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March 30, 2012

Mr. Scott Miller
Atlanta Federal Center
Superfund Remedial Branch, Section C
61 Forsyth Street S.W.
Atlanta, GA 30303

Subject: Evaluation of USEPA Statement of Work

Dear Mr. Miller:

Attached please find the report "Evaluation of USEPA Statement of Work," prepared by Geosyntec Consultants, Inc. on behalf of The Advertiser Company. This report reviews the Statement of Work for the Capitol City Plume Superfund Site shared with Geosyntec Consultants on February 9, 2012.

The report is submitted for inclusion in the administrative record of the Capitol City Plume Superfund Site located in Montgomery, Alabama (EPA ID: AL0001058056), pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Sections 113(j) and (k). 42 U.S.C. § 9613(j)(k).

A hard copy of the report addressed to EPA Region 4 will follow in the mail. We look forward to further discussions with USEPA regarding its Statement of Work in the near future.

Sincerely,

Robert Veenstra
Principal

Attachment Evaluation of USEPA Statement of Work

12-CHR8371-3.2.1-Evaluation of USEPA Statement of Work Ltr.doc

EVALUATION OF USEPA STATEMENT OF WORK
Capitol City Plume Superfund Site, FY2012

Prepared for

The Advertiser Company

Prepared by

Geosyntec consultants

engineers | scientists | innovators

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Project Number CHR8371

March 29, 2012

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SECTION 1

INTRODUCTION

This report provides a review of the United States Environmental Protection Agency (USEPA) Region 4 Statement of Work FY2012 which was submitted to USEPA by the United States Geological Service (USGS) and transmitted via email by Scott Miller (USEPA Region 4) to Bob Veenstra (Geosyntec) on 9 February 2012.

This report is submitted on behalf of The Advertiser Company.

In the Statement of Work (SOW) document (Exhibit 1), USGS identifies five tasks for the Capitol City Plume site in Montgomery, Alabama, as follows:

1. Collect 2 rounds of air samples in 2 previously sampled and 1 additional building.
2. Install a vapor-intrusion monitoring site (VIMS) along 501 Dexter Avenue.
3. Install 3 shallow monitoring wells and sample for volatile organic compounds (VOCs).
4. Collect 188 soil-gas samples across 47 blocks of the City of Montgomery.
5. USGS Technical Oversight

No other supporting documentation was provided.

The Geosyntec review included an assessment of the SOW as compared to several regulatory guidance documents pertaining to remedial investigations at hazardous waste sites, particularly with regard to the evaluation of the vapor intrusion pathway.

These documents included the following:

- 40 CFR Part 300 – National Oil and Hazardous Substances Pollution Contingency Plan
- USEPA – Office of Solid Waste and Emergency Response (OSWER) Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils (Subsurface Vapor Intrusion Guidance) EPA530-D-02-004 November 2002
- Interstate Technology & Regulatory Council (ITRC) - Vapor Intrusion Pathway: A Practical Guideline, January 2007
- USEPA – Region 4 Quality Management Plan

- USEPA – Region 4 Science and Ecosystems Support Division (SESD) Field Branches Quality System and Technical Procedures

1.1 Summary

The SOW as provided does not follow standard guidance contained in documents from multiple USEPA entities (OSWER, Region 4, SESD) or other bodies (ITRC) and it is not consistent with the NCP. Areas of deficiency that have been identified include the lack of established data quality objectives (DQO's), sampling and analysis plans (SAP), field sampling plans (FSP), a Quality Assurance Project Plan (QAPP), a conceptual site model (CSM), and appropriate and approved standard operating procedures (SOPs).

SECTION 2

SOW COMPARISON TO GUIDANCE DOCUMENTS

A comparison of the Statement of Work to each of the relevant identified guidance documents is summarized below.

2.1 National Contingency Plan

The sections of the National Contingency Plan (NCP) which address the remedial investigation/feasibility study (RI/FS) and selection of remedy can be found at 40 CFR 300.430. Section 300.430(b) addresses the scoping process for the RI/FS, and paragraph (b)(8) provides the following specific requirements.

> Specifically, the lead agency shall:
>
> (8) Develop sampling and analysis plans that shall provide a process for obtaining data of sufficient quality and quantity to satisfy data needs. Sampling and analysis plans shall be reviewed and approved by EPA. The sampling and analysis plans shall consist of two parts:
>
> (i) The field sampling plan, which describes the number, type, and location of samples and the type of analyses; and
>
> (ii) The quality assurance project plan, which describes policy, organization, and functional activities and the data quality objectives and measures necessary to achieve adequate data for use in selecting the appropriate remedy.

Based on the SOW provided, it does not appear that this requirement of the NCP, addressing the development of data quality objectives (DQO's) sampling and analysis plans (SAP), field sampling plan (FSP) and a Quality Assurance Project Plan (QAPP) has been met, and therefore a data collection effort conducted in accordance with only the SOW would not be in compliance with the NCP.

2.2 OSWER Subsurface Vapor Intrusion Guidance

The OSWER Subsurface Vapor Intrusion Guidance document was issued as Draft in November 2002 and has been a key guidance document for the development and implementation of subsurface vapor investigations since that time. The Introduction section of this document states that it is suggested for use at RCRA Corrective Action, CERCLA (NPL and Superfund Alternative Sites) and Brownfield sites. It further states:

> OSWER's fundamental approach to evaluating contaminated sites uses *Guidance for the Data Quality Objectives (DQO) Process, EPA QA/G-4* (EPA/600/R-96/055; August 2000) which calls for proceeding in a careful stepwise fashion. We recommend that site investigators use the specific sequential approach outlined in the DQO process to adequately determine the nature and extent of contamination, and identify potential exposure pathways and receptors that may be at risk (see Appendix A for more information). The first step in the DQO process is to develop a Conceptual Site Model (CSM). A CSM is a three dimensional "picture" of site conditions illustrating the contaminant sources, their movement of contaminants in the environment, their exposure pathways and the potential receptors (see Appendix B for more information).

Appendix A of the OSWER Subsurface Vapor Intrusion Guidance is entitled "Data Quality Assurance Considerations" and contains the following passage:

> OSWER expects that site-specific projects assess the impact of groundwater contaminants on indoor VOCs will be addressed by an approved Quality Assurance Project Plan (QAPP). This appendix is intended to provide a few recommendations on developing a QAPP, which need to follow EPA Requirements for Quality Assurance Project Plans (QA/R-5).
>
> > *Recommendation 1: Using the Conceptual Site Model, develop the project plan and quality assurance project plan through a process that involves all key players and share these materials with interested parties in draft form so that potential study weaknesses can be addressed early.*
>
> The collection and assessment of data, or the use of a model for the assessment of the data, warrants the development of a Quality Assurance Project Plan as part of a systematic planning process (EPA, 2000a,b, 2001). The EPA Region 1 guidance on the Quality Assurance Project Plan may be a useful reference that can aid site managers (EPA, 1999). Data Quality Objectives (DQOs) play a central role in the systematic planning process as they help to ensure that the data collected will be of sufficient quality to support their intended use.
>
> Data Quality Objectives will generally be addressed within the Quality Assurance Project Plan and are typically a critical element in the planning for much of the work that EPA undertakes. The Agency guidance for DQOs, *Guidance for the Data Quality Objectives Process (G-4)*, provides useful information to implement DQOs (EPA, 2000c).

Appendix A also lists analytical methods that can meet DQOs for a vapor intrusion investigation. The passive sampling for ambient air and soil gas analysis are not included in the list of recommended methods. USEPA has not provided any documentation that the proposed sampling and analysis methodology will meet the DQOs. Furthermore, ASTM Standard D7758-11, "Standard Practice for Passive Sampling in the Vadose Zone for Source Identification, Spatial Variability Assessment, Monitoring, and Vapor Intrusion Evaluations" describes the limitations in using passive soil gas samplers to quantitatively measure soil gas concentrations. The passive soil gas sampling vendor and USEPA have not provided documentation to demonstrate that the passive sampling will meet DQOs.

Based on the SOW provided, it does not appear that several requirements of the OSWER Subsurface Vapor Intrusion Guidance have been met, specifically those addressing the development of DQO's, a Conceptual Site Model (CSM) and a QAPP, and therefore a data collection effort conducted in accordance with only the SOW would not be in compliance with this guidance.

2.3 ITRC Vapor Intrusion Pathway Guideline

The ITRC Vapor Intrusion guidance document describes a 13-step process for assessing the vapor intrusion pathway. The first seven steps are associated with the preliminary screening phase and the remaining six steps are associated with the site investigation phase. A fundamental element of the ITRC document is the development of a conceptual site model. As stated in the ITRC guidance:

> The initial step in assessing the vapor intrusion pathway is developing a conceptual site model based on all available data. Once prepared, the CSM becomes a primary developmental method used by investigators when conducting a preliminary screening of a contaminated site.
>
> The goal for developing a CSM in the assessment of the vapor intrusion pathway is to assemble a three-dimensional concept of the site that is as comprehensive as possible. This is based on available, reliable data describing the sources of the contamination, the release/transport mechanisms, the possible subsurface migration routes, and the potential receptors, as well as historical uses of the site, cleanup concerns expressed by the community, and future land use plans.
>
> Appendix D of the USEPA draft vapor intrusion guidance (USEPA 2002b) explains the relationship of the CSM to the USEPA data quality objective (DQO) process.

Once the assessment has moved to the site investigation stage (steps 8 through 13) several additional planning documents must be developed, as described below:

> Once the investigative strategy is selected (or established by state policy/guidance), a work plan is developed (Step 9) to assess the vapor intrusion pathway. Key components of any vapor intrusion work plan include updating the CSM, identifying data gaps, addressing background contaminant sources, developing the sampling and analysis plan, formulating a schedule, and preparing a community relations plan.
>
> Once the data gaps have been identified and the investigative locations (i.e., properties or buildings) selected, sampling methodologies and DQOs should be developed in conjunction with the preparation of the sampling and analysis plan.
>
> Sampling plans should be reviewed to ensure that the objectives are consistent with the DQOs for the vapor intrusion pathway. Detection limits associated with the available data should be reviewed to ensure that methods chosen provide sufficient sensitivity to detect volatile chemicals at levels of concern. As previously noted, the CSM and its relationship to the USEPA DQO process are presented in Appendix B of the USEPA draft VI guidance (USEPA 2002b).

Appendix D of the ITRC document provides a "toolbox" for the investigator to use to help develop an appropriate assessment of the vapor intrusion pathway. Section D.1 of that toolbox discusses the topic of data quality objectives:

> It is necessary to establish DQOs before sampling is conducted. These are usually addressed during the work plan preparation.

Section D.5 of the toolbox addresses the use of passive soil gas methods:

> Passive soil gas methods consist of the burial of an adsorbent in the ground with subsequent retrieval and measurement of the adsorbent. With passive sampling, there is no forced movement of soil gas. Instead, as the vapors migrate, the sorbent acts as a sink for the organic compounds in the soil gas.
>
> While published methods exist that describe the procedures to generate contaminant concentration data from a passive sorbent-based sampler in air in the absence of soil (ASTM 2002a, 2003), no published data or documents have demonstrated the applicability of the method to soil gas. The fundamental difference is that the gas-phase diffusivity is known in the air, enabling a calculation of concentration from the adsorbed mass, but it is unknown in the vadose zone.
>
> Field studies to calibrate the passive method to actual soil gas concentrations are still too limited to validate the use of this method for quantitative soil gas

> concentrations. For this reason, passive soil gas is not presently considered to be applicable for stand-alone assessment of vapor intrusion risk.

Based on the SOW provided, it does not appear that several requirements of the ITRC Vapor Intrusion guidance document have been met, specifically those addressing the development of DQO's, a Conceptual Site Model (CSM) and a sampling and analysis workplan, and therefore a data collection effort conducted in accordance with only the SOW would not be in compliance with this guidance. Furthermore, the passive sampling methodology proposed in the SOW has not been validated for quantitative soil gas analysis. As such, it is best suited to screening level studies.

2.4 US EPA Region 4 Quality Management Plan (QMP)

EPA Order 5360.1 A2, Policy and Program Requirements for the Mandatory Agency-Wide Quality System, requires that each EPA Program and Regional Office develop and document a quality system to assure that environmental data used to support Agency decisions is of adequate quality and is usable for its intended purpose. US EPA Region 4 has developed a Quality Management Plan (QMP) to meet this requirement. A key element of the Region 4 QMP is stated below:

> A quality system is a structured and documented management system which describes an organization's roles, responsibilities, policies, and procedures as they relate to the generation and use of environmental data and the implementation of environmental technology. This document is intended for use by EPA Region 4 managers and staff, as well as those organizations producing environmental data under an EPA extramural agreement, i.e., contract, grant, cooperative agreement, and interagency agreement.

Within this document are descriptions of what are referred to as "Essential Definitions", which among others include the following:

> Quality Assurance Project Plan (QAPP) - A critical planning document for a project, study or task, describing how data collection activities are planned, implemented, and assessed.
>
> Data Quality Objectives (DQOs) - A systematic planning system designed to produce qualitative and quantitative statements that clarify project objectives, define the appropriate type of environmental data, delineate the decision rules, and specify tolerable levels of decision error.

This document further discusses the objectives for the Regional Quality Management Plan which supports the Regional Policy. Two of the specific objectives are discussed as:

> The data quality objectives (DQO) process, or a similar systematic planning process, shall be used to plan project or study goals and objectives as they relate to programmatic or regulatory requirements, and needed environmental data quality prior to the initiation of data collection activities. DQOs, or similar outputs from a systematic planning process, shall be documented in a quality assurance project plan, or equivalent project-level planning document.
>
> QA Project Plans (QAPPs) or equivalent planning documents, however named, shall be developed by those staff (either EPA or contractor) responsible for designing and implementing a project, study, or task which requires the collection or use of environmental data. QAPPs and equivalent planning documents shall meet EPA requirements and will incorporate project-specific DQOs. QAPPs will be developed using a graded approach consistent with the complexity of the project and the intended use of the data.

Another key element of the Region 4 QMP is the development and use of Standard Operating Procedures (SOPs) for the collection and analysis of environmental data. The Region 4 QMP provides the following information on SOPs:

> SOPs are prepared by the regional organization which has determined that a certain task, procedure, or job function must be performed in a uniform, consistent manner by multiple personnel. The purpose of an SOP is to assure that random error produced as a result of differences in performance of the task, are minimized. It is advisable that SOPs be prepared by personnel who are most knowledgeable in a specific task or procedure. The SOPs are reviewed by appropriate staff in the user organization, and at times by technical specialists in other organizations. The SOPs are prepared in document control format by the user and are to be maintained on permanent file by the originating organization. The EPA document entitled "Guidance for the Preparation of Standard Operating Procedures" (EPA QA/G-6), EPA/240/B-01/004 (March 2001), should be consulted for an example of the document control format. The second level supervisor (Branch Chief or equivalent) approves the SOP for use. SOPs are dynamic documents that are revised as needed. SOP revisions may be the result of changes in regulations, procedures, instruments and equipment, or by inadequacies noted during implementation and/or audits. Revisions are reviewed and approved as described above.

2.5 USEPA Region 4 SESD Field Branches Quality System and Technical Procedures

Within US EPA Region 4, the Science and Ecosystem Support Division (SESD) serves as the primary provider of scientific and technical expertise and environmental data for the United States Environmental Protection Agency's Region 4 program offices located in Atlanta, Georgia.

As such, the SESD has developed a series of documents to be used in developing field investigations and the collection of environmental data by US EPA Region 4 staff. One such document is the Field Branches Quality Policy, which states, in part, the following:

> The following are SESD goals which serve to support the divisional policy:
>
> 1. The data quality objectives (DQO) process, or a similar systematic planning process, shall be used to plan project or study goals and objectives as they relate to programmatic or regulatory requirements, and needed environmental data quality prior to the initiation of data collection activities. DQOs, or similar outputs from a systematic planning process, shall be documented in a quality assurance project plan, or equivalent project-level planning document.
>
> 2. QA Project Plans (QAPPs), or equivalent planning documents, however named, shall be developed by field investigators responsible for designing and implementing a project, study, or task which requires the collection, measurement, analysis or use of environmental data. QAPPs and equivalent planning documents shall meet EPA requirements and will incorporate project specific DQOs. QAPPs or other equivalent planning documents shall be approved by the appropriate designated official prior to project implementation except under circumstances requiring immediate deployment to protect human health and the environment. In these cases, development of a QAPP and its applicable DQOs shall be completed in a timely manner following deployment in accordance with the SESD Operating Procedure for Project Planning (SESDPROC-016).

As a Division within US EPA Region 4, the SESD must also develop and maintain a Quality Management Plan specific to their operations. It is similar to the Regional QMP in that it defines the need to follow the DQO process and to develop QAPPs for the collection of environmental data. In discussing the steps required for project planning, the following statements are made in the SESD QMP concerning DQOs, QAPPs and SOPs:

> The data quality objectives (DQOs) process is a systematic planning tool which is used to delineate project-level elements. During the DQO process, the elements which are developed include project management, data generation and acquisition, project assessment and oversight, and data validation/usability. Detailed guidance for developing DQOs is provided in "Guidance for the DQO Process", EPA QA/G-4, Final, August 2000; and "Guidance for Data Quality Assessment - Practical Methods for Data Analysis," EPA QA/G-9, Final, July 2000. The Agency's DQO process is the preferred method of developing objectives for those projects requiring the collection of environmental data or the use of environmental technology.

Having identified the need for an environmental data collection effort, the project leader and the decision maker (i.e., Branch Chief, Section Chief, customer, etc.) are responsible for initiating the DQO development process. During the early planning phase of the investigation, the customer must clearly establish the intended use of the data, time and resource constraints, and in general terms, the quality of data needed. The Project Leader is responsible for development of DQOs that will facilitate the generation of sufficient data of the quality needed by the ultimate data user/decision maker. The DQO process requires interaction between the Project Leader, customer, field and laboratory technical staff, QA staff, and secondary data users as appropriate. The DQOs developed will be used for the detailed design of the investigation and preparation of the QAPP.

All regional projects requiring collection of environmental data or the use of environmental technology must have an approved QAPP prior to data collection. An exception to this requirement is projects where immediate danger to human health or the environment is present or suspected and emergency response staff is immediately deployed. The Regional Quality Assurance Manager (RQAM), or a designated approving official (DAO), shall review all QAPPs, provide input, recommend changes, and approve final plans. The SESD field branches have a procedure for reviewing and approving all internally generated QAPPS. Operating procedures are developed to provide consistency in activities performed in support of field investigations and laboratory analysis and are the foundation for competency evaluations, proficiency tests, and some training. All are part of the controlled documents of the organization and can be accessed through the SESD local area network.

SESD has a process for developing new and/or modifying existing written controlled documents. Processes that are candidates for standardization are identified by SESD management, the quality staff, or technical staff. The documents are written by persons who are deemed technically competent by management, based on their knowledge, skills, and abilities. The documents are reviewed and evaluated or tested by staff prior to approval by SESD management. Staff is expected to follow applicable procedures while conducting technical operations. Procedures are modified or new ones are developed when existing procedures are inadequate or inappropriate to meet the needs of the organization. The information used to develop procedures or modify existing written procedures must be documented. Personnel can depart from existing written procedures on a project-specific basis. Planned departures are acceptable if needed to meet project objectives and/or data quality objectives. Planned departures will be described in the project specific quality assurance project plan.

The SESD has developed a Standard Operating Procedure (SOP) for soil gas sampling (SESDPROC-307-R2, effective September 8, 2010) which "describes general and specific procedures, methods and considerations to be used and observed when collecting soil gas samples for field screening or laboratory analysis." In this SOP, under the sample handling procedures section, the following statement is made:

> Soil gas samples will typically be collected by directly filling evacuated, specially-prepared stainless steel canisters (SUMMA or SilcoSteel canisters) after sample delivery line purging.

The SOP goes on to describe two approved methods for sample collection. These include the Post-Run Tubing system (PRT) for single event or grab sampling, and the Permanent Soil Gas Sampling Implants for long-term sampling, both of which are installed using direct-push technology (DPT). There is no approved method listed in this SOP for the use of passive diffusion samplers such as the GoreSorber or EmFlux samplers.

Based on the SOW provided, it does not appear that several requirements of the USEPA Region 4 Quality Management Plan, or the SESD Quality Management Plan, have been met, specifically those addressing the development of DQO's, a QAPP, or appropriate SOPs. In addition, the passive sampling methodology is not currently an approved method in the SESD Operating Procedure for the collection of soil gas samples.

SECTION 3

CONCLUSIONS

Based on a comparison to relevant guidance documents, a number of deficiencies have been identified in the United States Environmental Protection Agency (USEPA) Region 4 Statement of Work FY2012 document. These deficiencies are discussed below.

Overall Approach

- The goals of the SOW are not identified. The SOW simply lists the tasks to be performed to meet those objectives, but does not provide any justification for the proposed sampling or the intended use for the data to be collected.
- The sampling and analysis described in the SOW does not meet USEPA requirements for a CERCLA investigation. Use of proposed passive samplers does not meet DQOs necessary for CERCLA investigations and no quality assurance procedures are described in the SOW. Therefore, only qualitative or semi-quantitative results will be obtained following this SOW.

Air Sampling

- The limitations to the indoor air sampling that were detailed in Geosyntec's 16-Feb-2012 Review of the USGS August 2011 Vapor Intrusion Assessment include:
  - GoreSorbers do not meet the data quality objectives for ambient air sampling
  - A chemical inventory should be performed prior to collecting indoor air samples
  - Field screening for potential indoor sources should be performed
  - Outdoor air samples should be collected along with the indoor air samples
- No rationale for sampling locations is provided. Twenty five locations per building are excessive and unnecessary. A sampling plan should be prepared that includes rationale for sampling locations.
- Based on the data collected at this site, a screening-level analysis indicates that the vapor intrusion pathway is not complete for the buildings selected for sampling. The rationale for sampling these building appears to be based on odor complaints by building occupants rather than subsurface contamination. Consequently, the decision to sample these buildings is not based on subsurface contamination.

VIMS Sampling

- It is not appropriate to call the clusters of soil vapor probes Vapor Intrusion Monitoring Sites. These soil vapor probe clusters can be useful to evaluate the vertical distribution of VOCs in soil vapor, but they will not be effective in evaluating the vapor intrusion pathway. Note that the soil vapor probe cluster located at the

corner of Washington and Lawrence is approximately 100 ft. from the nearest building. Therefore, this cluster is too far from any structure to be used to "monitor" vapor intrusion.

- The soil vapor probe cluster should be sampled using traditional active soil gas sampling methods. The data quality of using the GoreSorbers for soil vapor sampling is insufficient for a CERCLA investigation.

Shallow Groundwater Monitoring Well Installation

- The rationale for the proposed groundwater wells is not provided. It is not clear how these additional wells will help refine the site conceptual model.
- No details regarding the construction or sampling of wells is provided in the SOW.

Passive Soil Gas Sampling

- The SOW should make it clear that the passive soil gas sampling will only provide qualitative data.
- The rationale for this sampling approach is not clear. A passive soil gas sampling investigation in any urban area will identify potential VOC sources, so it is not clear why this is being conducted for this site and how it will assist in the CERCLA investigation.
- The results of the passive soil gas investigation cannot be used to assist in the response to "future complaints of air-quality degradation in the buildings". This investigation may identify potential sources in the area, but will not be useful in identifying potential sources to the Capitol City Plume.

In summary, the SOW is deficient in many respects and is inconsistent with USEPA guidance and the NCP.

EXHIBIT 1
U.S. Environmental Protection Agency, Region IV,
Superfund Division, Superfund Remedial Branch, Section C

STATEMENT OF WORK

Submitted by the
U.S. Geological Survey
Alabama & South Carolina Water Science Centers

FY2012

1.0 INTRODUCTION

The U.S. Geological Survey (USGS), in cooperation with U.S. Environmental Protection Agency (USEPA), Region IV, Superfund Division, Superfund Remedial Branch, Section C, is tasked with these 5 **objectives** at the Capital City Plume (CCP) Site in Montgomery, Alabama:

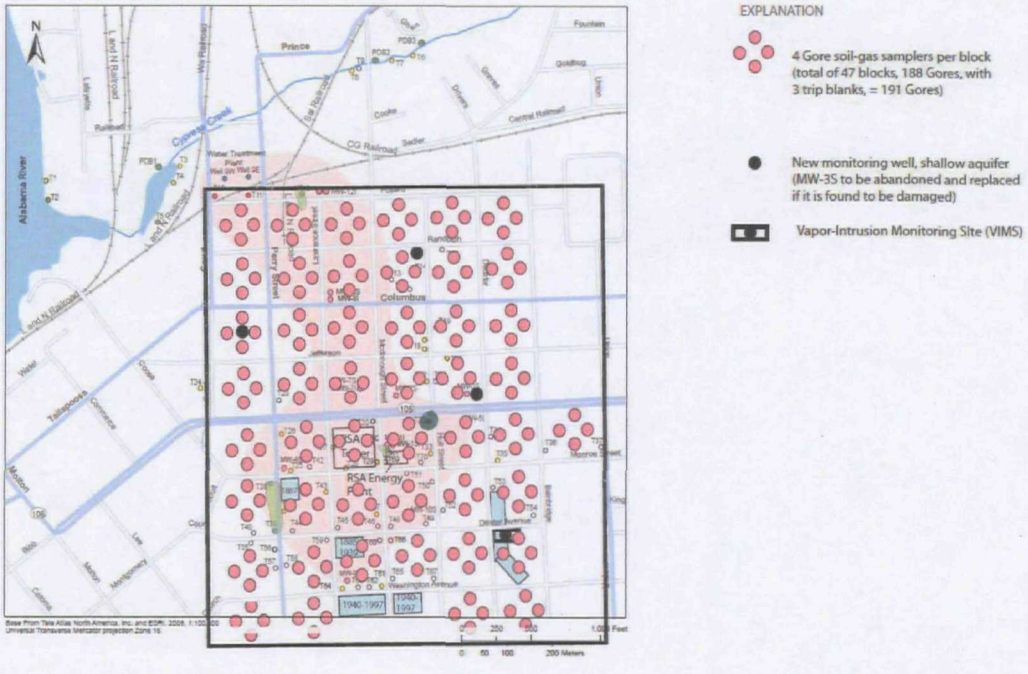
1. Collect 2 rounds of air samples in 2 previously sampled and 1 additional building.
2. Install a vapor-intrusion monitoring site (VIMS) along 501 Dexter Avenue.
3. Install 3 shallow monitoring wells and sample for volatile organic compounds (VOCs).
4. Collect 188 soil-gas samples across 47 blocks of the City of Montgomery.
5. USGS Technical Oversight

The USGS will meet these 5 **objectives** by completing the following 5 **tasks**;

1. Collect 2 rounds of air samples in 2 previously sampled and 1 additional building: Air-quality samples will be collected at the Annex III, Attorney Generals (AG) Building, and the Department of Education buildings. Air samples will be collected by using Gore samplers. To the extent possible, the samplers will be deployed in the Annex III and AG Buildings at the same locations as in 2011. Up to 25 samplers will be deployed in each of the 3 buildings, for a total of 75 environmental samplers (and 2 trip blanks per building). The first round of air-quality samples will be collected in February 2012; the second round of air-quality samples will be collected no later than May 2012. Completion of this task will assist the USEPA in meeting one of its objectives stated during the November 3, 2011 public hearing; e.g., sampling indoor air quality over the next 2 quarters to evaluate changes in air-quality results due to the time of sampling. Additionally, a total of ten (10) summa canisters will be deployed where needed either during the first or second round of sampling.
2. Install a VIMS along 501 Dexter Avenue: A VIMS consisting of 5 separately installed, small-diameter nylon tubes connected to a screen at the end, will be installed to collect soil vapors from discrete depths near 501 Dexter Avenue. The same method used to successfully install the VIMS adjacent to the Annex III also will be used. The VIMS at the Annex III will be sampled using 5 Gore samplers.

3. Install 3 shallow monitoring wells: Three new monitoring wells will be installed in areas within the CCP where no wells currently exist—one new well will be installed near existing MW-3S, as the condition of this well does not warrant sampling. The wells will be developed to acceptable levels of turbidity and then sampled for the presence of VOCs (schedule 2020).

4. Collect 188 soil-gas samples across 47 blocks of the City of Montgomery. Four gore samplers will be installed below grade in each of 47 city blocks in downtown Montgomery. The 47 blocks were selected for soil-gas sampling as some are within the current CCP site boundaries, some are in areas where no current data exists as to determine the level of contamination, and in areas where indoor air-quality complaints have been made. At least 3 trip blank samplers will be needed. This effort is designed to provide the USEPA with a spatial comprehensive data set to rapidly respond to future complaints of air-quality degradation in buildings within the CCP Site, and to proactively investigate buildings shown to exhibit a high VI potential.



5. USGS Technical Oversight

1.1 Location

The site is called the Capital City Plume Site and it is located in Montgomery, Alabama.

1.2 Scope of Work

The scope of the proposes work by the USGS entails the following tasks listed above;

1. Collect 2 rounds of air samples in 2 previously sampled and 1 additional building.
2. Install a vapor-intrusion monitoring site (VIMS) along 501 Dexter Avenue.
3. Install 3 shallow monitoring wells and sample for VOCs.
4. Collect 188 soil-gas samples across 47 blocks of the City of Montgomery.
5. USGS Technical Oversight