



W. Marshall Taylor Jr., Acting Director

Promoting and protecting the health of the public and the environment

June 15, 2015

**CROWN CENTRAL LLC
C/O ANNIE SMITH-JONES
40 HUDSON STREET
SUITE 107
ANNAPOLIS MD 21401**

Re: Corrective Action Solicitation
Mine Street Mart, 201 North Mine Street, McCormick, SC 29835
UST Permit #06443
Release Reported December 13, 1989
Report Received February 3, 2015
McCormick County

Dear Ms. Smith-Jones:

The Underground Storage Tank (UST) Management Division (Division) of the South Carolina Department of Health and Environmental Control (Agency) has reviewed the February 3, 2015 monitoring report submitted by Terracon. Active corrective action is necessary to remediate the subsurface and ensure there is no potential impact to human health or the environment at the receptor locations.

The site's priority classification is 2BA. Therefore, funds from the State Underground Petroleum Environmental Response Bank (SUPERB) Account are currently available for implementation of an acceptable method of corrective action. The selected technology must completely reduce the petroleum chemicals of concern to those concentrations listed in the Corrective Action Solicitation package. All rehabilitation activities associated with a release from an UST must be performed by a SCDHEC certified site rehabilitation contractor as required by R.61-98 and in accordance with the UST Quality Assurance Program Plan (QAPP), Revision 2.0.

The Division understands that you wish to select the rehabilitation contractor to perform the corrective action. In addition to the three solicitation responses you personally obtain as outlined below, the Agency will announce the Corrective Action Solicitation in the South Carolina Business Opportunities. This announcement is to ensure enough responses are received to establish a fair and competitive price to initiate corrective action in a timely manner. This announcement will clearly indicate that the UST owner/operator will make the contractor selection to receive financial and technical approval.

Procedures

The following steps should be followed as you secure responses to the Corrective Action Solicitation.

- Step 1. Select a minimum of three (3) certified site rehabilitation contractors to complete the enclosed Financial Approval Form. A list of currently certified contractors is enclosed.

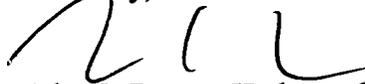
- Step 2. Please provide each of the proposed site rehabilitation contractors a copy of this letter. The Corrective Action Solicitation package is available at <http://www.scdhec.gov/environment/lwm/usthome/OOBid.htm>.

- Step 3. Direct each of your proposed site rehabilitation contractors to submit their Financial Approval Form, addressed to the attention of Lee A. Monts, by the date specified in the table on Page 1 of the attached solicitation. The form may be hand delivered or mailed in a sealed envelope to SCDHEC, UST Management Division, 2600 Bull St., Columbia, SC 29201. The envelope must be marked as Financial Approval Form for UST Permit #06443.

You will be provided copies of all the solicitation response forms submitted. Upon review of the responses, you will be required to complete a Corrective Action Solicitation Proposal - Summary form that designates which site rehabilitation contractor you wish to use. Once you select a contractor, the Agency strongly suggests that a written contract between you and the contractor be developed. The only parties to this contract would be you and the contractor you choose. Since the Agency's only function would be to monitor the corrective action activities to ensure progress toward achieving defined corrective actions goals, rather than perform and/or oversee the associated activities, the Agency would not be party to your contract. Please note that under R.61-92, Part 280: Underground Storage Tank Control Regulations, you as the owner/operator are ultimately responsible to the Agency for the actions of your contractor.

On all future correspondence, please reference the **UST Permit #06443**. Please note that approval from the Agency must be issued before corrective action begins. If you have questions concerning this correspondence, please contact me by telephone at (803) 898-0606, by fax at (803) 898-0673, or by email at bryantjc@dhec.sc.gov.

Sincerely,



John C. Bryant, Hydrogeologist
Corrective Action Section
Underground Storage Tank Management Division
Bureau of Land and Waste Management

enc: Corrective Action Solicitation Package
List of Certified Site Rehabilitation Contractors

cc: Technical File (Cover letter and solicitation package)

I. FINANCIAL APPROVAL FORM

A. ACCEPTANCE and DELIVERY STATEMENT

In compliance with the solicitation and subject to all conditions thereof, the Offeror agrees, if selected by the UST Owner/Operator within _____ days from the date of financial approval form submittal, to complete the corrective action as specified at the price set forth for the site as stated below. For the purpose of this submittal and possible acceptance of financial approval, I certify that this company understands the nature of the release(s) and the geologic conditions at the site as documented in the technical file and this solicitation. **Any quantities listed in the corrective action method(s) below are estimates and changes to those quantities or to the listed method(s) will not affect the financial approval amount.** Additionally, I certify that this company understands that acceptance is based on total cost to treat the area of concern.

Offeror (Print)

UST Site Rehabilitation Contractor Certification #

Registered Professional Name (Print)

Registered Professional Signature (required)

P.G. P.E. (check appropriate box)

Professional Certification #

B. CORRECTIVE ACTION SOLICITATION RESPONSE

Please respond to the following questions for Mine Street Mart, 201 North Mine Street, McCormick, SC 29835, UST Permit #06443:

1. State and briefly describe the corrective action method(s) or technology(ies) that will be discussed in detail in the CAP to achieve completion in five years, should financial approval occur. Attach an additional sheet if necessary.

2. The Corrective Action Completion Time, in months, to complete the corrective action from the date of corrective action plan implementation until the final corrective action goal has been achieved and maintained for 2 consecutive quarters is _____ months. All activities must be completed within 5 years of the date of financial approval unless otherwise approved in writing by the Agency.

3. The Corrective Action Cost, in whole dollars, regardless of the type, quantity, or duration of the permitted technology applied, to treat the area of concern shown in the Appendix such that the FPP thicknesses do not exceed 0.01' and CoC concentrations do not exceed the SSTLs at any point in the area of concern; complete all associated monitoring and post-corrective action verification; prepare all plans, reports, and correspondence; obtain and meet all terms and conditions of all required permits and licenses; design, install, monitor, operate, maintain, and

when completed, properly abandon or remove all assessment and corrective action components;
and complete other items outlined in this solicitation is:

\$ _____

II. SCOPE OF WORK

A. DEFINITIONS:

For the purposes of this solicitation the following terms and definitions shall apply:

1. **Area of Concern**: The horizontal and vertical area in which concentrations of petroleum chemicals of concern have been quantified and/or can be relatively determined by actual data and subsequent interpretation using accepted scientific principles.
2. **Catastrophic Occurrence**: An event (e.g., hurricane) that results in a declared state of emergency and directly and substantially affects the Contractor's operations at a site.
3. **Chemicals of Concern (CoC)**: Specific petroleum constituents that are identified for monitoring and corrective action.
4. **Corrective Action Completion Time**: The time in months, submitted by the Contractor, necessary to reduce FPP thicknesses to at or below 0.01' and CoC concentrations to below site-specific target levels (SSTLs), verify attainment of corrective action goals, and remove and/or properly abandon assessment and corrective action components (wells, treatment lines, etc.). All activities must be completed within five years of the date of financial approval unless otherwise approved in writing by the Agency.
5. **Corrective Action Cost**: The total amount established via the procurement process to complete the scope of work/specifications detailed in the solicitation.
6. **Corrective Action Plan (CAP)**: A document submitted by the Contractor that outlines and details proposed corrective action(s) and contains a timetable consistent with the Corrective Action Completion Time.
7. **Corrective Action Plan Implementation Date**: The date on which the Contractor initiates corrective action (i.e., physical treatment activities such excavation, extraction, injection, etc.) under the approved Corrective Action Plan. The date must be within 30 days of receipt of a Notice to Proceed issued by the Agency.
8. **Day**: For the purpose of this solicitation, any reference to day(s) will be intended as calendar day(s) and not business day(s).
9. **Free-Phase Product (FPP)**: Petroleum lighter than water non-aqueous phase liquid (LNAPL) identified for monitoring and corrective action.
10. **QAPP**: UST Management Division Quality Assurance Program Plan.
11. **Site Incentive Period**: The period of time in months established by the Agency during which the Contractor must achieve the corrective action goals (see Solicitation Item III.A.9.) in order to qualify for the Early Completion Incentive.

B. SOLICITATION STATEMENT

The Underground Storage Tank (UST) Management Division of the South Carolina Department of Health and Environmental Control (Agency) is seeking services on behalf of Crown Central, LLC to perform active corrective action of a petroleum release or petroleum releases at a regulated underground storage tank site in accordance with defined corrective action goals. The objectives are to prevent significant further migration of FPP and CoC, to remove measurable ($>0.01'$) thicknesses of FPP, and to reduce CoC concentrations to or below SSTLs established by the Agency. All Offerors must be SCDHEC-certified Class I Site Rehabilitation Contractors.

C. SCHEDULE OF DELIVERABLES

The following table summarizes the deadlines for deliverables associated with this solicitation:

DELIVERABLE DUE	DEADLINE
Questions	By 4:30PM on July 3, 2015
Financial Approval Form	By 4:30PM on July 20, 2015 in sealed envelope
QAPP Contractor Addendum or Site-Specific Work Plan for Initial Monitoring Report	15 days from date of financial approval
Corrective Action Plan and QAPP Contractor Addendum or Site-Specific Work Plan for Corrective Action	30 days from date of financial approval
Initial Monitoring Report	45 days from approval of QAPP Contractor Addendum or Site-Specific Work Plan for Initial Monitoring Report
CAP Implementation	30 days from Notice to Proceed
CAP Implementation Report	60 days from Notice to Proceed
Notify Project Manager of Sampling	At least 2 weeks prior to sampling event
Corrective Action System Evaluation Report (CASE)	Semi-annually with initial report due within 90 days of the CAP Implementation Report or other schedule approved by the Agency
Water Supply Well Sampling Results	Quarterly from date of CAP Implementation Report or other schedule approved by the Agency
Update QAPP Contractor Addendum or Site-Specific Work Plan for Corrective Action	First quarter of each year or as needed until completion of corrective action
Abandon and/or Remove Assessment and Corrective Action Components	Within 60 days from notice by the Agency

D. SITE SPECIFIC INFORMATION

The scope of work defined in this solicitation is to be implemented at Mine Street Mart, 201 North Mine Street, McCormick, SC 29835, UST Permit #06443 for the release(s) reported on December 13, 1989. A copy of the technical file will be available on-line at <http://www.scdhec.gov/environment/lw/ust/releaseassessmentclean-up/correctiveactionopenbids/> until

the initial Corrective Action Plan is approved. The technical file may also be reviewed at the Freedom of Information (FOI) Office located at the Sims/Aycock Building, 2600 Bull Street, Columbia, SC (803-898-3882).

III. SOLICITATION REQUIREMENTS

A. GENERAL REQUIREMENTS

1. **PAYMENT PERIOD:** The payment period will be effective from the date of financial approval until corrective action is complete as outlined in this solicitation.
2. **EQUAL OPPORTUNITY EMPLOYMENT:** Contractor must agree to make positive efforts to employ women, other minorities, and minority-owned businesses.
3. **AMENDMENTS:** All amendments to this solicitation shall be in writing from the Agency. The Agency shall not be legally bound by any amendment, interpretation or settlement that is not in writing.
4. **RESTRICTION . . . THE ONLY OFFICIAL CONTACT PERSON AT THE AGENCY DURING THE SOLICITATION AND FINANCIAL APPROVAL PROCESS IS LEE MONTS. OFFERORS ARE NOT TO CONTACT ANY OTHER AGENCY PERSONNEL OR OTHER CONTRACTORS.**
5. **FINANCIAL APPROVAL:** The UST Owner/Operator has the right to select an SCDHEC-certified Class I Site Rehabilitation Contractor to perform corrective action in accordance with SUPERB Act (Title 44, Chapter 2 of the Code of Laws of South Carolina), and is not limited to Contractors who respond to this solicitation. Therefore, financial approval may be made to a Contractor who has been selected by the Owner/Operator but has not responded to this solicitation. The financial approval will be for the reasonable cost as defined in Solicitation Item III.A.6. The selected Contractor must agree to make positive efforts to employ women, other minorities, and minority-owned businesses. **The Agency strongly suggests that a written contract be developed between the Owner/Operator and the selected Contractor following completion of the solicitation process. The Agency will not be a party to this contract. If the selected Contractor does not or cannot complete the corrective action in accordance with the specifications outlined in this solicitation, the Owner/Operator will be required to find another SCDHEC-certified Class I Site Rehabilitation Contractor to complete the corrective action for the remainder of the existing financial approval amount. Additional SUPERB funding in excess of financial approval amount may not be allowed. Per the Underground Storage Tank Control Regulations R. 61-92, Part 280, the Owner/Operator is ultimately responsible to the Agency for the actions of their selected Contractor. Therefore, the Agency will pursue enforcement actions against the Owner/Operator if their selected Contractor does not make satisfactory progress towards achieving corrective action goals as outlined in Solicitation Item III.A.9.**
6. **REASONABLE COST:** The lowest Corrective Action Cost submitted on a Financial Approval Form in response to this solicitation will be considered the reasonable or SUPERB-allowable

cost to complete corrective action as defined by the solicitation. The Agency reserves the right to reject any and all submitted Financial Approval Forms that propose Corrective Action Costs that are not advantageous to the State of South Carolina, that propose a Corrective Action Completion Time that is not protective of public health and the environment, and that propose remediation technology(ies) or method(s) that cannot be permitted in the State of South Carolina and/or that are not protective of public health and the environment.

a. The Corrective Action Completion Time for the site shall be determined by the Offeror and entered on the Financial Approval Form in Solicitation Item I.B.

1) Time is of the essence in completing the site work to restore the aquifer and protect human health and the environment. Therefore, the Offeror is encouraged to strive for efficient corrective action methods and to propose the shortest practical completion time for the site.

2) The Offeror shall enter the number of months in the space provided for the site in Solicitation Item I.B.

7. **SITE WORK VERIFICATION:** The Contractor will be required to treat the area of concern as defined in Solicitation Item II.A.1. and as shown in the Appendix (Figure 4). Verification that FPP removal and interim corrective action goals have been achieved will be based upon gauging/sampling results from the site-specific target level (SSTL) wells and sampling points listed in the Appendix, and extraction wells installed as part of corrective action. Verification that the final corrective action goal has been achieved will be based upon sampling results from all wells and gauging points listed in the Appendix and all verification wells to be installed at locations and depths designated by the Agency (see Solicitation Item IV.B.11. for more details). It is understood that seasonal fluctuations in FPP thicknesses and CoC concentrations will occur. It is the intent of this corrective action to prevent further degradation of the aquifer(s) by continued migration of FPP and/or CoC into areas not previously impacted. If the corrective action allows FPP and/or CoC to migrate into areas not previously impacted, the Contractor will be responsible for completing assessment activities necessary to re-define the impacted areas and for providing amendments to their Corrective Action Plan (CAP) to address the additional impact.

8. **REPORTS:** Reports are to be submitted to the Agency on, or prior to, established due dates unless otherwise approved in writing by the Agency. Deliver one paper copy and one electronic copy of each plan and report to: SCDHEC, Bureau of Land and Waste Management, UST Management Division 2600 Bull Street, Columbia, SC 29201. The electronic copy should be submitted on compact disk (CD) in Personal Data Format (PDF). All data tables should be in MS Excel or comparable format. One copy of each plan or report must be delivered to each party listed on the Distribution List included in the Appendix. The distribution copies may be electronic or paper as agreed upon by the party and the Contractor. Based on permitting and other requirements, additional copies of plans and reports may be required by the Agency. The Agency will notify the Owner/Operator of the exact number of copies of each document to be submitted.

9. **INVOICING:** Invoices will be submitted to SCDHEC, Bureau of Land and Waste

Management, UST Management Division, ATTN: Financial Section, 2600 Bull Street, Columbia, SC 29201, using the Corrective Action (CA) Invoice form. The initial invoice must be received at the above address within 4 months of CAP approval or funds will be uncommitted as required by the Section 44-2-40(B) of the SUPERB Act. If funds are uncommitted, the invoice will be held until funds become available. **Payment will only be made for achieving corrective action goals as specified below. No partial payments will be made, except as outlined in Solicitation Item IV B 4.** Payment to the Contractor will be on a pay-for-performance basis as follows:

- a. Payment of 40% of the total Corrective Action Cost will be made within 90 days following receipt of an invoice and documentation that the Contractor has completed the Corrective Action Plan implementation. All corrective action activities must be as described in the CAP and are subject to the limitations of Section 44-2-40 of the SUPERB Act. The implementation should be documented in the Corrective Action Plan Implementation Report. The Corrective Action Plan Implementation Report must include the construction logs for all injection and/or extraction wells installed in accordance with the CAP.
- b. Payment of 30% of the total Corrective Action Cost will be made based on achieving FPP removal, interim CoC concentration reduction goals, and a final CoC concentration reduction goal as verified in the SSTL wells and sampling points listed in the Appendix, and in all extraction wells, and in all verification wells. Payments will be made upon receipt of invoices and documentation that the Contractor has achieved FPP removal, and interim and final goals of 60, 90 and 100% reduction of the total CoC concentrations above the SSTLs **by the implementation of corrective action.** CoC concentrations and SSTLs are listed in the Appendix.
 - 1) FPP removal will be achieved when the FPP thickness does not exceed 0.01' in all SSTL wells and sampling points listed in the Appendix, and in all extraction wells. Payment of 10% of the total Corrective Action Cost will be made upon verification (see Solicitation Item IV.B.11. for the method of verification) that measurable (>.01') FPP has been removed. **Achievement of this goal must be verified by gauging conducted by the Agency.**
 - 2) The first interim concentration reduction goal will be achieved when 60% of the total CoC concentration above SSTLs in the SSTL wells and sampling points listed in the Appendix is removed. The formula listed in the site rehabilitation section of the QAPP will be used to calculate the percent total concentration reduction. Payment of 10% of the total Corrective Action Cost will be made upon confirmation by CASE report or upon verification (see Solicitation Item IV.B.11. for the method of verification) that at least 60% of the total CoC concentration above SSTLs has been removed.
 - 3) The second interim concentration reduction goal will be achieved when 90% of the total CoC concentration above SSTLs in the SSTL wells and sampling points listed in the Appendix is removed. The formula listed in the site rehabilitation section of the QAPP will be used to calculate the percent total concentration reduction. Payment of 5% of the total Corrective Action Cost will be made upon verification (see Solicitation Item

IV.B.11. for the method of verification) that at least 90% of the total CoC concentration above SSTLs has been removed. **Achievement of this interim goal must be verified by split sampling conducted with the Agency.**

- 4) The final concentration reduction goal will be achieved when 100% of the total CoC concentration above SSTLs in the SSTL wells and sampling points listed in the Appendix is removed. The formula listed in the site rehabilitation section of the QAPP will be used to calculate the percent total concentration reduction. Payment of 5% of the total Corrective Action Cost will be made upon verification (see Solicitation Item IV.B.11. for the method of verification) that 100% of the total CoC concentration above SSTLs has been removed. **The 100% payment milestone must be verified following two consecutive quarters with all corrective action activities completely ceased prior to payment eligibility. Achievement of this goal must be verified by split sampling conducted with the Agency (to be completed during the 2nd 100% verification quarter).** CoC concentrations must not exceed SSTLs in all wells and sampling points listed in the Appendix, in all verification wells, and at any point in the area of concern.
 - c. The final 30% of the total Corrective Action Cost will be paid upon receipt of an invoice and verification that all assessment and corrective action components (e.g., piping, wells, trenches, etc.) have been removed from the site or properly abandoned (see Solicitation Items IV.B.11-14. for more details), and the facility and associated adjacent properties have been restored to the condition that existed prior to assessment and corrective action (Solicitation Item IV.B.13.). If 100% CoC concentration reduction is not achieved, the final payment may be reduced accordingly (e.g., 98% paid for 98% final reduction) as mutually agreed upon by the Agency and the Contractor.
10. **LIMITATIONS:** The approved Corrective Action Cost will be final and will not be increased or cancelled for any reason (e.g., unanticipated iron fouling of a system, wells clogging because of biological activity or sediments, damage by lightning, increased subcontractor costs, loss of utilities, modification to the system to meet the remediation goals, etc.) with the exception of: 1) unforeseen subsurface conditions as determined solely at the discretion of the Agency; or 2) identification of additional FPP or CoC from a confirmed release that occurs subsequent to financial approval and that adversely impacts corrective action as determined by the Agency. Payment will only be made for achieving the corrective action goals as specified in this solicitation. No interim or partial payments will be made once corrective action is initiated, except as outlined in Solicitation Item IV.B.4. Once corrective action has been initiated and in the event of a cancellation due to any of the conditions described in this solicitation Item, final payment, if appropriate, will be a percentage of the Corrective Action Cost. The percentage will be equal to the actual percent total CoC concentration reduction based upon last sampling results, as verified by the Agency, from all wells and sampling points listed in the Appendix and all verification wells, less the amount previously paid. Contractor-owned items used on-site for the corrective action that are damaged or destroyed by common acts of nature, improper maintenance or handling, theft or vandalism will not be replaced or reimbursed by the SUPERB Account. The Contractor cannot delay progress or suspend corrective action activities at the site based upon a claim of a suspected new petroleum release from the UST system. Unless

directed otherwise by the Agency, the Contractor must continue to perform corrective action activities under this solicitation during any period of time during which a new petroleum release from the UST system is being investigated. The Contractor must clearly demonstrate sufficient evidence of the release in the form of analytical test results or other demonstrative evidence to the Agency. The determination that a new petroleum release from the UST system has occurred that post-dates the financial approval, and that adversely impacts corrective action at the site, is the sole discretion of the Agency.

B. SPECIFIC REQUIREMENTS

1. **SCOPE OF SOLICITATION:** This solicitation is for corrective action at one site in South Carolina.
2. **INQUIRIES:** A copy of the technical file will be available on-line at <http://www.scdhec.gov/environment/lw/ust/releaseassessmentclean-up/correctiveactionopenbids/> until the initial Corrective Action Plan is approved. The technical file may also be reviewed at the Freedom of Information (FOI) Office located at the Sims/Aycock Building, 2600 Bull Street, Columbia, SC (803-898-3882). All questions or requests for information must be submitted in writing to Lee Monts, FAX number (803) 898-0673, in accordance with the date specified in Solicitation Item II.C. After this date, no further questions or requests for information will be addressed. A written response will be provided.
3. **PROVISION FOR EARLY COMPLETION INCENTIVE:** The Agency will pay the Contractor an incentive of 10% of the Corrective Action Cost for early completion, subject solely to the conditions set forth in this provision. Payment will be made if the corrective action goals have been met in accordance with the terms and conditions of this solicitation prior to the end of the Site Incentive Period, as established by the Agency and verified in accordance with Solicitation Item IV.B.11.

The Site Incentive Period will commence on the Corrective Action Plan Implementation Date. A month starts at 12:00 Midnight on the Corrective Action Plan Implementation Date and ends at Midnight preceding the same day of the following month. Months will be counted consecutively from the Corrective Action Plan Implementation Date. Following implementation, the Agency will notify the Contractor in writing of the closing date of the Site Incentive Period.

The Site Incentive Period will not be adjusted for any reason, cause, or circumstance whatsoever, regardless of fault, save and except: 1) in the instance of a catastrophic occurrence (e.g., hurricane) that results in a declared state of emergency and that directly and substantially affects the Contractor's operations at a site and results in unavoidable delay of the corrective action, or 2) an unforeseen condition that could not have been anticipated following financial award to which the Agency has been notified in writing by the Contractor and as the Agency has approved in writing. In the event of a catastrophic occurrence or unforeseen condition on a specific site, the Agency shall determine the number of months reasonably necessary to extend the Site Incentive Period due solely to such catastrophic occurrence. Any amendments to the Site Incentive Period will be provided to the Contractor in writing.

The parties anticipate that routine delays may be caused by or arise from any number of events during the course of corrective action, including, but not limited to: work performed, work deleted, supplemental agreements, delays, disruptions, differing site conditions, utility conflicts, design changes or defects, extra work, right-of-way issues, permitting issues, actions of suppliers, subcontractors, or other Contractors, actions by third parties, revision of the work scope by the Contractor, weather, weekends, holidays, suspensions of the Contractor's operations, or any other such events, forces or factors experienced in environmental work. Such delays or events, and their potential impacts on performance by the Contractor are specifically contemplated and acknowledged by the Contractor upon entering into this contract, and shall not affect the Site Incentive Period or incentives set forth in this contract item. Further, any and all costs or impacts whatsoever incurred by the Contractor to complete corrective action within the Site Incentive Period, whether successful or not, shall be the sole responsibility of the Contractor in every instance.

The Contractor shall have no rights under the contract to make any claim arising out of this incentive provision except as is expressly set forth in this provision.

The Site Incentive Period for Mine Street Mart, 201 North Mine Street, McCormick, SC 29835, UST Permit #06443 is 36 months.

4. **SITE-SPECIFIC DETAILS:** A brief technical summary, including maps and data tables, is attached in the Appendix. A copy of the technical file will be available on-line at <http://www.scdhec.gov/environment/lw/ust/releaseassessmentclean-up/correctiveactionopenbids/> until the initial Corrective Action Plan is approved. The technical file may also be reviewed at the Freedom of Information Office (FOI) located at the Sims/Aycock Building, 2600 Bull Street, Columbia, SC. Appointment(s) to view the technical file may be scheduled on weekdays between the hours of 8:30 A.M. to 5:00 P.M. by calling FOI at 803-898-3882. **Offerors are strongly encouraged to review the file(s) to ensure a complete understanding of corrective action requirements. The selected Contractor will be responsible for all information in the technical file(s).**

IV. SPECIFICATIONS for CORRECTIVE ACTION

A. GENERAL SPECIFICATIONS

1. **SUBMITTALS:** All offerors must submit a completed Financial Approval Form. All submittals must be either hand-delivered or mailed in a sealed envelope to SCDHEC, UST Management Division, 2600 Bull Street, Columbia, SC 29201, ATTN: Lee A. Monts. The envelope must be marked as a Financial Approval Form for Mine Street Mart, 201 North Mine Street, McCormick, SC 29835, UST Permit #06443. The Form outlines an approach to achieve the corrective action goals (i.e., removal of measurable (>0.01') FPP and reduction of CoC to SSTLs) and contains the following elements:
 - a. A description of the proposed treatment method(s) or technology(ies) for corrective action.

- b. The amount of time in months to meet the corrective action goals, install verification wells, and remove or abandon all assessment and corrective action components.
 - c. The total Corrective Action Cost (in U.S. dollars) to meet the corrective action goals and to remove or abandon all assessment and corrective action components.
2. **MINIMUM REQUIREMENTS:** Corrective action will be considered complete when: 1) the CoC concentrations are verified to be at or below SSTLs in all wells and sampling points listed in the Appendix, in all verification wells, and at any point in the area of concern for **two consecutive quarters**; 2) all assessment and corrective action components (e.g., piping, wells, trenches, etc.) have been removed from the site or are properly abandoned; and 3) the facility and associated adjacent properties have been restored to the condition that existed prior to assessment and corrective action in accordance with Solicitation Item IV.B.13. See Solicitation Item IV.B.11. for the method of verification. Per R. 61-98, all site rehabilitation activities associated with a UST release must be performed by an SCDHEC-certified Class I Site Rehabilitation Contractor. The Contractor will be required to adhere to all applicable portions of QAPP Revision 2.0. See http://www.scdhec.gov/environment/docs/QAPP_Rev-2-April2013.pdf and follow the link for UST Quality Assurance Program Plan for the most up-to-date version. All corrective action plans and reports must be sealed by a Professional Engineer or Professional Geologist registered in the State of South Carolina. All engineering reports, drawings and plans must be sealed by a Professional Engineer registered in the State of South Carolina. All laboratory analysis for CoC must be performed by an SC-certified laboratory. All monitoring, verification, injection and/or extraction wells must be installed and abandoned by an SC-certified well driller. All applicable certification, training, permits, applications, and fees associated with well installation; injection, discharge, treatment, or transportation of groundwater, air, or soil; construction or operation of a corrective action system; and any other action requiring a permit are the responsibility of the Contractor. Any required business or occupation license and occupational safety and health training (e.g., OSHA) as defined by the laws and regulations of the United States of America, the State of South Carolina, the county or city is also the responsibility of the Contractor. The terms and conditions of all applicable permits will be met. Any contaminated soil or construction debris, contaminated water, and FPP must be properly transported and disposed of, or treated at, an approved facility with prior approval from the Agency. Any costs for utilities construction and service (electric, telephone, sewer, etc.) required by the corrective action are the responsibility of the Contractor.

B. PERFORMANCE REQUIREMENTS

1. **QAPP CONTRACTOR ADDENDA/SITE-SPECIFIC WORK PLANS:** The Contractor must submit a QAPP Contractor Addendum or Site-Specific Work Plan for the Initial Monitoring Report **within 15 days** from the date of financial approval. The Addendum or Work Plan for the Initial Monitoring Report must be approved by the Agency prior to initiation of work at the site. A QAPP Contractor Addendum or Site-Specific Work Plan for corrective action must be submitted with the Corrective Action Plan (CAP). The Addendum or Work Plan action must be updated during the first quarter of each year or as needed until completion of corrective action.

2. **CORRECTIVE ACTION PLAN:** The Contractor must complete and submit a detailed Corrective Action Plan and QAPP Contractor Addendum or Site-Specific Work Plan for corrective action within 30 days from the date of financial approval. Copies of the CAP must be distributed in accordance with Solicitation Item III.A.8. The CAP must define the method(s) and technology(ies) proposed to achieve corrective action goals in a manner that is consistent with the Corrective Action Completion Time submitted by the Contractor. **The corrective action method(s) or technology(ies) must be designed to prevent vapors from entering onsite or adjacent structures.** It must be shown, by use of scientific models, computations, or discussion, how FPP will be removed and CoC concentrations reduced by each method and technology proposed. Any assumptions used in a model will be listed or shown, as well as appropriate references. **The use of monitoring well(s) for injection, extraction, or FPP recovery purposes is not allowed.** Accordingly, the CAP may propose installation of additional injection, extraction, or compliance wells. General construction details will be included in the CAP (e.g. install 4 extraction wells, install 8 injection wells, excavate 3,000 cubic yards of impacted soils, etc.) as well as details of assessment and corrective action component abandonment and/or removal.

A corrective action timetable that includes demobilization and site restoration (Solicitation Items IV. B. 12-14.) will be provided by the Contractor. As corrective action is required to be completed within 5 years from CAP implementation, the submitted timetable shall not exceed 5 years in any case. The timetable shall itemize when the Contractor expects to meet the FPP removal, 60%, 90%, and 100% interim payment milestones. During corrective action implementation, this timetable may be adjusted (as approved in writing by the Agency) if circumstances beyond the control of the Contractor arise. If the Contractor fails to meet the interim goals in the proposed time frames, a remedy will be sought through the procedures outlined in Solicitation Item III.A.5.

The Agency will review the CAP and initiate a public notice period for a maximum of 30 days. The names and addresses of the owners of all impacted properties and all properties located adjacent to the impacted properties are provided in the Appendix. The Contractor may be required to attend and provide input at one or more public meetings upon request by the Agency. Any CAP amendments and modifications resulting from the public notice must be submitted within 15 days of notification by the Agency. The CAP and any amendments or modifications must be sealed by a qualified Professional Geologist or Engineer registered in the State of South Carolina. The UST Owner/Operator and any other affected property owners will be consulted and will approve the location of the corrective action system. Any aboveground part of the system that is to remain on-site for longer than 30 contiguous days must be secured within a fenced area or building.

3. **PERMIT APPLICATIONS:** The Contractor must complete and submit all applications for permits (injection, NPDES, BAQC modeling form, thermal treatment, construction, etc.) with the CAP. All submitted applications must comply with the requirements of the respective permitting program. Any required permit changes or corrections will be submitted within 15 days of notification by the Agency.
4. **INITIAL MONITORING REPORT:** Prior to Corrective Action Plan implementation, the Contractor must submit an Initial Monitoring Report to the Agency documenting CoC

concentrations, FPP thicknesses, and potentiometric conditions in all wells and sampling points listed in the Appendix. The report will be due **within 45 days** after QAPP Contractor Addendum or Site-Specific Work Plan approval. The report should include color photographs with date stamp of the facility/site and surrounding properties to provide documentation of the condition of the facility/site prior to implementation of any corrective action activities. Copies of the Initial Monitoring Report must be distributed in accordance with Solicitation Item III.A.8.

Naturally occurring conditions may cause FPP thicknesses and/or CoC concentrations to increase or decrease. For the purpose of this solicitation, the total FPP thickness or CoC concentration for all wells and sampling points listed in the Appendix may reasonably increase up to 150% or decrease as much as 50%. If the total FPP thickness or CoC concentration in the wells and sampling points listed in the Appendix increases more than 150% percent based on initial gauging and sampling, or if measurable ($> .01'$) FPP that has not been previously documented in any report is detected during the initial sampling event, the Contractor may request in writing that financial approval be cancelled. **If any of these conditions is identified during initial sampling, the Contractor will notify the Agency within 2 days of identification and will submit written documentation within 5 days of notification.** Financial approval will be cancelled and the Contractor will be reimbursed based on the following rate schedule:

Subcontract Costs*	Invoice + 12%
Personnel mobilization	\$423.00
Groundwater sample collection- purge	\$60.00 per well
Groundwater sample collection- no purge	\$28.00 per well
Field blank	\$24.60
Gauging FPP	\$7.00 per well
Contaminated water disposal	\$0.56 per gallon
FPP disposal	\$0.50 per gallon
CAP preparation and associated costs	\$6,000.00
QAPP Contractor Addendum preparation	\$250.00
Site-Specific Work Plan preparation	\$150.00

* Includes laboratory, drilling, electrical, etc.

If the total FPP thickness or CoC concentration in the wells and sampling points listed in the Appendix decreases more than 50% based on initial gauging and sampling, the Agency may cancel financial approval. The Contractor will be notified of the cancellation by certified letter and must submit an invoice for the appropriate items listed in the rate schedule within 20 days from receipt of the letter. If financial approval is cancelled prior to the Corrective Action Plan Implementation Date due to any of the conditions described in this Solicitation Item, final payment will not exceed 40% of the Corrective Action Cost under any circumstances as no FPP removal or CoC reduction will have been accomplished by implementation of corrective action. If the CAP has been implemented and physical treatment activities performed, the Contractor will be required to complete the corrective action unless conditions described in Solicitation Item III.A.10. are encountered.

5. **CORRECTIVE ACTION PLAN IMPLEMENTATION:** After the CAP, QAPP Contractor

Addendum or Site-Specific Work Plan, and all permit applications are reviewed and approved in accordance with QAPP Revision 2.0 and R.61-92, Section 280.66, the Agency will issue a Notice to Proceed with CAP implementation. The Contractor will implement the CAP within 30 days of receipt of the Notice to Proceed and any required permit to construct. A penalty of \$100 per day will be assessed for each calendar day late if the CAP is not implemented in 30 days unless the Contractor obtains written approval from the Agency regarding a change in the implementation schedule. Any assessed penalty amounts will be deducted from the initial payment. If any problem with CAP implementation occurs, the Contractor will notify the Agency within 24 hours of problem identification and will submit written documentation within 5 days of notification. Disruption to the normal business at the site will be kept to a minimum. Any modification, relocation, disturbance, or destruction of physical structures or features as a result of CAP implementation must be approved in writing by the affected property owner prior to CAP implementation. Upon completion of any required construction, the Agency will inspect the corrective action system and issue a permit to operate. The Contractor will, at all times, keep the site free from waste materials and rubbish related to corrective action and maintain the site in a neat and workmanlike condition for the duration of the corrective action. All contaminated soil and construction debris, contaminated water, and FPP generated on-site will be removed from the site promptly. Manifests documenting the proper disposal of contaminated soil and construction debris, contaminated water, and FPP must be included in the appropriate report. The Contractor will repair and/or restore the site/facility to the condition that existed prior to CAP implementation and as documented by the photographs included in the Initial Monitoring Report in accordance with IV.B.4. Any deviation in returning the site/facility to the condition that existed prior to CAP implementation must be documented in writing by the Contractor and signed by the Owner/Operator and property owner.

Implementation of the CAP is not authorized until the Contractor receives a Notice to Proceed from the Agency. If unauthorized implementation occurs, the Agency will not reimburse related costs incurred by the Contractor from the SUPERB Account, and the Corrective Action Cost will be reduced by the amount of the incurred costs. If the Agency agrees with early implementation to better protect human health in an emergency and provides approval in writing, early implementation without any reduction to the Corrective Action Cost will be authorized.

A Corrective Action Plan Implementation Report will be due 60 days from the Notice to Proceed and shall include a description of work sufficient to document CAP implementation activities and the associated dates of work.

6. **PROPERTY ACCESS:** The Contractor will secure access to the site and adjacent properties to gauge and sample wells and sampling points, and to install any corrective action components, as required. The Contractor will be responsible for corrective action components installed on adjacent properties. Costs to repair or replace components of the corrective action system damaged due to the actions of adjacent property owners cannot be paid by the SUPERB Account.
7. **START-UP:** The Contractor will initiate corrective action within 15 days of receipt of a permit to operate, if required. Corrective action as defined in the CAP will begin upon start-up.

NOTE: The application of corrective action technologies or natural fluctuations in the water table can mobilize FPP and cause possible appearance of FPP and/or elevated CoC concentrations in non-SSTL wells and sampling points.

8. **REPORTING:** The Contractor must complete and submit a Corrective Action Plan (CAP) Implementation Report within 60 days of the Notice to Proceed. The Contractor must also complete and submit a Corrective Action System Evaluation (CASE) report on a semi-annual schedule. The CAP Implementation Report and CASE reports will be distributed in accordance with Solicitation Item III.A.8. The first CASE report is due within 90 days of the CAP Implementation Report. **CASE reports must be submitted regardless of the status of corrective action activities.**

All wells and sampling points listed in the Appendix will be sampled on a quarterly schedule (see Solicitation Item IV.B. 9 for sampling details) following submittal of the CAP Implementation Report. The Contractor must submit a written request for a change in the protocol to the Agency. **Approval for any reduction in the number of wells and sampling points to be sampled, or for any lengthening of the reporting interval, is at the sole discretion of the Agency.**

CASE reports must include, at a minimum, all items stipulated in the Documents and Records section and Active Site Rehabilitation Procedures section of QAPP Revision 2.0. CASE reports must also include any additional data required by permits (e.g., air analyses, wastewater effluent analyses, etc.). The Contractor will be provided with the proper report forms and reporting format prior to CAP Implementation. The Agency will notify the Contractor regarding any revisions to the forms or format 60 days prior to the due date for the next CASE report.

9. **SAMPLING:** The Contractor must collect water samples from all wells and sampling points listed in the Appendix on a quarterly schedule. **Do not sample wells and sampling points containing measurable (>0.01') FPP.** If measurable FPP is present, the thickness of product and depth to groundwater must be recorded to the nearest 0.01'. The sampling will be conducted in accordance with applicable portions of QAPP Revision 2.0. Additional samples (air, groundwater, effluent, soil) required by permits must be collected in accordance with established QA/QC protocol and submitted to an SC-certified laboratory for analysis. The samples will be analyzed for parameters stipulated in the permits. Sampling and analytical data for each sample (e.g., field sampling logs, chain of custody forms, certificates of analysis, lab certification number) will be included in the CASE report.

The Contractor must submit a written request to the Agency for a change in the sampling protocol. Approval for any reduction in the number of wells and sampling points to be sampled is at the sole discretion of the Agency. The Contractor may choose to conduct sampling more frequently in order to document that a reduction milestone has been achieved.

10. **DISPOSAL:** The Contractor must properly dispose of all contaminated water, contaminated soil, and FPP generated during corrective action. The Owner/Operator of the UST facility will be considered the generator. In the case of an orphan site, the Contractor will be considered the generator. Treatment and disposal must be conducted at an SCDHEC-approved facility, and

must be documented in the CASE reports.

11. **QUALITY ASSURANCE & VERIFICATION:** Once sampling data indicate 100% CoC concentration reduction, the Contractor must completely suspend corrective action and provide notification to the Agency. After 30 days, the Contractor will sample all wells and sampling points listed in the Appendix to verify that the final (100%) CoC concentration reduction goal has been achieved and maintained. If the goal is maintained, the date of the 30-day sampling event will be considered the start of the two-quarter, post-corrective action verification period. During the verification period, the Contractor will conduct quarterly sampling of all wells and sampling points listed in the Appendix and all verification wells. **Do not sample wells and sampling points containing measurable (>0.01') FPP.** If measurable FPP is present, the thickness of product and depth to groundwater must be recorded to the nearest 0.01'. The samples should be analyzed for the parameters listed in the Appendix, and for dissolved oxygen, ferrous iron, methane, nitrate, and sulfate using the analytical methods and reporting limits detailed in the QAPP.

If sampling results show that the final (100%) CoC concentration reduction goal has not been maintained, and/or CoC concentrations exceed SSTLs in any verification well, corrective action must be resumed. The Agency may require the Contractor to propose a revised corrective action strategy and timetable to achieve and maintain the goal. The strategy may require modification of the existing corrective action system. The post-corrective action period will be suspended and corrective action will continue until the final (100%) CoC concentration reduction goal is again achieved and maintained for a period of 30 days, and CoC concentrations in the verification well(s) remain below SSTLs for a period of 30 days. Once again, the Contractor will completely suspend corrective action and a new post-corrective action verification period will begin. The aforementioned cycle of activity must be repeated until CoC concentrations remain at or below SSTLs in all wells and sampling points listed in the Appendix and in all verification wells for 2 consecutive quarters.

The Agency may require installation of 6 verification well(s) during the post-corrective action verification period at designated locations and depths. Costs for the verification wells will be considered part of the Corrective Action Cost. SSTLs for the verification wells will be provided by the Agency.

The Agency will collect split samples from wells and sampling points in the area of concern to verify achievement of the second (90%) interim CoC concentration reduction goal, and may collect split samples to verify achievement of the first (60%) interim CoC reduction goal and to confirm the start of the two-quarter, post-corrective action verification period. Split samples will also be collected at the end of the two-quarter, post-corrective action verification period to confirm that corrective action goals have been maintained. In addition to the split samples, the Agency may provide up to three standards or prepared blanks for the Contractor's laboratory to analyze. Analytical data sets from the Contractor's laboratory and the Agency's laboratory will be compared. In the event of substantial variance (more than 15%) between the sets, a second split sampling event may be conducted with the Contractor. If the variance persists, all data sets and associated quality assurance/quality control data will be provided to Laboratory Certification to determine the cause of the variance. The Director of the Assessment and

Corrective Action Division, UST Management Division, will solicit input from Laboratory Certification, the UST Section Manager, the UST Project Manager, and the Contractor, and render a final decision as to which data set will be used for verification. The Contractor will be provided a written record of the decision.

If the Contractor anticipates that split sampling is warranted, the Agency must be allowed at least 2 weeks to schedule a mutually agreeable time for the split sampling event. Costs for transportation and analysis of split or duplicate samples collected by the Agency will be paid by the Agency.

12. **DEMOBILIZATION:** The Contractor will disassemble and remove the corrective action system and associated components including utilities from the site within 60 days of notification by the Agency that the final CoC concentration reduction goal has been achieved and maintained for 2 consecutive quarters. Disruption to the UST Owner/Operator's or property owner's normal business will be kept to a minimum.
13. **SITE RESTORATION:** The Contractor must remove or properly abandon all assessment and corrective action components (piping, monitoring wells, injection and/or extraction wells, trenches, etc.) within 60 days of notification by the Agency that the final CoC concentration reduction goal has been achieved and maintained for 2 consecutive quarters. Abandonment will be in accordance with the South Carolina Well Standards and Regulations R. 61-71, the UST Management Division QAPP Revision 2.0, and accepted industry standards for abandonment of trenches and piping/utility runs. Disruption to the Owner/Operator's or property owner's business must be kept to a minimum. The Contractor must provide the Agency with documentation of the abandonment and disposal of any remaining contaminated soil, contaminated groundwater, and FPP. **The Contractor will restore the site and adjacent properties to the condition that existed prior to assessment and corrective action (e.g., repaving, reseeding, etc.) as documented by the photographs included in the Initial Monitoring Report or other written documentation detailing a variance from the conditions documented by the photographs. Neither the Agency nor the SUPERB Account will be liable for any damages caused by the Contractor. As required by Section IV.A.4c of the SUPERB Site Rehabilitation and Fund Access Regulations R.61-98, the Contractor shall be required to indemnify the property owner, UST Owner/Operator and the State of South Carolina from and against all claims, damages, losses and expenses arising out of or resulting from activity conducted by the Contractor, its agents, employees or subcontractors.**
14. **COMPLETION NOTICE:** Written notice must be provided to the Agency at least 2 weeks prior to completion of site restoration. This will allow the Agency and the Contractor time to jointly inspect the site and adjacent properties, and compile a list of tasks to be finished. Task items may include, but are not limited to, well abandonment, pavement repair, debris removal, etc. **Site restoration will be complete once all the tasks are finished, the site passes a final inspection by the Agency, and the Agency issues written notice that the corrective action is complete.**

UST # 06443, Mine Street Mart
McCormick County

Appendix

UST # 06443, Mine Street Mart
McCormick County

Distribution List for Plans and Reports

Responsible Party:

Crown Central LLC
PO Box 1168
Baltimore, MD 21203-11668

Affected Property Owners:*

Fast Point Food Stores, Inc
201 North Mine Street
McCormick, SC 29835

Tax Map 126-05-12-001 (site)

Ansel D. Brewer
PO Box 1746
McCormick, SC 29835

Tax Map 126-05-12-037

Oscar & Shirley New
PO Box 121
McCormick, SC 29835

Tax Map 126-05-12-003

The Bowick Agency
208 Hatton Court
Lexington, SC 29072

Tax Map 126-05-12-005

Abbeville and McCormick County
Habitat for Humanity
PO Box 238
McCormick, SC 29835

Tax Map 126-05-11-001

McCormick County
Health Center
RT 2 Box 84AAA
McCormick, SC 29835

Tax Map 126-05-01-010 &
126-05-01-008

Gerald and Kathryn West
906 Garrison Street
McCormick, SC 29835

Tax Map 126-05-01-012

McCormick County Historical Commission
RT 1 Box 2
McCormick, SC 29835

Tax Map 126-05-01-011 &
126-05-01-013

Palmetto Pro Properties LLC
PO Box 4539
Batesburg-Leesville, SC 29070

Tax Map 126-05-12-042

David Pollow
5676 Walnut Grove Place
Memphis, TN 38120

Tax Map 126-05-01-039

*Property owners are subject to change.

UST # 06443, Mine Street Mart
McCormick County

Table 1: Analytical Parameters

Analyte	Analytical Method*
BTEX	8260B
Naphthalene	8260B
MTBE	8260B
1,2 DCA	8260B
Oxygenates + Ethanol	8260B
EDB	8011

* See Programmatic QAPP for Reporting Limits.

The analyses listed in Table 1 are required for quarterly sampling and for verification sampling.

Table 2: Natural Attenuation Parameters

Analyte	Analytical Method*
Dissolved Oxygen	SM4500-O G
Ferrous Iron	SM3500-Fe D
Methane	Kerr Method
Nitrate	9056/9210
Sulfate	9038/9056

* See Programmatic QAPP for Reporting Limits.

The analyses listed in Table 2 are required for verification sampling.

Verification Wells

Six verification wells may be installed during the post-corrective action monitoring period at locations and depths designated by the UST Management Division. Costs for the well installation are considered part of the approved Corrective Action Cost. The Division will calculate SSTLs for the verification wells and provide the data to the Contractor in writing. During verification, all wells must be sampled for the analytical parameters listed above in Table 1 as well as the natural attenuation parameters listed in Table 2.

UST # 06443, Mine Street Mart
McCormick County

Table 3: Current CoC Concentrations in Groundwater

CoC concentrations in micrograms per liter (µg/l) based on the November 13, 2014 sampling and gauging:

Well	Free Product Thickness	Benzene	Toluene	Ethylbenzene	Xylene	Naphthalene	MtBE	EDB	1,2 DCA	TAA	DIPE	TBA
MW-1	1.00 Feet	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP
MW-2	2.10 Feet	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP
MW-4		DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
MW-4R		DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
MW-5		DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
MW-6		7,710	559	330	1,260	749	19,900	<0.0063	<58.1	30,000	537	2,120
MW-7B		DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
MW-8		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-8R		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-9B		<0.111	<0.122	<0.109	<0.179	<0.176	<0.077	<0.0063	<0.116	70.4	<0.236	<0.290
MW-10		DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
MW-10R		<0.111	<0.122	<0.109	<0.179	<0.176	<0.077	<0.0063	<0.116	<1.01	<0.236	<0.290
MW-11		DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
MW-12		DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
MW-12R		508	<0.122	<0.109	1.73	39.7	3.74	<0.0063	<0.116	894	17.9	22.1
MW-13R		323	3,670	1,750	11,100	801	60.3	NA	<5.81	1,380	13.8	<14.5
MW-14B	0.01 Feet	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
MW-15		<0.111	<0.122	<0.109	<0.179	<0.176	<0.077	<0.0063	<0.116	<1.01	<0.236	<0.290
MW-16		DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
MW-18R		DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
MW-19R		<0.111	<0.122	<0.109	<0.179	<0.176	66.3	<0.0063	<0.116	<1.01	9.63	<0.290
MW-20	0.29 Feet	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP
MW-20R	0.23 Feet	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP
MW-21		<0.111	<0.122	<0.109	<0.179	<0.176	<0.077	<0.0063	<0.116	<1.01	<0.236	<0.290
MW-22		<0.111	<0.122	<0.109	<0.179	<0.176	<0.077	<0.0063	<0.116	<1.01	<0.236	<0.290
MW-22D		<0.111	<0.122	<0.109	<0.179	<0.176	<0.077	<0.0063	<0.116	<1.01	<0.236	<0.290
MW-24		<0.111	<0.122	<0.109	<0.179	<0.176	<0.077	<0.0063	<0.116	<1.01	<0.236	<0.290
MW-26		412	3,060	1,650	9,880	577	<1.93	<0.0063	<2.9	<1.01	<0.236	<0.290
MW-27		<0.111	<0.122	<0.109	<0.179	<0.176	<0.077	<0.0063	<0.116	<1.01	<0.236	<0.290
PW-28		<0.111	<0.122	<0.109	<0.179	<0.176	<0.077	<0.0063	<0.116	<1.01	<0.236	<0.290
MW-29		<0.111	<0.122	<0.109	<0.179	<0.176	<0.077	<0.0063	<0.116	<1.01	<0.236	<0.290
MW-30		<0.111	<0.122	<0.109	<0.179	<0.176	<0.077	<0.0063	<0.116	<1.01	<0.236	<0.290
PW-31		5,690	9,750	1,790	6,320	636	618	3.50	<500	10,300	117	36.4
MW-32	0.81 Feet	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP
MW-33		DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
MW-34		<0.111	<0.122	<0.109	<0.179	<0.176	19.7	<0.0063	<0.116	<1.01	<0.236	<0.290
MW-34D		<0.111	<0.122	<0.109	<0.179	<0.176	<0.077	<0.0063	<0.116	<1.01	<0.236	<0.290
MW-35		21,800	42,300	3,430	17,500	3,180	<38.5	6.19	<58.1	17,700	<118	<154
MW-36	0.13 Feet	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP
MW-37		<0.555	<0.609	<0.545	<0.894	<0.880	314	<0.0063	<0.581	56.4	29.0	<1.45
MW-38		4,000	2,810	1,910	6,310	491	268	<0.0063	<5.81	4,460	43.7	86.6
MW-39	0.21 Feet	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP
MW-40		570	5,590	2,240	8,520	881	115	<0.0063	<5.81	4,350	<11.8	<14.5
MW-41		21,000	35,500	3,210	15,000	1,500	2,300	13.7	171	27,400	409	858
MW-42		23.6	<0.609	<0.545	<0.894	26.6	410	<0.0063	10.4	2,090	58.7	96.8
MW-43		<0.111	<0.122	8.62	14.9	8.13	<0.077	<0.0063	<0.116	61.5	<0.236	<0.290
MW-44		<0.111	<0.122	<0.109	<0.179	6.95	<0.077	<0.0063	<0.116	<1.01	<0.236	<0.290

NOTE: CoC concentrations may vary due to seasonal fluctuations in the groundwater.

NOTE: The CoC concentrations for the monitoring wells with free product are the solubility limits of gasoline constituents

NOTE: After free product has been removed, all wells that contained free product shall be sampled. The results from this sampling event shall be used as a baseline against which to measure the percent dissolved reduction.

UST # 06443, Mine Street Mart
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Table 4: Site-Specific Target Levels

Site-specific target levels (SSTLs) for interim payment under this solicitation in parts per billion (µg/l).

Well	Benzene	Toluene	Ethylbenzene	Xylene	Naph.	MtBE	EDB	1,2 DCA	TBA	TAA	DIPE
MW-1	3,286	26,540***	3,700***	21,680***	6,700***	106	1.33	18	369,681	755,184	2,670,000***
MW-2	2,477	26,540***	3,700***	21,680***	6,700***	102	1.15	17	290,006	531,918	2,670,000***
MW-6	3,286	559*	330*	1,260*	749*	106	.0063**	18	2,120*	30,000*	537*
MW-12R	508*	0.122**	0.109**	1.73*	39.7*	3.74*	.0063**	.116**	22.1*	894*	17.9*
MW-13R	323*	3,670*	1,750*	11,100*	801*	60.3*	.0063**	5.81**	14.5**	1,380*	13.8*
MW-14B	2,477	26,540***	3,700***	21,680***	6,700***	102	1.15	17	290,006	531,918	2,670,000***
MW-20	147	26,540***	3,700***	21,680***	1,381	67	.28	10	25,659	16,025	588,993
MW-20R	147	26,540***	3,700***	21,680***	1,381	67	.28	10	25,659	16,025	588,993
MW-26	63	3,060*	1,650*	9,880*	506	1.93**	.0063**	8	67,662	65,020	2,670,000***
MW-32	455	26,540***	3,700***	21,680***	5,258	79	.49	12	67,662	65,020	2,670,000***
MW-35	10,178	26,540***	3,430*	17,500*	3,180*	38.5**	2.36	58.1**	154**	17,700*	118**
MW-36	5,782	26,540***	3,700***	21,680***	6,700***	116	1.77	21	600,821	1,522,470	2,670,000***
MW-37	.555**	.609**	.545**	.894**	.880**	111	.0063**	.581**	1.45**	56.4*	29.0*
MW-38	1,408	2,810*	1,910*	6,310*	491*	94	.0063**	5.81**	86.6*	4,460*	43.7*
MW-39	1,124	26,540***	3,700***	21,680***	6,700***	90	.77	15	147,014	199,428	2,670,000***
MW-40	259	5,590*	2,240*	8,520*	881*	72	.0063**	5.81**	14.5**	4,350*	11.8**
MW-41	259	26,540***	3,210*	15,000*	1,500*	72	.37	171*	858*	27,000*	409*
MW-42	23.6*	.609**	.545**	.894**	26.6*	61	.0063**	10.4*	96.8*	2,090*	58.7*
Total	32,203	281,090	44,121	243,014	49,695	1,349	10	404	1,887,538	3,790,938	19,869,225

- * Laboratory analysis is less than calculated SSTL. SSTL is set equal to laboratory analysis.
- ** Laboratory analysis is below detection limit. SSTL is set equal to detection limit
- *** SSTL set to effective solubility in free product wells; however, new SSTL's will be established once free product has been removed.

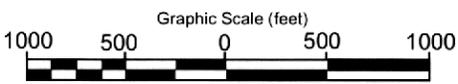
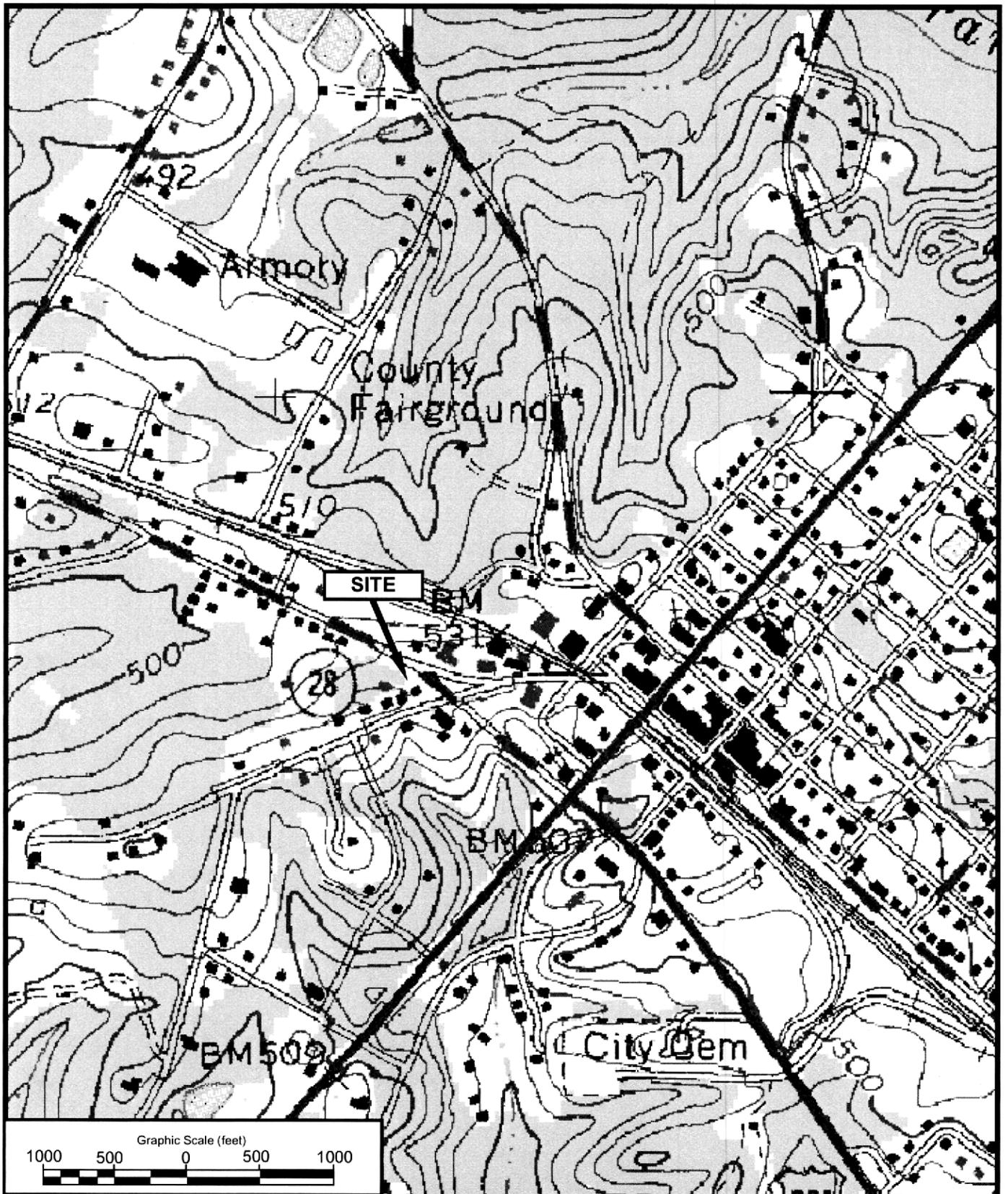
UST # 06443, Mine Street Mart
McCormick County

Site-specific target levels (SSTLs) for interim payment under this solicitation.

Monitoring Well	Free Product Thickness (feet)	SSTL
MW-1	1.00'	<0.01
MW-2	2.10'	<0.01
MW-14B	0.01'	<0.01
MW-20	0.29'	<0.01
MW-20R	0.23'	<0.01
MW-32	0.81'	<0.01
MW-36	0.13'	<0.01
MW-39	0.21'	<0.01
Total Initial Thickness	4.78'	
Total SSTL Thickness	0.08'	
Total Initial Thickness Above SSTL	4.70'	

List of Adjacent Facilities

No adjacent facilities located.



USGS TOPOGRAPHIC QUADRANGLE MAP
MCCORMICK, SOUTH CAROLINA

DATE: 1987

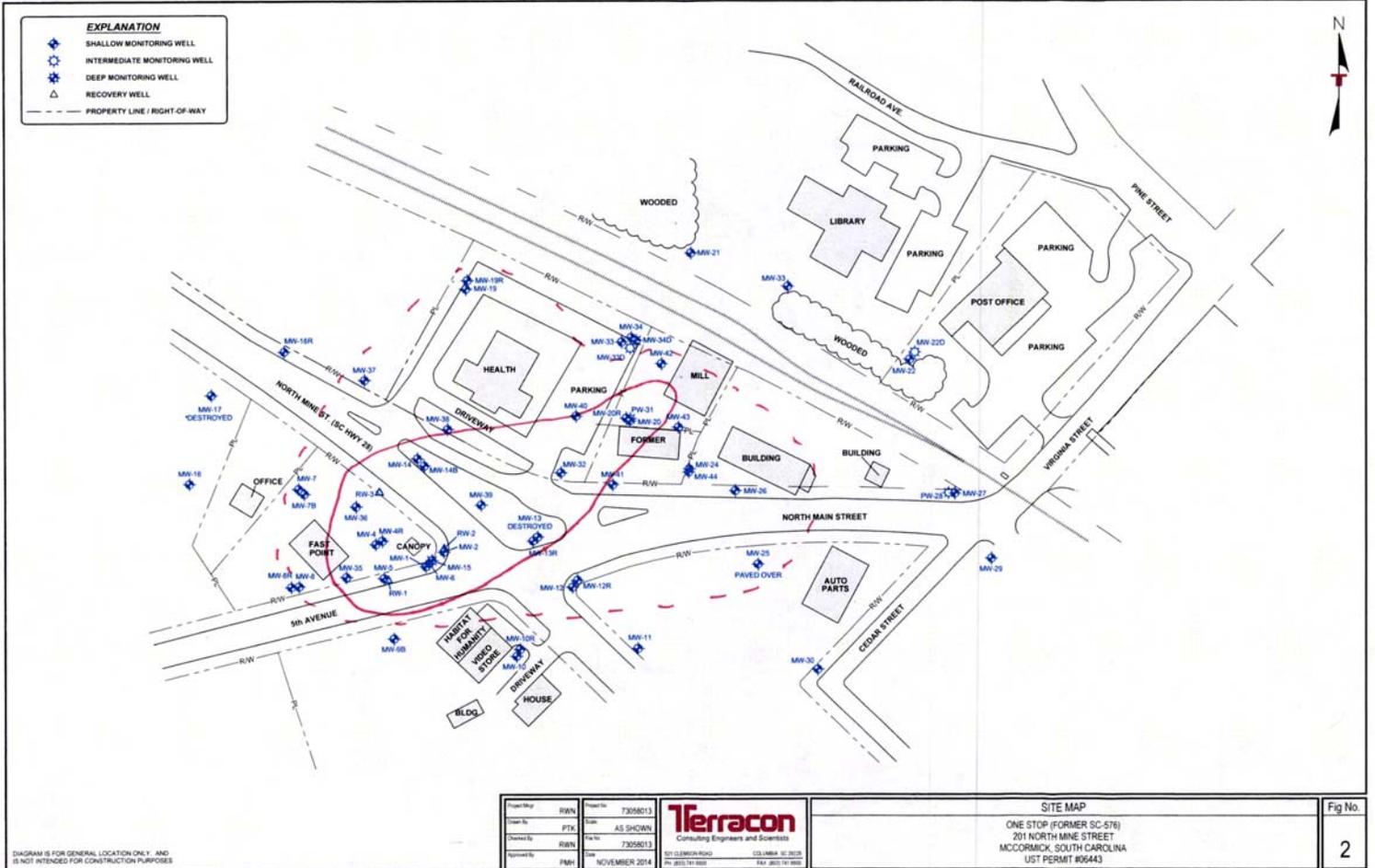
PROJECT NO. 73058013



SITE LOCATION MAP
ONE STOP (FORMER SC-576)
MCCORMICK, SOUTH CAROLINA
UST SITE NO. 06443

FIGURE 1





— = Area Free Product Concern
 --- = Area dissolved COC Concern

- NOTES
 1) GROUND WATER SAMPLES COLLECTED ON NOVEMBER 13-15, 2014.
 2) ALL CONCENTRATIONS REPORTED IN MICROGRAMS PER LITER (µg/L).
 3) CONCENTRATIONS IN BOLD RBLSL OR ALS.
 4) J. INDICATES ESTIMATED VALUE.

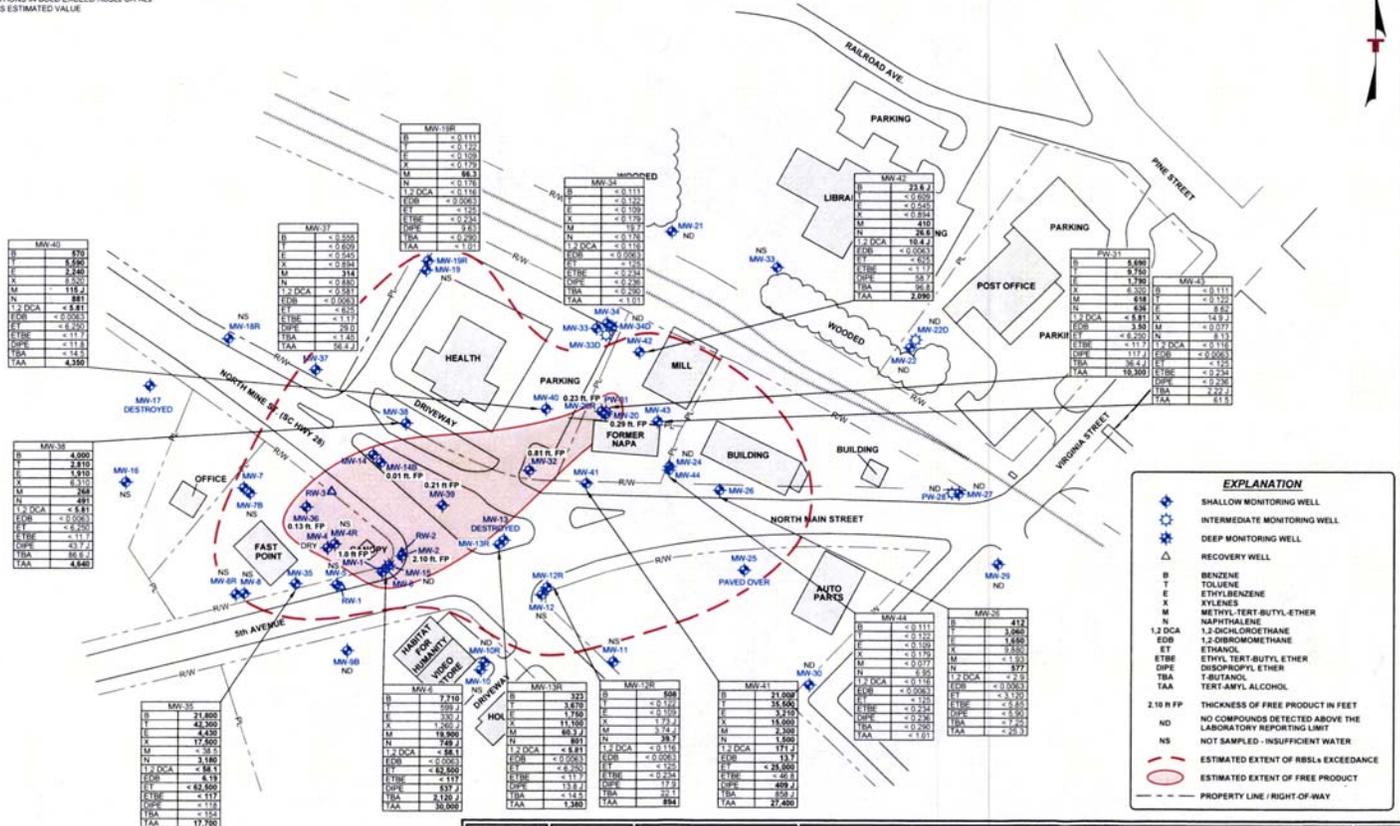


DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

Project No.	RAIN	73058013	 Terracon Consulting Engineers and Scientists
Drawn By	PTK	AS SHOWN	
Checked By	RAIN	73058013	
Approved By	PMH	DECEMBER 2014	

COC CONCENTRATION MAP		Fig No.
ONE STOP (FORMER SC-576)		4
201 NORTH MINE STREET		
MCCORMICK, SOUTH CAROLINA		

UST PERMIT #05443



EXPLANATION	
	SHALLOW MONITORING WELL
	INTERMEDIATE MONITORING WELL
	DEEP MONITORING WELL
	RECOVERY WELL
	GROUND WATER SURFACE CONTOUR
	GROUND WATER FLOW DIRECTION
	PROPERTY LINE / RIGHT-OF-WAY



NOTES:
 1) GROUND WATER ELEVATIONS WERE RECORDED ON NOVEMBER 3, 2014.
 2) DEEP MONITORING WELLS MW-10, MW-15, AND MW-34D WERE NOT USED IN CONTOURING THE INTERMEDIATE AQUIFER.

DIAGRAM IS FOR GENERAL LOCATION ONLY AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

Project No.	RAN	73058013	 Consulting Engineers and Scientists
Drawn By	PTK	AS SHOWN	
Checked By	RAN	73058013	321 GLENNON ROAD COLUMBIA, SC 29205 TEL: 803.747.9300 FAX: 803.747.9800
Approved By	JPM	DECEMBER 2014	

POTENTIOMETRIC SURFACE MAP OF THE LOWER PORTION OF THE SHALLOW AQUIFER	
ONE STOP (FORMER SC-576) 201 NORTH MINE STREET McCORMICK, SOUTH CAROLINA UST PERMIT #56443	

Fig No.	5A
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**TABLE 2
HISTORICAL GROUND WATER ELEVATION DATA**

**One Stop (Former SC-576)
201 North Mine Street, McCormick
UST PERMIT NO. 06443
Terracon Project No. 73058013**

WELL NUMBER	DATE MEASURED	SCREEN INTERVAL (ft bgs)	TOP OF CASING ELEVATION	DEPTH TO PRODUCT (ft btoc)	DEPTH TO GROUND WATER (ft btoc)	PRODUCT THICKNESS (ft)	GROUND WATER ELEVATION	
MW-1	10/11/96	20-30	100.03	22.20	23.23	1.03	77.60	
	9/19/01			29.40	30.01	0.61	70.50	
	9/18/02			DRY				
	5/28/03			19.34	23.15	3.81	79.85	
	12/20/04			28.37	29.57	1.20	71.40	
	6/05/07			26.05	28.40	2.35	73.46	
	6/17/08			NM	29.94	> 3.0	NC	
	1/6/09			DRY				
	1/24/11			ND	18.92	ND	81.11	
	11/3/14			27.50	28.5	1.0	71.53	
MW-2	10/11/96	20.5 -30.5	99.31	20.75	23.28	2.53	78.00	
	9/19/01			28.31	29.74	1.43	70.69	
	9/18/02			DRY				
	5/28/03			17.50	23.39	5.89	80.51	
	12/20/04			27.16	28.60	1.44	71.83	
	6/05/07			25.20	27.18	1.98	73.67	
	6/17/08			27.10	28.10	1.00	71.99	
	1/6/09			DRY				
	1/24/11			30.34	30.44	0.10	68.95	
	11/3/14			25.90	28	2.10	72.95	
MW-4	10/11/96	21.5-31.5	101.51	23.45	24.29	0.84	77.88	
	9/19/01			DRY				
	12/20/04			DRY				
	6/05/07			DRY				
	6/17/08			DRY				
	1/6/09			DRY				
	1/24/11			DRY				
	11/3/14			DRY				

**TABLE 2
HISTORICAL GROUND WATER ELEVATION DATA**

**One Stop (Former SC-576)
201 North Mine Street, McCormick
UST PERMIT NO. 06443
Terracon Project No. 73058013**

WELL NUMBER	DATE MEASURED	SCREEN INTERVAL (ft bgs)	TOP OF CASING ELEVATION	DEPTH TO PRODUCT (ft btoc)	DEPTH TO GROUND WATER (ft btoc)	PRODUCT THICKNESS (ft)	GROUND WATER ELEVATION			
MW-4R	9/18/02	20.5-30.5	101.56	DRY						
	5/28/03			19.51	20.84	1.33	81.75			
	12/20/04			ND	29.95	ND	71.61			
	6/05/07			27.40	29.49	2.09	73.70			
	6/17/08			DRY						
	1/6/09			ND	29.85	ND	71.71			
	1/24/11			ND	29.84	ND	71.72			
	11/3/14			ND	29.88	ND	71.68			
	MW-5			10/11/96	15-30	102.16	21.89	24.08	2.19	79.79
				9/19/01			30.74	32.76	2.02	70.98
9/18/02		DRY								
5/28/03		21.77	22.60	0.83			80.20			
12/20/04		29.89	30.90	1.01			72.05			
6/05/07		28.03	29.01	0.98			73.91			
6/17/08		31.55	30.65	0.90			72.21			
1/6/09		DRY								
1/24/11		NM	NM	NM			NM			
11/3/14		ND	29.30	ND			72.86			
MW-6	10/11/96	TD-58	100.45	ND	20.97	ND	79.48			
	9/19/01			ND	29.12	ND	71.33			
	9/18/02			ND	33.15	ND	67.30			
	5/28/03			ND	20.27	ND	80.18			
	12/20/04			ND	28.55	ND	71.90			
	6/05/07			ND	26.59	ND	73.86			
	6/17/08			ND	19.11	ND	81.34			
	1/6/09			ND	33.33	ND	67.12			
	1/24/11			NM	NM	NM	NM			
	11/3/14			ND	27.60	ND	72.85			

**TABLE 2
HISTORICAL GROUND WATER ELEVATION DATA**

**One Stop (Former SC-576)
201 North Mine Street, McCormick
UST PERMIT NO. 06443
Terracon Project No. 73058013**

WELL NUMBER	DATE MEASURED	SCREEN INTERVAL (ft bgs)	TOP OF CASING ELEVATION	DEPTH TO PRODUCT (ft btoc)	DEPTH TO GROUND WATER (ft btoc)	PRODUCT THICKNESS (ft)	GROUND WATER ELEVATION
MW-7B	10/11/96	15-30	101.43	ND	23.83	ND	77.60
	9/19/01			ND	29.86	ND	71.57
	9/18/02			NM	NM	NM	NM
	5/28/03			ND	18.00	ND	83.43
	12/20/04			DRY			
	6/05/07			ND	28.71	ND	72.72
	6/17/08			DRY			
	1/6/09			DRY			
	1/24/11			NM	NM	NM	NM
	11/3/14			ND	29.93	ND	71.50
MW-8	10/11/96	10-20	103.85	DRY			
	9/19/01			DRY			
	12/20/04			DRY			
	6/05/07			DRY			
	1/6/09			DRY			
	1/24/11			NM	NM	NM	NM
	11/3/14			NM	NM	NM	NM
MW-8R	9/18/02	25-40	103.89	ND	35.94	ND	67.95
	5/28/03			ND	22.97	ND	80.92
	12/20/04			ND	32.14	ND	71.75
	6/05/07			ND	29.58	ND	74.31
	6/17/08			ND	30.75	ND	73.14
	1/6/09			ND	36.24	ND	67.65
	1/24/11			NM	NM	NM	NM
	11/3/14			NM	NM	NM	NM

**TABLE 2
HISTORICAL GROUND WATER ELEVATION DATA**

One Stop (Former SC-576)
201 North Mine Street, McCormick
UST PERMIT NO. 06443
Terracon Project No. 73058013

WELL NUMBER	DATE MEASURED	SCREEN INTERVAL (ft bgs)	TOP OF CASING ELEVATION	DEPTH TO PRODUCT (ft btoc)	DEPTH TO GROUND WATER (ft btoc)	PRODUCT THICKNESS (ft)	GROUND WATER ELEVATION
MW-9B	10/11/96	15-30	98.99	ND	20.09	ND	78.90
	9/19/01			ND	28.32	ND	70.67
	9/18/02			DRY			
	5/28/03			ND	18.12	ND	80.87
	12/20/04			ND	26.73	ND	72.26
	6/05/07			ND	23.25	ND	75.74
	6/17/08			NM	26.65	ND	72.34
	1/6/09			DRY			
	1/24/11			NM	NM	NM	NM
	11/3/14			ND	26.11	ND	72.88
	MW-10			10/11/96	8-18	93.53	DRY
9/19/01		DRY					
9/18/02		DRY					
5/28/03		ND	14.05	ND			79.48
12/20/04		DRY					
6/05/07		DRY					
1/6/09		DRY					
1/24/11		NM	NM	NM			NM
11/3/14		ND	18.08	ND			75.45
MW-10R	6/6/07	24-39	93.31	ND	23.27	ND	70.04
	6/17/08			ND	24.18	ND	69.13
	1/6/09			ND	26.97	ND	66.34
	1/24/11			NM	NM	NM	NM
	11/3/14			ND	25.20	ND	68.11

**TABLE 2
HISTORICAL GROUND WATER ELEVATION DATA**

**One Stop (Former SC-576)
201 North Mine Street, McCormick
UST PERMIT NO. 06443
Terracon Project No. 73058013**

WELL NUMBER	DATE MEASURED	SCREEN INTERVAL (ft bgs)	TOP OF CASING ELEVATION	DEPTH TO PRODUCT (ft btoc)	DEPTH TO GROUND WATER (ft btoc)	PRODUCT THICKNESS (ft)	GROUND WATER ELEVATION
MW-11	10/11/96	5-15	85.80	ND	11.69	ND	74.11
	9/19/01			DRY			
	9/18/02			DRY			
	5/28/03			ND	9.65	ND	76.15
	12/20/04			DRY			
	6/05/07			ND	15.18	ND	70.62
	6/17/08			DRY			
	1/6/09			DRY			
	1/24/11			NM	NM	NM	NM
	11/3/14			ND	15.03	ND	70.77
MW-12	10/11/96	8.5-23.5	94.95	ND	19.16	ND	75.79
	9/19/01			DRY			
	12/20/04			DRY			
	6/05/07			DRY			
	1/6/09			DRY			
	1/24/11			NM	NM	NM	NM
	11/3/14			ND	23.25	ND	71.70
MW-12R	9/18/02	30-45	95.36	ND	30.66	ND	64.70
	5/28/03			ND	17.96	ND	77.40
	12/20/04			ND	25.38	ND	69.98
	6/05/07			ND	24.29	ND	71.07
	6/17/08			ND	25.40	ND	69.96
	1/6/09			ND	29.09	ND	66.27
	1/24/11			NM	NM	NM	NM
	11/3/14			ND	24.45	ND	70.91

**TABLE 2
HISTORICAL GROUND WATER ELEVATION DATA**

**One Stop (Former SC-576)
201 North Mine Street, McCormick
UST PERMIT NO. 06443
Terracon Project No. 73058013**

WELL NUMBER	DATE MEASURED	SCREEN INTERVAL (ft bgs)	TOP OF CASING ELEVATION	DEPTH TO PRODUCT (ft btoc)	DEPTH TO GROUND WATER (ft btoc)	PRODUCT THICKNESS (ft)	GROUND WATER ELEVATION	
MW-13	10/11/96	9.5-25	98.25	20.29	20.70	0.41	77.87	
	9/19/01			DRY				
	12/20/04			DRY				
	6/05/07			WELL DESTROYED				
MW-13R	9/18/02	29-44	98.33	ND	31.22	ND	67.11	
	5/28/03			18.30	18.60	0.30	79.96	
	12/20/04			26.56	26.76	0.20	71.73	
	6/05/07			24.26	24.34	0.08	74.05	
	6/17/08			ND	26.34	ND	71.99	
	1/6/09			31.23	31.77	0.54	66.56	
	1/24/11			29.00	29.01	0.01	69.33	
	11/3/14			ND	25.83	ND	72.50	
MW-14B	10/11/96	20-40	100.74	ND	23.08	ND	77.66	
	9/19/01			ND	32.54	ND	68.20	
	9/18/02			35.25	35.88	0.63	65.35	
	5/28/03			18.11	18.23	0.12	82.63	
	12/20/04			30.26	30.69	0.43	70.39	
	6/05/07			27.69	27.71	0.02	73.05	
	6/17/08			ND	30.80	ND	69.94	
	1/6/09			35.70	35.87	0.17	64.87	
	1/24/11			33.40	33.63	0.23	67.29	
	11/3/14			29.50	29.51	0.01	71.24	

**TABLE 2
HISTORICAL GROUND WATER ELEVATION DATA**

**One Stop (Former SC-576)
201 North Mine Street, McCormick
UST PERMIT NO. 06443
Terracon Project No. 73058013**

WELL NUMBER	DATE MEASURED	SCREEN INTERVAL (ft bgs)	TOP OF CASING ELEVATION	DEPTH TO PRODUCT (ft btoc)	DEPTH TO GROUND WATER (ft btoc)	PRODUCT THICKNESS (ft)	GROUND WATER ELEVATION
MW-15	10/11/96	125-130	100.08	ND	22.30	ND	77.78
	9/19/01			ND	29.12	ND	70.96
	9/18/02			ND	32.86	ND	67.22
	5/28/03			ND	20.18	ND	79.90
	12/20/04			ND	29.35	ND	70.73
	6/05/07			ND	26.50	ND	73.58
	6/17/08			ND	28.20	ND	71.88
	1/6/09			ND	33.03	ND	67.05
	1/24/11			NM	NM	NM	NM
	11/3/14			ND	27.69	ND	72.39
MW-16	10/11/96	13-23.5	100.57	DRY			
	9/19/01			ND	22.47	ND	78.10
	9/18/02			DRY			
	5/28/03			ND	17.84	ND	82.73
	12/20/04			DRY			
	6/17/08			ND	22.85	ND	77.72
	1/6/09			ND	22.93	ND	77.64
	1/24/11			NM	NM	NM	NM
	11/3/14			ND	22.46	ND	78.11
	MW-17			10/11/96	13-23.5	96.79	ND
9/19/01		WELL DESTROYED					
MW-18	10/11/96	13-23.5	95.79	ND	18.93	ND	76.86
	9/19/01			WELL DESTROYED			

**TABLE 2
HISTORICAL GROUND WATER ELEVATION DATA**

**One Stop (Former SC-576)
201 North Mine Street, McCormick
UST PERMIT NO. 06443
Terracon Project No. 73058013**

WELL NUMBER	DATE MEASURED	SCREEN INTERVAL (ft bgs)	TOP OF CASING ELEVATION	DEPTH TO PRODUCT (ft btoc)	DEPTH TO GROUND WATER (ft btoc)	PRODUCT THICKNESS (ft)	GROUND WATER ELEVATION
MW-18R	5/29/03	18-33	98.75	ND	16.23	ND	82.52
	12/20/04			ND	30.31	ND	68.44
	6/05/07			ND	28.46	ND	70.29
	6/17/08			ND	30.55	ND	68.2
	1/6/09			DRY			
	1/24/11			NM	NM	NM	NM
	11/3/14			ND	31.83	ND	66.92
MW-19	10/11/96	12-22.5	94.61	ND	17.60	ND	77.01
	9/19/01			ND	21.61	ND	73.00
	12/20/04			DRY			
	6/17/08			WELL CASING BENT; BAILER OBSTRUCTED			
	1/6/09			WELL CASING BENT; BAILER OBSTRUCTED			
	1/24/11			WELL CASING BENT; BAILER OBSTRUCTED			
	11/3/14			WELL CASING BENT; BAILER OBSTRUCTED			
MW-19R	9/18/02	30-45	94.07	ND	32.40	ND	61.67
	5/28/03			ND	12.29	ND	81.78
	12/20/04			ND	26.14	ND	67.93
	6/05/07			ND	24.71	ND	69.36
	6/17/08			ND	26.96	ND	67.11
	1/6/09			ND	31.19	ND	62.88
	1/24/11			NM	NM	NM	NM
	11/3/14			ND	28.26	ND	65.81

**TABLE 2
HISTORICAL GROUND WATER ELEVATION DATA**

**One Stop (Former SC-576)
201 North Mine Street, McCormick
UST PERMIT NO. 06443
Terracon Project No. 73058013**

WELL NUMBER	DATE MEASURED	SCREEN INTERVAL (ft bgs)	TOP OF CASING ELEVATION	DEPTH TO PRODUCT (ft btoc)	DEPTH TO GROUND WATER (ft btoc)	PRODUCT THICKNESS (ft)	GROUND WATER ELEVATION
MW-20	10/11/96	18-38.5	98.90	ND	23.94	ND	74.96
	9/19/01			DRY			
	12/20/04			29.39	30.21	0.82	69.33
	6/06/07			ND	28.75	ND	70.15
	6/17/08			29.80	30.53	0.73	67.80
	1/6/09			32.21	32.50	0.29	66.40
	1/24/11			30.64	30.69	0.05	68.17
	11/3/14			29.71	30.00	0.29	68.67
	MW-20R			9/18/02	34.5-49.5	98.38	ND
5/28/03		ND	20.75	ND			77.63
12/20/04		ND	29.24	ND			69.14
6/06/07		ND	28.39	ND			69.99
6/17/08		29.69	29.94	0.25			68.25
1/6/09		31.78	31.80	0.02			66.56
1/24/11		ND	30.19	ND			68.19
11/3/14		29.42	29.65	0.23			68.55
MW-21	8/13/96	30.3 -40.3	97.54	ND	27.19	ND	70.35
	9/19/01			ND	33.71	ND	63.83
	9/18/02			ND	38.09	ND	59.45
	5/28/03			ND	20.53	ND	77.01
	12/20/04			ND	32.14	ND	65.40
	6/05/07			ND	30.61	ND	66.93
	6/17/08			ND	31.66	ND	65.88
	1/6/09			ND	34.50	ND	63.04
	1/24/11			NM	NM	NM	NM
	11/3/14			ND	33.10	ND	64.44

**TABLE 2
HISTORICAL GROUND WATER ELEVATION DATA**

One Stop (Former SC-576)
201 North Mine Street, McCormick
UST PERMIT NO. 06443
Terracon Project No. 73058013

WELL NUMBER	DATE MEASURED	SCREEN INTERVAL (ft bgs)	TOP OF CASING ELEVATION	DEPTH TO PRODUCT (ft btoc)	DEPTH TO GROUND WATER (ft btoc)	PRODUCT THICKNESS (ft)	GROUND WATER ELEVATION
MW-22	8/13/96	32-42	100.87	ND	30.83	ND	70.04
	9/19/01			ND	36.06	ND	64.81
	9/18/02			ND	39.98	ND	60.89
	5/28/03			ND	26.97	ND	73.90
	12/20/04			NM	NM	NM	NM
	6/05/07			ND	33.00	ND	67.87
	6/17/08			ND	33.98	ND	66.89
	1/6/09			ND	33.50	ND	67.37
	1/24/11			NM	NM	NM	NM
	11/3/14			ND	34.77	ND	66.10
MW-22D	6/6/07	52-57	98.44	ND	35.08	ND	63.36
	6/17/08			ND	31.42	ND	67.02
	1/6/09			ND	35.45	ND	62.99
	1/24/11			NM	NM	NM	NM
	11/3/14			ND	31.13	ND	67.31
MW-24	10/11/96	35-40	97.17	ND	22.53	ND	74.64
	9/19/01			ND	28.20	ND	68.97
	9/18/02			ND	32.08	ND	65.09
	5/28/03			ND	22.24	ND	74.93
	12/20/04			ND	27.68	ND	69.49
	6/06/07			ND	26.15	ND	71.02
	6/17/08			ND	27.38	ND	69.79
	1/6/09			ND	30.61	ND	66.56
	1/24/11			NM	NM	NM	NM
	11/3/14			ND	26.49	ND	70.68

**TABLE 2
HISTORICAL GROUND WATER ELEVATION DATA**

One Stop (Former SC-576)
201 North Mine Street, McCormick
UST PERMIT NO. 06443
Terracon Project No. 73058013

WELL NUMBER	DATE MEASURED	SCREEN INTERVAL (ft bgs)	TOP OF CASING ELEVATION	DEPTH TO PRODUCT (ft btoc)	DEPTH TO GROUND WATER (ft btoc)	PRODUCT THICKNESS (ft)	GROUND WATER ELEVATION		
MW-25	10/11/96	15-30	94.97	ND	23.33	ND	71.64		
	9/19/01			ND	29.10	ND	65.87		
	9/18/02			ND	29.41	ND	65.56		
	5/28/03			ND	21.45	ND	73.52		
	12/20/04			ND	27.56	ND	67.41		
	6/05/07			ND	26.39	ND	94.97		
	6/17/08			ND	27.55	ND	67.42		
	1/6/09			ND	29.18	ND	65.79		
	1/24/11			NM	NM	NM	NM		
	11/3/14			PAVED OVER					
MW-26	10/11/96	15-30	96.36	ND	23.42	ND	72.94		
	9/19/01			ND	29.31	ND	67.05		
	9/18/02			DRY					
	5/28/03			ND	22.02	ND	74.34		
	12/20/04			ND	27.74	ND	68.62		
	6/06/07			ND	26.74	ND	69.62		
	6/17/08			ND	27.51	ND	68.85		
	1/6/09			ND	29.98	ND	66.38		
	1/24/11			ND	30.31	ND	66.05		
	11/3/14			ND	26.15	ND	70.21		
MW-27	12/20/04	25-40	93.34	ND	26.98	ND	66.36		
	6/05/07			ND	25.85	ND	67.49		
	6/17/08			ND	26.63	ND	66.71		
	1/6/09			ND	28.27	ND	65.07		
	1/24/11			NM	NM	NM	NM		
	11/3/14			ND	27.10	ND	66.24		

**TABLE 2
HISTORICAL GROUND WATER ELEVATION DATA**

**One Stop (Former SC-576)
201 North Mine Street, McCormick
UST PERMIT NO. 06443
Terracon Project No. 73058013**

WELL NUMBER	DATE MEASURED	SCREEN INTERVAL (ft bgs)	TOP OF CASING ELEVATION	DEPTH TO PRODUCT (ft btoc)	DEPTH TO GROUND WATER (ft btoc)	PRODUCT THICKNESS (ft)	GROUND WATER ELEVATION
PW-28	12/20/04	50-55	93.19	ND	28.31	ND	64.88
	6/05/07			ND	26.94	ND	66.25
	6/17/08			ND	27.00	ND	66.19
	1/6/09			ND	30.67	ND	62.52
	1/24/11			NM	NM	NM	NM
	11/3/14			ND	27.54	ND	65.65
MW-29	12/20/04	23-38	92.11	ND	26.62	ND	65.49
	6/05/07			ND	25.30	NM	66.81
	6/17/08			ND	26.38	ND	65.73
	1/6/09			ND	27.74	ND	64.37
	1/24/11			NM	NM	NM	NM
	11/3/14			ND	26.83	ND	65.28
MW-30	12/20/04	11-26	84.36	ND	19.65	ND	64.71
	6/05/07			ND	19.31	ND	65.05
	6/17/08			ND	20.18	ND	64.18
	1/6/09			ND	20.09	ND	64.27
	1/24/11			NM	NM	NM	NM
	11/3/14			ND	21.52	ND	62.84
PW-31	12/20/04	50-55	98.13	ND	29.35	ND	68.78
	6/06/07			ND	28.50	ND	69.63
	6/17/08			ND	29.63	ND	68.50
	1/6/09			ND	31.83	ND	66.30
	1/24/11			NM	NM	NM	NM
	11/3/14			ND	26.90	ND	71.23

**TABLE 2
HISTORICAL GROUND WATER ELEVATION DATA**

**One Stop (Former SC-576)
201 North Mine Street, McCormick
UST PERMIT NO. 06443
Terracon Project No. 73058013**

WELL NUMBER	DATE MEASURED	SCREEN INTERVAL (ft bgs)	TOP OF CASING ELEVATION	DEPTH TO PRODUCT (ft btoc)	DEPTH TO GROUND WATER (ft btoc)	PRODUCT THICKNESS (ft)	GROUND WATER ELEVATION
MW-32	6/6/07	20-35	97.73	ND	24.35	ND	73.38
	6/17/08			24.97	27.22	2.25	68.76
	1/6/09			31.11	33.11	2.00	64.62
	1/24/11			30.41	30.96	0.55	66.34
	11/3/14			25.64	26.45	0.81	70.65
MW-33	6/6/07	23-38	94.62	ND	25.81	ND	68.81
	6/17/08			ND	21.29	ND	73.33
	1/6/09			ND	21.39	ND	73.23
	1/24/11			NM	NM	NM	NM
	11/3/14			ND	20.93	ND	73.69
MW-34	1/11/10	19-34	95.61	NM	NM	NM	NM
	1/24/11			NM	NM	NM	NM
	11/3/14			ND	30.48	ND	65.13
MW-34D	1/11/10	55-60	95.71	ND	26.10	ND	69.61
	1/24/11			NM	NM	NM	NM
	11/3/14			ND	35.66	ND	60.05
MW-35	1/24/11	25-40	102.67	ND	32.99	ND	69.68
	11/3/14			ND	29.53	ND	73.14
MW-36	1/24/11	25-40	101.03	34.29	34.54	0.25	66.30
	11/3/14			29.82	29.95	0.13	70.98
MW-37	1/24/11	26-41	98.29	ND	33.40	ND	64.89
	11/3/14			ND	30.64	ND	67.65
MW-38	1/24/11	28-43	99.19	33.44	33.45	0.01	65.73
	11/3/14			ND	28.62	ND	70.57
MW-39	1/24/11	25-40	100.71	32.55	33.60	1.05	66.29
	11/3/14			28.65	28.86	0.21	71.85
MW-40	1/24/11	25-40	95.79	ND	28.08	ND	67.71
	11/3/14			ND	24.12	ND	71.67
MW-41	1/24/11	20-35	98.48	ND	29.58	ND	68.90

**TABLE 2
HISTORICAL GROUND WATER ELEVATION DATA**

**One Stop (Former SC-576)
201 North Mine Street, McCormick
UST PERMIT NO. 06443
Terracon Project No. 73058013**

WELL NUMBER	DATE MEASURED	SCREEN INTERVAL (ft bgs)	TOP OF CASING ELEVATION	DEPTH TO PRODUCT (ft btoc)	DEPTH TO GROUND WATER (ft btoc)	PRODUCT THICKNESS (ft)	GROUND WATER ELEVATION
	11/3/14			ND	25.76	ND	72.72
MW-42	1/24/11	19-34	98.89	ND	26.67	ND	72.22
	11/3/14			ND	26.00	ND	72.89
MW-43	1/24/11	25-40	101.13	ND	27.88	ND	73.25
	11/3/14			ND	26.55	ND	74.58
MW-44	1/24/11	20-35	97.01	ND	28.79	ND	68.22
	11/3/14			ND	26.79	ND	70.22

Notes:

- 1) Ground Water elevation corrected for free product using the following formula:

$$\text{GW Elev.} = \text{TOC Elevation} - [\text{Depth to Water} - (\text{F.P Thickness} * 0.78)],$$
 where gasoline has an assumed specific gravity of 0.78 g/cc.
- 2) ND - not detected
- 3) NA - data not available.
- 4) bgs - below ground surface
- 5) btoc - below top of casing

TABLE 3
GROUND WATER ANALYTICAL DATA
Petroleum Compounds

FORMER SC-576
201 North Mine Street, McCormick, SC
UST Permit No. 06443
Terracon Project No. 73058013

WELL NUMBER	SAMPLE DATE	BENZENE (µg/L)	TOLUENE (µg/L)	ETHYL- BENZENE (µg/L)	XYLENES (µg/L)	MTBE (µg/L)	NAPHTH- ALENE (µg/L)	1,2 DCA (µg/L)	EDB (µg/L)
<i>RBSL</i>	—	5	1,000	700	10,000	40	25	5	0.05
MW-1	10/11/96	1.03 ft FREE PRODUCT							
	9/19/01	0.61 ft FREE PRODUCT							
	9/18/02	DRY							
	5/28/03	3.81 ft FREE PRODUCT							
	12/20/04	1.20 ft FREE PRODUCT							
	6/5/07	2.35 ft FREE PRODUCT							
	6/17/08	> 3 ft FREE PRODUCT							
	1/7/09	DRY							
	11/3/14	1.00 ft FREE PRODUCT							
MW-2	10/11/96	2.53 ft FREE PRODUCT							
	9/19/01	1.43 ft FREE PRODUCT							
	9/18/02	DRY							
	5/28/03	5.89 ft FREE PRODUCT							
	12/20/04	1.44 ft FREE PRODUCT							
	6/5/07	1.98 ft FREE PRODUCT							
	6/17/08	1.00 ft FREE PRODUCT							
	1/7/09	DRY							
	11/3/14	2.10 ft FREE PRODUCT							
MW-4	10/11/96	0.84 ft FREE PRODUCT							
	9/19/01	DRY							
	12/20/04	DRY							
	6/5/07	DRY							
	1/7/09	DRY							
	11/3/14	DRY							

TABLE 3
GROUND WATER ANALYTICAL DATA
Petroleum Compounds

FORMER SC-576
201 North Mine Street, McCormick, SC
UST Permit No. 06443
Terracon Project No. 73058013

WELL NUMBER	SAMPLE DATE	BENZENE (µg/L)	TOLUENE (µg/L)	ETHYL-BENZENE (µg/L)	XYLENES (µg/L)	MTBE (µg/L)	NAPHTH-ALENE (µg/L)	1,2 DCA (µg/L)	EDB (µg/L)
RBSL	-	5	1,000	700	10,000	40	25	5	0.05
MW-4R	9/18/02	DRY							
	5/28/03	1.33 ft FREE PRODUCT							
	12/20/04	NOT SAMPLED							
	6/5/07	2.09 ft FREE PRODUCT							
	6/17/08	DRY							
	1/8/09	8,840	11,800	651	7,220	6,080	1,480	NA	NA
	11/3/14	INSUFFICIENT WATER TO SAMPLE							
MW-5	5/28/03	0.83 ft FREE PRODUCT							
	12/20/04	1.01 ft FREE PRODUCT							
	6/5/07	0.98 ft FREE PRODUCT							
	6/17/08	0.90 ft FREE PRODUCT							
	1/7/09	DRY							
	11/3/14	INSUFFICIENT WATER TO SAMPLE							
MW-6	10/11/96	NA	NA	NA	NA	NA	NA	NA	NA
	8/20/98	NA	NA	NA	NA	NA	NA	NA	NA
	9/19/01	10,300	165	BDL	1,460	5,860	249	NA	BDL
	9/18/02	15,200	684	291	2,278	13,500	356	NA	1.5
	5/28/03	11,400	213	136	1,641	13,200	385	NA	1.8
	12/21/04	13,000	300	320	1900	15,000	400	NA	1.2
	6/05/07	13,500	<200	<200	<600	17,500	<1000	<1000	<0.01
	6/19/08	6,760	< 100	< 100	< 300	15,100	< 500	< 500	NA
	1/7/09	18,000	291	293	535 J	24,000	967 J	NA	< 0.0035
	11/5/14	7,710	559 J	330 J	1,260 J	19,900	749 J	< 58.1	< 0.0063

**TABLE 3
GROUND WATER ANALYTICAL DATA
Petroleum Compounds**

**FORMER SC-576
201 North Mine Street, McCormick, SC
UST Permit No. 06443
Terracon Project No. 73058013**

WELL NUMBER	SAMPLE DATE	BENZENE (µg/L)	TOLUENE (µg/L)	ETHYL-BENZENE (µg/L)	XYLENES (µg/L)	MTBE (µg/L)	NAPHTH-ALENE (µg/L)	1,2 DCA (µg/L)	EDB (µg/L)
RBSL	–	5	1,000	700	10,000	40	25	5	0.05
MW-7B	10/11/96	35	94	43	174	BDL	18	NA	BDL
	8/20/98	31	15	41	141	BDI	41	NA	BDL
	9/19/01	NOT SAMPLED							
	9/18/02	NOT SAMPLED							
	5/28/03	1.77	BDL	1.1	4.6	5.75	BDL	NA	BDL
	12/20/04	DRY							
	6/05/07	4.9	9.4	1.9	10.4	4.7	<5	<5	<0.01
	6/17/08	DRY							
	1/7/09	DRY							
	11/3/14	INSUFFICIENT WATER TO SAMPLE							
MW-8	10/11/96	DRY							
	8/20/98	NA	NA	NA	NA	NA	NA	NA	NA
	9/19/01	DRY							
	12/20/04	DRY							
	06/05/07	DRY							
	6/17/08	DRY							
	1/7/09	DRY							
11/3/14	UNABLE TO ACCESS WELL								
MW-8R	9/18/02	BDL	BDL	BDL	BDL	BDL	BDL	NA	BDL
	5/28/03	BDL	BDL	BDL	BDL	BDL	BDL	NA	BDL
	12/21/04	BDL	BDL	BDL	BDL	BDL	BDL	NA	BDL
	6/06/07	<1	<1	<1	<1	<1	<5	<5	<0.010
	6/19/08	< 1.00	< 1.00	< 1.00	< 3.00	< 1.00	< 5.00	< 5.00	NA
	1/8/09	< 0.065	< 0.076	< 0.065	< 0.183	< 0.077	< 0.118	NA	< 0.0035
	11/3/14	UNABLE TO ACCESS WELL							

TABLE 3
GROUND WATER ANALYTICAL DATA
Petroleum Compounds

FORMER SC-576
201 North Mine Street, McCormick, SC
UST Permit No. 06443
Terracon Project No. 73058013

WELL NUMBER	SAMPLE DATE	BENZENE (µg/L)	TOLUENE (µg/L)	ETHYL-BENZENE (µg/L)	XYLENES (µg/L)	MTBE (µg/L)	NAPHTH-ALENE (µg/L)	1,2 DCA (µg/L)	EDB (µg/L)
RBSL	–	5	1,000	700	10,000	40	25	5	0.05
MW-9B	10/11/96	45	285	46	212	BDL	BDL	NA	BDL
	8/20/98	BDL	BDL	BDL	BDL	BDL	BDL	NA	BDL
	9/19/01	BDL	2.75	BDL	2.03	BDL	BDL	NA	BDL
	9/18/02	DRY							
	5/28/03	BDL	BDL	BDL	BDL	BDL	BDL	NA	0.11
	12/21/04	BDL	BDL	BDL	BDL	BDL	BDL	NA	BDL
	6/06/07	4.2	12.6	2.03	9.39	<1	<5	<5	<0.010
	6/19/08	< 1.00	< 1.00	< 1.00	< 3.00	< 1.00	< 5.00	< 5.00	NA
	1/7/09	DRY							
	11/4/14	< 0.111	< 0.122	< 0.109	< 0.179	< 0.077	< 0.176	< 0.116	< 0.0063
MW-10	10/11/96	DRY							
	9/19/01	DRY							
	9/18/02	DRY							
	5/28/03	BDL	BDL	BDL	BDL	BDL	BDL	NA	BDL
	12/20/04	DRY							
	6/06/07	DRY							
	1/7/09	DRY							
	11/3/14	INSUFFICIENT WATER TO SAMPLE							
MW-10R	6/07/07	3.28	4.1	<1	3.6	<1	<5	<5	<0.010
	6/19/08	< 1.00	< 1.00	< 1.00	< 3.00	< 1.00	< 5.00	< 5.00	NA
	1/8/09	< 0.065	< 0.076	< 0.065	< 0.183	< 0.077	< 0.118	NA	< 0.0035
	11/4/14	< 0.111	< 0.122	< 0.109	< 0.179	< 0.077	< 0.176	< 0.116	< 0.0063

TABLE 3
GROUND WATER ANALYTICAL DATA
Petroleum Compounds

FORMER SC-576
201 North Mine Street, McCormick, SC
UST Permit No. 06443
Terracon Project No. 73058013

WELL NUMBER	SAMPLE DATE	BENZENE (µg/L)	TOLUENE (µg/L)	ETHYL-BENZENE (µg/L)	XYLENES (µg/L)	MTBE (µg/L)	NAPHTH-ALENE (µg/L)	1,2 DCA (µg/L)	EDB (µg/L)
RBSL	--	5	1,000	700	10,000	40	25	5	0.05
MW-11	10/11/96	BDL	BDL	BDL	BDL	4.67	BDL	NA	BDL
	8/20/98	BDL	0.8	0.9	BDL	BDL	BDL	NA	BDL
	9/19/01	NOT SAMPLED							
	9/18/02	NOT SAMPLED							
	5/29/03	BDL	BDL	BDL	BDL	BDL	BDL	NA	BDL
	12/20/04	NOT SAMPLED							
	6/05/07	NOT SAMPLED							
	6/17/08	DRY							
	1/7/09	DRY							
	11/3/14	INSUFFICIENT WATER TO SAMPLE							
MW-12	10/11/96	2.2	BDL	BDL	BDL	BDL	BDL	NA	BDL
	8/20/98	2.2	1	BDL	BDL	BDL	BDL	NA	BDL
	9/19/01	DRY							
	12/20/04	DRY							
	6/5/07	DRY							
	1/7/09	DRY							
	11/3/14	INSUFFICIENT WATER TO SAMPLE							
MW-12R	9/18/02	139	BDL	BDL	BDL	1.3	11.1	NA	0.18
	5/28/03	178	BDL	BDL	1.7	BDL	19.2	NA	0.14
	12/20/04	230	BDL	BDL	BDL	BDL	21	NA	1.1
	6/06/07	332	<10	<10	<30	<10	<50	<50	<0.010
	6/18/08	322	< 5.00	< 5.00	< 15.0	< 5.00	38.9	< 25.0	NA
	1/7/09	751	< 0.378	< 0.326	< 0.917	< 0.385	52.5	NA	< 0.0035
	11/4/14	508	< 0.122	< 0.109	1.73 J	3.74 J	39.7	< 0.116	< 0.0063

**TABLE 3
GROUND WATER ANALYTICAL DATA
Petroleum Compounds**

**FORMER SC-576
201 North Mine Street, McCormick, SC
UST Permit No. 06443
Terracon Project No. 73058013**

WELL NUMBER	SAMPLE DATE	BENZENE (µg/L)	TOLUENE (µg/L)	ETHYL-BENZENE (µg/L)	XYLENES (µg/L)	MTBE (µg/L)	NAPHTH-ALENE (µg/L)	1,2 DCA (µg/L)	EDB (µg/L)
RBSL	–	5	1,000	700	10,000	40	25	5	0.05
MW-13	10/11/96	0.41 ft FREE PRODUCT							
	8/20/98	NA	NA	NA	NA	NA	NA	NA	NA
	9/19/01	DRY							
	12/20/04	DRY							
	6/05/07	WELL DESTROYED							
MW-13R	9/18/02	5,010	18,600	1,990	12,540	973	456	NA	3.6
	5/28/03	0.30 ft FREE PRODUCT							
	12/20/04	0.20 ft FREE PRODUCT							
	6/05/07	0.08 ft FREE PRODUCT							
	6/18/08	12,100	5,120	2,370	11,400	1,450	1,250	<500	NA
	1/7/09	0.54 ft FREE PRODUCT							
	11/4/14	323	3,670	1,750	11,100	60.3 J	801	<5.81	< 0.0063
MW-14B	10/11/96	7,800	18,100	2,300	10,600	BDL	BDL	NA	BDL
	8/20/98	7,225	12,612	1,244	6192	158	403	NA	42.4
	9/19/01	5,740	16,500	2,420	12,470	15.2	1,040	NA	16.9
	9/18/02	0.63 ft FREE PRODUCT							
	5/28/03	0.12 ft FREE PRODUCT							
	12/20/04	0.43 ft FREE PRODUCT							
	6/05/07	2,130	19,700	4,080	22,400	<100	866	<500	<0.010
	6/18/08	3,730	24,700	4,780	19,400	< 500	3,360	< 2,500	NA
	1/7/09	0.17 ft FREE PRODUCT							
	1/7/09	0.01 ft FREE PRODUCT							

TABLE 3
GROUND WATER ANALYTICAL DATA
Petroleum Compounds

FORMER SC-576
201 North Mine Street, McCormick, SC
UST Permit No. 06443
Terracon Project No. 73058013

WELL NUMBER	SAMPLE DATE	BENZENE (µg/L)	TOLUENE (µg/L)	ETHYL-BENZENE (µg/L)	XYLENES (µg/L)	MTBE (µg/L)	NAPHTH-ALENE (µg/L)	1,2 DCA (µg/L)	EDB (µg/L)
RBSL	–	5	1,000	700	10,000	40	25	5	0.05
MW-15	10/11/96	NA	NA	NA	NA	NA	NA	NA	NA
	8/20/98	NA	NA	NA	NA	NA	NA	NA	NA
	9/19/01	BDL	BDL	BDL	BDL	BDL	BDL	NA	BDL
	9/18/02	3.3	BDL	BDL	BDL	6.9	2.1	NA	BDL
	5/28/03	BDL	BDL	BDL	BDL	6.54	BDL	NA	BDL
	12/21/04	2.2	BDL	BDL	BDL	12	BDL	NA	BDL
	6/05/07	50.5	10.7	2	11.5	49.6	<5	<5	<0.010
	6/19/08	21.1	3.45	5.07	12.8	31.1	6.34	< 5.00	NA
	1/8/09	81.7	< 0.076	< 0.065	< 0.183	55.6	2.24 J	NA	< 0.0035
11/5/14	< 0.111	< 0.122	< 0.109	< 0.179	< 0.077	< 0.176	< 0.116	< 0.0063	
MW-16	10/11/96	NA	NA	NA	NA	NA	NA	NA	NA
	8/20/98	NA	NA	NA	NA	NA	NA	NA	NA
	9/19/01	BDL	BDL	BDL	BDL	1.71	BDL	NA	BDL
	9/18/02	NOT SAMPLED							
	5/28/03	BDL	7.05	3.81	23.5	1.85	BDL	NA	BDL
	12/20/04	NOT SAMPLED							
	6/05/07	NOT SAMPLED							
	6/18/08	< 1.00	< 1.00	< 1.00	< 3.00	< 1.00	< 5.00	< 5.00	NA
	1/8/09	< 0.065	< 0.076	< 0.065	< 0.183	< 0.077	< 0.118	NA	NA
11/3/14	INSUFFICIENT WATER TO SAMPLE								
MW-17	10/11/96	BDL	BDL	BDL	BDL	1.71	BDL	NA	BDL
	6/05/07	WELL DESTROYED							
MW-18	10/11/96	BDL	BDL	BDL	BDL	BDL	BDL	NA	BDL
	8/20/98	BDL	BDL	BDL	BDL	BDL	BDL	NA	BDL
	6/05/07	WELL DESTROYED							

**TABLE 3
GROUND WATER ANALYTICAL DATA
Petroleum Compounds**

**FORMER SC-576
201 North Mine Street, McCormick, SC
UST Permit No. 06443
Terracon Project No. 73058013**

WELL NUMBER	SAMPLE DATE	BENZENE (µg/L)	TOLUENE (µg/L)	ETHYL-BENZENE (µg/L)	XYLENES (µg/L)	MTBE (µg/L)	NAPHTH-ALENE (µg/L)	1,2 DCA (µg/L)	EDB (µg/L)
RBSL	--	5	1,000	700	10,000	40	25	5	0.05
MW-18R	5/28/03	BDL	BDL	BDL	BDL	8.94	BDL	NA	BDL
	12/21/04	BDL	BDL	BDL	BDL	BDL	BDL	NA	BDL
	6/06/07	<1	1.77	<1	<3	<1	<5	<5	<0.010
	6/18/08	< 1.00	< 1.00	< 1.00	< 3.00	< 1.00	< 5.00	< 5.00	NA
	1/7/09	DRY							
	11/3/14	INSUFFICIENT WATER TO SAMPLE							
MW-19	10/11/96	BDL	BDL	BDL	BDL	BDL	BDL	NA	BDL
	8/20/98	BDL	1	BDL	BDL	BDL	BDL	NA	BDL
	9/19/01	DRY							
	12/20/04	DRY							
	6/05/07	WELL CASING BENT; BAILER OBSTRUCTED							
	1/7/09	WELL CASING BENT; BAILER OBSTRUCTED							
MW-19R	9/18/02	BDL	BDL	BDL	BDL	36.9	BDL	NA	BDL
	5/29/03	BDL	BDL	BDL	BDL	BDL	BDL	NA	BDL
	12/21/04	BDL	BDL	BDL	BDL	41	BDL	NA	BDL
	6/06/07	<1	<1	<1	<3	54.7	<5	<5	<0.010
	6/18/08	< 1.00	< 1.00	< 1.00	< 3.00	66.5	< 5.00	< 5.00	NA
	1/7/09	< 0.065	< 0.076	< 0.065	< 0.183	61.6	< 0.118	NA	< 0.0035
	11/3/14	< 0.111	< 0.122	< 0.109	< 0.179	66.3	< 0.176	< 0.116	< 0.0063
MW-20	10/11/96	10,800	17,800	1,900	9,240	1,800	BDL	NA	BDL
	8/20/98	9,950	19,800	3,050	16,150	1,500	5,150	NA	678
	9/19/01	DRY							
	12/20/04	0.82 ft FREE PRODUCT							
	6/07/07	4,750	17,400	3,010	15,900	147	1,230	<500	<0.010
	6/18/08	0.73 ft FREE PRODUCT							
	1/7/09	0.29 ft FREE PRODUCT							
	11/3/14	0.29 ft FREE PRODUCT							

TABLE 3
GROUND WATER ANALYTICAL DATA
Petroleum Compounds

FORMER SC-576
201 North Mine Street, McCormick, SC
UST Permit No. 06443
Terracon Project No. 73058013

WELL NUMBER	SAMPLE DATE	BENZENE (µg/L)	TOLUENE (µg/L)	ETHYL-BENZENE (µg/L)	XYLENES (µg/L)	MTBE (µg/L)	NAPHTH-ALENE (µg/L)	1,2 DCA (µg/L)	EDB (µg/L)	
RBSL	–	5	1,000	700	10,000	40	25	5	0.05	
MW-20R	9/18/02	14,500	25,000	2,040	8,590	1,010	446	NA	46	
	5/29/03	5,180	10,100	799	4,540	209	393	NA	E-67	
	12/21/04	9,100	20,000	1,900	9800	890	660	NA	54	
	6/07/07	8,750	13,800	1,490	6,820	973	<500	<500	<0.010	
	6/18/08	0.25 ft FREE PRODUCT								
	1/7/09	0.02 ft FREE PRODUCT								
	11/3/14	0.23 ft FREE PRODUCT								
MW-21	10/11/96	BDL	BDL	BDL	BDL	BDL	BDL	NA	BDL	
	8/20/98	BDL	BDL	BDL	BDL	BDL	BDL	NA	BDL	
	9/19/01	BDL	BDL	BDL	BDL	BDL	BDL	NA	BDL	
	9/18/02	BDL	BDL	BDL	BDL	BDL	BDL	NA	BDL	
	5/28/03	BDL	BDL	BDL	BDL	BDL	BDL	NA	BDL	
	12/20/04	BDL	BDL	BDL	BDL	BDL	BDL	NA	BDL	
	6/05/07	1.52	2.89	<1	<3	<1	<5	<5	<0.010	
	6/18/08	< 1.00	< 1.00	< 1.00	< 3.00	< 1.00	< 5.00	< 5.00	NA	
	1/7/09	< 0.065	< 0.076	< 0.065	< 0.183	< 0.077	< 0.118	NA	< 0.0035	
	11/3/14	< 0.111	< 0.122	< 0.109	< 0.179	< 0.077	< 0.176	< 0.116	< 0.0063	
MW-22	10/11/96	BDL	BDL	BDL	BDL	BDL	BDL	NA	BDL	
	8/20/98	BDL	BDL	BDL	BDL	BDL	BDL	NA	BDL	
	9/19/01	BDL	BDL	BDL	BDL	BDL	BDL	NA	BDL	
	9/18/02	BDL	BDL	BDL	BDL	BDL	BDL	NA	BDL	
	5/29/03	BDL	BDL	BDL	BDL	BDL	BDL	NA	BDL	
	12/20/04	NOT SAMPLED								
	6/05/07	1.23	1.86	<1	<3	<1	<5	<5	<0.010	
	6/18/08	< 1.00	< 1.00	< 1.00	< 3.00	< 1.00	< 5.00	< 5.00	NA	
	1/7/09	< 0.065	< 0.076	< 0.065	< 0.183	< 0.077	< 0.118	NA	< 0.0035	
	11/4/14	< 0.111	< 0.122	< 0.109	< 0.179	< 0.077	< 0.176	< 0.116	< 0.0063	

TABLE 3
GROUND WATER ANALYTICAL DATA
Petroleum Compounds

FORMER SC-576
201 North Mine Street, McCormick, SC
UST Permit No. 06443
Terracon Project No. 73058013

WELL NUMBER	SAMPLE DATE	BENZENE (µg/L)	TOLUENE (µg/L)	ETHYL-BENZENE (µg/L)	XYLENES (µg/L)	MTBE (µg/L)	NAPHTH-ALENE (µg/L)	1,2 DCA (µg/L)	EDB (µg/L)
<i>RBSL</i>	–	5	1,000	700	10,000	40	25	5	0.05
MW-22D	6/07/07	3.2	8.2	1.24	6.01	<1	<5	<5	<0.010
	6/18/08	< 1.00	< 1.00	< 1.00	< 3.00	< 1.00	< 5.00	< 5.00	NA
	1/7/09	< 0.065	< 0.076	< 0.065	< 0.183	< 0.077	< 0.118	NA	< 0.0035
	11/4/14	< 0.111	< 0.122	< 0.109	< 0.179	< 0.077	< 0.176	< 0.116	< 0.0063
MW-24	10/11/96	BDL	135	155	715	BDL	BDL	NA	BDL
	8/20/98	2.6	2	12	86	BDL	12.9	NA	0.18
	9/19/01	BDL	BDL	BDL	BDL	4.67	BDL	NA	BDL
	9/18/02	BDL	BDL	BDL	6.4	BDL	1.6	NA	BDL
	5/29/03	BDL	BDL	BDL	BDL	BDL	BDL	NA	BDL
	12/20/04	BDL	BDL	BDL	BDL	BDL	BDL	NA	0.021
	6/07/07	<1	<1	<1	<3	<1	<5	<5	<0.010
	6/18/08	< 1.00	< 1.00	< 1.00	< 3.00	< 1.00	< 5.00	< 5.00	NA
	1/7/09	< 0.065	< 0.076	< 0.065	< 0.183	< 0.077	< 0.118	NA	< 0.0035
	11/4/14	< 0.111	< 0.122	< 0.109	< 0.179	< 0.077	< 0.176	< 0.116	< 0.0063
MW-25	10/11/96	2,510	85	2,160	4,590	447	480	NA	BDL
	8/20/98	3,081	19	6	3,046	788	393	NA	2.48
	9/19/01	2.64	5.37	2.1	42.2	BDL	1.09	NA	BDL
	5/29/03	740	4.58	BDL	269.8	562	112	NA	0.34
	1/7/09	23.7	< 0.076	< 0.065	< 0.183	48.2	5.01	NA	< 0.0035
	12/20/04	1,200	BDL	BDL	210	370	180	NA	0.16
	6/05/07	27	9.18	1.26	5.89	130	<5	<5	<0.010
	6/18/08	71.0	1.39	< 1.00	5.77	151	26.1	< 5.00	NA
	1/7/09	23.7	< 0.076	< 0.065	< 0.065	48.2	5.01	NA	< 0.0035
	11/3/14	PAVED OVER							

TABLE 3
GROUND WATER ANALYTICAL DATA
Petroleum Compounds

FORMER SC-576
201 North Mine Street, McCormick, SC
UST Permit No. 06443
Terracon Project No. 73058013

WELL NUMBER	SAMPLE DATE	BENZENE (µg/L)	TOLUENE (µg/L)	ETHYL-BENZENE (µg/L)	XYLENES (µg/L)	MTBE (µg/L)	NAPHTH-ALENE (µg/L)	1,2 DCA (µg/L)	EDB (µg/L)
RBSL	--	5	1,000	700	10,000	40	25	5	0.05
MW-26	10/11/96	9,200	18,370	2,100	9,800	BDL	BDL	NA	BDL
	8/20/98	9,760	19,053	2,455	12,534	200	728	NA	45
	9/19/01	999	4,220	906	4,660	BDL	2,070	NA	BDL
	9/18/02	DRY							
	5/29/03	6,110	15,300	2,650	14,020	<100	672	NA	E-15
	12/20/04	3,400	21,000	2,700	15,000	<89	940	NA	6.1
	6/06/07	1,730	8,510	904	5,720	<200	<1000	<1000	<0.010
	6/18/08	3,080	20,500	3,450	16,200	< 250	2,120	< 1,250	NA
	1/7/09	2,640	15,800	2,930	18,600	< 7.69	983	NA	0.171
11/4/14	412	3,060	1,650	9,880	< 1.93	577	< 2.9	< 0.0063	
MW-27	12/20/04	BDL	BDL	BDL	BDL	BDL	BDL	NA	BDL
	6/06/07	<1	<1	<1	<3	<1	<5	<5	<0.010
	6/18/08	< 1.00	< 1.00	< 1.00	< 3.00	< 1.00	< 5.00	< 5.00	NA
	1/7/09	< 0.065	< 0.076	< 0.065	< 0.183	< 0.077	< 0.118	NA	< 0.0035
	11/4/14	< 0.111	< 0.122	< 0.109	< 0.179	< 0.077	< 0.176	< 0.116	< 0.0063
PW-28	12/20/04	BDL	BDL	BDL	BDL	BDL	BDL	NA	BDL
	6/07/07	8.74	10.4	1.30	6.63	<1	<5	<5	0.036
	6/18/08	< 1.00	1.67	< 1.00	5.56	< 1.00	< 5.00	< 5.00	NA
	1/7/09	< 0.065	< 0.076	< 0.065	< 0.183	< 0.077	< 0.118	NA	< 0.0035
	11/4/14	< 0.111	< 0.122	< 0.109	< 0.179	< 0.077	< 0.176	< 0.116	< 0.0063
MW-29	12/20/04	BDL	BDL	BDL	BDL	BDL	BDL	NA	BDL
	6/06/07	<1	<1	<1	<3	<1	<5	<5	<0.010
	6/18/08	< 1.00	< 1.00	< 1.00	< 3.00	< 1.00	< 5.00	< 5.00	NA
	1/7/09	< 0.065	< 0.076	< 0.065	< 0.183	< 0.077	< 0.118	NA	< 0.0035
	11/4/14	< 0.111	< 0.122	< 0.109	< 0.179	< 0.077	< 0.176	< 0.116	< 0.0063

**TABLE 3
GROUND WATER ANALYTICAL DATA
Petroleum Compounds**

**FORMER SC-576
201 North Mine Street, McCormick, SC
UST Permit No. 06443
Terracon Project No. 73058013**

WELL NUMBER	SAMPLE DATE	BENZENE (µg/L)	TOLUENE (µg/L)	ETHYL-BENZENE (µg/L)	XYLENES (µg/L)	MTBE (µg/L)	NAPHTH-ALENE (µg/L)	1,2 DCA (µg/L)	EDB (µg/L)
RBSL	—	5	1,000	700	10,000	40	25	5	0.05
MW-30	12/20/04	BDL	BDL	BDL	BDL	BDL	BDL	NA	BDL
	6/06/07	<1	<1	<1	<3	<1	<5	<5	<0.010
	6/18/08	< 1.00	< 1.00	< 1.00	< 3.00	< 1.00	< 5.00	< 5.00	NA
	1/7/09	< 0.065	< 0.076	< 0.065	< 0.183	< 0.077	< 0.118	NA	< 0.0035
	11/4/14	< 0.111	< 0.122	< 0.109	< 0.179	< 0.077	< 0.176	< 0.116	< 0.0063
PW-31	12/21/04	7,100	15,000	1,600	8500	700	440	NA	42
	6/07/07	8,640	13,100	1,380	6,830	1,030	<500	<500	<0.010
	6/18/08	6,970	16,900	2,540	9,360	568	1,660	< 1,250	NA
	1/7/09	6,510	11,100	2,020	9,580	515	503 J	NA	1.34
	11/3/14	5,690	9,750	1,790	6,320	618	636	< 5.81	3.50
MW-32	6/07/07	13,700	16,000	2,040	10,100	2,160	872	<500	0.142
	6/18/08	2.25 ft FREE PRODUCT							
	1/7/09	2.00 ft FREE PRODUCT							
	11/3/14	0.81 ft FREE PRODUCT							
MW-33	6/07/07	8.95	11.6	1.07	5.87	<1	<5	<5	<0.010
	6/18/08	< 1.00	< 1.00	< 1.00	< 3.00	< 1.00	< 5.00	< 5.00	NA
	1/7/09	< 0.065	< 0.076	< 0.065	< 0.183	< 0.077	< 0.118	NA	< 0.0035
	11/3/14	INSUFFICIENT WATER TO SAMPLE							
MW-34	11/3/14	< 0.111	< 0.122	< 0.109	< 0.179	19.7	< 0.176	< 0.116	< 0.0063
MW-34D	11/3/14	< 0.111	< 0.122	< 0.109	< 0.179	< 0.077	< 0.176	< 0.116	< 0.0063
MW-35	11/4/14	21,800	42,300	3,430	17,500	< 38.5	3,180	< 58.1	6.19
MW-36	11/3/14	0.13 ft FREE PRODUCT							
MW-37	11/3/14	< 0.555	< 0.609	< 0.545	< 0.894	314	< 0.880	< 0.581	< 0.0063
MW-38	11/5/14	4,000	2,810	1,910	6,310	268	491	< 5.81	< 0.0063
MW-38 Dup	11/5/14	3,990	2,310	1,470	5,060	281	500	< 5.81	< 0.0063
MW-39	11/3/14	0.21 ft FREE PRODUCT							
MW-40	11/3/14	570	5,590	2,240	8,520	115 J	881	< 5.81	< 0.0063
MW-40 Dup	11/3/14	601	6,120	2,880	10,600	123 J	1,080	< 5.81	0.019
MW-41	11/4/14	21,000	35,500	3,210	15,000	2,300	1,500	171 J	13.7

TABLE 3
GROUND WATER ANALYTICAL DATA
Petroleum Compounds

FORMER SC-576
201 North Mine Street, McCormick, SC
UST Permit No. 06443
Terracon Project No. 73058013

WELL NUMBER	SAMPLE DATE	BENZENE (µg/L)	TOLUENE (µg/L)	ETHYL-BENZENE (µg/L)	XYLENES (µg/L)	MTBE (µg/L)	NAPHTH-ALENE (µg/L)	1,2 DCA (µg/L)	EDB (µg/L)
<i>RBSL</i>	-	5	<i>1,000</i>	<i>700</i>	<i>10,000</i>	<i>40</i>	<i>25</i>	<i>5</i>	<i>0.05</i>
MW-42	11/3/14	23.6 J	< 0.609	< 0.545	< 0.894	410	26.6	10.4 J	< 0.0063
MW-43	11/3/12	< 0.111	< 0.122	8.62	14.9 J	< 0.077	8.13	< 0.116	< 0.0063
MW-44	11/4/14	< 0.111	< 0.122	< 0.109	< 0.179	< 0.077	6.95	< 0.116	< 0.0063
Field Blank	11/3/14	< 0.111	< 0.122	< 0.109	< 0.179	< 0.077	< 0.176	< 0.116	< 0.0063
	11/4/14	< 0.111	< 0.122	< 0.109	< 0.179	< 0.077	< 0.176	< 0.116	< 0.0063
	11/5/14	< 0.111	< 0.122	< 0.109	< 0.179	< 0.077	< 0.176	< 0.116	< 0.0063
Trip Blank	11/3/14	< 0.111	< 0.122	< 0.109	< 0.179	< 0.077	< 0.176	< 0.116	NA

Notes:

- 1 Results shown in boldface type indicate concentrations which exceed the RBSL for that compound
- 2 BDL - below laboratory method detection limit
- 3 µg/L - micrograms per liter or parts per billion
- 4 NS- not sampled. There was not a sufficient amount of water in the monitoring well to allow for analysis
- 5 NA- not analyzed/ data not available
- 6 MTBE - Methyl-tert-butyl-ether
- 7 EDB - 1,2- Dibromomethane
- 9 1, 2 DCA - 1,2 Dichloroethane
- 10 RBSL- Risk-Based Screening Level as defined by the SCDHEC RBCA Document

TABLE 3A
GROUND WATER ANALYTICAL DATA
Petroleum Compounds (Oxygenates)

FORMER SC-576
201 North Mine Street, McCormick, SC
UST Permit No. 06443
Terracon Project No. 73058013

WELL NUMBER	SAMPLE DATE	Ethanol (µg/L)	ETBE (µg/L)	DIPE (µg/L)	ETBA (µg/L)	TBA (µg/L)	TAME (µg/L)	TAA (µg/L)	TBF (µg/L)
RBSL	--	10,000	47	150	NE	1,400	128	240	NE
MW-1	11/3/14	1.0 ft FREE PRODUCT							
MW-2	11/3/14	2.10 ft FREE PRODUCT							
MW-4	11/3/14	DRY							
MW-4R	11/3/14	INSUFFICIENT WATER TO SAMPLE							
MW-5	11/3/14	INSUFFICIENT WATER TO SAMPLE							
MW-6	11/5/14	< 62,500	< 117	537 J	< 18,800	2,120 J	< 120	30,000	< 243
MW-7B	11/3/14	INSUFFICIENT WATER TO SAMPLE							
MW-8	11/3/14	UNABLE TO ACCESS WELL							
MW-8R	11/3/14	UNABLE TO ACCESS WELL							
MW-9B	11/4/14	< 125	< 0.234	< 0.236	< 37.6	< 0.290	< 0.240	70.4	< 0.487
MW-10	11/3/14	INSUFFICIENT WATER TO SAMPLE							
MW-10R	11/4/14	< 125	< 0.234	< 0.236	< 37.6	< 0.290	< 0.240	< 1.01	< 0.487
MW-11	11/3/14	INSUFFICIENT WATER TO SAMPLE							
MW-12	11/3/14	INSUFFICIENT WATER TO SAMPLE							
MW-12R	11/4/14	< 125	< 0.234	17.9	< 37.6	22.1	< 0.240	894	< 0.487
MW-13R	11/4/14	< 6,250	< 11.7	13.8 J	< 1,880	< 14.5	< 12.0	1,380	< 24.3
MW-14B	11/3/14	0.01 ft FREE PRODUCT							
MW-15	11/5/14	< 125	< 0.234	< 0.236	< 37.6	< 0.290	< 0.240	< 1.01	< 0.487
MW-16	11/3/14	INSUFFICIENT WATER TO SAMPLE							
MW-18R	11/3/14	INSUFFICIENT WATER TO SAMPLE							
MW-19	11/3/14	WELL CASING BENT; BAILER OBSTRUCTED							
MW-19R	11/3/14	< 125	< 0.234	9.63	< 37.6	< 0.290	< 0.240	< 1.01	< 0.487
MW-20	11/3/14	0.29 ft FREE PRODUCT							
MW-20R	11/3/14	0.23 ft FREE PRODUCT							
MW-21	11/3/14	< 125	< 0.234	< 0.236	< 37.6	< 0.290	< 0.240	< 1.01	< 0.487
MW-22	11/4/14	< 125	< 0.234	< 0.236	< 37.6	< 0.290	< 0.240	< 1.01	< 0.487
MW-22D	11/4/14	< 125	< 0.234	< 0.236	< 37.6	< 0.290	< 0.240	< 1.01	< 0.487
MW-24	11/4/14	< 125	< 0.234	< 0.236	< 37.6	< 0.290	< 0.240	< 1.01	< 0.487

TABLE 3A
GROUND WATER ANALYTICAL DATA
Petroleum Compounds (Oxygenates)

FORMER SC-576
201 North Mine Street, McCormick, SC
UST Permit No. 06443
Terracon Project No. 73058013

WELL NUMBER	SAMPLE DATE	Ethanol (µg/L)	ETBE (µg/L)	DIPE (µg/L)	ETBA (µg/L)	TBA (µg/L)	TAME (µg/L)	TAA (µg/L)	TBF (µg/L)
RBSL	–	10,000	47	150	NE	1,400	128	240	NE
MW-25	11/3/14	PAVED OVER							
MW-26	11/4/14	< 3,120	< 5.85	< 5.90	< 940	< 7.25	< 6.00	< 25.3	< 12.2
MW-27	11/4/14	< 125	< 0.234	< 0.236	< 37.6	< 0.290	< 0.240	< 1.01	< 0.487
PW-28	11/4/14	< 125	< 0.234	< 0.236	< 37.6	< 0.290	< 0.240	< 1.01	< 0.487
MW-29	11/4/14	< 125	< 0.234	< 0.236	< 37.6	< 0.290	< 0.240	< 1.01	< 0.487
MW-30	11/4/14	< 125	< 0.234	< 0.236	< 37.6	< 0.290	< 0.240	< 1.01	< 0.487
PW-31	11/3/14	< 6,250	< 11.7	117 J	< 1,880	36.4 J	< 12.0	10,300	< 24.3
MW-32	11/3/14	0.81 ft FREE PRODUCT							
MW-33	11/3/14	INSUFFICIENT WATER TO SAMPLE							
MW-34	11/3/14	< 125	< 0.234	< 0.236	< 37.6	< 0.290	< 0.240	< 1.01	< 0.487
MW-34D	11/3/14	< 125	< 0.234	< 0.236	< 37.6	< 0.290	< 0.240	< 1.01	< 0.487
MW-35	11/4/14	< 62,500	< 117	< 118	< 18,800	< 154	< 120	17,700	< 243
MW-36	11/3/14	0.13 ft FREE PRODUCT							
MW-37	11/3/14	< 625	< 1.17	29.0	< 188	< 1.45	< 1.20	56.4 J	< 2.43
MW-38	11/5/14	< 6,250	< 11.7	43.7 J	< 1,880	86.6 J	< 12.0	4,640	< 24.3
MW-38 Dup	11/5/14	< 6,250	< 11.7	44.5 J	< 1,880	76.1 J	< 12.0	5,360	< 24.3
MW-39	11/3/14	0.21 ft FREE PRODUCT							
MW-40	11/3/14	< 6,250	< 11.7	< 11.8	< 1,880	< 14.5	< 12.0	4,350	< 24.3
MW-40 Dup	11/3/14	< 6,250	< 11.7	< 11.8	< 1,800	< 14.5	< 12.0	3,490	< 24.3
MW-41	11/4/14	< 25,000	< 46.8	409 J	< 7,520	858 J	< 48.0	27,400	< 97.4
MW-42	11/3/14	< 625	< 1.17	58.7	< 188	96.8	< 1.20	2,090	< 2.43
MW-43	11/3/14	< 125	< 0.234	< 0.236	< 37.6	2.22 J	< 0.240	61.5	< 0.487
MW-44	11/4/14	< 125	< 0.234	< 0.236	< 37.6	< 0.290	< 0.240	< 1.01	< 0.487
Field Blank	11/3/14	< 125	< 0.234	< 0.236	< 37.6	< 0.290	< 0.240	< 1.01	< 0.487
	11/4/14	< 125	< 0.234	< 0.236	< 37.6	< 0.290	< 0.240	< 1.01	< 0.487
	11/5/14	< 125	< 0.234	< 0.236	< 37.6	< 0.290	< 0.240	< 1.01	< 0.487

TABLE 3A
GROUND WATER ANALYTICAL DATA
Petroleum Compounds (Oxygenates)

FORMER SC-576
201 North Mine Street, McCormick, SC
UST Permit No. 06443
Terracon Project No. 73058013

WELL NUMBER	SAMPLE DATE	Ethanol (µg/L)	ETBE (µg/L)	DIPE (µg/L)	ETBA (µg/L)	TBA (µg/L)	TAME (µg/L)	TAA (µg/L)	TBF (µg/L)
<i>RBSL</i>	-	<i>10,000</i>	<i>47</i>	<i>150</i>	<i>NE</i>	<i>1,400</i>	<i>128</i>	<i>240</i>	<i>NE</i>
Trip Blank	11/3/14	< 125	< 0.234	< 0.236	< 37.6	< 0.290	< 0.240	< 1.01	< 0.487

Notes:

- 1) Results shown in boldface type indicate detected compounds.
- 2) µg/L - micrograms per liter or parts per billion
- 3) ALs- SCDHEC Action Levels
- 4) NE - Not Established
- 5) 1,2-DCA = 1,2-dichloroethane
- 6) 8 Oxygenates abbreviated as:

ETBE = ethyl tert-butyl ether
 DIPE = diisopropyl ether
 ETBA = ethyl tert-butanol
 TBA = t-butanol

TAME = t-amyl methyl ether
 TAA = tert-amyl alcohol
 TBF = tert-butyl formate

Data set..... A:\MW7B.D
Data set title..... MW-7B SLUG TEST McCORMICK, SC

Knowns and Constants:

No. of data points..... 21
Radius of well casing..... 0.08333
Radius of well..... 0.3333
Aquifer saturated thickness..... 50
Well screen length..... 15
Static height of water in well..... 23.82
Log(Re/Rw)..... 2.716
A, B, C..... 2.918, 0.471, 0.000

ANALYTICAL METHOD

Bouwer-Rice (Unconfined Aquifer Slug Test)

RESULTS FROM STATISTICAL CURVE MATCHING

STATISTICAL MATCH PARAMETER ESTIMATES

	Estimate	Std. Error
K =	1.0050E-004 +/-	2.6258E-006
y0 =	3.1272E+000 +/-	3.7583E-002

ANALYSIS OF MODEL RESIDUALS

residual = calculated - observed
weighted residual = residual * weight

Weighted Residual Statistics:

Number of residuals..... 21
Number of estimated parameters.... 2
Degrees of freedom..... 19
Residual mean..... 0.006604
Residual standard deviation..... 0.06846
Residual variance..... 0.004687

Model Residuals:

Time	Observed	Calculated	Residual	Weight
0.25	3.15	3.0047	0.14534	1
0.5	2.94	2.8869	0.05305	1
0.75	2.78	2.7738	0.0061514	1
1	2.68	2.6652	0.014822	1
1.5	2.39	2.4604	-0.070443	1
2	2.23	2.2714	-0.041435	1
2.5	2.03	2.0969	-0.066947	1
3	1.76	1.9359	-0.17586	1
3.5	1.73	1.7872	-0.057152	1
4	1.63	1.6499	-0.019865	1
4.5	1.52	1.5231	-0.0031249	1
5	1.42	1.4061	0.013879	1
6	1.22	1.1984	0.021614	1
7	1.05	1.0213	0.028659	1
8	0.93	0.87045	0.059548	1
9	0.81	0.74185	0.068145	1
10	0.7	0.63226	0.067744	1
15	0.35	0.28429	0.065709	1
20	0.15	0.12783	0.02217	1
25	0.06	0.057478	0.0025217	1
30	0.03	0.025845	0.0041551	1

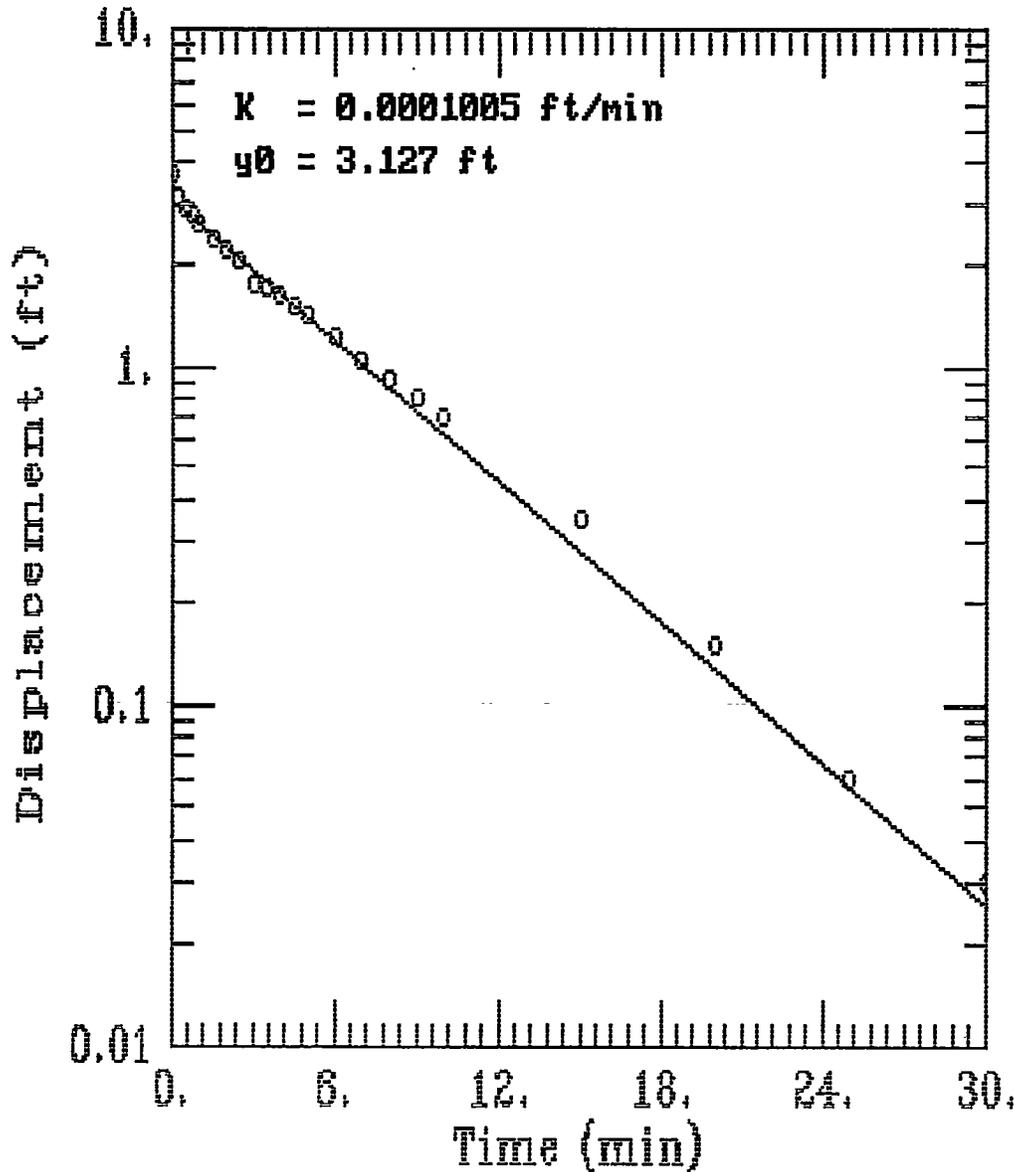
RESULTS FROM VISUAL CURVE MATCHING

VISUAL MATCH PARAMETER ESTIMATES

Estimate
K = 1.0050E-004
y0 = 3.1272E+000



MW-7B SLUG TEST McCORMICK, SC



AQTESOLV

 GERAGHTY
& MILLER, INC.
Modeling Group

TEST DESCRIPTION

Data set..... A:\MW14B.D
Data set title..... MW-14B SLUG TEST McCORMICK, SC

Knowns and Constants:

No. of data points..... 13
Radius of well casing..... 0.08333
Radius of well..... 0.3333
Aquifer saturated thickness..... 50
Well screen length..... 20
Static height of water in well..... 22.93
Log(R_e/R_w)..... 2.811
A, B, C..... 3.377, 0.539, 0.000

ANALYTICAL METHOD

Bouwer-Rice (Unconfined Aquifer Slug Test)

RESULTS FROM STATISTICAL CURVE MATCHING

STATISTICAL MATCH PARAMETER ESTIMATES

	Estimate	Std. Error
K =	3.2346E-005 +/-	6.9381E-006
y0 =	1.1209E+000 +/-	5.6836E-002

ANALYSIS OF MODEL RESIDUALS

residual = calculated - observed
weighted residual = residual * weight

Weighted Residual Statistics:

Number of residuals..... 13
Number of estimated parameters.... 2
Degrees of freedom..... 11
Residual mean..... 0.002816
Residual standard deviation..... 0.1238
Residual variance..... 0.01532

Model Residuals:

Time	Observed	Calculated	Residual	Weight
0.25	1.41	1.1025	0.3075	1
0.5	1.17	1.0844	0.085623	1
0.75	1.04	1.0666	-0.026555	1
1	1.02	1.049	-0.029025	1
1.5	0.94	1.0148	-0.074827	1
2	0.89	0.98174	-0.091743	1
2.5	0.84	0.94974	-0.10974	1
3	0.84	0.91878	-0.078775	1
3.5	0.82	0.88882	-0.068823	1
4	0.8	0.85985	-0.059847	1
7	0.72	0.70478	0.015216	1
10	0.59	0.57768	0.012315	1
15	0.57	0.41471	0.15529	1

RESULTS FROM VISUAL CURVE MATCHING

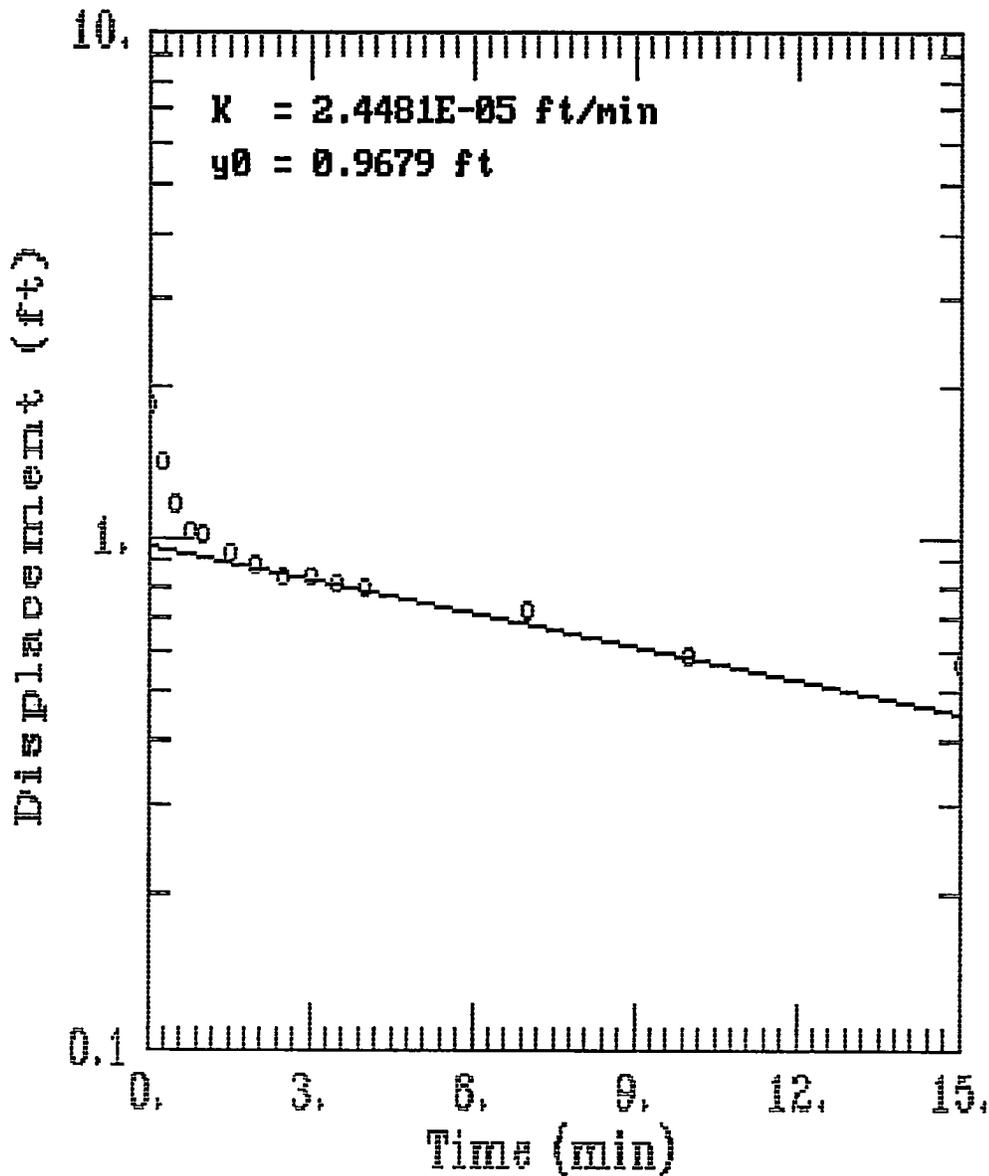
VISUAL MATCH PARAMETER ESTIMATES

Estimate

K = 3.2346E-005

y0 = 1.1209E+000

MW-14B SLUG TEST McCORMICK, SC



AQTESOLV

 GERAGHTY
& MILLER, INC.
 Modeling Group

TEST DESCRIPTION

Data set..... A:\MW25D
Data set title..... MW-25 SLUG TEST McCORMICK, SC

Knowns and Constants:

No. of data points..... 21
Radius of well casing..... 0.08333
Radius of well..... 0.3333
Aquifer saturated thickness..... 50
Well screen length..... 15
Static height of water in well..... 23.22
Log(Re/Rw)..... 2.703
A, B, C..... 2.918, 0.471, 0.000

ANALYTICAL METHOD

Bouwer-Rice (Unconfined Aquifer Slug Test)

RESULTS FROM STATISTICAL CURVE MATCHING

STATISTICAL MATCH PARAMETER ESTIMATES

Estimate	Std. Error
K = 3.8698E-005 +/- 1.5379E-006	
y0 = 4.5278E+000 +/- 5.6787E-002	

ANALYSIS OF MODEL RESIDUALS

residual = calculated - observed
weighted residual = residual * weight

Weighted Residual Statistics:

Number of residuals..... 21
Number of estimated parameters.... 2
Degrees of freedom..... 19
Residual mean..... 0.01242
Residual standard deviation..... 0.1394
Residual variance..... 0.01945

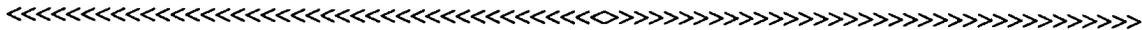
Model Residuals:

Time	Observed	Calculated	Residual	Weight
0.25	4.73	4.4583	0.27169	1
0.5	4.6	4.3899	0.2101	1
0.75	4.4	4.3225	0.077465	1
1	4.33	4.2562	0.073794	1
1.5	4.12	4.1266	-0.0065875	1
2	3.96	4.0009	-0.040916	1
2.5	3.81	3.8791	-0.069072	1
3	3.68	3.7609	-0.080938	1
3.5	3.55	3.6464	-0.096402	1
4	3.42	3.5354	-0.11535	1
4.5	3.32	3.4277	-0.10769	1
5	3.21	3.3233	-0.1133	1
6	3.02	3.124	-0.10397	1
7	2.83	2.9366	-0.10659	1
8	2.66	2.7605	-0.10045	1
9	2.53	2.5949	-0.064877	1
10	2.39	2.4392	-0.049235	1
15	1.85	1.7903	0.059652	1
20	1.46	1.3141	0.14592	1
25	1.17	0.96451	0.20549	1
30	0.98	0.70793	0.27207	1

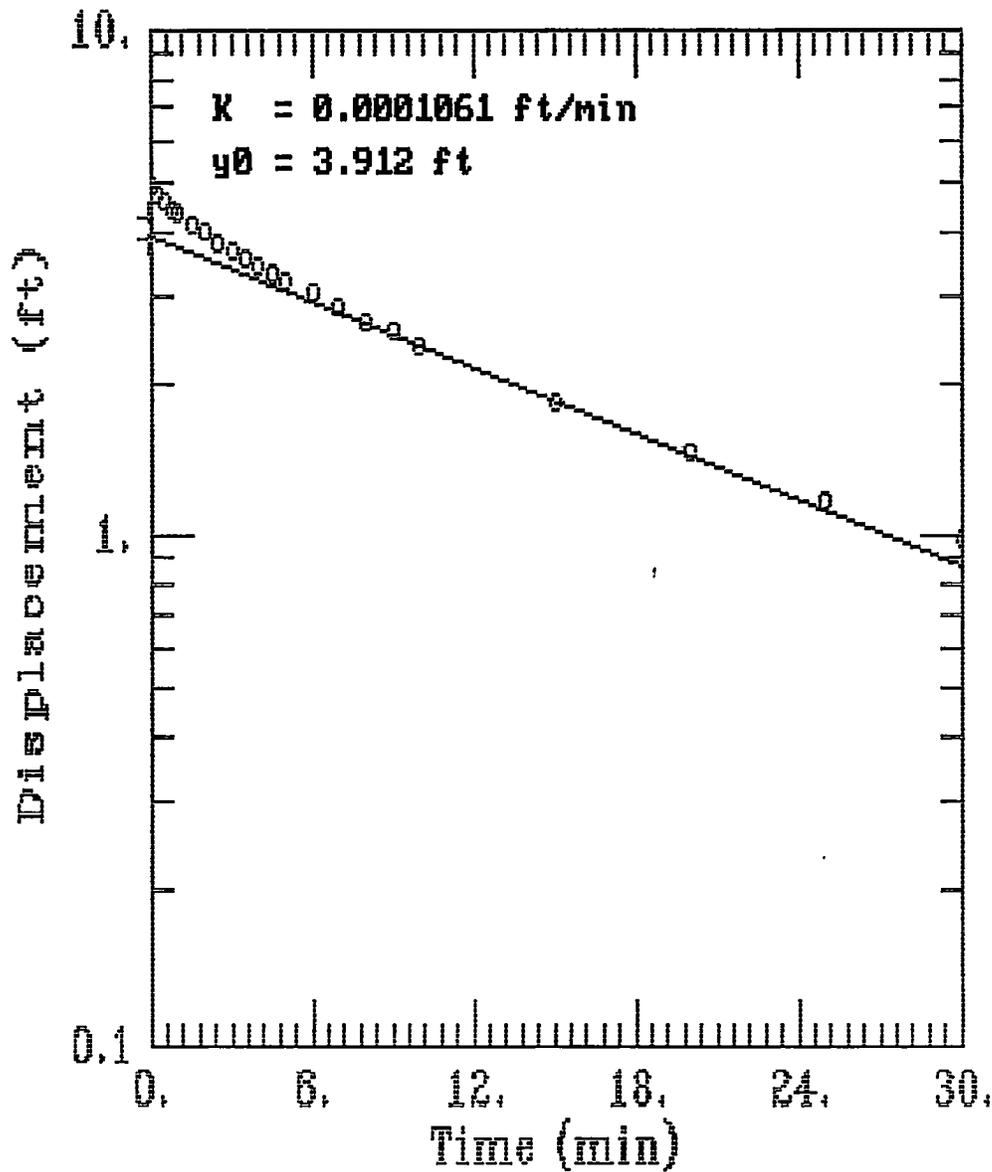
RESULTS FROM VISUAL CURVE MATCHING

VISUAL MATCH PARAMETER ESTIMATES

Estimate
K = 3.8698E-005
y0 = 4.5278E+000



MW-25 SLUG TEST, McCORMICK, SC



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& MILLER, INC.
Modeling Group

EQUATIONS USED FOR ESTIMATING GROUNDWATER VELOCITY AND TRANSMISSIVITY

To estimate the average groundwater velocity, the following modified Darcian flow equation was used:

EQUATION:
$$V_h = \frac{(K_h) * (l)}{n}$$

WHERE:
 V_h = Average Horizontal Velocity (ft/day)
 K_h = Average Horizontal Hydraulic Conductivity (ft/day)
 l = Hydraulic Gradient (ft/ft)
 n = Porosity (%)

THEREFORE:

$$V_h = \frac{0.11 \times 0.02}{0.15}$$

$$V_h = 0.014667 \text{ ft/day}$$

$$5.353333 \text{ ft/yr}$$

The transmissivity of the surficial aquifer was estimated using the following equation:

EQUATION: $T = K_h * b$

WHERE:
 T = Transmissivity (ft²/day)
 K_h = Horizontal Hydraulic Conductivity (ft/day)
 b = Saturated Thickness of Aquifer (ft)

THEREFORE:

$$T = 0.11 \times 50$$

$$T = 5.5 \text{ ft}^2/\text{day}$$

APPENDIX I
FREE-PRODUCT RECOVERY TESTS

mw1

FREE-PRODUCT RECOVERY TEST RESULTS (MW-1)

	depth to product (ft)	depth to water (ft)	initial product thickness (ft)
	21.77	24.13	2.36
time (min)			change in product thickness (ft)
0	24.39	24.82	0.43
2	23.97	24.47	0.5
3	23.82	24.34	0.52
4	23.72	24.23	0.51
5	23.65	24.15	0.5
10	23.42	23.8	0.38
15	23.3	23.59	0.29
25	23.13	23.39	0.26
35	22.94	23.28	0.34
45	22.78	23.2	0.42
55	22.66	23.09	0.43
70	22.55	23	0.45
171	22.3	22.92	0.62
1070	22.18	23.13	0.95

$$\frac{0.95}{2.36} = 40.25424 \% \quad \text{recovery over a period of } 1070 \text{ minutes.}$$

~ 18 hrs.

FREE-PRODUCT RECOVERY TEST RESULTS (RW-1)

	depth to product (ft)	depth to water (ft)	initial product thickness (ft)
	22.45	23.12	0.67
time (min)			change in product thickness (ft)
0	22.91	23.28	0.37
3	22.75	23.18	0.43
4	22.7	23.1	0.4
5	22.67	23	0.33
6	22.64	23.06	0.42
7	22.62	23.05	0.43
8	22.6	23.02	0.42
13	22.56	23	0.44
18	22.54	22.95	0.41
23	22.52	22.97	0.45
28	22.52	22.97	0.45
33	22.52	22.94	0.42
38	22.5	22.94	0.44
48	22.51	22.97	0.46
58	22.5	22.95	0.45
101	22.52	22.95	0.43
138	22.49	22.95	0.46

$$\frac{0.46}{0.67} = 68.65672 \% \quad \text{recovery over a period of 138 minutes.}$$

~ 2.3 hrs

FREE-PRODUCT RECOVERY TEST RESULTS (MW-4)

	depth to product (ft)	depth to water (ft)	initial product thickness (ft)
	23.1	24.67	1.57
time (min)			change in product thickness (ft)
0	23.7	24.2	0.5
5	23.52	23.89	0.37
10	23.48	23.87	0.39
15	23.45	23.87	0.42
20	23.45	23.91	0.46
108	23.35	24	0.65
1010	23.42	24.24	0.82

$$\frac{0.82}{1.57} = 52.2293 \% \quad \text{recovery over a period of 1010 minutes.} \quad \sim 16.8 \text{ hrs}$$

APPENDIX J
SOIL LEACHIBILITY MODEL

IN-SITU SOIL RISK EVALUATION

SOUTH CAROLINA
 Department of Health and Environmental Control (DHEC)

Site Data

SITE ID: # 06443 COUNTY McCormick
 FACILITY NAME Former Crown Service Station SC-576
 STREET ADDRESS 200 North Mine Street (SC Highway 28)

Soil Risk Evaluation Data

			Figure
TPH		361 mg/kg	
Soil % SAND		17 %	
Soil % CLAY		5 %	
Worst Case	Benzene	0.866 mg/kg	C _s
Soil Analyses	Toluene	6.62 mg/kg	C _s
	Ethylbenzene	4.46 mg/kg	C _s
	Xylenes	19.3 mg/kg	C _s
	Naphthalene	11.4 mg/kg	C _s
Natural Organic Carbon Content		30 mg/kg	f _{oc}
Average Annual Recharge		25 cm	H _w
Distance from highest Soil Contamination to water table		67 cm	L
Bulk Density of Soil		1.05 g/cc ^{1/5}	Bd
Wetting Front Section		- 30 cm	H _f
Soil Hydraulic Conductivity		0.00014 cm/sec [✓]	K _f
Porosity		0.45 % [✓]	Φ
Residual Water Content		0.04 % [✓]	W _r

List possible human exposure pathways from surface soil.

Dermal Contact and Absorption

Ingestion of Surface Soils

Inhalation of Volatiles

IN-SITU SOIL RISK EVALUATION

IN-SITU SOIL RISK EVALUATION

SOUTH CAROLINA
Department of Health and Environmental Control (DHEC)

Site Data

SITE ID: # 6443
FACILITY NAME Former Crown Service Station SC-576

Instructions

Provide results, separately, for each constituent in the worst case soil analyses.

Data

List constituent:	BENZENE			
(BTEX, Naphth.)				Table
Bioremediation "half-life"	16 days	$t_{1/2}$		1
Soil/water partitioning coefficient	81 ml/g	k_{oc}		2

Results

			Equation Set	Step
Total Organic Carbon Content	0.000227 decimal%	f_{cs}	I	1
Leachate Concentration	6.21 mg/l	C_w	I	2
Air Filled Porosity	0.41 decimal%	f	II	1
Infiltration Rate Time	530874 seconds	t	II	2
Velocity of Water	130.43 ft/yr	V_w	II	3
Soil/Water Distribution Coefficient	0.00243 mg/l	K_d	III	1
Contamination Percolation Rate	129.7 ft/yr	V_c	III	2
Time to Reach Groundwater	6.19 days	T_c	IV	1
Concentration Reaching Groundwater	6.21 mg/l	C_w	IV	2
Site Specific Target Level	0.228245 mg/l	C_{sstl}	V	

Conclusions

Does concentration of chemical of concern in soil exceed SSTL? YES
Risk of Human Exposure due to contaminated soil.

XXX YES _____ NO

Page 2 of 2 pages

IN-SITU SOIL RISK EVALUATION

SOIL LEACHABILITY MODEL FOR BENZENE

Former Crown Service Station SC-576

200 North Mine Street

McCormick, South Carolina

MEADE Project No. 209.60

*Fill in the shaded areas

EQUATION SET I

natural organic carbon content in mg/kg of uncontaminated soil: 30 mg/kg f_{oc}

Total Petroleum Hydrocarbon (EPA Method 3550): 361 mg/kg TPH

Total organic carbon content: 0.000227 % f_{cs}

concentration of the COC in soil (worst case sample): 0.866 mg/kg C_s

porosity: 0.45 Φ

residual water content: 0.04 W_r

bulk density of soil: 1.05 g/cc Bd

soil organic/water partitioning coefficient: 81 ml/g K_{oc}

Henry's Law Constant: 0.226 H'

concentration of the COC in soil pore water: 6.212208 mg/l C_w

EQUATION SET II

air filled porosity: 0.41 f

field saturated hydraulic conductivity: 0.00014 cm/sec

distance from the depth of the worst case soil sample to the water table: 67 cm L

average annual recharge: 25 cm H_w

wetting front suction head: 30 cm H_f

time required for water to travel distance (L): 530874 seconds 6.144339 days t

velocity of water: 130.4304 ft/yr V_w

EQUATION SET III

soil/water distribution coefficient: 0.00243 ml/g K_d
 COC percolation rate: 129.695 ft/yr V_c

EQUATION SET IV

Time required for the COC to reach groundwater: 6.186279 days T_c

biodegradation "half-life" of COC: 16 days t_{1/2}

estimate of the concentration of COC in the soil pore water necessary to protect groundwater:
4.750606 mg/l C_{rbsl}

If 6.212208 is less than 4.750606 ,do not proceed to Equation Set 5.

EQUATION SET V

dilution/attenuation factor (unitless): 2 DAF

Site Specific Target Level for the COC in soil: 0.228245 mg/kg C_{sstl}

IN-SITU SOIL RISK EVALUATION

SOUTH CAROLINA
Department of Health and Environmental Control (DHEC)

Site Data

SITE ID: # 6443
FACILITY NAME Former Crown Service Station SC-576

Instructions

Provide results, separately, for each constituent in the worst case soil analyses.

Data

List constituent:	TOLUENE		Table
(BTEX, Naphth.)			
Bioremediation "half-life"	22 days	$t_{1/2}$	1
Soil/water partitioning coefficient	133 ml/g	k_{oc}	2

Results

			Equation Set	Step
Total Organic Carbon Content	0.000227 decimal%	f_{cs}	I	1
Leachate Concentration	36.99 mg/l	C_w	I	2
Air Filled Porosity	0.41 decimal%	f	II	1
Infiltration Rate Time	530874 seconds	t	II	2
Velocity of Water	130.43 ft/yr	V_w	II	3
Soil/Water Distribution Coefficient	0.00399 mg/l	K_d	III	1
Contamination Percolation Rate	129.23 ft/yr	V_c	III	2
Time to Reach Groundwater	6.21 days	T_c	IV	1
Concentration Reaching Groundwater	36.99 mg/l	C_w	IV	2
Site Specific Target Level	2.231452 mg/l	C_{sstl}	V	

Conclusions

Does concentration of chemical of concern in soil exceed SSTL? YES

Risk of Human Exposure due to contaminated soil.

XXX YES _____ NO

SOIL LEACHABILITY MODEL FOR TOLUENE
 Former Crown Service Station SC-576
 200 North Mine Street
 McCormick, South Carolina
 MEADE Project No. 209.60

*Fill in the shaded areas

EQUATION SET I

natural organic carbon content in mg/kg of uncontaminated soil: 30 mg/kg f_{oc}

Total Petroleum Hydrocarbon (EPA Method 3550): 361 mg/kg TPH

Total organic carbon content: 0.000227 % f_{cs}

concentration of the COC in soil (worst case sample): 6.62 mg/kg C_s

porosity: 0.45 Φ

residual water content: 0.04 W_r

bulk density of soil: 1.05 g/cc B_d

soil organic/water partitioning coefficient: 133 ml/g K_{oc}

Henry's Law Constant: 0.301 H'

concentration of the COC in soil pore water: 36.98848 mg/l C_w

EQUATION SET II

air filled porosity: 0.41 f

field saturated hydraulic conductivity: 0.00014 cm/sec

distance from the depth of the worst case soil sample to the water table: 67 cm L

average annual recharge: 25 cm H_w

wetting front suction head: 30 cm H_f

time required for water to travel distance (L): 530874 seconds 6.144339 days t

velocity of water: 130.4304 ft/yr V_w

EQUATION SET III

soil/water distribution coefficient: 0.00399 ml/g K_d
COC percolation rate: 129.2273 ft/yr V_c

EQUATION SET IV

Time required for the COC to reach groundwater: 6.20867 days T_c

biodegradation "half-life" of COC: 22 days $t_{1/2}$

estimate of the concentration of COC in the soil pore water necessary to protect groundwater:
30.41128 mg/l C_{rbsl}

If 36.98848 is less than 30.41128 ,do not proceed to Equation Set 5.

EQUATION SET V

dilution/attenuation factor (unitless): 2 DAF

Site Specific Target Level for the COC in soil: 2.231452 mg/kg C_{sstl}

IN-SITU SOIL RISK EVALUATION

SOUTH CAROLINA
Department of Health and Environmental Control (DHEC)

Site Data

SITE ID: # 6443
FACILITY NAME Former Crown Service Station SC-576

Instructions

Provide results, separately, for each constituent in the worst case soil analyses.

Data

List constituent: ETHYLBENZENE
(BTEX, Naphth.) Table

Bioremediation "half-life"	10 days	t _{1/2}	1
Soil/water partitioning coefficient	176 ml/g	k _{oc}	2

Results

			Equation Set	Step
Total Organic Carbon Content	0.000227 decimal%	f _{cs}	I	1
Leachate Concentration	24.71 mg/l	C _w	I	2
Air Filled Porosity	0.41 decimal%	f	II	1
Infiltration Rate Time	530874 seconds	t	II	2
Velocity of Water	130.43 ft/yr	V _w	II	3
Soil/Water Distribution Coefficient	0.00528 mg/l	K _d	III	1
Contamination Percolation Rate	128.84 ft/yr	V _c	III	2
Time to Reach Groundwater	6.23 days	T _c	IV	1
Concentration Reaching Groundwater	24.71 mg/l	C _w	IV	2
Site Specific Target Level	1.97 mg/l	C _{sstl}	V	

Conclusions

Does concentration of chemical of concern in soil exceed SSTL? YES
Risk of Human Exposure due to contaminated soil.

XXX YES NO

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IN-SITU SOIL RISK EVALUATION

SOIL LEACHABILITY MODEL FOR ETHYLBENZENE

Former Crown Service Station SC-576

200 North Mine Street

McCormick, South Carolina

MEADE Project No. 209.60

*Fill in the shaded areas

EQUATION SET I

natural organic carbon content in mg/kg of uncontaminated soil: 30 mg/kg f_{oc}

Total Petroleum Hydrocarbon (EPA Method 3550): 361 mg/kg TPH

Total organic carbon content: 0.000227 % f_{cs}

concentration of the COC in soil (worst case sample): 4.46 mg/kg C_s

porosity: 0.45 Φ

residual water content: 0.04 W_r

bulk density of soil: 1.05 g/cc B_d

soil organic/water partitioning coefficient: 176 ml/g K_{oc}

Henry's Law Constant: 0.28 H'

concentration of the COC in soil pore water: 24.71325 mg/l C_w

EQUATION SET II

air filled porosity: 0.41 f

field saturated hydraulic conductivity: 0.00014 cm/sec

distance from the depth of the worst case soil sample to the water table: 67 cm L

average annual recharge: 25 cm H_w

wetting front suction head: 30 cm H_f

time required for water to travel distance (L): 530874 seconds 6.144339 days t

velocity of water: 130.4304 ft/yr V_w

EQUATION SET III

soil/water distribution coefficient: 0.00528 ml/g K_d
COC percolation rate: 128.843 ft/yr V_c

EQUATION SET IV

Time required for the COC to reach groundwater: 6.227186 days T_c

biodegradation "half-life" of COC: 10 days $t_{1/2}$

estimate of the concentration of COC in the soil pore water necessary to protect groundwater:
16.04361 mg/l C_{rbsl}

If 24.71325 is less than 16.04361 ,do not proceed to Equation Set 5.

EQUATION SET V

dilution/attenuation factor (unitless): 2 DAF

Site Specific Target Level for the COC in soil: 1.972931 mg/kg C_{sstl}

IN-SITU SOIL RISK EVALUATION

SOUTH CAROLINA
 Department of Health and Environmental Control (DHEC)

Site Data

SITE ID: # 6443
 FACILITY NAME Former Crown Service Station SC-576

Instructions

Provide results, separately, for each constituent in the worst case soil analyses.

Data

List constituent: XYLENE (BTEX, Naphth.)				Table
Bioremediation "half-life"	28 days	$t_{1/2}$		1
Soil/water partitioning coefficient	639 ml/g	k_{oc}		2

Results

			Equation Set	Step
Total Organic Carbon Content	0.000227 decimal%	f_{cs}	I	1
Leachate Concentration	68.71 mg/l	C_w	I	2
Air Filled Porosity	0.41 decimal%	f	II	1
Infiltration Rate Time	530874 seconds	t	II	2
Velocity of Water	130.43 ft/yr	V_w	II	3
Soil/Water Distribution Coefficient	0.01917 mg/l	K_d	III	1
Contamination Percolation Rate	124.85 ft/yr	V_c	III	2
Time to Reach Groundwater	6.43 days	T_c	IV	1
Concentration Reaching Groundwater	68.71 mg/l	C_w	IV	2
Site Specific Target Level	19.92 mg/l	C_{sstl}	V	

Conclusions

Does concentration of chemical of concern in soil exceed SSTL? YES
 Risk of Human Exposure due to contaminated soil.

XXX YES _____ NO

IN-SITU SOIL RISK EVALUATION

SOIL LEACHABILITY MODEL FOR XYLENE
 Former Crown Service Station SC-576
 200 North Mine Street
 McCormick, South Carolina
 MEADE Project No. 209.60

*Fill in the shaded areas

EQUATION SET I

natural organic carbon content in mg/kg of uncontaminated soil: 30 mg/kg f_{oc}

Total Petroleum Hydrocarbon (EPA Method 3550): 361 mg/kg TPH

Total organic carbon content: 0.000227 % f_{cs}

concentration of the COC in soil (worst case sample): 19.3 mg/kg C_s

porosity: 0.45 Φ

residual water content: 0.04 W_r

bulk density of soil: 1.05 g/cc B_d

soil organic/water partitioning coefficient: 639 ml/g K_{oc}

Henry's Law Constant: 0.278 H'

concentration of the COC in soil pore water: 68.71463 mg/l C_w

EQUATION SET II

air filled porosity: 0.41 f

field saturated hydraulic conductivity: 0.00014 cm/sec

distance from the depth of the worst case soil sample to the water table: 67 cm L

average annual recharge: 25 cm H_w

wetting front suction head: 30 cm H_f

time required for water to travel distance (L): 530874 seconds 6.144339 days t

velocity of water: 130.4304 ft/yr V_w

EQUATION SET III

soil/water distribution coefficient:	0.01917 ml/g	K_d
COC percolation rate:	124.846 ft/yr	V_c

EQUATION SET IV

Time required for the COC to reach groundwater:	6.426553 days	T_c
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biodegradation "half-life" of COC:	28 days	$t_{1/2}$
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estimate of the concentration of COC in the soil pore water necessary to protect groundwater:	58.5995 mg/l	C_{rbsl}
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If 68.71463 is less than 58.5995 ,do not proceed to Equation Set 5.

EQUATION SET V

dilution/attenuation factor (unitless):	2	DAF
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Site Specific Target Level for the COC in soil:	19.9168 mg/kg	C_{sstl}
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naphthalene

IN-SITU SOIL RISK EVALUATION

SOUTH CAROLINA
Department of Health and Environmental Control (DHEC)

Site Data

SITE ID: # 6443
FACILITY NAME Former Crown Service Station SC-576

Instructions

Provide results, separately, for each constituent in the worst case soil analyses.

Data

List constituent: NAPHTHALENE
(BTEX, Naphth.) Table

Bioremediation "half-life"	48 days	$t_{1/2}$		1
Soil/water partitioning coefficient	1543 ml/g	k_{oc}		2

Results

			Equation	Step
			Set	
Total Organic Carbon Content	0.000227 decimal%	f_{cs}	I	1
Leachate Concentration	30.44 mg/l	C_w	I	2
Air Filled Porosity	0.45 decimal%	f	II	1
Infiltration Rate Time	530874 seconds	t	II	2
Velocity of Water	130.43 ft/yr	V_w	II	3
Soil/Water Distribution Coefficient	0.04629 mg/l	K_d	III	1
Contamination Percolation Rate	117.72 ft/yr	V_c	III	2
Time to Reach Groundwater	6.82 days	T_c	IV	1
Concentration Reaching Groundwater	30.44 mg/l	C_w	IV	2
Site Specific Target Level	21.3 mg/l	C_{sstl}	V	

Conclusions

Does concentration of chemical of concern in soil exceed SSTL? YES
Risk of Human Exposure due to contaminated soil.

XXX YES NO

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IN-SITU SOIL RISK EVALUATION

SOIL LEACHABILITY MODEL FOR NAPHTHALENE

Former Crown Service Station SC-576

200 North Mine Street

McCormick, South Carolina

MEADE Project No. 209.60

*Fill in the shaded areas

EQUATION SET I

natural organic carbon content in mg/kg of uncontaminated soil: 30 mg/kg f_{oc}

Total Petroleum Hydrocarbon (EPA Method 3550): 361 mg/kg TPH

Total organic carbon content: 0.000227 % f_{cs}

concentration of the COC in soil (worst case sample): 11.4 mg/kg C_s

porosity: 0.45 Φ

residual water content: 0.04 W_r

bulk density of soil: 1.05 g/cc B_d

soil organic/water partitioning coefficient: 1543 ml/g K_{oc}

Henry's Law Constant: 0.002 H'

concentration of the COC in soil pore water: 30.43596 mg/l C_w

EQUATION SET II

air filled porosity: 0.41 f

field saturated hydraulic conductivity: 0.00014 cm/sec

distance from the depth of the worst case soil sample to the water table: 67 cm L

average annual recharge: 25 cm H_w

wetting front suction head: 30 cm H_f

time required for water to travel distance (L): 530874 seconds 6.144339 days t

velocity of water: 130.4304 ft/yr V_w

EQUATION SET III

soil/water distribution coefficient: 0.04629 ml/g K_d
COC percolation rate: 117.7159 ft/yr V_c

EQUATION SET IV

Time required for the COC to reach groundwater: 6.815813 days T_c

biodegradation "half-life" of COC: 48 days $t_{1/2}$

estimate of the concentration of COC in the soil pore water necessary to protect groundwater:
27.58056 mg/l C_{rbsl}

If 30.43596 is less than 27.58056 ,do not proceed to Equation Set 5.

EQUATION SET V

dilution/attenuation factor (unitless): 2 DAF

Site Specific Target Level for the COC in soil: 21.3021 mg/kg C_{sstl}