COMPETITIVE BID TO RESULT SOLICITATION

ADDITIONAL SITE CHARACTERIZATION ACTIVITIES & REPORTING

TNT ENTERPRISES, INC.
21779 STATE HIGHWAY 8
BLOOMFIELD TOWNSHIP, CRAWFORD COUNTY
CENTERVILLE, PENNSYLVANIA 16404

PADEP FACILITY ID #20-90351
PAUSTIF CLAIM #1998-0188(S)

September 17, 2013

This Request for Bid (RFB) Solicitation has been issued by the Pennsylvania Underground Storage Tank Indemnification Fund (PAUSTIF or "Fund") for PAUSTIF Claim #1998-0188(S) on behalf of the Claimant, Mr. Tom Allison of TNT Enterprises, Inc. (TNT Enterprises), who hereafter is referred to as "Solicitor". This guaranteed Bid to Result[1] RFB seeks competitive bids from qualified contractors (consultants) to perform fixed-price activities in accordance with the performance milestones referenced herein, the goal of which is to perform supplemental site characterization activities, remedial alternatives analysis, and preparation/submittal of a combination Revised Site Characterization Report (RSCR) / Revised Remedial Action Plan (RRAP) for this inactive retail gasoline, bulk diesel fuel and kerosene sales, and convenience store/restaurant facility. The milestone-oriented work described in this RFB shall be conducted relative to an identified petroleum release at the facility known as TNT Enterprises located at 21779 State Highway 8, Centerville, Bloomfield Township, Crawford County, PA. The Solicitor, who is the owner of the TNT Enterprises site and the property associated therewith**, hereby requests bidders to provide their written approach to achieve the project goal in accordance with the work milestones presented in this RFB, which will be incorporated into an associated fixed-price Remediation Agreement (Attachment 3).**

Pursuant to this RFB, the RSCR / RRAP shall address all known contaminants of concern (COCs), including any associated phase-separated petroleum products, if identified, at concentrations in soil and groundwater above the Statewide Health Standards – Medium Specific Concentrations for a residential used aquifer (SHS-MSCs/RUA) with total dissolved solids in groundwater less than or equal to 2,500 mg/l and soil vapors greater than soil vapor screening values absent the use of any activity and use limitations, institutional controls, or engineering controls.

The purpose of the activities outlined in this RFB is to develop sufficient data to identify an appropriate and cost effective remedial solution to ultimately secure an associated Relief of Liability (ROL) from the Pennsylvania Department of Environmental Protection (PADEP or "Department"). However, implementing the RRAP, once it is approved by the PADEP, will be performed under a separate agreement.[2]

The Solicitor seeks bids with a written approach, schedule, and firm fixed-price in accordance with this RFB (Tasks/Milestones 1 through 6), which will be incorporated into an associated Fixed-Price

[1] "Bid to Result" solicitations identify task goals and rely on the bidders to provide a higher level of detail on how they will achieve the goal. The outcome of this type of solicitation is a performance-oriented contract under which payment is based on actual achievement of task goals. In reviewing the quality of bids submitted under Bid to Result solicitations, there is an increased emphasis placed on technical approach and reduced emphasis on cost (e.g., as compared to bids for "Defined Work" RFBs).

[2] 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.

Agreement (Attachment 3) to be executed by the Solicitor and the selected consultant. 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 5 below and as incorporated into the signed Fixed-Price Agreement.

Task/Milestone 1	Additional Background Research / Site and Geophysical Surveys
Task/Milestone 2	Vapor Intrusion Evaluation
Task Milestone 3	Supplemental Source Soil Delineation
Task/Milestone 4	Installation of Additional Groundwater Monitoring Wells and Quarterly Groundwater Monitoring, Sampling, and Reporting
Task/Milestone 5	Pilot Testing
Task/Milestone 6	Risk Assessment and Preparation & Submission of Draft & Final Combined RSCR/RRAP

By submitting a bid in response to this RFB, a firm (consultant or contractor) indicates their acceptance of the contractual terms (Attachment 3) and Milestone requirements of this project, including schedule deadlines, unless explicitly stated to the contrary in their bid. However, bidders are still expected to describe their approach to completing the scope of work (SOW) in full and in detail.

To be considered for selection, **one hard copy of the signed bid package and one electronic copy (one PDF file on a compact disk (CD) included with the hard copy) must be provided directly to the Fund's third party administrator, ICF International (ICF), to the attention of the Contracts Administrator.** Bid responses will only be accepted from those firms who attended the mandatory pre-bid site meeting. **The ground address for overnight/next-day deliveries is ICF International, 4000 Vine Street, Middletown, PA 17057, Attention: Deb Cassel. The outside of the shipping package containing the bid response must be clearly marked and labeled with "Bid – Claim #1998-0188(S)."** Please note that the use of U.S. Mail, FedEx, UPS, or other delivery method does not guarantee delivery to this address by the due date and time listed below for submission. Firms mailing bid responses should allow adequate delivery time to ensure timely receipt of their bid package.

The bid response must be received by 3:00 PM, on THURSDAY, OCTOBER 17, 2013. Bids will be opened immediately after the 3:00 PM deadline on the due date. Any bid packages received after this due date and time will be time-stamped and returned. If, due to inclement weather, natural disaster, or any other cause, the Fund's third party administrator, ICF's office is closed on the bid response due date, the deadline for submission will automatically be extended to the next business day on which the office is open. The Fund's third party administrator, ICF, may notify all firms who attended the mandatory site meeting of an extended due date. The hour for submission of bid responses shall remain the same. Submitted bid responses are subject to Pennsylvania Right-to-Know Law.

Each bid response will be considered individually and consistent with the evaluation process described in the PAUSTIF Competitive Bidding Fact Sheet, which can be downloaded from the PAUSTIF website (www.insurance.pa.gov). Key considerations for the bid evaluation shall include, but are not necessarily limited to how well the bidder conveys; A) a well-supported understanding of site hydrogeologic conditions including the bidder's assessment of the dissolved-phase contaminant plume; and B) a sound understanding of what will be needed to delineate the horizontal and vertical extent of residual contaminant mass in soil in the current dispenser, fuel conveyance lines, underground storage tank (UST) area, and in other potential historical source areas that may be identified during prior investigation work.

While the Technical Contact will assist ICF, 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

ICF International	**Solicitor**	**Technical Contact**
Ms. Jennifer Goodyear ICF International 4000 Vine Street Middletown, PA 17057	Mr. Tom Allison TNT Enterprises, Inc. 21779 State Highway 8 Centerville, PA 16404	Mr. R. Michael Lowe Excalibur Group, LLC 4127 Bennett Drive Annandale, VA 22003 mlowe@excaliburgrpllc.com

Please note that the Technical Contact is the single point of contact regarding this RFB. Questions regarding this RFB and the associated site conditions must only be directed in **written form only** to the Technical Contact, **not to the Solicitor, PAUSTIF or ICF**. Bidder questions must be received no later than seven (7) calendar days prior to the due date for the bid. Bidders shall not contact or discuss this RFB with the Solicitor, PAUSTIF, ICF, or the PADEP unless approved by the Technical Contact. However, this RFB may be discussed with subcontractors and vendors to the extent required for preparing a responsive bid. If a bidder has specific questions for the PADEP, such questions shall be submitted only to the Technical Contact, who will forward the questions to PADEP. The PADEP may choose not to reply to questions it receives, or may not reply in time for its response to be beneficial.

Please note that:

- Unless a bidder is able to demonstrate its question is proprietary in nature, all questions and responses exchanged before, during, and after the mandatory pre-bid site meeting will be provided to all bidders on a non-attributable basis. A bidder must specify any questions it regards as proprietary at the time it submits 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.
- All questions regarding this RFB Solicitation and the subject site conditions must be directed via e-mail to the Technical Contact identified above with the understanding that all questions and answers will be provided to all bidders. The e-mail subject line must be "TNT Enterprises, 1998-188(S) – RFB Question".

2. RFB ATTACHMENTS

The following attachments have been included with this RFB solicitation to assist with bid preparation.

Attachment 1A: 6/23/98 UST Closure Report

Attachment 1B: 3/9/00 Site Characterization Report

Attachment 1C: 1/8/01 Additional Site Characterization Report

Attachment 1D: 8/22/01 Remedial Action Plan

Attachment 1E: 12/17/01 Remedial Action Plan

Attachment 1F: Feb. 2009 Soil Sample Locations

Attachment 1G: 8/24/09 AEA Proposed Soil Excavation Locations

Attachment 1H: 4/20/12 PADEP Internal Memo Suggesting New SCR/RAP

Attachment 1I: Quarter 4, 2011 RAPR

Attachment 1J: Quarter 4, 2012 RAPR

Attachment 1K: Quarter 2, 2013 RAPR

Attachment 1L: 7/26/12 Water Supply Well Analytical Results

Attachment 2: Bid Cost Tabulation Spreadsheet

Attachment 3: Template/Standard Fixed Price Agreement

3. GENERAL SITE BACKGROUND AND DESCRIPTION[3]

Site Background and Description - The TNT Enterprises site is located at 21779 State Highway 8 in Bloomfield Township, Crawford County, Centerville, PA and is situated on the southwestern corner of the intersection of State Routes 8 and 77. The property is currently occupied by a facility building that formerly housed a convenience store and restaurant, a detached storage building, USTs, dispenser islands beneath a common canopy, above ground storage tanks (ASTs), two bulk fuel loading racks and associated pipe systems. The consultant of record, American Environmental Associates, Inc. (AEA) reported that the facility building was formerly operated as a retail fuel sales and convenience store/restaurant. The lower level of the facility building is comprised of three garage bays and entrances but it is unknown if automotive and/or truck repair services were ever conducted in the garage bays or if they contain hydraulic lifts or automotive/truck repair equipment, materials, and/or supplies.

The detached building (hereinafter referred to as the storage building), that was perhaps formerly used as an auto/truck repair garage is situated behind (west) of the main facility building. A garage door is present on the south end of the storage building but it is unknown whether automotive and/or truck repairs were ever conducted in this building. The Solicitor reported that the storage building is currently used as a storage area. Relevant site features are depicted in Attachment 1F; Feb. 09 Soil Sample Locations.

The Solicitor reported that the businesses that operated at the site ceased operations in 2006 and there are no active business operations currently being conducted at the site. Bidders should note that no other historical property use information is available, and that an environmental records search has not been conducted on the subject and surrounding properties.

Potable water at the site is supplied by a well located between the facility and storage buildings. This potable water well is reportedly double-cased with a depth to water of approximately 60 ft. below the top of the well casing, and was last sampled on 7/26/12. Other well construction details such as the total depth, casing typing and length, screened interval (or open borehole interval), diameter, and other construction materials are not available. AEA reported that potable water for local residential and

[3] The site information provided herein has been excerpted and/or summarized from the site-related documents provided as Attachment 1 of this RFB. The Site Background and Description section within this RFB contains only a brief summary of a select portion of the available information pertaining to the TNT Enterprises site. Therefore, Bidders are encouraged to carefully review all of the documents provided in Attachment 1 of this RFB to gain a more complete understanding of site conditions and issues.

commercial properties is provided by individual water supply wells and no public water source is available. Therefore, the Statewide Health Standards – Medium Specific Concentrations for a residential used aquifer (SHS-MSCs/RUA) for groundwater with total dissolved solids in groundwater less than or equal to 2,500 mg/l is anticipated for this site. However, **should the risk assessment completed under Milestone 6 indicate that closure via site-specific standards (SSS) is feasible and more cost effective and the Claimant is agreeable, then the site cleanup goals articulated in the RSCR / RRAP may be SSS or a combination of SHS and SSS.** The analytical laboratory results of the 7/26/12 water supply well sample are provided in Attachment 1L.

The retail fueling and convenience store/restaurant facility formerly operated six steel-constructed underground storage tanks (USTs), two above ground storage tanks (ASTs), and two bulk fuel loading racks. The former UST systems included one 15,000-gallon gasoline UST (Tank 001) that apparently was later used to store diesel fuel, one 4,000-gallon gasoline UST (Tank 002), one 8,000-gallon gasoline UST (Tank 003), one 3,000-gallon diesel UST (Tank 004), one 1,000-gallon kerosene UST (Tank 005), and one 3,000-gallon gasoline UST (Tank 006). All six of the USTs were reported to have been removed from the ground on 4/30/98 whereas the ASTs are still located at the facility. Location of the former USTs are shown in the 6/23/98 *Underground Storage Tank System Closure Report* (6/23/98 UST Closure Report) (Attachment 1A) and existing ASTs are shown on Figure 1 of 1 in the February 2009 Soil Sample Locations Map (Attachment 1F).

The ASTs are steel-constructed, have a capacity of 21,000 gallons each and reportedly contained kerosene (Tank 001A) and No. 2 fuel oil (Tank 002A). Both bulk fuel loading racks are abandoned and no longer in use. The bulk fuel loading rack located at the north end of the gravel driveway between the facility and storage buildings appears to have been abandoned some time ago and is no longer functional. The loading rack located east of the ASTs appeared to be the location where bulk fuel sales were conducted until the time that the facility ceased business operations. The ages of the former USTs, existing ASTs, and loading racks are not known. The Solicitor reported that the product in the ASTs has been removed to within one inch of the bottom.

According to AEA's 6/23/98 UST Closure Report (Attachment 1A), the facility originally operated at least four dispensers that were located to the east of the convenience store/restaurant fronting Rt. 8. A kerosene dispenser was located to the north of the facility building fronting Rt. 77. The ASTs were reported to have been used for bulk fuel sales and product from the ASTs was distributed via a loading rack situated to the east of the ASTs.

The Solicitor reported that after the removal of the six USTs in April 1998, and contaminated soil was excavated and stockpiled, four USTs were installed in the same cavity in May 1998 to replace the six USTs previously removed. A kerosene AST (installed in a spill containment vessel) and a kerosene dispenser was also installed at the site at that time. The existing USTs (installed in May 1998) are constructed of fiberglass and consist of one 12,000 gallon (Tank 007) containing unleaded gasoline, one 8,000-gallon (Tank 008) containing premium unleaded gasoline, one 10,000 gallon (Tank 009) containing diesel fuel, and one 2,000 gallon (Tank 010) containing off-road diesel fuel. According to the Solicitor, the four existing USTs are inactive and have been emptied with each UST containing less than one inch of product. The Solicitor reported that fiberglass-constructed product conveyance piping and dispensers were installed at the site in May 1998 to replace the previously removed piping and dispensers. However, it appears that at least one of the dispensers has been recently removed from beneath the existing canopy.

Geology and Hydrogeology – The soil overburden is generally characterized as clay to silty clay extending to a depth of about 5 to 10 feet below grade surface (ft. bgs). Underlying the clay to silty clay is a weathered shale that generally ranges in depth from 5 to 15 ft. bgs and reportedly becomes competent

shale bedrock at about 15 ft. bgs. Groundwater appears to reside in the lower portion of the weathered shale and upper region of the competent shale bedrock.

Release Information and Historical Chronology Since 1998 - An unleaded gasoline release of an undetermined volume was discovered when the USTs were removed in April 1998 to comply with the 1998 UST standards. During the UST excavation activities, a hole was reportedly observed in Tank 001 (3,000-gallon gasoline), the piping above Tank 006 (15,000-gallon diesel) was leaking, and there was extensive contamination beneath the pump islands. Soil contamination was observed throughout the excavation and the most likely sources of contamination were the lines above Tank 001 and 006 and under the pump islands. Approximately 1,500 cubic yards (CYs) of contaminated soil was excavated during the UST closure activities and was reportedly relocated to an undeveloped area of the property to the south of the ASTs. Results of soil samples collected from beneath the USTs, conveyance lines, and dispensers indicated that only those samples collected from beneath the dispensers (soil samples 20, 21, 22, and 23) contained concentrations of unleaded gasoline constituents exceeding SHS–MSCs/RUA, Soil to Groundwater Numeric Values. Additional details regarding the removal of the UST systems were reported in the 6/23/98 UST Closure Report (Attachment 1A).

According to the 12/17/01 RAP (Attachment 1E), prior to the UST closures, all the tanks were relined and the product piping and dispenser islands were scheduled to be replaced. However, prior to the replacement activities, a former building, presumably located in the same footprint as the existing facility building was reported to have been demolished. AEA mobilized a backhoe to the site and excavated several test pits near the building footers and pump island areas. It was reported that extensive gasoline contaminated soil was observed in the test pits.[4] Additional details regarding the excavation of test pits were reported in the 12/17/01 RAP (Attachment 1E).

Following the April 1998 UST removal and contaminated soil excavation, site characterization activities were initiated with the installation of four on-property groundwater monitoring wells (MWs-1, -2, -3, and -4) on July 22, 1999, and four additional on-property groundwater monitoring wells (MWs-A, -B, -C, and –D) on February 7, 2000. The eight wells were installed to a depth of 40 ft. bgs using air rotary drilling methods. MWs-1, -2, -3 and -4 are screened from 10 to 40 ft. bgs, whereas MWs-A, -B, -C, and –D are screened from 5 to 40 ft. bgs. A single soil sample collected from a depth of 0-10 ft. bgs during the advancement of the boring for MW-2 indicated the presence of benzene in a concentration of 1.11 mg/kg (exceeding SHS-MSCs/RUA). All other soil samples collected from the groundwater monitoring well boreholes were less than SHS-MSCs/RUA although several wells exhibited elevated photoionization detector (PID) readings (>50 PID units) primarily in the soil interval from 0–20 ft. bgs. No other soil samples were collected at the site during the monitoring well installations.

Groundwater quality samples collected from MWs-1, -2, -3, and -4 on 7/23/99 indicated that MWs-1, -2 and -4 contained concentrations of one or more PADEP unleaded gasoline constituents greater than SHS-MSCs/RUA. None of the samples collected from these wells contained concentrations of fluorene or phenanthrene greater than laboratory method detection limits. Following the installation of groundwater monitoring wells MWs-A, -B, -C and –D, another round of groundwater samples was collected on 2/9/00 from all the wells. With the exception of MW-3, all groundwater monitoring well samples contained concentrations of PADEP unleaded gasoline constituents greater than SHS-MSCs/RUA. Fluorene and phenanthrene samples were not collected during this or any subsequent round of quarterly groundwater monitoring/sampling conducted at the site. Additional details regarding the installation and sampling of the on-property groundwater monitoring wells were reported in the 3/9/00, *Underground Storage Tank Facility Site Characterization Report* (Attachment 1B).

[4] The number, location, depth, and areal extent of the test pits was not reported in the 12/17/01 RAP nor were the test pit locations depicted in any of the figures contained in the document.

On 12/11/00 through 12/14/00, AEA mobilized to the site and installed four additional on-property groundwater monitoring wells.[5] The four wells were designated as MWs-9, -10, -11, and -12 and were installed using a combination of hollow stem auger and air rotary drilling methods.[6] The four two-inch diameter wells were installed to a depth 40 ft. bgs each and were constructed with well screens from 10 to 40 ft. bgs. Soil samples collected from each of the well borings, at a soil interval of 6 to 7.5 ft. bgs, were analyzed for PADEP unleaded gasoline parameters. None of the soil samples collected contained concentrations of PADEP unleaded gasoline parameters greater than laboratory method detection limits.[7]

Following the installation of the four wells (MW-9 through MW-12), AEA collected groundwater samples from the 12 on-property wells on 12/20/00. Separate phase liquids were reportedly present in MWs-2, -4, -6 and -7. More specifically, 18 inches (in.) of SPL was measured in MW-2, 0.25 in. in MWs-4 and -6, and the bailer used in MW-7 was full of SPL. Of the newly installed wells, only benzene was detected in MW-12 at a concentration greater than SHS-MSCs/RUA.[8] Additional details regarding the installation and sampling of the on-property groundwater monitoring wells are reported in the 1/8/01 *Underground Storage Tank Facility Additional Site Characterization Report* (Attachment 1C).

On 8/22/01, AEA submitted a Remedial Action Plan (RAP) for the site wherein it specified the installation and operation of a dual phase high vacuum extraction (DPE) remedial system. In the RAP, other remedial technologies were evaluated, which included air sparging, excavation of contaminated soil, pump and treat, and soil vapor extraction (SVE). AEA concluded that DPE was the most viable remedial technology to address soil and groundwater contaminants at the site and proposed that MW-2 and MW-7 be retrofitted and utilized as extraction wells with the addition of several small diameter SVE wells in the area around MW-2.[9] The 8/22/01 RAP is provided as Attachment 1D.

Remedial Feasibility Testing: Prior to the development and submittal of the RAP, remedial feasibility testing was performed on wells MW-2 and MW-7. The testing was performed using a 3 horsepower (hp) liquid ring pump (LRP) to extract soil vapor and a top loading pneumatic pump to extract groundwater. Prior to initiating the soil vapor extraction (SVE) test, AEA reported that they extracted groundwater from MW-7 for a period of two hours to dewater the aquifer and enhance vapor movement through the subsurface. A similar dewatering effort was conducted on MW-2 prior to the SVE test on that well.

MW-7 Pilot Test Results: Testing was initiated on MW-7 by applying a wellhead vacuum of 5 inches of mercury (Hg), which corresponded to an airflow rate of 20 standard cubic feet per minute (SCFM). Vapor effluent samples were collected throughout the duration of the pilot test and were measured using a flame ionization detector (FID). All collected samples were greater than 10,000 parts per million (ppm). Vapor

[5] Bidders should note that although not stated in the 1/8/01 *Underground Storage Tank Facility Additional Site Characterization Report,* AEA apparently renamed the monitoring wells they installed on 2/7/00. The wells formerly designated as MWs-A, -B, -C, and –D appear to have been re-named as MWs-5, -6, -7, and -8, respectively. Comparison of the site maps contained in the February 2000, *Underground Storage Tank Facility Site Characterization Report* and in the 1/8/01, *Underground Storage Tank Facility Additional Site Characterization Report*, suggest that MW's-5, -6, -7, and -8 appear to be in the same locations as MWs-A, -B, -C and –D.

[6] AEA reported that MWs-9, -10 and -11 were installed in response to groundwater quality concerns expressed by the adjacent neighboring property owner located west of the subject property.

[7] The 1/8/01 *Underground Storage Tank Facility Additional Site Characterization Report* indicates that industry standard headspace screening of soil samples using a PID was performed. However, no PID data were recorded on the monitoring well boring / construction logs contained in Appendix A of the report.

[8] In the 1/8/01 *Underground Storage Tank Facility Additional Site Characterization Report*, it was reported in Table 3 that the groundwater concentrations of all wells except MWs-2 and -7 (presumably due to the presence of SPL) and no laboratory data sheets were provided for MW-10 and MW-11 in Appendix B.

[9] AEA reported that the SVE wells were installed at the site. However, no document in the claim files contains SVE well boring logs or construction details.

recovery rates ranged from 1.03 to 1.12 lbs/hr, and separate phase liquids were encountered in MW-6, MW-7 and MW-8 during the pilot test.

A groundwater flow rate of 5 gallons per minute (gpm) was achieved throughout the duration of the pilot test. Drawdown was measured in MW-6 and MW-8 during the test wherein the wells exhibited a maximum drawdown of 2.71 ft. and 0.68 ft., respectively, after 2.5 hours of groundwater pumping on MW-7. Pneumatic measurements conducted in MW-6 and MW-8 resulted in a maximum vacuum response of 16.5 and 2.7 inches of water, respectively, after 2.5 hours of groundwater pumping on MW-7.

MW-2 Pilot Test Results: Testing was conducted on MW-2 by applying a wellhead vacuum of 7 inches Hg, which corresponded to an airflow rate of 25 standard cubic feet per minute (SCFM). AEA attributed the low applied vacuum in MW-2 to the well being installed primarily in fractured bedrock. Vapor effluent samples were collected throughout the duration of the pilot test and were measured using a FID. Vapor recovery rates ranging from 0.09 to 0.10 lbs/hr.

A groundwater flow rate of 5 gallons per minute (gpm) was achieved throughout the duration of the pilot test. Drawdown was measured in MW-6 and MW-8 during the test wherein each well exhibited a maximum drawdown of 2.71 ft. and 0.68 ft., respectively.[10] No vacuum response was detected in MW-1, MW-3, and MW-5 during the pilot test conducted on MW-2. Additional hydraulic and pneumatic data associated with the remedial feasibility testing were reported in AEA's 8/22/01 *Underground Storage Tank Facility Remedial Action Plan* (Attachment 1D).

The DPE remedial system was reportedly installed and its operation was initiated in February 2003. The 8/22/01 RAP proposed the installation of groundwater extraction components that consist of submersible pumps installed in MW-2 and MW-7, 5 hp LRP, vapor/liquid knockout tank, oil water separator, 3 hp transfer pump, particulate filters and two liquid phase granular activated carbon (LGAC) vessels. The proposed vapor extraction components consist of a seal water tank and two vapor phase granular activated carbon (VGAC) vessels.[11] The remedial system discharges treated water to a NPDES-permitted outfall. However, the location of the outfall is unknown as it is not depicted in any of the site maps included in the 8/22/01 RAP. Additionally, a remedial system trenching and piping diagram and the NDPES permit sampling/reporting requirements are not included in 8/22/01 RAP.

On 12/17/01, AEA submitted a second *UST Facility RAP*, apparently in response to PADEP comments to the 8/22/01 RAP.[12] The 12/17/01 RAP specified that the Solicitor desired to remediate soil and groundwater at the site to SHS-MSCs/RUA. The 12/17/01 RAP also provided a remedial alternative analysis (RAA) for the on-property treatment of the approximately 1,500 CY of soil that was generated during the UST closure and stockpiled on the property to the south of the ASTs. In the RAA, it was reported that there was significant soil contamination variability in the stockpiled soil, and that "…loosely packed soil from the perimeter of the tank field excavation showed no sign of contamination. Some heavily packed (clay) soil that was in direct contact with the leaking tank had obvious product contamination."[13]

[10] Bidders should note that the maximum drawdown data obtained on MW-2 is identical to the maximum drawdown data obtained for MW-7. Also note that there are no hydraulic or pneumatic data tables for MW-2 contained in the report.

[11] The actual size of the submersible pumps used in MW-2 and MW-7 and the size of the LGAC and VGAC vessels are unknown as their sizes were not specified in any of the claim file documents.

[12] The PADEP RAP disapproval letter, if it exists, is not included in the claim file documents.

[13] Note that in the 6/23/98 *UST Facility Closure Report*, it was reported that "…all soil was deemed contaminated from the beginning of excavation work..."

Various soil disposal methodologies discussed in the RAA included landfill disposal, bioremediation, phytoremediation, and thermal desorption. AEA proposed a combination of land farming/composting, phytoremediation, and potential landfilling of the most heavily impacted soil. It was proposed that 1,000 CY of excavated soil would be spread over 0.5 acres on-property which would reportedly elevate the land surface by about one foot in that area of the site.[14] At the conclusion of proposed on-site treatment of contaminated soil, 12 soil samples were to be collected to demonstrate soil attainment and verify that the remedy was successfully achieved.[15]

In subsequent discussions with AEA, it was reported that the Solicitor leveled and spread out the contaminated soil pile in an undefined area west of the ASTs. However, no information was provided regarding: 1) the time period when the soil pile was spread out over the western end of the property; 2) whether a landfill liner was used below the soil to inhibit leaching of unleaded gasoline contaminants into underlying soil; 3) the specific location or depth of the soil treatment area; 4) whether chemical additives were mixed into the contaminated soil to potentially accelerate natural attenuation of the soil contaminants; or 5) if subsequent periodic tilling of the contaminated soil occurred to expose underlying soil contaminants to the open air. It is unknown if the contaminated and underlying soil in the land-farmed area of the site has been sampled since it was constructed.

The remedial system operated for a period of 10 years and data collected during the quarterly groundwater monitoring events indicates that concentrations of the COC has declined in only a few wells. Contaminant concentration trend lines suggest; 1) residually contaminated soil may still exist in the unsaturated and smear zone soil in some areas of the site; 2) the remedial system may have been undersized; and 3) the remedial system may have been inadequately focused to address groundwater contaminants known to exist in the weathered bedrock within and downgradient of the release area.

AEA conducted a direct push drilling soil investigation in late February 2009, wherein they installed 23 soil borings in the areas between the facility building and the dispenser islands, surrounding the former UST cavity, along the east and west sides of the gravel alley between the facility and storage buildings, and in the area east of the fuel dispensing rack associated with the ASTs. Four of the soil samples (TB-6, TB-8, TB-9, and TB-11) contained concentrations of benzene exceeding SHS-MSCs/RUA. It should be noted that two of the four samples that contained benzene at concentrations exceeding SHS-MSCs/RUA were located behind (west) of the facility building east and west of the gravel alley. The soil boring location map is provided as Attachment 1F.

Following the direct push soil investigation, on 8/24/09, AEA proposed the excavation of contaminated soil in three areas of the site where soil samples collected in February 2009 were found to be greater than SHS-MSCs/RUA. The proposed activities included conducting a vapor intrusion investigation, and compliance groundwater monitoring, with the goal of the excavation plan "…to close the soil excavation areas using random sampling…" and a secondary goal "…to place (with PADEP approval) the site into the compliance monitoring…" The proposed areas to be excavated included: 1) between the UST cavity and the dispenser islands containing approximately 189 CY of contaminated soil; 2) between the facility building and the dispenser islands containing approximately 74 CY of contaminated soil; and 3) encompassing the southern end of the gravel alley and south of the garage building containing

[14] It is unknown how the remaining 500 CY of potentially contaminated soil that was reportedly generated during the UST system removal activities was disposed.

[15] There was no discussion nor was there a figure provided in the RAP that depicted the proposed location and areal dimensions of the contaminated soil treatment area. Moreover, there was no discussion whether the contaminated soil would be placed over a landfill liner or other impermeable membrane to prevent leaching of unleaded gasoline constituents into the underlying soil and there was no estimation of the timeframe required to treat the contaminated soil.

approximately 233 CY of contaminated soil. AEA's proposed contaminated soil excavation areas are depicted in Attachment 1G.[16]

An internal PADEP Northwest Regional Office memorandum issued by William S. Pelc, Jr. on 4/20/12, states the following regarding the corrective action at the site:

"…Based upon the information available, the previous attempts at corrective action have failed to bring the site into compliance with the SHS. In addition, the approved RAP did not fully consider the possibilities of soil impact. Based on this information, the responsible party should develop a revised RAP for the Department's approval. A revised SCR may also be necessary to support the revised RAP. The revised RAP and revised SCR should include all applicable elements of 25 Pa. Code Section 245.310 and 245.311, respectively. With groundwater sampling results increasing over time, while active remediation is taking place, there must be underlying issues in some affect at the site. It is my recommendation that the site be re-evaluated with a detailed hydrogeological study. It is my belief that there is an undiscovered source of contamination or an unexcavated smear zone…" PADEP's 4/20/12 memorandum is provided in Attachment 1H.

Static water levels are measured in MW-1 through MW-12 on a quarterly basis. Quarterly groundwater samples are collected from MW-1, MW-4, and MW-5 and annual groundwater samples are collected from MW-2 (extraction well), MW-3, MW-6, MW-7 (extraction well), and MW-8. Groundwater samples from MWs-9, -10, -11 have not been collected since Quarter 3, 2006 and the last groundwater sampling event conducted on MW-12 was Quarter 2, 2010. All groundwater samples are analyzed for BTEX, MTBE, naphthalene and cumene.

Based on AEA's quarterly Remedial Action Progress Reports (RAPR), "before" and "between" liquid GAC treatment samples are collected monthly and "after" treatment samples bi-monthly. Before treatment samples are analyzed for benzene, toluene, ethylbenzene, xylenes (BTEX), MTBE, naphthalene, cumene, oil and grease, total suspended solids, dissolved iron, dissolved lead, and pH. Before vapor treatment samples are analyzed for BTEX, MTBE, and gasoline range organics.

AEA reported in its Quarter 2, 2013 RAPR that the remedial system treated 2,121,585 gallons of extracted groundwater since the system was activated in February 2003. AEA further reported that the remedial system was deactivated on 1/2/13 to initiate groundwater attainment monitoring. Bidders should note that PADEP approved the remedial system deactivation on 12/21/12 provided that a new PADEP-approved RAP would be implanted by 12/16/13. AEA's Quarter 2, 2013 RAPR is provided as Attachment 1K.

Bidders should note that approximately thirty 55-gallon drums are located inside the on-property storage building and a layer of what appeared to be an oily sludge-like material was observed on the concrete floor of the building. In October 2012, PADEP conducted a telephone interview with the Solicitor, wherein he stated that the contents of the drums stored in the storage building consist of fuel oil, kerosene and motor oil but the quantity or type of product contained in each drum is unknown. Moreover, the drums were reported to be in poor condition (e.g., rusting, pealing paint, dented, etc.) and several did not appear to be properly sealed.

The two former bulk fuel loading racks situated on the property reportedly loaded fuels (No. 2 fuel oil and kerosene) to bulk fuel tanker trucks via above- and below-ground steel conveyance pipes and a fuel pumping system. Fuel conveyance piping associated the northern bulk fuel loading rack (located adjacent to but at a lower elevation than the UST field), appeared to have been connected via a pump

[16] Bidders should note that AEA's proposal to conduct the proposed contaminated soil excavation was never implemented.

and piping network to the former UST systems that were removed from the property in 1998. The network of pipes and pumps located on the southern side of the property appear to be currently connected to the on-property ASTs. Both bulk fuel loading racks were observed to be in poor condition.

In light of: (i) the list of deficiencies identified by the PADEP in its interoffice memorandum; (ii) the non-compliance issues identified in numerous PADEP facility inspection records; (iii) inadequate characterization of potentially impacted medias of concern at the site; and (iv) the apparent lack of effectiveness of the current remedial system in reducing petroleum hydrocarbon impacts to soil, groundwater and potentially soil vapor at the site as identified above, bidders should carefully consider what new information, analyses, and interpretations are needed to formulate a ***new*** comprehensive combined RSCR / RRAP submittal meeting PADEP requirements.

4. PROJECT MILESTONES AND OBJECTIVES

This RFB seeks competitive, fixed-price bids to achieve the development and PADEP approval of a RSCR/RRAP using the bidder's recommended course of action through the completion of the six tasks/milestones outlined below. For the TNT Enterprises site, the desired result or project goal is to develop and submit a RSCR/RRAP to the PADEP and to obtain their approval of the document so that the selected remedial action can be implemented and ultimately, the site can be closed under Chapter 245 consistent with PADEP Act 2 standards. To be deemed responsive, each bid must address in detail each of the RFB milestones, including describing the bidder's understanding of the conceptual site model (CSM) and how that model relates to the bidder's proposed approach. Recommendations for changes/additions to the RFB outline shall be discussed, quantified, and priced separately; however, **failure to bid the RFB milestone format "*as is*" may result in a bid not being considered.**

This solicitation requests a fixed price guaranteed Bid to Result bid for achieving PADEP approval of a RSCR / RRAP through the completion of the specific tasks/milestones defined in this RFB. Again, the desired result or project goal is to identify cost effective remedial methods to "close" the site under Pennsylvania Act 2 and obtain an associated release of liability from PADEP by demonstrating attainment of residential SHS-MSCs/RUA for soil and groundwater and addressing soil vapor exceeding applicable screening values. To be deemed responsive, each bid must respond in detail to each of the tasks/milestones (see following), including describing the bidder's understanding of the CSM and how that model relates to the bidder's proposed approach to executing the tasks/milestones. Any recommendations for changes/additions to the tasks/milestones can be discussed, but are to be discussed, quantified, and priced separately. Subsequent to bid award, any modification of the selected consultant's SOW will require prior written approval by the Solicitor ***and PAUSTIF*** through its third-party administrator, and may require PADEP pre-approval.[17]

Because **this is a results-oriented remediation bid solicitation, each bid response must detail the approach and specific methods for achieving the task/milestone objectives. In other words, there is a premium on thoroughly describing the bidder's understanding of the site conditions along with the CSM, and how that model relates to the bidder's proposed approach to attaining the objectives of each task/milestone**. Furthermore, each bid will need to contain a higher level of project-specific details sufficient for the Solicitor and PAUSTIF to accurately assess each bid and differentiate among them. Each bidder should keep in mind that the quality of the technical approach is emphasized with these results-oriented bid solicitations as compared to bids submitted in response to solicitations that define the work scope with greater specificity (often referred to as Defined SOW RFBs). Conversely, while cost remains a significant factor in the evaluation of guaranteed Bid to Results bids, the emphasis on cost is reduced *in comparison to* the evaluation of the bid for a Defined SOW RFB. At the same time,

[17] The PADEP Case Manager for this site is William S. Pelc, Jr.

the Solicitor and PAUSTIF recognize that each bidder may propose a unique path forward for a given site.

Because this RFB includes results-oriented fixed price tasks/milestones, each bid response must contain a higher level of project-specific details, which will allow the Solicitor and PAUSTIF to accurately assess each bid and differentiate among them (see further discussion below). In reviewing responses to this RFB, the bid review committee will use the following criteria (questions) to assess whether bids are technically sound:

- Does the bid demonstrate that the bidder has an understanding of existing site conditions (COC mass distribution with the subsurface, site geology and hydrogeology, etc.)?
- Does the bid demonstrate that bidder has an understanding of site-specific regulatory and permitting issues?
- Does the bid demonstrate that the bidder has an understanding of individual milestone objectives as well as the overall project goal?
- Will the conceptual remedial solution outlined in the bid (to be presented in the RRAP) be capable of achieving site closure in conformance with PADEP guidance and PA Code, Title 25, Chapter 245 within a reasonable timeframe?
- Does the bid provide a convincing argument that the outlined remedial approach (or combination of technologies) will be effective, will be cost efficient, and will achieve project goals within a reasonable timeframe?
- Has appropriate pilot testing been proposed consistent with the bidder's conceptual remedial solution?

Each bidder should carefully review the existing site information provided in the attachments to this RFB and seek out other appropriate sources of information to develop their response to this RFB. Nothing stated or implied within this RFB shall be construed as an endorsement by the Solicitor or by PAUSTIF of a particular remedial technology or remedial solution for the site, including continued use or disuse of any components of the existing remedial system.

The bidder's approach to develop a PADEP-approved RSCR/RRAP that, when implemented, will achieve closure of this site under PA Act 2 and an associated release of liability from PADEP shall be in accordance with generally accepted industry standards/practices and all applicable federal, state, and local rules, regulations, guidance, and directives. The latter include, but are not necessarily limited to meeting the requirements of the following:

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

- Pennsylvania's Engineer, Land Surveyor and Geologist Registration Law, P.L. 913, No. 367 Cl. 63.

Each bid must provide the Solicitor and PAUSTIF with a schedule that begins with execution of the fixed-price Remediation Agreement with the Solicitor and ends with PADEP approval of a complete RSCR/RAP. Schedules must also indicate the start and end of each of the milestones/tasks specified below, and indicate the timing of all proposed key milestone activities. Schedules must also specify no less than two weeks advance notice for the Solicitor and PAUSTIF to review and comment on any documents that will be submitted to PADEP or any other governing regulatory body. As appropriate, bid schedules must include time to address any comments received from PADEP on the RSCR and/or a RRAP.

Bidders should note that this solicitation requests a fixed-price bid for several specific tasks defined in this RFB and for successfully attaining the goal of achieving a PADEP approved RSCR/RRAP. Consequently, each bidder is identifying its proposed SOW to achieve the goal. As previously noted, the Solicitor and PAUSTIF recognize that each bidder may propose a unique path forward for a given site within the general framework of the tasks/milestones specified below.

During completion of the milestone objectives specified below and throughout implementation of the project, the selected consultant shall:[18]

- Conduct necessary, reasonable, and appropriate project planning and management activities until the project (fixed-price agreement) is completed. Such activities may include Solicitor communications/updates, meetings, record keeping, subcontracting, personnel and subcontractor management, quality assurance/quality control, scheduling, and other activities (e.g., utility location, 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 tasks/milestones, and shall also include activities related to establishing any necessary access agreements. Project planning and management shall include identifying and taking appropriate safety precautions to not disturb site utilities, including, but not limited to, contacting Pennsylvania One Call (dial 811) as required prior to any ground-invasive work.[19] As appropriate, project management costs shall be included in each bidder's pricing to complete the tasks/milestones specified below.

- Be responsible for coordinating, managing and completing the proper management, characterization, handling, treatment, and/or disposal of all investigation derivative wastes (IDW), including soil/rock cuttings, purge water, development water and pumping test water generated during the implementation of this SOW in accordance with standard

[18] As such, all bids shall include the fixed costs of these activities and associated functions within the pricing for applicable milestones.

[19] Pennsylvania's Underground Utility Line Protection Law, Act 287 of 1974, as amended by Act 121 of 2008 (the "Act"); OSHA Standard 1926.651 (revised 1990); the Federal Pipeline Safety Act of 1968, as amended, protecting underground liquid (CFR 49 Part 195) and natural gas (CFR 49 Part 192.614) pipelines; and the National Electric Safety Code, ANSI C-2 (revised 1997) require anyone who engages in any type of excavation or demolition, (see the Act for definition of excavation), to provide advance notice. In Pennsylvania, the Act requires "*notice in the design or planning phase of every work operation that involves the movement of earth with powered equipment. This notice is not less than 10 or more than 90 business days before final design approval. In the Construction phase of a work operation involving movement of earth with powered equipment or explosives the notice required is at least 3 business days but not more than 10 business days prior to actual excavation.*" The Pennsylvania One Call website is www.paonecall.org.

industry practices and applicable laws, regulations, guidance, and PADEP directives. **All IDW shall be handled and disposed of per PADEP's Northwest Regional Office (NWRO) guidance.** Bidders are encouraged to check with the PADEP-NWRO for current requirements. Waste characterization and disposal documentation (e.g., manifests, chain of custody forms, etc.) shall be maintained by the successful bidder and provided to the Solicitor upon request.

- 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 compensation under the fixed-price Remediation Agreement.

- Be responsible for keeping all site monitoring wells, recovery wells, and vapor monitoring points in good condition, with each well properly sealed and locked between each monitoring/sampling event. The selected consultant is responsible for repairing any seals or locks that become defective during the period of this Fixed-Price Agreement at its expense. 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/Milestone 1 – Additional Background Research / Site and Geophysical Surveys.

Background Research. Through review and evaluation of the historical information summarized in Section 3 above and the additional site background information included in the accompanying electronic files (Attachment 1), the successful bidder shall become fully educated on 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.

In addition to becoming intimately familiar with the details of the site information collected to date, bidders will be expected to close several other background data gaps under this task as outlined below.

Historical Records. Bidders shall address gaps in the current understanding of site and surrounding area conditions that may prove important for completing the supplemental site characterization. At a minimum, each bid shall address the following additional background research needs:

a) As noted in Section 3, there appear to be uncertainties concerning pre-1998 property use(s), historic UST locations (if any), and UST operational history. For example, the available documents do not provide specific information of property use or zoning prior to 1998, when gasoline retail sales were presumably originated on the property or when the property was converted to commercial use. Of particular concern is the lack of information regarding property use prior to TNT Enterprises initiating retail fueling operations and, if previously used for commercial purposes, the type(s) of business(es) or potential UST systems that historically existed on the property.

b) Neither the March 2000 SCR nor the January 2001 Additional SCR appears to present sufficient information concerning the current and historical uses of properties immediately surrounding the TNT Enterprises facility.

Receptor Survey. This task/milestone shall also include a receptor survey. The survey shall include 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 describe their approach and provide a firm fixed-price for completing these additional background research activities, the results of which shall be summarized in the RSCR/RRAP (Task/Milestone 6).

Professional Site Survey. It appears that none of the existing SCRs and RAPs contains drawings that accurately depict an appropriate scale, shows property boundaries, right-of-ways, or adjacent properties. Moreover, none of the drawings depict surveyed locations of easements, sanitary and storm water sewer lines (if any), septic systems (if any), or underground water and natural gas lines (if any).[20] Therefore, under this task/milestone, bidders shall describe their approach and provide a firm, fixed-price quote for completing an optical land survey of the site to be conducted by a professional surveyor licensed in the Commonwealth of Pennsylvania. Work under this task/milestone might include, but may not necessarily be limited to:

- 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 2 and 3, respectively; and,
- Surveying in locations and elevations, ground surface (top of surface cover) and top-of-casing (PVC riser pipe), for the twelve existing on-property monitoring wells and the additional monitoring wells to be installed under Task 4.

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 RSCR/RRAP (Task/Milestone 6).

Buried Utility Survey. The location, depth, and orientation of all below-grade utilities entering, on and adjacent to the subject property do not appear to have been sufficiently defined for evaluation as preferential contaminant migration pathways. Therefore, bidders shall take appropriate measures to locate and depict buried utilities on the base map.

On-Property Geophysical Survey. There are no indications that a geophysical survey was ever conducted on this property to adequately delineate the locations of underground utilities, tank field boundary, and associated product piping and piping trenches or the potential presence of orphan USTs.[21] Therefore, under this task/milestone, bidders shall describe their approach in detail for conducting a geophysical survey at the site. Each bid must include a site drawing depicting the proposed areas designated for the geophysical survey, along with the rationale (basis) for each area. Bidders shall select the appropriate geophysical surveying method(s) it shall use to identify the locations of the above

[20] There is no documentation in the claim files that indicate a professional survey was ever conducted at the site.

[21] Bidders should note that two soil samples collected in Feb. 2009, contained concentrations of benzene greater than SHS-MSCs/RUA. One of the soil samples was collected from the east side of the gravel alley *behind the facility building* and the other soil sample was collected from the south side of the storage building. The presence of soil containing concentrations of benzene greater than SHS-MSCs/RUA suggest that there may be one or more orphan USTs in that area of the site.

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 vapor monitoring points (Task/Milestone 2), soil borings (Task/Milestone 3), and groundwater monitoring wells (Task/Milestone 4) (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 RSCR/RRAP (Task/Milestone 6).

Task/Milestone 2 – Vapor Intrusion Evaluation. 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 soil vapor sampling 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 RSCR/RRAP.

The Soil Vapor Sampling 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 a total of six (6) soil vapor monitoring points. Each bid must include the rationale (basis) for locating the soil vapor monitoring points, and describe the approach for the installation of these sampling points. In addition, bidders shall quote an all-inclusive unit cost (installation and sampling) in the Bid Tabulation Spreadsheet (Attachment 2) per soil vapor monitoring point should additional monitoring points become necessary.

The fixed price cost for this task shall also include the sampling and analysis of the six soil vapor sampling points to be installed under this task. Each of 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 bid shall describe the approach for purging and sampling the soil vapor sampling points, including sample analysis and schedule for when sampling would be anticipated. In addition, bidders shall quote an all-inclusive unit cost in the Bid Tabulation Spreadsheet (Attachment 2) for any additional soil vapor sampling events including sample analysis. However, bidders must include the rationale (basis) for conducting additional soil vapor sampling events to ICF / PAUSTIF and demonstrate that the collection of additional vapor samples is reasonable, necessary, and appropriate before conducting the work. The soil vapor study shall be described in the RSCR/RRAP (Task/Milestone 6) along with any recommendations regarding the necessity for an expanded vapor intrusion assessment inclusive of indoor air quality sampling, if appropriate.

Task/Milestone 3 – Source Soil Delineation. The release of unleaded gasoline appears to have occurred sometime prior to the discovery of a hole in Tank 006 and a leak in the gasoline conveyance line above Tank 001 during UST removals. Upon excavation of the USTs and conveyance lines in April 1998, it is reported that no contaminated soil was observed beneath the conveyance lines and the conveyance lines appeared to be in good condition. However, contaminated soil was observed beneath the fuel dispenser islands. On the site drawing contained in the 6/23/98 UST Closure Report (Attachment 1A), soil samples appear to have been collected from the base of the excavation; three soil samples from beneath each of the six tanks (samples 1-18), one soil sample from the conveyance pipe trench (sample 19) and one soil sample from beneath each of the five dispensers (samples 20-24). Because no sidewall sample data was reported, it appears that no soil samples were collected from the sidewalls of the excavation.

As noted earlier, one soil sample was collected from each of the twelve groundwater monitoring well boreholes. The soil sample collected from MW-2 at a depth of 0 to 10 feet below grade exhibited a concentration of benzene greater than SHS-MSCs/RUA.

The final soil sampling event conducted at the site occurred in February 2009 wherein 23 soil samples were collected from multiple borehole locations throughout the site. Four of the soil samples (TB-6, TB-8, TB-9 and TB-11), each collected from a depth interval of 4 to 8 feet below grade, contained concentrations of benzene greater that SHS-MSCs/RUA. The locations of the four samples that exceeded SHS-MSCs/RUA for benzene are depicted in the drawing entitled: *TNT Enterprises Inc., Facility ID #20-90351, Appendix E, Site Map/Groundwater Contour Map* (Attachment 1F).

The existing soil sampling data suggest that excessively impacted soil remains at the site but the full lateral and vertical extent of impacted soil is not yet known in every direction relevant to developing a remedial approach/design. Therefore, under this task/milestone, bidders shall provide a fixed-price cost for implementing a soil boring / sampling program to assess the magnitude and extent of potential soil impacts. Each bid shall assume advancing six (6) soil borings and each bidder must provide the proposed locations for the borings on a site drawing. Each bid must also include the rationale (basis) for each of the proposed boring locations. The intent of Task/Milestone 3 is to collect soil samples from borings to adequately delineate the horizontal and vertical extent of possible residual soil impacts that may remain at the site.

The soil delineation program shall be accomplished safely and without risking damage to utilities or UST system infrastructure. Each bidder shall independently consider final locations relative to utilities, bidder's own interpretation of historical data, and the findings from Task 1. If a bidder believes additional soil borings and samples (greater than 6) are needed to adequately characterize the site, the bidder shall specify the number of additional boring(s) and sample(s) to be collected for laboratory analysis, include the boring locations on a site drawing, provide rationale, and include this work in the fixed price for this task. Bidders shall provide an all-inclusive fixed unit cost per survey point for professionally surveying more than six additional soil borings in the Bid Cost Tabulation Spreadsheet (Attachment 2). 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 entered into the Bid Cost Tabulation Spreadsheet (Attachment 2) would include utility clearance, borehole advancement, logging, screening, sample collection and analysis, borehole abandonment, surface restoration, and waste removal/disposal. In conducting this task, the Solicitor requires at least two (2) weeks advance notice.[22]

Each bid shall describe the approach of advancement, logging, screening, and sampling of each soil boring. The soil borings shall be examined in the field and described for lithology, groundwater occurrence, and potential staining / odor indicative of hydrocarbon contamination. 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 14 feet below grade based on the expected depth to the top of competent shale bedrock generally inferred from previous subsurface investigation work. However, bidders shall provide an all-inclusive per foot unit cost in the Bid Cost Tabulation Spreadsheet (Attachment 2) should additional drilling footage be required. The per foot unit cost shall include borehole advancement, logging, screening, and borehole abandonment.

One soil sample per boring (six total) shall be submitted for laboratory analysis for the **pre**-March 2008 PADEP short list of unleaded gasoline parameters, *excluding 1,2,4- and 1,3,5-trimethylbenzenes,* by a

[22] As noted earlier, no facility operations have been conducted at the site since 2006.

PADEP-accredited laboratory using appropriate analytical methods and detection levels. The soil sample selected for laboratory analysis shall be biased based on field screening results indicating highest levels of adsorbed contamination. Appropriate quality assurance/quality control (QA/QC) samples shall also be obtained for laboratory analysis. Based on these analytical results, the approximate dimensions and volume of remaining source material exceeding the PADEP Act 2 SHS-MSCs/RUA for soil, if any, shall be estimated. However, to accommodate the possible need to collect additional soil samples based on field observations and in order to delineate the extent of soil contamination, bidders shall provide an all-inclusive unit cost per additional soil sample collection and analysis on the Bid Cost Tabulation Spreadsheet (Attachment 2).

In addition to the samples for unleaded gasoline analysis, soil samples shall also be collected from three separate soil borings to be analyzed for fraction organic content (FOC), porosity, and bulk density to assist with fate and transport modeling. Each bid shall identify the sample locations and describe the methods used to obtain these samples.

Each bidder's fixed-price cost for Task/Milestone 3 shall account for: (i) identifying subsurface utilities and other buried features of concern including, but not necessarily limited to, contacting PA One Call System and clearing the borehole location to a minimum depth of 5 feet using a hand auger; (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) management of IDW. The soil boring program methods and results shall be detailed in the RSCR/RRAP to be prepared under Task/Milestone 6.

Task/Milestone 4 – Installation of Additional Groundwater Monitoring Wells and Quarterly Groundwater Monitoring, Sampling, and Reporting. Under this task/milestone, bidders shall provide a firm fixed-price cost for installing five (5) additional on-property groundwater monitoring wells and two (2) off-property groundwater monitoring wells on the opposite side of Route 77, downgradient of MW-1 (either in right-of-way or on off-site property).[23] Each bidder shall independently consider the final locations relative to the location of buried utilities; bidders own interpretation of historical groundwater flow variations, geophysical data, configuration of the dissolved-phase plume, and perception of data gaps. Each bidder must show their proposed locations for the additional groundwater monitoring wells on a site drawing and provide their rationale for those locations in their bid response.

The objectives for installing additional wells at this site are to: (i) delineate the horizontal and vertical extent of dissolved-phase contaminants in bedrock groundwater; (ii) refine the interpretation of groundwater flow; (iii) enable representative aquifer testing; (iv) facilitate contaminant fate-and-transport modeling; (v) evaluate natural attenuation processes; and (vi) provide for point-of-compliance (POC) monitoring. Should additional wells be 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.

Borings for the five on-property bedrock monitoring wells and the two off-property bedrock wells shall be advanced to intersect the water table aquifer intercepted by existing on-property monitoring wells, which is expected to be present at depths of between 14 and 28 feet below grade based on the existing groundwater elevation data. For cost estimating purposes, bidders shall assume that each of the seven (7) well borings will attain a depth of 40 feet below grade (280 feet of well installation). In addition, bidders shall provide an all-inclusive per foot unit cost in the Bid Cost Tabulation Spreadsheet (Attachment 2) should additional drilling footage / well installation be required. The per foot unit cost shall

[23] Currently, there are no off-property, groundwater monitoring wells associated with this site.

include borehole advancement, logging and screening, well materials and installation, and waste removal/disposal.

Each bidder in their bid shall describe the methods used to advance the well borehole including total depth of the boring and well construction details.[24] 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. PID readings obtained will be recorded on the boring / well construction logs.

The additional groundwater monitoring wells shall be constructed in accordance with the PADEP Groundwater Monitoring Guidance Manual. Bidders shall assume constructing each well with 2-inch diameter Schedule 40 PVC casing and well screen. Final construction for the five monitoring wells must ensure that the screened interval intersects the water table surface and accounts for seasonal groundwater fluctuations.[25] For cost comparison purposes, bidders shall assume 15 feet of well screen, 0.010-inch slot-size screen. Bedrock well screens shall not extend into the overburden. Should any wells be installed with a submerged screen, the well(s) will be replaced at the selected consultant's sole expense.

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. 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.

The current condition of the existing on-property monitoring wells is unknown. PAUSTIF will consider reasonable, necessary, and appropriate costs to repair the existing wells (e.g, flush-mounted manway covers, concrete surface seals, locking well cap seals, etc.) on a case by case basis. Any well repairs approved for PAUSTIF reimbursement shall be conducted by the successful bidder on a time and materials (T&M) basis after providing PAUSTIF / ICF a written cost estimate to perform the work including documentation as to why the repairs are necessary and a professional opinion of how damage(s) occurred.

Each bidder's fixed-price cost for this task shall describe the proposed well construction specifications along with rationale and also 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 or hand auger; (ii) well development activities; (iii) management and disposal of IDW; 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 RSCR/RRAP (Task/Milestone 6). 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.

[24] 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.

[25] If a bidder believes additional 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.

Quarterly Groundwater Monitoring, Sampling and Reporting. Bidders shall provide a firm fixed-price to complete six (6) quarterly groundwater monitoring, sampling and reporting events. The initial quarterly groundwater monitoring event conducted by the selected bidder shall sequentially follow the final quarterly groundwater monitoring event conducted by AEA such that there are no gaps in the quarterly groundwater monitoring data collected at the site and reported to the PADEP. Quarterly groundwater quality data shall continue to be collected, evaluated, and reported to PADEP while they review the RSCR/RRAP, provide their comments and ultimate approval of the RRAP, and until implementation of the RRAP commences.[26] Each quarterly groundwater monitoring, sampling and reporting event shall include the additional wells installed under this task/milestone, and the 12 existing on-property wells (MW-1 through MW-12). In addition, should additional quarterly events become necessary, bidders shall provide an all-inclusive unit cost in the Bid Cost Tabulation Spreadsheet (Attachment 2) to conduct additional groundwater monitoring, sampling, and reporting events. The conduct and results of these quarterly groundwater monitoring events shall be documented in the RSCR/RRAP (Task/Milestone 6).

During each of the six (6) quarterly groundwater monitoring/sampling events, 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 has historically been detected and measured in MW-2, MW-4, MW-6 and MW-7). IDW and purge water shall be disposed of per PADEP NWRO guidance; bidders are encouraged contact PADEP's NWRO for current requirements.

Groundwater samples collected during these six events shall be analyzed for the **pre**-March 2008 PADEP short-list of unleaded gasoline parameters *excluding 1,2,4- and 1,3,5-trimethylbenzenes* 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.[27] 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.

In addition to the sampling for unleaded gasoline compounds, groundwater samples shall be collected from three monitoring wells for inorganic analysis, including analyses for hardness parameters, iron, manganese, and total hardness, to be used in assessing groundwater treatability. Each bid shall identify the monitoring wells to be used for collection of these samples.

The RAPRs describing the sampling methods and results shall be provided to the PADEP on a quarterly basis and within 30 days of the receipt of analytical results for each quarter. At a minimum, each RAPR shall contain the following:

- A summary of site operations and remedial progress made during the reporting period, including contaminant mass recovery estimates in groundwater;
- Narrative description of the sampling procedures and results;

[26] RAP implementation will be performed under a separate fixed price agreement or will be re-bid by PAUSTIF.

[27] Each bidder's approach to implementing Task/Milestone 4 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.

- Tabulated data collected from the monitored wells documenting the depth to groundwater and thickness of any free product encountered;
- Groundwater elevation contour maps depicting groundwater flow direction;
- Tabulated historical quantitative groundwater analytical results including results from the current quarter;
- Maps for all media and all phases at specified times that indicate the distribution of concentrations of regulated substances;
- Current quarter laboratory analytical report(s);
- One site-wide iso-concentration contour map for each compound detected in any one well above the SHS during the quarter;
- For each well exceeding SHS, a graphical depiction of historical key contaminant concentrations and groundwater elevations to provide an assessment of correlations between fluctuating water levels/precipitation events and contaminant concentrations;
- For each well exceeding SHS, a graphical depiction of recent key contaminant concentration trends;
- Discussion of the data to offer an updated assessment whether these data are consistent with a stable, shrinking, or expanding plume;
- Evaluation of system performance including contaminant mass recovery quantification and system optimizations performed;
- Treatment and disposal documentation for waste generated during the reporting period; and
- Demonstration of compliance with the required Federal, State, and local permits and approvals.

PAUSTIF will only reimburse for necessary quarterly groundwater sampling/reporting events actually completed under this milestone. Each quarterly RAPR shall be signed and sealed by a Professional Geologist and/or Professional Engineer registered in the Commonwealth of Pennsylvania (bidders shall refer to state licensing laws to determine which seals are required based on the work performed for and documented in the RAPR).

Task/Milestone 5 – Pilot Testing. Bid responses to this RFB shall present a conceptual plan to cost effectively remediate the site based on what is currently known about site conditions and cleanup goals. Bids will be evaluated, in part, on how well the presented conceptual remedial plan has considered the site conditions and project goals and how compelling the supporting rationale is for the conceptual plan being viable, likely successful, and cost effective. The bid conceptual remedial plan may ultimately be changed or modified in the RRAP based on the new data to be secured by the successful bidder under the contract originating from this competitive bid.

Under this task/milestone, each bidder shall provide a firm fixed-price for pilot testing the in-situ technologies necessary to implement the bidder's conceptual remedial plan. Bid pilot tests shall be consistent with the vision the bidder has provided for cleaning up the site. The failure of the prior remediation system brings into some doubt the reliability of previous in-situ pilot testing results, therefore, even if a bidder's conceptual remedial plan includes the technologies already tested on-site, the bidder shall propose pilot testing the technology again to obtain independent results. Under no circumstance should a bidder elect not to conduct any activities under Task/Milestone 5, unless a bidder has identified a feasible and cost effective remedial approach that does not involve in-situ remediation. Bidders that

elect not to propose pilot testing to facilitate the efficient closure of the site under Act 2 must provide the technical rationale (basis) for this decision within their bid, along with supporting examples (as appropriate).

Work that may be conducted under this task/milestone will vary by bid according to each bidder's vision for remediation of the site. Task/Milestone 5 shall be used by bidders to collect the data they feel is necessary to assess or finalize the design of the remedial approach envisioned for the TNT Enterprises site to ultimately achieve SHS for soil and groundwater. The work proposed and conducted under this task/milestone as well as the fixed- or unit-price(s) associated therewith, shall be formulated independently by each bidder. Task/milestone work breakdowns and their associated pricing entered into the Standardized Bid Form (Attachment 2) will vary by bid.

Feasibility and pilot tests for the remedial approach the bidder has described in concept in its bid for the TNT Enterprises site shall be described with fixed price costs under Task/Milestone 5. Task/Milestone 5 activities include: determination of site-specific remedial design data, confirmation that the proposed technology is technically feasible, confirmation that the proposed technology is cost-effective, and confirmation that the proposed technology will provide a timely closure of the site under Pennsylvania Act 2.

Although not an endorsement to implement (or not to implement) any such work, potential activities for bidders to consider may include, but not be limited to, the following:

- In-situ pneumatic or hydraulic permeability studies (radius of influence tests).
- Aquifer pump test – Should a bidder choose to conduct an aquifer pump test or any other feasibility or pilot tests requiring extraction of groundwater, the bidder shall provide a detailed description of how extracted groundwater will be managed, sampled, analyzed, transported from the site, and disposed. Each bidder shall provide an all-inclusive per gallon fixed unit cost for management, sampling and analysis, loading, transporting, and disposing extracted groundwater in the Bid Cost Tabulation Spreadsheet (Attachment 2).
- Soil vapor extraction testing.
- Feasibility studies and/or pilot testing activities to assess the effectiveness of a specific remedial technology or approach.
- Spot excavation of contaminated unsaturated zone soil in areas known to contain unleaded gasoline constituents greater than SHS-MSCs/RUA.
- Remedial design calculations, technology information, equipment specifications, and materials specifications as appropriate to support implementation and PADEP approval of the remedial technology proposed within your bid.

Any and all Task/Milestone 5 activities that are proposed with bidding firm's bid shall be accompanied by the following:

- The purpose and need for each Milestone 5 activity and an appropriate breakdown (Task/Milestone 5-1, 5-2, etc.).
- A detailed scope description of each activity, including the use of and incorporation of pre-existing site data.
- The timing and schedule of each activity relative to the overall project schedule.
- A description of the anticipated results of each activity and how such results may impact its proposed conceptual remedial action plan.

- For activities involving the evaluation of a remedial technology, such as a feasibility study or pilot test, bids shall describe in detail the likelihood that the resulting data will dictate a change in the conceptual remedial action plan proposed in your bid.
- Firm fixed-pricing and any appropriate unit pricing for each Task/Milestone 5 activity (Task/Milestone 5-1, 5-2, etc.) within each bidder's completed Standardized Bid Form (Attachment 2).

The methods and results of feasibility / pilot testing activities conducted under Task/Milestone 5 shall be documented in the RSCR/RRAP (Task/Milestone 6), which shall be submitted to both the Solicitor and PAUSTIF for review prior to its submission to PADEP. Each bidder's project schedule shall provide two weeks advance notice for Solicitor and PAUSTIF review of the draft document. The final RSCR/RRAP shall address comments received from the Solicitor and PAUSTIF on the draft report before it is submitted to PADEP. The RSCR/RRAP shall be consistent (with regard to approach and level of effort) with the conceptual remedial action plan provided in the selected consultant's bid.

The pricing for Task/Milestone 5 (i.e., Tasks/Milestones 5-1, 5-2, etc., as applicable) on the Standardized Bid Form (Attachment 2) shall incorporate all costs associated the documentation of the associated pilot tests.

Task/Milestone 5 activities shall be conducted as soon as possible following the completion of Tasks/Milestones 1 through 4 with the exception of quarterly groundwater monitoring events to be conducted following submittal of the RSCR/RRAP to the PADEP.

Task/Milestone 6 – Risk Assessment and Preparation and Submission of Draft and Final Combined RSCR/RRAP. Under this task, bidders shall provide a fixed-price cost for performing an exposure evaluation and risk assessment. This task shall include conducting an exposure pathway analysis to determine potentially complete and incomplete exposure pathways followed by a risk assessment to calculate risk-based numerical site-specific standards for soils and/or groundwater with respect to any complete exposure pathway that cannot be eliminated by means of viable environmental covenants, institutional or engineering controls. A residential / commercial well use survey and evaluation of local groundwater ordinances shall also be performed as part of this task, as well as research concerning zoning ordinances, flood zones, and future land use plans for the properties in the area of concern. **The selected consultant of the competitive bid will be expected to consult with PADEP case manager before and during the activities of this task.**

Bidders shall assume that the risk assessment will need to consider soil, soil vapor, and groundwater contamination exposure pathways and risks. The successful bidder will be responsible for producing a risk assessment that can reasonably be expected to be approved by PADEP.

The risk assessment shall encompass an exposure assessment, toxicity assessment, and risk characterization. The identification of exposure pathways for the site shall be based upon guidance from the American Society for Testing and Materials (ASTM) and the United States Environmental Protection Agency (USEPA), as required by Act 2, Section 250.404. The exposure pathway analysis shall consider these four pathway elements:[28]

- A source and mechanism of release;
- A retention or transport medium (e.g., groundwater);

[28] All four elements are necessary for an exposure pathway to be deemed complete; otherwise, the pathway is not complete and there is no risk.

- A point where a receptor can contact the impacted medium (e.g., a drinking water well); and
- A mechanism (exposure route) by which the receptor contacts the impacted medium (e.g., ingestion).

The chemicals of potential concern (COPCs) will be those constituents whose concentrations in soil and groundwater do not screen out when maximum contaminant concentrations are compared to the USEPA's Regional Screening Levels (RSLs), i.e., if maximum constituent concentrations are less than the RSLs, it is not a COPC.[29] Exposure point concentrations (EPCs) shall be derived for COPCs by statistical analysis (maximum concentrations shall not be used for EPCs).

Exposure pathways for the identified COPCs shall then be evaluated to determine if the pathway is complete or can be rendered incomplete through the application of pathway elimination measures (i.e., viable institutional and/or engineering controls) without active remediation. For any exposure pathways that cannot be eliminated by means of institutional and/or engineering controls, a toxicity assessment and risk characterization shall be performed. The determination of whether exposure to a COPC will cause adverse health effects in exposed individuals shall be evaluated based on available toxicity information and regulatory limits, and, if required, risk-based numeric Site-Specific Standards shall be developed.

For carcinogenic substances, cancer slope factors developed by the USEPA shall be used to assess the increased probability of developing cancer following exposure to a chemical. For non-carcinogenic (or systemic) substances, reference doses developed by the USEPA shall be used to estimate potential for adverse effects other than cancer. The COPCs that yield an adverse risk level shall be further evaluated during the risk characterization step, which shall combine the components of exposure (i.e., estimate of intake) and toxicity to estimate potential risk for the completed exposure pathways.

In addition, an ecological screening assessment shall be conducted to determine if the site poses an unacceptable risk to ecological receptors. The screening assessment shall be conducted in accordance with Chapter H of the Pennsylvania Land Recycling Program's Technical Guidance Manual and USEPA Region 3 risk assessment screening criteria insofar as is necessary for determining any potential ecological risk.

After completing the exposure analysis / risk assessment, the selected consultant will present its draft findings to the Solicitor and PAUSTIF for review and comment as a separate deliverable. The exposure analysis / risk assessment draft findings will include the selected consultant's evaluation of which institutional controls (if any) could be implemented at the site that would preclude the use of future active remediation. The project schedule should allow two (2) weeks for Solicitor and PAUSTIF to review the draft Risk Assessment before being finalized and incorporated into the SCRA / RRAP (Task G).

Upon completing the risk assessment and Tasks/Milestones 1 through 5 described above (with the exception of the ongoing quarterly groundwater monitoring identified in Task/Milestone 4, the selected consultant will prepare a **new** (i.e., not an amended) combined and comprehensive draft RSCR/RRAP for review and comment by the Solicitor and PAUSTIF. This combined RSCR/RRAP 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 RSCR/RRAP shall

[29] Based on discussions with the PADEP, constituent concentrations are to be screened against the USEPA Region 3 risk-based screening levels and not against the PADEP Statewide Health Standards (SHS). Only those constituents that do not screen out against the risk-based screening levels remain as COPCs for the exposure pathway analysis and/for demonstrating attainment of the PADEP SHS or a risk-based numeric Site Specific Standard.

address comments received from the Solicitor and PAUSTIF on the draft report before it is submitted to the PADEP for its review.

This task shall include the data analysis and interpretation needed for and to allow the presentation of a complete and rational CSM in the report. The CSM in the report shall explain the introduction of contamination to the environment at this site, how the contamination moved to arrive at its current distribution in site media and what contaminant distribution can be expected in the future based on fate and transport modeling. Bidders shall assume that the weathered bedrock zone in which contaminant transport occurs sufficiently approximates soil characteristics that the New Quick Dominico model may be calibrated to the site data to predict contaminant migration. Should a different model become necessary, this would represent a Changed Condition under the contract. The modeling and CSM shall be presented in the combined RSCR/RRAP.

This task shall also include a technical and cost evaluation of remedial alternatives to clean up the site to Solicitor's selected standard. Three viable remedial alternatives shall be presented in the RRAP. A conceptual design shall be formulated and presented for the most cost effective of the three viable alternatives.

The RSCR/RRAP shall detail the methodology and incorporate results of any new soil borings, groundwater monitoring results (Tasks/Milestones 3 and 4), any new site characterization data (Tasks/Milestones 1, 2 and 4), and any new pilot test results (Task/Milestone 5)[30] conducted to asses site-specific conditions. The RSCR/RRAP shall present a clear discussion to PADEP as to what activities and testing have been completed, their associated results, and a structured argument as to why the selected remedial strategy is reasonable, appropriate, and necessary for the TNT Enterprises site. The document shall also: (i) contain all necessary figures, tabulated data, and appendices; (ii) present a detailed and comprehensive remedial alternatives analysis which leads to a presentation of three equally viable site closure options; (iii) include a conceptual design for the most cost effective of the three viable alternatives; (iv) identify Solicitor's selected remedial goal for soil and groundwater; (v) discuss the recommended site closure strategy and its viability for achieving the remedial goal within a reasonable time frame; (vi) identify the proposed point-of-compliance monitoring wells; and (vii) present a schedule for implementing the recommended remedial approach allowing several months for remediator contracting. The RSCR/RRAP shall be signed and sealed by a Professional Geologist **and** a Professional Engineer registered in the Commonwealth of Pennsylvania.

As noted earlier, the RSCR/RRAP shall be submitted to both the Solicitor and PAUSTIF for review prior to its submission to PADEP. Each bidder's project schedule shall provide two weeks advance notice for Solicitor and PAUSTIF review of the draft document. The final RSCR/RRAP shall address comments received from the Solicitor and PAUSTIF on the draft report before it is submitted to PADEP.

5. 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/Milestones 1 through 6. A template/standard Fixed-Price Agreement is included as Attachment 3.[31] The Fund will facilitate negotiations between the Solicitor and the selected consultant toward executing this Fixed-Price Agreement. The selected consultant would have no more than ten (10) business days to return its draft of the Fixed-Price Agreement for Technical Contact/ICF review.

[30] As applicable, this may in part be accomplished by incorporating the Pilot Test Report (if appropriate) prepared for Task/Milestone 5 into the RSCR/RRAP (Task/Milestone 6).

[31] The selected consultant will be provided an electronic copy of the sample contract in Word format to allow contract-specific information to be added.

As noted earlier, **by submitting a bid in response to this RFB, each bidder indicates its acceptance of the contractual terms (Attachments 2 and 3) and task/milestone requirements of this project, including any stated schedule deadlines, unless explicitly stated to the contrary in the bid response**. Therefore, any **requested changes to the Fixed-Price Agreement should 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 Tasks/Milestones 1 through 6. Associated unit price quotes shall be entered into the Standardized Bid Form included as Attachment 2 to this RFB, and found among the accompanying electronic files. **Bid costs will be evaluated based solely on the cost information as provided on Table 1 in Attachment 2.**

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

Bids will be considered individually in a manner consistent with the evaluation process described in the PAUSTIF Competitive Bidding Fact Sheet, which can be downloaded from the PAUSTIF website.[32] While the Technical Contact will assist ICF, PAUSTIF, and the Solicitor in evaluating the bids, it is up to the Solicitor to select the bidder from those bids deemed acceptable to PAUSTIF as reasonable, necessary, and appropriate. The Technical Contact will also assist the Solicitor in communicating its choice of the successful bidder. Notification of bid award will likely occur within eight (8) weeks after receiving the bids.

Finally, subsequent to bid award, any modification of the selected consultant's SOW will require prior written approval by the Solicitor **and PAUSTIF** through its third-party administrator, and may require PADEP pre-approval.

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 / Site and Geophysical Surveys (Task/Milestone 1).
- Milestones B1, B2 and B3 – Vapor Intrusion Evaluation (Task/Milestone 2). Note that the schedule assumes three (3) Milestone B payments.
- Milestone C – Source Soil Delineation (Task/Milestone 3).
- Milestone D1 - D7 – Installation of Additional Groundwater Monitoring Wells and Quarterly Groundwater Monitoring, Sampling and Reporting (Task/Milestone 4). Note that the schedule assumes seven (7) Milestone E payments.
- Milestone E – Pilot Testing (Task/Milestone 5).

[32] www.insurance.pa.gov

- Milestone F1 – F2 – Risk Assessment and Preparation and Submission of Draft and Final Combined RSCR/RRAP (Task/Milestone 6). Note that the schedule assumes two (2) Milestone F payments.

TABLE 2 – SAMPLE MILESTONE COMPLETION / PAYMENT SCHEDULE

Estimated Milestone Timing Month After Contract Award	SOW Activities Anticipated / Completed for that Month	Milestone[1]
1	Additional Background Research; Site and Geophysical Surveys (A)	A
2	Vapor Intrusion Evaluation (probe installation) (B1); Vapor Intrusion Evaluation (initial sampling event) (B2);	B1, B2
3	Source Soil Delineation (C); Installation of Additional Groundwater Monitoring Wells (D1); Quarterly Groundwater Monitoring, Sampling and Reporting (initial event) (D2)	C, D1, D2
4	Vapor Intrusion Evaluation (confirmation sampling event) (B3)	B3
5	Pilot Testing (E), Risk Assessment	E, F1
6	Quarterly Groundwater Monitoring, Sampling and Reporting (confirmation event) (D3); Prepare a Draft and Final Combined RSCR/RRAP (F)[(2)]	D3, F2
9	Quarterly Groundwater Monitoring, Sampling and Reporting (event 3) (D4)	D4
12	Quarterly Groundwater Monitoring, Sampling and Reporting (event 4) (D5)	D5
15	Quarterly Groundwater Monitoring, Sampling and Reporting (event 5) (D6)	D6
18	Quarterly Groundwater Monitoring, Sampling and Reporting (event 6) (D7)	D7

1. Each bidder should modify this sample Milestone Completion/Payment Schedule for Tasks/Milestones 1 through 6 to reflect its proposed task schedule, as long as the proposed schedule meets the deliverable deadlines specified in Section 4 of this RFB.
2. The RSCR/RRAP 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 received is required to be good for a period of up to 120 days after its receipt. All bid pricing (fixed-prices and quoted unit prices) shall be good for the duration of the period of performance cited in the associated Fixed-Price Agreement.

6. 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/Milstones 1 through 6 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 3) or has provided a list of requested changes to the Fixed-Price Agreement. **Each bid must include the requested changes/edits to the template/standard 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 specific description of the proposed technical approach for each task/milestone, including detailed protocols for the handling, management, and proper disposal of all investigation derived waste (e.g., monitoring well purge water, excess soil boring cuttings, etc.). **If this milestone-by-milestone 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/milestone.**
- 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 task/milestone work. 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 RSCR/RRAP. 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/Milestones 1 through 6.

7. MANDATORY PRE-BID SITE VISIT

ON WEDNESDAY, OCTOBER 2, 2013, THERE WILL BE A MANDATORY PRE-BID SITE MEETING facilitated by the Technical Contact or his representative. The Technical Contact, or his representative will be present at the site between 1:00 PM and 3:00 PM to answer general questions and conduct a site tour for no more than two participants per firm. **Any firm that does not attend this mandatory pre-bid site meeting on the date and during the hours specified will not be eligible to submit a bid.**

A CONFIRMATION OF YOUR INTENT TO ATTEND THIS PRE-BID SITE MEETING IS REQUESTED and shall be provided to the Technical Contact via e-mail at least three business days in advance of this date with the subject header "TNT Enterprises, Inc., PAUSTIF Claim #1998-188(S), Site Meeting Attendance Confirmation." This e-mail is to indicate the number and names of the participants (no more than two) attending from your firm. Each attending firm will be asked to enter the contact information for the individual at the firm who is to receive all subsequent RFB-related communications to help ensure the receipt of this information (e.g., responses to bidder questions).

Questions will be entertained during the pre-bid site meeting and every attempt will be made to answer questions at that time. Verbal questions and responses discussed during the site meeting 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 meeting has been concluded. 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.[33] Questions will be accepted up by the Technical Contact up to seven days prior to the date when bids are due.

8. CRITICAL BID PROCESS DATES

The following list provides a general recap of important bid process events and dates.

- **Mandatory Pre-Bid Site Meeting held on WEDNESDAY, OCTOBER 2, 2013, between 1:00 PM and 3:00 PM.**
- **Bid Responses Must be Received by 3:00 PM, THURSDAY, OCTOBER 17, 2013.**

[33] As appropriate, the list of assumptions, special conditions, or exemptions will be discussed with the Solicitor. As part of that discussion, the USTIF may advise the Solicitor that some or all of the assumptions, special conditions, or exemptions that are likely to generate change orders may be the financial responsibility of the Solicitor.

ATTACHMENT 1

Historical / Background Information

Filename:	**Document:**
Attachment 1A_980623 Closure Report.pdf	6/23/98 UST Closure Report
Attachment 1B_000309 SCR.pdf	3/9/00 Site Characterization Report
Attachment 1C_010112 Addl SCR.pdf	1/9/01 Additional Site Characterization Report
Attachment 1D_010822 RAP.pdf	8/22/01 Remedial Action Plan
Attachment 1E_011217 RAP.pdf	12/17/01 Remedial Action Plan
Attachment 1F_Feb 09 Soil Sample Locations.pdf	Feb. 2009 Soil Sample Locations
Attachment 1G_090824 AEA Prop Soil Excavation Locations.pdf	8/24/09 Proposed Soil Excavation Locations
Attachment 1H_120420 New SCR RAP Memo_PADEP.pdf	4/20/12 PADEP Internal Memo Suggesting New SCR/RAP
Attachment 1I_2011_Q4.pdf	Quarter 4, 2011 RAPR
Attachment 1J_2012_Q4.pdf	Quarter 4, 2012 RAPR
Attachment 1K_2013_Q2.pdf	Quarter 2, 2013 RAPR
Attachment 1L_Water Supply Well Results	7/26/12 Water Supply Well Analytical Results

ATTACHMENT 2

Bid Cost Tabulation Worksheet

ATTACHMENT 3

Template/Standard Fixed-Price Remediation 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.)