

Underground Storage Tank Technical Bulletin

Prepared by:
The Underground Storage Tank Indemnification Fund (USTIF)

Endorsed by:
Pennsylvania Council of Professional Geologists (PCPG)

Date of Release: August 2008

This bulletin addresses two subjects: (1) Initial Work Plans and (2) Evaluation of Remedial Alternatives. In issuing this bulletin, USTIF's goal is to improve the quality of the corrective action work for which it reimburses claimants consistent with its fiduciary responsibility. Please note, the preparation of an Initial Work Plan is an USTIF requirement. ICF will review the Work Plan and comment as necessary to the claimant/consulting firm within 15 business days. It is expected that the consulting firm would undertake this planning step at each site regardless of USTIF requirements and that while the Work Plan is being reviewed by USTIF, necessary additional detailed planning and scheduling tasks would be undertaken. Therefore, it is not expected that the preparation of the Work Plan will interfere with the obligation to complete the SCR in 180 days. DO NOT SUBMIT THE WORK PLAN DOCUMENT TO THE PADEP. USTIF's request for a Conceptual Evaluation of Remedial Alternatives is described under existing Chapter 245 regulations, and therefore that evaluation shall be included in the Site Characterization Report (SCR) that is submitted to the PaDEP for review and approval.

1. Initial Work Plan

In order for USTIF, the claimant and the consultant to: 1) gain a better initial understanding of the nature of the release, 2) understand general characteristics of the site, and 3) to establish an initial set of activities to characterize the site, USTIF is requesting the submission of a **Work Plan** and cost estimate for execution of the initial work proposed by the consulting firm. It is required that the consulting firm engage a licensed Professional Geologist (PG) to be in responsible charge because the preparation of the **Work Plan** involves the practice of geology. This **Work Plan** is for the performance of the initial intrusive/substantial work at the site such as borings, monitoring wells, samples, geophysical surveys, etc. It is understood that additional iterations of characterization work may be necessary. It is not necessary to submit **Work Plans** for any additional iterations, although subsequent **Work Plans** may be requested by USTIF at its discretion. The **Work Plan** shall be submitted prior to or along with the first invoice sent to ICF. USTIF will pay up to \$5,000 for reasonable and necessary costs to prepare the complete and thorough **Work Plan**. Submission of the **Work Plan** (a full

description of the content of the **Work Plan** is included on the following pages) along with cost estimates will facilitate approval of subsequent invoices submitted to USTIF.

The objective of the **Work Plan** is to foster the generation and use of basic information by the consulting firm at the outset of characterization work in order to improve the quality of site characterizations for which USTIF makes reimbursements. The information requested is consistent with PaDEP regulations and constitutes good professional practice. However, please be advised that USTIF's response to the **Work Plan** will have no impact on the PaDEP's review of Site Characterization Reports or Remedial Action Plans submitted to the PaDEP. The PaDEP remains the regulator with regard to all aspects of the Corrective Action Process, including but not limited to reports, deadlines, approval authority, etc.

Initial Work Plan Highlights:

- submit the **Work Plan** and cost estimate to ICF along with or before the first invoice.
- reasonable and necessary costs associated with preparing the complete and thorough **Work Plan** are reimbursable by USTIF up to \$5,000.
- ICF will send an acknowledgment email upon receipt of the **Work Plan** and may provide comments, if appropriate, to the claimant and the consulting firm within 15 business days; submission of a revised **Work Plan** will not be required, other than an email acknowledgement of receipt of the comments. The nature of the comments will generally be related to the thoroughness of the **work plan** and/or selection of the depth/location/number of monitoring wells/soil borings proposed based on the initial reconnaissance and site history evaluation. The intent is for consulting firms to consider key information before proceeding with monitoring wells, borings, etc. Although submission of a revised **work plan** is not required, failure to consider ICF comments may jeopardize reimbursement.
- Submission of a **Work Plan** provides USTIF with general expectations of initial costs to be incurred by the consulting firm with the expected goal of facilitating the reimbursement process and reducing or eliminating reimbursement questions and investigations.

Initial Work Plan Outline

- A. Source Area Documentation
 1. Summary of site history
 2. How did the release occur - source area evaluation
 3. Volumetric amounts and mechanism of the known release
- B. Soil Boring and Monitoring Well Location and Depth Selection
 4. Inferred direction of shallow groundwater flow
 5. Approximate local bedrock structural orientation – bedding and fractures
 6. Anticipated depth to the top of the shallowest zone of saturation
 7. Depth of initial monitoring wells should be less than 60 feet unless justification exists.
- C. Maps and Figures
 8. Provide north oriented scaled site map
 9. Provide USGS 7.5 minute topographic map

10. Provide a copy of published geologic map
 11. Provide an local area map
 12. On a north oriented scaled site map, show locations of existing and proposed monitoring wells
- D. Preliminary Receptor Summary – Fit Any of These Conditions?
13. Known off-property receptor third party impact
 14. Contamination beyond property – there are public or private supply wells
 15. Contamination not beyond property – there are public or private supply wells
 16. Contamination not beyond property – public water
 17. Not enough information available to determine one of the above - intrusive site characterization required
- E. **Work Plan** Documentation – Appendices to the **Work Plan**
18. site reconnaissance summary
 19. document any obvious or potential source areas
 20. presence or absence of water supply wells (potable and non-potable)
 21. copy of ordinances
 22. detailed cost estimate
- F. Format for Submittal
- There is a brief highly structured format for the submittals in order to assure expedited review.

Detailed Requirements and Suggestions for the Work Plan are found in the attached Appendix.

2. Conceptual Discussion of Remedial Action Options within the Site Characterization Report

One of the objectives of the site characterization is to gather appropriate data to facilitate the discussion of remedial action alternatives at the conceptual level in the SCR. Chapter 245, section 310, subsection 30, indicates that the Site Characterization Report (SCR) contain a “discussion of the **remedial action options** selected to remediate the site.” The conceptual evaluation of remedial alternatives is reasonable and necessary as it is considered to be a critical step in the development of a technically defensible and cost effective remedial approach for a site. Therefore, in order for the claimant’s invoices to be considered for full reimbursement from USTIF for costs associated with the SCR, the conceptual evaluation of remedial alternatives must be included in the SCR submitted to the DEP. The conceptual discussion should explain why the characteristics specific to the site may make certain **remedial action options** more feasible and cost effective. If the remedial action options analysis/discussion determines that multiple remedial alternatives are feasible and relatively cost effective in addition to the preferred remedy, the SCR would be expected to identify the several remedial options that could alternatively be implemented.

The SCR may evaluate any and as many alternatives as the consultant/claimant deem necessary, but must evaluate the following set of alternatives at a minimum:

- Monitored Natural Attenuation
- Excavation or Excavation Coupled with Monitored Natural Attenuation
- Soil Vapor Extraction
- Air Sparging coupled with Soil Vapor Extraction
- Some form of Total Fluids Extraction (vapor and/or SPL and/or groundwater)

Underground Storage Tank Technical Bulletin Appendix

The Underground Storage Tank Indemnification Fund (USTIF)

Date of Release: August 2008

Initial Site Characterization Work Plan Documentation

USTIF is requesting the submission of a concise **Work Plan** for all proposed initial site characterization activities as described below and following the Chapter 245 (Sections 309 and 310) “Administration of the Storage Tank and Spill Prevention Program” Regulations for site characterization. Copies of the **Work Plan** should be submitted to USTIF’s Third party Administrator, ICF with or prior to the first routine corrective action invoice. An electronic copy should be submitted to ICF. The invoice to prepare the **Work Plan**, should be submitted within 30 days of the plan submission via email to the ICF Work Plan Coordinator. The Work Plan email’s subject title should be “**Work Plan** Documentation, Claim No. “**aaa-bbbb(x)**”. DO NOT SUBMIT THE **WORK PLAN** TO THE PADEP. Reasonable and necessary costs incurred to develop this initial **work plan** for a site up to \$5,000 are reimbursable since they apply to the collection and presentation of information consistent with PaDEP’s Chapter 245 Site Characterization requirements and/or guidelines.

The objective of the **Work Plan** is to foster the generation and use of basic information by the consulting firm at the outset of characterization work in order to improve the quality of site Characterizations. The information requested is consistent with PaDEP regulations and good practice. The **Work Plan** will rely on basic information that must be gathered in order to prepare the **Work Plan**. The PaDEP remains the regulator. USTIF’s goal is to improve the quality of the corrective action work for which it reimburses claimants consistent with its fiduciary responsibility.

USTIF understands that the items that will be included in the **Work Plan** Documentation are consistent with 245.309 and constitute best industry standard of care practices, and are consistent with an appropriate standard of care for USTIF-funded work as part of the process for preparation and submittal of a Site Characterization Report to PaDEP. Nothing in this document should be construed as conflicting with Chapter 245 or Chapter 250 requirements. The information requested is consistent with PaDEP regulations and constitutes good professional practice. However, please be advised that USTIF’s response to the **Work Plan** by USTIF will have no impact on the PaDEP’s review of Site Characterization Reports or Remedial Action Plans. Furthermore, the consulting firm should comply with all statutory and regulatory requirements regarding emergency responses and interim remedial action(s). For example, affected water supplies should be replaced immediately, harmful vapors abated immediately, and any other emergency response and/or interim remedial action(s) as defined in Ch. 245 should be completed.

USTIF requires that the claimant cooperate as called for under USTIF Regulations, Section 977.32, Participant Cooperation, (a), (b), and (c) by including the following data/items in the **Work Plan** submittal. Failure to include these data/items in the **Work Plan** submittal may be interpreted by USTIF as a lack of cooperation and affect reimbursement. ICF will review the **Work Plan** and comment as necessary to the claimant/consulting firm within 15 business days. It is expected that the consulting firm would undertake this planning step at each site regardless of USTIF requirements and that while the Work Plan is being reviewed by USTIF, necessary

additional detailed planning and scheduling tasks would be undertaken. If no comments are received by the consulting firm within 15 business days, then the consulting firm may proceed under the assumption that none are forthcoming from ICF. The intent is not to interfere with the routine judgments of the consulting firms, but rather it is the intent of USTIF that characterization work: 1) be in compliance with applicable PaDEP regulations and guidance, 2) be planned and well reasoned 3); lead to a full site characterization that can be used to further timely, effective, and comprehensive corrective action; and, 4) be necessary and reasonable to justify reimbursement. Because the **Work Plan** is preliminary in nature, the information presented is subject to change. Even though portions may be preliminary in nature, it is important that it be complete, and that it represent the best professional judgment of the PG in responsible charge of its preparation and submission to ICF. Therefore, it is appropriate that the PG responsible for preparation may want to use qualifying language such as “*Preliminary Document – Submitted at the Request of USTIF for Project Planning Purposes*”, etc.

Other than emergency response activity investigation(s) and interim remedial action(s) as defined by Ch. 245, failure to submit the **Work Plan** and cost estimate requested herein, prior to the work being performed, will likely result in an increase in the amount of time necessary to review invoices associated with site characterization activities which could delay reimbursement. USTIF may require that the consulting firm provide justifications for costs post facto that would not have otherwise been necessary. The preparation of these post facto justifications will not be reimbursable.

A. Source Area Documentation

1. A summary of the site history. This summary should include a discussion of existing and historic petroleum product UST and AST storage (fuel, consumptive heating oil, used motor oil). Also include tank and line removal/upgrade history, and the reasons why, if known. If not known, please specify.
 - a. *The site release history summary may include but is not limited to information from sources such as release notifications, NOVs, PaDEP site closure or “no further action” determinations, etc. Include any repair and maintenance records that may help to identify or eliminate potential source area(s) at the site.*
 - b. *This site history should be used to determine the analytical testing suite.*
 - c. *Geophysical surveys may be proposed as the consulting firm deems necessary.*
2. General questions to be considered regarding source area evaluation include, but are not limited to, the following:
 - a. *Is it likely a chronic or catastrophic release?*
 - b. *What is the estimated volume and most likely source of product lost?*

Note #1: If this information is not reasonably estimable at this point, describe the steps that have been, or will be taken to identify and characterize the potential source area(s) or to provide an estimate of the subsurface hydrocarbon mass in the SCR.

3. Using estimates, ranges, and professional judgments as applicable, discuss the volumetric amount(s) and mechanism(s) of the known release(s) identified as the basis of the claim(s).

Example #1: The data indicates that an estimated 100 to 500 gallons (634 to 3170 lbs.) of unleaded gasoline was released from a leaky fitting 3 feet below grade near an unleaded gasoline dispenser following a line replacement. The loss was estimated to last an estimated three months and the leak was identified and fixed (when and by whom?)

Example #2: The data required to estimate the volume and mechanism of the release is not available and the volume is not known and will not be known until soil samples and/or groundwater samples are collected at the site. Once collected, source area(s) will be identified on both a site map and an area map, Once identified, the hydrocarbon mass of the source(s) will be estimated, and an evaluation of the mechanism of the release at the site will be provided using an appropriate, PaDEP approved method.

B. Soil Boring and Monitoring Well Location and Depth Selection

4. What is the anticipated inferred direction of shallow groundwater flow based, at least, on local topography and surface water features from a USGS 7.5 minute quadrangle. Where, and at what elevation, are the local surface water discharge feature(s) relative to the site (estimate both vertical and horizontal distances)?
5. When contact with the underlying bedrock is anticipated, identify and approximate the basic local structural orientation (strike and dip) of the shallow underlying bedrock formation(s). Identify at least the basic geologic formation(s) associated with the site from a source such as:
 - a. “Map 61” (Atlas of Preliminary Geologic Quadrangle Maps of Pennsylvania – 1981 PA Geological Survey) as indexed at <http://www.dcnr.state.pa.us/topogeo/map61/glossary.aspx>, or;
 - b. *the 1980 Geologic Map of Pennsylvania and/or other published map sources, or;*
 - c. *any other reliable source such as the USGS, US Department of the Interior, or, Pa Topographic and Geologic Survey, DCNR, among others.*
6. Considering (at least) local surface water features, and the potential for “areas of uniformly low yield”, or a “shallow flow system...that may or may not be hydraulically connected to the bedrock system” as mentioned in Section 3.7.3 of PaDEP’s December 1, 2001 Groundwater Monitoring Guidance Manual, what is the anticipated depth to the top of the shallowest zone of saturation (regardless of yield potential)?

Note #2: This should be determined by evaluating local discharge features relative to the site and by researching other sites in the area, or area supply wells, or any other prominent discharge feature likely to suggest the presence of shallow groundwater.

7. To expect reimbursement, the total depth of the first monitoring wells installed during an initial investigation phase and intended to be “water table” wells shall not exceed 60 feet without a technically supported argument that the water table lies below 60 feet. That is, there is a rebuttable presumption that the total depth of wells in the Commonwealth should not be greater than 60 feet. USTIF may deny reimbursement for costs associated with the installation and monitoring of wells that are installed to an inappropriate depth or with inappropriate construction (particularly those wells installed after the initial well and site-specific information has been obtained).
- a. Review of a plan that proposes the installation of any well with a total depth greater than 60 feet when NOT working in the Allentown Area, State College Area, or other unique carbonate bedrock areas will require the consulting firm to rebut the presumption that wells greater than 60 feet are inappropriate to obtain reimbursement. For any monitoring well, reimbursement may be denied or adjusted if:
 - i. The shallowest zone of saturation (regardless of low yield) is cased off without the well reasoned intent to do so (exceptions; piezometers, nested wells, etc. if/as required by PaDEP);
 - ii. The screen interval is drowned without the well-reasoned intent to do so;
 - iii. The well has a screened or open borehole interval that crosses more than one water bearing zone where the potential for cross-contamination is increased without the well-reasoned intent to do so;
 - iv. The construction technique is substantially inconsistent with PaDEP’s “Groundwater Monitoring Guidance Manual”;
 - v. The well was installed to a depth that should have been recognized as excessive given information available prior to drilling;
 - vi. Following installation, the consulting firm does not recognize that static water levels are anomalous. The most likely cause is that shallow groundwater is communicating within the well-bore with deeper water bearing zones. (i.e., water in the well bore is flowing up or down depending on the vertical gradient resulting in the masking of multiple potentiometric surfaces).

Note 3: A shallow well or two that are dry (e.g., a well drilled to the top of bedrock and completed as a soil monitoring well that is dry) are acceptable and provide valuable information about the site. Soil borings that are drilled before monitoring wells are drilled can be completed as temporary soil piezometers and provide valuable site-specific information.

- b. When working in areas where a depth-to-first-water level (water table) is commonly greater than 60 feet (particularly in carbonate areas such as Allentown, State College, or other unique carbonate bedrock areas), the total depth of the wells may be deeper, but must be justified with supporting documentation. This documentation should not rely upon drilling observations or databases focused on “yieldable” quantities of groundwater. Data used to support the depth to the shallowest zone of saturated (regardless of yield) for Sites in any locations may be obtained from local Municipalities, US Department of the Interior, USEPA, USGS, PaDEP,

USTIF, ICF, drillers, other consulting firms working in the area, Pa Geologic Society, Pa Topographic and Geologic Survey, etc.). In any event, no monitoring wells regardless of depth may have overly long open hole or screened intervals as discussed in the PaDEP's "Groundwater Monitoring Guidance Manual".

Based on the information available to the consultant at the time of the preparation of this plan, what are the intended locations, depths and screened intervals of the proposed initial monitoring wells? What are the depths of proposed soil borings and what field screening/decision criteria will be used to select soil samples for analysis?

C. Maps and Figures

8. Figure 1: On a north oriented (show arrow), **scaled** Site Map (developed from a tax map, existing property map, detailed air photo-based map, etc.) show the location of **all** known former and existing storage areas (ASTs, USTs, vents, remote fills, lines, dispenser islands and/or dispensers, etc.), major site improvements, and site property lines. This initial information should be obtained by the claimant.

Note #4: Show the orientation of the proposed soil borings and monitoring wells relative to historic and existing storage and/or known releases.

9. Figure 2: Provide a USGS 7.5 minute Topographic Map showing the location of the Site.
10. Figure 3: Provide a Geologic Map(s) showing the site geology (unconsolidated [Map 3a] and/or consolidated [Map 3b]) based on published information.
11. Figure 4: Provide an Area Map (developed from a tax map and/or aerial images/photographs) showing the location of buildings and use of other immediately surrounding properties (initially not to exceed a 1,000 foot radius from the site, more or less). Generally show local discharge features and topography. Show area water use (public, domestic wells and surface water intakes, for adjacent properties up to within a one-quarter mile radius, as applicable for the site). Show the approximate location(s) of residential or public supply wells (if present) on each of the adjacent property(s).

Note #5: Show the orientation of the proposed soil borings and monitoring wells relative to historic and existing storage and/or known releases and the orientation of strike and dip (estimate based on evaluation of geologic maps if not known).

12. Figure 5: On a north oriented (show arrow), **scaled** Site Map, show the location of the proposed monitoring wells relative to the anticipated hydraulic gradient and structure (local strike and dip; if you anticipate encountering bedrock) relative to source area(s) identified or suspected at the site. Indicate expected total depth and screened/open hole interval. Show the location of the proposed soil borings relative to potential sources and anticipated total depth considering the anticipated water table and/or top of bedrock.

D. Preliminary Receptor Summary

Once the above information has been generated, USTIF requests that the consulting firm indicate whether the site fits any or all of the five conditions below by indicating either “yes” or “no” for each:

13. Known off-property receptor third party impact (supply well impact, surface water impact, ecological, or vapor intrusion into, on, or, off-property buildings or utilities) and/or recent release of greater than 200 gallons over a short time period of time (less than a month)
14. Contamination is likely to have migrated to potential drinking water or other sensitive receptors beyond the property (public and/or private supply wells that utilize groundwater or other sensitive receptors are in close proximity) based on the position of the tank systems in proximity to the property boundary.
15. Although private groundwater resource supply wells are located within the general area of the site and there is no ordinance that would prohibit the use and/or installation of private and/or public supply wells, contamination is not likely to have migrated beyond the property boundary, based on the position of the tank systems relative to the property boundary and a potential for off-property third party impact is not indicated.
16. At this site public water is available and an ordinance exists that prohibits the use and/or installation of private and/or public supply wells and based on the position of the tank field or lines relative to the property boundary and a potential for off-property third party impact is not indicated (contamination is not likely to have migrated beyond the property boundary).
17. Site information at this time does not place the site into one of the four conditions above. Intrusive site characterization will be required to determine if the conditions above apply.

Note #6: This is a preliminary evaluation that may change as additional information is developed, or based on changes resulting from subsequent site characterization information.

E. Work Plan Documentation

Once the above information has been evaluated, USTIF is requesting that the information be summarized in a concise **Work Plan** for proposed initial characterization of the site. In addition, as appendices to the **Work Plan**, include:

18. Site reconnaissance summary (may use field notes) and site and adjacent property photo-documentation.
19. Document any obvious or potential source areas on immediately adjacent properties. If potential off-site source area(s) are indicated, provide the approximate location(s) of the source(s) on an area Site map (Figure 6, as applicable).
20. Document the presence or absence of residential or public water supply or industrial supply resources for the property and for properties immediately adjacent to the site.
21. A copy of any ordinances that document restrictions for the installation and use of private supply wells within one-quarter mile radius of the site. In the event no such ordinance exists, provide documentation, such as a phone log, email, letter, etc. from an appropriate local official (Municipality, Township, and Borough) that one does not exist within a one-quarter mile radius of the site.

22. A detailed cost estimate for the work. (estimated number of field and office labor-hours, number of soil and groundwater samples, extent of subcontractor participation, and anticipated incidental expenses required to implement the **Work Plan**. Include unit costs.)

USTIF requests the above documentation be provided for any site prior to initiation of intrusive site characterization activities. It is anticipated that this will ensure the proposed site investigation has been reviewed, stamped, signed, and approved by a PG licensed in the State of Pennsylvania and the proposed work scope has been evaluated utilizing both engineering and geology principles.

*Note #7: **Work Plan** documentation is not immediately required for emergency response and/or interim remedial action(s), but PaDEP, ICF, USTIF, and others as appropriate should be kept updated on emergency investigation and interim cleanup activities. Non-emergency interim remedial actions required by PaDEP should proceed following verbal approval from USTIF/ICF and in close contact with PaDEP, ICF, USTIF, and the claimant. Subsequent documentation may be provided in email format to USTIF/ICF.*

F. Format for Submittal

It is important that the submittal be **concise**. Once the information requested in Sections A through E has been obtained, researched, and/or completed, USTIF requests submittal of the brief documentation with deliverables in the following format:

Section A. Source Area Documentation

- Item #1a - Approximately one to two paragraphs per source.*
- Item #1b - Identify appropriate analytical short list(s) that apply.*
- Item #1c - One paragraph description of geophysical survey if one is proposed.*
- Item #2a - Answer/provide brief explanation as appropriate.*
- Item #2b - Answer/provide brief explanation with reference to information source if available.*
- Item #3 - Provide a brief discussion as indicated in the examples.*

Section B. Soil Boring and Monitoring Well Location and Depth Selection

- Item #4 - Answer/provide brief explanation(s) as appropriate.*
- Item #5 - Answer/provide brief explanation(s) as appropriate.*
- Item #6 - Answer/provide brief explanation(s) as appropriate.*
- Item #7 - Answer/provide brief explanation(s) as appropriate.*

Section C. Maps and Figures

One site reconnaissance trip, one trip to the appropriate local government office, and a reasonable publication/on-line data-base search effort will be required to obtain the information necessary to develop the maps and figures requested.

- Item #'s 8-12 - Provide maps as requested.*

Section D. Preliminary Receptor Summary

Item #'s 13-17 - Answer "yes" or "no"/provide maps as requested and brief explanation(s) as appropriate.

Section E. Work Plan Documentation

One site reconnaissance trip (combine it with the maps and figures trip) and a reasonable publication/on-line data-base/telecom with local water authority(s) will be required to obtain the information necessary to develop/obtain the information requested.

Item #'s 18-22 - Provide the information as requested/provide map(s) if applicable, and brief explanation(s) as appropriate.

This deliverable format will ensure consistency to expedite review and processing of the information.

DO NOT submit the Work Plan to the PaDEP. Direct the Work Plan and all related questions and comments about the Work Plan Document to USTIF and ICF only. When site characterization (Ch. 245.309) begins, communication with the PaDEP project officer is encouraged.

SAMPLE BLANK FORM

WORK PLAN SUBMISSION

Preliminary Document – Submitted at the Request of USTIF for Project Planning Purposes

Date: _____

USTIF Claim Number: _____

Claimant Name: _____

Location of Release: _____

DEP Project Officer: _____

DEP Reference Number: _____

Submitted By: _____

Claimant's email: _____

Consultant's email: _____

Section A. Source Area Documentation

- Item #1a* - *Approximately one to two paragraphs per source.*
- Item #1b* - *Identify appropriate analytical short list(s) that apply.*
- Item #1c* - *One paragraph description of geophysical survey if one is proposed.*
- Item #2a* - *Answer/provide brief explanation as appropriate.*
- Item #2b* - *Answer/provide brief explanation with reference to information source if available.*
- Item #3* - *Provide a brief discussion as indicated in the examples.*

Section B. Soil Boring and Monitoring Well Location and Depth Selection

- Item #4* - *Answer/provide brief explanation(s) as appropriate.*
- Item #5* - *Answer/provide brief explanation(s) as appropriate.*
- Item #6* - *Answer/provide brief explanation(s) as appropriate.*

Item #7 - Answer/provide brief explanation(s) as appropriate.

Section C. Maps and Figures

One site reconnaissance trip, one trip to the appropriate local government office, and a reasonable publication/on-line data-base search effort will be required to obtain the information necessary to develop the maps and figures requested.

Item #'s 8-12 - Provide maps as requested.

Section D. Preliminary Receptor Summary

Item #'s 13-17 - Answer "yes" or "no"/provide maps as requested and brief explanation(s) as appropriate.

Section E. Work Plan Documentation

One site reconnaissance trip (combine it with the maps and figures trip) and a reasonable publication/on-line data-base/telecom with local water authority(s) will be required to obtain the information necessary to develop/obtain the information requested.

Item #'s 18-22 - Provide the information as requested/provide map(s) if applicable, and brief explanation(s) as appropriate.

This deliverable format will ensure consistency to expedite review and processing of the information.

DO NOT submit the Work Plan to the PaDEP. Direct the Work Plan and all related questions and comments about the Work Plan Document to USTIF and ICF only. When site characterization (Ch. 245.309) begins, communication with the PaDEP project officer is encouraged.