (Act 2 of 1995) and Pa. Code, Chapter 250 (Administration of Land Recycling Program).

The Solicitor specifies that the SOW covered by Tasks 1 through 12, including submitting a combination SCR / RAP to the PADEP for review, must be completed within **6 months** following contract award. **The bidder's proposed project schedule for Tasks 1 through 12 must clearly meet this requirement.** This schedule must also specify no less than two (2) weeks for the Solicitor and PAUSTIF to review and comment on the draft SCR / RAP before these reports are submitted to the PADEP for its review and comment.<sup>11</sup>

In addition to the SOW tasks specified below, the selected consultant shall also:

- Complete necessary, reasonable, and appropriate project planning and management activities until the SOW specified in the executed contract has been completed. Such activities would be expected to include client communications/updates, meetings, record keeping, subcontracting, personnel and subcontractor management, quality assurance/quality control, scheduling, and other activities (e.g., utility location, etc.). Project planning and management activities will also include preparing and implementing plans for Health and Safety, Waste Management, Field Sampling/Analysis, and/or other plans that may be required by regulations or that may be necessary and appropriate to complete the SOW, and shall also include activities related to establishing any necessary access agreements. Project management costs shall be included in the fixed-price quoted for Tasks 1 through 12, as appropriate.
- Be responsible for coordinating, managing and completing the proper management, characterization, handling, treatment, and/or disposal of all impacted soils, water, and derivative wastes generated during the implementation of this SOW in accordance with standard industry practices and applicable laws, regulations, guidance, and PADEP directives. Waste

<sup>10</sup> The best scanned-in version of each document available to the Technical Contact has been provided.

<sup>11</sup> Addressing potential PADEP comments on the SCR / RAP is not a component of this RFB. Should addressing PADEP comments on the SCR / RAP become necessary, the selected consultant will define a scope of work and associated cost at that time for approval by the Solicitor and PAUSTIF.

characterization and disposal documentation (e.g., manifests) shall be maintained and provided to the Solicitor upon request. Waste disposal costs shall be included in the fixed-price quoted for Tasks 1 through 12, as appropriate.

- Be responsible for providing the Solicitor with adequate advance notice prior to each visit to the property. The purpose of this notification is to coordinate with the Solicitor to ensure that appropriate areas of the property are accessible. Return visits to the site prompted by a failure to make the necessary logistical arrangements in advance will **not** constitute a change in the selected consultant's SOW or total project cost for Tasks 1 through 12.
- Be responsible for keeping all wells in good condition, with each well properly sealed and locked in-between each monitoring/sampling event. The selected consultant is responsible for repairing any seals or locks that become defective during the period of this contract at its expense; however, should a well become damaged or destroyed through no fault of the contractor, the Solicitor may request that the selected consultant repair or replace the well as an amendment to this SOW subject to the rate schedule provided in the selected consultant's bid response. Any request for Fund reimbursement of the reasonable costs to repair or replace a well will be considered on a case-by-case basis.

**Task 1 – Additional Background Research.** Through review and evaluation of the historical information summarized in Section 2 above and the additional site background information included in the accompanying electronic files, bidders will understand what is currently known about: (i) facility features and setting; (ii) current and historical surrounding land uses; (iii) regional and local geology, hydrogeology, and hydrology; (iv) local groundwater use; (v) utilities; (vi) known or suspected source areas; (vii) sensitive receptors; and (viii) previous interim remedial measures, (ix) environmental investigations, and (x) regulatory issues. However, under this task, bidders shall address any perceived gaps in the current understanding of site and surrounding area conditions that may prove important for completing the site characterization. At a minimum, each bid shall address the following additional background research needs:

- a) As noted in Section 2, there are uncertainties concerning pre-1987 property use(s), historic UST locations (if any), and UST operational history. For example, the available documents do not provide specific information as to when the property was converted from residential to commercial use. Of particular concern is the lack of information regarding property use prior to BFS initiating retail fueling operations in 1987 and, if previously used for commercial purposes, the type(s) of business(es) or potential UST systems that historically existed on the property.
- b) The May 2008 Expanded SCR / RAP does not present sufficient information concerning the current and historical uses of properties immediately surrounding the BFS facility.
- c) The location, depth, and orientation of all below-grade utilities entering and on the subject property have not been sufficiently defined for evaluation as preferential contaminant migration pathways.

This task shall also include performing a sensitive receptor survey to assist with identifying current and potential future exposure pathways. The survey shall include, but not necessarily be limited to, researching available databases for private and public water supplies; researching other informational databases, as necessary; assessing underground conduits, utilities, and other potential preferential pathways; determining the nature of any local water-use ordinance; and evaluating potential ecological receptors (e.g. surface water bodies).

Bidders shall provide a firm fixed-price for completing these additional background research activities, the results of which shall be summarized in the SCR / RAP (Task 12).

**Task 2 – Professional Site Survey.** The SCR contains one drawing dated 1995 that depicts an appropriate scale, shows property boundaries, right-of-ways and the adjacent properties. However, this drawing does not depict the surveyed locations of easements, sanitary and storm water sewer lines, underground water and natural gas lines (if any). Therefore, under this task, bidders shall provide a firm, fixed-price quote for completing a survey of the site to be conducted by a professional surveyor licensed in the Commonwealth of Pennsylvania. Work under this task shall include, but is not necessarily limited to, the following:

- Obtaining tax maps of the subject property and surrounding adjoining properties;
- Surveying in property boundaries, roadway right-of-ways, site features (e.g. buildings, fueling islands, UST field, etc.), and above and below grade utilities;
- Surveying in locations and ground surface elevations for the soil vapor monitoring points and soil borings to be completed under Tasks 5 and 6, respectively; and,
- Surveying in locations and elevations, ground surface (top of surface cover) and top-of-casing (PVC riser pipe), for the eight existing on-property monitoring wells, the four existing off-property monitoring wells and the additional monitoring wells to be installed under Task 7.

Monitoring well, soil boring, and soil vapor monitoring point locations should include northing and easting coordinates. All elevations should be based on the nearest USGS benchmark and recorded to the nearest 0.01 foot. Results of the professional survey shall be provided on an appropriately scaled site plan that shall be sealed by the professional surveyor and included in the SCR / RAP (Task 12).

**Task 3 – On-Property Geophysical Survey.** There is no evidence that a geophysical survey was ever conducted on this property to adequately delineate the locations of underground utilities and the current USTs, tank field boundary, and associated product piping and piping trenches. Therefore, under this task, bidders shall conduct a geophysical survey over all accessible areas of the property. The bidder shall select the appropriate geophysical surveying method(s) it shall use to identify the locations of the above referenced underground features as well as possible historical USTs / excavations and other potential subsurface anomalies. Results from the geophysical survey shall be used to assist with the placement of soil borings (Task 6), soil vapor monitoring points (Task 5), and groundwater monitoring wells (Task 7) (along with the required PA One Call notification and the use of location-specific borehole clearance methods). The locations of identified subsurface features shall be marked with paint on the ground surface to guide the intrusive activities and shall be depicted on a scaled site plan. The conduct and results of the geophysical survey shall be described in the SCR / RAP (Task 12).

**Task 4 – Soil Gas Survey.** Since there remains uncertainty in the location of sources of dissolved-phase MTBE (only trace concentrations of other PADEP unleaded gasoline constituents have ever been found in groundwater), bidders shall provide a fixed-price cost for conducting MTBE soil vapor screening encompassing the UST systems (i.e., USTs, fuel conveyance piping, and dispensers) and surrounding areas. The bidders shall select the appropriate soil vapor screening method(s) it shall use to locate peak concentrations of MTBE in soil vapor. Results of the soil vapor screening shall be (a) utilized to aid in depicting zones of elevated MTBE soil vapor concentrations surrounding the UST systems on a scaled site map; (b) combined with utility clearance activities (e.g. PA One Call, geophysical survey, etc.) to locate proposed supplemental soil borings (Task 6) and monitoring wells (Task 7); and (c) used to assist with determining the need for and scope of soil vapor intrusion sampling (Task 5). As appropriate, the location of peak MTBE concentrations in soil vapor shall be marked on the ground surface for subsequent positioning of the soil borings and/or monitoring wells. For the purpose of this bid solicitation, bidders shall assume completing and sampling a total of twelve (12) MTBE vapor screening points. In addition, bidders shall quote an all-inclusive unit price per vapor screening point should more or fewer points be

needed. The conduct and results of the soil vapor survey around the UST systems shall be described in the SCR / RAP (Task 12).

**Task 5 – Soil Vapor Intrusion Sampling.** Under this task, bidders shall provide a fixed-price cost for conducting soil vapor sampling if warranted after applying the decision matrices in the *Land Recycling Program Technical Guidance Manual – Section IV.A.4, Vapor Intrusion into Buildings from Soil and Groundwater*, and as dictated by factors such as the potential presence of separate phase hydrocarbons (SPH) and/or the location / depth of any identified preferential pathways. Consequently, should a soil vapor study prove unnecessary at this site, the fixed-price quote for this task will be deducted from the Total Fixed Price referenced in the Fixed-Price Agreement; however, evaluation of the application of the decision matrices shall be included in the SCR / RAP.

If a soil vapor study proves necessary, PADEP concurrence on the need for and scope of the study shall first be secured by submitting a Soil Vapor Sampling Plan for PADEP review and approval. This plan shall be consistent with the requirements, guidance, and decision matrices in the *Land Recycling Program Technical Guidance Manual – Section IV.A.4, Vapor Intrusion into Buildings from Soil and Groundwater*. Currently, absent knowing whether residual source soil exists in areas of the site, selecting proposed locations for the soil vapor monitoring points may be difficult. However, for the purpose of comparing cost quotes, bidders shall assume installing and sampling a total of three (3) soil vapor monitoring points. In addition, bidders shall quote an all-inclusive unit price per soil vapor monitoring point should more or fewer monitoring points be needed. The installed soil vapor monitoring points shall be sampled twice with each sampling event separated by a period of at least four (4) weeks.

Each soil vapor sample shall be collected in pre-certified Summa canisters supplied by the analytical laboratory. The Summa canisters must be fitted with a properly calibrated regulator to allow an approximate 8-hour draw such that each sample represents an 8-hour time-weighted composite. All soil vapor samples shall be submitted to a PADEP-accredited laboratory for analysis of the PADEP pre-March 2008 unleaded gasoline parameters using appropriate analytical methods (e.g., TO-15) and detection levels. Appropriate QA/QC samples shall also be collected and analyzed for the same unleaded gasoline compounds. The soil vapor study shall be described in the SCR / RAP along with any recommendations regarding the necessity for an expanded vapor intrusion assessment inclusive of indoor air quality sampling, if appropriate.

**Task 6 – Source Soil Delineation.** The release of unleaded gasoline appears to have occurred sometime prior to a failed line leak detection test in the premium grade gasoline conveyance line extending from the UST to the dispenser. Upon excavation of the conveyance lines in April 2002, it was reported that the lines were in poor condition and a hole was discovered in one of the lines near the dispenser located on the eastern side of the dispenser island. Consequently, the possibility exists that the UST field was impacted by the line release because gasoline originating from the leak could have migrated through the conveyance line bedding material back to the UST field. It appears that the presence / absence of contaminated soil surrounding the tank field had never been investigated.<sup>12</sup>

It was reported in the UST Closure Report that discrete soil excavations were completed in the area of the conveyance lines on the north side of all three dispensers and above the USTs where the conveyance piping connects to the tanks. The depth of the excavations was not provided in the report forwarded to the PADEP following confirmation of the release but it is assumed the excavations were relatively shallow (about 5 ft. or less) based on the depth at which soil samples were collected. Assuming that the excavations were terminated at approximately 5 ft. below grade or less, and based on boring logs indicating shale and sandstone bedrock at a depth of 7 to 9 ft. below grade, it appears that the remaining

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<sup>12</sup> Note that based on drilling data, the tank bottoms are believed to be in contact with bedrock.

3 - 4 ft. of overburden soil from the base of the excavations to the top of bedrock has never been adequately investigated.

Thirteen shallow soil samples (presumably confirmation samples) were reportedly collected from various locations inside the excavation limits. Of the 13 soil samples collected and analyzed, eight of the samples exceeded Statewide Health Standards (SHS) for at least one PADEP unleaded gasoline constituent. However, it is not clear in the UST Closure Report whether the soil samples were collected before, during, or after excavation of the conveyance piping. There is no other additional information available regarding the depth of the excavations or the timing of soil sample collection relative to the excavation work beyond that contained in the UST Closure Report forms.

Four additional soil samples (SS-1 through SS-4) were reportedly collected on 6/19/09 from soil borings located near the edge of the asphalt surface patch that was installed after the fuel conveyance lines were replaced in 1992. The soil samples were reportedly collected from depths ranging from 12 - 16 ft., likely within the weathered shale and sandstone bedrock horizon, and none of the samples had detectable concentrations of PADEP unleaded gasoline constituents. The specific locations of these four soil borings completed in 2009 are unknown.

Because the existing soil sampling data does not provide conclusive results that excessively impacted soil was completely removed from the site during excavation of the conveyance piping in April 2002, and based on the "flat-line" MTBE contaminant trend in well MW-7 located near the suspected source areas, there is the potential that excessively contaminated soil remains at the site.

Under this task, bidders shall provide a fixed-price cost for implementing a soil boring program to assess the magnitude and extent of potential soil impacts in the area of the dispenser islands, conveyance piping, and USTs. Each bid shall assume advancing twenty (20) soil borings in these areas at proposed locations guided, in part, by the findings from Tasks 1, 2, 3, 4, and 5. The intent is to collect soil samples from borings completed adjacent to the dispenser islands area, conveyance piping, and UST cavities to adequately delineate the horizontal and vertical extent of possible residual soil impacts that may remain. The soil delineation program shall be accomplished safely and without risking damage to utilities or UST system infrastructure. If gross soil impacts are evident based on field screening data and observations, additional soil borings for delineation purposes may need to be completed subject to a comprehensive fixed unit cost per boring to be included with each bid. The unit cost per boring would include borehole advancement, logging, screening, and sample analysis. Tentative locations for the assumed 20 soil borings shall be depicted on a site plan and included with each consultant's bid with the understanding that the proposed locations could possibly vary based on the results provided from earlier tasks or that additional borings may be needed for delineation purposes.

In conducting this task, the Solicitor requires at least two (2) weeks advance notice and coordination with facility personnel, conducting all intrusive work within two days, **and**, if possible, completing the work in such a way as to keep one lane of vehicular access to the dispenser pumps open at all times.

Each soil boring shall achieve a depth that ensures vertical delineation of unsaturated and periodically saturated (smear zone) soils. For the purpose of this bid, bidders shall assume each soil boring will be completed to an average depth of 13 feet below grade based on the expected depth to the top of competent sandstone / shale bedrock generally inferred from previous subsurface investigation work. In the event that additional or reduced drilling footage is required at one or more of the proposed soil boring locations, bidders shall provide a unit cost per foot for borehole advancement, logging, and screening.

In addition to contacting PA One Call and completing the Task 2 geophysical survey, bidders shall assume clearing and sampling the initial five (5) feet of each boring location using a hand auger. Below five feet, each soil boring shall be advanced using direct-push sampling methods. Continuous soil

samples shall be collected beginning immediately beneath the asphalt / concrete surface cover for description of lithologic characteristics, groundwater occurrence, and staining / odor indicative of potential petroleum impacts. Hand auger and direct-push soil core samples shall be screened in the field using a photoionization detector (PID), calibrated daily, and standard headspace methods. One soil sample per boring shall be submitted for laboratory analysis (20 total). This soil sample shall be collected from the depth interval exhibiting the highest organic vapor concentration based on PID headspace screening. If no elevated organic vapor levels are measured along the length of a boring and no staining and/or odors are evident, the one sample shall be obtained either from the depth interval immediately above the water table or at the bottom of the borehole (i.e., refusal at the top of competent bedrock), whichever occurs first. However, to accommodate the possible need to collect additional soil samples based on field observations and in order to delineate the vertical extent of soil contamination, bidders shall provide a unit cost per additional soil sample analysis.

Soil samples shall be analyzed for the pre-March 2008 PADEP short list of unleaded gasoline parameters, excluding 1,2,4- and 1,3,5-trimethylbenzenes. Appropriate quality assurance/quality control (QA/QC) samples shall also be obtained for laboratory analysis.<sup>13</sup> Based on these analytical results, the approximate dimensions and volume of remaining source material exceeding the PADEP Act 2 SHS MSCs for soil, if any, shall be estimated.

Activities under Task 6 shall also include: (i) contacting the PA One Call System, Inc.; (ii) professional surveying of the soil boring locations and elevations for inclusion on the site plan and geologic cross sections; (iii) sealing each boring with bentonite and an asphalt or concrete surface patch after completion; and (iv) managing the drilling and personal protective equipment wastes in accordance with applicable regulations, guidance, and directives. The soil boring program methods and results shall be detailed in the SCR / RAP to be prepared under Task 12.

**Task 7 – Installation of Additional Groundwater Monitoring Wells.** Under this task, bidders shall provide a firm fixed-price cost for installing three additional groundwater monitoring wells on the subject property (two shallow and one vertical extent) and three additional off-property deep groundwater monitoring wells. Example locations for these six additional monitoring wells are shown on the site drawing (Possible Locations for Additional Wells) included in Attachment 4. However, each bidder shall develop its proposed final locations for these wells based on its interpretation of groundwater flow variations, configuration of the dissolved-phase plume, location of buried utilities, and perception of data gaps. Also, positioning the new shallow well in the interior of the site (shown on the site drawing near the UST systems) should also be guided by MTBE screening results produced under Task 4. The objectives for installing additional wells at this site are to: (a) delineate the horizontal and vertical extent of dissolved-phase contaminants in shallow and deeper bedrock groundwater; (b) refine the interpretation of groundwater flow; (c) enable representative aquifer testing; (d) facilitate contaminant fate-and-transport modeling; (e) evaluate natural attenuation processes; and (f) provide for point-of-compliance (POC) monitoring in the shallow and deeper bedrock groundwater zones. Should a conclusion of this work be that even more wells are needed to accomplish horizontal or vertical delineation of the dissolved-phase plume, such work will be considered an out-of-scope task under the Fixed-Price Agreement, which will require Solicitor and PAUSTIF approval of a work plan and cost estimate before beginning the work.

Example locations of two of the three additional off-property deep monitoring wells are on the residential property to the north on the opposite side of Albion Street. The third off-property deep well is shown to be installed on the residential property to the southeast on the opposite side of Morgantown Road. It is likely that the previous consultant, Ryan/DHI, executed an access agreement to install and collect samples from existing wells MW-9 and MW-10 on the property across Albion Street. However, a copy of the

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<sup>13</sup> Considering that the shallow water table aquifer appears to be entirely present in fractured bedrock, the collection of samples for fraction organic carbon, bulk density, and porosity analyses to support fate and transport modeling should not be necessary.

access agreement is not available. Regardless, the bidder shall assume that new access agreements will need to be negotiated for both properties. In the event that an access agreement cannot be negotiated with one or more of the current property owners, it may be possible to install the deep well(s) within the PennDOT right of way (e.g., sidewalk or road) although the presence of overhead and underground utilities will need to be considered.<sup>14</sup>

Borings for the two additional shallow monitoring wells shall be advanced to intersect the water table aquifer. The water table surface is expected to be present at depths of between 22 and 33 ft. below grade based on the existing groundwater elevation data. For costing purposes, bidders shall assume that the two shallow well borings will attain a depth of 30 ft. below grade. The three off-property wells are intended to monitor a deeper zone of the water table aquifer and bidders shall assume that borings for these deep wells will attain a depth of 45 ft. below grade. Additionally, the suggested boring depth for the on-property vertical extent well is 75 ft. below grade. Bidders should note, however, that the total depth of the wells could vary based on actual field conditions encountered. In the event that more or less drilling footage is required, bidders shall provide a unit cost per foot inclusive of borehole advancement, logging, screening, and well installation. In addition, considering the suggested location for the vertical extent delineation well and the historical elevated levels of MTBE in adjacent well MW-7, bidders shall assume it will be necessary to install / grout a permanent outer surface casing to seal-off upper impacted shallow groundwater before advancing the vertical extent well boring to its target depth. For costing purposes, bidders shall assume that 55 feet of permanent outer surface casing will be needed. Bidders shall provide a unit cost per foot in the event that more or less outer surface casing is required.

Bidders shall assume advancing all monitoring well borings using standard air-rotary or hammer-rotary drilling methods.<sup>15</sup> Drill cuttings returned to the surface shall be examined in the field and described for lithology, groundwater occurrence, and potential staining / odor indicative of hydrocarbon contamination. Although the bid shall assume no soil samples will be collected from the monitoring well boreholes for laboratory analysis, the soil and bedrock cuttings shall be screened in the field with a PID. Should field screening and/or visual or olfactory observations suggest petroleum impacts to soil in these additional monitoring well locations, bidders shall quote a unit cost for sample collection and laboratory analysis as an option. If any soil samples are collected for laboratory analysis, these samples shall be analyzed for the pre-March 2008 PADEP short list of unleaded gasoline parameters, excluding 1,2,4- and 1,3,5-trimethylbenzenes.

The additional shallow, deep and vertical extent groundwater monitoring wells shall be constructed in accordance with the PADEP Groundwater Monitoring Guidance Manual. Bidders shall assume constructing each well of 2-inch diameter Schedule 40 PVC casing and well screen. Final construction for the two shallow wells must ensure that the screened interval intersects the water table surface and accounts for seasonal groundwater fluctuations.<sup>16</sup> Should one or both of the two additional shallow wells be installed with a submerged screen, the well(s) will be replaced at the selected consultant's sole expense. For cost comparison purposes, bidders shall assume the use of 15 feet of well screen for the two shallow wells and 10 feet of well screen for construction of the deep and vertical delineation wells to assist with isolating these targeted groundwater zones.

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<sup>14</sup> In the event that access agreements with one or more property owners cannot be secured, costs for securing PennDOT permits, if necessary, will be considered an out-of-scope task requiring Solicitor and PAUSTIF pre-approval. Should access to one or more of the off-property well locations be denied by the property owner(s) and PennDOT, or there is utility interference at one or more locations, the PADEP, technical contact, and Solicitor shall be contacted to discuss possible alternatives.

<sup>15</sup> Although borehole collapse is not anticipated based on the clay-rich and relatively thin soil horizon, bidders may wish to consider the use of a multi-capacity drilling rig capable of air / auger drilling in the unexpected event of borehole instability.

<sup>16</sup> If a bidder believes monitoring wells are needed to assess a shallow perched water-bearing zone, additional details in support of installing such wells should be provided in the proposal as an optional task.

Annulus materials shall consist of a filter-pack of silica sand extending to a height of approximately two feet above the top of the screen section overlain by a minimum 3.0 feet thick hydrated bentonite pellet seal. The remaining annulus shall be filled with a cement / bentonite slurry to within approximately one-foot below grade. Considering the suggested locations for the six new wells, bidders shall assume surface finishing consisting of an expandable locking cap fitted to the top of the PVC riser and a flush-mounted traffic-rated manhole with a bolt-on lid. The flush-mounted manholes shall be set into a 2 ft. by 2 ft. concrete pad. If the area surrounding the concrete pad is damaged during well installation activities, the surrounding surface material shall be repaired in kind (e.g. asphalt patch in asphalt paved areas, sod in grass-covered areas, etc.).

Also included within this task are repairs to existing monitoring wells. Although the current condition of the flush-mounted manway cover and concrete surface seals is unknown, bidders shall provide a fixed unit cost per well to complete any required repairs (manhole / pad replacement) to existing on- and off-property monitoring wells.

Each bidder's fixed-price cost for this task shall account for: (i) identifying subsurface utilities and other buried features of concern including, but not necessarily limited to, contacting PA One Call and clearing each borehole location to a minimum depth of 5 feet using vacuum excavation; (ii) well development activities; (iii) management of investigation-derived wastes; and (iv) professional surveying of the new well locations and top-of-casing elevations. Well drilling / installation and development activities along with supporting documentation (e.g., waste manifests, boring logs and well construction details, etc.) shall be documented in the SCR / RAP (Task 12). Bidders shall manage groundwater generated by the drilling and well development activities in accordance with standard industry practices and applicable laws, regulations, guidance, and PADEP directives.

**Task 8 – Groundwater Quality Monitoring and Sampling.** Under this task, bidders shall provide a firm fixed-price to complete two (2) groundwater monitoring and sampling events (an initial and a confirmatory monitoring and sampling event). Both groundwater monitoring and sampling events will include the additional on- and off-property wells installed under Task 7, as well as the 12 existing wells (MW-1 through MW-12). The conduct and results of these two events shall be documented in the SCR / RAP.

The initial groundwater monitoring and sampling event shall be performed no later than two (2) weeks, but no sooner than one week after installing and developing the six additional wells discussed under Task 7. The confirmatory monitoring and sampling event shall be conducted no less than four (4) and no more than six (6) weeks after the initial event. During each event, the depth to groundwater and any potential SPH shall be gauged in all available monitoring wells prior to purging any of the wells for sampling. Groundwater level measurements obtained from the monitoring wells during both events shall be converted to groundwater elevations for assessing groundwater flow direction and hydraulic gradient.

Each of the monitoring wells designated for sample collection during each event shall be purged and sampled in accordance with the PADEP Groundwater Monitoring Guidance Manual and standard industry practices. Any well exhibiting more than a sheen of SPH shall not be purged and sampled (note that SPH have never been measured in any of the site wells). Bidders shall manage equipment decontamination fluids and groundwater generated by the well purging and sampling activities in accordance with standard industry practices and applicable laws, regulations, guidance, and PADEP directives.

Groundwater samples collected during these two events shall be analyzed for the pre-March 2008 PADEP short-list of unleaded gasoline parameters by a PADEP-accredited laboratory using appropriate

analytical methods and detection levels. Appropriate QA/QC samples shall also be collected during each event and analyzed for the same parameters.<sup>17</sup>

In addition, each event shall include field measurements for these natural attenuation parameters: pH, temperature, specific conductance, dissolved oxygen (measured in-situ), and oxidation/reduction potential. Laboratory analysis of the following suggested natural attenuation parameters shall be conducted on three well samples during the confirmatory sampling event only: dissolved manganese, ferrous iron, methane, nitrate nitrogen, sulfate, alkalinity, and microbial plate counts (heterotrophic and gasoline degraders). Bidders shall assume analyzing samples for these parameters from one well located upgradient, within, and downgradient of the contaminant plume in the shallow and/or deep groundwater zones to be determined by the selected bidder following installation of the new wells and the initial groundwater monitoring and sampling event (three to six samples total). Consequently, bidders shall quote a per-well cost should more or fewer wells be selected for natural attenuation parameters sampling and analysis. The natural attenuation data shall be evaluated as part of the remedial alternatives analysis to be included in the SCR / RAP (Task 12).

**Task 9 – Aquifer Characterization Testing.** Based on the available document record, it appears that no data have been collected concerning the hydraulic properties of the bedrock aquifer to date. Therefore, each bidder shall provide a fixed-price cost to conduct and evaluate the data from a single 24-hour constant-rate pumping test. Each bidder shall specify the monitoring well it believes may be the most appropriate for groundwater extraction and the observation wells to be used for the test considering both the existing wells and newly installed wells. The test data shall be analyzed to: (a) confirm / determine hydraulic characteristics; (b) evaluate aqueous contaminant transport via bedrock fractures; (c) develop a fate-and-transport model; and (d) determine a sustainable yield and radius of hydraulic influence as input to the Remedial Feasibility / Alternatives Analysis (RF/AA) to be included in the SCR / RAP (Task 12). Raw data from the pumping tests shall be reduced using appropriate techniques and the test methods and conclusions shall be described in the SCR / RAP (Task 12).

Before beginning the pumping test, groundwater levels shall be monitored in all site monitoring wells over a minimum 24-hour period to identify the influence of natural background fluctuations. Next, a step-drawdown (or stepped-rate) test will be conducted within the selected extraction well to determine a sustainable flow rate for the 24-hour pumping test. Groundwater levels in the extraction well and surrounding observation wells shall be monitored during the stepped-rate test. After pumping for the stepped-rate test has been discontinued, the extraction well and observation wells must be monitored until water levels return to at least 90 percent of the pre-pumping static conditions.

A constant-rate 24-hour pumping test shall be conducted following the stepped-rate test. Prior to initiating the constant-rate pumping test, water-level measurements shall be obtained from all on- and off-property monitoring wells to confirm recovery to pre-stepped test static conditions. During the pumping test, groundwater levels in the selected extraction well and surrounding observation wells shall be monitored continuously. After the extraction well has been pumped for a minimum period of 24 hours, pumping shall be terminated and water levels in the wells shall be allowed to recover. During the recovery phase, groundwater levels in the selected extraction well and all observation wells will be monitored until it is determined that the water level in the extraction well has recovered to at least 90 percent of the original static groundwater level.

Monitoring of the selected extraction well and observation wells shall be performed using electronic pressure transducers and data logging equipment, although other secondary observation points can be monitored manually using an electronic water level meter.

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<sup>17</sup> Each bidder's approach to implementing Task 8 shall clearly identify the number of sampling events, number of wells / samples per event, well purging and sampling method(s), QA/QC measures, analytes, and other key assumptions affecting the bid price.

Bidders shall manage groundwater generated by the aquifer testing activities in accordance with standard industry practices and applicable laws, regulations, guidance, and PADEP directives.

**Task 10 – Contaminant Fate-and-Transport Modeling.** After the additional groundwater monitoring wells have been installed and sampled twice (Tasks 7 and 8) and subsequent to collecting and evaluating the aquifer characterization test data (Task 9), a quantitative contaminant fate-and-transport model shall be developed to address all dissolved-phase constituents whose concentrations exceed the residential used aquifer SHS-MSCs for groundwater. Because groundwater appears to be present in fractured sandstone and shale bedrock only, bidders shall employ numerical groundwater modeling (e.g., MODFLOW and MT3D) in lieu of the New Quick Dominico model. However, prior to implementing this task, the selected consultant shall contact the PADEP project officer (Ms. Amy Kemerer, P.G.) for her input on the modeling effort.<sup>18</sup>

Bidders shall provide a firm fixed-price cost for developing a calibrated, numerical, contaminant fate-and-transport model utilizing data generated from the site characterization tasks described above and any relevant historical site characterization data. The fixed-price cost shall include documenting the modeling effort in the SCR / RAP (Task 12). This documentation shall describe all model input/output, provide a thorough explanation of model construction, justify all input parameters, and include a detailed discussion of the modeling results and conclusions regarding current and predicted future plume stability (or lack thereof).

Environmental data currently available for the site suggest that surface water modeling applications such as SWLOAD5B and PENTOXSD are probably not necessary to assess potential impacts to downgradient surface water. Should additional site characterization data indicate that contaminant loading to surface water needs to be evaluated, such modeling will be subject to the “New Conditions” provision of the Fixed-Price Agreement.

**Task 11 – Conceptual Site Model.** Under this task, bidders shall provide a fixed-price cost for developing a complete conceptual site model (CSM) for the site and its vicinity based on evaluating the results of the site characterization tasks outlined above. Information contained in the prior Expanded SCR/RAP may also be referenced, although bidders are reminded that this report was not approved by the PADEP.

Information considered in developing the CSM shall consist of, but should not necessarily be limited to, stratigraphic and lithologic characteristics / relationships; groundwater elevations and flow direction; hydrogeologic controls on groundwater movement and contaminant transport; intrinsic aquifer parameters; the distribution of hydrocarbon contaminants in soil and groundwater; evaluation of potential sensitive receptors, and consideration of the contaminant fate-and-transport modeling results. The CSM shall be presented and discussed in the SCR / RAP (Task 12).

**Task 12 - Prepare a Draft and Final Combined SCR / RAP.** Upon completing Tasks 1 through 11 described above, the selected consultant will prepare a **new** (i.e., not an amended or revised version) combined draft SCR / RAP for review and comment by the Solicitor and PAUSTIF. This combined SCR / RAP shall contain all necessary information required under 25 PA Code §245.309, §245.310, and §245.311 and be of sufficient quality and content to reasonably expect PADEP approval. Each bidder's project schedule shall provide two (2) weeks for Solicitor and PAUSTIF review of the draft document. The final SCR / RAP shall address comments received from the Solicitor and PAUSTIF on the draft report before it is submitted to the PADEP for its review.

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<sup>18</sup> The PADEP has indicated that since only relatively low levels of MTBE are present in site groundwater, a “toned-down” numerical model will likely be sufficient.

The SCR / RAP shall document, describe, and evaluate all findings provided from Tasks 1 through 11 above and incorporate information and data from the previous site documentation as the selected consultant deems appropriate. The document shall also: (a) contain all necessary figures, tabulated data, and appendices; (b) present a detailed and comprehensive remedial feasibility / alternatives analysis (RF/AA) describing at least three equally viable options for site closure and remediation (if necessary) and identifying a cost effective preference; (c) reference the selected remedial goal for soil and groundwater; (d) discuss the recommended site closure strategy and its viability for achieving the remedial goal within a reasonable time frame; (e) identify the proposed point-of-compliance monitoring wells; and (f) present a detailed schedule for implementing the recommended remedial approach. As appropriate, the document may also need to include at least a conceptual remediation system design, installation schedule, compliance-related sampling program details, and an operations and maintenance plan. The SCR / RAP shall be signed and sealed by a Professional Geologist **and** a Professional Engineer registered in the Commonwealth of Pennsylvania.

#### 4. TYPE OF CONTRACT / PRICING

The Solicitor wishes to execute a mutually agreeable, firm, fixed-price, not-to-exceed contract for the SOW addressed by Tasks 1 through 12. A sample Fixed-Price Agreement is included as Attachment 2.<sup>19</sup> The Fund will facilitate negotiations between the Solicitor and the selected consultant toward executing this Fixed-Price Agreement.

As noted earlier, **a bidder's response to this RFB Solicitation Package means it has accepted all the contractual terms unless explicitly stated to the contrary in the bid response.** Therefore, any requested changes to the Fixed-Price Agreement must be specified in the bid response. Please note that these changes will need to be reviewed and agreed upon by both the Solicitor and the PAUSTIF.

Each bid is to clearly identify unit cost rates for labor, other direct costs, and equipment, as well as proposed mark-ups on other direct costs and subcontracted services for all SOW Tasks 1 through 12. The by-task and by-subtask quotes are to be entered into the Cost Tabulation Spreadsheet / Standardized Bid Format included as Table 1 in Attachment 3 to this RFB. Please note that **the total fixed-price bid must include all costs, including those cost items that the bidder may regard as "variable," i.e., these variable cost items will not be handled outside of the Total Fixed Price quoted for the SOW.** Finally, please note that referencing extremely narrow or unreasonable assumptions, special conditions, and exemptions may make the bid response too difficult to evaluate and may result in the bid response being deemed "unresponsive."

**Payment Milestones:** Table 2 below illustrates the approximate timing expected for completion of respective milestone tasks and milestone payouts. Actual milestone payments will occur only after successful and documented completion of the work defined for each milestone. Payment milestones under the Fixed-Price Agreement shall be broken out as follows:

- **Milestone A** – Additional Background Research (Task 1).
- **Milestone B** – Professional Site Survey (Task 2).
- **Milestone C** – On-Property Geophysical Survey (Task 3).
- **Milestone D** - Soil Gas Survey (Task 4).

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<sup>19</sup> The selected consultant will be provided an electronic copy of the sample contract in Word format to allow contract-specific information to be added.

- Milestones E1, E2, and E3 – Soil Vapor Intrusion Sampling (Task 5). Note that the schedule assumes three Milestone E payments.
- Milestone F – Source Soil Delineation (Task 6).
- Milestone G – Installation of Additional Groundwater Monitoring Wells (Task 7).
- Milestones H1 and H2 – Groundwater Quality Monitoring and Sampling (Task 8). Note that the schedule assumes two Milestone H payments.
- Milestones I – Aquifer Characterization Testing (Task 9).
- Milestone J – Contaminant Fate-and-Transport Modeling (Task 10).
- Milestone K – Conceptual Site Model (Task 11).
- Milestone L – Prepare a Draft and Final Combined SCR / RAP (Task 12).

**TABLE 2 – SAMPLE MILESTONE COMPLETION / PAYMENT SCHEDULE**

Estimated Milestone Timing Month After Contract Award	SOW Activities Anticipated / Completed for that Month	Milestone <sup>1</sup>
1	Additional Background Research (A); Professional Site Survey (B); On-Property Geophysical Survey (C); Soil Gas Survey (MTBE vapor screening) (D); Soil Vapor Intrusion Sampling (probe installation) (E1)	A, B, C, D, E1
2	Soil Vapor Intrusion Sampling (initial sampling event) (E2); Source Soil Delineation (F); Installation of Additional Groundwater Monitoring Wells (G)	E2, F, G
3	Groundwater Quality Monitoring and Sampling (initial event) (H1); Aquifer Characterization Testing (I)	H1, I
4	Groundwater Quality Monitoring and Sampling (confirmation event) (H2); Soil Vapor Intrusion Sampling (confirmation sampling event) (E3)	H2, E3
5	Contaminant Fate-and-Transport Modeling (J); Conceptual Site Model (K)	J, K
6	Prepare a Draft and Final Combined SCR / RAP (L) <sup>(2)</sup>	L

1. Each bidder should modify this sample Milestone Completion / Payment Schedule for Tasks 1 through 12 to reflect its proposed task schedule, as long as the proposed schedule meets the deliverable deadlines specified in Section 3 of this RFB.
2. The SCR / RAP must be submitted in final form to the PADEP within 6 months of contract award.

Please note that the selected consultant's work may be subject to ongoing review by the PAUSTIF or its representatives to assess whether the proposed and completed work and the associated costs are reasonable, necessary, and appropriate. In order to facilitate review and reimbursement of submitted invoices by PAUSTIF, project costs shall be invoiced following the task structure specified in the selected bidder's bid response. Tracking incremental and cumulative costs by task will also be required to facilitate invoice review.

Unless otherwise noted by the bidder, each bid response received is required to be good for a period of up to 120 days after its receipt. The unit costs quoted in the bid will be assumed to be good for the duration of the period of performance cited in the Fixed-Price Agreement.

## 5. ADDITIONAL BID PACKAGE REQUIREMENTS

Each submitted bid response must include the following:

- A reasonable demonstration that the bidder (i) understands the objectives of the project, (ii) offers a reasonable approach for achieving those objectives efficiently, and (iii) has reviewed the existing site information provided in or attached to this RFB Solicitation Package.
- Provide an answer to the following questions regarding the bidder's qualifications and experience:
  - How many Chapter 245/250 sites has your company closed (i.e., obtained a Release of Liability under Act 2) in Pennsylvania?
  - How many Chapter 245/250 sites has your company or the proposed PA-licensed Professional Geologist (P.G.) and Professional Engineer (P.E.) closed (i.e., obtained a Release of Liability from the PADEP) under either the SHS and/or the Site Specific Standard? *[NOTE: The Solicitor requires the work described herein to be completed under the responsible care and directly supervised by a P.G. and P.E. consistent with applicable regulations and licensing standards.]*
  - Whether there were or were not circumstances consistent with the cancellation provision of a signed contractual agreement, has your firm ever terminated work under a fixed-price or pay-for-performance contract before attaining all of the project objectives and milestones? If yes, please list and explain the circumstances of each such occurrence.
- A complete firm fixed-price cost bid for Tasks 1 through 12 by completing the bid cost tabulation spreadsheet provided in Attachment 3 following the SOW task structure specified herein.
- A description and discussion of all level-of-effort and costing assumptions.
- Indicate whether the bidder accepts the proposed contract / terms and conditions (see Attachment 2) or has provided a list of requested changes to the Fixed-Price Agreement.
- Provide a statement of applicable / pertinent qualifications, including the qualifications of any proposed subcontractors (relevant project descriptions are encouraged).
- Identify the proposed project team and provide resumes for the key project staff, including the proposed Professional Geologist and Professional Engineer of Record who will be responsible for endorsing work products prepared for PADEP review and approval.
- Provide a task-by-task description of the proposed technical approach. **If this task-by-task description fails to address a specific requirement of this RFB, it will be assumed that the bidder has accepted all the requirements specified herein by task.**
- Identify and sufficiently describe subcontractor involvement by task (if any).
- Provide a detailed schedule complete with specific by-month dates for completing the proposed SOW, inclusive of reasonable assumptions regarding the timing and duration of client, PAUSTIF, and PADEP reviews needed to complete the SOW. Details on such items as proposed meetings and work product submittals shall also be reflected in the schedule of activities.
- Describe your approach to working with the PADEP from project inception to submittal of the SCR / RAP. Describe how the PADEP would be involved proactively in the resolution of technical issues and how the PADEP case team will be kept informed as to project status.

- Describe how the Solicitor and ICFI / PAUSTIF will be kept informed as to project progress and developments and how the Solicitor will be informed of, and participate in, evaluating potential alternatives / tradeoffs with regard to the SOW addressed by Tasks 1 through 12.

## 6. MANDATORY PRE-BID SITE VISIT

On **Thursday, November 11, 2010**, the Technical Contact will conduct a **mandatory pre-bid site tour** for a limited number of participants per firm at this property starting at 1 PM. Please inform the Technical Contact at least three (3) business days in advance of this date as to the number of participants attending from your firm. Again, **any firm that does not attend this mandatory pre-bid site tour will not be eligible to submit a bid response.**

Questions will be entertained as part of the pre-bid site tour and every attempt will be made to answer questions at that time. However, all questions and the responses provided will also be distributed in writing to the attendees after the tour, as will the answers to any non-proprietary questions submitted in writing after the pre-bid site tour has been concluded. Again, please note that referencing extremely narrow or unreasonable assumptions, special conditions, and exemptions in a bid response may make the bid response too difficult to evaluate and may result in the bid response being deemed "unresponsive." Consequently, bidders are strongly encouraged to ask clarifying questions sufficient to minimize the number of assumptions, special conditions, and exemptions referenced in the submitted bid response.<sup>20</sup>

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<sup>20</sup> The list of assumptions, special conditions, or exemptions will be discussed with the Solicitor. As part of that discussion, the PAUSTIF may advise the Solicitor that certain assumptions, special conditions, or exemptions that are likely to generate change orders may be the financial responsibility of the Solicitor if the change order involves non-reimbursable activities.

## ATTACHMENT 1

### Relevant Project Documents

<u>Filename:</u>	<u>Document:</u>
1A_PADEP Letters to Tank Owner	<ul style="list-style-type: none"> <li>• Requirement to Develop a SCR 6/12/02</li> <li>• NOV – Obligation to Address Release 5/3/04</li> <li>• NOV – SCR / RAP Disapproval 4/11/06</li> <li>• Notice that Quarterly Groundwater Monitoring not Required 10/19/07</li> <li>• NOV – SCR / RAP Disapproval 8/22/08</li> <li>• Notice of Proposed Assessment 5/8/09</li> <li>• NOV – SCR / RAP Disapproval 9/29/09</li> <li>• Consent Assessment of Civil Penalty 10/20/09</li> </ul>
1B_BMSE Letters to PADEP	<ul style="list-style-type: none"> <li>• Notice of Site Characterization Work Performed and Non-Compliance with SCR Due Date 6/11/04</li> <li>• Response to PADEP's SCR / RAP Disapproval Letter 6/14/06</li> </ul>
1C_RAPR_Q3_Q4_2005_Q1_Q2_2006	<ul style="list-style-type: none"> <li>• Remedial Action Progress Report for Q3, Q4 2005 and Q1, Q2 2006</li> </ul>
1D_RAPR_Q3_2006	<ul style="list-style-type: none"> <li>• Remedial Action Progress Report for Q3 2006</li> </ul>
1E_RAPR_Q4_2006	<ul style="list-style-type: none"> <li>• Remedial Action Progress Report for Q4 2006</li> </ul>
1F_RAPR_Q1_Q2_2007	<ul style="list-style-type: none"> <li>• Remedial Action Progress Report for Q1, Q2 2007</li> </ul>
1G_RAPR_Q3_Q4_2007	<ul style="list-style-type: none"> <li>• Remedial Action Progress Report for Q3, Q4 2007</li> </ul>
1H_Expanded SCR_RAP_0805	<ul style="list-style-type: none"> <li>• Expanded SCR/RAP</li> </ul>
1I_Ryan-DHI Letters to PADEP	<ul style="list-style-type: none"> <li>• Response to PADEP's SCR / RAP Disapproval 5/21/09</li> <li>• Response to PADEP's SCR / RAP Disapproval 10/07/09</li> </ul>

## **ATTACHMENT 2**

### **Fixed-Price Agreement**

(This agreement has been provided in an electronic form that does not permit the use to modify the agreement because only the selected consultant will need to complete the agreement. An electronic version of the agreement that will allow for tracking modifications to the agreement will be provided to the selected consultant at the appropriate time.)

*Request for Bid  
PAUSTIF #2002-0198(F)  
BFS Foods Uniontown  
Uniontown, PA  
October 26, 2010*

## **ATTACHMENT 3**

### **Standardized Bid Format**

*Request for Bid  
PAUSTIF #2002-0198(F)  
BFS Foods Uniontown  
Uniontown, PA  
October 26, 2010*

## **ATTACHMENT 4**

### **Possible Locations for Additional Wells**