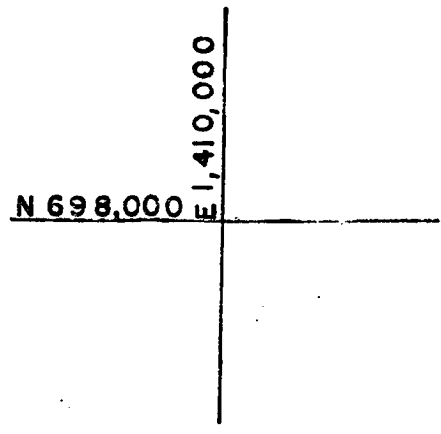
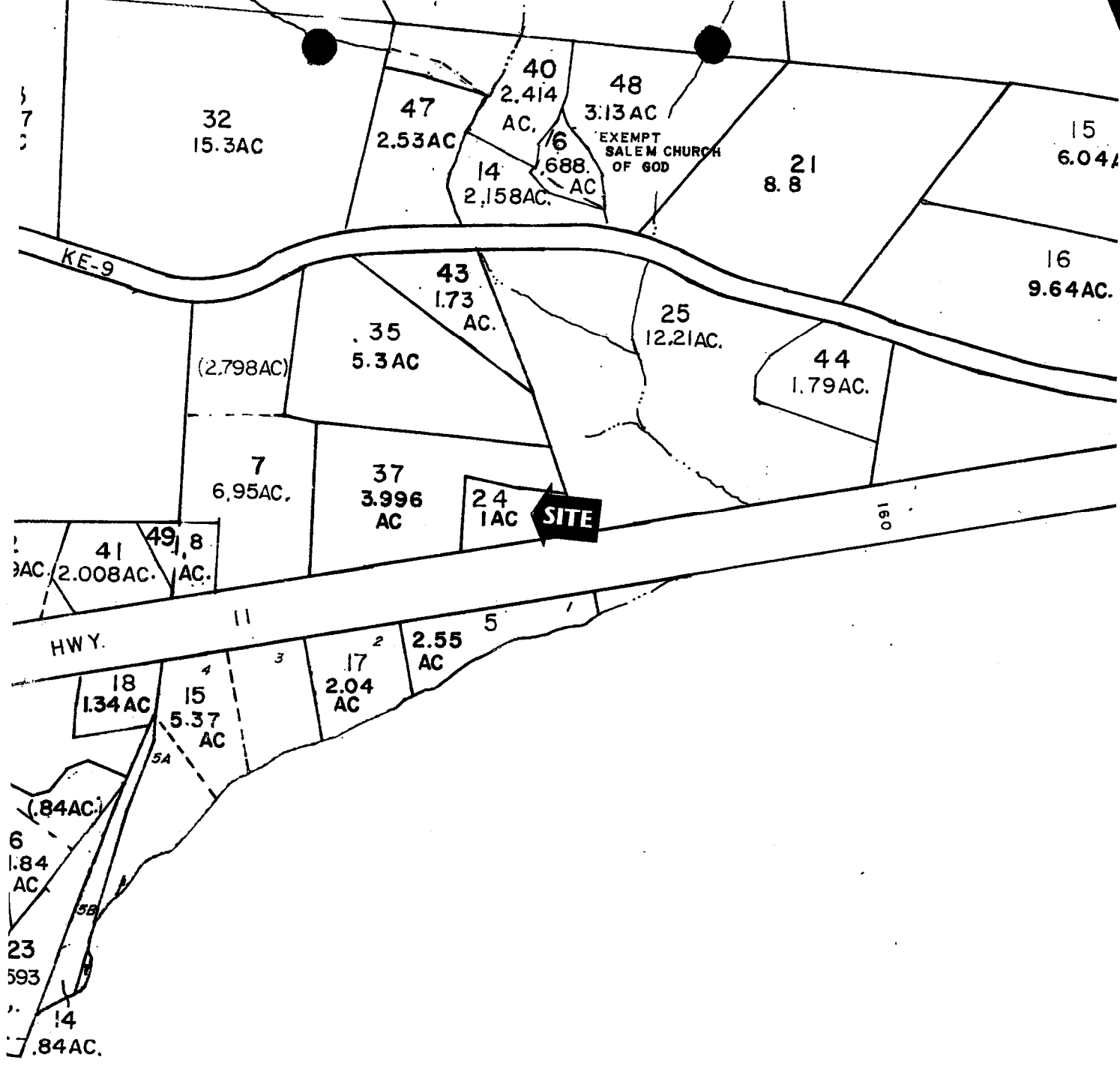


**Property Tax Map Information  
Highway 11 Grocery / Salem, South Carolina**

<i>Parcels</i>	<i>Property Owner</i>
54-02-24 (site) 54-02-37	Steven Smith & Tammy Finley 180 Shallowford Road Salem, South Carolina 29676
54-02-25	James W. Reid 185 Reid Drive Salem, South Carolina 29676
54-03-05	Margie A. Satterfield Post Office Box 405 West Union, South Carolina 29696 - 0405





**UNDERGROUND STORAGE TANK PROGRAM  
BUREAU OF LAND AND WASTE MANAGEMENT**

Phone (803) 896-6240 Fax (803) 896-6245

2600 Bull Street  
Columbia, SC 29201-1708

**OCT 22 2002**

MR STEVEN SMITH  
180 SCHALLOW FORD ROAD  
SALEM SC 29676

Re: Hwy 11 Grocery, 13527 N Hwy. 11, Salem, SC  
**UST Permit # 03439**  
Release 1 Reported November 28, 2000  
Oconee County

Dear Mr. Smith:

The Underground Storage Tank (UST) Program of the South Carolina Department of Health and Environmental Control has reviewed the Corrective Action Solicitation Responses resulting from the Corrective Action Solicitation. The cost for active corrective action activities will be established in the amount of \$116,000.00. Copies of the corrective action solicitation responses are enclosed for your review. A "Corrective Action Solicitation Response Summary" form is also enclosed for you to specify your choice of contractor. Any Class I Certified Underground Storage Tank Contractor may perform the necessary activities at the established price. Please return the "Corrective Action Solicitation Response Summary" form by November 4, 2002 in order for the necessary financial approval to be made.

On all correspondence regarding this site, please reference UST Permit #03439. If you have any questions, please contact me at (800) 826-5435 (within South Carolina only) or (803) 896-6647.

Sincerely,

Konstantine Akhvlediani, Hydrogeologist  
Owner/Operator Assistance Section  
Assessment and Corrective Action Division

Enc: Corrective Action Solicitation Response Summary form  
Corrective Action Solicitation Responses received from seven contractors

cc: Technical File (w/enc)

SCDHEC/UST/OO/KTA/10/14/02

UST Permit #03439

Submit the following by October 11, 2002

**CORRECTIVE ACTION SOLICITATION RESPONSE**

Please respond to the following questions:

1. The corrective action method(s) or technology (ies) that will be proposed in the CAP will be (list all active and/or intrinsic methods or technologies for remediation of the aquifer; attach additional pages(s) as required):  
Air Sparge/Bio Remediation  
\_\_\_\_\_  
\_\_\_\_\_
2. The estimated time in months to complete the corrective action from the date of financial approval, corrective action goals are met, and all corrective action items are removed from the site or properly abandoned is approximately 24 months. This time assumes all submitted plans and reports will be reviewed by DHEC within 30 days of receipt.
3. The total cost in dollars, regardless of the type, quantity, or duration of the permitted technology applied, to treat the area of concern (see figure #2) such that the thickness of free product does not exceed .01 foot and the levels of CoC do not exceed the site-specific target levels (SSTLs) defined in item 11.C. at any point, complete all associated monitoring and post-remediation 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 remediation items installed as part of corrective action; provide evidence of performance bond; and other items outlined in this solicitation is: \$  
116,000.00

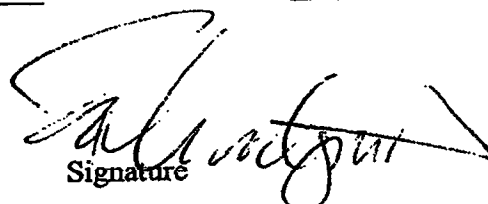
**ACCEPTANCE and DELIVERY STATEMENT**

In compliance with the Corrective Action Solicitation and subject to all conditions thereof, the contractor offers and agrees, if selected by the UST owner/operator within 30 days from the final quotation submittal date, to furnish any or all items/services quoted at the prices set forth once financial approval has been issued by the Department.

For the purpose of this submittal and acceptance of financial approval should it occur, I certify that this company understands the nature of the release and the geologic conditions at this facility as documented in the technical file and this solicitation. Additionally, I certify that this company understands that acceptance is based on total cost to treat the area of concern.

Consultech Environmental, Inc. Certification No. 65  
Contractor (Print)

Richard Goodspeed  
Authorized Representative (Print)

  
Signature

.dform1

UST Permit #03439

Submit the following by October 11, 2002

CORRECTIVE ACTION SOLICITATION RESPONSE

Please respond to the following questions:

- 1. The corrective action method(s) or technology (ies) that will be proposed in the CAP will be (list all active and/or intrinsic methods or technologies for remediation of the aquifer; attach additional pages(s) as required):

Air sparging, vacuum extraction, and chemical oxidation

- 2. The estimated time in months to complete the corrective action from the date of financial approval, corrective action goals are met, and all corrective action items are removed from the site or properly abandoned is approximately 30 months. This time assumes all submitted plans and reports will be reviewed by DHEC within 30 days of receipt.

- 3. The total cost in dollars, regardless of the type, quantity, or duration of the permitted technology applied, to treat the area of concern (see figure #2) such that the thickness of free product does not exceed .01 foot and the levels of CoC do not exceed the site-specific target levels (SSTLs) defined in item 11.C. at any point, complete all associated monitoring and post-remediation 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 remediation items installed as part of corrective action; provide evidence of performance bond; and other items outlined in this solicitation is: \$

\$160,000.00

ACCEPTANCE and DELIVERY STATEMENT

In compliance with the Corrective Action Solicitation and subject to all conditions thereof, the contractor offers and agrees, if selected by the UST owner/operator within 60 days from the final quotation submittal date, to furnish any or all items/services quoted at the prices set forth once financial approval has been issued by the Department.

For the purpose of this submittal and acceptance of financial approval should it occur, I certify that this company understands the nature of the release and the geologic conditions at this facility as documented in the technical file and this solicitation. Additionally, I certify that this company understands that acceptance is based on total cost to treat the area of concern.

PALMISTO ENVIRONMENTAL GROUP Certification No. 260  
Contractor (Print)

JAMES L. COOPER  
Authorized Representative (Print)

[Signature]  
Signature

RECEIVED

Submit the following by October 11, 2002

OCT 11 2002

CORRECTIVE ACTION SOLICITATION RESPONSE

Underground Storage Tank Program

Please respond to the following questions:

- 1. The corrective action method(s) or technology (ies) that will be proposed in the CAP will be (list all active and/or intrinsic methods or technologies for remediation of the aquifer; attach additional pages(s) as required):

PUMP & TREAT WITH DISCHARGE RE-INJECTION,  
SOL VAPOR EXTRACTION, AIR SPARGING.

- 2. The estimated time in months to complete the corrective action from the date of financial approval, corrective action goals are met, and all corrective action items are removed from the site or properly abandoned is approximately 36 months. This time assumes all submitted plans and reports will be reviewed by DHEC within 30 days of receipt.

- 3. The total cost in dollars, regardless of the type, quantity, or duration of the permitted technology applied, to treat the area of concern (see figure #2) such that the thickness of free product does not exceed .01 foot and the levels of CoC do not exceed the site-specific target levels (SSTLs) defined in item 11.C. at any point, complete all associated monitoring and post-remediation 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 remediation items installed as part of corrective action; provide evidence of performance bond; and other items outlined in this solicitation is: \$ 164,000.

ACCEPTANCE and DELIVERY STATEMENT

In compliance with the Corrective Action Solicitation and subject to all conditions thereof, the contractor offers and agrees, if selected by the UST owner/operator within 30 days from the final quotation submittal date, to furnish any or all items/services quoted at the prices set forth once financial approval has been issued by the Department.

For the purpose of this submittal and acceptance of financial approval should it occur, I certify that this company understands the nature of the release and the geologic conditions at this facility as documented in the technical file and this solicitation. Additionally, I certify that this company understands that acceptance is based on total cost to treat the area of concern.

BROOKS & MEDLOCK ENGINEERING Certification No. 270  
 Contractor (Print)

MARK BROOKS, P.E.  
 Authorized Representative (Print)

Mark Brooks  
 Signature

Submit the following by October 11, 2002

**CORRECTIVE ACTION SOLICITATION RESPONSE**

Please respond to the following questions:

1. The corrective action method(s) or technology (ies) that will be proposed in the CAP will be (list all active and/or intrinsic methods or technologies for remediation of the aquifer, attach additional pages(s) as required):

AS/VE and Free Product Recovery

2. The estimated time in months to complete the corrective action from the date of financial approval, corrective action goals are met, and all corrective action items are removed from the site or properly abandoned is approximately 18 months. This time assumes all submitted plans and reports will be reviewed by DHEC within 30 days of receipt.

3. The total cost in dollars, regardless of the type, quantity, or duration of the permitted technology applied, to treat the area of concern (see figure #2) such that the thickness of free product does not exceed .01 foot and the levels of CoC do not exceed the site-specific target levels (SSTLs) defined in item 11.C. at any point, complete all associated monitoring and post-remediation 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 remediation items installed as part of corrective action; provide evidence of performance bond; and other items outlined in this solicitation is: \$ \$ 192,000

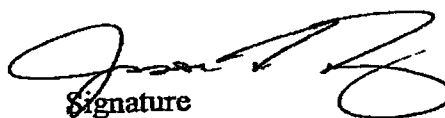
**ACCEPTANCE and DELIVERY STATEMENT**

In compliance with the Corrective Action Solicitation and subject to all conditions thereof, the contractor offers and agrees, if selected by the UST owner/operator within 60 days from the final quotation submittal date, to furnish any or all items/services quoted at the prices set forth once financial approval has been issued by the Department.

For the purpose of this submittal and acceptance of financial approval should it occur, I certify that this company understands the nature of the release and the geologic conditions at this facility as documented in the technical file and this solicitation. Additionally, I certify that this company understands that acceptance is based on total cost to treat the area of concern.

TERRY ENVIRONMENTAL SVCS. Certification No. 223  
Contractor (Print)

JASON A. TERRY  
Authorized Representative (Print)

  
Signature

UST Permit #03439

Submit the following by October 11, 2002

**CORRECTIVE ACTION SOLICITATION RESPONSE**

Please respond to the following questions:

- 1. The corrective action method(s) or technology (ies) that will be proposed in the CAP will be (list all active and/or intrinsic methods or technologies for remediation of the aquifer; attach additional pages(s) as required):

VACUUM ENHANCED FLUID RECOVERY w/ Enhanced In-Situ BIOREMEDIATION  
AND NATURAL ATTENUATION

- 2. The estimated time in months to complete the corrective action from the date of financial approval, corrective action goals are met, and all corrective action items are removed from the site or properly abandoned is approximately 36 months. This time assumes all submitted plans and reports will be reviewed by DHEC within 30 days of receipt.

- 3. The total cost in dollars, regardless of the type, quantity, or duration of the permitted technology applied, to treat the area of concern (see figure #2) such that the thickness of free product does not exceed .01 foot and the levels of CoC do not exceed the site-specific target levels (SSTLs) defined in item 11.C. at any point, complete all associated monitoring and post-remediation 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 remediation items installed as part of corrective action; provide evidence of performance bond; and other items outlined in this solicitation is: \$ 213,000

**ACCEPTANCE and DELIVERY STATEMENT**

In compliance with the Corrective Action Solicitation and subject to all conditions thereof, the contractor offers and agrees, if selected by the UST owner/operator within 120 days from the final quotation submittal date, to furnish any or all items/services quoted at the prices set forth once financial approval has been issued by the Department.

For the purpose of this submittal and acceptance of financial approval should it occur, I certify that this company understands the nature of the release and the geologic conditions at this facility as documented in the technical file and this solicitation. Additionally, I certify that this company understands that acceptance is based on total cost to treat the area of concern.

PHA Environmental Restoration, Inc Certification No. 271  
Contractor (Print)

L.E. Priester  
L.E. Priester  
Authorized Representative (Print)  
803-798-4377

10-9-2002  
Signature



UST Permit #03439

Submit the following by October 11, 2002

**CORRECTIVE ACTION SOLICITATION RESPONSE**

Please respond to the following questions:

- 1. The corrective action method(s) or technology (ies) that will be proposed in the CAP will be (list all active and/or intrinsic methods or technologies for remediation of the aquifer; attach additional pages(s) as required):

VEER and PUSTER - Air & Nutrient  
Injection System

- 2. The estimated time in months to complete the corrective action from the date of financial approval, corrective action goals are met, and all corrective action items are removed from the site or properly abandoned is approximately 21 months. This time assumes all submitted plans and reports will be reviewed by DHEC within 30 days of receipt.

- 3. The total cost in dollars, regardless of the type, quantity, or duration of the permitted technology applied, to treat the area of concern (see figure #2) such that the thickness of free product does not exceed .01 foot and the levels of CoC do not exceed the site-specific target levels (SSTLs) defined in item 11.C. at any point, complete all associated monitoring and post-remediation 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 remediation items installed as part of corrective action; provide evidence of performance bond; and other items outlined in this solicitation is: \$

\$ 250,000.00

**ACCEPTANCE and DELIVERY STATEMENT**

In compliance with the Corrective Action Solicitation and subject to all conditions thereof, the contractor offers and agrees, if selected by the UST owner/operator within 100 days from the final quotation submittal date, to furnish any or all items/services quoted at the prices set forth once financial approval has been issued by the Department.

For the purpose of this submittal and acceptance of financial approval should it occur, I certify that this company understands the nature of the release and the geologic conditions at this facility as documented in the technical file and this solicitation. Additionally, I certify that this company understands that acceptance is based on total cost to treat the area of concern.

GAGE GROUP, Inc

Certification No. 246

Contractor (Print)

CHUCK CLYMER  
VICE PRESIDENT

Authorized Representative (Print)

Chuck Clymer  
 Signature

Submit the following by October 11, 2002

**CORRECTIVE ACTION SOLICITATION RESPONSE**

Please respond to the following questions:

- 1. The corrective action method(s) or technology (ies) that will be proposed in the CAP will be (list all active and/or intrinsic methods or technologies for remediation of the aquifer; attach additional pages(s) as required):

Pulsed AFVR and Air Sparging

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- 2. The estimated time in months to complete the corrective action from the date of financial approval, corrective action goals are met, and all corrective action items are removed from the site or properly abandoned is approximately 60 months. This time assumes all submitted plans and reports will be reviewed by DHEC within 30 days of receipt.

- 3. The total cost in dollars, regardless of the type, quantity, or duration of the permitted technology applied, to treat the area of concern (see figure #2) such that the thickness of free product does not exceed .01 foot and the levels of CoC do not exceed the site-specific target levels (SSTLs) defined in item 11.C. at any point, complete all associated monitoring and post-remediation 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 remediation items installed as part of corrective action; provide evidence of performance bond; and other items outlined in this solicitation is: \$ 309,400.00.

**ACCEPTANCE and DELIVERY STATEMENT**

In compliance with the Corrective Action Solicitation and subject to all conditions thereof, the contractor offers and agrees, if selected by the UST owner/operator within 90 days from the final quotation submittal date, to furnish any or all items/services quoted at the prices set forth once financial approval has been issued by the Department.

For the purpose of this submittal and acceptance of financial approval should it occur, I certify that this company understands the nature of the release and the geologic conditions at this facility as documented in the technical file and this solicitation. Additionally, I certify that this company understands that acceptance is based on total cost to treat the area of concern.

Applied Earth Sciences  
Contractor (Print)

Certification No. 209

Thomas Witaer  
Authorized Representative (Print)

Thomas Witaer  
Signature

**CORRECTIVE ACTION SOLICITATION RESPONSE SUMMARY**

**SOUTH CAROLINA**

**Department of Health and Environmental Control**

**Underground Storage Tank Program**

UST Permit #03439

Facility Name Hwy 11 Grocery

**1. Completed Corrective Action Solicitation Response Forms are attached from 7 contractors.**

Consultech Environmental, Inc.	\$116,000.00
Palmetto Environmental Group	\$160,000.00
Brooks & Medlock Engineering	\$164,000.00
Terry Environmental Services	\$192,000.00
phA Environmental Restoration, Inc.	\$213,000.00
Gage Group, Inc.	\$250,000.00
Applied Earth Sciences	\$309,000.00

**2. Based on a review of the corrective action responses, I select (please name):**

I understand that the SUPERB Account will compensate for reasonable costs up to \$116,000.00 regardless of the proposed cost of the contractor selected by me.

**3. Compensation from the SUPERB Account should be paid to: (please check one)**

UST Owner/ Operator

SC Certified Site Rehabilitation Contractor named above in Item 2

**4. List any anticipated changes to the site in the near future: (e.g. sale, UST removal, etc.)**

**5. Additional Comments:** (Attach additional page(s) if required)

UST Owner/ Operator Name \_\_\_\_\_

Address \_\_\_\_\_

Telephone Number \_\_\_\_\_

( )

FAX Number \_\_\_\_\_

( )

Signature \_\_\_\_\_

Printed or Typed Name \_\_\_\_\_

Title \_\_\_\_\_

Date Signed \_\_\_\_\_

**CORRECTIVE ACTION SOLICITATION RESPONSE SUMMARY**



**INSTRUCTIONS**  
**Water Well Record**

This form is to be completed by an SC Certified Water Well Driller within thirty days of completion of the well. One copy is to be submitted to SCDHEC, another is intended for the well owner, and the final copy is for the well driller. In most cases, well location, owner, driller and other administrative information can be obtained from the Notice of Intent form. If additional comments are necessary, attach those on a separate sheet.

1. Include the name and present mailing address and telephone number of the well owner. This can be a tract owner or developer in the case of a new subdivision.
2. Indicate the exact number, street, city, zip, and county for the location of the well. If the street address is not available, attach a sketch map for general location and include lot number if it is in a new subdivision. "Same as 1<sup>a</sup>" can be indicated if that is the case.
3. For public water supply, indicate system name and number.
4. Check appropriate boxes; for the driller's log, describe the formation, indicate the thickness and complete the depth to the bottom of the stratum.
5. Insert any comments.
6. Insert the eight-digit number assigned when the Notice of Intent was submitted for a residential or irrigation well or the public supply number.
7. Check box indicating use.
8. Indicate the total depth in the space provided; fill in the requested dates.
9. Check the box indicating the drilling method.
10. Check appropriate boxes and complete the information requested for the casing.
11. Complete the information requested for the screen; check the appropriate box.
12. Measure the static water level 24 hours after well completion and provide the measurement in the space.
13. Provide pumping level, time, and rates in the appropriate spaces.
14. Indicate whether these analyses were run.
15. Provide the requested information on filter pack.
16. Check the appropriate boxes and provide the depth of the grout.
17. Complete the requested information concerning the nearest source of possible contamination.
18. If installed, provide the information requested concerning the pump.
19. Indicate name, SC certification number, address and business or mobile (or both) telephone number for the well driller.
20. Sign and date the form.

The completed Form 1903 should be submitted to the SCDHEC, Bureau of Water, Private Well Program, 2600 Bull Street, Columbia, SC 29201-1708.



**INSTRUCTIONS**  
**Water Well Record**

This form is to be completed by an SC Certified Water Well Driller within thirty days of completion of the well. One copy is to be submitted to SCDHEC, another is intended for the well owner, and the final copy is for the well driller. In most cases, well location, owner, driller and other administrative information can be obtained from the Notice of Intent form. If additional comments are necessary, attach those on a separate sheet.

1. Include the name and present mailing address and telephone number of the well owner. This can be a tract owner or developer in the case of a new subdivision.
2. Indicate the exact number, street, city, zip, and county for the location of the well. If the street address is not available, attach a sketch map for general location and include lot number if it is in a new subdivision. "Same as 1" can be indicated if that is the case.
3. For public water supply, indicate system name and number.
4. Check appropriate boxes; for the driller's log, describe the formation, indicate the thickness and complete the depth to the bottom of the stratum.
5. Insert any comments.
6. Insert the eight-digit number assigned when the Notice of Intent was submitted for a residential or irrigation well or the public supply number.
7. Check box indicating use.
8. Indicate the total depth in the space provided; fill in the requested dates.
9. Check the box indicating the drilling method.
10. Check appropriate boxes and complete the information requested for the casing.
11. Complete the information requested for the screen; check the appropriate box.
12. Measure the static water level 24 hours after well completion and provide the measurement in the space.
13. Provide pumping level, time, and rates in the appropriate spaces.
14. Indicate whether these analyses were run.
15. Provide the requested information on filter pack.
16. Check the appropriate boxes and provide the depth of the grout.
17. Complete the requested information concerning the nearest source of possible contamination.
18. If installed, provide the information requested concerning the pump.
19. Indicate name, SC certification number, address and business or mobile (or both) telephone number for the well driller.
20. Sign and date the form.

The completed Form 1903 should be submitted to the SCDHEC, Bureau of Water, Private Well Program, 2600 Bull Street, Columbia, SC 29201-1708.





**INSTRUCTIONS**  
**Water Well Record**

This form is to be completed by an SC Certified Water Well Driller within thirty days of completion of the well. One copy is to be submitted to SCDHEC, another is intended for the well owner, and the final copy is for the well driller. In most cases, well location, owner, driller and other administrative information can be obtained from the Notice of Intent form. If additional comments are necessary, attach those on a separate sheet.

1. Include the name and present mailing address and telephone number of the well owner. This can be a tract owner or developer in the case of a new subdivision.
2. Indicate the exact number, street, city, zip, and county for the location of the well. If the street address is not available, attach a sketch map for general location and include lot number if it is in a new subdivision. "Same as 1" can be indicated if that is the case.
3. For public water supply, indicate system name and number.
4. Check appropriate boxes; for the driller's log, describe the formation, indicate the thickness and complete the depth to the bottom of the stratum.
5. Insert any comments.
6. Insert the eight-digit number assigned when the Notice of Intent was submitted for a residential or irrigation well or the public supply number.
7. Check box indicating use.
8. Indicate the total depth in the space provided; fill in the requested dates.
9. Check the box indicating the drilling method.
10. Check appropriate boxes and complete the information requested for the casing.
11. Complete the information requested for the screen; check the appropriate box.
12. Measure the static water level 24 hours after well completion and provide the measurement in the space.
13. Provide pumping level, time, and rates in the appropriate spaces.
14. Indicate whether these analyses were run.
15. Provide the requested information on filter pack.
16. Check the appropriate boxes and provide the depth of the grout.
17. Complete the requested information concerning the nearest source of possible contamination.
18. If installed, provide the information requested concerning the pump.
19. Indicate name, SC certification number, address and business or mobile (or both) telephone number for the well driller.
20. Sign and date the form.

The completed Form 1903 should be submitted to the SCDHEC, Bureau of Water, Private Well Program, 2600 Bull Street, Columbia, SC 29201-1708.



UNDERGROUND STORAGE TANK PROGRAM  
BUREAU OF LAND AND WASTE MANAGEMENT  
Phone (803) 898-4350 Fax (803) 898-4330

500 Bull Street  
Columbia, SC 29201-1708

MR STEVEN SMITH  
180 SCHALLOW FORD ROAD  
SALEM SC 29676

MAR 21 2002

Re: Hwy 11 Grocery, 13527 N Hwy. 11, Salem, SC  
UST Permit # 03439, CA #15851, MWA #UMW-15974  
Release 1 Reported November 28, 2000  
Assessment Plan received February 15, 2002  
Oconee County

Dear Mr. Smith:

The Underground Storage Tank (UST) Program of the South Carolina Department of Health and Environmental Control (SCDHEC) has reviewed the referenced Assessment Plan.

The cost agreement has been approved up to the amount indicated on the enclosed cost agreement form and assigned #15116 to track the allowable costs associated with this assessment. This includes the adjustment of the following rates and/or site rehabilitation activities proposed in the cost proposal to ensure compliance with current SUPERB program criteria per Section 44-2-20(2):

- Monitoring well installation has been approved for 100 feet for the deep well, 15 feet for shallow well and must delineate the extent of the plume, to include offsite extent. Please note that the screens must bracket the water table, otherwise costs associated with monitoring well installation will not be approved. Please note that costs associated with monitoring well installation will not be approved if well locations are not technically justified
- Lead analyses were omitted, and methane and ferrous analyses were reduced to five, implying the source area wells only.

SEI can submit an invoice for direct billing from the SUPERB Account. Please note that all applicable South Carolina certification requirements apply to the laboratory services, well installation, and report preparation. Please note that Sections 44-2-110(4) and 44-2-130 of the SUPERB Statute state that no costs will be allowed unless prior approval from the Department is obtained. If for any reason additional tasks will be completed, these additional tasks and the associated cost must be pre-approved by the Department for the cost to be paid. **The SCDHEC reserves the authority to pay only for work properly performed and/or technically justified and will only pay rates in accordance with established criteria. Further, SCDHEC reserves the right to question and/or reject costs if deemed unreasonable or excessive.** The SCDHEC reserves the right to audit project records at any time during the project or after completion of work.

Implementation of the assessment should proceed upon receipt of this correspondence. Monitoring well approval has been issued to your environmental contractor and a copy for your records is enclosed. **The report should be submitted within 90 days from the date of this letter.** All investigative derived waste must be properly stored in labeled containers or covered with plastic as appropriate. The Bureau grants pre-approval for the transportation of the investigative derived waste (virgin petroleum contaminated soil and groundwater) from the referenced site to a permitted treatment facility. All contaminated investigative derived waste must be accepted by the approved treatment facility. There can be no spillage or leakage in transport. A copy of the disposal manifest and approval letter from the receiving facility must be included as an appendix to the final report. If the levels of petroleum contamination based on laboratory analysis are below treatment levels, please contact the project manager for approval to dispose of the investigative derived waste on site. The SUPERB Account will not compensate for transportation or treatment of clean soil and/or groundwater. The Bureau reserves the authority to only apply costs to your deductible for work properly performed and/or technically justified in accordance with established criteria.

Upon receipt of the signed invoice, assessment report, and a copy of your canceled check (front and back) or a notarized statement from the contractor verifying payment for this scope of work, the amount up to the amount of the enclosed cost agreement form may be applied toward your deductible. **If the invoice is not submitted within 120 days from the date of this letter, monies allocated to pay this invoice will be uncommitted.** This means that the invoice will not be processed for payment until all other committed funds are paid or monies become available. Please note that payment from the SUPERB account will be made upon review of the report and confirmation that all work performed was technically justified.

On all correspondence regarding this site and scope of work, please reference UST Permit #03439 CA #15851. If you have any questions concerning this correspondence, please contact me at (803) 898-4353 or 1-800-826-5435 (within South Carolina only).

Sincerely,



Konstantine Akhvlediani, Hydrogeologist  
Owner/Operator Assistance Section  
Assessment and Corrective Action Division

enc.: Approved Cost Agreement  
Monitoring Well Approval (copy)

cc: SEI, 3021 McNaughton Drive, Suite 9, Columbia, SC 29223  
(w/ Approved Cost Agreement & original Monitoring Well Approval)  
Financial File (w/ Approved Cost Agreement)  
Technical File (w/ Monitoring Well Approval)  
Read File (without enclosures)



500 Bull Street  
Columbia, SC 29201-1708

## Monitoring Well Installation Approval Form

Date of Issue: February 22, 2002

Approval No.: UMW-15974

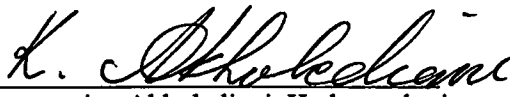
Approval is hereby granted to:  
(On behalf of):  
UST Permit #:  
County:

SEI  
Mr. Steven Smith  
03439  
Oconee

This approval is for the construction of one Type III monitoring well(s) and one Type II well in accordance with the South Carolina Well Standards and Regulations. The well(s) is to be constructed within the shallow aquifer for the intended purpose of monitoring ground-water quality and/or water level(s) at the referenced facility. Approval is provided with the following conditions:

1. The latitude and longitude, surveyed elevations, boring and/or geologist logs and actual (as built) construction details for each well will be submitted with the technical report.
2. Each well will be labeled with an identification plate constructed of a durable material affixed to the casing or surface pad where it is readily visible. The plate will provide monitoring well I.D.#, date of construction, static water level, and driller name and state certification #.
3. Well construction and sampling derived waste including, but not necessarily limited to, drill cuttings, drilling fluids, development and purge water should be managed properly and in compliance with applicable requirements. If containerized, each vessel should be clearly labeled with regard to contents, source, and date of activity.
4. A minimum of forty-eight (48) hours prior to initiation of drilling activities, please provide notice to Konstantine Akhvlediani at (803) 898-4353 or akhvlekt@columb26.dhec.state.sc.us.
5. Please provide ground-water quality analytical data (chemical analysis and/or water level(s)) and associated measurements (i.e., in-situ field measurements) to me with the technical report.
6. Monitoring wells will be installed by or under the direct supervision of a licensed well driller certified by the State of South Carolina.
7. Monitoring wells will be abandoned, when no longer required, by or under the direct supervision of a licensed well driller certified by the State of South Carolina.

This approval is pursuant to the provisions of Section 44-55-40 of the 1976 South Carolina Code of Laws and the Department of Health and Environmental Control Regulations R.61-71. Please remember to have a copy of this approval on the site during well installation.

Approved by:   
Konstantine Akhvlediani, Hydrogeologist  
Owner/Operator Assistance Section  
Assessment and Corrective Action Division  
UST Program

cc: Appalachia I District EQC  
Technical File  
Mr. Steven Smith, 180 Schallow Ford Road, Salem, SC 29676



**UNDERGROUND STORAGE TANK PROGRAM  
BUREAU OF LAND AND WASTE MANAGEMENT**

Phone (803) 898-4350 Fax (803) 898-4330

**FEB 07 2002**

500 Bull Street  
Columbia, SC 29201-1708

Mr. Steven Smith  
180 Schallow Ford Road  
Salem, SC 29676

Re: Hwy 11 Grocery, 13527 N Hwy. 11, Salem, SC  
UST Permit # 03439  
Release 1 Reported November 28, 2000  
Assessment Report received January 11, 2002  
Oconee County

Dear Mr. Smith:


The Underground Storage Tank (UST) Program of the South Carolina Department of Health and Environmental Control (SCDHEC) has reviewed the referenced report. The Program has concluded that DMW-3 (telescoping well) was improperly installed and could cause cross-contamination of the groundwater. Therefore, this well should be properly abandoned and a new Type III well installed to vertically delineate the groundwater contamination. In addition to this, one shallow monitoring well should be installed to the south of MW-11 (close to the creek). All monitoring wells should be sampled after the new wells are installed.

**Please have your contractor complete and submit the Assessment Component Cost Agreement form within thirty days of the date of this letter.** Every component may not be necessary to complete the above scope of work. The SUPERB allowable cost for each component is included on the Assessment Component Cost Proposal Form.

According to our records, the release was reported to the SCDHEC on November 28, 2000. In accordance with Section 44-2-40(D) of the State Underground Petroleum Environmental Response Bank (SUPERB) Act, you are responsible for the first \$25,000 for site rehabilitation. To insure that any expenditure you make apply to this \$25,000 deductible, it is prudent for this agency to pre-approve such costs along with your technical plan of action. By law, the SUPERB Account cannot compensate any costs that are not pre-approved. Eligible costs exceeding the \$25,000 deductible can be compensated from the SUPERB Account.

On all correspondence regarding this site and scope of work, please reference UST Permit #03439. If you have any questions concerning this correspondence, please contact me at (803) 898-4353 or 1-800-826-5435 (within South Carolina only).

Sincerely,

  
Konstantine Akhvlediani, Hydrogeologist  
Owner/Operator Assistance Section  
Assessment and Corrective Action Division

cc: SEI, 3021 McNaughton Drive, Suite 9, Columbia, SC 29223  
Technical/Read Files

SCDHEC/UST/SLFS/KTA/1/25/02

**SEI**  
**Environmental, Inc.**

3021 McNaughton Drive  
Suite 9  
Columbia, SC 29223  
800-377-2826  
803-788-2535  
Fax 803-788-2399

RECEIVED

FEB 15 2002

Ground Storage  
Tank Program

February 12, 2002

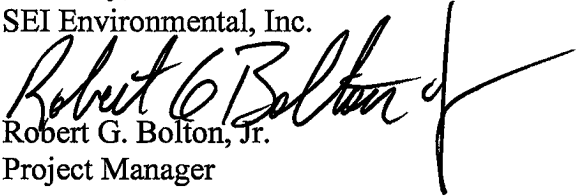
Mr. Konstantine Akhvlediani, Hydrogeologist  
SCDHEC – UST Program  
Bureau of Land And Waste Management  
2600 Bull Street  
Columbia, South Carolina 29201

RE: Assessment Component Cost Agreement  
Highway 11 Grocery  
13527 North SC Highway 11  
Salem, South Carolina  
Oconee County  
UST Permit #03439

Dear Mr. Akhvlediani:

Please find enclosed an Assessment Cost Proposal for an Assessment Component Cost Agreement at Highway 11 Grocery, per your request of February 7, 2002. Should you have any questions or require additional information, please contact SEI Environmental, Inc. at 788-2535.

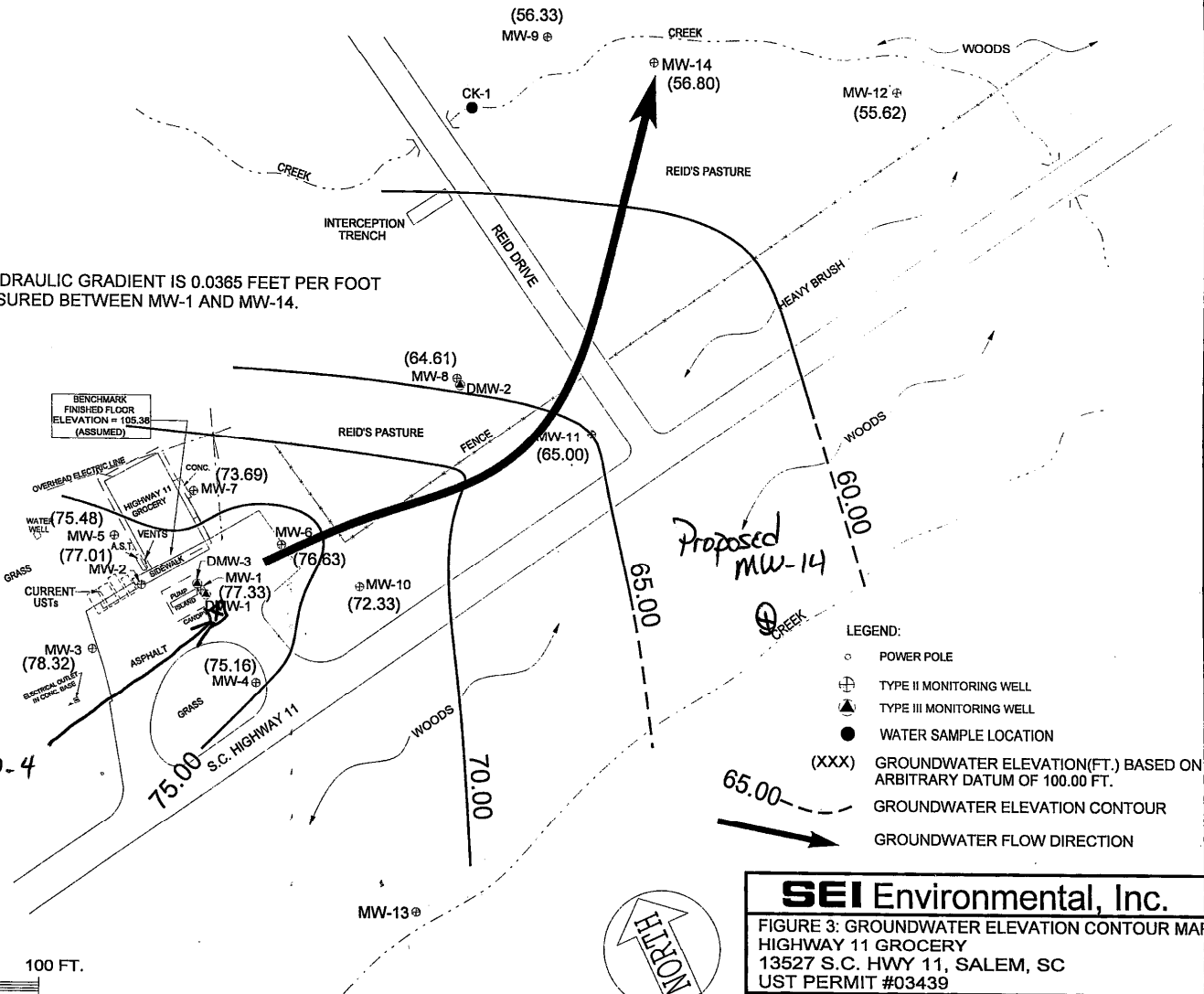
Sincerely,  
SEI Environmental, Inc.

  
Robert G. Bolton, Jr.  
Project Manager

Enclosure

cc: Mr. Steve Smith, Highway 11 Grocery

NOTE: THE HYDRAULIC GRADIENT IS 0.0365 FEET PER FOOT AS MEASURED BETWEEN MW-1 AND MW-14.



- LEGEND:
- POWER POLE
  - ⊕ TYPE II MONITORING WELL
  - ▲ TYPE III MONITORING WELL
  - WATER SAMPLE LOCATION
  - (XXX) GROUNDWATER ELEVATION (FT.) BASED ON ARBITRARY DATUM OF 100.00 FT.
  - - - GROUNDWATER ELEVATION CONTOUR
  - GROUNDWATER FLOW DIRECTION

**SEI Environmental, Inc.**  
 FIGURE 3: GROUNDWATER ELEVATION CONTOUR MAP  
 HIGHWAY 11 GROCERY  
 13527 S.C. HWY 11, SALEM, SC  
 UST PERMIT #03439

WO #300-388	DATE: 1/8/02
DWG #HI03883B	DRAWN BY: J CJ



UNDERGROUND STORAGE TANK PROGRAM  
BUREAU OF LAND AND WASTE MANAGEMENT

Phone (803) 898-4350 Fax (803) 898-4330

100 Bull Street  
Columbia, SC 29201-1708

Mr. Steven Smith  
180 Schallow Ford Road  
Salem, SC 29676

NOV 16 2001

Re: Hwy 11 Grocery, 13527 N Hwy. 11, Salem, SC  
UST Permit # 03439, CP #15116  
Release 1 Reported November 28, 2000  
Assessment Plan received November 1, 2001  
Oconee County

Dear Mr. Smith:

The Underground Storage Tank (UST) Program of the South Carolina Department of Health and Environmental Control (SCDHEC) has reviewed the referenced Assessment Plan.

The cost proposal has been approved up to the amount indicated on the enclosed cost agreement form and assigned #15116 to track the allowable costs associated with this assessment. This includes the adjustment of the following rates and/or site rehabilitation activities proposed in the cost proposal to ensure compliance with current SUPERB program criteria per Section 44-2-20(2):

- Monitoring well installation has been approved for: 120 feet for the deep well, 30 feet for shallow wells and for 50 feet of temporary wells and must delineate the extent of the plume, to include offsite extent. Please note that the screens must bracket the water table, otherwise costs associated with monitoring well installation will not be approved. Please note that costs associated with monitoring well installation will not be approved if well locations are not technically justified
- EDB analyses were denied and methane analyses were reduced to five implying the source area wells only.

SEI can submit an invoice for direct billing from the SUPERB Account. Please note that all applicable South Carolina certification requirements apply to the laboratory services, well installation, and report preparation. Please note that Sections 44-2-110(4) and 44-2-130 of the SUPERB Statute state that no costs will be allowed unless prior approval from the Department is obtained. If for any reason additional tasks will be completed, these additional tasks and the associated cost must be preapproved by the Department for the cost to be paid. **The SCDHEC reserves the authority to pay only for work properly performed and/or technically justified and will only pay rates in accordance with established criteria. Further, SCDHEC reserves the right to question and/or reject costs if deemed unreasonable or excessive.** The SCDHEC reserves the right to audit project records at any time during the project or after completion of work.

Implementation of the assessment should proceed upon receipt of this correspondence. Monitoring well approval has been issued to your environmental contractor and a copy for your records is enclosed. **The report should be submitted within 90 days from the date of this letter.** All investigative derived waste must be properly stored in labeled containers or covered with plastic as appropriate. The Bureau grants pre-approval for the transportation of the investigative derived waste (virgin petroleum contaminated soil and groundwater) from the referenced site to a permitted treatment facility. All contaminated investigative derived waste must be accepted by the approved treatment facility. There can be no spillage or leakage in transport. A copy of the disposal manifest and approval letter from the receiving facility must be included as an appendix to the final report. If the levels of petroleum contamination based on laboratory analysis are below treatment levels, please contact the project manager for approval to dispose of the investigative derived waste on site. The SUPERB Account will not compensate for transportation or treatment of clean soil and/or groundwater. The Bureau



Upon receipt of the signed invoice, assessment report, and a copy of your canceled check (front and back) or a notarized statement from the contractor verifying payment for this scope of work, the amount up to the amount of the enclosed cost agreement form may be applied toward your deductible. **If the invoice is not submitted within 120 days from the date of this letter, monies allocated to pay this invoice will be uncommitted.** This means that the invoice will not be processed for payment until all other committed funds are paid or monies become available. Please note that payment from the SUPERB account will be made upon review of the report and confirmation that all work performed was technically justified.

**Field screening results, along with proposed permanent monitoring well locations, are to be faxed to the Department project manager at (803) 898-4330 for approval prior to the installation of permanent monitoring wells.**

On all correspondence regarding this site and scope of work, please reference UST Permit #03439 cost proposal #15116. If you have any questions concerning this correspondence, please contact me at (803) 898-4353 or 1-800-826-5435 (within South Carolina only).

Sincerely,



Konstantine Akhvlediani, Hydrogeologist  
State Lead and Field Services Section  
Assessment and Corrective Action Division

enc.: Finance Approved Assessment Component Cost Proposal  
Monitoring Well Approval (copy)

cc: SEI, 3021 McNaughton Drive, Suite 9, Columbia, SC 29223  
(w/Finance Approved Assessment Component Cost Proposal & original Monitoring Well Approval)  
Financial File (w/ Finance Approved Assessment Component Cost Proposal)  
Technical File (w/ Monitoring Well Approval)  
Read File (without enclosures)



00 Bull Street  
Columbia, SC 29201-1708

## Monitoring Well Installation Approval Form

Date of Issue: November 6, 2001

Approval No.: UMW-15618

Approval is hereby granted to:  
(On behalf of):  
UST Permit #:  
County:


SEI  
Mr. Steven Smith  
03439  
Oconee

This approval is for the construction of two Type III monitoring well(s), two shallow wells and 50 feet of temporary wells in accordance with the South Carolina Well Standards and Regulations. The well(s) is to be constructed within the shallow aquifer for the intended purpose of monitoring ground-water quality and/or water level(s) at the referenced facility. Approval is provided with the following conditions:

1. The latitude and longitude, surveyed elevations, boring and/or geologist logs and actual (as built) construction details for each well will be submitted with the technical report.
2. Each well will be labeled with an identification plate constructed of a durable material affixed to the casing or surface pad where it is readily visible. The plate will provide monitoring well I.D.#, date of construction, static water level, and driller name and state certification #.
3. Well construction and sampling derived waste including, but not necessarily limited to, drill cuttings, drilling fluids, development and purge water should be managed properly and in compliance with applicable requirements. If containerized, each vessel should be clearly labeled with regard to contents, source, and date of activity.
4. A minimum of forty-eight (48) hours prior to initiation of drilling activities, please provide notice to Konstantine Akhvlediani at (803) 898-4353 or akhvlekt@columb26.dhec.state.sc.us.
5. Please provide ground-water quality analytical data (chemical analysis and/or water level(s)) and associated measurements (i.e., in-situ field measurements) to me with the technical report.
6. Monitoring wells will be installed by or under the direct supervision of a licensed well driller certified by the State of South Carolina.
7. Monitoring wells will be abandoned, when no longer required, by or under the direct supervision of a licensed well driller certified by the State of South Carolina.

This approval is pursuant to the provisions of Section 44-55-40 of the 1976 South Carolina Code of Laws and the Department of Health and Environmental Control Regulations R.61-71. Please remember to have a copy of this approval on the site during well installation.

Approved by:

  
Konstantine Akhvlediani, Hydrogeologist  
Owner/Operator Assistance Section  
Assessment and Corrective Action Division  
UST Program

cc: Appalachia I District EQC  
Technical File  
Mr. Steven Smith, 180 Schallow Ford Road, Salem, SC 29676



**Environmental, Inc.**

3021 McNaughton Drive  
Suite 9  
Columbia, SC 29223  
800.377.2826  
803.788.2535  
Fax 788.2399

RECEIVED  
NOV 1 2001  
Underground Storage  
Tank Program

October 31, 2001

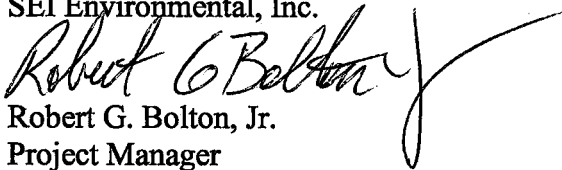
Mr. Konstantine Akhvlediani, Hydrogeologist  
SCDHEC - UST Program  
Bureau of Land And Waste Management  
2600 Bull Street  
Columbia, South Carolina 29201

RE: Tier II Assessment Addendum Proposal  
Highway 11 Grocery  
13527 North SC Highway 11  
Salem, South Carolina  
Oconee County  
UST Permit #03439

Dear Mr. Akhvlediani:

Please find enclosed an Assessment Cost Proposal for a Tier II Assessment Addendum at Highway 11 Grocery, per your request of October 10, 2001. Should you have any questions or require additional information, please contact SEI Environmental, Inc. at 788-2535.

Sincerely,  
SEI Environmental, Inc.

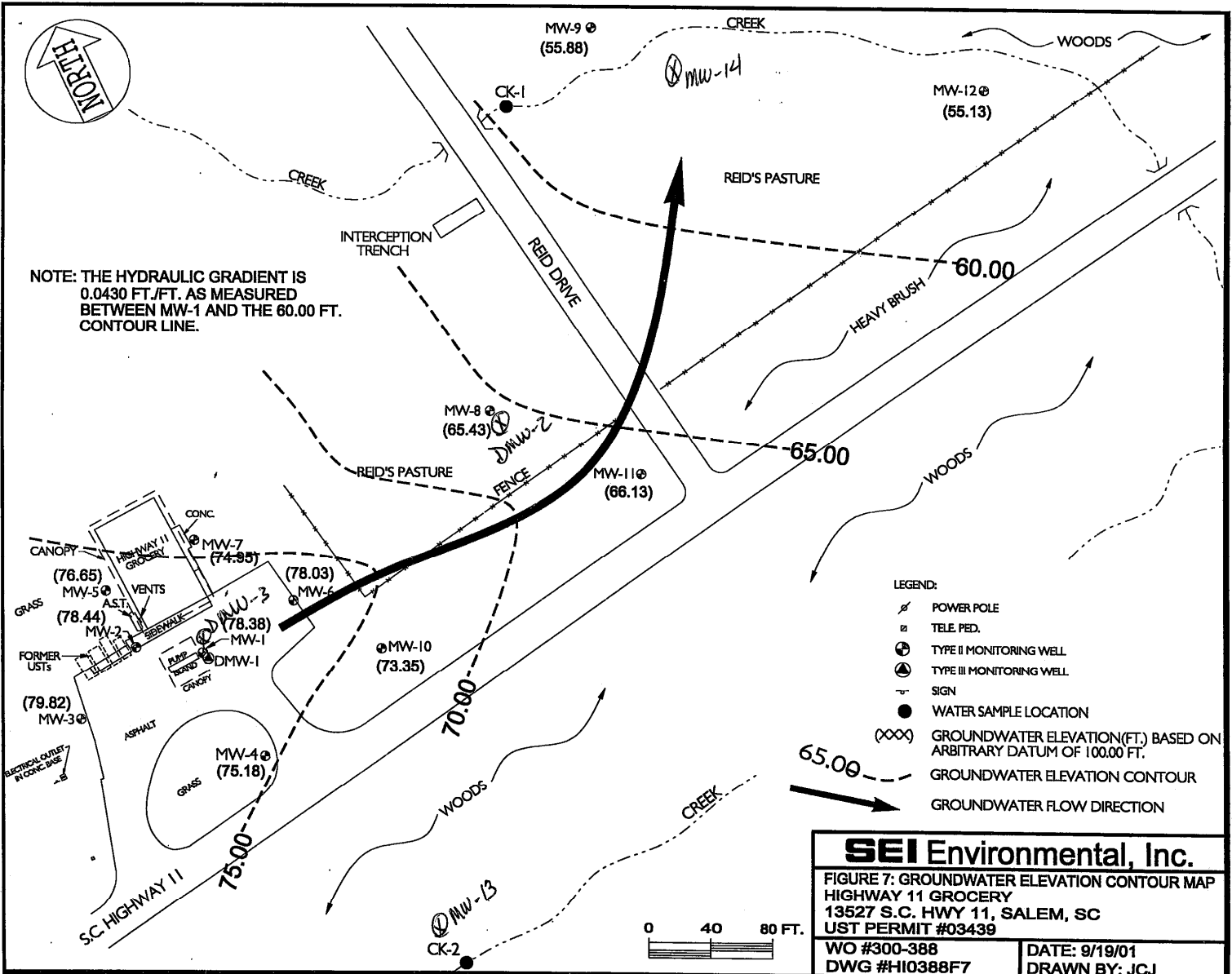
  
Robert G. Bolton, Jr.  
Project Manager

Enclosure

cc: Mr. Steve Smith, Highway 11 Grocery



NOTE: THE HYDRAULIC GRADIENT IS 0.0430 FT./FT. AS MEASURED BETWEEN MW-1 AND THE 60.00 FT. CONTOUR LINE.



LEGEND:

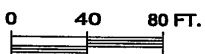
- POWER POLE
- TELE PED.
- TYPE II MONITORING WELL
- TYPE III MONITORING WELL
- SIGN
- WATER SAMPLE LOCATION
- GROUNDWATER ELEVATION (FT.) BASED ON ARBITRARY DATUM OF 100.00 FT.
- GROUNDWATER ELEVATION CONTOUR
- GROUNDWATER FLOW DIRECTION

**SEI Environmental, Inc.**

FIGURE 7: GROUNDWATER ELEVATION CONTOUR MAP  
 HIGHWAY 11 GROCERY  
 13527 S.C. HWY 11, SALEM, SC  
 UST PERMIT #03439

WO #300-388  
 DWG #H10388F7

DATE: 9/19/01  
 DRAWN BY: JCJ





**Environmental, Inc.**

3021 McNaughton Drive  
Suite 9  
Columbia, SC 29223  
800.377.2826  
803.788.2535  
Fax 788.2399

RECEIVED

SEP 26 2001

Underground Storage  
Tank Program

September 25, 2001

Mr. Konstantine Akhvlediani, Hydrogeologist  
SCDHEC – UST Program  
Bureau of Land and Waste Management  
2600 Bull Street  
Columbia, South Carolina 29201-1708

Re: Highway 11 Grocery  
13527 SC Highway 11  
Salem, South Carolina  
UST Permit #03439  
Cost Proposal #13586

Dear Mr. Akhvlediani:

Please find enclosed the soil and water drum disposal certificates for the March 29–30, 2001, drilling and sampling activities performed by SEI Environmental, Inc. (SEI) personnel. These certificates were inadvertently omitted from the April 4, 2001, Assessment Report. Should you have any questions or require additional information, please contact me at 788-2535.

Sincerely,  
SEI Environmental, Inc.

Bob Bolton  
Project Manager

Enclosure

cc: Mr. Steve Smith, Highway 11 Grocery

**NON-HAZARDOUS WASTE MANIFEST**

1. Generator's US EPA ID No.

Manifest Document No. GK3729

2. Page 1 of

03-30-01

3. Generator's Name and Mailing Address

SEI ENVIRONMENTAL  
3021 MCNAUGHTON DRIVE, SUITE 9  
COLUMBIA, SC

4. Generator's Phone ( )

5. Transporter 1 Company Name  
SEI ENVIRONMENTAL

6. US EPA ID Number

A. Transporter's Phone  
803-788-2535

7. Transporter 2 Company Name

8. US EPA ID Number

B. Transporter's Phone

9. Designated Facility Name and Site Address

G & K TANK SERVICES  
PO BOX 1384  
SUMTER, SC 29151

US EPA ID Number

C. Facility's Phone

800-800-6840

11. Waste Shipping Name and Description

a. NON HAZARDOUS PETROLEUM CONTAMINATED SOIL  
HIGHWAY 11 GROCERY

b. NON HAZARDOUS PETROLEUM CONTAMINATED WATER  
HIGHWAY 11 GROCERY

c.

d.

12. Containers  
No. Type

13. Total  
Quantity

14. Unit  
Wt/Vol

03DR

01DDR

D. Additional Descriptions for Materials Listed Above

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

SEI ENVIRONMENTAL  
3021 MCNAUGHTON DRIVE, SUITE 9  
COLUMBIA, SC

16. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name

Signature

Month Day Year

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name

Signature

Month Day Year

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name

Signature

Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

Printed/Typed Name

Signature

Month Day Year

GENERATOR

TRANSPORTER

FACILITY



Broad St. Extension • PO Box 1384 • Sumter, SC 29151  
(803) 494-2694 • 1-800-800-6840 • FAX: (803) 494-8598

## *Certificate of Disposal*

# Tons 1 Drum  
Highway 11 Grocery

Contaminant NonHazardous Petroleum  
Contaminanted water

This is to certify the above ~~soil~~<sup>water</sup> has been processed and disposed of by G & K Tank Services, Inc., in accordance with and exceeding EPA regulations on petroleum contaminated soils.

Certified by S. S. S. S.

Date 04/02/01



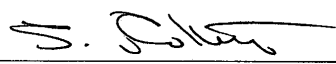
Broad St. Extension • PO Box 1384 • Sumter, SC 29151  
(803) 494-2694 • 1-800-800-6840 • FAX: (803) 494-8598

## *Certificate of Disposal*

# Tons \_\_\_\_\_ 3 Drums \_\_\_\_\_  
Hwy 11 Grocery

Contaminant NonHazardous Petroleum  
Contaminated Soil

This is to certify the above soil has been processed and disposed of by G & K Tank Services, Inc., in accordance with and exceeding EPA regulations on petroleum contaminated soils.

Certified by 

Date 04/02/01



# SEI ENVIRONMENTAL, INC.

3021 McNaughton Drive, Suite 9, Columbia, S.C. 29223

Phone (803) 788.2535 Fax (803) 788.2399

ATTENTION: KONSTANTINE

COMPANY: SCD HEC - UST

DATE: 8/6

FAX NUMBER: 898-4350

PHONE NUMBER: 898-4330

FROM: BOB BOLTON

PAGES: 3 (INCLUDING COVERSHEET)

COMMENTS  
Konstantine,  
Pls review the attached info for  
Highway 11 Grocery (UST # 03439) and call  
me to discuss future well locations.

THANKS,  
BOB

PLEASE CALL IF YOU HAVE QUESTIONS OR IF THIS FAX IS NOT COMPLETE.

PROVIDING PRACTICAL SOLUTIONS FOR TODAY'S ENVIRONMENTAL NEEDS.....

HARD COPY BEING SENT VIA:

( ) First Class Mail ( ) Federal Express ( ) Messenger ( ) None

RECEIVED

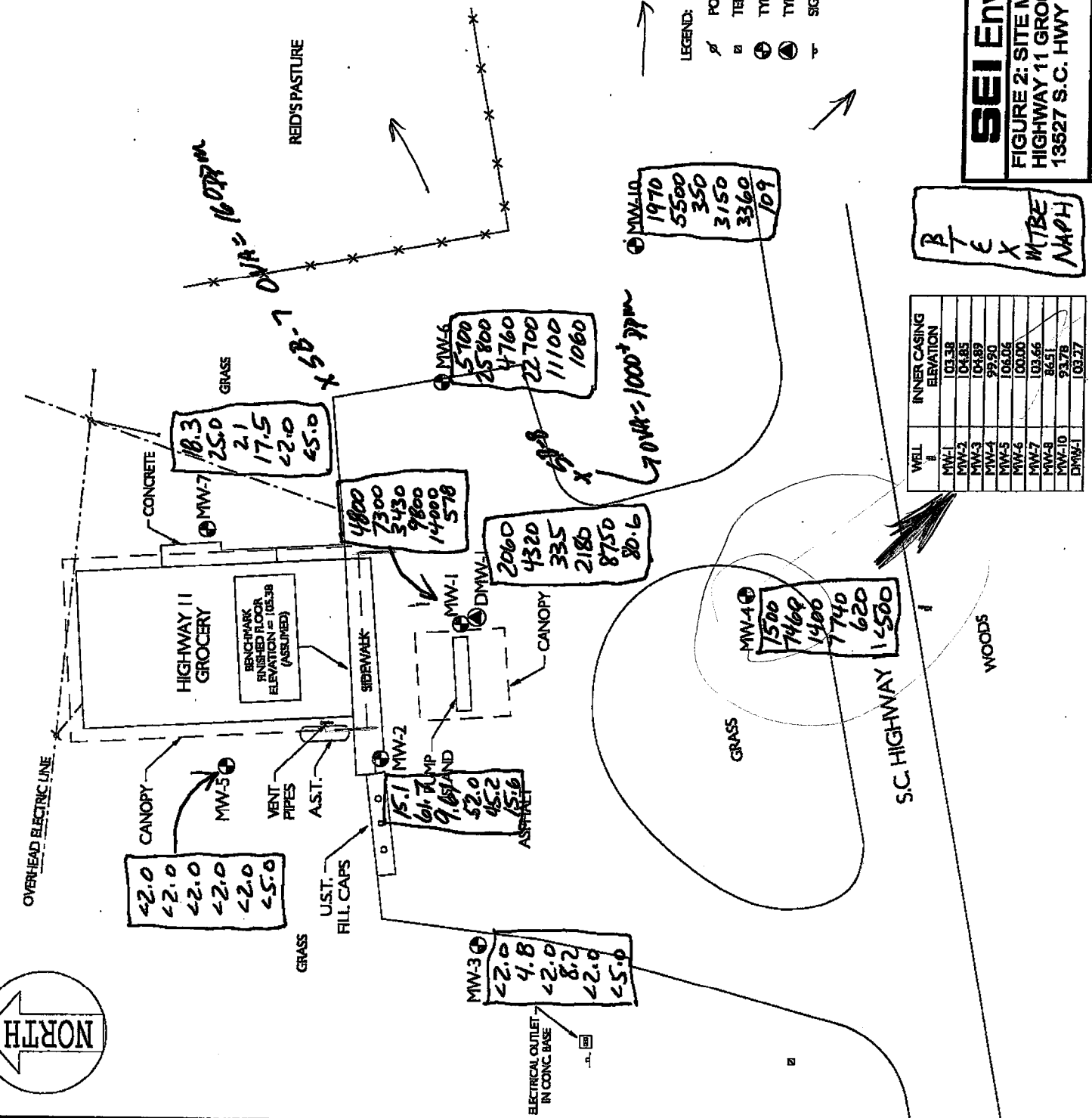
AUG 06 2001

Underground Storage Tank Program

CREEK

MW-8

17100
34400
3060
14800
47000
500



# SEI Environmental, Inc.

FIGURE 2: SITE MAP  
 HIGHWAY 11 GROCERY  
 13527 S.C. HWY 11, SALEM, SC

WO #300-388  
 DWG #H10388F2  
 DATE: 7/31/01  
 DRAWN BY: J.C.J.

BTEX  
 MTBE  
 NAPL

WELL #	INNER CASING ELEVATION
MW-1	103.38
MW-2	104.85
MW-3	104.89
MW-4	99.90
MW-5	106.06
MW-6	100.00
MW-7	103.66
MW-8	86.51
MW-10	93.78
DMW-1	103.27

NOTE ELEVATIONS REFER TO AN ASSUMED ELEVATION.

MW-7

18.3
25.0
2.1
17.5
22.0
45.0

MW-6

4800
7300
3430
9800
14000
578

MW-1

2060
4320
335
2180
8750
80.6

MW-4

1500
7460
1400
7740
620
11500

MW-3

2.0
4.8
2.0
8.2
2.0
45.0

MW-10

1970
5500
350
3750
3360
109



HIGHWAY 11 GROCERY  
 CONCRETE  
 CANOPY  
 BENCHMARK FINISHED FLOOR ELEVATION = 103.38 (ASSUMED)

SC HIGHWAY 11  
 GRASS  
 WOODS

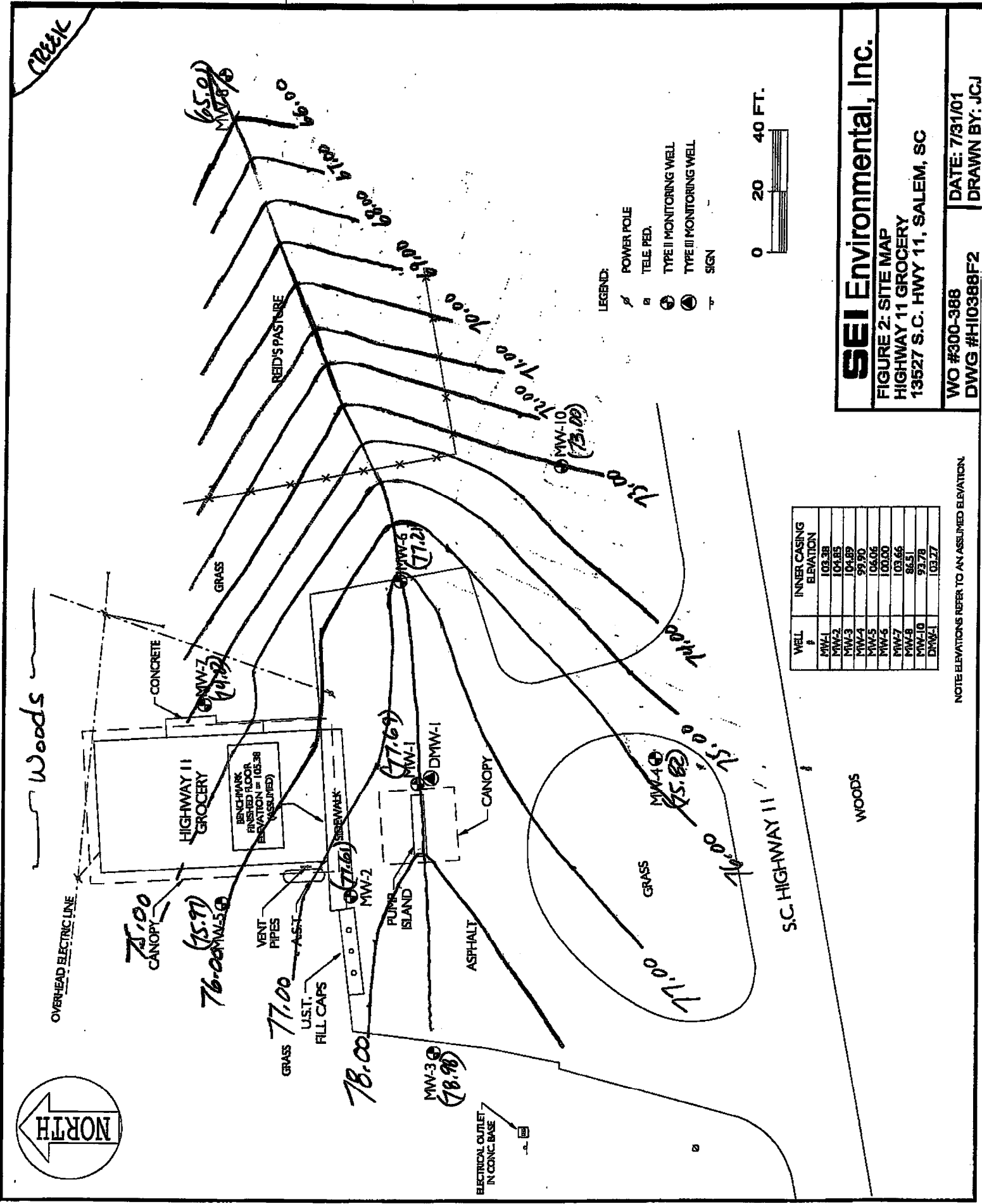
REID'S PASTURE  
 GRASS  
 DVA = 1607 m  
 58-7  
 70 m = 1000 + 77 m

OVERHEAD ELECTRIC LINE

MW-5  
 CANOPY  
 VENT PIPES  
 A.S.T.  
 U.S.T. FILL CAPS  
 GRASS

MW-2  
 60.7 PUMP  
 9.69 STAND  
 52.0  
 45.2  
 45.6  
 ASPHALT

ELECTRICAL OUTLET IN CONC. BASE



WELL #	INNER CASING ELEVATION
MW-1	103.38
MW-2	104.85
MW-3	104.89
MW-4	99.90
MW-5	104.06
MW-6	100.00
MW-7	103.66
MW-8	84.51
MW-10	93.78
DMW-1	103.27

NOTE ELEVATIONS REFER TO AN ASSUMED ELEVATION

**SEI Environmental, Inc.**  
 FIGURE 2- SITE MAP  
 HIGHWAY 11 GROCERY  
 13527 S.C. HWY 11, SALEM, SC  
 WO #300-388 DATE: 7/31/01  
 DWG #H10388F2 DRAWN BY: JCJ



**Environmental, Inc.**

3021 McNaughton Drive  
Suite 9  
Columbia, SC 29223  
800.377.2826  
803.788.2535  
Fax 788.2399

**RECEIVED**

JUN 28 2001

Underground Storage  
Tank Program

June 28, 2001

Mr. Konstantine Akhvlediani, Hydrogeologist  
SCDHEC - UST Program  
Bureau of Land And Waste Management  
2600 Bull Street  
Columbia, South Carolina 29201

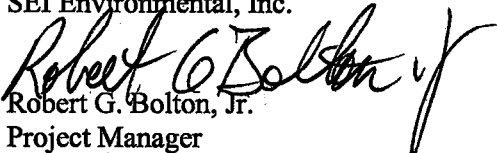
RE: Interception Trench  
Highway 11 Grocery  
13527 North SC Highway 11  
Salem, South Carolina  
Oconee County  
UST Permit #03439

Dear Mr. Akhvlediani:

On June 4-6, 2001, SEI personnel mobilized to Highway 11 Grocery to construct an interception trench adjacent to Fall Creek, which is topographically down-gradient from Highway 11 Grocery. The trench is approximately 20 feet long, 3 feet wide, and 6 feet deep. It is located approximately 8 to 10 feet away from Fall Creek. The bottom of the trench was lined with engineer screen with slotted PVC pipe above the screen with risers on either end. The pipe was then be covered with a shallow layer of gravel. Absorbent booms were placed in the trench to absorb any petroleum products that enter the trench. These booms, as well as those in the creek, are checked every two weeks and replaced as necessary. A wire fence was constructed around the trench to prevent animals and people from entering the trench. Approximately 60.61 tons of excavated soil was removed and properly disposed at Palmetto Landfill and Recycling Center in Wellford, South Carolina. Copies of the disposal manifests are attached.

Should you have any questions or require additional information, please contact Fred Lyke or me at 788-2535.

Sincerely,  
SEI Environmental, Inc.

  
Robert G. Bolton, Jr.  
Project Manager

Enclosure

cc: Mr. Steve Smith, Highway 11 Grocery



**PALMETTO LANDFILL**  
A WASTE MANAGEMENT COMPANY

DIRECT TO PALMETTO

Gate Ticker No. 865537

**NON-HAZARDOUS WASTE MANIFEST**

**133392**

**GENERATOR**

Generator: SEI MAS Mailing Address  
 Shipping Location (Return completed manifest to:) 41098  
 Street: 210 New Hope Rd. Street or P.O. Box:  
 City: SPRING State: SC City: SPRING  
 County: Spartanburg State: SC Zip Code: 29105  
 Phone: (803) 772-2117 Phone: (803) 772-2717

Description of Waste Materials	Profile Number	Total Quantity	Unit of Measure	Container Type
<u>Non-hazardous solid waste</u>	<u>CG65703</u>			
<u>TPH</u>		<u>20.28</u>		

I hereby certify that the above-described materials are not hazardous wastes as defined by 40 CFR, Part 261 or any applicable state law, have been fully and accurately described, classified and packaged, and are in proper condition for transportation according to applicable regulations.

Generator Authorized Agent Name (Print) Henry V. Swales SEI Signature Henry V. Swales Delivery Date 6/5/01

**TRANSPORTER**

Transporter Name J.L. Russell/SON Driver Name (Print) DAVID MC HARMON  
 Address 410 Alice St. Truck Number 19  
SPRING, SC 29103

I hereby acknowledge receipt of the above described materials for transport from the generator site listed above.

I hereby acknowledge receipt of the above described materials: were received from the generator site, and were transported without incident, to the destination as stated on this form.

Driver Signature [Signature] Shipment Date 6-5-01 Driver Signature [Signature] Delivery Date 6-5-01

**DESTINATION**

Site Name: Palmetto Landfill & Recycling Center Phone Number: (864) 439-8426 • Fax: 439-0097

Address: 251 New Hope Road, Wellford, South Carolina 29385

Disposal Location: North Q West 22 Level 82C

I hereby acknowledge receipt of the above described materials.  
 Name of Authorized Agent (Print) Henry V. Swales Signature [Signature] Receipt Date 6/12/2001

NOTE: MANIFEST MUST BE FILLED OUT COMPLETELY BEFORE DISPOSAL



Gate Ticket No. 8667

**NON-HAZARDOUS WASTE MANIFEST**

**133394**

**GENERATOR**

Generator: SEI ENV SERV.  
 Shipping Location  
 Street: 3051 McNAULTON DR.  
 City: COLUMBIA State: SC  
 County: LEXINGTON  
 Phone: (803) 788-4535

Mailing Address  
 (Return completed manifest to:)  
 Street or P.O. Box: 4078  
 City: SPARTANBURG  
 State: SC Zip Code: 29305  
 Phone: (814) 582-2717

Description of Waste Materials	Profile Number	Total Quantity	Unit of Measure	Container Type
<u>ENV. RELATED SOLID, NOS.</u>	<u>001203</u>			<u>271</u>
<u>GEN. UNIDENTIFIED SOL.</u>				
		<u>1931</u>		

I hereby certify that the above-described materials are not hazardous wastes as defined by 40 CFR, Part 261 or any applicable state law, have been fully and accurately described, classified and packaged, and are in proper condition for transportation according to applicable regulations.

Generator Authorized Agent Name (Print) \_\_\_\_\_ Signature \_\_\_\_\_ Delivery Date \_\_\_\_\_

**TRANSPORTER**

Transporter Name: SEI ENV SERV.  
 Address: 3051 McNAULTON DR.

Driver Name (Print): ...  
 Truck Number: 17

I hereby acknowledge receipt of the above described materials for transport from the generator site listed above.

I hereby acknowledge receipt of the above described materials:  
 were received from the generator site, and were transported without incident, to the destination as stated on this form.

Driver Signature \_\_\_\_\_ Shipment Date \_\_\_\_\_

Driver Signature \_\_\_\_\_ Delivery Date \_\_\_\_\_

**DESTINATION**

Site Name: Palmetto Landfill & Recycling Center, Phone Number: (864) 439-8426 • Fax: 439-0097

Address: 251 New Hope Road, Wellford, South Carolina 29385

Disposal Location: North \_\_\_\_\_ West \_\_\_\_\_ Level \_\_\_\_\_

I hereby acknowledge receipt of the above described materials.

Name of Authorized Agent (Print) \_\_\_\_\_ Signature \_\_\_\_\_ Receipt Date \_\_\_\_\_

NOTE: MANIFEST MUST BE FILLED OUT COMPLETELY BEFORE DISPOSAL



**PALMETTO LANDFILL**  
A WASTE MANAGEMENT COMPANY

Gate Ticket No. 806545

133393

**NON-HAZARDOUS WASTE MANIFEST**

**GENERATOR**

Generator: SET ENVIRONMENTAL Mailing Address \_\_\_\_\_  
 Shipping Location \_\_\_\_\_ (Return completed manifest to:)  
 Street: 3021 McNAUGHTON DR. SA. Street or P.O. Box: 4098  
 City: COLUMBIA State: S.C. City: SPARTANBURG  
 County: LEXINGTON State: S.C. Zip Code: 29305  
 Phone: (803) 788-2535 Phone: (864) 583-2717

Description of Waste Materials	Proble Number	Total Quantity	Unit of Measure	Container Type
<u>NON REGULATED SOLID, NOS.</u>	<u>CQ-6803</u>	<u>13.57</u>	<u>tons</u>	<u>25 yd</u>
<u>TPH CONTAMINATED SOIL.</u>				

I hereby certify that the above-described materials are not hazardous wastes as defined by 40 CFR, Part 261 or any applicable state law, have been fully and accurately described, classified and packaged, and are in proper condition for transportation according to applicable regulations.

Brett Ransom Generator Authorized Agent Name (Print)      Brett Ransom Signature      \_\_\_\_\_ Delivery Date

**TRANSPORTER**

Transporter Name JBR ENV SERV.  
 Address 212 ALICE STREET  
SPARTANBURG S.C. 29305

Driver Name (Print) DAVID MC CHARMAN  
 Truck Number 17

I hereby acknowledge receipt of the above described materials for transport from the generator site listed above.

I hereby acknowledge receipt of the above described materials: were received from the generator site, and were transported without incident, to the destination as stated on this form.

David McCharman Driver Signature      6-26-01 Shipment Date

David McCharman Driver Signature      6-26-01 Delivery Date

**DESTINATION**

Site Name: Palmetto Landfill & Recycling Center      Phone Number: (864) 439-8426 • Fax: 439-0097

Address: 251 New Hope Road, Wellford, South Carolina 29385

Disposal Location: North P West 23 Level 820

I hereby acknowledge receipt of the above described materials.  
\_\_\_\_\_ Name of Authorized Agent (Print)      \_\_\_\_\_ Signature      5/19/01 Receipt Date

NOTE: MANIFEST MUST BE FILLED OUT COMPLETELY BEFORE DISPOSAL



# PALMETTO LANDFILL

A WASTE MANAGEMENT COMPANY

Gate Ticket No. 706504

## NON-HAZARDOUS WASTE MANIFEST

133395

### GENERATOR

Generator: SET CAN. SERV.  
Shipping Location  
Street: 3921 M. WASHINGTON DR.  
City: COLUMBIA State: SC  
County: LEXINGTON  
Phone: (803) 702-3535

Mailing Address  
(Return completed manifest to)  
Street or P.O. Box: 1106123016  
City: D-  
State: SC Zip Code: 2905  
Phone: (803) 702-3535

Description of Waste Materials	Profile Number	Total Quantity	Unit of Measure	Container Type
<u>111 PERILLATED PAID. RES.</u>	<u>12-1312</u>	<u>7.45</u>		
<u>711 UNCONTAMINATED W/L</u>				

I hereby certify that the above-described materials are not hazardous wastes as defined by 40 CFR, Part 261 or any applicable state law, have been fully and accurately described, classified and packaged, and are in proper condition for transportation according to applicable regulations.

Generator Authorized Agent Name (Print) \_\_\_\_\_ Signature \_\_\_\_\_ Delivery Date \_\_\_\_\_

### TRANSPORTER

Transporter Name U.S. ENV. SERV.  
Address 210 RICE STREET  
WILMINGTON, SC 29405

Driver Name (Print) \_\_\_\_\_  
Truck Number 17

I hereby acknowledge receipt of the above described materials for transport from the generator site listed above.

I hereby acknowledge receipt of the above described materials:  
were received from the generator site, and were transported without incident, to the destination as stated on this form.

Driver Signature \_\_\_\_\_ Shipment Date \_\_\_\_\_

Driver Signature \_\_\_\_\_ Delivery Date \_\_\_\_\_

### DESTINATION

Site Name: Palmetto Landfill & Recycling Center Phone Number: (864) 439-8426 • Fax: 439-0097

Address: 251 New Hope Road, Wellford, South Carolina 29385

Disposal Location: North + West 20 Level 720

I hereby acknowledge receipt of the above described materials.

Name of Authorized Agent (Print) C. Myers Signature \_\_\_\_\_ Receipt Date 6/26/01

NOTE: MANIFEST MUST BE FILLED OUT COMPLETELY BEFORE DISPOSAL

WHITE ORIGINAL - YOU OR TRANSPORTER RETAIN; PINK LABEL - YOU OR TRANSPORTER RETAIN; GOLD - GENERATOR RETAIN





2600 Bull Street  
Columbia, SC 29201-1708

**UNDERGROUND STORAGE TANK PROGRAM  
BUREAU OF LAND AND WASTE MANAGEMENT**

2600 Bull Street, Columbia, SC 29201  
Phone (803) 898-4350 Fax (803) 898-4330

Mr. Steven Smith  
180 Schallow Ford Road  
Salem, SC 29676

MAY 24 2001

Re: Hwy 11 Grocery  
UST Permit # 03439, CP #13668  
Assessment Report and Tier II Assessment Plan received April 5, 2001  
Oconee County

Dear Mr. Smith:

The Bureau of Land and Waste Management (BLWM) of the South Carolina Department of Health and Environmental Control (SCDHEC) has reviewed the referenced Assessment Report. The report indicates presence of chemicals of concern (CoC) in the groundwater and soil. The nature of contamination requires Tier II Assessment. The Bureau has reviewed the Tier II Assessment Plan and the Cost Proposal. Rehabilitation activities at the site should be resumed immediately upon receipt of this letter. Characterization of all exposure points should be completed using field screening points. Based on the field screening results, monitoring wells should be installed in appropriate locations to monitor the migration of chemicals of concern (CoC) along these pathways and for rehabilitation.

The cost proposal has been approved up to the amount indicated on the enclosed cost agreement form and assigned #13668 to track the allowable costs associated with this assessment. This includes the adjustment of the following rates and/or site rehabilitation activities proposed in the cost proposal to ensure compliance with current SUPERB program criteria per Section 44-2-20(2):

- Personnel Mobilizations were reduced from six to five
- Monitoring well installation has been approved for 50 feet for deep well and for 300 feet for shallow wells and must delineate the extent of the plume, to include offsite extent. Please note that the screens must bracket the water table, otherwise costs associated with monitoring well installation will not be approved. Please note that costs associated with monitoring well installation will not be approved if well locations are not technically justified
- Nitrate, Sulfate, Ferrous Iron and Methane analyses were added.

According to our records, the releases were reported to the Bureau on November 28, 2000. In accordance with Section 44-2-40(D) of the State Underground Petroleum Environmental Response Bank (SUPERB) Act, you are responsible for the first \$25,000 for site rehabilitation. To insure that any expenditure you make apply to this \$25,000 deductible, if this release becomes qualified, it is prudent for this agency to pre-approve such costs along with your technical plan of action. By law, the SUPERB Account cannot compensate any costs that are not pre-approved. Eligible costs exceeding the \$25,000 deductible can be compensated from the SUPERB Account.

Implementation of the assessment should proceed upon receipt of this correspondence. Monitoring well approval has been issued to your environmental contractor and a copy for your records is enclosed. **The report should be submitted within 90 days from the date of this letter.** All investigative derived waste must be properly stored in labeled containers or covered with plastic as appropriate. The Bureau grants pre-approval for the transportation of the investigative derived waste (virgin petroleum contaminated soil and groundwater) from the referenced site to a permitted treatment facility. All contaminated investigative derived waste must be accepted by the approved treatment facility. There can be no spillage or leakage in transport. A copy of the disposal manifest and approval letter from the receiving facility must be included as an appendix to the final report. If the levels of petroleum contamination based on laboratory analysis are below treatment levels, please contact the project manager for approval to dispose of the investigative derived waste on site. The SUPERB Account will not compensate for transportation or treatment of clean soil and/or groundwater. The Bureau reserves the authority to only apply costs to your deductible for work properly performed and/or technically justified in accordance with established criteria.

Upon receipt of the signed invoice, assessment report, and a copy of your canceled check (front and back) or a notarized statement from the contractor verifying payment for this scope of work, the amount up to the amount of the enclosed cost agreement form may be applied toward your deductible. **If the invoice is not submitted within 120 days from the date of this letter, monies allocated to pay this invoice will be uncommitted.** This means that the invoice will not be processed for payment until all other committed funds are paid or monies become available. Please note that payment from the SUPERB account will be made upon review of the report and confirmation that all work performed was technically justified.

**Field screening results, along with proposed permanent monitoring well locations, are to be faxed to the Department project manager at (803) 898-4330 for approval prior to the installation of permanent monitoring wells.**

On all correspondence regarding this site and scope of work, please reference UST Permit #03439 cost proposal #13668. If you have any questions concerning this correspondence, please contact me at (803) 898-4353 or 1-800-826-5435 (within South Carolina only).

Sincerely,



Konstantine Akhvlediani, Hydrogeologist  
State Lead and Field Services Section  
Assessment and Corrective Action Division  
Underground Storage Tank Program

Enc.: Approved Assessment Component Cost Proposal  
Monitoring Well Approval

cc: SEI, 3021 McNaughton Drive, Suite 9, Columbia, SC 29223  
(w/Approved Assessment Component Cost Proposal & Monitoring Well Approval)  
Financial File (w/ Approved Assessment Component Cost Proposal)  
Technical File (w/ Monitoring Well Approval)  
Read File (without enclosures)



2600 Bull Street  
Columbia, SC 29201-1708

MAY 24 2001

### Monitoring Well Installation Approval Form

Date of Issue: 04/09/01 Approval No.: 15115

Approval is hereby granted to: SEI  
UST Permit # 03439  
County: Oconee

This approval is for the construction of one Type III well, 10 Type II wells and 200 feet of temporary wells in accordance with the South Carolina Well Standards and Regulations. The well(s) are to be constructed within the shallow aquifer for the intended purpose of monitoring ground-water quality and/or water level(s) at the referenced facility. Approval is provided with the following conditions:

1. The latitude and longitude, surveyed elevations, boring and/or geologist logs and actual (as built) construction details for each well will be submitted with the technical report.
2. Each well will be labeled with an identification plate constructed of a durable material affixed to the casing or surface pad where it is readily visible. The plate will provide monitoring well I.D.#, date of construction, static water level, and driller name and state certification #.
3. Well construction and sampling derived waste including, but not necessarily limited to, drill cuttings, drilling fluids, development and purge water should be managed properly and in compliance with applicable requirements. If containerized, each vessel should be clearly labeled with regard to contents, source, and date of activity.
4. A minimum of forty-eight (48) hours prior to initiation of drilling activities, please provide notice to PM at (803) 898-4353 or [akhvlekt@columb26.dhec.state.sc.us](mailto:akhvlekt@columb26.dhec.state.sc.us).
5. Please provide ground-water quality analytical data (chemical analysis and/or water level(s)) and associated measurements (i.e., in-situ field measurements) to me with the technical report.
6. Monitoring wells will be installed by or under the direct supervision of a licensed well driller certified by the State of South Carolina.
7. Monitoring wells will be abandoned, when no longer required, by or under the direct supervision of a licensed well driller certified by the State of South Carolina.

This approval is pursuant to the provisions of Section 44-55-40 of the 1976 South Carolina Code of Laws and the Department of Health and Environmental Control Regulations R.61-71. Please remember to have a copy of this approval on the site during well installation.

Approved by: *K. Akhvlediani*  
Konstantine Akhvlediani, Hydrogeologist  
State Lead and Field Services Section  
Assessment and Corrective Action Division  
UST Program

cc: Appalachia I District EQC  
Technical File  
Mr. Steven Smith, 180 Schallow Ford Road, Salem, SC 29676



**UNDERGROUND STORAGE TANK PROGRAM  
BUREAU OF LAND AND WASTE MANAGEMENT**

2600 Bull Street, Columbia, SC 29201

Phone (803) 898-4350 Fax (803) 898-4330

2600 Bull Street  
Columbia, SC 29201-1708

Mr. Steven Smith  
180 Schallow Ford Road  
Salem, SC 29676

**MAY 24 2001**

Re: Hwy 11 Grocery  
UST Permit # 03439, CP #13967  
Abatement Plan received May 23, 2001  
Oconee County

Dear Mr. Smith:

The Bureau of Land and Waste Management (BLWM) of the South Carolina Department of Health and Environmental Control (SCDHEC) has reviewed the referenced Plan. The cost proposal has been approved up to the amount indicated on the enclosed cost agreement form and assigned #13967 to track the allowable costs associated with this assessment

According to our records, the releases were reported to the Bureau on November 28, 2000. In accordance with Section 44-2-40(D) of the State Undergraduate Petroleum Environmental Response Bank (SUPERB) Act, you are responsible for the first \$25,000 for site rehabilitation. To insure that any expenditure you make apply to this \$25,000 deductible, if this release becomes qualified, it is prudent for this agency to pre-approve such costs along with your technical plan of action. By law, the SUPERB Account cannot compensate any costs that are not pre-approved. Eligible costs exceeding the \$25,000 deductible can be compensated from the SUPERB Account.

Implementation of the abatement should proceed upon receipt of this correspondence. All investigative derived waste must be properly stored in labeled containers or covered with plastic as appropriate. The Bureau grants pre-approval for the transportation of the investigative derived waste (virgin petroleum contaminated soil and groundwater) from the referenced site to a permitted treatment facility. All contaminated investigative derived waste must be accepted by the approved treatment facility. There can be no spillage or leakage in transport. A copy of the disposal manifest and approval letter from the receiving facility must be included as an appendix to the final report. If the levels of petroleum contamination based on laboratory analysis are below treatment levels, please contact the project manager for approval to dispose of the investigative derived waste on site. The SUPERB Account will not compensate for transportation or treatment of clean soil and/or groundwater. The Bureau reserves the authority to only apply costs to your deductible for work properly performed and/or technically justified in accordance with established criteria.

On all correspondence regarding this site and scope of work, please reference UST Permit #03439 and proposal #13967. If you have any questions concerning this correspondence, please contact me at (803) 898-4353 or 1-800-826-5435 (within South Carolina only).

Sincerely,

Konstantine Akhvediani, Hydrogeologist  
State Lead and Field Services Section  
Assessment and Corrective Action Division  
Underground Storage Tank Program

Enc.: Approved Assessment Component Cost Agreement

cc: SEI, 3021 McNaughton Drive, Suite 9, Columbia, SC 29223 (Approved Assessment Component Cost Agreement)  
Financial File (w/ Approved Assessment Component Cost Agreement)  
Technical/Read Files (without enclosures)

SCDHEC/UST/SLFS/KTA/05/23/01

**SEI**   
**Environmental, Inc.**

3021 McNaughton Drive  
Suite 9  
Columbia, SC 29223  
800-377-2826  
803-788-2535  
Fax 803-788-2399

**RECEIVED**

MAY 22 2001

Underground Storage  
Tank Program

May 21, 2001

Mr. Konstantine Akhvlediani, Hydrogeologist  
SCDHEC  
Bureau of UST Management  
2600 Bull Street  
Columbia, South Carolina 29201

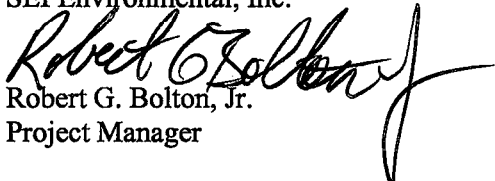
RE: Assessment Cost Proposal  
Highway 11 Grocery  
13527 North SC Highway 11  
Salem, South Carolina  
Oconee County  
UST Permit #03439

Dear Mr. Akhvlediani:

Please find enclosed an Assessment Cost Proposal for an interception trench to be constructed adjacent to Fall Creek, which is topographically down-gradient from Highway 11 Grocery. The trench will be approximately 30 feet long, 3 feet wide, and 4 to 8 feet deep. It will be located approximately 3 to 5 feet away from Fall Creek. The bottom of the trench will be lined with engineer screen with slotted pvc pipe above the screen with risers on either end. The pipe will then be covered with a shallow layer of gravel. Absorbent booms will be placed in the trench to absorb any petroleum products that enter the trench. A wire fence will be constructed around the trench to prevent animals and people from entering the trench. The excavated soil will be removed and properly disposed at Environmental Soils in Lattimore, North Carolina.

The work should be completed in approximately 4 days. I have included 4 personnel mobilizations since I did not itemize the labor expenses involved in the excavation activities. Should you have any questions or require additional information, please contact SEI Environmental, Inc. at 788-2535.

Sincerely,  
SEI Environmental, Inc.

  
Robert G. Bolton, Jr.  
Project Manager

Enclosure

cc: Mr. Steve Smith, Highway 11 Grocery

# TestAmerica

INCORPORATED

May 3, 2001

Page 1

CLIENT: SOUTH CAROLINA DEPT. HEALTH  
9440 TWO NOTCH  
STE B  
COLUMBIA, SC 29223

Order Number: 12767  
Project Name: HWY 11 GROCERY  
Project Number: 03439  
Date Received: 05/02/01

ATTN: C/O TESTAMERICA COLUMBIA

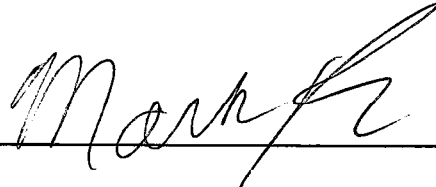
RECEIVED

MAY 11 2001

Underground Storage  
Tank Program

Sample Identification	Lab Number	Collection Date and Time
-----	-----	-----
BUMGARTNER	01-F11331	4/30/01 14:40

Approved By: \_\_\_\_\_



Mark Rusler, Director of Technical Services  
K.R. Vault, Client Services Manager  
Elizabeth A. Rich, Q.A. Officer

South Carolina Certification Number: DHEC 96012

Attachments: chain-of-custody/field sheet

CLIENT: SOUTH CAROLINA DEPT. HEALTH  
 9440 TWO NOTCH  
 STE B  
 COLUMBIA, SC 29223

ATTN: C/O TESTAMERICA COLUMBIA

Order Number: 12767  
 Project: HWY 11 GROCERY  
 Sample ID: BUMGARTNER  
 Lab Number: 01-F11331  
 Date Collected: 04/30/01  
 Time Collected: 14:40  
 Date Received: 05/02/01

**LABORATORY REPORT**

Analyte	Result	Q	Units	Report Limit	Dil Factor	Date	Time	Analyst	Method	Batch
<b>*VOLATILE ORGANICS*</b>										
Benzene	< 1.00	U	ug/l	1.00	1	5/ 2/01	12:59	CTH	8260B	9284
Ethylbenzene	< 1.00	U	ug/l	1.00	1	5/ 2/01	12:59	CTH	8260B	9284
Naphthalene	< 5.00	U	ug/l	5.00	1	5/ 2/01	12:59	CTH	8260B	9284
Toluene	< 1.00	U	ug/l	1.00	1	5/ 2/01	12:59	CTH	8260B	9284
Xylenes	< 1.00	U	ug/l	1.00	1	5/ 2/01	12:59	CTH	8260B	9284
Methyl-t-butyl ether	< 1.00	U	ug/l	1.00	1	5/ 2/01	12:59	CTH	8260B	9284

Surrogate	% Recovery	Target Range
VOA: 1,2-Dichloroethane-d4	89	82.0 - 130
VOA: Toluene-d8	98	84.0 - 119
VOA: 4-Bromofluorobenzene	94	84.0 - 121
VOA: Dibromofluoromethane	96	82.0 - 136

CLIENT: SOUTH CAROLINA DEPT. HEALTH  
Order No.: 12767  
Project: HWY 11 GROCERY

---

**Qualifier Definitions:**

- B = results based upon colony counts outside the acceptable range
- I = the reported value is between the laboratory method detection limit and the laboratory practical quantitation limit
- J1 = surrogate recovery limits have been exceeded
- J3 = the reported value failed to meet the established quality control criteria for either precision and/or accuracy
- J4 = the sample matrix interfered with the ability to make an accurate determination
- J5 = the data is questionable because of improper lab or field protocols
- K = off-scale low, actual value is less than the value given
- L = off-scale high, actual value is known to be greater than the value given
- Q = sample held beyond acceptable holding time
- U = the compound was analyzed for but not detected
- V = the analyte was detected in both the sample and the associated method blank
- Z = too many colonies present (TNTC)

\*TA = sampled by TestAmerica, Inc. Field Services

the # indicates reported value is outside method defined and/or charted laboratory control limit



**RUSH!**

**TestAmerica**  
INCORPORATED

Division/Laboratory Name: \_\_\_\_\_

**FAX CHAIN  
TO COLUMBIA**

12767

**RUSH!**

To assist us in using the proper analytical methods,  
is this work being conducted for regulatory purposes?  
Compliance Monitoring \_\_\_\_\_

Client Name: SCDHEC Client #: 2200

Address: 2600 Bull St

City/State/Zip Code: Char, S.C 29201

Project Manager: Lee Muntz / K. Akhvediani

Telephone Number: 803 898-4350 Fax: 898-4330

Sampler Name: (Print Name) B. Folley

Sampler Signature: [Signature]

Project Name: Hwy 11 Grocery

Project #: 03739

Site/Location ID: Oconee State: S.C.

Report To: D. T. Gant

Invoice To: P. Holland

Quote #: \_\_\_\_\_ PO#: 179220

TAT Standard <input checked="" type="checkbox"/> Rush (surcharges may apply)	Date Needed: <u>5/3</u>	Fax Results: Y N	Date Sampled	Time Sampled	G = Grab, C = Composite	Field Filtered	Matrix										Analyze For:	QC Deliverables <input type="checkbox"/> None <input type="checkbox"/> Level 2 (Batch QC) <input type="checkbox"/> Level 3 <input type="checkbox"/> Level 4 Other: _____
							SL - Sludge	DW - Drinking Water	GW - Groundwater	S - Soil/Solid	WW - Wastewater	Specify Other	HNO <sub>3</sub>	HCl	NaOH	H <sub>2</sub> SO <sub>4</sub>		
			<u>5/2/01</u>	<u>1440</u>	<u>G</u>		<u>GW</u>		<u>3</u>							<u>F11331</u>	<b>REMARKS</b> <u>Need results by 5/3 @ 9:30am</u>	
																	<b>RUSH!</b>	

Special Instructions: CP # 13848: P Fed Ext# 816250839231

LABORATORY COMMENTS:  
 Init Lab Temp: \_\_\_\_\_  
 Rec Lab Temp: 4° **RUSH!**  
 Custody Seals: Y N NA  
 Bottles Supplied by TestAmerica: Y N  
 Method of Shipment: \_\_\_\_\_

Relinquished By: <u>[Signature]</u>	Date: <u>5/1/01</u>	Time: <u>0830</u>	Received By: <u>[Signature]</u>	Date: <u>5/1/01</u>	Time: <u>840</u>
Relinquished By: <u>[Signature]</u>	Date: <u>5/1/01</u>	Time: <u>1130</u>	Received By: <u>M. Bowers</u>	Date: <u>5/2/01</u>	Time: <u>9:15</u>
Relinquished By: _____	Date: _____	Time: _____	Received By: _____	Date: _____	Time: _____



2600 Bull Street  
Columbia, SC 29201-1708

**UNDERGROUND STORAGE TANK PROGRAM**  
**BUREAU OF LAND AND WASTE MANAGEMENT**  
2600 Bull Street, Columbia, SC 29201  
Phone (800) 826-5435 Fax (803) 898-4330

Test America  
Attn: Karen Moore  
9440 Two Notch Road, Ste. B  
Columbia, SC 29223

**MAY 08 2001**

Re: Highway 11 Grocery  
UST Permit #03439  
Purchase Order #179220  
CP #13848P  
Oconee County


Dear Ms. Moore:

Under the term and conditions of the referenced bid package, analytical sampling has been approved for the referenced facility. Laboratory analysis has been approved for 1 (water) samples for BTEX+ Naphthalene + MTBE analyses. The facility has been assigned an individual Cost Proposal (CP) number as listed above. Please reference the CP number and Purchase Order #179220 on the invoice submitted for payment.

DHEC personnel will perform the required sampling at the facility on April 30, 2001 and deliver the samples to Test America for the required analysis(es).

If you have any questions or need further assistance, please contact me at (803) 898-4353 or (800) 826-5435 (within SC only).

Sincerely,

  
Konstantine Akhvlediani, Hydrogeologist  
Sate Lead and Field Services Section  
Assessment & Corrective Action Division  
Underground Storage Tank Program

cc: Debra Thoma, State Lead & Field Services  
Technical File (w/enc.)  
Financial/Read Files (w/o enc.)

SCDHEC/BLWM/UST/KTA/4/30/01



2600 Bull Street  
Columbia, SC 29201-1708

**UNDERGROUND STORAGE TANK PROGRAM  
BUREAU OF LAND AND WASTE MANAGEMENT  
2600 Bull Street, Columbia, SC 29201  
Phone (800) 826-5435 Fax (803) 898-4330**

Test America  
Attn: Karen Moore  
9440 Two Notch Road, Ste. B  
Columbia, SC 29223

**MAY 07 2001**

Re: Highway 11 Grocery  
UST Permit #03439  
Purchase Order #179220  
CP #13848P  
Oconee County

Dear Ms. Moore:

Under the term and conditions of the referenced bid package, analytical sampling has been approved for the referenced facility. Laboratory analysis has been approved for 1 (water) samples for BTEX+ Naphthalene + MTBE analyses. The facility has been assigned an individual Cost Proposal (CP) number as listed above. Please reference the CP number and Purchase Order #179220 on the invoice submitted for payment.

DHEC personnel will perform the required sampling at the facility on April 30, 2001 and deliver the samples to Test America for the required analysis(es).

If you have any questions or need further assistance, please contact me at (803) 898-4353 or (800) 826-5435 (within SC only).

Sincerely,

Konstantine Akhvlediani, Hydrogeologist  
State Lead and Field Services Section  
Assessment & Corrective Action Division  
Underground Storage Tank Program

cc: Debra Thoma, State Lead & Field Services  
~~Technical File~~ (w/enc.)  
Financial/Read Files (w/o enc.)

SCDHEC/BLWM/UST/KTA/4/30/01

# SEI ENVIRONMENTAL, INC.

3021 McNaughton Drive, Suite 9, Columbia, S.C. 29223

Phone (803)788.2535 Fax (803) 788.2399

ATTENTION: Konstantine A.

COMPANY: SCDHEC - UST

DATE: 5/03/01

**RECEIVED**

MAY 03 2001

FAX NUMBER: \_\_\_\_\_

PHONE NUMBER: \_\_\_\_\_

Underground Storage  
Tank Program

FROM: Bob Bolton

PAGES: 2 (INCLUDING COVERSHEET)

COMMENTS

Insurance statement for Hwy 11 Grocery.

Bob Bolton

PLEASE CALL IF YOU HAVE QUESTIONS OR IF THIS FAX IS NOT COMPLETE.

PROVIDING PRACTICAL SOLUTIONS FOR TODAY'S ENVIRONMENTAL NEEDS.....

HARD COPY BEING SENT VIA:

( )First Class Mail ( )Federal Express ( )Messenger ( )None

**INSURANCE STATEMENT FORM**

UST Permit #03439 is potentially eligible to receive state monies to assist you in site rehabilitation, if required. Before eligibility for State Underground Petroleum Environmental Response Bank (SUPERB) funds can be determined, written confirmation of the existence or non-existence of an environmental insurance policy for this site is required. Please complete the following information:

- I do not have any insurance that would cover releases from underground storage tanks.
- I have an insurance policy that covers releases from underground storage tanks.

My policy provider is:  
The policy deductible is:  
The policy limit is:

If you have this type of insurance, please include a copy of the policy with this report.

Signature: *St M Smith*  
Date: *5-2-01*

**To be Completed by Notary Public:**

Sworn before me this *2<sup>nd</sup>* day of *May*, *2001*

(Name) *Tracy M. Shelton*  
Notary Public for the state of *SC*

My commission expires *5-15-2005*

Please affix State Seal if you are commissioned outside South Carolina.



# SEI ENVIRONMENTAL, INC.

3021 McNaughton Drive, Suite 9, Columbia, S.C. 29223

Phone (803)788.2535 Fax (803) 788.2399

ATTENTION: Konstantine A.

COMPANY: SCDHEC - UST

DATE: 5/03/01

FAX NUMBER: \_\_\_\_\_

PHONE NUMBER: \_\_\_\_\_

FROM: Bob Bolton

PAGES: 2 (INCLUDING COVERSHEET)

COMMENTS \_\_\_\_\_

Insurance statement for Hwy 11 Grocery.

Bob Bolton

PLEASE CALL IF YOU HAVE QUESTIONS OR IF THIS FAX IS NOT COMPLETE.

PROVIDING PRACTICAL SOLUTIONS FOR TODAY'S ENVIRONMENTAL NEEDS.....

HARD COPY BEING SENT VIA:

( )First Class Mail ( )Federal Express ( )Messenger ( )None

### INSURANCE STATEMENT FORM

UST Permit #03439 is potentially eligible to receive state monies to assist you in site rehabilitation, if required. Before eligibility for State Underground Petroleum Environmental Response Bank (SUPERB) funds can be determined, written confirmation of the existence or non-existence of an environmental insurance policy for this site is required. Please complete the following information:

- I do not have any insurance that would cover releases from underground storage tanks.
- I have an insurance policy that covers releases from underground storage tanks.

My policy provider is:  
 The policy deductible is:  
 The policy limit is:

If you have this type of insurance, please include a copy of the policy with this report.

Signature:

*St M Smith*

Date:

*5-2-01*

#### To be Completed by Notary Public:

Sworn before me this 2<sup>nd</sup> day of May, 2001

(Name) Tracy M. Shelton

Notary Public for the state of SC

My commission expires 5-15-2005



Please affix State Seal if you are commissioned outside South Carolina.



Tier II Permit  
Division of Underground Storage Tank Management

UST Permit #: 03439 County: Donee Facility Name: Highway 11 Grocery  
 Facility Address: 13527 SC Highway 11, Salem, SC  
 Responsible Party: Steve Smith Address: 180 Shallowford Rd, Salem, SC  
 No. USTs: \_\_\_\_\_ Removed? \_\_\_\_\_ Replaced? \_\_\_\_\_  
 (date) (date)  
 Current use of facility/property: Convenience store with retail gas sales  
 Current property owner name: Steve Smith  
 Current property owner address: 180 Shallowford Rd, Salem, SC

Field Screening Methodology

Specify the field screening methodology to be used. The use of field screening methods to optimize the number and location of permanent wells is required.

An OVA-FID will be used for the proper placement of the monitor wells.

Permanent Monitoring Wells (estimate number and total completed depth)

# of shallow wells: 10 Total depth: 300  
 # of deep wells: 1 Total depth: 50 (if necessary)

Comments, if warranted: \_\_\_\_\_

Analyses

List the analytical parameters (e.g., BTEX, MTBE) and estimated number.

Soil: 7 BTEX + Naph Ground H<sub>2</sub>O: 11 BTEX, Naph, MTBE, EDB  
1 TPH 11 PAH  
1 TOC 11 Lead  
1 GRAIN SIZE

Implementation Schedule

Start up date: ASAP Completion date: 6/1/01  
 Report submittal date: 7/1/01



UST Permit #: 03439 Facility Name: Highway 11 Grocery

Site Maps

1. Attach a copy of the relevant portion of the USGS topographic map showing the site location.
2. Prepare a site base map. This map must be accurately scaled, but does not need to be surveyed. The map must include the following:

- |                                    |   |
|------------------------------------|---|
| North arrow                        | Legend with facility name and address, UST Permit number, date, and a bar scale |
| Location of property lines         | Streets or highways (indicate names and numbers)                                |
| Location of buildings              | Identification of located buildings   |
| Paved areas on or adjacent to site | Location of all present and former ASTs and USTs                                |
| Previous soil sampling locations   | Underground and above ground utilities on or adjacent to site                   |
| Previous monitoring well locations | Location of any other potential receptor  |

Aquifer Characterization (check one and provide explanation for choice)

Pump test: \_\_\_\_\_ Slug tests:

Slug tests are more cost efficient

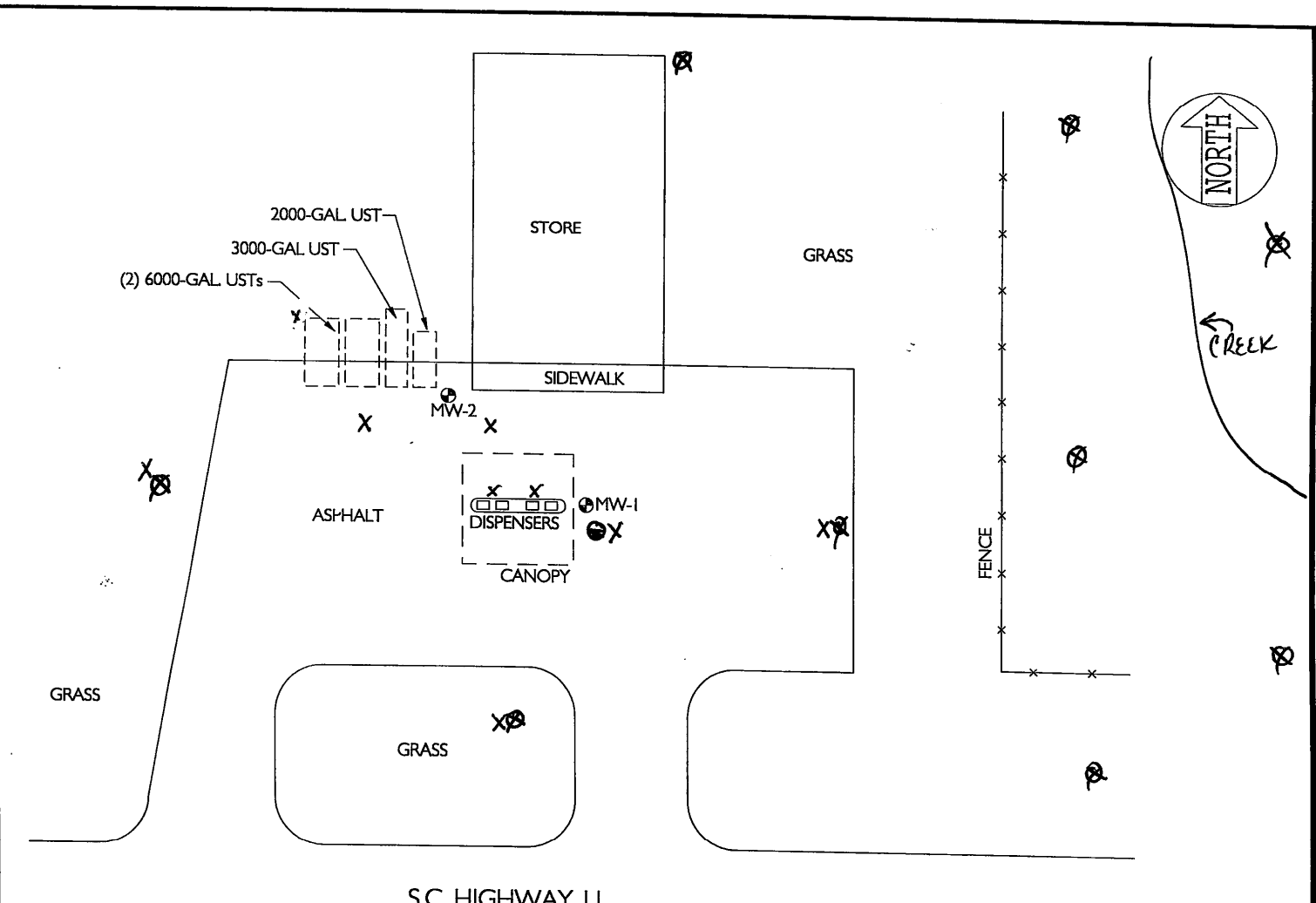
Small Volume Disposal Type and Method

Soil: Drummed for proper disposal

Purge water: Drummed for proper disposal

Additional comments:

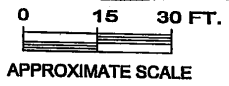
Regarding well footage calculations:  
10 wells @ 30' each assuming 15' rock drilling  
per well  
1 deep well with casing set on top of rock at  
30' and approximately 20' of rock drilling.



S.C. HIGHWAY 11

LEGEND:

- ⊕ MONITORING WELL
- X Soil sample locations
- ⊗ monitor well locations



**SEI Environmental, Inc.**

FIGURE 2: SITE MAP  
HIGHWAY 11 GROCERY  
13527 S.C. HIGHWAY 11  
SALEM, SC

WO #300-388  
DWG #HG0388F2

DATE: 4/4/01  
DRAWN BY: JCJ



**UNDERGROUND STORAGE TANK PROGRAM  
BUREAU OF LAND AND WASTE MANAGEMENT**

2600 Bull Street, Columbia, SC 29201

Phone (803) 898-4350

Fax (803) 898-4330

**MAR 29 2001**

Mr. Steven Smith  
180 Schallow Ford Road  
Salem, SC 29676

Re: Hwy 11 Grocery  
UST Permit # ~~03430~~, CP #13586  
Assessment Plan received March 22, 2001  
Oconee County

Dear Mr. Smith:

The Bureau of Land and Waste Management (BLWM) of the South Carolina Department of Health and Environmental Control (SCDHEC) has reviewed the Assessment Plan and the Cost Proposal. This assessment is designed to address the surface water (creek) impact by petroleum constituents.

The cost proposals have been approved up to the amount indicated on the enclosed cost agreement form and assigned #13586 to track the allowable cost associated with this assessment. This includes the adjustment of the following rates and/or site rehabilitation activities proposed in the cost proposal to ensure compliance with current SUPERB program criteria per Section 44-2-20(2):

- Personnel Mobilizations were increased from three to seven reflecting replacement of absorbent booms
- Monitoring well installation has been approved for 120 feet deep wells. Please note that the screens must bracket the water table, otherwise costs associated with monitoring well installation will not be approved.
- Number of soil disposal drums was increased from six to eight and of absorbent booms from 0.5 to 2.

According to our records, the release was reported to the Bureau on November 28, 2000. In accordance with Section 44-2-40(D) of the State Underground Petroleum Environmental Response Bank (SUPERB) Act, you are responsible for the first \$25,000 for site rehabilitation. To insure that any expenditure you make apply to this \$25,000 deductible, if this release becomes qualified, it is prudent for this agency to pre-approve such costs along with your technical plan of action. By law, the SUPERB Account cannot compensate any costs that are not pre-approved. Eligible costs exceeding the \$25,000 deductible can be compensated from the SUPERB Account.

To proceed with the qualification process for the State Underground Petroleum Environmental Response Bank (SUPERB) Act, the following information is required:

Written confirmation of the existence or nonexistence of an environmental insurance policy for this site. **This information must be signed by the responsible party and a notary public.** For your convenience, an insurance statement form has been enclosed. If an environmental insurance policy existed at the time of the release, a copy of the policy with all endorsements must be submitted with the insurance statement. **Please complete and return the enclosed insurance information form within 14 days from the date of this letter.**

**Please complete and return the enclosed Owner/Operator Information Sheet within 14 days from the date of this letter (note that all rehabilitation activities associated with a UST release must be performed by a SCDHEC certified class 1 site rehabilitation contractor as required by R.61-98).**

Implementation of the Tier I Assessment should proceed upon receipt of this correspondence. The required monitoring well approval is enclosed. **The report should be submitted within 60 days from the date of this letter.** All investigative derived waste must be properly stored in labeled containers or covered with plastic as appropriate. The Bureau grants pre-approval for the transportation of the investigative derived waste (virgin petroleum contaminated soil and groundwater) from the referenced site to a permitted facility. There can be no spillage or leakage in transport. A copy of the disposal manifest and approval letter from the receiving facility must be included as an appendix to the final report. If laboratory analysis of the investigation derived waste shows levels of petroleum contamination are below treatment levels, please contact the project manager for approval to dispose of the investigation derived waste on site. The SUPERB Account will not compensate for the transportation or treatment of clean soil and/or groundwater. The Bureau reserves the authority to only apply costs to your deductible for work properly performed and/or technically justified in accordance with established criteria.

On all correspondence regarding this site, please reference UST Permit #03439 and cost proposal #13586. If you have any questions concerning this correspondence, please call at (803) 898-4353 or 1-800-826-5435 (within South Carolina only).

Sincerely,



Konstantine T. Akhvlediani, Hydrogeologist  
State Lead and Field Services Section  
Assessment and Corrective Action Division  
Underground Storage Tank Program

Enc.: Approved Assessment Component Cost Proposal  
Monitoring Well Approval

cc: SEL, 3021 McNaughton Drive, Suite 9, Columbia, SC 29223 (w/Monitoring Well Approval)  
Financial File (w/ Approved Assessment Component Cost Proposal)  
Technical/Read Files



**UNDERGROUND STORAGE TANK PROGRAM  
BUREAU OF LAND AND WASTE MANAGEMENT  
2600 Bull Street, Columbia, SC 29201  
Phone (800) 826-5435 Fax (803) 898-4330**

Test America  
Attn: Karen Moore  
9440 Two Notch Road, Ste. B  
Columbia, SC 29223

**MAR 29 2001**

Re: Hwy 11 Grocery  
UST Permit # ~~03439~~, CP #13501  
Assessment Plan received March 22, 2001  
Oconee County

Dear Ms. Moore:

Under the term and conditions of the referenced bid package, analytical sampling has been approved for the referenced facility. Laboratory analysis has been approved for 4 (water) sample for BTEX + Naphthalene + MTBE analyses. The facility has been assigned an individual Cost Proposal number as listed above. Please reference the CP number 13501 and Purchase Order #179220 on the invoice submitted for payment.

DHEC personnel performed the required sampling at the facility on March 12, 2001 and delivered the samples to Test America for the required analysis(es).

If you have any questions or need further assistance, please contact me at (803) 898-4353 or (800) 826-5435 (within SC only).

Sincerely,

A handwritten signature in black ink that reads 'K. Akhvlediani'.

Konstantine Akhvlediani, Hydrogeologist  
State Lead and Field Services Section  
Assessment & Corrective Action Division  
Underground Storage Tank Program

cc: Debra Thoma, State Lead & Field Services  
Technical File  
Financial File  
Read File

SCDHEC/BLWM/UST/KTA/03/22/01

# Test America

INCORPORATED

## ANALYTICAL REPORT

Laboratory Number: 01-A33681  
Sample ID: CREEK  
Project: #03439  
Page 2

These results relate only to the items tested.  
This report shall not be reproduced except in full and with  
permission of the laboratory.

Report Approved By: *Michael H. Dunn*

Report Date: 3/21/01

Paul E. Lane, Jr., Lab Director  
Michael H. Dunn, M.S., Technical Director  
Johnny A. Mitchell, Dir. Technical Serv.  
Eric S. Smith, Assistant Technical Director

Gail A. Lage, Technical Serv.  
Glenn L. Norton, Technical Serv.  
Kelly S. Comstock, Technical Serv.  
Pamela A. Langford, Technical Serv.

Laboratory Certification Number: 84009

End of Sample Report.

All other loc.'s  
were ND

# TestAmerica

INCORPORATED

Konstantine  
AKHVLEDIANI

## ANALYTICAL REPORT

SCDHEC 2200  
2600 BULL STREET  
COLUMBIA, SC 29201

Lab Number: 01-A33681  
Sample ID: CREEK  
Sample Type: Water  
Site ID:

Project: #03439  
Project Name: HWY 11 GROCERY  
Sampler: K.A.

Date Collected: 3/12/01  
Time Collected: 12:57  
Date Received: 3/14/01  
Time Received: 9:00

Analyte	Result	Units	Report Limit	Quan Limit	Dil Factor	Analysis Date	Analysis Time	Analyst	Method	Batch
<b>*VOLATILE ORGANICS*</b>										
Benzene	80.0	ug/l	20.0	2.0	20	3/21/01	2:03	T.Johnson	8260B	4892
Toluene	320.	ug/l	20.0	2.0	20	3/21/01	2:03	T.Johnson	8260B	4892
Ethylbenzene	140.	ug/l	20.0	2.0	20	3/21/01	2:03	T.Johnson	8260B	4892
Xylenes, Total	1140	ug/l	20.0	2.0	20	3/21/01	2:03	T.Johnson	8260B	4892
Methyl-t-butyl ether	ND	ug/l	100.	2.0	20	3/21/01	2:03	T.Johnson	8260B	4892
Naphthalene	120.	ug/l	100.	5.0	20	3/21/01	2:03	T.Johnson	8260B	4892

ND - Not detected at the report limit.

Surrogate	% Recovery	Target Range
VOA Surr, 1,2-DCA, d4	86.	71. - 136.
VOA Surr, Toluene d8	101.	69. - 129.
VOA Surr, 4-BFB	96.	65. - 122.
VOA Surr, DBFM	98.	61. - 139.

# - Recovery outside Laboratory historical limits.

Sample report continued . . .

FAX CHAIN

TestAmerica Division/Laboratory Name: TO COLUMBIA

To assist us in using the proper analytical methods, is this work being conducted for regulatory purposes? Compliance Monitoring

Client Name: SC DHEC, UST Client #: 8200
Address: 2600 BULL ST
City/State/Zip Code: COLUMBIA SC 29201
Project Manager: KONSTANTINE AKHVEDIANI
Telephone Number: 803-898-4353 Fax: 803-898-4330
Sampler Name: (Print Name) K. AKHVEDIANI
Sampler Signature: K. Akhvediani

Project Name: Hwy 11 Grocery
Project #: 03439
Site Location ID: Sale M State: SC
Report To: Deborah Traoma
Invoice To: Deborah Traoma
Quote #: PO#: 179220

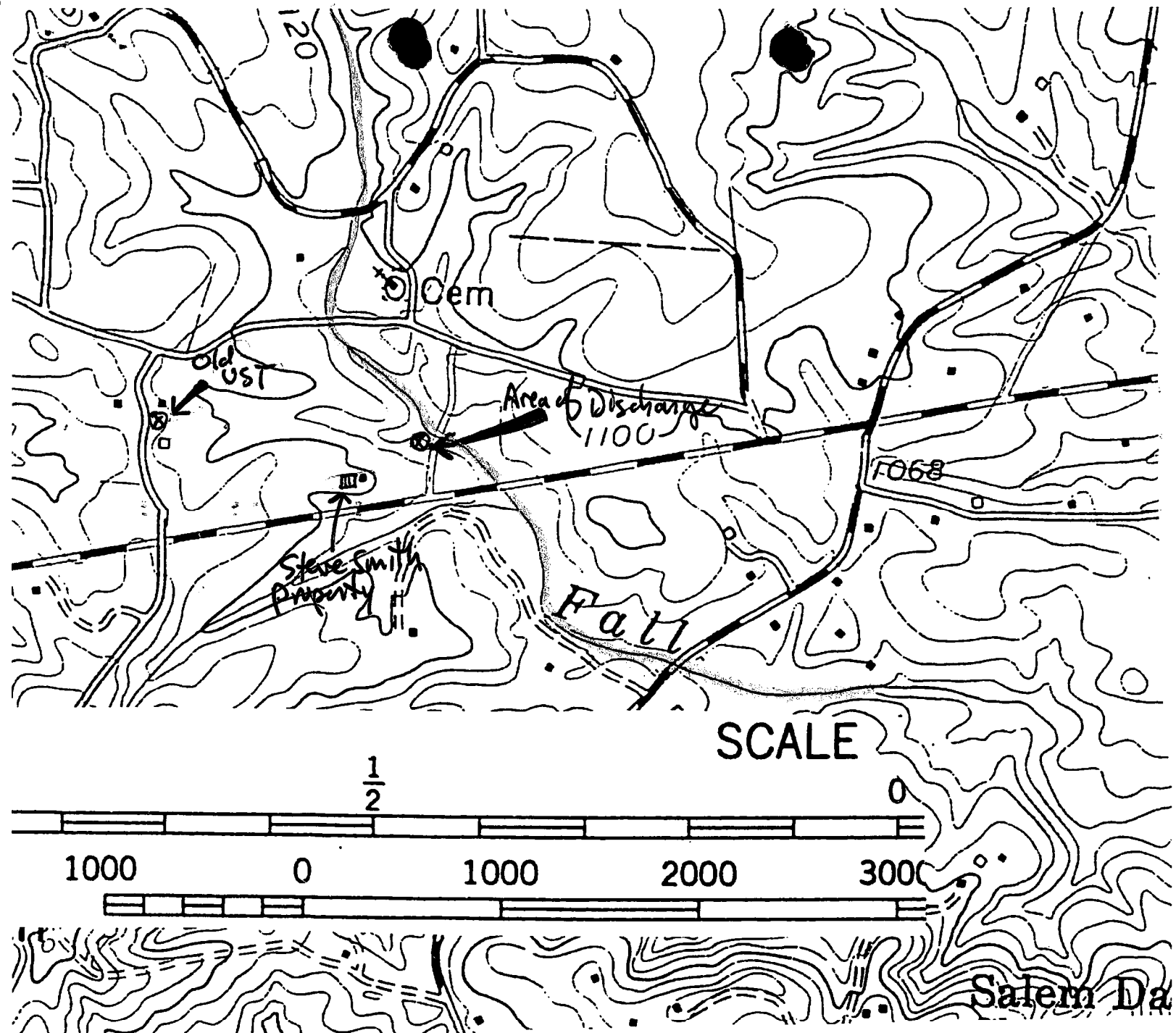
Table with columns: SAMPLE ID, Date Sampled, Time Sampled, Matrix, Preservation & # of Containers, Analyze For, Q/C Deliverables, REMARKS. Includes handwritten entries for samples WSW-1, WSW-2, WSW-3 and various Q/C results.

Special Instructions: CP #13501 Fed Ex # 826184328936

Table with columns: Requisitioned By, Date, Time, Received By, Date, Time. Includes handwritten signatures and dates.







RECEIVED

MAR 16 2001

Underground Storage  
Tank Program

## FAX CHAIN TO COLUMBIA

**TestAmerica**  
INCORPORATED

Division/Laboratory Name: TO COLUMBIA

To assist us in using the proper analytical methods,  
is this work being conducted for regulatory purposes?  
Compliance Monitoring \_\_\_\_\_

Client Name SC DHEC, UST Client #: 2200  
 229845 Address: 2600 BULL ST  
 City/State/Zip Code: COLUMBIA SC 29201  
 Project Manager: KONSTANTINE AKHVEDIANI  
 Telephone Number: 803-898-4353 Fax: 803-898-4330  
 Sampler Name: (Print Name) K. AKHVEDIANI  
 Sampler Signature: K. Akhvediani

Project Name: Hwy 11 Grocery  
 Project #: 03439  
 Site/Location ID: Salem State: SC  
 Report To: Deborah Thoma  
 Invoice To: Deborah Thoma  
 Quote #: \_\_\_\_\_ PO#: 179220

TAT <input checked="" type="checkbox"/> Standard <input type="checkbox"/> Rush (surcharges may apply)	Date Needed: <u>3/22/01</u>	Date Sampled	Time Sampled	G = Grab, C = Composite	Field Filtered	Matrix SL - Sludge DW - Drinking Water GW - Groundwater S - Soil/Solid WW - Wastewater Specify Other	Preservation & # of Containers										Analyze For:	QC Deliverables None Level 2 (Batch QC) Level 3 Level 4 Other: _____	
							HNO <sub>3</sub>	HCl	NaOH	H <sub>2</sub> SO <sub>4</sub>	Methanol	None	Other (Specify)	1	2	3			4
							<b>RECEIVED</b> MAR 22 2001												
							Underground Storage Tank Program												
SAMPLE ID																			REMARKS
<del># (Creek)</del>		<u>3/12/01</u>	<u>12:57</u>			<u>SD</u>													<u>2 vials</u>
<del># (Creek)</del>						<u>SD</u>													
<del># WSW-1</del>						<u>DU</u>													
<del># WSW-2</del>						<u>DU</u>													
<del># WSW-3</del>						<u>DU</u>													
<u>WSW-1</u>		<u>3/22/01</u>	<u>12:58</u>			<u>DU</u>								<u>532</u>	<u>82</u>				<u>1 vial each</u>
<u>WSW-2</u>		<u>↓</u>	<u>100</u>			<u>DU</u>								<u>L</u>	<u>83</u>				<u>↓</u>
<u>WSW-3</u>		<u>↓</u>	<u>110</u>			<u>DU</u>									<u>84</u>				<u>↓</u>
Special Instructions: <u>CP #13501 Fed Ex # 826184328936</u>																LABORATORY COMMENTS: Init Lab Temp: _____ Rec Lab Temp: <u>4°C</u> Custody Seals: <u>Y</u> <u>N</u> <u>N/A</u> Bottles Supplied by TestAmerica: <u>Y</u> <u>N</u> Method of Shipment: _____			
Relinquished By: <u>K. Akhvediani</u>	Date: <u>3/14/01</u>	Time: <u>8:10</u>	Received By: <u>K. Moore</u>	Date: <u>3/13/01</u>	Time: <u>8:10</u>														
Relinquished By: <u>K. Moore</u>	Date: <u>3/13/01</u>	Time: <u>11:20</u>	Received By: <u>J. Gank</u>	Date: <u>3/14/01</u>	Time: <u>9:00</u>														
Relinquished By:	Date:	Time:	Received By:	Date:	Time:														

# TESTAMERICA, INC.-NASHVILLE

## COOLER RECEIPT FORM

Client: SCDHEC BC# 229845

Cooler Received On: 3/14/01 And Opened On: 3/14/01 By: James Jacobs

(Signature) 

1. Temperature of Cooler when opened 4 Degrees Celsius
2. Were custody seals on outside of cooler?.....YES... NO
- a. If yes, how many, what kind and where: \_\_\_\_\_
3. Were custody seals on containers and intact?..... NO...YES
4. Were the seals intact, signed, and dated correctly?.....YES... NO
5. Were custody papers inside cooler?..... YES...NO
6. Were custody papers properly filled out (ink, signed, etc)?..... YES...NO
7. Did you sign the custody papers in the appropriate place?..... YES...NO
8. What kind of packing material used?  Bubblewrap  Peanuts  Vermiculite  Other  None
9. Was sufficient ice used (if appropriate)?..... YES...NO
10. Did all bottles arrive in good condition( unbroken)?..... YES...NO
11. Were all bottle labels complete (#, date, signed, pres, etc)?..... YES...NO
12. Did all bottle labels and tags agree with custody papers?..... YES...NO
13. Were correct bottles used for the analysis requested?..... YES...NO
14. a. Were VOA vials received?..... YES...NO
- b. Was there any observable head space present in any VOA vial?..... NO...YES
15. Was sufficient amount of sample sent in each bottle?..... YES...NO
16. Were correct preservatives used?..... YES...NO
17. Was residual chlorine present?..... NO...YES
18. Corrective action taken, if necessary:

See attached for resolution



**ANALYTICAL REPORT**

SCDHEC 2200  
 2600 BULL STREET  
 COLUMBIA, SC 29201

Lab Number: 01-A33681  
 Sample ID: CREEK  
 Sample Type: Water  
 Site ID:

Project: #03439  
 Project Name: HWY 11 GROCERY  
 Sampler: K.A.

Date Collected: 3/12/01  
 Time Collected: 12:57  
 Date Received: 3/14/01  
 Time Received: 9:00

Analyte	Result	Units	Report Limit	Quan Limit	Dil Factor	Analysis Date	Analysis Time	Analyst	Method	Batch
<b>*VOLATILE ORGANICS*</b>										
Benzene	80.0	ug/l	20.0	2.0	20	3/21/01	2:03	T.Johnson	8260B	4892
Toluene	320.	ug/l	20.0	2.0	20	3/21/01	2:03	T.Johnson	8260B	4892
Ethylbenzene	140.	ug/l	20.0	2.0	20	3/21/01	2:03	T.Johnson	8260B	4892
Xylenes, Total	1140	ug/l	20.0	2.0	20	3/21/01	2:03	T.Johnson	8260B	4892
Methyl-t-butyl ether	ND	ug/l	100.	2.0	20	3/21/01	2:03	T.Johnson	8260B	4892
Naphthalene	120.	ug/l	100.	5.0	20	3/21/01	2:03	T.Johnson	8260B	4892

ND = Not detected at the report limit.

Surrogate	% Recovery	Target Range
VOA Surr, 1,2-DCA, d4	86.	71. - 136.
VOA Surr, Toluene d8	101.	69. - 129.
VOA Surr, 4-BFB	96.	65. - 122.
VOA Surr, DBFM	98.	61. - 139.

# = Recovery outside Laboratory historical limits.

Sample report continued . . .



**ANALYTICAL REPORT**

Laboratory Number: 01-A33681  
Sample ID: CREEK  
Project: #03439  
Page 2

These results relate only to the items tested.  
This report shall not be reproduced except in full and with  
permission of the laboratory.

Report Approved By: *Paul E. Lane, Jr.*

Report Date: 3/21/01

Paul E. Lane, Jr., Lab Director  
Michael H. Dunn, M.S., Technical Director  
Johnny A. Mitchell, Dir. Technical Serv.  
Eric S. Smith, Assistant Technical Director

Gail A. Lage, Technical Serv.  
Glenn L. Norton, Technical Serv.  
Kelly S. Comstock, Technical Serv.  
Pamela A. Langford, Technical Serv.

Laboratory Certification Number: 84009

End of Sample Report.



**ANALYTICAL REPORT**

SCDHEC 2200  
 2600 BULL STREET  
 COLUMBIA, SC 29201

Lab Number: 01-A33682  
 Sample ID: WSW-1  
 Sample Type: Water  
 Site ID:

Project: #03439  
 Project Name: HWY 11 GROCERY  
 Sampler: K.A.

Date Collected: 3/12/01  
 Time Collected: 12:58  
 Date Received: 3/14/01  
 Time Received: 9:00

Analyte	Result	Units	Report Limit	Quan Limit	Dil Factor	Analysis Date	Analysis Time	Analyst	Method	Batch
<b>*VOLATILE ORGANICS*</b>										
Benzene	ND	ug/l	1.0	1.0	1	3/21/01	2:36	T.Johnson	8260B	4892
Toluene	ND	ug/l	1.0	1.0	1	3/21/01	2:36	T.Johnson	8260B	4892
Ethylbenzene	ND	ug/l	1.0	1.0	1	3/21/01	2:36	T.Johnson	8260B	4892
Xylenes, Total	ND	ug/l	1.0	1.0	1	3/21/01	2:36	T.Johnson	8260B	4892
Methyl-t-butyl ether	ND	ug/l	5.0	2.0	1	3/21/01	2:36	T.Johnson	8260B	4892
Naphthalene	ND	ug/l	5.0	5.0	1	3/21/01	2:36	T.Johnson	8260B	4892

ND - Not detected at the report limit.

Surrogate	% Recovery	Target Range
VOA Surr, 1,2-DCA, d4	85.	71. - 136.
VOA Surr, Toluene d8	101.	69. - 129.
VOA Surr, 4-BFB	92.	65. - 122.
VOA Surr, DBFM	99.	61. - 139.

# - Recovery outside Laboratory historical limits.

Sample report continued . . .



**ANALYTICAL REPORT**

Laboratory Number: 01-A33682  
Sample ID: WSW-1  
Project: #03439  
Page 2

These results relate only to the items tested.  
This report shall not be reproduced except in full and with  
permission of the laboratory.

Report Approved By: *Paul E. Lane, Jr.*

Report Date: 3/21/01

Paul E. Lane, Jr., Lab Director  
Michael H. Dunn, M.S., Technical Director  
Johnny A. Mitchell, Dir. Technical Serv.  
Eric S. Smith, Assistant Technical Director

Gail A. Lage, Technical Serv.  
Glenn L. Norton, Technical Serv.  
Kelly S. Comstock, Technical Serv.  
Pamela A. Langford, Technical Serv.

Laboratory Certification Number: 84009

End of Sample Report.



**ANALYTICAL REPORT**

SCDHEC 2200  
 2600 BULL STREET  
 COLUMBIA, SC 29201

Lab Number: 01-A33683  
 Sample ID: WSW-2 *Retd*  
 Sample Type: Water  
 Site ID:

Project: #03439  
 Project Name: HWY 11 GROCERY  
 Sampler: K.A.

Date Collected: 3/12/01  
 Time Collected: 13:00  
 Date Received: 3/14/01  
 Time Received: 9:00

Analyte	Result	Units	Report Limit	Quan Limit	Dil Factor	Analysis Date	Analysis Time	Analyst	Method	Batch
<b>*VOLATILE ORGANICS*</b>										
Benzene	ND	ug/l	1.0	1.0	1	3/21/01	3:09	T.Johnson	8260B	4892
Toluene	ND	ug/l	1.0	1.0	1	3/21/01	3:09	T.Johnson	8260B	4892
Ethylbenzene	ND	ug/l	1.0	1.0	1	3/21/01	3:09	T.Johnson	8260B	4892
Xylenes, Total	ND	ug/l	1.0	1.0	1	3/21/01	3:09	T.Johnson	8260B	4892
Methyl-t-butyl ether	ND	ug/l	5.0	2.0	1	3/21/01	3:09	T.Johnson	8260B	4892
Naphthalene	ND	ug/l	5.0	5.0	1	3/21/01	3:09	T.Johnson	8260B	4892

ND - Not detected at the report limit.

Surrogate	% Recovery	Target Range
VOA Surr, 1,2-DCA, d4	88.	71. - 136.
VOA Surr, Toluene d8	101.	69. - 129.
VOA Surr, 4-BFB	93.	65. - 122.
VOA Surr, DBFM	100.	61. - 139.

# - Recovery outside Laboratory historical limits.

Sample report continued . . .





**ANALYTICAL REPORT**

Laboratory Number: 01-A33683  
Sample ID: WSW-2  
Project: #03439  
Page 2

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Report Approved By: *Paul E. Lane, Jr.*

Report Date: 3/21/01

Paul E. Lane, Jr., Lab Director  
Michael H. Dunn, M.S., Technical Director  
Johnny A. Mitchell, Dir. Technical Serv.  
Eric S. Smith, Assistant Technical Director

Gail A. Lage, Technical Serv.  
Glenn L. Norton, Technical Serv.  
Kelly S. Comstock, Technical Serv.  
Pamela A. Langford, Technical Serv.

Laboratory Certification Number: 84009

End of Sample Report.



**ANALYTICAL REPORT**

SCDHEC 2200  
 2600 BULL STREET  
 COLUMBIA, SC 29201

Lab Number: 01-A33684  
 Sample ID: WSW-3 *Revd*  
 Sample Type: Water  
 Site ID:

Project: #03439  
 Project Name: HWY 11 GROCERY  
 Sampler: K.A.

Date Collected: 3/12/01  
 Time Collected: 13:10  
 Date Received: 3/14/01  
 Time Received: 9:00

Analyte	Result	Units	Report Limit	Quan Limit	Dil Factor	Analysis Date	Analysis Time	Analyst	Method	Batch
<b>*VOLATILE ORGANICS*</b>										
Benzene	ND	ug/l	1.0	1.0	1	3/21/01	3:41	T.Johnson	8260B	4892
Toluene	ND	ug/l	1.0	1.0	1	3/21/01	3:41	T.Johnson	8260B	4892
Ethylbenzene	ND	ug/l	1.0	1.0	1	3/21/01	3:41	T.Johnson	8260B	4892
Xylenes, Total	ND	ug/l	1.0	1.0	1	3/21/01	3:41	T.Johnson	8260B	4892
Methyl-t-butyl ether	ND	ug/l	5.0	2.0	1	3/21/01	3:41	T.Johnson	8260B	4892
Naphthalene	ND	ug/l	5.0	5.0	1	3/21/01	3:41	T.Johnson	8260B	4892

ND - Not detected at the report limit.

Surrogate	% Recovery	Target Range
VOA Surr, 1,2-DCA, d4	86.	71. - 136.
VOA Surr, Toluene d8	102.	69. - 129.
VOA Surr, 4-BFB	93.	65. - 122.
VOA Surr, DBFM	96.	61. - 139.

# - Recovery outside Laboratory historical limits.

Sample report continued . . .



**ANALYTICAL REPORT**

Laboratory Number: 01-A33684  
Sample ID: WSW-3  
Project: #03439  
Page 2

These results relate only to the items tested.  
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permission of the laboratory.

Report Approved By:

A handwritten signature in cursive script, appearing to read 'Paul E. Lane, Jr.', is written over a horizontal line.

Report Date: 3/21/01

Paul E. Lane, Jr., Lab Director  
Michael H. Dunn, M.S., Technical Director  
Johnny A. Mitchell, Dir. Technical Serv.  
Eric S. Smith, Assistant Technical Director

Gail A. Lage, Technical Serv.  
Glenn L. Norton, Technical Serv.  
Kelly S. Comstock, Technical Serv.  
Pamela A. Langford, Technical Serv.

Laboratory Certification Number: 84009

End of Sample Report.

**PROJECT QUALITY CONTROL DATA**  
**Project Number: #03439**

Matrix Spike Recovery

Analyte	units	Orig. Val.	MS Val	Spike Conc	Recovery	Target Range	Q.C. Batch	Spike Sample
**VOA PARAMETERS**								
Benzene	mg/l	< 0.00100	0.04900	0.05000	98	53. - 134.	4892	blank
Toluene	mg/l	< 0.00100	0.04900	0.05000	98	54. - 135.	4892	blank

Matrix Spike Duplicate

Analyte	units	Orig. Val.	Duplicate	RPD	Limit	Q.C. Batch
**VOA PARAMETERS**						
Benzene	mg/l	0.04900	0.05200	5.94	25.	4892
Toluene	mg/l	0.04900	0.05300	7.84	29.	4892

Laboratory Control Data

Analyte	units	Known Val.	Analyzed Val	% Recovery	Target Range	Q.C. Batch
**VOA PARAMETERS**						
Benzene	mg/l	0.1000	0.1000	100	73 - 113	4892
Ethylbenzene	mg/l	0.1000	0.1090	109	78 - 119	4892
Naphthalene	mg/l	0.1000	0.1060	106	62 - 149	4892
Toluene	mg/l	0.1000	0.1030	103	70 - 119	4892
Xylenes, Total	mg/l	0.2000	0.2170	108	62 - 137	4892
Methyl-t-butyl ether	mg/l	0.1000	0.0970	97	68 - 129	4892

Project QC continued . . .



**PROJECT QUALITY CONTROL DATA**  
**Project Number: #03439**

Blank Data

Analyte	Blank Value	Units	Q.C. Batch	Analysis Date	Analysis Time
-----	-----	-----	-----	-----	-----

Blank Data

Analyte	Blank Value	Units	Q.C. Batch	Date Analyzed	Time Analyzed
-----	-----	-----	-----	-----	-----

**\*\*VOA PARAMETERS\*\***

Benzene	< 0.00100	mg/l	4892	3/20/01	21:39
Ethylbenzene	< 0.00100	mg/l	4892	3/20/01	21:39
Naphthalene	< 0.0050	mg/l	4892	3/20/01	21:39
Toluene	< 0.00100	mg/l	4892	3/20/01	21:39
Xylenes, Total	< 0.00100	mg/l	4892	3/20/01	21:39
Methyl-t-butyl ether	< 0.0050	mg/l	4892	3/20/01	21:39
VOA Surr, 1,2-DCA, d4	90.	% Rec	4892	3/20/01	21:39
VOA Surr, Toluene d8	103.	% Rec	4892	3/20/01	21:39
VOA Surr, 4-BFB	91.	% Rec	4892	3/20/01	21:39

# - Value outside Laboratory historical QC limits.

End of Report for Project 229845



2600 Bull Street  
Columbia, SC 29201-1708

**UNDERGROUND STORAGE TANK PROGRAM  
BUREAU OF LAND AND WASTE MANAGEMENT**

2600 Bull Street, Columbia, SC 29201  
Phone (803) 898-4350 Fax (803) 898-4330

**MAR 15 2001**

Mr. Steven Smith  
180 Schallow Ford Road  
Salem, SC 29676

Re: Hwy 11 Grocery  
UST Permit # 03439  
Information regarding the discharge of petroleum constituents into the surface  
water (creek)  
Oconee County

Dear Mr. Smith:

On March 9, 2001, the Bureau's inspector, Mr. Bill Williamson visited the referenced facility. Hydrocarbons were observed discharging to the creek downhill from your property. As the referenced facility is the only known possible source, you must take immediate actions to prevent further impact of the creek.

**Please choose your environmental contractor from the certified contractor's list that was provided to you earlier. Please call me to discuss an emergency response plan and costs within 48 hours of the date of this correspondence. All approvable costs incurred in abatement procedures can be applied towards your \$25,000.00 deductible.**

On all correspondence regarding this site, please reference UST Permit #03439. If you have any questions concerning this correspondence, please call at (803) 898-4353 or 1-800-826-5435 (within South Carolina only).

Sincerely,

Konstantine T. Akhvlediani, Hydrogeologist  
State Lead and Field Services Section  
Assessment and Corrective Action Division  
Underground Storage Tank Program

cc: Technical File  
Read File

SCDHEC/UST/SLFS/KTA/03/09/01

### UNDERGROUND STORAGE TANK (UST) 72 HOUR RELEASE REPORT

SITE ID NUMBER: (ON ANNUAL INVOICE) 03439

FACILITY NAME: Hwy 11 Grocery

Address: \_\_\_\_\_

Contact: \_\_\_\_\_ Telephone \_\_\_\_\_

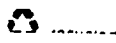
- 1) Number of USTs at this site: In Service 4 Out of Service 0
- 2) Date of LAST System test: Fals 12/96 lines 9/00 (Attach copy)
- 3) Are there any drinking water wells on or near the site? Yes No
- 4) Is the drinking water contaminated? Yes No
- 5) Date release discovered. 11/27/00
- 6) How was the release discovered? Adjacent property owner showed Bill Williamson a creek w/ a petroleum Sheen
- 7) Type of product(s) discovered Petroleum

Describe actions taken to: (attach additional sheets if needed)

- 8) Discover the cause of the release. Investigation & abatement proceeding
- 9) Prevent further release. \_\_\_\_\_
- 10) Clean up the site. \_\_\_\_\_

Follow the directives of Subpart E of the SC UST Control Regulations, notify proper local authorities and neighboring property owners potentially affected by the release. On all correspondence related to a particular site, please reference the GWPD Site ID Number. Questions should be addressed to the Ground-Water Protection Division at (803) 734-5331. FAX (803) 734-3604

Reported by (PRINT) Don Stouderme Telephone ~~423~~  
Signature Don Stouderme Date 11-28-00



11/28/2000 10:36:15  
SiteID E-37-NO-03439

HWY 11 GROCERY

Memo field

1-16-98--notified by Steven Smith (son) that Ms Smith had been killed---he is planning to sell the store and will keep us posted on progress---jek

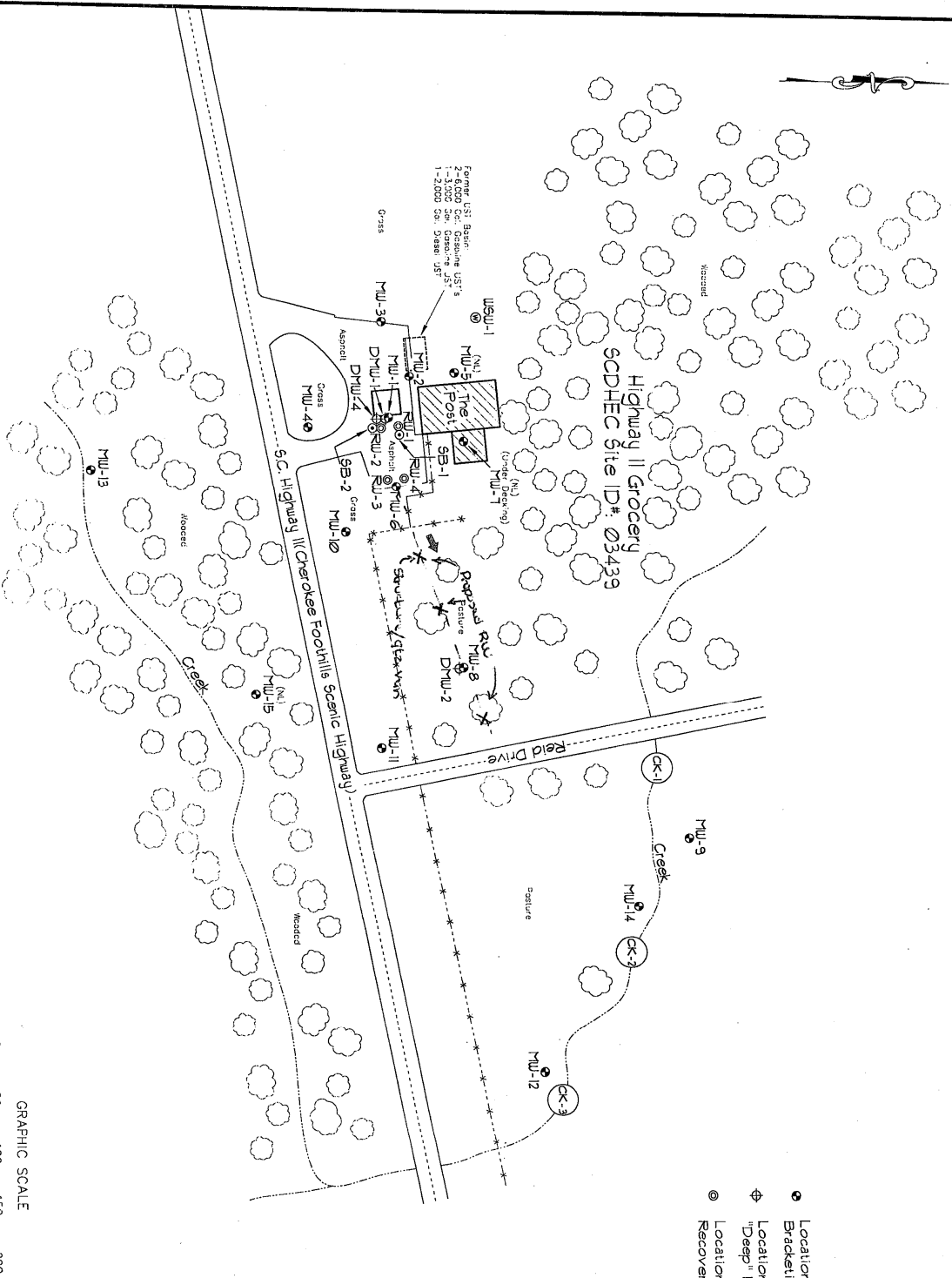
1-19-98--rec'd documentation from Susan Marlowe that site had been upgraded--spill and overfill installed by CK Bush, impressed current installed by HARCO Technologies--jek

10-4-99 STEVE HAS INHERITED THE SITE. I WILL MAIL HIM T OF O AND FR INFO TODAY. DMO

11/28/00 - James Reed, the adjacent property owner, called this office to report an odor in the soil on his property. Bill Williamson met Mr. Reed at the site on 11/27/00. Mr. Reed showed him an area in a small creek that is directly down-gradient and has as a visible petroleum sheen. The nearby soil has a distinct petroleum odor. Since there is no other source in the area, we will enter a confirmed release at this site. The inspector will request all leak detection records and a tank tightness test (the lines were tested in September, 2000). The release will be forwarded to corrective action for immediate response to the surface contamination. DWS



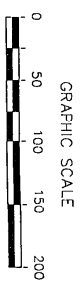
Drawing Based on MECI Field Notes and SCDHEC Files. All Locations are Approximate.



**Explanation:**

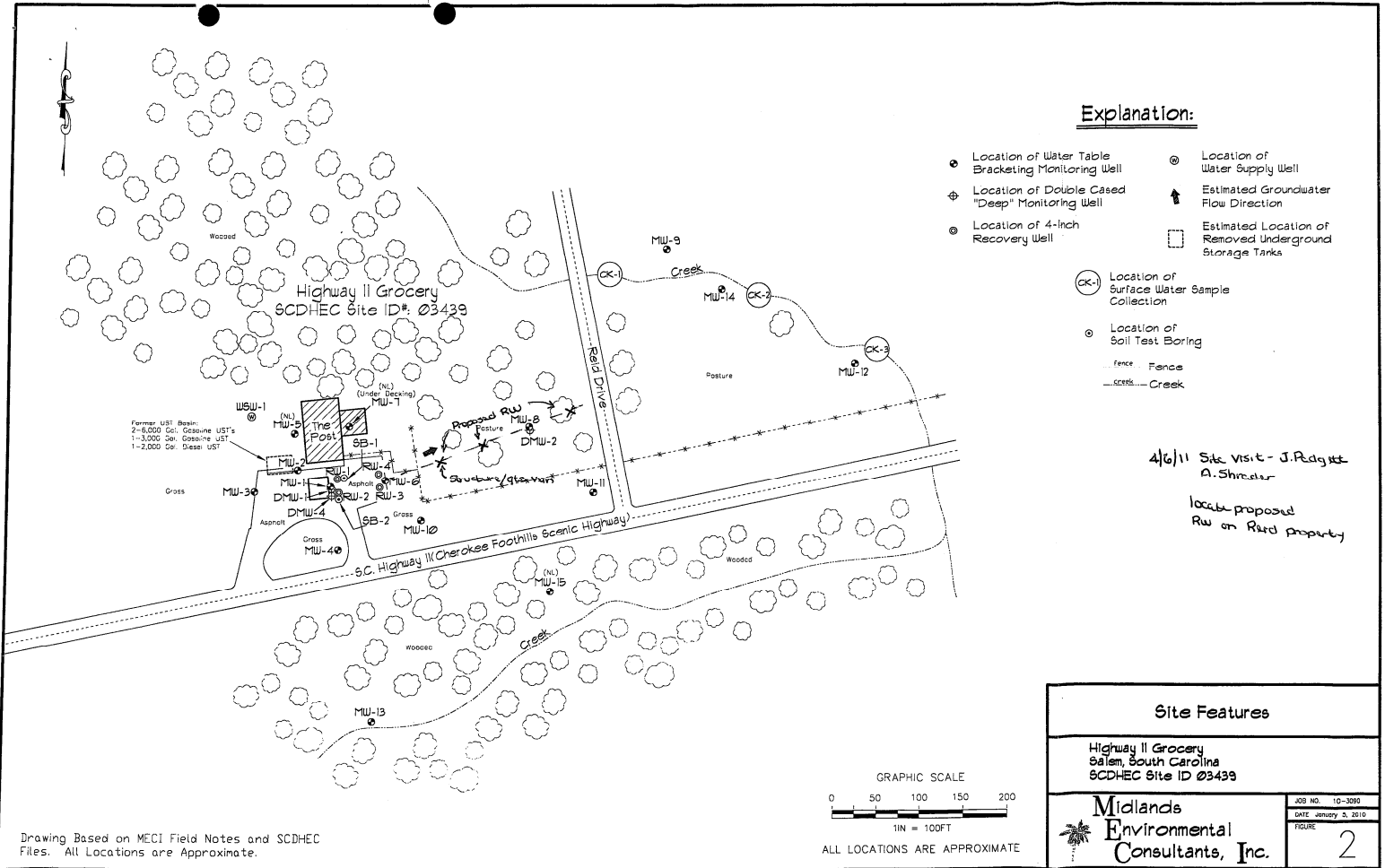
- Location of Water Table
- ⊕ Bracketing Monitoring Well
- ⊕ Location of Double Cased "Deep" Monitoring Well
- ⊙ Location of 4-inch Recovery Well
- ⊙ Location of Water Supply Well
- ⊕ Estimated Groundwater Flow Direction
- Estimated Location of Removed Underground Storage Tanks

- Location of Surface Water Sample Collection
- Location of Soil Test Boring
- Fence
- - - - - Creek



ALL LOCATIONS ARE APPROXIMATE

<b>Site Features</b>	
Highway II Grocery Salem, South Carolina SCDHEC Site ID 03439	
Midlands Environmental Consultants, Inc.	
JOB NO. 10-0398 DATE January 5, 2010 FIGURE	2



Drawing Based on MECI Field Notes and SCDHEC Files. All Locations are Approximate.

03439

**POST INSTALLATION REPORT  
CATHODIC PROTECTION SYSTEM  
UNDERGROUND FUEL STORAGE TANKS  
AND PIPING  
HIGHWAY 11 GROCERY  
13527 NORTH HIGHWAY 11  
SALEM, SOUTH CAROLINA**

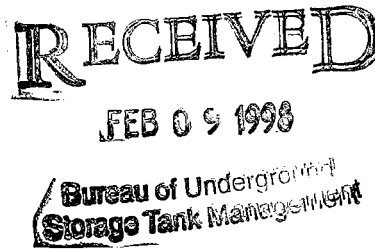
PREPARED BY:  
HARCO TECHNOLOGIES  
*A DIVISION OF CORRPRO COMPANIES, INC.*  
581 SIGMAN ROAD, SUITE 300  
CONYERS, GEORGIA 30013  
(770) 761-5400  
W.M.G.

**42-Tech**

AUGUST, 1997

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Conclusions	1
Recommendations	2
Benefits	3
INTRODUCTION	4
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RESULTS AND ANALYSIS	5
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B - NACE CRITERIA FOR CATHODIC PROTECTION	
C - OPERATING AND MAINTENANCE MANUAL	
D - DRAWING NO. A-53335	



**POST INSTALLATION REPORT  
CATHODIC PROTECTION SYSTEM  
UNDERGROUND FUEL STORAGE TANKS  
AND PIPING  
HIGHWAY 11 GROCERY  
13527 NORTH HIGHWAY 11  
SALEM, SOUTH CAROLINA**

**SUMMARY**

**OBJECTIVES**

1. To commission the newly installed cathodic protection system afforded the underground metallic fuel tanks and piping at Highway 11 Grocery located in Salem, South Carolina.
2. To provide recommendations for cathodic protection system monitoring and maintenance in accordance with the South Carolina Department of Health & Environmental Control (SCDHEC)

**CONCLUSIONS**

1. The cathodic protection system at this site is designed to provide corrosion control for four (4) underground metallic fuel tanks and associated piping in accordance with DHEC requirements.
2. Electrical continuity between the fuel tanks was established and the cathodic protection system components were installed properly and in accordance with design recommendations.
3. All of the structure-to-electrolyte potential measurements obtained after energizing the system, satisfied criteria for cathodic protection as established by the National Association

of Corrosion Engineers (NACE). (This also satisfies DHEC requirements for corrosion control).

4. Testing indicates that the newly installed cathodic protection system is not having a detrimental effect on other buried metallic structures in the vicinity.

#### RECOMMENDATIONS

1. Ensure the cathodic protection system is properly operated and maintained. An effective operating and maintenance program must be initiated and include:

##### Monthly Rectifier Monitoring:

- a. Record the individual circuit voltage and amperage outputs in a permanent log book. Utilize the "Rectifier Maintenance Sheet" included with this report.
- b. Report any of the following operational deficiencies to Harco Technologies, a division of Corpro Companies, Inc.
  1. Voltmeter or ammeter reads "zero".
  2. Tripped circuit breaker in A.C. power feed to rectifier unit.
- c. Ensure that the rectifier unit remains in continuous operation.

##### System Surveys:

- a. Have the cathodic protection system resurveyed by a qualified person on a periodic basis to ensure continual effective operation. It is recommended that these surveys be performed annually. DHEC regulations mandate that the system be surveyed at least every three (3) years. The next survey will be due in June of 2000.

## BENEFITS

A cathodic protection system, properly operated and maintained, will effectively mitigate corrosion. This will result in a longer service life for the tanks and lessen the likelihood of hazardous material contaminating the environment.

## INTRODUCTION

Harco Technologies, *a division of Corpro Companies, Inc.*, engineering personnel designed the cathodic protection system based on site plans and detailed information provided by Highway 11 Grocery. Presently, there are two (2) 6,000 and two (2) 3,000 gallon underground fuel storage tanks in service at this particular location, all of which were afforded cathodic protection under this project. Accurate information regarding the type or quality of coating afforded the metallic fuel tanks was unavailable, therefore, a conservative design was prepared in order to achieve protection in the event the structures were bare or possessed deteriorated coatings. The product piping at this site is constructed of galvanized steel and also required cathodic protection.

The cathodic protection system consists essentially of eight (8) canisterized graphite anodes energized by a manually controlled rectifier located outside the store building. The anodes, which are distributed around the fuel tanks, are each furnished with individual continuous lead wires to a junction box located on the outside wall of the store.

On June 19, 1997, Harco's engineer conducted the commissioning survey in accordance with Highway 11 Grocery's authorization.

## TEST PROCEDURES

Continuity testing was performed between the various fueling structures using a copper/copper sulfate reference cell and a Miller Model LC-4 multimeter. The tests were conducted by placing the reference cell in a stationary central location over the fuel tanks in direct contact with the electrolyte (soil or wetted surface). The reference cell was then connected, via a lead wire, to the negative terminal of the multimeter. Each fuel tank was then contacted with a lead connected to the multimeter's positive terminal. Identical potential measurements indicate electrically continuous structures.



The system's effectiveness and effect on adjacent structures was determined by obtaining local structure-to-electrolyte potential measurements. These readings were obtained using the same reference cell and voltmeter as previously described; however, in this test the reference cell was placed immediately adjacent to or directly above each structure under test. The measurements were made by placing the cell in intimate contact with the electrolyte and connecting a lead between the cell and the negative terminal of the voltmeter. The positive connection necessary to complete the measuring circuit was made by directly contacting the structure under test. These readings were recorded prior to energizing the system ("native"), with the system operating ("on") and with the current instantaneously interrupted ("instant off"). A cycling interruption period of 30 seconds "on", 3 seconds "off" was used to prevent polarization decay.

Rectifier voltage and current outputs were recorded using the built-in meters within the unit. These readings were authenticated using the multimeter by reading across the individual output lugs and calibrated current measuring shunts.

## RESULTS AND ANALYSIS

Pertinent data gathered during the commissioning survey has been tabulated and is presented within Appendix A. The criteria used for the cathodic protection of buried or partially submerged metallic structures has been documented by the National Association of Corrosion Engineers (NACE). Applicable sections of their Recommended Practice RP-02-85 have been reproduced and are exhibited in Appendix B. This particular recommended practice is cited by the DHEC as having to be satisfied in order to comply with federal standards for corrosion control on underground fueling systems.

Once the electrical continuity between the fuel tanks was established, local structure-to-electrolyte potential measurements were recorded with the system operated and interrupted. This data is listed within Appendix A. All of the structure-to-electrolyte potential measurements obtained satisfied NACE criteria.

At present operating levels, the cathodic protection system has an estimated service life in excess of twenty (20) years. This figure is based on published consumption rates for the anode material used.

In order to ensure that the cathodic protection system gives continual effective performance, a preventative maintenance program must be initiated. This program must include monthly surveillance of the rectifier unit, and periodic complete system evaluations. The monthly surveillance includes recording unit output levels and routine maintenance as required, and is best completed by store personnel. A rectifier log book has been included with this report to record the output levels; in addition, system maintenance and operating instructions are included within Appendix C of this report. The periodic surveys are best conducted by a qualified corrosion engineer and allows adjustment of the system to meet environmental and structural changes. In accordance with state law, rectifier surveillance must be conducted at least every sixty (60) days with complete system evaluations on three (3) year intervals.

Based on the results of this survey, it is concluded that the new cathodic protection system is operating effectively and no additions or modifications are required.

APPENDIX A  
TEST DATA

# CORROSION SURVEY FIELD DATA AND TABLES

TABLE   1    
SHEET  1  OF  1 

<b>OWNER:</b> Highway 11 Grocery		<b>CONTINUITY TESTING, STATIONARY REFERENCE CELL</b>				
<b>STRUCTURE:</b> Fueling System		1. "Native" structure-to-soil potential measurements				
<b>DATE OBTAINED:</b> 6/19/97		2. "On" structure-to-soil potential measurements				
<b>SURVEYED BY:</b> RSP		3. "Instant off" structure-to-soil potential measurements				
<b>All potential measurements recorded in millivolts</b>						
NO.	LOCATION	1.	2.	3.		COMMENTS
01	Tanks: 1. 3K - Fill	-357	-683	-419		
	2. 3K - Fill	-357	-683	-419		
	3. 6K - Fill	-357	-683	-419		
	4. 6K - Fill	-357	-683	-419		
	(Above) 5. Kero - Fill	-357	-683	-419		
02	Disp: 1.	-357	-683	-419		
	2.	-357	-683	-419		
	3.	-357	-683	-419		
	4.	-357	-683	-419		
03	Vents: 1.	-357	-683	-419		
	2.	-357	-683	-419		
	3.	-357	-683	-419		
	4.	-357	-683	-419		

# CORROSION SURVEY FIELD DATA AND TABLES

TABLE   II    
SHEET   1   OF   1  

<b>OWNER:</b> Highway 11 Grocery		<b>COMMISSIONING SURVEY, LOCAL POTENTIAL MEASUREMENTS</b>				
<b>STRUCTURE:</b> Fueling System		1. "Native" structure-to-soil potential measurements				
<b>DATE OBTAINED:</b> 6/19/97		2. "On" structure-to-soil potential measurements				
<b>SURVEYED BY:</b> RSP		3. "Instant off" structure-to-soil potential measurements				
All potential measurements recorded in millivolts						
NO.	LOCATION	1.	2.	3.		COMMENTS
01	Tanks: 1. 3K - Fill	-687	-1247	-743		
	End of tank	-356	-2270	-438		
	2. 3K - Fill	-667	-1420	-829		
	End of tank	-271	-3200	-421		
	3. 6K - Fill	-581	-889	-597		
	End of tank	-252	-4610	-417		
	4. 6K - Fill	-439	-1231	-452		
	End of tank	-229	-4610	-443		
	(Above) 5. Kero - Fill					
	End of tank					
02	Disp: 1.	-556	-1272	-802		
	2.	-598	-1294	-886		
	3.	-701	-1445	-999		
	4.	-684	-1534	-1042		
03	Vents: 1.	-543	-582	-551		
	2.	-574	-591	-585		
	3.	-581	-596	-591		
	4.	-529	-559	-536		

# CORROSION SURVEY FIELD DATA AND TABLES

TABLE III  
SHEET 1 OF 1

<b>OWNER:</b> Highway 11 Grocery		<b>INDIVIDUAL ANODE CURRENT OUTPUT MEASURED IN AMPERES AT</b>				
<b>STRUCTURE:</b> Fueling System		<b>JUNCTION BOX.</b>				
<b>DATE OBTAINED:</b> 6/19/97						
<b>SURVEYED BY:</b> RSP						
NO.	LOCATION					COMMENTS
01	Anode No. 1	.26				
02	Anode No. 2	.23				
03	Anode No. 3	.11				
04	Anode No. 4	.13				
05	Anode No. 5	.03				
06	Anode No. 6	.02				
07	Anode No. 7	.02				
08	Anode No. 8	.80				

# HARCO TECHNOLOGIES CATHODIC PROTECTION RECTIFIER MONITORING LOG

Table \_\_\_\_\_  
Sheet 1 of 1

OWNER: Highway 11 Grocery STRUCTURE: UST

SITE NAME & CITY: Highway 11 Grocery - Salem, South Carolina S.N. C-97500

LOCATION OF RECTIFIER UNIT: \_\_\_\_\_

RECTIFIER MODEL: CSAYSA 80-08

RECTIFIER MANUFACTURED BY: RTS INSTALLED: 6/19/97

TYPE OF ANODES: Graphite TYPE OF GROUND BED: Distributed

NO. OF ANODES: 8 SIZE: 3" N x 30" LONG X CANNED     BARE

GROUND BED LOCATION: Around Tanks

RECTIFIER AC INPUT: 115 VOLTS 1 PHASE 60 CYCLES

RECTIFIER RATED DC OUTPUT: 80 VOLTS 8 AMPERES

RECOMMENDED OUTPUT: 15 TO 21 VOLTS .5 TO 1.1 AMPERES

RECTIFIER TAP SETTING	D C OUTPUT		DATE	BY	REMARKS
	VOLTS	AMPS			
C-A/F-5	19.0	.8	6/19/97	RSP	Meter
C-A/F-5	18.02	.80	6/19/97	RSP	DM10

APPENDIX B  
NACE CRITERIA FOR CATHODIC PROTECTION



## NACE STANDARD RP-02-85

### CONTROL OF EXTERNAL CORROSION ON METALLIC BURIED, PARTIALLY BURIED, OR SUBMERGED LIQUID STORAGE SYSTEMS

#### Section 6: Criteria for Cathodic Protection

##### 6.3 Criteria for Steel and Iron Structures

6.3.1 A negative (cathodic) voltage of at least 0.85 V as measured between the structure surface and a saturated copper/copper sulfate reference electrode contacting the electrolyte. Determination of this voltage is to be made with the protective current applied.

6.3.2 A minimum negative (cathodic) voltage shift of 300 mV, produced by the application of protective current. The voltage shift is measured between the structure surface and a stable reference electrode contacting the electrolyte. This criterion of voltage shift does not apply to structures in contact with dissimilar metals.

6.3.3 A minimum negative (cathodic) polarization voltage shift of 100 mV measured between the structure surface and a stable reference electrode contacting the electrolyte. This polarization voltage shift is to be determined by interrupting the protective current and measuring the polarization decay. When the current is initially interrupted, an immediate voltage shift will occur. The voltage reading after the immediate shift shall be used as the base reading from which to measure polarization decay.

6.3.4 A structure-to-electrolyte voltage at least as negative (cathodic) as that originally established at the beginning of the Tafel segment of the E-log-I curve. This structure-to-electrolyte voltage shall be measured between the structure surface and a stable reference electrode contacting the electrolyte at the same location where voltage measurements were taken to obtain the E-log-I curve.

6.3.5 A net protective current from the electrolyte into the structure surface as measured by an earth current technique applied to predetermined current discharge (anodic) points of the structure.

APPENDIX C  
OPERATING AND MAINTENANCE MANUAL

# OPERATING AND MAINTENANCE MANUAL IMPRESSED CURRENT CATHODIC PROTECTION SYSTEM

## A. OPERATION OF CATHODIC PROTECTION SYSTEMS

The rectifier units provide the means by which the existing A.C. voltage supply may be stepped down through a multi-tap secondary transformer to the required magnitude and then rectified through a full-wave bridge rectifying stack to a D.C. output.

The anodes are the means by which the D.C. output of the rectifier unit is transmitted to the soil in order to provide protective current flow to the underground metallic structures.

The magnitude of the D.C. output current to the anode assemblies at any specific tap setting will be a variable which is a function of the resistance between that positive anode terminal and the common negative terminal on the rectifier unit.

The resistance referred to is comprised of the series resistance of the connecting cables (a constant) and the resistance of the anodes to the soil, which is a variable.

## B. TESTING CRITERIA FOR CATHODIC PROTECTION SYSTEMS

One of the most important tests in corrosion work is the measurement of metallic surfaces-to-soil (or water) potentials. Steel is generally considered to be fully protected when it has a negative potential of at least 0.85 volt with respect to a copper sulfate electrode placed in contact with the soil (water).

Metallic structures are also considered to be fully protected if:

1. The millivolt change (between the structure and the electrode) with the rectifier "on" and "off" is in the order of 300 millivolts.
2. The polarized change is in the order of 100 millivolts. (Polarization can be defined as a change in the surface of a metal resulting from electrochemical action which changes the potential of the metal and tends to reduce the rate of corrosion). Polarization may be thought of as formation of very thin film, of hydrogen, which coats the metal surface. (Polarized potentials are those obtained immediately after the cathodic protection installation has been turned off.)

C. TYPES OF MEASUREMENTS

1. Rectifier Voltage and Current Measurements:

a. A.C. Input:

- (1) Read the A.C. Voltage by connecting the A.C. voltmeter at terminals AA or BB as shown on the attached schematic.
- (2) Read the A.C. current by clamping a clamp-on ammeter to the A.C. input cables at circuit breakers.

b. D.C. Output:

- (1) Read the D.C. voltage of the rectifier by connecting the D.C. voltmeter leads to the positive and negative terminals of the rectifier. Make sure the right polarity is maintained or the meter could be damaged.
- (2) Read the total D.C. current by measuring the voltage drop across the totalizing shunt. See Section C, Paragraph 3.

2. Structure-to-Soil Potential Measurements:

An attached drawing shows the method of connecting the voltmeter for measuring the potential of a structure (in the case of a pipeline) to a reference electrode (copper sulfate, zinc rod, etc.) placed in contact with the soil close to the structure being measured. A reference electrode is considered "close" to a structure when it is located on the soil directly over a pipeline (see Figure 1) for example, or when it is within a few feet of a structure such as a storage tank (see Figure 2).

In some cases, over-the-line potential surveys (measurement of potentials to a reference electrode directly over the pipe and at frequent intervals along the pipe) are necessary to locate the more actively corroding areas or to determine the degree of cathodic protection of the pipeline in its entirety.

OPERATING AND MAINTENANCE MANUAL  
IMPRESSED CURRENT CATHODIC PROTECTION SYSTEM

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When measuring pipe-to-soil potentials, it is necessary to use a voltmeter that has a high resistance compared with the resistance between the electrode and the pipeline. Otherwise, a large error in the indicated voltage may result. The largest resistance between electrode and pipeline is almost always the resistance to earth of the electrode. This resistance can be held to a minimum by placing the electrode in moist soil. At times it may be necessary to moisten the soil with water at points where the electrode is to be placed. It is always desirable to install the reference electrode below the very dry surface soil.

The effect of circuit resistance of a voltage reading can be calculated from the equation  $V_a = V_i \frac{R_m + R_c}{R_m}$ , where  $V_a$  is the actual voltage,  $V_i$  is the voltage indicated by the meter,  $R_m$  is the resistance of the meter, and  $R_c$  is the resistance of the circuit connected to the meter terminals. This equation can be used to calculate the true voltage when a suitable high resistance voltmeter is not available, if the circuit resistance ( $R_c$ ) is measured. The circuit resistance is the sum of the resistance of the test leads, the pipe to earth, and the electrode to earth.

A convenient method to determine whether the circuit resistance is sufficiently low compared with meter resistance is to measure the voltage on two ranges, such as the 1-volt range and the 10-volt range. If the reading on the higher range is greater than the reading on the lower range, an error resulting from

too small a ratio between meter resistance and circuit resistance is indicated.

Erroneous readings resulting from high current resistance can be overcome by using a potentiometer-type voltmeter or high-impedance voltmeter.

3. Current Measurements:

a. General:

Except for clamp-on ammeters (which are essentially magnetic flux instruments) and zero-resistance ammeters (which are used in special cases when the circuit resistance is very low), direct current is measured by observing the voltage drop caused by the current flow in a known resistance. The voltage difference or drop between the ends of the known resistance is divided by the resistance value to obtain the current. Current shunts made for the purpose of measuring current can be used when it is possible to connect them in series with the conductor. An ammeter consists of a current shunt and a permanently attached low-resistance voltmeter calibrated to read current directly in amperes.

Current shunts can be obtained in any desired resistance value. The resistance of the shunt should be sufficiently low to avoid adding any significant resistance to the circuit. This is discussed in paragraph 3.b. below.

The connection of test leads to the shunt should be solid metal-to-metal contacts. All dirt and metal oxide should be cleaned from contact surfaces. A light film of grease applied to the contact surfaces will preserve the clean surfaces for some time and will not affect contact of metal to metal.

It is particularly important to have good contact at the shunt potential terminals. A very small resistance in the potential measuring circuit will result in grossly inaccurate readings.

b. Measuring Current with Current Shunt:

When it is possible to insert a current shunt in the circuit, current can be measured conveniently with a current shunt. The current terminals of the shunt are connected solidly in series with the conductor so that the shunt carries the same current as the conductor. Separate potential terminals are provided for measuring the voltage drop across the shunt. The current is calculated by dividing the voltage measured across the potential terminals by the resistance of the shunt.



D. TESTING EQUIPMENT

1. Equipment for Measuring the Rectifier  
A.C. Input and D.C. Output:

- a. Clip-on, split-core, A.C. ammeter and voltmeter combination (such as Simpson Model 295):

Voltmeter scales 0-150 and 0-600 volts; ammeter scales 0-6 and 0-30 amperes.

- b. D.C. voltmeter, 1000-ohm/volt (such as Simpson Model 260 in combination with M.C. Miller Model LC-4), with full scale ranges of 0-20 mV; 0-0.1 volt, 0-0.2 volt, 0-1.0 volt, 0-2 volts, 0-10 volts, 0-20 volts, and 0-100 volts.

2. Equipment for Measuring Structure-to-Reference Electrode Potential:

- a. D.C. voltmeter (100,000 ohm-volt or higher sensitivity) with full scale ranges of 0-0.1, 0-0.2, 0-2, and 0-5 volts.

- b. Copper Sulfate Electrode - In order to make contact with the earth or water when measuring structure-to-soil (water) potential, it is necessary to use a standard reference electrode. The electrode commonly used for this purpose consists of copper rod enclosed in a plastic tube which has a porous plug in one end and a cap through which the copper rod protrudes at the other end. The tube is filled with a saturated

OPERATING AND MAINTENANCE MANUAL  
IMPRESSED CURRENT CATHODIC PROTECTION SYSTEM

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copper sulfate solution. In operation, the porous plug is placed in contact with the earth (water) and the copper rod is connected to the voltmeter through a test lead.

Copper sulfate electrodes should be kept full with saturated copper sulfate solution. A few surplus crystals should be added to make certain that the solution is always saturated. Chemically-pure copper sulfate and distilled water should be used in preparing the solution. When the electrode is not in use, a rubber cap should be placed over the plug to prevent it from drying out. If the plug accidentally becomes dried out, it will lose its porosity and should be replaced.

- c. Six (6) 5'-long test wire leads, No. 12 AWG insulated.
- d. Five hundred feet of No. 16 AWG insulated (for potential profiles).

3. Equipment for Current Measurements:

D.C. voltmeter, 1000-ohm minimum input impedance with full scale ranges of 0-20 mV and 0-200 mV for reading the mV drop on the current shunts and current monitoring test stations.

E. RECTIFIER TROUBLESHOOTING

Adherence to the maintenance and periodic testing program described in Section "F" will greatly reduce the possibility of ultimate rectifier failure. However, failures may occur. The following procedures are recommended to enable company personnel to find and repair troubles rapidly in order to maintain cathodic protection of the underground metallic structures.

1. Precaution:

The following precautions should be observed when troubleshooting rectifiers:

- a. Turn the rectifier off when handling components within the rectifier. Turn off the circuit breaker at the A.C. panelboard and at the rectifier cabinet.
- b. Check the rectifier wiring diagram before starting to troubleshoot.
- c. Make certain that meters used in troubleshooting are properly connected. The voltmeter should be connected across the points where the voltage is to be measured while the ammeter should be placed in series with the circuit being tested. A millivoltmeter should be connected across the terminals on the rectifier shunt. Correct polarity must be observed when using D.C. instruments.

2. Procedures:

Most rectifier troubles are simple and do not require extensive detailed troubleshooting procedures. Most common problems are: blown fuses, faulty meter, loose terminals, open anode leads, and lightning stroke damage. These troubles are usually found by a simple visual inspection of the rectifier.

For more difficult troubles, however, it is usually better to systematically isolate the rectifier components until the defective part is found. This may be done as follows (see attached drawing):

- a. Check to see whether voltage is being applied to the rectifier by placing the leads from an A.C. voltmeter across the line side of the circuit breaker at points A.
- b. Check across the load side of the circuit breaker at points B to determine whether it is defective. The voltage should be the same as that at points A.
- c. With an A.C. voltmeter, check the transformer secondary windings (at points D and E) to determine whether voltage is present. Voltage may be measured at any tap setting. If the circuit breaker trips, indicating a short circuit, the transformer may be isolated from the D.C. circuit by removing the secondary tap changing link bars (D and E). If the circuit

breaker continues to trip, check for possible shorts within the transformer. If it no longer trips, the short is not in the transformer, but either in the rectifier stack or in the D.C. circuit.

- d. Measure the A.C. voltage supplied to the rectifier stack (points G and F). This voltage should be the same as that measured at the transformer secondary (points D and E). If A.C. voltage is present at the transformer secondary but not at the stack A.C. terminals, check the leads from the transformer to the stack as follows: Place the A.C. voltmeter leads between point D on the transformer secondary and point G on the stack. If no voltage is present, the lead between the points E and G is probably open. Verify by measuring the A.C. voltage between points E and F. If voltage is present between these points, the open circuit is between points E and G. If no voltage is present between these points, both leads are defective. Replace the defective leads.
- e. If the circuit breaker trips, the stack may be isolated from the rest of the D.C. circuit by removing one of the D.C. leads at either point J or H. If the breaker continues to trip, the stack is defective and should be replaced.
- f. If the circuit breaker does not trip when a D.C. lead on the stack is removed but does trip when

it is connected, the short circuit is probably in the external grounded or structure leads. This may be verified by removing one of the external leads from the rectifier and turning the rectifier on again.

- g. If D.C. voltage is present at the stack but not at the rectifier output terminals, check for loose connections or open leads between points J and the positive terminal or between points H and the negative terminal. This may be done by measuring the D.C. voltage between point J and the negative terminal or between point H and the positive terminal.
- h. If D.C. voltage is present at the rectifier output terminals but no current is flowing, there is an open circuit in one of the external D.C. leads.
- i. Faulty meters may cause the rectifier to appear defective when it is actually operating. The meters may be checked with portable meters known to be accurate.

3. Troubleshooting Techniques:

Many rectifier problems have symptoms which are obvious; however, the obvious should never be overlooked. Loose connections, signs of arcing, strange odors, etc., indicate troubles which do not

OPERATING AND MAINTENANCE MANUAL  
IMPRESSED CURRENT CATHODIC PROTECTION SYSTEM

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require elaborate test procedures to uncover. Some helpful troubleshooting techniques are:

If no output voltage or current is present, the trouble and remedy may be:

a. Breaker tripped (or fuse blown):

(1) If apparently due to steady overload, reduce the output slightly.

(2) If the breaker trips repeatedly even with the output reduced, the cause may be a short circuit in some component. Isolate the component as described before and repair or replace.

(3) If the breaker trips occasionally for no obvious reason, the cause may be:

(a) Line voltage surges.

(b) Intermittent short circuits. Isolate the component as described before. Check for loose brackets or connections. Check with ohm-meter while moving leads, etc. (Make certain power is turned off when using the ohm-meter.)

b. No A.C. line voltage. Check the A.C. voltmeter. Do not overlook the possibility

that the A.C. panelboard circuit breaker may have tripped.

c. Open circuit in some component or connection:

(1) Check all connections, fine and coarse transformer tap adjustments, and stack connections.

(2) Rectifier stacks. Use an A.C. voltmeter to see if voltage is applied to the stacks. If so, they may be open-circuited and should be checked with an ohm-meter and possibly replaced.

d. Defective meters.

e. Defective transformer. If A.C. line voltage is applied to the primary but none is present at the secondary, check to see whether there is an audible hum coming from the transformer. If so, the primary is operating but the secondary is probably open.

f. Circuit breaker. If the contacts do not close, they should be repaired or the breaker replaced.



F. PERIODIC TESTS AND MAINTENANCE

It is recommended that a periodic test program to read and record various pertinent data of each cathodic protection system be established. Such a program will permit determination of continued adequate cathodic protection of the structures through sustained system operation and will also provide the opportunity to detect cathodic protection system malfunctions through observation of periodic test data. All test data should be recorded on a permanent log. (Sample sheets are included).

1. It is recommended that each of the rectifiers be checked once a month to ensure continuous operation and that meter readings be taken once a month. Should a rectifier malfunction develop, such a program would reduce outage time to a minimum.

The following rectifier measurements and observations should be made and recorded in a permanent log:

- a. D.C. volts and amperes as read on the rectifier meters.
  - b. D.C. volts and amperes as read on a portable test instrument.
  - c. Rectifier tap settings.
2. Once a year, tests should be made to determine the rectifier efficiencies. Efficiency tests may be done as follows:

OPERATING AND MAINTENANCE MANUAL  
IMPRESSED CURRENT CATHODIC PROTECTION SYSTEM

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- a. Read and record the input A.C. voltage and current using a portable A.C. voltmeter and clamp-on type ammeter.
- b. With the rectifier at the same tap setting as in 3.a. above, read and record the rectifier unit D.C. output voltage and current as in the normal monthly check.
- c. Efficiency may be computed as follows:

$$\frac{\text{D.C. volts} \times \text{D.C. amps} \times 100}{\text{A.C. watts}} = \% \text{ efficiency}$$

assuming 100% power factor.

It should be pointed out that there will be relatively low efficiencies calculated for units which are operating at low tap settings. The closer a rectifier unit is operating to 80% of the maximum output values, the higher the overall efficiency of the unit will be.

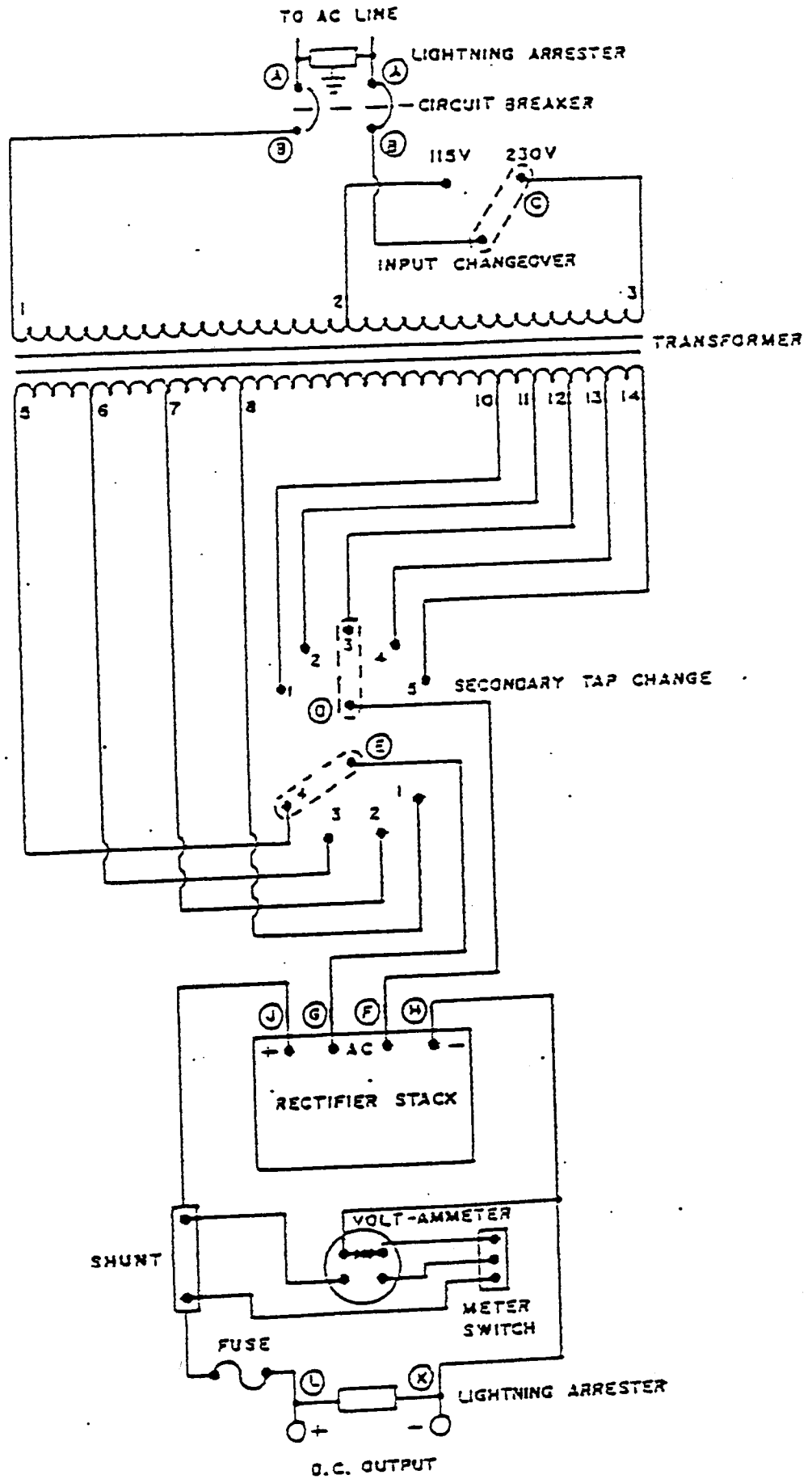
3. It is recommended that structure-to-soil potentials be taken annually to determine system effectiveness. If, at any time, the surveys show that protected potentials on the pipeline are below -0.85 volt, it is recommended that:
  - a. The rectifier output be increased accordingly, but without exceeding their ratings.

OPERATING AND MAINTENANCE MANUAL  
IMPRESSED CURRENT CATHODIC PROTECTION SYSTEM

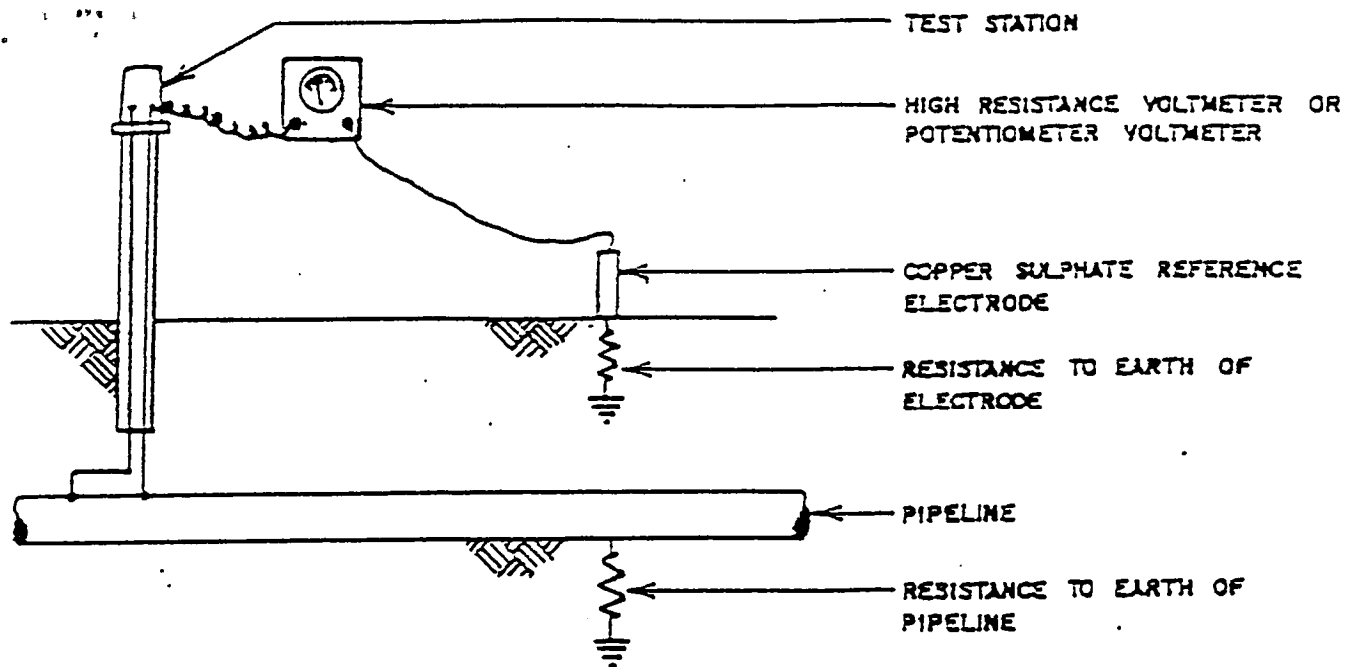
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- b. Care should be taken that the structure-to-soil ("on") potentials do not exceed (negatively) a value predetermined by the corrosion engineer.
  - c. If 3.a. above is not economically feasible, the problem should be brought to the attention of Harco Technologies, a division of Corrpro Companies, Inc., for further consideration.
4. A sudden drop of the rectifier current output with no or a small change in the rectifier output voltage may indicate a break in the anode header cable or the negative return cable. Any cable breaks found should be repaired.
5. If any abnormal readings or conditions are found by company personnel during the course of the recommended tests which cannot be accounted for or corrected, they should be submitted to Harco Technologies, a division of Corrpro Companies, Inc., for their analysis and recommendations.
6. A complete detailed survey should be conducted by an experienced corrosion engineer on an annual basis.

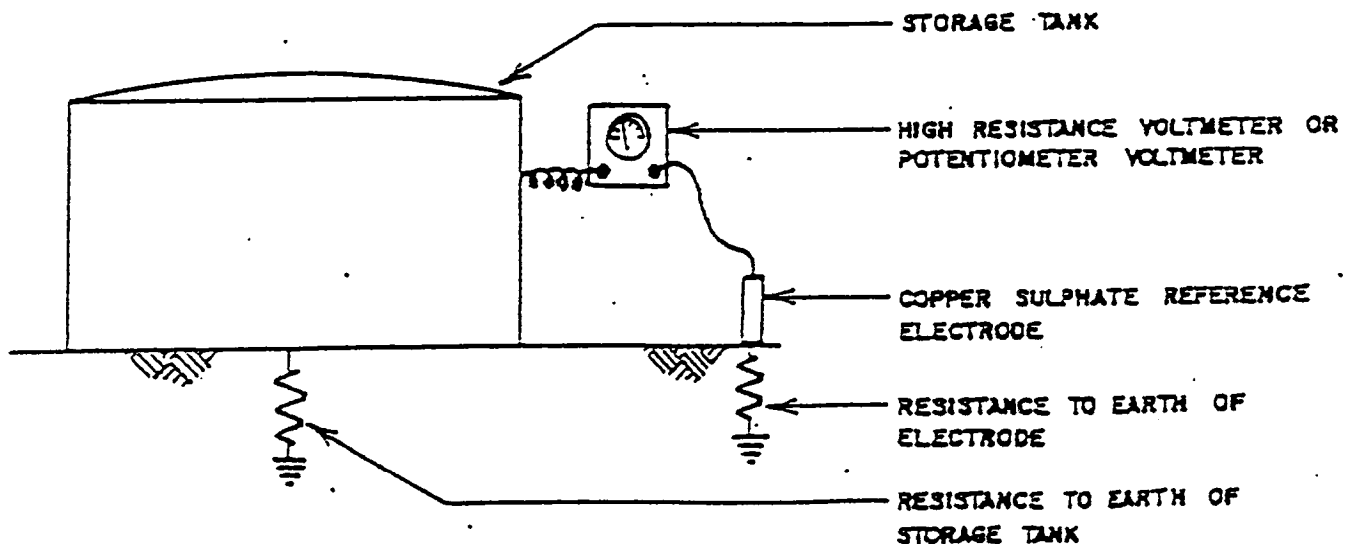
# TYPICAL RECTIFIER CIRCUIT



APPENDIX D  
DRAWING NO. A-53335



PIPELINE-FIG. 1



STORAGE TANK-FIG. 2

# STRUCTURE-TO-SOIL POTENTIAL MEASUREMENT

June 20, 1997

610 Brandywine Parkway  
West Chester, PA 19380  
Phone: (610) 344-7062  
Fax: (610) 344-9028

RECEIVED

FEB 09 1998

Bureau of Underground  
Storage Tank Management

Highway 11 Grocery  
13527 North Highway 11  
Salem, NC 29676

Attention: Ms. Ingeburd

Reference: Underground Storage Tank Corrosion Evaluation  
Highway 11 Grocery, 13527 North Highway 11, Salem, North Carolina

Dear Ms. Ingeburd:

Enclosed please find the corrosion evaluation report for the above referenced location.

The tanks evaluated at Highway 11 Grocery satisfy the requirements of ASTM Standard ES 40-94 "Alternative Procedures for the Assessment of Buried Steel Tanks Prior to the Addition of Cathodic Protection" and are acceptable for upgrading with cathodic protection. The requirements for upgrading of the tanks with cathodic protection are included in the evaluation report.

Also enclosed is a copy of "Corrosion Engineering Evaluation of Underground Storage Tanks", which describes the corrosion evaluation test procedures, analysis of the data and the results of the evaluation.

Please feel free to contact Mick Steele (770-761-5400) or me at our Philadelphia Office (610-344-7062) if you should have any comments, questions or require any additional information.

Sincerely,

  
Thomas E. Mehalick  
Manager, UST Services

cc: M. Steele

**CORROSION EVALUATION OF  
UNDERGROUND STORAGE TANKS**

610 Brandywine Parkway  
West Chester, PA 19380  
Phone: (610) 344-7062  
Fax: (610) 344-9028

**(TWO 6,000 GALLON GASOLINE TANKS,  
ONE 3,000 GALLON GASOLINE TANK AND  
ONE 2,000 GALLON DIESEL TANK)**

**HIGHWAY 11 GROCERY  
13527 NORTH HIGHWAY 11  
SALEM, SOUTH CAROLINA**

**JUNE 20, 1997**

On May 15th 1997, Harco Technologies performed an engineering analysis on underground storage tanks at the above referenced location. There were four (4) fuel storage tanks evaluated, two 6,000 gallon gasoline, one 3,000 gallon gasoline and one 2,000 gallon diesel.

All testing and analysis was performed in accordance with ASTM Standard ES 40-94 "Alternative Procedures for the Assessment of Buried Steel Tanks Prior to the Addition of Cathodic Protection" as outlined in EPA OUST Interim Guidance Memo on Integrity Assessment of Bare Steel Tanks dated October 21, 1996.

Based on the results of the corrosion evaluation recently completed on the underground tanks, these tanks satisfy the requirements of ASTM Standard ES 40-94 and are acceptable for upgrading with cathodic protection.

The following plan for upgrading of the tanks with cathodic protection is required.

**The probability of corrosion failure is less than 0.05.**

- 1) Prior to any upgrade activities, assess the tanks using ASTM Practice E 1430 or a method that has been certified in accordance with Federal EPA requirements to establish that the tanks are not leaking.
- 2) Install cathodic protection to provide corrosion protection to the exterior surfaces of the tanks and associated steel piping.
- 3) Implement an approved monthly monitoring leak detection system.
- 4) Assess the tanks again, approximately six (6) months after the cathodic protection system has been in operation, using ASTM Practice E 1430 or a method that has been certified in accordance with Federal EPA requirements to insure the continued leak free condition of the tanks.



- 5) **Submit the corrosion evaluation report, evidence that the tanks have been properly tested and are leak free and cathodic protection system test data to the regulatory authorities as evidence that the tanks have been satisfactorily upgraded with cathodic protection.**

Corrosion evaluation field testing at the underground storage tank location consisted of collecting site information, performing soil borings and recording data relative to the electrical properties. Chemical tests were conducted in the laboratory on the soil collected from the borings. All data were then analyzed by Harco Technologies and Warren Rogers Associates including the use of a computer model to calculate and complete a Mean Time to Corrosion Failure (MTCF<sup>®</sup>) analysis for the tanks.

Attached is a copy of all the test data obtained and analyzed during the corrosion evaluation and the results of the MTCF analysis.

Since the tanks evaluated are older than 10 years old, in order to meet the regulatory requirements for upgrading with cathodic protection, the tanks must be assessed for corrosion holes by a method which is approved by the implementing agency. Harco Technologies Corrosion Evaluation which is performed in accordance with ASTM Standard ES 40-94 "Alternative Procedures for the Assessment of Buried Tanks Prior to the Addition of Cathodic Protection" has been approved by many of the implementing agencies. If using this method, to be acceptable for upgrading with cathodic protection, 1) The probability of corrosion failure must be less than 0.05, or 2) The probability of pitting corrosion must be less than 0.05.

The following conclusion resulted from MTCF Analysis recently completed on the underground tanks:

- The probability of corrosion failure, based on the results of the corrosion survey on the underground tanks, is 0.018.

**NOTE: The results derived are entirely dependent on the assumption that the tanks are leak free at this time. The leak free condition of the tanks should be verified by the owner/operator prior to the installation of cathodic protection.**

Since the probability of corrosion failure is less than 0.05, these tanks satisfy the requirements of ASTM Standard ES 40-94 and are acceptable for upgrading with cathodic protection.

*MTCF<sup>®</sup> is a Service Mark of Corpro Companies, Inc., Registered in the U.S. Patent and Trademark Office.*

h11g0620.rpt

Prepared on June 12, 1997 for:  
HIGHWAY 11 GROCERY  
3527 N. HIGHWAY 11  
SALEM, SC 29676

Location ID: **H11-HIGHWAY 11**  
13527 N. HWY 11  
3527 N. HWY 11  
SALEM, SC

Operator: MS INGEBURD  
864-944-0494

PROBABILITIES AND TANK INFORMATION

Location Name	Conditional Probability of Corrosion Failure Given Pitting Corrosion		Probability of Localized Corrosion	Mean Time to Corrosion Failure  (Expected Leak Free Life if pitting corrosion exists)	Tank Age
		If Saturated			
13527 N. HWY 11	0.018	0.640	N/A	18.2	13.00

RECOMMENDATION:

The Conditional Probability of Corrosion Failure Given Pitting Corrosion meets ASTM criteria as set forth in ASTM ES 40-94 for upgrading by Cathodic Protection retrofit.

Tank #	Location	Gallons	Dimensions	Year Installed	Tank Type	Product	Bottom Depth (Inches)	Internal Water	Internal Corrosion	Information Confirmation <sup>1</sup>	Isolated (Y/N)
1	SOUTH	6000	96X192	12/31/84	Steel	PRM	127	0.00	Smooth	1	N
2	SOUTH	6000	96X192	12/31/84	Steel	NOL	126	0.00	Smooth	1	N
3	SOUTH	3000	64X216	12/31/84	Steel	PLS	92	0.00	Smooth	1	N
4	NORTH	2000	64X144	12/31/84	Steel	DSL	91	0.00	Smooth	1	N

<sup>1</sup>-Confirmation: 1=Same as Company Information; 2=Different than Company Information

The results we have derived are entirely dependent on the assumption that the tanks are tight at this time.

The calculation of the probability of localized corrosion is based on the assumption that a recently conducted precision test for which probability of detection is .99 found the tanks to be tight. This should be verified prior to installation of cathodic protection.

Engineer:

SITE INFORMATION

Active Electrical Plant Nearby? Type of System; Distance in feet?	N	Overspill containment on site?	Y
Cathodically protected structures nearby?; Distance in feet?	N	Monitoring wells on site?	N
Utility vault or conduit nearby?	N	Leak history available on site?	N
Potable water well nearby?	N	Repair history available on site?	N
Waterway, stream or lake nearby?	N	Site plans available on site?	N
Line leak detectors installed?	N	Installation specs available on site?	N
Piping material?	S	Type of pump?	P

LABORATORY INFORMATION

Moisture Content (% Dry Weight)	pH	Conductivity (micromhos)	Sulphides (ppm)	Chlorides (ppm)
6.61% - 9.75%	6.0 - 7.3	37 - 61	0.000 - 0.000	1 - 2

Moisture tested as to ASTM D22-16 80

pH tested as to ASTM D2476-71

Conductivity tested as to APHA 120.1

Sulphides tested as to EPA 371.1

Chlorides tested as to ASTM D516-81

ON SITE SOIL SAMPLE ANALYSIS

SAMPLE LOCATION (HOLE #)	DEPTH (FT)	SQUEEZE MOISTURE TEST (YES/NO)	GROUND WATER LEVEL (FEET)	TYPE OF BACKFILL <sup>2</sup>	SAMPLE LOCATION (HOLE #)	DEPTH (FT)	SQUEEZE MOISTURE TEST (YES/NO)	GROUND WATER LEVEL (FEET)	TYPE OF BACKFILL <sup>2</sup>
1 TOP MIDDLE BOTTOM	2	N		1	3 TOP MIDDLE BOTTOM				
	5	N		1					
	8	N		1					
2 TOP MIDDLE BOTTOM	2	N		1	4 TOP MIDDLE BOTTOM				
	7	N		1					
	11	N		1					

<sup>2</sup> - Type of Backfill: 1=Sand; 2=Native Soil; 3=Clay; 4=Rubble; 5=Pea Gravel; 6=Other or Combination

ON SITE HOLE PROFILE

HOLE #1 - POTENTIAL AND RESISTIVITY PROFILE			HOLE #2 - POTENTIAL AND RESISTIVITY PROFILE			HOLE #3 - POTENTIAL AND RESISTIVITY PROFILE			HOLE #4 - POTENTIAL AND RESISTIVITY PROFILE		
DEPTH (FT)	POTENTIAL (NV)	RESISTANCE (OHM-CM)	DEPTH (FT)	POTENTIAL (NV)	RESISTANCE (OHM-CM)	DEPTH (FT)	POTENTIAL (NV)	RESISTANCE (OHM-CM)	DEPTH (FT)	POTENTIAL (NV)	RESISTANCE (OHM-CM)
2	-293.00	386400.00	2	-212.00	273000.00						
4	-267.00	285600.00	4	-246.00	382200.00						
6	-265.00	315000.00	6	-249.00	378000.00						
8	-253.00	378000.00	8	-294.00	382200.00						
			10	-284.00	386400.00						
			11	-273.00	394800.00						



**Environmental, Inc.**

2025 Progress Court  
Raleigh, North Carolina 27608  
800.474.7049  
919.832.2535  
Fax 832.5914

43-TECH

March 5, 2008

Mr. Joel P. Padgett, P.G., Hydrogeologist  
South Carolina Department of Health and Environmental Control  
Assessment & Corrective Action Section, Underground Storage Tank Program  
2600 Bull Street  
Columbia, South Carolina 29201

**RE: Corrective Action System Evaluation Report  
Highway 11 Grocery  
13527 North SC Highway 11  
Salem, Oconee County, South Carolina  
UST Permit Number: 03439  
SEI Project Number: 302169**

**RECEIVED**

MAR 13 2008

UNDERGROUND STORAGE  
TANK PROGRAM

Dear Mr. Padgett:

Please find enclosed the quarterly Corrective Action System Evaluation (C.A.S.E) Report for the February 14, 2008 groundwater sampling event at the above referenced site. If you have any questions or comments, please contact me at (919) 832-2535.

Sincerely,  
SEI Environmental, Inc.

Laura Dell'Olio  
Staff Scientist

cc: Mr. John Smith, Highway 11 Grocery

**SCANNED**

**CORRECTIVE ACTION SYSTEM EVALUATION REPORT**  
**December 2007 through February 2008**

**Highway 11 Grocery**  
**13527 North SC Highway 11**  
**Salem, South Carolina**  
**Oconee County**  
**UST Permit Number: 03439**  
**SEI Project Number: 302169**

**PREPARED FOR:**

**Mr. Steve Smith**  
**Highway 11 Grocery**  
**13527 North SC Highway 11**  
**Salem, South Carolina 29676-9801**

**RECEIVED**

**MAR 13 2008**

**PREPARED BY:**

**SEI ENVIRONMENTAL, INC.**  
**2025 Progress Court**  
**Raleigh, NC, 27608**  
**UST Site Rehabilitation Contractor No. 354**

**UNDERGROUND STORAGE  
TANK PROGRAM**

**March 5, 2008**

**UST PROGRAM  
DOCKETING #**

**977**

**SCANNED**

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# CORRECTIVE ACTION SYSTEM EVALUATION REPORT

Submittal Date: March 5, 2008  
For Period Covering: December 12, 2007  
Facility Name: Highway 11 Grocery  
UST Permit Number: 03439  
County: Oconee  
Latitude: N 35°54'26.02"

Monitoring Report Number: \_\_\_\_\_  
to February 14, 2008  
Street Address: 13527 North SC Highway 11  
City: Salem, South Carolina  
Zip Code: 27603  
Longitude: W 82°58'31.29"  
:

Submitted by UST Owner/Operator:

Prepared by Consultant/Contractor:

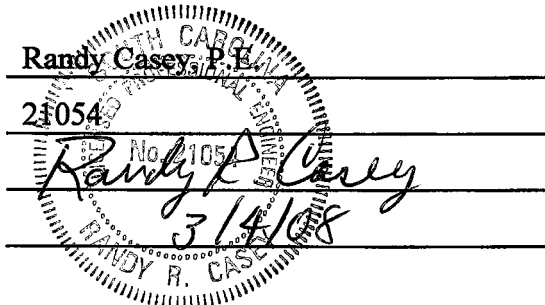
Name: Steve Smith  
Company: Highway 11 Grocery  
Address: 13527 North Highway 11  
City: Salem State: SC  
Zip Code: 29676-9801  
Telephone: (864) 944-0494  
SEI Project Number: 302169

Name: Randy Casey  
Company: SEI Environmental, Inc.  
Address: 2025 Progress Place  
City: Raleigh State: NC  
Zip Code: 27608  
Telephone: (919) 832-2535  
UST Site Rehabilitation Contractor No. 354

## Registered Professional Engineer or Professional Geologist Certification

I hereby certify that I have directed and supervised the fieldwork and preparation of this Plan, in accordance with State Rules and Regulations. As a registered professional geologist and/or professional engineer, I certify that I am a qualified groundwater professional, as defined by the South Carolina State Board of Professional Geologists. All of the information and laboratory data in this plan and in all of the attachments are true, accurate, complete, and in accordance with applicable State Rules and Regulations.

Name: Randy Casey, P.E.  
SC Reg. No. 21054  
Signature: Randy Casey  
Date: 3/14/08



## LIMITATIONS

This investigation is intended to be a non-biased assessment of on-site environmental conditions proximate to the location of the former UST system. Subsurface investigative methodologies are in accordance with all applicable state and federal regulatory requirements. The information presented in this report is based upon site-specific observations, generally accepted geological practices, and analytical results for environmental samples collected at the time of the field investigation. All data is believed to represent subsurface conditions at the facility, however, data may not be completely representative of all subsurface conditions.

This report has been prepared under the guidance of a Licensed Geologist registered in South Carolina to meet the requirements of the South Carolina Department of Health and Environmental Control. The information and conclusions expressed in this report are based upon normal standards of the profession and limited to information available at this time. Chemical analyses of the samples associated with this report were performed by a subcontracted, independent, and certified laboratory. All data have been reviewed for accuracy and, excepting obvious errors, have been accepted as correct. SEI Environmental, Inc. reserves the right to revise estimates of performances as required by changes in the data supplied by Accutest Laboratories.



## 1.0 INTRODUCTION

The Highway 11 Grocery is a convenience and retail fuel store located at 13527 North SC Highway 11 in Salem, Oconee County, South Carolina. Figure 1 in Appendix A is a portion of the United States Geological Survey (USGS) 7.5-minute topographical quadrangle map identifying the location of the site.

The following is a brief summary of recent events occurring at the site:

- December 18, 2003 – Groundwater Sampling Event
- March 31, 2004 – Groundwater Sampling Event
- September 29, 2004 – Groundwater Sampling Event
- January 11, 2005 – EFR performed on MW-8
- March 17, 2005 – EFR performed on MW-8
- March 17, 2005 – Groundwater Sampling Event
- August 9, 2005 – Groundwater Sampling Event
- November 1, 2005 – Groundwater Sampling Event
- March 22, 2006 – Groundwater Sampling Event
- August 28, 2006 – Groundwater Sampling Event
- November 5, 2006 – Groundwater Sampling Event
- February 7, 2007 – Groundwater Sampling Event
- May 3, 2007 - Groundwater Sampling Event
- August 21, 2007 – Groundwater Sampling Event
- December 12, 2007- Groundwater Sampling Event
- February 14, 2008 – Groundwater Sampling Event

On February 14, 2008, in accordance with the requirements of the PFP contract, samples were collected from sixteen groundwater monitoring wells and two surface locations. This report provides details of the groundwater sampling event. An AFVR event will be performed before May 1, 2008.

## **2.0 FIELD MEASUREMENTS AND SAMPLING**

### **2.1 Groundwater Sampling**

On February 14, 2008, groundwater samples were collected from sixteen groundwater monitoring wells. Prior to sampling, groundwater depth was gauged in the monitoring wells utilizing an oil-water interface probe to measure depth to groundwater, and to detect any phase separated hydrocarbons (PSH) present. The depth to groundwater measurement is used to calculate the groundwater elevation used in determining the current groundwater potentiometric surface, along with hydraulic gradient, and groundwater flow direction.

Figure 3 in Appendix A presents a groundwater potentiometric map for the current sampling event. The latest groundwater data indicate that groundwater flow at the site is to the northeast with a hydraulic gradient of 0.032 feet per foot between monitoring wells MW-3 and MW-12. This flow direction is consistent with previous determinations of groundwater movement. Table 1 in Appendix B summarizes groundwater measurement data. Appendix C includes field observation data.

Representative groundwater samples were collected utilizing new, disposable bailers. Samples were placed in laboratory supplied containers, maintained at 4° Celsius, and shipped via FedEx under chain-of-custody to AccuTest, Inc. Laboratories in Orlando, Florida. The groundwater samples were analyzed by EPA Method 8260B for benzene, toluene, ethylbenzene, xylenes (BTEX), methyl-tert-butyl-ether (MTBE), and naphthalene.

### **2.2 Surface Water Sampling**

On February 14, 2008, two (CK-1 and CK-3) surface water samples were collected from adjacent creek. CK-2 location is no longer sampled per the March 17, 2005, sampling event report. CK-3 replaced CK-2 to monitor for potential contamination from monitoring well MW-14. Representative samples were collected utilizing new, disposable bailers. Samples

were placed in laboratory supplied containers, maintained at 4° Celsius, and shipped via FedEx under chain-of-custody to AccuTest, Inc. Laboratories in Orlando, Florida. The groundwater samples were analyzed by EPA Method 8260B for benzene, toluene, ethylbenzene, xylenes (BTEX), methyl-tert-butyl-ether (MTBE), and naphthalene.

### **3.0 LABORATORY ANALYTICAL RESULTS**

#### **3.1 Groundwater Analytical Results**

SSTLs have been designated for fourteen (MW-1 through MW-8, MW-10, MW-11, MW-14, DMW-1, DMW-2, and DMW-4). Sixteen wells were sampled on February 14, 2008 and CoCs were detected in four (MW-7, MW-10, MW-11, and MW-14) monitoring wells at concentrations above their respective Site Specific Target Level (SSTL). Free products was observed in monitoring wells MW-1 and MW-8. Figure 4 in Appendix A is a site map presenting monitoring well location and their CoC concentrations. Table 2 in Appendix B summarizes historical groundwater analytical results. A copy of the laboratory report and completed chain-of-custody form is included in Appendix C.

#### **3.2 Surface Water Analytical Results**

Benzene was detected in surface water sample CK-1 at a concentration of 8.7 µg/L.

### **4.0 REMEDIATION SYSTEM EFFECTIVENESS**

In awarding the Pay-For-Performance (PFP) site remediation contract, the South Carolina Department of Health and Environmental Control (SCDHEC) set remediation goals for this site via site specific target levels (SSTLs). The monitoring wells have individual target concentrations for five (benzene, toluene, ethylbenzene, xylenes, MTBE and naphthalene) identified chemicals of concern (CoC).

Remediation system effectiveness can be calculated comparing the initial May 7, 2002, CoC concentrations that exceeded the SSTLs with the current CoC concentrations that exceeded the SSTLs. For monitoring wells MW-1 and MW-8, the standard values for

free product (benzene, 226,000 µg/L; toluene, 301,000 µg/L; ethylbenzene, 280,000 µg/L; xylenes, 278,000 µg/L; MTBE, 5,110,000 µg/L; and naphthalene 2,000 µg/L) were used in the percent reduction calculation. The formula is as follows:

$$\left[ \frac{[08/29/96 \text{ Sample Concentration Above SSTL}] - [\text{Current Sample Concentration Above SSTL}]}{[08/29/96 \text{ Sample Concentration Above SSTL}]} \right] * 100 = \% \text{ Reduction}$$

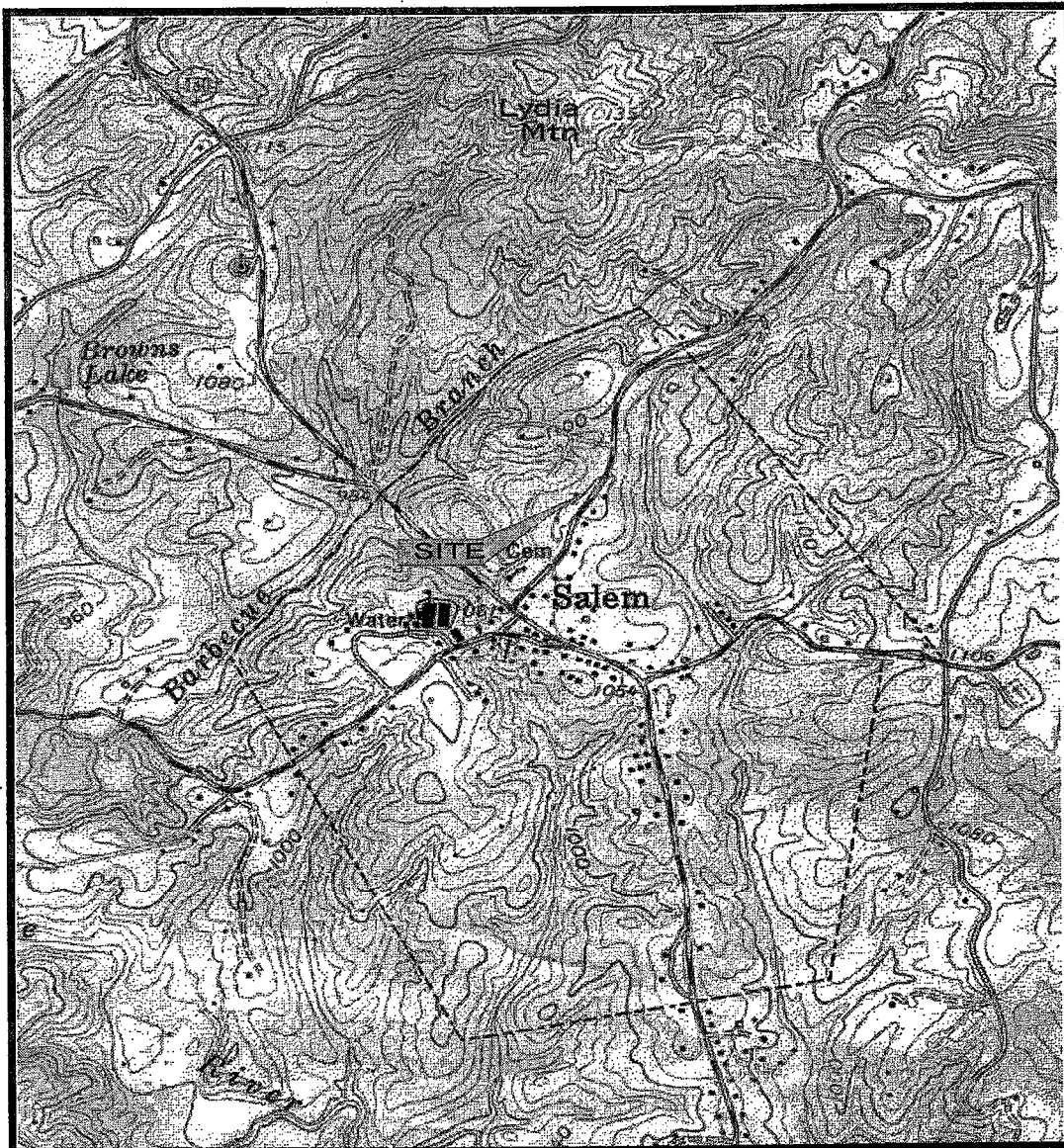
Using the current analytical results, the percent concentration reduction is 99.75%. Table 2 in Appendix B presents concentration reduction calculations.

## 5.0 CONCLUSIONS

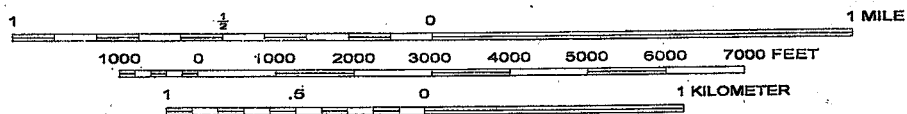
The groundwater flow direction at the time of the February 14, 2008 sampling event was towards the northeast with a hydraulic gradient of 0.032 feet per foot. Free product was present in monitoring wells MW-1 and MW-8. CoCs were detected in four monitoring wells above their respective SSTLs. Benzene was detected in CK-1 surface water samples at a concentration above the RBSL. The percent concentration reduction was calculated at 99.75%.

SEI Environmental, Inc recommends continuing the quarterly monitoring to evaluate the continued reduction of chemicals of concern in the monitoring wells on site. In addition SEI will perform an AFVR event before May 1, 2008 on monitoring wells MW-1, MW-6, and MW-14 as directed in the letter from DHEC dated Feb 19, 2008.

**APPENDIX A**  
**Figures**



SCALE 1:24000



SALEM QUADRANGLE  
 SOUTH CAROLINA-OCONEE CO.  
 7.5 MINUTE SERIES (TOPOGRAPHIC-BATHYMETRIC)  
 BY U.S. GEOLOGICAL SURVEY

**SEI Environmental, Inc.**

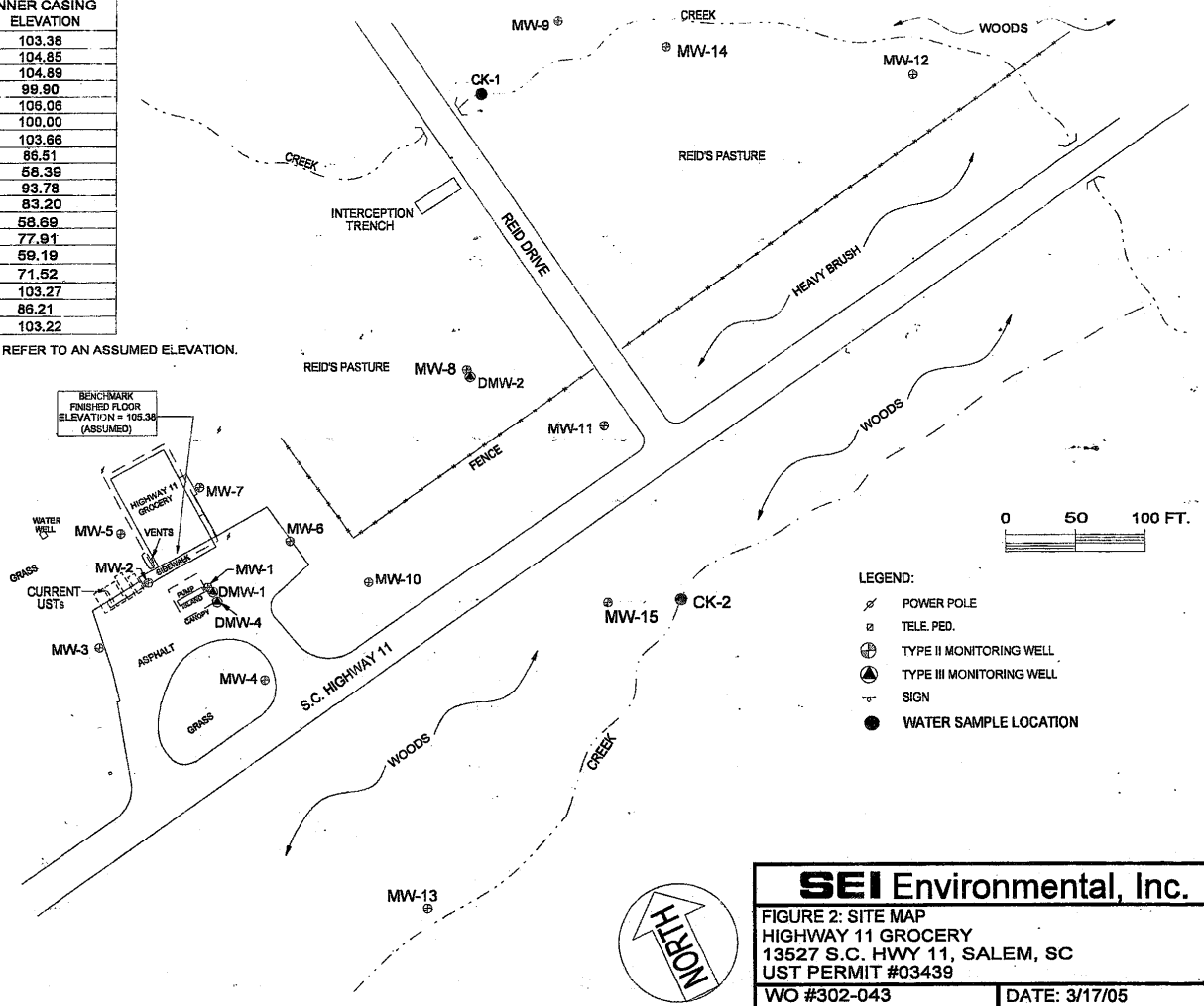
FIGURE 1: SITE LOCATION MAP  
 HIGHWAY 11 GROCER  
 13527 Highway 11, Salem, SC  
 FACILITY I.D. #03439

WO # 302169  
 DWG # Hw 11\_topo\_sitemap

DATE: 9/16/05  
 DRAWN BY: HWH

WELL #	INNER CASING ELEVATION
MW-1	103.38
MW-2	104.85
MW-3	104.89
MW-4	99.90
MW-5	106.06
MW-6	100.00
MW-7	103.86
MW-8	86.51
MW-9	56.39
MW-10	93.78
MW-11	83.20
MW-12	58.69
MW-13	77.91
MW-14	59.19
MW-15	71.52
DMW-1	103.27
DMW-2	86.21
DMW-4	103.22

NOTE: ELEVATIONS REFER TO AN ASSUMED ELEVATION.



**SEI Environmental, Inc.**

FIGURE 2: SITE MAP  
 HIGHWAY 11 GROCERY  
 13527 S.C. HWY 11, SALEM, SC  
 UST PERMIT #03439

WO #302-043  
 DWG #HI01692G

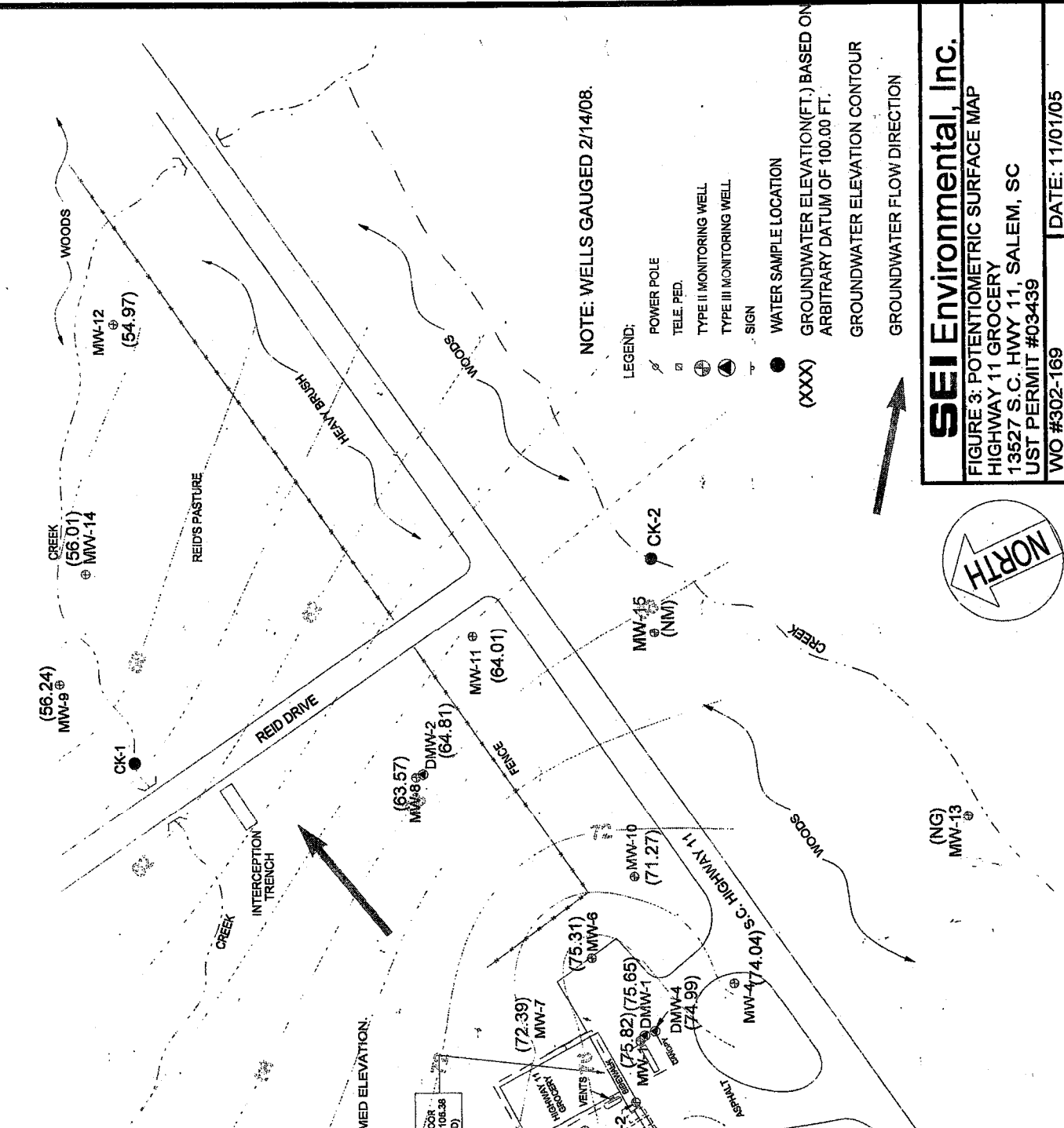
DATE: 3/17/05  
 DRAWN BY: JCJ

WELL #	INNER CASING ELEVATION
MW-1	103.38
MW-2	104.85
MW-3	104.89
MW-4	99.90
MW-5	106.06
MW-6	100.00
MW-7	103.66
MW-8	88.51
MW-9	58.39
MW-10	93.78
MW-11	83.20
MW-12	58.69
MW-13	77.91
MW-14	58.19
MW-15	71.52
DMW-1	103.27
DMW-2	86.21
DMW-4	103.22

NOTE: ELEVATIONS REFER TO AN ASSUMED ELEVATION.

FINISHED FLOOR ELEVATION = 105.38 (ASSUMED)

WATER WELL  
 MW-5 (73.99)  
 MW-2 (75.55)  
 CURRENT USIS  
 MW-7 (75.31)  
 MW-10 DMW-1 (74.99)  
 MW-3 (76.90)



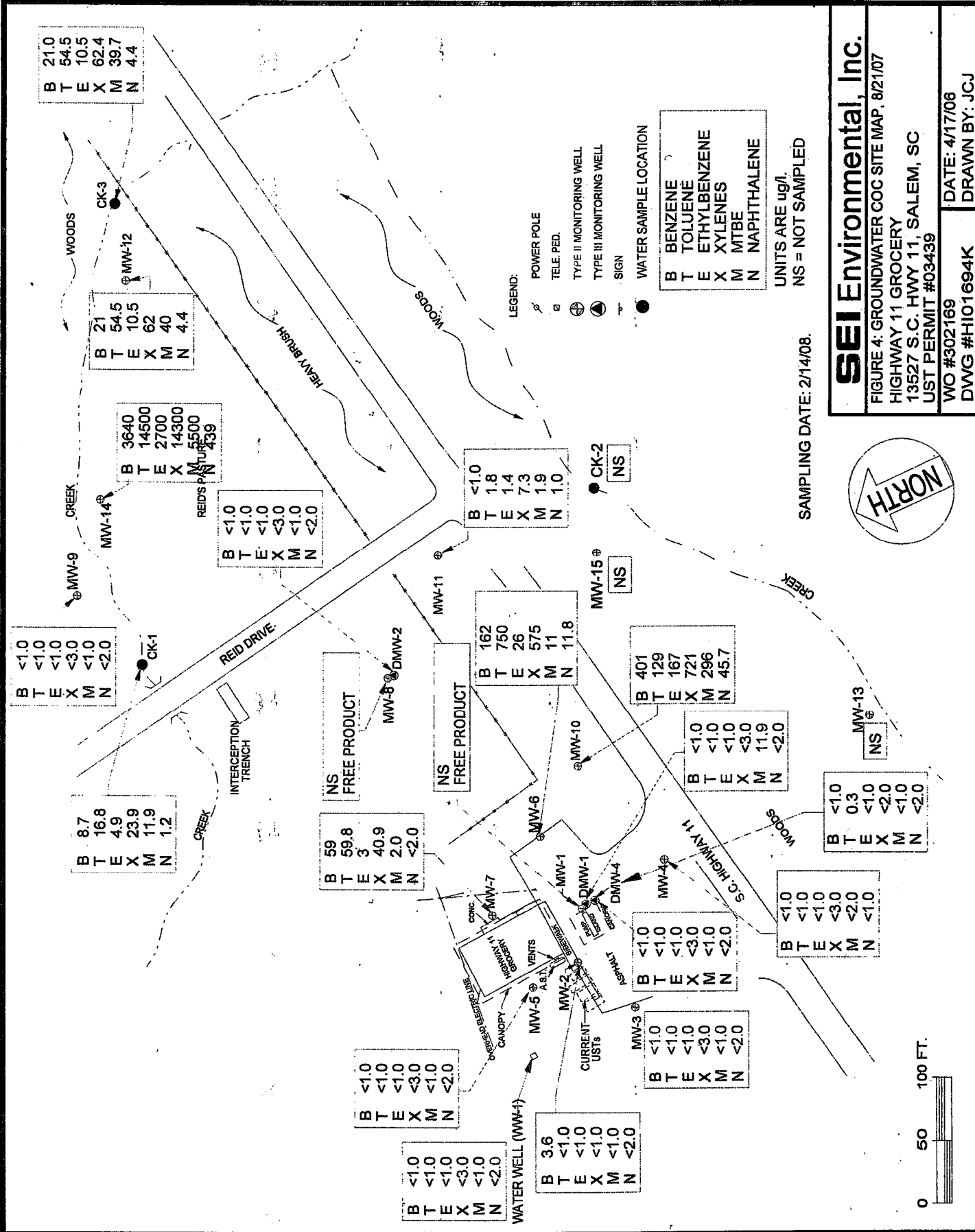
NOTE: WELLS GAUGED 2/14/08.

- LEGEND:
- ⊕ POWER POLE
  - ⊞ TELE. PED.
  - ⊕ TYPE II MONITORING WELL
  - ⊙ TYPE III MONITORING WELL
  - ⊞ SIGN
  - WATER SAMPLE LOCATION
  - (XXX) GROUNDWATER ELEVATION (FT.) BASED ON ARBITRARY DATUM OF 100.00 FT.
  - GROUNDWATER ELEVATION CONTOUR
  - GROUNDWATER FLOW DIRECTION



**SEI Environmental, Inc.**  
 FIGURE 3: POTENTIOMETRIC SURFACE MAP  
 HIGHWAY 11 GROCERY  
 13527 S.C. HWY 11, SALEM, SC  
 UST PERMIT #03439  
 WO #302-169  
 DATE: 11/01/05  
 DWG #HI01693L  
 DRAWN BY: JCJ





**SEI Environmental, Inc.**  
 FIGURE 4: GROUNDWATER COC SITE MAP, 8/21/07  
 HIGHWAY 11 GROCERY  
 13527 S.C. HWY 11, SALEM, SC  
 UST PERMIT #03439  
 WO #302169 DATE: 4/17/06  
 DWG #H101694K DRAWN BY: JCJ



SAMPLING DATE: 2/14/08.



**APPENDIX B**  
**Tables**

Table 1

**Historical Groundwater Elevation And Product Thickness Data**  
**Highway 11 Grocery**  
**13527 South Carolina Highway 11**  
**Salem, Oconee County, South Carolina**  
**UST Permit Number: 03439**  
**SEI Project Number: 302169**

Location	Date	Depth To Water	Depth To Product	Product Thickness	Well Head Elevation	Groundwater Elevation
MW-1	05/08/02	24.67	24.71	0.04	103.38	78.74
	07/01/03	23.28	23.52	0.24		80.29
	07/30/03	22.89	22.97	0.08		80.55
	09/15/03	23.78	23.82	0.04		79.63
	10/02/03	24.32	24.45	0.13		79.16
	10/23/03	24.72	24.93	0.21		78.82
	12/18/03	24.08				79.32
	03/31/04	24.61				78.77
	09/29/04	24.20				79.18
	01/11/05	23.77				79.61
	03/17/05	23.97				79.41
	08/09/05	22.86				80.52
	11/01/05	25.20	25.13	0.07		78.23
	03/22/06	23.91				79.47
	08/28/06	27.17	26.64	0.53		76.62
	11/05/06	26.08	25.55	0.53		77.71
	02/07/07	24.30	24.14	0.16		79.20
	05/03/07	25.23				78.15
	08/21/07	27.05				76.33
	12/12/07	28.18	27.38	0.80		75.82
02/14/08	25.72	25.69	0.03	77.68		
MW-2	05/08/02	26.08			104.85	78.77
	07/01/03	24.08				80.77
	07/30/03	23.78				81.07
	09/15/03	24.73				80.12
	10/02/03	25.56				79.29
	10/23/03	25.71				79.14
	12/18/03	25.38				79.47
	03/31/04	25.85				79.00
	09/29/04	25.55				79.30
	01/11/05	24.74				80.11
	03/17/05	25.10				79.75
	08/09/05	23.70				81.15
	11/01/05	26.29				78.58
	03/22/06	25.64				78.91
	08/28/06	28.33				76.52
	11/05/06	27.39				77.46
	02/07/07	25.47				79.38
	05/03/07	26.34				78.51
	08/21/07	28.49				76.36
	12/12/07	29.30				75.55
02/14/08	27.53			77.32		
MW-3	05/08/02	24.78			104.86	80.08
	07/01/03	22.51				82.35
	07/30/03	22.21				82.65
	09/15/03	23.23				81.63
	10/02/03	23.87				80.99
	10/23/03	24.23				80.63
	12/18/03	23.93				80.93
	03/31/04	24.44				80.42
	09/29/04	24.20				80.66
	01/11/05	23.36				81.50
	03/17/05	23.65				81.21
	08/09/05	22.11				82.75
	11/01/05	24.85				80.01
	03/22/06	24.57				80.29
	08/28/06	26.95				77.91
	11/05/06	26.05				78.81
	02/07/07	24.15				80.71
	05/03/07	25.03				79.83
	08/21/07	27.26				77.60
	12/12/07	27.96				76.90
02/14/08	26.21			78.65		

**Historical Groundwater Elevation And Product Thickness Data**  
**Highway 11 Grocery**  
**13527 South Carolina Highway 11**  
**Salem, Oconee County, South Carolina**  
**UST Permit Number: 03439**  
**SEI Project Number: 302169**

Location	Date	Depth To Water	Depth To Product	Product Thickness	Well Head Elevation	Groundwater Elevation
MW-4	05/08/02	23.38			99.90	76.52
	07/01/03	22.10				77.80
	07/30/03	22.09				77.81
	09/15/03	22.90				77.00
	10/02/03	23.32				76.58
	10/23/03	23.69				76.21
	12/18/03	22.95				76.95
	03/31/04	23.49				76.41
	09/29/04	23.14				76.76
	01/11/05	22.70				77.20
	03/17/05	22.84				77.06
	08/09/05	26.40				73.50
	11/01/05	27.27				72.63
	03/22/06	23.42				76.48
	08/28/06	25.99				74.51
	11/05/06	24.11				75.79
	02/07/07	22.96				76.94
	05/03/07	23.88				76.02
	08/21/07	25.86				74.24
	12/12/07	25.86				74.04
02/14/08	26.44			73.46		
MW-5	05/08/02	28.82			106.06	77.24
	07/01/03	26.82				79.24
	07/30/03	26.53				79.53
	09/15/03	27.40				78.66
	10/02/03	27.92				78.14
	10/23/03	28.40				77.66
	12/18/03	28.40				77.66
	03/31/04	28.56				77.50
	09/29/04	28.46				77.60
	01/11/05	27.41				78.65
	03/17/05	27.86				78.20
	08/09/05	20.02				86.04
	11/01/05	28.91				77.15
	03/22/06	28.59				77.47
	08/28/06	31.06				75.00
	11/05/06	30.40				75.66
	02/07/07	28.30				77.76
	05/03/07	28.80				77.16
	08/21/07	31.12				74.94
	12/12/07	32.07				73.99
02/14/08	30.60			75.46		
MW-6	05/08/02	21.66			100.00	78.34
	07/01/03	19.77				80.23
	07/30/03	19.88				80.12
	09/15/03	20.63				79.37
	10/02/03	21.34				78.66
	10/23/03	21.74				78.26
	12/18/03	21.00				79.00
	03/31/04	21.71				78.29
	09/29/04	21.33				78.67
	01/11/05	20.81				79.19
	03/17/05	20.10				79.90
	08/09/05	26.18				73.82
	11/01/05	22.41				77.59
	03/22/06	21.77				78.23
	08/28/06	23.86				76.14
	11/05/06	22.71				77.29
	02/07/07	21.13				78.87
	05/03/07	22.23				77.77
	08/21/07	24.17				75.83
	12/12/07	24.89				75.31
02/14/08	22.77			77.23		

Historical Groundwater Elevation And Product Thickness Data  
 Highway 11 Grocery  
 13527 South Carolina Highway 11  
 Salem, Oconee County, South Carolina  
 UST Permit Number: 03439  
 SEI Project Number: 302169

Location	Date	Depth To Water	Depth To Product	Product Thickness	Well Head Elevation	Groundwater Elevation
MW-7	05/08/02	28.12			103.66	75.54
	07/01/03	26.55				77.11
	07/30/03	26.22				77.44
	09/15/03	26.83				76.83
	10/02/03	27.69				75.97
	10/23/03	28.10				75.56
	12/18/03	27.71				75.95
	03/31/04	28.00				75.66
	09/29/04	27.80				76.06
	01/11/05	26.88				76.78
	03/17/05	27.83				75.83
	08/09/05	20.27				83.39
	11/01/05	28.63				75.03
	03/22/06	N/L				N/L
	08/28/06	30.43				73.23
	11/05/06	29.56				74.10
	02/07/07	27.41				76.25
	05/03/07	28.35				75.31
	08/21/07	29.49				74.17
	12/12/07	31.27				72.39
02/14/08	29.64			74.02		
MW-8	05/08/02	21.00			86.51	65.51
	07/01/03	20.96				65.55
	07/30/03	20.46				66.05
	09/15/03	21.17				65.34
	10/02/03	20.44				66.07
	10/23/03	21.54				64.97
	12/18/03	20.82				65.69
	03/31/04	21.35				65.16
	09/29/04	21.10				66.41
	01/11/05	21.04				65.47
	03/17/05	20.95				65.56
	08/09/05	22.16				64.35
	11/01/05	23.31				63.20
	03/22/06	22.00	21.23	0.77		65.11
	08/28/06	24.46	22.05	2.41		63.93
	11/05/06	NM				
	02/07/07	NM				
	05/03/07	NM				
	08/21/07	26.61	22.10	4.51		63.42
	12/12/07	23.24	22.85	0.39		63.57
02/14/08	23.54	21.61	1.93	64.48		
MW-9	05/08/02	2.47			58.39	55.92
	07/01/03	2.30				56.09
	07/30/03	2.26				56.13
	09/15/03	2.42				55.97
	10/02/03	2.16				56.23
	10/23/03	2.42				55.97
	12/18/03	2.20				56.19
	03/31/04	2.56				55.83
	09/29/04	1.90				56.49
	01/11/05	2.23				56.16
	03/17/05	2.11				56.28
	08/09/05	2.04				56.35
	11/01/05	2.33				56.06
	03/22/06	2.23				56.16
	08/28/06	2.50				55.89
	11/05/06	2.38				56.01
	02/07/07	2.36				56.03
	05/03/07	2.50				55.89
	08/21/07	2.61				55.78
	12/12/07	2.15				56.24
02/14/08	2.22			56.17		

**Historical Groundwater Elevation And Product Thickness Data**  
**Highway 11 Grocery**  
**13527 South Carolina Highway 11**  
**Salem, Oconee County, South Carolina**  
**UST Permit Number: 03439**  
**SEI Project Number: 302169**

Location	Date	Depth To Water	Depth To Product	Product Thickness	Well Head Elevation	Groundwater Elevation
MW-10	05/08/02	20.04			93.78	73.74
	07/01/03	16.20				77.58
	07/30/03	18.95				74.83
	09/15/03	16.53				77.25
	10/02/03	20.19				73.59
	10/23/03	20.51				73.27
	12/18/03	19.83				73.95
	03/31/04	18.85				74.93
	09/29/04	20.02				73.76
	01/11/05	19.47				74.31
	03/17/05	18.84				74.94
	08/09/05	18.94				74.84
	11/01/05	21.07				72.71
	03/22/06	20.16				73.62
	08/28/06	22.16				71.62
	11/05/06	20.94				72.84
	02/07/07	19.65				74.13
	05/03/07	20.57				73.21
	08/21/07	22.38				71.40
	12/12/07	22.51				71.27
02/14/08	20.72			73.06		
MW-11	05/08/02	16.22			83.20	66.98
	07/01/03	16.53				66.67
	07/30/03	16.70				66.50
	09/15/03	17.35				65.85
	10/02/03	16.40				66.80
	10/23/03	17.83				65.37
	12/18/03	17.58				65.62
	03/31/04	16.21				66.99
	09/29/04	15.92				67.28
	01/11/05	15.93				67.27
	03/17/05	16.86				66.34
	08/09/05	15.80				67.40
	11/01/05	18.22				64.98
	03/22/06	17.28				65.92
	08/28/06	19.09				64.11
	11/05/06	17.79				65.41
	02/07/07	16.44				66.76
	05/03/07	17.87				65.53
	08/21/07	19.12				64.08
	12/12/07	19.19				64.01
02/14/08	16.90			66.30		
MW-12	05/08/02	2.80			58.69	55.89
	07/01/03	3.16				55.53
	07/30/03	2.55				56.14
	09/15/03	3.26				55.43
	10/02/03	2.60				58.09
	10/23/03	3.50				55.19
	12/18/03	2.97				55.72
	03/31/04	3.19				55.50
	09/29/04	3.02				55.67
	01/11/05	3.10				55.59
	03/17/05	3.12				55.57
	08/09/05	2.72				55.97
	11/01/05	3.63				55.06
	03/22/06	3.23				55.46
	08/28/06	3.84				54.85
	11/05/06	3.48				55.21
	02/07/07	3.15				55.54
	05/03/07	3.69				55.00
	08/21/07	4.14				54.55
	12/12/07	3.72				54.97
02/14/08	3.15			55.54		

**Historical Groundwater Elevation And Product Thickness Data**  
**Highway 11 Grocery**  
**13527 South Carolina Highway 11**  
**Salem, Oconee County, South Carolina**  
**UST Permit Number: 03439**  
**SEI Project Number: 302169**

Location	Date	Depth To Water	Depth To Product	Product Thickness	Well Head Elevation	Groundwater Elevation
MW-13	05/08/02	6.29			77.72	71.43
	07/01/03	6.44				71.28
	07/30/03	N/L				N/L
	09/15/03	6.36				71.38
	10/02/03	6.24				71.48
	10/23/03	6.78				70.94
	12/18/03	7.51				70.21
	03/31/04	6.62				71.10
	09/29/04	6.28				71.44
	01/11/05	6.44				71.28
	03/17/05	6.52				71.20
	08/09/05	10.52				67.20
	11/01/05	N/L				N/L
	03/22/06	N/L				N/L
	08/28/06	N/L				N/L
	08/28/06	N/L				N/L
	02/07/07	N/L				N/L
	05/03/07	N/L				N/L
	08/21/07	N/L				N/L
	12/12/07	N/L				N/L
02/14/08	N/L			N/L		
MW-14	05/08/02	2.00			59.19	57.19
	07/01/03	2.28				56.91
	07/30/03	2.03				57.16
	09/15/03	2.42				56.77
	10/02/03	1.98				57.21
	10/23/03	2.67				56.52
	12/18/03	1.58				57.61
	03/31/04	2.03				57.16
	09/29/04	1.77				57.42
	01/11/05	1.92				57.27
	03/17/05	2.14				57.05
	08/09/05	1.75				57.44
	11/01/05	N/L				N/L
	03/22/06	N/L				N/L
	08/28/06	3.36				55.83
	11/05/06	N/L				N/L
	02/07/07	N/L				N/L
	05/03/07	2.94				56.25
	08/21/07	3.85	3.82	0.03		55.36
	12/12/07	3.41	3.12	0.29		56.01
02/14/08	2.09			57.10		
MW-15	05/08/02	10.82			71.52	60.70
	07/01/03	10.76				60.76
	07/30/03	10.11				61.41
	09/15/03	11.00				60.52
	10/02/03	10.20				61.32
	10/23/03	11.07				60.45
	12/18/03	11.88				59.64
	03/31/04	11.02				60.50
	09/29/04	10.67				60.85
	01/11/05	10.83				60.69
	03/17/05	10.61				60.91
	08/09/05	10.68				60.84
	11/01/05	11.32				60.20
	03/22/06	NG				NG
	08/28/06	11.62				59.90
	11/05/06	NM				NM
	02/07/07	NM				NM
	05/03/07	NM				NM
	08/21/07	DRY				DRY
	02/14/08	NM				DRY

**Historical Groundwater Elevation And Product Thickness Data**  
**Highway 11 Grocery**  
**13527 South Carolina Highway 11**  
**Salem, Oconee County, South Carolina**  
**UST Permit Number: 03439**  
**SEI Project Number: 302169**

Location	Date	Depth To Water	Depth To Product	Product Thickness	Well Head Elevation	Groundwater Elevation
DMW-1	05/08/02	23.88			103.27	79.39
	07/01/03	23.61				79.66
	07/30/03	24.24				79.03
	09/15/03	24.60				78.67
	10/02/03	24.00				79.27
	10/23/03	24.50				78.77
	12/18/03	24.11				79.16
	03/31/04	23.61				79.66
	09/29/04	22.72				80.55
	01/11/05	22.97				80.30
	03/17/05	24.68				78.59
	08/09/05	22.66				80.61
	11/01/05	25.11				78.16
	03/22/06	24.71				78.56
	08/28/06	26.95				76.32
	11/05/06	25.85				77.42
	02/07/07	24.59				78.68
	05/03/07	24.93				78.34
	08/21/07	26.89				76.38
	12/12/07	27.62				75.65
02/14/08	26.18			77.09		
DMW-2	05/08/02	17.83			86.21	68.38
	07/01/03	16.67				69.54
	07/30/03	17.20				69.01
	09/15/03	17.31				68.90
	10/02/03	16.80				69.41
	10/23/03	17.63				68.58
	12/18/03	17.11				69.10
	03/31/04	15.75				70.46
	09/29/04	16.49				69.72
	01/11/05	16.44				69.77
	03/17/05	17.22				68.89
	08/09/05	16.71				69.50
	11/01/05	18.08				68.13
	03/22/06	17.40				68.81
	08/28/06	18.72				67.49
	11/05/06	18.00				68.21
	11/05/06	18.93				67.28
	05/03/07	18.81				67.40
	08/21/07	19.15				67.06
	12/12/07	21.40				64.81
02/14/08	20.86			65.35		
DMW-4	05/08/02	24.30			103.22	78.92
	07/01/03	23.93				79.29
	07/30/03	24.75				78.47
	09/15/03	24.95				78.27
	10/02/03	24.45				78.77
	10/23/03	24.95				78.27
	12/18/03	24.39				78.83
	03/31/04	23.88				79.34
	09/29/04	23.18				80.04
	01/11/05	23.32				79.90
	03/17/05	25.08				78.14
	08/09/05	22.96				80.26
	11/01/05	26.51				76.71
	03/22/06	25.00				78.22
	08/28/06	27.33				75.89
	11/05/06	26.39				76.83
	02/07/07	24.59				78.63
	05/03/07	25.48				77.74
	08/21/07	25.48				77.74
	12/12/07	28.23				74.99
02/14/08	26.44			76.78		



Table 2

**Historical Groundwater Analytical Results**  
**Highway 11 Grocery**  
**13527 South Carolina Highway 11**  
**Salem, Oconee County, South Carolina**  
**UST Permit Number: 03439**  
**SEI Project Number: 302169**

Well	Date	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Naphthalene	FP	Initial Mass	Current Mass
MW-1	05/07/02	226,000	301,000	280,000	278,000	5,110,000	2,000			6,197,000.00
	07/01/03	10,000	34,000	4,400	23,000	34,000	1,200			106,600.00
	07/30/03	7,600	26,000	6,300	32,000	25,000.0	2,500			101,400.00
	12/18/03	2,200	6,200	910	5,800	16,000	2,500			33,610.00
	03/31/04	3,400	9,300	1,100	6,200	20,000	1,200			41,200.00
	09/29/04	3,200	7,300	<1,000	4,600	12,000	<5,000			27,000.00
	03/17/05	5,600	9,550	1,570	7,610	19,300	325			43,955.00
	08/09/05	16,800	42,600	3,620	19,000	116,000	705			197,725.00
	11/01/05	44,390	26,540	3,700	21,680	173,000	637,000			908,310.00
	03/22/06	20,700	41,100	3,100	11,700	103,000	<4,000			179,600.00
	08/28/06	44,390	26,540	3,700	21,680	173,000	637,000	0.53		908,310.00
	08/28/06	44,390	26,540	3,700	21,680	173,000	637,000	0.53		908,310.00
	02/07/07	44,390	26,540	3,700	21,680	173,000	637,000	0.16		908,310.00
	05/03/07	11,800	27,800	2,650	13,300	74,600	<4000			130,150.00
	08/21/07	11,800	27,800	2,650	13,300	74,600	<4000			130,150.00
	12/12/07	228,000	301,000	280,000	278,000	5,110,000	2,000	0.81		6,197,000.00
	02/14/08	NS	NS	NS	NS	NS	NS	0.03		0.00
	SSTL		22	4,497	3,148	44,969	180	112		
> SSTL		0.0	0.0	0.0	0.0	0.0	0.0			
MW-2	05/07/02	13	8.0	1.0	5.0	5.0	5.0			37.00
	07/01/03	4.7	5.0	1.0	3.0	1.0	5.0			19.70
	07/30/03	5.8	5.0	1.0	5.3	1.0	5.0			23.10
	12/18/03	2.2	5.0	1.0	3.0	1.0	5.0			17.20
	03/31/04	2.6	5.0	1.0	3.0	1.0	5.0			17.60
	09/29/04	14	<25	<5.0	<15	<5.0	<25			14.00
	03/17/05	13	5	<1.0	5	<1.0	<2.0			22.40
	08/09/05	39.7	14.5	1.2	27.5	<1.0	<2.0			82.90
	11/01/05	3.8	1.6	<1.0	<3.0	<1.0	<2.0			6.40
	03/22/06	11.8	4.2	<1.0	3.4	<1.0	<2.0			19.40
	08/28/06	32.0	3.1	<1.0	4.5	<1.0	<2.0			39.60
	08/28/06	8.2	<1.0	<1.0	<3	<1.0	<2.0			8.20
	02/07/07	6.9	2.1	<1.0	3.4	<1.0	<2.0			12.40
	05/03/07	15.0	3.5	<1.0	5.4	<1.0	<2.0			23.90
	08/21/07	56.4	6.6	<1.0	20.0	<1.0	<2.0			83.00
	12/12/07	7.1	0.7	<1.0	2.5	<1.0	<2.0			10.42
	02/14/08	3.6	<1.0	<1.0	1.0	<1.0	<2.0			4.59
	SSTL		13	8.0	1.0	5.0	5.0	5.0		
> SSTL		0.0	0.0	0.0	0.0	0.0	0.0			
MW-3	05/07/02	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0			0.00
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	07/30/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	12/18/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	08/09/05	NS	NS	NS	NS	NS	NS			0.00
	11/01/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	03/22/06	<1.0	1.4	<1.0	<3.0	<1.0	<2.0			1.40
	08/28/06	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	11/05/06	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	02/07/07	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	05/03/07	NS	NS	NS	NS	NS	NS			0.00
	08/21/07	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	12/12/07	<1.0	0.4	<1.0	1.3	<1.0	<2.0			1.74
	02/14/08	<1.0	<1.0	<1.0	0.7	<1.0	<2.0			0.65
	SSTL		1.0	1.0	1.0	1.0	5.0	5.0		
> SSTL		0.0	0.4	0.0	0.0	0.0	0.0			

Table 2

Historical Groundwater Analytical Results  
 Highway 11 Grocery  
 13527 South Carolina Highway 11  
 Salem, Oconee County, South Carolina  
 UST Permit Number: 03439  
 SEI Project Number: 302169

Well	Date	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Naphthalene	FP	Initial Mass	Current Mass
MW-4	05/07/02	1,500	5,320	820	3,380	810	500			12,110.00
	07/01/03	4,800	14,000	2,300	12,000	12,000	2,800			47,700.00
	07/30/03	4,000	14,000	2,700	13,000	2,100	500			38,300.00
	12/18/03	1,100	2,400	230	1,900	1,200	250			7,080.00
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	09/28/04	53	<25	7.1	70	210	<25			340.10
	03/17/05	<1.0	<1.0	<1.0	<3.0	17	<2.0			16.80
	08/09/05	<1.0	<1.0	<1.0	<3.0	5.9	<2.0			5.80
	11/01/05	3,720	3,660	745	4,170	4,640	<200			16,835.00
	03/22/06	<1.0	<1.0	<1.0	<3.0	1.2	<2.0			1.20
	08/28/06	43	7	4	88	183.0	3.6			288.70
	11/05/06	195	24	19	164	225.0	11.6			638.90
	02/07/07	25	59	13	67	47.1	<2.0			
	05/03/07	95	120	39	199	56.3	8.1			517.30
	08/21/07	0	<1.0	<1.0	3	52.4	<2.0			55.63
	12/12/07	32	3	1	31	55.7	1.5			124.20
	02/14/08	<1.0	<1.0	<1.0	<3.0	0.8	<2.0			0.83
SSTL	1,500	5,320	820	3,380	810	500.0				
> SSTL	0	0.0	0	0	0	0.0				
MW-5	05/07/02	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0			0.00
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	07/30/03	4.2	17.0	3.6	18.0	2.2	<5.0			45.00
	12/18/03	2.3	<5.0	<1.0	3.2	1.3	<5.0			6.80
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	09/28/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	08/09/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	11/01/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	03/22/06	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	08/28/06	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	11/05/06	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	02/07/07	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	05/03/07	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	08/21/07	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	12/12/07	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	02/14/08	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
SSTL	1.0	1.0	1.0	1.0	5.0	5.0				
> SSTL	0.0	0.0	0.0	0.0	0.0	0.0				
MW-6	05/07/02	1,780	4,950	490	2,880	6,380	500.0			16,950.00
	07/01/03	2,200	6,600	820	4,400	12,000	2,500			28,520.00
	07/30/03	4,200	13,000	1,800	6,900	21,000	400			49,100.00
	12/18/03	5,100	14,000	1,700	11,000	19,000	2,500			53,300.00
	03/31/04	280	340	100	2,200	900	250			4,570.00
	09/28/04	2,400	<5,000	<1,000	<3,000	17,000	<5,000			19,400.00
	03/17/05	3,490	7,500	952	5,380	15,500	282			33,084.00
	08/09/05	1,370	4,630	295	2,220	7,640	<400			16,155.00
	11/01/05	979	2,220	282	1,810	9,410	<200			14,701.00
	03/22/06	1,280	3,480	399	2,880	8,600	<200			16,639.00
	08/28/06	89	78	<2.0	243	22	<4.0			439.60
	11/05/06	34.0	60.9	<2.0	194	355	<20			843.80
	02/07/07	4,970.0	16,100.0	2,070	12,000	39,500	<500			67,640.00
	05/03/07	1,600.0	5,430.0	672	4,080	11,000	<1000			22,762.00
	08/21/07	167.0	416.0	7	227	213	<10			1,029.80
	12/12/07	534.0	1,310.0	54	537	41	11.6			2,487.60
	02/14/08	162.0	750.0	28	575	11	11.8			1,535.40
SSTL	1,780	4,950	490	2,880	6,380	500.0				
> SSTL	0.0	0.0	0.0	0.0	0.0	0.0				

Table 2

**Historical Groundwater Analytical Results**  
**Highway 11 Grocery**  
**13527 South Carolina Highway 11**  
**Salem, Oconee County, South Carolina**  
**UST Permit Number: 03439**  
**SEI Project Number: 302169**

Well	Date	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Naphthalene	FP	Initial Mass	Current Mass	
MW-7	05/07/02	34	20	<1.0	8.0	7.0	<5.0			89.00	
	07/01/03	37	36	1.7	20	9.2	<5.0			103.90	
	07/30/03	18	18	<1.0	10	<1.0	<5.0			45.70	
	12/18/03	41	20	<1.0	<3.0	<1.0	<5.0			81.00	
	03/31/04	30	34	<1.0	16	<1.0	<5.0			80.00	
	09/29/04	370	500	<100	<300	<100	<500			870.00	
	03/17/05	505	590	34	280	85	<2.0			1,473.40	
	08/09/05	52	56	2.6	34	9.2	<2.0			154.00	
	11/01/05	27	42	3.7	24	<1.0	<2.0			98.10	
	03/22/06	Not Sampled									
	08/28/06	99	95	3.6	127	7	<2.0			331.80	
	11/05/06	50	44.5	<1.0	23.5	1.9	<2.0			119.80	
	02/07/07	182	261.0	12.8	202.0	18.7	<2.0			676.50	
	05/03/07	132	104.0	8.2	104.0	8.6	<10.0			358.70	
	08/21/07	179	163.0	8.0	178.0	10.5	<4.0			538.50	
	12/12/07	200	88.3	<1.0	162.0	<1.0	<2.0			450.30	
	02/14/08	59	59.8	3.0	40.9	2.0	<2.0			164.50	
	SSTL	22	20	1.0	8.0	7.0	5.0				
	> SSTL	36.8	39.8	2.0	32.9	0.0	0.0				
	MW-8	05/07/02	226,000	301,000	280,000	278,000	6,110,000	2,000			6,187,000.00
07/01/03		12,000	51,000	7,800	40,000	11,000	2,900			124,300.00	
07/30/03		12,000	40,000	3,800	18,000	15,000	680			89,280.00	
12/18/03		10,000	27,000	3,300	18,000	14,000	2,800			74,800.00	
03/31/04		17,000	140,000	32,000	180,000	8,600	<25,000			377,600.00	
09/29/04		44,380	26,540	3,700	21,680	173,000	637,000			908,310.00	
03/17/05		44,380	26,540	3,700	21,680	173,000	637,000			908,310.00	
08/09/05		44,380	26,540	3,700	21,680	173,000	637,000			908,310.00	
11/01/05		44,380	26,540	3,700	21,680	173,000	637,000			908,310.00	
03/22/06		44,380	26,540	3,700	21,680	173,000	637,000			908,310.00	
08/28/06		44,380	26,540	3,700	21,680	173,000	637,000	2.41		908,310.00	
11/05/06		44,380	26,540	3,700	21,680	173,000	637,000			908,310.00	
02/07/07		44,380	26,540	3,700	21,680	173,000	637,000	0.89		908,310.00	
05/03/07		44,380	26,540	3,700	21,680	173,000	637,000			908,310.00	
08/21/07		226,000	301,000	280,000	278,000	6,110,000	2,000	4.51		6,197,000.00	
12/12/07		226,000	301,000	280,000	278,000	6,110,000	2,000	0.39		6,187,000.00	
02/14/08		NS	NS	NS	NS	NS	NS	1.93		0.00	
SSTL		204	40,888	28,822	278,000	1,382	1,021				
> SSTL		0.0	0.0	0.0	0.0	0.0	0.0				
MW-9		05/07/02	N/A	N/A	N/A	N/A	N/A	N/A			0.00
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00	
	07/30/03	N/A	N/A	N/A	N/A	N/A	N/A			0.00	
	12/18/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00	
	03/31/04	<1.0	<5.0	1.2	8.8	<1.0	<5.0			10.00	
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00	
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00	
	08/09/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00	
	11/01/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00	
	03/22/06	<1.0	1.5	<1.0	<3.0	<1.0	<2.0			1.50	
	08/28/06	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00	
	11/05/06	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00	
	02/07/07	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00	
	05/03/07	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00	
	08/21/07	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00	
	12/12/07	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00	
	02/14/08	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00	
RBSL	5.0	1,000	700	10,000	40	25					

Table 2

**Historical Groundwater Analytical Results**  
**Highway 11 Grocery**  
**13527 South Carolina Highway 11**  
**Salem, Oconee County, South Carolina**  
**UST Permit Number: 03439**  
**SEI Project Number: 302169**

Well	Date	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Naphthalene	FP	Initial Mass	Current Mass	
MW-10	05/07/02	115	185	88.0	328	86	9.0			791.00	
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00	
	07/30/03	170	420	43	240	540	6.5			1,419.80	
	12/18/03	89	280	74	460	91	25.0			1,039.00	
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00	
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00	
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00	
	08/09/05	1.7	4.4	<1.0	<3.0	16	<2.0			24.00	
	11/01/05	10,000	23,500	1,410	7,510	21,800	<1,000			64,020.00	
	03/22/06	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00	
	08/28/06	79	98	16	69	166	<2.0			430.90	
	11/05/06	203	412	67	226	137	4.7			1,049.90	
	02/07/07	376	1,080	454	2,440	507	82.8			4,939.80	
	05/03/07	1,980	4,990	846	4,420	1,770	136.0			14,162.00	
	08/21/07	9,730	31,500	2,880	13,900	13,100	317.0			71,427.00	
	12/12/07	2,120	8,880	1,680	8,420	1,680	321.0			23,091.00	
	02/14/08	401	129	167	721	296	45.7			1,759.70	
	SSTL		116	185	88	328	86	9.0			
	> SSTL		269.0	0.0	99.0	393.0	210.0	38.7			
	MW-11	05/07/02	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0			0.00
07/01/03		<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00	
07/30/03		<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00	
12/18/03		<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00	
03/31/04		<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00	
09/29/04		<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00	
03/17/05		<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00	
08/09/05		NS	NS	NS	NS	NS	NS			0.00	
11/01/05		42.2	<1.0	<1.0	93.6	4.6	3.8			144.10	
03/22/06		<1.0	<1.0	<1.0	<3.0	1.9	<2.0			1.90	
08/28/06		6.4	<1	<1	82.6	4.4	2.5			95.90	
11/05/06		2.8	<1	<1	8.9	4.7	<2.0			16.40	
02/07/07		<1	<1	<1	8.9	1.1	<2.0			10.00	
05/03/07		NS	NS	NS	NS	NS	NS			0.00	
08/21/07		2.0	<1.0	<1.0	9.2	5.8	<2.0			17.00	
12/12/07		1.9	<1.0	<1.0	1.6	3.6	<2.0			7.00	
02/14/08		<1.0	1.8	1.4	7.3	1.9	1.0			13.40	
SSTL			1.0	1.0	1.0	1.0	5.0	5.0			
> SSTL			0.0	0.8	0.4	6.3	0.0	0.0			
MW-12		05/07/02	N/A	N/A	N/A	N/A	N/A	N/A			0.00
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00	
	07/30/03	N/A	N/A	N/A	N/A	N/A	N/A			0.00	
	12/18/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00	
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00	
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00	
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00	
	08/09/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00	
	11/01/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00	
	03/22/06	1.5	24.8	10.1	58.6	<1.0	11.3			108.30	
	08/28/06	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00	
	11/05/06	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00	
	02/07/07	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00	
	05/03/07	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00	
	08/21/07	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00	
	12/12/07	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00	
	02/14/08	21	54.5	10.5	62	40	4.4			192.60	
	RBSL		5.0	1,000	700	10,000	40	25			

Table 2

**Historical Groundwater Analytical Results  
Highway 11 Grocery  
13527 South Carolina Highway 11  
Salem, Oconee County, South Carolina  
UST Permit Number: 03439  
SEI Project Number: 302169**

Well	Date	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Naphthalene	FP	Initial Mass	Current Mass
MW-13	05/07/02	N/A	N/A	N/A	N/A	N/A	N/A			0.00
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	07/30/03	N/A	N/A	N/A	N/A	N/A	N/A			0.00
	12/18/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	08/28/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	08/09/05	NS	NS	NS	NS	NS	NS			0.00
	11/01/05	NS	NS	NS	NS	NS	NS			0.00
	03/22/06	NS	NS	NS	NS	NS	NS			0.00
	08/28/06	NS	NS	NS	NS	NS	NS			0.00
	11/05/06	NS	NS	NS	NS	NS	NS			0.00
	02/07/07	NS	NS	NS	NS	NS	NS			0.00
	05/03/07	NS	NS	NS	NS	NS	NS			0.00
	08/21/07	NS	NS	NS	NS	NS	NS			0.00
	12/12/07	NS	NS	NS	NS	NS	NS			0.00
	02/14/08	NS	NS	NS	NS	NS	NS			0.00
RBSL		5.0	1,000	700	10,000	40	25			
MW-14	05/07/02	3,780	13,800	27,000	14,700	7,010	500			66,780.00
	07/01/03	3,500	10,000	1,900	10,000	5,300	500			31,200.00
	07/30/03	3,100	9,700	1,800	9,300	4,300	500			28,700.00
	12/18/03	3,300	11,000	2,000	11,000	4,100	500			31,900.00
	03/31/04	5,500	17,000	2,600	13,000	7,100	570			45,770.00
	09/29/04	3,200	12,000	1,600	9,100	3,200	<5,000			29,100.00
	03/17/05	5,140	13,000	1,710	10,900	4,970	339			36,059.00
	08/09/05	3,280	10,600	1,820	11,000	4,950	<400			31,660.00
	11/01/05	NL	NL	NL	NL	NL	NL			0.00
	03/22/06	NL	NL	NL	NL	NL	NL			0.00
	08/28/06	2,010.0	4,080.0	1,160.0	6,320.0	3,320.0	281.0			17,151.00
	11/05/06	NL	NL	NL	NL	NL	NL			0.00
	02/07/07	NL	NL	NL	NL	NL	NL			0.00
	05/03/07	3,640.0	11,700.0	1,950.0	10,600.0	5,340.0	527.0			33,757.00
	08/21/07	226,000	301,000	280,000	278,000	5,110,000	2,000	0		6,197,000.00
	12/12/07	226,000	301,000	280,000	278,000	5,110,000	2,000	0		6,197,000.00
	02/14/08	3,640	14,500	2,700	14,300	5,900	439	0		41,079.00
SSTL	5.0	1,000	700	10,000	40	25			11,770.00	
> SSTL	3,635.0	13,500.0	2,000.0	4,300.0	5,460.0	414.0				
MW-15	05/07/02	N/A	N/A	N/A	N/A	N/A	N/A			0.00
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	07/30/03	N/A	N/A	N/A	N/A	N/A	N/A			0.00
	12/18/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	08/09/05	NS	NS	NS	NS	NS	NS			0.00
	11/01/05	NS	NS	NS	NS	NS	NS			0.00
	03/22/06	NS	NS	NS	NS	NS	NS			0.00
	08/28/06	NS	NS	NS	NS	NS	NS			0.00
	11/05/06	NS	NS	NS	NS	NS	NS			0.00
	02/07/07	NS	NS	NS	NS	NS	NS			0.00
	05/03/07	NS	NS	NS	NS	NS	NS			0.00
	08/21/07	NS	NS	NS	NS	NS	NS			0.00
	12/12/07	NS	NS	NS	NS	NS	NS			0.00
	02/14/08	NS	NS	NS	NS	NS	NS			0.00
RBSL		5.0	1,000	700	10,000	40	25			

Table 2

**Historical Groundwater Analytical Results  
Highway 11 Grocery  
13527 South Carolina Highway 11  
Salem, Oconee County, South Carolina  
UST Permit Number: 03439  
SEI Project Number: 302169**

Well	Date	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Naphthalene	FP	Initial Mass	Current Mass
DMW-1	05/07/02	215	430	50	50	1,780	250			2,775.00
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	07/30/03	<1.0	<5.0	<1.0	<3.0	4.2	<5.0			4.20
	12/18/03	1.6	<5.0	<1.0	<3.0	<1.0	<5.0			1.50
	03/31/04	<1.0	<15.0	<1.0	<3.0	3.9	<5.0			3.90
	09/29/04	8.4	<25	<5.0	<15	130	<25			138.40
	03/17/05	<1.0	1.2	<1.0	<3.0	8.1	<2.0			9.30
	08/09/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	11/01/05	<5.0	<5.0	<5.0	<15	<5.0	<10			0.00
	03/22/06	3.0	35.1	16	92.2	21.9	13.1			181.30
	08/28/06	<1.0	<1.0	<1.0	<3.0	20.3	<2.0			20.30
	11/05/06	<1.0	<1.0	<1.0	<3.0	90.8	<2.0			90.80
	02/07/07	9.2	2.5	<1.0	9.7	164.0	<4.0			185.40
	05/03/07	<1.0	<1.0	<1.0	<3.0	5.2	<2.0			5.20
	08/21/07	<1.0	<1.0	<1.0	<3.0	28.5	<2.0			28.50
	12/12/07	<1.0	<1.0	<1.0	<3.0	2.2	<2.0			2.20
	02/14/08	<1.0	<1.0	<1.0	<3.0	11.9	<2.0			11.90
	SSTL	215	430	50	50	1,780	250			
	> SSTL	0.0	0.0	0.0	0.0	0.0	0.0			
	DMW-2	05/07/02	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0		
07/01/03		<1.0	<5.0	<1.0	<3.0	8.4	<5.0			8.40
07/30/03		<1.0	8.4	6.8	30.0	<1.0	6.7			51.90
12/18/03		<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
03/31/04		<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
09/29/04		<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
03/17/05		<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
08/09/05		<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
11/01/05		<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
03/22/06		<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
08/28/06		<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
11/05/06		<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
02/07/07		<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
05/03/07		<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
08/21/07		<1.0	<1.0	<1.0	<3.0	0.3	<2.0			0.28
12/12/07		<1.0	<1.0	<1.0	<3.0	0.3	<2.0			0.28
02/14/08		<1.0	0.4	<1.0	<3.0	0.3	<2.0			0.85
SSTL		1.0	1.0	1.0	1.0	5.0	5.0			
> SSTL		0.0	0.0	0.0	0.0	0.0	0.0			
DMW-4		05/07/02	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0		
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	07/30/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	12/18/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	08/09/05	NS	NS	NS	NS	NS	NS			0.00
	11/01/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	03/22/06	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	08/28/06	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	11/05/06	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	02/07/07	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	02/07/07	NS	NS	NS	NS	NS	NS			0.00
	08/21/07	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	12/12/07	<1.0	0.3	<1.0	<3.0	<1.0	<2.0			0.31
	02/14/08	<1.0	0.3	<1.0	<3.0	<1.0	<2.0			0.31
	SSTL	1.0	1.0	1.0	1.0	5.0	5.0			
	> SSTL	0.0	0.0	0.0	0.0	0.0	0.0			

Table 2

**Historical Groundwater Analytical Results  
Highway 11 Grocery  
13527 South Carolina Highway 11  
Salem, Oconee County, South Carolina  
UST Permit Number: 03439  
SEI Project Number: 302168**

Well	Date	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Naphthalene	FP	Initial Mass	Current Mass
CK-1	05/07/02	N/A	N/A	N/A	N/A	N/A	N/A			0.00
	07/01/03	2.8	<5.0	<1.0	4.8	4.5	<5.0			11.90
	07/30/03	N/A	N/A	N/A	N/A	N/A	N/A			0.00
	12/18/03	11	18	4.1	20.0	9.0	<5.0			82.10
	09/29/04	16	30	6.1	32.0	22.0	<5.0			108.10
	03/17/05	10.4	17.5	4.1	20.8	12.3	<2.0			65.10
	08/09/05	7.8	17.6	2.9	15.8	6.9	<2.0			50.80
	11/01/05	20.3	33.2	8.8	48.8	27.3	<2.0			143.40
	03/22/06	6.6	12.9	3.2	15.2	7.8	<2.0			45.70
	08/28/06	13.1	29.0	6.7	27.8	16.7	<2.0			93.30
	11/05/06	13.9	22.3	6.7	34.3	17.8	<2.0			95.00
	02/07/07	7.9	16.4	4.0	21.1	9.8	<2.0			59.20
	05/03/07	10.8	20.4	5.2	26.2	13.2	<2.0			77.80
	08/21/07	40.4	62.8	19.3	108.0	53.2	3.2			286.90
	12/12/07	13.2	24.0	6.9	33.9	19.4	1.2			98.60
02/14/08	8.7	16.8	4.9	23.9	11.9	1.2			67.40	
RBSL	5.0	1,000	700	10,000	40	25				
CK-2	05/07/02	N/A	N/A	N/A	N/A	N/A	N/A			0.00
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	07/30/03	N/A	N/A	N/A	N/A	N/A	N/A			0.00
	12/18/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	08/09/05	NS	NS	NS	NS	NS	NS			0.00
	11/01/05	NS	NS	NS	NS	NS	NS			0.00
	03/22/06	NS	NS	NS	NS	NS	NS			0.00
	08/28/06	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	11/05/06	NS	NS	NS	NS	NS	NS			0.00
	02/07/07	NS	NS	NS	NS	NS	NS			0.00
	05/03/07	NS	NS	NS	NS	NS	NS			0.00
	08/21/07	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
12/12/07	NS	NS	NS	NS	NS	NS			0.00	
02/14/08	NS	NS	NS	NS	NS	NS			0.00	
RBSL	5.0	1,000	700	10,000	40	25				
CK-3	08/09/05	14.4	33.3	7.1	41.1	25.8	<2.0			121.70
	11/01/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	03/22/06	23.3	49.7	10.1	48.2	33.8	<2.0			165.10
	11/05/06	25.2	49.1	11.4	63.8	49.3	<2.0			188.80
	02/07/07	21.7	57.5	10.3	57.9	30.8	<2.0			178.20
	05/03/07	23.1	55.6	9.8	52.7	38.0	<2.0			179.20
	08/21/07	NS	NS	NS	NS	NS	NS			0.00
	12/12/07	4.5	8.8	2.2	11.7	60.2	0.6			77.99
	02/14/08	21.0	54.5	10.5	62.4	39.7	4.4			192.50
	RBSL	5.0	1,000	700	10,000	40	25			

Table 2

**Historical Groundwater Analytical Results  
Highway 11 Grocery  
13527 South Carolina Highway 11  
Salem, Oconee County, South Carolina  
UST Permit Number: 03439  
SEI Project Number: 302169**

Well	Date	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Naphthalene	FP	Initial Mass	Current Mass
WW-1	05/07/02	N/A	N/A	N/A	N/A	N/A	N/A			0.00
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	07/30/03	N/A	N/A	N/A	N/A	N/A	N/A			0.00
	12/18/03	N/A	N/A	N/A	N/A	N/A	N/A			0.00
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	08/09/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	11/01/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	03/22/06	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	08/28/06	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	11/05/06	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	02/07/07	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	05/03/07	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	08/21/07	NS	NS	NS	NS	NS	NS			0.00
	12/12/07	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
02/14/08	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00	
RBSL		5.0	1,000	700	10,000	40	25			
<b>TOTAL MASS</b>									<b>850,716</b>	
<b>TOTAL SSTL MASS</b>		3,881	57,303	33,705	339,605	10,645	2,452		<b>447,591</b>	
<b>INITIAL MASS ABOVE SSTL</b>									<b>12,046,007</b>	
<b>CURRENT MASS ABOVE SSTL</b>									<b>30,453</b>	
<b>PERCENT TOTAL MASS REDUCTION ABOVE SSTL</b>									<b>99.75</b>	

Reported in parts per billion (µg/l)  
 ND: Compound not detected  
 BDL: Below analytical Detection Limits  
 SSTL: Site Specific Treatment Level



**APPENDIX C**  
**Field Data Information Sheets for Groundwater Sampling**

## SEI Environmental SC Monitoring Well Gauging Data Sheet

Site Name:  Hwy 11 Grocery  WO#  302043

Date  2/14/08

Well ID	Total Depth (feet)	Well Dia. (in.)	Depth to Product (feet)	Product Thickness (feet)	Depth to Water (feet)	Notes
MW-7					29.64	
MW-6					20.77	
MW-70					20.72	
MW-4					23.89	
DMW-4					26.44	
DMW-1					26.18	
MW-2					27.53	
MW-5					30.60	
MW-3					26.21	
MW-1			25.69	0.03'	25.72	N.S
<del>DMW-2</del>					20.86	
MW-8			21.61	1.93'	23.54	N.S
MW-11					16.90	
MW-9					2.22	
MW-12					3.15	
MW-14					2.09	
Purging is only necessary if water table is not across the screening interval. (Usually DMW-1 only)						

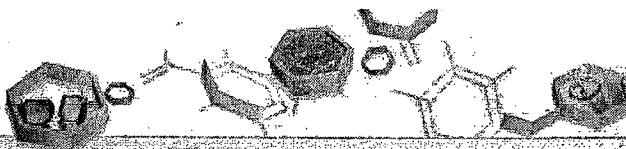
**Analysis: EPA Method 8260B for BTEX, MTBE, and Naphthalene**

2-inch diameter well: Well Volume = (water column) x (0.163 gallon/foot)

4-inch diameter well: Well Volume = (water column) x (0.652 gallon/foot)

Purge amount = Well Volume x 3

**APPENDIX D**  
**Laboratory Analytical Results and Chain-of-Custody**



IT'S ALL IN THE CHEMISTRY

02/21/08



**Technical Report for**

SEI-Columbia, SC

Hwy 11 Grocery; Salem, SC

302043

Accutest Job Number: F55712

Sampling Date: 02/14/08

Report to:

[dparker@sei-environmental.com](mailto:dparker@sei-environmental.com)

ATTN: Distribution6

Total number of pages in report: 33



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

*Harry Behzadi*  
Harry Behzadi, Ph.D.  
Laboratory Director

Client Service contact: Heather Wandrey 407-425-6700

Certifications: FL (DOH E83510), NC (573), NJ (FL002), MA (FL946), IA (366), LA (03051), KS (E-10327), SC, AK  
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Test results relate only to samples analyzed.

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## Sample Summary

SEI-Columbia, SC

Job No: F55712

Hwy 11 Grocery; Salem, SC  
Project No: 302043

Sample Number	Collected		Matrix Received	Code Type	Client Sample ID	
	Date	Time By				
F55712-1	02/14/08	13:05	HPRR 02/16/08	AQ	Ground Water	MW-7
F55712-2	02/14/08	13:11	HPRR 02/16/08	AQ	Ground Water	MW-6
F55712-3	02/14/08	13:18	HPRR 02/16/08	AQ	Ground Water	MW-10
F55712-4	02/14/08	13:24	HPRR 02/16/08	AQ	Ground Water	MW-4
F55712-5	02/14/08	13:40	HPRR 02/16/08	AQ	Ground Water	DMW-4
F55712-6	02/14/08	13:43	HPRR 02/16/08	AQ	Ground Water	DMW-1
F55712-7	02/14/08	13:56	HPRR 02/16/08	AQ	Ground Water	MW-2
F55712-8	02/14/08	14:03	HPRR 02/16/08	AQ	Ground Water	MW-5
F55712-9	02/14/08	14:08	HPRR 02/16/08	AQ	Ground Water	WSW-1
F55712-10	02/14/08	14:13	HPRR 02/16/08	AQ	Ground Water	MW-3
F55712-11	02/14/08	15:00	HPRR 02/16/08	AQ	Ground Water	DMW-2
F55712-12	02/14/08	15:15	HPRR 02/16/08	AQ	Ground Water	MW-11
F55712-13	02/14/08	15:32	HPRR 02/16/08	AQ	Ground Water	MW-9



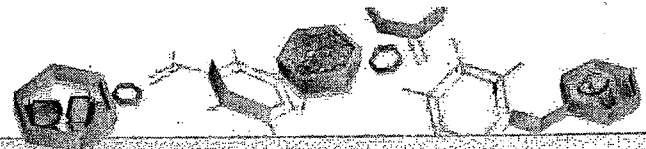
### Sample Summary (continued)

SEI-Columbia, SC

Job No: F55712

Hwy 11 Grocery; Salem, SC  
Project No: 302043

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
F55712-14	02/14/08	15:38	HPRR 02/16/08	AQ	Ground Water	MW-12
F55712-15	02/14/08	15:42	HPRR 02/16/08	AQ	Ground Water	CK-3
F55712-16	02/14/08	15:48	HPRR 02/16/08	AQ	Ground Water	CK-1
F55712-17	02/14/08	15:51	HPRR 02/16/08	AQ	Ground Water	MW-14



IT'S ALL IN THE CHEMISTRY

**Sample Results**

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**Report of Analysis**

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Report of Analysis

Client Sample ID:	MW-7	Date Sampled:	02/14/08
Lab Sample ID:	F55712-1	Date Received:	02/16/08
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	Hwy 11 Grocery; Salem, SC		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N0024580.D	1	02/19/08	MM	n/a	n/a	VN1044
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE, Naphthalene

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	58.8	1.0	0.20	ug/l	
108-88-3	Toluene	59.8	1.0	0.27	ug/l	
100-41-4	Ethylbenzene	3.0	1.0	0.20	ug/l	
1330-20-7	Xylene (total)	40.9	3.0	0.56	ug/l	
1634-04-4	Methyl Tert Butyl Ether	2.0	1.0	0.25	ug/l	
91-20-3	Naphthalene	ND	2.0	0.44	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	96%		87-116%
17060-07-0	1,2-Dichloroethane-D4	89%		76-127%
2037-26-5	Toluene-D8	98%		86-112%
460-00-4	4-Bromofluorobenzene	100%		84-120%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Page 1 of 1

Client Sample ID:	MW-6	Date Sampled:	02/14/08
Lab Sample ID:	F55712-2	Date Received:	02/16/08
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	Hwy 11 Grocery; Salem, SC		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M0025319.D	5	02/18/08	MM	n/a	n/a	VM1045
Run #2	N0024585.D	10	02/19/08	MM	n/a	n/a	VN1044

Run #	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

## Purgeable Aromatics, MTBE, Naphthalene

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	162	5.0	1.0	ug/l	
108-88-3	Toluene	750 <sup>a</sup>	10	2.7	ug/l	
100-41-4	Ethylbenzene	25.9	5.0	1.0	ug/l	
1330-20-7	Xylene (total)	575	15	2.8	ug/l	
1634-04-4	Methyl Tert Butyl Ether	10.7	5.0	1.3	ug/l	
91-20-3	Naphthalene	11.8	10	2.2	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%	98%	87-116%
17060-07-0	1,2-Dichloroethane-D4	99%	91%	76-127%
2037-26-5	Toluene-D8	98%	95%	86-112%
460-00-4	4-Bromofluorobenzene	98%	96%	84-120%

(a) Result is from Run# 2

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-10	Date Sampled:	02/14/08
Lab Sample ID:	F55712-3	Date Received:	02/16/08
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	Hwy 11 Grocery; Salem, SC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N0024586.D	5	02/19/08	MM	n/a	n/a	VN1044
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

## Purgeable Aromatics, MTBE, Naphthalene

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	401	5.0	1.0	ug/l	
108-88-3	Toluene	129	5.0	1.4	ug/l	
100-41-4	Ethylbenzene	167	5.0	1.0	ug/l	
1330-20-7	Xylene (total)	721	15	2.8	ug/l	
1634-04-4	Methyl Tert Butyl Ether	296	5.0	1.3	ug/l	
91-20-3	Naphthalene	45.7	10	2.2	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	95%		87-116%
17060-07-0	1,2-Dichloroethane-D4	87%		76-127%
2037-26-5	Toluene-D8	97%		86-112%
460-00-4	4-Bromofluorobenzene	98%		84-120%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-4	Date Sampled:	02/14/08
Lab Sample ID:	F55712-4	Date Received:	02/16/08
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	Hwy 11 Grocery; Salem, SC		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M0025302.D	1	02/18/08	MM	n/a	n/a	VM1045
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## Purgeable Aromatics, MTBE, Naphthalene

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.20	ug/l	
108-88-3	Toluene	ND	1.0	0.27	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.20	ug/l	
1330-20-7	Xylene (total)	ND	3.0	0.56	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.83	1.0	0.25	ug/l	J
91-20-3	Naphthalene	ND	2.0	0.44	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	106%		87-116%
17060-07-0	1,2-Dichloroethane-D4	107%		76-127%
2037-26-5	Toluene-D8	100%		86-112%
460-00-4	4-Bromofluorobenzene	103%		84-120%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

Report of Analysis

2.5  
2

Client Sample ID:	DMW-4	Date Sampled:	02/14/08
Lab Sample ID:	F55712-5	Date Received:	02/16/08
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	Hwy 11 Grocery; Salem, SC		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M0025303.D	1	02/18/08	MM	n/a	n/a	VM1045
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE, Naphthalene

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.20	ug/l	
108-88-3	Toluene	ND	1.0	0.27	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.20	ug/l	
1330-20-7	Xylene (total)	ND	3.0	0.56	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.25	ug/l	
91-20-3	Naphthalene	ND	2.0	0.44	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	107%		87-116%
17060-07-0	1,2-Dichloroethane-D4	105%		76-127%
2037-26-5	Toluene-D8	102%		86-112%
460-00-4	4-Bromofluorobenzene	102%		84-120%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: DMW-1	Date Sampled: 02/14/08
Lab Sample ID: F55712-6	Date Received: 02/16/08
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260B	
Project: Hwy 11 Grocery; Salem, SC	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M0025304.D	1	02/18/08	MM	n/a	n/a	VM1045
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE, Naphthalene

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.20	ug/l	
108-88-3	Toluene	ND	1.0	0.27	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.20	ug/l	
1330-20-7	Xylene (total)	ND	3.0	0.56	ug/l	
1634-04-4	Methyl Tert Butyl Ether	11.9	1.0	0.25	ug/l	
91-20-3	Naphthalene	ND	2.0	0.44	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	107%		87-116%
17060-07-0	1,2-Dichloroethane-D4	105%		76-127%
2037-26-5	Toluene-D8	101%		86-112%
460-00-4	4-Bromofluorobenzene	102%		84-120%

ND = Not detected    MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

Report of Analysis

2.7  
2

Client Sample ID:	MW-2	Date Sampled:	02/14/08
Lab Sample ID:	F55712-7	Date Received:	02/16/08
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	Hwy 11 Grocery; Salem, SC		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M0025305.D	1	02/18/08	MM	n/a	n/a	VM1045
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE, Naphthalene

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	3.6	1.0	0.20	ug/l	
108-88-3	Toluene	ND	1.0	0.27	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.20	ug/l	
1330-20-7	Xylene (total)	0.99	3.0	0.56	ug/l	J
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.25	ug/l	
91-20-3	Naphthalene	ND	2.0	0.44	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	105%		87-116%
17060-07-0	1,2-Dichloroethane-D4	102%		76-127%
2037-26-5	Toluene-D8	99%		86-112%
460-00-4	4-Bromofluorobenzene	101%		84-120%

ND = Not detected ; MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW-5	Date Sampled:	02/14/08
Lab Sample ID:	F55712-8	Date Received:	02/16/08
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	Hwy 11 Grocery; Salem, SC		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M0025306.D	1	02/18/08	MM	n/a	n/a	VM1045
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## Purgeable Aromatics, MTBE, Naphthalene

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.20	ug/l	
108-88-3	Toluene	ND	1.0	0.27	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.20	ug/l	
1330-20-7	Xylene (total)	ND	3.0	0.56	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.25	ug/l	
91-20-3	Naphthalene	ND	2.0	0.44	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	106%		87-116%
17060-07-0	1,2-Dichloroethane-D4	103%		76-127%
2037-26-5	Toluene-D8	100%		86-112%
460-00-4	4-Bromofluorobenzene	100%		84-120%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound



### Report of Analysis

<b>Client Sample ID:</b> WSW-1	
<b>Lab Sample ID:</b> F55712-9	<b>Date Sampled:</b> 02/14/08
<b>Matrix:</b> AQ - Ground Water	<b>Date Received:</b> 02/16/08
<b>Method:</b> SW846 8260B	<b>Percent Solids:</b> n/a
<b>Project:</b> Hwy 11 Grocery; Salem, SC	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M0025322.D	1	02/18/08	MM	n/a	n/a	VM1045
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE, Naphthalene

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.20	ug/l	
108-88-3	Toluene	ND	1.0	0.27	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.20	ug/l	
1330-20-7	Xylene (total)	ND	3.0	0.56	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.25	ug/l	
91-20-3	Naphthalene	ND	2.0	0.44	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	107%		87-116%
17060-07-0	1,2-Dichloroethane-D4	103%		76-127%
2037-26-5	Toluene-D8	101%		86-112%
460-00-4	4-Bromofluorobenzene	100%		84-120%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-3	Date Sampled: 02/14/08
Lab Sample ID: F55712-10	Date Received: 02/16/08
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260B	
Project: Hwy 11 Grocery; Salem, SC	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M0025307.D	1	02/18/08	MM	n/a	n/a	VM1045
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE, Naphthalene

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.20	ug/l	
108-88-3	Toluene	ND	1.0	0.27	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.20	ug/l	
1330-20-7	Xylene (total)	0.65	3.0	0.56	ug/l	J
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.25	ug/l	
91-20-3	Naphthalene	ND	2.0	0.44	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	107%		87-116%
17060-07-0	1,2-Dichloroethane-D4	103%		76-127%
2037-26-5	Toluene-D8	100%		86-112%
460-00-4	4-Bromofluorobenzene	100%		84-120%

ND = Not detected    MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

### Report of Analysis

<b>Client Sample ID:</b> DMW-2	<b>Date Sampled:</b> 02/14/08
<b>Lab Sample ID:</b> F55712-11	<b>Date Received:</b> 02/16/08
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260B	
<b>Project:</b> Hwy 11 Grocery; Salem, SC	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M0025308.D	1	02/18/08	MM	n/a	n/a	VM1045
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

**Purgeable Aromatics, MTBE, Naphthalene**

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.20	ug/l	
108-88-3	Toluene	0.36	1.0	0.27	ug/l	J
100-41-4	Ethylbenzene	ND	1.0	0.20	ug/l	
1330-20-7	Xylene (total)	ND	3.0	0.56	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.29	1.0	0.25	ug/l	J
91-20-3	Naphthalene	ND	2.0	0.44	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	106%		87-116%
17060-07-0	1,2-Dichloroethane-D4	101%		76-127%
2037-26-5	Toluene-D8	100%		86-112%
460-00-4	4-Bromofluorobenzene	100%		84-120%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

### Report of Analysis

Client Sample ID:	MW-11	Date Sampled:	02/14/08
Lab Sample ID:	F55712-12	Date Received:	02/16/08
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	Hwy 11 Grocery; Salem, SC		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N0024577.D	1	02/19/08	MM	n/a	n/a	VN1044
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

**Purgeable Aromatics, MTBE, Naphthalene**

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.20	ug/l	
108-88-3	Toluene	1.8	1.0	0.27	ug/l	
100-41-4	Ethylbenzene	1.4	1.0	0.20	ug/l	
1330-20-7	Xylene (total)	7.3	3.0	0.56	ug/l	
1634-04-4	Methyl Tert Butyl Ether	1.9	1.0	0.25	ug/l	
91-20-3	Naphthalene	1.0	2.0	0.44	ug/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		87-116%
17060-07-0	1,2-Dichloroethane-D4	91%		76-127%
2037-26-5	Toluene-D8	97%		86-112%
460-00-4	4-Bromofluorobenzene	99%		84-120%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-9	Date Sampled:	02/14/08
Lab Sample ID:	F55712-13	Date Received:	02/16/08
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	Hwy 11 Grocery; Salem, SC		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M0025310.D	1	02/18/08	MM	n/a	n/a	VM1045
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE, Naphthalene

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.20	ug/l	
108-88-3	Toluene	ND	1.0	0.27	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.20	ug/l	
1330-20-7	Xylene (total)	ND	3.0	0.56	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.25	ug/l	
91-20-3	Naphthalene	ND	2.0	0.44	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	106%		87-116%
17060-07-0	1,2-Dichloroethane-D4	100%		76-127%
2037-26-5	Toluene-D8	100%		86-112%
460-00-4	4-Bromofluorobenzene	100%		84-120%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range.

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-12	Date Sampled:	02/14/08
Lab Sample ID:	F55712-14	Date Received:	02/16/08
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	Hwy 11 Grocery; Salem, SC		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N0024578.D	1	02/19/08	MM	n/a	n/a	VN1044
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE, Naphthalene

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.20	ug/l	
108-88-3	Toluene	ND	1.0	0.27	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.20	ug/l	
1330-20-7	Xylene (total)	ND	3.0	0.56	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.25	ug/l	
91-20-3	Naphthalene	ND	2.0	0.44	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		87-116%
17060-07-0	1,2-Dichloroethane-D4	89%		76-127%
2037-26-5	Toluene-D8	96%		86-112%
460-00-4	4-Bromofluorobenzene	102%		84-120%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

### Report of Analysis

Client Sample ID: CK-3	Date Sampled: 02/14/08
Lab Sample ID: F55712-15	Date Received: 02/16/08
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260B	
Project: Hwy 11 Grocery; Salem, SC	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M0025321.D	1	02/18/08	MM	n/a	n/a	VM1045
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE, Naphthalene

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	21.0	1.0	0.20	ug/l	
108-88-3	Toluene	54.5	1.0	0.27	ug/l	
100-41-4	Ethylbenzene	10.5	1.0	0.20	ug/l	
1330-20-7	Xylene (total)	62.4	3.0	0.56	ug/l	
1634-04-4	Methyl Tert Butyl Ether	39.7	1.0	0.25	ug/l	
91-20-3	Naphthalene	4.4	2.0	0.44	ug/l	B

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	106%		87-116%
17060-07-0	1,2-Dichloroethane-D4	100%		76-127%
2037-26-5	Toluene-D8	99%		86-112%
460-00-4	4-Bromofluorobenzene	98%		84-120%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

### Report of Analysis

Client Sample ID:	CK-1	Date Sampled:	02/14/08
Lab Sample ID:	F55712-16	Date Received:	02/16/08
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	Hwy 11 Grocery; Salem, SC		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N0024579.D	1	02/19/08	MM	n/a	n/a	VN1044
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

**Purgeable Aromatics, MTBE, Naphthalene**

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	8.7	1.0	0.20	ug/l	
108-88-3	Toluene	16.8	1.0	0.27	ug/l	
100-41-4	Ethylbenzene	4.9	1.0	0.20	ug/l	
1330-20-7	Xylene (total)	23.9	3.0	0.56	ug/l	
1634-04-4	Methyl Tert Butyl Ether	11.9	1.0	0.25	ug/l	
91-20-3	Naphthalene	1.2	2.0	0.44	ug/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		87-116%
17060-07-0	1,2-Dichloroethane-D4	89%		76-127%
2037-26-5	Toluene-D8	97%		86-112%
460-00-4	4-Bromofluorobenzene	96%		84-120%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound



## Report of Analysis

Client Sample ID:	MW-14	Date Sampled:	02/14/08
Lab Sample ID:	F55712-17	Date Received:	02/16/08
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	Hwy 11 Grocery; Salem, SC		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M0025317.D	200	02/18/08	MM	n/a	n/a	VM1045
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## Purgeable Aromatics, MTBE, Naphthalene

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	3640	200	40	ug/l	
108-88-3	Toluene	14500	200	54	ug/l	
100-41-4	Ethylbenzene	2700	200	40	ug/l	
1330-20-7	Xylene (total)	14300	600	110	ug/l	
1634-04-4	Methyl Tert Butyl Ether	5500	200	50	ug/l	
91-20-3	Naphthalene	439	400	88	ug/l	B

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	104%		87-116%
17060-07-0	1,2-Dichloroethane-D4	100%		76-127%
2037-26-5	Toluene-D8	101%		86-112%
460-00-4	4-Bromofluorobenzene	97%		84-120%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound



## Misc. Forms

### Custody Documents and Other Forms

Includes the following where applicable:

- Certification Exceptions
- Chain of Custody



## Accutest Laboratories Southeast Chain of Custody

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Accutest JOB # **F55712** PAGE 1 OF 2

Client / Reporting Information		Project Information												Analytical Information	Matrix Codes				
Company Name <b>SEI ENVIRONMENTAL</b>		Project Name: <b>HWY 11 GROCERY</b>													DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge OL - Oil LIQ - Other Liquid AFS - AS SOL - Other Solid WP - Wipe LAB USE ONLY				
Address <b>5100 REAGAN DR.</b>		Street <b>SC Hwy 11</b>																	
City <b>CHARLOTTE</b> State <b>NC 28206</b>		City <b>SALEM</b> State <b>SC</b>																	
Project Contact <b>CHRIS BAGGS</b>		Project # <b>302043</b>																	
Phone # <b>704-596-8624</b>		Fax # <b>704-596-8605</b>																	
Sampler(s) Name(s) (Printed)		Client Purchase Order #																	
Accutest Sample #	Field ID / Point of Collection	COLLECTION		CONTAINER INFORMATION															
		DATE	TIME	SAMPLED BY	MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	
1	MW-7	2/14	1305	RR	GW	3													
2	MW-6		1311																
3	MW-10		1318																
4	MW-4		1324																
5	DMW-4		1340																
6	DMW-1		1343																
7	MW-2		1356																
8	MW-5		1403																
9	U/SW-1		1408																
10	MW-3		1413																
11	DMW-2		1500																
12	MW-11		1515																
TURNAROUND TIME (Business Days)		Data Deliverable Information														Comments / Remarks			
<input checked="" type="checkbox"/> 10 Days Standard <input type="checkbox"/> 7 Day RUSH <input type="checkbox"/> 5 Day RUSH <input type="checkbox"/> 3 Day EMERGENCY <input type="checkbox"/> 2 Day EMERGENCY <input type="checkbox"/> 1 Day EMERGENCY <input type="checkbox"/> OTHER		Approved By: / Rush Code		<input type="checkbox"/> COMMERCIAL "A" (RESULTS ONLY) <input type="checkbox"/> COMMERCIAL "B" (RESULTS PLUS QC) <input type="checkbox"/> REDT1 (EPA LEVEL 3) <input type="checkbox"/> FULT1 (EPA LEVEL 4) <input type="checkbox"/> EDD'S															
Emergency or Rush T/A Data Available VIA Email or Lablink																			
Sample Custody must be documented below each time samples change possession, including courier delivery.																			
Relinquished by Sampler:	Date Time:	Received By:	Relinquished by:	Date Time:	Received By:	Relinquished by:	Date Time:	Received By:	Relinquished by:	Date Time:	Received By:	Relinquished by:	Date Time:	Received By:	Relinquished by:	Date Time:	Received By:		
1 <i>HR</i>	2/15/08 1700	2	3	2-16-08	4	5			6			7			8		9		
Lab Use Only: Custody Seal in Place: Y N Temp Blank Provided: Y N Preserved where Applicable: Y N Total # of Coolers: Cooler Temperature (s) Celsius:																			

182-608 For BTEX  
MTBE & NAPTH.



**Accutest Laboratories Southeast**  
**Chain of Custody**

4405 Vineland Road, Suite C-15 Orlando, FL 32811  
 TEL: 407-425-6700 • FAX: 407-425-0707

Accutest JOB # **F55712** PAGE **2** OF **2**

<b>Client / Reporting Information</b>			<b>Project Information</b>		<b>Analytical Information</b>			<b>Matrix Codes</b>										
Company Name: <b>SEI ENVIRONMENTAL INC</b>			Project Name: <b>HWY11 GROCERY</b>		<div style="text-align: right; padding-right: 5px;"> <b>8260 B for BTEX MISE, NAPTH</b> </div>			DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge OL - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe										
Address: <b>5700 REAGAN DR. STE 5</b>			Street: <b>S.C. HWY 11</b>															
City: <b>CHARLOTTE NC 28206</b>			City: <b>SALEM</b> State: <b>SC</b>															
Project Contact: <b>CHARIS BOGGS</b>			Project #: <b>302043</b>															
Phone: <b>704-596-8624</b>			Fax #: <b>704-596-8605</b>															
Sampler(s) Name(s) (Printed)			Client Purchase Order #															
Accutest Sample #	Field ID / Point of Collection	COLLECTION		CONTAINER INFORMATION														LAB USE ONLY
		DATE	TIME	SAMPLED BY	MATRIX	TOTAL # OF BOTTLES	OTHER	WINE	BEER	BLOCH	BRD	BSDA	MONITORING	IN WATER	GLASS			
13	MW-9	8/14	1539	HR RGW	3													
14	MW-12		1538															
15	CK-3		1542															
16	CK-1		1548															
17	MW-14		1551															

<b>TURNAROUND TIME (Business Days)</b>		<b>Data Deliverable Information</b>		<b>Comments / Remarks</b>	
<input checked="checked" type="checkbox"/> 10 Days Standard <input type="checkbox"/> 7 Day RUSH <input type="checkbox"/> 5 Day RUSH <input type="checkbox"/> 3 Day EMERGENCY <input type="checkbox"/> 2 Day EMERGENCY <input type="checkbox"/> 1 Day EMERGENCY <input type="checkbox"/> OTHER		Approved By: / Rush Code _____		<input type="checkbox"/> COMMERCIAL "A" (RESULTS ONLY) <input type="checkbox"/> COMMERCIAL "B" (RESULTS PLUS QC) <input type="checkbox"/> REDT1 (EPA LEVEL 3) <input type="checkbox"/> FULT1 (EPA LEVEL 4) <input type="checkbox"/> EDD'S	
Emergency or Rush T/A Data Available VIA Email or Lablink					

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler: <b>APL</b>	Date Time: <b>8/15/08 17:00</b>	Received By: <b>FX</b>	Relinquished by: <b>FX</b>	Date Time: <b>8-16-08</b>	Received By: <b>4 Hogg Corol 09:00</b>
Relinquished by: <b>5</b>	Date Time: _____	Received By: _____	Relinquished by: _____	Date Time: _____	Received By: _____
Relinquished by: <b>6</b>	Date Time: _____	Received By: _____	Relinquished by: _____	Date Time: _____	Received By: _____
Relinquished by: <b>7</b>	Date Time: _____	Received By: _____	Relinquished by: _____	Date Time: _____	Received By: _____
Relinquished by: <b>8</b>	Date Time: _____	Received By: _____	Relinquished by: _____	Date Time: _____	Received By: _____

Lab Use Only: Custody Seal in Place: Y N Temp Blank Provided: Y N Preserved where Applicable: Y N Total # of Coolers: \_\_\_\_\_ Cooler Temperature (s) Celsius: \_\_\_\_\_

F55712: Chain of Custody  
 Page 2 of 3

**ACCUTEST LABORATORIES SAMPLE RECEIPT CONFIRMATION**

ACCUTEST'S JOB NUMBER: F55712 CLIENT: SEI PROJECT: HWY 11 GROCERY  
 DATE/TIME RECEIVED: 2-16-08 <sup>09:00</sup> # OF COOLERS RECEIVED: 1 COOLER TEMPS: 1.8  
 METHOD OF DELIVERY: FEDEX UPS ACCUTEST COURIER GREYHOUND DELIVERY OTHER  
 AIRBILL NUMBERS: 86004340 3673

**COOLER INFORMATION**

- CUSTODY SEAL NOT PRESENT OR NOT INTACT
- CHAIN OF CUSTODY NOT RECEIVED (COC)
- ANALYSIS REQUESTED IS UNCLEAR OR MISSING
- SAMPLE DATES OR TIMES UNCLEAR OR MISSING
- TEMPERATURE CRITERIA NOT MET
- WET ICE RECEIVED IN COOLER

**TRIP BLANK INFORMATION**

- TRIP BLANK PROVIDED
- TRIP BLANK NOT PROVIDED
- TRIP BLANK NOT ON COC
- TRIP BLANK INTACT
- TRIP BLANK NOT INTACT
- RECEIVED WATER TRIP BLANK
- RECEIVED SOIL TRIP BLANK

**MISC. INFORMATION**

NUMBER OF ENCORES ? 0  
 NUMBER OF 5035 FIELD KITS ? 0  
 NUMBER OF LAB FILTERED METALS ? 0

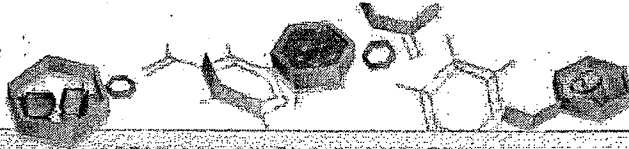
SUMMARY OF COMMENTS: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**SAMPLE INFORMATION**

- SAMPLE LABELS NOT PRESENT ON ALL BOTTLES
  - CORRECT NUMBER OF CONTAINERS USED
  - SAMPLE RECEIVED IMPROPERLY PRESERVED
  - INSUFFICIENT VOLUME FOR ANALYSIS
  - TIMES ON COC DOES NOT MATCH LABEL(S)
  - ID'S ON COC DOES NOT MATCH LABEL(S)
  - VOC VIALS HAVE HEADSPACE (MACRO BUBBLES)
  - BOTTLES RECEIVED BUT ANALYSIS NOT REQUESTED
  - NO BOTTLES RECEIVED FOR ANALYSIS REQUESTED
  - UNCLEAR FILTERING INSTRUCTIONS.
  - UNCLEAR COMPOSITING INSTRUCTIONS
  - SAMPLE CONTAINER(S) RECEIVED BROKEN
  - % SOLIDS JAR NOT RECEIVED
  - 5035 FIELD KIT NOT FROZEN WITHIN 48 HOURS
  - RESIDUAL CHLORINE PRESENT
- ( APPLICABLE TO EPA 600 SERIES OR NORTH CAROLINA ORGANICS )

TECHNICIAN SIGNATURE/DATE AP. 2-16-08 TECHNICIAN SIGNATURE/DATE E.T. 2-16-08 ASBD 12/17/07

31  
3



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### GC/MS Volatiles

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### QC Data Summaries

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**Includes the following where applicable:**

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

# Method Blank Summary

Job Number: F55712  
 Account: SEISCC SEI-Columbia, SC  
 Project: Hwy 11 Grocery; Salem, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VM1045-MB	M0025301.D1		02/18/08	MM	n/a	n/a	VM1045

The QC reported here applies to the following samples:

Method: SW846 8260B

F55712-2, F55712-4, F55712-5, F55712-6, F55712-7, F55712-8, F55712-9, F55712-10, F55712-11, F55712-13, F55712-15, F55712-17

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.20	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.20	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.25	ug/l	
91-20-3	Naphthalene	0.64	2.0	0.44	ug/l	J
108-88-3	Toluene	ND	1.0	0.27	ug/l	
1330-20-7	Xylene (total)	ND	3.0	0.56	ug/l	

CAS No.	Surrogate Recoveries	Result	Limits
1868-53-7	Dibromofluoromethane	107%	87-116%
17060-07-0	1,2-Dichloroethane-D4	109%	76-127%
2037-26-5	Toluene-D8	102%	86-112%
460-00-4	4-Bromofluorobenzene	106%	84-120%

# Method Blank Summary

Job Number: F55712  
Account: SEISCC SEI-Columbia, SC  
Project: Hwy 11 Grocery; Salem, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VN1044-MB	N0024576.D	1	02/19/08	MM	n/a	n/a	VN1044

4.1  
4

The QC reported here applies to the following samples:

Method: SW846 8260B

F55712-1, F55712-2, F55712-3, F55712-12, F55712-14, F55712-16

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.20	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.20	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.25	ug/l	
91-20-3	Naphthalene	ND	2.0	0.44	ug/l	
108-88-3	Toluene	ND	1.0	0.27	ug/l	
1330-20-7	Xylene (total)	ND	3.0	0.56	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	96%	87-116%
17060-07-0	1,2-Dichloroethane-D4	90%	76-127%
2037-26-5	Toluene-D8	99%	86-112%
460-00-4	4-Bromofluorobenzene	103%	84-120%



# Blank Spike Summary

Job Number: F55712  
 Account: SEISCC SEI-Columbia, SC  
 Project: Hwy 11 Grocery; Salem, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VM1045-BS	M0025300.D 1		02/18/08	MM	n/a	n/a	VM1045

The QC reported here applies to the following samples:

Method: SW846 8260B

F55712-2, F55712-4, F55712-5, F55712-6, F55712-7, F55712-8, F55712-9, F55712-10, F55712-11, F55712-13, F55712-15, F55712-17

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	25	24.2	97	83-124
100-41-4	Ethylbenzene	25	25.3	101	87-118
1634-04-4	Methyl Tert Butyl Ether	25	23.2	93	75-116
91-20-3	Naphthalene	25	22.8	91	59-125
108-88-3	Toluene	25	25.7	103	86-116
1330-20-7	Xylene (total)	75	77.3	103	86-120

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	104%	87-116%
17060-07-0	1,2-Dichloroethane-D4	109%	76-127%
2037-26-5	Toluene-D8	102%	86-112%
460-00-4	4-Bromofluorobenzene	103%	84-120%

4.2  
4

# Blank Spike Summary

Job Number: F55712  
Account: SEISCC SEI-Columbia, SC  
Project: Hwy 11 Grocery, Salem, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VN1044-BS	N0024575.D 1		02/19/08	MM	n/a	n/a	VN1044

The QC reported here applies to the following samples:

Method: SW846 8260B

F55712-1, F55712-2, F55712-3, F55712-12, F55712-14, F55712-16

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	25	26.3	105	83-124
100-41-4	Ethylbenzene	25	25.2	101	87-118
1634-04-4	Methyl Tert Butyl Ether	25	22.9	92	75-116
91-20-3	Naphthalene	25	24.5	98	59-125
108-88-3	Toluene	25	25.8	103	86-116
1330-20-7	Xylene (total)	75	74.5	99	86-120

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	95%	87-116%
17060-07-0	1,2-Dichloroethane-D4	91%	76-127%
2037-26-5	Toluene-D8	97%	86-112%
460-00-4	4-Bromofluorobenzene	98%	84-120%

# Matrix Spike/Matrix Spike Duplicate Summary

Job Number: F55712  
 Account: SEISCC SEI-Columbia, SC  
 Project: Hwy 11 Grocery; Salem, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
F55712-4MS	M0025311.D 1		02/18/08	MM	n/a	n/a	VM1045
F55712-4MSD	M0025312.D 1		02/18/08	MM	n/a	n/a	VM1045
F55712-4	M0025302.D 1		02/18/08	MM	n/a	n/a	VM1045

The QC reported here applies to the following samples:

Method: SW846 8260B

F55712-2, F55712-4, F55712-5, F55712-6, F55712-7, F55712-8, F55712-9, F55712-10, F55712-11, F55712-13, F55712-15, F55712-17

CAS No.	Compound	F55712-4 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND	25	23.4	94	22.6	90	3	83-124/11
100-41-4	Ethylbenzene	ND	25	23.4	94	23.0	92	2	87-118/10
1634-04-4	Methyl Tert Butyl Ether	0.83	J 25	21.3	82	21.5	83	1	75-116/10
91-20-3	Naphthalene	ND	25	20.7	83	21.7	87	5	59-125/15
108-88-3	Toluene	ND	25	23.9	96	23.6	94	1	86-116/10
1330-20-7	Xylene (total)	ND	75	70.1	93	69.1	92	1	86-120/10

CAS No.	Surrogate Recoveries	MS	MSD	F55712-4	Limits
1868-53-7	Dibromofluoromethane	103%	102%	106%	87-116%
17060-07-0	1,2-Dichloroethane-D4	102%	103%	107%	76-127%
2037-26-5	Toluene-D8	99%	99%	100%	86-112%
460-00-4	4-Bromofluorobenzene	96%	97%	103%	84-120%

# Matrix Spike/Matrix Spike Duplicate Summary

Job Number: F55712  
 Account: SEISCC SEI-Columbia, SC  
 Project: Hwy 11 Grocery; Salem, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
F55712-12MS	N0024587.D	1	02/19/08	MM	n/a	n/a	VN1044
F55712-12MSD	N0024588.D	1	02/19/08	MM	n/a	n/a	VN1044
F55712-12	N0024577.D	1	02/19/08	MM	n/a	n/a	VN1044

The QC reported here applies to the following samples:

Method: SW846 8260B

F55712-1, F55712-2, F55712-3, F55712-12, F55712-14, F55712-16

CAS No.	Compound	F55712-12 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND	25	26.7	107	25.7	103	4	83-124/11
100-41-4	Ethylbenzene	1.4	25	26.5	100	26.2	99	1	87-118/10
1634-04-4	Methyl Tert Butyl Ether	1.9	25	23.1	85	23.8	88	3	75-116/10
91-20-3	Naphthalene	1.0	25	25.9	100	25.5	98	2	59-125/15
108-88-3	Toluene	1.8	25	27.9	104	27.3	102	2	86-116/10
1330-20-7	Xylene (total)	7.3	75	83.2	101	81.0	98	3	86-120/10

CAS No.	Surrogate Recoveries	MS	MSD	F55712-12	Limits
1868-53-7	Dibromofluoromethane	95%	96%	99%	87-116%
17060-07-0	1,2-Dichloroethane-D4	89%	89%	91%	76-127%
2037-26-5	Toluene-D8	97%	99%	97%	86-112%
460-00-4	4-Bromofluorobenzene	97%	97%	99%	84-120%



130 Penmarc Drive, Suite 108  
Raleigh, NC 27603  
919.832.2535  
Fax 919.832.5914

**RECEIVED**

MAR 02 2007

**UNDERGROUND STORAGE  
TANK PROGRAM**

February 28, 2007

Mr. Joel P. Padgett, P.G., Hydrogeologist  
South Carolina Department of Health and Environmental Control  
Assessment & Corrective Action Section, Underground Storage Tank Program  
2600 Bull Street  
Columbia, South Carolina 29201

**RE: Corrective Action System Evaluation Report  
Highway 11 Grocery  
13527 North SC Highway 11  
Salem, Oconee County, South Carolina  
UST Permit Number: 03439  
SEI Project Number: 302169**

44-TECH

Dear Mr. Padgett:

Please find enclosed the quarterly Corrective Action System Evaluation (C.A.S.E) Report for the February 7, 2007 groundwater sampling event at the above referenced site. If you have any questions or comments, please contact me at (919) 832-2535.

Sincerely,  
SEI Environmental, Inc.

Chris L. Boggs, P.G.  
Project Manager

cc: Mr. John Smith, Highway 11 Grocery

**CORRECTIVE ACTION SYSTEM EVALUATION REPORT**

**November 2006 through February 2007**

**RECEIVED**

**MAR 02 2007**

**Highway 11 Grocery  
13527 North SC Highway 11  
Salem, South Carolina  
Oconee County  
UST Permit Number: 03439  
SEI Project Number: 302169**

**UNDERGROUND STORAGE  
TANK PROGRAM**

**PREPARED FOR:**

**Mr. Steve Smith  
Highway 11 Grocery  
13527 North SC Highway 11  
Salem, South Carolina 29676-9801**

**PREPARED BY:**

**SEI ENVIRONMENTAL, INC.  
130 Penmarc Drive, Suite 108  
Raleigh, North Carolina  
UST Site Rehabilitation Contractor No. 354**

**February 28, 2007**

# CORRECTIVE ACTION SYSTEM EVALUATION REPORT

Submittal Date: February 28, 2007  
For Period Covering: November 5, 2006  
Facility Name : Highway 11 Grocery  
UST Permit Number: 03439  
County: Oconee  
Latitude: N 35°54'26.02"

Monitoring Report Number: \_\_\_\_\_  
to February 7, 2007  
Street Address: 13527 North SC Highway 11  
City: Salem, South Carolina  
Zip Code: 27603  
Longitude: W 82°58'31.29"

Submitted by UST Owner/Operator:

Prepared by Consultant/Contractor:

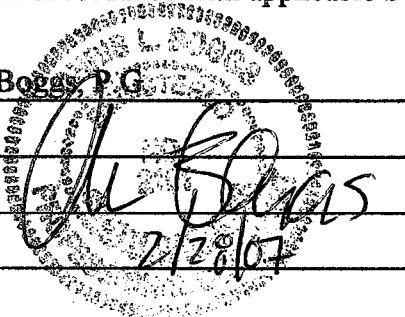
Name: Steve Smith  
Company: Highway 11 Grocery  
Address: 13527 North Highway 11  
City: Salem State: SC  
Zip Code: 29676-9801  
Telephone: (864) 944-0494  
SEI Project Number: 302169

Name: Chris L. Boggs  
Company: SEI Environmental, Inc.  
Address: 130Penmarc Drive Suite 108  
City: Raleigh State: NC  
Zip Code: 27603  
Telephone: (919) 832-2535  
UST Site Rehabilitation Contractor No. 354

## Registered Professional Engineer or Professional Geologist Certification

I hereby certify that I have directed and supervised the fieldwork and preparation of this Plan, in accordance with State Rules and Regulations. As a registered professional geologist and/or professional engineer, I certify that I am a qualified groundwater professional, as defined by the South Carolina State Board of Professional Geologists. All of the information and laboratory data in this plan and in all of the attachments are true, accurate, complete, and in accordance with applicable State Rules and Regulations.

Name: Chris L. Boggs, P.G.  
SC Reg. No. 2101  
Signature: \_\_\_\_\_  
Date: 2/28/07



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3.0 LABORATORY ANALYTICAL RESULTS .....	3
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3.2 SURFACE WATER ANALYTICAL RESULTS.....	4
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APPENDIX D	Laboratory Reports and Chain-of-Custody Forms



## LIMITATIONS

This investigation is intended to be a non-biased assessment of on-site environmental conditions proximate to the location of the former UST system. Subsurface investigative methodologies are in accordance with all applicable state and federal regulatory requirements. The information presented in this report is based upon site-specific observations, generally accepted geological practices, and analytical results for environmental samples collected at the time of the field investigation. All data is believed to represent subsurface conditions at the facility, however, data may not be completely representative of all subsurface conditions.

This report has been prepared under the guidance of a Licensed Geologist registered in South Carolina to meet the requirements of the South Carolina Department of Health and Environmental Control. The information and conclusions expressed in this report are based upon normal standards of the profession and limited to information available at this time. Chemical analyses of the samples associated with this report were performed by a subcontracted, independent, and certified laboratory. All data have been reviewed for accuracy and, excepting obvious errors, have been accepted as correct. SEI Environmental, Inc. reserves the right to revise estimates of performances as required by changes in the data supplied by Accutest Laboratories.

## **1.0 INTRODUCTION**

The Highway 11 Grocery is a convenience and retail fuel store located at 13527 North SC Highway 11 in Salem, Oconee County, South Carolina. Figure 1 in Appendix A is a portion of the United States Geological Survey (USGS) 7.5-minute topographical quadrangle map identifying the location of the site.

The following is a brief summary of recent events occurring at the site:

- December 18, 2003 – Groundwater Sampling Event
- March 31, 2004 – Groundwater Sampling Event
- September 29, 2004 – Groundwater Sampling Event
- January 11, 2005 – EFR performed on MW-8
- March 17, 2005 – EFR performed on MW-8
- March 17, 2005 – Groundwater Sampling Event
- August 9, 2005 – Groundwater Sampling Event
- November 1, 2005 – Groundwater Sampling Event
- March 22, 2006 – Groundwater Sampling Event
- August 28, 2006 – Groundwater Sampling Event
- November 5, 2006 – Groundwater Sampling Event
- February 7, 2007 – Groundwater Sampling Event

On February 7, 2007, in accordance with the requirements of the PFP contract, samples were collected from thirteen groundwater monitoring wells, one water supply well and two surface locations. This report provides details of the groundwater sampling event.

## **2.0 FIELD MEASUREMENTS AND SAMPLING**

### **2.1 Groundwater Sampling**

On February 7, 2007, groundwater samples were collected from thirteen groundwater monitoring wells. Monitoring wells MW-1 and MW-8 was not sampled due to the presence of free product. Prior to sampling, groundwater depth was gauged in the monitoring wells utilizing an oil-water interface probe to measure depth to groundwater, and to detect any phase

separated hydrocarbons (PSH) present. The depth to groundwater measurement is used to calculate the groundwater elevation used in determining the current groundwater potentiometric surface, along with hydraulic gradient, and groundwater flow direction.

Figure 3 in Appendix A presents a groundwater potentiometric map for the current sampling event. The latest groundwater data indicate that groundwater flow at the site is to the northeast with a hydraulic gradient of 0.035 feet per foot between monitoring wells MW-3 and MW-12. This flow direction is consistent with previous determinations of groundwater movement. Table 1 in Appendix B summarizes groundwater measurement data. Appendix C includes field observation data.

Representative groundwater samples were collected utilizing new, disposable bailers. Samples were placed in laboratory supplied containers, maintained at 4° Celsius, and shipped via FedEx under chain-of-custody to AccuTest, Inc. Laboratories in Orlando, Florida. The groundwater samples were analyzed by EPA Method 8260B for benzene, toluene, ethylbenzene, xylenes (BTEX), methyl-tert-butyl-ether (MTBE), and naphthalene.

## **2.2 Surface Water Sampling**

On February 7, 2007, two (CK-1 and CK-3) surface water samples were collected from adjacent creeks. CK-2 location is no longer sampled per the March 17, 2005, sampling event report. CK-3 replaced CK-2 to monitor for potential contamination from monitoring well MW-14. Representative samples were collected utilizing new, disposable bailers. Samples were placed in laboratory supplied containers, maintained at 4° Celsius, and shipped via FedEx under chain-of-custody to AccuTest, Inc. Laboratories in Orlando, Florida. The groundwater samples were analyzed by EPA Method 8260B for benzene, toluene, ethylbenzene, xylenes (BTEX), methyl-tert-butyl-ether (MTBE), and naphthalene.

## **2.3 Water Supply Well Sampling**

On February 7, 2007, the onsite water supply well (WW-1) was sampled. The sample was collected from a spigot nearest the water supply well. Prior to sampling, the spigot was

allowed to run for at least ten minutes. The sample was placed in a laboratory supplied container, maintained at 4° Celsius, and shipped via FedEx under chain-of-custody to AccuTest, Inc. Laboratories in Orlando, Florida. The groundwater sample was analyzed by EPA Method 8260B for benzene, toluene, ethylbenzene, xylenes (BTEX), methyl-tert-butyl-ether (MTBE), and naphthalene.

### **3.0 LABORATORY ANALYTICAL RESULTS**

#### **3.1 Groundwater Analytical Results**

SSTLs have been designated for fourteen (MW-1 through MW-8, MW-10, MW-11, MW-14, DMW-1, DMW-2, and DMW-4).

CoCs were detected in four (MW-6, MW-7, MW-10, and MW-11) at concentrations above their respective Site Specific Target Level (SSTL). Figure 4 in Appendix A is a site map presenting monitoring well location and their CoC concentrations. Table 2 in Appendix B summarizes historical groundwater analytical results. A copy of the laboratory report and completed chain-of-custody form is included in Appendix C.

#### **3.2 Surface Water Analytical Results**

Benzene was detected in surface water sample CK-1 at a concentration of 7.9 µg/L and in sample CK-3 at a concentration of 21.7 µg/L.

#### **3.3 Water Supply Well Analytical Results**

CoCs were not detected in water supply well sample WW-1 at concentrations above laboratory detection limits.

### **4.0 REMEDIATION SYSTEM EFFECTIVENESS**

In awarding the Pay-For-Performance (PFP) site remediation contract, the South Carolina Department of Health and Environmental Control (SCDHEC) set remediation goals for this site via site specific target levels (SSTLs). The monitoring wells have individual target

concentrations for five (benzene, toluene, ethylbenzene, xylenes, MTBE and naphthalene) identified chemicals of concern (CoC).

Remediation system effectiveness can be calculated comparing the initial May 7, 2002, CoC concentrations that exceeded the SSTLs with the current CoC concentrations that exceeded the SSTLs. For monitoring wells MW-1 and MW-8, the standard values for free product (benzene, 44,390 µg/L; toluene, 26,540 µg/L; ethylbenzene, 3,700 µg/L; xylenes, 21,680 µg/L; MTBE, 173,000 µg/L; and naphthalene 637,000 µg/L) were used in the percent reduction calculation. The formula is as follows:

$$\left[ \frac{[08/29/96 \text{ Sample Concentration Above SSTL}] - [\text{Current Sample Concentration Above SSTL}]}{[08/29/96 \text{ Sample Concentration Above SSTL}]} \right] * 100 = \% \text{ Reduction}$$

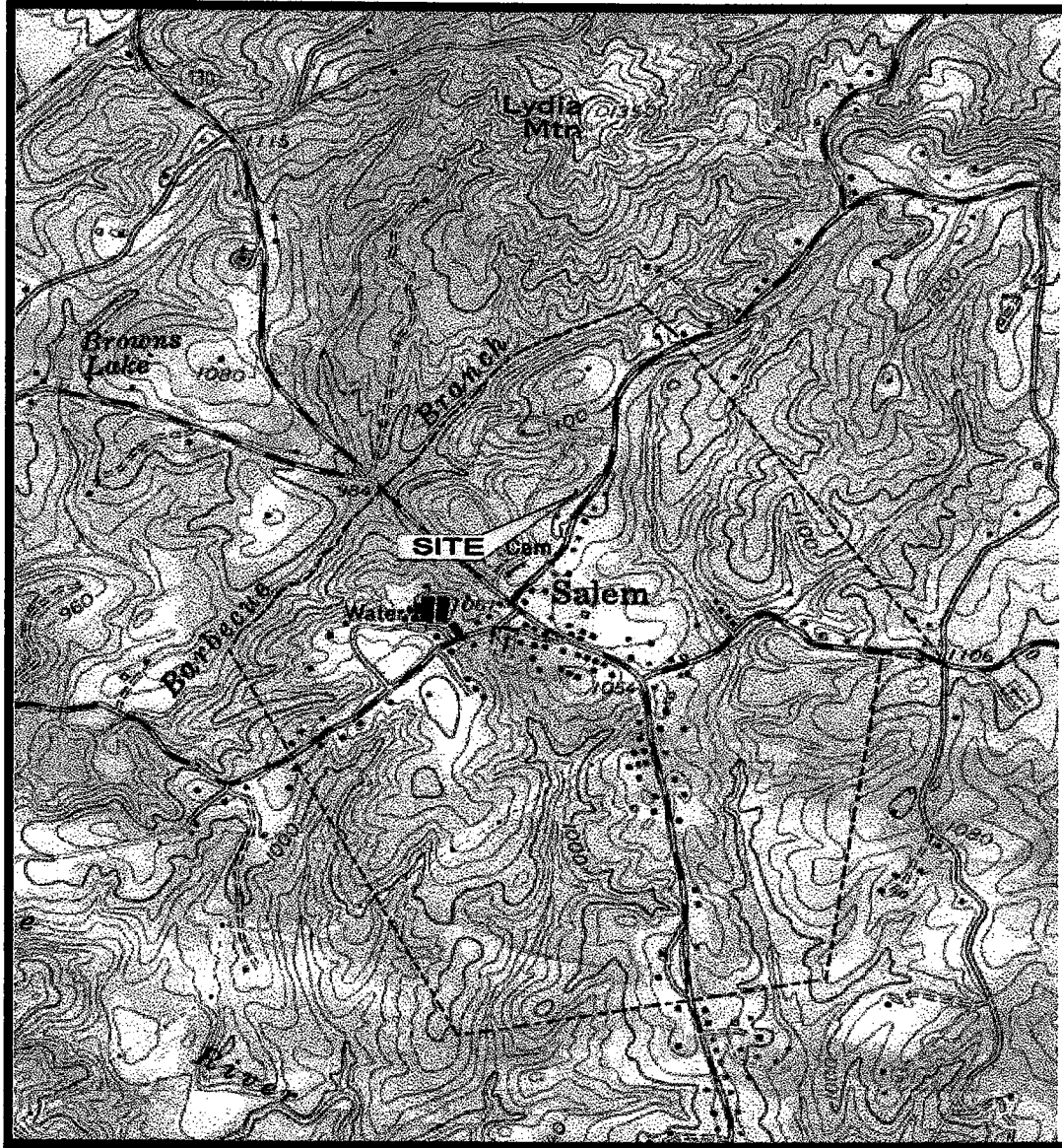
Using the current analytical results, the percent concentration reduction is 85.19%. Table 2 in Appendix B presents concentration reduction calculations.

## 5.0 CONCLUSIONS

The groundwater flow direction at the time of the February 7, 2007 sampling event was towards the northeast with a hydraulic gradient of 0.035 feet per foot. Free product was present in monitoring wells MW-1 and MW-8. CoC were detected in four monitoring wells above their respective SSTLs. Benzene was detected in two surface water samples at a concentration above the RBSL. No CoC were detected in the water supply well sample above laboratory detection limits. The percent concentration reduction was calculated at 85.57%.

SEI Environmental, Inc recommends continuing the quarterly monitoring to evaluate the continued reduction of chemicals of concern in the monitoring wells on site. The next sampling event will occur in May 2007.

**APPENDIX A**  
**FIGURES**



SCALE 1:24000



SALEM QUADRANGLE  
 SOUTH CAROLINA-OCONEE CO.  
 7.5 MINUTE SERIES (TOPOGRAPHIC-BATHYMETRIC)  
 BY U.S. GEOLOGICAL SURVEY

**SEI Environmental, Inc.**

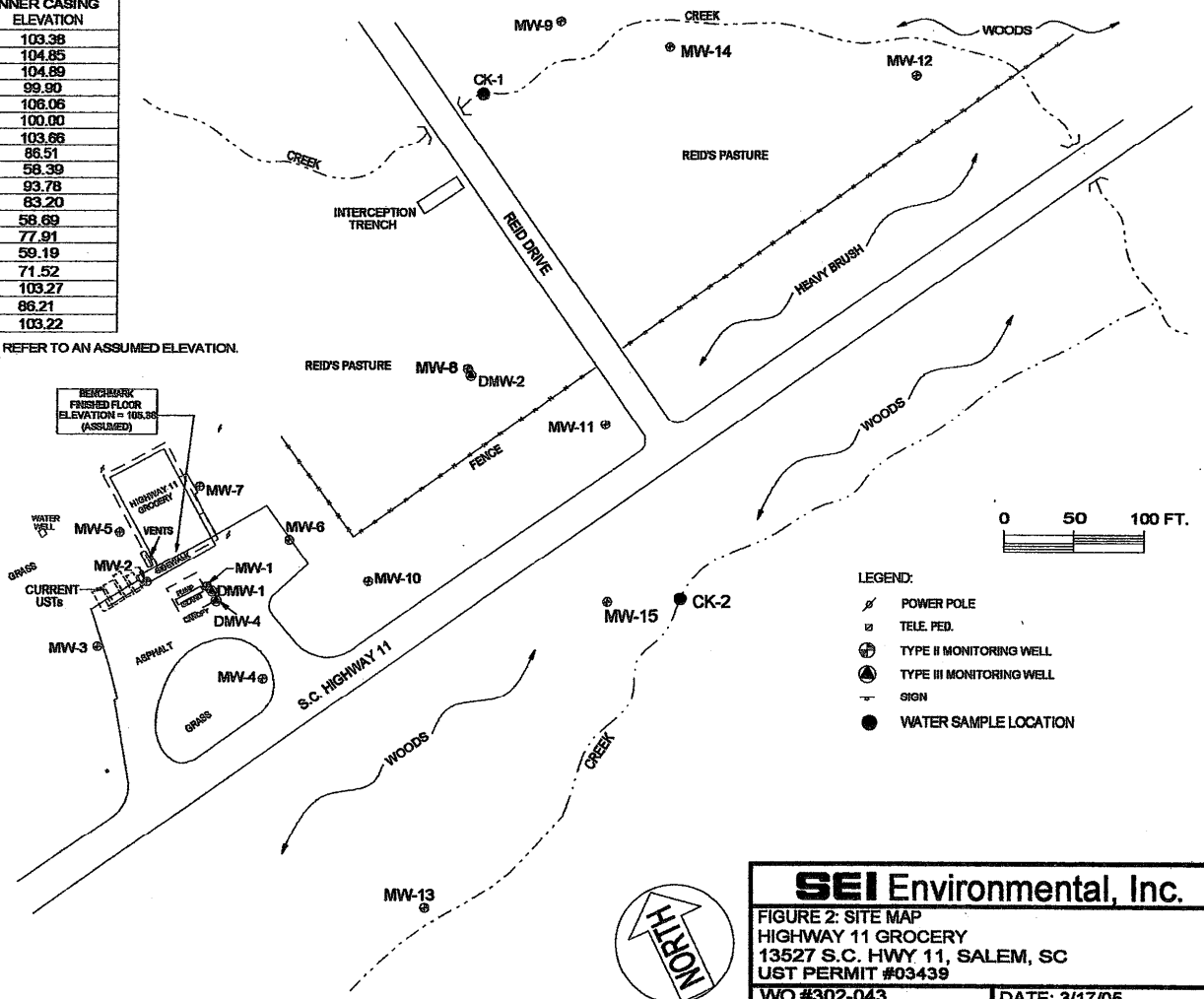
FIGURE 1: SITE LOCATION MAP  
 HIGHWAY 11 GROCER  
 13527 Highway 11, Salem, SC  
 FACILITY I.D. #03439

WO # 302169  
 DWG # Hw 11\_topo\_sitemap

DATE: 9/16/05  
 DRAWN BY: HWH

WELL #	INNER CASING ELEVATION
MW-1	103.38
MW-2	104.85
MW-3	104.89
MW-4	99.90
MW-5	106.06
MW-6	100.00
MW-7	103.66
MW-8	86.51
MW-9	58.39
MW-10	93.78
MW-11	83.20
MW-12	58.69
MW-13	77.91
MW-14	59.19
MW-15	71.52
DMW-1	103.27
DMW-2	86.21
DMW-4	103.22

NOTE: ELEVATIONS REFER TO AN ASSUMED ELEVATION.

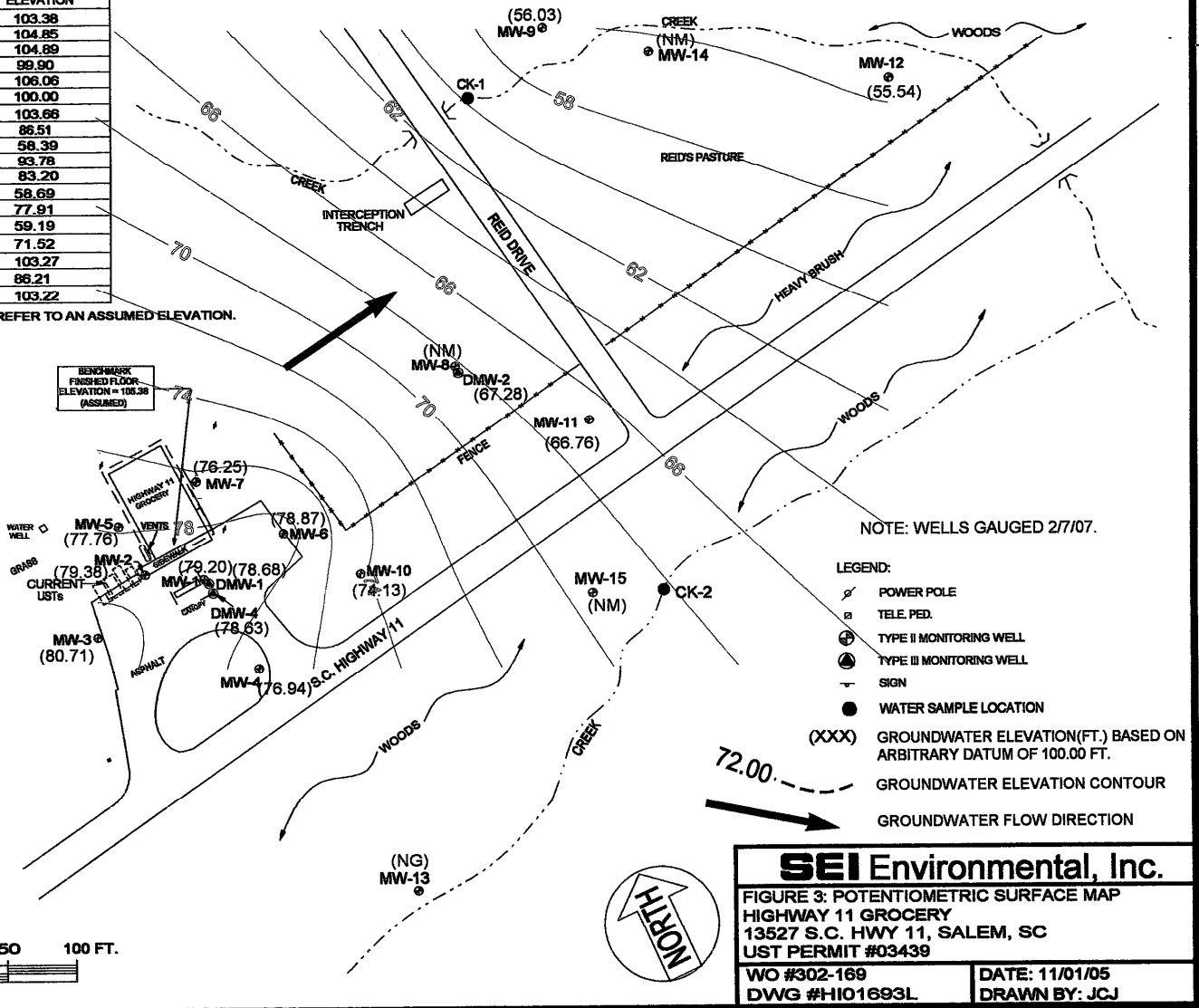


**SEI Environmental, Inc.**  
 FIGURE 2: SITE MAP  
 HIGHWAY 11 GROCERY  
 13527 S.C. HWY 11, SALEM, SC  
 UST PERMIT #03439  
 WO #302-043      DATE: 3/17/05  
 DWG #HI01692G      DRAWN BY: JCJ



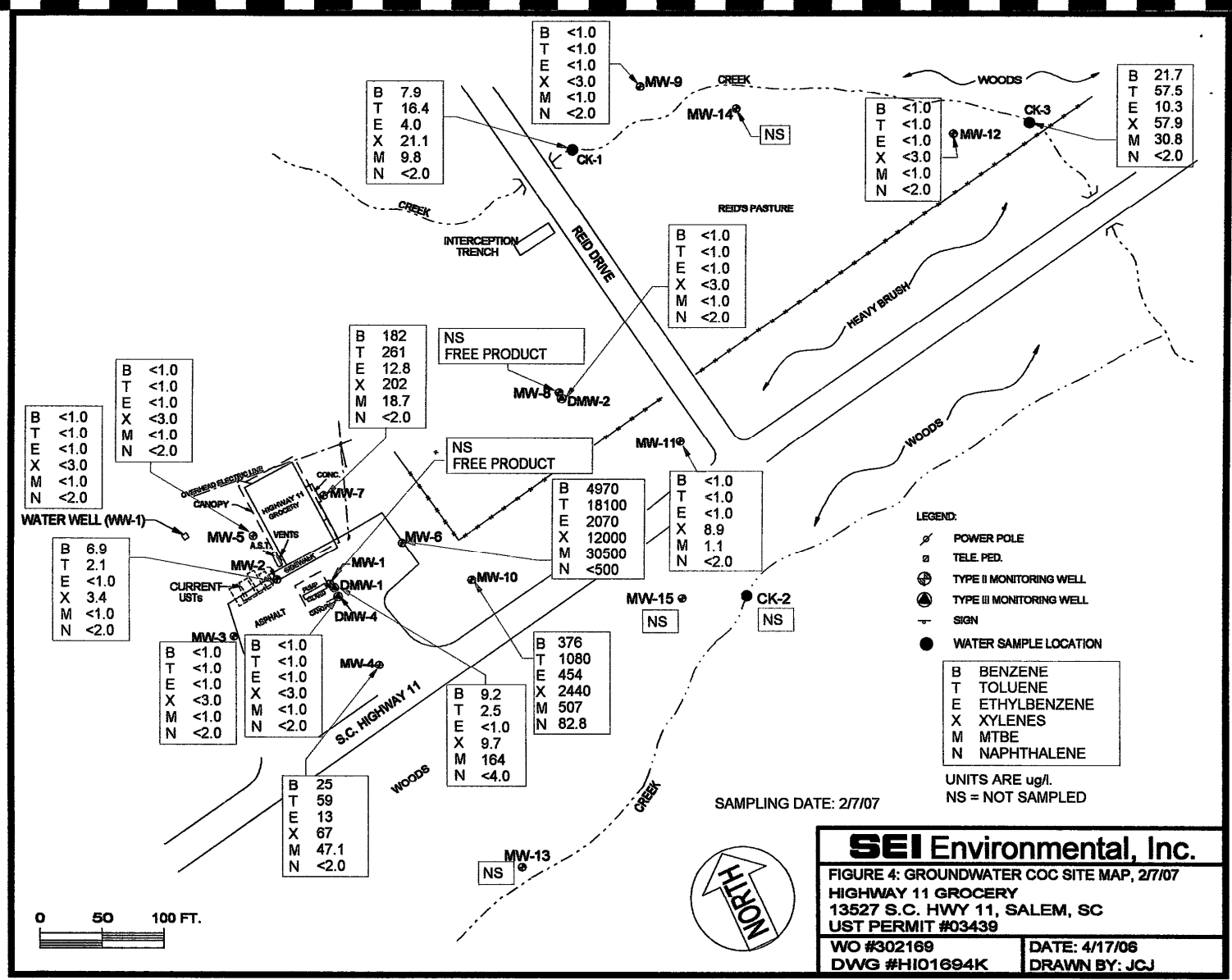
WELL #	INNER CASING ELEVATION
MW-1	103.38
MW-2	104.85
MW-3	104.89
MW-4	99.90
MW-5	106.06
MW-6	100.00
MW-7	103.66
MW-8	86.51
MW-9	58.39
MW-10	93.78
MW-11	83.20
MW-12	58.69
MW-13	77.91
MW-14	59.19
MW-15	71.52
DMW-1	103.27
DMW-2	86.21
DMW-4	103.22

NOTE: ELEVATIONS REFER TO AN ASSUMED ELEVATION.



**SEI Environmental, Inc.**  
 FIGURE 3: POTENTIOMETRIC SURFACE MAP  
 HIGHWAY 11 GROCERY  
 13527 S.C. HWY 11, SALEM, SC  
 UST PERMIT #03439

WO #302-169	DATE: 11/01/05
DWG #HI01693L	DRAWN BY: JCJ



B	7.9
T	16.4
E	4.0
X	21.1
M	9.8
N	<2.0

B	<1.0
T	<1.0
E	<1.0
X	<3.0
M	<1.0
N	<2.0

B	<1.0
T	<1.0
E	<1.0
X	<3.0
M	<1.0
N	<2.0

B	21.7
T	57.5
E	10.3
X	57.9
M	30.8
N	<2.0

B	<1.0
T	<1.0
E	<1.0
X	<3.0
M	<1.0
N	<2.0

B	182
T	261
E	12.8
X	202
M	18.7
N	<2.0

B	<1.0
T	<1.0
E	<1.0
X	<3.0
M	<1.0
N	<2.0

B	<1.0
T	<1.0
E	<1.0
X	<3.0
M	<1.0
N	<2.0

B	6.9
T	2.1
E	<1.0
X	3.4
M	<1.0
N	<2.0

B	<1.0
T	<1.0
E	<1.0
X	<3.0
M	<1.0
N	<2.0

B	<1.0
T	<1.0
E	<1.0
X	<3.0
M	<1.0
N	<2.0

B	9.2
T	2.5
E	<1.0
X	9.7
M	164
N	<4.0

B	376
T	1080
E	454
X	2440
M	507
N	82.8

B	<1.0
T	<1.0
E	<1.0
X	8.9
M	1.1
N	<2.0

B	25
T	59
E	13
X	67
M	47.1
N	<2.0



**APPENDIX B**  
**TABLES**

Table 1

Historical Groundwater Elevation And Product Thickness Data  
 Highway 11 Grocery  
 13827 South Carolina Highway 11  
 Salem, Oconee County, South Carolina  
 UST Permit Number: 03439  
 SEI Project Number: 302169

Location	Date	Depth To Water	Depth To Product	Product Thickness	Well Head Elevation	Groundwater Elevation
MW-1	05/08/02	24.67	24.71	0.04	103.38	78.74
	07/01/03	23.28	23.52	0.24		80.29
	07/30/03	22.89	22.97	0.08		80.55
	09/15/03	23.78	23.82	0.04		79.63
	10/02/03	24.32	24.45	0.13		79.16
	10/23/03	24.72	24.83	0.21		78.82
	12/18/03	24.06				79.32
	03/31/04	24.61				78.77
	09/29/04	24.20				79.18
	01/11/05	23.77				79.81
	03/17/05	23.97				79.41
	08/09/05	22.86				80.52
	11/01/05	25.20	25.13	0.07		78.23
	03/22/06	23.91				79.47
	08/28/06	27.17	26.64	0.53		76.62
	11/05/06	26.08	25.55	0.53		77.71
	02/07/07	24.30	24.14	0.16		79.20
MW-2	05/08/02	26.08			104.86	78.77
	07/01/03	24.08				80.77
	07/30/03	23.78				81.07
	09/15/03	24.73				80.12
	10/02/03	25.56				79.29
	10/23/03	25.71				79.14
	12/18/03	25.38				79.47
	03/31/04	25.85				79.00
	09/29/04	25.55				79.30
	01/11/05	24.74				80.11
	03/17/05	25.10				79.75
	08/09/05	23.70				81.15
	11/01/05	26.29				78.56
	03/22/06	25.94				78.91
	08/28/06	28.33				76.82
	11/05/06	27.39				77.46
	02/07/07	25.47				79.38
MW-3	05/08/02	24.78			104.86	80.08
	07/01/03	22.51				82.35
	07/30/03	22.21				82.65
	09/15/03	23.23				81.63
	10/02/03	23.87				80.99
	10/23/03	24.23				80.63
	12/18/03	23.83				80.93
	03/31/04	24.44				80.42
	09/29/04	24.20				80.66
	01/11/05	23.36				81.50
	03/17/05	23.65				81.21
	08/09/05	22.11				82.75
	11/01/05	24.85				80.01
	03/22/06	24.67				80.29
	08/28/06	26.95				77.91
	11/05/06	26.05				78.81
	02/07/07	24.15				80.71
MW-4	05/08/02	23.38			89.90	76.62
	07/01/03	22.10				77.80
	07/30/03	22.99				77.81
	09/15/03	22.90				77.00
	10/02/03	23.32				76.58
	10/23/03	23.69				76.21
	12/18/03	22.95				76.95
	03/31/04	23.49				76.41
	09/29/04	23.14				76.76
	01/11/05	22.70				77.20
	03/17/05	22.84				77.05
	08/09/05	26.40				73.60
	11/01/05	27.27				72.63
	03/22/06	23.42				76.48
	08/28/06	25.39				74.51
	11/05/06	24.11				75.79
	02/07/07	22.86				76.94

**Historical Groundwater Elevation And Product Thickness Data**  
**Highway 11 Grocery**  
**13827 South Carolina Highway 11**  
**Salem, Oconee County, South Carolina**  
**UST Permit Number: 03438**  
**SEI Project Number: 302168**

Location	Date	Depth To Water	Depth To Product	Product Thickness	Well Head Elevation	Groundwater Elevation
MW-5	05/08/02	28.82			106.06	77.24
	07/01/03	28.82				79.24
	07/30/03	28.53				79.53
	09/16/03	27.40				78.66
	10/02/03	27.92				78.14
	10/23/03	28.40				77.66
	12/18/03	28.40				77.66
	03/31/04	28.56				77.60
	09/29/04	28.46				77.60
	01/11/05	27.41				78.65
	03/17/05	27.86				78.20
	08/09/05	20.02				86.04
	11/01/05	28.91				77.15
	03/22/06	28.59				77.47
	08/28/06	31.06				76.00
11/05/06	30.40			75.66		
02/07/07	28.30			77.76		
MW-6	05/08/02	21.66			100.00	78.34
	07/01/03	19.77				80.23
	07/30/03	19.88				80.12
	09/16/03	20.63				79.37
	10/02/03	21.34				78.66
	10/23/03	21.74				78.26
	12/18/03	21.00				79.00
	03/31/04	21.71				78.29
	09/29/04	21.33				78.67
	01/11/05	20.81				79.19
	03/17/05	20.10				79.90
	08/09/05	26.18				73.82
	11/01/05	22.41				77.59
	03/22/06	21.77				78.23
	08/28/06	23.86				76.14
	11/05/06	22.71				77.29
	02/07/07	21.13				78.87
MW-7	05/08/02	28.12			103.66	75.64
	07/01/03	26.55				77.11
	07/30/03	26.22				77.44
	09/16/03	26.83				76.83
	10/02/03	27.69				75.87
	10/23/03	28.10				75.56
	12/18/03	27.71				75.95
	03/31/04	28.00				75.66
	09/29/04	27.60				76.08
	01/11/05	26.88				76.78
	03/17/05	27.83				75.83
	08/09/05	20.27				83.39
	11/01/05	28.63				76.03
	03/22/06	N/L				N/L
	08/28/06	30.43				73.23
	11/05/06	29.66				74.10
	02/07/07	27.41				76.25
MW-8	05/08/02	21.00			86.51	65.51
	07/01/03	20.96				65.55
	07/30/03	20.46				65.06
	09/16/03	21.17				65.34
	10/02/03	20.44				66.07
	10/23/03	21.64				64.97
	12/18/03	20.82				65.69
	03/31/04	21.35				65.16
	09/29/04	21.10				65.41
	01/11/05	21.04				65.47
	03/17/05	20.95				65.56
	08/09/05	22.16				64.35
	11/01/05	23.31				63.20
	03/22/06	22.00	21.23	0.77		65.11
	08/28/06	24.46	22.05	2.41		63.93
	11/05/06	NM				
	02/07/07	NM				

**Historical Groundwater Elevation And Product Thickness Data**  
**Highway 11 Grocery**  
**13527 South Carolina Highway 11**  
**Salem, Oconee County, South Carolina**  
**UST Permit Number: 03439**  
**SEI Project Number: 302169**

Location	Date	Depth To Water	Depth To Product	Product Thickness	Well Head Elevation	Groundwater Elevation
MW-9	05/08/02	2.47			58.39	55.92
	07/01/03	2.30				56.09
	07/30/03	2.26				56.13
	09/15/03	2.42				56.97
	10/02/03	2.16				56.23
	10/23/03	2.42				55.97
	12/18/03	2.20				56.19
	03/31/04	2.58				55.83
	09/29/04	1.90				56.49
	01/11/05	2.23				56.16
	03/17/05	2.11				56.28
	08/09/05	2.04				56.35
	11/01/05	2.33				56.06
	03/22/06	2.23				56.16
	08/28/06	2.50				55.89
	11/05/06	2.38				56.01
02/07/07	2.38			56.03		
MW-10	05/08/02	20.04			93.78	73.74
	07/01/03	16.20				77.68
	07/30/03	18.95				74.83
	09/15/03	16.53				77.25
	10/02/03	20.19				73.59
	10/23/03	20.51				73.27
	12/18/03	19.83				73.85
	03/31/04	18.85				74.93
	09/29/04	20.02				73.76
	01/11/05	19.47				74.31
	03/17/05	18.84				74.94
	08/09/05	18.94				74.84
	11/01/05	21.07				72.71
	03/22/06	20.16				73.62
	08/28/06	22.16				71.62
	11/05/06	20.94				72.84
02/07/07	19.65			74.13		
MW-11	05/08/02	16.22			83.20	66.98
	07/01/03	16.53				66.67
	07/30/03	16.70				66.50
	09/15/03	17.35				65.85
	10/02/03	16.40				66.80
	10/23/03	17.83				65.37
	12/18/03	17.58				65.82
	03/31/04	16.21				66.99
	09/29/04	15.92				67.28
	01/11/05	15.93				67.27
	03/17/05	16.86				66.34
	08/09/05	15.80				67.40
	11/01/05	18.22				64.98
	03/22/06	17.28				65.82
	08/28/06	19.09				64.11
	11/05/06	17.79				65.41
02/07/07	16.44			68.76		
MW-12	05/08/02	2.80			58.69	55.89
	07/01/03	3.16				55.53
	07/30/03	2.65				56.14
	09/15/03	3.26				55.43
	10/02/03	2.60				56.09
	10/23/03	3.50				55.19
	12/18/03	2.97				55.72
	03/31/04	3.19				55.50
	09/29/04	3.02				55.67
	01/11/05	3.10				55.59
	03/17/05	3.12				55.57
	08/09/05	2.72				55.97
	11/01/05	3.63				55.06
	03/22/06	3.23				55.46
	08/28/06	3.84				54.85
	11/05/06	3.48				55.21
02/07/07	3.16			55.54		

**Historical Groundwater Elevation And Product Thickness Data**  
**Highway 11 Grocery**  
**13627 South Carolina Highway 11**  
**Salem, Oconee County, South Carolina**  
**UST Permit Number: 03438**  
**SEI Project Number: 302168**

Location	Date	Depth To Water	Depth To Product	Product Thickness	Well Head Elevation	Groundwater Elevation
MW-13	05/08/02	6.28			77.72	71.43
	07/01/03	6.44				71.28
	07/30/03	N/L				N/L
	09/15/03	6.36				71.36
	10/02/03	6.24				71.48
	10/23/03	6.78				70.84
	12/18/03	7.51				70.21
	03/31/04	6.62				71.10
	09/29/04	6.28				71.44
	01/11/05	6.44				71.28
	03/17/05	6.62				71.20
	08/09/05	10.52				67.20
	11/01/05	N/L				N/L
	03/22/06	N/L				N/L
	08/28/06	N/L				N/L
	08/28/06	N/L				N/L
02/07/07	N/L			N/L		
MW-14	05/08/02	2.00			69.19	67.19
	07/01/03	2.28				66.91
	07/30/03	2.03				67.18
	09/15/03	2.42				66.77
	10/02/03	1.98				67.21
	10/23/03	2.67				66.52
	12/18/03	1.68				67.61
	03/31/04	2.03				67.16
	09/29/04	1.77				67.42
	01/11/05	1.92				67.27
	03/17/05	2.14				67.05
	08/09/05	1.75				67.44
	11/01/05	N/L				N/L
	03/22/06	N/L				N/L
	08/28/06	3.36				55.83
	11/05/06	N/L				N/L
02/07/07	N/L			N/L		
MW-16	05/08/02	10.82			71.52	60.70
	07/01/03	10.76				60.76
	07/30/03	10.11				61.41
	09/15/03	11.00				60.62
	10/02/03	10.20				61.32
	10/23/03	11.07				60.45
	12/18/03	11.88				59.64
	03/31/04	11.02				60.60
	09/29/04	10.67				60.85
	01/11/05	10.83				60.69
	03/17/05	10.61				60.91
	08/09/05	10.66				60.84
	11/01/05	11.32				60.20
	03/22/06	NG				NG
	08/28/06	11.62				59.60
	11/05/06	NM				NM
02/07/07	NM			NM		

**Historical Groundwater Elevation And Product Thickness Data**  
**Highway 11 Grocery**  
**13627 South Carolina Highway 11**  
**Salem, Oconee County, South Carolina**  
**UST Permit Number: 03439**  
**SEI Project Number: 302169**

Location	Date	Depth To Water	Depth To Product	Product Thickness	Well Head Elevation	Groundwater Elevation
DMW-1	05/08/02	23.88			103.27	79.39
	07/01/03	23.61				79.66
	07/30/03	24.24				79.03
	09/16/03	24.60				78.67
	10/02/03	24.00				79.27
	10/23/03	24.60				78.77
	12/18/03	24.11				79.16
	03/31/04	23.61				78.66
	09/29/04	22.72				80.55
	01/11/05	22.97				80.30
	03/17/05	24.66				78.69
	08/09/05	22.66				80.61
	11/01/05	25.11				78.16
	03/22/06	24.71				78.66
	08/28/06	26.95				76.32
	11/05/06	25.85				77.42
	02/07/07	24.59				78.68
DMW-2	05/08/02	17.83			86.21	68.38
	07/01/03	16.67				69.54
	07/30/03	17.20				69.01
	09/16/03	17.31				68.90
	10/02/03	16.80				69.41
	10/23/03	17.63				68.68
	12/18/03	17.11				69.10
	03/31/04	15.75				70.46
	09/29/04	16.49				69.72
	01/11/05	16.44				69.77
	03/17/05	17.22				68.99
	08/09/05	16.71				69.60
	11/01/05	18.08				68.13
	03/22/06	17.40				68.81
	08/28/06	18.72				67.49
	11/05/06	18.00				68.21
	02/07/07	18.93				67.28
DMW-4	05/08/02	24.30			103.22	78.92
	07/01/03	23.93				79.29
	07/30/03	24.75				78.47
	09/16/03	24.95				78.27
	10/02/03	24.45				78.77
	10/23/03	24.95				78.27
	12/18/03	24.39				78.83
	03/31/04	23.88				79.34
	09/29/04	23.18				80.04
	01/11/05	23.32				79.90
	03/17/05	25.08				78.14
	08/09/05	22.96				80.26
	11/01/05	26.61				78.71
	03/22/06	25.00				78.22
	08/28/06	27.33				75.89
	11/05/06	25.39				76.83
	02/07/07	24.59				78.63



Table 2

**Historical Groundwater Analytical Results  
Highway 11 Grocery  
13627 South Carolina Highway 11  
Salem, Oconee County, South Carolina  
UST Permit Number: 03439  
SEI Project Number: 302169**

Well	Date	Benzene	Toluene	Ethylbenzene	Xylenes	mTBE	Naphthalene	FP	Initial Mass	Current Mass
MW-1	05/07/02	228,000	301,000	280,000	278,000	6,110,000	2,000			6,197,000.00
	07/01/03	10,000	34,000	4,400	23,000	34,000	1,200			106,600.00
	07/30/03	7,600	28,000	6,300	32,000	26,000.0	2,600			101,400.00
	12/18/03	2,200	6,200	910	5,800	16,000	2,500			33,610.00
	03/31/04	3,400	8,300	1,100	6,200	26,000	1,200			41,200.00
	09/29/04	3,200	7,800	<1,000	4,500	12,000	<5,000			27,000.00
	03/17/05	6,600	9,660	1,570	7,610	19,300	325			43,935.00
	08/09/05	16,800	42,600	3,620	19,000	115,000	705			197,725.00
	11/01/05	44,380	26,640	3,700	21,680	173,000	637,000			906,310.00
	03/22/06	20,700	41,100	3,100	11,700	103,000	<4,000			179,600.00
	08/28/06	44,380	26,640	3,700	21,680	173,000	637,000	0.63		906,310.00
	08/28/06	44,380	26,640	3,700	21,680	173,000	637,000	0.63		906,310.00
	02/07/07	44,380	26,640	3,700	21,680	173,000	637,000	0.16		906,310.00
	SSTL	22	4,497	3,148	44,668	180	112			
> SSTL	44,368	22,043	552	0	172,620	636,888				
MW-2	05/07/02	13	8.0	1.0	5.0	5.0	5.0			37.00
	07/01/03	4.7	5.0	1.0	3.0	1.0	5.0			19.70
	07/30/03	5.8	5.0	1.0	6.3	1.0	5.0			23.10
	12/18/03	2.2	5.0	1.0	3.0	1.0	5.0			17.20
	03/31/04	2.6	5.0	1.0	3.0	1.0	5.0			17.60
	09/29/04	14	<25	<5.0	<16	<5.0	<25			14.00
	03/17/05	13	5	<1.0	5	<1.0	<2.0			22.40
	08/09/05	38.7	14.6	1.2	27.6	<1.0	<2.0			82.90
	11/01/05	3.8	1.6	<1.0	<3.0	<1.0	<2.0			5.40
	03/22/06	11.8	4.2	<1.0	3.4	<1.0	<2.0			18.40
	08/28/06	32.0	3.1	<1.0	4.5	<1.0	<2.0			39.60
	08/28/06	8.2	<1.0	<1.0	<3	<1.0	<2.0			8.20
	02/07/07	6.9	2.1	<1.0	3.4	<1.0	<2.0			12.40
	SSTL	13	8.0	1.0	8.0	5.0	6.0			
> SSTL	0.0	0.0	0.0	0.0	0.0	0.0				
MW-3	05/07/02	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0			0.00
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	07/30/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	12/18/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	08/09/05	NS	NS	NS	NS	NS	NS			0.00
	11/01/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	03/22/06	<1.0	1.4	<1.0	<3.0	<1.0	<2.0			1.40
	08/28/06	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	11/05/06	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	02/07/07	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	SSTL	1.0	1.0	1.0	1.0	5.0	5.0			
> SSTL	0.0	0.4	0.0	0.0	0.0	0.0				
MW-4	05/07/02	1,500	5,320	620	3,360	810	600			12,110.00
	07/01/03	4,800	14,000	2,300	12,000	12,000	2,600			47,700.00
	07/30/03	4,000	14,000	2,700	13,000	2,100	600			36,300.00
	12/18/03	1,100	2,400	230	1,800	1,200	280			7,080.00
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	09/29/04	53	<25	7.1	70	210	<25			340.10
	03/17/05	<1.0	<1.0	<1.0	<3.0	17	<2.0			16.80
	08/09/05	<1.0	<1.0	<1.0	<3.0	5.9	<2.0			5.90
	11/01/05	3,720	3,660	745	4,170	4,540	<200			16,835.00
	03/22/06	<1.0	<1.0	<1.0	<3.0	1.2	<2.0			1.20
	08/28/06	43	7	4	88	153.0	3.6			298.70
	11/05/06	195	24	19	164	225.0	11.6			638.90
	02/07/07	25	69	13	67	47.1	<2.0			210.30
	SSTL	1,500	5,320	620	3,360	810	600.0			
> SSTL	0	0.0	0	0	0	0.0				

Table 2

**Historical Groundwater Analytical Results  
Highway 11 Grocery  
13527 South Carolina Highway 11  
Salem, Oconee County, South Carolina  
UST Permit Number: 03439  
SEI Project Number: 302169**

Well	Date	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Naphthalene	FP	Initial Mass	Current Mass
MW-5	05/07/02	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0			0.00
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	07/30/03	4.2	17.0	3.6	16.0	2.2	<5.0			45.00
	12/18/03	2.3	<5.0	<1.0	3.2	1.3	<5.0			6.80
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	09/09/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	11/01/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	03/22/06	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	08/28/06	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	11/05/06	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	02/07/07	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	SSTL	1.0	1.0	1.0	1.0	5.0	5.0			
> SSTL	0.0	0.0	0.0	0.0	0.0	0.0				
MW-6	05/07/02	1,780	4,850	480	2,880	6,350	500.0			16,950.00
	07/01/03	2,200	6,600	620	4,400	12,000	2,600			28,520.00
	07/30/03	4,200	13,000	1,600	8,800	21,000	400			49,100.00
	12/18/03	5,100	14,000	1,700	11,000	18,000	2,600			53,300.00
	03/31/04	280	840	100	2,200	900	250			4,570.00
	09/29/04	2,400	<5,000	<1,000	<3,000	17,000	<5,000			19,400.00
	03/17/05	3,480	7,800	962	6,380	15,500	262			33,084.00
	08/09/05	1,370	4,630	265	2,220	7,640	<400			16,195.00
	11/01/05	979	2,220	282	1,810	8,410	<200			14,701.00
	03/22/06	1,280	3,480	399	2,680	8,600	<200			16,639.00
	08/28/06	99	76	<2.0	243	22	<4.0			439.60
	11/05/06	34.0	60.9	<2.0	194	355	<20			643.80
	02/07/07	4,970.0	18,100.0	2,070	12,000	30,500	<500			67,640.00
	SSTL	1,780	4,850	480	2,880	6,350	500.0			
> SSTL	3,190.0	13,150.0	1,580.0	9,120.0	24,150.0	0.0				
MW-7	05/07/02	34	20	<1.0	8.0	7.0	<5.0			69.00
	07/01/03	37	36	1.7	20	8.2	<5.0			103.90
	07/30/03	18	18	<1.0	10	<1.0	<5.0			45.70
	12/18/03	41	20	<1.0	<3.0	<1.0	<5.0			61.00
	03/31/04	30	34	<1.0	16	<1.0	<5.0			80.00
	09/29/04	376	500	<100	<300	<100	<500			870.00
	03/17/05	595	590	34	280	68	<2.0			1,473.40
	08/09/05	62	66	2.6	34	8.2	<2.0			154.00
	11/01/05	27	42	3.7	24	<1.0	<2.0			96.10
	03/22/06	Not Sampled								
	08/28/06	99	95	3.6	127	7	<2.0			331.90
	11/05/06	50	44.5	<1.0	23.5	1.9	<2.0			119.90
	02/07/07	182	261.0	12.8	202.0	18.7	<2.0			676.60
	SSTL	22	20	1.0	8.0	7.0	5.0			
> SSTL	160.0	241.0	11.8	194.0	11.7	0.0				
MW-8	05/07/02	226,000	301,000	280,000	278,000	5,110,000	2,000			6,197,000.00
	07/01/03	12,000	61,000	7,800	40,000	11,000	2,500			124,300.00
	07/30/03	12,000	40,000	3,600	18,000	18,000	660			89,260.00
	12/18/03	10,000	27,000	3,300	18,000	14,000	2,900			74,800.00
	03/31/04	17,000	140,000	32,000	180,000	8,600	<25,000			377,600.00
	09/29/04	44,390	26,540	3,700	21,680	173,000	637,000			906,310.00
	03/17/05	44,390	26,540	3,700	21,680	173,000	637,000			906,310.00
	08/09/05	44,390	26,540	3,700	21,680	173,000	637,000			906,310.00
	11/01/05	44,390	26,540	3,700	21,680	173,000	637,000			906,310.00
	03/22/06	44,390	26,540	3,700	21,680	173,000	637,000			906,310.00
	08/28/06	44,390	26,540	3,700	21,680	173,000	637,000	2.41		906,310.00
	11/05/06	44,390	26,540	3,700	21,680	173,000	637,000	NM		906,310.00
	02/07/07	44,390	26,540	3,700	21,680	173,000	637,000	0.89		906,310.00
	SSTL	294	40,888	28,622	278,000	1,382	1,021			
> SSTL	44,186.0	0.0	0.0	0.0	171,638.0	635,979.0				

Table 2

**Historical Groundwater Analytical Results  
Highway 11 Grocery  
13527 South Carolina Highway 11  
Salem, Oconee County, South Carolina  
UST Permit Number: 03439  
SEI Project Number: 302169**

Well	Date	Benzene	Toluene	Ethylbenzene	Xylene	MTBE	Naphthalene	FP	Initial Mass	Current Mass
MW-9	05/07/02	N/A	N/A	N/A	N/A	N/A	N/A			0.00
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	07/30/03	N/A	N/A	N/A	N/A	N/A	N/A			0.00
	12/18/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/31/04	<1.0	<5.0	1.2	8.8	<1.0	<5.0			10.00
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	08/09/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	11/01/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	03/22/06	<1.0	1.5	<1.0	<3.0	<1.0	<2.0			1.50
	08/28/06	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	11/05/06	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	02/07/07	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
RBSL		5.0	1,000	700	10,000	40	25			
MW-10	05/07/02	115	185	68.0	328	88	8.0			791.00
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	07/30/03	170	420	43	240	640	6.5			1,419.80
	12/18/03	89	280	74	480	81	25.0			1,039.00
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	08/09/05	1.7	4.4	<1.0	<3.0	18	<2.0			24.00
	11/01/05	10,000	23,500	1,410	7,510	21,500	<1,000			64,020.00
	03/22/06	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	08/28/06	79	98	16	69	169	<2.0			430.80
	11/05/06	203	412	67	226	137	4.7			1,049.90
	02/07/07	376	1,080	454	2,440	507	82.8			4,939.80
SSTL		116	185	68	328	88	8.0			
> SSTL		281.0	885.0	388.0	2,112.0	421.0	73.8			
MW-11	05/07/02	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0			0.00
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	07/30/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	12/18/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	08/09/05	NS	NS	NS	NS	NS	NS			0.00
	11/01/05	42.2	<1.0	<1.0	83.6	4.5	3.8			144.10
	03/22/06	<1.0	<1.0	<1.0	<3.0	1.9	<2.0			1.80
	08/28/06	6.4	<1	<1	82.6	4.4	2.5			95.90
	11/05/06	2.8	<1	<1	8.9	4.7	<2.0			16.40
	02/07/07	<1	<1	<1	8.9	1.1	<2.0			10.00
SSTL		1.0	1.0	1.0	1.0	5.0	5.0			
> SSTL		0.0	0.0	0.0	7.9	0.0	0.0			
MW-12	05/07/02	N/A	N/A	N/A	N/A	N/A	N/A			0.00
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	07/30/03	N/A	N/A	N/A	N/A	N/A	N/A			0.00
	12/18/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	08/09/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	11/01/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	03/22/06	1.5	24.8	10.1	58.6	<1.0	11.3			106.30
	08/28/06	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	11/05/06	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	02/07/07	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
RBSL		5.0	1,000	700	10,000	40	25			

Table 2

**Historical Groundwater Analytical Results  
Highway 11 Grocery  
13527 South Carolina Highway 11  
Salem, Oconee County, South Carolina  
UST Permit Number: 03439  
SEI Project Number: 302169**

Well	Date	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Naphthalene	FP	Initial Mass	Current Mass
MW-13	05/07/02	N/A	N/A	N/A	N/A	N/A	N/A			0.00
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	07/30/03	N/A	N/A	N/A	N/A	N/A	N/A			0.00
	12/18/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	08/09/06	NS	NS	NS	NS	NS	NS			0.00
	11/01/05	NS	NS	NS	NS	NS	NS			0.00
	03/22/06	NS	NS	NS	NS	NS	NS			0.00
	08/28/06	NS	NS	NS	NS	NS	NS			0.00
	11/05/06	NS	NS	NS	NS	NS	NS			0.00
	02/07/07	NS	NS	NS	NS	NS	NS			0.00
RBSL		5.0	1,000	700	10,000	40	25			
MW-14	05/07/02	3,780	13,800	27,000	14,700	7,010	500			66,780.00
	07/01/03	3,800	10,000	1,800	10,000	8,300	500			31,200.00
	07/30/03	3,100	8,700	1,800	9,300	4,300	600			28,700.00
	12/18/03	3,300	11,000	2,000	11,000	4,100	600			31,900.00
	03/31/04	6,500	17,000	2,500	13,000	7,100	670			45,770.00
	09/29/04	3,200	12,000	1,600	9,100	3,200	<5,000			29,100.00
	03/17/05	5,140	13,000	1,710	10,900	4,970	338			36,058.00
	08/09/05	3,280	16,600	1,820	11,000	4,860	<400			31,680.00
	11/01/05	NL	NL	NL	NL	NL	NL			0.00
	03/22/06	NL	NL	NL	NL	NL	NL			0.00
	08/28/06	2,010.0	4,080.0	1,160.0	6,320.0	3,320.0	261.0			17,161.00
	11/05/06	NL	NL	NL	NL	NL	NL			0.00
	02/07/07	NL	NL	NL	NL	NL	NL			0.00
SSTL		5.0	1,000	700	10,000	40	25			11,770.00
> SSTL		0	0	0	0	0	0			
MW-15	05/07/02	N/A	N/A	N/A	N/A	N/A	N/A			0.00
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	07/30/03	N/A	N/A	N/A	N/A	N/A	N/A			0.00
	12/18/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	08/09/05	NS	NS	NS	NS	NS	NS			0.00
	11/01/05	NS	NS	NS	NS	NS	NS			0.00
	03/22/06	NS	NS	NS	NS	NS	NS			0.00
	08/28/06	NS	NS	NS	NS	NS	NS			0.00
	11/05/06	NS	NS	NS	NS	NS	NS			0.00
	02/07/07	NS	NS	NS	NS	NS	NS			0.00
RBSL		5.0	1,000	700	10,000	40	25			
DMW-1	05/07/02	215	430	80	60	1,780	250			2,775.00
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	07/30/03	<1.0	<5.0	<1.0	<3.0	4.2	<5.0			4.20
	12/18/03	1.5	<5.0	<1.0	<3.0	<1.0	<5.0			1.50
	03/31/04	<1.0	<15.0	<1.0	<3.0	3.9	<5.0			3.90
	09/29/04	8.4	<25	<5.0	<15	130	<25			138.40
	03/17/05	<1.0	1.2	<1.0	<3.0	8.1	<2.0			9.30
	08/09/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	11/01/05	<5.0	<5.0	<5.0	<15	<5.0	<10			0.00
	03/22/06	3.0	35.1	16	82.2	21.9	13.1			181.30
	08/28/06	<1.0	<1.0	<1.0	<3.0	20.3	<2.0			20.30
	11/05/06	<1.0	<1.0	<1.0	<3.0	90.8	<2.0			90.80
	02/07/07	8.2	2.5	<1.0	9.7	164.0	<4.0			185.40
SSTL		215	430	80	60	1,780	250			
> SSTL		0.0	0.0	0.0	0.0	0.0	0.0			

Table 2

Historical Groundwater Analytical Results  
 Highway 11 Grocery  
 13527 South Carolina Highway 11  
 Salem, Oconee County, South Carolina  
 UST Permit Number: 03439  
 SEI Project Number: 302169

Well	Date	Benzene	Toluene	Ethylbenzene	Xylenes	MtBE	Naphthalene	FP	Initial Mass	Current Mass
DMW-2	05/07/02	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0			0.00
	07/01/03	<1.0	<5.0	<1.0	<3.0	6.4	<5.0			6.40
	07/30/03	<1.0	8.4	6.6	30.0	<1.0	6.7			51.80
	12/18/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	08/09/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	11/01/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	03/22/06	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	08/28/06	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	11/05/06	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	02/07/07	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	SSTL	1.0	1.0	1.0	1.0	5.0	5.0			
> SSTL	0.0	0.0	0.0	0.0	0.0	0.0				
DMW-4	05/07/02	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0			0.00
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	07/30/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	12/18/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	08/09/05	NS	NS	NS	NS	NS	NS			0.00
	11/01/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	03/22/06	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	08/28/06	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	11/05/06	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	02/07/07	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	SSTL	1.0	1.0	1.0	1.0	5.0	5.0			
> SSTL	0.0	0.0	0.0	0.0	0.0	0.0				
CK-1	05/07/02	N/A	N/A	N/A	N/A	N/A	N/A			0.00
	07/01/03	2.6	<5.0	<1.0	4.8	4.5	<5.0			11.90
	07/30/03	N/A	N/A	N/A	N/A	N/A	N/A			0.00
	12/18/03	11	18	4.1	20.0	9.0	<5.0			62.10
	09/29/04	19	30	6.1	32.0	22.0	<5.0			106.10
	03/17/05	10.4	17.5	4.1	20.8	12.3	<2.0			66.10
	08/09/05	7.8	17.6	2.9	15.8	6.9	<2.0			50.80
	11/01/05	20.3	38.2	8.8	48.8	27.3	<2.0			143.40
	03/22/06	6.8	12.9	3.2	16.2	7.8	<2.0			45.70
	08/28/06	13.1	29.0	6.7	27.8	16.7	<2.0			93.30
	11/05/06	13.9	22.3	6.7	34.3	17.8	<2.0			95.00
	02/07/07	7.9	16.4	4.0	21.1	9.8	<2.0			59.20
	RBSL	5.0	1,000	700	10,000	40	25			
CK-2	05/07/02	N/A	N/A	N/A	N/A	N/A	N/A			0.00
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	07/30/03	N/A	N/A	N/A	N/A	N/A	N/A			0.00
	12/18/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	08/09/05	NS	NS	NS	NS	NS	NS			0.00
	11/01/05	NS	NS	NS	NS	NS	NS			0.00
	03/22/06	NS	NS	NS	NS	NS	NS			0.00
	08/28/06	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	11/05/06	NS	NS	NS	NS	NS	NS			0.00
	02/07/07	NS	NS	NS	NS	NS	NS			0.00
RBSL	5.0	1,000	700	10,000	40	25				

Table 2

**Historical Groundwater Analytical Results  
Highway 11 Grocery  
13527 South Carolina Highway 11  
Salem, Oconee County, South Carolina  
UST Permit Number: 03439  
SEI Project Number: 302169**

Well	Date	Benzene	Toluene	Ethylbenzene	Xylenes	MIBE	Naphthalene	FP	Initial Mass	Current Mass
CK-3	08/09/05	14.4	33.3	7.1	41.1	25.8	<2.0			121.70
	11/01/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	03/22/06	23.3	49.7	10.1	48.2	33.8	<2.0			165.10
	11/05/06	25.2	49.1	11.4	63.8	49.3	<2.0			198.80
	02/07/07	21.7	57.5	10.3	57.9	30.8	<2.0			178.20
	RBSL	5.0	1,000	700	10,000	40	25			
WW-1	05/07/02	N/A	N/A	N/A	N/A	N/A	N/A			0.00
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	07/30/03	N/A	N/A	N/A	N/A	N/A	N/A			0.00
	12/18/03	N/A	N/A	N/A	N/A	N/A	N/A			0.00
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	09/09/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	11/01/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	03/22/06	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	08/28/06	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	11/05/06	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	02/07/07	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	RBSL	5.0	1,000	700	10,000	40	25			
<b>TOTAL MASS</b>										<b>1,885,618</b>
<b>TOTAL SSTL MASS</b>		<b>3,681</b>	<b>67,303</b>	<b>33,705</b>	<b>339,605</b>	<b>10,645</b>	<b>2,482</b>		<b>447,691</b>	
<b>INITIAL MASS ABOVE SSTL</b>									<b>12,046,007</b>	
<b>CURRENT MASS ABOVE SSTL</b>									<b>1,784,440</b>	
<b>PERCENT TOTAL MASS REDUCTION ABOVE SSTL</b>									<b>85.18</b>	

Reported in parts per billion (µg/l)  
 ND: Compound not detected  
 BDL: Below analytical Detection Limits  
 SSTL: Site Specific Treatment Level

**APPENDIX C**  
**Field Data Information Sheets for Groundwater Sampling**

TO: BOGGS

FROM MARK

2-8-07

## SEI Environmental SC Monitoring Well Gauging Data Sheet

Site Name: Highway 11 GroceryWO# 302169Date 2/7/07

Well ID	Total Depth (feet)	Well Dia. (in.)	Depth to Product (feet)	Product Thickness (feet)	Depth to Water (feet)	Notes
MW-1	30	2	24.14		24.30	
MW-2	35	2			25.47	
MW-3	35	2			24.15	Semi-annual
MW-4	35	2			22.96	
MW-5	35	2			28.30	
MW-6	35	2			21.13	
MW-7	40	2			27.41	
MW-9	11	2			2.36	
MW-10	24	2			19.65	
MW-11	23	2			16.44	Semi-annual
MW-12	11	2			3.15	
MW-14	9	2			CNF	
DW-1	45	2			24.59	
DW-2	75	2			18.93	
DMW-4	61	2			24.59	Semi-annual
Water Supply Well Sample: WW-1						
Surface Water Samples: CK-1 & CK-3						
MW-8			20.74		21.63	

**Analysis: EPA Method 8260B for BTEX, MTBE, and Naphthalene**

2-inch diameter well: Well Volume = (water column) x (0.163 gallon/foot)

4-inch diameter well: Well Volume = (water column) x (0.652 gallon/foot)

Purge amount = Well Volume x 3



South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy): 2/7/07

Field Personnel: Scott Ritch

General Weather Conditions: Sunny 52°

Ambient Air Temperature: \_\_\_\_\_ °C

Quality Assurance

pH Meter serial no. _____	Conductivity Meter serial no. _____
pH = 4.0 _____	standard _____
pH = 7.0 _____	standard _____
pH = 10.0 _____	standard _____

Chain of Custody

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name Highway 11 Grocery Job # 302169

Site ID # 03439 Monitoring Well # DMW-1

Water Supply Well Public \_\_\_\_\_ Private \_\_\_\_\_

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C = 0.163  
for a 4 inch well C = 0.65.

\*Free Product Thickness \_\_\_\_\_ feet

Depth to Ground Water (DGW) 24.59 feet

Total Well Depth (TWD) 45.0 feet

Length of the water column (LWC = TWD-DGW) \_\_\_\_\_ feet

1 casing volume (CV = LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals

3 casing volume (3 X CV) = \_\_\_\_\_ gals (standard purge volume)

Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals

\* If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1 <sup>st</sup> Vol	2 <sup>nd</sup> Vol	3 <sup>rd</sup> Vol	4 <sup>th</sup> Vol	5 <sup>th</sup> Vol	Post Sampling
Time (military)	<u>11:30</u>						
pH (s.u.)	<u>7.23</u>						
Specific Conductivity (µmhos/cm)	<u>0.025</u>						
Water Temperature (°C)	<u>18.5</u>						
Dissolved Oxygen	<u>0.08</u>						
PID readings, if required							

Remarks: \_\_\_\_\_

02/08/07 07:57 FAX 704 596 8605 SEI ENVIRONMENTAL INC. RAL SEI 002

South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy): 2/7/07

Field Personnel: Scott, Ritch

General Weather Conditions: Sunny 52°

Ambient Air Temperature: \_\_\_\_\_ °C

Quality Assurance

pH Meter serial no. _____	Conductivity Meter serial no. _____
pH = 4.0 _____	standard _____
pH = 7.0 _____	standard _____
pH = 10.0 _____	standard _____

Chain of Custody

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name Highway 11 Grocery Job # 302169

Site ID # 03439 Monitoring Well # DMW-4

Water Supply Well Public Private \_\_\_\_\_

Monitoring Well Diameter (D): 2 1/2 feet

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C = 0.16  
for a 4 inch well C = 0.6

\*Free Product Thickness \_\_\_\_\_ feet

Depth to Ground Water (DGW) 24.59 feet

Total Well Depth (TWD) 61.0 feet

Length of the water column (LWC = TWD - DGW) \_\_\_\_\_ feet

1 casing volume (CV = LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals

3 casing volume (3 X CV) = \_\_\_\_\_ gals (standard purge volume)

Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals

\* If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1 <sup>st</sup> Vol	2 <sup>nd</sup> Vol	3 <sup>rd</sup> Vol	4 <sup>th</sup> Vol	5 <sup>th</sup> Vol	Post Sampling
Time (military)	<u>12:00</u>						
pH (s.u.)	<u>7.61</u>						
Specific Conductivity (µmhos/cm)	<u>1029</u>						
Water Temperature (°C)	<u>18.2</u>						
Dissolved Oxygen	<u>0.18</u>						
PID readings, if required							

Remarks: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

South Carolina Department of Health and Environmental Control  
 Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy): 2/7/07  
 Field Personnel: Scott Ritch  
 General Weather Conditions: Sunny 52°  
 Ambient Air Temperature: \_\_\_\_\_ °C  
 \_\_\_\_\_  
 Quality Assurance  
 pH Meter serial no. \_\_\_\_\_ Conductivity Meter serial no. \_\_\_\_\_  
 pH = 4.0 \_\_\_\_\_ standard \_\_\_\_\_  
 pH = 7.0 \_\_\_\_\_ standard \_\_\_\_\_  
 pH = 10.0 \_\_\_\_\_ standard \_\_\_\_\_  
 \_\_\_\_\_  
 Chain of Custody  
 Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name Highway 11 Grocery Job # 302169  
 Site ID # 03439 Monitoring Well # DMW-2  
 Water Supply Well Public \_\_\_\_\_ Private \_\_\_\_\_  
 Monitoring Well Diameter (D): 2" feet  
 Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C = 0.163  
 for a 4 inch well C = 0.652  
 \*Free Product Thickness \_\_\_\_\_ feet  
 Depth to Ground Water (DGW) 18.93 feet  
 Total Well Depth (TWD) 75.0 feet  
 Length of the water column (LWC = TWD - DGW) \_\_\_\_\_ feet  
 1 casing volume (CV = LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals  
 3 casing volume (3 X CV) = \_\_\_\_\_ gals (standard purge volume)  
 Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals  
 \* If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1 <sup>st</sup> Vol	2 <sup>nd</sup> Vol	3 <sup>rd</sup> Vol	4 <sup>th</sup> Vol	5 <sup>th</sup> Vol	Post Sampling
Time (military)	13:00						
pH (s.u.)	9.38						
Specific Conductivity (µmhos/cm)	0.054						
Water Temperature (°C)	17.3						
Dissolved Oxygen	0.02						
PID readings, if required							

Remarks: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



Accutest Laboratories

Client Information

NAME: SEI Environmental, Inc.
ADDRESS: 5100 Reagan Drive, Ste 5
CITY: Charlotte NC
STATE: 28206
SEND REPORT TO: PHONE # 704-596-8624

CHAIN OF CUSTODY

4405 VINELAND ROAD, SUITE C-15
ORLANDO, FL 32811
TEL: 407-425-6700 • FAX: 407-425-0707

Facility Information

PROJECT NAME: Hwy 11 Grocery
LOCATION: 13501 SC Hwy 11
PROJECT NO.: 302169
Salem, S.C.
FAX # 704-596-8605

ACCUTEST JOB #:
ACCUTEST QUOTE #:

Analytical Information

Table with Matrix Codes (DW, GW, WW, SO, SL, LO, SOL) and Lab Use Only.

Collection Table Headers: DATE, TIME, MATRIX, # OF BOTTLES, PRESERVATION

Main data table with columns for DATE, TIME, MATRIX, # OF BOTTLES, PRESERVATION, and COMMENTS/REMARKS.

Data Deliverable Information

- STANDARD
COMMERCIAL "B"
DISK DELIVERABLE
STATE FORMS
OTHER (SPECIFY)

Data Turnaround Information

- STANDARD
48 HOUR RUSH
24 HOUR EMERGENCY
OTHER

EMERGENCY OR RUSH IS FAX DATA UNLESS PREVIOUSLY APPROVED

Relinquished by table with columns for Relinquished by, Date Time, Received by, Date Time, and Seal #.

ACCOUNT JOB #

ACCOUNT QUOTE #

# CHAIN OF CUSTODY

4405 VINELAND ROAD • SUITE C-15  
ORLANDO, FL 32811  
TEL: 407-425-6700 • FAX: 407-425-0707



Accutest Laboratories

### CLIENT INFORMATION

NAME: SEI Environmental, Inc.  
ADDRESS: 5100 Reagan Drive, Ste 5  
CITY: Charlotte NC STATE: 28206  
SEND REPORT TO: PHONE #: 704-596-8624

### FACILITY INFORMATION

PROJECT NAME: Hwy 11 Grocery  
LOCATION: Hwy 11 S.C. Hwy 11  
PROJECT NO.: 300169  
FAX #: 704-596-8605

### ANALYTICAL INFORMATION

- DW - DRINKING WATER
- GW - GROUND WATER
- WW - WASTE WATER
- SO - SOIL
- SL - SLUDGE
- OI - OIL
- LQ - OTHER LIQUID
- SOL - OTHER SOLID

LAB USE ONLY

### COLLECTION

DATE	TIME	SAMPLED BY:	MATRIX	# OF BOTTLES	HCl	HNO3	H2SO4	NONE
2/16/07	13:05	RS	GW	3				
	13:10							
	13:15							
	13:35							
	13:35							

### FIELD ID / POINT OF COLLECTION

DMW-2  
CK-1  
MW-1  
MW-12  
CK-3

EPA Method 8600  
BTEX  
MTH, Naphthalene

### COMMENTS/REMARKS

### DATA DELIVERABLE INFORMATION

- STANDARD
- COMMERCIAL "B"
- DISK DELIVERABLE
- STATE FORMS
- OTHER (SPECIFY) \_\_\_\_\_

### DATA TURNAROUND INFORMATION

- STANDARD
- 48 HOUR RUSH
- 24 HOUR EMERGENCY
- OTHER \_\_\_\_\_

EMERGENCY OR RUSH IS FAX DATA UNLESS PREVIOUSLY APPROVED

### SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY

RELINQUISHED BY:	RECEIVED BY:	DATE TIME:	DATE TIME:
1.	1.	2/16/07 11:00	
3.	3.		
5.	5.		

ON ICE  TEMPERATURE \_\_\_\_\_

PRESERVE WHERE APPLICABLE  SEAL # \_\_\_\_\_

**APPENDIX D**

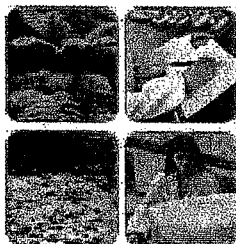
**Laboratory Analytical Results and Chain-of-Custody**



IT'S ALL IN THE CHEMISTRY

02/26/07

Blank area for additional information or notes.



**Technical Report for**

**SEI-Columbia, SC**

**Hwy 11 Grocery; Salem, SC**

**302169**

**Accutest Job Number: F47154**

**Sampling Date: 02/07/07**

**Report to:**

**SEI Environmental-Raleigh**

**cboggs@sei-environmental.com**

**ATTN: Chris Boggs**

**Total number of pages in report: 25**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

*Harry Behzadi*  
**Harry Behzadi, Ph.D.**  
**Laboratory Director**

Certifications: FL (DOH E83510), NC (573), NJ (FL002), MA (FL946), IA (366), LA (03051), KS (E-10327), SC, AK  
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### Sample Summary

SEI-Columbia, SC

Hwy 11 Grocery; Salem, SC  
 Project No: 302169

Job No: F47154

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
F47154-1	02/07/07	11:30 RRSS	02/10/07	AQ	Ground Water	MW-7
F47154-2	02/07/07	11:35 RRSS	02/10/07	AQ	Ground Water	MW-6
F47154-3	02/07/07	11:50 RRSS	02/10/07	AQ	Ground Water	DMW-1
F47154-4	02/07/07	12:00 RRSS	02/10/07	AQ	Ground Water	DMW-4
F47154-5	02/07/07	12:10 RRSS	02/10/07	AQ	Ground Water	MW-4
F47154-6	02/07/07	12:15 RRSS	02/10/07	AQ	Ground Water	MW-3
F47154-7	02/07/07	12:20 RRSS	02/10/07	AQ	Ground Water	MW-2
F47154-8	02/07/07	12:30 RRSS	02/10/07	AQ	Ground Water	MW-5
F47154-9	02/07/07	12:35 RRSS	02/10/07	AQ	Ground Water	WW-1
F47154-10	02/07/07	12:40 RRSS	02/10/07	AQ	Ground Water	MW-10
F47154-11	02/07/07	12:45 RRSS	02/10/07	AQ	Ground Water	MW-11
F47154-12	02/07/07	13:05 RRSS	02/10/07	AQ	Ground Water	DMW-2
F47154-13	02/07/07	13:10 RRSS	02/10/07	AQ	Ground Water	CK-1



### Sample Summary (continued)

SEI-Columbia, SC

Job No: F47154

Hwy 11 Grocery; Salem, SC  
Project No: 302169

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
F47154-14	02/07/07	13:15	RRSS	02/10/07	AQ Ground Water	MW-9
F47154-15	02/07/07	13:25	RRSS	02/10/07	AQ Ground Water	MW-12
F47154-16	02/07/07	13:35	RRSS	02/10/07	AQ Ground Water	CK-3



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**Sample Results**

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**Report of Analysis**

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### Report of Analysis

Client Sample ID:	MW-2	Date Sampled:	02/07/07
Lab Sample ID:	F47154-7	Date Received:	02/10/07
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	Hwy 11 Grocery; Salem, SC		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	B044128.D	1	02/13/07	AB	n/a	n/a	VB1867
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE, Naphthalene

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	6.9	1.0	ug/l	
108-88-3	Toluene	2.1	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	3.4	3.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
91-20-3	Naphthalene	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		87-116%
17060-07-0	1,2-Dichloroethane-D4	99%		76-127%
2037-26-5	Toluene-D8	100%		86-112%
460-00-4	4-Bromofluorobenzene	100%		84-120%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-3	Date Sampled:	02/07/07
Lab Sample ID:	F47154-6	Date Received:	02/10/07
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	Hwy 11 Grocery; Salem, SC		

Run #1	Files ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #2	B044127.D	1	02/13/07	AB	n/a	n/a	VB1867

Run #1	Purge Volume
Run #2	5.0 ml

Purgeable Aromatics, MTBE, Naphthalene

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	3.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
91-20-3	Naphthalene	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		87-116%
17060-07-0	1,2-Dichloroethane-D4	101%		76-127%
2037-26-5	Toluene-D8	102%		86-112%
460-00-4	4-Bromofluorobenzene	101%		84-120%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

**Report of Analysis**

<b>Client Sample ID:</b> MW-4	<b>Date Sampled:</b> 02/07/07
<b>Lab Sample ID:</b> F47154-5	<b>Date Received:</b> 02/10/07
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260B	
<b>Project:</b> Hwy 11 Grocery; Salem, SC	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	B044146.D	1	02/14/07	AB	n/a	n/a	VB1868
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

**Purgeable Aromatics, MTBE, Naphthalene**

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	25.0	1.0	ug/l	
108-88-3	Toluene	58.6	1.0	ug/l	
100-41-4	Ethylbenzene	12.8	1.0	ug/l	
1330-20-7	Xylene (total)	66.8	3.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	47.1	1.0	ug/l	
91-20-3	Naphthalene	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		87-116%
17060-07-0	1,2-Dichloroethane-D4	98%		76-127%
2037-26-5	Toluene-D8	99%		86-112%
460-00-4	4-Bromofluorobenzene	99%		84-120%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

### Report of Analysis

Client Sample ID: MW-5	Date Sampled: 02/07/07
Lab Sample ID: F47154-8	Date Received: 02/10/07
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260B	
Project: Hwy 11 Grocery; Salem, SC	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	B044131.D	1	02/13/07	AB	n/a	n/a	VB1867
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE, Naphthalene

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	3.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
91-20-3	Naphthalene	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		87-116%
17060-07-0	1,2-Dichloroethane-D4	99%		76-127%
2037-26-5	Toluene-D8	101%		86-112%
460-00-4	4-Bromofluorobenzene	99%		84-120%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-6	Date Sampled:	02/07/07
Lab Sample ID:	F47154-2	Date Received:	02/10/07
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	Hwy 11 Grocery; Salem, SC		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	B044158.D	250	02/14/07	AB	n/a	n/a	VB1868
Run #2	J027891.D	500	02/15/07	KW	n/a	n/a	VJ2051

Run #	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

Purgeable Aromatics, MTBE, Naphthalene

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	4970	250	ug/l	
108-88-3	Toluene	18100	250	ug/l	
100-41-4	Ethylbenzene	2070	250	ug/l	
1330-20-7	Xylene (total)	12000	750	ug/l	
1634-04-4	Methyl Tert Butyl Ether	30500	500	ug/l	
91-20-3	Naphthalene	ND	500	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%	103%	87-116%
17060-07-0	1,2-Dichloroethane-D4	98%	106%	76-127%
2037-26-5	Toluene-D8	96%	91%	86-112%
460-00-4	4-Bromofluorobenzene	93%	99%	84-120%

(a) Result is from Run# 2

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound



**Report of Analysis**

Client Sample ID: MW-7	Date Sampled: 02/07/07
Lab Sample ID: F47154-1	Date Received: 02/10/07
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260B	
Project: Hwy 11 Grocery; Salem, SC	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	B044125.D	1	02/13/07	AB	n/a	n/a	VB1867
Run #2	B044156.D	5	02/14/07	AB	n/a	n/a	VB1868

Run #	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

**Purgeable Aromatics, MTBE, Naphthalene**

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	182 <sup>a</sup>	5.0	ug/l	
108-88-3	Toluene	261 <sup>a</sup>	5.0	ug/l	
100-41-4	Ethylbenzene	12.8	1.0	ug/l	
1330-20-7	Xylene (total)	202	3.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	18.7	1.0	ug/l	
91-20-3	Naphthalene	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%	97%	87-116%
17060-07-0	1,2-Dichloroethane-D4	104%	96%	76-127%
2037-26-5	Toluene-D8	97%	98%	86-112%
460-00-4	4-Bromofluorobenzene	99%	97%	84-120%

(a) Result is from Run# 2

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-9	Date Sampled: 02/07/07
Lab Sample ID: F47154-14	Date Received: 02/10/07
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260B	
Project: Hwy 11 Grocery; Salem, SC	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0046355.D	1	02/13/07	AB	n/a	n/a	VC1872
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE, Naphthalene

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	3.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
91-20-3	Naphthalene	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		87-116%
17060-07-0	1,2-Dichloroethane-D4	103%		76-127%
2037-26-5	Toluene-D8	101%		86-112%
460-00-4	4-Bromofluorobenzene	101%		84-120%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

**Report of Analysis**

<b>Client Sample ID:</b> MW-10		<b>Date Sampled:</b> 02/07/07
<b>Lab Sample ID:</b> F47154-10		<b>Date Received:</b> 02/10/07
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260B		
<b>Project:</b> Hwy 11 Grocery; Salem, SC		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	B044159.D	20	02/14/07	AB	n/a	n/a	VB1868
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

**Purgeable Aromatics, MTBE, Naphthalene**

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	376	20	ug/l	
108-88-3	Toluene	1080	20	ug/l	
100-41-4	Ethylbenzene	454	20	ug/l	
1330-20-7	Xylene (total)	2440	60	ug/l	
1634-04-4	Methyl Tert Butyl Ether	507	20	ug/l	
91-20-3	Naphthalene	82.8	40	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		87-116%
17060-07-0	1,2-Dichloroethane-D4	98%		76-127%
2037-26-5	Toluene-D8	98%		86-112%
460-00-4	4-Bromofluorobenzene	93%		84-120%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-11	Date Sampled:	02/07/07
Lab Sample ID:	F47154-11	Date Received:	02/10/07
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	Hwy 11 Grocery; Salem, SC		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0046352.D	1	02/13/07	AB	n/a	n/a	VC1872
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE, Naphthalene

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	3.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	1.1	1.0	ug/l	
91-20-3	Naphthalene	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		87-116%
17060-07-0	1,2-Dichloroethane-D4	102%		76-127%
2037-26-5	Toluene-D8	100%		86-112%
460-00-4	4-Bromofluorobenzene	102%		84-120%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

**Report of Analysis**

<b>Client Sample ID:</b> MW-12		
<b>Lab Sample ID:</b> F47154-15		<b>Date Sampled:</b> 02/07/07
<b>Matrix:</b> AQ - Ground Water		<b>Date Received:</b> 02/10/07
<b>Method:</b> SW846 8260B		<b>Percent Solids:</b> n/a
<b>Project:</b> Hwy 11 Grocery; Salem, SC		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0046356.D	1	02/13/07	AB	n/a	n/a	VC1872
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

**Purgeable Aromatics, MTBE, Naphthalene**

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	3.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
91-20-3	Naphthalene	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		87-116%
17060-07-0	1,2-Dichloroethane-D4	104%		76-127%
2037-26-5	Toluene-D8	99%		86-112%
460-00-4	4-Bromofluorobenzene	102%		84-120%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

**Report of Analysis**

<b>Client Sample ID:</b> DMW-1	<b>Date Sampled:</b> 02/07/07
<b>Lab Sample ID:</b> F47154-3	<b>Date Received:</b> 02/10/07
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260B	
<b>Project:</b> Hwy 11 Grocery; Salem, SC	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #2	B044147.D	2	02/14/07	AB	n/a	n/a	VB1868

Run #1	Purge Volume
Run #2	5.0 ml

**Purgeable Aromatics, MTBE, Naphthalene**

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	9.2	2.0	ug/l	
108-88-3	Toluene	2.5	2.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	ug/l	
1330-20-7	Xylene (total)	9.7	6.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	164	2.0	ug/l	
91-20-3	Naphthalene	ND	4.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		87-116%
17060-07-0	1,2-Dichloroethane-D4	99%		76-127%
2037-26-5	Toluene-D8	101%		86-112%
460-00-4	4-Bromofluorobenzene	98%		84-120%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Page 1 of 1

Client Sample ID:	DMW-2	Date Sampled:	02/07/07
Lab Sample ID:	F47154-12	Date Received:	02/10/07
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	Hwy 11 Grocery; Salem, SC		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0046353.D	1	02/13/07	AB	n/a	n/a	VC1872
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## Purgeable Aromatics, MTBE, Naphthalene

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	3.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
91-20-3	Naphthalene	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		87-116%
17060-07-0	1,2-Dichloroethane-D4	102%		76-127%
2037-26-5	Toluene-D8	101%		86-112%
460-00-4	4-Bromofluorobenzene	102%		84-120%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

### Report of Analysis

Client Sample ID: DMW-4	Date Sampled: 02/07/07
Lab Sample ID: F47154-4	Date Received: 02/10/07
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260B	
Project: Hwy 11 Grocery; Salem, SC	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	B044126.D	1	02/13/07	AB	n/a	n/a	VB1867
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE, Naphthalene

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	3.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
91-20-3	Naphthalene	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		87-116%
17060-07-0	1,2-Dichloroethane-D4	102%		76-127%
2037-26-5	Toluene-D8	103%		86-112%
460-00-4	4-Bromofluorobenzene	101%		84-120%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound



### Report of Analysis

Client Sample ID: CK-1	Date Sampled: 02/07/07
Lab Sample ID: F47154-13	Date Received: 02/10/07
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260B	
Project: Hwy 11 Grocery; Salem, SC	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0046354.D	1	02/13/07	AB	n/a	n/a	VC1872
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE, Naphthalene

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	7.9	1.0	ug/l	
108-88-3	Toluene	16.4	1.0	ug/l	
100-41-4	Ethylbenzene	4.0	1.0	ug/l	
1330-20-7	Xylene (total)	21.1	3.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	9.8	1.0	ug/l	
91-20-3	Naphthalene	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		87-116%
17060-07-0	1,2-Dichloroethane-D4	103%		76-127%
2037-26-5	Toluene-D8	101%		86-112%
460-00-4	4-Bromofluorobenzene	100%		84-120%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

### Report of Analysis

Client Sample ID:	CK-3	Date Sampled:	02/07/07
Lab Sample ID:	F47154-16	Date Received:	02/10/07
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	Hwy 11 Grocery; Salem, SC		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0046357.D	1	02/13/07	AB	n/a	n/a	VC1872
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE, Naphthalene

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	21.7	1.0	ug/l	
108-88-3	Toluene	57.5	1.0	ug/l	
100-41-4	Ethylbenzene	10.3	1.0	ug/l	
1330-20-7	Xylene (total)	57.9	3.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	30.8	1.0	ug/l	
91-20-3	Naphthalene	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		87-116%
17060-07-0	1,2-Dichloroethane-D4	101%		76-127%
2037-26-5	Toluene-D8	100%		86-112%
460-00-4	4-Bromofluorobenzene	99%		84-120%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

**Report of Analysis**

Client Sample ID:	WW-1	Date Sampled:	02/07/07
Lab Sample ID:	F47154-9	Date Received:	02/10/07
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	Hwy 11 Grocery; Salem, SC		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0046341.D	1	02/13/07	AB	n/a	n/a	VC1872
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

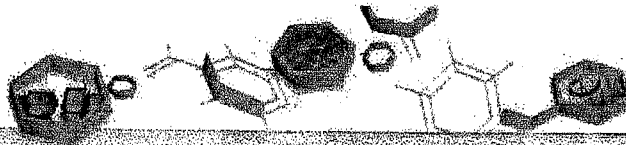
**Purgeable Aromatics, MTBE, Naphthalene**

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	3.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
91-20-3	Naphthalene	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		87-116%
17060-07-0	1,2-Dichloroethane-D4	103%		76-127%
2037-26-5	Toluene-D8	102%		86-112%
460-00-4	4-Bromofluorobenzene	100%		84-120%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound



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**Misc. Forms**

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**Custody Documents and Other Forms**

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**Includes the following where applicable:**

- Chain of Custody



# CHAIN OF CUSTODY

4408 VINELAND ROAD • SUITE C-16  
ORLANDO, FL 32811  
TEL: 407-485-6700 • FAX: 407-485-0707

ACCUTEST JOB #: **F47154**

ACCUTEST QUOTE #:

<b>CLIENT INFORMATION</b>		<b>FACILITY INFORMATION</b>				<b>ANALYTICAL INFORMATION</b>				<b>MATRIX CODES</b>	
NAME SEI Environmental, Inc.		PROJECT NAME Hwy 11 Grocery				DW - DOMESTIC WATER GW - GROUND WATER WW - WASTE WATER SO - SOIL SL - SLUDGE CL - CL. LO - OTHER LIQUID SOL - OTHER SOLID				LAB USE ONLY	
ADDRESS 5100 Reagan Drive, Ste 5		LOCATION Salem, S.C.									
CITY, STATE, ZIP Charlotte, NC 28206		PROJECT NO. 302169									
SEND REPORT TO: PHONE # 704-596-8624		FAX # 704-596-5605									

ACCUTEST SAMPLE #	FIELD ID / POINT OF COLLECTION	COLLECTION		DATE	TIME	SAMPLER	BY	PRESERVATION						LAB USE ONLY	
		DATE	TIME					REF	STAB	COOL	FREEZE	OTHER	OTHER		
1	MW-7	2/7/07	11:30	RR	JK	✓	✓	✓	✓	✓	✓	✓	✓	✓	
2	MW-6		11:35												
3	DMW-1		11:30												
4	DMW-4		12:00												
5	MW-4		12:10												
6	MW-3		12:15												
7	MW-2		12:20												
8	MW-5		12:30												
9	WW-1		12:35												
10	MW-10		12:40												
11	MW-11		12:45												

<b>DATA TURNAROUND INFORMATION</b>		<b>DATA DELIVERABLE INFORMATION</b>		<b>COMMENTS/REMARKS</b>	
<input checked="" type="checkbox"/> STANDARD <input type="checkbox"/> 48 HOUR RUSH <input type="checkbox"/> 24 HOUR EMERGENCY <input type="checkbox"/> OTHER	APPROVED BY: _____	<input checked="" type="checkbox"/> STANDARD <input type="checkbox"/> COMMERCIAL "B" <input type="checkbox"/> DISK DELIVERABLE <input type="checkbox"/> STATE FORMS <input type="checkbox"/> OTHER (SPECIFY) _____			
EMERGENCY OR RUSH IS FAX DATA UNLESS PREVIOUSLY APPROVED					

**SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY**

RELINQUISHED BY: _____	DATE/TIME: 2/7/07	RECEIVED BY: FK	RELINQUISHED BY: FK	DATE/TIME: 2-10-07	RECEIVED BY: J. CORAL	09:00
RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:	RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:	
RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:	RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:	
RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:	RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:	
			SEAL #	PRESERVE WHEN APPLICABLE <input type="checkbox"/>	ON ICE <input type="checkbox"/>	TEMPERATURE 22 C

# CHAIN OF CUSTODY

4405 VINELAND ROAD • SUITE C-18  
ORLANDO, FL 32811  
TEL: 407-422-0700 • FAX: 407-422-0707

ACCUTEST JOB #: **F47154**

ACCUTEST QUOTE #:

CLIENT INFORMATION		FACILITY INFORMATION				ANALYTICAL INFORMATION				MATRIX CODES	
NAME SEI Environmental, Inc. ADDRESS 5100 Reagan Drive, Ste 5 CITY, STATE ZIP Charlotte NC 28206 SEND REPORT TO: PHONE # 704-596-8624		PROJECT NAME Hwy 11 Greeny LOCATION 1324 S.C. Hwy 11 Salem, S.C. PROJECT NO. 308169 FAX # 704-596-8625				(Vertical text: EPA Method 8200 B, RETEX, PASTE, WATER)				DW - DRINKING WATER GW - GROUND WATER WW - WASTE WATER SO - SOIL SL - SLUDGE CL - CL LIQ - OTHER LIQUID SOL - OTHER SOLID	
ACCUTEST SAMPLE #	FIELD ID / POINT OF COLLECTION	COLLECTION		SAMPLER BY	VOLUME	PRESERVATION	DATE	TIME	LAB USE ONLY	LAB USE ONLY	
		DATE	TIME								
12	DMW-2	2/7/07	13:05	AS	3						
13	CK-1		13:10								
14	MW-9		13:15								
15	MW-12		13:25								
16	CK-3		13:35								
<input checked="" type="checkbox"/> STANDARD APPROVED BY: _____ <input type="checkbox"/> 48 HOUR RUSH <input type="checkbox"/> 24 HOUR EMERGENCY <input type="checkbox"/> OTHER _____ EMERGENCY OR RUSH IS FAX DATA UNLESS PREVIOUSLY APPROVED		<input checked="" type="checkbox"/> STANDARD <input type="checkbox"/> COMMERCIAL "B" <input type="checkbox"/> DISK DELIVERABLE <input type="checkbox"/> STATE FORMS <input type="checkbox"/> OTHER (SPECIFY) _____				COMMENTS/REMARKS					
SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY											
RELINQUISHED BY: 1. [Signature]	DATE/TIME: 2/7/07 11:00	RECEIVED BY: 1. FX	RELINQUISHED BY: 2. FX	DATE/TIME: 2-10-07	RECEIVED BY: 2. J. COAR	DATE/TIME: 2-10-07	RECEIVED BY: 3. [Signature]	DATE/TIME: 2-10-07	RECEIVED BY: 4. [Signature]	DATE/TIME: 2-10-07	RECEIVED BY: 5. [Signature]
RELINQUISHED BY: 3.	DATE/TIME:	RECEIVED BY: 3.	RELINQUISHED BY: 4.	DATE/TIME:	RECEIVED BY: 4.	RELINQUISHED BY: 5.	DATE/TIME:	RECEIVED BY: 5.	DATE/TIME:	RECEIVED BY: 6.	TEMPERATURE: 2-9-07

3-1  
3

F47154: Chain of Custody  
Page 2 of 3

**ACCUTEST LABORATORIES SAMPLE RECEIPT CONFIRMATION**

ACCUTEST'S JOB NUMBER: F47154 CLIENT: SEI PROJECT: HWY 11 GROCERY  
 DATE/TIME RECEIVED: 02-10-07 09:30 # OF COOLERS RECEIVED: 1 COOLER TEMPS: 2.4  
 METHOD OF DELIVERY: FEDEX UPS ACCUTEST COURIER GREYHOUND DELIVERY OTHER  
 AIRBILL NUMBERS: 8536 3068 2766

**COOLER INFORMATION**

- CUSTODY SEAL NOT PRESENT OR NOT INTACT
- CHAIN OF CUSTODY NOT RECEIVED (COC)
- ANALYSIS REQUESTED IS UNCLEAR OR MISSING
- SAMPLE DATES OR TIMES UNCLEAR OR MISSING
- TEMPERATURE CRITERIA NOT MET

**TRIP BLANK INFORMATION**

- TRIP BLANK PROVIDED
- TRIP BLANK NOT PROVIDED
- TRIP BLANK NOT ON COC
- TRIP BLANK INTACT
- TRIP BLANK NOT INTACT
- RECEIVED WATER TRIP BLANK
- RECEIVED SOIL TRIP BLANK

**MISC. INFORMATION**

NUMBER OF ENCORES ? 0  
 NUMBER OF SOSS FIELD KITS ? 0  
 NUMBER OR LAB FILTERED METALS ? 0

SUMMARY OF COMMENTS:

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**SAMPLE INFORMATION**

- SAMPLE LABELS NOT PRESENT ON ALL BOTTLES
  - CORRECT NUMBER OF CONTAINERS USED
  - SAMPLE RECEIVED IMPROPERLY PRESERVED
  - INSUFFICIENT VOLUME FOR ANALYSIS
  - TIMES ON COC DOES NOT MATCH LABEL(S)
  - ID'S ON COC DOES NOT MATCH LABEL(S)
  - VOC VIALS HAVE HEADSPACE (MACRO BUBBLES)
  - BOTTLES RECEIVED BUT ANALYSIS NOT REQUESTED
  - NO BOTTLES RECEIVED FOR ANALYSIS REQUESTED
  - UNCLEAR FILTERING INSTRUCTIONS
  - UNCLEAR COMPOSITING INSTRUCTIONS
  - SAMPLE CONTAINER(S) RECEIVED BROKEN
  - % SOLIDS JAR NOT RECEIVED
  - SOSS FIELD KIT NOT FROZEN WITHIN 48 HOURS
  - RESIDUAL CHLORINE PRESENT
- ( APPLICABLE TO EPA 600 SERIES OR NORTH CAROLINA ORGANICS)

TECHNICIAN SIGNATURE/DATE JE 02-10-07 TECHNICIAN SIGNATURE/DATE JAL 02-10-07 ASPD 10/03/06

**CORRECTIVE ACTION SYSTEM EVALUATION REPORT**  
**August 2006 through November 2006**

**Highway 11 Grocery**  
**13527 North SC Highway 11**  
**Salem, South Carolina**  
**Oconee County**  
**UST Permit Number: 03439**  
**SEI Project Number: 302169**

**RECEIVED**

**DEC 04 2006**  
**UNDERGROUND STORAGE**  
**TANK PROGRAM**

**PREPARED FOR:**

**Mr. Steve Smith**  
**Highway 11 Grocery**  
**13527 North SC Highway 11**  
**Salem, South Carolina 29676-9801**

**45-TECH**

**PREPARED BY:**

**SEI ENVIRONMENTAL, INC.**  
**130 Penmarc Drive, Suite 108**  
**Raleigh, North Carolina**  
**UST Site Rehabilitation Contractor No. 354**

**December 1, 2006**



# CORRECTIVE ACTION SYSTEM EVALUATION REPORT

Submittal Date: December 1, 2006  
For Period Covering: August 28, 2006  
Facility Name: Highway 11 Grocery  
UST Permit Number: 03439  
County: Oconee  
Latitude: N 35°54'26.02"

Monitoring Report Number: \_\_\_\_\_  
to November 5, 2006  
Street Address: 13527 North SC Highway 11  
City: Salem, South Carolina  
Zip Code: 29676-9801  
Longitude: W 82°58'31.29"

Submitted by UST Owner/Operator:

Prepared by Consultant/Contractor:

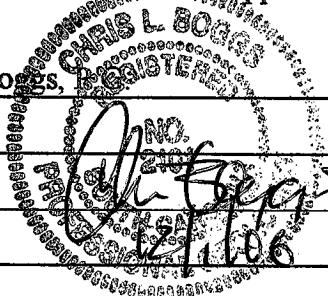
Name: Steve Smith  
Company: Highway 11 Grocery  
Address: 13527 North Highway 11  
City: Salem State: SC  
Zip Code: 29676-9801  
Telephone: (864) 944-0494  
SEI Project Number: 302169

Name: Chris L. Boggs  
Company: SEI Environmental, Inc.  
Address: 130 Penmarc Drive Suite 108  
City: Raleigh State: NC  
Zip Code: 27603  
Telephone: (919) 832-2535  
UST Site Rehabilitation Contractor No. 354

## Registered Professional Engineer or Professional Geologist Certification

I hereby certify that I have directed and supervised the fieldwork and preparation of this Plan, in accordance with State Rules and Regulations. As a registered professional geologist and/or professional engineer, I certify that I am a qualified groundwater professional, as defined by the South Carolina State Board of Professional Geologists. All of the information and laboratory data in this plan and in all of the attachments are true, accurate, complete, and in accordance with applicable State Rules and Regulations.

Name: Chris L. Boggs  
SC Reg. No. 2101  
Signature: \_\_\_\_\_  
Date: \_\_\_\_\_



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APPENDIX D	Laboratory Reports and Chain-of-Custody Forms

## **LIMITATIONS**

This investigation is intended to be a non-biased assessment of on-site environmental conditions proximate to the location of the former UST system. Subsurface investigative methodologies are in accordance with all applicable state and federal regulatory requirements. The information presented in this report is based upon site-specific observations, generally accepted geological practices, and analytical results for environmental samples collected at the time of the field investigation. All data is believed to represent subsurface conditions at the facility, however, data may not be completely representative of all subsurface conditions.

This report has been prepared under the guidance of a Licensed Geologist registered in South Carolina to meet the requirements of the South Carolina Department of Health and Environmental Control. The information and conclusions expressed in this report are based upon normal standards of the profession and limited to information available at this time. Chemical analyses of the samples associated with this report were performed by a subcontracted, independent, and certified laboratory. All data have been reviewed for accuracy and, excepting obvious errors, have been accepted as correct. SEI Environmental, Inc. reserves the right to revise estimates of performances as required by changes in the data supplied by Accutest Laboratories.

## **1.0 INTRODUCTION**

The Highway 11 Grocery is a convenience and retail fuel store located at 13527 North SC Highway 11 in Salem, Oconee County, South Carolina. Figure 1 in Appendix A is a portion of the United States Geological Survey (USGS) 7.5-minute topographical quadrangle map identifying the location of the site.

The following is a brief summary of recent events occurring at the site:

- December 18, 2003 – Groundwater Sampling Event
- March 31, 2004 – Groundwater Sampling Event
- September 29, 2004 – Groundwater Sampling Event
- January 11, 2005 – EFR performed on MW-8
- March 17, 2005 – EFR performed on MW-8
- March 17, 2005 – Groundwater Sampling Event
- August 9, 2005 – Groundwater Sampling Event
- November 1, 2005 – Groundwater Sampling Event
- March 22, 2006 – Groundwater Sampling Event
- August 28, 2006 – Groundwater Sampling Event
- November 5, 2006 – Groundwater Sampling Event

On November 5, 2006, fifteen groundwater monitoring wells were sampled, one water supply well was sampled, and two surface water samples were collected, in accordance with the requirements of the PFP contract. This report provides details of the groundwater sampling event.

## **2.0 FIELD MEASUREMENTS AND SAMPLING**

### **2.1 Groundwater Sampling**

On November 5, 2006, groundwater samples were collected from thirteen groundwater monitoring wells. Monitoring wells MW-1 and MW-8 was not sampled due to the presence of free product. Prior to sampling, groundwater depth was gauged in the fifteen monitoring wells utilizing an oil-water interface probe to measure depth to groundwater, and to detect any phase

separated hydrocarbons (PSH) present. The depth to groundwater measurement is used to calculate the groundwater elevation used in determining the current groundwater potentiometric surface, along with hydraulic gradient, and groundwater flow direction.

Figure 3 in Appendix A presents a groundwater potentiometric map for the current sampling event. The latest groundwater data indicate that groundwater flow at the site is to the northeast with a hydraulic gradient of 0.0423 feet per foot between monitoring wells MW-3 and MW-8. This flow direction is consistent with previous determinations of groundwater movement. Table 1 in Appendix B summarizes groundwater measurement data. Appendix C includes field observation data.

Representative groundwater samples were collected utilizing new, disposable bailers. Samples were placed in laboratory supplied containers, maintained at 4° Celsius, and shipped via FedEx under chain-of-custody to AccuTest, Inc. Laboratories in Orlando, Florida. The groundwater samples were analyzed by EPA Method 8260B for benzene, toluene, ethylbenzene, xylenes (BTEX), methyl-tert-butyl-ether (MTBE), and naphthalene.

## **2.2 Surface Water Sampling**

On November 5, 2006, two (CK-1 and CK-3) surface water samples were collected from adjacent creeks. CK-2 location is no longer sampled per the March 17, 2005, sampling event report. CK-3 replaced CK-2 to monitor for potential contamination from monitoring well MW-14. Representative samples were collected utilizing new, disposable bailers. Samples were placed in laboratory supplied containers, maintained at 4° Celsius, and shipped via FedEx under chain-of-custody to AccuTest, Inc. Laboratories in Orlando, Florida. The groundwater samples were analyzed by EPA Method 8260B for benzene, toluene, ethylbenzene, xylenes (BTEX), methyl-tert-butyl-ether (MTBE), and naphthalene.

## **2.3 Water Supply Well Sampling**

On November 5, 2006, the onsite water supply well (WW-1) was sampled. The sample was collected from a spigot nearest the water supply well. Prior to sampling, the spigot was

allowed to run for at least ten minutes. The sample was placed in a laboratory supplied container, maintained at 4° Celsius, and shipped via FedEx under chain-of-custody to AccuTest, Inc. Laboratories in Orlando, Florida. The groundwater sample was analyzed by EPA Method 8260B for benzene, toluene, ethylbenzene, xylenes (BTEX), methyl-tert-butyl-ether (MTBE), and naphthalene.

### **3.0 LABORATORY ANALYTICAL RESULTS**

#### **3.1 Groundwater Analytical Results**

SSTLs have been designated for fourteen (MW-1 through MW-8, MW-10, MW-11, MW-14, DMW-1, DMW-2, and DMW-4).

CoCs were detected in three (MW-7, MW-11, and MW-14) at concentrations above their respective Site Specific Target Level (SSTL). Figure 4 in Appendix A is a site map presenting monitoring well location and their CoC concentrations. Table 2 in Appendix B summarizes historical groundwater analytical results. A copy of the laboratory report and completed chain-of-custody form is included in Appendix C.

#### **3.2 Surface Water Analytical Results**

Benzene was detected in surface water sample CK-1 at a concentration of 13.9 µg/L and in sample CK-3 at a concentration of 25.2 µg/L.

#### **3.3 Water Supply Well Analytical Results**

CoC were not detected in water supply well sample WW-1 at concentrations above laboratory detection limits.

### **4.0 REMEDIATION SYSTEM EFFECTIVENESS**

In awarding the Pay-For-Performance (PFP) site remediation contract, the South Carolina Department of Health and Environmental Control (SCDHEC) set remediation goals for this site via site specific target levels (SSTLs). The monitoring wells have individual target

concentrations for five (benzene, toluene, ethylbenzene, xylenes, MTBE and naphthalene) identified chemicals of concern (CoC).

Remediation system effectiveness can be calculated comparing the initial May 7, 2002, CoC concentrations that exceeded the SSTLs with the current CoC concentrations that exceeded the SSTLs. For monitoring well MW-8, the standard values for free product (benzene, 44,390 µg/L; toluene, 26,540 µg/L; ethylbenzene, 3,700 µg/L; xylenes, 21,680 µg/L; MTBE, 173,000 µg/L; and naphthalene 637,000 µg/L) were used in the percent reduction calculation. The formula is as follows:

$$\left[ \frac{[08/29/96 \text{ Sample Concentration Above SSTL}] - [\text{Current Sample Concentration Above SSTL}]}{[08/29/96 \text{ Sample Concentration Above SSTL}]} \right] * 100 = \% \text{ Reduction}$$

Using the current analytical results, the percent concentration reduction is 85.65%. Table 2 in Appendix B presents concentration reduction calculations.

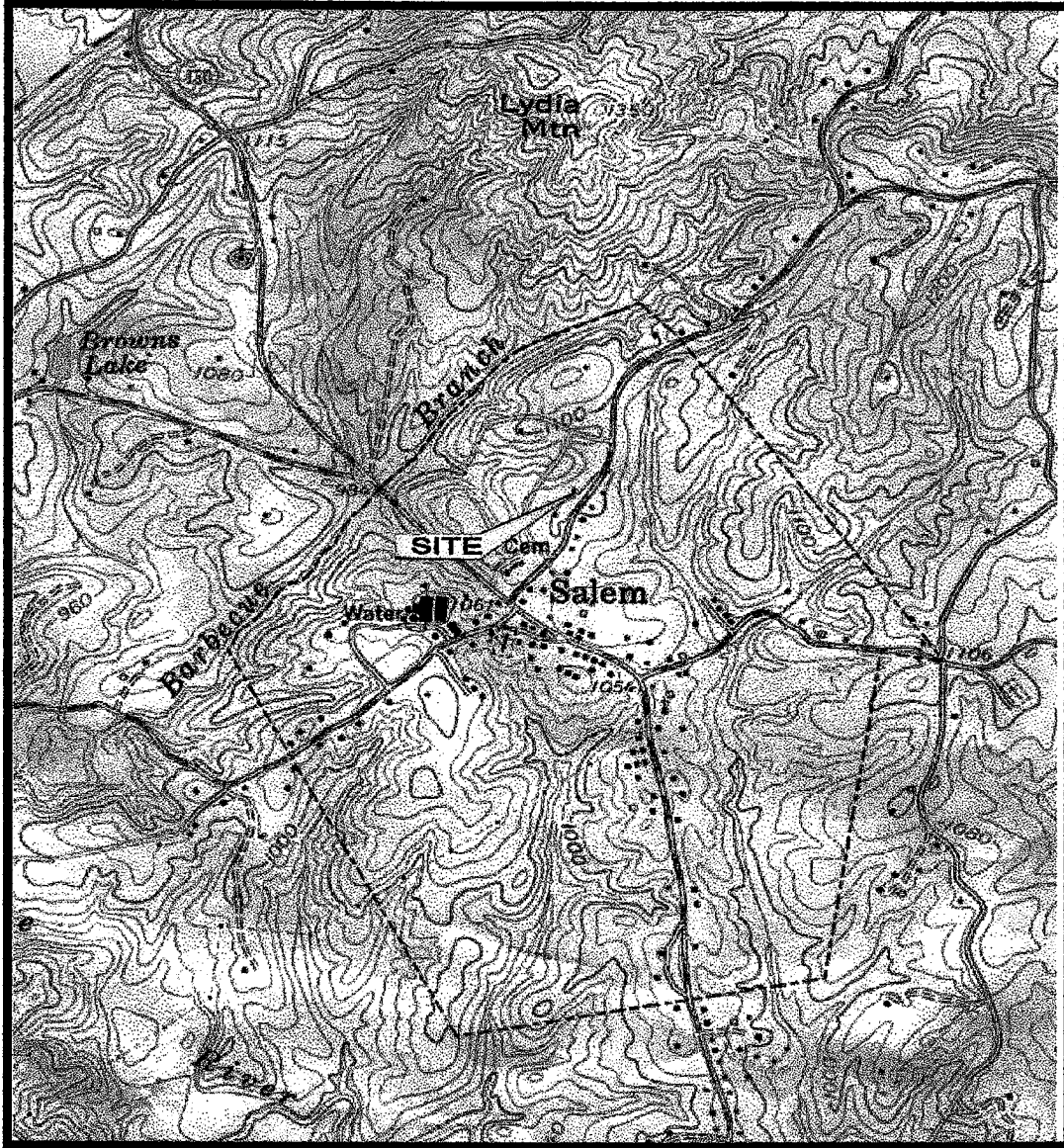
## 5.0 CONCLUSIONS

The groundwater flow direction at the time of the November 5, 2006, sampling event was towards the northeast with a hydraulic gradient of 0.0423 feet per foot. Free product was present in monitoring wells MW-1 and MW-8. CoC were detected in three monitoring wells above their respective SSTLs. Benzene was detected in one surface water sample at a concentration above the RBSL. No CoC were detected in the water supply well sample above laboratory detection limits. The percent concentration reduction was calculated at 85.57%.

SEI Environmental, Inc recommends continuing the quarterly monitoring to evaluate the continued reduction of chemicals of concern in the monitoring wells on site. The next sampling event will occur in February 2007.

**APPENDIX A**  
**FIGURES**





SCALE 1:24000

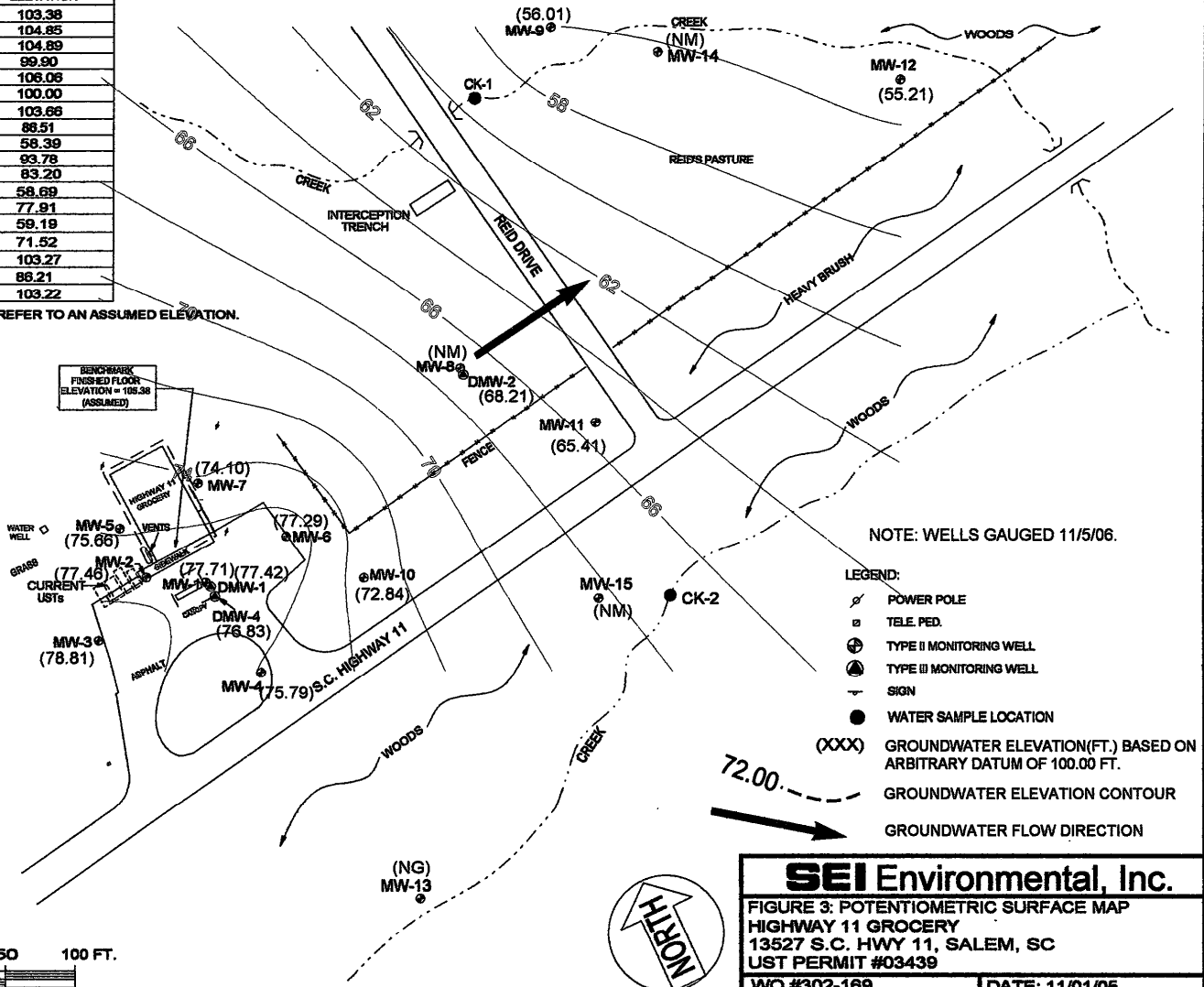


SALEM QUADRANGLE  
 SOUTH CAROLINA-OCONEE CO.  
 7.5 MINUTE SERIES (TOPOGRAPHIC-BATHYMETRIC)  
 BY U.S. GEOLOGICAL SURVEY

<b>SEI Environmental, Inc.</b>	
<b>FIGURE 1: SITE LOCATION MAP</b> <b>HIGHWAY 11 GROCER</b> 13527 Highway 11, Salem, SC FACILITY I.D. #03439	
WO # 302169 DWG # Hw 11_topo_sitemap	DATE: 9/16/05 DRAWN BY: HWH

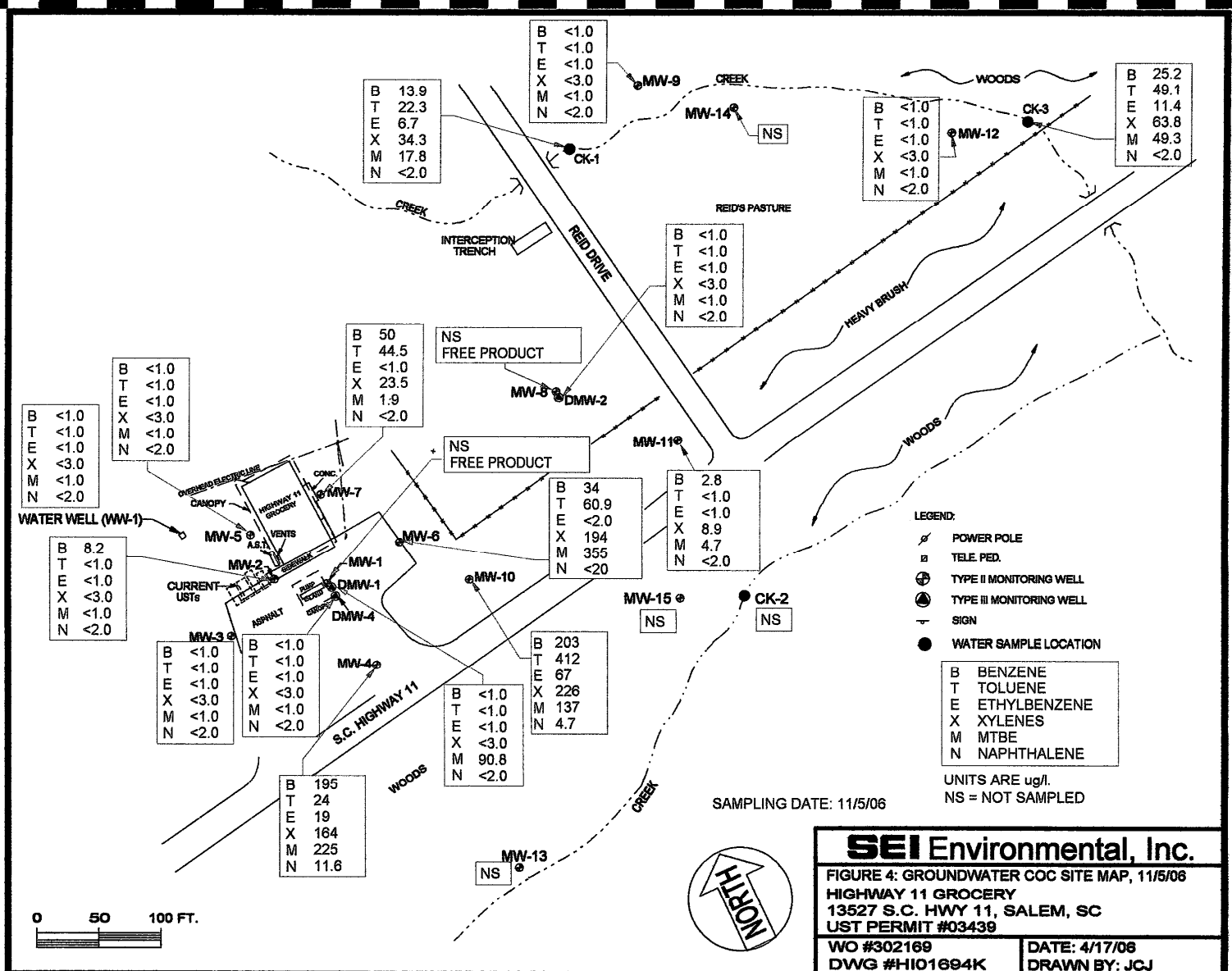
WELL #	INNER CASING ELEVATION
MW-1	103.38
MW-2	104.85
MW-3	104.89
MW-4	89.90
MW-5	106.06
MW-6	100.00
MW-7	103.66
MW-8	88.51
MW-9	58.39
MW-10	93.78
MW-11	83.20
MW-12	58.69
MW-13	77.91
MW-14	59.19
MW-15	71.52
DMW-1	103.27
DMW-2	86.21
DMW-4	103.22

NOTE: ELEVATIONS REFER TO AN ASSUMED ELEVATION.



**SEI Environmental, Inc.**  
 FIGURE 3: POTENTIOMETRIC SURFACE MAP  
 HIGHWAY 11 GROCERY  
 13527 S.C. HWY 11, SALEM, SC  
 UST PERMIT #03439

WO #302-189	DATE: 11/01/06
DWG #HI01693L	DRAWN BY: JCJ



B	13.9
T	22.3
E	6.7
X	34.3
M	17.8
N	<2.0

B	<1.0
T	<1.0
E	<1.0
X	<3.0
M	<1.0
N	<2.0

B	<1.0
T	<1.0
E	<1.0
X	<3.0
M	<1.0
N	<2.0

B	25.2
T	49.1
E	11.4
X	63.8
M	49.3
N	<2.0

B	<1.0
T	<1.0
E	<1.0
X	<3.0
M	<1.0
N	<2.0

B	50
T	44.5
E	<1.0
X	23.5
M	1.9
N	<2.0

B	<1.0
T	<1.0
E	<1.0
X	<3.0
M	<1.0
N	<2.0

B	<1.0
T	<1.0
E	<1.0
X	<3.0
M	<1.0
N	<2.0

B	8.2
T	<1.0
E	<1.0
X	<3.0
M	<1.0
N	<2.0

B	<1.0
T	<1.0
E	<1.0
X	<3.0
M	<1.0
N	<2.0

B	<1.0
T	<1.0
E	<1.0
X	<3.0
M	<1.0
N	<2.0

B	<1.0
T	<1.0
E	<1.0
X	<3.0
M	90.8
N	<2.0

B	34
T	60.9
E	<2.0
X	194
M	355
N	<20

B	2.8
T	<1.0
E	<1.0
X	8.9
M	4.7
N	<2.0

B	203
T	412
E	67
X	226
M	137
N	4.7

B	195
T	24
E	19
X	164
M	225
N	11.6

**APPENDIX B**  
**TABLES**

Table 1

**Historical Groundwater Elevation And Product Thickness Data**  
**Highway 11 Grocery**  
**13627 South Carolina Highway 11**  
**Salem, Oconee County, South Carolina**  
**UST Permit Number: 03439**  
**SEI Project Number: 302169**

Location	Date	Depth To Water	Depth To Product	Product Thickness	Well Head Elevation	Groundwater Elevation
MW-1	05/08/02	24.67	24.71	0.04	103.38	78.74
	07/01/03	23.28	23.62	0.24		80.29
	07/30/03	22.89	22.97	0.08		80.56
	09/15/03	23.78	23.82	0.04		79.63
	10/02/03	24.32	24.45	0.13		79.16
	10/23/03	24.72	24.83	0.21		78.62
	12/18/03	24.06				79.32
	03/31/04	24.61				78.77
	09/29/04	24.20				79.18
	01/11/05	23.77				79.61
	03/17/05	23.97				79.41
	08/09/05	22.86				80.52
	11/01/05	26.20	25.13	0.07		78.23
	03/22/06	23.91				79.47
	08/28/06	27.17	26.64	0.53		76.62
	11/05/06	26.08	25.65	0.53		77.71
MW-2	05/08/02	26.08			104.85	78.77
	07/01/03	24.08				80.77
	07/30/03	23.78				81.07
	09/15/03	24.73				80.12
	10/02/03	25.56				79.28
	10/23/03	25.71				79.14
	12/18/03	25.38				79.47
	03/31/04	25.85				79.00
	09/29/04	25.95				79.30
	01/11/05	24.74				80.11
	03/17/05	25.10				79.75
	08/09/05	23.70				81.15
	11/01/05	26.29				78.56
	03/22/06	25.94				78.91
	08/28/06	28.33				76.62
	11/05/06	27.39				77.46
MW-3	05/08/02	24.78			104.86	80.08
	07/01/03	22.51				82.35
	07/30/03	22.21				82.65
	09/15/03	23.23				81.63
	10/02/03	23.87				80.99
	10/23/03	24.23				80.63
	12/18/03	23.93				80.93
	03/31/04	24.44				80.42
	09/29/04	24.20				80.66
	01/11/05	23.36				81.50
	03/17/05	23.65				81.21
	08/09/05	22.11				82.75
	11/01/05	24.85				80.01
	03/22/06	24.57				80.29
	08/28/06	26.95				77.91
	11/05/06	26.05				78.81
MW-4	05/08/02	23.38			99.90	76.52
	07/01/03	22.10				77.80
	07/30/03	22.09				77.81
	09/15/03	22.90				77.00
	10/02/03	23.32				76.58
	10/23/03	23.69				76.21
	12/18/03	22.95				76.95
	03/31/04	23.49				76.41
	09/29/04	23.14				76.76
	01/11/05	22.70				77.20
	03/17/05	22.84				77.05
	08/09/05	26.40				73.60
	11/01/05	27.27				72.63
	03/22/06	23.42				76.48
	08/28/06	25.39				74.51
	11/05/06	24.11				75.79
MW-5	05/08/02	28.82			106.06	77.24
	07/01/03	26.82				79.24
	07/30/03	26.63				79.53
	09/15/03	27.40				78.66
	10/02/03	27.92				78.14
	10/23/03	28.40				77.66
	12/18/03	28.40				77.66
	03/31/04	28.86				77.90
	09/29/04	28.46				77.60
	01/11/05	27.41				78.65
	03/17/05	27.86				78.20
	08/09/05	20.02				86.04
	11/01/05	28.91				77.15
	03/22/06	28.69				77.47
	08/28/06	31.06				75.00
	11/05/06	30.40				75.66

Historical Groundwater Elevation And Product Thickness Data

Highway 11 Grocery  
 13627 South Carolina Highway 11  
 Salem, Oconee County, South Carolina  
 UST Permit Number: 03439  
 SEI Project Number: 302169

Location	Date	Depth To Water	Depth To Product	Product Thickness	Well Head Elevation	Groundwater Elevation
MW-6	05/08/02	21.66			100.00	78.34
	07/01/03	19.77				80.23
	07/30/03	19.88				80.12
	09/15/03	20.63				79.37
	10/02/03	21.34				78.66
	10/23/03	21.74				78.26
	12/18/03	21.00				79.00
	03/31/04	21.71				78.29
	09/29/04	21.33				78.67
	01/11/05	20.81				79.19
	03/17/05	20.10				79.90
	08/09/05	26.18				73.82
	11/01/05	22.41				77.69
	03/22/06	21.77				78.23
	08/28/06	23.86				76.14
11/05/06	22.71			77.29		
MW-7	05/08/02	28.12			103.66	76.54
	07/01/03	26.56				77.11
	07/30/03	26.22				77.44
	09/16/03	26.83				76.83
	10/02/03	27.69				76.97
	10/23/03	28.10				75.56
	12/18/03	27.71				75.95
	03/31/04	28.00				76.66
	09/29/04	27.60				76.06
	01/11/05	26.88				78.78
	03/17/05	27.83				75.83
	08/09/05	20.27				83.39
	11/01/05	28.63				76.03
	03/22/06	N/L				N/L
	08/28/06	30.43				73.23
11/05/06	29.56			74.10		
MW-8	05/08/02	21.00			86.61	66.61
	07/01/03	20.96				65.55
	07/30/03	20.46				66.05
	09/15/03	21.17				65.34
	10/02/03	20.44				66.07
	10/23/03	21.84				64.97
	12/18/03	20.82				65.69
	03/31/04	21.35				65.16
	09/29/04	21.10				65.41
	01/11/05	21.04				65.47
	03/17/05	20.95				65.56
	08/09/05	22.16				64.35
	11/01/05	23.31				63.20
	03/22/06	22.00	21.23	0.77		65.11
	08/28/06	24.46	22.05	2.41		63.93
11/05/06	N/L					
MW-9	05/08/02	2.47			68.39	56.92
	07/01/03	2.30				56.09
	07/30/03	2.26				56.13
	09/15/03	2.42				55.87
	10/02/03	2.16				56.23
	10/23/03	2.42				55.97
	12/18/03	2.20				56.19
	03/31/04	2.56				55.83
	09/29/04	1.90				56.49
	01/11/05	2.23				56.16
	03/17/05	2.11				56.28
	08/09/05	2.04				56.35
	11/01/05	2.33				56.06
	03/22/06	2.23				56.16
	08/28/06	2.50				55.89
11/05/06	2.38			56.01		
MW-10	05/08/02	20.04			93.78	73.74
	07/01/03	16.20				77.68
	07/30/03	18.96				74.83
	09/15/03	16.53				77.25
	10/02/03	20.15				73.59
	10/23/03	20.51				73.27
	12/18/03	19.83				73.95
	03/31/04	18.86				74.93
	09/29/04	20.02				73.76
	01/11/05	19.47				74.31
	03/17/05	18.84				74.94
	08/09/05	18.94				74.84
	11/01/05	21.07				72.71
	03/22/06	20.16				73.62
	08/28/06	22.16				71.62
11/05/06	20.94			72.84		

**Historical Groundwater Elevation And Product Thickness Data**  
**Highway 11 Grocery**  
**13527 South Carolina Highway 11**  
**Salem, Oconee County, South Carolina**  
**UST Permit Number: 03438**  
**SEI Project Number: 302169**

Location	Date	Depth To Water	Depth To Product	Product Thickness	Well Head Elevation	Groundwater Elevation
MW-11	05/08/02	16.22			83.20	66.98
	07/01/03	16.93				66.67
	07/30/03	16.70				66.50
	09/16/03	17.36				65.85
	10/02/03	16.40				66.80
	10/23/03	17.83				65.37
	12/18/03	17.98				65.62
	03/31/04	16.21				66.99
	09/29/04	16.92				67.28
	01/11/05	16.93				67.27
	03/17/05	16.86				66.34
	08/09/05	16.80				67.40
	11/01/05	18.22				64.98
	03/22/06	17.28				65.92
	08/28/06	19.09				64.11
11/05/06	17.79			65.41		
MW-12	05/08/02	2.80			58.69	55.89
	07/01/03	3.16				55.53
	07/30/03	2.65				56.14
	09/16/03	3.26				55.43
	10/02/03	2.60				56.09
	10/23/03	3.50				55.19
	12/18/03	2.97				55.72
	03/31/04	3.19				55.60
	09/29/04	3.02				55.67
	01/11/05	3.10				55.59
	03/17/05	3.12				55.57
	08/09/05	2.72				55.97
	11/01/05	3.63				55.05
	03/22/06	3.23				55.46
	08/28/06	3.84				54.85
11/05/06	3.48			55.21		
MW-13	05/08/02	6.29			71.72	71.43
	07/01/03	6.44				71.28
	07/30/03	N/L				N/L
	09/16/03	6.36				71.36
	10/02/03	6.24				71.48
	10/23/03	6.78				70.94
	12/18/03	7.61				70.21
	03/31/04	6.62				71.10
	09/29/04	6.28				71.44
	01/11/05	6.44				71.28
	03/17/05	6.62				71.20
	08/09/05	10.62				67.20
	11/01/05	N/L				N/L
	03/22/06	N/L				N/L
	08/28/06	N/L				N/L
MW-14	05/08/02	2.00			59.19	57.19
	07/01/03	2.28				56.91
	07/30/03	2.03				57.16
	09/16/03	2.42				56.77
	10/02/03	1.98				57.21
	10/23/03	2.67				56.62
	12/18/03	1.58				57.61
	03/31/04	2.03				57.16
	09/29/04	1.77				57.42
	01/11/05	1.92				57.27
	03/17/05	2.14				57.05
	08/09/05	1.75				57.44
	11/01/05	N/L				N/L
	03/22/06	N/L				N/L
	08/28/06	3.36				55.83
11/05/06	N/L			N/L		
MW-15	05/08/02	10.82			71.52	60.70
	07/01/03	10.76				60.76
	07/30/03	10.11				61.41
	09/16/03	11.00				60.62
	10/02/03	10.20				61.32
	10/23/03	11.07				60.45
	12/18/03	11.86				59.64
	03/31/04	11.00				60.50
	09/29/04	10.67				60.85
	01/11/05	10.83				60.69
	03/17/05	10.61				60.91
	08/09/05	10.68				60.84
	11/01/05	11.32				60.20
	03/22/06	NG				NG
	08/28/06	11.62				59.90
11/05/06	NM			NM		

**Historical Groundwater Elevation And Product Thickness Data**  
**Highway 11 Grocery**  
**13627 South Carolina Highway 11**  
**Salem, Oconee County, South Carolina**  
**UST Permit Number: 03439**  
**SEI Project Number: 302169**

Location	Date	Depth To Water	Depth To Product	Product Thickness	Well Head Elevation	Groundwater Elevation
DMW-1	05/08/02	23.88			103.27	79.39
	07/01/03	23.61				79.66
	07/30/03	24.24				79.03
	09/16/03	24.60				78.67
	10/02/03	24.00				79.27
	10/23/03	24.50				78.77
	12/18/03	24.11				79.16
	03/31/04	23.61				79.66
	09/29/04	22.72				80.65
	01/11/05	22.97				80.30
	03/17/05	24.68				78.99
	08/09/05	22.66				80.81
	11/01/05	25.11				78.16
	03/22/06	24.71				78.66
	08/28/06	26.95				76.32
11/05/06	25.85			77.42		
DMW-2	05/08/02	17.83			86.21	68.38
	07/01/03	16.67				69.54
	07/30/03	17.20				69.01
	09/16/03	17.31				68.90
	10/02/03	16.80				69.41
	10/23/03	17.63				68.98
	12/18/03	17.11				69.10
	03/31/04	15.75				70.46
	09/29/04	16.49				69.72
	01/11/05	16.44				69.77
	03/17/05	17.22				68.99
	08/09/05	16.71				69.60
	11/01/05	18.08				68.13
	03/22/06	17.40				68.81
	08/28/06	18.72				67.49
11/05/06	18.00			68.21		
DMW-4	05/08/02	24.30			103.22	78.92
	07/01/03	23.93				79.29
	07/30/03	24.76				78.47
	09/16/03	24.95				78.27
	10/02/03	24.46				78.77
	10/23/03	24.95				78.27
	12/18/03	24.39				78.83
	03/31/04	23.88				79.34
	09/29/04	23.18				80.04
	01/11/05	23.32				79.90
	03/17/05	26.08				78.14
	08/09/05	22.96				80.26
	11/01/05	26.51				76.71
	03/22/06	25.00				78.22
	08/28/06	27.33				75.89
11/05/06	26.39			76.83		



Table 2

**Historical Groundwater Analytical Results**  
**Highway 11 Grocery**  
**13627 South Carolina Highway 11**  
**Salem, Oconee County, South Carolina**  
**UST Permit Number: 03439**  
**SEI Project Number: 302169**

Well	Date	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Naphthalene	FP	Initial Mass	Current Mass
MW-1	05/07/02	226,000	301,000	280,000	278,000	5,110,000	2,000			6,197,000.00
	07/01/03	10,000	34,000	4,400	23,000	34,000	1,200			106,600.00
	07/30/03	7,600	28,600	6,300	32,000	25,000.0	2,600			101,400.00
	12/18/03	2,200	6,200	910	5,800	16,000	2,600			33,610.00
	03/31/04	3,400	9,300	1,100	6,200	20,000	1,200			41,200.00
	09/29/04	3,200	7,300	<1,000	4,500	12,000	<5,000			27,000.00
	03/17/05	5,600	9,650	1,570	7,610	19,300	325			43,955.00
	08/09/05	16,900	42,600	3,620	19,000	115,000	705			197,725.00
	11/01/05	44,390	26,540	3,700	21,680	173,000	637,000			906,310.00
	03/22/06	20,700	41,100	3,100	11,700	103,000	<4,000			179,600.00
	08/28/06	44,390	26,540	3,700	21,680	173,000	637,000	0.63		906,310.00
	08/28/06	44,390	26,540	3,700	21,680	173,000	637,000	0.63		906,310.00
	SSTL	22	4,497	3,148	44,969	180	112			
> SSTL	44,368	22,043	552	0	172,820	636,888				
MW-2	05/07/02	13	8.0	1.0	5.0	5.0	5.0			37.00
	07/01/03	4.7	5.0	1.0	3.0	1.0	5.0			19.70
	07/30/03	5.8	5.0	1.0	6.3	1.0	5.0			23.10
	12/18/03	2.2	5.0	1.0	3.0	1.0	5.0			17.20
	03/31/04	2.6	5.0	1.0	3.0	1.0	5.0			17.80
	09/29/04	14	<25	<5.0	<15	<5.0	<25			14.00
	03/17/05	13	5	<1.0	5	<1.0	<2.0			22.40
	08/09/05	39.7	14.5	1.2	27.5	<1.0	<2.0			82.90
	11/01/05	3.8	1.6	<1.0	<3.0	<1.0	<2.0			5.40
	03/22/06	11.8	4.2	<1.0	3.4	<1.0	<2.0			19.40
	08/28/06	32.0	3.1	<1.0	4.6	<1.0	<2.0			39.60
	08/28/06	8.2	<1.0	<1.0	<3	<1.0	<2.0			8.20
	SSTL	13	8.0	1.0	5.0	5.0	5.0			
> SSTL	0.0	0.0	0.0	0.0	0.0	0.0				
MW-3	05/07/02	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0			0.00
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	07/30/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	12/18/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	08/09/05	NS	NS	NS	NS	NS	NS			0.00
	11/01/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	03/22/06	<1.0	1.4	<1.0	<3.0	<1.0	<2.0			1.40
	08/28/06	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	11/05/06	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	SSTL	1.0	1.0	1.0	1.0	6.0	6.0			
> SSTL	0.0	0.4	0.0	0.0	0.0	0.0				
MW-4	05/07/02	1,500	5,320	620	3,360	810	500			12,110.00
	07/01/03	4,800	14,000	2,300	12,000	12,000	2,600			47,700.00
	07/30/03	4,000	14,000	2,700	13,000	2,100	500			36,300.00
	12/18/03	1,100	2,400	230	1,900	1,200	250			7,080.00
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	09/29/04	53	<25	7.1	70	210	<25			340.10
	03/17/05	<1.0	<1.0	<1.0	<3.0	17	<2.0			16.80
	08/09/05	<1.0	<1.0	<1.0	<3.0	5.9	<2.0			5.80
	11/01/05	3,720	3,660	745	4,170	4,640	<200			16,635.00
	03/22/06	<1.0	<1.0	<1.0	<3.0	1.2	<2.0			1.20
	08/28/06	43	7	4	86	153.0	3.6			296.70
	11/05/06	195	24	19	164	225.0	11.6			638.90
	SSTL	1,600	5,320	620	3,360	810	500.0			
> SSTL	0	0.0	0	0	0	0.0				

Table 2

**Historical Groundwater Analytical Results  
Highway 11 Grocery  
13627 South Carolina Highway 11  
Salem, Oconee County, South Carolina  
UST Permit Number: 03439  
SEI Project Number: 302169**

Well	Date	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Naphthalene	FP	Initial Mass	Current Mass	
MW-5	05/07/02	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0			0.00	
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00	
	07/30/03	4.2	17.0	3.6	18.0	2.2	<5.0			45.00	
	12/18/03	2.3	<5.0	<1.0	3.2	1.3	<5.0			6.80	
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00	
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00	
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00	
	08/09/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00	
	11/01/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00	
	03/22/06	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00	
	08/28/06	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00	
	11/05/06	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00	
	SSTL	1.0	1.0	1.0	1.0	5.0	5.0				
> SSTL	0.0	0.0	0.0	0.0	0.0	0.0					
MW-6	05/07/02	1,780	4,950	490	2,880	6,350	500.0			16,950.00	
	07/01/03	2,200	6,600	820	4,400	12,000	2,500			28,520.00	
	07/30/03	4,200	13,000	1,600	8,900	21,000	400			49,100.00	
	12/18/03	5,100	14,000	1,700	11,000	19,000	2,500			53,300.00	
	03/31/04	280	840	100	2,200	900	250			4,570.00	
	09/29/04	2,400	<5,000	<1,000	<3,000	17,000	<5,000			19,400.00	
	03/17/05	3,490	7,500	952	5,380	15,500	262			33,084.00	
	08/09/05	1,370	4,630	295	2,220	7,640	<400			16,155.00	
	11/01/05	879	2,220	262	1,810	9,410	<200			14,701.00	
	03/22/06	1,280	3,480	399	2,880	8,600	<200			16,639.00	
	08/28/06	99	76	<2.0	243	22	<4.0			439.60	
	11/05/06	34.0	60.9	<2.0	194	355	<2.0			643.90	
	SSTL	1,780	4,950	490	2,880	6,350	500.0				
> SSTL	0.0	0.0	0.0	0.0	0.0	0.0					
MW-7	05/07/02	34	20	<1.0	8.0	7.0	<5.0			69.00	
	07/01/03	37	36	1.7	20	9.2	<5.0			103.90	
	07/30/03	18	18	<1.0	10	<1.0	<5.0			45.70	
	12/18/03	41	20	<1.0	<3.0	<1.0	<5.0			61.00	
	03/31/04	30	34	<1.0	16	<1.0	<5.0			80.00	
	09/29/04	370	600	<100	<300	<100	<500			870.00	
	03/17/05	595	590	34	280	65	<2.0			1,473.40	
	08/09/05	52	56	2.6	34	9.2	<2.0			154.00	
	11/01/05	27	42	3.7	24	<1.0	<2.0			96.10	
	03/22/06	Not Sampled									
	08/28/06	99	95	3.6	127	7	<2.0			331.80	
	11/05/06	50	44.5	<1.0	23.5	1.9	<2.0			119.90	
	SSTL	22	20	1.0	6.0	7.0	5.0				
> SSTL	28.0	24.5	0.0	15.5	0.0	0.0					
MW-8	05/07/02	226,000	301,000	280,000	278,000	5,110,000	2,000			6,197,000.00	
	07/01/03	12,000	91,000	7,800	40,000	11,000	2,500			124,300.00	
	07/30/03	12,000	40,000	3,600	18,000	15,000	680			89,280.00	
	12/18/03	10,000	27,000	3,300	18,000	14,000	2,500			74,800.00	
	03/31/04	17,000	140,000	32,000	180,000	8,600	<25,000			377,600.00	
	09/29/04	44,390	26,540	3,700	21,680	173,000	637,000			906,310.00	
	03/17/05	44,390	26,540	3,700	21,680	173,000	637,000			906,310.00	
	08/09/05	44,390	26,540	3,700	21,680	173,000	637,000			906,310.00	
	11/01/05	44,390	26,540	3,700	21,680	173,000	637,000			906,310.00	
	03/22/06	44,390	26,540	3,700	21,680	173,000	637,000			906,310.00	
	08/28/06	44,390	26,540	3,700	21,680	173,000	637,000	2.41		906,310.00	
	11/05/06	44,390	26,540	3,700	21,680	173,000	637,000	NM		906,310.00	
	SSTL	204	40,886	28,622	278,000	1,362	1,021				
> SSTL	44,186.0	0.0	0.0	0.0	171,838.0	635,979.0					

Table 2

**Historical Groundwater Analytical Results  
Highway 11 Grocery  
13627 South Carolina Highway 11  
Salem, Oconee County, South Carolina  
UST Permit Number: 03439  
SEI Project Number: 302169**

Well	Date	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Naphthalene	FP	Initial Mass	Current Mass
MW-9	05/07/02	N/A	N/A	N/A	N/A	N/A	N/A			0.00
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	07/30/03	N/A	N/A	N/A	N/A	N/A	N/A			0.00
	12/18/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/31/04	<1.0	<5.0	1.2	8.8	<1.0	<5.0			10.00
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	08/09/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	11/01/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	03/22/06	<1.0	1.5	<1.0	<3.0	<1.0	<2.0			1.50
	08/28/06	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
11/05/06	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00	
RBSL		5.0	1,000	700	10,000	40	25			
MW-10	05/07/02	115	185	68.0	328	86	9.0			791.00
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	07/30/03	170	420	43	240	540	6.5			1,419.50
	12/18/03	89	280	74	480	91	25.0			1,039.00
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	08/09/05	1.7	4.4	<1.0	<3.0	18	<2.0			24.00
	11/01/05	10,000	23,600	1,410	7,810	21,600	<1,000			64,020.00
	03/22/06	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	08/28/06	79	98	16	69	169	<2.0			430.90
	11/05/06	203	412	67	226	137	4.7			1,049.90
	SSTL		115	185	68	328	86	9.0		
> SSTL		88.0	227.0	0.0	0.0	51.0	0.0			
MW-11	05/07/02	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0			0.00
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	07/30/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	12/18/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	08/09/05	NS	NS	NS	NS	NS	NS			0.00
	11/01/05	42.2	<1.0	<1.0	93.6	4.5	3.8			144.10
	03/22/06	<1.0	<1.0	<1.0	<3.0	1.9	<2.0			1.90
	08/28/06	6.4	<1	<1	82.6	4.4	2.5			95.90
	11/05/06	2.8	<1	<1	8.9	4.7	<2.0			16.40
	SSTL		1.0	1.0	1.0	1.0	5.0	5.0		
> SSTL		1.8	0.0	0.0	7.9	0.0	0.0			
MW-12	05/07/02	N/A	N/A	N/A	N/A	N/A	N/A			0.00
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	07/30/03	N/A	N/A	N/A	N/A	N/A	N/A			0.00
	12/18/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	08/09/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	11/01/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	03/22/06	1.5	24.8	10.1	58.6	<1.0	11.3			106.30
	08/28/06	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	11/05/06	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	RBSL		5.0	1,000	700	10,000	40	25		

Table 2

**Historical Groundwater Analytical Results  
Highway 11 Grocery  
13627 South Carolina Highway 11  
Salem, Oconee County, South Carolina  
UST Permit Number: 03439  
SEI Project Number: 302168**

Well	Date	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Naphthalene	FP	Initial Mass	Current Mass
MW-13	05/07/02	N/A	N/A	N/A	N/A	N/A	N/A			0.00
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	07/30/03	N/A	N/A	N/A	N/A	N/A	N/A			0.00
	12/18/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	08/09/05	NS	NS	NS	NS	NS	NS			0.00
	11/01/05	NS	NS	NS	NS	NS	NS			0.00
	03/22/06	NS	NS	NS	NS	NS	NS			0.00
	08/28/06	NS	NS	NS	NS	NS	NS			0.00
11/05/06	NS	NS	NS	NS	NS	NS			0.00	
RBSL		5.0	1,000	700	10,000	40	25			0.00
MW-14	05/07/02	3,780	13,800	27,000	14,700	7,010	500			66,790.00
	07/01/03	3,500	10,000	1,900	10,000	5,300	500			31,200.00
	07/30/03	3,100	9,700	1,800	9,300	4,300	500			28,700.00
	12/18/03	3,300	11,000	2,000	11,000	4,100	500			31,900.00
	03/31/04	5,500	17,000	2,600	13,000	7,100	570			45,770.00
	09/29/04	3,200	12,000	1,500	9,100	3,200	<5,000			29,100.00
	03/17/05	5,140	13,000	1,710	10,900	4,970	339			36,059.00
	08/09/05	3,290	10,600	1,820	11,000	4,950	<400			31,680.00
	11/01/05	NL	NL	NL	NL	NL	NL			0.00
	03/22/06	NL	NL	NL	NL	NL	NL			0.00
	08/28/06	2,010.0	4,080.0	1,160.0	6,320.0	3,320.0	261.0			17,151.00
11/05/06	NL	NL	NL	NL	NL	NL			0.00	
SSTL		5.0	1,000	700	10,000	40	25			11,770.00
> SSTL		0	0	0	0	0	0			
MW-15	05/07/02	N/A	N/A	N/A	N/A	N/A	N/A			0.00
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	07/30/03	N/A	N/A	N/A	N/A	N/A	N/A			0.00
	12/18/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	08/09/05	NS	NS	NS	NS	NS	NS			0.00
	11/01/05	NS	NS	NS	NS	NS	NS			0.00
	03/22/06	NS	NS	NS	NS	NS	NS			0.00
	08/28/06	NS	NS	NS	NS	NS	NS			0.00
11/05/06	NS	NS	NS	NS	NS	NS			0.00	
RBSL		5.0	1,000	700	10,000	40	25			0.00
DMW-1	05/07/02	216	430	50	50	1,780	250			2,775.00
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	07/30/03	<1.0	<5.0	<1.0	<3.0	4.2	<5.0			4.20
	12/18/03	1.5	<5.0	<1.0	<3.0	<1.0	<5.0			1.50
	03/31/04	<1.0	<15.0	<1.0	<3.0	3.9	<5.0			3.90
	09/29/04	8.4	<25	<5.0	<15	130	<25			136.40
	03/17/05	<1.0	1.2	<1.0	<3.0	8.1	<2.0			9.30
	08/09/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	11/01/05	<5.0	<5.0	<5.0	<15	<5.0	<10			0.00
	03/22/06	3.0	35.1	16	92.2	21.9	13.1			181.30
	08/28/06	<1.0	<1.0	<1.0	<3.0	20.3	<2.0			20.30
11/05/06	<1.0	<1.0	<1.0	<3.0	90.8	<2.0			90.80	
SSTL		215	430	50	50	1,780	250			
> SSTL		0.0	0.0	0.0	0.0	0.0	0.0			

Table 2

**Historical Groundwater Analytical Results**  
**Highway 11 Grocery**  
**13527 South Carolina Highway 11**  
**Salem, Oconee County, South Carolina**  
**UST Permit Number: 03439**  
**SEI Project Number: 302169**

Well	Date	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Naphthalene	FP	Initial Mass	Current Mass
DMW-2	05/07/02	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0			0.00
	07/01/03	<1.0	<5.0	<1.0	<3.0	6.4	<5.0			6.40
	07/30/03	<1.0	8.4	6.8	30.0	<1.0	6.7			51.90
	12/18/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	08/09/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	11/01/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	03/22/06	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	08/28/06	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	11/05/06	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	SSTL	1.0	1.0	1.0	1.0	5.0	5.0			
> SSTL	0.0	0.0	0.0	0.0	0.0	0.0				
DMW-4	05/07/02	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0			0.00
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	07/30/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	12/18/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	08/09/05	NS	NS	NS	NS	NS	NS			0.00
	11/01/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	03/22/06	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	08/28/06	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	11/05/06	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	SSTL	1.0	1.0	1.0	1.0	5.0	5.0			
> SSTL	0.0	0.0	0.0	0.0	0.0	0.0				
CK-1	05/07/02	N/A	N/A	N/A	N/A	N/A	N/A			0.00
	07/01/03	2.6	<5.0	<1.0	4.8	4.5	<5.0			11.90
	07/30/03	N/A	N/A	N/A	N/A	N/A	N/A			0.00
	12/18/03	11	18	4.1	20.0	9.0	<5.0			62.10
	09/29/04	16	30	6.1	32.0	22.0	<5.0			108.10
	03/17/05	10.4	17.5	4.1	20.8	12.3	<2.0			65.10
	08/09/05	7.6	17.6	2.9	15.8	6.9	<2.0			50.80
	11/01/05	20.3	38.2	8.8	48.8	27.3	<2.0			143.40
	03/22/06	6.6	12.9	3.2	15.2	7.8	<2.0			45.70
	08/28/06	13.1	29.0	6.7	27.8	16.7	<2.0			93.30
	11/05/06	13.9	22.3	6.7	34.3	17.8	<2.0			95.00
	RBSL	5.0	1,000	700	10,000	40	25			
	CK-2	05/07/02	N/A	N/A	N/A	N/A	N/A	N/A		
07/01/03		<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
07/30/03		N/A	N/A	N/A	N/A	N/A	N/A			0.00
12/18/03		<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
03/31/04		<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
09/29/04		<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
03/17/05		<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
08/09/05		NS	NS	NS	NS	NS	NS			0.00
11/01/05		NS	NS	NS	NS	NS	NS			0.00
03/22/06		NS	NS	NS	NS	NS	NS			0.00
08/28/06		<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
11/05/06		NS	NS	NS	NS	NS	NS			0.00
RBSL		5.0	1,000	700	10,000	40	25			

Table 2

**Historical Groundwater Analytical Results  
Highway 11 Grocery  
13527 South Carolina Highway 11  
Salem, Oconee County, South Carolina  
UST Permit Number: 03439  
SEI Project Number: 302169**

Well	Date	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Naphthalene	FP	Initial Mass	Current Mass
CK-3	08/08/05	14.4	33.3	7.1	41.1	25.8	<2.0			121.70
	11/01/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	03/22/06	23.3	49.7	10.1	48.2	33.8	<2.0			165.10
	11/05/06	25.2	49.1	11.4	63.8	49.3	<2.0			198.80
	RBSL	5.0	1,000	700	10,000	40	25			
WW-1	05/07/02	N/A	N/A	N/A	N/A	N/A	N/A			0.00
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	07/30/03	N/A	N/A	N/A	N/A	N/A	N/A			0.00
	12/18/03	N/A	N/A	N/A	N/A	N/A	N/A			0.00
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	08/09/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	11/01/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	03/22/06	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	08/28/06	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	11/05/06	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	RBSL	5.0	1,000	700	10,000	40	25			
<b>TOTAL MASS</b>										<b>1,815,068</b>
<b>TOTAL SSSL MASS</b>		<b>3,881</b>	<b>57,303</b>	<b>33,708</b>	<b>339,608</b>	<b>10,645</b>	<b>2,452</b>		<b>447,591</b>	
<b>INITIAL MASS ABOVE SSSL</b>									<b>12,046,007</b>	
<b>CURRENT MASS ABOVE SSSL</b>									<b>1,728,918</b>	
<b>PERCENT TOTAL MASS REDUCTION ABOVE SSSL</b>									<b>86.66</b>	

Reported in parts per billion (µg/l)

ND: Compound not detected

BDL: Below analytical Detection Limits

SSSL: Site Specific Treatment Level

**APPENDIX C**  
**Field Data Information Sheets for Groundwater Sampling**

## SEI Environmental SC Monitoring Well Gauging Data Sheet

Site Name: Highway 11 GroceryWO# 302169Date 11/5/06

Well ID	Total Depth (feet)	Well Dia. (in.)	Depth to Product (feet)	Product Thickness (feet)	Depth to Water (feet)	Notes
MW-1	30	2	25.55		26.08	Bailed out 1 GAL PROD + WATER
MW-2	35	2			27.39	1351
MW-3	35	2			26.05	1415 Semi-annual
MW-4	35	2			24.11	1425
MW-5	35	2			30.40	1407
MW-6	35	2			22.71	1454
MW-7	40	2			29.56	1503
MW-9	11	2			2.38	COWS 1624
MW-10	24	2			20.94	1513
MW-11	23	2			17.79	1701 Semi-annual
MW-12	11	2			3.48	1641
MW-14	9	2				CAN'T FIND
DW-1	45	2			25.85	1438
DW-2	75	2			18.00	1653
DMW-4	61	2			26.39	1431 Semi-annual
Water Supply Well Sample: WW-1 1717						
Surface Water Samples: CK-1 & CK-3 1630 1633						

Analysis: EPA Method 8260B for BTEX, MTBE, and Naphthalene

2-inch diameter well: Well Volume = (water column) x (0.163 gallon/foot)

4-inch diameter well: Well Volume = (water column) x (0.652 gallon/foot)

Purge amount = Well Volume x 3



South Carolina Department of Health and Environmental Control  
 Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy): 11/6/06  
 Field Personnel: RB, HP  
 General Weather Conditions: \_\_\_\_\_  
 Ambient Air Temperature: \_\_\_\_\_ °C  
 \_\_\_\_\_  
 Quality Assurance  
 pH Meter serial no. \_\_\_\_\_ Conductivity Meter serial no. \_\_\_\_\_  
 pH = 4.0 \_\_\_\_\_ standard \_\_\_\_\_  
 pH = 7.0 \_\_\_\_\_ standard \_\_\_\_\_  
 pH = 10.0 \_\_\_\_\_ standard \_\_\_\_\_  
 \_\_\_\_\_  
 Chain of Custody  
 Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name Highway 11 Grocery Job # 302169  
 Site ID # 03439 Monitoring Well # DMW-2  
 Water Supply Well Public Private \_\_\_\_\_  
 Monitoring Well Diameter (D): \_\_\_\_\_ feet  
 Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C = 0.163  
 for a 4 inch well C = 0.652  
 \*Free Product Thickness \_\_\_\_\_ feet  
 Depth to Ground Water (DGW) \_\_\_\_\_ feet  
 Total Well Depth (TWD) \_\_\_\_\_ feet  
 Length of the water column (LWC = TWD-DGW) \_\_\_\_\_ feet  
 1 casing volume (CV = LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals  
 3 casing volume (3 X CV) = \_\_\_\_\_ gals (standard purge volume)  
 Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals  
 \* If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1 <sup>st</sup> Vol	2 <sup>nd</sup> Vol	3 <sup>rd</sup> Vol	4 <sup>th</sup> Vol	5 <sup>th</sup> Vol	Post Sampling
Time (military)	1653						
pH (s.u.)	8.49						
Specific Conductivity (µmhos/cm)	.078						
Water Temperature (°C)	16.2						
Dissolved Oxygen	.16						
PID readings, if required							

Remarks: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

SEI ENVIRONMENTAL INC. → RAL SEI 0003

South Carolina Department of Health and Environmental Control  
 Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy): 11/6/06

Field Personnel: RB, HP

General Weather Conditions: \_\_\_\_\_

Ambient Air Temperature: \_\_\_\_\_ °C

Quality Assurance

pH Meter serial no. \_\_\_\_\_ Conductivity Meter serial no. \_\_\_\_\_

pH = 4.0 \_\_\_\_\_ standard \_\_\_\_\_

pH = 7.0 \_\_\_\_\_ standard \_\_\_\_\_

pH = 10.0 \_\_\_\_\_ standard \_\_\_\_\_

Chain of Custody

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name Highway 11 Grocery Job # 302169

Site ID # 03439 Monitoring Well # MW-12

Water Supply Well Public Private \_\_\_\_\_

Monitoring Well Diameter (D): \_\_\_\_\_ feet

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C = 0.163  
 for a 4 inch well C = 0.652

\*Free Product Thickness \_\_\_\_\_ feet

Depth to Ground Water (DGW) \_\_\_\_\_ feet

Total Well Depth (TWD) \_\_\_\_\_ feet

Length of the water column (LWC = TWD - DGW) \_\_\_\_\_ feet

1 casing volume (CV = LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals

3 casing volume (3 X CV) = \_\_\_\_\_ gals (standard purge volume)

Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals

\* If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1 <sup>st</sup> Vol	2 <sup>nd</sup> Vol	3 <sup>rd</sup> Vol	4 <sup>th</sup> Vol	5 <sup>th</sup> Vol	Post Sampling
Time (military)	<u>1641</u>						
pH (s.u.)	<u>7.85</u>						
Specific Conductivity (µmhos/cm)	<u>.021</u>						
Water Temperature (°C)	<u>15.3</u>						
Dissolved Oxygen	<u>.12</u>						
PID readings, if required							

Remarks: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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 ENVIRONMENTAL INC. → KAL SEI

South Carolina Department of Health and Environmental Control  
 Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy): 11/6/06

Field Personnel: RR, HP

General Weather Conditions: \_\_\_\_\_

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Ambient Air Temperature: \_\_\_\_\_ °C

Quality Assurance \_\_\_\_\_

pH Meter serial no. _____	Conductivity Meter serial no. _____
pH = 4.0 _____	standard _____
pH = 7.0 _____	standard _____
pH = 10.0 _____	standard _____

Chain of Custody \_\_\_\_\_

Relinquished by _____	Date/Time _____	Received by _____	Date/Time _____
-----------------------	-----------------	-------------------	-----------------

Facility Name Highway 11 Grocery Job # 302169

Site ID # 03439 Monitoring Well # MW-9

Water Supply Well Public \_\_\_\_\_ Private \_\_\_\_\_

Monitoring Well Diameter (D): \_\_\_\_\_ feet

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C = 0.163  
 for a 4 inch well C = 0.652

\*Free Product Thickness \_\_\_\_\_ feet

Depth to Ground Water (DGW) \_\_\_\_\_ feet

Total Well Depth (TWD) \_\_\_\_\_ feet

Length of the water column (LWC = TWD-DGW) \_\_\_\_\_ feet

1 casing volume (CV = LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals

3 casing volume (3 X CV) = \_\_\_\_\_ gals (standard purge volume)

Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals

\* If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1 <sup>st</sup> Vol	2 <sup>nd</sup> Vol	3 <sup>rd</sup> Vol	4 <sup>th</sup> Vol	5 <sup>th</sup> Vol	Post Sampling
Time (military)	<u>1624</u>						
pH (s.u.)	<u>8.10</u>						
Specific Conductivity (µmhos/cm)	<u>.030</u>						
Water Temperature (°C)	<u>16.1</u>						
Dissolved Oxygen	<u>.02</u>						
PID readings, if required							

Remarks: \_\_\_\_\_

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 SEI ENVIRONMENTAL INC. → RAL SEI  
 11/13/06 15:20 FAX 704 596 8605

SEI ENVIRONMENTAL INC. → RAL SEI 11/13/06 15:20 FAX 704 596 8605

South Carolina Department of Health and Environmental Control  
 Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy): 11/6/06  
 Field Personnel: RR, HP  
 General Weather Conditions: \_\_\_\_\_  
 Ambient Air Temperature: \_\_\_\_\_ °C  
 \_\_\_\_\_  
 Quality Assurance  
 pH Meter serial no. \_\_\_\_\_ Conductivity Meter serial no. \_\_\_\_\_  
 pH = 4.0 \_\_\_\_\_ standard \_\_\_\_\_  
 pH = 7.0 \_\_\_\_\_ standard \_\_\_\_\_  
 pH = 10.0 \_\_\_\_\_ standard \_\_\_\_\_  
 Chain of Custody  
 Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name Highway 11 Grocery Job # 302169  
 Site ID # 03439 Monitoring Well # MW-10  
 Water Supply Well Public \_\_\_\_\_ Private \_\_\_\_\_  
 Monitoring Well Diameter (D): \_\_\_\_\_ feet  
 Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C = 0.163  
 for a 4 inch well C = 0.652  
 \*Free Product Thickness \_\_\_\_\_ feet  
 Depth to Ground Water (DGW) \_\_\_\_\_ feet  
 Total Well Depth (TWD) \_\_\_\_\_ feet  
 Length of the water column (LWC = TWD-DGW) \_\_\_\_\_ feet  
 1 casing volume (CV = LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals  
 3 casing volume (3 X CV) = \_\_\_\_\_ gals (standard purge volume)  
 Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals  
 \* If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1 <sup>st</sup> Vol	2 <sup>nd</sup> Vol	3 <sup>rd</sup> Vol	4 <sup>th</sup> Vol	5 <sup>th</sup> Vol	Post Sampling
Time (military)	1513						
pH (s.u.)	7.75						
Specific Conductivity (µmhos/cm)	.058						
Water Temperature (°C)	17.4						
Dissolved Oxygen	.03						
PID readings, if required							

Remarks: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

South Carolina Department of Health and Environmental Control  
 Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy): 11/6/06

Field Personnel: BR, HP

General Weather Conditions: \_\_\_\_\_

Ambient Air Temperature: \_\_\_\_\_ °C

Quality Assurance

pH Meter serial no. \_\_\_\_\_ Conductivity Meter serial no. \_\_\_\_\_

pH = 4.0 \_\_\_\_\_ standard \_\_\_\_\_

pH = 7.0 \_\_\_\_\_ standard \_\_\_\_\_

pH = 10.0 \_\_\_\_\_ standard \_\_\_\_\_

Chain of Custody

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name Highway 11 Grocery Job # 302169

Site ID # 03439 Monitoring Well # MW-7

Water Supply Well Public Private \_\_\_\_\_

Monitoring Well Diameter (D): \_\_\_\_\_ feet

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C = 0.163  
 for a 4 inch well C = 0.652

\*Free Product Thickness \_\_\_\_\_ feet

Depth to Ground Water (DGW) \_\_\_\_\_ feet

Total Well Depth (TWD) \_\_\_\_\_ feet

Length of the water column (LWC = TWD-DGW) \_\_\_\_\_ feet

1 casing volume (CV = LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals

3 casing volume (3 X CV) = \_\_\_\_\_ gals (standard purge volume)

Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals

\* If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1 <sup>st</sup> Vol	2 <sup>nd</sup> Vol	3 <sup>rd</sup> Vol	4 <sup>th</sup> Vol	5 <sup>th</sup> Vol	Post Sampling
Time (military)	<u>1503</u>						
pH (s.u.)	<u>7.25</u>						
Specific Conductivity (µmhos/cm)	<u>.022</u>						
Water Temperature (°C)	<u>17.4</u>						
Dissolved Oxygen	<u>.13</u>						
PID readings, if required							

Remarks: \_\_\_\_\_

11/13/06 15:21 FAX 704 596 8605  
 SEI ENVIRONMENTAL INC. → RAL SEI 007

South Carolina Department of Health and Environmental Control  
 Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy): 11/6/06

Field Personnel: RR, HP

General Weather Conditions: Cloudy

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Ambient Air Temperature: \_\_\_\_\_ °C

Quality Assurance

pH Meter	Conductivity Meter
serial no. _____	serial no. _____
pH = 4.0 _____	standard _____
pH = 7.0 _____	standard _____
pH = 10.0 _____	standard _____

Chain of Custody

---

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name Highway 11 Grocery Job # 302169

Site ID # 03439 Monitoring Well # MW-2

Water Supply Well Public Private \_\_\_\_\_

Monitoring Well Diameter (D): \_\_\_\_\_ feet

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C = 0.16  
 for a 4 inch well C = 0.65

\*Free Product Thickness \_\_\_\_\_ feet

Depth to Ground Water (DGW) \_\_\_\_\_ feet

Total Well Depth (TWD) \_\_\_\_\_ feet

Length of the water column (LWC = TWD-DGW) \_\_\_\_\_ feet

1 casing volume (CV = LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals

3 casing volume (3 X CV) = \_\_\_\_\_ gals (standard purge volume)

Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals

\* If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1 <sup>st</sup> Vol	2 <sup>nd</sup> Vol	3 <sup>rd</sup> Vol	4 <sup>th</sup> Vol	5 <sup>th</sup> Vol	Post Sampling
Time (military)	<u>1351</u>						
pH (s.u.)	<u>7.43</u>						
Specific Conductivity (µmhos/cm)	<u>31</u>						
Water Temperature (°C)	<u>17.5</u>						
Dissolved Oxygen	<u>-.08</u>						
PID readings, if required							

Remarks: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

SEI ENVIRONMENTAL INC. → RAL SEI 008

South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy): 11/6/06

Field Personnel: RR, HC

General Weather Conditions: \_\_\_\_\_

---

Ambient Air Temperature: \_\_\_\_\_ °C

Quality Assurance \_\_\_\_\_

pH Meter serial no. _____	Conductivity Meter serial no. _____
pH = 4.0 _____	standard _____
pH = 7.0 _____	standard _____
pH = 10.0 _____	standard _____

Chain of Custody \_\_\_\_\_

Relinquished by _____	Date/Time _____	Received by _____	Date/Time _____
-----------------------	-----------------	-------------------	-----------------

Facility Name Highway 11 Grocery Job # 302169

Site ID # 03439 Monitoring Well # MW-6

Water Supply Well Public \_\_\_\_\_ Private \_\_\_\_\_

Monitoring Well Diameter (D): \_\_\_\_\_ feet

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C = 0.163  
for a 4 inch well C = 0.652

\*Free Product Thickness \_\_\_\_\_ feet

Depth to Ground Water (DGW) \_\_\_\_\_ feet

Total Well Depth (TWD) \_\_\_\_\_ feet

Length of the water column (LWC = TWD-DGW) \_\_\_\_\_ feet

1 casing volume (CV = LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals

3 casing volume (3 X CV) = \_\_\_\_\_ gals (standard purge volume)

Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals

\* If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1 <sup>st</sup> Vol	2 <sup>nd</sup> Vol	3 <sup>rd</sup> Vol	4 <sup>th</sup> Vol	5 <sup>th</sup> Vol	Post Sampling
Time (military)	<u>1454</u>						
pH (s.u.)	<u>7.46</u>						
Specific Conductivity (µmhos/cm)	<u>.018</u>						
Water Temperature (°C)	<u>18.4</u>						
Dissolved Oxygen	<u>.12</u>						
PID readings, if required							

Remarks: \_\_\_\_\_

\_\_\_\_\_

009  
SEI ENVIRONMENTAL INC. → RAL SEI

South Carolina Department of Health and Environmental Control  
 Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy): 11/6/06

Field Personnel: RR, HP

General Weather Conditions: \_\_\_\_\_

---

Ambient Air Temperature: \_\_\_\_\_ °C

Quality Assurance \_\_\_\_\_

pH Meter serial no. _____	Conductivity Meter serial no. _____
pH = 4.0 _____	standard _____
pH = 7.0 _____	standard _____
pH = 10.0 _____	standard _____

Chain of Custody \_\_\_\_\_

---

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name Highway 11 Grocery Job # 302169

Site ID # 03439 Monitoring Well # MW-1

Water Supply Well Public Private \_\_\_\_\_

Monitoring Well Diameter (D): \_\_\_\_\_ feet

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C = 0.163  
 for a 4 inch well C = 0.652

\*Free Product Thickness \_\_\_\_\_ feet

Depth to Ground Water (DGW) \_\_\_\_\_ feet

Total Well Depth (TWD) \_\_\_\_\_ feet

Length of the water column (LWC = TWD-DGW) \_\_\_\_\_ feet

1 casing volume (CV = LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals

3 casing volume (3 X CV) = \_\_\_\_\_ gals (standard purge volume)

Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals

\* If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1 <sup>st</sup> Vol	2 <sup>nd</sup> Vol	3 <sup>rd</sup> Vol	4 <sup>th</sup> Vol	5 <sup>th</sup> Vol	Post Sampling
Time (military)	<u>1438</u>						
pH (s.u.)	<u>7.50</u>						
Specific Conductivity (µmhos/cm)	<u>.020</u>						
Water Temperature (°C)	<u>18.3</u>						
Dissolved Oxygen	<u>.13</u>						
PID readings, if required							

Remarks: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



11/13/06 15:22 FAX 704 596 8605 SEI ENVIRONMENTAL INC. → RAL SEI 011

South Carolina Department of Health and Environmental Control  
 Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy): 11/6/06  
 Field Personnel: RR, HP  
 General Weather Conditions: \_\_\_\_\_  
 Ambient Air Temperature: \_\_\_\_\_ °C  
 \_\_\_\_\_  
 Quality Assurance  
 pH Meter serial no. \_\_\_\_\_ Conductivity Meter serial no. \_\_\_\_\_  
 pH = 4.0 \_\_\_\_\_ standard \_\_\_\_\_  
 pH = 7.0 \_\_\_\_\_ standard \_\_\_\_\_  
 pH = 10.0 \_\_\_\_\_ standard \_\_\_\_\_  
 \_\_\_\_\_  
 Chain of Custody  
 Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name Highway 11 Grocery Job # 302169  
 Site ID # 03439 Monitoring Well # DMW-4  
 Water Supply Well Public \_\_\_\_\_ Private \_\_\_\_\_  
 Monitoring Well Diameter (D): \_\_\_\_\_ feet  
 Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C = 0.163  
 for a 4 inch well C = 0.652  
 \*Free Product Thickness \_\_\_\_\_ feet  
 Depth to Ground Water (DGW) \_\_\_\_\_ feet  
 Total Well Depth (TWD) \_\_\_\_\_ feet  
 Length of the water column (LWC = TWD-DGW) \_\_\_\_\_ feet  
 1 casing volume (CV = LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals  
 3 casing volume (3 X CV) = \_\_\_\_\_ gals (standard purge volume)  
 Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals  
 \* If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1 <sup>st</sup> Vol	2 <sup>nd</sup> Vol	3 <sup>rd</sup> Vol	4 <sup>th</sup> Vol	5 <sup>th</sup> Vol	Post Sampling
Time (military)	<u>1431</u>						
pH (s.u.)	<u>7.87</u>						
Specific Conductivity (µmhos/cm)	<u>.026</u>						
Water Temperature (°C)	<u>17.8</u>						
Dissolved Oxygen	<u>.15</u>						
PID readings, if required							

Remarks: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program**

**Field Data Information Sheet for Ground Water Sampling**

Date (mm/dd/yy): \_\_\_\_\_

Field Personnel: \_\_\_\_\_

General Weather Conditions: \_\_\_\_\_

---

Ambient Air Temperature: \_\_\_\_\_ °C

Quality Assurance

pH Meter serial no. _____	Conductivity Meter serial no. _____
pH = 4.0 _____	standard _____
pH = 7.0 _____	standard _____
pH = 10.0 _____	standard _____

Chain of Custody

\_\_\_\_\_

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name Highway 11 Grocery Job # 302169

Site ID # 03439 Monitoring Well # MW-11

Water Supply Well Public \_\_\_\_\_ Private \_\_\_\_\_

Monitoring Well Diameter (D): \_\_\_\_\_ feet

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C = 0.163  
for a 4 inch well C = 0.652

\*Free Product Thickness \_\_\_\_\_ feet

Depth to Ground Water (DGW) \_\_\_\_\_ feet

Total Well Depth (TWD) \_\_\_\_\_ feet

Length of the water column (LWC = TWD - DGW) \_\_\_\_\_ feet

1 casing volume (CV = LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals

3 casing volume (3 X CV) = \_\_\_\_\_ gals (standard purge volume)

Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals

\* If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1 <sup>st</sup> Vol	2 <sup>nd</sup> Vol	3 <sup>rd</sup> Vol	4 <sup>th</sup> Vol	5 <sup>th</sup> Vol	Post Sampling
Time (military)	1701						
pH (s.u.)	7.99						
Specific Conductivity (µmhos/cm)	.021						
Water Temperature (°C)	16.5						
Dissolved Oxygen	.11						
PID readings, if required							

Remarks: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

11/13/06 15:22 FAX 704 596 8805 SEI ENVIRONMENTAL, INC. → RAL SEI 012

11/13/06 15:22 FAX 704 596 8605 SEI ENVIRONMENTAL INC. → RAL SEI 013

South Carolina Department of Health and Environmental Control  
 Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy): 11/6/06

Field Personnel: RR, HP

General Weather Conditions: \_\_\_\_\_

---

Ambient Air Temperature: \_\_\_\_\_ °C

Quality Assurance \_\_\_\_\_

pH Meter serial no.	Conductivity Meter serial no.
pH = 4.0 _____	standard _____
pH = 7.0 _____	standard _____
pH = 10.0 _____	standard _____

Chain of Custody \_\_\_\_\_

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name Highway 11 Grocery Job # 302169

Site ID # 03439 Monitoring Well # MW-4

Water Supply Well Public \_\_\_\_\_ Private \_\_\_\_\_

Monitoring Well Diameter (D): \_\_\_\_\_ feet

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C = 0.163  
 for a 4 inch well C = 0.652

\*Free Product Thickness \_\_\_\_\_ feet

Depth to Ground Water (DGW) \_\_\_\_\_ feet

Total Well Depth (TWD) \_\_\_\_\_ feet

Length of the water column (LWC = TWD-DGW) \_\_\_\_\_ feet

1 casing volume (CV = LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals

3 casing volume (3 X CV) = \_\_\_\_\_ gals (standard purge volume)

Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals

\* If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1 <sup>st</sup> Vol	2 <sup>nd</sup> Vol	3 <sup>rd</sup> Vol	4 <sup>th</sup> Vol	5 <sup>th</sup> Vol	Post Sampling
Time (military)	1425						
pH (s.u.)	7.70						
Specific Conductivity (µmhos/cm)	.057						
Water Temperature (°C)	17.5						
Dissolved Oxygen	.15						
PID readings, if required							

Remarks: \_\_\_\_\_

014  
 SEI ENVIRONMENTAL INC. → RAL SEI  
 11/13/06 15:22 FAX 704 596 8605

South Carolina Department of Health and Environmental Control  
 Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy): 11/6/06

Field Personnel: RR, HP

General Weather Conditions: \_\_\_\_\_

---

Ambient Air Temperature: \_\_\_\_\_ °C

Quality Assurance

pH Meter serial no. \_\_\_\_\_ Conductivity Meter serial no. \_\_\_\_\_

pH = 4.0 \_\_\_\_\_ standard \_\_\_\_\_

pH = 7.0 \_\_\_\_\_ standard \_\_\_\_\_

pH = 10.0 \_\_\_\_\_ standard \_\_\_\_\_

Chain of Custody

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name Highway 11 Grocery Job # 302169

Site ID # 03439 Monitoring Well # MW-3

Water Supply Well Public Private \_\_\_\_\_

Monitoring Well Diameter (D): \_\_\_\_\_ feet

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C = 0.163  
 for a 4 inch well C = 0.652

\*Free Product Thickness \_\_\_\_\_ feet

Depth to Ground Water (DGW) \_\_\_\_\_ feet

Total Well Depth (TWD) \_\_\_\_\_ feet

Length of the water column (LWC = TWD - DGW) \_\_\_\_\_ feet

1 casing volume (CV = LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals

3 casing volume (3 X CV) = \_\_\_\_\_ gals (standard purge volume)

Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals

\* If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1 <sup>st</sup> Vol	2 <sup>nd</sup> Vol	3 <sup>rd</sup> Vol	4 <sup>th</sup> Vol	5 <sup>th</sup> Vol	Post Sampling
Time (military)	<u>1415</u>						
pH (s.u.)	<u>7.07</u>						
Specific Conductivity (µmhos/cm)	<u>.012</u>						
Water Temperature (°C)	<u>16.9</u>						
Dissolved Oxygen	<u>.17</u>						
PID readings, if required							

Remarks: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

SEI ENVIRONMENTAL INC. → RAL SEI  
 11/13/08 15:22 FAX 704 596 8605

South Carolina Department of Health and Environmental Control  
 Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy): 11/6/06

Field Personnel: RR, HP

General Weather Conditions: \_\_\_\_\_

---

Ambient Air Temperature: \_\_\_\_\_ °C

Quality Assurance \_\_\_\_\_

pH Meter serial no. \_\_\_\_\_ Conductivity Meter serial no. \_\_\_\_\_

pH = 4.0 \_\_\_\_\_ standard \_\_\_\_\_

pH = 7.0 \_\_\_\_\_ standard \_\_\_\_\_

pH = 10.0 \_\_\_\_\_ standard \_\_\_\_\_

Chain of Custody \_\_\_\_\_

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name Highway 11 Grocery Job # 302169

Site ID # 03439 Monitoring Well # \_\_\_\_\_

Water Supply Well Public \_\_\_\_\_ Private \_\_\_\_\_

Monitoring Well Diameter (D): \_\_\_\_\_ feet

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C = 0.163  
 for a 4 inch well C = 0.652

\*Free Product Thickness \_\_\_\_\_ feet

Depth to Ground Water (DGW) \_\_\_\_\_ feet

Total Well Depth (TWD) \_\_\_\_\_ feet

Length of the water column (LWC = TWD - DGW) \_\_\_\_\_ feet

1 casing volume (CV = LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals

3 casing volume (3 X CV) = \_\_\_\_\_ gals (standard purge volume)

Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals

\* If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1 <sup>st</sup> Vol	2 <sup>nd</sup> Vol	3 <sup>rd</sup> Vol	4 <sup>th</sup> Vol	5 <sup>th</sup> Vol	Post Sampling
Time (military)							
pH (s.u.)							
Specific Conductivity (µmhos/cm)							
Water Temperature (°C)							
Dissolved Oxygen							
PID readings, if required							

Remarks: \_\_\_\_\_

South Carolina Department of Health and Environmental Control  
 Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy): 11/6/06

Field Personnel: RR, HP

General Weather Conditions: \_\_\_\_\_

---

Ambient Air Temperature: \_\_\_\_\_ °C

Quality Assurance

pH Meter serial no. \_\_\_\_\_ Conductivity Meter serial no. \_\_\_\_\_

pH = 4.0 \_\_\_\_\_ standard \_\_\_\_\_

pH = 7.0 \_\_\_\_\_ standard \_\_\_\_\_

pH = 10.0 \_\_\_\_\_ standard \_\_\_\_\_

Chain of Custody

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name Highway 11 Grocery Job # 302169

Site ID # 03439 Monitoring Well # MW-5

Water Supply Well Public \_\_\_\_\_ Private \_\_\_\_\_

Monitoring Well Diameter (D): \_\_\_\_\_ feet

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C = 0.163  
 for a 4 inch well C = 0.652

\*Free Product Thickness \_\_\_\_\_ feet

Depth to Ground Water (DGW) \_\_\_\_\_ feet

Total Well Depth (TWD) \_\_\_\_\_ feet

Length of the water column (LWC = TWD - DGW) \_\_\_\_\_ feet

1 casing volume (CV = LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals

3 casing volume (3 X CV) = \_\_\_\_\_ gals (standard purge volume)

Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals

\* If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1 <sup>st</sup> Vol	2 <sup>nd</sup> Vol	3 <sup>rd</sup> Vol	4 <sup>th</sup> Vol	5 <sup>th</sup> Vol	Post Sampling
Time (military)	<u>1407</u>						
pH (s.u.)	<u>6.86</u>						
Specific Conductivity (µmhos/cm)	<u>.012</u>						
Water Temperature (°C)	<u>16.8</u>						
Dissolved Oxygen	<u>.19</u>						
PID readings, if required							

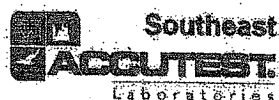
Remarks: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

016  
 SEI ENVIRONMENTAL INC. → RAL SEI

**APPENDIX D**  
**Laboratory Analytical Results and Chain-of-Custody**



IT'S ALL IN THE CHEMISTRY

11/30/06

Technical Report for

SEI-Columbia, SC

Hwy 11 Grocery; Salem, SC

302169

Accutest Job Number: F45055

Sampling Date: 11/05/06



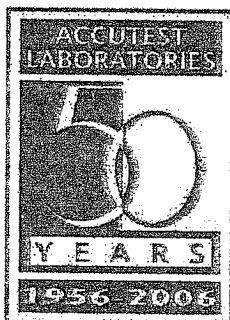
Report to:

SEI Environmental-Raleigh

cboggs@sei-environmental.com

ATTN: Chris Boggs

Total number of pages in report: 25



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

*Harry Behzadi*  
Harry Behzadi, Ph.D.  
Laboratory Director

Certifications: FL (DOH E83510), NC (573), NJ (FL002), MA (FL946), IA (366), LA (03051), KS (E-10327), SC, AK  
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### Sample Summary

SEI-Columbia, SC

Job No: F45055

Hwy 11 Grocery; Salem, SC  
Project No: 302169

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
F45055-1	11/05/06	14:38 RR	11/08/06	AQ	Ground Water	DMW-1
F45055-2	11/05/06	13:51 RR	11/08/06	AQ	Ground Water	MW-2
F45055-3	11/05/06	14:15 RR	11/08/06	AQ	Ground Water	MW-3
F45055-4	11/05/06	14:25 RR	11/08/06	AQ	Ground Water	MW-4
F45055-5	11/05/06	14:07 RR	11/08/06	AQ	Ground Water	MW-5
F45055-6	11/05/06	14:54 RR	11/08/06	AQ	Ground Water	MW-6
F45055-7	11/05/06	15:03 RR	11/08/06	AQ	Ground Water	MW-7
F45055-8	11/05/06	16:24 RR	11/08/06	AQ	Ground Water	MW-9
F45055-9	11/05/06	15:13 RR	11/08/06	AQ	Ground Water	MW-10
F45055-10	11/05/06	17:01 RR	11/08/06	AQ	Ground Water	MW-11
F45055-11	11/05/06	16:41 RR	11/08/06	AQ	Ground Water	MW-12
F45055-12	11/05/06	16:53 RR	11/08/06	AQ	Ground Water	DMW-2
F45055-13	11/05/06	14:31 RR	11/08/06	AQ	Ground Water	DMW-4

**Sample Summary**  
(continued)

SEI-Columbia, SC

Job No: F45055

Hwy 11 Grocery; Salem, SC  
Project No: 302169

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
F45055-14	11/05/06	16:30 RR	11/08/06	AQ	Ground Water	CK-1
F45055-15	11/05/06	16:33 RR	11/08/06	AQ	Ground Water	CK-3
F45055-16	11/05/06	17:17 RR	11/08/06	AQ	Ground Water	WW-1



IT'S ALL IN THE CHEMISTRY

**Sample Results**

**Report of Analysis**

## Report of Analysis

Page 1 of 1

Client Sample ID: MW-2	Date Sampled: 11/05/06
Lab Sample ID: F45055-2	Date Received: 11/08/06
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260B	
Project: Hwy 11 Grocery; Salem, SC	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0044652.D	1	11/15/06	KW	n/a	n/a	VC1795
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## Purgeable Aromatics, MTBE, Naphthalene

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	8.2	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	3.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
91-20-3	Naphthalene	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		86-115%
17060-07-0	1,2-Dichloroethane-D4	109%		73-126%
2037-26-5	Toluene-D8	101%		86-112%
460-00-4	4-Bromofluorobenzene	100%		83-119%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

### Report of Analysis

Client Sample ID: MW-3	Date Sampled: 11/05/06
Lab Sample ID: F45055-3	Date Received: 11/08/06
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260B	
Project: Hwy 11 Grocery; Salem, SC	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0044653.D	1	11/15/06	KW	n/a	n/a	VC1795
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE, Naphthalene

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	3.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
91-20-3	Naphthalene	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		86-115%
17060-07-0	1,2-Dichloroethane-D4	115%		73-126%
2037-26-5	Toluene-D8	102%		86-112%
460-00-4	4-Bromofluorobenzene	98%		83-119%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

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Client Sample ID:	MW-4	Date Sampled:	11/05/06
Lab Sample ID:	F45055-4	Date Received:	11/08/06
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	Hwy 11 Grocery; Salem, SC		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0044654.D	1	11/15/06	KW	n/a	n/a	VC1795
Run #2	B042603.D	5	11/16/06	KW	n/a	n/a	VB1800

Run #	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

## Purgeable Aromatics, MTBE, Naphthalene

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	195 <sup>a</sup>	5.0	ug/l	
108-88-3	Toluene	24.2	1.0	ug/l	
100-41-4	Ethylbenzene	19.1	1.0	ug/l	
1330-20-7	Xylene (total)	164 <sup>a</sup>	15	ug/l	
1634-04-4	Methyl Tert Butyl Ether	225 <sup>a</sup>	5.0	ug/l	
91-20-3	Naphthalene	11.6	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%	100%	86-115%
17060-07-0	1,2-Dichloroethane-D4	110%	101%	73-126%
2037-26-5	Toluene-D8	99%	99%	86-112%
460-00-4	4-Bromofluorobenzene	96%	111%	83-119%

(a) Result is from Run# 2

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

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Client Sample ID:	MW-5	Date Sampled:	11/05/06
Lab Sample ID:	F45055-5	Date Received:	11/08/06
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	Hwy 11 Grocery; Salem, SC		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0044655.D	1	11/15/06	KW	n/a	n/a	VC1795
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## Purgeable Aromatics, MTBE, Naphthalene

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	3.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
91-20-3	Naphthalene	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		86-115%
17060-07-0	1,2-Dichloroethane-D4	106%		73-126%
2037-26-5	Toluene-D8	104%		86-112%
460-00-4	4-Bromofluorobenzene	101%		83-119%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound



## Report of Analysis

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Client Sample ID:	MW-6	Date Sampled:	11/05/06
Lab Sample ID:	F45055-6	Date Received:	11/08/06
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	Hwy 11 Grocery; Salem, SC		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	B042604.D	10	11/16/06	KW	n/a	n/a	VB1800
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## Purgeable Aromatics, MTBE, Naphthalene

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	34.0	10	ug/l	
108-88-3	Toluene	60.9	10	ug/l	
100-41-4	Ethylbenzene	ND	10	ug/l	
1330-20-7	Xylene (total)	194	30	ug/l	
1634-04-4	Methyl Tert Butyl Ether	355	10	ug/l	
91-20-3	Naphthalene	ND	20	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		86-115%
17060-07-0	1,2-Dichloroethane-D4	105%		73-126%
2037-26-5	Toluene-D8	97%		86-112%
460-00-4	4-Bromofluorobenzene	107%		83-119%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

**Report of Analysis**

Client Sample ID: MW-7	Date Sampled: 11/05/06
Lab Sample ID: F45055-7	Date Received: 11/08/06
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260B	
Project: Hwy 11 Grocery; Salem, SC	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0044657.D	1	11/15/06	KW	n/a	n/a	VC1795
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

**Purgeable Aromatics, MTBE, Naphthalene**

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	50.0	1.0	ug/l	
108-88-3	Toluene	44.5	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	23.5	3.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	1.9	1.0	ug/l	
91-20-3	Naphthalene	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	96%		86-115%
17060-07-0	1,2-Dichloroethane-D4	108%		73-126%
2037-26-5	Toluene-D8	97%		86-112%
460-00-4	4-Bromofluorobenzene	98%		83-119%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

### Report of Analysis

<b>Client Sample ID:</b> MW-9	<b>Date Sampled:</b> 11/05/06
<b>Lab Sample ID:</b> F45055-8	<b>Date Received:</b> 11/08/06
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260B	
<b>Project:</b> Hwy 11 Grocery; Salem, SC	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0044658.D	1	11/15/06	KW	n/a	n/a	VC1795
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE, Naphthalene

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	3.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
91-20-3	Naphthalene	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	96%		86-115%
17060-07-0	1,2-Dichloroethane-D4	111%		73-126%
2037-26-5	Toluene-D8	101%		86-112%
460-00-4	4-Bromofluorobenzene	106%		83-119%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

**Report of Analysis**

Client Sample ID:	MW-10	Date Sampled:	11/05/06
Lab Sample ID:	F45055-9	Date Received:	11/08/06
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	Hwy 11 Grocery; Salem, SC		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0044659.D	1	11/15/06	KW	n/a	n/a	VC1795
Run #2	B042605.D	10	11/16/06	KW	n/a	n/a	VB1800

Run #	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

Purgeable Aromatics, MTBE, Naphthalene

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	203 <sup>a</sup>	10	ug/l	
108-88-3	Toluene	412 <sup>a</sup>	10	ug/l	
100-41-4	Ethylbenzene	67.2	1.0	ug/l	
1330-20-7	Xylene (total)	226 <sup>a</sup>	30	ug/l	
1634-04-4	Methyl Tert Butyl Ether	137 <sup>a</sup>	10	ug/l	
91-20-3	Naphthalene	4.7	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	94%	98%	86-115%
17060-07-0	1,2-Dichloroethane-D4	108%	102%	73-126%
2037-26-5	Toluene-D8	93%	97%	86-112%
460-00-4	4-Bromofluorobenzene	100%	114%	83-119%

(a) Result is from Run# 2

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

### Report of Analysis

Client Sample ID:	MW-11	Date Sampled:	11/05/06
Lab Sample ID:	F45055-10	Date Received:	11/08/06
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	Hwy 11 Grocery; Salem, SC		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	B042606.D	1	11/16/06	KW	n/a	n/a	VB1800
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE, Naphthalene

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	2.8	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	8.9	3.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	4.7	1.0	ug/l	
91-20-3	Naphthalene	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		86-115%
17060-07-0	1,2-Dichloroethane-D4	102%		73-126%
2037-26-5	Toluene-D8	98%		86-112%
460-00-4	4-Bromofluorobenzene	110%		83-119%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

**Report of Analysis**

Client Sample ID: MW-12	Date Sampled: 11/05/06
Lab Sample ID: F45055-11	Date Received: 11/08/06
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260B	
Project: Hwy 11 Grocery; Salem, SC	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	J026173.D	1	11/16/06	AB	n/a	n/a	VJ1074
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE, Naphthalene

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	3.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
91-20-3	Naphthalene	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	110%		86-115%
17060-07-0	1,2-Dichloroethane-D4	114%		73-126%
2037-26-5	Toluene-D8	93%		86-112%
460-00-4	4-Bromofluorobenzene	112%		83-119%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

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Client Sample ID:	DMW-1	Date Sampled:	11/05/06
Lab Sample ID:	F45055-1	Date Received:	11/08/06
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	Hwy 11 Grocery; Salem, SC		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0044649.D	1	11/15/06	KW	n/a	n/a	VC1795
Run #2	B042602.D	2	11/16/06	KW	n/a	n/a	VB1800

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

## Purgeable Aromatics, MTBE, Naphthalene

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	3.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	90.8 <sup>a</sup>	2.0	ug/l	
91-20-3	Naphthalene	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%	100%	86-115%
17060-07-0	1,2-Dichloroethane-D4	114%	102%	73-126%
2037-26-5	Toluene-D8	102%	99%	86-112%
460-00-4	4-Bromofluorobenzene	105%	113%	83-119%

(a) Result is from Run# 2

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

### Report of Analysis

Client Sample ID:	DMW-2	Date Sampled:	11/05/06
Lab Sample ID:	F45055-12	Date Received:	11/08/06
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	Hwy 11 Grocery; Salem, SC		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	J026174.D	1	11/16/06	AB	n/a	n/a	VJ1074
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE, Naphthalene

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	3.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
91-20-3	Naphthalene	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	111%		86-115%
17060-07-0	1,2-Dichloroethane-D4	118%		73-126%
2037-26-5	Toluene-D8	93%		86-112%
460-00-4	4-Bromofluorobenzene	110%		83-119%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound



**Report of Analysis**

Client Sample ID: DMW-4	Date Sampled: 11/05/06
Lab Sample ID: F45055-13	Date Received: 11/08/06
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260B	
Project: Hwy 11 Grocery; Salem, SC	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	J026175.D	1	11/16/06	AB	n/a	n/a	VJ1074
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE, Naphthalene

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	3.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
91-20-3	Naphthalene	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	110%		86-115%
17060-07-0	1,2-Dichloroethane-D4	119%		73-126%
2037-26-5	Toluene-D8	94%		86-112%
460-00-4	4-Bromofluorobenzene	113%		83-119%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

### Report of Analysis

Client Sample ID:	CK-1	Date Sampled:	11/05/06
Lab Sample ID:	F45055-14	Date Received:	11/08/06
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	Hwy 11 Grocery; Salem, SC		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	J026176.D	1	11/16/06	AB	n/a	n/a	VJ1074
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE, Naphthalene

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	13.9	1.0	ug/l	
108-88-3	Toluene	22.3	1.0	ug/l	
100-41-4	Ethylbenzene	6.7	1.0	ug/l	
1330-20-7	Xylene (total)	34.3	3.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	17.8	1.0	ug/l	
91-20-3	Naphthalene	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	110%		86-115%
17060-07-0	1,2-Dichloroethane-D4	117%		73-126%
2037-26-5	Toluene-D8	94%		86-112%
460-00-4	4-Bromofluorobenzene	111%		83-119%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

### Report of Analysis

Client Sample ID: CK-3	Date Sampled: 11/05/06
Lab Sample ID: F45055-15	Date Received: 11/08/06
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260B	
Project: Hwy 11 Grocery; Salem, SC	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	J026177.D	1	11/16/06	AB	n/a	n/a	VJ1074
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE, Naphthalene

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	25.2	1.0	ug/l	
108-88-3	Toluene	49.1	1.0	ug/l	
100-41-4	Ethylbenzene	11.4	1.0	ug/l	
1330-20-7	Xylene (total)	63.8	3.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	49.3	1.0	ug/l	
91-20-3	Naphthalene	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	110%		86-115%
17060-07-0	1,2-Dichloroethane-D4	117%		73-126%
2037-26-5	Toluene-D8	95%		86-112%
460-00-4	4-Bromofluorobenzene	107%		83-119%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

### Report of Analysis

Client Sample ID:	WW-1	Date Sampled:	11/05/06
Lab Sample ID:	F45055-16	Date Received:	11/08/06
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	Hwy 11 Grocery; Salem, SC		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	J026178.D	1	11/16/06	AB	n/a	n/a	VJ1074
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE, Naphthalene

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	3.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
91-20-3	Naphthalene	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	111%		86-115%
17060-07-0	1,2-Dichloroethane-D4	120%		73-126%
2037-26-5	Toluene-D8	94%		86-112%
460-00-4	4-Bromofluorobenzene	115%		83-119%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound



## Misc. Forms

### Custody Documents and Other Forms

---

Includes the following where applicable:

- Chain of Custody

# CHAIN OF CUSTODY

4405 VINELAND ROAD • SUITE C-18  
ORLANDO, FL 32811  
TEL: 407-423-8700 • FAX: 407-423-0707

ACCUTEST JOB #: **F45055**  
ACCUTEST QUOTE #:

CLIENT INFORMATION		FACILITY INFORMATION						ANALYTICAL INFORMATION								MATRIX CODES					
NAME: <b>SEI ENVIRONMENTAL</b> ADDRESS: <b>5100 REAGAN DR SUITE 5</b> <b>LYNNHURST N.C. 28206</b> CITY: STATE: ZIP SEND REPORT TO: <b>MARIE MORRIS</b> PHONE #: <b>704-301-0737</b>		PROJECT NAME: <b>Highway 11 Groceries</b> LOCATION: <b>13527 N Highway 11 Salem S.C.</b> PROJECT NO.: <b>302169</b> FAX #:						ANALYTICAL INFORMATION (Grid for parameters and results)								DW - DRINKING WATER GW - GROUND WATER WW - WASTE WATER SO - SOIL SL - SLUDGE OL - OIL LIQ - OTHER LIQUID SOL - OTHER SOLID					
ACCUTEST SAMPLE #	FIELD ID / POINT OF COLLECTION	COLLECTION		PRESERVATION												LAB USE ONLY					
		DATE	TIME	SAMPLED BY:	REMARKS	# OF BOTTLES	REF									COOL	IMP	OTHER			
①	MW-1																				
②	MW-2	11/5/06	1438	RA, HP	GW	3	3														
③	MW-3		1351																		
④	MW-4		1415																		
⑤	MW-5		1425																		
⑥	MW-6		1407																		
⑦	MW-7		1454																		
⑧	MW-9		1503																		
⑨	MW-10		1624																		
⑩	MW-11		1513																		
⑪	MW-12		1701																		
			1641																		
DATA TURNAROUND INFORMATION		DATA DELIVERABLE INFORMATION						COMMENTS/REMARKS													
<input checked="" type="checkbox"/> STANDARD <input type="checkbox"/> 48 HOUR RUSH <input type="checkbox"/> 24 HOUR EMERGENCY <input type="checkbox"/> OTHER EMERGENCY OR RUSH IS FAX DATA UNLESS PREVIOUSLY APPROVED		APPROVED BY: _____ <input type="checkbox"/> STANDARD <input type="checkbox"/> COMMERCIAL "B" <input type="checkbox"/> DISK DELIVERABLE <input type="checkbox"/> STATE FORMS <input type="checkbox"/> OTHER (SPECIFY) _____						COMMENTS/REMARKS													
SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY																					
RELINQUISHED BY SAMPLER: 1. <b>M. V. BUDZSKY</b>	DATE/TIME: <b>11/5/06</b>	RECEIVED BY: 1. <b>Fx</b>	RELINQUISHED BY: 2. <b>Fx</b>	DATE/TIME: <b>11-8-06</b>	RECEIVED BY: 2. <b>George Canal 09:00</b>	RELINQUISHED BY: 3.	DATE/TIME:									RECEIVED BY: 4.	RELINQUISHED BY: 5.	DATE/TIME:	RECEIVED BY:	SEAL #	PRESERVE WHERE APPLICABLE <input type="checkbox"/>

F45055: Chain of Custody  
Page 1 of 3

**CHAIN OF CUSTODY**

4405 VINELAND ROAD • SUITE C-15  
ORLANDO, FL 32811  
TEL: 407-423-0700 • FAX: 407-423-0707

ACCUTEST JOB #: **F45055**  
ACCUTEST QUOTE #:

CLIENT INFORMATION		FACILITY INFORMATION		ANALYTICAL INFORMATION		MATRIX CODES		
<b>SEI ENVIRONMENTAL</b> NAME: <b>5100 RESEARCH DR SUITE 5</b> ADDRESS: <b>CHARLOTTE, N.C. 28206</b> CITY, STATE, ZIP SEND REPORT TO: <b>MARK MORRIS</b> PHONE #: <b>704-301-0737</b>		PROJECT NAME: <b>Highway 11 GRACEY</b> LOCATION: <b>13527 N Highway 11 Salem SC.</b> PROJECT NO.: <b>302169</b> FAX #:		ANALYTICAL INFORMATION (Grid for analytical methods)		MATRIX CODES DW - DRINKING WATER GW - GROUND WATER WW - WASTE WATER SO - SOIL SL - SLUDGE LI - LIQUID SOL - OTHER SOLID		
ACCUTEST SAMPLE #	FIELD ID / POINT OF COLLECTION	COLLECTION		PRESERVATION				LAB USE ONLY
		DATE	TIME	SAMPLED BY	INITIALS	DATE	TIME	
12	DMW-2	11/6/06	1653	RR	GW	3	3	
13	DMW-4	11/6/06	1431		GW			
14	CK-1		1630					
15	CK-3		1633					
16	WW-1		1717					

82ccs for 61cc, 61cc, 61cc

DATA TURNAROUND INFORMATION	DATA DELIVERABLE INFORMATION	COMMENTS/REMARKS
<input type="checkbox"/> STANDARD <input type="checkbox"/> 48 HOUR RUSH <input type="checkbox"/> 24 HOUR EMERGENCY <input type="checkbox"/> OTHER APPROVED BY: _____ EMERGENCY OR RUSH IS FAX DATA UNLESS PREVIOUSLY APPROVED	<input type="checkbox"/> STANDARD <input type="checkbox"/> COMMERCIAL "B" <input type="checkbox"/> DISK DELIVERABLE <input type="checkbox"/> STATE FORMS <input type="checkbox"/> OTHER (SPECIFY)	

**SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY**

RELINQUISHED BY: <b>1. KIM RUDNICKY</b> DATE/TIME: <b>11/7/06</b>	RECEIVED BY: <b>1. Fk</b>	RELINQUISHED BY: <b>Fk</b> DATE/TIME: <b>11/8-06</b>	RECEIVED BY: <b>2. George Corral 09:00</b>
RELINQUISHED BY: 3.	RECEIVED BY: 3.	RELINQUISHED BY: 4.	RECEIVED BY: 4.
RELINQUISHED BY: 5.	RECEIVED BY: 5.	RELINQUISHED BY: 6.	RECEIVED BY: 6.

PRESERVE WHERE APPLICABLE  ON ICE  TEMPERATURE **2.8 C**

F45055: Chain of Custody

Page 2 of 3

**ACCUTEST LABORATORIES SAMPLE RECEIPT CONFIRMATION**

ACCUTEST'S JOB NUMBER: F45055 CLIENT: SEI PROJECT: HIGHWAY 11 GROCERY  
 DATE/TIME RECEIVED: 11-8-06 09200 # OF COOLERS RECEIVED: 1 COOLER TEMPS: 2.8  
 METHOD OF DELIVERY: FEDEX UPS ACCUTEST COURIER GREYHOUND DELIVERY OTHER  
 AIRBILL NUMBERS: 8536 3068 2950

**COOLER INFORMATION**

- CUSTODY SEAL NOT PRESENT OR NOT INTACT
- CHAIN OF CUSTODY NOT RECEIVED (COC)
- ANALYSIS REQUESTED IS UNCLEAR OR MISSING
- SAMPLE DATES OR TIMES UNCLEAR OR MISSING
- TEMPERATURE CRITERIA NOT MET

**TRIP BLANK INFORMATION**

- TRIP BLANK PROVIDED
- TRIP BLANK NOT PROVIDED
- TRIP BLANK NOT ON COC
- TRIP BLANK INTACT
- TRIP BLANK NOT INTACT
- RECEIVED WATER TRIP BLANK
- RECEIVED SOIL TRIP BLANK

**MISC. INFORMATION**

NUMBER OF ENCORES ? 0  
 NUMBER OF SOSS FIELD KITS ? 0  
 NUMBER OF LAB FILTERED METALS ? 0

**SAMPLE INFORMATION**

- SAMPLE LABELS NOT PRESENT ON ALL BOTTLES
  - CORRECT NUMBER OF CONTAINERS USED
  - SAMPLE RECEIVED IMPROPERLY PRESERVED
  - INSUFFICIENT VOLUME FOR ANALYSIS
  - TIMES ON COC DOES NOT MATCH LABEL(S)
  - ID'S ON COC DOES NOT MATCH LABEL(S)
  - VOC VIALS HAVE HEADSPACE (MACRO BUBBLES)
  - BOTTLES RECEIVED BUT ANALYSIS NOT REQUESTED
  - NO BOTTLES RECEIVED FOR ANALYSIS REQUESTED
  - UNCLEAR FILTERING INSTRUCTIONS
  - UNCLEAR COMPOSITING INSTRUCTIONS
  - SAMPLE CONTAINER(S) RECEIVED BROKEN
  - % SOLIDS JAR NOT RECEIVED
  - SOSS FIELD KIT NOT FROZEN WITHIN 48 HOURS
  - RESIDUAL CHLORINE PRESENT
- ( APPLICABLE TO EPA 600 SERIES OR NORTH CAROLINA ORGANICS )

SUMMARY OF COMMENTS: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

TECHNICIAN SIGNATURE/DATE le 11-8-06 TECHNICIAN SIGNATURE/DATE \_\_\_\_\_ ASBD 10/03/06

F45055: Chain of Custody  
 Page 3 of 3





130 Penmarc Drive, Suite 108  
Raleigh, NC 27603  
919.832.2535  
Fax 919.832.5914

**RECEIVED**  
DEC 04 2006  
UNDERGROUND STORAGE  
TANK PROGRAM

December 1, 2006

Mr. Joel P. Padgett, P.G., Hydrogeologist  
South Carolina Department of Health and Environmental Control  
Assessment & Corrective Action Section, Underground Storage Tank Program  
2600 Bull Street  
Columbia, South Carolina 29201

**RE: Corrective Action System Evaluation Report  
Highway 11 Grocery  
13527 North SC Highway 11  
Salem, Oconee County, South Carolina  
UST Permit Number: 03439  
SEI Project Number: 302169**

Dear Mr. Padgett:

Please find enclosed the quarterly Corrective Action System Evaluation (C.A.S.E) Report for the August 28, 2006, groundwater sampling event at the above referenced site. In addition to completing quarterly sampling and analysis at the site, SEI conducted an AFVR event on monitoring wells MW-1 and MW-8 on October 18, 2006 and filled the interceptor trench located on the adjacent property. Copies of the measurements taken during the AFVR event, a manifest for the water generated during this event, and analytical results for a water sample collected from the trench are attached to this letter. If you have any questions or comments, please contact me at (919) 832-2535.

Sincerely,  
SEI Environmental, Inc.

Chris L. Boggs, P.G.  
Project Manager

cc: Mr. John Smith, Highway 11 Grocery

SEI Environmental, Inc.  
Enhanced Fluid Recovery (EFR) Field Log

Project Name: Henry 11 Brewery Project Number: 10/29/06  
 Site Address: Henry 11 Date: \_\_\_\_\_  
 City, State: Salem, SC Event Number: \_\_\_\_\_  
 Facility ID: \_\_\_\_\_

Time	Extraction Wells	Vacuum (in/Hg) Extraction Well		Unit TEMP. F Wet	STACK TEMP. F Dry	PPM <sub>nitros</sub> OVA Conc.	Flow FT/MIN	Flow FT/SEC	Magnetic reading	
		Extraction Well	Extraction Well						Inches Water Upper Scale	Flow Lower Scale
0	MW-1									
0.25		2.3		88.5	66.0	37.819	1400			
0.5		2.3		83.6	108.8	45.007	2600			
0.75		2.3		87.2	120.3	42.888	1900			
1		2.3		86.5	126.9	50.720	1900			
1.25		2.4		92.7	121.4	50.000	1900			
1.5		2.4		95.4	126.1	34.459	1800			
1.75		2.3		90.5	128.3	50.007	1800			
2		2.3		100.7	130.2	50.007	1700			
2.5		2.3		94.4	131.1	47.253	1600			
3		2.3		93.7	130.6	35.498	1600			
3.5		2.3		97.6	131.2	50.004	1600			
4	MW 8	1.3		91.4	136.6	50.004	2700			
4.5		1.3		98.4	132.0	45.257	2600			
5		1.3		96.8	137.1	34.753	2500			
5.5		1.3		101.1	138.2	43.311	2500			
6		1.3		97.3	137.6	56.004	2500			
6.5		1.3		100.0	134.5	38.596	2500			
7		1.3		104.3	134.4	50.004	2500			
7.5		1.2		98.7	134.2	44.174	2500			
8		1.2		97.6	134.0	48.833	2500			
8.5		1.2		99.2	134.9	50.004	2500			
9		1.2		97.5	133.1	37.722	2500			

Well #	Observation Wells Before Event		Observation Wells After Event		Change in GW Level	Field Comments:
	DTW	DTP	DTW	DTP		
MW-1	25.87	0.42				
MW-8	23.64	1.98				
						Personnel:
						Pump type (wet or dry):
						Coolant (oil, water, etc):
						Stack Diameter ID (in):
						Stack Diameter ID (ft):
						Stack Discharge Area (ft <sup>2</sup> ):
						Total Hours of This Event:
						Calibration Gas (RID):
						Total Gal. of Water:
						Cum. Gal. of Water:

RECEIVED

DEC 04 2006

UNDERGROUND STORAGE TANK PROGRAM

# NON-HAZARDOUS WASTE MANIFEST

Please print or type (Form designed for use on elite (12 pitch) typewriter)

<b>NON-HAZARDOUS WASTE MANIFEST</b>		1. Generator's US EPA ID No.		Manifest Document No. <b>101906</b>		2. Page <b>1</b> of <b>1</b>			
3. Generator's Name and Mailing Address <b>Highway 11, Greer, SC</b>									
4. Generator's Phone (704) 596-5624 <b>SCOTT LUCAS</b>									
5. Transporter 1 Company Name <b>SEI ENVIRONMENTAL</b>				6. US EPA ID Number		A. State Transporter's ID (704) 596-5624			
7. Transporter 2 Company Name				8. US EPA ID Number		C. State Transporter's ID			
9. Designated Facility Name and Site Address <b>WORLD LOGISTICS SVCS PIEDMONT</b> <b>305 S MAIN STREET</b> <b>ANDREWS SC 29669</b>				10. US EPA ID Number		D. Transporter 2 Phone			
						E. State Facility's ID			
						F. Facility's Phone (843) 962-9953			
11. WASTE DESCRIPTION						12. Containers	13. Total Quantity	14. Unit Wt./Vol.	
a. <b>NON HAZ PETROLEUM CONTN 1122 2 DRUMS</b>						No.	Type	200	GALS
b.									
c.									
d.									
G. Additional Descriptions for Materials Listed Above						H. Handling Codes for Wastes Listed Above			
15. Special Handling Instructions and Additional Information									
16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.									
Printed/Typed Name <b>Stephanie C. Smith</b>				Signature <i>[Signature]</i>		Date 10/16/06			
17. Transporter 1 Acknowledgement of Receipt of Materials				Signature <i>[Signature]</i>		Date 10/16/06			
18. Transporter 2 Acknowledgement of Receipt of Materials				Signature		Date			
Printed/Typed Name				Signature		Date			
19. Discrepancy Indication Space									
20. Facility Owner or Operator; Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.									
Printed/Typed Name <b>Paul Carr</b>				Signature <i>[Signature]</i>		Date 10/19/06			

NON-HAZARDOUS WASTE

GENERATOR

TRANSPORTER

FACILITY



IT'S ALL IN THE CHEMISTRY

11/15/06



**Technical Report for**

**SEI-Charlotte, NC**

**James Reid Property/trench, 185 Reid Dr, Salem, SC**

**Accutest Job Number: F44643**

**Sampling Date: 10/19/06**

**Report to:**

**SEI Environmental-Raleigh**

**cboggs@sei-environmental.com**

**ATTN: Chris Boggs**

**Total number of pages in report: 8**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

*Harry Behzadi*  
**Harry Behzadi, Ph.D.**  
**Laboratory Director**

Certifications: FL (DOH E83510), NC (573), NJ (FL002), MA (FL946), IA (366), LA (03051), KS (E-10327), SC, AK  
This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories.

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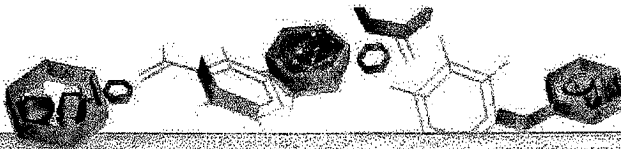
### Sample Summary

SEI-Charlotte, NC

Job No: F44643

James Reid Property/trench, 185 Reid Dr, Salem, SC

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
F44643-1	10/19/06	11:00 SS	10/21/06	AQ	Ground Water	TRENCH



IT'S ALL IN THE CHEMISTRY

## Sample Results

## Report of Analysis

---

## Report of Analysis

Page 1 of 1

Client Sample ID:	TRENCH	Date Sampled:	10/19/06
Lab Sample ID:	F44643-1	Date Received:	10/21/06
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	James Reid Property/trench, 185 Reid Dr, Salem, SC		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	B042081.D	1	10/23/06	KW	n/a	n/a	VB1778
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## Purgeable Aromatics, MTBE, Naphthalene

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	5.8	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	3.9	3.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
91-20-3	Naphthalene	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	110%		86-115%
17060-07-0	1,2-Dichloroethane-D4	88%		73-126%
2037-26-5	Toluene-D8	90%		86-112%
460-00-4	4-Bromofluorobenzene	93%		83-119%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound





**Misc. Forms**

**Custody Documents and Other Forms**

---

**Includes the following where applicable:**

- Chain of Custody

**CHAIN OF CUSTODY**

4405 VINELAND ROAD • SUITE C-10  
ORLANDO, FL 32811  
TEL: 407-425-6700 • FAX: 407-425-0707

ACCUTEST JOB #:  
**F44643**  
ACCUTEST #

CLIENT INFORMATION		FACILITY INFORMATION		ANALYTICAL INFORMATION						MATERIAL CODES		
NAME: <b>SET Environmental</b> ADDRESS: <b>500 Rangan Dr. Suite</b> CITY: <b>Charlotte, N.C. 28206</b> STATE: STATE ZIP SEND REPORT TO: <b>SET</b> PHONE # <b>704-536-9623</b>		PROJECT NAME: <b>James Reid property Trench</b> LOCATION: <b>185 Reid Dr. Salem, S.C. 29676</b> PROJECT NO.: FAX # <b>704-536-8605</b>		ANALYTICAL INFORMATION (Grid area for sample analysis)						DW - DRINKING WATER GW - GROUND WATER WW - WASTE WATER SO - SOIL SL - SLUDGE OS - OIL LIQ - OTHER LIQUID SOL - OTHER SOLID		
ACCUTEST SAMPLE #	FIELD ID / POINT OF COLLECTION	COLLECTION			PRESERVATION						LAB USE ONLY	
		DATE	TIME	SAMPLED BY:	DATE	TIME	SAMPLED BY:	DATE	TIME	SAMPLED BY:		
<b>1</b>	<b>Trench</b>	<b>10/16</b>	<b>11:00</b>	<b>SS</b>	<b>10/16</b>	<b>6</b>						<b>XX</b>

<b>DATA TURNAROUND INFORMATION</b> <input checked="" type="checkbox"/> STANDARD 7 Day <input type="checkbox"/> 48 HOUR RUSH <input type="checkbox"/> 24 HOUR EMERGENCY <input type="checkbox"/> OTHER APPROVED BY: _____	<b>DATA DELIVERABLE INFORMATION</b> <input checked="" type="checkbox"/> STANDARD 7 Day <input type="checkbox"/> COMMERCIAL "B" <input type="checkbox"/> DISK DELIVERABLE <input type="checkbox"/> STATE FORMS <input type="checkbox"/> OTHER (SPECIFY) _____	<b>COMMENTS/REMARKS</b>  
---	---	---------------------------------

**SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY**

1. RECEIVED BY: [Signature] DATE TIME: 10/16/06	2. RECEIVED BY: [Signature] DATE TIME: 10/16/06	3. RECEIVED BY: [Signature] DATE TIME: 10/16/06	4. RECEIVED BY: [Signature] DATE TIME: 10/16/06
5. RECEIVED BY: _____ DATE TIME: _____			

31  
3

F44643: Chain of Custody  
Page 1 of 2

**ACCUTEST LABORATORIES SAMPLE RECEIPT CONFIRMATION**

ACCUTEST'S JOB NUMBER: F44643 CLIENT: SEI PROJECT: French  
 DATE/TIME RECEIVED: 10/24/06 9:00 # OF COOLERS RECEIVED: 1 COOLER TEMPS: 9.2  
 METHOD OF DELIVERY: FEDEX UPS ACCUTEST COURIER GREYHOUND DELIVERY OTHER  
 AIRBILL NUMBERS: 8536 3088 2983

**COOLER INFORMATION**

- CUSTODY SEAL NOT PRESENT OR NOT INTACT
- CHAIN OF CUSTODY NOT RECEIVED (COC)
- ANALYSIS REQUESTED IS UNCLEAR OR MISSING
- SAMPLE DATES OR TIMES UNCLEAR OR MISSING
- TEMPERATURE CRITERIA NOT MET

**TRIP BLANK INFORMATION**

- TRIP BLANK PROVIDED
- TRIP BLANK NOT PROVIDED
- TRIP BLANK NOT ON COC
- TRIP BLANK INTACT
- TRIP BLANK NOT INTACT
- RECEIVED WATER TRIP BLANK
- RECEIVED SOIL TRIP BLANK

**MISC. INFORMATION**

NUMBER OF ENCORES ? 0  
 NUMBER OF 5035 FIELD KITS ? 2  
 NUMBER OF LAB FILTERED METALS ? 2

**SAMPLE INFORMATION**

- SAMPLE LABELS NOT PRESENT ON ALL BOTTLES
- CORRECT NUMBER OF CONTAINERS USED
- SAMPLE RECEIVED IMPROPERLY PRESERVED
- INSUFFICIENT VOLUME FOR ANALYSIS
- TIMES ON COC DOES NOT MATCH LABEL(S)
- ID'S ON COC DOES NOT MATCH LABEL(S)
- VOC VIALS HAVE HEADSPACE (MACRO BUBBLES)
- BOTTLES RECEIVED BUT ANALYSIS NOT REQUESTED
- NO BOTTLES RECEIVED FOR ANALYSIS REQUESTED
- UNCLEAR FILTERING INSTRUCTIONS
- UNCLEAR COMPOSITING INSTRUCTIONS
- SAMPLE CONTAINER(S) RECEIVED BROKEN
- % SOLIDS JAR NOT RECEIVED
- 5035 FIELD KIT NOT FROZEN WITHIN 48 HOURS
- RESIDUAL CHLORINE PRESENT  
 ( APPLICABLE TO EPA 600 SERIES OR NORTH CAROLINA ORGANICS)

SUMMARY OF COMMENTS:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

TECHNICIAN SIGNATURE/DATE: [Signature] 10/24/06 TECHNICIAN SIGNATURE/DATE: \_\_\_\_\_ ASD 10/03/06

# CORRECTIVE ACTION SOLICITATION

Hwy 11 Grocery  
UST Permit #03439

46-700

## PURPOSE and SCOPE OF WORK

The Underground Storage Tank (UST) Program of the South Carolina Department of Health and Environmental Control (DHEC) has determined that active corrective action of a petroleum release from a regulated underground storage tank site is required, and Mr. Steve Smith, the owner/operator responsible for the release, has opted to seek the services of a certified contractor to perform corrective action in accordance with defined rehabilitation goals. The objective is to remove free product and reduce the levels of chemicals of concern (CoC) in the groundwater to or below defined site specific target levels (SSTLs). **In this request for corrective action solicitation responses, DHEC is acting not as an agent, but as a coordinator between site rehabilitation contractors and the UST owner/operator. This role as coordinator does not imply a contractual obligation from the Department. Once a contractor has been selected by the UST owner/operator, payment will be from the State Underground Petroleum Environmental Response Bank (SUPERB) Account in accordance with this technical solicitation, the SUPERB Act, and R.61-98. All contractors submitting a solicitation response must be a South Carolina Certified Class I Site Rehabilitation Contractors.** The scope of work defined in this solicitation is to be implemented at Hwy 11 Grocery (UST Permit # 03439), 13527 N Hwy 11, Salem, South Carolina for the release reported on November 28, 2000.

## SPECIAL CONDITIONS

1. **PAYMENT PERIOD:** The corrective action pay for performance will be effective from date of financial approval until the corrective action, as described in this solicitation, is completed by a SCDHEC Class I Site Rehabilitation Contractor.
2. A signed Corrective Action Solicitation Response form should be returned (via mail or fax) to Mr. Lee Monts of the UST Program by the date specified to be forwarded to Mr. Steve Smith.
3. **FINANCIAL APPROVAL:** The owner/operator has the right to select the contractor to perform this active corrective action in accordance with the SUPERB Act (Title 44, Chapter 2 of the Code of Laws of South Carolina). The owner/operator is not limited to contractors who respond to this corrective action solicitation request. Therefore, financial approval may not be to any of the contractors that submit a price quotation or to the contractor who submits the lowest price. **When the UST owner/operator selects the rehabilitation contractor, a written contractual agreement should be developed between the owner/operator and the environmental contractor. The Department will not be a party to any contractual obligations between the UST owner/operator and the site rehabilitation contractor performing the corrective action activities.**
4. **REASONABLE COST:** The low price submitted to the UST Program (as the coordinator) or as obtained by the UST owner/operator, will be considered the reasonable or allowable cost by the SUPERB program to complete the corrective action as described in this solicitation as long as the price is within reason. DHEC reserves the right to reject any and all Corrective Action Solicitation Responses that appear to be out of line with the

customary and reasonable cost for the same scope of work in a similar geologic setting, or that propose a technology that cannot be permitted in the State of South Carolina, or that propose an estimated time frame for cleanup that is not protective of human health or the environment.

5. Contractor must agree to make positive efforts to use women and minority owned businesses and individuals.
6. **AMENDMENTS:** All amendments to this request for corrective action solicitation responses will be in writing from the UST Program. The UST owner/operator or DHEC will not be legally bound by any amendment or interpretation that is not in writing.
7. **QUESTIONS:** Questions or requests for information must be submitted in writing and received by September 20, 2002 5:00 P.M. After this date, no further questions will be addressed. A written response will be provided to all requestors of this solicitation. The questions may be faxed to Lee Monts (fax number (803) 896-6245).
8. **NOTE . . . THE ONLY OFFICIAL CONTACT PERSON AT DHEC DURING THE CORRECTIVE ACTION SOLICITATION SUBMITTAL AND FINANCIAL APPROVAL PROCESS IS LEE MONTS. CONTRACTORS ARE NOT TO CONTACT ANY OTHER UST PROGRAM PERSONNEL OR OTHER CONTRACTORS.**
9. The certified contractor selected by the UST owner/operator will be required to remediate the area where the dissolved petroleum chemicals of concern are above site-specific target levels (see figure #2). Verification that interim corrective action goals have been met will be based upon ground-water quality samples collected from monitoring wells MW-1, MW-2, MW-3, MW-4, MW-5, MW-6, MW-7, MW-8, MW-10, MW-11, MW-14, DMW-1, DMW-2 and DMW-4. Verification that final corrective goals have been met will be based upon ground-water quality samples collected from all existing monitoring wells and the creek, and additional verification wells to be installed at locations designated by DHEC (see specification #10 for more detail).
10. **REPORTS:** Deliver the reports to: SCDHEC, UST Program, ATTN: Konstantine Akhvlediani, 2600 Bull Street, Columbia, SC 29201 or other location as specified. A minimum of two (2) copies of each plan and two (2) copies of each report must be delivered to the above address. Based on permitting and other requirements, engineering report, UIC permits, air modeling forms or NPDES Permits may be required. Please contact the Department for the exact number of copies of each document to be submitted.
11. **INVOICING:** Invoices will be submitted to: SCDHEC, UST Program, ATTN: Financial Section, 2600 Bull Street, Columbia, SC 29201, using the Department's Corrective Action (CA) Invoice form. The initial invoice must be received at the above address within 120 days from the date of the letter directing Corrective Action Plan (CAP) implementation or funds will be uncommitted as required by the Section 44-2-40(B) of the SUPERB Act. If funds are uncommitted, any submitted invoices will be held until funding is available. **Payment will only be made for achieving the corrective action goals as specified in this contract. No interim or partial payments will be made once corrective action is initiated, except as outlined in Specification #2.** Payment to the contractor will be a pay for performance system as follows:

- A. Payment of forty percent (40%) of the total price approved will be made within 90 days of operation of the remediation system or implementation of corrective action as described in the approved corrective action plan (CAP), subject to the limitations of Section 44-2-40 of the SUPERB Act. This will be documented in the initial monitoring report.
- B. Payment of thirty-five percent (35%) of the total price approved will be made based on removal of free product to .01 foot as verified in monitoring wells MW-1 and MW-8 and achieving interim CoC concentration reduction goals at the site as verified in monitoring wells MW-1, MW-2, MW-3, MW-4, MW-5, MW-6, MW-7, MW-8, MW-10, MW-11, MW-8, MW-14, DMW-1, DMW-2 and DMW-4. Payment will be made for interim goals of 25, 50, and 75 percent reduction of total CoC concentration by the implementation of corrective action. **NOTE: Payment cannot be based on laboratory analyses for any well that has been used for injection unless that well has returned to ambient conditions.** The CoC concentration requiring reduction is as follows:

CoC concentration in parts per billion ( $\mu\text{g/l}$ ) based on May 7, 2002 sampling: (CoC may increase or decrease in the future)

Well	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Naphthalene	Total Conc.
MW-1**	226,000	301,000	280,000	278,000	5,110,000	2,000	6,197,000
MW-2	13	8	1	5	5	5	37
MW-3	1*	1*	1*	1*	5*	5*	14
MW-4	1,500	5,320	620	3,360	810	500	12,110
MW-5	1*	1*	1*	1*	5*	5*	14
MW-6	1,780	4,950	490	2,880	6,350	500	42,871
MW-7	34	20	1*	8	7	5*	75
MW-8**	226,000	301,000	280,000	278,000	5,110,000	2,000	6,197,000
MW-10	115	185	68	328	86	9	791
MW-11	1*	1*	1*	1*	5*	5*	14
MW-14	3,780	13,800	27,000	14,700	7,010	500	66,790
DMW-1	215	430	50	50	1,780	250	2,775
DMW-2	1*	1*	1*	1*	5*	5*	14
DMW-4	1*	1*	1*	1*	5*	5*	14
Initial Conc.***	459,442	626,718	588,235	577,336	10,236,073	5,794	12,493,598
SSTL Conc.	3,881	57,303	33,705	339,605	10,645	2,452	447,591
Initial Conc. Above SSTL	455,561	569,415	554,530	237,731	10,225,428	3,342	12,046,007

\*Laboratory analysis is below detection limits; therefore, initial concentration is set equal to the detection limit.

\*\* Well contains free phase petroleum, concentrations set based on Henry's Law solubility limits.

\*\*\* CoC concentration may change due to seasonal fluctuations in the groundwater.

- (1) 25 percent total concentration reduction will be achieved when free product has been removed to .01 foot from MW-1 and MW-8 and one-quarter of the initial BTEX, MTBE, and Naphthalene concentration from monitoring wells MW-1, MW-2, MW-3, MW-4, MW-5, MW-6, MW-8, MW-14, DMW-1, DMW-2 and DMW-4 is removed as compared to the SSTLs. Payment of ten percent (10%) of the total price approved will be made upon verification (see Specifications item 10 for the method of verification) of at least one-quarter of the total CoC concentration above SSTLs is removed.

The following is an example to demonstrate the CoC Concentration Reduction Calculation:

Well		Benzene	Toluene	Ethylbenzene	Xylene	MTB E	Naphthalene	Concentration>SSTL
MW-1	Initial A	7,500	4,000	2,000	15,000	3,000	1,000	A
	SSTL B	10	2,000	1,400	10,000	80	50	B
	Initial > SSTL C	7,490	2,000	600	5,000	2,920	950	18,960 <sup>C</sup>
	Subsequent D	3,000	1,000	900	13,000	2,000	5	D
	SSTL E	10	2,000	1,400	10,000	80	50	E
	Subsequent > SSTL F	2,990	0	0	3,000	1,920	0	7,910 <sup>F</sup>
MW-4	Initial G	150	400	50	250	300	25	G
	SSTL H	5	400	50	250	40	25	H
	Initial > SSTL I	145	0	0	0	260	0	405 <sup>I</sup>
	Subsequent J	100	100	1	1	100	1	J
	SSTL K	5	400	50	250	40	25	K
	Subsequent > SSTL L	95	0	0	0	60	0	155 <sup>L</sup>
<b>Total s</b>	Initial > SSTL M	(Sum of initial concentration above SSTL for all wells) (C+I)						19,365 <sup>M</sup>
	Subsequent > SSTL N	(Sum of subsequent concentration above SSTL for all wells) (F+L)						8,065 <sup>N</sup>

Notes: If subsequent sampling indicates a CoC concentration at or below the SSTL and/or a CoC concentration at BDL but the reporting limit is at/or below the SSTL value for any constituent, the value for the concentration reduction will be 0 (no negative numbers).

If subsequent sampling indicates a CoC concentration at BDL but the reporting limit is above the SSTL, the value for any constituent will be the analytical reporting limit.

#### Concentration Reduction Calculation

$$\text{CoC Mass Reduction} = \frac{(M-N)}{(M)} = \frac{(19,365-8,065)}{19,365} = 0.5835 * 100 = 58.35\% \text{ CoC Reduction}$$

- (2) 50 percent total concentration reduction will be achieved when one-half of the initial BTEX, MTBE, and Naphthalene concentration from monitoring wells MW-1, MW-2, MW-3, MW-4, MW-5, MW-6, MW-8, MW-14, DMW-1, DMW-2 and DMW-4 is removed as compared to the SSTLs. The formula outlined above will be used. Payment of 10 percent (10%) of the total price approved will be made upon verification (see Specifications item 10 for the method of verification) of at least one-half of the total CoC concentration above SSTLs is removed.
- (3) 75 percent total concentration reduction will be achieved when three-quarters of the initial BTEX, MTBE, and Naphthalene concentration from monitoring wells MW-1, MW-2, MW-3, MW-4, MW-5, MW-6, MW-8, MW-14, DMW-1, DMW-2 and DMW-4 is removed as compared to the SSTLs. The formula outlined above will be used. Payment of 15 percent (15%) of the total price approved will be made upon verification (see Specifications item 10 for the method of verification) of at least three-quarters of the total CoC concentration above SSTLs is removed.

**C. The final 25 percent (25%) of the total price approved will be paid upon:**

- 1) verification that the thickness of free product does not exceed .01 foot and the levels of CoC do not exceed the site-specific target levels (SSTLs) defined in item 11.C. at any point in the area of concern (see figure #2). Verification that the SSTLs have been met will be based upon ground-water quality samples collected from all existing monitoring wells, the creek and additional verification wells to be installed at locations designated by DHEC (see specification #10 for more detail); and**
- 2) all remediation and assessment items installed by the contractor (e.g., wells [including preexisting wells], trenches, etc.) are removed from the site or properly abandoned. The SSTLs are as follows:**



Site-specific target levels (SSTLs) in parts per billion (µg/l)

Well	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Naphthalene
MW-1	22	4,497	3,148	44,969	180	112
MW-2	13*	8**	1**	5**	5**	5**
MW-3	1**	1**	1**	1**	5**	5**
MW-4	1,500*	5,320*	620*	3,360*	810*	500*
MW-5	1**	1**	1**	1**	5**	5**
MW-6	1,780*	4,950*	490*	2,880*	6,350*	500*
MW-7	22	20*	1*	8*	7	5*
MW-8	204	40,888	28,622	278,000**	1,362	1,021
MW-10	115*	185*	68*	328*	86*	9*
MW-11	1**	1**	1**	1**	5**	5**
MW-14	5	1,000	700	10,000	40	25
DMW-1	215*	430*	50**	50**	1,780*	250*
DMW-2	1**	1**	1**	1**	5**	5**
DMW-4	1**	1**	1**	1**	5**	5**
Total	3,881	57,303	33,705	339,605	10,645	2,452

\* Laboratory analysis is less than calculated SSTLs; therefore, SSTL concentration is set equal to laboratory concentration.

\*\* Laboratory analysis is below detection limits; therefore, SSTL concentration is set equal to detection limits.

12. NOTIFICATION FOR FAILURE TO PERFORM: If the contractor fails to meet any specification of corrective action as outlined in this document, DHEC will notify the contractor by certified letter of the deficiency(ies). If the contractor does not correct the deficiency(ies) within 30 days, the contractor will be in breach of contract and the financial approval may be voided by DHEC. DHEC will notify the contractor by certified letter that the financial approval is void and if any invoices are payable upon review and approval of DHEC. If the contractor corrects the deficiency(ies) within 30 days, the financial approval will continue. Please note contractor-owned items used on-site for the contract that are destroyed by acts of nature, improper maintenance or handling, theft or vandalism will not be replaced or reimbursed by the SUPERB Account. **The amount of financial approval 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, increased subcontractor costs, loss of utilities, modification to the system to meet the remediation goals, etc.) with the exception of unforeseen geologic circumstances or identification of additional CoC from another release.** Payment will only be made for achieving the corrective action goals as specified in this contract. No interim or partial payments will be made once corrective action is initiated, except as outlined in Specification #4. Once site rehabilitation has been initiated under this contract, in the event of a cancellation due to the prescribed circumstances, final payment will be a percentage of the contract amount equal to the actual percent reduction of the CoC mass as calculated based on the last sampling results from all wells listed in Special Condition 11.C. of the contract less the amount previously paid.

13. **SITE SPECIFIC DETAILS:** A brief technical summary of the release, including a location map and specifics of existing wells, is attached. The detailed technical file will be available for review through the Freedom of Information (FOI) Office located on the third floor of the Sims Building, 2600 Bull Street, Columbia, SC. Review of the detailed technical file is not mandatory; however, contractors submitting a Corrective Action Solicitation Response are strongly encouraged to review the file to ensure a complete understanding of the contract requirements. The contractor given financial approval will be responsible for understanding the information in the technical file. Appointments 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 the SCDHEC Freedom of Information Office at (803) 896-4288. Please request file #03439. **NOTE: Free phase product was present at this site in two monitoring wells; however, application of corrective action technologies or natural fluctuations in water table can result in the mobilization and possible appearance of free product or elevated CoC concentrations in other monitoring wells. Three gasoline USTs and one diesel UST are currently in operation at the facility. There are no known facilities adjacent to the site that have regulated USTs, either operating or abandoned.**
14. **The contractor will submit a Corrective Action Plan (CAP) within 30 days of notification of selection by the UST Owner/Operator Assistance Section.** The implementation of the CAP will be initiated immediately upon the Department's directive to implement the CAP and all associated permit(s) have been issued; implementation will be in accordance with the schedule presented in the CAP. **A performance bond or irrevocable standby letter of credit, equal to the financial approval amount, will be required by DHEC.** The issuing institution for an irrevocable standby letter of credit must be an entity that has the authority to issue letters of credit in South Carolina and whose letter-of-credit operations are regulated and examined by a federal or state agency. The original performance bond or irrevocable letter of credit will be submitted to the UST Program, Attn: Lee Monts, with the submittal of the CAP. The performance bond or irrevocable standby letter of credit will specify that the SUPERB Account will be the recipient of any forfeiture. Since DHEC is responsible for the disbursement of funds from the SUPERB Account, the financial responsibility mechanism (i.e., bond or letter-of-credit) will be held by the UST Program until the work is successfully completed.
15. **MINIMUM REQUIREMENTS:** Corrective action will be considered complete once the levels of CoC are verified to be at or below the SSTLs listed in item 11.C., and removal or abandonment of all remediation and assessment items installed by the contractor (e.g., wells [including preexisting wells], trenches, etc.). See Specification #10 for the method of verification. All rehabilitation activities associated with a UST release must be performed by a SCDHEC certified Class I site rehabilitation contractor as required by R. 61-98. 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 a SC certified laboratory. All monitoring, verification, injection, or recovery wells must be installed and abandoned by a SC certified well driller. All applicable certification, training, permits, applications, and fees associated with well installation; injection, discharge, treatment, or transportation of ground water, air, or soil; construction or operation of a remediation 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, State of South Carolina, county or city is also the responsibility of the contractor. The terms and conditions of all applicable permits will be met. Any contaminated ground water, soil, or construction material must be properly transported and disposed of, or treated at an approved

facility with prior approval from DHEC. Any costs for utilities construction and service (electric, telephone, sewer, etc.) required by the corrective action are the responsibility of the contractor.

## **SPECIFICATIONS for CORRECTIVE ACTION**

All Corrective Action Solicitation Responses submitted must meet the following specifications as required by the proposed treatment method(s) or corrective action technology(ies):

1. The solicitation response for active corrective action may be submitted by mail or by fax. The response will outline in general terms an approach to achieve the remediation goals (e.g., reduction of each CoC to SSTL). The response must outline the following:
  - A. A description of the proposed treatment method(s) or technology(ies) for corrective action.
  - B. The estimated amount of time in months to complete site rehabilitation to meet the remediation goals, install verification wells, and remove or abandon all assessment and remediation items installed as part of the corrective action.
  - C. The total cost (in thousands of dollars) to complete site rehabilitation to meet the remediation goals and to remove or abandon all assessment and remediation items installed as part of corrective action.
2. The contractor selected by the owner/operator to perform corrective action activities must complete and submit a detailed CAP (three copies) for the release at Hwy 11 Grocery, 13527 N Hwy 11, Salem, South Carolina **within 30 days of notification by the Underground Storage Tank Program. NOTE: Use of monitoring well(s) for injection purposes is not allowed.** A condition of the plan may include installation of additional recovery, sparge, compliance, or injection wells. The plan must define all active (pump and treat, sparge, vapor extraction, excavation of impacted soils, bioremediation, etc.) and passive (intrinsic remediation, monitoring, etc.) corrective action method(s) proposed to reduce CoC to SSTLs. It must be shown, by use of scientific models, computations, or discussion, how each CoC will be reduced to the SSTL for each remediation method proposed for the release. Any assumptions used in a model will be listed or shown, as well as, appropriate references. Intrinsic corrective action will require monitoring to verify remediation. General construction details will be included (e.g., install four additional recovery wells, construct a compliance point, install four air injection wells, excavate 3,000 cubic yards of impacted soils, etc.) as well as details of well abandonment and equipment removal. A remediation time table including abandonment of wells and removal of equipment will be included with the CAP. The UST Program will review the CAP and initiate a public notice period for a maximum of 30 days. The contractor must obtain a copy of the applicable portion of the tax map. This map will depict the location of the facility, and all impacted properties, and all properties located adjacent to the impacted properties. The names and addresses of the owners of each of these properties will be provided. The contractor may be required to attend or provide input at a public meeting upon request by DHEC. Any CAP amendments and modifications arising from public notice must be submitted within 15 days of notification by DHEC. The CAP and any amendments or modifications must be sealed by a qualified Professional Engineer or Geologist registered in the State of South Carolina. The owner/operator, Mr. Steve Smith, and any other affected property owners will be consulted and will approve the location of the corrective action system. If permanent, the system must be enclosed in a fenced area or small building. The initial invoice must be received at the above address within four months or funds will be uncommitted as required by the SUPERB Act. If funds are uncommitted this invoice will be held until funding is available.

An initial monitoring report documenting potentiometric conditions and CoC concentrations in all wells and CoC concentrations in the creek flowing on Reid's property and the creek located across the Hwy. 11 (at the same locations as during May 2002 sampling) prior to start up (including verification of system operation or CAP implementation) must be submitted to the Bureau of Land and Waste Management UST Program within 45 days after financial approval. Sampling for the initial monitoring report must occur prior to system startup.

Based on naturally occurring conditions, the dissolved concentration of petroleum chemicals of concern (CoC) will increase or decrease. For the purposes of this contract, the total CoC mass for the wells included in the bid package may reasonably increase up to 150 percent or decrease as much as 50 percent. If the total CoC concentration in all wells listed in Special Condition 11.B. increases more than 150 percent based on this initial sampling or if measurable free product that has not been previously documented in any report is detected during the initial sampling event, the contractor may request in writing that the award be canceled. **If either of these conditions occurs, the contractor will contact the UST project manager within two days of problem identification and will submit written documentation within five days of notification.** The contractor will be reimbursed based on the following rate schedule:

Subcontract Costs*	Invoice + 15%
Personnel Mobilization	\$250.00
Equipment Mobilization	\$500.00
Groundwater Sample Collection	\$55.00 each
Gauging Free Phase Product	\$45.00 per well
Wastewater Disposal	\$90.00 per drum
CAP Preparation and Assoc. Costs	\$6,000.00

\* Includes laboratory, drilling, electrical, etc.

The contract will be canceled and the performance bond or irrevocable letter of credit will be returned to the company. If the total CoC concentration in all wells listed in Special Condition 11.B. decreases more than 50 percent based on this initial sampling the DHEC may cancel the award. If the contract is canceled by DHEC, the contractor will be notified by certified letter and an invoice for the above outlined items shall be submitted within 20 days from the date of the certified letter canceling the contract. If the corrective action system is started or treatment is performed, the contractor will be required to complete the contract unless unforeseen geological conditions are encountered or another release is confirmed. See special condition 12. **Once CAP implementation has been initiated under this contract, in the event of a cancellation due to the prescribed circumstances and before any mass reduction has been achieved, final payment will not exceed 40 percent of the award price under any circumstances as no reduction of CoC mass has been accomplished.**

3. Complete and submit all applications for permits (injection, NPDES, BAQC modeling form, thermal treatment, construction, etc. (3 copies) and an engineering report (ER; 4 copies) with the CAP. Any required permit changes or corrections will be submitted within 15 days of notification by DHEC. The ER and any ER amendments and modifications, must be sealed by a Professional Engineer registered in the State of South Carolina. After review of the CAP and all permit applications by DHEC, the UST Program will issue a notice to proceed with CAP implementation.

Implementation of the corrective action plan before the completion of the public notice process and approval of all permits by DHEC is not authorized. If premature implementation occurs, the Department will not reimburse those costs from the SUPERB Account, and the financial approval amount will be reduced by that amount. If the Department agrees with early implementation to better protect human health in an emergency and provides approval in writing, early implementation without any reduction to the financial approval amount will be authorized.

4. Implement the CAP within 30 days of receipt of notice to proceed and any required permit to construct. Disruption to the owner/operator's normal business will be kept to a minimum. The contractor will repair the site to the condition as it existed prior to installation of the corrective action system (e.g., asphalt paved areas will be repaved with asphalt, concrete areas will be replaced with concrete, grass areas will have soil replaced to the original grade and be rseeded or sodded with grass, etc.) Upon completion of any required construction, DHEC will inspect the system and issue a permit to operate. The contractor will, at all times, keep the site free from waste materials and rubbish related to the corrective action. Until completion of the corrective action, the contractor will keep the premises in a clean, neat and workmanlike condition satisfactory to DHEC. All generated soil and wastewater will be removed from the site promptly. Manifests documenting the proper disposal of the soil and wastewater must be included in the appropriate report.
5. Gain access to the adjacent property to sample monitoring wells and to install any corrective action equipment, as required. The contractor will repair the adjacent property to the condition as it existed prior to installation of the corrective action system (e.g., asphalt paved areas will be repaved with asphalt, concrete areas will be replaced with concrete, grass areas will have soil replaced to the original grade and reseeded or sodded with grass, etc.).
6. Initiate system startup within 15 days of receipt of the permit to operate. Remediation as defined in the CAP and ER will begin upon system startup. An initial monitoring report documenting CoC concentrations in all wells and potentiometric conditions prior to start up (including verification of system operation or CAP implementation) must be submitted to the UST Program. **If any problem with CAP implementation occurs, the contractor will contact the UST project manager within 24 hours of problem identification and will submit written documentation within five days of notification. NOTE: Free phase product was present at this site in two monitoring wells; however, application of corrective action technologies or natural fluctuations in water table can result in the mobilization and possible appearance of free product or elevated CoC concentrations in other monitoring wells. There are no known facilities adjacent to the site that have regulated USTs, either operating or abandoned.**
7. Complete and submit a corrective action monitoring report (3 copies plus one copy for any DHEC Bureau that issued a permit) on a quarterly basis. The corrective action monitoring reports must include:
  - A. A narrative portion that documents current site conditions and system effectiveness in achieving the remediation goals (e.g., free product removal, reducing CoC to the SSTLs) as outlined in the CAP. Any system down time and the associated reason(s) will be included in the report.

- B. Conclusions and recommendations based on the reported data.
- C. Ground-water laboratory analytical data for all monitoring wells and two samples from each creek adjacent to the site in the following format (additional parameters such as dissolved oxygen may be required; do not sample wells containing free product):

Analytical Data ( $\mu\text{g/l}$ )							
Monitoring Well	Date	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Naphthalene
MW-1	7/15/97	145	20	146	1,000	17	47
	10/1	14	0	140	900	0	165
	5/97	0	19			0	
				0			
MW-2	7/15/97	580	80	300	1,000	60	20
	10/1	48	0	257	0	0	19
	5/97	0	69		912	50	
				0			

- D. Groundwater potentiometric data for all monitoring wells in the following format:

Ground-water Data (feet)						
Monitoring Well	Date	TOC Elevation	TOC to GW	TOC to FP	FP Thickness	GW Elevation
MW-1	7/15/97	98.0	17.54			80.46
	10/1	98.0	17.90			80.10
	5/97					
MW-2	7/15/97	100.0	20.50	20.47	0.03	79.50
	10/1	100.0	21.50	21.48	0.02	78.50
	5/97					

- E. A ground-water elevation contour map of the site based on current ground-water potentiometric data.
- F. A CoC map based upon current ground-water laboratory analytical data. The groundwater data should be adjacent to the relevant monitoring well using the following format (additional parameters such as dissolved oxygen may be required):

MW - Number  
 Benzene ( $\mu\text{g/l}$ )  
 Toluene ( $\mu\text{g/l}$ )  
 Ethylbenzene ( $\mu\text{g/l}$ )  
 Xylenes ( $\mu\text{g/l}$ )  
 MTBE ( $\mu\text{g/l}$ )  
 Naphthalene ( $\mu\text{g/l}$ )

- G. A copy of the DHEC approval letter and manifests for any contaminated soil and groundwater removed from the site for treatment and/or disposal.

- H. Additional data required by permits (e.g., air analyses, wastewater effluent analyses and amounts, etc.). The data should be reported on a form or in a format specified in the permits, and attached to the monitoring report as an addendum.

All rehabilitation activities associated with the UST release must be performed by a SCDHEC Certified Site Rehabilitation Contractor. All air, soil, and groundwater analyses must be performed by a South Carolina certified laboratory. The corrective action monitoring report must be sealed by a Professional Engineer or Geologist registered in the State of South Carolina. All monitoring wells associated with the release will be sampled on a quarterly basis for the first year. Thereafter, the number of wells sampled may be reduced and/or the interval between corrective action monitoring reports may be lengthened upon clear demonstration of CoC reduction, unless restricted by permit requirements. Any approval to reduce the number of wells sampled or the frequency of sampling must be in writing from the Bureau of Land and Waste Management UST Program. DHEC may require data to be reported on a form or in a specific format. The contractor will be provided with the proper report forms and format prior to system startup. The contractor will be notified of any revisions to the report forms or format 90 days prior to the due date for the corrective action monitoring report.

- 8. Collect one (1) groundwater sample per monitoring event for all monitoring wells associated with the release and from the creek flowing on Reid's property and the creek located across the Hwy. 11 (from the same locations as during the May 2002 sampling). Each well should be purged prior to sampling. Purging is considered complete once the ground-water temperature and pH have stabilized. Sampling logs should note all temperature and pH measurements, as well as the location and type of each sample submitted for laboratory analysis. Each groundwater sample will be collected in accordance with established QA/QC protocol and submitted to a certified laboratory for analysis. The samples must be analyzed for the following parameters:

Analyte	Analytical Method*	Reporting Limit (µg/l)
BTEX*	8260B	5
Naphthalene*	8260B	5
MTBE*	8260B	5
PAH**	8270C/3510C	10

\* The Bureau of Land and Waste Management UST Program no longer accepts equivalent analytical methods for VOC analysis.

\*\* or EPA equivalent method that can achieve the same reporting level

Additional samples (air, groundwater, effluent, soil) required by permits must be collected in accordance with established QA/QC protocol and submitted to a 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, and the lab certification number) will be included in the corrective action monitoring report.

9. Properly dispose of all contaminated soil and groundwater generated during the implementation of the CAP and installation of verification wells. DHEC must approve the disposal facility selected for treatment and disposal of the free product and contaminated soil and groundwater. The owner/operator of the facility is considered the generator for any contaminated soil and groundwater. The contractor must document all disposal of free product and contaminated soil and groundwater in the quarterly corrective action monitoring report.
  
10. Verification for the removal of free product will be conducted by SCDHEC personnel with an interface probe. If the remediation technology is in-situ (e.g., pump and treat, air sparging, vapor extraction): suspend operation of the system once the remediation goals for all CoC have been maintained for a period of 30 days. Samples are to be taken after one (1) quarter or after all CoC levels have reached equilibrium and again after a second quarter. Along with the parameters listed in Specification #8, the ground-water samples should also be sampled for the following parameters:

Analyte	Analytical Method*	Reporting Limit
Dissolved Oxygen	SM4500-O G	500 µg/l
Ferrous Iron	SM3500-Fe D	30 µg/l
Methane	Kerr Method	1 mg/l
Nitrate	9056/9210	100 µg/l
Sulfate	9038/9056	1000 µg/l

\*or EPA equivalent method that can achieve the same reporting level

If sample results indicate that the remediation goals are not sustained, the contractor must submit a corrective action status report (3 copies) that outlines the deficiency(ies) and offers recommendations for achieving the remediation goals with a revised timetable. Modifying and restarting of the system will be directed by DHEC. The system will operate until all remediation goals are again maintained for a minimum period of 30 days. Operation of the system will then be suspended again and samples taken to verify that remediation goals are sustained. This cycle of activity, including status reports, will be repeated until all CoC levels remain below SSTLs for all wells listed in Special Conditions item 11 C for two (2) consecutive quarters. (up to two) verification wells may then be installed at locations designated by DHEC. Costs for verification well installation are considered part of the financial approval amount. Each well will be sampled in accordance with Specifications item 8 and the analyses compared to the calculated SSTLs for the CoC at that well location. If the laboratory analyses are at or below the SSTLs, corrective action will be considered complete. If any analysis is above the SSTL, the corrective action will not be considered complete, and the activity cycle described above must be repeated until all CoC levels remain below SSTLs for those wells listed in Special Conditions item 11 C. Split or duplicate samples may be collected by DHEC (or its subcontractors) to verify achievement of remediation goals. Split ground-water samples will be accomplished during quarterly monitoring events and during the final sampling of monitoring and



verification wells to document that the cleanup goals have been met. A ground-water sample will be collected from each monitoring well to substantiate the  $\frac{1}{4}$ ,  $\frac{1}{2}$ , or  $\frac{3}{4}$  concentration reduction has occurred. Once the site rehabilitation contractor indicates the final cleanup goals have been reached, a ground-water sample will be collected from each monitoring well plus the required verification wells. These two separate quality assurance events will consist of a representative ground-water sample being collected by the certified rehabilitation contractor. Part of the split sample will be analyzed by a SCDHEC certified laboratory selected by the contractor as part of the routine quarterly reporting process, and the second half of the sample will be analyzed by a SCDHEC laboratory selected by the UST Program. In addition to the ground water collected from the monitoring wells, the UST Program may provide up to three prepared blanks for the contractor's laboratory to analyze. The laboratory analysis from the contractor's and the UST Program's laboratory will be compared. In the event of substantial variance (more than 15%), a second sampling event with field and prepared blanks will be sent to a SC certified laboratory by the UST Program for analysis. The contractor will be notified when the wells will be resampled, can observe this second sampling event, and will be provided analytical results for comment. Based on these results, DHEC Laboratory Certification will be contacted to assist the UST program in determining the cause of the laboratory variation. The Director of the Assessment and Corrective Action Division will make the final decision on which analytical values will be the basis for payment or closure based on the recommendation of the site rehabilitation contractor, DHEC Laboratory Certification, the UST Section Manager, and the UST Project Manager. The site rehabilitation contractor will be provided a written record of any decision. At least two weeks notice will be provided to the UST Project Manager prior to mobilizing to the site for sampling to verify attainment of remediation goals. Costs for transportation and analysis of split or duplicate samples will be paid by DHEC.

or

If the remediation technology is a single event (e. g. excavation of impacted soils, vacuum enhanced recovery): collect sufficient samples as outlined in the CAP to verify the reduction of CoC to the remediation goals. The contractor may be required to install and sample (up to two) verification wells at locations designated by DHEC. If the levels of CoC in all samples are at or below SSTLs, corrective action will be considered complete. If the level of any CoC is above the SSTL, additional corrective action will be required. The contractor will submit one (1) corrective action status report to document the reduction of CoC to the remediation goals. Split or duplicate samples will be collected by DHEC (or its subcontractors) to verify achievement of remediation goals in the manner outlined above. At least two weeks notice will be provided to the UST Project Manager prior to mobilizing to the site for sampling to verify attainment of remediation goals. Costs for transportation and analysis of split or duplicate samples will be paid by DHEC.

11. Disassemble and remove the remediation system and all associated remediation items including utilities from the site within 60 days of notification by DHEC that the remediation goal for the release associated with the UST(s) at the site has been achieved. Disruption to the owner/operator's normal business will be kept to a minimum.

12

Properly abandon all monitoring, recovery, and/or injection wells (including preexisting wells), borings, trenches, and piping/utility runs installed by the contractor as part of corrective action within 60 days of notification by DHEC that the remediation goal for the release associated with the UST(s) at the site has been achieved. The abandonment will be in accordance with South Carolina Well Standards and Regulations R. 61-71 and accepted industry standards for abandonment of trenches and piping/utility runs. Disruption to the property owner's normal business will be kept to a minimum. The contractor must notify DHEC of the method of well abandonment and final disposal of any free product and contaminated soil or ground water. The contractor will return the site to the condition prior to corrective action (e.g., asphalt paved areas will be repaved with asphalt, concrete areas will be replaced with concrete, grass areas will have soil replaced to the original grade and reseeded or sodded with grass, etc.).

Submit the following by October 11, 2002

**CORRECTIVE ACTION SOLICITATION RESPONSE**

Please respond to the following questions:

1. The corrective action method(s) or technology (ies) that will be proposed in the CAP will be (list all active and/or intrinsic methods or technologies for remediation of the aquifer; attach additional pages(s) as required):  


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2. The estimated time in months to complete the corrective action from the date of financial approval, corrective action goals are met, and all corrective action items are removed from the site or properly abandoned is approximately \_\_\_\_\_ months. This time assumes all submitted plans and reports will be reviewed by DHEC within 30 days of receipt.
3. The total cost in dollars, regardless of the type, quantity, or duration of the permitted technology applied, to treat the area of concern (see figure #2) such that the thickness of free product does not exceed .01 foot and the levels of CoC do not exceed the site-specific target levels (SSTLs) defined in item 11.C. at any point, complete all associated monitoring and post-remediation 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 remediation items installed as part of corrective action; provide evidence of performance bond; and other items outlined in this solicitation is: \$ \_\_\_\_\_.

**ACCEPTANCE and DELIVERY STATEMENT**

In compliance with the Corrective Action Solicitation and subject to all conditions thereof, the contractor offers and agrees, if selected by the UST owner/operator within \_\_\_\_\_ days from the final quotation submittal date, to furnish any or all items/services quoted at the prices set forth once financial approval has been issued by the Department.

For the purpose of this submittal and acceptance of financial approval should it occur, I certify that this company understands the nature of the release and the geologic conditions at this facility as documented in the technical file and this solicitation. Additionally, I certify that this company understands that acceptance is based on total cost to treat the area of concern.

\_\_\_\_\_  
Contractor (Print) Certification No. \_\_\_\_\_

\_\_\_\_\_  
Authorized Representative (Print) Signature

**SEI**  
**Environmental, Inc.**

130 Penmarc Drive, Suite 108  
Raleigh, NC 27603  
919.832.2535  
Fax 919.832.5914

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SEP 25 2006

UNDERGROUND STORAGE  
TANK PROGRAM

September 20, 2006

Mr. Joel P. Padgett, P.G., Hydrogeologist  
South Carolina Department of Health and Environmental Control  
Assessment & Corrective Action Section, Underground Storage Tank Program  
2600 Bull Street  
Columbia, South Carolina 29201

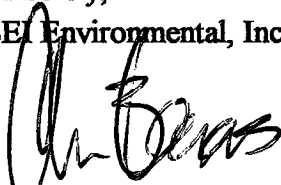
**RE: Corrective Action System Evaluation Report  
Highway 11 Grocery  
13527 North SC Highway 11  
Salem, Oconee County, South Carolina  
UST Permit Number: 03439  
SEI Project Number: 302169**

**47-724**

Dear Mr. Padgett:

Please find enclosed the quarterly Corrective Action System Evaluation (C.A.S.E) Report for the August 28, 2006, groundwater sampling event at the above referenced site. If you have any questions or comments, please contact me at (919) 832-2535.

Sincerely,  
SEI Environmental, Inc.



Chris L. Boggs, P.G.  
Project Manager

cc: Mr. John Smith, Highway 11 Grocery

**CORRECTIVE ACTION SYSTEM EVALUATION REPORT**  
**March 2006 through August 2006**

**Highway 11 Grocery**  
**13527 North SC Highway 11**  
**Salem, South Carolina**  
**Oconee County**  
**UST Permit Number: 03439**  
**SEI Project Number: 302169**

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SEP 25 2006  
UNDERGROUND STORAGE  
TANK PROGRAM

**PREPARED FOR:**

**Mr. Steve Smith**  
**Highway 11 Grocery**  
**13527 North SC Highway 11**  
**Salem, South Carolina 29676-9801**

**PREPARED BY:**

**SEI ENVIRONMENTAL, INC.**  
**6190 Regency Parkway, Suite 308**  
**Norcross, Georgia 30071**  
**UST Site Rehabilitation Contractor No. 41**

**September 20, 2006**

# CORRECTIVE ACTION SYSTEM EVALUATION REPORT

Submittal Date: September 20, 2006  
For Period Covering: March 22, 2006  
Facility Name: Highway 11 Grocery  
UST Permit Number: 03439  
County: Oconee  
Latitude: N 35°54'26.02"

Monitoring Report Number: \_\_\_\_\_  
to August 28, 2006  
Street Address: 13527 North SC Highway 11  
City: Salem, South Carolina  
Zip Code: 29676-9801  
Longitude: W 82°58'31.29"

Submitted by UST Owner/Operator:


Prepared by Consultant/Contractor:

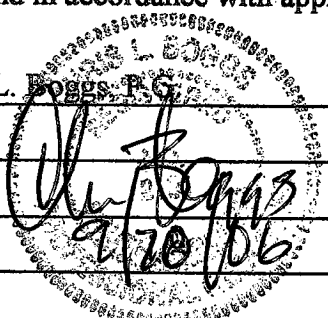
Name: Steve Smith  
Company: Highway 11 Grocery  
Address: 13527 North Highway 11  
City: Salem State: SC  
Zip Code: 29676-9801  
Telephone: (864) 944-0494  
SEI Project Number: 302169

Name: Chris L. Boggs  
Company: SEI Environmental, Inc.  
Address: 6190 Regency Parkway, Suite 308  
City: Norcross State: GA  
Zip Code: 30071  
Telephone: (770) 263-2002  
UST Site Rehabilitation Contractor No. 254

## Registered Professional Engineer or Professional Geologist Certification

I hereby certify that I have directed and supervised the fieldwork and preparation of this Plan, in accordance with State Rules and Regulations. As a registered professional geologist and/or professional engineer, I certify that I am a qualified groundwater professional, as defined by the South Carolina State Board of Professional Geologists. All of the information and laboratory data in this plan and in all of the attachments are true, accurate, complete, and in accordance with applicable State Rules and Regulations.

Name: Chris L. Boggs, P.G.  
SC Reg. No. 2101  
Signature:   
Date: 9/20/06



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SEP 25 2006

UNDERGROUND STORAGE  
TANK PROGRAM

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APPENDIX B	Tables
APPENDIX C	Field Data Information Sheets for Groundwater Sampling
APPENDIX D	Laboratory Reports and Chain-of-Custody Forms

## **LIMITATIONS**

This investigation is intended to be a non-biased assessment of on-site environmental conditions proximate to the location of the former UST system. Subsurface investigative methodologies are in accordance with all applicable state and federal regulatory requirements. The information presented in this report is based upon site-specific observations, generally accepted geological practices, and analytical results for environmental samples collected at the time of the field investigation. All data is believed to represent subsurface conditions at the facility, however, data may not be completely representative of all subsurface conditions.

This report has been prepared under the guidance of a Licensed Geologist registered in South Carolina to meet the requirements of the South Carolina Department of Health and Environmental Control. The information and conclusions expressed in this report are based upon normal standards of the profession and limited to information available at this time. Chemical analyses of the samples associated with this report were performed by a subcontracted, independent, and certified laboratory. All data have been reviewed for accuracy and, excepting obvious errors, have been accepted as correct. SEI Environmental, Inc. reserves the right to revise estimates of performances as required by changes in the data supplied by Accutest Laboratories.



## **1.0 INTRODUCTION**

The Highway 11 Grocery is a convenience and retail fuel store located at 13527 North SC Highway 11 in Salem, Oconee County, South Carolina. Figure 1 in Appendix A is a portion of the United States Geological Survey (USGS) 7.5-minute topographical quadrangle map identifying the location of the site.

The following is a brief summary of recent events occurring at the site:

- December 18, 2003 – Groundwater Sampling Event
- March 31, 2004 – Groundwater Sampling Event
- September 29, 2004 – Groundwater Sampling Event
- January 11, 2005 – EFR performed on MW-8
- March 17, 2005 – EFR performed on MW-8
- March 17, 2005 – Groundwater Sampling Event
- August 9, 2005 – Groundwater Sampling Event
- November 1, 2005 – Groundwater Sampling Event
- March 22, 2006 – Groundwater Sampling Event
- August 28, 2006 – Groundwater Sampling Event

On August 28, 2006, fifteen groundwater monitoring wells were sampled, one water supply well was sampled, and two surface water samples were collected, in accordance with the requirements of the PFP contract. This report provides details of the groundwater sampling event.

## **2.0 FIELD MEASUREMENTS AND SAMPLING**

### **2.1 Groundwater Sampling**

On August 28, 2006, groundwater samples were collected from fifteen groundwater monitoring wells. Monitoring wells MW-1 and MW-8 was not sampled due to the presence of free product. Prior to sampling, groundwater depth was gauged in the fifteen monitoring wells utilizing an oil-water interface probe to measure depth to groundwater, and to detect any phase separated hydrocarbons (PSH) present. The depth to groundwater measurement is used to

calculate the groundwater elevation used in determining the current groundwater potentiometric surface, along with hydraulic gradient, and groundwater flow direction.

Figure 3 in Appendix A presents a groundwater potentiometric map for the current sampling event. The latest groundwater data indicate that groundwater flow at the site is to the northeast with a hydraulic gradient of 0.0423 feet per foot between monitoring wells MW-3 and MW-8. This flow direction is consistent with previous determinations of groundwater movement. Monitoring well MW-8 contained approximately 0.77 feet of free product. Table 1 in Appendix B summarizes groundwater measurement data. Appendix C includes field observation data.

Representative groundwater samples were collected utilizing new, disposable bailers. Samples were placed in laboratory supplied containers, maintained at 4° Celsius, and shipped via FedEx under chain-of-custody to AccuTest, Inc. Laboratories in Orlando, Florida. The groundwater samples were analyzed by EPA Method 8260B for benzene, toluene, ethylbenzene, xylenes (BTEX), methyl-tert-butyl-ether (MTBE), and naphthalene.

## **2.2 Surface Water Sampling**

On August 28, 2006, two (CK-1 and CK-3) surface water samples were collected from adjacent creeks. CK-2 location is no longer sampled per the March 17, 2005, sampling event report. CK-3 replaced CK-2 to monitor for potential contamination from monitoring well MW-14. Representative samples were collected utilizing new, disposable bailers. Samples were placed in laboratory supplied containers, maintained at 4° Celsius, and shipped via FedEx under chain-of-custody to AccuTest, Inc. Laboratories in Orlando, Florida. The groundwater samples were analyzed by EPA Method 8260B for benzene, toluene, ethylbenzene, xylenes (BTEX), methyl-tert-butyl-ether (MTBE), and naphthalene.

## **2.3 Water Supply Well Sampling**

On August 28, 2006, the onsite water supply well (WW-1) was sampled. The sample was collected from a spigot nearest the water supply well. Prior to sampling, the spigot was

allowed to run for at least ten minutes. The sample was placed in a laboratory supplied container, maintained at 4° Celsius, and shipped via FedEx under chain-of-custody to AccuTest, Inc. Laboratories in Orlando, Florida. The groundwater sample was analyzed by EPA Method 8260B for benzene, toluene, ethylbenzene, xylenes (BTEX), methyl-tert-butyl-ether (MTBE), and naphthalene.

### **3.0 LABORATORY ANALYTICAL RESULTS**

#### **3.1 Groundwater Analytical Results**

SSTLs have been designated for fourteen (MW-1 through MW-8, MW-10, MW-11, MW-14, DMW-1, DMW-2, and DMW-4).

CoCs were detected in three (MW-7, MW-11, and MW-14) at concentrations above their respective Site Specific Target Level (SSTL). Figure 4 in Appendix A is a site map presenting monitoring well location and their CoC concentrations. Table 2 in Appendix B summarizes historical groundwater analytical results. A copy of the laboratory report and completed chain-of-custody form is included in Appendix C.

#### **3.2 Surface Water Analytical Results**

Benzene was detected in surface water sample CK-1 at a concentration of 13.1 µg/L.

#### **3.3 Water Supply Well Analytical Results**

CoC were not detected in water supply well sample WW-1 at concentrations above laboratory detection limits.

### **4.0 REMEDIATION SYSTEM EFFECTIVENESS**

In awarding the Pay-For-Performance (PFP) site remediation contract, the South Carolina Department of Health and Environmental Control (SCDHEC) set remediation goals for this site via site specific target levels (SSTLs). The monitoring wells have individual target concentrations for five (benzene, toluene, ethylbenzene, xylenes, MTBE and naphthalene) identified chemicals of concern (CoC).

Remediation system effectiveness can be calculated comparing the initial May 7, 2002, CoC concentrations that exceeded the SSTLs with the current CoC concentrations that exceeded the SSTLs. For monitoring well MW-8, the standard values for free product (benzene, 44,390 µg/L; toluene, 26,540 µg/L; ethylbenzene, 3.700 µg/L; xylenes, 21,680 µg/L; MTBE, 173,000 µg/L; and naphthalene 637,000 µg/L) were used in the percent reduction calculation. The formula is as follows:

$$\left[ \frac{[08/29/96 \text{ Sample Concentration Above SSTL}] - [\text{Current Sample Concentration Above SSTL}]}{[08/29/96 \text{ Sample Concentration Above SSTL}]} \right] * 100 = \% \text{ Reduction}$$

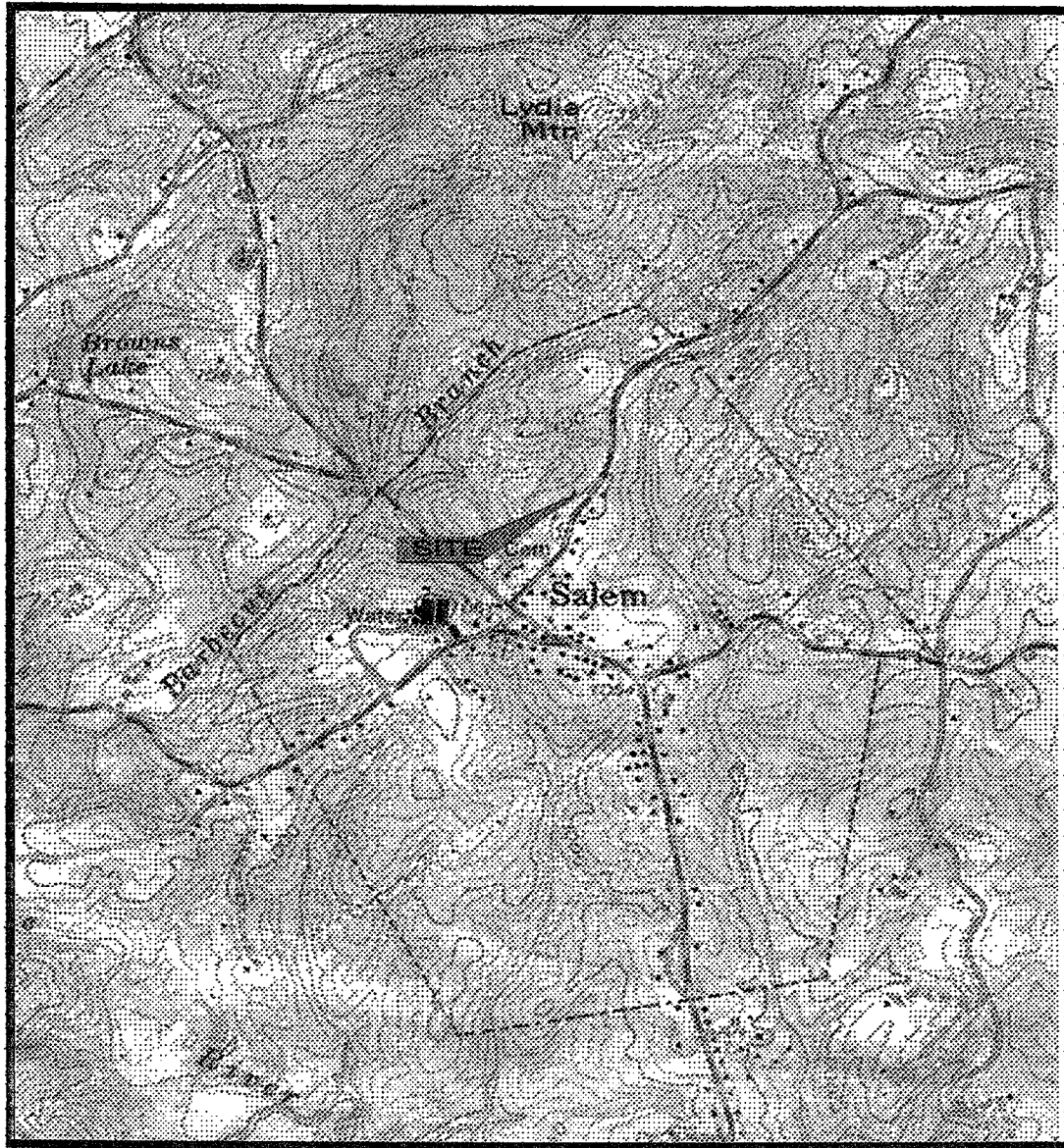
Using the current analytical results, the percent concentration reduction is 85.57%. Table 2 in Appendix B presents concentration reduction calculations.

## 5.0 CONCLUSIONS

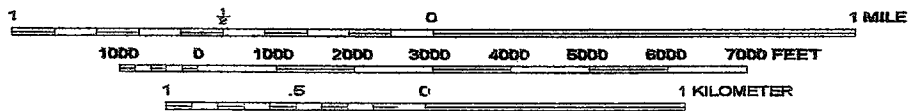
The groundwater flow direction at the time of the August 28, 2006, sampling event was towards the northeast with a hydraulic gradient of 0.0423 feet per foot. Free product was present in monitoring wells MW-1 and MW-8. CoC were detected in three monitoring wells above their respective SSTLs. Benzene was detected in one surface water sample at a concentration above the RBSL. No CoC were detected in the water supply well sample above laboratory detection limits. The percent concentration reduction was calculated at 85.57%.

SEI Environmental, Inc recommends continuing the quarterly monitoring to evaluate the continued reduction of chemicals of concern in the monitoring wells on site. The next sampling event will occur in November 2006. SEI is also considering an additional Enhance Fluid Recovery (EFR) to be performed on monitoring well MW-1, MW-8, MW-10, and MW-14. SEI is currently evaluating alternative methods of active corrective action to be implemented at the site in order to proceed with the remediation effort.

**APPENDIX A**  
**FIGURES**



SCALE 1:24000



SALEM QUADRANGLE  
 SOUTH CAROLINA-OCONEE CO.  
 7.5 MINUTE SERIES (TOPOGRAPHIC-BATHYMETRIC)  
 BY U.S. GEOLOGICAL SURVEY

**SEI Environmental, Inc.**

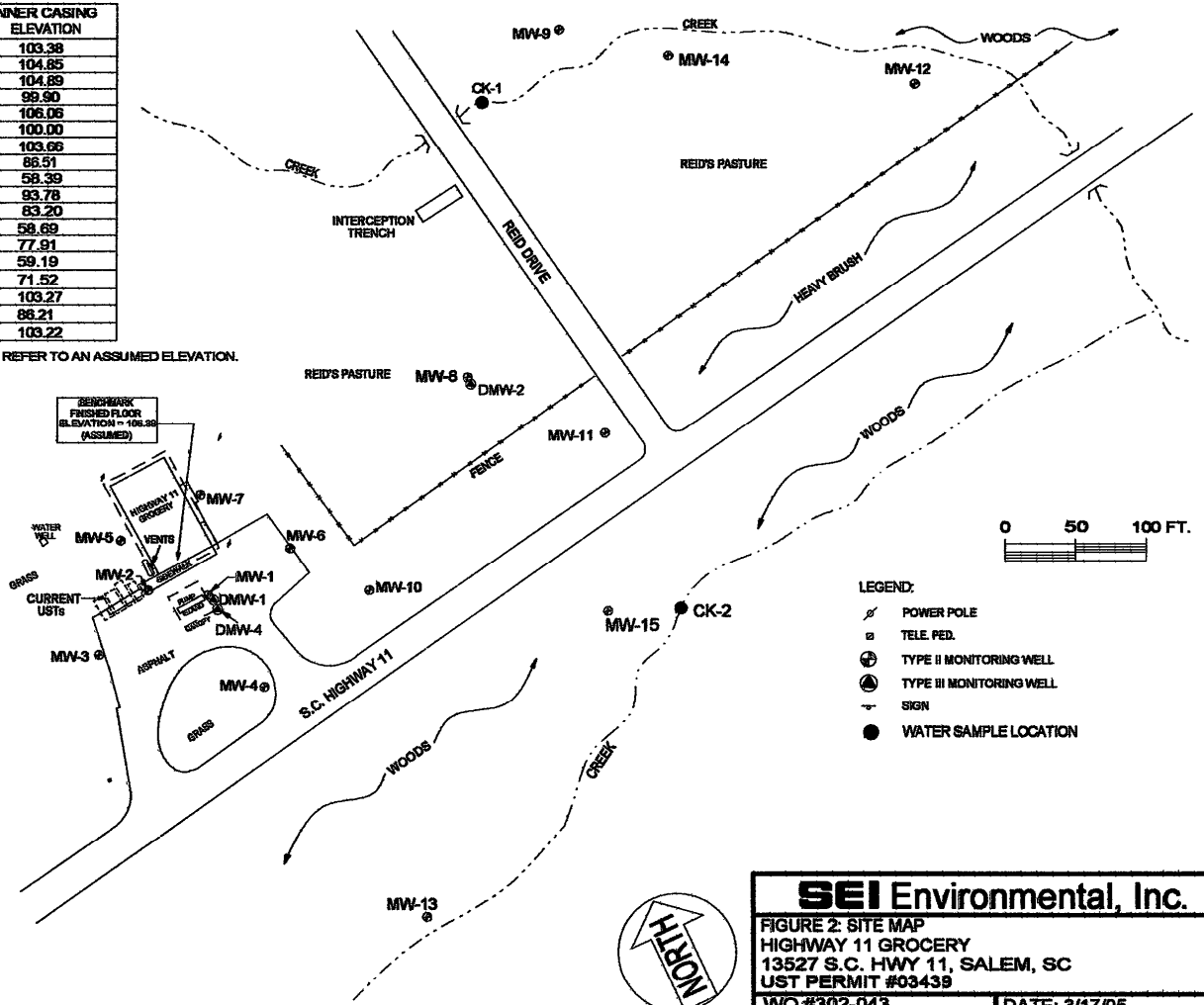
FIGURE 1: SITE LOCATION MAP  
 HIGHWAY 11 GROCER  
 13527 Highway 11, Salem, SC  
 FACILITY I.D. #03439

WO # 302169  
 DWG # Hw 11 topo\_sitemap

DATE: 9/16/05  
 DRAWN BY: HWH

WELL #	INNER CASING ELEVATION
MW-1	103.38
MW-2	104.85
MW-3	104.89
MW-4	95.90
MW-5	106.06
MW-6	100.00
MW-7	103.66
MW-8	86.91
MW-9	58.39
MW-10	93.78
MW-11	83.20
MW-12	58.69
MW-13	77.91
MW-14	59.19
MW-15	71.52
DMW-1	103.27
DMW-2	86.21
DMW-4	103.22

NOTE: ELEVATIONS REFER TO AN ASSUMED ELEVATION.



**SEI Environmental, Inc.**

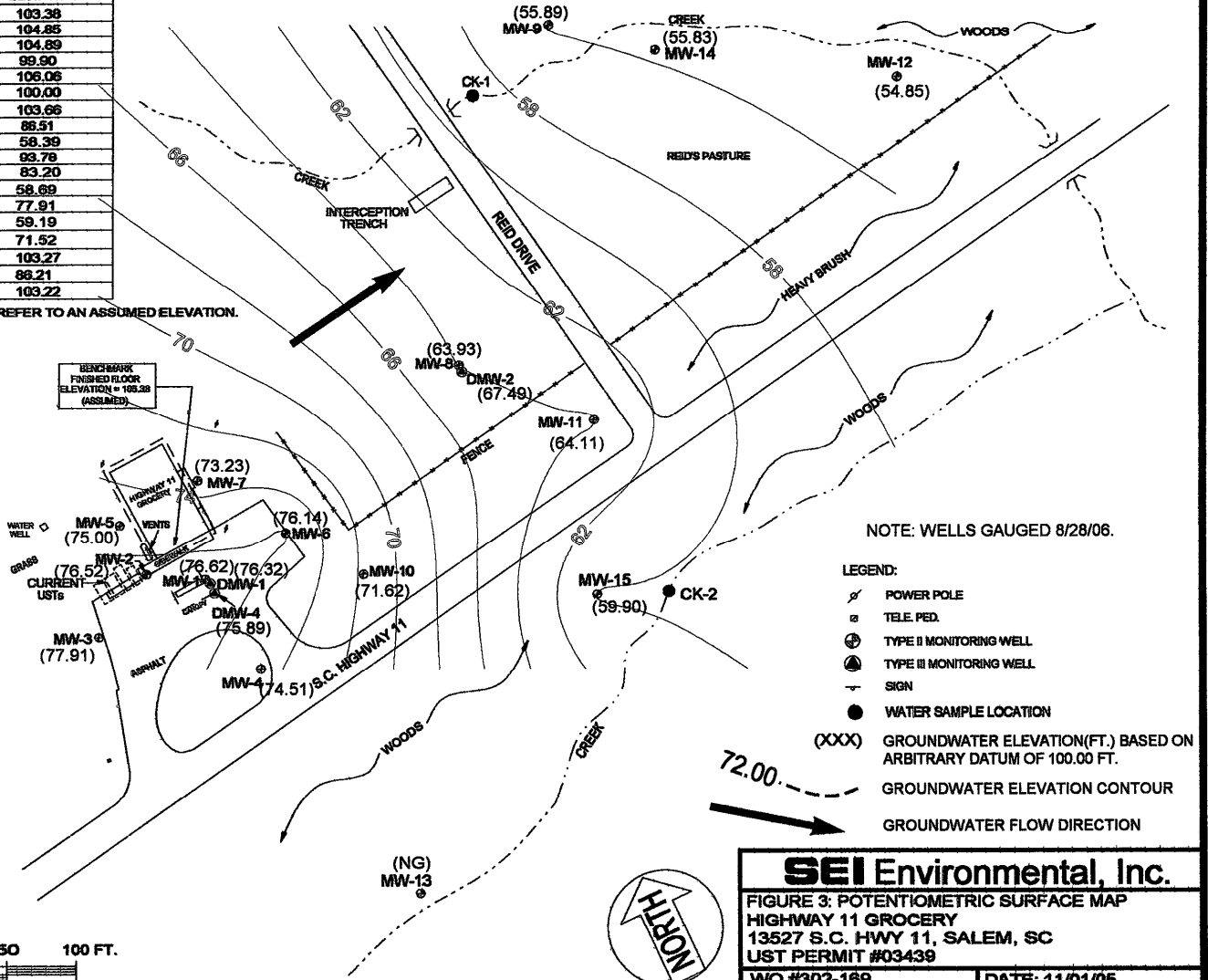
FIGURE 2: SITE MAP  
 HIGHWAY 11 GROCERY  
 13527 S.C. HWY 11, SALEM, SC  
 UST PERMIT #03439

WO #302-043  
 DWG #HID1692G

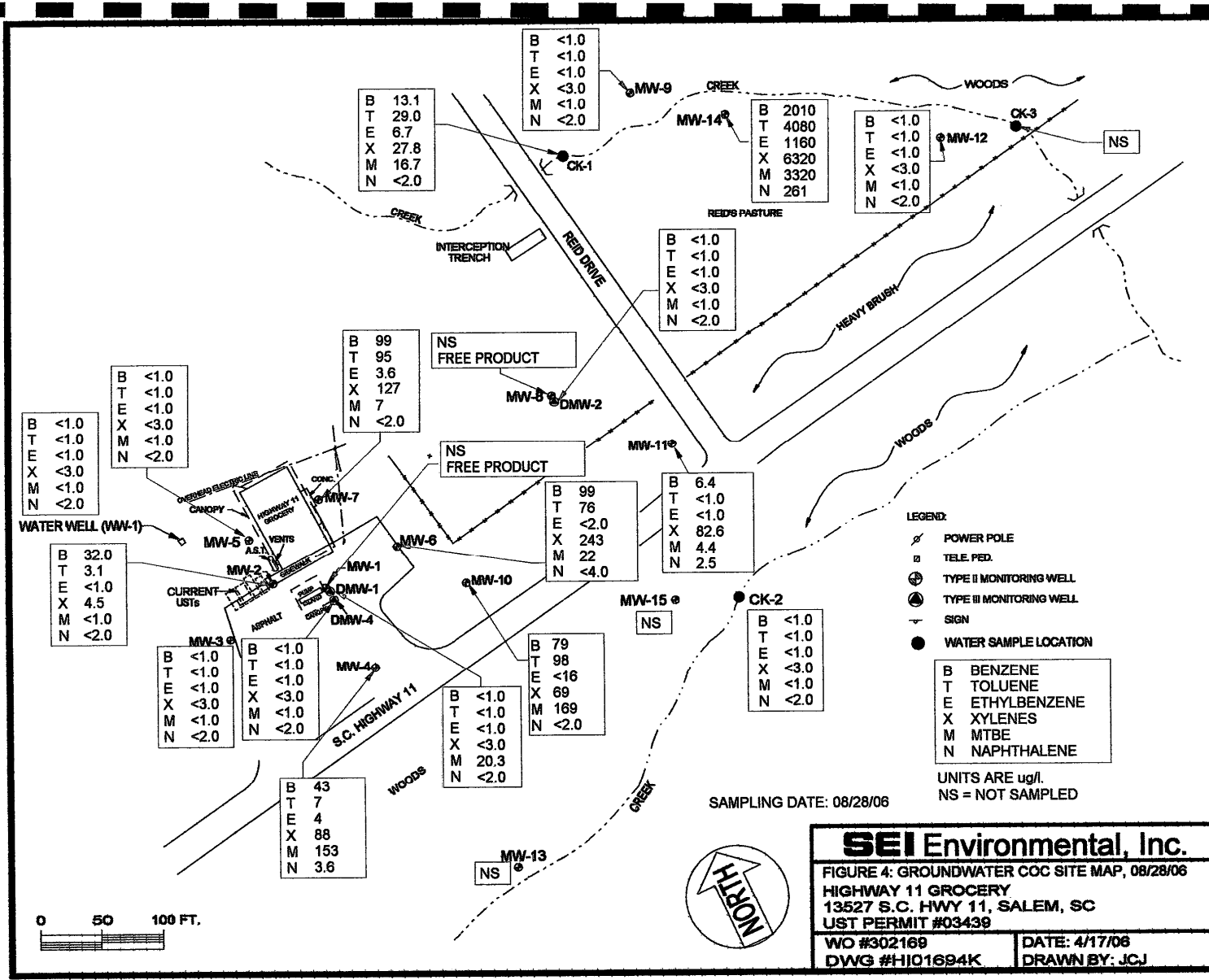
DATE: 3/17/05  
 DRAWN BY: JCJ

WELL #	INNER CASING ELEVATION
MW-1	103.38
MW-2	104.85
MW-3	104.89
MW-4	99.90
MW-5	106.06
MW-6	100.00
MW-7	103.66
MW-8	88.51
MW-9	58.39
MW-10	93.78
MW-11	83.20
MW-12	58.69
MW-13	77.91
MW-14	59.19
MW-15	71.52
DMW-1	103.27
DMW-2	86.21
DMW-4	103.22

NOTE: ELEVATIONS REFER TO AN ASSUMED ELEVATION.







**APPENDIX B**  
**TABLES**

Table 1

Historical Groundwater Elevation And Product Thickness Data  
 Highway 11 Grocery  
 13927 South Carolina Highway 11  
 Salem, Oconee County, South Carolina  
 UST Permit Number: 03428  
 SEI Project Number: 302188

Location	Date	Depth To Water	Depth To Product	Product Thickness	Well Head Elevation	Groundwater Elevation		
MW-1	05/08/02	24.67	24.71	0.04	103.38	78.74		
	07/01/03	23.28	23.52	0.24		80.28		
	07/30/03	22.89	22.97	0.08		80.85		
	09/16/03	23.78	23.82	0.04		79.63		
	10/02/03	24.32	24.45	0.13		79.16		
	10/23/03	24.72	24.93	0.21		78.82		
	12/18/03	24.08				79.32		
	03/31/04	24.61				78.77		
	09/29/04	24.20				78.18		
	01/11/05	23.77				78.61		
	03/17/05	23.97				79.41		
	08/09/05	22.86				80.52		
	11/01/05	25.20	25.13	0.07		78.23		
	03/22/06	23.91				79.47		
	08/28/06	27.17	26.64	0.53		76.62		
	MW-2	05/08/02	28.08				104.85	78.77
		07/01/03	24.08					80.77
07/30/03		23.78			81.07			
09/16/03		24.73			80.12			
10/02/03		25.66			79.29			
10/23/03		25.71			79.14			
12/18/03		26.38			79.47			
03/31/04		25.85			79.00			
09/29/04		25.65			79.30			
01/11/05		24.74			80.11			
03/17/05		25.10			79.75			
08/09/05		23.70			81.15			
11/01/05		28.29			78.56			
03/22/06		25.94			78.91			
08/28/06		28.33			76.52			
MW-3		05/08/02	24.78			104.85		80.08
		07/01/03	22.61					82.35
	07/30/03	22.21			82.65			
	09/16/03	23.23			81.63			
	10/02/03	23.87			80.99			
	10/23/03	24.23			80.63			
	12/18/03	23.93			80.93			
	03/31/04	24.44			80.42			
	09/29/04	24.20			80.66			
	01/11/05	23.36			81.60			
	03/17/05	23.65			81.21			
	08/09/05	22.11			82.75			
	11/01/05	24.85			80.01			
	03/22/06	24.67			80.29			
	08/28/06	26.95			77.91			
	MW-4	05/08/02	23.38				99.90	76.52
		07/01/03	22.10					77.80
07/30/03		22.09			77.61			
09/16/03		22.90			77.00			
10/02/03		23.32			76.58			
10/23/03		23.89			76.21			
12/18/03		22.95			76.95			
03/31/04		23.49			76.41			
09/29/04		23.14			76.76			
01/11/05		22.70			77.20			
03/17/05		22.84			77.06			
08/09/05		26.40			73.50			
11/01/05		27.27			72.63			
03/22/06		23.42			76.48			
08/28/06		25.39			74.51			
MW-5		05/08/02	28.82			106.05		77.24
		07/01/03	26.82					79.24
	07/30/03	26.53			79.53			
	09/16/03	27.40			78.66			
	10/02/03	27.92			78.14			
	10/23/03	28.40			77.65			
	12/18/03	28.40			77.65			
	03/31/04	28.56			77.51			
	09/29/04	28.45			77.61			
	01/11/05	27.41			78.65			
	03/17/05	27.86			78.20			
	08/09/05	20.02			86.04			
	11/01/05	28.91			77.15			
	03/22/06	28.59			77.47			
	08/28/06	31.06			75.00			

**Historical Groundwater Elevation And Product Thickness Data**  
**Highway 11 Grocery**  
**13827 South Carolina Highway 11**  
**Salem, Oconee County, South Carolina**  
**UST Permit Number: 03439**  
**SEI Project Number: 302169**

Location	Date	Depth To Water	Depth To Product	Product Thickness	Well Head Elevation	Groundwater Elevation
MW-6	05/08/02	21.68			100.00	78.34
	07/01/03	19.77				80.23
	07/30/03	19.88				80.12
	09/16/03	20.63				79.37
	10/02/03	21.34				78.66
	10/23/03	21.74				78.26
	12/18/03	21.00				79.00
	03/31/04	21.71				78.29
	09/29/04	21.33				78.67
	01/11/05	20.81				79.19
	03/17/05	20.10				78.90
	08/09/05	26.18				73.82
	11/01/05	22.41				77.69
	03/22/06	21.77				78.23
	08/28/06	23.88				76.14
MW-7	05/08/02	28.12			103.66	78.54
	07/01/03	26.55				77.11
	07/30/03	26.22				77.44
	09/16/03	26.83				76.83
	10/02/03	27.69				75.97
	10/23/03	28.10				75.56
	12/18/03	27.71				75.65
	03/31/04	28.09				75.66
	09/29/04	27.60				76.05
	01/11/05	26.88				76.78
	03/17/05	27.83				75.83
	08/09/05	20.27				83.39
	11/01/05	28.63				75.03
	03/22/06	N/L				N/L
	08/28/06	30.43				73.23
MW-8	05/08/02	21.00			86.51	65.51
	07/01/03	20.98				65.55
	07/30/03	20.46				68.05
	09/16/03	21.17				65.34
	10/02/03	20.44				68.07
	10/23/03	21.54				64.97
	12/18/03	20.82				65.69
	03/31/04	21.35				65.16
	09/29/04	21.10				65.41
	01/11/05	21.04				65.47
	03/17/05	20.95				65.56
	08/09/05	22.16				64.35
	11/01/05	23.31				63.20
	03/22/06	22.00	21.23	0.77		65.11
	08/28/06	24.46	22.05	2.41		63.93
MW-9	05/08/02	2.47			58.39	55.92
	07/01/03	2.30				58.09
	07/30/03	2.26				55.13
	09/16/03	2.42				55.97
	10/02/03	2.16				56.23
	10/23/03	2.42				55.97
	12/18/03	2.20				56.19
	03/31/04	2.96				55.83
	09/29/04	1.90				56.49
	01/11/05	2.23				56.16
	03/17/05	2.11				56.28
	08/09/05	2.04				55.35
	11/01/05	2.33				56.05
	03/22/06	2.23				56.16
	08/28/06	2.50				55.89
MW-10	05/08/02	20.04			93.78	73.74
	07/01/03	16.20				77.88
	07/30/03	18.95				74.83
	09/16/03	16.53				77.25
	10/02/03	20.19				73.59
	10/23/03	20.51				73.27
	12/18/03	19.83				73.95
	03/31/04	18.85				74.93
	09/29/04	20.02				73.76
	01/11/05	19.41				74.31
	03/17/05	18.84				74.91
	08/09/05	18.94				74.84
	11/01/05	21.01				72.71
	03/22/06	20.46				73.62
	08/28/06	22.16				71.62

**Historical Groundwater Elevation And Product Thickness Data**  
**Highway 11 Grocery**  
**13527 South Carolina Highway 11**  
**Salem, Oconee County, South Carolina**  
**UST Permit Number: 03439**  
**SEI Project Number: 302169**

Location	Date	Depth To Water	Depth To Product	Product Thickness	Well Head Elevation	Groundwater Elevation
MW-11	05/08/02	16.22			83.20	65.98
	07/01/03	16.83				66.67
	07/30/03	16.70				66.60
	09/16/03	17.35				65.85
	10/02/03	16.40				66.80
	10/23/03	17.93				65.37
	12/18/03	17.58				65.62
	03/31/04	16.21				66.99
	09/29/04	16.92				67.28
	01/11/05	16.93				67.27
	03/17/05	16.86				68.34
	08/09/05	15.80				67.40
	11/01/05	18.22				64.98
	03/22/06	17.28				65.92
	08/28/06	19.09				64.11
	MW-12	05/08/02	2.80			
07/01/03		3.16			55.53	
07/30/03		2.66			56.14	
09/16/03		3.26			55.43	
10/02/03		2.60			56.09	
10/23/03		3.80			55.19	
12/18/03		2.97			55.72	
03/31/04		3.19			56.60	
09/29/04		3.02			55.67	
01/11/05		3.10			55.59	
03/17/05		3.12			55.57	
08/09/05		2.72			55.97	
11/01/05		3.83			55.06	
03/22/06		3.23			55.46	
08/28/06		3.84			64.85	
MW-13		05/08/02	6.29			77.72
	07/01/03	6.44			71.28	
	07/30/03	N/L			N/L	
	09/16/03	6.36			71.36	
	10/02/03	6.24			71.48	
	10/23/03	6.78			70.94	
	12/18/03	7.51			70.21	
	03/31/04	6.62			71.10	
	09/29/04	6.28			71.44	
	01/11/05	6.44			71.28	
	03/17/05	6.52			71.20	
	08/09/05	10.62			67.20	
	11/01/05	N/L			N/L	
	03/22/06	N/L			N/L	
	08/28/06	N/L			N/L	
	MW-14	05/08/02	2.00			
07/01/03		2.28			56.91	
07/30/03		2.03			57.16	
09/16/03		2.42			56.77	
10/02/03		1.98			57.21	
10/23/03		2.67			56.52	
12/18/03		1.68			57.61	
03/31/04		2.03			57.18	
09/29/04		1.77			57.42	
01/11/05		1.82			57.27	
03/17/05		2.14			57.05	
08/09/05		1.75			57.44	
11/01/05		N/L			N/L	
03/22/06		N/L			N/L	
08/28/06		3.36			56.83	
MW-15		05/08/02	10.82			71.52
	07/01/03	10.76			60.76	
	07/30/03	10.11			61.41	
	09/16/03	11.00			60.62	
	10/02/03	10.20			61.32	
	10/23/03	11.07			60.45	
	12/18/03	11.88			59.84	
	03/31/04	11.02			60.60	
	09/29/04	10.67			60.85	
	01/11/05	10.85			60.65	
	03/17/05	10.65			60.91	
	08/09/05	10.65			60.84	
	11/01/05	11.32			60.20	
	03/22/06	NG			NG	
	08/28/06	11.62			59.80	

**Historical Groundwater Elevation And Product Thickness Data**  
**Highway 11 Grocery**  
**13527 South Carolina Highway 11**  
**Salem, Oconee County, South Carolina**  
**UST Permit Number: 03438**  
**SEI Project Number: 302188**

Location	Date	Depth To Water	Depth To Product	Product Thickness	Well Head Elevation	Groundwater Elevation
DMW-1	05/08/02	23.88			103.27	79.39
	07/01/03	23.81				79.65
	07/30/03	24.24				79.03
	09/16/03	24.60				78.67
	10/02/03	24.00				79.27
	10/23/03	24.80				78.77
	12/18/03	24.11				79.16
	03/31/04	23.61				79.66
	09/29/04	22.72				80.66
	01/11/05	22.97				80.30
	03/17/05	24.68				78.69
	08/09/05	22.65				80.61
	11/01/05	25.11				78.16
	03/22/06	24.71				78.86
	08/28/06	26.95				76.32
	DMW-2	05/08/02	17.83			
07/01/03		16.67			69.54	
07/30/03		17.20			69.01	
09/16/03		17.31			68.90	
10/02/03		16.80			69.41	
10/23/03		17.63			68.68	
12/18/03		17.11			69.10	
03/31/04		15.75			70.46	
09/29/04		16.49			69.72	
01/11/05		16.44			69.77	
03/17/05		17.22			68.99	
08/09/05		16.71			69.50	
11/01/05		15.08			68.13	
03/22/06		17.40			68.81	
08/28/06		18.72			67.49	
DMW-4		05/08/02	24.30			103.22
	07/01/03	23.93			79.29	
	07/30/03	24.76			78.47	
	09/16/03	24.95			78.27	
	10/02/03	24.45			78.77	
	10/23/03	24.95			78.27	
	12/18/03	24.39			78.83	
	03/31/04	23.88			79.34	
	09/29/04	23.18			80.04	
	01/11/05	23.32			79.99	
	03/17/05	25.08			78.14	
	08/09/05	22.66			80.26	
	11/01/05	26.61			76.71	
	03/22/06	25.00			78.22	
	08/28/06	27.33			75.69	

Table 2

Historical Groundwater Analytical Results  
 Highway 11 Grocery  
 13627 South Carolina Highway 11  
 Salem, Oconee County, South Carolina  
 UST Permit Number: 03439  
 SEI Project Number: 302169

Well	Date	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Naphthalene	FP	Initial Mass	Current Mass	
MW-1	05/07/02	226,000	301,000	280,000	278,000	6,110,000	2,000			6,197,000.00	
	07/01/03	10,000	34,000	4,400	23,000	34,000	1,200			106,600.00	
	07/30/03	7,600	28,900	6,360	32,000	25,000.0	2,500			101,400.00	
	12/18/03	2,200	6,200	910	5,800	16,000	2,600			33,610.00	
	03/31/04	3,400	8,200	1,100	6,200	20,000	1,200			41,200.00	
	09/29/04	3,200	7,300	<1,000	4,500	12,000	<5,000			27,000.00	
	03/17/05	5,600	9,560	1,570	7,610	19,300	325			43,955.00	
	08/09/05	16,900	42,600	3,520	19,000	116,000	765			197,725.00	
	11/01/05	44,390	26,540	3,700	21,680	173,000	637,000			908,310.00	
	03/22/06	20,700	41,100	3,100	11,700	103,000	<4,000			179,600.00	
	08/28/06	44,390	26,540	3,700	21,680	173,000	637,000	0.63		908,310.00	
	SSTL	22	4,497	3,148	44,969	160	112				
	> SSTL	44,398	22,043	552	0	172,820	636,868				
MW-2	05/07/02	13	8.0	1.0	5.0	5.0	5.0			37.09	
	07/01/03	4.7	5.0	1.0	3.0	1.0	5.0			19.70	
	07/30/03	5.8	5.0	1.0	5.3	1.0	5.0			23.10	
	12/18/03	2.2	5.0	1.0	3.0	1.0	5.0			17.20	
	03/31/04	2.8	5.0	1.0	3.0	1.0	5.0			17.60	
	09/29/04	14	<25	<5.0	<15	<5.0	<25			14.90	
	03/17/05	13	5	<1.0	5	<1.0	<2.0			22.40	
	08/09/05	39.7	14.8	1.2	27.5	<1.0	<2.0			82.90	
	11/01/05	3.8	1.8	<1.0	<3.0	<1.0	<2.0			5.40	
	03/22/06	11.8	4.2	<1.0	3.4	<1.0	<2.0			19.40	
	08/28/06	32.0	3.1	<1.0	4.5	<1.0	<2.0			39.60	
	SSTL	13	8.0	1.0	5.0	5.0	5.0				
	> SSTL	19.0	0.0	0.0	0.0	0.0	0.0				
MW-3	05/07/02	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0			0.00	
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00	
	07/30/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00	
	12/18/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00	
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00	
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00	
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00	
	08/09/05	NS	NS	NS	NS	NS	NS			0.00	
	11/01/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00	
	03/22/06	<1.0	1.4	<1.0	<3.0	<1.0	<2.0			1.40	
	08/28/06	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00	
	SSTL	1.0	1.0	1.0	1.0	5.0	5.0				
	> SSTL	0.0	0.4	0.0	0.0	0.0	0.0				
MW-4	05/07/02	1,500	5,320	620	3,360	810	500			12,110.00	
	07/01/03	4,800	14,000	2,300	12,000	12,000	2,600			47,700.00	
	07/30/03	4,890	14,899	2,700	13,690	2,190	500			36,300.00	
	12/18/03	1,100	2,400	230	1,900	1,200	250			7,080.00	
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00	
	09/29/04	53	<25	7.1	70	210	<25			340.10	
	03/17/05	<1.0	<1.0	<1.0	<3.0	17	<2.0			16.80	
	08/09/05	<1.0	<1.0	<1.0	<3.0	5.9	<2.0			5.90	
	11/01/05	3,720	3,680	745	4,170	4,540	<200			16,635.00	
	03/22/06	<1.0	<1.0	<1.0	<3.0	1.2	<2.0			1.20	
	08/28/06	43	7	4	88	153.0	3.6			286.70	
	SSTL	1,500	5,320	620	3,360	810	500.0				
	> SSTL	0	0.0	0	0	0	0.0				
MW-5	05/07/02	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0			0.00	
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00	
	07/30/03	4.2	17.1	3.1	18.1	2.2	<5.0			45.00	
	12/18/03	2.3	<5.0	<1.0	3.2	1.3	<5.0			6.80	
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00	
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00	
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00	
	08/09/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00	
	11/01/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00	
	03/22/06	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00	
	08/28/06	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00	
	SSTL	1.0	1.0	1.0	1.0	5.0	5.0				
	> SSTL	0.0	0.0	0.0	0.0	0.0	0.0				

Table 2

**Historical Groundwater Analytical Results**  
**Highway 11 Grocery**  
**13527 South Carolina Highway 11**  
**Salem, Oconee County, South Carolina**  
**UST Permit Number: 03439**  
**SEI Project Number: 302169**

Well	Date	Benzene	Toluene	Ethylbenzene	Xylenes	MIBE	Naphthalene	FP	Initial Mass	Current Mass
MW-6	05/07/02	1,780	4,950	490	2,880	6,350	600.0			18,950.00
	07/01/03	2,200	8,600	820	4,400	12,000	2,500			28,520.00
	07/30/03	4,200	13,000	1,600	6,900	21,000	400			49,100.00
	12/18/03	6,100	14,000	1,700	11,000	19,000	2,500			53,300.00
	03/31/04	280	840	100	2,200	900	260			4,570.00
	09/29/04	2,400	<5,000	<1,000	<3,000	17,000	<5,000			19,400.00
	03/17/05	3,490	7,500	982	6,380	16,600	262			33,084.00
	08/09/05	1,370	4,630	285	2,220	7,940	<400			16,165.00
	11/01/05	978	2,220	282	1,810	8,410	<200			14,701.00
	03/22/06	1,280	3,480	399	2,690	6,600	<200			16,639.00
	08/28/06	99	78	<2.0	243	22	<4.0			439.60
SSTL	1,780	4,950	490	2,880	6,350	600.0				
> SSTL	0.0	0.0	0.0	0.0	0.0	0.0				
MW-7	05/07/02	34	29	<1.0	8.0	7.0	<5.0			69.99
	07/01/03	37	36	1.7	20	9.2	<5.0			109.99
	07/30/03	18	18	<1.0	10	<1.0	<5.0			45.70
	12/18/03	41	20	<1.0	<3.0	<1.0	<5.0			61.00
	03/31/04	30	34	<1.0	16	<1.0	<5.0			60.00
	09/29/04	370	500	<100	<300	<100	<500			670.00
	03/17/05	595	590	34	280	65	<2.0			1,473.40
	08/09/05	62	56	2.6	34	9.2	<2.0			154.00
	11/01/05	27	42	3.7	24	<1.0	<2.0			96.10
	03/22/06	Not Sampled								
	08/28/06	99	95	3.6	127	7	<2.0			331.99
SSTL	22	20	1.0	8.0	7.0	5.0				
> SSTL	76.9	75.4	2.6	119.0	0.0	0.0				
MW-8	05/07/02	226,000	301,000	280,000	278,000	5,110,000	2,000			6,187,000.00
	07/01/03	12,000	61,000	7,800	40,000	11,000	2,500			124,300.00
	07/30/03	12,000	40,000	3,600	18,000	15,000	660			89,290.00
	12/18/03	10,000	27,000	3,300	18,000	14,000	2,800			74,800.00
	03/31/04	17,000	140,000	32,000	180,000	6,600	<25,000			377,600.00
	09/29/04	44,390	26,540	3,700	21,980	173,000	637,000			908,310.00
	03/17/05	44,390	26,540	3,700	21,980	173,000	637,000			908,310.00
	08/09/05	44,390	26,540	3,700	21,980	173,000	637,000			908,310.00
	11/01/05	44,390	26,540	3,700	21,980	173,000	637,000			908,310.00
	03/22/06	44,390	26,540	3,700	21,980	173,000	637,000			908,310.00
	08/28/06	44,390	26,540	3,700	21,980	173,000	637,000	2.41		908,310.00
SSTL	204	40,888	28,622	278,000	1,362	1,021				
> SSTL	44,189.0	0.0	0.0	0.0	171,638.0	635,979.0				
MW-9	05/07/02	N/A	N/A	N/A	N/A	N/A	N/A			0.00
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	07/30/03	N/A	N/A	N/A	N/A	N/A	N/A			0.00
	12/18/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/31/04	<1.0	<5.0	1.2	8.8	<1.0	<5.0			10.00
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	08/09/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	11/01/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	03/22/06	<1.0	1.5	<1.0	<3.0	<1.0	<2.0			1.50
	08/28/06	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
RBSL	5.0	1,000	700	10,000	40	25				
MW-10	05/07/02	115	185	68.0	325	85	9.0			791.00
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	07/30/03	170	420	40	240	540	6.5			1,419.50
	12/18/03	80	280	70	480	90	25.0			1,039.00
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	08/09/05	1.7	4.4	<1.0	<3.0	18	<2.0			24.00
	11/01/05	10,000	23,600	1,410	7,910	21,600	<1,000			64,020.00
	03/22/06	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	08/28/06	79	96	16	69	169	<2.0			430.90
SSTL	115	185	68	325	85	9.0				
> SSTL	0.0	0.0	0.0	0.0	0.0	0.0				



Table 2

Historical Groundwater Analytical Results  
Highway 11 Grocery  
13527 South Carolina Highway 11  
Salem, Oconee County, South Carolina  
UST Permit Number: 03439  
SEI Project Number: 302169

Well	Date	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Naphthalene	FP	Initial Mass	Current Mass
MW-11	05/07/02	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0			0.00
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	07/30/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	12/18/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	08/09/05	NS	NS	NS	NS	NS	NS			0.00
	11/01/05	42.2	<1.0	<1.0	93.6	4.5	3.8			144.10
	03/22/06	<1.0	<1.0	<1.0	<3.0	1.9	<2.0			1.80
	08/28/06	6.4	<1	<1	82.6	4.4	2.5			95.90
	SSTL	1.0	1.0	1.0	1.0	5.0	5.0			
> SSTL	5.4	0.0	0.0	81.6	0.0	0.0				
MW-12	05/07/02	N/A	N/A	N/A	N/A	N/A	N/A			0.00
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	07/30/03	N/A	N/A	N/A	N/A	N/A	N/A			0.00
	12/18/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	08/09/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	11/01/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	03/22/06	1.5	24.8	10.1	98.6	<1.0	11.3			108.30
	08/28/06	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	RBSL	5.0	1,000	700	10,000	40	25			
MW-13	05/07/02	N/A	N/A	N/A	N/A	N/A	N/A			0.00
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	07/30/03	N/A	N/A	N/A	N/A	N/A	N/A			0.00
	12/18/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	08/09/05	NS	NS	NS	NS	NS	NS			0.00
	11/01/05	NS	NS	NS	NS	NS	NS			0.00
	03/22/06	NS	NS	NS	NS	NS	NS			0.00
	08/28/06	NS	NS	NS	NS	NS	NS			0.00
	RBSL	5.0	1,000	700	10,000	40	25			
MW-14	05/07/02	3,780	13,800	27,000	14,700	7,010	500			66,780.00
	07/01/03	3,500	10,000	1,900	10,000	5,300	500			31,200.00
	07/30/03	3,100	9,700	1,800	9,300	4,300	600			28,700.00
	12/18/03	3,300	11,000	2,000	11,000	4,100	500			31,900.00
	03/31/04	5,500	17,000	2,600	13,000	7,100	570			45,770.00
	09/29/04	3,200	12,000	1,600	9,100	3,200	<5,000			29,100.00
	03/17/05	5,140	13,000	1,710	10,900	4,970	339			36,059.00
	08/09/05	3,290	10,600	1,920	11,000	4,950	<400			31,680.00
	11/01/05	NL	NL	NL	NL	NL	NL			0.00
	03/22/06	NL	NL	NL	NL	NL	NL			0.00
	08/28/06	2,010.0	4,080.0	1,160.0	6,320.0	3,320.0	281.0			17,151.00
	SSTL	5.0	1,000	700	10,000	40	25			11,770.00
> SSTL	2,005	3,080	460	0	3,280	236				
MW-15	05/07/02	N/A	N/A	N/A	N/A	N/A	N/A			0.00
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	07/30/03	N/A	N/A	N/A	N/A	N/A	N/A			0.00
	12/18/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	08/09/05	NS	NS	NS	NS	NS	NS			0.00
	11/01/05	NS	NS	NS	NS	NS	NS			0.00
	03/22/06	NS	NS	NS	NS	NS	NS			0.00
	08/28/06	NS	NS	NS	NS	NS	NS			0.00
	RBSL	5.0	1,000	700	10,000	40	25			

Table 2

**Historical Groundwater Analytical Results  
Highway 11 Grocery  
13527 South Carolina Highway 11  
Salem, Oconee County, South Carolina  
UST Permit Number: 03439  
SEI Project Number: 302169**

Well	Date	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Naphthalene	FP	Initial Mass	Current Mass
DMW-1	05/07/02	215	430	50	50	1,780	280			2,775.00
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	07/30/03	<1.0	<5.0	<1.0	<3.0	4.2	<5.0			4.20
	12/18/03	1.5	<5.0	<1.0	<3.0	<1.0	<5.0			1.50
	03/31/04	<1.0	<15.0	<1.0	<3.0	3.9	<5.0			3.90
	09/29/04	8.4	<25	<5.0	<15	130	<25			138.40
	03/17/05	<1.0	1.2	<1.0	<3.0	8.1	<2.0			9.30
	08/09/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	11/01/05	<5.0	<5.0	<5.0	<15	<5.0	<10			0.00
	03/22/06	3.0	35.1	16	92.2	21.9	13.1			181.30
	08/28/06	<1.0	<1.0	<1.0	<3.0	20.3	<2.0			20.30
SSTL	215	430	50	50	1,780	280				
> SSTL	0.0	0.0	0.0	0.0	0.0	0.0				
DMW-2	05/07/02	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0			0.00
	07/01/03	<1.0	<5.0	<1.0	<3.0	6.4	<5.0			6.40
	07/30/03	<1.0	8.4	6.8	30.0	<1.0	6.7			51.90
	12/18/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	08/09/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	11/01/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	03/22/06	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	08/28/06	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
SSTL	1.0	1.0	1.0	1.0	5.0	5.0				
> SSTL	0.0	0.0	0.0	0.0	0.0	0.0				
DMW-4	05/07/02	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0			0.00
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	07/30/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	12/18/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	08/09/05	NS	NS	NS	NS	NS	NS			0.00
	11/01/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	03/22/06	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	08/28/06	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
SSTL	1.0	1.0	1.0	1.0	5.0	5.0				
> SSTL	0.0	0.0	0.0	0.0	0.0	0.0				
CK-1	05/07/02	N/A	N/A	N/A	N/A	N/A	N/A			0.00
	07/01/03	2.6	<5.0	<1.0	4.8	4.5	<5.0			11.90
	07/30/03	N/A	N/A	N/A	N/A	N/A	N/A			0.00
	12/18/03	11	18	4.1	20.0	9.0	<5.0			62.10
	03/31/04	16	30	6.1	32.0	22.0	<5.0			108.10
	09/29/04	10.4	17.5	4.1	20.8	12.3	<2.0			65.10
	08/09/05	7.5	17.6	2.9	15.8	6.9	<2.0			50.80
	11/01/05	20.3	38.2	8.6	46.6	27.3	<2.0			143.40
	03/22/06	6.6	12.9	3.2	15.2	7.8	<2.0			45.70
	08/28/06	13.1	29.0	6.7	27.6	16.7	<2.0			93.30
	RBSL	5.0	1,000	700	10,000	40	25			
CK-2	05/07/02	N/A	N/A	N/A	N/A	N/A	N/A			0.00
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	07/30/03	N/A	N/A	N/A	N/A	N/A	N/A			0.00
	12/18/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	08/09/05	NS	NS	NS	NS	NS	NS			0.00
	11/01/05	NS	NS	NS	NS	NS	NS			0.00
	03/22/06	NS	NS	NS	NS	NS	NS			0.00
	08/28/06	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
RBSL	5.0	1,000	700	10,000	40	25				

Table 2

**Historical Groundwater Analytical Results  
Highway 11 Grocery  
13527 South Carolina Highway 11  
Salem, Oconee County, South Carolina  
UST Permit Number: 03438  
SEI Project Number: 302169**

Well	Date	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Naphthalene	FP	Initial Mass	Current Mass
CK-3	08/09/05	14.4	33.3	7.1	41.1	25.8	<2.0			121.70
	11/01/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	03/22/06	23.3	49.7	10.1	48.2	33.8	<2.0			165.10
	RBSL	5.0	1,000	700	10,000	40	25			
WW-1	05/07/02	N/A	N/A	N/A	N/A	N/A	N/A			0.00
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	07/30/03	N/A	N/A	N/A	N/A	N/A	N/A			0.00
	12/18/03	N/A	N/A	N/A	N/A	N/A	N/A			0.00
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	08/09/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	11/01/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	03/22/06	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	08/28/06	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	RBSL	5.0	1,000	700	10,000	40	25			
<b>TOTAL MASS</b>										<b>1,831,096</b>
<b>TOTAL SSTL MASS</b>		<b>3,881</b>	<b>67,303</b>	<b>33,705</b>	<b>339,605</b>	<b>10,648</b>	<b>2,452</b>		<b>447,591</b>	
<b>INITIAL MASS ABOVE SSTL</b>									<b>12,046,007</b>	
<b>CURRENT MASS ABOVE SSTL</b>									<b>1,737,915</b>	
<b>PERCENT TOTAL MASS REDUCTION ABOVE SSTL</b>									<b>85.57</b>	

Reported in parts per billion (µg/l)  
 ND: Compound not detected  
 BDL: Below analytical Detection Limits  
 SSTL: Site Specific Treatment Level

**APPENDIX C**  
**Field Data Information Sheets for Groundwater Sampling**

*Q*

## SEI Environmental SC Monitoring Well Gauging Data Sheet

Site Name: Highway 11 Grocery

WO# 302169

Date 5/28/06

Well ID	Total Depth (feet)	Well Dia. (in.)	Depth to Product (feet)	Product Thickness (feet)	Depth to Water (feet)	Notes
MW-1	30	2	26.64		27.17	Free Product Bailed 12 gal
MW-2	35	2			28.33	
MW-3	35	2			26.95	Semi-annual
MW-4	35	2			25.39	
MW-5	35	2			31.06	
MW-6	35	2			23.86	
MW-7	40	2			30.43	
MW-9	11	2			2.50	
MW-10	24	2			22.16	
MW-11	23	2			19.09	Semi-annual
MW-12	11	2			3.84	
MW-14	9	2			3.36	
DW-1 <del>DMW-1</del>	45	2	<del>26.64</del>		26.95	
DW-2 <del>DMW-2</del>	75	2			18.72	
DMW-4	61	2			27.33	Semi-annual
MW-15					11.62	
MW-13						
MW-8			22.05		24.46	Free Product Bailed 3 gal
Water Supply Well Sample: WW-1						
Surface Water Samples: CK-1 & CK-2						
			14:50	15:50		

Analysis: EPA Method 8260B for BTEX, MTBE, and Naphthalene

2-inch diameter well: Well Volume = (water column) x (0.163 gallon/foot)

4-inch diameter well: Well Volume = (water column) x (0.652 gallon/foot)

Purge amount = Well Volume x 3



### CHAIN OF CUSTODY

4405 Vineland Rd., Suite C15  
 Orlando, FL 32811  
 407.425.6700, fax 407.425.0707

Accutest Job #:

Accutest Control #:

Client Information			Facility Information				Analytical Information															
Name <b>SEI Environmental</b>			Project Name <b>Highway 11 Grocery</b>																			
Address <b>5100 Reagan Dr., Suite 7</b>			Location <b>13527 S.C. Hwy 11 Salem S.C.</b>																			
City <b>Charlotte</b>	State <b>NC</b>	Zip <b>28206</b>	Project No. <b>104-896-8605</b>																			
Send Report to: Phone #: <b>704-596-8624</b>			FAX #: <b>302169</b>																			
Collection			Preservation																			
Field ID / Point of Collection	Date	Time	Sampled By	Matrix	# of bottles	WV	NH <sub>4</sub>	HPO <sub>4</sub>	H <sub>2</sub> SO <sub>4</sub>	None												
MW-14	8/28/06	13:05	SS, ZS	GW	3	3					EPA 1600S, 1600B, 1600C, 1600D, 1600E, 1600F, 1600G, 1600H, 1600I, 1600J, 1600K, 1600L, 1600M, 1600N, 1600O, 1600P, 1600Q, 1600R, 1600S, 1600T, 1600U, 1600V, 1600W, 1600X, 1600Y, 1600Z											
DMW-1		13:05		GW							XX											
DMW-2		15:25		GW							XX											
DMW-4		13:15		GW							XX											
WW-1		14:00		GW							XX											
CK-1		14:50		GW							XX											
CK-2		15:30		GW							XX											
Turnaround Information			Data Deliverable Information							Comments / Remarks												
<input type="checkbox"/> 21 Day Standard <input type="checkbox"/> 14 Day <input checked="" type="checkbox"/> 7 Days <input type="checkbox"/> Other _____ (Days) RUSH TAT is for FAX data Data unless previously approved.			Approved By: _____ <input type="checkbox"/> NJ Reduced <input type="checkbox"/> NJ Full <input type="checkbox"/> FULL CLP <input type="checkbox"/> Disk Deliverable <input type="checkbox"/> Other (Specify) _____							<input type="checkbox"/> Commercial "A" <input type="checkbox"/> Commercial "B" <input type="checkbox"/> ASP Category B <input type="checkbox"/> State Forms												
Relinquished by Sampler: <i>[Signature]</i> Date/Time: <b>8/28/06 8:00</b>													Received By: <b>1</b>									
Relinquished by Sampler: _____ Date/Time: _____													Received By: _____									
Relinquished by Sampler: <b>3</b> Date/Time: _____													Received By: <b>4</b>									
Relinquished by Sampler: _____ Date/Time: _____													Received By: _____									
Relinquished by Sampler: <b>5</b> Date/Time: _____													Received By: _____									



### CHAIN OF CUSTODY

4405 Vineland Rd., Suite C15  
 Orlando, FL 32811  
 407.425.6700, fax 407.425.0707

Accutest Job #:  
 \_\_\_\_\_  
 Accutest Control #:  
 \_\_\_\_\_

Client Information			Facility Information				Analytical Information									
Name SEI Environmental			Project Name Highway 11 Grocery													
Address 5100 Reagan Dr., Suite 7			Location 13527 S.C Hwy 11 Salem S.C.													
City Charlotte	State NC	Zip 28206	Project No. 302169													
Send Report to: Phone #: 704-596-8624			FAX #: 704-596-8605													
Field ID / Point of Collection	Collection		Sampled By	Matrix	# of bottles	Preservation					None					
	Date	Time				NaOH	HNO3	H2SO4	None							
MW-2	8/24/06	13:20	SS, ZS	GW	3						X					
MW-3		13:40									X					
MW-4		13:50									X					
MW-5		13:30									X					
MW-6		13:00									X					
MW-7		14:20									X					
MW-9		15:15									X					
MW-10		14:05									X					
MW-11		15:35									X					
MW-12		15:00									X					
Turnaround Information			Data Deliverable Information								Comments / Remarks					
<input type="checkbox"/> 21 Day Standard <input type="checkbox"/> 14 Day <input checked="" type="checkbox"/> 7 Days <del>Express</del> <input type="checkbox"/> Other _____ (Days) RUSH TAT is for FAX data Data unless previously approved.			Approved By: _____ <input type="checkbox"/> NJ Reduced <input type="checkbox"/> NJ Full <input type="checkbox"/> FULL CLP <input type="checkbox"/> Disk Deliverable <input type="checkbox"/> Other (Specify) _____			<input type="checkbox"/> Commercial "A" <input type="checkbox"/> Commercial "B" <input type="checkbox"/> ASP Category B <input type="checkbox"/> State Forms										
Sample Custody must be documented below each time samples change possession, including courier delivery.																
Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:											
1	8/24/06 8:00	1	2		2											
Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:											
3		3	4		4											
Relinquished by Sampler:	Date Time:	Received By:	Seal #	Preserved where applica	On Ice:											
5		5		<input type="checkbox"/>	<input type="checkbox"/>											

**South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program**

**Field Data Information Sheet for Ground Water Sampling**

Date (mm/dd/yy): 8/28/06

Field Personnel: Scott, Zeph

General Weather Conditions: SUNNY 85

Ambient Air Temperature: \_\_\_\_\_ °C

Quality Assurance

pH Meter serial no. _____	Conductivity Meter serial no. _____
pH = 4.0 _____	standard _____
pH = 7.0 _____	standard _____
pH = 10.0 _____	standard _____

Chain of Custody

Relinquished by _____	Date/Time _____	Received by _____	Date/Time _____
-----------------------	-----------------	-------------------	-----------------

Facility Name Highway 11 Grocery Job # 302169

Site ID # 03439 Monitoring Well # MV-6

Water Supply Well Public \_\_\_\_\_ Private \_\_\_\_\_

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C = 0.163  
for a 4 inch well C = 0.652

\*Free Product Thickness \_\_\_\_\_ feet

Depth to Ground Water (DGW) 23.86 feet

Total Well Depth (TWD) 35.0 feet

Length of the water column (LWC = TWD - DGW) \_\_\_\_\_ feet

1 casing volume (CV = LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals

3 casing volume (3 X CV) = \_\_\_\_\_ gals (standard purge volume)

Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals.

\* If free product is present over 1/8 inch, sampling will not be required.

	Initial	1 <sup>st</sup> Vol	2 <sup>nd</sup> Vol	3 <sup>rd</sup> Vol	4 <sup>th</sup> Vol	5 <sup>th</sup> Vol	Post Sampling
Cumulative Volume Purged (gallons)	<u>13.00</u>						
Time (military)	<u>7.97</u>						
pH (s.u.)	<u>.030</u>						
Specific Conductivity (µmhos/cm)	<u>21.2</u>						
Water Temperature (°C)	<u>0.01</u>						
Dissolved Oxygen							
PID readings, if required							

Remarks: \_\_\_\_\_



South Carolina Department of Health and Environmental Control  
 Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy): 8/28/06

Field Personnel: Scott, Zeph

General Weather Conditions: Sunny 85

Ambient Air Temperature: \_\_\_\_\_ °C

Quality Assurance

pH Meter serial no. \_\_\_\_\_ Conductivity Meter serial no. \_\_\_\_\_

pH = 4.0 \_\_\_\_\_ standard \_\_\_\_\_

pH = 7.0 \_\_\_\_\_ standard \_\_\_\_\_

pH = 10.0 \_\_\_\_\_ standard \_\_\_\_\_

Chain of Custody

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name Highway 11 Grocery Job # 302169

Site ID # 03439 Monitoring Well # DW-1

Water Supply Well  Public  Private

Monitoring Well Diameter (D): \_\_\_\_\_ feet

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C = 0.163  
 for a 4 inch well C = 0.652

\*Free Product Thickness \_\_\_\_\_ feet

Depth to Ground Water (DGW) 26.93 feet

Total Well Depth (TWD) 45.0 feet

Length of the water column (LWC = TWD - DGW) \_\_\_\_\_ feet

1 casing volume (CV = LWC x C) = \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals

3 casing volume (3 x CV) = \_\_\_\_\_ gals (standard purge volume)

Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals

\* If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1 <sup>st</sup> Vol	2 <sup>nd</sup> Vol	3 <sup>rd</sup> Vol	4 <sup>th</sup> Vol	5 <sup>th</sup> Vol	Post Sampling
Time (military)	<u>13:05</u>						
pH (s.u.)	<u>7.6</u>						
Specific Conductivity (µmhos/cm)	<u>028</u>						
Water Temperature (°C)	<u>21.0</u>						
Dissolved Oxygen	<u>0.12</u>						
PID readings, if required							

Remarks: \_\_\_\_\_

09/08/06 07:04 FAX 794 398 3605 S&E ENVIRONMENTAL INC. → RAL SEL

South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy): 8/28/06

Field Personnel: Scott, Zeph

General Weather Conditions: SUNNY 85

Ambient Air Temperature: \_\_\_\_\_ °C

Quality Assurance \_\_\_\_\_

pH Meter serial no. _____	Conductivity Meter serial no. _____
pH = 4.0 _____	standard _____
pH = 7.0 _____	standard _____
pH = 10.0 _____	standard _____

Chain of Custody \_\_\_\_\_

Relinquished by _____	Date/Time _____	Received by _____	Date/Time _____
-----------------------	-----------------	-------------------	-----------------

Facility Name Highway 11 Grocery Job # 302169

Site ID # 03439 Monitoring Well # DMW-14

Water Supply Well Public \_\_\_\_\_ Private \_\_\_\_\_

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C = 0.163  
for a 4 inch well C = 0.652

\*Free Product Thickness \_\_\_\_\_ feet

Depth to Ground Water (DGW) 27.33 feet

Total Well Depth (TWD) 61.0 feet

Length of the water column (LWC = TWD - DGW) \_\_\_\_\_ feet

1 casing volume (CV = LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals

3 casing volume (3 X CV) = \_\_\_\_\_ gals (standard purge volume)

Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals

\* If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1 <sup>st</sup> Vol	2 <sup>nd</sup> Vol	3 <sup>rd</sup> Vol	4 <sup>th</sup> Vol	5 <sup>th</sup> Vol	Post Sampling
Time (military)	<u>13:15</u>						
pH (s.u.)	<u>8.00</u>						
Specific Conductivity (µmhos/cm)	<u>0.28</u>						
Water Temperature (°C)	<u>22.7</u>						
Dissolved Oxygen	<u>0.12</u>						
PID readings, if required							

Remarks: \_\_\_\_\_

South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy): 8/28/06

Field Personnel: Scott, Zeph

General Weather Conditions: Sunny 85

Ambient Air Temperature: \_\_\_\_\_ °C

Quality Assurance

pH Meter serial no. \_\_\_\_\_ Conductivity Meter serial no. \_\_\_\_\_

pH = 4.0 \_\_\_\_\_ standard \_\_\_\_\_

pH = 7.0 \_\_\_\_\_ standard \_\_\_\_\_

pH = 10.0 \_\_\_\_\_ standard \_\_\_\_\_

Chain of Custody \_\_\_\_\_

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name Highway 11 Grocery Job # 302169

Site ID # 03439 Monitoring Well # MW5

Water Supply Well Public \_\_\_\_\_ Private \_\_\_\_\_

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C = 0.163  
for a 4 inch well C = 0.652

\*Free Product Thickness \_\_\_\_\_ feet

Depth to Ground Water (DGW) 31.06 feet

Total Well Depth (TWD) 35.0 feet

Length of the water column (LWC = TWD - DGW) \_\_\_\_\_ feet

1 casing volume (CV = LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals

3 casing volume (3 X CV) = \_\_\_\_\_ gals (standard purge volume)

Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals

\* If free product is present over 1/8 inch, sampling will not be required.

	Initial	1 <sup>st</sup> Vol	2 <sup>nd</sup> Vol	3 <sup>rd</sup> Vol	4 <sup>th</sup> Vol	5 <sup>th</sup> Vol	Post Sampling
Cumulative Volume Purged (gallons)							
Time (military)	<u>13:30</u>						
pH (s.u.)	<u>7.91</u>						
Specific Conductivity (µmhos/cm)	<u>0.12</u>						
Water Temperature (°C)	<u>19.7</u>						
Dissolved Oxygen	<u>0.14</u>						
PID readings, if required							
Remarks:							

South Carolina Department of Health and Environmental Control  
 Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy): 8/28/06  
 Field Personnel: Scott, Zeph  
 General Weather Conditions: SUNNY 85  
 Ambient Air Temperature: \_\_\_\_\_ °C  
 \_\_\_\_\_  
 Quality Assurance  
 pH Meter serial no. \_\_\_\_\_ Conductivity Meter serial no. \_\_\_\_\_  
 pH = 4.0 \_\_\_\_\_ standard \_\_\_\_\_  
 pH = 7.0 \_\_\_\_\_ standard \_\_\_\_\_  
 pH = 10.0 \_\_\_\_\_ standard \_\_\_\_\_  
 Chain of Custody  
 Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name Highway 11 Grocery Job # 302169  
 Site ID # 03439 Monitoring Well # MW-2  
 Water Supply Well Public \_\_\_\_\_ Private \_\_\_\_\_  
 Monitoring Well Diameter (D): 2" feet  
 Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C = 0.163  
 for a 4 inch well C = 0.652  
 \*Free Product Thickness \_\_\_\_\_ feet  
 Depth to Ground Water (DGW) 29.33 feet  
 Total Well Depth (TWD) 35.0 feet  
 Length of the water column (LWC = TWD-DGW) \_\_\_\_\_ feet  
 1 casing volume (CV = LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals  
 3 casing volume (3 X CV) = \_\_\_\_\_ gals (standard purge volume)  
 Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals  
 \* If free product is present over 1/8 inch, sampling will not be required.

	Initial	1 <sup>st</sup> Vol	2 <sup>nd</sup> Vol	3 <sup>rd</sup> Vol	4 <sup>th</sup> Vol	5 <sup>th</sup> Vol	Post Sampling
Cumulative Volume Purged (gallons)							
Time (military)	<u>13:20</u>						
pH (s.u.)	<u>7.19</u>						
Specific Conductivity (µmhos/cm)	<u>203</u>						
Water Temperature (°C)	<u>0.13</u>						
Dissolved Oxygen							
PID readings, if required							
Remarks: _____							

South Carolina Department of Health and Environmental Control  
 Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy): 8/28/06

Field Personnel: Scott, Zeph

General Weather Conditions: Sunny 85

Ambient Air Temperature: \_\_\_\_\_ °C

Quality Assurance \_\_\_\_\_

pH Meter serial no. \_\_\_\_\_ Conductivity Meter serial no. \_\_\_\_\_

pH = 4.0 \_\_\_\_\_ standard \_\_\_\_\_

pH = 7.0 \_\_\_\_\_ standard \_\_\_\_\_

pH = 10.0 \_\_\_\_\_ standard \_\_\_\_\_

Chain of Custody \_\_\_\_\_

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name Highway 11 Grocery Job # 302169

Site ID # 03439 Monitoring Well # MW-3

Water Supply Well Public \_\_\_\_\_ Private \_\_\_\_\_

Monitoring Well Diameter (D): \_\_\_\_\_ feet

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C = 0.163  
 for a 4 inch well C = 0.652

\*Free Product Thickness \_\_\_\_\_ feet

Depth to Ground Water (DGW) 26.95 feet

Total Well Depth (TWD) 35.0 feet

Length of the water column (LWC = TWD - DGW) \_\_\_\_\_ feet

1 casing volume (CV = LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals

3 casing volume (3 X CV) = \_\_\_\_\_ gals (standard purge volume)

Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals

\* If free product is present over 1/8 inch, sampling will not be required.

	Initial	1 <sup>st</sup> Vol	2 <sup>nd</sup> Vol	3 <sup>rd</sup> Vol	4 <sup>th</sup> Vol	5 <sup>th</sup> Vol	Post Sampling
Cumulative Volume Purged (gallons)							
Time (military)	<u>13:40</u>						
pH (s.u.)	<u>7.52</u>						
Specific Conductivity (µmhos/cm)	<u>19.8</u>						
Water Temperature (°C)	<u>0.14</u>						
Dissolved Oxygen							
PID readings, if required							
Remarks:							

South Carolina Department of Health and Environmental Control  
 Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy): 8/28/06  
 Field Personnel: Scott, Zeph  
 General Weather Conditions: SUNNY 85  
 Ambient Air Temperature: \_\_\_\_\_ °C  
 \_\_\_\_\_  
 Quality Assurance  
 pH Meter serial no. \_\_\_\_\_ Conductivity Meter serial no. \_\_\_\_\_  
 pH = 4.0 \_\_\_\_\_ standard \_\_\_\_\_  
 pH = 7.0 \_\_\_\_\_ standard \_\_\_\_\_  
 pH = 10.0 \_\_\_\_\_ standard \_\_\_\_\_  
 Chain of Custody  
 Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name Highway 11 Grocery Job # 302169  
 Site ID # 03439 Monitoring Well # MW-4  
 Water Supply Well \_\_\_\_\_ Public \_\_\_\_\_ Private \_\_\_\_\_  
 Monitoring Well Diameter (D): \_\_\_\_\_ feet  
 Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C = 0.163  
 for a 4 inch well C = 0.652  
 \*Free Product Thickness \_\_\_\_\_ feet  
 Depth to Ground Water (DGW) \_\_\_\_\_ feet  
 Total Well Depth (TWD) \_\_\_\_\_ feet  
 Length of the water column (LWC = TWD - DGW) \_\_\_\_\_ feet  
 1 casing volume (CV = LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals  
 3 casing volume (3 X CV) = \_\_\_\_\_ gals (standard purge volume)  
 Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals  
 \* If free product is present over 1/8 inch, sampling will not be required.

	Initial	1 <sup>st</sup> Vol	2 <sup>nd</sup> Vol	3 <sup>rd</sup> Vol	4 <sup>th</sup> Vol	5 <sup>th</sup> Vol	Post Sampling
Cumulative Volume Purged (gallons)							
Time (military)	<u>3:50</u>						
pH (s.u.)	<u>8.10</u>						
Specific Conductivity (µmhos/cm)	<u>1044</u>						
Water Temperature (°C)	<u>19.8</u>						
Dissolved Oxygen	<u>0.13</u>						
PID readings, if required							
Remarks:	_____						

South Carolina Department of Health and Environmental Control  
 Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy): 8/28/06  
 Field Personnel: Scott, Zeph  
 General Weather Conditions: SUNNY 85  
 Ambient Air Temperature: \_\_\_\_\_ °C  
 \_\_\_\_\_  
 Quality Assurance \_\_\_\_\_  
 pH Meter serial no. \_\_\_\_\_ Conductivity Meter serial no. \_\_\_\_\_  
 pH = 4.0 \_\_\_\_\_ standard \_\_\_\_\_  
 pH = 7.0 \_\_\_\_\_ standard \_\_\_\_\_  
 pH = 10.0 \_\_\_\_\_ standard \_\_\_\_\_  
 Chain of Custody \_\_\_\_\_  
 Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name Highway 11 Grocery Job # 302169  
 Site ID # 03439 Monitoring Well # MW-10  
 Water Supply Well Public \_\_\_\_\_ Private \_\_\_\_\_  
 Monitoring Well Diameter (D): 211 feet  
 Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C = 0.163  
 for a 4 inch well C = 0.652  
 \*Free Product Thickness \_\_\_\_\_ feet  
 Depth to Ground Water (DGW) 22.16 feet  
 Total Well Depth (TWD) 240 feet  
 Length of the water column (LWC = TWD - DGW) \_\_\_\_\_ feet  
 1 casing volume (CV = LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals  
 3 casing volume (3 X CV) = \_\_\_\_\_ gals (standard purge volume)  
 Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals  
 \* If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1 <sup>st</sup> Vol	2 <sup>nd</sup> Vol	3 <sup>rd</sup> Vol	4 <sup>th</sup> Vol	5 <sup>th</sup> Vol	Post Sampling
Time (military)	<u>14:05</u>						
pH (s.u.)	<u>8.21</u>						
Specific Conductivity (µmhos/cm)	<u>0.36</u>						
Water Temperature (°C)	<u>20.3</u>						
Dissolved Oxygen	<u>0.14</u>						
PID readings, if required							
Remarks: _____							

South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy): 8/28/06  
 Field Personnel: Scott, Zeph  
 General Weather Conditions: SUNNY 85  
 Ambient Air Temperature: \_\_\_\_\_ °C  
 \_\_\_\_\_  
 Quality Assurance  
 pH Meter serial no. \_\_\_\_\_ Conductivity Meter serial no. \_\_\_\_\_  
 pH = 4.0 \_\_\_\_\_ standard \_\_\_\_\_  
 pH = 7.0 \_\_\_\_\_ standard \_\_\_\_\_  
 pH = 10.0 \_\_\_\_\_ standard \_\_\_\_\_  
 Chain of Custody  
 Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name Highway 11 Grocery Job # 302169  
 Site ID # 03439 Monitoring Well # MW-7  
 Water Supply Well Public \_\_\_\_\_ Private \_\_\_\_\_  
 Monitoring Well Diameter (D): \_\_\_\_\_ feet  
 Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C = 0.163  
 for a 4 inch well C = 0.652  
 \*Free Product Thickness \_\_\_\_\_ feet  
 Depth to Ground Water (DGW) 30.43 feet  
 Total Well Depth (TWD) 40.0 feet  
 Length of the water column (LWC = TWD - DGW) \_\_\_\_\_ feet  
 1 casing volume (CV = LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals  
 3 casing volume (3 X CV) = \_\_\_\_\_ gals (standard purge volume)  
 Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals  
 \* If free product is present over 1/8 inch, sampling will not be required.

	Initial	1 <sup>st</sup> Vol	2 <sup>nd</sup> Vol	3 <sup>rd</sup> Vol	4 <sup>th</sup> Vol	5 <sup>th</sup> Vol	Post Sampling
Cumulative Volume Purged (gallons)							
Time (military)	<u>14:20</u>						
pH (s.u.)	<u>7.61</u>						
Specific Conductivity (µmhos/cm)	<u>207</u>						
Water Temperature (°C)	<u>20.6</u>						
Dissolved Oxygen	<u>0.14</u>						
PID readings, if required							
Remarks:							



**South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program**

**Field Data Information Sheet for Ground Water Sampling**

Date (mm/dd/yy): 8/28/06

Field Personnel: Scott, Zeph

General Weather Conditions: SUNNY 85

Ambient Air Temperature: \_\_\_\_\_ °C

Quality Assurance

pH Meter serial no. _____	Conductivity Meter serial no. _____
pH = 4.0 _____	standard _____
pH = 7.0 _____	standard _____
pH = 10.0 _____	standard _____

Chain of Custody

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name Highway 11 Grocery Job # 302169

Site ID # 03439 Monitoring Well # MW-12

Water Supply Well Public \_\_\_\_\_ Private \_\_\_\_\_

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C = 0.163  
for a 4 inch well C = 0.652

\*Free Product Thickness \_\_\_\_\_ feet

Depth to Ground Water (DGW) 3.94 feet

Total Well Depth (TWD) 11.0 feet

Length of the water column (LWC = TWD - DGW) \_\_\_\_\_ feet

1 casing volume (CV = LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals

3 casing volume (3 X CV) = \_\_\_\_\_ gals (standard purge volume)

Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals

\* If free product is present over 1/8 inch, sampling will not be required.

	Initial	1 <sup>st</sup> Vol	2 <sup>nd</sup> Vol	3 <sup>rd</sup> Vol	4 <sup>th</sup> Vol	5 <sup>th</sup> Vol	Post Sampling
Cumulative Volume Purged (gallons)							
Time (military)	<u>15:00</u>						
pH (s.u.)	<u>7.32</u>						
Specific Conductivity (µmhos/cm)	<u>0.021</u>						
Water Temperature (°C)	<u>24.0</u>						
Dissolved Oxygen	<u>0.11</u>						
PID readings, if required							
Remarks:	_____						

South Carolina Department of Health and Environmental Control  
 Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy): 8/28/06  
 Field Personnel: Scott, Zeph  
 General Weather Conditions: SUNNY 85  
 Ambient Air Temperature: \_\_\_\_\_ °C  
 \_\_\_\_\_  
 Quality Assurance \_\_\_\_\_  
 pH Meter serial no. \_\_\_\_\_ Conductivity Meter serial no. \_\_\_\_\_  
 pH = 4.0 \_\_\_\_\_ standard \_\_\_\_\_  
 pH = 7.0 \_\_\_\_\_ standard \_\_\_\_\_  
 pH = 10.0 \_\_\_\_\_ standard \_\_\_\_\_  
 Chain of Custody \_\_\_\_\_  
 Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name Highway 11 Grocery Job # 302169  
 Site ID # 03439 Monitoring Well # MW-14  
 Water Supply Well Public Private \_\_\_\_\_  
 Monitoring Well Diameter (D): 2" feet  
 Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C = 0.163  
 for a 4 inch well C = 0.652  
 \*Free Product Thickness \_\_\_\_\_ feet  
 Depth to Ground Water (DGW) 3.36 feet  
 Total Well Depth (TWD) 9.0 feet  
 Length of the water column (LWC = TWD-DGW) \_\_\_\_\_ feet  
 1 casing volume (CV = LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals  
 3 casing volume (3 X CV) = \_\_\_\_\_ gals (standard purge volume)  
 Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals  
 \* If free product is present over 1/8 inch, sampling will not be required.

	Initial	1 <sup>st</sup> Vol	2 <sup>nd</sup> Vol	3 <sup>rd</sup> Vol	4 <sup>th</sup> Vol	5 <sup>th</sup> Vol	Post Sampling
Cumulative Volume Purged (gallons)							
Time (military)	<u>7:50</u>						
pH (s.u.)	<u>7.98</u>						
Specific Conductivity (µmhos/cm)	<u>249</u>						
Water Temperature (°C)	<u>24.2</u>						
Dissolved Oxygen	<u>0.11</u>						
PID readings, if required							
Remarks:							

South Carolina Department of Health and Environmental Control  
 Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy): 8/28/06  
 Field Personnel: Scott, Zeph  
 General Weather Conditions: SUNNY 85  
 Ambient Air Temperature: \_\_\_\_\_ °C  
 \_\_\_\_\_  
 Quality Assurance \_\_\_\_\_  
 pH Meter serial no. \_\_\_\_\_ Conductivity Meter serial no. \_\_\_\_\_  
 pH = 4.0 \_\_\_\_\_ standard \_\_\_\_\_  
 pH = 7.0 \_\_\_\_\_ standard \_\_\_\_\_  
 pH = 10.0 \_\_\_\_\_ standard \_\_\_\_\_  
 Chain of Custody \_\_\_\_\_  
 Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name Highway 11 Grocery Job # 302169  
 Site ID # 03439 Monitoring Well # MW-9  
 Water Supply Well Public \_\_\_\_\_ Private \_\_\_\_\_  
 Monitoring Well Diameter (D): 2 1/2 feet  
 Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C = 0.163  
 for a 4 inch well C = 0.652  
 \*Free Product Thickness \_\_\_\_\_ feet  
 Depth to Ground Water (DGW) 2.50 feet  
 Total Well Depth (TWD) 11.0 feet  
 Length of the water column (LWC = TWD-DGW) \_\_\_\_\_ feet  
 1 casing volume (CV = LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals  
 3 casing volume (3 X CV) = \_\_\_\_\_ gals (standard purge volume)  
 Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals  
 \* If free product is present over 1/8 inch, sampling will not be required.

	Initial	1 <sup>st</sup> Vol	2 <sup>nd</sup> Vol	3 <sup>rd</sup> Vol	4 <sup>th</sup> Vol	5 <sup>th</sup> Vol	Post Sampling
Cumulative Volume Purged (gallons)							
Time (military)	<u>5:15</u>						
pH (s.u.)	<u>8.09</u>						
Specific Conductivity (µmhos/cm)	<u>0.35</u>						
Water Temperature (°C)	<u>22.8</u>						
Dissolved Oxygen	<u>0.12</u>						
PID readings, if required							
Remarks: _____							

South Carolina Department of Health and Environmental Control  
 Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy): 8/28/06  
 Field Personnel: Scott, Zeph  
 General Weather Conditions: SUNNY 85  
 Ambient Air Temperature: \_\_\_\_\_ °C  
 \_\_\_\_\_  
 Quality Assurance \_\_\_\_\_  
 pH Meter serial no. \_\_\_\_\_  
 pH = 4.0 \_\_\_\_\_  
 pH = 7.0 \_\_\_\_\_  
 pH = 10.0 \_\_\_\_\_  
 Conductivity Meter serial no. \_\_\_\_\_  
 standard \_\_\_\_\_  
 standard \_\_\_\_\_  
 standard \_\_\_\_\_  
 Chain of Custody \_\_\_\_\_  
 Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_  
 Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name Highway 11 Grocery Job # 302169  
 Site ID # 03439 Monitoring Well # MW-8  
 Water Supply Well Public Private \_\_\_\_\_  
 Monitoring Well Diameter (D): 2 1/2 feet  
 Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C = 0.163  
 for a 4 inch well C = 0.652  
 \*Free Product Thickness 2.41 feet  
 Depth to Ground Water (DGW) 24.46 feet  
 Total Well Depth (TWD) \_\_\_\_\_ feet  
 Length of the water column (LWC = TWD - DGW) \_\_\_\_\_ feet  
 1 casing volume (CV = LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals  
 3 casing volume (3 X CV) = \_\_\_\_\_ gals (standard purge volume)  
 Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals  
 \* If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1 <sup>st</sup> Vol	2 <sup>nd</sup> Vol	3 <sup>rd</sup> Vol	4 <sup>th</sup> Vol	5 <sup>th</sup> Vol	Post Sampling
Time (military)							
pH (s.u.)							
Specific Conductivity (µmhos/cm)							
Water Temperature (°C)							
Dissolved Oxygen							
PID readings, if required							
Remarks: <u>Free Product</u>							

South Carolina Department of Health and Environmental Control  
 Division of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Ground Water Sampling

8/06  
A. Zeph  
SUNNY 85  
 \_\_\_\_\_ °C  
 Insurance \_\_\_\_\_  
 Conductivity Meter  
 serial no. \_\_\_\_\_  
 standard \_\_\_\_\_  
 standard \_\_\_\_\_  
 standard \_\_\_\_\_  
 Custody \_\_\_\_\_  
 Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name Highway 11 Grocery Job # 302169  
 Site ID # 03439 Monitoring Well # DMW-2  
 Water Supply Well Public \_\_\_\_\_ Private \_\_\_\_\_  
 Monitoring Well Diameter (D): 2 1/2 feet  
 Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C = 0.163  
 for a 4 inch well C = 0.652  
 \*Free Product Thickness \_\_\_\_\_ feet  
 Depth to Ground Water (DGW) 18.72 feet  
 Total Well Depth (TWD) 75.0 feet  
 Length of the water column (LWC = TWD - DGW) \_\_\_\_\_ feet  
 1 casing volume (CV = LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals  
 3 casing volume (3 X CV) = \_\_\_\_\_ gals (standard purge volume)  
 Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals  
 \* If free product is present over 1/8 inch, sampling will not be required.

(ons)	Initial	1 <sup>st</sup> Vol	2 <sup>nd</sup> Vol	3 <sup>rd</sup> Vol	4 <sup>th</sup> Vol	5 <sup>th</sup> Vol	Post Sampling
	<u>25.25</u>						
	<u>0.85</u>						
n)	<u>0.68</u>						
	<u>18.5</u>						
	<u>0.15</u>						

**APPENDIX D**  
**Laboratory Analytical Results and Chain-of-Custody**



09/06/06

Technical Report for

SEI-Charlotte, NC

Highway 11 Grocery; 13527 S.C. Hwy 11, Salem, SC  
302169

Accutest Job Number: F43271

Sampling Date: 08/28/06



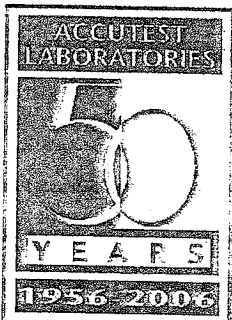
Report to:

SEI Environmental-Raleigh

cboggs@sei-environmental.com

ATTN: Chris Boggs

Total number of pages in report: 26



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

*H. Behzadi*  
Harry Behzadi, Ph.D.  
Laboratory Director

Certifications: FL (DOH E83510), NC (573), NJ (FL002), MA (FL946), IA (366), LA (03051), KS (E-10327), SC, AK  
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### Sample Summary

SEI-Charlotte, NC

Job No: F43271

Highway 11 Grocery; 13527 S.C. Hwy 11, Salem, SC  
 Project No: 302169

Sample Number	Collected Date	Time By	Received	Matrix Code Type	Client Sample ID
F43271-1	08/28/06	13:20 SS	08/30/06	AQ Ground Water	MW-2
F43271-2	08/28/06	13:40 SS	08/30/06	AQ Ground Water	MW-3
F43271-3	08/28/06	13:50 SS	08/30/06	AQ Ground Water	MW-4
F43271-4	08/28/06	13:30 SS	08/30/06	AQ Ground Water	MW-5
F43271-5	08/28/06	13:00 SS	08/30/06	AQ Ground Water	MW-6
F43271-6	08/28/06	14:20 SS	08/30/06	AQ Ground Water	MW-7
F43271-7	08/28/06	15:15 SS	08/30/06	AQ Ground Water	MW-9
F43271-8	08/28/06	14:05 SS	08/30/06	AQ Ground Water	MW-10
F43271-9	08/28/06	15:35 SS	08/30/06	AQ Ground Water	MW-11
F43271-10	08/28/06	15:00 SS	08/30/06	AQ Ground Water	MW-12
F43271-11	08/28/06	15:05 SS	08/30/06	AQ Ground Water	MW-14
F43271-12	08/28/06	13:05 SS	08/30/06	AQ Ground Water	DMW-1
F43271-13	08/28/06	15:25 SS	08/30/06	AQ Ground Water	DMW-2

### Sample Summary (continued)

SEI-Charlotte, NC

Job No: F43271

Highway 11 Grocery; 13527 S.C. Hwy 11, Salem, SC  
Project No: 302169

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
F43271-14	08/28/06	13:15 SS	08/30/06	AQ	Ground Water	DMW-4
F43271-15	08/28/06	14:00 SS	08/30/06	AQ	Ground Water	WW-1
F43271-16	08/28/06	14:50 SS	08/30/06	AQ	Ground Water	CK-1
F43271-17	08/28/06	15:50 SS	08/30/06	AQ	Ground Water	CK-2



IT'S ALL IN THE CHEMISTRY

**Sample Results**

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**Report of Analysis**

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**Report of Analysis**

<b>Client Sample ID:</b> MW-2	<b>Date Sampled:</b> 08/28/06
<b>Lab Sample ID:</b> F43271-1	<b>Date Received:</b> 08/30/06
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260B	
<b>Project:</b> Highway 11 Grocery; 13527 S.C. Hwy 11, Salem, SC	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N0013913.D	1	08/30/06	CS	n/a	n/a	VN600
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

**Purgeable Aromatics, MTBE, Naphthalene**

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	32.0	1.0	ug/l	
108-88-3	Toluene	3.1	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	4.5	3.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
91-20-3	Naphthalene	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		86-115%
17060-07-0	1,2-Dichloroethane-D4	102%		73-126%
2037-26-5	Toluene-D8	104%		86-112%
460-00-4	4-Bromofluorobenzene	108%		83-119%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

**Report of Analysis**

<b>Client Sample ID:</b> MW-3	<b>Date Sampled:</b> 08/28/06
<b>Lab Sample ID:</b> F43271-2	<b>Date Received:</b> 08/30/06
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260B	
<b>Project:</b> Highway 11 Grocery; 13527 S.C. Hwy 11, Salem, SC	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N0013914.D	1	08/30/06	CS	n/a	n/a	VN600
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

**Purgeable Aromatics, MTBE, Naphthalene**

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	3.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
91-20-3	Naphthalene	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		86-115%
17060-07-0	1,2-Dichloroethane-D4	102%		73-126%
2037-26-5	Toluene-D8	103%		86-112%
460-00-4	4-Bromofluorobenzene	108%		83-119%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Page 1 of 1

<b>Client Sample ID:</b> MW-4	<b>Date Sampled:</b> 08/28/06
<b>Lab Sample ID:</b> F43271-3	<b>Date Received:</b> 08/30/06
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260B	
<b>Project:</b> Highway 11 Grocery; 13527 S.C. Hwy 11, Salem, SC	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N0013915.D	1	08/30/06	CS	n/a	n/a	VN600
Run #2	N0013950.D	5	08/31/06	CS	n/a	n/a	VN601

Run #	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

## Purgeable Aromatics, MTBE, Naphthalene

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	42.8	1.0	ug/l	
108-88-3	Toluene	6.7	1.0	ug/l	
100-41-4	Ethylbenzene	4.3	1.0	ug/l	
1330-20-7	Xylene (total)	88.3	3.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	153 <sup>a</sup>	5.0	ug/l	
91-20-3	Naphthalene	3.6	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%	98%	86-115%
17060-07-0	1,2-Dichloroethane-D4	102%	100%	73-126%
2037-26-5	Toluene-D8	105%	104%	86-112%
460-00-4	4-Bromofluorobenzene	105%	93%	83-119%

(a) Result is from Run# 2

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

### Report of Analysis

<b>Client Sample ID:</b> MW-5	<b>Date Sampled:</b> 08/28/06
<b>Lab Sample ID:</b> F43271-4	<b>Date Received:</b> 08/30/06
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260B	
<b>Project:</b> Highway 11 Grocery; 13527 S.C. Hwy 11, Salem, SC	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N0013916.D	1	08/30/06	CS	n/a	n/a	VN600
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

**Purgeable Aromatics, MTBE, Naphthalene**

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	3.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
91-20-3	Naphthalene	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		86-115%
17060-07-0	1,2-Dichloroethane-D4	103%		73-126%
2037-26-5	Toluene-D8	105%		86-112%
460-00-4	4-Bromofluorobenzene	106%		83-119%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Page 1 of 1

<b>Client Sample ID:</b> MW-6	<b>Date Sampled:</b> 08/28/06
<b>Lab Sample ID:</b> F43271-5	<b>Date Received:</b> 08/30/06
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260B	
<b>Project:</b> Highway 11 Grocery; 13527 S.C. Hwy 11, Salem, SC	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N0013951.D	2	08/31/06	CS	n/a	n/a	VN601
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## Purgeable Aromatics, MTBE, Naphthalene

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	98.9	2.0	ug/l	
108-88-3	Toluene	75.9	2.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	ug/l	
1330-20-7	Xylene (total)	243	6.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	21.8	2.0	ug/l	
91-20-3	Naphthalene	ND	4.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		86-115%
17060-07-0	1,2-Dichloroethane-D4	99%		73-126%
2037-26-5	Toluene-D8	103%		86-112%
460-00-4	4-Bromofluorobenzene	94%		83-119%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound



## Report of Analysis

Page 1 of 1

<b>Client Sample ID:</b> MW-7	<b>Date Sampled:</b> 08/28/06
<b>Lab Sample ID:</b> F43271-6	<b>Date Received:</b> 08/30/06
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260B	
<b>Project:</b> Highway 11 Grocery; 13527 S.C. Hwy 11, Salem, SC	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N0013918.D	1	08/30/06	CS	n/a	n/a	VN600
Run #2	N0013952.D	2	08/31/06	CS	n/a	n/a	VN601

Run #	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

## Purgeable Aromatics, MTBE, Naphthalene

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	98.9 <sup>a</sup>	2.0	ug/l	
108-88-3	Toluene	95.4	1.0	ug/l	
100-41-4	Ethylbenzene	3.6	1.0	ug/l	
1330-20-7	Xylene (total)	127	3.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	7.0	1.0	ug/l	
91-20-3	Naphthalene	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%	100%	86-115%
17060-07-0	1,2-Dichloroethane-D4	100%	102%	73-126%
2037-26-5	Toluene-D8	105%	104%	86-112%
460-00-4	4-Bromofluorobenzene	104%	102%	83-119%

(a) Result is from Run# 2

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

**Report of Analysis**

<b>Client Sample ID:</b> MW-9		<b>Date Sampled:</b> 08/28/06
<b>Lab Sample ID:</b> F43271-7		<b>Date Received:</b> 08/30/06
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260B		
<b>Project:</b> Highway 11 Grocery; 13527 S.C. Hwy 11, Salem, SC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N0013919.D	1	08/30/06	CS	n/a	n/a	VN600
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

**Purgeable Aromatics, MTBE, Naphthalene**

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	3.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
91-20-3	Naphthalene	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		86-115%
17060-07-0	1,2-Dichloroethane-D4	102%		73-126%
2037-26-5	Toluene-D8	105%		86-112%
460-00-4	4-Bromofluorobenzene	107%		83-119%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Page 1 of 1

Client Sample ID:	MW-10	Date Sampled:	08/28/06
Lab Sample ID:	F43271-8	Date Received:	08/30/06
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	Highway 11 Grocery; 13527 S.C. Hwy 11, Salem, SC		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N0013920.D	1	08/30/06	CS	n/a	n/a	VN600
Run #2	N0013953.D	2	08/31/06	CS	n/a	n/a	VN601

Run #	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

## Purgeable Aromatics, MTBE, Naphthalene

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	78.7	1.0	ug/l	
108-88-3	Toluene	98.2 <sup>a</sup>	2.0	ug/l	
100-41-4	Ethylbenzene	15.6	1.0	ug/l	
1330-20-7	Xylene (total)	69.4	3.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	169 <sup>a</sup>	2.0	ug/l	
91-20-3	Naphthalene	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%	99%	86-115%
17060-07-0	1,2-Dichloroethane-D4	100%	101%	73-126%
2037-26-5	Toluene-D8	103%	102%	86-112%
460-00-4	4-Bromofluorobenzene	102%	99%	83-119%

(a) Result is from Run# 2

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

**Report of Analysis**

<b>Client Sample ID:</b> MW-11	<b>Date Sampled:</b> 08/28/06
<b>Lab Sample ID:</b> F43271-9	<b>Date Received:</b> 08/30/06
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260B	
<b>Project:</b> Highway 11 Grocery; 13527 S.C. Hwy 11, Salem, SC	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N0013921.D	1	08/30/06	CS	n/a	n/a	VN600
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

**Purgeable Aromatics, MTBE, Naphthalene**

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	6.4	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	82.6	3.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	4.4	1.0	ug/l	
91-20-3	Naphthalene	2.5	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		86-115%
17060-07-0	1,2-Dichloroethane-D4	101%		73-126%
2037-26-5	Toluene-D8	105%		86-112%
460-00-4	4-Bromofluorobenzene	100%		83-119%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Page 1 of 1

<b>Client Sample ID:</b> MW-12		<b>Date Sampled:</b> 08/28/06
<b>Lab Sample ID:</b> F43271-10		<b>Date Received:</b> 08/30/06
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260B		
<b>Project:</b> Highway 11 Grocery; 13527 S.C. Hwy 11, Salem, SC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N0013939.D	1	08/31/06	CS	n/a	n/a	VN601
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

## Purgeable Aromatics, MTBE, Naphthalene

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	3.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
91-20-3	Naphthalene	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		86-115%
17060-07-0	1,2-Dichloroethane-D4	98%		73-126%
2037-26-5	Toluene-D8	103%		86-112%
460-00-4	4-Bromofluorobenzene	96%		83-119%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

### Report of Analysis

<b>Client Sample ID:</b> MW-14		<b>Date Sampled:</b> 08/28/06
<b>Lab Sample ID:</b> F43271-11		<b>Date Received:</b> 08/30/06
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260B		
<b>Project:</b> Highway 11 Grocery; 13527 S.C. Hwy 11, Salem, SC		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N0013949.D	50	08/31/06	CS	n/a	n/a	VN601
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

**Purgeable Aromatics, MTBE, Naphthalene**

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	2010	50	ug/l	
108-88-3	Toluene	4080	50	ug/l	
100-41-4	Ethylbenzene	1160	50	ug/l	
1330-20-7	Xylene (total)	6320	150	ug/l	
1634-04-4	Methyl Tert Butyl Ether	3320	50	ug/l	
91-20-3	Naphthalene	261	100	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		86-115%
17060-07-0	1,2-Dichloroethane-D4	99%		73-126%
2037-26-5	Toluene-D8	99%		86-112%
460-00-4	4-Bromofluorobenzene	91%		83-119%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

**Report of Analysis**

<b>Client Sample ID:</b> DMW-1		
<b>Lab Sample ID:</b> F43271-12		<b>Date Sampled:</b> 08/28/06
<b>Matrix:</b> AQ - Ground Water		<b>Date Received:</b> 08/30/06
<b>Method:</b> SW846 8260B		<b>Percent Solids:</b> n/a
<b>Project:</b> Highway 11 Grocery; 13527 S.C. Hwy 11, Salem, SC		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N0013940.D	1	08/31/06	CS	n/a	n/a	VN601
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

**Purgeable Aromatics, MTBE, Naphthalene**

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	3.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	20.3	1.0	ug/l	
91-20-3	Naphthalene	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		86-115%
17060-07-0	1,2-Dichloroethane-D4	96%		73-126%
2037-26-5	Toluene-D8	103%		86-112%
460-00-4	4-Bromofluorobenzene	94%		83-119%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Page 1 of 1

Client Sample ID:	DMW-2	Date Sampled:	08/28/06
Lab Sample ID:	F43271-13	Date Received:	08/30/06
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	Highway 11 Grocery; 13527 S.C. Hwy 11, Salem, SC		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N0013941.D	1	08/31/06	CS	n/a	n/a	VN601
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## Purgeable Aromatics, MTBE, Naphthalene

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	3.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
91-20-3	Naphthalene	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		86-115%
17060-07-0	1,2-Dichloroethane-D4	98%		73-126%
2037-26-5	Toluene-D8	103%		86-112%
460-00-4	4-Bromofluorobenzene	93%		83-119%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound



### Report of Analysis

<b>Client Sample ID:</b> DMW-4		
<b>Lab Sample ID:</b> F43271-14		
<b>Matrix:</b> AQ - Ground Water	<b>Date Sampled:</b> 08/28/06	
<b>Method:</b> SW846 8260B	<b>Date Received:</b> 08/30/06	
<b>Project:</b> Highway 11 Grocery; 13527 S.C. Hwy 11, Salem, SC	<b>Percent Solids:</b> n/a	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N0013942.D	1	08/31/06	CS	n/a	n/a	VN601
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

**Purgeable Aromatics, MTBE, Naphthalene**

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	3.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
91-20-3	Naphthalene	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		86-115%
17060-07-0	1,2-Dichloroethane-D4	98%		73-126%
2037-26-5	Toluene-D8	102%		86-112%
460-00-4	4-Bromofluorobenzene	95%		83-119%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

**Report of Analysis**

<b>Client Sample ID:</b> WW-1	<b>Date Sampled:</b> 08/28/06
<b>Lab Sample ID:</b> F43271-15	<b>Date Received:</b> 08/30/06
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260B	
<b>Project:</b> Highway 11 Grocery; 13527 S.C. Hwy 11, Salem, SC	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N0013943.D	1	08/31/06	CS	n/a	n/a	VN601
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

**Purgeable Aromatics, MTBE, Naphthalene**

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	3.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
91-20-3	Naphthalene	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		86-115%
17060-07-0	1,2-Dichloroethane-D4	100%		73-126%
2037-26-5	Toluene-D8	103%		86-112%
460-00-4	4-Bromofluorobenzene	93%		83-119%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Page 1 of 1

<b>Client Sample ID:</b> CK-1		<b>Date Sampled:</b> 08/28/06
<b>Lab Sample ID:</b> F43271-16		<b>Date Received:</b> 08/30/06
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260B		
<b>Project:</b> Highway 11 Grocery; 13527 S.C. Hwy 11, Salem, SC		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N0013946.D	1	08/31/06	CS	n/a	n/a	VN601
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## Purgeable Aromatics, MTBE, Naphthalene

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	13.1	1.0	ug/l	
108-88-3	Toluene	29.0	1.0	ug/l	
100-41-4	Ethylbenzene	6.7	1.0	ug/l	
1330-20-7	Xylene (total)	27.8	3.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	16.7	1.0	ug/l	
91-20-3	Naphthalene	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		86-115%
17060-07-0	1,2-Dichloroethane-D4	99%		73-126%
2037-26-5	Toluene-D8	101%		86-112%
460-00-4	4-Bromofluorobenzene	94%		83-119%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Page 1 of 1

Client Sample ID:	CK-2	Date Sampled:	08/28/06
Lab Sample ID:	F43271-17	Date Received:	08/30/06
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	Highway 11 Grocery; 13527 S.C. Hwy 11, Salem, SC		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N0013947.D	1	08/31/06	CS	n/a	n/a	VN601
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## Purgeable Aromatics, MTBE, Naphthalene

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	3.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
91-20-3	Naphthalene	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		86-115%
17060-07-0	1,2-Dichloroethane-D4	98%		73-126%
2037-26-5	Toluene-D8	103%		86-112%
460-00-4	4-Bromofluorobenzene	95%		83-119%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound



IT'S ALL IN THE CHEMISTRY

**Misc. Forms**

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**Custody Documents and Other Forms**

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**Includes the following where applicable:**

- Chain of Custody



CHAIN OF CUSTODY

4405 Vineland Rd., Suite C13  
Orlando, FL 32811  
407.423.6700, fax 407.423.0707

Account Job #: **F43271**  
Account Control #:

Client Information			Facility Information			Analytical Information														
Name: SEI Environmental			Project Name: Highway 11 Grocery																	
Address: 5100 Reagan Dr., Suite 7			Location: 12507 S.C Hwy 11 Salem S.C.																	
City: Charlotte State: NC Zip: 28208			Project No.: 302169																	
Send Report to: Phone #: 704-592-8824			FAX #: 704-596-8605																	
Field ID / Point of Collection	Collection		Sampled By	Matrix	# of bottles	Preservation														
	Date	Time				1	2	3	4	5	6	7	8	9	10					
MW-2	8/28/06	13:20	SSZS	GW	3															
MW-3		13:40																		
MW-4		13:50																		
MW-5		13:30																		
MW-6		13:00																		
MW-7		14:20																		
MW-9		15:15																		
MW-10		14:05																		
MW-11		15:35																		
MW-12		15:00																		
Turnaround Information			Data Deliverable Information			Comments / Remarks														
<input type="checkbox"/> 21 Day Standard <input type="checkbox"/> 14 Day <input checked="" type="checkbox"/> 7 Days <input type="checkbox"/> Other (Days) _____ RUSH TAT is for FAX data Data unless previously approved.			Approved By: _____ <input type="checkbox"/> HJ Reduced <input type="checkbox"/> HJ Full <input type="checkbox"/> FULL CLP <input type="checkbox"/> Disk Deliverable <input type="checkbox"/> Other (Specify) _____			<input type="checkbox"/> Commercial "A" <input type="checkbox"/> Commercial "B" <input type="checkbox"/> ASP Category B <input type="checkbox"/> State Forms														
Sample Custody must be documented below each time samples change possession, including center delivery.																				
Relinquished by Sampler:	Date/Time:	Received By:	Relinquished by:	Date/Time:	Received By:	Relinquished by:	Date/Time:	Received By:	Relinquished by:	Date/Time:	Received By:	Relinquished by:	Date/Time:	Received By:						
1	8/28/06 8:00	FX	2	8-30-06 9:06	Jorge Cortal	3			4			5								
6			7			8			9			10								

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# CHAIN OF CUSTODY

4405 Vineland Rd., Suite C15  
Orlando, FL 32811  
407.425.6700, fax 407.425.0707

# F43271

Account Job #: \_\_\_\_\_  
Account Control #: \_\_\_\_\_

Client Information		Facility Information		Analytical Information	
Name: SEI Environmental		Project Name: Highway 11 Grocery			
Address: 8100 Reagan Dr., Suite 7		Location: 13529 S.C. Hwy 11 Salem S.C.			
City: Charlotte	State: NC	Zip: 28206	Project No: 1704-896-8605		
Send Report to: Phone #: 704-536-8824		FAX #: 302169			

Field ID / Point of Collection	Collection		Sampled By	Matrix	# of bottles	Preservation														
	Date	Time				REF	NOX	PHOS	LEAD	COBALT	OTHER									
MW-14	8/28/06	15:05	STZ	GW	3	3														
DMW-1		13:05		GW																
DMW-2		15:25		GW																
DMW-14		13:15		GW																
WW-1		14:00		DW																
CK-1		14:50		GW																
CK-2		15:30		GW																

Turnaround Information	Data Deliverable Information	Comments / Remarks
<input type="checkbox"/> 21 Day Standard <input type="checkbox"/> 14 Day <input checked="" type="checkbox"/> 7 Days <del>Standard</del> <input type="checkbox"/> Other _____ (Days) Approved By: _____ RUSH TAT in for FAX data Date unless previously approved.	<input type="checkbox"/> All Reduced <input type="checkbox"/> All Full <input type="checkbox"/> FULL GLP <input type="checkbox"/> Disk Deliverable <input type="checkbox"/> Other (Specify) _____ <input type="checkbox"/> Commercial "A" <input type="checkbox"/> Commercial "B" <input type="checkbox"/> AEP Category B <input type="checkbox"/> State Forms	

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Samplet	Date/Time	Received By:	Relinquished by:	Date/Time	Received By:
1	8/28/06 9:00	FX	2	8-30-06 9:00	Jorge Corral
3			4		
5			6		

Revised 09/2005 RS

3.1  
3

**ACCUTEST LABORATORIES SAMPLE RECEIPT CONTINUATION**

ACCUTEST'S JOB NUMBER: F43271 CLIENT: SEI PROJECT: Highway 11 Grocery  
 DATE/TIME RECEIVED: 8-30-06 9:00 # OF COOLERS RECEIVED: 1 COOLER TEMPS: 4.2  
 METHOD OF DELIVERY: FEDEx UPS ACCUTEST COURIER GREYHOUND DELIVERY OTHER  
 AIRBILL NUMBERS: 8536 3068 0259

**COOLER INFORMATION**

- CUSTODY SEAL NOT PRESENT OR NOT INTACT
- CHAIN OF CUSTODY NOT RECEIVED (COC)
- ANALYSIS REQUESTED IS UNCLEAR OR MISSING
- SAMPLE DATES OR TIMES UNCLEAR OR MISSING
- TEMPERATURE CRITERIA NOT MET

**TRIP BLANK INFORMATION**

- TRIP BLANK NOT PROVIDED
- TRIP BLANK NOT ON COC
- TRIP BLANK INTACT
- TRIP BLANK NOT INTACT
- RECEIVED WATER TRIP BLANK
- RECEIVED SOIL TRIP BLANK

**MISC. INFORMATION**

NUMBER OF ENCLOSURES ? 0  
 NUMBER OF 5035 REEFER KITS ? 0  
 NUMBER OR LAB PREPARED METALS ? 0

**SUMMARY OF COMMENTS:**

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

TECHNICIAN SIGNATURE/DATE: Jmc 8-30-06 TECHNICIAN SIGNATURE/DATE

ASEID03/27/06

**SAMPLE INFORMATION**

- SAMPLE LABELS PRESENT ON ALL BOTTLES
- CORRECT NUMBER OF CONTAINERS USED
- SAMPLE RECEIVED EMERGENCY PRESERVED
- INSUFFICIENT VOLUME FOR ANALYSIS
- TIMES ON COC DON'T MATCH LABEL
- ID'S ON COC DON'T MATCH LABEL
- VOC VIALS HAVE HEADSPACE (MACRO BUBBLES)
- BOTTLES RECEIVED BUT ANALYSIS NOT REQUESTED
- NO BOTTLES RECEIVED FOR ANALYSIS REQUESTED
- UNCLEAR FILTERING INSTRUCTIONS
- UNCLEAR COMPOSITING INSTRUCTIONS
- SAMPLE CONTAINER(S) RECEIVED BROKEN
- % SOLIDS JAR NOT RECEIVED
- 5035 FIELD KIT FROZEN WITHIN 48 HOURS





3021 McNaughton Drive  
Suite 9  
Columbia, SC 29223  
800-377-2826  
803-788-2535  
Fax 803-788-2399

**RECEIVED**

DEC 02 2002

UNDERGROUND STORAGE  
TANK PROGRAM

December 2, 2002

Mr. Konstantine Akhvlediani, Hydrogeologist  
SCDHEC – UST Program  
Bureau of Land and Waste Management  
2600 Bull Street  
Columbia, South Carolina 29201-1708

**37-Tech**

**Re: Corrective Action Plan  
Highway 11 Grocery  
13527 SC Highway 11  
Salem, South Carolina  
Oconee County  
UST Permit #03439**

Dear Mr. Akhvlediani:

Please find attached three (3) copies of the Corrective Action Plan for Highway 11 Grocery. Should you have any questions or require additional information, please contact me at 788-2535.

Sincerely,  
SEI Environmental, Inc.

A handwritten signature in black ink that reads "Bob Bolton". The signature is written in a cursive, flowing style.

Bob Bolton  
Project Manager

Attachments

cc: Mr. Steve Smith, Highway 11 Grocery

**CORRECTIVE ACTION PLAN**  
**Highway 11 Grocery**  
**13527 South Carolina Highway 11**  
**Salem, South Carolina**  
Oconee County

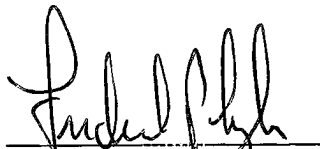
SCDHEC Site # 03439

**PREPARED FOR:**

South Carolina Department of Health and Environmental Control  
UST Management Section  
2600 Bull Street  
Columbia, S.C. 29201

**PREPARED BY:**

SEI Environmental, Inc.  
3021 McNaughton Drive #9  
Columbia, S.C. 29223



Frederick P. Lyke,  
Professional Geologist #1055

November 20, 2002

## ***TABLE OF CONTENTS***

- 1.0 INTRODUCTION
- 2.0 SITE CHARACTERIZATION
- 3.0 GROUNDWATER QUALITY
- 4.0 GROUNDWATER REMEDIATION
  - 4.1 Free Product Recovery System Design
  - 4.2 Free Product Recovery System Operation and Maintenance
  - 4.3 Insitu bioremediation theory
  - 4.4 Insitu bioremediation evaluation and design
  - 4.5 Proposed Corrective Action Plan
- 5.0 CORRECTIVE ACTION MONITORING
- 6.0 ABANDONMENT
- 7.0 REFERENCES

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Figure 1 Site Location Map  
Figure 2 Site Map  
Figure 3 Proposed Injection Well Locations  
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### **APPENDICES**

A – Free Product Recovery System Specifications  
B – BAQC Modeling Information  
C – UIC Type V.A. I Permit Application  
D – Remediation System Design for Dissolved CoC

## **1.0 Introduction**

The South Carolina Department of Health and Environmental Control (SCDHEC) Bureau of Underground Storage Tank Management (BUST) received bids to conduct remedial action at the Highway 11 Grocery facility located at 13527 SC Highway 11, Salem, South Carolina (see Figure 1 for site location). SEI Environmental, Inc. (SEI) was awarded a purchase order to conduct the remediation on November 6, 2002. Free phase petroleum product has been detected in one monitoring wells onsite (MW-1 and MW-8). The release was reported on November 28, 2000. The site is supplied potable water by on onsite drinking water well.

## **2.0 Site Characterization**

For a complete review of the site geologic/hydrogeologic characterization, a review of the complete project file at SCDHEC/BUST is recommended. The site is within the Inner Piedmont Belt of the Piedmont Physiographic Province. Native rocks are generally medium to high grade metamorphic rocks such as granitic gneiss, mica schist, and amphibolite.

Visual analysis of subsurface soils collected from field screening activities and monitor well installations conducted as part of the assessment indicated the soil types of medium to fine sand and medium grained saprolite. The maximum depth of the current investigation was approximately 60 feet bls (below land surface).

Ground water generally flows to the east, consistent with the topography of the area. Saturated conditions are encountered at approximately 20 - 25 feet below grade.

## **3.0 Ground Water Quality**

A Rapid Assessment Plan (RAP) was submitted by SEI Environmental in June, 2002. A baseline groundwater sampling event was conducted by SCDHEC on May 7, 2002. A table summerizing the analytical results of the ground water samples collected during that assessment is included as Table 1. Free product was measured in wells MW-1 and MW-8. Dissolved constituents above calculated SSTL's were found in wells MW-1, MW-7, MW-8 and MW-14. Additional ground water quality data can be found in the project file at SCDHEC/BUST.

## **4.0 GROUND WATER REMEDIATION**

Ground water remediation will be accomplished by removing the existing free-phase product using a dual phase extraction system referred to as MAV. The dissolved-phase chemicals of concern will be treated using a patented "EDOT" oxygen injection system and a patented hydrogen peroxide injection system ("Per-Petual") to enhance natural attenuation processes in situ. Detailed descriptions of the two techniques are presented in the sections that follow.

### **4.1 Free Product Recovery System Design**

An MAV free product recovery system is proposed to remove the free phase petroleum hydrocarbons present on the groundwater table at the Highway 11 Grocery site. The proposed system will include dual phase recovery events utilizing up to 45 points as recovery wells. These points are to be installed as part of the "EDOT" System discussed in Section 4.4. Figure 3 provides the location of the product recovery points.

### **4.2 Free Product Removal System Operation and Monitoring**

The proposed free product recovery events will occur until the desired endpoints are achieved. Presently, the target endpoint is  $\leq 0.01$  feet of free product detected in monitoring well MW-1 and MW-8 onsite. This endpoint is based on the designed removal efficiency of the MAV system to be installed.

Monitoring of the free product recovery system will be conducted monthly for the first twelve months of system operation. Free product thickness will be gauged in MW-1 and MW-8 during these visits in order to verify system operation. Also, any necessary system maintenance will be conducted during these visits. It is anticipated that after this twelve-month period the desired endpoint will be achieved. Monthly monitoring of the site will continue until compliance with the target endpoint is confirmed by SCDHEC.

### **4.3 In Situ Bioremediation Theory**

In situ bioremediation refers to the use of natural microbiological processes occurring in the subsurface environment to breakdown complex organic compounds into simpler, non-toxic compounds without the removal of aquifer material. Contaminant degradation takes place by microorganisms when the contaminants either serve as a primary energy source (electron donor), or are fortuitously metabolized when other primary substrates are available to the microorganisms (co-metabolism). In order for the electron donors to be utilized by the indigenous microbial community, compounds must also be available which allow energy transfer by the microorganisms to take place. Oxygen is required for micro-organisms to utilize the compounds for energy transfer.

A hydrogen peroxide injection system (trade name "Per-Petual", U.S. patent application serial number 60/357,550) continuously injects a mild solution of peroxide into numerous injection points arranged across the groundwater contamination plume in a grid-like fashion. It is our intent to use the MAV points as injection points. Decontamination occurs through chemical oxidation and through enhanced bioremediation due to elevated dissolved oxygen levels. Chemical oxidation (responsible for roughly 25% of total decontamination) is often augmented by the presence of naturally occurring minerals which act as catalysts (Fenton's Reaction). Bioremediation (responsible for roughly 75% of total decontamination) is enhanced by elevating dissolved oxygen levels from typically 0-5 ppm in the presence of contamination to 100+ ppm and thereby providing naturally occurring microbes with a sustained oxygen level required for microbial activity.

### **4.4 In Situ Bioremediation Evaluation and Design**

Remediation System design and specifications details are presented in Appendix D. The oxygen and hydrogen peroxide injection system will include approximately 45 injection points. This bore-hole layout was designed to get injection points spaced in a grid like fashion over as much

of the contamination plume as possible. Each injection point will simply be the end of a section of ¼ inch polypropylene tubing that is scored with slits/holes along the last 12 inches in order to ensure proper oxygen diffusion. The 45 lengths of PPT tubing will exit the bore-holes along the rear of the system building and then will run to the enclosure in shallow (1 foot) trenches.

The 45 injection points will be connected to PPT tubing and then connected to individual conduits on the patented control panels. These control panels contain a flow meter and control valve for each injection point, as well as a regulator that controls the incoming flow/pressure of oxygen from the liquid oxygen cylinder to the control panel. Given the number of injection points in this system, the system will include two control panels and two oxygen cylinders. Each control panel is connected via a pressure hose to a liquid oxygen cylinder. The control panels and oxygen cylinders are store within a 6' x 8' locked wooden enclosure.

After considering the advantages, disadvantages, and feasibility of the available options, The patented "EDOT" oxygen injection system is the most effective and least costly option for treatment of the contaminated soil and groundwater at the site. The primary reasons for selecting this option is the ability of this type of system to enhance bioremediation, the ability of injected oxygen gas to diffuse effectively in the sandy silt and clay soil present at this site, the ability of this system to reach parts of the contamination plume under dispensers and the store that could not be reached with other systems and also eliminating costly and time-consuming need for concrete and asphalt cutting, the ability of this system to attack the entire plume by installing injection points in a grid-like fashion across the plume, the ability of this system to be installed quickly and inexpensively relative to other options, and the low maintenance and operating costs associated with this system.

#### **4.5 PROPOSED CORRECTIVE ACTION PLAN**

Based on the findings of previous investigations, soil and groundwater at the site have been impacted by a release of petroleum hydrocarbons from the UST system. The continuous injection of oxygen gas through the patented "EDOT" system is recommended to remediate the impacted soil and groundwater at the site.

A plan view of the proposed EDOT system is presented in Figure 3 and in Appendix D. Forty five bore-holes, each spaced 10-15 feet apart are proposed to cover the area of adsorbed phase contaminants.

Construction drawings for the oxygen injection system are included as Appendix D. Following completion of all construction activities, as-built drawings will be generated and forwarded as an addition to this CAP.

The remediation system will be housed and secured within a wooden enclosure in order to prevent unwarranted tampering. The structure shall meet all necessary requirements by the South Carolina Building Code. The injection point tubing sections will be buried below grade from the enclosure to the horizontal bore-hole entrance point. Both the entrance point and exit point of all horizontal bore holes will be sealed with bentonite and neat Portland cement layers.

Inside the building, the control panel will have clearly marked and labeled control valves, regulators, and flow meters. A local gas supply company will be issued a key to the enclosure for the purpose of swapping out used liquid oxygen cylinders on a monthly basis.

Monthly site visits will be conducted to inspect and adjust the oxygen injection system, and to measure soil gas and dissolve oxygen concentrations. One copy of the system operation and maintenance manual will be provided and located permanently at the site for future reference.

## **5.0 CORRECTIVE ACTION MONITORING**

Prior to system start up a groundwater sample will be collected from each of the existing monitoring wells. Prior to sample collection the water level in each well will be measured. The volume of water standing in the well will be calculated. A volume equal to or greater than three times the calculated volume will be purged from the well before a sample is collected. Field measurements of pH, temperature, and specific conductance will be made and recorded after each single volume purge. Purge water will be containerized and temporarily stored onsite in



labeled containers for subsequent off site disposal through an approved facility. Samples will be placed in laboratory supplied containers, maintained at 4 degrees C, in a cooler and shipped to a SC certified laboratory for analysis. The groundwater samples will be analyzed for the BTEX components, PAHs (including naphthalene), and MTBE. Analytical methodologies shall be as specified in the bid document, or their equivalent. Proper field notes and chain of custody documentation will be maintained.

Sampling and reporting will be conducted on a quarterly basis. The quarterly corrective action monitoring report will contain those elements described in the bid document.

## **6.0 VERIFICATION AND ABANDONMENT**

Air delivery equipment and the structure housing the equipment will be dismantled and removed from the site. The in situ bioreactors will be abandoned in place by disconnecting the air and nutrient delivery lines. A bentonite slurry will be pumped through air and nutrient delivery lines, to fill the reactors, and the protective well vaults will be filled with concrete to match the existing grade. Air delivery lines will be capped and abandoned in place. Abandonment in place of the system as much as possible will minimize disruption of the owner/operator's normal operations. At the completion of the abandonment operations, an abandonment report will be prepared documenting all abandonment actions

## **7.0 REFERENCES**

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Strumm, W. and Morgan, J.J., 1981, *Aquatic Chemistry*, J. Wiley & Sons, New York, NY, Chapter 7.

USEPA, 1995, *Bioventing Principles and Practice, Volume I and II*, EPA/540/R-95/53a, Office of Research and Development, Washington, DC.

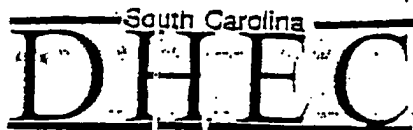
Wiedemeier, Todd H., Matthew A. Swanson, John T. Wilson, Donald H. Kampbell, Ross N. Miller, and Jerry E. Hansen, *Patterns of Intrinsic Bioremediation at Two U.S. Air Force Bases*, in Third International In Situ and On-Site Bioreclamation Symposium, Vol 3(1), Intrinsic Bioremediation, Battelle Press, Columbus, Ohio, 1995.

Wiedemeier, Todd H., John T. Wilson, Donald H. Kampbell, and Ross N. Miller, *Proposed Air Force Guidelines for Successfully Supporting the Intrinsic Remediation (Natural Attenuation)*

*Option at Fuel Hydrocarbon Contaminated Sites*, from National Ground Water Association  
Proceedings of The Eighth national Outdoor Action Conference and Exposition, Minneapolis,  
Minnesota, May 23-25.

**APPENDIX B**

**BAQC PERMIT APPLICATION**



2600 Bull Street, Columbia, SC 29201

Commissioner: Michael D. Jarrett

Board: John B. Pata, MD, Chairman, William E. Applegate, III, Vice Chairman, John H. Burriss, Secretary

Toney Graham, Jr., MD, Richard E. Jabbour, DDS, Henry S. Jordan, MD, Currie B. Seivey, Jr.

Promoting Health. Protecting the Environment

BAQC UST MODELING INFORMATION

PLEASE FILL OUT COMPLETELY

COMPANY NAME: Hwy 11 Grocery
CLEANUP LOCATION: 13527 SC Hwy 11, Salem, SC
TYPE OF OPERATION (i.e. AIR STRIPPER): Dual Phase Recovery
CONTACT: Fred Lyke - SEI Environmental Inc.
PHONE NUMBER: 803 788 2535

SITE MAPS

Please include a scaled plot plan of the site location that clearly shows distances from the stack to the property boundaries. All buildings and/or structures within a radius of 5 stack heights (measured from the stack/vent) shall be incorporated on this plot plan and information on each building and/or structure's height, width, and length shall also be included.

STACK INFORMATION

HEIGHT ABOVE GROUND 10 FEET; DIAMETER 333 FEET
TEMPERATURE 110 F; VELOCITY 10 FEET/SECOND

AIR TOXIC INFORMATION

Table with 3 columns: AIR TOXIC EMITTED (i.e. BENZENE), CHEMICAL ABSTRACT SERVICE (CAS) NUMBER, EMISSION RATE LB/HR. Rows include Benzene, Toluene, Ethylbenzene, Xylene.

Please submit the completed form with maps to the appropriate SCDHEC project manager at the Ground-Water Protection Division. (BAQC-MIF)

Hwy 11 Grocery, 13527 Sottway Pl, Salem, OR Calculations GOC air emissions

Groundwater MW-1 concentrations, Maximum Dissolved concentration in water from E.K. Nyer, Groundwater Treatment Technology 2<sup>nd</sup> ed, 1992, Van Nostrand Reinhold, NY, p. 49, Table

Benzene 1.750 mg/l  
Ethylbenzene 1.52 mg/l  
Toluene 535 mg/l  
Xylene 175 mg/l

Flow Rate:

$$Q_{std} = \left( \frac{60 \text{ sec}}{1 \text{ min}} \right) (1 - B_{ws}) (V) (A) \left[ \frac{528}{460 + T(°F)} \right]$$
$$= 60 (1 - .03) (.10) (1.0871) \left[ \frac{528}{580} \right]$$
$$= 46.45 \text{ ft}^3/\text{min}$$

COC emissions

$$\text{Benzene: } \left( .00175 \frac{\text{kg}}{\text{l}} \right) \left( \frac{46.45 \text{ ft}^3}{\text{min}} \right) \left( \frac{60 \text{ min}}{1 \text{ hr}} \right) \left( \frac{3.53 \times 10^{-2} \text{ l}}{\text{ft}^3} \right) \left( \frac{15}{2.205 \text{ kg}} \right) = .08 \text{ lb/hr}$$

$$\text{Toluene: } \left( .00052 \frac{\text{kg}}{\text{l}} \right) 44.34 = .007 \text{ lb/hr}$$

$$\text{Ethylbenzene: } \left( .000535 \frac{\text{kg}}{\text{l}} \right) 44.34 = .024 \text{ lb/hr}$$

$$\text{Xylene: } \left( .000175 \frac{\text{kg}}{\text{l}} \right) 44.34 = .008 \text{ lb/hr}$$

Total estimated COC in lbs per 12 hr event = 1.43 lbs/event

**Table I (reprinted from CA Bid Document).**

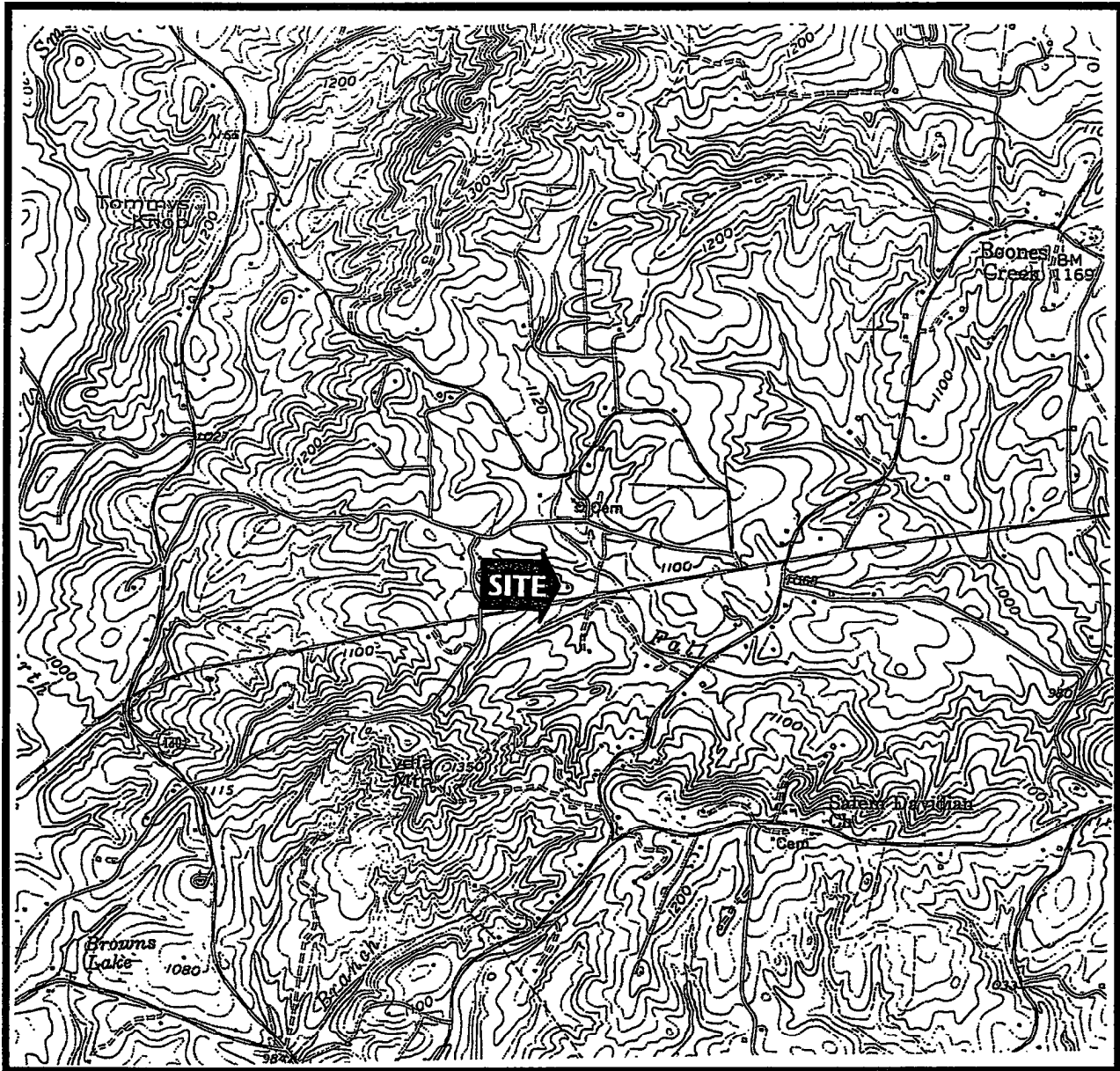
CoC concentration in parts per billion (µg/l) based on May 7, 2002 sampling: (CoC may increase or decrease in the future)

Well	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Naphthalene	Total Conc.
MW-1**	226,000	301,000	280,000	278,000	5,110,000	2,000	6,197,000
MW-2	13	8	1	5	5	5	37
MW-3	1*	1*	1*	1*	5*	5*	14
MW-4	1,500	5,320	620	3,360	810	500	12,110
MW-5	1*	1*	1*	1*	5*	5*	14
MW-6	1,780	4,950	490	2,880	6,350	500	42,871
MW-7	34	20	1*	8	7	5*	75
MW-8**	226,000	301,000	280,000	278,000	5,110,000	2,000	6,197,000
MW-10	115	185	68	328	86	9	791
MW-11	1*	1*	1*	1*	5*	5*	14
MW-14	3,780	13,800	27,000	14,700	7,010	500	66,790
DMW-1	215	430	50	50	1,780	250	2,775
DMW-2	1*	1*	1*	1*	5*	5*	14
DMW-4	1*	1*	1*	1*	5*	5*	14
Initial Conc.***	459,442	626,718	588,235	577,336	10,236,073	5,794	12,493,598
SSTL Conc.	3,881	57,303	33,705	339,605	10,645	2,452	447,591
Initial Conc. Above SSTL	455,561	569,415	554,530	237,731	10,225,428	3,342	12,046,007

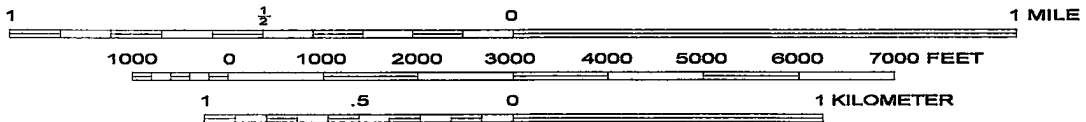
\*Laboratory analysis is below detection limits; therefore, initial concentration is set equal to the detection limit.

\*\* Well contains free phase petroleum, concentrations set based on Henry's Law solubility limits.

\*\*\* CoC concentration may change due to seasonal fluctuations in the groundwater.



SCALE 1:24000



# SEI Environmental, Inc.

FIGURE 1: SITE LOCATION MAP  
HIGHWAY 11 GROCERY  
13527 S.C. HWY 11, SALEM, SC  
UST PERMIT #03439

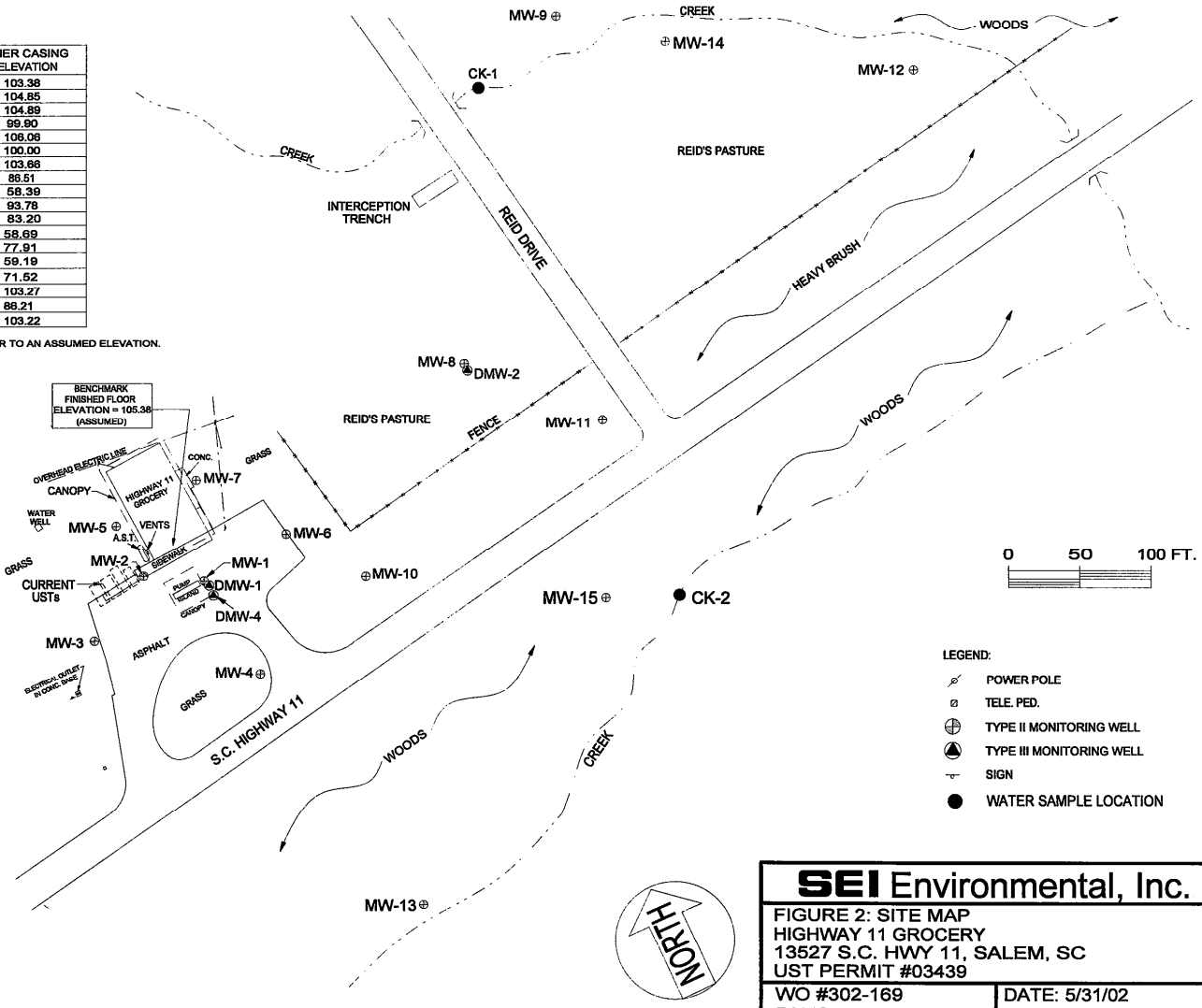
WO #302-169  
DWG #

DATE: 11/20/02  
DRAWN BY: JJC



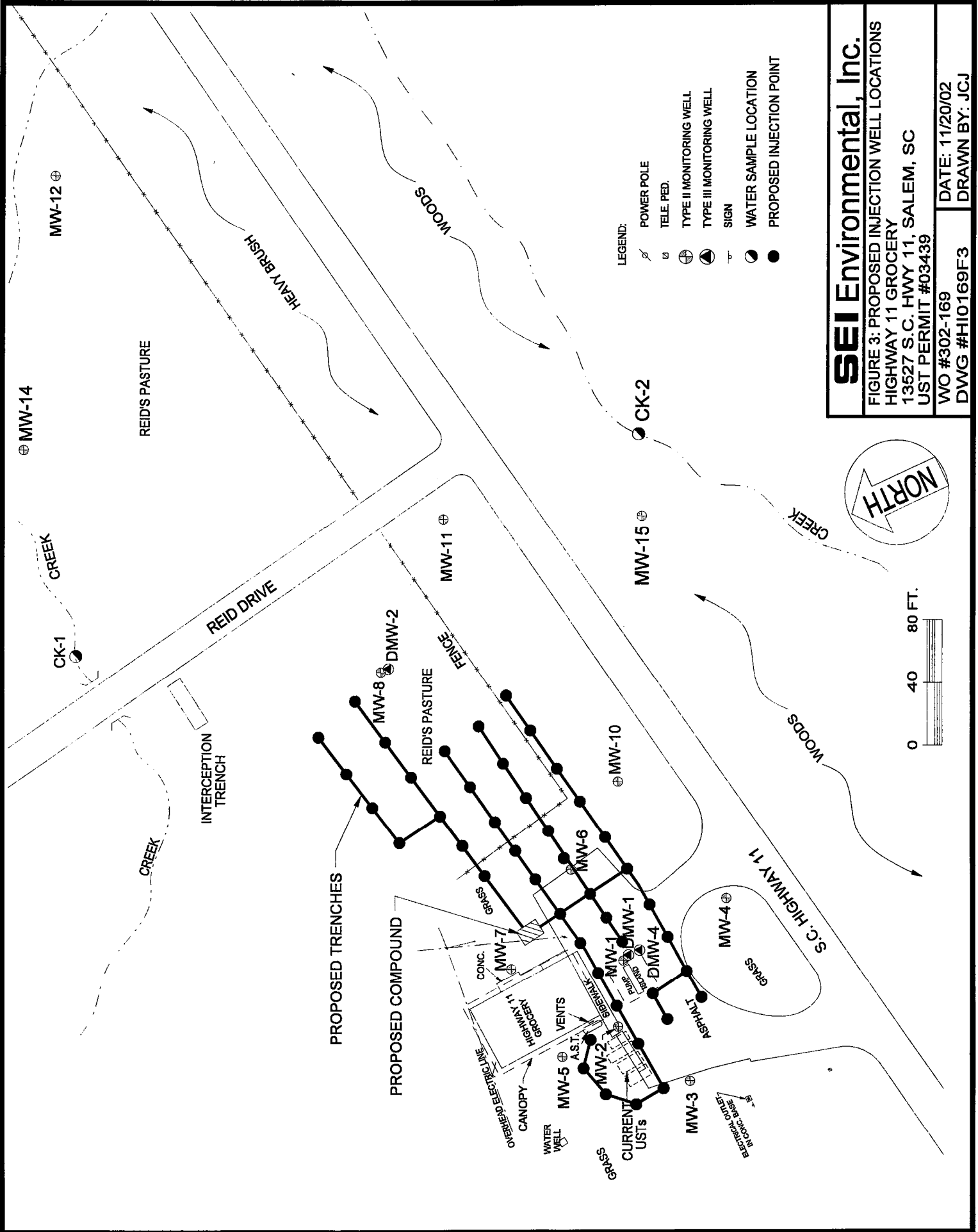
WELL #	INNER CASING ELEVATION
MW-1	103.38
MW-2	104.85
MW-3	104.89
MW-4	99.90
MW-5	108.08
MW-6	100.00
MW-7	103.86
MW-8	88.51
MW-9	58.39
MW-10	93.78
MW-11	83.20
MW-12	58.89
MW-13	77.91
MW-14	59.19
MW-15	71.52
DMW-1	103.27
DMW-2	86.21
DMW-4	103.22

NOTE: ELEVATIONS REFER TO AN ASSUMED ELEVATION.



**SEI Environmental, Inc.**  
 FIGURE 2: SITE MAP  
 HIGHWAY 11 GROCERY  
 13527 S.C. HWY 11, SALEM, SC  
 UST PERMIT #03439

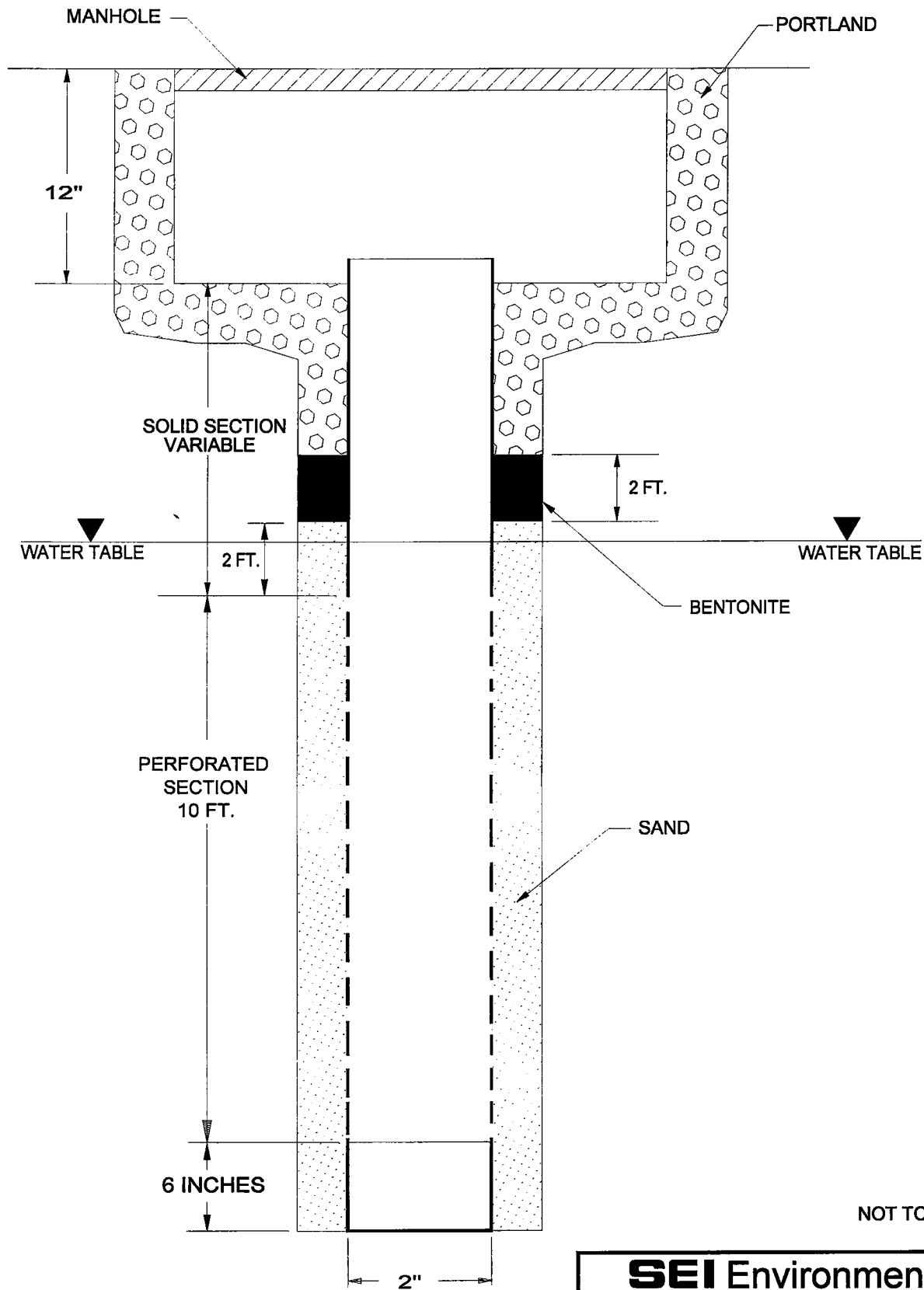
WO #302-169	DATE: 5/31/02
DWG #HI0388F1	DRAWN BY: JCJ



**SEI Environmental, Inc.**

FIGURE 3: PROPOSED INJECTION WELL LOCATIONS  
 HIGHWAY 11 GROCERY  
 13527 S.C. HWY 11, SALEM, SC  
 UST PERMIT #03439

WO #302-169 DATE: 11/20/02  
 DWG #HI0169F3 DRAWN BY: JCJ



NOT TO SCALE

**SEI Environmental, Inc.**

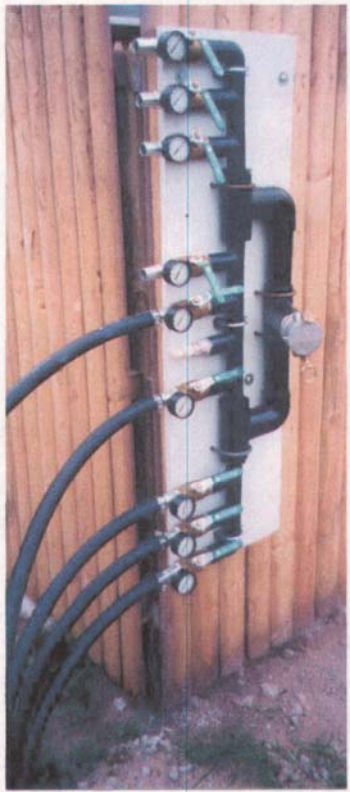
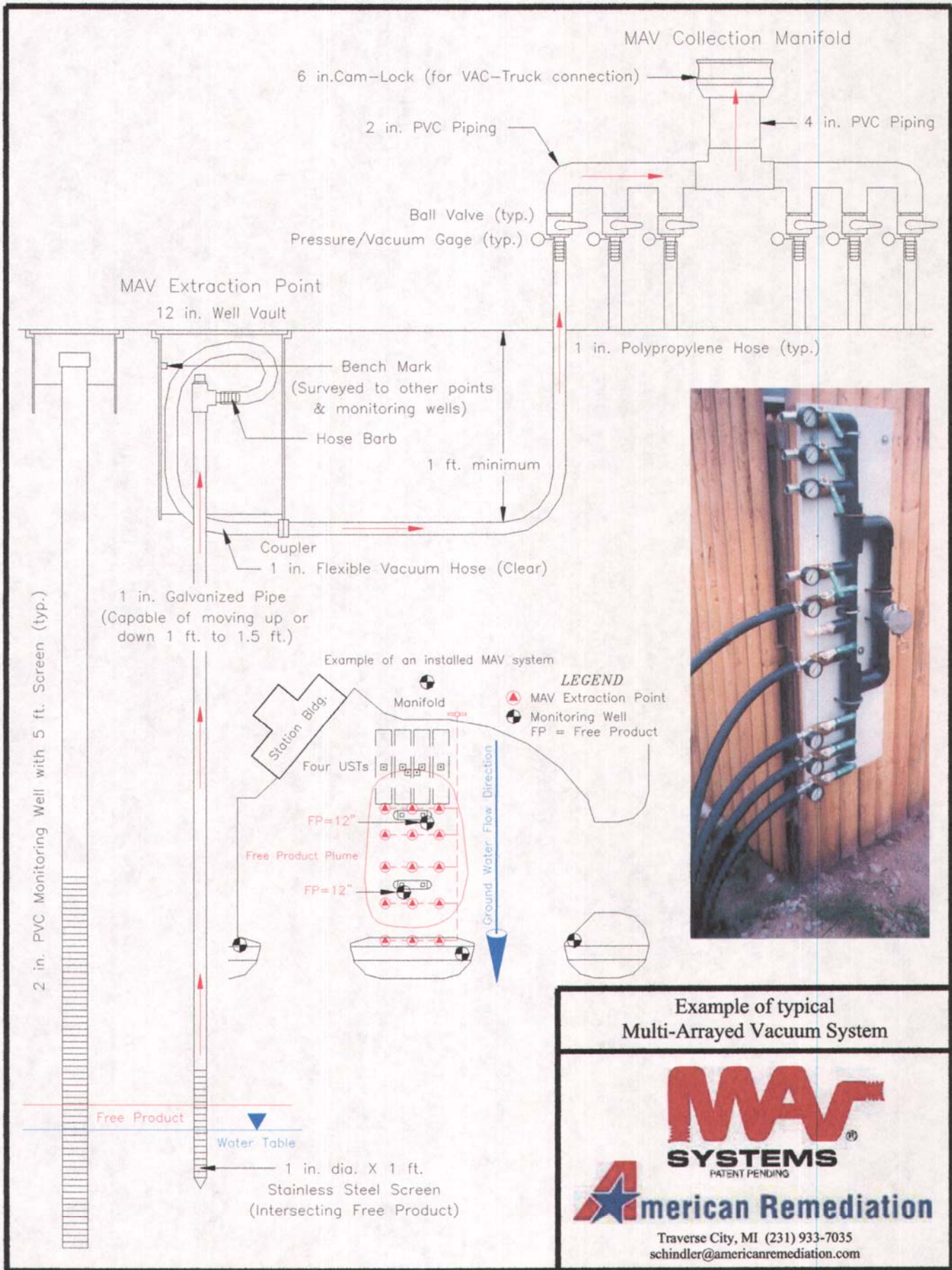
FIGURE 4: INJECTION WELL SCHEMATIC  
 HIGHWAY 11 GROCERY  
 13527 S.C. HWY 11, SALEM, SC  
 UST PERMIT #03439

WO #302-169  
 DWG #HI0169F4

DATE: 11/20/02  
 DRAWN BY: JCJ

**APPENDIX A**

**FREE PRODUCT REMOVAL SYSTEM SPECIFICATIONS**



Example of typical  
Multi-Arrayed Vacuum System

**MAV**  
**SYSTEMS**  
PATENT PENDING

**American Remediation**


Traverse City, MI (231) 933-7035  
schindler@americanremediation.com

## **APPENDIX C**

### **UNDERGROUND INJECTION CONTROL PERMIT APPLICATION**

#### **CLASS V. A. TYPE I**

Attachments A – F only. Injection of air and hydrogen peroxide are proposed. No injection of fluid whose chemical constituents exceeds any drinking water standard or may otherwise adversely affect the health of persons is proposed.

Form 1 UIC	 <p><b>Underground Injection Control Permit Application</b> Ground-Water Protection Division (Collected under the Authority of Title 48 Chapter 1 of the 1976 South Carolina Code of Laws)</p>	I. EPA ID NUMBER		
		U		T/A

**Read attached instructions before starting.  
For Official Use Only**

Application Approved month day year	Date Received month day year	Permit/Well Number

**Comments**

<b>II. Facility Name and Address</b>	<b>III. Owner/Operator and Address</b>
Facility Name <i>Hwy 11 Grocery</i>	Owner/Operator Name <i>Steve Smith</i>
Street Address <i>13527 SC Hwy 11</i>	Street Address <i>13527 SC Hwy 11</i>
City State Zip Code <i>Salem SC</i>	City State Zip Code <i>Salem SC</i>

<b>IV. Ownership Status (Mark "x")</b>	<b>V. SIC Codes</b>
<input type="checkbox"/> A. Federal <input type="checkbox"/> B. State <input checked="" type="checkbox"/> C. Private <input type="checkbox"/> D. Public <input type="checkbox"/> E. Other (Explain)	

<b>VI. Well Status (Mark "x")</b>	Date Started month day year	<input type="checkbox"/> B. Modification/Conversion	<input checked="" type="checkbox"/> C. Proposed
<input type="checkbox"/> A. Operating			

<b>VII. Type of Permit Requested - Class and Type of Well (see reverse)</b>			
A. Class(es) enter code(s) <i>VA</i>	B. Type(s) enter code(s) <i>I</i>	C. If class is "other" or type is code "x", explain	D. Number of Wells per type <i>45</i>

<b>VIII. Location of Wells or Approximate Center of field or Project</b>							
C	A. Latitude			B. Longitude			
I	Deg	Min	Sec	Deg	Min	Sec	
	<i>34</i>	<i>54</i>	<i>31</i>	<i>83</i>	<i>58</i>	<i>12</i>	

**IX. Attachments**  
Complete the following questions on a separate sheet(s) and number accordingly; see instructions for Classes II, III, and V, complete and submit on a separate sheet(s) attachments A-U as appropriate. Attach maps where required. List attachments by letter which are applicable and include with your application.

<b>X. Certification</b>	
I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of a fine and imprisonment.	
A. Name and Title (Type or Print) <i>Steven M Smith</i> <i>OWNER</i>	B. Phone No. <i>(864) 944-0474</i>
C. Signature <i>SM Smith</i>	D. Date Signed <i>11-25-02</i>

Attachment A – Activity for Review

The permit application is in support of the remedial activities proposed for the Highway 11 Grocery site in Salem, SC (SCDHEC/BUSTM Site ID #03439). Remedial activities proposed the installation and operation of a system for remediation of dissolved phase hydrocarbons. The operation of the proposed system requires the injection of air and hydrogen peroxide as the oxygen delivery system for the aerobic degradation of the hydrocarbons.



## Attachment B – Well Construction Details

Forty five (45) injection points are proposed. Attached is a typical schematic of an injection point. This bore-hole layout was designed to get injection points spaced in a grid like fashion over as much of the contamination plume as possible. Each injection point will simply be the end of a section of ¼ inch polypropylene tubing that is scored with slits/holes along the last 12 inches in order to ensure proper oxygen diffusion. The 45 lengths of PPT tubing will exit the bore-holes along the rear of the building and then will run to the enclosure in shallow (1 foot) trenches.

The 45 injection points will be connected to PPT tubing and then connected to individual conduits on the patented control panels. These control panels contain a flow meter and control valve for each injection point, as well as a regulator that controls the incoming flow/pressure of oxygen from the liquid oxygen cylinder to the control panel. Given the number of injection points in this system, the system will include two control panels and two oxygen cylinders. Each control panel is connected via a pressure hose to a liquid oxygen cylinder. The control panels and oxygen cylinders are store within a 6' x 8' locked wooden enclosure.

Attachment C – Operating Data

For each injection point:

1. An average and a maximum flow of 1.5 cubic feet per minute (CFM) (2,160 cubic feet per day) of air per injection point. No routine recovery of ground water is anticipated. No air permeability data is available.
2. Average and maximum injection pressure will be 5 pounds per square inch and 7 pounds per square inch.
3. Injection will be continuous.
4. A diluted solution of hydrogen peroxide will be in the injected fluid.
5. Based on calculations in the Corrective Action Plan estimated length of clean up will be 24 months. It is requested that the permit be valid for an initial period of three years.

Attachment D – Monitoring Program

1. At 30, 45, and 60 days after startup dissolved oxygen, pH, nitrates, and gasoline range organics will be monitored. In addition, prior to system startup a ground water sample will be collected from each of the existing monitoring wells. Prior to sample collection the water level in each well will be measured. The volume of water standing in the well will be calculated. A volume equal to or greater than three times the calculated volume will be purged from the well before a sample is collected. Field measurements of pH, temperature, and specific conductance will be made and recorded after each single volume purge. Purge water will be containerized and temporarily stored onsite in labeled containers for subsequent off site disposal through an approved facility. Samples will be placed in laboratory supplied containers, maintained at 4<sup>o</sup> C, in a cooler and shipped to a SC certified laboratory for analysis. The ground water samples will be analyzed for the BTEX components, Naphthalene, and MTBE. Analytical methodologies shall be as specified in SCDHEC DUSTM guidance documents (or equivalent). Proper field notes and chain of custody documentation will be maintained.

Sampling and reporting will be conducted on a quarterly basis. The quarterly corrective action monitoring report will contain those elements described in bid request document.

2. No contaminant constituents will be present in the injectate.
3. No hydraulic impact on the contaminant plume is anticipated. Water level measurements will be collected and potentiometric maps at intervals specified above to confirm that the existing ground water flow direction is not affected.

Attachment E – Existing or Pending State/Federal Permits

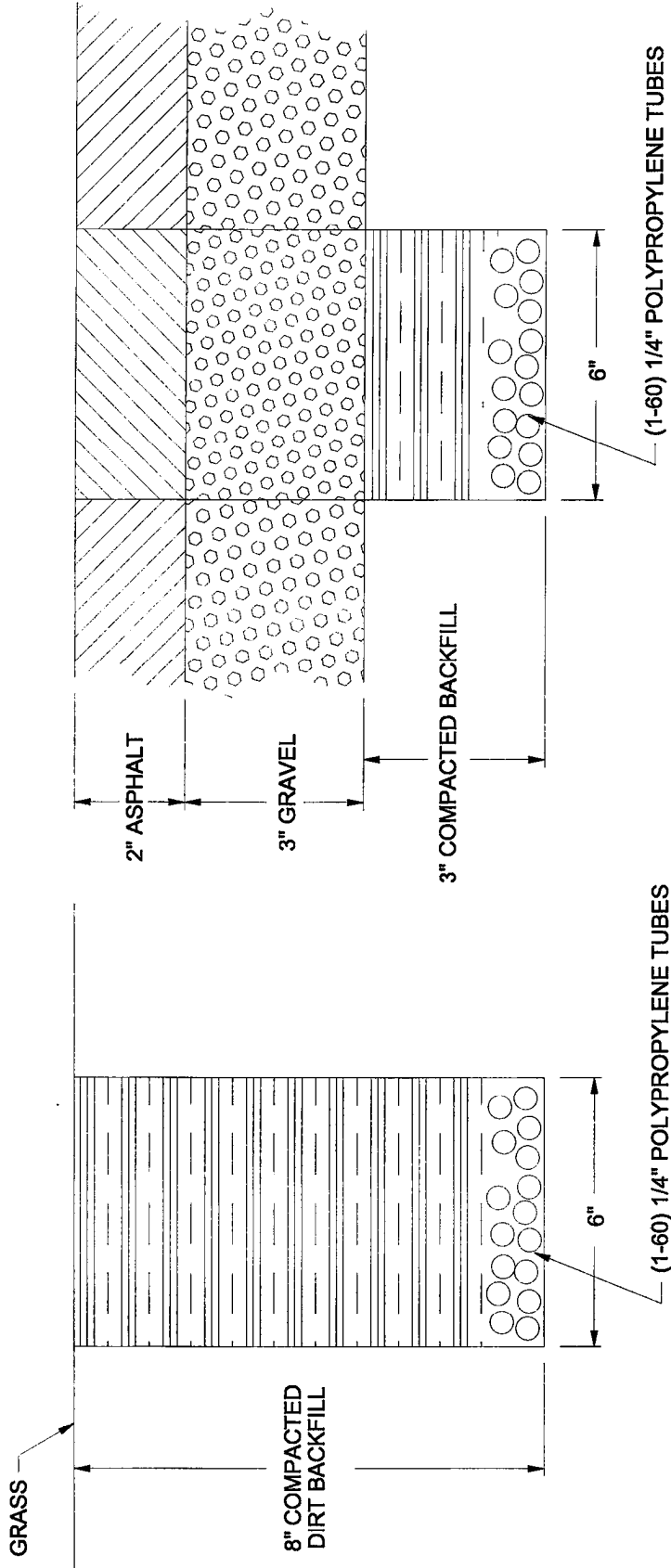
The site is identified under SCDHEC/DUST site ID number 03439. Underground storage tanks currently exist on the site. No other known permits exist.

Attachment F – Description of Business

Highway 11 Grocery is a convenience store that also sells gasoline.

**APPENDIX D**

**REMEDATION SYSTEM DESIGN FOR DISSOLVED COC**



1 TRENCH SECTION(GRASS AREA)  
2

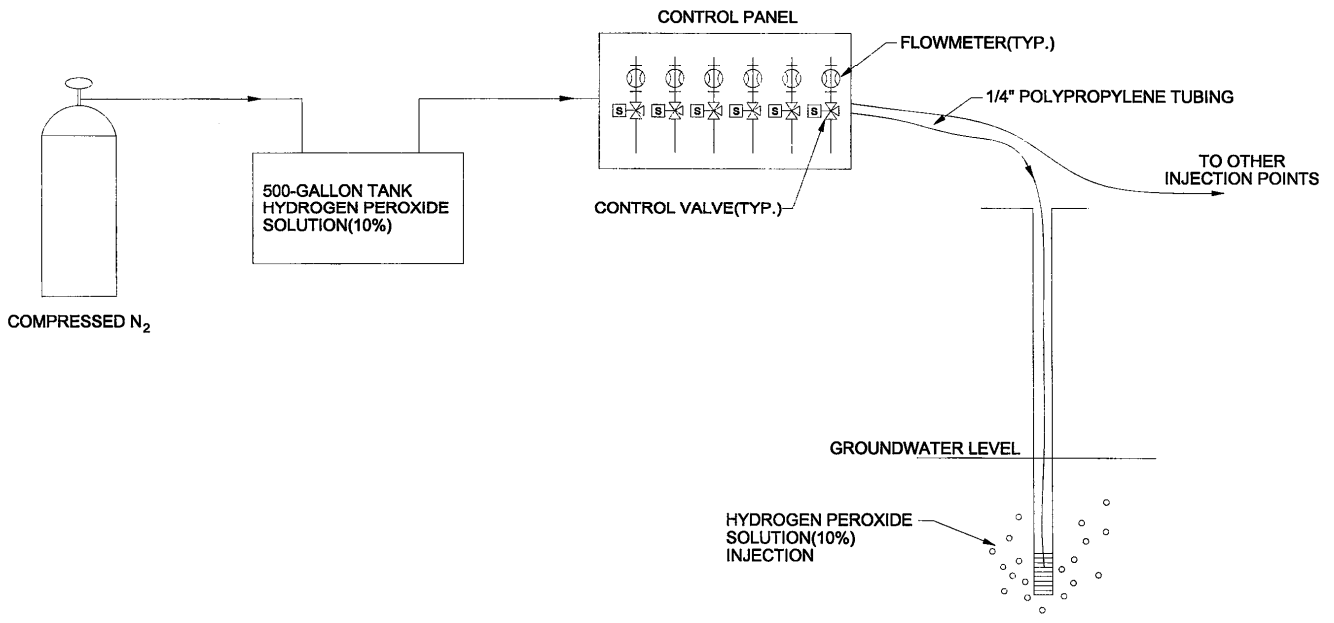
2 TRENCH SECTION(PARKING LOT)  
2

**SEI Environmental, Inc.**  
 APPENDIX D, FIGURE 1: TRENCH DETAILS  
 HIGHWAY 11 GROCERY  
 13527 S.C. HWY 11, SALEM, SC  
 UST PERMIT #03439

WO #302-169  
 DWG #: H10169S1

DATE: 11/20/02  
 DRAWN BY: JCJ

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**SEI Environmental, Inc.**

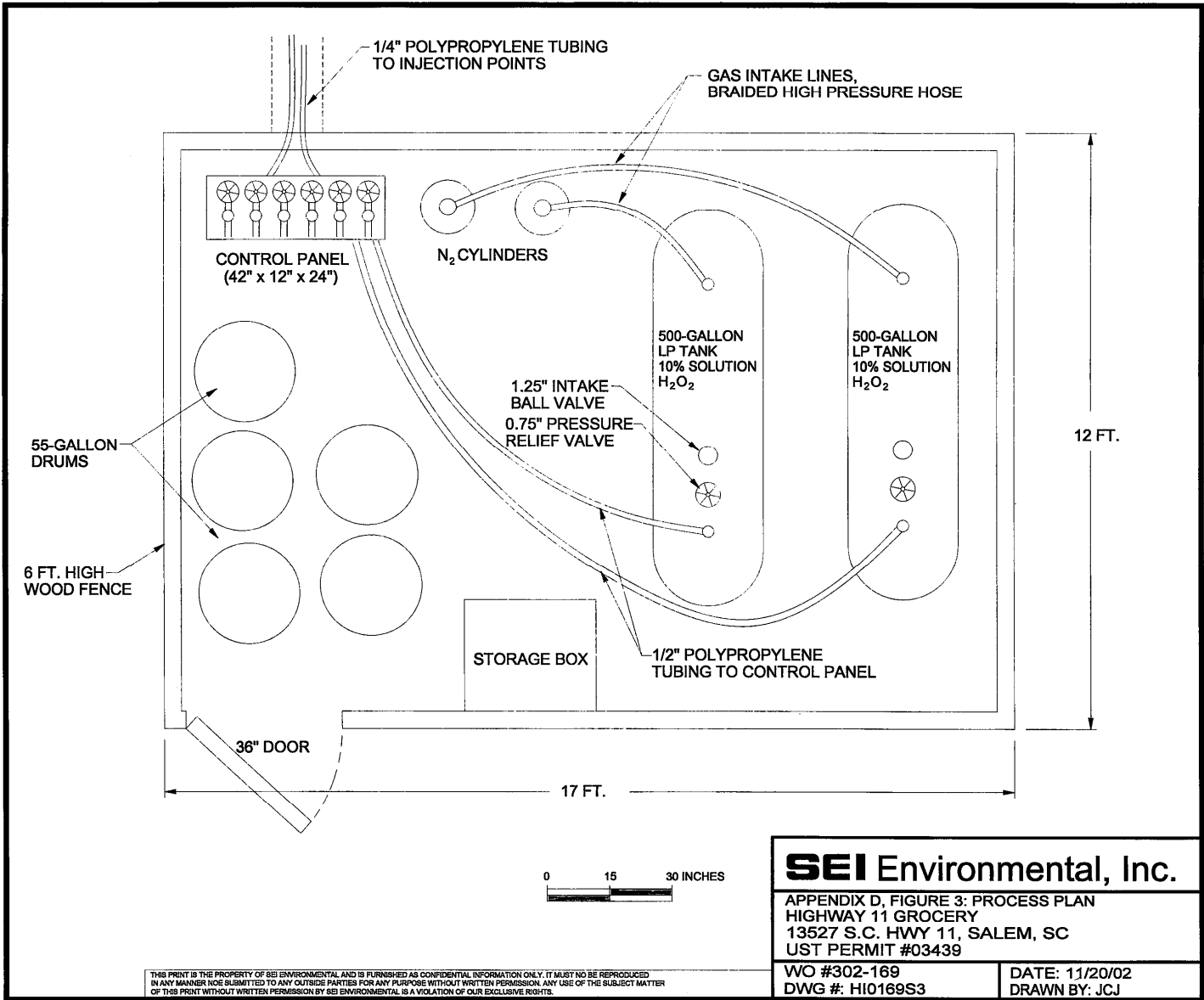
APPENDIX D, FIGURE 2: PROCESS FLOW DIAGRAM  
 HIGHWAY 11 GROCERY  
 13527 S.C. HWY 11, SALEM, SC  
 UST PERMIT #03439

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WO #302-169  
 DWG #: HI0169S2

DATE: 11/20/02  
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<b>SEI Environmental, Inc.</b>	
APPENDIX D, FIGURE 3: PROCESS PLAN HIGHWAY 11 GROCERY 13527 S.C. HWY 11, SALEM, SC UST PERMIT #03439	
WO #302-169 DWG #: HI0169S3	DATE: 11/20/02 DRAWN BY: JCJ



**Environmental, Inc.**

130 Penmarc Drive  
Suite 108  
Raleigh, NC 27603-2470  
800.474.7049  
919.832.2535  
Fax 832.5914

**RECEIVED**

MAY 01 2006

UNDERGROUND STORAGE  
TANK PROGRAM

April 21, 2006

Mr. Joel P. Padgett, P.G., Hydrogeologist  
South Carolina Department of Health and Environmental Control  
Assessment & Corrective Action Section, Underground Storage Tank Program  
2600 Bull Street  
Columbia, South Carolina 29201

**RE: Corrective Action System Evaluation Report  
Highway 11 Grocery  
13527 North SC Highway 11  
Salem, Oconee County, South Carolina  
UST Permit Number: 03439  
SEI Project Number: 302169**

**48-Tech**

Dear Mr. Padgett:

Please find enclosed the quarterly Corrective Action System Evaluation (C.A.S.E) Report for the March 22, 2006, groundwater sampling event at the above referenced site. If you have any questions or comments, please contact me at (919) 832-2535.

Sincerely,  
SEI Environmental, Inc.

Douglas S. Parker  
Project Manager

cc: Mr. John Smith, Highway 11 Grocery



**Environmental, Inc**

**CORRECTIVE ACTION SYSTEM EVALUATION REPORT  
December 2005 through March 2006**

**Highway 11 Grocery  
13527 North SC Highway 11  
Salem, South Carolina  
Oconee County  
UST Permit Number: 03439  
SEI Project Number: 302169**

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**MAY 01 2006**

**UNDERGROUND STORAGE  
TANK PROGRAM**

**PREPARED FOR:**

**Mr. Steve Smith  
Highway 11 Grocery  
13527 North SC Highway 11  
Salem, South Carolina 29676-9801**

**PREPARED BY:**

**SEI ENVIRONMENTAL, INC.  
6190 Regency Parkway, Suite 308  
Norcross, Georgia 30071  
UST Site Rehabilitation Contractor No. 41**

**April 21, 2006**



**Environmental, Inc**

### CORRECTIVE ACTION SYSTEM EVALUATION REPORT

Submittal Date: April 21, 2006  
 For Period Covering: November 2, 2005  
 Facility Name: Highway 11 Grocery  
 UST Permit Number: 03439  
 County: Oconee  
 Latitude: N 35°54'26.02"

Monitoring Report Number: 1<sup>st</sup> Quarter 2006  
 to March 22, 2006  
 Street Address: 13527 North SC Highway 11  
 City: Salem, South Carolina  
 Zip Code: 29676-9801  
 Longitude: W 82°58'31.29"

Submitted by UST Owner/Operator:

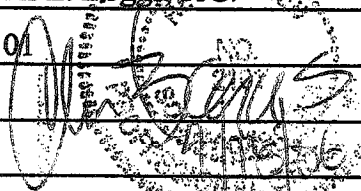
Name: Steve Smith  
 Company: Highway 11 Grocery  
 Address: 13527 North Highway 11  
 City: Salem State: SC  
 Zip Code: 29676-9801  
 Telephone: (864) 944-0494  
 SEI Project Number: 302169

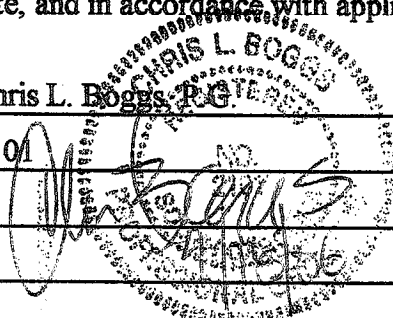
Prepared by Consultant/Contractor:

Name: Chris L. Boggs  
 Company: SEI Environmental, Inc.  
 Address: 6190 Regency Parkway, Suite 308  
 City: Norcross State: GA  
 Zip Code: 30071  
 Telephone: (770) 263-2002  
 UST Site Rehabilitation Contractor No. 41

#### Registered Professional Engineer or Professional Geologist Certification

I hereby certify that I have directed and supervised the fieldwork and preparation of this Plan, in accordance with State Rules and Regulations. As a registered professional geologist and/or professional engineer, I certify that I am a qualified groundwater professional, as defined by the South Carolina State Board of Professional Geologists. All of the information and laboratory data in this plan and in all of the attachments are true, accurate, complete, and in accordance with applicable State Rules and Regulations.

Name: Chris L. Boggs, P.G.  
 SC Reg. No. 2101  
 Signature:   
 Date: \_\_\_\_\_



**RECEIVED**

MAY 01 2006

UNDERGROUND STORAGE  
TANK PROGRAM

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APPENDIX B	Tables
APPENDIX C	Field Data Information Sheets
APPENDIX D	Laboratory Reports and Chain-of-Custody Forms

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**MAY 01 2006**

**UNDERGROUND STORAGE  
TANK PROGRAM**

## **LIMITATIONS**

This investigation is intended to be a non-biased assessment of on-site environmental conditions proximate to the location of the former UST system. Subsurface investigative methodologies are in accordance with all applicable state and federal regulatory requirements. The information presented in this report is based upon site-specific observations, generally accepted geological practices, and analytical results for environmental samples collected at the time of the field investigation. All data is believed to represent subsurface conditions at the facility, however, data may not be completely representative of all subsurface conditions.

This report has been prepared under the guidance of a Licensed Geologist registered in South Carolina to meet the requirements of the South Carolina Department of Health and Environmental Control. The information and conclusions expressed in this report are based upon normal standards of the profession and limited to information available at this time. Chemical analyses of the samples associated with this report were performed by a subcontracted, independent, and certified laboratory. All data have been reviewed for accuracy and, excepting obvious errors, have been accepted as correct. SEI Environmental, Inc. reserves the right to revise estimates of performances as required by changes in the data supplied by Accutest Laboratories.

## **1.0 INTRODUCTION**

The Highway 11 Grocery is a convenience and retail fuel store located at 13527 North SC Highway 11 in Salem, Oconee County, South Carolina. Figure 1 in Appendix A is a portion of the United States Geological Survey (USGS) 7.5-minute topographical quadrangle map identifying the location of the site.

The following is a brief summary of recent events occurring at the site:

- December 18, 2003 – Groundwater Sampling Event
- March 31, 2004 – Groundwater Sampling Event
- September 29, 2004 – Groundwater Sampling Event
- January 11, 2005 – EFR performed on MW-8
- March 17, 2005 – EFR performed on MW-8
- March 17, 2005 – Groundwater Sampling Event
- August 9, 2005 – Groundwater Sampling Event
- November 1, 2005 – Groundwater Sampling Event
- March 22, 2005 – Groundwater Sampling Event

Three (MW-3, MW-11, and DMW-4) monitoring wells are sampled semi-annually. Two (MW-13 and MW-15) monitoring wells are not sampled because they have never reported detectable levels of chemicals of concern (CoC).

On March 22, 2006, thirteen groundwater monitoring wells were sampled, one water supply well was sampled, and two surface water samples were collected, in accordance with the requirements of the PFP contract. This report provides details of the groundwater sampling event.

## **2.0 FIELD MEASUREMENTS AND SAMPLING**

### **2.1 Groundwater Sampling**

On March 22, 2006, groundwater samples were collected from thirteen (MW-1 through MW-6, MW-9 through MW-12, DMW-1, DMW-2, and DMW-4) groundwater monitoring wells.

Two (MW-13 and MW-15) monitoring wells have been removed from sampling because they have never reported detectable CoCs. Monitoring well MW-8 was not sampled due to the presence of free product. Monitoring wells MW-7 and MW-14 were not sampled because they could not be located. Prior to sampling, groundwater depth was gauged in the fifteen monitoring wells utilizing an oil-water interface probe to measure depth to groundwater, and to detect any phase separated hydrocarbons (PSH) present. The depth to groundwater measurement is used to calculate the groundwater elevation used in determining the current groundwater potentiometric surface, along with hydraulic gradient, and groundwater flow direction.

Figure 3 in Appendix A presents a groundwater potentiometric map for the current sampling event. The latest groundwater data indicate that groundwater flow at the site is to the northeast with a hydraulic gradient of 0.0877 feet per foot between monitoring wells MW-3 and MW-8. This flow direction is consistent with previous determinations of groundwater movement. Monitoring well MW-8 contained approximately 0.77 feet of free product. Table 1 in Appendix B summarizes groundwater measurement data. Appendix C includes field observation data.

The thirteen monitoring wells were purged prior to sampling by removing a minimum of three well volumes of water via hand bailing with a new, disposable, polyethylene bailer or until groundwater quality data stabilized, or the well went dry. This purging process produced approximately 55.8 gallons of petroleum contaminated water. The water was disposed of at a SC approved disposal facility.

Representative groundwater samples were collected utilizing new, disposable bailers. Samples were placed in laboratory supplied containers, maintained at 4° Celsius, and shipped via FedEx under chain-of-custody to AccuTest, Inc. Laboratories in Orlando, Florida. The groundwater samples were analyzed by EPA Method 8260B for benzene, toluene, ethylbenzene, xylenes (BTEX), methyl-tert-butyl-ether (MTBE), and naphthalene.



## **2.2 Surface Water Sampling**

On March 22, 2006, two (CK-1 and CK-3) surface water samples were collected from adjacent creeks. CK-2 location is no longer sampled per the March 17, 2005, sampling event report. CK-3 replaced CK-2 to monitor for potential contamination from monitoring well MW-14. Representative samples were collected utilizing new, disposable bailers. Samples were placed in laboratory supplied containers, maintained at 4° Celsius, and shipped via FedEx under chain-of-custody to AccuTest, Inc. Laboratories in Orlando, Florida. The groundwater samples were analyzed by EPA Method 8260B for benzene, toluene, ethylbenzene, xylenes (BTEX), methyl-tert-butyl-ether (MTBE), and naphthalene.

## **2.3 Water Supply Well Sampling**

On March 22, 2006, the onsite water supply well (WW-1) was sampled. The sample was collected from a spigot nearest the water supply well. Prior to sampling, the spigot was allowed to run for at least ten minutes. The sample was placed in a laboratory supplied container, maintained at 4° Celsius, and shipped via FedEx under chain-of-custody to AccuTest, Inc. Laboratories in Orlando, Florida. The groundwater sample was analyzed by EPA Method 8260B for benzene, toluene, ethylbenzene, xylenes (BTEX), methyl-tert-butyl-ether (MTBE), and naphthalene.

## **3.0 LABORATORY ANALYTICAL RESULTS**

### **3.1 Groundwater Analytical Results**

CoCs were detected in four (MW-1, MW-3, MW-6, and DMW-1) of the thirteen sampled monitoring wells at concentrations above their respective Site Specific Target Level (SSTL). Monitoring well MW-1 contained the highest concentrations of benzene (20,700 micrograms per liter ( $\mu\text{g/L}$ )), toluene (41,100  $\mu\text{g/L}$ ), ethylbenzene (3,100  $\mu\text{g/L}$ ), total xylenes (11,700  $\mu\text{g/L}$ ), MTBE (103,000  $\mu\text{g/L}$ ) and naphthalene (<4,000  $\mu\text{g/L}$ ). Figure 4 in Appendix A is a site map presenting monitoring well location and their CoC concentrations. Table 2 in Appendix B summarizes historical groundwater analytical results. A copy of the laboratory report and completed chain-of-custody form is included in Appendix C.

SSTLs have been designated for fourteen (MW-1 through MW-8, MW-10, MW-11, MW-14, DMW-1, DMW-2, and DMW-4) monitoring wells, of which three (MW-1, MW-3, MW-6, and DMW-1) contained CoC concentrations exceeded their SSTLs, one (MW-8) contained free product, and two (MW-7 and MW-14) was not sampled because it could not be located.

During this sampling event, monitoring well MW-1 exceeded the SSTLs for all CoCs with the exception of ethylbenzene, total xylenes, and naphthalene. In monitoring well MW-3, SSTLs were exceeded for toluene only. In monitoring well MW-6, SSTLs were exceeded for total xylenes and MTBE only. In monitoring well DMW-1, SSTLs were exceeded for total xylenes only. Table 2 in Appendix B summarizes SSTL information.

### **3.2 Surface Water Analytical Results**

Benzene was detected in both surface water sample CK-1 (20.3 µg/L) and CK-3 (23.3 µg/L), collected from the adjacent creek, at concentrations above the risk based screening level (RBSL) of 5.0 µg/L.

### **3.3 Water Supply Well Analytical Results**

CoC were not detected in water supply well sample WW-1 at concentrations above laboratory detection limits.

## **4.0 REMEDIATION SYSTEM EFFECTIVENESS**

In awarding the Pay-For-Performance (PFP) site remediation contract, the South Carolina Department of Health and Environmental Control (SCDHEC) set remediation goals for this site via site specific target levels (SSTLs). The monitoring wells have individual target concentrations for five (benzene, toluene, ethylbenzene, xylenes, MTBE and naphthalene) identified chemicals of concern (CoC).

Remediation system effectiveness can be calculated comparing the initial May 7, 2002, CoC concentrations that exceeded the SSTLs with the current CoC concentrations that

exceeded the SSTLs. For monitoring well MW-8, the standard values for free product (benzene, 44,390 µg/L; toluene, 26,540 µg/L; ethylbenzene, 3.7 µg/L; xylenes, 21,680 µg/L; MTBE, 173,000 µg/L; and naphthalene 637,000 µg/L) were used in the percent reduction calculation. August 9, 2005, data was used in the formula for monitoring well MW-14 and the November 1, 2005, data was used in the formula for monitoring well MW-7, because neither were sampled because they could not be located. The formula is as follows:

$$\left[ \frac{[\text{08/29/96 Sample Concentration Above SSTL}] - [\text{Current Sample Concentration Above SSTL}]}{[\text{08/29/96 Sample Concentration Above SSTL}]} \right] * 100 = \% \text{ Reduction}$$

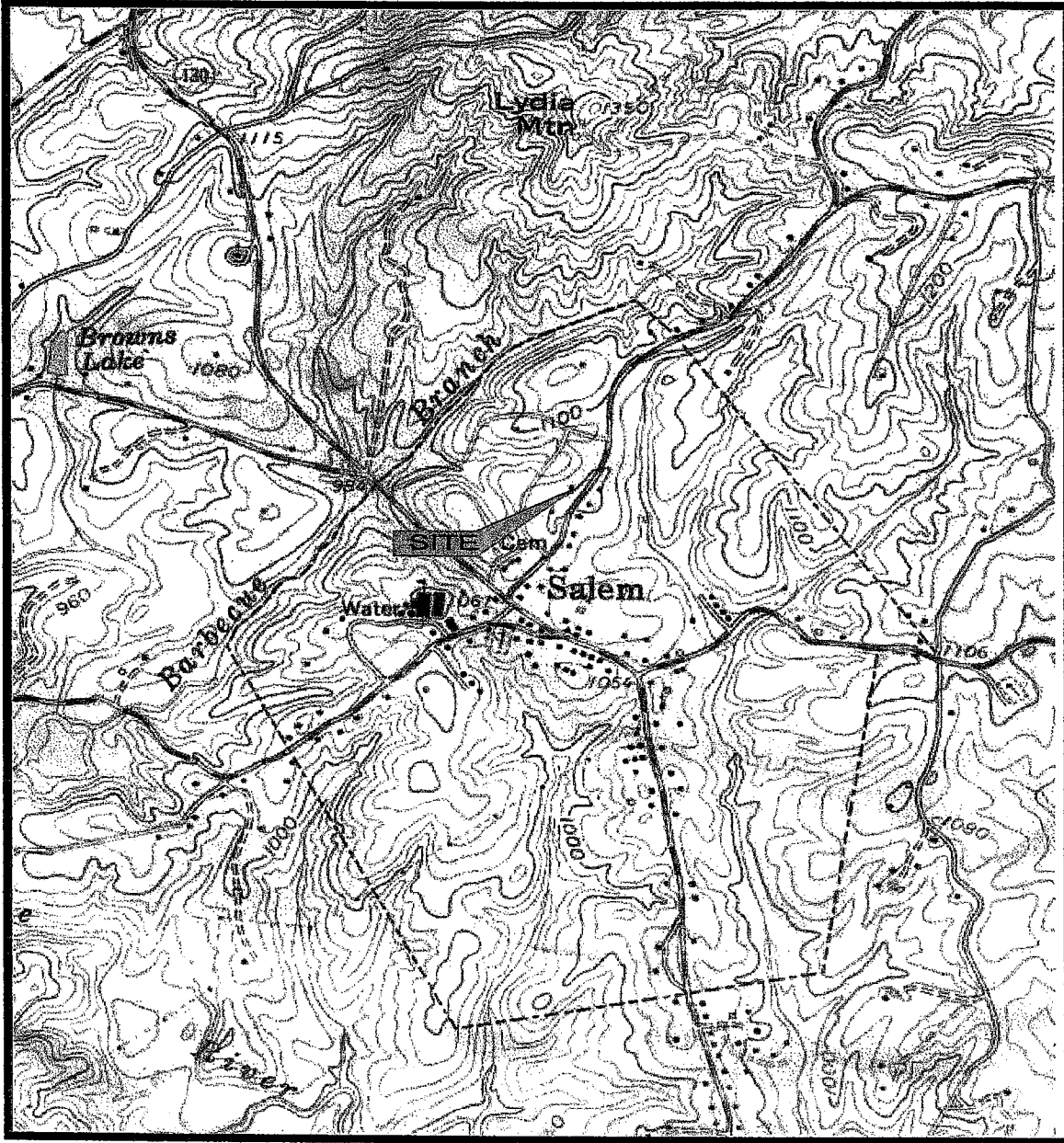
Using the current analytical results, the percent concentration reduction is 91.38%. Table 2 in Appendix B presents concentration reduction calculations.

## 5.0 CONCLUSIONS

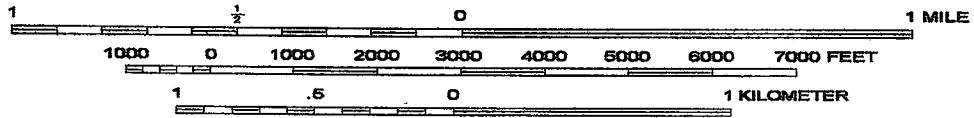
The groundwater flow direction at the time of the March 22, 2006, sampling event was towards the northeast with a hydraulic gradient of 0.0877 feet per foot. Free product was present in monitoring well MW-8 (0.77 feet). CoC were detected in three monitoring wells above their respective SSTLs. Benzene was detected in both surface water samples at a concentration above the RBSL. No CoC were detected in the water supply well sample above laboratory detection limits. The percent concentration reduction was calculated at 91.38%. The previous November 1, 2005, percent reduction was calculated at 84.67%. The August 9, 2005, percent concentration reduction was calculated at 96.51%.

SEI Environmental, Inc recommends continuing the quarterly monitoring to evaluate the continued reduction of chemicals of concern in the monitoring wells on site. The next sampling event will occur in June 2006. SEI is also considering an additional Enhance Fluid Recovery (EFR) to be performed on monitoring well MW-1, MW-8, MW-10, and MW-14. SEI is currently evaluating alternative methods of active corrective action to be implemented at the site in order to proceed with the remediation effort.

**APPENDIX A**  
**FIGURES**



SCALE 1:24000



SALEM QUADRANGLE  
 SOUTH CAROLINA-OCONEE CO.  
 7.5 MINUTE SERIES (TOPOGRAPHIC-BATHYMETRIC)  
 BY U.S. GEOLOGICAL SURVEY

**SEI Environmental, Inc.**

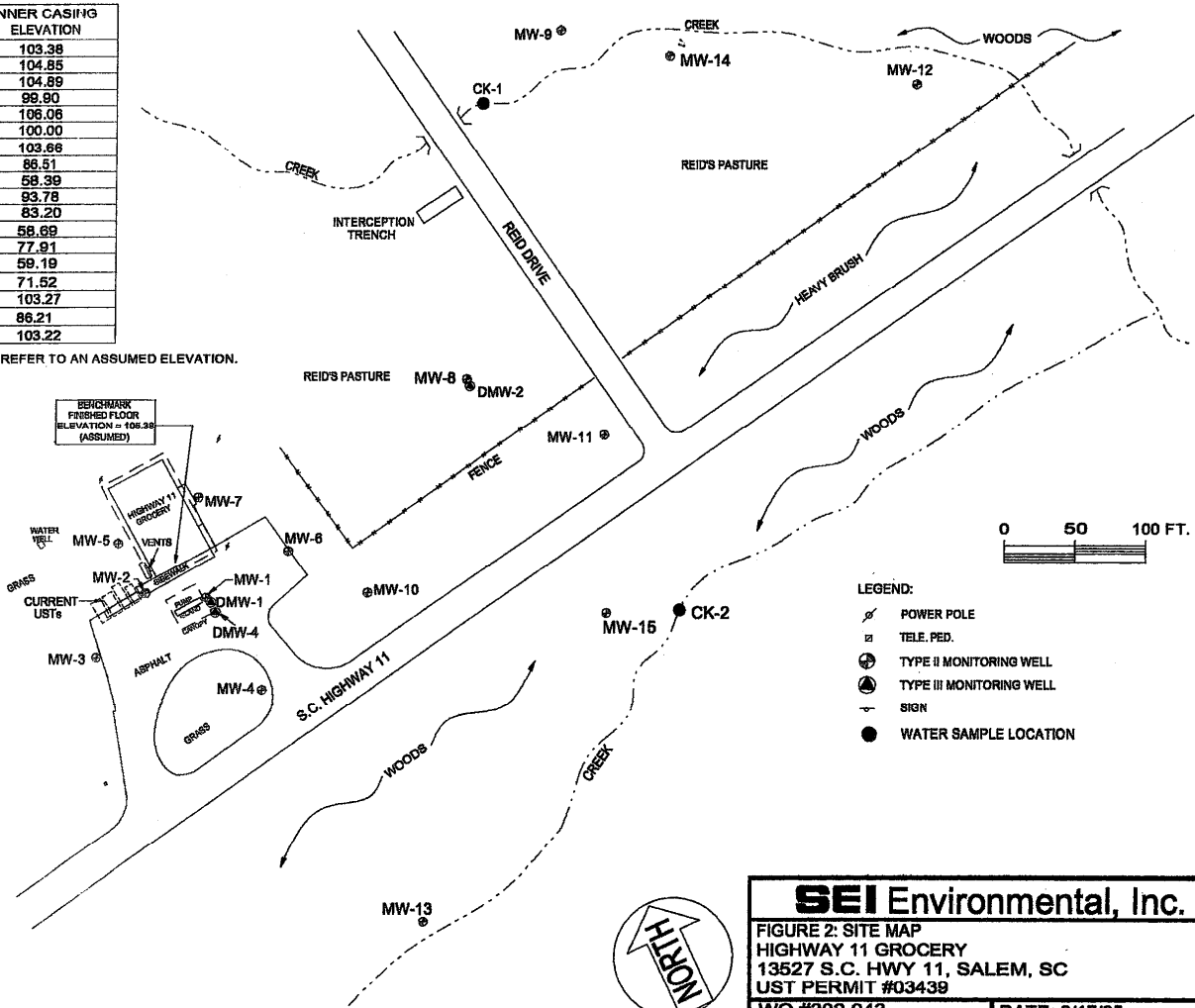
FIGURE 1: SITE LOCATION MAP  
 HIGHWAY 11 GROCER  
 13527 Highway 11, Salem, SC  
 FACILITY I.D. #03439

WO # 302169  
 DWG # Hw 11\_topo\_sitemap

DATE: 9/16/05  
 DRAWN BY: HWH

WELL #	INNER CASING ELEVATION
MW-1	103.38
MW-2	104.85
MW-3	104.89
MW-4	98.90
MW-5	106.08
MW-6	100.00
MW-7	103.66
MW-8	88.51
MW-9	59.39
MW-10	93.78
MW-11	83.20
MW-12	58.69
MW-13	77.91
MW-14	59.19
MW-15	71.52
DMW-1	103.27
DMW-2	86.21
DMW-4	103.22

NOTE: ELEVATIONS REFER TO AN ASSUMED ELEVATION.

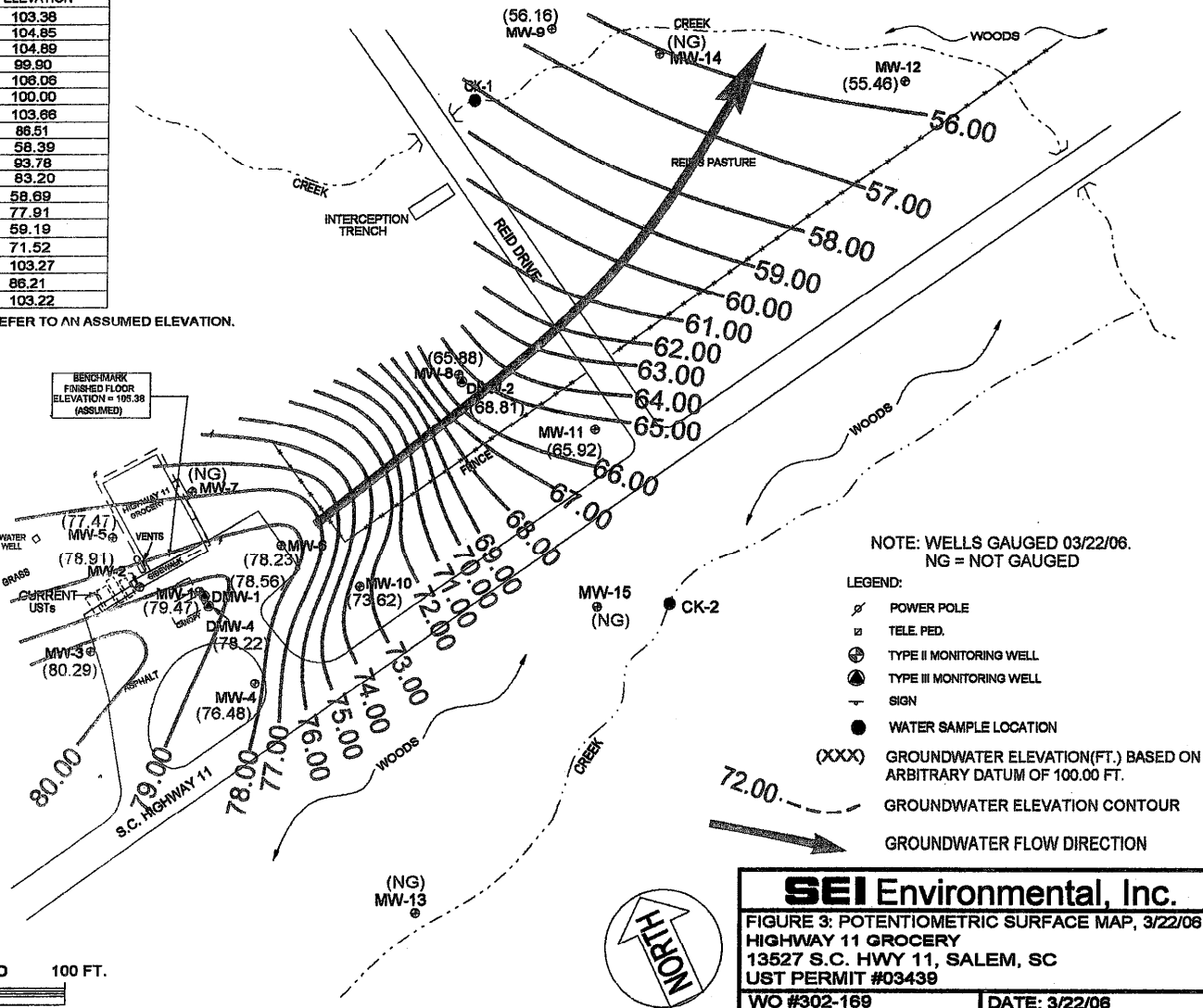


**SEI Environmental, Inc.**  
 FIGURE 2: SITE MAP  
 HIGHWAY 11 GROCERY  
 13527 S.C. HWY 11, SALEM, SC  
 UST PERMIT #03439

WO #302-043	DATE: 3/17/05
DWG #HI01692G	DRAWN BY: JCJ

WELL #	INNER CASING ELEVATION
MW-1	103.38
MW-2	104.85
MW-3	104.89
MW-4	99.90
MW-5	108.06
MW-6	100.00
MW-7	103.86
MW-8	88.51
MW-9	58.39
MW-10	93.78
MW-11	83.20
MW-12	58.89
MW-13	77.91
MW-14	59.19
MW-15	71.52
DMW-1	103.27
DMW-2	86.21
DMW-4	103.22

NOTE: ELEVATIONS REFER TO AN ASSUMED ELEVATION.



NOTE: WELLS GAUGED 03/22/06.  
NG = NOT GAUGED

LEGEND:

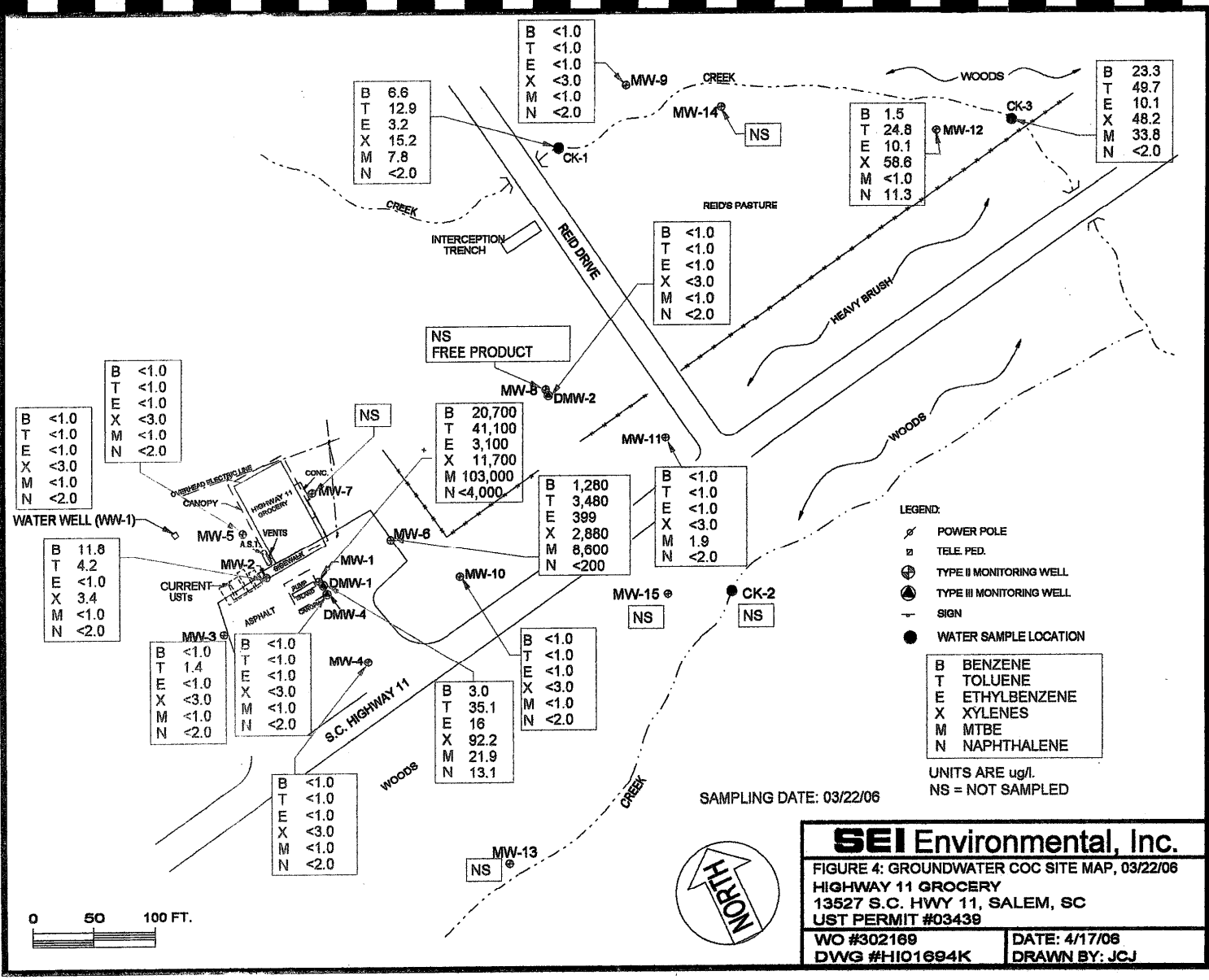
- ⊕ POWER POLE
- ⊞ TELE. PED.
- ⊕ TYPE II MONITORING WELL
- ⊕ TYPE III MONITORING WELL
- ⊕ SIGN
- WATER SAMPLE LOCATION
- (XXX) GROUNDWATER ELEVATION (FT.) BASED ON ARBITRARY DATUM OF 100.00 FT.
- GROUNDWATER ELEVATION CONTOUR
- GROUNDWATER FLOW DIRECTION

**SEI Environmental, Inc.**

FIGURE 3: POTENTIOMETRIC SURFACE MAP, 3/22/06  
HIGHWAY 11 GROCERY  
13527 S.C. HWY 11, SALEM, SC  
UST PERMIT #03439

WO #302-169  
DWG #H100433E

DATE: 3/22/06  
DRAWN BY: JCJ



SAMPLING DATE: 03/22/06

**SEI Environmental, Inc.**

FIGURE 4: GROUNDWATER COC SITE MAP, 03/22/06  
 HIGHWAY 11 GROCERY  
 13527 S.C. HWY 11, SALEM, SC  
 UST PERMIT #03439

WO #302169  
 DWG #H101694K

DATE: 4/17/06  
 DRAWN BY: JCJ



**APPENDIX B**  
**TABLES**

Table 1

**Historical Groundwater Elevation And Product Thickness Data**  
**Highway 11 Grocery**  
**13527 South Carolina Highway 11**  
**Salem, Oconee County, South Carolina**  
**UST Permit Number: 03439**  
**SEI Project Number: 302169**

Location	Date	Depth To Water	Depth To Product	Product Thickness	Well Head Elevation	Groundwater Elevation
MW-1	05/08/02	24.67	24.71	0.04	103.38	78.74
	07/01/03	23.28	23.52	0.24		80.29
	07/30/03	22.89	22.97	0.08		80.55
	09/15/03	23.78	23.82	0.04		79.63
	10/02/03	24.32	24.45	0.13		79.16
	10/23/03	24.72	24.93	0.21		78.82
	12/18/03	24.06				79.32
	03/31/04	24.61				78.77
	09/29/04	24.20				79.18
	01/11/05	23.77				79.61
	03/17/05	23.97				79.41
	08/09/05	22.86				80.52
	11/01/05	25.20	25.13	0.07		78.23
	03/22/06	23.91				79.47
MW-2	05/08/02	26.08			104.85	78.77
	07/01/03	24.08				80.77
	07/30/03	23.78				81.07
	09/15/03	24.73				80.12
	10/02/03	25.56				79.29
	10/23/03	25.71				79.14
	12/18/03	25.38				79.47
	03/31/04	25.85				79.00
	09/29/04	25.55				79.30
	01/11/05	24.74				80.11
	03/17/05	25.10				79.75
	08/09/05	23.70				81.15
	11/01/05	26.29				78.56
	03/22/06	25.94				78.91
MW-3	05/08/02	24.78			104.86	80.08
	07/01/03	22.51				82.35
	07/30/03	22.21				82.65
	09/15/03	23.23				81.63
	10/02/03	23.87				80.99
	10/23/03	24.23				80.63
	12/18/03	23.93				80.93
	03/31/04	24.44				80.42
	09/29/04	24.20				80.66
	01/11/05	23.36				81.50
	03/17/05	23.65				81.21
	08/09/05	22.11				82.75
	11/01/05	24.85				80.01
	03/22/06	24.57				80.29
MW-4	05/08/02	23.38			99.90	76.52
	07/01/03	22.10				77.80
	07/30/03	22.09				77.81
	09/15/03	22.90				77.00
	10/02/03	23.32				76.58
	10/23/03	23.69				76.21
	12/18/03	22.95				76.95
	03/31/04	23.49				76.41
	09/29/04	23.14				76.76
	01/11/05	22.70				77.20
	03/17/05	22.84				77.06
	08/09/05	26.40				73.50
	11/01/05	27.27				72.63
	03/22/06	23.42				76.48
MW-5	05/08/02	28.82			106.06	77.24
	07/01/03	26.82				79.24
	07/30/03	26.53				79.53
	09/15/03	27.40				78.66
	10/02/03	27.92				78.14
	10/23/03	28.40				77.66
	12/18/03	28.40				77.66
	03/31/04	28.56				77.50
	09/29/04	28.46				77.60
	01/11/05	27.41				78.65
	03/17/05	27.86				78.20
	08/09/05	20.02				86.04
	11/01/05	28.91				77.15
	03/22/06	28.59				77.47

**Historical Groundwater Elevation And Product Thickness Data**  
**Highway 11 Grocery**  
**13827 South Carolina Highway 11**  
**Salem, Oconee County, South Carolina**  
**UST Permit Number: 03439**  
**SEI Project Number: 302169**

Location	Date	Depth To Water	Depth To Product	Product Thickness	Well Head Elevation	Groundwater Elevation
MW-6	05/08/02	21.66			100.00	78.34
	07/01/03	19.77				80.23
	07/30/03	19.88				80.12
	09/15/03	20.83				79.37
	10/02/03	21.34				78.66
	10/23/03	21.74				78.26
	12/18/03	21.00				79.00
	03/31/04	21.71				78.29
	09/29/04	21.33				78.67
	01/11/05	20.81				79.19
	03/17/05	20.10				79.90
	08/09/05	26.18				73.82
	11/01/05	22.41				77.59
	03/22/06	21.77				78.23
MW-7	05/08/02	28.12			103.66	75.54
	07/01/03	26.55				77.11
	07/30/03	26.22				77.44
	09/15/03	26.83				76.83
	10/02/03	27.69				75.97
	10/23/03	28.10				75.56
	12/18/03	27.71				75.95
	03/31/04	28.00				75.86
	09/29/04	27.60				76.06
	01/11/05	26.88				76.78
	03/17/05	27.83				75.83
	08/09/05	20.27				83.39
	11/01/05	28.63				75.03
	03/22/06	N/L				N/L
MW-8	05/08/02	21.00			86.51	65.51
	07/01/03	20.96				65.55
	07/30/03	20.46				66.05
	09/15/03	21.17				65.34
	10/02/03	20.44				66.07
	10/23/03	21.54				64.97
	12/18/03	20.82				65.69
	03/31/04	21.35				65.16
	09/29/04	21.10				65.41
	01/11/05	21.04				65.47
	03/17/05	20.95				65.56
	08/09/05	22.16				64.35
	11/01/05	23.31				63.20
	03/22/06	22.00	21.23	0.77		65.11
MW-9	05/08/02	2.47			56.39	55.92
	07/01/03	2.30				56.09
	07/30/03	2.26				56.13
	09/15/03	2.42				55.97
	10/02/03	2.16				56.23
	10/23/03	2.42				55.97
	12/18/03	2.20				56.19
	03/31/04	2.56				55.83
	09/29/04	1.90				56.49
	01/11/05	2.23				56.16
	03/17/05	2.11				56.28
	08/09/05	2.04				56.35
	11/01/05	2.33				56.06
	03/22/06	2.23				56.16
MW-10	05/08/02	20.04			93.78	73.74
	07/01/03	16.20				77.58
	07/30/03	18.95				74.83
	09/15/03	16.53				77.25
	10/02/03	20.19				73.59
	10/23/03	20.51				73.27
	12/18/03	19.83				73.95
	03/31/04	18.85				74.93
	09/29/04	20.02				73.76
	01/11/05	19.47				74.31
	03/17/05	18.84				74.94
	08/09/05	18.94				74.84
	11/01/05	21.07				72.71
	03/22/06	20.16				73.62

**Historical Groundwater Elevation And Product Thickness Data**  
**Highway 11 Grocery**  
**13527 South Carolina Highway 11**  
**Salem, Oconee County, South Carolina**  
**UST Permit Number: 03439**  
**SEI Project Number: 302169**

Location	Date	Depth To Water	Depth To Product	Product Thickness	Well Head Elevation	Groundwater Elevation
MW-11	05/08/02	16.22			83.20	66.98
	07/01/03	16.53				66.67
	07/30/03	16.70				66.50
	09/15/03	17.35				65.85
	10/02/03	16.40				66.80
	10/23/03	17.83				65.37
	12/18/03	17.58				65.62
	03/31/04	16.21				66.99
	09/29/04	15.92				67.28
	01/11/05	15.93				67.27
	03/17/05	16.86				66.34
	08/09/05	16.80				67.40
	11/01/05	16.22				64.98
	03/22/06	17.28				65.92
MW-12	05/08/02	2.80			58.69	55.89
	07/01/03	3.16				55.53
	07/30/03	2.55				56.14
	09/15/03	3.26				55.43
	10/02/03	2.60				56.09
	10/23/03	3.50				55.19
	12/18/03	2.97				55.72
	03/31/04	3.19				55.50
	09/29/04	3.02				55.67
	01/11/05	3.10				55.59
	03/17/05	3.12				55.57
	08/09/05	2.72				55.97
	11/01/05	3.63				55.06
	03/22/06	3.23				55.46
MW-13	05/08/02	6.29			77.72	71.43
	07/01/03	6.44				71.28
	07/30/03	N/L				N/L
	09/15/03	6.36				71.36
	10/02/03	6.24				71.48
	10/23/03	6.78				70.94
	12/18/03	7.51				70.21
	03/31/04	6.62				71.10
	09/29/04	6.28				71.44
	01/11/05	6.44				71.28
	03/17/05	6.52				71.20
	08/09/05	10.52				67.20
	11/01/05	N/L				N/L
	03/22/06	N/L				N/L
MW-14	05/08/02	2.00			59.19	57.19
	07/01/03	2.28				56.91
	07/30/03	2.03				57.16
	09/15/03	2.42				56.77
	10/02/03	1.98				57.21
	10/23/03	2.67				56.52
	12/18/03	1.58				57.61
	03/31/04	2.03				57.16
	09/29/04	1.77				57.42
	01/11/05	1.92				57.27
	03/17/05	2.14				57.05
	08/09/05	1.75				57.44
	11/01/05	N/L				N/L
	03/22/06	N/L				N/L
MW-15	05/08/02	10.82			71.52	60.70
	07/01/03	10.76				60.76
	07/30/03	10.11				61.41
	09/15/03	11.00				60.52
	10/02/03	10.20				61.32
	10/23/03	11.07				60.45
	12/18/03	11.88				59.64
	03/31/04	11.02				60.50
	09/29/04	10.87				60.85
	01/11/05	10.83				60.69
	03/17/05	10.61				60.91
	08/09/05	10.68				60.84
	11/01/05	11.32				60.20
	03/22/06	NG				NG

**Historical Groundwater Elevation And Product Thickness Data**  
**Highway 11 Grocery**  
**13527 South Carolina Highway 11**  
**Salem, Oconee County, South Carolina**  
**UST Permit Number: 03439**  
**SEI Project Number: 302169**

Location	Date	Depth To Water	Depth To Product	Product Thickness	Well Head Elevation	Groundwater Elevation
DMW-1	05/08/02	23.88			103.27	79.39
	07/01/03	23.61				79.66
	07/30/03	24.24				79.03
	09/15/03	24.60				78.67
	10/02/03	24.00				79.27
	10/23/03	24.50				78.77
	12/18/03	24.11				79.16
	03/31/04	23.61				79.66
	09/29/04	22.72				80.55
	01/11/05	22.97				80.30
	03/17/05	24.68				78.59
	08/09/05	22.66				80.61
	11/01/05	25.11				78.16
	03/22/06	24.71				78.56
DMW-2	05/08/02	17.83			86.21	68.38
	07/01/03	16.67				69.54
	07/30/03	17.20				69.01
	09/15/03	17.31				68.90
	10/02/03	16.80				69.41
	10/23/03	17.63				68.58
	12/18/03	17.11				69.10
	03/31/04	15.75				70.46
	09/29/04	16.49				69.72
	01/11/05	16.44				69.77
	03/17/05	17.22				68.99
	08/09/05	16.71				69.50
	11/01/05	18.08				68.13
	03/22/06	17.40				68.81
DMW-4	05/08/02	24.30			103.22	78.92
	07/01/03	23.93				79.29
	07/30/03	24.75				78.47
	09/15/03	24.95				78.27
	10/02/03	24.45				78.77
	10/23/03	24.95				78.27
	12/18/03	24.39				78.83
	03/31/04	23.88				79.34
	09/29/04	23.18				80.04
	01/11/05	23.32				79.90
	03/17/05	25.08				78.14
	08/09/05	22.96				80.26
	11/01/05	26.51				76.71
	03/22/06	25.00				78.22

Table 2

**Historical Groundwater Analytical Results**  
**Highway 11 Grocery**  
**13527 South Carolina Highway 11**  
**Salem, Oconee County, South Carolina**  
**UST Permit Number: 03438**  
**SEI Project Number: 302169**

Well	Date	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Naphthalene	FP	Initial Mass	Current Mass
MW-1	05/07/02	226,000	301,000	280,000	278,000	6,110,000	2,000			6,197,000.00
	07/01/03	10,000	34,000	4,400	23,000	34,000	1,200			108,600.00
	07/30/03	7,600	28,000	6,300	32,000	25,000.0	2,500			101,400.00
	12/18/03	2,200	6,200	910	5,800	16,000	2,500			33,610.00
	03/31/04	3,400	9,300	1,100	6,200	20,000	1,200			41,200.00
	09/29/04	3,200	7,300	<1,000	4,500	12,000	<5,000			27,000.00
	03/17/05	6,600	9,550	1,570	7,610	19,300	325			43,955.00
	08/09/05	16,900	42,600	3,620	19,000	115,000	705			197,725.00
	11/01/05	44,390	26,540	3,700	21,680	173,000	637,000			808,310.00
	03/22/06	20,700	41,100	3,100	11,700	103,000	<4,000			179,600.00
	SSTL	22	4,497	3,148	44,998	180	112			
> SSTL	20,878	36,603	0.0	0.0	102,820	3,888				
MW-2	05/07/02	13	8.0	1.0	5.0	5.0	5.0			37.00
	07/01/03	4.7	5.0	1.0	3.0	1.0	5.0			19.70
	07/30/03	5.8	5.0	1.0	5.3	1.0	5.0			23.10
	12/18/03	2.2	5.0	1.0	3.0	1.0	5.0			17.20
	03/31/04	2.6	5.0	1.0	3.0	1.0	5.0			17.60
	09/29/04	14	<25	<5.0	<15	<5.0	<25			14.00
	03/17/05	13	5	<1.0	5	<1.0	<2.0			22.40
	08/09/05	39.7	14.6	1.2	27.5	<1.0	<2.0			82.90
	11/01/05	3.8	1.6	<1.0	<3.0	<1.0	<2.0			5.40
	03/22/06	11.8	4.2	<1.0	3.4	<1.0	<2.0			19.40
	SSTL	13	8.0	1.0	6.0	6.0	6.0			
> SSTL	0.0	0.0	0.0	0.0	0.0	0.0				
MW-3	05/07/02	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0			0.00
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	07/30/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	12/18/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	08/09/05	NS	NS	NS	NS	NS	NS			0.00
	11/01/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	03/22/06	<1.0	1.4	<1.0	<3.0	<1.0	<2.0			1.40
	SSTL	1.0	1.0	1.0	1.0	5.0	5.0			
> SSTL	0.0	0.4	0.0	0.0	0.0	0.0				
MW-4	05/07/02	1,500	5,320	620	3,360	810	500			12,110.00
	07/01/03	4,800	14,000	2,300	12,000	2,000	2,600			47,700.00
	07/30/03	4,900	14,000	2,700	13,000	2,100	800			36,300.00
	12/18/03	1,100	2,400	230	1,900	1,200	250			7,080.00
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	09/29/04	53	<25	7.1	70	210	<25			340.10
	03/17/05	<1.0	<1.0	<1.0	<3.0	17	<2.0			16.80
	08/09/05	<1.0	<1.0	<1.0	<3.0	5.9	<2.0			5.90
	11/01/05	3,720	3,660	745	4,170	4,540	<200			16,835.00
	03/22/06	<1.0	<1.0	<1.0	<3.0	1.2	<2.0			1.20
	SSTL	1,500	5,320	620	3,360	810	500.0			
> SSTL	0	0.0	0	0	0	0.0				
MW-5	05/07/02	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0			0.00
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	07/30/03	4.2	17.0	3.6	18.0	2.2	<5.0			45.00
	12/18/03	2.3	<5.0	<1.0	3.2	1.3	<5.0			6.80
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	08/09/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	11/01/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	03/22/06	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	SSTL	1.0	1.0	1.0	1.0	5.0	5.0			
> SSTL	0.0	0.0	0.0	0.0	0.0	0.0				

Table 2

**Historical Groundwater Analytical Results**  
**Highway 11 Grocery**  
**13527 South Carolina Highway 11**  
**Salem, Oconee County, South Carolina**  
**UST Permit Number: 03439**  
**SEI Project Number: 302169**

Well	Date	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Naphthalene	FP	Initial Mass	Current Mass
MW-6	05/07/02	1,780	4,880	490	2,880	6,350	800.0			18,950.00
	07/01/03	2,200	6,600	820	4,400	12,000	2,500			28,520.00
	07/30/03	4,200	13,000	1,600	8,900	21,000	400			49,100.00
	12/18/03	6,100	14,000	1,700	11,000	19,000	2,900			53,300.00
	03/31/04	280	840	100	2,200	900	250			4,570.00
	09/28/04	2,400	<5,000	<1,000	<3,000	17,000	<5,000			19,400.00
	03/17/05	3,490	7,500	852	5,380	15,500	282			33,084.00
	08/09/05	1,370	4,630	295	2,220	7,940	<400			18,155.00
	11/01/05	979	2,220	282	1,810	9,410	<200			14,701.00
	03/22/06	1,280	3,480	399	2,880	8,600	<200			18,639.00
	SSTL	1,780	4,880	490	2,880	6,350	800.0			
> SSTL	0.0	0.0	0.0	0.0	2,250	0.0				
MW-7	05/07/02	34	20	<1.0	8.0	7.0	<5.0			69.00
	07/01/03	37	36	1.7	20	9.2	<5.0			103.90
	07/30/03	18	18	<1.0	10	<1.0	<5.0			45.70
	12/18/03	41	20	<1.0	<3.0	<1.0	<5.0			61.00
	03/31/04	30	34	<1.0	16	<1.0	<5.0			80.00
	09/28/04	370	600	<100	<300	<100	<500			870.00
	03/17/05	505	890	34	280	65	<2.0			1,473.40
	08/09/05	52	66	2.6	34	9.2	<2.0			154.00
	11/01/05	27	42	3.7	24	<1.0	<2.0			98.10
	03/22/06	Not Sampled								
	SSTL	22	20	1.0	8.0	7.0	5.0			
> SSTL	5.3	21.5	2.7	15.6	0.0	0.0				
MW-8	05/07/02	226,000	301,000	280,000	278,000	5,110,000	2,000			6,187,000.00
	07/01/03	12,000	81,000	7,600	40,000	11,000	2,500			124,300.00
	07/30/03	12,000	40,000	3,600	18,000	16,000	660			89,260.00
	12/18/03	10,000	27,000	3,300	18,000	14,000	2,500			74,800.00
	03/31/04	17,000	140,000	32,000	180,000	8,600	<25,000			377,600.00
	09/28/04	44,390	26,540	3,700	21,680	173,000	637,000			906,310.00
	03/17/05	44,390	26,540	3,700	21,680	173,000	637,000			906,310.00
	08/09/05	44,390	26,540	3,700	21,680	173,000	637,000			906,310.00
	11/01/05	44,390	26,540	3,700	21,680	173,000	637,000			906,310.00
	03/22/06	44,390	26,540	3,700	21,680	173,000	637,000			906,310.00
	SSTL	204	40,898	28,622	278,000	1,362	1,021			
> SSTL	44,188.0	0.0	0.0	0.0	171,638.0	635,979.0				
MW-9	05/07/02	N/A	N/A	N/A	N/A	N/A	N/A			0.00
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	07/30/03	N/A	N/A	N/A	N/A	N/A	N/A			0.00
	12/18/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/31/04	<1.0	<5.0	1.2	8.8	<1.0	<5.0			10.00
	09/28/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	08/09/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	11/01/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	03/22/06	<1.0	1.5	<1.0	<3.0	<1.0	<2.0			1.50
	RBSL	5.0	1,000	700	10,000	40	25			
MW-10	05/07/02	115	185	68.0	328	86	9.0			791.00
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	07/30/03	170	420	43	240	640	6.5			1,419.50
	12/18/03	89	280	74	480	91	25.0			1,039.00
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	09/28/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	08/09/05	1.7	4.4	<1.0	<3.0	18	<2.0			24.00
	11/01/05	10,000	23,500	1,410	7,810	21,500	<1,000			64,020.00
	03/22/06	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	SSTL	115	185	68	328	86	9.0			
> SSTL	0.0	0.0	0.0	0.0	0.0	0.0				

Table 2

**Historical Groundwater Analytical Results**  
**Highway 11 Grocery**  
**13527 South Carolina Highway 11**  
**Salem, Oconee County, South Carolina**  
**UST Permit Number: 03439**  
**SEI Project Number: 302169**

Well	Date	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Naphthalene	FP	Initial Mass	Current Mass
MW-11	05/07/02	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0			0.00
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	07/30/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	12/18/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	08/09/05	NS	NS	NS	NS	NS	NS			0.00
	11/01/05	42.2	<1.0	<1.0	98.6	4.5	3.8			144.10
	03/22/06	<1.0	<1.0	<1.0	<3.0	1.9	<2.0			1.80
SSTL	1.0	1.0	1.0	1.0	5.0	5.0				
> SSTL	0.0	0.0	0.0	0.0	0.0	0.0				
MW-12	05/07/02	N/A	N/A	N/A	N/A	N/A	N/A			0.00
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	07/30/03	N/A	N/A	N/A	N/A	N/A	N/A			0.00
	12/18/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	08/09/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	11/01/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	03/22/06	1.5	24.8	10.1	58.6	<1.0	11.3			108.30
RBSL	5.0	1,000	700	10,000	40	25				
MW-13	05/07/02	N/A	N/A	N/A	N/A	N/A	N/A			0.00
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	07/30/03	N/A	N/A	N/A	N/A	N/A	N/A			0.00
	12/18/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	08/09/05	NS	NS	NS	NS	NS	NS			0.00
	11/01/05	NS	NS	NS	NS	NS	NS			0.00
	03/22/06	NS	NS	NS	NS	NS	NS			0.00
RBSL	5.0	1,000	700	10,000	40	25				
MW-14	05/07/02	3,780	13,800	27,000	14,700	7,010	500			66,790.00
	07/01/03	3,600	10,000	1,900	10,000	5,300	500			31,200.00
	07/30/03	3,100	9,700	1,800	9,300	4,300	500			28,700.00
	12/18/03	3,300	11,000	2,000	11,000	4,100	500			31,900.00
	03/31/04	5,500	17,000	2,600	13,000	7,100	570			45,770.00
	09/29/04	3,200	12,000	1,600	9,100	3,200	<5,000			29,100.00
	03/17/05	5,140	13,000	1,710	10,900	4,970	339			38,059.00
	08/09/05	3,290	10,600	1,820	11,000	4,950	<400			31,660.00
	11/01/05	NL	NL	NL	NL	NL	NL			0.00
	03/22/06	NL	NL	NL	NL	NL	NL			0.00
SSTL	5.0	1,000	700	10,000	40	25			11,770.00	
> SSTL	3,285	9,600	1,120	1,000	4,910	375				
MW-15	05/07/02	N/A	N/A	N/A	N/A	N/A	N/A			0.00
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	07/30/03	N/A	N/A	N/A	N/A	N/A	N/A			0.00
	12/18/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	08/09/05	NS	NS	NS	NS	NS	NS			0.00
	11/01/05	NS	NS	NS	NS	NS	NS			0.00
	03/22/06	NS	NS	NS	NS	NS	NS			0.00
RBSL	5.0	1,000	700	10,000	40	25				



Table 2

**Historical Groundwater Analytical Results**  
**Highway 11 Grocery**  
**13527 South Carolina Highway 11**  
**Salem, Oconee County, South Carolina**  
**UST Permit Number: 03438**  
**SEI Project Number: 302169**

Well	Date	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Naphthalene	FP	Initial Mass	Current Mass
DMW-1	05/07/02	215	430	50	50	1,780	250			2,775.00
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	07/30/03	<1.0	<5.0	<1.0	<3.0	4.2	<5.0			4.20
	12/18/03	1.5	<5.0	<1.0	<3.0	<1.0	<5.0			1.50
	03/31/04	<1.0	<15.0	<1.0	<3.0	3.8	<5.0			3.80
	09/29/04	8.4	<25	<5.0	<15	130	<25			138.40
	03/17/05	<1.0	1.2	<1.0	<3.0	8.1	<2.0			8.30
	08/09/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	11/01/05	<5.0	<5.0	<5.0	<15	<5.0	<10			0.00
	03/22/06	3.0	35.1	16	92.2	21.9	13.1			181.30
	SSTL	215	430	50	50	1,780	250			
> SSTL	0.0	0.0	0.0	42.2	0.0	0.0				
DMW-2	05/07/02	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0			0.00
	07/01/03	<1.0	<5.0	<1.0	<3.0	6.4	<5.0			6.40
	07/30/03	<1.0	8.4	6.8	30.0	<1.0	6.7			51.60
	12/18/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	08/09/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	11/01/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	03/22/06	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	SSTL	1.0	1.0	1.0	1.0	5.0	5.0			
> SSTL	0.0	0.0	0.0	0.0	0.0	0.0				
DMW-4	05/07/02	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0			0.00
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	07/30/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	12/18/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	08/09/05	NS	NS	NS	NS	NS	NS			0.00
	11/01/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	03/22/06	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	SSTL	1.0	1.0	1.0	1.0	5.0	5.0			
> SSTL	0.0	0.0	0.0	0.0	0.0	0.0				
CK-1	05/07/02	N/A	N/A	N/A	N/A	N/A	N/A			0.00
	07/01/03	2.6	<5.0	<1.0	4.8	4.5	<5.0			11.80
	07/30/03	N/A	N/A	N/A	N/A	N/A	N/A			0.00
	12/18/03	11	18	4.1	20.0	9.0	<5.0			62.10
	09/29/04	16	30	6.1	32.0	22.0	<5.0			108.10
	03/17/05	10.4	17.5	4.1	20.8	12.3	<2.0			65.10
	08/09/05	7.6	17.6	2.9	15.8	6.9	<2.0			50.80
	11/01/05	20.3	38.2	8.8	48.8	27.3	<2.0			143.40
	03/22/06	6.6	12.9	3.2	15.2	7.8	<2.0			45.70
	RBSL	5.0	1,000	700	10,000	40	25			
CK-2	05/07/02	N/A	N/A	N/A	N/A	N/A	N/A			0.00
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	07/30/03	N/A	N/A	N/A	N/A	N/A	N/A			0.00
	12/18/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	08/09/05	NS	NS	NS	NS	NS	NS			0.00
	11/01/05	NS	NS	NS	NS	NS	NS			0.00
	03/22/06	NS	NS	NS	NS	NS	NS			0.00
RBSL	5.0	1,000	700	10,000	40	25				

Table 2

**Historical Groundwater Analytical Results**  
**Highway 11 Grocery**  
**13527 South Carolina Highway 11**  
**Salem, Oconee County, South Carolina**  
**UST Permit Number: 03439**  
**SEI Project Number: 302169**

Well	Date	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Naphthalene	FP	Initial Mass	Current Mass
CK-3	08/09/05	14.4	33.3	7.1	41.1	25.8	<2.0			121.70
	11/01/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	03/22/06	23.3	49.7	10.1	48.2	33.8	<2.0			165.10
	RBSL	5.0	1,000	700	10,000	40	25			
WW-1	05/07/02	N/A	N/A	N/A	N/A	N/A	N/A			0.00
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	07/30/03	N/A	N/A	N/A	N/A	N/A	N/A			0.00
	12/18/03	N/A	N/A	N/A	N/A	N/A	N/A			0.00
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0			0.00
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	08/09/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	11/01/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	03/22/06	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0			0.00
	RBSL	5.0	1,000	700	10,000	40	25			
<b>TOTAL MASS</b>										<b>1,102,764</b>
<b>TOTAL SSSL MASS</b>		<b>3,891</b>	<b>57,303</b>	<b>33,705</b>	<b>339,605</b>	<b>10,845</b>	<b>2,452</b>		<b>447,591</b>	
<b>INITIAL MASS ABOVE SSSL</b>										<b>12,046,007</b>
<b>CURRENT MASS ABOVE SSSL</b>										<b>1,038,420</b>
<b>PERCENT TOTAL MASS REDUCTION ABOVE SSSL</b>										<b>91.38</b>

Reported in parts per billion (µg/l)

ND: Compound not detected

BDL: Below analytical Detection Limits

SSSL: Site Specific Treatment Level

**APPENDIX C**  
**Field Information Data Sheets**

# SEI Environmental

## SC Monitoring Well Gauging Data Sheet

Site Name: Highway 11 Grocery

WO# 302169

Date 22 March 06

Well ID	Total Depth (feet)	Well Dia. (in.)	Depth to Product (feet)	Product Thickness (feet)	Depth to Water (feet)	Notes
MW-1	30	2			23.91	
MW-2	35	2			25.94	
MW-3	35	2			24.57	Semi-annual
MW-4	35	2			23.42	
MW-5	35	2			28.59	
MW-6	35	2			21.77	
MW-7	40	2			under Deck	
MW-9	11	2			2.73	
MW-10	24	2			20.16	
MW-11	23	2			17.28	Semi-annual
MW-12	11	2			3.23	
MW-14	9	2			20.11.4	Final
DW-1	45	2			24.71	
DW-2	75	2			17.4	
DMW-4	61	2			25.00	Semi-annual
MW-8		2	21.23	0.77	22.0	
Water Supply Well Sample: WW-1						
Surface Water Samples: CK-1 & CK-3						

**Analysis: EPA Method 8260B for BTEX, MTBE, and Naphthalene**

2-inch diameter well: Well Volume = (water column) x (0.163 gallon/foot)

4-inch diameter well: Well Volume = (water column) x (0.652 gallon/foot)

Purge amount = Well Volume x 3

**South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program**

**Field Data Information Sheet for Ground Water Sampling**

Date (mm/dd/yy): \_\_\_\_\_  
 Field Personnel: \_\_\_\_\_  
 General Weather Conditions: \_\_\_\_\_  
 Ambient Air Temperature: \_\_\_\_\_ °C

Quality Assurance

pH Meter serial no. _____	Conductivity Meter serial no. _____
pH = 4.0 _____	standard _____
pH = 7.0 _____	standard _____
pH = 10.0 _____	standard _____

Chain of Custody

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name Highway 11 Grocery Job # 302169  
 Site ID # 03439 Monitoring Well # 1  
 Water Supply Well Public Private \_\_\_\_\_  
 Monitoring Well Diameter (D): \_\_\_\_\_ feet  
 Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C = 0.163  
 for a 4 inch well C = 0.652

\*Free Product Thickness \_\_\_\_\_ feet  
 Depth to Ground Water (DGW) \_\_\_\_\_ feet  
 Total Well Depth (TWD) \_\_\_\_\_ feet  
 Length of the water column (LWC = TWD-DGW) \_\_\_\_\_ feet  
 1 casing volume (CV = LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals  
 3 casing volume (3 X CV) = \_\_\_\_\_ gals (standard purge volume)

Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals  
 \* If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1 <sup>st</sup> Vol	2 <sup>nd</sup> Vol	3 <sup>rd</sup> Vol	4 <sup>th</sup> Vol	5 <sup>th</sup> Vol	Post Sampling
Time (military)							
pH (s.u.)	5.9	5.9	5.9	5.9			
Specific Conductivity (µmhos/cm)	127	125	127	126			
Water Temperature (°C)	19.6	19.7	19.6	19.6			
Dissolved Oxygen	2.0	2.0	2.0	2.0			
PID readings, if required							

Remarks: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program**

**Field Data Information Sheet for Ground Water Sampling**

Date (mm/dd/yy): \_\_\_\_\_

Field Personnel: \_\_\_\_\_

General Weather Conditions: \_\_\_\_\_

---

Ambient Air Temperature: \_\_\_\_\_ °C

Quality Assurance

pH Meter serial no. _____	Conductivity Meter serial no. _____
pH = 4.0 _____	standard _____
pH = 7.0 _____	standard _____
pH = 10.0 _____	standard _____

Chain of Custody

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name Highway 11 Grocery Job # 302169

Site ID # 03439 Monitoring Well # 62

Water Supply Well Public Private \_\_\_\_\_

Monitoring Well Diameter (D): \_\_\_\_\_ feet

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C = 0.163  
for a 4 inch well C = 0.652

\*Free Product Thickness \_\_\_\_\_ feet

Depth to Ground Water (DGW) \_\_\_\_\_ feet

Total Well Depth (TWD) \_\_\_\_\_ feet

Length of the water column (LWC = TWD-DGW) \_\_\_\_\_ feet

1 casing volume (CV = LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals

3 casing volume (3 X CV) = \_\_\_\_\_ gals (standard purge volume)

Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals

\* If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1 <sup>st</sup> Vol	2 <sup>nd</sup> Vol	3 <sup>rd</sup> Vol	4 <sup>th</sup> Vol	5 <sup>th</sup> Vol	Post Sampling
Time (military)							
pH (s.u.)	4.8	4.8	4.9	4.9			
Specific Conductivity (umhos/cm)	200	250	296	295			
Water Temperature (°C)	18.6	18.6	18.6	18.6			
Dissolved Oxygen	3.2	3.0	3.4	3.3			
PID readings, if required							

Remarks: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program**

**Field Data Information Sheet for Ground Water Sampling**

Date (mm/dd/yy): \_\_\_\_\_

Field Personnel: \_\_\_\_\_

General Weather Conditions: \_\_\_\_\_

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Ambient Air Temperature: \_\_\_\_\_ °C

Quality Assurance

pH Meter serial no. _____	Conductivity Meter serial no. _____
pH = 4.0 _____	standard _____
pH = 7.0 _____	standard _____
pH = 10.0 _____	standard _____

Chain of Custody

\_\_\_\_\_

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name Highway 11 Grocery Job # 302169

Site ID # 03439 Monitoring Well # 3

Water Supply Well Public Private

Monitoring Well Diameter (D): \_\_\_\_\_ feet

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C = 0.163  
for a 4 inch well C = 0.652

\*Free Product Thickness \_\_\_\_\_ feet

Depth to Ground Water (DGW) \_\_\_\_\_ feet

Total Well Depth (TWD) \_\_\_\_\_ feet

Length of the water column (LWC = TWD - DGW) \_\_\_\_\_ feet

1 casing volume (CV = LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals

3 casing volume (3 X CV) = \_\_\_\_\_ gals (standard purge volume)

Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals

\* If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1 <sup>st</sup> Vol	2 <sup>nd</sup> Vol	3 <sup>rd</sup> Vol	4 <sup>th</sup> Vol	5 <sup>th</sup> Vol	Post Sampling
Time (military)							
pH (s.u.)	5.5	5.3	5.4	5.4			
Specific Conductivity (µmhos/cm)	100	250	250	251			
Water Temperature (°C)	18.5	18.5	18.5	18.5			
Dissolved Oxygen	3.0	3.8	4.0	3.9			
PID readings, if required							

Remarks: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program**

**Field Data Information Sheet for Ground Water Sampling**

Date (mm/dd/yy): \_\_\_\_\_

Field Personnel: \_\_\_\_\_

General Weather Conditions: \_\_\_\_\_

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Ambient Air Temperature: \_\_\_\_\_ °C

Quality Assurance

pH Meter serial no. _____	Conductivity Meter serial no. _____
pH = 4.0 _____	standard _____
pH = 7.0 _____	standard _____
pH = 10.0 _____	standard _____

Chain of Custody

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name Highway 11 Grocery Job # 302169

Site ID # 03439 Monitoring Well # 4

Water Supply Well Public Private \_\_\_\_\_

Monitoring Well Diameter (D): \_\_\_\_\_ feet

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C = 0.163  
for a 4 inch well C = 0.652

\*Free Product Thickness \_\_\_\_\_ feet

Depth to Ground Water (DGW) \_\_\_\_\_ feet

Total Well Depth (TWD) \_\_\_\_\_ feet

Length of the water column (LWC = TWD-DGW) \_\_\_\_\_ feet

1 casing volume (CV = LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals

3 casing volume (3 X CV) = \_\_\_\_\_ gals (standard purge volume)

Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals

\* If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1 <sup>st</sup> Vol	2 <sup>nd</sup> Vol	3 <sup>rd</sup> Vol	4 <sup>th</sup> Vol	5 <sup>th</sup> Vol	Post Sampling
Time (military)							
pH (s.u.)	5.7	5.9	5.9	5.9			
Specific Conductivity (µmhos/cm)	170	182	184	185			
Water Temperature (°C)	18.2	18.0	18.1	18.1			
Dissolved Oxygen	0.7	0.7	0.7	0.8			
PID readings, if required							

Remarks: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



**South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program**

**Field Data Information Sheet for Ground Water Sampling**

Date (mm/dd/yy): \_\_\_\_\_  
 Field Personnel: \_\_\_\_\_  
 General Weather Conditions: \_\_\_\_\_  
 Ambient Air Temperature: \_\_\_\_\_ °C

Quality Assurance

pH Meter serial no. _____	Conductivity Meter serial no. _____
pH = 4.0 _____	standard _____
pH = 7.0 _____	standard _____
pH = 10.0 _____	standard _____

Chain of Custody

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name Highway 11 Grocery Job # 302169  
 Site ID # 03439 Monitoring Well # 5  
 Water Supply Well Public \_\_\_\_\_ Private \_\_\_\_\_  
 Monitoring Well Diameter (D): \_\_\_\_\_ feet

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C = 0.163  
 for a 4 inch well C = 0.652

\*Free Product Thickness \_\_\_\_\_ feet  
 Depth to Ground Water (DGW) \_\_\_\_\_ feet  
 Total Well Depth (TWD) \_\_\_\_\_ feet  
 Length of the water column (LWC = TWD-DGW) \_\_\_\_\_ feet  
 1 casing volume (CV = LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals.  
 3 casing volume (3 X CV) = \_\_\_\_\_ gals (standard purge volume)

Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals  
 \* If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1 <sup>st</sup> Vol	2 <sup>nd</sup> Vol	3 <sup>rd</sup> Vol	4 <sup>th</sup> Vol	5 <sup>th</sup> Vol	Post Sampling
Time (military)							
pH (s.u.)	4.5	4.0	5.0	5.1			
Specific Conductivity (µmhos/cm)	298	300	306	304			
Water Temperature (°C)	18.3	18.6	18.5	18.5			
Dissolved Oxygen	4.5	4.5	4.6	4.6			
PID readings, if required							

Remarks: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program**

**Field Data Information Sheet for Ground Water Sampling**

Date (mm/dd/yy): \_\_\_\_\_  
 Field Personnel: \_\_\_\_\_  
 General Weather Conditions: \_\_\_\_\_

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Ambient Air Temperature: \_\_\_\_\_ °C

Quality Assurance

pH Meter serial no. _____	Conductivity Meter serial no. _____
pH = 4.0 _____	standard _____
pH = 7.0 _____	standard _____
pH = 10.0 _____	standard _____

Chain of Custody

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name Highway 11 Grocery Job # 302169  
 Site ID # 03439 Monitoring Well # 6  
 Water Supply Well Public Private  
 Monitoring Well Diameter (D): \_\_\_\_\_ feet  
 Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C = 0.163  
 for a 4 inch well C = 0.652

\*Free Product Thickness \_\_\_\_\_ feet  
 Depth to Ground Water (DGW) \_\_\_\_\_ feet  
 Total Well Depth (TWD) \_\_\_\_\_ feet  
 Length of the water column (LWC = TWD-DGW) \_\_\_\_\_ feet  
 1 casing volume (CV = LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals  
 3 casing volume (3 X CV) = \_\_\_\_\_ gals (standard purge volume)

Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals  
 \* If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1 <sup>st</sup> Vol	2 <sup>nd</sup> Vol	3 <sup>rd</sup> Vol	4 <sup>th</sup> Vol	5 <sup>th</sup> Vol	Post Sampling
Time (military)							
pH (s.u.)	5.7	5.7	5.7	5.7			
Specific Conductivity (µmhos/cm)	130	130	130	131			
Water Temperature (°C)	19.	19.1	19.1	19.1			
Dissolved Oxygen	1.1	1.2	1.1	1.2			
PID readings, if required							

Remarks: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program**

**Field Data Information Sheet for Ground Water Sampling**

Date (mm/dd/yy): \_\_\_\_\_

Field Personnel: \_\_\_\_\_

General Weather Conditions: \_\_\_\_\_

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Ambient Air Temperature: \_\_\_\_\_ °C

Quality Assurance

pH Meter serial no. _____	Conductivity Meter serial no. _____
pH = 4.0 _____	standard _____
pH = 7.0 _____	standard _____
pH = 10.0 _____	standard _____

Chain of Custody

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name Highway 11 Grocery Job # 302169

Site ID # 03439 Monitoring Well # mwd 9

Water Supply Well Public Private \_\_\_\_\_

Monitoring Well Diameter (D): \_\_\_\_\_ feet

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C = 0.163  
for a 4 inch well C = 0.652

\*Free Product Thickness \_\_\_\_\_ feet

Depth to Ground Water (DGW) \_\_\_\_\_ feet

Total Well Depth (TWD) \_\_\_\_\_ feet

Length of the water column (LWC = TWD-DGW) \_\_\_\_\_ feet

1 casing volume (CV = LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals

3 casing volume (3 X CV) = \_\_\_\_\_ gals (standard purge volume)

Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals

\* If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1 <sup>st</sup> Vol	2 <sup>nd</sup> Vol	3 <sup>rd</sup> Vol	4 <sup>th</sup> Vol	5 <sup>th</sup> Vol	Post Sampling
Time (military)							
pH (s.u.)	6.0	6.1	6.2	6.2			
Specific Conductivity (µmhos/cm)	240	200	222	221			
Water Temperature (°C)	17.2	17.2	17.2	17.2			
Dissolved Oxygen	2.7	2.7	2.8	2.8			
PLD readings, if required							

Remarks: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program**

**Field Data Information Sheet for Ground Water Sampling**

Date (mm/dd/yy): \_\_\_\_\_

Field Personnel: \_\_\_\_\_

General Weather Conditions: \_\_\_\_\_

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Ambient Air Temperature: \_\_\_\_\_ °C

Quality Assurance

pH Meter	Conductivity Meter
serial no. _____	serial no. _____
pH = 4.0 _____	standard _____
pH = 7.0 _____	standard _____
pH = 10.0 _____	standard _____

Chain of Custody

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name Highway 11 Grocery Job # 302169

Site ID # 03439 Monitoring Well # MW-10

Water Supply Well Public Private \_\_\_\_\_

Monitoring Well Diameter (D): \_\_\_\_\_ feet

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C = 0.163  
for a 4 inch well C = 0.652

\*Free Product Thickness \_\_\_\_\_ feet

Depth to Ground Water (DGW) \_\_\_\_\_ feet

Total Well Depth (TWD) \_\_\_\_\_ feet

Length of the water column (LWC = TWD-DGW) \_\_\_\_\_ feet

1 casing volume (CV = LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals

3 casing volume (3 X CV) = \_\_\_\_\_ gals (standard purge volume)

Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals

\* If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1 <sup>st</sup> Vol	2 <sup>nd</sup> Vol	3 <sup>rd</sup> Vol	4 <sup>th</sup> Vol	5 <sup>th</sup> Vol	Post Sampling
Time (military)							
pH (s.u.)	5.7	5.8	5.8	5.7			
Specific Conductivity (µmhos/cm)	265	258	255	256			
Water Temperature (°C)	18.0	18.0	18.0	18.0			
Dissolved Oxygen	3.4	3.4	3.4	3.4			
PLD readings, if required							

Remarks: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program**

**Field Data Information Sheet for Ground Water Sampling**

Date (mm/dd/yy): \_\_\_\_\_

Field Personnel: \_\_\_\_\_

General Weather Conditions: \_\_\_\_\_

Ambient Air Temperature: \_\_\_\_\_ °C

Quality Assurance

pH Meter serial no. _____	Conductivity Meter serial no. _____
pH = 4.0 _____	standard _____
pH = 7.0 _____	standard _____
pH = 10.0 _____	standard _____

Chain of Custody

\_\_\_\_\_

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name Highway 11 Grocery Job # 302169

Site ID # 03439 Monitoring Well # HW-11

Water Supply Well Public Private \_\_\_\_\_

Monitoring Well Diameter (D): \_\_\_\_\_ feet

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C = 0.163  
for a 4 inch well C = 0.652

\*Free Product Thickness \_\_\_\_\_ feet

Depth to Ground Water (DGW) \_\_\_\_\_ feet

Total Well Depth (TWD) \_\_\_\_\_ feet

Length of the water column (LWC = TWD-DGW) \_\_\_\_\_ feet

1 casing volume (CV = LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals

3 casing volume (3 X CV) = \_\_\_\_\_ gals (standard purge volume)

Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals

\* If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1 <sup>st</sup> Vol	2 <sup>nd</sup> Vol	3 <sup>rd</sup> Vol	4 <sup>th</sup> Vol	5 <sup>th</sup> Vol	Post Sampling
Time (military)							
pH (s.u.)	5.6	5.6	5.5	5.5			
Specific Conductivity (µmhos/cm)	278	270	272	271			
Water Temperature (°C)	17.9	17.9	17.9	17.9			
Dissolved Oxygen	3.7	3.8	3.8	3.9			
PID readings, if required							

Remarks: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program**

**Field Data Information Sheet for Ground Water Sampling**

Date (mm/dd/yy): \_\_\_\_\_  
 Field Personnel: \_\_\_\_\_  
 General Weather Conditions: \_\_\_\_\_  
 \_\_\_\_\_  
 Ambient Air Temperature: \_\_\_\_\_ °C  
 \_\_\_\_\_  
 Quality Assurance  
 \_\_\_\_\_  
 pH Meter serial no. \_\_\_\_\_ Conductivity Meter serial no. \_\_\_\_\_  
 pH = 4.0 \_\_\_\_\_ standard \_\_\_\_\_  
 pH = 7.0 \_\_\_\_\_ standard \_\_\_\_\_  
 pH = 10.0 \_\_\_\_\_ standard \_\_\_\_\_  
 Chain of Custody  
 \_\_\_\_\_  
 Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name Highway 11 Grocery Job # 302169  
 Site ID # 03439 Monitoring Well # MW-12  
 Water Supply Well Public Private  
 Monitoring Well Diameter (D): \_\_\_\_\_ feet  
 Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C = 0.163  
 for a 4 inch well C = 0.652  
 \*Free Product Thickness \_\_\_\_\_ feet  
 Depth to Ground Water (DGW) \_\_\_\_\_ feet  
 Total Well Depth (TWD) \_\_\_\_\_ feet  
 Length of the water column (LWC = TWD-DGW) \_\_\_\_\_ feet  
 1 casing volume (CV = LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals  
 3 casing volume (3 X CV) = \_\_\_\_\_ gals (standard purge volume)  
 Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals  
 \* If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1 <sup>st</sup> Vol	2 <sup>nd</sup> Vol	3 <sup>rd</sup> Vol	4 <sup>th</sup> Vol	5 <sup>th</sup> Vol	Post Sampling
Time (military)							
pH (s.u.)	6.5	6.5	6.2	6.1			
Specific Conductivity (µmhos/cm)	220	240	244	244			
Water Temperature (°C)	17.0	17.0	17.0	17.0			
Dissolved Oxygen	3.5	2.9	2.8	2.8			
PID readings, if required							

Remarks: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program**

**Field Data Information Sheet for Ground Water Sampling**

Date (mm/dd/yy): \_\_\_\_\_

Field Personnel: \_\_\_\_\_

General Weather Conditions: \_\_\_\_\_

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Ambient Air Temperature: \_\_\_\_\_ °C

Quality Assurance

pH Meter serial no. _____	Conductivity Meter serial no. _____
pH = 4.0 _____	standard _____
pH = 7.0 _____	standard _____
pH = 10.0 _____	standard _____

Chain of Custody

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name Highway 11 Grocery Job # 302169

Site ID # 03439 Monitoring Well # Dmwr-1

Water Supply Well Public \_\_\_\_\_ Private \_\_\_\_\_

Monitoring Well Diameter (D): \_\_\_\_\_ feet

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C = 0.163  
for a 4 inch well C = 0.652

\*Free Product Thickness \_\_\_\_\_ feet

Depth to Ground Water (DGW) \_\_\_\_\_ feet

Total Well Depth (TWD) \_\_\_\_\_ feet

Length of the water column (LWC = TWD-DGW) \_\_\_\_\_ feet

1 casing volume (CV = LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals

3 casing volume (3 X CV) = \_\_\_\_\_ gals (standard purge volume)

Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals

\* If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1 <sup>st</sup> Vol	2 <sup>nd</sup> Vol	3 <sup>rd</sup> Vol	4 <sup>th</sup> Vol	5 <sup>th</sup> Vol	Post Sampling
Time (military)							
pH (s.u.)	5.8	5.8	5.7	5.8			
Specific Conductivity (µmhos/cm)	170	190	179	178			
Water Temperature (°C)	19.8	19.7	17.8	19.7			
Dissolved Oxygen	3.9	3.8	3.9	4.0			
PID readings, if required							

Remarks: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program**

**Field Data Information Sheet for Ground Water Sampling**

Date (mm/dd/yy): \_\_\_\_\_  
 Field Personnel: \_\_\_\_\_  
 General Weather Conditions: \_\_\_\_\_  
 \_\_\_\_\_  
 Ambient Air Temperature: \_\_\_\_\_ °C  
 \_\_\_\_\_  
 Quality Assurance  
 \_\_\_\_\_  
 pH Meter serial no. \_\_\_\_\_ Conductivity Meter serial no. \_\_\_\_\_  
 pH = 4.0 \_\_\_\_\_ standard \_\_\_\_\_  
 pH = 7.0 \_\_\_\_\_ standard \_\_\_\_\_  
 pH = 10.0 \_\_\_\_\_ standard \_\_\_\_\_  
 Chain of Custody  
 \_\_\_\_\_  
 Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name Highway 11 Grocery Job # 302169  
 Site ID # 03439 Monitoring Well # Dgw-2  
 Water Supply Well Public \_\_\_\_\_ Private \_\_\_\_\_  
 Monitoring Well Diameter (D): \_\_\_\_\_ feet  
 Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C = 0.163  
 for a 4 inch well C = 0.652  
 \*Free Product Thickness \_\_\_\_\_ feet  
 Depth to Ground Water (DGW) \_\_\_\_\_ feet  
 Total Well Depth (TWD) \_\_\_\_\_ feet  
 Length of the water column (LWC = TWD-DGW) \_\_\_\_\_ feet  
 1 casing volume (CV = LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals  
 3 casing volume (3 X CV) = \_\_\_\_\_ gals (standard purge volume)  
 Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals  
 \* If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1 <sup>st</sup> Vol	2 <sup>nd</sup> Vol	3 <sup>rd</sup> Vol	4 <sup>th</sup> Vol	5 <sup>th</sup> Vol	Post Sampling
Time (military)							
pH (s.u.)	6.8	7.0	6.6	6.6			
Specific Conductivity (µmhos/cm)	100	250	221	222			
Water Temperature (°C)	17.6	17.6	17.6	17.6			
Dissolved Oxygen	3.0	3.2	3.7	3.7			
PID readings, if required							

Remarks: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



**South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program**

**Field Data Information Sheet for Ground Water Sampling**

Date (mm/dd/yy): \_\_\_\_\_

Field Personnel: \_\_\_\_\_

General Weather Conditions: \_\_\_\_\_

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Ambient Air Temperature: \_\_\_\_\_ °C

Quality Assurance

pH Meter serial no. _____	Conductivity Meter serial no. _____
pH = 4.0 _____	standard _____
pH = 7.0 _____	standard _____
pH = 10.0 _____	standard _____

Chain of Custody

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name Highway 11 Grocery Job # 302169

Site ID # 03439 Monitoring Well # DMW-4

Water Supply Well Public \_\_\_\_\_ Private \_\_\_\_\_

Monitoring Well Diameter (D): \_\_\_\_\_ feet

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C = 0.163  
for a 4 inch well C = 0.652

\*Free Product Thickness \_\_\_\_\_ feet

Depth to Ground Water (DGW) \_\_\_\_\_ feet

Total Well Depth (TWD) \_\_\_\_\_ feet

Length of the water column (LWC = TWD-DGW) \_\_\_\_\_ feet

1 casing volume (CV = LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals

3 casing volume (3 X CV) = \_\_\_\_\_ gals (standard purge volume)

Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals

\* If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1 <sup>st</sup> Vol	2 <sup>nd</sup> Vol	3 <sup>rd</sup> Vol	4 <sup>th</sup> Vol	5 <sup>th</sup> Vol	Post Sampling
Time (military)							
pH (s.u.)	5.7	5.8	5.8	5.9			
Specific Conductivity (µmhos/cm)	172	170	192	193			
Water Temperature (°C)	19.7	19.8	19.8	19.8			
Dissolved Oxygen	4.1	4.1	4.0	4.1			
PLD readings, if required							

Remarks: \_\_\_\_\_

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**APPENDIX D**  
**Laboratory Analytical Results and Chain-of-Custody**



IT'S ALL IN THE CHEMISTRY

04/04/06

**Technical Report for**

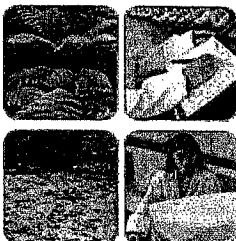
**SEI-Columbia, SC**

**Hwy 11 Grocery; Salem, SC**

**302169**

**Accutest Job Number: F39531**

**Sampling Date: 03/22/06**

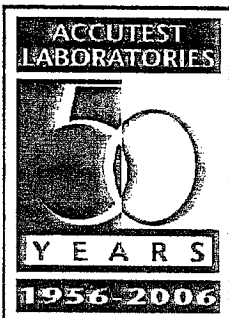


**Report to:**

**SEI-Charlotte, NC  
5100 Regan Drive  
Suite 7  
Charlotte, NC 28206**

**ATTN: Douglas Parker**

**Total number of pages in report: 35**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

*Harry Behzadi*  
**Harry Behzadi, Ph.D.  
Laboratory Director**

Certifications: FL (DOH E83510), NC (573), NJ (FL002), MA (FL946), IA (366), LA (03051), KS (E-10327), SC, AK  
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### Sample Summary

SEI-Columbia, SC

Job No: F39531

Hwy 11 Grocery; Salem, SC  
Project No: 302169

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
F39531-1	03/22/06	14:00 DM	03/24/06	AQ	Ground Water	CK #1
F39531-2	03/22/06	14:10 DM	03/24/06	AQ	Ground Water	CK #3
F39531-3	03/22/06	14:20 DM	03/24/06	AQ	Ground Water	MW #9
F39531-4	03/22/06	14:30 DM	03/24/06	AQ	Ground Water	MW #12
F39531-5	03/22/06	14:45 DM	03/24/06	AQ	Ground Water	DMW-2
F39531-6	03/22/06	15:00 DM	03/24/06	AQ	Ground Water	MW-11
F39531-7	03/22/06	15:15 DM	03/24/06	AQ	Ground Water	MW-10
F39531-8	03/22/06	15:30 DM	03/24/06	AQ	Ground Water	MW-6
F39531-9	03/22/06	15:45 DM	03/24/06	AQ	Ground Water	DMW-4
F39531-10	03/22/06	16:00 DM	03/24/06	AQ	Ground Water	DMW-1
F39531-11	03/22/06	16:15 DM	03/24/06	AQ	Ground Water	MW-1
F39531-12	03/22/06	16:30 DM	03/24/06	AQ	Ground Water	MW-4
F39531-13	03/22/06	16:45 DM	03/24/06	AQ	Ground Water	MW-3

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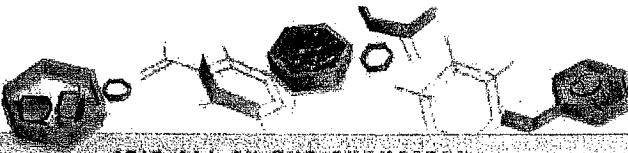
### Sample Summary (continued)

SEI-Columbia, SC

Job No: F39531

Hwy 11 Grocery; Salem, SC  
Project No: 302169

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
F39531-14	03/22/06	17:00 DM	03/24/06	AQ	Ground Water	MW-2
F39531-15	03/22/06	17:15 DM	03/24/06	AQ	Ground Water	MW-51
F39531-16	03/22/06	17:30 DM	03/24/06	AQ	Ground Water	WW-1



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Sample Results

Report of Analysis

Report of Analysis

Client Sample ID: MW-1	Date Sampled: 03/22/06
Lab Sample ID: F39531-11	Date Received: 03/24/06
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260B	
Project: Hwy 11 Grocery; Salem, SC	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N0010781.D	2000	03/30/06	CS	n/a	n/a	VN456
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE, Naphthalene

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	20700	2000	ug/l	
108-88-3	Toluene	41100	2000	ug/l	
100-41-4	Ethylbenzene	3100	2000	ug/l	
1330-20-7	Xylene (total)	11700	6000	ug/l	
1634-04-4	Methyl Tert Butyl Ether	103000	2000	ug/l	
91-20-3	Naphthalene	ND	4000	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	109%		86-115%
17060-07-0	1,2-Dichloroethane-D4	118%		73-126%
2037-26-5	Toluene-D8	90%		86-112%
460-00-4	4-Bromofluorobenzene	97%		83-119%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound



### Report of Analysis

Client Sample ID: MW-2	Date Sampled: 03/22/06
Lab Sample ID: F39531-14	Date Received: 03/24/06
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260B	
Project: Hwy 11 Grocery; Salem, SC	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N0010775.D	1	03/30/06	CS	n/a	n/a	VN456
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE, Naphthalene

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	11.8	1.0	ug/l	
108-88-3	Toluene	4.2	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	3.4	3.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
91-20-3	Naphthalene	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	113%		86-115%
17060-07-0	1,2-Dichloroethane-D4	118%		73-126%
2037-26-5	Toluene-D8	89%		86-112%
460-00-4	4-Bromofluorobenzene	93%		83-119%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-3	Date Sampled: 03/22/06
Lab Sample ID: F39531-13	Date Received: 03/24/06
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260B	
Project: Hwy 11 Grocery; Salem, SC	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N0010774.D	1	03/30/06	CS	n/a	n/a	VN456
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE, Naphthalene

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	1.4	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	3.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
91-20-3	Naphthalene	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	109%		86-115%
17060-07-0	1,2-Dichloroethane-D4	119%		73-126%
2037-26-5	Toluene-D8	89%		86-112%
460-00-4	4-Bromofluorobenzene	94%		83-119%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

### Report of Analysis

Client Sample ID: MW-4	Date Sampled: 03/22/06
Lab Sample ID: F39531-12	Date Received: 03/24/06
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260B	
Project: Hwy 11 Grocery; Salem, SC	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N0010799.D	1	03/31/06	CS	n/a	n/a	VN457
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE, Naphthalene

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	3.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	1.2	1.0	ug/l	
91-20-3	Naphthalene	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	106%		86-115%
17060-07-0	1,2-Dichloroethane-D4	115%		73-126%
2037-26-5	Toluene-D8	94%		86-112%
460-00-4	4-Bromofluorobenzene	94%		83-119%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

### Report of Analysis

Client Sample ID:	MW-51	Date Sampled:	03/22/06
Lab Sample ID:	F39531-15	Date Received:	03/24/06
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	Hwy 11 Grocery; Salem, SC		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N0010788.D	1	03/30/06	CS	n/a	n/a	VN456
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE, Naphthalene

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	3.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
91-20-3	Naphthalene	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	109%		86-115%
17060-07-0	1,2-Dichloroethane-D4	117%		73-126%
2037-26-5	Toluene-D8	92%		86-112%
460-00-4	4-Bromofluorobenzene	95%		83-119%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

2.8  
2

Client Sample ID: MW-6	Date Sampled: 03/22/06
Lab Sample ID: F39531-8	Date Received: 03/24/06
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260B	
Project: Hwy 11 Grocery; Salem, SC	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N0010779.D	100	03/30/06	CS	n/a	n/a	VN456
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

**Purgeable Aromatics, MTBE, Naphthalene**

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	1280	100	ug/l	
108-88-3	Toluene	3480	100	ug/l	
100-41-4	Ethylbenzene	399	100	ug/l	
1330-20-7	Xylene (total)	2880	300	ug/l	
1634-04-4	Methyl Tert Butyl Ether	8600	100	ug/l	
91-20-3	Naphthalene	ND	200	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	113%		86-115%
17060-07-0	1,2-Dichloroethane-D4	118%		73-126%
2037-26-5	Toluene-D8	88%		86-112%
460-00-4	4-Bromofluorobenzene	93%		83-119%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW #9	Date Sampled: 03/22/06
Lab Sample ID: F39531-3	Date Received: 03/24/06
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260B	
Project: Hwy 11 Grocery; Salem, SC	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N0010786.D	1	03/30/06	CS	n/a	n/a	VN456
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE, Naphthalene

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	1.5	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	3.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
91-20-3	Naphthalene	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	113%		86-115%
17060-07-0	1,2-Dichloroethane-D4	118%		73-126%
2037-26-5	Toluene-D8	90%		86-112%
460-00-4	4-Bromofluorobenzene	94%		83-119%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

Report of Analysis

2.7  
2

Client Sample ID: MW-10	Date Sampled: 03/22/06
Lab Sample ID: F39531-7	Date Received: 03/24/06
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260B	
Project: Hwy 11 Grocery; Salem, SC	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N0010845.D	1	04/03/06	CS	n/a	n/a	VN458
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE, Naphthalene

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	3.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
91-20-3	Naphthalene	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		86-115%
17060-07-0	1,2-Dichloroethane-D4	91%		73-126%
2037-26-5	Toluene-D8	96%		86-112%
460-00-4	4-Bromofluorobenzene	102%		83-119%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID: MW-11 Lab Sample ID: F39531-6 Matrix: AQ - Ground Water Method: SW846 8260B Project: Hwy 11 Grocery; Salem, SC	Date Sampled: 03/22/06 Date Received: 03/24/06 Percent Solids: n/a
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Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N0010772.D	1	03/30/06	CS	n/a	n/a	VN456
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

**Purgeable Aromatics, MTBE, Naphthalene**

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	3.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	1.9	1.0	ug/l	
91-20-3	Naphthalene	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	113%		86-115%
17060-07-0	1,2-Dichloroethane-D4	122%		73-126%
2037-26-5	Toluene-D8	89%		86-112%
460-00-4	4-Bromofluorobenzene	94%		83-119%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound



### Report of Analysis

Client Sample ID: MW #12	Date Sampled: 03/22/06
Lab Sample ID: F39531-4	Date Received: 03/24/06
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260B	
Project: Hwy 11 Grocery; Salem, SC	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N0010787.D	1	03/30/06	CS	n/a	n/a	VN456
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE, Naphthalene

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	1.5	1.0	ug/l	
108-88-3	Toluene	24.8	1.0	ug/l	
100-41-4	Ethylbenzene	10.1	1.0	ug/l	
1330-20-7	Xylene (total)	58.6	3.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
91-20-3	Naphthalene	11.3	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	111%		86-115%
17060-07-0	1,2-Dichloroethane-D4	120%		73-126%
2037-26-5	Toluene-D8	88%		86-112%
460-00-4	4-Bromofluorobenzene	87%		83-119%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: DMW-1	Date Sampled: 03/22/06
Lab Sample ID: F39531-10	Date Received: 03/24/06
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260B	
Project: Hwy 11 Grocery; Salem, SC	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N0010798.D	1	03/31/06	CS	n/a	n/a	VN457
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE, Naphthalene

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	3.0	1.0	ug/l	
108-88-3	Toluene	35.1	1.0	ug/l	
100-41-4	Ethylbenzene	16.0	1.0	ug/l	
1330-20-7	Xylene (total)	92.2	3.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	21.9	1.0	ug/l	
91-20-3	Naphthalene	13.1	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	109%		86-115%
17060-07-0	1,2-Dichloroethane-D4	118%		73-126%
2037-26-5	Toluene-D8	93%		86-112%
460-00-4	4-Bromofluorobenzene	93%		83-119%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

### Report of Analysis

Client Sample ID: DMW-2	Date Sampled: 03/22/06
Lab Sample ID: F39531-5	Date Received: 03/24/06
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260B	
Project: Hwy 11 Grocery; Salem, SC	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N0010771.D	1	03/30/06	CS	n/a	n/a	VN456
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE, Naphthalene

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	3.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
91-20-3	Naphthalene	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	112%		86-115%
17060-07-0	1,2-Dichloroethane-D4	118%		73-126%
2037-26-5	Toluene-D8	90%		86-112%
460-00-4	4-Bromofluorobenzene	95%		83-119%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID: DMW-4	Date Sampled: 03/22/06
Lab Sample ID: F39531-9	Date Received: 03/24/06
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260B	
Project: Hwy 11 Grocery; Salem, SC	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N0010773.D	1	03/30/06	CS	n/a	n/a	VN456
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## Purgeable Aromatics, MTBE, Naphthalene

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	3.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
91-20-3	Naphthalene	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	111%		86-115%
17060-07-0	1,2-Dichloroethane-D4	118%		73-126%
2037-26-5	Toluene-D8	89%		86-112%
460-00-4	4-Bromofluorobenzene	94%		83-119%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

### Report of Analysis

Client Sample ID: CK #1	Date Sampled: 03/22/06
Lab Sample ID: F39531-1	Date Received: 03/24/06
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260B	
Project: Hwy 11 Grocery; Salem, SC	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N0010784.D	1	03/30/06	CS	n/a	n/a	VN456
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE, Naphthalene

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	6.6	1.0	ug/l	
108-88-3	Toluene	12.9	1.0	ug/l	
100-41-4	Ethylbenzene	3.2	1.0	ug/l	
1330-20-7	Xylene (total)	15.2	3.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	7.8	1.0	ug/l	
91-20-3	Naphthalene	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	111%		86-115%
17060-07-0	1,2-Dichloroethane-D4	119%		73-126%
2037-26-5	Toluene-D8	88%		86-112%
460-00-4	4-Bromofluorobenzene	93%		83-119%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: CK #3	Date Sampled: 03/22/06
Lab Sample ID: F39531-2	Date Received: 03/24/06
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260B	
Project: Hwy 11 Grocery; Salem, SC	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N0010785.D	1	03/30/06	CS	n/a	n/a	VN456
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE, Naphthalene

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	23.3	1.0	ug/l	
108-88-3	Toluene	49.7	1.0	ug/l	
100-41-4	Ethylbenzene	10.1	1.0	ug/l	
1330-20-7	Xylene (total)	48.2	3.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	33.8	1.0	ug/l	
91-20-3	Naphthalene	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	108%		86-115%
17060-07-0	1,2-Dichloroethane-D4	117%		73-126%
2037-26-5	Toluene-D8	87%		86-112%
460-00-4	4-Bromofluorobenzene	91%		83-119%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

### Report of Analysis

Client Sample ID: WW-1	Date Sampled: 03/22/06
Lab Sample ID: F39531-16	Date Received: 03/24/06
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260B	
Project: Hwy 11 Grocery; Salem, SC	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N0010783.D	1	03/30/06	CS	n/a	n/a	VN456
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE, Naphthalene

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	3.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
91-20-3	Naphthalene	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	111%		86-115%
17060-07-0	1,2-Dichloroethane-D4	121%		73-126%
2037-26-5	Toluene-D8	93%		86-112%
460-00-4	4-Bromofluorobenzene	94%		83-119%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound



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**Misc. Forms**

**Custody Documents and Other Forms**

**Includes the following where applicable:**

- Chain of Custody





CHAIN OF CUSTODY

4405 Vineland Rd., Suite C15
Orlando, FL 32811
407.425.6700, fax 407.425.0707

Accutest Job #: F39531
Accutest Control #:

Client Information: SEI Environmental, Project Name: Highway 11 Grocery, Location: Salem, SC, Project No.: 302169. Collection and Preservation table with columns for Field ID, Date, Time, Matrix, # of bottles, etc. Includes Turnaround Information and Data Deliverable Information sections.

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CHAIN OF CUSTODY

4405 Vineland Rd., Suite C15  
Orlando, FL 32811  
407.425.6700, fax 407.425.0707

Accutest Job #: **F39531**  
Accutest Control #:

31  
3

Client Information			Facility Information			Analytical Information									
Name <b>SEI Environmental</b>			Project Name <b>Highway 11 Grocery</b>												
Address <b>130 Penmarc Dr., Suite 108</b>			Location <b>Salem, SC</b>												
City <b>Raleigh</b>			Project No. <b>302169</b>												
State <b>NC</b>			Zip <b>27603</b>												
Send Report to: Phone #: <b>919-832-2635</b>			FAX #: <b>919-832-9914</b>												
Field ID / Point of Collection	Date	Time	Sampled By	Matrix	# of bottles	Preservation									
						REF	COOL	SHAKE	STABIL	OTHER	None				
MW-#1	3/22/06	4:15pm	AW	H <sub>2</sub> O	3	Y							X		
MW-#4	3/22/06	4:30pm	AW	H <sub>2</sub> O	2	Y							X		
MW-3	3/22/06	4:45pm	AW	H <sub>2</sub> O	3	Y							X		
MW-2	3/22/06	5:00pm	AW	H <sub>2</sub> O	3	Y							X		
MW-5	3/22/06	5:15pm	AW	H <sub>2</sub> O	3	Y							X		
WW-1	3/22/06	5:30pm	AW	H <sub>2</sub> O	3	Y							X		
Turnaround Information			Date Deliverable Information			Comments / Remarks									
<input checked="" type="checkbox"/> 21 Day Standard <input type="checkbox"/> 14 Day <input type="checkbox"/> 7 Days EMERGENCY <input type="checkbox"/> Other _____ (Days)			Approved By: _____			<input type="checkbox"/> NJ Reduced <input type="checkbox"/> NJ Full <input type="checkbox"/> FULL CLP <input type="checkbox"/> Disk Deliverable <input type="checkbox"/> Other (Specify) _____									
<input type="checkbox"/> Commercial "A" <input type="checkbox"/> Commercial "B" <input type="checkbox"/> ASP Category B <input type="checkbox"/> State Forms															
RUSH TAT is for FAX data Data unless previously approved.															
Sample Custody must be documented below each time samples change possession, including courier delivery.															
Relinquished by Sampler:	Date/Time:	Received By:	Date/Time:	Relinquished By:	Date/Time:	Received By:	Date/Time:	Relinquished By:	Date/Time:	Received By:	Date/Time:	Relinquished By:			
1 <i>[Signature]</i>	7/23/06 1400	1 FX		2 FX	9:15	2 FX	3-24-06	2 <i>[Signature]</i>							
3		3		4		4		4							
5		5													

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F39531: Chain of Custody

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**ACCUTEST LABORATORIES SAMPLE RECEIPT CONFIRMATION**

ACCUTEST'S JOB NUMBER: F39531 CLIENT: SFI PROJECT: Highway 11 Grocery  
 DATE/TIME RECEIVED: 3-24-06/9:15 # OF COOLERS RECEIVED: 1 COOLER TEMPS: 3.8  
 METHOD OF DELIVERY: FEDEX UPS ACCUTEST COURIER GREYHOUND DELIVERY OTHER  
 AIRBILL NUMBERS: 8565-1623-8635

**COOLER INFORMATION**

- CUSTODY SEAL NOT PRESENT OR NOT INTACT
- NO COC RECEIVED
- ANALYSIS REQUESTED IS UNCLEAR OR MISSING
- SAMPLE DATES OR TIMES UNCLEAR OR MISSING
- TEMPERATURE CRITERIA NOT MET

**TRIP BLANK INFORMATION**

- TRIP BLANK NOT PROVIDED
- TRIP BLANK NOT ON COC
- TRIP BLANK INTACT
- TRIP BLANK NOT INTACT
- RECEIVED WATER TRIP BLANK
- RECEIVED SOIL TRIP BLANK

**SAMPLE INFORMATION**

- SAMPLE LABELS PRESENT ON ALL BOTTLES
- CORRECT NUMBER OF CONTAINERS USED
- SAMPLE RECEIVED IMPROPERLY PRESERVED
- INSUFFICIENT VOLUME FOR ANALYSIS
- TIMES ON COC DON'T MATCH LABEL
- ID'S ON COC DON'T MATCH LABEL
- VOC VIALS HAVE HEADSPACE (MACRO BUBBLES)
- BOTTLES RECEIVED BUT ANALYSIS NOT REQUESTED
- NO BOTTLES RECEIVED FOR ANALYSIS REQUESTED
- UNCLEAR FILTERING INSTRUCTIONS
- UNCLEAR COMPOSITING INSTRUCTIONS
- SAMPLE(S) RECEIVED BROKEN
- % SOLIDS JAR NOT RECEIVED

**SOIL INFORMATION**

NUMBER OF ENCORES ? 0  
 NUMBER OF 8035 FIELD KITS ? 0

SUMMARY OF COMMENTS: Received 3x40ml (LHC) vials for t1B. with no sample present inside.

TECHNICIAN SIGNATURE/DATE Stewart Brown / 3-24-06 TECHNICIAN SIGNATURE/DATE \_\_\_\_\_

ASBD06/22/05

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F39531: Chain of Custody

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### GC/MS Volatiles

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### QC Data Summaries

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Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

# Method Blank Summary

Job Number: F39531  
Account: SEISCC SEI-Columbia, SC  
Project: Hwy 11 Grocery; Salem, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VN456-MB	N0010766.D 1		03/30/06	CS	n/a	n/a	VN456

4.1  
4

The QC reported here applies to the following samples:

Method: SW846 8260B

F39531-1, F39531-2, F39531-3, F39531-4, F39531-5, F39531-6, F39531-8, F39531-9, F39531-11, F39531-13, F39531-14, F39531-15, F39531-16

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
91-20-3	Naphthalene	ND	2.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	3.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	109%	86-115%
17060-07-0	1,2-Dichloroethane-D4	114%	73-126%
2037-26-5	Toluene-D8	90%	86-112%
460-00-4	4-Bromofluorobenzene	95%	83-119%

# Method Blank Summary

Job Number: F39531  
 Account: SEISCC SEI-Columbia, SC  
 Project: Hwy 11 Grocery; Salem, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VN457-MB	N0010797.D	1	03/31/06	CS	n/a	n/a	VN457

4.1  
4

The QC reported here applies to the following samples:

Method: SW846 8260B

F39531-10, F39531-12

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
91-20-3	Naphthalene	ND	2.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	3.0	ug/l	

CAS No.	Surrogate Recoveries	Limits	
1868-53-7	Dibromofluoromethane	105%	86-115%
17060-07-0	1,2-Dichloroethane-D4	116%	73-126%
2037-26-5	Toluene-D8	94%	86-112%
460-00-4	4-Bromofluorobenzene	93%	83-119%

# Method Blank Summary

Job Number: F39531  
Account: SEISCC SEI-Columbia, SC  
Project: Hwy 11 Grocery; Salem, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VN458-MB	N0010830.D	1	04/03/06	CS	n/a	n/a	VN458

4.1  
4

The QC reported here applies to the following samples:

Method: SW846 8260B

F39531-7

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
91-20-3	Naphthalene	ND	2.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	3.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	99%	86-115%
17060-07-0	1,2-Dichloroethane-D4	86%	73-126%
2037-26-5	Toluene-D8	95%	86-112%
460-00-4	4-Bromofluorobenzene	102%	83-119%

# Blank Spike Summary

Job Number: F39531  
 Account: SEISCC SEI-Columbia, SC  
 Project: Hwy 11 Grocery; Salem, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VN456-BS	N0010765.D	1	03/30/06	CS	n/a	n/a	VN456

The QC reported here applies to the following samples:

Method: SW846 8260B

F39531-1, F39531-2, F39531-3, F39531-4, F39531-5, F39531-6, F39531-8, F39531-9, F39531-11, F39531-13, F39531-14, F39531-15, F39531-16

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	25	29.3	117	80-120
100-41-4	Ethylbenzene	25	27.1	108	82-115
1634-04-4	Methyl Tert Butyl Ether	25	26.9	108	67-127
91-20-3	Naphthalene	25	21.1	84	62-129
108-88-3	Toluene	25	25.1	100	81-114
1330-20-7	Xylene (total)	75	73.0	97	81-118

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	108%	86-115%
17060-07-0	1,2-Dichloroethane-D4	114%	73-126%
2037-26-5	Toluene-D8	93%	86-112%
460-00-4	4-Bromofluorobenzene	92%	83-119%

4.2  
4



# Blank Spike Summary

Job Number: F39531  
Account: SEISCC SEI-Columbia, SC  
Project: Hwy 11 Grocery; Salem, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VN457-BS	N0010796.D 1		03/31/06	CS	n/a	n/a	VN457

4.2  
4

The QC reported here applies to the following samples:

Method: SW846 8260B

F39531-10, F39531-12

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	25	25.9	104	80-120
100-41-4	Ethylbenzene	25	26.0	104	82-115
1634-04-4	Methyl Tert Butyl Ether	25	23.9	96	67-127
91-20-3	Naphthalene	25	21.1	84	62-129
108-88-3	Toluene	25	24.5	98	81-114
1330-20-7	Xylene (total)	75	70.1	93	81-118

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	104%	86-115%
17060-07-0	1,2-Dichloroethane-D4	113%	73-126%
2037-26-5	Toluene-D8	97%	86-112%
460-00-4	4-Bromofluorobenzene	92%	83-119%

# Blank Spike Summary

Job Number: F39531  
 Account: SEISCC SEI-Columbia, SC  
 Project: Hwy 11 Grocery; Salem, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VN458-BS	N0010832.D	1	04/03/06	CS	n/a	n/a	VN458

4.2  
4

The QC reported here applies to the following samples:

Method: SW846 8260B

F39531-7

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	25	26.5	106	80-120
100-41-4	Ethylbenzene	25	25.3	101	82-115
1634-04-4	Methyl Tert Butyl Ether	25	21.8	87	67-127
91-20-3	Naphthalene	25	22.6	90	62-129
108-88-3	Toluene	25	23.9	96	81-114
1330-20-7	Xylene (total)	75	65.7	88	81-118

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	100%	86-115%
17060-07-0	1,2-Dichloroethane-D4	85%	73-126%
2037-26-5	Toluene-D8	93%	86-112%
460-00-4	4-Bromofluorobenzene	98%	83-119%

# Matrix Spike/Matrix Spike Duplicate Summary

Job Number: F39531  
 Account: SEISCC SEI-Columbia, SC  
 Project: Hwy 11 Grocery; Salem, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
F39531-5MS	N0010776.D	1	03/30/06	CS	n/a	n/a	VN456
F39531-5MSD	N0010777.D	1	03/30/06	CS	n/a	n/a	VN456
F39531-5	N0010771.D	1	03/30/06	CS	n/a	n/a	VN456

The QC reported here applies to the following samples:

Method: SW846 8260B

F39531-1, F39531-2, F39531-3, F39531-4, F39531-5, F39531-6, F39531-8, F39531-9, F39531-11, F39531-13, F39531-14, F39531-15, F39531-16

CAS No.	Compound	F39531-5 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND	25	28.2	113	27.7	111	2	72-125/7
100-41-4	Ethylbenzene	ND	25	25.9	104	25.3	101	2	73-119/8
1634-04-4	Methyl Tert Butyl Ether	ND	25	26.9	108	26.9	108	0	61-129/9
91-20-3	Naphthalene	ND	25	21.9	88	21.5	86	2	52-127/13
108-88-3	Toluene	ND	25	24.2	97	24.0	96	1	67-123/8
1330-20-7	Xylene (total)	ND	75	71.4	95	69.2	92	3	73-122/7

CAS No.	Surrogate Recoveries	MS	MSD	F39531-5	Limits
1868-53-7	Dibromofluoromethane	111%	107%	112%	86-115%
17060-07-0	1,2-Dichloroethane-D4	116%	117%	118%	73-126%
2037-26-5	Toluene-D8	90%	92%	90%	86-112%
460-00-4	4-Bromofluorobenzene	93%	94%	95%	83-119%

# Matrix Spike/Matrix Spike Duplicate Summary

Job Number: F39531  
 Account: SEISCC SEI-Columbia, SC  
 Project: Hwy 11 Grocery; Salem, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
F39527-7MS	N0010809.D	1	03/31/06	CS	n/a	n/a	VN457
F39527-7MSD	N0010810.D	1	03/31/06	CS	n/a	n/a	VN457
F39527-7	N0010803.D	1	03/31/06	CS	n/a	n/a	VN457

The QC reported here applies to the following samples:

Method: SW846 8260B

F39531-10, F39531-12

CAS No.	Compound	F39527-7 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	1.9		25	28.3	106	27.4	102	3	72-125/7
100-41-4	Ethylbenzene	ND		25	26.1	104	25.8	103	1	73-119/8
1634-04-4	Methyl Tert Butyl Ether	2.6		25	27.9	101	27.2	98	3	61-129/9
91-20-3	Naphthalene	ND		25	23.7	95	25.0	100	5	52-127/13
108-88-3	Toluene	1.7		25	25.6	96	25.3	94	1	67-123/8
1330-20-7	Xylene (total)	ND		75	72.3	96	72.1	96	0	73-122/7

CAS No.	Surrogate Recoveries	MS	MSD	F39527-7	Limits
1868-53-7	Dibromofluoromethane	108%	105%	107%	86-115%
17060-07-0	1,2-Dichloroethane-D4	115%	116%	116%	73-126%
2037-26-5	Toluene-D8	95%	97%	93%	86-112%
460-00-4	4-Bromofluorobenzene	91%	95%	95%	83-119%

# Matrix Spike/Matrix Spike Duplicate Summary

Job Number: F39531  
 Account: SEISCC SEI-Columbia, SC  
 Project: Hwy 11 Grocery; Salem, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
F39586-2MS	N0010842.D	1	04/03/06	CS	n/a	n/a	VN458
F39586-2MSD	N0010843.D	1	04/03/06	CS	n/a	n/a	VN458
F39586-2	N0010837.D	1	04/03/06	CS	n/a	n/a	VN458

The QC reported here applies to the following samples:

Method: SW846 8260B

F39531-7

CAS No.	Compound	F39586-2 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND	25	25.9	104	25.8	103	0	72-125/7
100-41-4	Ethylbenzene	ND	25	24.7	99	25.0	100	1	73-119/8
1634-04-4	Methyl Tert Butyl Ether	ND	25	21.9	88	21.9	88	0	61-129/9
91-20-3	Naphthalene	ND	25	21.3	85	21.6	86	1	52-127/13
108-88-3	Toluene	ND	25	22.5	90	22.8	91	1	67-123/8
1330-20-7	Xylene (total)	ND	75	63.2	84	64.2	86	2	73-122/7

CAS No.	Surrogate Recoveries	MS	MSD	F39586-2	Limits
1868-53-7	Dibromofluoromethane	102%	101%	100%	86-115%
17060-07-0	1,2-Dichloroethane-D4	90%	90%	89%	73-126%
2037-26-5	Toluene-D8	87%	89%	98%	86-112%
460-00-4	4-Bromofluorobenzene	93%	96%	102%	83-119%



**Environmental, Inc.**

130 Penmarc Drive  
Suite 108  
Raleigh, NC 27603-2470  
800.474.7049  
919.832.2535  
Fax 832.5914

December 14, 2005

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DEC 28 2005

**UNDERGROUND STORAGE  
TANK PROGRAM**

Mr. Joel P. Padgett, P.G., Hydrogeologist  
South Carolina Department of Health and Environmental Control  
Assessment & Corrective Action Section, Underground Storage Tank Program  
2600 Bull Street  
Columbia, South Carolina 29201

**RE: Corrective Action System Evaluation Report  
Highway 11 Grocery  
13527 North SC Highway 11  
Salem, Oconee County, South Carolina  
UST Permit Number: 03439  
SEI Project Number: 302169**

**49-Tech**

Dear Mr. Padgett:

Please find enclosed the quarterly Corrective Action System Evaluation (C.A.S.E) Report for the November 1, 2005, groundwater sampling event at the above referenced site. If you have any questions or comments, please contact me at (919) 832-2535.

Sincerely,  
SEI Environmental, Inc.

Douglas S. Parker  
Project Manager

cc: Mr. John Smith, Highway 11 Grocery



**Environmental, Inc**

**CORRECTIVE ACTION SYSTEM EVALUATION REPORT  
September through November 2005**

**Highway 11 Grocery  
13527 North SC Highway 11  
Salem, South Carolina  
Oconee County  
UST Permit Number: 03439  
SEI Project Number: 302169**

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**UNDERGROUND STORAGE  
TANK PROGRAM**

**PREPARED FOR:**

**Mr. Steve Smith  
Highway 11 Grocery  
13527 North SC Highway 11  
Salem, South Carolina 29676-9801**

**PREPARED BY:**

**SEI ENVIRONMENTAL, INC.  
6190 Regency Parkway, Suite 308  
Norcross, Georgia 30071  
UST Site Rehabilitation Contractor No. 41**

**December 14, 2005**

DEC 28 2005

UNDERGROUND STORAGE  
TANK PROGRAM  
**CORRECTIVE ACTION SYSTEM EVALUATION REPORT**

Submittal Date: December 14, 2005 Monitoring Report Number: 2005 4<sup>th</sup> Quarter  
For Period Covering: August 10, 2005 to November 1, 2005  
Facility Name: Highway 11 Grocery Street Address: 13527 North SC Highway 11  
UST Permit Number: 03439 City: Salem, South Carolina  
County: Oconee Zip Code: 29676-9801  
Latitude: N 35°54'26.02" Longitude: W 82°58'31.29"

Submitted by UST Owner/Operator:

Prepared by Consultant/Contractor:

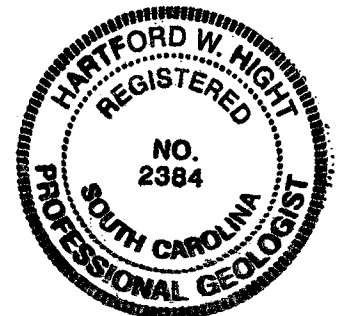
Name: Steve Smith  
Company: Highway 11 Grocery  
Address: 13527 North Highway 11  
City: Salem State: SC  
Zip Code: 29676-9801  
Telephone: (864) 944-0494  
SEI Project Number: 302169

Name: Hartford W. Hight  
Company: SEI Environmental, Inc.  
Address: 6190 Regency Parkway, Suite 308  
City: Norcross State: GA  
Zip Code: 30071  
Telephone: (770) 263-2002  
UST Site Rehabilitation Contractor No. 41

**Registered Professional Engineer or Professional Geologist Certification**

I hereby certify that I have directed and supervised the fieldwork and preparation of this Plan, in accordance with State Rules and Regulations. As a registered professional geologist and/or professional engineer, I certify that I am a qualified groundwater professional, as defined by the South Carolina State Board of Professional Geologists. All of the information and laboratory data in this plan and in all of the attachments are true, accurate, complete, and in accordance with applicable State Rules and Regulations.

Name: Hartford W. Hight, P.G.  
SC Reg. No. 2384  
Signature: Hartford W. Hight  
Date: 12/9/05





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**UNDERGROUND STORAGE  
TANK PROGRAM**

**LIMITATIONS**

This investigation is intended to be a non-biased assessment of on-site environmental conditions proximate to the location of the former UST system. Subsurface investigative methodologies are in accordance with all applicable state and federal regulatory requirements. The information presented in this report is based upon site-specific observations, generally accepted geological practices, and analytical results for environmental samples collected at the time of the field investigation. All data is believed to represent subsurface conditions at the facility, however, data may not be completely representative of all subsurface conditions.

This report has been prepared under the guidance of a Licensed Geologist registered in South Carolina to meet the requirements of the South Carolina Department of Health and Environmental Control. The information and conclusions expressed in this report are based upon normal standards of the profession and limited to information available at this time. Chemical analyses of the samples associated with this report were performed by a subcontracted, independent, and certified laboratory. All data have been reviewed for accuracy and, excepting obvious errors, have been accepted as correct. SEI Environmental, Inc. reserves the right to revise estimates of performances as required by changes in the data supplied by Accutest Laboratories.

## **1.0 INTRODUCTION**

The Highway 11 Grocery is a convenience and retail fuel store located at 13527 North SC Highway 11 in Salem, Oconee County, South Carolina. Figure 1 in Appendix A is a portion of the United States Geological Survey (USGS) 7.5-minute topographical quadrangle map identifying the location of the site.

The following is a brief summary of recent events occurring at the site:

- December 18, 2003 – Groundwater Sampling Event
- March 31, 2004 – Groundwater Sampling Event
- September 29, 2004 – Groundwater Sampling Event
- January 11, 2005 – EFR performed on MW-8
- March 17, 2005 – EFR performed on MW-8
- March 17, 2005 – Groundwater Sampling Event
- August 9, 2005 – Groundwater Sampling Event
- November 1, 2005 – Groundwater Sampling Event

Three (MW-3, MW-11, and DMW-4) monitoring wells are sampled semi-annually (May and November). Two (MW-13 and MW-15) monitoring wells are not sampled because they have never reported detectable levels of chemicals of concern (CoC).

On November 1, 2005, thirteen groundwater monitoring wells were sampled, one water supply well was sampled, and two surface water samples were collected, in accordance with the requirements of the PFP contract. This report provides details of the groundwater sampling event.

## **2.0 FIELD MEASUREMENTS AND SAMPLING**

### **2.1 Groundwater Sampling**

On November 1, 2005, groundwater samples were collected from thirteen (MW-2 through MW-7, MW-9 through MW-12, DMW-1, DMW-2, and DMW-4) groundwater monitoring wells. Two (MW-13 and MW-15) monitoring wells have been removed from sampling

because they have never reported detectable CoCs. Monitoring wells MW-1 and MW-8 were not sampled due to the presence of free product. Monitoring well MW-14 was not sampled because it could not be located. Prior to sampling, groundwater depth was gauged in the fifteen monitoring wells utilizing an oil-water interface probe to measure depth to groundwater, and to detect any phase separated hydrocarbons (PSH) present. The depth to groundwater measurement is used to calculate the groundwater elevation used in determining the current groundwater potentiometric surface, along with hydraulic gradient, and groundwater flow direction.

Figure 3 in Appendix A presents a groundwater potentiometric map for the current sampling event. The latest groundwater data indicate that groundwater flow at the site is to the north, northeast, east, and southeast with a hydraulic gradient of 0.0438 feet per foot between monitoring wells MW-3 and MW-8. This flow direction is consistent with previous determinations of groundwater movement. Monitoring well MW-1 contained approximately 0.07 feet of free product. Monitoring well MW-8 contained approximately 1.62 feet of free product. Table 1 in Appendix B summarizes groundwater measurement data. Table 3 summarizes field observation data.

The thirteen monitoring wells were purged prior to sampling by removing a minimum of three well volumes of water via hand bailing with a new, disposable, polyethylene bailer or until groundwater quality data stabilized, or the well went dry. This purging process produced approximately 77.8 gallons of petroleum contaminated water. The water was disposed of at a SC approved disposal facility.

Representative groundwater samples were collected utilizing new, disposable bailers. Samples were placed in laboratory supplied containers, maintained at 4° Celsius, and shipped via FedEx under chain-of-custody to AccuTest, Inc. Laboratories in Orlando, Florida. The groundwater samples were analyzed by EPA Method 8260B for benzene, toluene, ethylbenzene, xylenes (BTEX), methyl-tert-butyl-ether (MTBE), and naphthalene.

## **2.2 Surface Water Sampling**

On November 1, 2005, two (CK-1 and CK-3) surface water samples were collected from adjacent creeks. CK-2 location is no longer sampled per the March 17, 2005, sampling event report. CK-3 replaced this sample to monitor for potential contamination from monitoring well MW-14. Representative groundwater samples were collected utilizing new, disposable bailers. Samples were placed in laboratory supplied containers, maintained at 4° Celsius, and shipped via FedEx under chain-of-custody to AccuTest, Inc. Laboratories in Orlando, Florida. The groundwater samples were analyzed by EPA Method 8260B for benzene, toluene, ethylbenzene, xylenes (BTEX), methyl-tert-butyl-ether (MTBE), and naphthalene.

## **2.3 Water Supply Well Sampling**

On November 1, 2005, the onsite water supply well (WW-1) was sampled. The sample was collected from a spigot nearest the water supply well. Prior to sampling, the spigot was allowed to run for at least ten minutes. The sample was placed in a laboratory supplied container, maintained at 4° Celsius, and shipped via FedEx under chain-of-custody to AccuTest, Inc. Laboratories in Orlando, Florida. The groundwater sample was analyzed by EPA Method 8260B for benzene, toluene, ethylbenzene, xylenes (BTEX), methyl-tert-butyl-ether (MTBE), and naphthalene.

## **3.0 LABORATORY ANALYTICAL RESULTS**

### **3.1 Groundwater Analytical Results**

CoCs were detected in five (MW-4, MW-6, MW-7, MW-10, and MW-11) of the thirteen sampled monitoring wells at concentrations above their respective Site Specific Target Level (SSTL). Monitoring well MW-10 contained the highest concentrations of benzene (10,000 micrograms per liter ( $\mu\text{g/L}$ )), toluene (23,500  $\mu\text{g/L}$ ), ethylbenzene (1,410  $\mu\text{g/L}$ ), total xylenes (7,510  $\mu\text{g/L}$ ), MTBE (21,600  $\mu\text{g/L}$ ) and naphthalene (<1,000  $\mu\text{g/L}$ ). Figure 4 in Appendix A is a site map presenting monitoring well location and their CoC concentrations. Table 2 in Appendix B summarizes historical groundwater analytical results. A copy of the laboratory report and completed chain-of-custody form is included in Appendix C.

SSTLs have been designated for fourteen (MW-1 through MW-8, MW-10, MW-11, MW-14, DMW-1, DMW-2, and DMW-4) monitoring wells, of which five (MW-4, MW-6, MW-7, MW-10, and MW-11) contained CoC concentrations exceeded their SSTLs, two (MW-1 and MW-8) contained free product, and one (MW-14) was not sampled because it could not be located. During this sampling event, monitoring well MW-4 exceeded the SSTLs for all CoCs with the exception of toluene and naphthalene. In monitoring well MW-6, SSTLs were exceeded for MTBE only. In monitoring well MW-7, SSTLs were exceeded for all CoCs, with the exception of MTBE and naphthalene. In monitoring well MW-10, SSTLs were exceeded for all CoCs. In monitoring well MW-11, SSTLs were exceeded for benzene and total xylenes only. Table 4 in Appendix B summarizes SSTL information.

### **3.2 Surface Water Analytical Results**

Benzene was detected in surface water sample CK-1 (20.3 µg/L) collected from the adjacent creek at concentrations above the risk based screening level (RBSL) of 5.0 µg/L.

### **3.3 Water Supply Well Analytical Results**

CoC were not detected in water supply well sample WW-1 at concentrations above laboratory detection limits.

## **4.0 REMEDIATION SYSTEM EFFECTIVENESS**

In awarding the Pay-For-Performance (PFP) site remediation contract, the South Carolina Department of Health and Environmental Control (SCDHEC) set remediation goals for this site via site specific target levels (SSTLs). The monitoring wells have individual target concentrations for five (benzene, toluene, ethylbenzene, xylenes, MTBE and naphthalene) identified chemicals of concern (CoC).

Remediation system effectiveness can be calculated comparing the initial May 7, 2002, CoC concentrations that exceeded the SSTLs with the current CoC concentrations that exceeded the SSTLs. For monitoring wells MW-1 and MW-8, the standard values for

free product (benzene, 44,390 µg/L; toluene, 26,540 µg/L; ethylbenzene, 3.7 µg/L; xylenes, 21,680 µg/L; MTBE, 173,000 µg/L; and naphthalene 637,000 µg/L) were used in the percent reduction calculation. August 9, 2005, data was used in the formula for monitoring well MW-14 because it was not sampled because it could not be located. The formula is as follows:

$$\left[ \frac{[08/29/96 \text{ Sample Concentration Above SSTL}] - [\text{Current Sample Concentration Above SSTL}]}{[08/29/96 \text{ Sample Concentration Above SSTL}]} \right] * 100 = \% \text{ Reduction}$$

Using the current analytical results, the percent concentration reduction is 84.67%. Table 4 in Appendix B presents concentration reduction calculations.

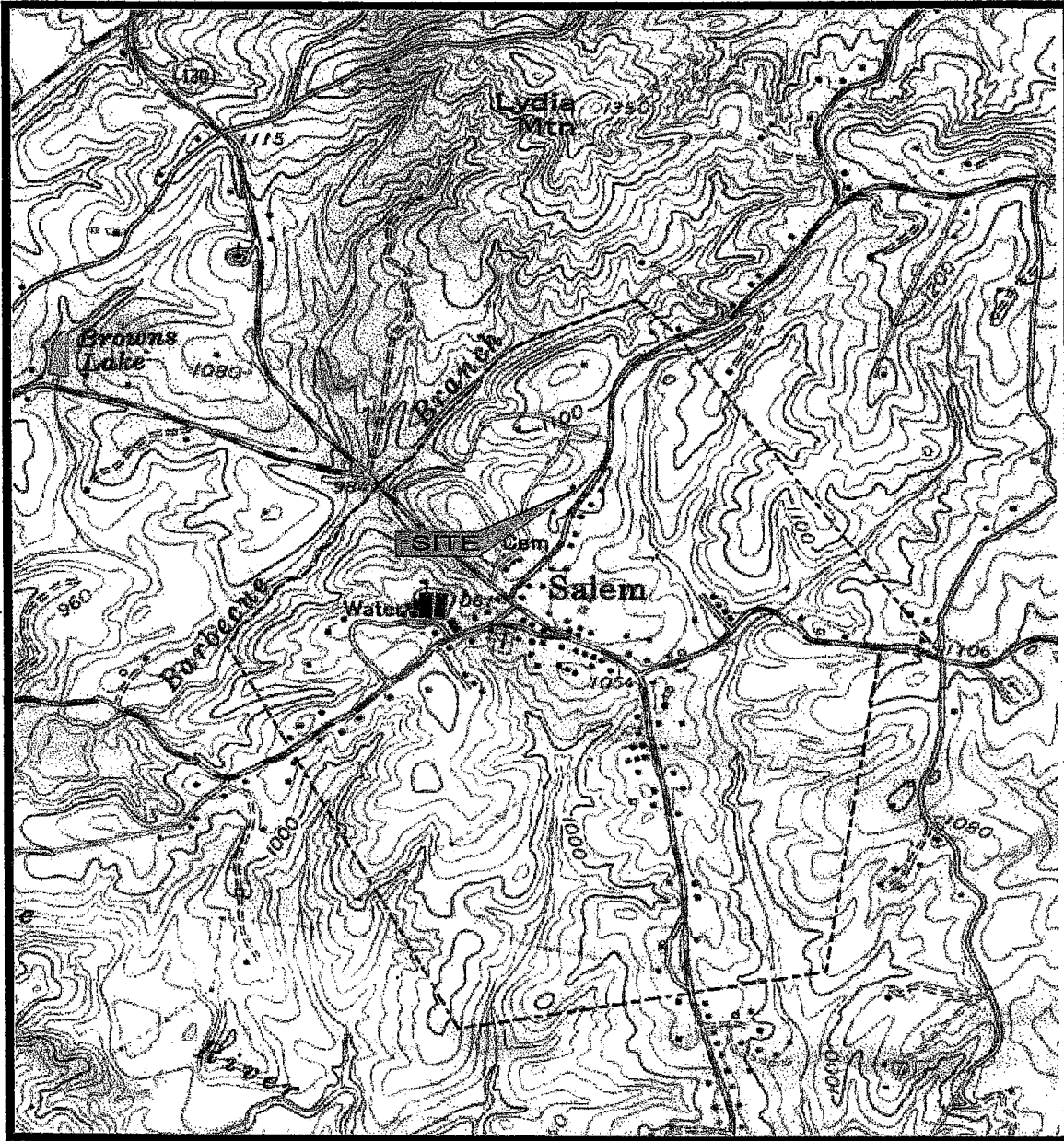
## 5.0 CONCLUSIONS

The groundwater flow direction at the time of the November 1, 2005, sampling event was towards the north, northeast, east, and southeast with a hydraulic gradient of 0.0438 feet per foot. Free product was present in monitoring wells MW-1 (0.07 feet) and MW-8 (1.62 feet). CoC were detected in five monitoring wells above their respective SSTLs. Benzene was detected in one surface water sample at a concentration above the RBSL. No CoC were detected in the water supply well sample above laboratory detection limits. The percent concentration reduction was calculated at 84.67%. The previous August 9, 2005, percent concentration reduction was calculated at 96.51%. The drop in percent concentration reduction was due to the detection of free product in monitoring well MW-1 and a dramatic increase in CoC concentrations in MW-10, which is located hydraulically down gradient of monitoring well MW-1.

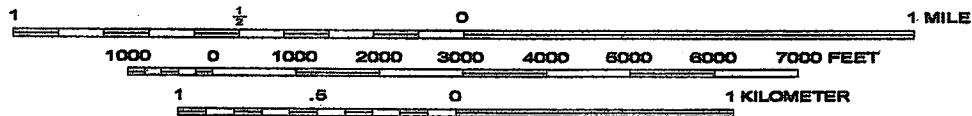
SEI Environmental, Inc recommends continuing the quarterly monitoring to evaluate the continued reduction of chemicals of concern in the monitoring wells on site. The next sampling event will occur in February 2006, not including the semi-annual sampled monitoring wells MW-3, MW-11, DMW-4. SEI is also considering an additional Enhance Fluid Recovery (EFR) to be performed on monitoring well MW-1, MW-8, MW-10, and MW-14. SEI is currently evaluating alternative methods of active corrective action to be implemented at the site in order to proceed with the remediation effort.

**APPENDIX A**  
**FIGURES**





SCALE 1:24000



SALEM QUADRANGLE  
 SOUTH CAROLINA-OCONEE CO.  
 7.5 MINUTE SERIES (TOPOGRAPHIC-BATHYMETRIC)  
 BY U.S. GEOLOGICAL SURVEY

**SEI Environmental, Inc.**

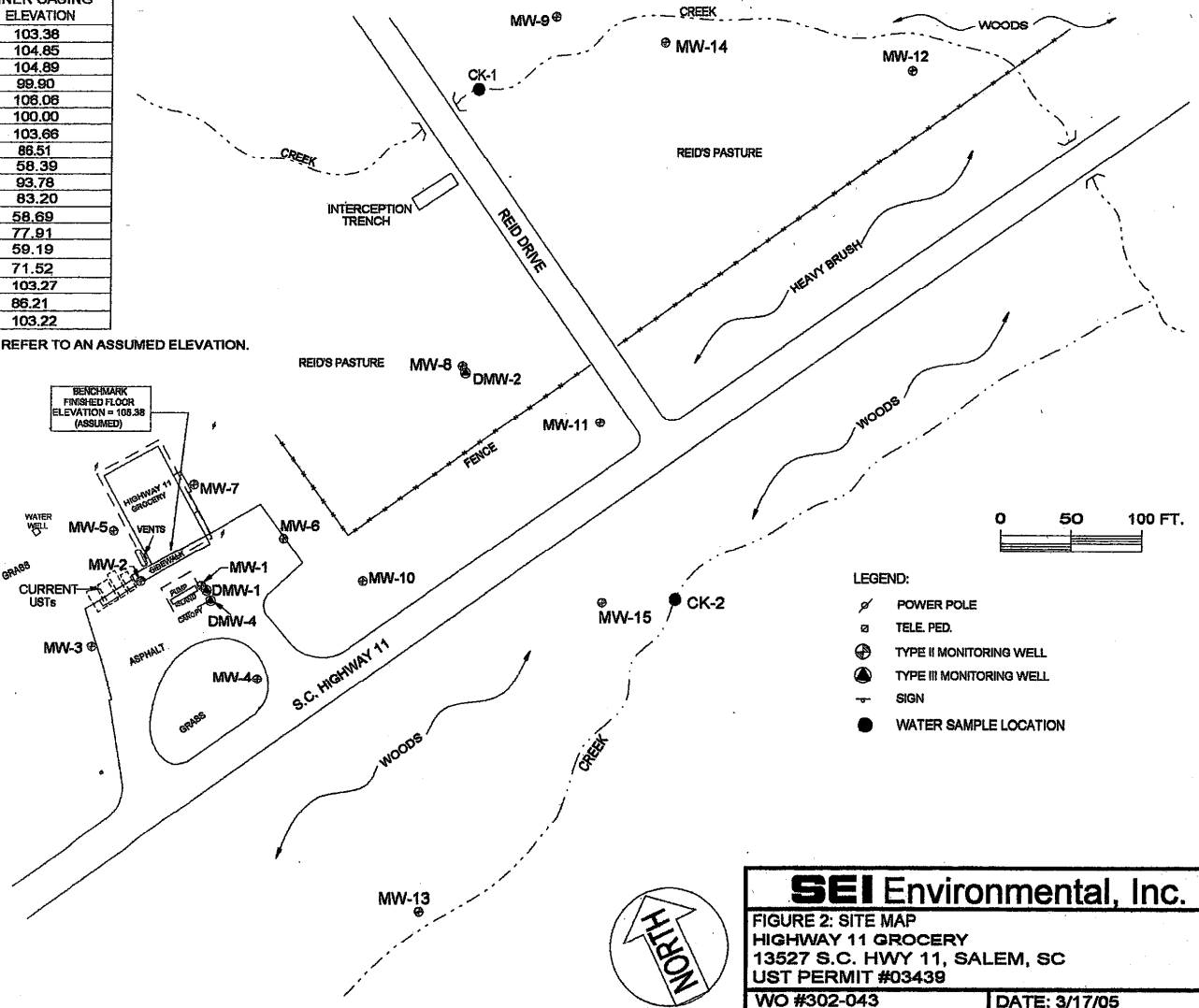
FIGURE 1: SITE LOCATION MAP  
 HIGHWAY 11 GROCER  
 13527 Highway 11, Salem, SC  
 FACILITY I.D. #03439

WO # 302169  
 DWG # Hw 11\_topo\_sitemap

DATE: 9/16/05  
 DRAWN BY: HWH

WELL #	INNER CASING ELEVATION
MW-1	103.38
MW-2	104.85
MW-3	104.89
MW-4	99.90
MW-5	106.06
MW-6	100.00
MW-7	103.66
MW-8	86.51
MW-9	58.39
MW-10	93.78
MW-11	83.20
MW-12	58.69
MW-13	77.91
MW-14	59.19
MW-15	71.52
DMW-1	103.27
DMW-2	86.21
DMW-4	103.22

NOTE: ELEVATIONS REFER TO AN ASSUMED ELEVATION.

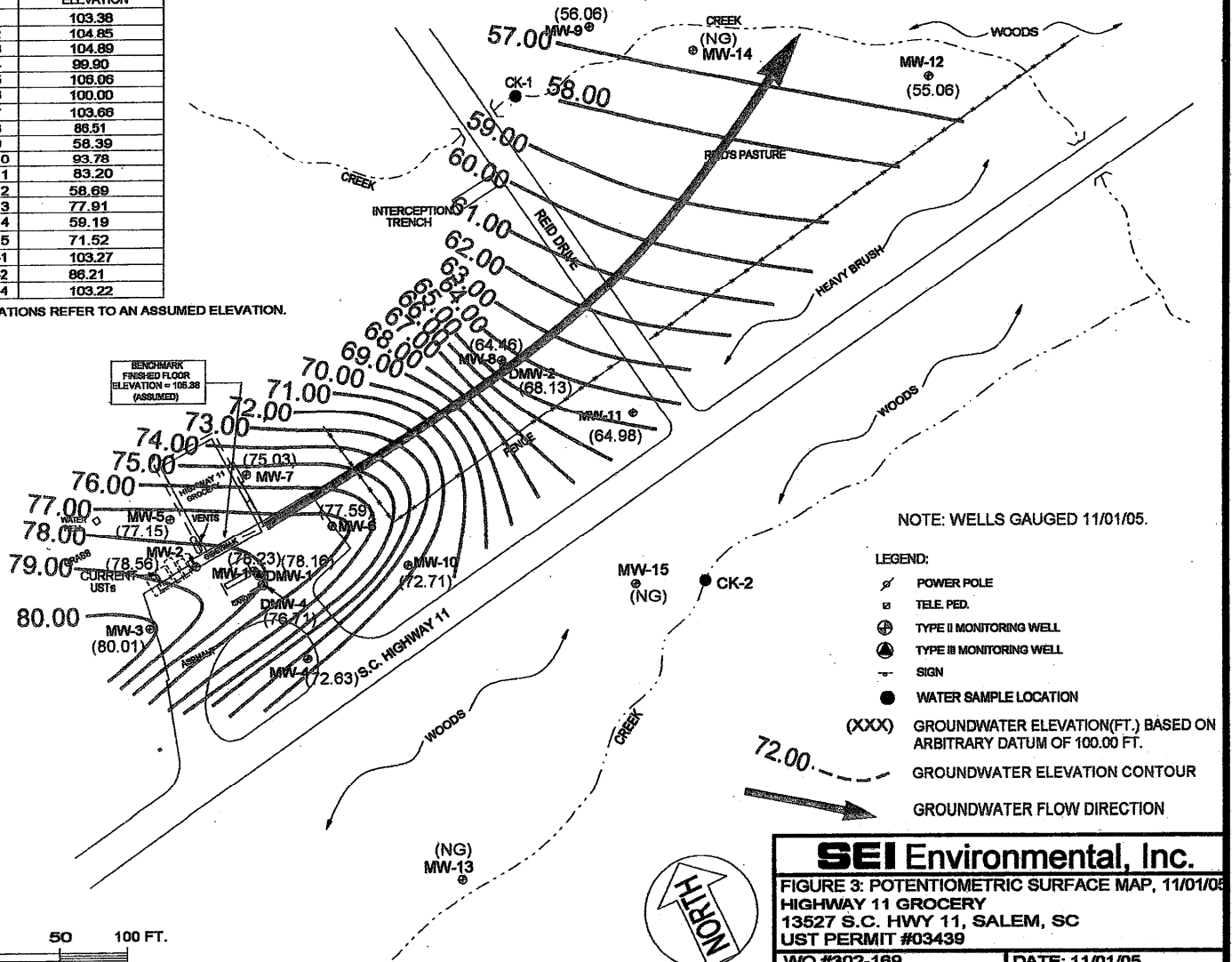


**SEI Environmental, Inc.**

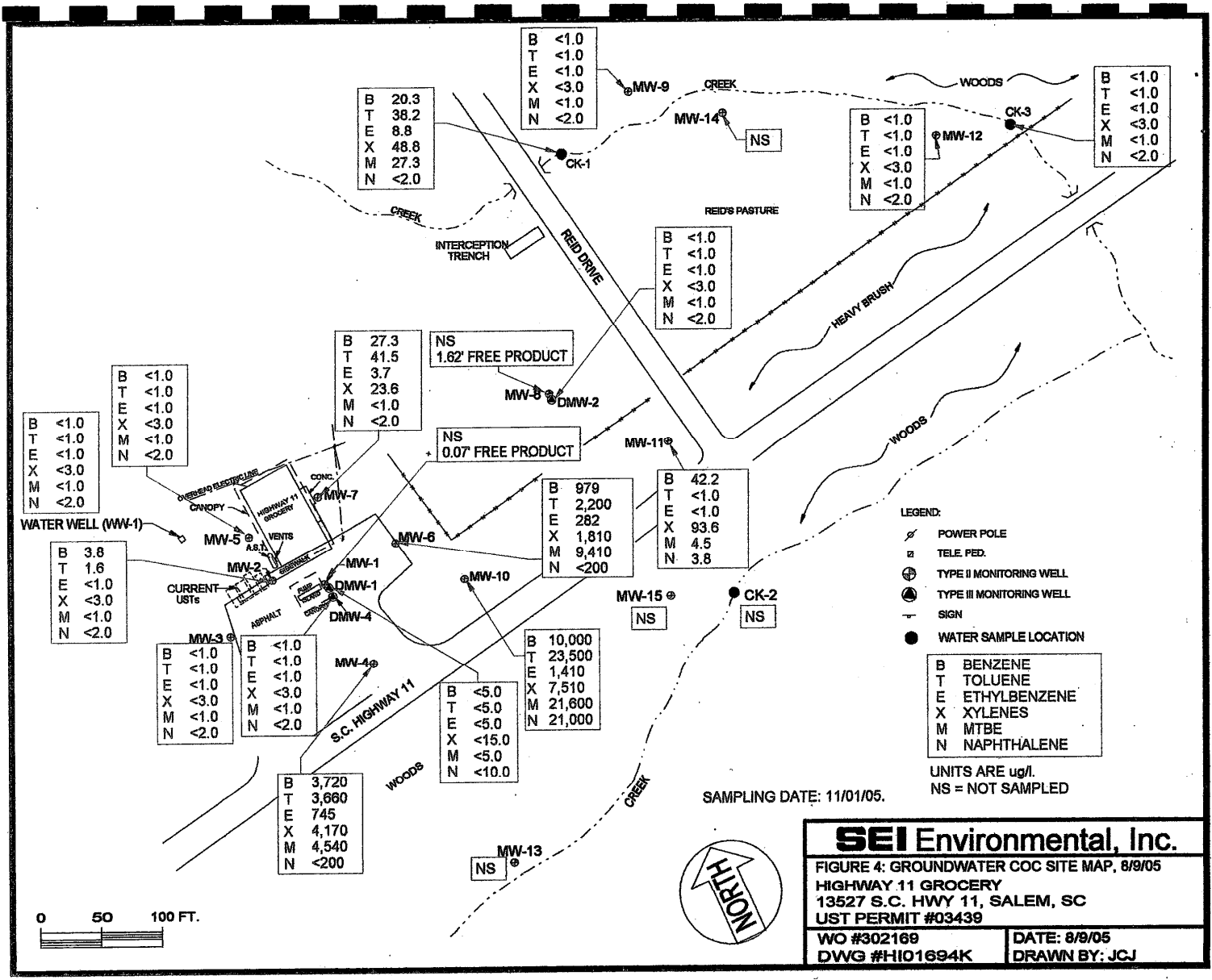
FIGURE 2: SITE MAP  
 HIGHWAY 11 GROCERY  
 13527 S.C. HWY 11, SALEM, SC  
 UST PERMIT #03439  
 WO #302-043  
 DWG #H101692G  
 DATE: 3/17/05  
 DRAWN BY: JCJ

WELL #	INNER CASING ELEVATION
MW-1	103.38
MW-2	104.85
MW-3	104.89
MW-4	99.90
MW-5	108.06
MW-6	100.00
MW-7	103.66
MW-8	88.51
MW-9	58.39
MW-10	93.78
MW-11	83.20
MW-12	58.69
MW-13	77.91
MW-14	59.19
MW-15	71.52
DMW-1	103.27
DMW-2	86.21
DMW-4	103.22

NOTE: ELEVATIONS REFER TO AN ASSUMED ELEVATION.



**SEI Environmental, Inc.**  
 FIGURE 3: POTENTIOMETRIC SURFACE MAP, 11/01/05  
 HIGHWAY 11 GROCERY  
 13527 S.C. HWY 11, SALEM, SC  
 UST PERMIT #03439  
 WO #302-189      DATE: 11/01/05  
 DWG #H101693L      DRAWN BY: JCJ



B	<1.0
T	<1.0
E	<1.0
X	<3.0
M	<1.0
N	<2.0

B	20.3
T	38.2
E	8.8
X	48.8
M	27.3
N	<2.0

B	<1.0
T	<1.0
E	<1.0
X	<3.0
M	<1.0
N	<2.0

B	<1.0
T	<1.0
E	<1.0
X	<3.0
M	<1.0
N	<2.0

B	<1.0
T	<1.0
E	<1.0
X	<3.0
M	<1.0
N	<2.0

B	27.3
T	41.5
E	3.7
X	23.6
M	<1.0
N	<2.0

NS  
0.07' FREE PRODUCT

B	<1.0
T	<1.0
E	<1.0
X	<3.0
M	<1.0
N	<2.0

B	3.8
T	1.6
E	<1.0
X	<3.0
M	<1.0
N	<2.0

B	<1.0
T	<1.0
E	<1.0
X	<3.0
M	<1.0
N	<2.0

B	<1.0
T	<1.0
E	<1.0
X	<3.0
M	<1.0
N	<2.0

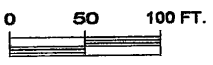
B	<5.0
T	<5.0
E	<5.0
X	<15.0
M	<5.0
N	<10.0

B	10,000
T	23,500
E	1,410
X	7,510
M	21,600
N	21,000

B	979
T	2,200
E	282
X	1,810
M	9,410
N	<200

B	42.2
T	<1.0
E	<1.0
X	93.6
M	4.5
N	3.8

B	3,720
T	3,660
E	745
X	4,170
M	4,540
N	<200



**APPENDIX B**  
**TABLES**

**TABLE 1**

**Historical Groundwater Elevation and Product Thickness Data**

**Highway 11 Grocery  
13527 South Carolina Highway 11  
Salem, Oconee County, South Carolina  
UST Permit Number: 03439  
SEI Project Number: 302169**

Well Location	Date Gauged	Top of Casing Elevation (feet)	Depth of Well (feet)	Depth to Groundwater (feet)	Depth to Product (feet)	Product Thickness (feet)	Groundwater Elevation (feet)
MW-1	05/08/02	103.38	30.00	24.67	24.71	0.04	78.74
	07/01/03			23.28	23.52	0.24	80.29
	07/30/03			22.89	22.97	0.08	80.55
	09/15/03			23.78	23.82	0.04	79.63
	10/02/03			24.32	24.45	0.13	78.76
	10/23/03			24.72	24.93	0.21	78.82
	12/18/03			24.06	--	--	79.32
	03/31/04			24.61	--	--	78.77
	09/29/04			24.20	--	--	79.18
	01/11/05			23.77	--	--	79.61
	03/17/05			23.97	--	--	79.41
	08/09/05			22.86	--	--	80.52
	11/01/05			25.20	25.13	0.07	78.23
	MW-2			05/08/02	104.85	35.00	26.08
07/01/03		24.08	--	--			80.77
07/30/03		23.78	--	--			81.07
09/15/03		24.73	--	--			80.12
10/02/03		25.56	--	--			79.29
10/23/03		25.71	--	--			79.14
12/18/03		25.38	--	--			79.47
03/31/04		25.85	--	--			79.00
09/29/04		25.55	--	--			79.30
01/11/05		24.74	--	--			80.11
03/17/05		25.10	--	--			79.75
08/09/05		23.70	--	--			81.15
11/01/05		26.29	--	--			78.56
MW-3		05/08/02	104.86	30.00			24.78
	07/01/03	22.51			--	--	82.35
	07/30/03	22.21			--	--	82.65
	09/15/03	23.23			--	--	81.63
	10/02/03	23.87			--	--	80.99
	10/23/03	24.23			--	--	80.63
	12/18/03	23.93			--	--	80.93
	03/31/04	24.44			--	--	80.42
	09/29/04	24.20			--	--	80.66
	01/11/05	23.36			--	--	81.50
	03/17/05	23.65			--	--	81.21
	08/09/05	22.11			--	--	82.75

**TABLE 1 (continued)**

Historical Groundwater Elevation and Product Thickness Data Highway 11 Grocery 13527 South Carolina Highway 11 Salem, Oconee County, South Carolina UST Permit Number: 03439 SEI Project Number: 302169							
Well Location	Date Gauged	Top of Casing Elevation (feet)	Depth of Well (feet)	Depth to Groundwater (feet)	Depth to Product (feet)	Product Thickness (feet)	Groundwater Elevation (feet)
MW-3 (continued)	11/01/05	104.86	30.00	24.85	--	--	80.01
MW-4	05/08/02	99.90	35.00	23.38	--	--	76.52
	07/01/03			22.10	--	--	77.80
	07/30/03			22.09	--	--	77.81
	09/15/03			22.90	--	--	77.00
	10/02/03			23.32	--	--	76.58
	10/23/03			23.69	--	--	76.21
	12/18/03			22.95	--	--	76.95
	03/31/04			23.49	--	--	76.41
	09/29/04			23.14	--	--	76.76
	01/11/05			22.70	--	--	77.20
	03/17/05			22.84	--	--	77.06
	08/09/05			26.40	--	--	73.50
	11/01/05			27.27	--	--	72.63
MW-5	05/08/02	106.06	35.00	28.82	--	--	77.24
	07/01/03			26.82	--	--	79.24
	07/30/03			26.53	--	--	79.53
	09/15/03			27.40	--	--	78.66
	10/02/03			27.92	--	--	78.14
	10/23/03			28.40	--	--	77.66
	12/18/03			28.40	--	--	77.66
	03/31/04			28.56	--	--	77.50
	09/29/04			28.46	--	--	77.60
	01/11/05			27.41	--	--	78.65
	03/17/05			27.86	--	--	78.20
	08/09/05			20.02	--	--	86.04
	11/01/05			28.91	--	--	77.15
MW-6	05/08/02	100.00	35.00	21.66	--	--	78.34
	07/01/03			19.77	--	--	80.23
	07/30/03			19.88	--	--	80.12
	09/15/03			20.63	--	--	79.37
	10/02/03			21.34	--	--	78.66
	10/23/03			21.74	--	--	78.26
	12/18/03			21.00	--	--	79.00
	03/31/04			21.71	--	--	78.29
	09/29/04			21.33	--	--	78.67
	01/11/05			20.81	--	--	79.19
	03/17/05			20.10	--	--	79.90

**TABLE 1 (continued)**

**Historical Groundwater Elevation and Product Thickness Data**

**Highway 11 Grocery  
13527 South Carolina Highway 11  
Salem, Oconee County, South Carolina  
UST Permit Number: 03439  
SEI Project Number: 302169**

Well Location	Date Gauged	Top of Casing Elevation (feet)	Depth of Well (feet)	Depth to Groundwater (feet)	Depth to Product (feet)	Product Thickness (feet)	Groundwater Elevation (feet)
MW-6 (continued)	08/09/05	100.00	35.00	26.18	--	--	73.82
	11/01/05			22.41	--	--	77.59
MW-7	05/08/02	103.66	40.00	28.12	--	--	75.54
	07/01/03			26.55	--	--	77.11
	07/30/03			26.22	--	--	77.44
	09/15/03			26.83	--	--	76.83
	10/02/03			27.69	--	--	75.97
	10/23/03			28.10	--	--	75.56
	12/18/03			27.71	--	--	75.95
	03/31/04			28.00	--	--	75.66
	09/29/04			27.60	--	--	76.06
	01/11/05			26.88	--	--	76.78
	03/17/05			27.83	--	--	75.83
	08/09/05			20.27	--	--	83.39
	11/01/05			28.63	--	--	75.03
MW-8	05/08/02	86.51	30.00	21.00	--	--	65.51
	07/01/03			20.96	--	--	65.50
	07/30/03			20.46	--	--	66.03
	09/15/03			21.17	--	--	65.33
	10/02/03			20.44	--	--	66.05
	10/23/03			21.54	--	--	64.97
	12/18/03			20.82	--	--	65.69
	03/31/04			21.35	--	--	65.08
	09/29/04			21.10	--	--	65.06
	01/11/05			21.04	--	--	65.15
	03/17/05			20.95	--	--	65.56
	08/09/05			22.16	22.21	0.05	64.39
	11/01/05			23.31	21.69	1.62	64.46
MW-9	05/08/02	58.39	11.00	2.47	--	--	55.92
	07/01/03			2.30	--	--	56.09
	07/30/03			2.26	--	--	56.13
	09/15/03			2.42	--	--	55.97
	10/02/03			2.16	--	--	56.23
	10/23/03			2.42	--	--	55.97
	12/18/03			2.20	--	--	56.19
	03/31/04			2.56	--	--	55.83
	09/29/04			1.90	--	--	56.49
	01/11/05			2.23	--	--	56.16
	03/17/05			2.11	--	--	56.28



**TABLE 1 (continued)**

**Historical Groundwater Elevation and Product Thickness Data**

**Highway 11 Grocery  
13527 South Carolina Highway 11  
Salem, Oconee County, South Carolina  
UST Permit Number: 03439  
SEI Project Number: 302169**

<b>Well Location</b>	<b>Date Gauged</b>	<b>Top of Casing Elevation (feet)</b>	<b>Depth of Well (feet)</b>	<b>Depth to Groundwater (feet)</b>	<b>Depth to Product (feet)</b>	<b>Product Thickness (feet)</b>	<b>Groundwater Elevation (feet)</b>
MW-9 (continued)	08/09/05	58.39	11.00	2.04	--	--	56.35
	11/01/05			2.33	--	--	56.06
MW-10	05/08/02	93.78	24.00	20.04	--	--	73.74
	07/01/03			16.20	--	--	77.58
	07/30/03			18.95	--	--	74.83
	09/15/03			16.53	--	--	77.25
	10/02/03			20.19	--	--	73.59
	10/23/03			20.51	--	--	73.27
	12/18/03			19.83	--	--	73.95
	03/31/04			18.85	--	--	74.93
	09/29/04			20.02	--	--	73.76
	01/11/05			19.47	--	--	74.31
	03/17/05			18.84	--	--	74.94
	08/09/05			18.94	--	--	74.84
	11/01/05			21.07	--	--	72.71
MW-11	05/08/02	83.20	23.00	16.22	--	--	66.98
	07/01/03			16.53	--	--	66.67
	07/30/03			16.70	--	--	66.50
	09/15/03			17.35	--	--	65.85
	10/02/03			16.40	--	--	66.80
	10/23/03			17.83	--	--	65.37
	12/18/03			17.58	--	--	65.62
	03/31/04			16.21	--	--	66.99
	09/29/04			15.92	--	--	67.28
	01/11/05			15.93	--	--	67.27
	03/17/05			16.86	--	--	66.34
	08/09/05			15.80	--	--	67.40
	11/01/05			18.22	--	--	64.98
MW-12	05/08/02	58.69	11.00	2.80	--	--	55.89
	07/01/03			3.16	--	--	55.53
	07/30/03			2.55	--	--	56.14
	09/15/03			3.26	--	--	55.43
	10/02/03			2.60	--	--	56.09
	10/23/03			3.50	--	--	55.19
	12/18/03			2.97	--	--	55.72
	03/31/04			3.19	--	--	55.50
	09/29/04			3.02	--	--	55.67
	01/11/05			3.10	--	--	55.59
	03/17/05			3.12	--	--	55.57

**TABLE 1 (continued)**

**Historical Groundwater Elevation and Product Thickness Data**

**Highway 11 Grocery  
13527 South Carolina Highway 11  
Salem, Oconee County, South Carolina  
UST Permit Number: 03439  
SEI Project Number: 302169**

Well Location	Date Gauged	Top of Casing Elevation (feet)	Depth of Well (feet)	Depth to Groundwater (feet)	Depth to Product (feet)	Product Thickness (feet)	Groundwater Elevation (feet)
MW-12 (continued)	08/09/05	58.69	11.00	2.72	--	--	55.97
	11/01/05			3.63	--	--	55.06
MW-13	05/08/02	77.72	13.00	6.29	--	--	71.43
	07/01/03			6.44	--	--	71.28
	07/30/03			N/L	--	--	N/L
	09/15/03			6.36	--	--	71.36
	10/02/03			6.24	--	--	71.48
	10/23/03			6.78	--	--	70.94
	12/18/03			7.51	--	--	70.21
	03/31/04			6.62	--	--	71.10
	09/29/04			6.28	--	--	71.44
	01/11/05			6.44	--	--	71.28
	03/17/05			6.52	--	--	71.20
	08/09/05			10.52	--	--	67.20
	11/01/05			NG	--	--	NG
MW-14	05/08/02	59.19	9.00	2.00	--	--	57.19
	07/01/03			2.28	--	--	56.91
	07/30/03			2.03	--	--	57.16
	09/15/03			2.42	--	--	56.77
	10/02/03			1.98	--	--	57.21
	10/23/03			2.67	--	--	56.52
	12/18/03			1.58	--	--	57.61
	03/31/04			2.03	--	--	57.16
	09/29/04			1.77	--	--	57.42
	01/11/05			1.92	--	--	57.27
	03/17/05			2.14	--	--	57.05
	08/09/05			1.75	--	--	57.44
	11/01/05			Not Located			
MW-15	05/08/02	71.52	12.00	10.82	--	--	60.70
	07/01/03			10.76	--	--	60.76
	07/30/03			10.11	--	--	61.41
	09/15/03			11.00	--	--	60.52
	10/02/03			10.20	--	--	61.32
	10/23/03			11.07	--	--	60.45
	12/18/03			11.88	--	--	59.64
	03/31/04			11.02	--	--	60.50
	09/29/04			10.67	--	--	60.85
	01/11/05			10.83	--	--	60.69
03/17/05	10.61	--	--	60.91			

**TABLE 1 (continued)**

**Historical Groundwater Elevation and Product Thickness Data**

**Highway 11 Grocery  
13527 South Carolina Highway 11  
Salem, Oconee County, South Carolina  
UST Permit Number: 03439  
SEI Project Number: 302169**

<b>Well Location</b>	<b>Date Gauged</b>	<b>Top of Casing Elevation (feet)</b>	<b>Depth of Well (feet)</b>	<b>Depth to Groundwater (feet)</b>	<b>Depth to Product (feet)</b>	<b>Product Thickness (feet)</b>	<b>Groundwater Elevation (feet)</b>
MW-15 (continued)	08/09/05	71.52	12.00	10.68	--	--	60.84
	11/01/05			11.32	--	--	60.20
DMW-1	05/08/02	103.27	45.00	23.88	--	--	79.39
	07/01/03			23.61	--	--	79.66
	07/30/03			24.24	--	--	79.03
	09/15/03			24.60	--	--	78.67
	10/02/03			24.00	--	--	79.27
	10/23/03			24.50	--	--	78.77
	12/18/03			24.11	--	--	79.16
	03/31/04			23.61	--	--	79.66
	09/29/04			22.72	--	--	80.55
	01/11/05			22.97	--	--	80.30
	03/17/05			24.68	--	--	78.59
	08/09/05			22.66	--	--	80.61
	11/01/05			25.11	--	--	78.16
DMW-2	05/08/02	86.21	75.00	17.83	--	--	68.38
	07/01/03			16.67	--	--	69.54
	07/30/03			17.20	--	--	69.01
	09/15/03			17.31	--	--	68.90
	10/02/03			16.80	--	--	69.41
	10/23/03			17.63	--	--	68.58
	12/18/03			17.11	--	--	69.10
	03/31/04			15.75	--	--	70.46
	09/29/04			16.49	--	--	69.72
	01/11/05			16.44	--	--	69.77
	03/17/05			17.22	--	--	68.99
	08/09/05			16.71	--	--	69.50
	11/01/05			18.08	--	--	68.13
DMW-4	05/08/02	103.22	61.00	24.30	--	--	78.92
	07/01/03			23.93	--	--	79.29
	07/30/03			24.75	--	--	78.47
	09/15/03			24.95	--	--	78.27
	10/02/03			24.45	--	--	78.77
	10/23/03			24.95	--	--	78.27
	12/18/03			24.39	--	--	78.83
	03/31/04			23.88	--	--	79.34
	09/29/04			23.18	--	--	80.04
	01/11/05			23.32	--	--	79.90
	03/17/05			25.08	--	--	78.14

**TABLE 1 (continued)**

Historical Groundwater Elevation and Product Thickness Data Highway 11 Grocery 13527 South Carolina Highway 11 Salem, Oconee County, South Carolina UST Permit Number: 03439 SEI Project Number: 302169							
Well Location	Date Gauged	Top of Casing Elevation (feet)	Depth of Well (feet)	Depth to Groundwater (feet)	Depth to Product (feet)	Product Thickness (feet)	Groundwater Elevation (feet)
DMW-4 (continued)	08/09/05	103.22	61.00	22.96	--	--	80.26
	11/01/05			26.51	--	--	76.71

-- = Not applicable

\*Groundwater Elevation = [(Top of Casing Elevation) - (DTW)] + (0.78\*Product Thickness) — where applicable

NM = Not Measured

**TABLE 2**

Historical Groundwater Analytical Results Highway 11 Grocery 13527 South Carolina Highway 11 Salem, Oconee County, South Carolina UST Permit Number: 03439 SEI Project Number: 302169								
Sample Location	Date Sampled	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Naphthalene (µg/L)	
MW-1	05/07/02	226,000	301,000	280,000	278,000	5,110,000	2,000	
	07/01/03	10,000	34,000	4,400	23,000	34,000	1,200	
	07/30/03	7,600	28,000	6,300	32,000	25,000	2,500	
	12/18/03	2,200	6,200	910	5,800	16,000	2,500	
	03/31/04	3,400	9,300	1,100	6,200	20,000	1,200	
	09/29/04	3,200	7,300	<1,000	4,500	12,000	<5,000	
	03/17/05	5,600	9,550	1,570	7,610	19,300	325	
	08/09/05	16,900	42,600	3,520	19,000	115,000	705	
	11/01/05	Not sampled due to the presence of 0.07 feet of free product.						
	SSTL	22	4,497	3,148	44,969	180	112	
MW-2	05/07/02	13.0	8.0	1.0	5.0	5.0	5.0	
	07/01/03	4.7	5.0	1.0	3.0	1.0	5.0	
	07/30/03	5.8	5.0	1.0	5.3	1.0	5.0	
	12/18/03	2.2	5.0	1.0	3.0	1.0	5.0	
	03/31/04	2.6	5.0	1.0	3.0	1.0	5.0	
	09/29/04	14.0	<25	<5.0	<15	<5.0	<25	
	03/17/05	12.5	5.4	<1.0	4.5	<1.0	<2.0	
	08/09/05	39.7	14.5	1.2	27.5	<1.0	<2.0	
	11/01/05	3.8	1.6	<1.0	<3.0	<1.0	<2.0	
	SSTL	13.0	8.0	1.0	5.0	5.0	5.0	
MW-3	05/07/02	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0	
	07/30/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0	
	12/18/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0	
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0	
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0	
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0	
	08/09/05	NS	NS	NS	NS	NS	NS	
	11/01/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0	
	SSTL	1.0	1.0	1.0	1.0	5.0	5.0	
MW-4	05/07/02	1,500	5,320	620	3,360	810	500	
	07/01/03	4,800	14,000	2,300	12,000	12,000	2,600	
	07/30/03	4,000	14,000	2,700	13,000	2,100	500	
	12/18/03	1,100	2,400	230	1,900	1,200	250	

**TABLE 2 (continued)**

Historical Groundwater Analytical Results Highway 11 Grocery 13527 South Carolina Highway 11 Salem, Oconee County, South Carolina UST Permit Number: 03439 SEI Project Number: 302169							
Sample Location	Date Sampled	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Naphthalene (µg/L)
MW-4 (continued)	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	09/29/04	53	<25	7.1	70	210	<25
	03/17/05	<1.0	<1.0	<1.0	<3.0	16.8	<2.0
	08/09/05	<1.0	<1.0	<1.0	<3.0	5.9	<2.0
	11/01/05	3,720	3,660	745	4,170	4,540	<200
	SSTL	1,500	5,320	620	3,360	810	500
MW-5	05/07/02	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	07/30/03	4.2	17	3.6	18	2.2	<5.0
	12/18/03	2.3	<5.0	<1.0	3.2	1.3	<5.0
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0
	08/09/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0
	11/01/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0
	SSTL	1.0	1.0	1.0	1.0	5.0	5.0
MW-6	05/07/02	1,780	4,950	490	2,880	6,350	500
	07/01/03	2,200	6,600	820	4,400	12,000	2,500
	07/30/03	4,200	13,000	1,600	8,900	21,000	400
	12/18/03	5,100	14,000	1,700	11,000	19,000	2,500
	03/31/04	280	840	100	2,200	900	250
	09/29/04	2,400	<5,000	<1,000	<3,000	17,000	<5,000
	03/17/05	3,490	7,500	952	5,380	15,500	262
	08/09/05	1,370	4,630	295	2,220	7,640	<400
	11/01/05	979	2,220	282	1,810	9,410	<200
	SSTL	1,780	4,950	490	2,880	6,350	500
MW-7	05/07/02	34	20	<1.0	8.0	7.0	<5.0
	07/01/03	37	36	1.7	20	9.2	<5.0
	07/30/03	18	18	<1.0	9.7	<1.0	<5.0
	12/18/03	41	20	<1.0	<3.0	<1.0	<5.0
	03/31/04	30	34	<1.0	16	<1.0	<5.0
	09/29/04	370	500	<100	<300	<100	<500
	03/17/05	505	590	33.9	280	64.5	<2.0

**TABLE 2 (continued)**

<b>Historical Groundwater Analytical Results</b> <b>Highway 11 Grocery</b> <b>13527 South Carolina Highway 11</b> <b>Salem, Oconee County, South Carolina</b> <b>UST Permit Number: 03439</b> <b>SEI Project Number: 302169</b>							
Sample Location	Date Sampled	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Naphthalene (µg/L)
MW-7 (continued)	08/09/05	52	55.9	2.6	34.3	9.2	<2.0
	11/01/05	27.3	41.5	3.7	23.6	<1.0	<2.0
	SSTL	22	20	1.0	8.0	7.0	5.0
MW-8	05/07/02	226,000	301,000	280,000	278,000	5,110,000	2,000
	07/01/03	12,000	51,000	7,800	40,000	11,000	2,500
	07/30/03	12,000	40,000	3,600	18,000	15,000	660
	12/18/03	10,000	27,000	3,300	18,000	14,000	2,500
	03/31/04	17,000	140,000	32,000	180,000	8,600	<25,000
	09/29/04	Not Sampled Due to the Presence of Free Product					
	03/17/05	Not Sampled Due to the Presence of Free Product					
	08/09/05	Not Sampled Due to the Presence of 0.05 Feet of Free Product					
	11/01/05	Not Sampled Due to the Presence of 1.62 Feet of Free Product					
SSTL	204	40,888	28,622	278,000	1,362	1,021	
MW-9	05/07/02	N/A	N/A	N/A	N/A	N/A	N/A
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	07/30/03	N/A	N/A	N/A	N/A	N/A	N/A
	12/18/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	03/31/04	<1.0	<5.0	1.2	8.8	<1.0	<5.0
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0
	08/09/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0
	11/01/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0
SSTL	N/A	N/A	N/A	N/A	N/A	N/A	
MW-10	05/07/02	115	185	68	328	86	9.0
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	07/30/03	170	420	43	240	540	6.5
	12/18/03	89	280	74	480	91	25
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0
	08/09/05	1.7	4.4	<1.0	<3.0	17.9	<2.0
	11/01/05	10,000	23,500	1,410	7,510	21,600	<1,000
SSTL	115	185	68	328	86	9.0	
MW-11	05/07/02	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0

**TABLE 2 (continued)**

Historical Groundwater Analytical Results							
Highway 11 Grocery 13527 South Carolina Highway 11 Salem, Oconee County, South Carolina UST Permit Number: 03439 SEI Project Number: 302169							
Sample Location	Date Sampled	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Naphthalene (µg/L)
MW-11 (continued)	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	07/30/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	12/18/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0
	08/09/05	NS	NS	NS	NS	NS	NS
	11/01/05	42.2	<1.0	<1.0	93.6	4.5	3.8
	<b>SSTL</b>	<b>1.0</b>	<b>1.0</b>	<b>1.0</b>	<b>1.0</b>	<b>5.0</b>	<b>5.0</b>
MW-12	05/07/02	N/A	N/A	N/A	N/A	N/A	N/A
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	07/30/03	N/A	N/A	N/A	N/A	N/A	N/A
	12/18/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0
	08/09/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0
	11/01/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0
	<b>SSTL</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
MW-13	05/07/02	N/A	N/A	N/A	N/A	N/A	N/A
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	07/30/03	N/A	N/A	N/A	N/A	N/A	N/A
	12/18/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0
	08/09/05	NS	NS	NS	NS	NS	NS
	11/01/05	NS	NS	NS	NS	NS	NS
	<b>SSTL</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
MW-14	05/07/02	3,780	13,800	27,000	14,700	7,010	500
	07/01/03	3,500	10,000	1,900	10,000	5,300	500
	07/30/03	3,100	9,700	1,800	9,300	4,300	500
	12/18/03	3,300	11,000	2,000	11,000	4,100	500
	03/31/04	5,500	17,000	2,600	13,000	7,100	570
	09/29/04	3,200	12,000	1,600	9,100	3,200	<5,000



**TABLE 2 (continued)**

Historical Groundwater Analytical Results Highway 11 Grocery 13527 South Carolina Highway 11 Salem, Oconee County, South Carolina UST Permit Number: 03439 SEI Project Number: 302169							
Sample Location	Date Sampled	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Naphthalene (µg/L)
MW-14 (continued)	03/17/05	5,140	13,000	1,710	10,900	4,970	339
	08/09/05	3,290	10,600	1,820	11,000	4,950	<400
	11/01/05	NL	NL	NL	NL	NL	NL
	SSTL	5.0	1,000	700	10,000	40	25
MW-15	05/07/02	N/A	N/A	N/A	N/A	N/A	N/A
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	07/30/03	N/A	N/A	N/A	N/A	N/A	N/A
	12/18/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0
	08/09/05	NS	NS	NS	NS	NS	NS
	11/01/05	NS	NS	NS	NS	NS	NS
	SSTL	N/A	N/A	N/A	N/A	N/A	N/A
DMW-1	05/07/02	215	430	50	50	1,780	250
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	07/30/03	<1.0	<5.0	<1.0	<3.0	4.2	<5.0
	12/18/03	1.5	<5.0	<1.0	<3.0	<1.0	<5.0
	03/31/04	<1.0	<15.0	<1.0	<3.0	3.9	<5.0
	09/29/04	8.4	<25	<5.0	<15	130	<25
	03/17/05	<1.0	1.2	<1.0	<3.0	8.1	<2.0
	08/09/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0
	11/01/05	<5.0	<5.0	<5.0	<15	<5.0	<10
	SSTL	215	430	50	50	1,780	250
DMW-2	05/07/02	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0
	07/01/03	<1.0	<5.0	<1.0	<3.0	6.4	<5.0
	07/30/03	<1.0	8.4	6.8	30	<1.0	6.7
	12/18/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0
	08/09/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0
	11/01/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0
	SSTL	1.0	1.0	1.0	1.0	5.0	5.0

**TABLE 2 (continued)**

<b>Historical Groundwater Analytical Results</b> <b>Highway 11 Grocery</b> <b>13527 South Carolina Highway 11</b> <b>Salem, Oconee County, South Carolina</b> <b>UST Permit Number: 03439</b> <b>SEI Project Number: 302169</b>							
Sample Location	Date Sampled	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Naphthalene (µg/L)
DMW-4	05/07/02	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	07/30/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	12/18/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0
	08/09/05	NS	NS	NS	NS	NS	NS
	11/01/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0
<b>SSTL</b>	<b>1.0</b>	<b>1.0</b>	<b>1.0</b>	<b>1.0</b>	<b>5.0</b>	<b>5.0</b>	
CK-1	05/07/02	N/A	N/A	N/A	N/A	N/A	N/A
	07/01/03	2.6	<5.0	<1.0	4.8	4.5	<5.0
	07/30/03	N/A	N/A	N/A	N/A	N/A	N/A
	12/18/03	11	18	4.1	20	9.0	<5.0
	09/29/04	16	30	6.1	32	22	<5.0
	03/17/05	10.4	17.5	4.1	20.8	12.3	<2.0
	08/09/05	7.6	17.6	2.9	15.8	6.9	<2.0
	11/01/05	<b>20.3</b>	<b>38.2</b>	<b>8.8</b>	<b>48.8</b>	<b>27.3</b>	<b>&lt;2.0</b>
	<b>RBSL</b>	<b>5.0</b>	<b>1,000</b>	<b>700</b>	<b>10,000</b>	<b>40</b>	<b>25</b>
CK-2	05/07/02	N/A	N/A	N/A	N/A	N/A	N/A
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	07/30/03	N/A	N/A	N/A	N/A	N/A	N/A
	12/18/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0
	08/09/05	NS	NS	NS	NS	NS	NS
	11/01/05	NS	NS	NS	NS	NS	NS
<b>RBSL</b>	<b>5.0</b>	<b>1,000</b>	<b>700</b>	<b>10,000</b>	<b>40</b>	<b>25</b>	
CK-3	08/09/05	14.4	33.3	7.1	41.1	25.8	<2.0
	11/01/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0
	<b>RBSL</b>	<b>5.0</b>	<b>1,000</b>	<b>700</b>	<b>10,000</b>	<b>40</b>	<b>25</b>
WW-1	05/07/02	N/A	N/A	N/A	N/A	N/A	N/A
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0

**TABLE 2 (continued)**

Historical Groundwater Analytical Results Highway 11 Grocery 13527 South Carolina Highway 11 Salem, Oconee County, South Carolina UST Permit Number: 03439 SEI Project Number: 302169							
Sample Location	Date Sampled	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Naphthalene (µg/L)
WW-1 (continued)	07/30/03	N/A	N/A	N/A	N/A	N/A	N/A
	12/18/03	N/A	N/A	N/A	N/A	N/A	N/A
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0
	08/09/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0
	11/01/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0
	<b>RBSL</b>	<b>5.0</b>	<b>1,000</b>	<b>700</b>	<b>10,000</b>	<b>40</b>	<b>25</b>

µg/L - micrograms per liter

SSTL = Site Specific Target Levels

RBSL = Risk Based Screen Level

N/A = Not Applicable

N/S = Not Sampled

**Bold** denotes concentrations over respective SSTL

**TABLE 3**

**Summary of Field Observations – August 9, 2005**

Highway 11 Grocery  
 13527 South Carolina Highway 11  
 Salem, Oconee County, South Carolina  
 UST Permit Number: 03439  
 SEL Project Number: 302169

Well ID	Frequency	Depth to Product (feet)	Free Product Thickness (feet)	Depth to Groundwater (feet)	Total Well Depth (feet)	pH (S.U.)	Specific Conductivity (umhos/cm)	Water Temp. (°C)	Dissolved Oxygen (S.U.)	Volume Purged (Gal.)	Notes
MW-1	Initial	25.13	0.07	25.13	30.00	N/A	N/A	N/A	N/A	1.00	Bailed Free Product
MW-2	Initial	-	-	26.29	35.00	4.63	-	19.02	-	5.50	-
	1 <sup>st</sup> Volume	-	-	-	-	4.63	-	18.71	-	-	-
	2 <sup>nd</sup> Volume	-	-	-	-	4.69	-	18.48	-	-	-
MW-3	3 <sup>rd</sup> Volume	-	-	-	-	4.70	0.082	18.50	3.90	-	-
	Initial	-	-	24.85	35.00	5.32	0.023	18.20	5.11	25.00	-
	1 <sup>st</sup> Volume	-	-	-	-	5.06	0.025	17.80	-	-	-
MW-4	2 <sup>nd</sup> Volume	-	-	-	-	5.07	-	17.89	5.05	-	-
	Initial	-	-	27.27	35.00	5.61	-	18.68	-	4.00	-
	1 <sup>st</sup> Volume	-	-	-	-	5.56	-	18.20	-	-	-
MW-5	2 <sup>nd</sup> Volume	-	-	-	-	4.99	-	18.17	-	-	-
	3 <sup>rd</sup> Volume	-	-	-	-	4.58	0.018	18.16	5.91	-	-
	Initial	-	-	28.91	35.00	4.89	0.018	18.57	5.59	3.50	-
MW-6	1 <sup>st</sup> Volume	-	-	-	-	4.74	-	18.03	-	-	-
	2 <sup>nd</sup> Volume	-	-	-	-	4.78	-	18.05	-	-	-
	3 <sup>rd</sup> Volume	-	-	-	-	4.79	0.019	18.01	5.01	-	-
MW-7	Initial	-	-	22.41	35.00	N/A	N/A	N/A	N/A	N/A	Strong Odor
	1 <sup>st</sup> Volume	-	-	28.63	40.00	5.21	0.032	18.84	2.58	6.30	-
	2 <sup>nd</sup> Volume	-	-	-	-	4.82	0.036	18.22	-	-	-
MW-8*	3 <sup>rd</sup> Volume	-	-	-	-	4.85	0.035	18.20	-	-	-
	Initial	21.69	1.62	23.31	30.00	4.90	0.031	18.21	4.90	-	Free Product
	1 <sup>st</sup> Volume	-	-	2.33	11.00	N/A	N/A	N/A	N/A	N/A	-
MW-9	Initial	-	-	-	-	5.02	-	18.90	-	4.00	-
	1 <sup>st</sup> Volume	-	-	-	-	4.96	-	18.50	-	-	-
	2 <sup>nd</sup> Volume	-	-	-	-	4.89	-	18.51	-	-	-
MW-10	3 <sup>rd</sup> Volume	-	-	-	-	4.90	-	18.53	5.10	-	-
	Initial	-	-	21.07	24.00	5.77	0.107	18.86	1.61	3.00	-
	1 <sup>st</sup> Volume	-	-	-	-	5.76	0.110	18.48	2.82	-	-

**TABLE 4 (Continued)**

**Summary of Field Observations - August 9, 2005**

**Highway 11 Grocery  
13527 South Carolina Highway 11  
Salem, Oconee County, South Carolina  
UST Permit Number: 03439  
SEI Project Number: 302169**

Well ID	Frequency	Depth to Product (feet)	Free Product Thickness (feet)	Depth to Groundwater (feet)	Total Well Depth (feet)	pH (S.U.)	Specific Conductivity (umhos/cm)	Water Temp. (°C)	Dissolved Oxygen (S.U.)	Volume Purged (Gal.)	Notes
MW-10 (continued)	2 <sup>nd</sup> Volume	--	--	21.07	24.00	5.79	0.124	18.51	2.83	3.00	--
MW-11	Initial	--	--	18.22	23.00	N/A	N/A	N/A	N/A	N/A	--
MW-12	Initial	--	--	3.63	11.00	5.76	0.008	18.76	--	4.00	--
	1 <sup>st</sup> Volume					5.36	--	18.53	--		--
	2 <sup>nd</sup> Volume					5.39	--	18.55	--		--
	3 <sup>rd</sup> Volume					5.38	0.018	18.57	4.91		--
MW-13	Initial	Not Sampled									--
MW-14	Initial	Not Sampled									--
MW-15	Initial	--	--	11.32	12.00	N/A	N/A	N/A	N/A	N/A	--
DMW-1	Initial	--	--	25.11	45.00	5.50	0.031	19.69	5.13	10.00	--
	1 <sup>st</sup> Volume					5.51	--	18.52	--		--
	2 <sup>nd</sup> Volume					5.53	--	18.53	--		--
	3 <sup>rd</sup> Volume					5.55	0.030	18.52	4.99		--
DMW-2	Initial	--	--	18.08	75.00	N/A	N/A	N/A	N/A	N/A	--
DMW-4	Initial	--	--	26.51	61.00	5.61	0.037	19.72	4.30	12.50	--
	1 <sup>st</sup> Volume					5.70	--	18.09	--		--
	2 <sup>nd</sup> Volume					5.76	--	18.47	--		--
	3 <sup>rd</sup> Volume					5.79	0.040	18.50	4.30		--

I/M = Information temporarily missing, will provide under separate cover when located.

N/A = Not Applicable

S.U. = Standard Units

umhos/cm = micromhos per centimeter

**TABLE 4**

**Concentration Reduction Calculation – August 9, 2005**

**Highway 11 Grocery  
13527 South Carolina Highway 11  
Salem, Oconee County, South Carolina  
UST Permit Number: 03439  
SEI Project Number: 302169**

Well ID		Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Naphthalene (µg/L)	Concentration > SSTL (µg/L)
MW-1	Initial (05/07/02)	226,000	301,000	280,000	278,000	5,110,000	2,000	
	SSTL	22	4,497	3,148	44,969	180	112	
	Initial > SSTL	225,978	296,503	276,852	233,031	5,109,820	1,888	6,144,072
	Subsequent (11/01/05)	44,390	26,540	3,700	21,680	173,000	637,000	
	Subsequent > SSTL	44,368	22,043	552	23,389	172,820	636,888	900,060
MW-2	Initial (05/07/02)	13.0	8.0	1.0	5.0	5.0	5.0	
	SSTL	13.0	8.0	1.0	5.0	5.0	5.0	
	Initial > SSTL	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Subsequent (11/01/05)	3.8	1.6	<1.0	<3.0	<1.0	<2.0	
	Subsequent > SSTL	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MW-3	Initial (05/07/02)	1.0	1.0	1.0	1.0	5.0	5.0	
	SSTL	1.0	1.0	1.0	1.0	5.0	5.0	
	Initial > SSTL	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Subsequent (11/01/05)	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0	
	Subsequent > SSTL	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MW-4	Initial (05/07/02)	1,500	5,320	620	3,360	810	500	
	SSTL	1,500	5,320	620	3,360	810	500	
	Initial > SSTL	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Subsequent (11/01/05)	3,720	3,660	745	4,170	4,540	<200	
	Subsequent > SSTL	2,220	0.0	125	810	3,730	0.0	6,885
MW-5	Initial (05/07/02)	1.0	1.0	1.0	1.0	5.0	5.0	
	SSTL	1.0	1.0	1.0	1.0	5.0	5.0	
	Initial > SSTL	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Subsequent (11/01/05)	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0	
	Subsequent > SSTL	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MW-6	Initial (05/07/02)	1,780	4,950	490	2,880	6,350	500	
	SSTL	1,780	4,950	490	2,880	6,350	500	
	Initial > SSTL	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Subsequent (11/01/05)	979	2,220	282	1,810	9,410	<200	
	Subsequent > SSTL	0.0	0.0	0.0	0.0	3,060	0.0	3,060
MW-7	Initial (05/07/02)	34	20	1.0	8.0	7.0	5.0	
	SSTL	22	20	1.0	8.0	7.0	5.0	
	Initial > SSTL	12	0.0	0.0	0.0	0.0	0.0	12
	Subsequent (11/01/05)	27.3	41.5	3.7	23.6	<1.0	<2.0	
	Subsequent > SSTL	5.3	21.5	2.7	15.6	0.0	0.0	45.1
MW-8	Initial (05/07/02)	226,000	301,000	280,000	278,000	5,110,000	2,000	
	SSTL	204	40,888	28,622	278,000	1,362	1,021	
	Initial > SSTL	225,796	260,112	251,378	0.0	5,108,638	979	5,846,903
	Subsequent (11/01/05)	44,390	26,540	3,700	21,680	173,000	637,000	
	Subsequent > SSTL	44,186	0.0	0.0	0.0	171,638	635,979	851,803

**TABLE 4 (Continued)**

**Concentration Reduction Calculation – August 9, 2005**

**Highway 11 Grocery  
13527 South Carolina Highway 11  
Salem, Oconee County, South Carolina  
UST Permit Number: 03439  
SEI Project Number: 302169**

Well ID		Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Naphthalene (µg/L)	Concentration > SSTL (µg/L)
MW-10	Initial (05/07/02)	115	185	68	328	86	9.0	
	SSTL	115	185	68	328	86	9.0	
	Initial > SSTL	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Subsequent (11/01/05)	10,000	23,500	1,410	7,510	21,600	<1,000	
	Subsequent > SSTL	9,885	23,315	1,342	7,182	21,514	991	64,229
MW-11	Initial (05/07/02)	1.0	1.0	1.0	1.0	5.0	5.0	
	SSTL	1.0	1.0	1.0	1.0	5.0	5.0	
	Initial > SSTL	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Subsequent (11/01/05)	42.2	<1.0	<1.0	93.6	4.5	3.8	
	Subsequent > SSTL	41.2	0.0	0.0	92.6	0.0	0.0	133.8
MW-14	Initial (05/07/02)	3,780	13,800	27,000	14,700	7,010	500	
	SSTL	5.0	1,000	700	10,000	40	25	
	Initial > SSTL	3,775	12,800	26,300	4,700	6,970	475	55,020
	Subsequent (11/01/05)	3,290	10,600	1,820	11,000	4,950	<400	08/09/05 data
	Subsequent > SSTL	3,285	9,600	1,120	1,000	4,910	375	20,290
DMW-1	Initial (05/07/02)	215	430	50	50	1,780	250	
	SSTL	215	430	50	50	1,780	250	
	Initial > SSTL	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Subsequent (11/01/05)	<5.0	<5.0	<5.0	<15	<5.0	<10	
	Subsequent > SSTL	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DMW-2	Initial (05/07/02)	1.0	1.0	1.0	1.0	5.0	5.0	
	SSTL	1.0	1.0	1.0	1.0	5.0	5.0	
	Initial > SSTL	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Subsequent (11/01/05)	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0	
	Subsequent > SSTL	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DMW-4	Initial (05/07/02)	1.0	1.0	1.0	1.0	5.0	5.0	
	SSTL	1.0	1.0	1.0	1.0	5.0	5.0	
	Initial > SSTL	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Subsequent (11/01/05)	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0	
	Subsequent > SSTL	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTALS	Initial > SSTL	(Sum of Initial Concentration Above SSTL for all Wells)						12,046,007
	Subsequent > SSTL	(Sum of Subsequent Concentration Above SSTL for all Wells)						1,846,505.9

\*MW-8 contained 0.5 feet of free product. Data from 03/31/04 used.

µg/L - micrograms per liter

SSTL = Site Specific Target Levels

ND = Non-Detect

Results of Non-Detect and Negative Numbers are Treated as Zeros

Comparison of Analytical Data = [(12,046,007 - 1,846,505.9)/12,046,007]\*100 = 84.67

$$\frac{[05/07/02 \text{ Sample Concentration Above SSTL}] - [11/01/05 \text{ Sample Concentration Above SSTL}]}{[05/07/02 \text{ Sample Concentration Above SSTL}]}$$

\*100 = % Reduction

**APPENDIX C**  
**Field Information Data Sheets**



*TO: Douglas  
From Mark  
11-4-05  
1315*

## SEI Environmental SC Monitoring Well Gauging Data Sheet

Site Name: Highway 11 Grocery WO# 302169

Date 10/31/05

Well ID	Total Depth (feet)	Well Dia. (in.)	Depth to Product (feet)	Product Thickness (feet)	Depth to Water (feet)	Notes
MW-1	30	2	<u>25.13</u>		<u>25.20</u>	
MW-2	35	2			<u>26.29</u>	
MW-3	35	2			<u>24.85</u>	Semi-annual
MW-4	35	2			<u>27.27</u>	
MW-5	35	2			<u>28.91</u>	
MW-6	35	2			<u>22.41</u>	
MW-7	40	2			<u>28.63</u>	
MW-9	11	2			<del>21.23</del>	
MW-10	24	2			<u>21.07</u>	
MW-11	23	2			<u>18.22</u>	Semi-annual
MW-12	11	2			<u>3.63</u>	
MW-14	9	2	<u>unable to locate</u>			
<del>DW-1</del>	45	2			<u>25.11</u>	
<del>DW-2</del>	75	2			<u>18.08</u>	
DMW-4	61	2			<u>26.51</u>	Semi-annual
MW-15					<u>11.32</u>	
MW-6			<u>21.69</u>		<u>23.31</u>	
Water Supply Well Sample: WW-1						
Surface Water Samples: CK-1 & CK-3 - <u>check location</u>						

*DMW  
DMW*

**Analysis:** EPA Method 8260B for BTEX, MTBE, and Naphthalene

2-inch diameter well: Well Volume = (water column) x (0.163 gallon/foot)  
 4-inch diameter well: Well Volume = (water column) x (0.652 gallon/foot)  
 Purge amount = Well Volume x 3

South Carolina Department of Health and Environmental Control  
 Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy): 6/31/05  
 Field Personnel: Scott, Ritch  
 General Weather Conditions: \_\_\_\_\_  
 Ambient Air Temperature: \_\_\_\_\_ °C  
 \_\_\_\_\_  
 Quality Assurance  
 pH Meter serial no. \_\_\_\_\_ Conductivity Meter serial no. \_\_\_\_\_  
 pH = 4.0 \_\_\_\_\_ standard \_\_\_\_\_  
 pH = 7.0 \_\_\_\_\_ standard \_\_\_\_\_  
 pH = 10.0 \_\_\_\_\_ standard \_\_\_\_\_  
 Chain of Custody  
 Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name Highway 11 Grocery Job # 302169  
 Site ID # 03439 Monitoring Well # MW-1  
 Water Supply Well Public Private \_\_\_\_\_  
 Monitoring Well Diameter (D): 2" feet  
 Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C = 0.163  
 for a 4 inch well C = 0.652  
 \*Free Product Thickness STFP 25.13 feet  
 Depth to Ground Water (DGW) 25.20 feet  
 Total Well Depth (TWD) 30' feet  
 Length of the water column (LWC = TWD - DGW) \_\_\_\_\_ feet  
 1 casing volume (CV = LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals  
 3 casing volume (3 X CV) = \_\_\_\_\_ gals (standard purge volume)  
 Total Volume of Water Purged Before Sampling 1 gal gals  
 \* If free product is present over 1/8 inch, sampling will not be required.

*Product meter  
 tank  
 verified*

Cumulative Volume Purged (gallons)	Initial	1 <sup>st</sup> Vol	2 <sup>nd</sup> Vol	3 <sup>rd</sup> Vol	4 <sup>th</sup> Vol	5 <sup>th</sup> Vol	Post Sampling
Time (military)							
pH (s.u.)							
Specific Conductivity (µmhos/cm)							
Water Temperature (°C)							
Dissolved Oxygen							
PID readings, if required							

Remarks: \_\_\_\_\_  
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South Carolina Department of Health and Environmental Control  
 Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy): 10/31/05

Field Personnel: Scott, Ritch

General Weather Conditions: \_\_\_\_\_

Ambient Air Temperature: \_\_\_\_\_ °C

Quality Assurance

pH Meter serial no. \_\_\_\_\_ Conductivity Meter serial no. \_\_\_\_\_

pH = 4.0 \_\_\_\_\_ standard \_\_\_\_\_

pH = 7.0 \_\_\_\_\_ standard \_\_\_\_\_

pH = 10.0 \_\_\_\_\_ standard \_\_\_\_\_

Chain of Custody

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name Highway 11 Grocery Job # 302169

Site ID # 03439 Monitoring Well # MW-2

Water Supply Well Public \_\_\_\_\_ Private \_\_\_\_\_

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C = 0.163  
 for a 4 inch well C = 0.652

\*Free Product Thickness \_\_\_\_\_ feet

Depth to Ground Water (DGW) 26.27 feet

Total Well Depth (TWD) 35 feet

Length of the water column (LWC = TWD - DGW) 11.7 feet

1 casing volume (CV = LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals

3 casing volume (3 X CV) = \_\_\_\_\_ gals (standard purge volume)

Total Volume of Water Purged Before Sampling 5.5 gals

\* If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1 <sup>st</sup> Vol	2 <sup>nd</sup> Vol	3 <sup>rd</sup> Vol	4 <sup>th</sup> Vol	5 <sup>th</sup> Vol	Post Sampling
Time (military)							
pH (s.u.)	<u>4.63</u>	<u>4.63</u>	<u>4.69</u>	<u>4.70</u>			
Specific Conductivity (µmhos/cm)				<u>.082</u>			
Water Temperature (°C)	<u>19.02</u>	<u>19.71</u>	<u>18.48</u>	<u>18.50</u>			
Dissolved Oxygen				<u>3.90</u>			
PID readings, if required							

Remarks: \_\_\_\_\_

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 ENVIRONMENTAL ENG. & ANAL. SER.

**South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program**

**Field Data Information Sheet for Ground Water Sampling**

Date (mm/dd/yy): 10/31/05  
 Field Personnel: Scott, Ritch  
 General Weather Conditions: \_\_\_\_\_  
 Ambient Air Temperature: \_\_\_\_\_ °C

Quality Assurance

pH Meter serial no. _____	Conductivity Meter serial no. _____
pH = 4.0 _____	standard _____
pH = 7.0 _____	standard _____
pH = 10.0 _____	standard _____

Chain of Custody

Relinquished by _____	Date/Time _____	Received by _____	Date/Time _____
-----------------------	-----------------	-------------------	-----------------

Facility Name Highway 11 Grocery Job # 302169  
 Site ID # 03439 Monitoring Well # MW-3  
 Water Supply Well Public Private \_\_\_\_\_  
 Monitoring Well Diameter (D): 2" feet  
 Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C = 0.163  
 for a 4 inch well C = 0.652

\*Free Product Thickness \_\_\_\_\_ feet  
 Depth to Ground Water (DGW) 24.85 feet  
 Total Well Depth (TWD) 35' feet  
 Length of the water column (LWC = TWD-DGW) 11 feet  
 1 casing volume (CV = LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals  
 3 casing volume (3 X CV) = \_\_\_\_\_ gals (standard-purge volume)

Total Volume of Water Purged Before Sampling 290 gals  
 \* If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1 <sup>st</sup> Vol	2 <sup>nd</sup> Vol	3 <sup>rd</sup> Vol	4 <sup>th</sup> Vol	5 <sup>th</sup> Vol	Post Sampling
Time (military)							
pH (s.u.)		<u>5.33</u>	<u>5.06</u>	<u>5.07</u>			
Specific Conductivity (µmhos/cm)		<u>1023</u>	<u>1025</u>				
Water Temperature (°C)		<u>18.20</u>	<u>17.80</u>	<u>17.89</u>			
Dissolved Oxygen		<u>6.61</u>		<u>5.05</u>			
PID readings, if required							

Remarks: \_\_\_\_\_  
 \_\_\_\_\_  
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561 ENVIRONMENTAL INC. - RAL 561  
 10/04/05 10:46 AM '04 596 1605

**South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program**

**Field Data Information Sheet for Ground Water Sampling**

Date (mm/dd/yy): 10/31/05  
 Field Personnel: Scott, Ritch  
 General Weather Conditions: \_\_\_\_\_  
 Ambient Air Temperature: \_\_\_\_\_ °C

Quality Assurance

pH Meter serial no.	Conductivity Meter serial no.
pH = 4.0	standard
pH = 7.0	standard
pH = 10.0	standard

Chain of Custody

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name Highway 11 Grocery Job # 302169  
 Site ID # 03439 Monitoring Well # MW-14  
 Water Supply Well Public Private \_\_\_\_\_  
 Monitoring Well Diameter (D): 2 1/2 feet

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C = 0.163  
 for a 4 inch well C = 0.652

\*Free Product Thickness \_\_\_\_\_ feet  
 Depth to Ground Water (DGW) 27.27 feet  
 Total Well Depth (TWD) 35 feet  
 Length of the water column (LWC = TWD-DGW) 2.7 feet  
 1 casing volume (CV = LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals  
 3 casing volume (3 X CV) = \_\_\_\_\_ gals (standard purge volume)

Total Volume of Water Purged Before Sampling 4 gals  
 \* If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1 <sup>st</sup> Vol	2 <sup>nd</sup> Vol	3 <sup>rd</sup> Vol	4 <sup>th</sup> Vol	5 <sup>th</sup> Vol	Post Sampling
Time (military)							
pH (s.u.)	<u>5.61</u>	<u>5.56</u>	<u>4.99</u>	<u>4.58</u>			
Specific Conductivity (µmhos/cm)				<u>20.08</u>			
Water Temperature (°C)	<u>18.68</u>	<u>18.20</u>	<u>18.17</u>	<u>18.16</u>			
Dissolved Oxygen				<u>5.91</u>			
PID readings, if required							

Remarks: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

11.04/05 13:46 FAX 704 588 3805 SEC. ENVIRONMENTAL SVC. - RAL SEL 4009

**South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program**

**Field Data Information Sheet for Ground Water Sampling**

Date (mm/dd/yy): 10/31/05  
 Field Personnel: Scott, Ritch  
 General Weather Conditions: \_\_\_\_\_  
 Ambient Air Temperature: \_\_\_\_\_ °C  
 \_\_\_\_\_  
 Quality Assurance  
 pH Meter serial no. \_\_\_\_\_ Conductivity Meter serial no. \_\_\_\_\_  
 pH = 4.0 \_\_\_\_\_ standard \_\_\_\_\_  
 pH = 7.0 \_\_\_\_\_ standard \_\_\_\_\_  
 pH = 10.0 \_\_\_\_\_ standard \_\_\_\_\_  
 Chain of Custody  
 Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name Highway 11 Grocery Job # 302169  
 Site ID # 03439 Monitoring Well # MW-5  
 Water Supply Well Public Private \_\_\_\_\_  
 Monitoring Well Diameter (D): 2 1/2 feet  
 Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C = 0.163  
 for a 4 inch well C = 0.652  
 \*Free Product Thickness \_\_\_\_\_ feet  
 Depth to Ground Water (DGW) 28.91 feet  
 Total Well Depth (TWD) 35' feet  
 Length of the water column (LWC = TWD - DGW) 6.1 feet  
 1 casing volume (CV = LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals  
 3 casing volume (3 X CV) = \_\_\_\_\_ gals (standard purge volume)  
 Total Volume of Water Purged Before Sampling 3.5 gals  
 \* If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1 <sup>st</sup> Vol	2 <sup>nd</sup> Vol	3 <sup>rd</sup> Vol	4 <sup>th</sup> Vol	5 <sup>th</sup> Vol	Post Sampling
Time (military)							
pH (s.u.)	<u>4.59</u>	<u>4.74</u>	<u>4.78</u>	<u>4.77</u>			
Specific Conductivity (µmhos/cm)	<u>.018</u>			<u>.019</u>			
Water Temperature (°C)	<u>18.57</u>	<u>18.03</u>	<u>18.05</u>	<u>18.01</u>			
Dissolved Oxygen	<u>5.59</u>			<u>5.01</u>			
PID readings, if required							
Remarks:	_____						
	_____						

SEI ENVIRONMENTAL INC. RAL SEI 010 11-04-05 10:47 AM '04 596 3605

**South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program**

**Field Data Information Sheet for Ground Water Sampling**

Date (mm/dd/yy): 10/3/05  
 Field Personnel: Scott, Ritch  
 General Weather Conditions: Sunny  
 Ambient Air Temperature: 70 F °C  
 \_\_\_\_\_  
 Quality Assurance  
 pH Meter serial no. \_\_\_\_\_ Conductivity Meter serial no. \_\_\_\_\_  
 pH = 4.0 \_\_\_\_\_ standard \_\_\_\_\_  
 pH = 7.0 \_\_\_\_\_ standard \_\_\_\_\_  
 pH = 10.0 \_\_\_\_\_ standard \_\_\_\_\_  
 \_\_\_\_\_  
 Chain of Custody  
 Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name Highway 11 Grocery Job # 302169  
 Site ID # 03439 Monitoring Well # MW-6  
 Water Supply Well Public Private \_\_\_\_\_  
 Monitoring Well Diameter (D): 2" feet  
 Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C = 0.163  
 for a 4 inch well C = 0.652  
 \*Free Product Thickness \_\_\_\_\_ feet  
 Depth to Ground Water (DGW) 22.41 feet  
 Total Well Depth (TWD) 35 feet  
 Length of the water column (LWC = TWD - DGW) 12 feet  
 1 casing volume (CV = LWC X C) = X = \_\_\_\_\_ gals  
 3 casing volume (3 X CV) = \_\_\_\_\_ gals (standard purge volume)  
 Total Volume of Water Purged Before Sampling 5.9 gals  
 \* If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1 <sup>st</sup> Vol	2 <sup>nd</sup> Vol	3 <sup>rd</sup> Vol	4 <sup>th</sup> Vol	5 <sup>th</sup> Vol	Post Sampling
Time (military)							
pH (s.u.)							
Specific Conductivity (µmhos/cm)							
Water Temperature (°C)							
Dissolved Oxygen							
PID readings, if required							

Remarks: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

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South Carolina Department of Health and Environmental Control  
 Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy): 10/31/05  
 Field Personnel: Scott, Rich  
 General Weather Conditions: \_\_\_\_\_  
 Ambient Air Temperature: \_\_\_\_\_ °C  
 \_\_\_\_\_  
 Quality Assurance  
 pH Meter serial no. \_\_\_\_\_ Conductivity Meter serial no. \_\_\_\_\_  
 pH = 4.0 \_\_\_\_\_ standard \_\_\_\_\_  
 pH = 7.0 \_\_\_\_\_ standard \_\_\_\_\_  
 pH = 10.0 \_\_\_\_\_ standard \_\_\_\_\_  
 Chain of Custody  
 Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name Highway 11 Grocery Job # 302169  
 Site ID # 03439 Monitoring Well # MW-7  
 Water Supply Well Public Private \_\_\_\_\_  
 Monitoring Well Diameter (D): 2" feet  
 Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C = 0.163  
 for a 4 inch well C = 0.652  
 \*Free Product Thickness \_\_\_\_\_ feet  
 Depth to Ground Water (DGW) 28.63 feet  
 Total Well Depth (TWD) 40' feet  
 Length of the water column (LWC = TWD - DGW) 12.5 feet  
 1 casing volume (CV = LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals  
 3 casing volume (3 X CV) = \_\_\_\_\_ gals (standard purge volume)  
 Total Volume of Water Purged Before Sampling 6.3 gals  
 \* If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1 <sup>st</sup> Vol	2 <sup>nd</sup> Vol	3 <sup>rd</sup> Vol	4 <sup>th</sup> Vol	5 <sup>th</sup> Vol	Post Sampling
Time (military)							
pH (s.u.)	<u>5.21</u>	<u>4.92</u>	<u>4.85</u>	<u>4.90</u>			
Specific Conductivity (µmhos/cm)	<u>032</u>	<u>030</u>	<u>035</u>	<u>031</u>			
Water Temperature (°C)	<u>14.84</u>	<u>18.72</u>	<u>16.20</u>	<u>18.21</u>			
Dissolved Oxygen	<u>2.98</u>			<u>4.90</u>			
PID readings, if required							
Remarks:	_____						

10/31/05 13:44 FAX 704 596 3305  
 SCDHEC ENVIRONMENTAL INC. 1000 RALPH B.



**South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program**

**Field Data Information Sheet for Ground Water Sampling**

Date (mm/dd/yy): 10/31/05  
 Field Personnel: Scott, Ritch  
 General Weather Conditions: \_\_\_\_\_  
 Ambient Air Temperature: \_\_\_\_\_ °C  
 \_\_\_\_\_  
 Quality Assurance  
 pH Meter serial no. \_\_\_\_\_ Conductivity Meter serial no. \_\_\_\_\_  
 pH = 4.0 \_\_\_\_\_ standard \_\_\_\_\_  
 pH = 7.0 \_\_\_\_\_ standard \_\_\_\_\_  
 pH = 10.0 \_\_\_\_\_ standard \_\_\_\_\_  
 Chain of Custody  
 Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name Highway 11 Grocery Job # 302169  
 Site ID # 03439 Monitoring Well # MW-9  
 Water Supply Well Public Private \_\_\_\_\_  
 Monitoring Well Diameter (D): 2" feet  
 Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C = 0.163  
 for a 4 inch well C = 0.652  
 \*Free Product Thickness \_\_\_\_\_ feet  
 Depth to Ground Water (DGW) 2.33 feet  
 Total Well Depth (TWD) 11 feet  
 Length of the water column (LWC = TWD - DGW) 8.5 feet  
 1 casing volume (CV = LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals  
 3 casing volume (3 X CV) = \_\_\_\_\_ gals (standard purge volume)  
 Total Volume of Water Purged Before Sampling 4 gals  
 \* If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1 <sup>st</sup> Vol	2 <sup>nd</sup> Vol	3 <sup>rd</sup> Vol	4 <sup>th</sup> Vol	5 <sup>th</sup> Vol	Post Sampling
Time (military)							
pH (s.u.)	<u>5.02</u>	<u>4.96</u>	<u>4.89</u>	<u>4.90</u>			
Specific Conductivity (µmhos/cm)							
Water Temperature (°C)	<u>18.90</u>	<u>18.50</u>	<u>18.51</u>	<u>18.53</u>			
Dissolved Oxygen				<u>5.1</u>			
PID readings, if required							

Remarks: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

11/04/05 10:48 FAX 94 336 3605 SEE ENVIRONMENTAL INC. - RAL SEE

South Carolina Department of Health and Environmental Control  
 Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy): 10/31/05  
 Field Personnel: Scott, Ritch  
 General Weather Conditions: \_\_\_\_\_  
 Ambient Air Temperature: \_\_\_\_\_ °C  
 \_\_\_\_\_  
 Quality Assurance  
 pH Meter serial no. \_\_\_\_\_ Conductivity Meter serial no. \_\_\_\_\_  
 pH = 4.0 \_\_\_\_\_ standard \_\_\_\_\_  
 pH = 7.0 \_\_\_\_\_ standard \_\_\_\_\_  
 pH = 10.0 \_\_\_\_\_ standard \_\_\_\_\_  
 Chain of Custody  
 Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name Highway 11 Grocery Job # 302169  
 Site ID # 03439 Monitoring Well # MW-10  
 Water Supply Well Public \_\_\_\_\_ Private \_\_\_\_\_  
 Monitoring Well Diameter (D): 2" feet  
 Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C = 0.163  
 for a 4 inch well C = 0.652  
 \*Free Product Thickness \_\_\_\_\_ feet  
 Depth to Ground Water (DGW) 21.07 feet  
 Total Well Depth (TWD) 241 feet  
 Length of the water column (LWC = TWD-DGW) 3 feet  
 1 casing volume (CV = LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals  
 3 casing volume (3 X CV) = \_\_\_\_\_ gals (standard purge volume)  
 Total Volume of Water Purged Before Sampling 3 gals  
 \* If free product is present over 1/8 inch, sampling will not be required.

	Initial	1 <sup>st</sup> Vol	2 <sup>nd</sup> Vol	3 <sup>rd</sup> Vol	4 <sup>th</sup> Vol	5 <sup>th</sup> Vol	Post Sampling
Cumulative Volume Purged (gallons)							
Time (military)							
pH (s.u.)	<u>5.77</u>	<u>5.76</u>	<u>5.79</u>				
Specific Conductivity (µmhos/cm)	<u>1107</u>	<u>1110</u>	<u>1124</u>				
Water Temperature (°C)	<u>18.86</u>	<u>18.88</u>	<u>18.51</u>				
Dissolved Oxygen	<u>1.61</u>	<u>2.92</u>	<u>2.83</u>				
PID readings, if required							
Remarks:	_____						

SEI ENVIRONMENTAL INC. 104 536 3605  
 10/31/05 09:44 FAX 704 536 3605

South Carolina Department of Health and Environmental Control  
 Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy): 6/3/05  
 Field Personnel: Scott, Ritch  
 General Weather Conditions: \_\_\_\_\_  
 Ambient Air Temperature: \_\_\_\_\_ °C

Quality Assurance

pH Meter serial no. _____	Conductivity Meter serial no. _____
pH = 4.0 _____	standard _____
pH = 7.0 _____	standard _____
pH = 10.0 _____	standard _____

Chain of Custody \_\_\_\_\_

Relinquished by _____	Date/Time _____	Received by _____	Date/Time _____
-----------------------	-----------------	-------------------	-----------------

Facility Name Highway 11 Grocery Job # 302169  
 Site ID # 03439 Monitoring Well # MW-11  
 Water Supply Well Public \_\_\_\_\_ Private \_\_\_\_\_  
 Monitoring Well Diameter (D): 2" feet

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C = 0.163  
 for a 4 inch well C = 0.652

\*Free Product Thickness 5 feet  
 Depth to Ground Water (DGW) 19.22 feet  
 Total Well Depth (TWD) 23' feet  
 Length of the water column (LWC = TWD - DGW) 5 feet  
 1 casing volume (CV = LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals  
 3 casing volume (3 X CV) = \_\_\_\_\_ gals (standard purge volume)

Total Volume of Water Purged Before Sampling 2.5 gals  
 \* If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1 <sup>st</sup> Vol	2 <sup>nd</sup> Vol	3 <sup>rd</sup> Vol	4 <sup>th</sup> Vol	5 <sup>th</sup> Vol	Post Sampling
Time (military)							
pH (s.u.)							
Specific Conductivity (umhos/cm)							
Water Temperature (°C)							
Dissolved Oxygen							
PID readings, if required							

Remarks: \_\_\_\_\_

04/05 13:48 FAX 704 598 3805  
 SET ENVIRONMENTAL INC. RAL SEI

**South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program**

**Field Data Information Sheet for Ground Water Sampling**

Date (mm/dd/yy): 10/31/05  
 Field Personnel: Scott, Ritch  
 General Weather Conditions: \_\_\_\_\_  
 Ambient Air Temperature: \_\_\_\_\_ °C

Quality Assurance

pH Meter serial no. _____	Conductivity Meter serial no. _____
pH = 4.0 _____	standard _____
pH = 7.0 _____	standard _____
pH = 10.0 _____	standard _____

Chain of Custody

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name Highway 11 Grocery Job # 302169  
 Site ID # 03439 Monitoring Well # MW-12  
 Water Supply Well Public Private \_\_\_\_\_  
 Monitoring Well Diameter (D): 2 1/2 feet

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C = 0.163  
 for a 4 inch well C = 0.652

\*Free Product Thickness \_\_\_\_\_ feet  
 Depth to Ground Water (DGW) 3.63 feet  
 Total Well Depth (TWD) 11 feet  
 Length of the water column (LWC = TWD - DGW) 7.5 feet  
 1 casing volume (CV = LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals  
 3 casing volume (3 X CV) = \_\_\_\_\_ gals (standard purge volume)

Total Volume of Water Purged Before Sampling 4.0 gals  
 \* If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1 <sup>st</sup> Vol	2 <sup>nd</sup> Vol	3 <sup>rd</sup> Vol	4 <sup>th</sup> Vol	5 <sup>th</sup> Vol	Post Sampling
Time (military)							
pH (s.u.)		<u>5.26</u>	<u>5.36</u>	<u>5.39</u>	<u>5.38</u>		
Specific Conductivity (µmhos/cm)		<u>.008</u>			<u>.018</u>		
Water Temperature (°C)		<u>18.76</u>	<u>18.83</u>	<u>18.55</u>	<u>18.57</u>		
Dissolved Oxygen				<u>4.91</u>			
PID readings, if required							

Remarks: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

SEI ENVIRONMENTAL INC. - RAL SEI 04/06 10:18 FAX 843 386 3605

**South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program**

**Field Data Information Sheet for Ground Water Sampling**

Date (mm/dd/yy): 10/31/05

Field Personnel: SCOTT, RITCH

General Weather Conditions: \_\_\_\_\_

Ambient Air Temperature: \_\_\_\_\_ °C

Quality Assurance

pH Meter serial no.	_____	Conductivity Meter serial no.	_____
pH = 4.0	_____	standard	_____
pH = 7.0	_____	standard	_____
pH = 10.0	_____	standard	_____

Chain of Custody

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name Highway 11 Grocery Job # 302169

Site ID # 03439 Monitoring Well # MW-14

Water Supply Well Public Private \_\_\_\_\_

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C = 0.163  
for a 4 inch well C = 0.652

\*Free Product Thickness \_\_\_\_\_ feet

Depth to Ground Water (DGW) \_\_\_\_\_ feet

Total Well Depth (TWD) 9' feet

Length of the water column (LWC = TWD - DGW) \_\_\_\_\_ feet

1 casing volume (CV = LWC X C) = X = \_\_\_\_\_ gals

3 casing volume (3 X CV) = \_\_\_\_\_ gals (standard purge volume)

Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals

\* If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1 <sup>st</sup> Vol	2 <sup>nd</sup> Vol	3 <sup>rd</sup> Vol	4 <sup>th</sup> Vol	5 <sup>th</sup> Vol	Post Sampling
Time (military)							
pH (s.u.)							
Specific Conductivity (umhos/cm)							
Water Temperature (°C)							
Dissolved Oxygen							
PID readings, if required							

Remarks: \_\_\_\_\_

11/04/05 13:47 FAX 704 596 3605 SEI ENVIRONMENTAL INC. RAL SEI

South Carolina Department of Health and Environmental Control  
 Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy): 10/31/05

Field Personnel: Scott, Ritch

General Weather Conditions: \_\_\_\_\_

Ambient Air Temperature: \_\_\_\_\_ °C

Quality Assurance

pH Meter serial no.	_____	Conductivity Meter serial no.	_____
pH = 4.0	_____	standard	_____
pH = 7.0	_____	standard	_____
pH = 10.0	_____	standard	_____

Chain of Custody

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name Highway 11 Grocery Job # 302169

Site ID # 03439 Monitoring Well # DW-1

Water Supply Well Public Private \_\_\_\_\_

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C = 0.163  
 for a 4 inch well C = 0.652

\*Free Product Thickness \_\_\_\_\_ feet  
 Depth to Ground Water (DGW) 25.1' feet  
 Total Well Depth (TWD) 45' feet  
 Length of the water column (LWC = TWD-DGW) 20' feet  
 1 casing volume (CV = LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals  
 3 casing volume (3 X CV) = \_\_\_\_\_ gals (standard purge volume)

Total Volume of Water Purged Before Sampling 10 gals  
 \* If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1 <sup>st</sup> Vol	2 <sup>nd</sup> Vol	3 <sup>rd</sup> Vol	4 <sup>th</sup> Vol	5 <sup>th</sup> Vol	Post Sampling
Time (military)							
pH (s.u.)	<u>5.50</u>	<u>5.51</u>	<u>5.53</u>	<u>5.55</u>			
Specific Conductivity (µmhos/cm)	<u>1031</u>			<u>1030</u>			
Water Temperature (°C)	<u>17.64</u>	<u>17.52</u>	<u>18.53</u>	<u>18.52</u>			
Dissolved Oxygen	<u>5.13</u>			<u>4.99</u>			
PID readings, if required							

Remarks: \_\_\_\_\_

11/04/05 13:48 FAX 704 586 3805  
 3E1 ENVIRONMENTAL INC. - RAL 3E1

**South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program**

**Field Data Information Sheet for Ground Water Sampling**

Date (mm/dd/yy): 10/31/05

Field Personnel: Scott, Ritch

General Weather Conditions: \_\_\_\_\_

Ambient Air Temperature: \_\_\_\_\_ °C

Quality Assurance

pH Meter serial no. _____	Conductivity Meter serial no. _____
pH = 4.0 _____	standard _____
pH = 7.0 _____	standard _____
pH = 10.0 _____	standard _____

Chain of Custody

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name Highway 11 Grocery Job # 302169

Site ID # 03439 Monitoring Well # DW-2

Water Supply Well Public Private \_\_\_\_\_

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C = 0.163  
for a 4 inch well C = 0.652

\*Free Product Thickness \_\_\_\_\_ feet

Depth to Ground Water (DGW) \_\_\_\_\_ feet

Total Well Depth (TWD) 75' feet

Length of the water column (LWC = TWD - DGW) \_\_\_\_\_ feet

1 casing volume (CV = LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals

3 casing volume (3 X CV) = \_\_\_\_\_ gals (standard purge volume)

Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals

\* If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1 <sup>st</sup> Vol.	2 <sup>nd</sup> Vol.	3 <sup>rd</sup> Vol.	4 <sup>th</sup> Vol.	5 <sup>th</sup> Vol.	Post Sampling
Time (military)							
pH (s.u.)							
Specific Conductivity (µmhos/cm)							
Water Temperature (°C)							
Dissolved Oxygen							
PID readings, if required							

Remarks: \_\_\_\_\_

S&E ENVIRONMENTAL INC. - RAL SEI 11/04/05 13:13 FAX 704 886 3805

South Carolina Department of Health and Environmental Control  
 Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy): 10/31/05  
 Field Personnel: Scott, Rich  
 General Weather Conditions: \_\_\_\_\_  
 Ambient Air Temperature: \_\_\_\_\_ °C  
 \_\_\_\_\_  
 Quality Assurance  
 pH Meter serial no. \_\_\_\_\_ Conductivity Meter serial no. \_\_\_\_\_  
 pH = 4.0 \_\_\_\_\_ standard \_\_\_\_\_  
 pH = 7.0 \_\_\_\_\_ standard \_\_\_\_\_  
 pH = 10.0 \_\_\_\_\_ standard \_\_\_\_\_  
 Chain of Custody  
 Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name Highway 11 Grocery Job # 302169  
 Site ID # 03439 Monitoring Well # DMW-4  
 Water Supply Well Public \_\_\_\_\_ Private \_\_\_\_\_  
 Monitoring Well Diameter (D): 2" feet  
 Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C = 0.163  
 for a 4 inch well C = 0.652  
 \*Free Product Thickness \_\_\_\_\_ feet  
 Depth to Ground Water (DGW) 26.51 feet  
 Total Well Depth (TWD) 61" feet  
 Length of the water column (LWC = TWD - DGW) 25 feet  
 1 casing volume (CV = LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals  
 3 casing volume (3 X CV) = \_\_\_\_\_ gals (standard purge volume)  
 Total Volume of Water Purged Before Sampling 12.5 gals  
 \* If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1 <sup>st</sup> Vol	2 <sup>nd</sup> Vol	3 <sup>rd</sup> Vol	4 <sup>th</sup> Vol	5 <sup>th</sup> Vol	Post Sampling
Time (military)							
pH (s.u.)	<u>5.61</u>	<u>5.670</u>	<u>5.76</u>	<u>5.79</u>			
Specific Conductivity (µmhos/cm)	<u>.037</u>			<u>.040</u>			
Water Temperature (°C)	<u>19.72</u>	<u>18.09</u>	<u>18.47</u>	<u>18.56</u>			
Dissolved Oxygen	<u>4.30</u>			<u>4.36</u>			
PID readings, if required							

Remarks: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

10/31/05 10:45 FAX 704 588 3805  
 SET ENVIRONMENTAL INC. 306



**APPENDIX D**  
**Laboratory Analytical Results and Chain-of-Custody**



CHAIN OF CUSTODY

4405 Vineland Rd., Suite C15  
Orlando, FL 32811  
407.425.6700, fax 407.425.0707

Account Job #: **F36316**  
Account Control #:

Client Information			Facility Information			Analytical Information			
Name: SEI Environmental			Project Name: Highway 11 Grocery						
Address: 8100 North I-85, Suite 7			Location: <u>Salem, SC</u>						
City: Charlotte	State: NC	Zip: 28206	Project No.: 302169						
Send Report to: Phone #: 704-588-8824			FAX #: 704-516-8605						
Field ID / Point of Collection	Collection			Preservation					
	Date	Time	Sampled By	Matrix	# of bottles	✓	✓	✓	✓
1 MW-6	10-31	1245	SG	Gr	3				X
2 MW-10	10-31	1320	RR	Gr					X
3 MW-7	10-31	1330	SG						X
4 MW-2	10-31	1343	RR						X
5 DMW-4	10-31	1556	RR						X
6 DMW-1	10-31	1357	SS						X
7 MW-4	10-31	1406	SS						X
8 MW-5	10-31	1410	RR						X
9 MW-3	10-31	1416	RR						X
10 MW-11	10-31	1420	SS	V					X

*SG, RR, SS, GR, V*

Turnaround Information		Data Deliverable Information		Comments / Remarks	
<input checked="" type="checkbox"/> 14 Day	Approved By: _____	<input type="checkbox"/> NJ Reduced	<input type="checkbox"/> Commercial "A"		
<input type="checkbox"/> 7 Days EMERGENCY		<input type="checkbox"/> NJ Full	<input type="checkbox"/> Commercial "B"		
<input type="checkbox"/> Other _____ (Days)		<input type="checkbox"/> FULL CLP	<input type="checkbox"/> ASP Category B		
RUSH TAT for FAX data		<input type="checkbox"/> Disk Deliverable	<input type="checkbox"/> State Forms		
Data unless previously approved.		<input type="checkbox"/> Other (Specify) _____			

Sample Custody must be documented below each time sample change possession, including courier delivery.

Received by:	Date/Time:	Received by:	Date/Time:	Received by:	Date/Time:
1. <i>[Signature]</i>	11/26/05 1530	2. <i>[Signature]</i>	11/23/05 0940	3. <i>[Signature]</i>	
3. <i>[Signature]</i>		4. <i>[Signature]</i>		5. <i>[Signature]</i>	
5. <i>[Signature]</i>		6. <i>[Signature]</i>		7. <i>[Signature]</i>	

Revised 08/2005 RS

F36316: Chain of Custody

Page 1 of 3



# CHAIN OF CUSTODY

4405 Vineland Rd., Suite C15  
Orlando, FL 32811  
407.425.6700, fax 407.425.0707

Accutest Job #:  
Accutest Control #:

Client Information			Facility Information			Analytical Information									
Name: <b>SEI Environmental</b>			Project Name: <b>Highway 11 Grocery</b>												
Address: <b>8100 North I-85, Suite 7</b>			Location: <b>Salem SC</b>												
City: <b>Charlotte</b> State: <b>NC</b> Zip: <b>28206</b>			Project No.: <b>302189</b>												
Send Report to: Phone #: <b>704-596-8624</b>			FAX #:												
Field ID / Point of Collection	Collection			Preservation											
	Date	Time	Sampled By	Matrix	# of bottles	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF
11 MW-1	10-31	1330	SS	GW	3										X
12 <del>CK-1</del>	10-31	1455	RR	GW	3										X
13 MW-9	10-31	1445	MHW	GW	3										X
17 DMW-2	10-31	1440	SS	GW	3										X
11 CR-3	10-31	1450	SS	GW	3										X
16 MW-12	10-31	1500	RR	GW	3										X
Terminology Information			Data Deliverable Information			Comments / Remarks									
<input checked="" type="checkbox"/> Agency Standard <input type="checkbox"/> 14 Day <input type="checkbox"/> 7 Days EMERGENCY <input type="checkbox"/> Other _____ (Days) <b>RUSH TAY is for FAX data</b> Data unless previously approved.			Approved By: _____ <input type="checkbox"/> NJ Reduced <input type="checkbox"/> NJ Full <input type="checkbox"/> FULL CLP <input type="checkbox"/> Disk Deliverable <input type="checkbox"/> Other (Specify) _____			<input type="checkbox"/> Commercial "A" <input type="checkbox"/> Commercial "B" <input type="checkbox"/> ASP Category B <input type="checkbox"/> State Forms									
Sample Custody must be documented below each time samples change possession, including courier delivery.															
1	Received by: <i>[Signature]</i>	Date Time: <i>11/2/05 10:30</i>	2	Received by: <i>[Signature]</i>	Date Time: <i>11/3/05 09:00</i>	3	Received by: <i>[Signature]</i>	Date Time:	4	Received by: <i>[Signature]</i>	Date Time:	5	Received by:	Date Time:	6
Preserved where applicable <input type="checkbox"/> On Ice <input type="checkbox"/>															

Revised 09/2005 RS

**CORRECTIVE ACTION SYSTEM EVALUATION REPORT**

**March through August 2005**

**Highway 11 Grocery  
13527 North SC Highway 11  
Salem, South Carolina  
Oconee County  
UST Permit Number: 03439  
SEI Project Number: 302169**

**50-Tab**

**PREPARED FOR:**

**Mr. Steve Smith  
Highway 11 Grocery  
13527 North SC Highway 11  
Salem, South Carolina 29676-9801**

**PREPARED BY:**

**SEI ENVIRONMENTAL, INC.  
130 Penmarc Drive, Suite 108  
Raleigh, North Carolina 27603-2434  
UST Site Rehabilitation Contractor No. 41**

**RECEIVED**

**September 21, 2005**

**SEP 26 2005**

**UNDERGROUND STORAGE  
TANK PROGRAM**

20-10m

SEP 26 2005

UNDERGROUND STORAGE  
TANK PROGRAM

**CORRECTIVE ACTION SYSTEM EVALUATION REPORT**

Submittal Date: September 21, 2005 Monitoring Report Number: 7  
For Period Covering: March 18, 2005 to August 9, 2005  
Facility Name: Highway 11 Grocery Street Address: 13527 North SC Highway 11  
UST Permit Number: 03439 City: Salem, South Carolina  
County: Oconee Zip Code: 29676-9801  
Latitude: N 35°54'26.02" Longitude: W 82°58'31.29"

Submitted by UST Owner/Operator:

Prepared by Consultant/Contractor:

Name: Steve Smith  
Company: Highway 11 Grocery  
Address: 13527 North Highway 11  
City: Salem State: SC  
Zip Code: 29676-9801  
Telephone: (864) 944-0494  
SEI Project Number: 302169

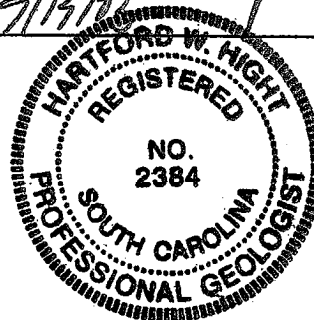
Name: Douglas S. Parker  
Company: SEI Environmental, Inc.  
Address: 130 Penmarc Drive, Suite 108  
City: Raleigh State: NC  
Zip Code: 27603-2434  
Telephone: (919) 832-2535  
UST Site Rehabilitation Contractor No. 41

**Registered Professional Engineer or Professional Geologist Certification**

I hereby certify that I have directed and supervised the fieldwork and preparation of this Plan, in accordance with State Rules and Regulations. As a registered professional geologist and/or professional engineer, I certify that I am a qualified groundwater professional, as defined by the South Carolina State Board of Professional Geologists. All of the information and laboratory data in this plan and in all of the attachments are true, accurate, complete, and in accordance with applicable State Rules and Regulations.

Name: Douglas S. Parker  
Signature: *[Handwritten Signature]*

Name: Hartford W. Hight, P.G.  
SC Reg. No. 2384  
Signature: *[Handwritten Signature]*  
Date: 9/19/05



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## LIMITATIONS

This investigation is intended to be a non-biased assessment of on-site environmental conditions proximate to the location of the former UST system. Subsurface investigative methodologies are in accordance with all applicable state and federal regulatory requirements. The information presented in this report is based upon site-specific observations, generally accepted geological practices, and analytical results for environmental samples collected at the time of the field investigation. All data is believed to represent subsurface conditions at the facility, however, data may not be completely representative of all subsurface conditions.

This report has been prepared under the guidance of a Licensed Geologist registered in South Carolina to meet the requirements of the South Carolina Department of Health and Environmental Control. The information and conclusions expressed in this report are based upon normal standards of the profession and limited to information available at this time. Chemical analyses of the samples associated with this report were performed by a subcontracted, independent, and certified laboratory. All data have been reviewed for accuracy and, excepting obvious errors, have been accepted as correct. SEI Environmental, Inc. reserves the right to revise estimates of performances as required by changes in the data supplied by Accutest Laboratories.

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UNDERGROUND STORAGE  
TANK PROGRAM



## **1.0 INTRODUCTION**

The Highway 11 Grocery is a convenience and retail fuel store located at 13527 North SC Highway 11 in Salem, Oconee County, South Carolina. Figure 1 in Appendix A is a portion of the United States Geological Survey (USGS) 7.5-minute topographical quadrangle map identifying the location of the site.

The following is a brief summary of recent events occurring at the site:

- December 18, 2003 – Groundwater Sampling Event
- March 31, 2004 – Groundwater Sampling Event
- September 29, 2004 – Groundwater Sampling Event
- January 11, 2005 – EFR performed on MW-8
- March 17, 2005 – EFR performed on MW-8
- March 17, 2005 – Groundwater Sampling Event
- August 9, 2005 – Groundwater Sampling Event

On August 9, 2005, eleven groundwater monitoring wells were sampled, one water supply well was sampled, and two surface water samples were collected, in accordance with the requirements of the PFP contract. This report provides details of the groundwater sampling event.

## **2.0 FIELD MEASUREMENTS AND SAMPLING**

### **2.1 Groundwater Sampling**

On August 9, 2005, groundwater samples were collected from eleven (MW-1, MW-2, MW-4 through MW-7, MW-9, MW-10, MW-12, MW-14, DMW-1, and DMW-2) groundwater monitoring wells. Five (MW-3, MW-11, MW-13, MW-15, and DMW-4) monitoring wells were not sampled because they are either sampled semi-annually (MW-3, MW-11, DMW-4) or were considered extraneous (MW-13 and MW-15). Monitoring well MW-8 was not sampled due to the presence of free product. Prior to sampling, groundwater depth was gauged in all seventeen monitoring wells utilizing an oil-water interface probe to measure depth to groundwater, and to detect any phase separated hydrocarbons (PSH) present. The depth to

groundwater measurement is used to calculate the groundwater elevation used in determining the current groundwater potentiometric surface, along with hydraulic gradient, and groundwater flow direction.

Figure 3 in Appendix A presents a groundwater potentiometric map for the current sampling event. The latest groundwater data indicate that groundwater flow at the site is predominately north, northeast, and south. This flow direction is consistent with previous determinations of groundwater movement. Monitoring well MW-8 contained approximately 0.05 feet of free product. Table 1 in Appendix B summarizes groundwater measurement data

Nine of the eleven monitoring wells did not require purging prior to sampling. Monitoring wells DMW-1 and DMW-2 were purged prior to sampling by removing a minimum of three well volumes of water via hand bailing with a new, disposable, polyethylene bailer or until groundwater quality data stabilized, or the well went dry. This purging process produced approximately 38 gallons of petroleum contaminated water. The water was disposed of onsite.

Representative groundwater samples were collected utilizing new, disposable bailers. Samples were placed in laboratory supplied containers, maintained at 4° Celsius, and shipped via FedEx under chain-of-custody to AccuTest, Inc. Laboratories in Orlando, Florida. The groundwater samples were analyzed by EPA Method 8260B for benzene, toluene, ethylbenzene, xylenes (BTEX), methyl-tert-butyl-ether (MTBE), and naphthalene.

## **2.2 Surface Water Sampling**

On August 9, 2005, two (CK-1 and CK-3) surface water samples were collected from adjacent creeks. CK-2 location is no longer sampled per the March 17, 2005, sampling event report. CK-3 replaced this sample to monitor for potential contamination from monitoring well MW-14. Representative groundwater samples were collected utilizing new, disposable bailers. Samples were placed in laboratory supplied containers, maintained at 4° Celsius, and shipped via FedEx under chain-of-custody to AccuTest, Inc. Laboratories in Orlando, Florida. The

groundwater samples were analyzed by EPA Method 8260B for benzene, toluene, ethylbenzene, xylenes (BTEX), methyl-tert-butyl-ether (MTBE), and naphthalene.

### **2.3 Water Supply Well Sampling**

On August 9, 2005, the onsite water supply well (WW-1) was sampled. The sample was collected from a spigot nearest the water supply well. Prior to sampling, the spigot was allowed to run for at least ten minutes. A samples was placed in laboratory supplied containers, maintained at 4° Celsius, and shipped via FedEx under chain-of-custody to AccuTest, Inc. Laboratories in Orlando, Florida. The groundwater samples were analyzed by EPA Method 8260B for benzene, toluene, ethylbenzene, xylenes (BTEX), methyl-tert-butyl-ether (MTBE), and naphthalene.

## **3.0 LABORATORY ANALYTICAL RESULTS**

### **3.1 Groundwater Analytical Results**

CoCs were detected in four (MW-1, MW-2, MW-7, and MW-14) of the eleven sampled monitoring wells at concentrations above their respective SSTL. Monitoring well MW-1 contained the highest concentrations of benzene (16,900 micrograms per liter ( $\mu\text{g/L}$ )), toluene (42,600  $\mu\text{g/L}$ ), ethylbenzene (3,520  $\mu\text{g/L}$ ), total xylenes (19,000 $\mu\text{g/L}$ ), MTBE (115,00  $\mu\text{g/L}$ ) and naphthalene (705  $\mu\text{g/L}$ ). Figure 4 in Appendix A is a site map presenting monitoring well location and their CoC concentrations. Table 2 in Appendix B summarizes historical groundwater analytical results. A copy of the laboratory report and completed chain-of-custody form is included in Appendix C.

SSTLs have been designated for eleven monitoring wells, of which four (MW-1, MW-2, MW-7, and MW-14) contained CoC concentrations exceeded their SSTLs. During this sampling event, monitoring well MW-1 exceeded the SSTLs for all CoCs with the exception of total xylenes. In monitoring well MW-2, SSTLs were exceeded for all CoCs, with the exceptions of MTBE and naphthalene. In monitoring well MW-7, SSTLs were exceeded for all CoCs, with the exception of naphthalene. In monitoring well MW-14,

SSTLs were exceeded for all CoCs, with the exception of naphthalene. Table 4 in Appendix B summarizes SSTL information.

### 3.2 Surface Water Analytical Results

Benzene was detected in both (CK-1 and CK-3) surface water samples collected from the adjacent creek at concentrations above the risk based screening level (RBSL) of 5.0 µg/L. Surface water sample CK-1 contained a concentration of benzene of 7.6 µg/L and CK-3 of 14.4 µg/L.

### 3.3 Water Supply Well Analytical Results

CoC were not detected in water supply well sample WW-1 at concentrations above laboratory detection limits.

## 4.0 REMEDIATION SYSTEM EFFECTIVENESS

In awarding the Pay-For-Performance (PFP) site remediation contract, the South Carolina Department of Health and Environmental Control (SCDHEC) set remediation goals for this site via site specific target levels (SSTLs). The monitoring wells have individual target concentrations for five (benzene, toluene, ethylbenzene, xylenes, MTBE and naphthalene) identified chemicals of concern (CoC).

Remediation system effectiveness can be calculated comparing the initial May 7, 2002, CoC concentrations that exceeded the SSTLs with the current CoC concentrations that exceeded the SSTLs. The formula is as follows:

$$\left[ \frac{[08/29/96 \text{ Sample Concentration Above SSTL}] - [\text{Current Sample Concentration Above SSTL}]}{[08/29/96 \text{ Sample Concentration Above SSTL}]} \right] * 100 = \% \text{ Reduction}$$

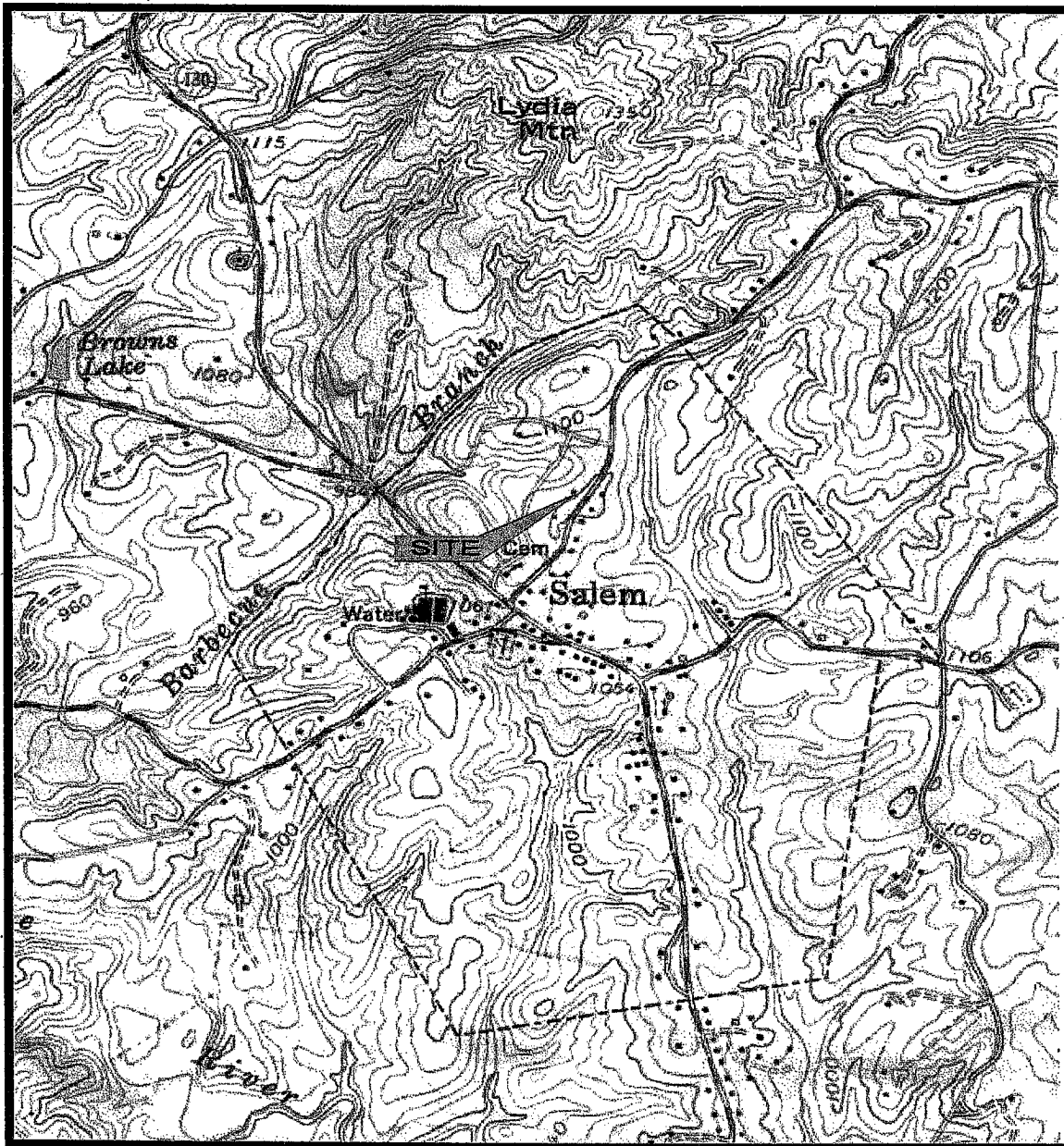
Using the current analytical results, the concentration reduction is 96.51%. Table 4 in Appendix B presents concentration reduction calculations.

## 5.0 CONCLUSIONS

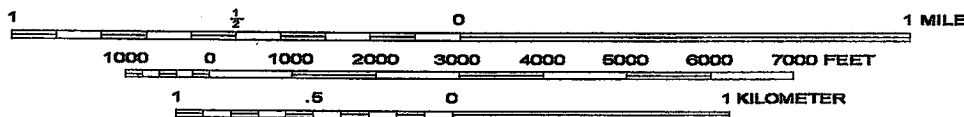
The groundwater flow direction at the time of the August 9, 2005, sampling event was towards the north, northeast, and south. Free product was present in monitoring well MW-8 at an approximate thickness of 0.05 feet. CoC were detected in four monitoring wells above their respective SSTLs. Benzene was detected in both surface water sample at a concentration above the RBSL. No CoC were detected in the water supply well sample above laboratory detection limits.

SEI Environmental, Inc recommends continuing the quarterly monitoring to evaluate the continued reduction of chemicals of concern in the monitoring wells on site. The next sampling event will occur in November 2005 and include semi-annual sampled monitoring wells MW-3, MW-11, DMW-4. SEI is also considering an additional Enhance Fluid Recovery (EFR) to be performed on monitoring well MW-8. SEI is currently evaluating alternative methods of active corrective action to be implemented at the site in order to proceed with the remediation effort.

**APPENDIX A**  
**FIGURES**



SCALE 1:24000



SALEM QUADRANGLE  
 SOUTH CAROLINA-OCONEE CO.  
 7.5 MINUTE SERIES (TOPOGRAPHIC-BATHYMETRIC)  
 BY U.S. GEOLOGICAL SURVEY

**SEI Environmental, Inc.**

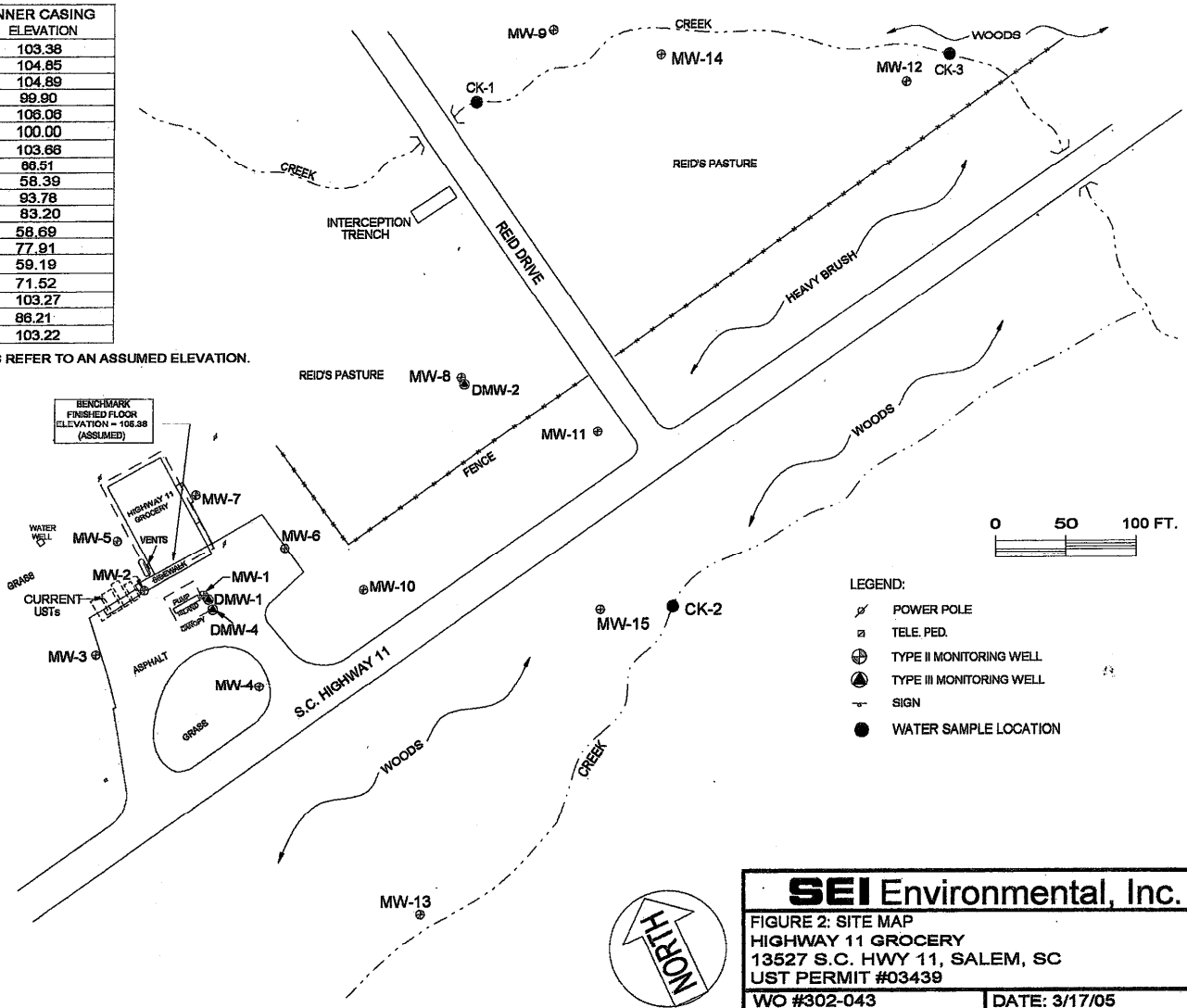
FIGURE 1: SITE LOCATION MAP  
 HIGHWAY 11 GROCER  
 13527 Highway 11, Salem, SC  
 FACILITY I.D. #03439

WO # 302169  
 DWG # Hw 11 topo\_sitemap

DATE: 9/16/05  
 DRAWN BY: HWH

WELL #	INNER CASING ELEVATION
MW-1	103.38
MW-2	104.85
MW-3	104.89
MW-4	99.90
MW-5	108.08
MW-6	100.00
MW-7	103.68
MW-8	88.51
MW-9	58.39
MW-10	93.78
MW-11	83.20
MW-12	58.69
MW-13	77.91
MW-14	59.19
MW-15	71.52
DMW-1	103.27
DMW-2	88.21
DMW-4	103.22

NOTE: ELEVATIONS REFER TO AN ASSUMED ELEVATION.



**SEI Environmental, Inc.**

FIGURE 2: SITE MAP  
 HIGHWAY 11 GROCERY  
 13527 S.C. HWY 11, SALEM, SC  
 UST PERMIT #03439

WO #302-043  
 DWG #H101692G

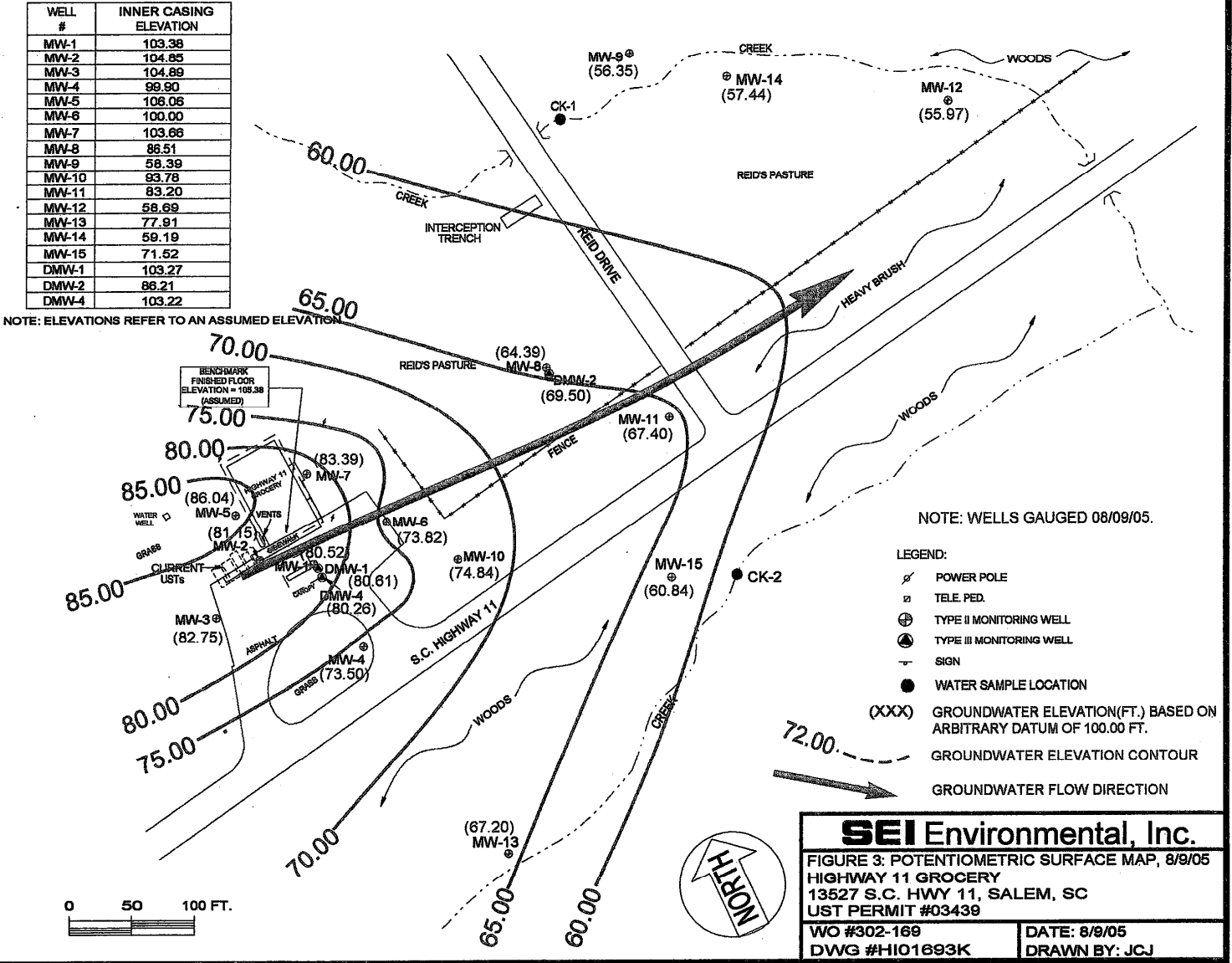
DATE: 3/17/05  
 DRAWN BY: JCJ

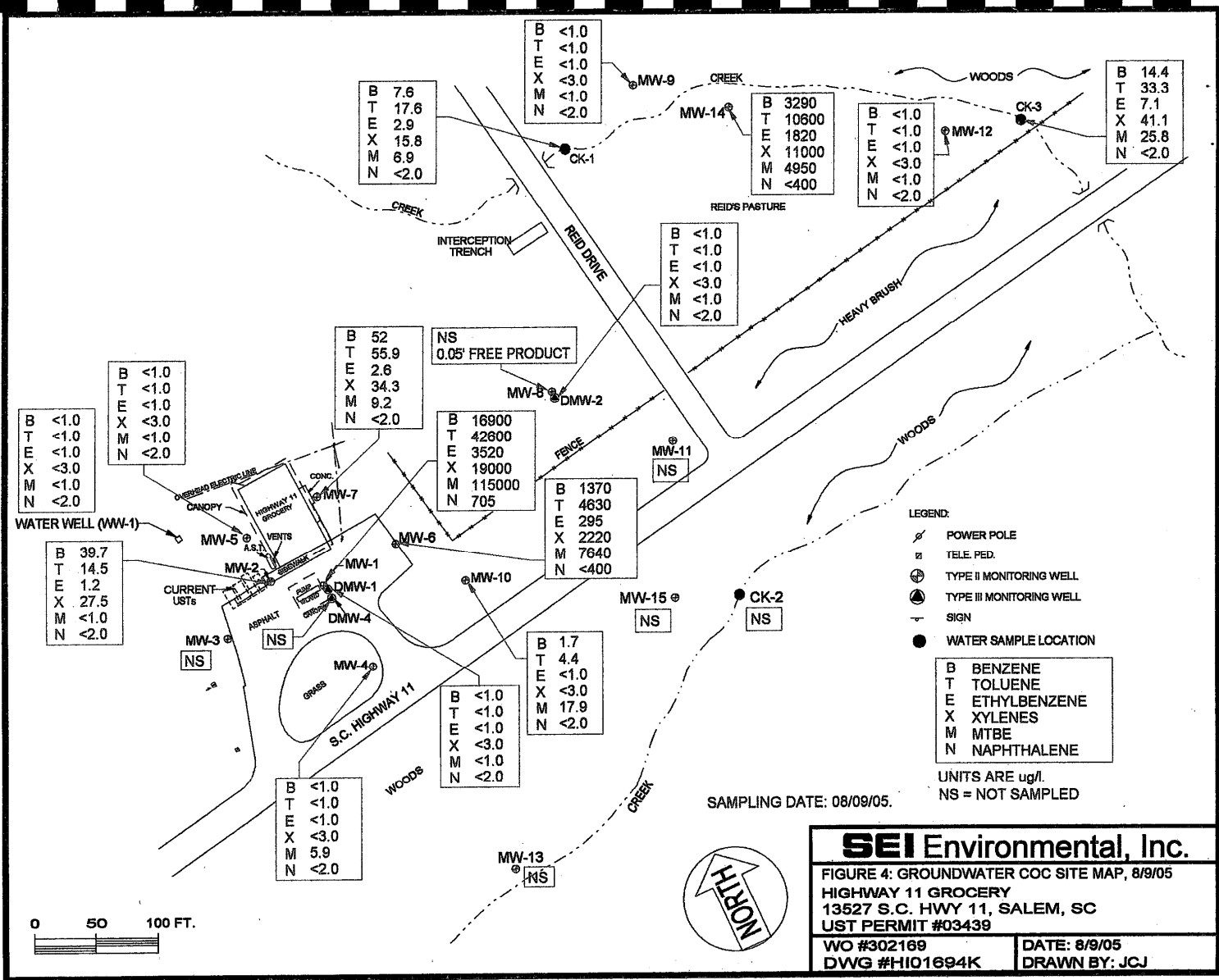




WELL #	INNER CASING ELEVATION
MW-1	103.38
MW-2	104.85
MW-3	104.89
MW-4	99.90
MW-5	106.08
MW-6	100.00
MW-7	103.66
MW-8	86.51
MW-9	58.39
MW-10	93.78
MW-11	83.20
MW-12	58.69
MW-13	77.91
MW-14	59.19
MW-15	71.52
DMW-1	103.27
DMW-2	89.21
DMW-4	103.22

NOTE: ELEVATIONS REFER TO AN ASSUMED ELEVATION





B	<1.0
T	<1.0
E	<1.0
X	<3.0
M	<1.0
N	<2.0

B	7.6
T	17.6
E	2.9
X	15.8
M	6.9
N	<2.0

B	3290
T	10600
E	1820
X	11000
M	4950
N	<400

B	<1.0
T	<1.0
E	<1.0
X	<3.0
M	<1.0
N	<2.0

B	14.4
T	33.3
E	7.1
X	41.1
M	25.8
N	<2.0

B	<1.0
T	<1.0
E	<1.0
X	<3.0
M	<1.0
N	<2.0

B	52
T	55.9
E	2.6
X	34.3
M	9.2
N	<2.0

NS  
0.05' FREE PRODUCT

B	16900
T	42800
E	3520
X	19000
M	115000
N	705

B	1370
T	4630
E	295
X	2220
M	7640
N	<400

B	<1.0
T	<1.0
E	<1.0
X	<3.0
M	<1.0
N	<2.0

B	<1.0
T	<1.0
E	<1.0
X	<3.0
M	<1.0
N	<2.0

B	39.7
T	14.5
E	1.2
X	27.5
M	<1.0
N	<2.0

B	1.7
T	4.4
E	<1.0
X	<3.0
M	17.9
N	<2.0

B	<1.0
T	<1.0
E	<1.0
X	<3.0
M	<1.0
N	<2.0

B	<1.0
T	<1.0
E	<1.0
X	<3.0
M	5.9
N	<2.0



**APPENDIX B**  
**TABLES**

**TABLE 1**

**Historical Groundwater Elevation and Product Thickness Data**

**Highway 11 Grocery  
13527 South Carolina Highway 11  
Salem, Oconee County, South Carolina  
UST Permit Number: 03439  
SEI Project Number: 302169**

<b>Well Location</b>	<b>Date Gauged</b>	<b>Top of Casing Elevation (feet)</b>	<b>Depth of Well (feet)</b>	<b>Depth to Groundwater (feet)</b>	<b>Depth to Product (feet)</b>	<b>Product Thickness (feet)</b>	<b>Groundwater Elevation (feet)</b>
MW-1	05/08/02	103.38	30.00	24.67	24.71	0.04	78.74
	07/01/03			23.28	23.52	0.24	80.29
	07/30/03			22.89	22.97	0.08	80.55
	09/15/03			23.78	23.82	0.04	79.63
	10/02/03			24.32	24.45	0.13	78.76
	10/23/03			24.72	24.93	0.21	78.82
	12/18/03			24.06	--	--	79.32
	03/31/04			24.61	--	--	78.77
	09/29/04			24.20	--	--	79.18
	01/11/05			23.77	--	--	79.61
	03/17/05			23.97	--	--	79.41
	08/09/05			22.86	--	--	80.52
MW-2	05/08/02	104.85	35.00	26.08	--	--	78.77
	07/01/03			24.08	--	--	80.77
	07/30/03			23.78	--	--	81.07
	09/15/03			24.73	--	--	80.12
	10/02/03			25.56	--	--	79.29
	10/23/03			25.71	--	--	79.14
	12/18/03			25.38	--	--	79.47
	03/31/04			25.85	--	--	79.00
	09/29/04			25.55	--	--	79.30
	01/11/05			24.74	--	--	80.11
	03/17/05			25.10	--	--	79.75
	08/09/05			23.70	--	--	81.15
MW-3	05/08/02	104.86	30.00	24.78	--	--	80.08
	07/01/03			22.51	--	--	82.35
	07/30/03			22.21	--	--	82.65
	09/15/03			23.23	--	--	81.63
	10/02/03			23.87	--	--	80.99
	10/23/03			24.23	--	--	80.63
	12/18/03			23.93	--	--	80.93
	03/31/04			24.44	--	--	80.42
	09/29/04			24.20	--	--	80.66
	01/11/05			23.36	--	--	81.50
	03/17/05			23.65	--	--	81.21
	08/09/05			22.11	--	--	82.75
MW-4	05/08/02	99.90	35.00	23.38	--	--	76.52
	07/01/03			22.10	--	--	77.80

**TABLE 1 (continued)**

Historical Groundwater Elevation and Product Thickness Data Highway 11 Grocery 13527 South Carolina Highway 11 Salem, Oconee County, South Carolina UST Permit Number: 03439 SEI Project Number: 302169							
Well Location	Date Gauged	Top of Casing Elevation (feet)	Depth of Well (feet)	Depth to Groundwater (feet)	Depth to Product (feet)	Product Thickness (feet)	Groundwater Elevation (feet)
MW-4 (continued)	07/30/03	99.90	35.00	22.09	--	--	77.81
	09/15/03			22.90	--	--	77.00
	10/02/03			23.32	--	--	76.58
	10/23/03			23.69	--	--	76.21
	12/18/03			22.95	--	--	76.95
	03/31/04			23.49	--	--	76.41
	09/29/04			23.14	--	--	76.76
	01/11/05			22.70	--	--	77.20
	03/17/05			22.84	--	--	77.06
	08/09/05			26.40	--	--	73.50
MW-5	05/08/02	106.06	35.00	28.82	--	--	77.24
	07/01/03			26.82	--	--	79.24
	07/30/03			26.53	--	--	79.53
	09/15/03			27.40	--	--	78.66
	10/02/03			27.92	--	--	78.14
	10/23/03			28.40	--	--	77.66
	12/18/03			28.40	--	--	77.66
	03/31/04			28.56	--	--	77.50
	09/29/04			28.46	--	--	77.60
	01/11/05			27.41	--	--	78.65
	03/17/05			27.86	--	--	78.20
	08/09/05			20.02	--	--	86.04
	MW-6			05/08/02	100.00	35.00	21.66
07/01/03		19.77	--	--			80.23
07/30/03		19.88	--	--			80.12
09/15/03		20.63	--	--			79.37
10/02/03		21.34	--	--			78.66
10/23/03		21.74	--	--			78.26
12/18/03		21.00	--	--			79.00
03/31/04		21.71	--	--			78.29
09/29/04		21.33	--	--			78.67
01/11/05		20.81	--	--			79.19
03/17/05		20.10	--	--			79.90
08/09/05		26.18	--	--			73.82
MW-7	05/08/02	103.66	40.00	28.12	--	--	75.54
	07/01/03			26.55	--	--	77.11
	07/30/03			26.22	--	--	77.44
	09/15/03			26.83	--	--	76.83
	10/02/03			27.69	--	--	75.97

**TABLE 1 (continued)**

Historical Groundwater Elevation and Product Thickness Data Highway 11 Grocery 13527 South Carolina Highway 11 Salem, Oconee County, South Carolina UST Permit Number: 03439 SEI Project Number: 302169							
Well Location	Date Gauged	Top of Casing Elevation (feet)	Depth of Well (feet)	Depth to Groundwater (feet)	Depth to Product (feet)	Product Thickness (feet)	Groundwater Elevation (feet)
MW-7 (continued)	10/23/03	103.66	40.00	28.10	--	--	75.56
	12/18/03			27.71	--	--	75.95
	03/31/04			28.00	--	--	75.66
	09/29/04			27.60	--	--	76.06
	01/11/05			26.88	--	--	76.78
	03/17/05			27.83	--	--	75.83
	08/09/05			20.27	--	--	83.39
MW-8	05/08/02	86.51	30.00	21.00	--	--	65.51
	07/01/03			20.96	--	--	65.50
	07/30/03			20.46	--	--	66.03
	09/15/03			21.17	--	--	65.33
	10/02/03			20.44	--	--	66.05
	10/23/03			21.54	--	--	64.97
	12/18/03			20.82	--	--	65.69
	03/31/04			21.35	--	--	65.08
	09/29/04			21.10	--	--	65.06
	01/11/05			21.04	--	--	65.15
	03/17/05			20.95	--	--	65.56
	08/09/05			22.16	22.21	0.05	64.39
	MW-9			05/08/02	58.39	11.00	2.47
07/01/03		2.30	--	--			56.09
07/30/03		2.26	--	--			56.13
09/15/03		2.42	--	--			55.97
10/02/03		2.16	--	--			56.23
10/23/03		2.42	--	--			55.97
12/18/03		2.20	--	--			56.19
03/31/04		2.56	--	--			55.83
09/29/04		1.90	--	--			56.49
01/11/05		2.23	--	--			56.16
03/17/05		2.11	--	--			56.28
08/09/05		2.04	--	--			56.35
MW-10		05/08/02	93.78	24.00			20.04
	07/01/03	16.20			--	--	77.58
	07/30/03	18.95			--	--	74.83
	09/15/03	16.53			--	--	77.25
	10/02/03	20.19			--	--	73.59
	10/23/03	20.51			--	--	73.27
	12/18/03	19.83			--	--	73.95
	03/31/04	18.85			--	--	74.93

**TABLE 1 (continued)**

Historical Groundwater Elevation and Product Thickness Data Highway 11 Grocery 13527 South Carolina Highway 11 Salem, Oconee County, South Carolina UST Permit Number: 03439 SEI Project Number: 302169							
Well Location	Date Gauged	Top of Casing Elevation (feet)	Depth of Well (feet)	Depth to Groundwater (feet)	Depth to Product (feet)	Product Thickness (feet)	Groundwater Elevation (feet)
MW-10 (continued)	09/29/04	93.78	24.00	20.02	--	--	73.76
	01/11/05			19.47	--	--	74.31
	03/17/05			18.84	--	--	74.94
	08/09/05			18.94	--	--	74.84
MW-11	05/08/02	83.20	23.00	16.22	--	--	66.98
	07/01/03			16.53	--	--	66.67
	07/30/03			16.70	--	--	66.50
	09/15/03			17.35	--	--	65.85
	10/02/03			16.40	--	--	66.80
	10/23/03			17.83	--	--	65.37
	12/18/03			17.58	--	--	65.62
	03/31/04			16.21	--	--	66.99
	09/29/04			15.92	--	--	67.28
	01/11/05			15.93	--	--	67.27
	03/17/05			16.86	--	--	66.34
	08/09/05			15.80	--	--	67.40
	MW-12			05/08/02	58.69	11.00	2.80
07/01/03		3.16	--	--			55.53
07/30/03		2.55	--	--			56.14
09/15/03		3.26	--	--			55.43
10/02/03		2.60	--	--			56.09
10/23/03		3.50	--	--			55.19
12/18/03		2.97	--	--			55.72
03/31/04		3.19	--	--			55.50
09/29/04		3.02	--	--			55.67
01/11/05		3.10	--	--			55.59
03/17/05		3.12	--	--			55.57
08/09/05		2.72	--	--			55.97
MW-13		05/08/02	77.72	13.00			6.29
	07/01/03	6.44			--	--	71.28
	07/30/03	N/L			--	--	N/L
	09/15/03	6.36			--	--	71.36
	10/02/03	6.24			--	--	71.48
	10/23/03	6.78			--	--	70.94
	12/18/03	7.51			--	--	70.21
	03/31/04	6.62			--	--	71.10
	09/29/04	6.28			--	--	71.44
	01/11/05	6.44			--	--	71.28
	03/17/05	6.52			--	--	71.20

**TABLE 1 (continued)**

Historical Groundwater Elevation and Product Thickness Data Highway 11 Grocery 13527 South Carolina Highway 11 Salem, Oconee County, South Carolina UST Permit Number: 03439 SEI Project Number: 302169							
Well Location	Date Gauged	Top of Casing Elevation (feet)	Depth of Well (feet)	Depth to Groundwater (feet)	Depth to Product (feet)	Product Thickness (feet)	Groundwater Elevation (feet)
MW-13 (continued)	08/09/05	77.72	13.00	10.52	--	--	67.20
MW-14	05/08/02	59.19	9.00	2.00	--	--	57.19
	07/01/03			2.28	--	--	56.91
	07/30/03			2.03	--	--	57.16
	09/15/03			2.42	--	--	56.77
	10/02/03			1.98	--	--	57.21
	10/23/03			2.67	--	--	56.52
	12/18/03			1.58	--	--	57.61
	03/31/04			2.03	--	--	57.16
	09/29/04			1.77	--	--	57.42
	01/11/05			1.92	--	--	57.27
	03/17/05			2.14	--	--	57.05
	08/09/05			1.75	--	--	57.44
MW-15	05/08/02	71.52	12.00	10.82	--	--	60.70
	07/01/03			10.76	--	--	60.76
	07/30/03			10.11	--	--	61.41
	09/15/03			11.00	--	--	60.52
	10/02/03			10.20	--	--	61.32
	10/23/03			11.07	--	--	60.45
	12/18/03			11.88	--	--	59.64
	03/31/04			11.02	--	--	60.50
	09/29/04			10.67	--	--	60.85
	01/11/05			10.83	--	--	60.69
	03/17/05			10.61	--	--	60.91
	08/09/05			10.68	--	--	60.84
DMW-1	05/08/02	103.27	45.00	23.88	--	--	79.39
	07/01/03			23.61	--	--	79.66
	07/30/03			24.24	--	--	79.03
	09/15/03			24.60	--	--	78.67
	10/02/03			24.00	--	--	79.27
	10/23/03			24.50	--	--	78.77
	12/18/03			24.11	--	--	79.16
	03/31/04			23.61	--	--	79.66
	09/29/04			22.72	--	--	80.55
	01/11/05			22.97	--	--	80.30
	03/17/05			24.68	--	--	78.59
	08/09/05			22.66	--	--	80.61
DMW-2	05/08/02	86.21	75.00	17.83	--	--	68.38



**TABLE 1 (continued)**

Historical Groundwater Elevation and Product Thickness Data Highway 11 Grocery 13527 South Carolina Highway 11 Salem, Oconee County, South Carolina UST Permit Number: 03439 SEI Project Number: 302169							
Well Location	Date Gauged	Top of Casing Elevation (feet)	Depth of Well (feet)	Depth to Groundwater (feet)	Depth to Product (feet)	Product Thickness (feet)	Groundwater Elevation (feet)
DMW-2 (continued)	07/01/03	86.21	75.00	16.67	--	--	69.54
	07/30/03			17.20	--	--	69.01
	09/15/03			17.31	--	--	68.90
	10/02/03			16.80	--	--	69.41
	10/23/03			17.63	--	--	68.58
	12/18/03			17.11	--	--	69.10
	03/31/04			15.75	--	--	70.46
	09/29/04			16.49	--	--	69.72
	01/11/05			16.44	--	--	69.77
	03/17/05			17.22	--	--	68.99
08/09/05	16.71	--	--	69.50			
DMW-4	05/08/02	103.22	61.00	24.30	--	--	78.92
	07/01/03			23.93	--	--	79.29
	07/30/03			24.75	--	--	78.47
	09/15/03			24.95	--	--	78.27
	10/02/03			24.45	--	--	78.77
	10/23/03			24.95	--	--	78.27
	12/18/03			24.39	--	--	78.83
	03/31/04			23.88	--	--	79.34
	09/29/04			23.18	--	--	80.04
	01/11/05			23.32	--	--	79.90
	03/17/05			25.08	--	--	78.14
	08/09/05			22.96	--	--	80.26

-- = Not applicable

\*Groundwater Elevation = [(Top of Casing Elevation) - (DTW)] + (0.78\*Product Thickness) — where applicable

NM = Not Measured

**TABLE 2**

Historical Groundwater Analytical Results Highway 11 Grocery 13527 South Carolina Highway 11 Salem, Oconee County, South Carolina UST Permit Number: 03439 SEI Project Number: 302169							
Sample Location	Date Sampled	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Naphthalene (µg/L)
MW-1	05/07/02	226,000	301,000	280,000	278,000	5,110,000	2,000
	07/01/03	10,000	34,000	4,400	23,000	34,000	1,200
	07/30/03	7,600	28,000	6,300	32,000	25,000	2,500
	12/18/03	2,200	6,200	910	5,800	16,000	2,500
	03/31/04	3,400	9,300	1,100	6,200	20,000	1,200
	09/29/04	3,200	7,300	<1,000	4,500	12,000	<5,000
	03/17/05	5,600	9,550	1,570	7,610	19,300	325
	08/09/05	16,900	42,600	3,520	19,000	115,000	705
	SSTL	22	4,497	3,148	44,969	180	112
MW-2	05/07/02	13.0	8.0	1.0	5.0	5.0	5.0
	07/01/03	4.7	5.0	1.0	3.0	1.0	5.0
	07/30/03	5.8	5.0	1.0	5.3	1.0	5.0
	12/18/03	2.2	5.0	1.0	3.0	1.0	5.0
	03/31/04	2.6	5.0	1.0	3.0	1.0	5.0
	09/29/04	14.0	<25	<5.0	<15	<5.0	<25
	03/17/05	12.5	5.4	<1.0	4.5	<1.0	<2.0
	08/09/05	39.7	14.5	1.2	27.5	<1.0	<2.0
	SSTL	13.0	8.0	1.0	5.0	5.0	5.0
MW-3	05/07/02	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	07/30/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	12/18/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0
	08/09/05	NS	NS	NS	NS	NS	NS
	SSTL	1.0	1.0	1.0	1.0	5.0	5.0
MW-4	05/07/02	1,500	5,320	620	3,360	810	500
	07/01/03	4,800	14,000	2,300	12,000	12,000	2,600
	07/30/03	4,000	14,000	2,700	13,000	2,100	500
	12/18/03	1,100	2,400	230	1,900	1,200	250
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	09/29/04	53	<25	7.1	70	210	<25

**TABLE 2 (continued)**

Historical Groundwater Analytical Results Highway 11 Grocery 13527 South Carolina Highway 11 Salem, Oconee County, South Carolina UST Permit Number: 03439 SEI Project Number: 302169							
Sample Location	Date Sampled	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Naphthalene (µg/L)
MW-4 (continued)	03/17/05	<1.0	<1.0	<1.0	<3.0	16.8	<2.0
	08/09/05	<1.0	<1.0	<1.0	<3.0	5.9	<2.0
	<b>SSTL</b>	<b>1,500</b>	<b>5,320</b>	<b>620</b>	<b>3,360</b>	<b>810</b>	<b>500</b>
MW-5	05/07/02	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	07/30/03	4.2	17	3.6	18	2.2	<5.0
	12/18/03	2.3	<5.0	<1.0	3.2	1.3	<5.0
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0
	08/09/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0
	<b>SSTL</b>	<b>1.0</b>	<b>1.0</b>	<b>1.0</b>	<b>1.0</b>	<b>5.0</b>	<b>5.0</b>
MW-6	05/07/02	1,780	4,950	490	2,880	6,350	500
	07/01/03	2,200	6,600	820	4,400	12,000	2,500
	07/30/03	4,200	13,000	1,600	8,900	21,000	400
	12/18/03	5,100	14,000	1,700	11,000	19,000	2,500
	03/31/04	280	840	100	2,200	900	250
	09/29/04	2,400	<5,000	<1,000	<3,000	17,000	<5,000
	03/17/05	3,490	7,500	952	5,380	15,500	262
	08/09/05	1,370	4,630	295	2,220	7,640	<400
	<b>SSTL</b>	<b>1,780</b>	<b>4,950</b>	<b>490</b>	<b>2,880</b>	<b>6,350</b>	<b>500</b>
MW-7	05/07/02	34	20	<1.0	8.0	7.0	<5.0
	07/01/03	37	36	1.7	20	9.2	<5.0
	07/30/03	18	18	<1.0	9.7	<1.0	<5.0
	12/18/03	41	20	<1.0	<3.0	<1.0	<5.0
	03/31/04	30	34	<1.0	16	<1.0	<5.0
	09/29/04	370	500	<100	<300	<100	<500
	03/17/05	505	590	33.9	280	64.5	<2.0
	08/09/05	52	55.9	2.6	34.3	9.2	<2.0
	<b>SSTL</b>	<b>22</b>	<b>20</b>	<b>1.0</b>	<b>8.0</b>	<b>7.0</b>	<b>5.0</b>
MW-8	05/07/02	226,000	301,000	280,000	278,000	5,110,000	2,000
	07/01/03	12,000	51,000	7,800	40,000	11,000	2,500
	07/30/03	12,000	40,000	3,600	18,000	15,000	660
	12/18/03	10,000	27,000	3,300	18,000	14,000	2,500

**TABLE 2 (continued)**

<p align="center"><b>Historical Groundwater Analytical Results</b></p> <p align="center"><b>Highway 11 Grocery</b>  <b>13527 South Carolina Highway 11</b>  <b>Salem, Oconee County, South Carolina</b>  <b>UST Permit Number: 03439</b>  <b>SEI Project Number: 302169</b></p>							
Sample Location	Date Sampled	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Naphthalene (µg/L)
MW-8 (continued)	03/31/04	17,000	140,000	32,000	180,000	8,600	<25,000
	09/29/04	Not Sampled Due to the Presence of Free Product					
	03/17/05	Not Sampled Due to the Presence of Free Product					
	08/09/05	Not Sampled Due to the Presence of 0.05 Feet of Free Product					
	<b>SSTL</b>	<b>204</b>	<b>40,888</b>	<b>28,622</b>	<b>278,000</b>	<b>1,362</b>	<b>1,021</b>
MW-9	05/07/02	N/A	N/A	N/A	N/A	N/A	N/A
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	07/30/03	N/A	N/A	N/A	N/A	N/A	N/A
	12/18/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	03/31/04	<1.0	<5.0	1.2	8.8	<1.0	<5.0
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0
	08/09/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0
	<b>SSTL</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
MW-10	05/07/02	115	185	68	328	86	9.0
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	07/30/03	170	420	43	240	540	6.5
	12/18/03	89	280	74	480	91	25
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0
	08/09/05	1.7	4.4	<1.0	<3.0	17.9	<2.0
	<b>SSTL</b>	<b>115</b>	<b>185</b>	<b>68</b>	<b>328</b>	<b>86</b>	<b>9.0</b>
MW-11	05/07/02	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	07/30/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	12/18/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0
	08/09/05	NS	NS	NS	NS	NS	NS
	<b>SSTL</b>	<b>1.0</b>	<b>1.0</b>	<b>1.0</b>	<b>1.0</b>	<b>5.0</b>	<b>5.0</b>
MW-12	05/07/02	N/A	N/A	N/A	N/A	N/A	N/A
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0

**TABLE 2 (continued)**

<b>Historical Groundwater Analytical Results</b> <b>Highway 11 Grocery</b> <b>13527 South Carolina Highway 11</b> <b>Salem, Oconee County, South Carolina</b> <b>UST Permit Number: 03439</b> <b>SEI Project Number: 302169</b>							
Sample Location	Date Sampled	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Naphthalene (µg/L)
MW-12 (continued)	07/30/03	N/A	N/A	N/A	N/A	N/A	N/A
	12/18/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0
	08/09/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0
	SSTL	N/A	N/A	N/A	N/A	N/A	N/A
MW-13	05/07/02	N/A	N/A	N/A	N/A	N/A	N/A
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	07/30/03	N/A	N/A	N/A	N/A	N/A	N/A
	12/18/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0
	08/09/05	NS	NS	NS	NS	NS	NS
	SSTL	N/A	N/A	N/A	N/A	N/A	N/A
MW-14	05/07/02	3,780	13,800	27,000	14,700	7,010	500
	07/01/03	3,500	10,000	1,900	10,000	5,300	500
	07/30/03	3,100	9,700	1,800	9,300	4,300	500
	12/18/03	3,300	11,000	2,000	11,000	4,100	500
	03/31/04	5,500	17,000	2,600	13,000	7,100	570
	09/29/04	3,200	12,000	1,600	9,100	3,200	<5,000
	03/17/05	5,140	13,000	1,710	10,900	4,970	339
	08/09/05	3,290	10,600	1,820	11,000	4,950	<400
	SSTL	5.0	1,000	700	10,000	40	25
MW-15	05/07/02	N/A	N/A	N/A	N/A	N/A	N/A
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	07/30/03	N/A	N/A	N/A	N/A	N/A	N/A
	12/18/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0
	08/09/05	NS	NS	NS	NS	NS	NS
	SSTL	N/A	N/A	N/A	N/A	N/A	N/A

**TABLE 2 (continued)**

**Historical Groundwater Analytical Results**

**Highway 11 Grocery  
13527 South Carolina Highway 11  
Salem, Oconee County, South Carolina  
UST Permit Number: 03439  
SEI Project Number: 302169**

<b>Sample Location</b>	<b>Date Sampled</b>	<b>Benzene (µg/L)</b>	<b>Toluene (µg/L)</b>	<b>Ethyl-benzene (µg/L)</b>	<b>Total Xylenes (µg/L)</b>	<b>MTBE (µg/L)</b>	<b>Naphthalene (µg/L)</b>
<b>DMW-1</b>	05/07/02	215	430	50	50	1,780	250
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	07/30/03	<1.0	<5.0	<1.0	<3.0	4.2	<5.0
	12/18/03	1.5	<5.0	<1.0	<3.0	<1.0	<5.0
	03/31/04	<1.0	<15.0	<1.0	<3.0	3.9	<5.0
	09/29/04	8.4	<25	<5.0	<15	130	<25
	03/17/05	<1.0	1.2	<1.0	<3.0	8.1	<2.0
	08/09/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0
	<b>SSTL</b>	<b>215</b>	<b>430</b>	<b>50</b>	<b>50</b>	<b>1,780</b>	<b>250</b>
<b>DMW-2</b>	05/07/02	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0
	07/01/03	<1.0	<5.0	<1.0	<3.0	6.4	<5.0
	07/30/03	<1.0	8.4	6.8	30	<1.0	6.7
	12/18/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0
	08/09/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0
	<b>SSTL</b>	<b>1.0</b>	<b>1.0</b>	<b>1.0</b>	<b>1.0</b>	<b>5.0</b>	<b>5.0</b>
<b>DMW-4</b>	05/07/02	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	07/30/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	12/18/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0
	08/09/05	NS	NS	NS	NS	NS	NS
	<b>SSTL</b>	<b>1.0</b>	<b>1.0</b>	<b>1.0</b>	<b>1.0</b>	<b>5.0</b>	<b>5.0</b>
<b>CK-1</b>	05/07/02	N/A	N/A	N/A	N/A	N/A	N/A
	07/01/03	2.6	<5.0	<1.0	4.8	4.5	<5.0
	07/30/03	N/A	N/A	N/A	N/A	N/A	N/A
	12/18/03	11	18	4.1	20	9.0	<5.0
	09/29/04	16	30	6.1	32	22	<5.0

**TABLE 2 (continued)**

**Historical Groundwater Analytical Results**

**Highway 11 Grocery  
13527 South Carolina Highway 11  
Salem, Oconee County, South Carolina  
UST Permit Number: 03439  
SET Project Number: 302169**

Sample Location	Date Sampled	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Naphthalene (µg/L)
CK-1 (continued)	03/17/05	10.4	17.5	4.1	20.8	12.3	<2.0
	08/09/05	7.6	17.6	2.9	15.8	6.9	<2.0
	<b>RBSL</b>	<b>5</b>	<b>1,000</b>	<b>700</b>	<b>10,000</b>	<b>40</b>	<b>25</b>
CK-2	05/07/02	N/A	N/A	N/A	N/A	N/A	N/A
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	07/30/03	N/A	N/A	N/A	N/A	N/A	N/A
	12/18/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0
	08/09/05	NS	NS	NS	NS	NS	NS
<b>RBSL</b>	<b>5</b>	<b>1,000</b>	<b>700</b>	<b>10,000</b>	<b>40</b>	<b>25</b>	
CK-3	08/09/05	14.4	33.3	7.1	41.1	25.8	<2.0
	<b>RBSL</b>	<b>5</b>	<b>1,000</b>	<b>700</b>	<b>10,000</b>	<b>40</b>	<b>25</b>
WW-1	05/07/02	N/A	N/A	N/A	N/A	N/A	N/A
	07/01/03	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	07/30/03	N/A	N/A	N/A	N/A	N/A	N/A
	12/18/03	N/A	N/A	N/A	N/A	N/A	N/A
	03/31/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	09/29/04	<1.0	<5.0	<1.0	<3.0	<1.0	<5.0
	03/17/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0
	08/09/05	<1.0	<1.0	<1.0	<3.0	<1.0	<2.0
<b>RBSL</b>	<b>5</b>	<b>1,000</b>	<b>700</b>	<b>10,000</b>	<b>40</b>	<b>25</b>	

µg/L - micrograms per liter

SSTL = Site Specific Target Levels

RBSL = Risk Based Screen Level

N/A = Not Applicable

N/S = Not Sampled

**Bold** denotes concentrations over respective SSTL

**TABLE 3**

Summary of Field Observations – August 9, 2005											
Highway 11 Grocery 13527 South Carolina Highway 11 Salem, Oconee County, South Carolina UST Permit Number: 03439 SEI Project Number: 302169											
Well ID	Frequency	Depth to Product (feet)	Free Product Thickness (feet)	Depth to Groundwater (feet)	Total Well Depth (feet)	pH (S.U.)	Specific Conductivity (umhos/cm)	Water Temp. (°C)	Dissolved Oxygen (S.U.)	Volume Purged (Gal.)	Notes
MW-1	Initial	--	--	22.86	30.00	N/A	N/A	N/A	N/A	0.00	--
MW-2	Initial	--	--	23.70	35.00	N/A	N/A	N/A	N/A	0.00	--
MW-3	Initial	--	--	22.11	35.00	N/A	N/A	N/A	N/A	0.00	--
MW-4	Initial	--	--	26.40	35.00	N/A	N/A	N/A	N/A	0.00	--
MW-5	Initial	--	--	20.02	35.00	N/A	N/A	N/A	N/A	0.00	--
MW-6	Initial	--	--	26.18	35.00	N/A	N/A	N/A	N/A	0.00	--
MW-7	Initial	--	--	20.27	40.00	N/A	N/A	N/A	N/A	0.00	--
MW-8*	Initial	22.21	0.05	22.16	30.00	N/A	N/A	N/A	N/A	0.00	Free Product
MW-9	Initial	--	--	2.04	11.00	N/A	N/A	N/A	N/A	0.00	--
MW-10	Initial	--	--	18.94	24.00	N/A	N/A	N/A	N/A	0.00	--
MW-11	Initial	--	--	15.80	23.00	N/A	N/A	N/A	N/A	0.00	--
MW-12	Initial	--	--	2.72	11.00	N/A	N/A	N/A	N/A	0.00	--
MW-13	Initial	--	--	10.52	10.00	N/A	N/A	N/A	N/A	0.00	--
MW-14	Initial	--	--	1.75	9.00	N/A	N/A	N/A	N/A	0.00	--
MW-15	Initial	--	--	10.68	12.00	N/A	N/A	N/A	N/A	0.00	--
DMW-1	Initial	--	--	16.71	75.00	I/M	I/M	I/M	I/M	I/M	--
	1 <sup>st</sup> Volume					I/M	I/M	I/M	I/M		--
	2 <sup>nd</sup> Volume					I/M	I/M	I/M	I/M		--
	3 <sup>rd</sup> Volume					I/M	I/M	I/M	I/M		--
	Post					I/M	I/M	I/M	I/M		--
DMW-2	Initial	--	--	22.96	61.00	I/M	I/M	I/M	I/M	I/M	--
	1 <sup>st</sup> Volume					I/M	I/M	I/M	I/M		--
	2 <sup>nd</sup> Volume					I/M	I/M	I/M	I/M		--
	3 <sup>rd</sup> Volume					I/M	I/M	I/M	I/M		--
	Post					I/M	I/M	I/M	I/M		--

I/M = Information temporarily missing, will provide under separate cover when located.

N/A = Not Applicable

S.U. = Standard Units

umhos/cm = micromhos per centimeter



**TABLE 4**

**Concentration Reduction Calculation – August 9, 2005**

**Highway 11 Grocery  
13527 South Carolina Highway 11  
Salem, Oconee County, South Carolina  
UST Permit Number: 03439  
SEI Project Number: 302169**

Well ID		Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Naphthalene (µg/L)	Concentration > SSTL (µg/L)
MW-1	Initial (05/07/02)	226,000	301,000	280,000	278,000	5,110,000	2,000	
	SSTL	22	4,497	3,148	44,969	180	112	
	Initial > SSTL	225,978	296,503	276,852	233,031	5,109,820	1,888	6,144,072
	Subsequent (08/09/05)	16,900	42,600	3,520	19,000	115,000	705	
	Subsequent > SSTL	16,878	38,103	372	0.0	114,820	593	170,766
MW-2	Initial (05/07/02)	13.0	8.0	1.0	5.0	5.0	5.0	
	SSTL	13.0	8.0	1.0	5.0	5.0	5.0	
	Initial > SSTL	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Subsequent (08/09/05)	39.7	14.5	1.2	27.5	0.0	0.0	
	Subsequent > SSTL	26.7	6.5	0.0	22.5	0.0	0.0	55.7
MW-3	Initial (05/07/02)	1.0	1.0	1.0	1.0	5.0	5.0	
	SSTL	1.0	1.0	1.0	1.0	5.0	5.0	
	Initial > SSTL	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Subsequent (08/09/05)	0.0	0.0	0.0	0.0	0.0	0.0	
	Subsequent > SSTL	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MW-4	Initial (05/07/02)	1,500	5,320	620	3,360	810	500	
	SSTL	1,500	5,320	620	3,360	810	500	
	Initial > SSTL	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Subsequent (08/09/05)	0.0	0.0	0.0	0.0	5.9	0.0	
	Subsequent > SSTL	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MW-5	Initial (05/07/02)	1.0	1.0	1.0	1.0	5.0	5.0	
	SSTL	1.0	1.0	1.0	1.0	5.0	5.0	
	Initial > SSTL	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Subsequent (08/09/05)	0.0	0.0	0.0	0.0	0.0	0.0	
	Subsequent > SSTL	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MW-6	Initial (05/07/02)	1,780	4,950	490	2,880	6,350	500	
	SSTL	1,780	4,950	490	2,880	6,350	500	
	Initial > SSTL	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Subsequent (08/09/05)	1,370	4,630	295	2,220	7,640	0.0	
	Subsequent > SSTL	0.0	0.0	0.0	0.0	1,290	0.0	1,290
MW-7	Initial (05/07/02)	34	20	1.0	8.0	7.0	5.0	
	SSTL	22	20	1.0	8.0	7.0	5.0	
	Initial > SSTL	12	0.0	0.0	0.0	0.0	0.0	12
	Subsequent (08/09/05)	52	55.9	2.6	34.3	9.2	0.0	
	Subsequent > SSTL	30	35.9	1.6	26.3	2.2	0.0	96
MW-8	Initial (05/07/02)	226,000	301,000	280,000	278,000	5,110,000	2,000	
	SSTL	204	40,888	28,622	278,000	1,362	1,021	
	Initial > SSTL	225,796	260,112	251,378	0.0	5,108,638	979	5,846,903
	Subsequent (08/09/05)	17,000	140,000	32,000	180,000	86,000	25,000	
	Subsequent > SSTL	16,796	99,112	3,378	0.0	84,638	23,979	227,903

**TABLE 4 (Continued)**

**Concentration Reduction Calculation – August 9, 2005**

**Highway 11 Grocery  
13527 South Carolina Highway 11  
Salem, Oconee County, South Carolina  
UST Permit Number: 03439  
SEI Project Number: 302169**

Well ID		Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Naphthalene (µg/L)	Concentration > SSTL (µg/L)
MW-10	Initial (05/07/02)	115	185	68	328	86	9.0	
	SSTL	115	185	68	328	86	9.0	
	Initial > SSTL	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Subsequent (08/09/05)	1.7	4.4	0.0	0.0	17.9	0.0	
	Subsequent > SSTL	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MW-11	Initial (05/07/02)	1.0	1.0	1.0	1.0	5.0	5.0	
	SSTL	1.0	1.0	1.0	1.0	5.0	5.0	
	Initial > SSTL	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Subsequent (08/09/05)	0.0	0.0	0.0	0.0	0.0	0.0	
	Subsequent > SSTL	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MW-14	Initial (05/07/02)	3,780	13,800	27,000	14,700	7,010	500	
	SSTL	5.0	1,000	700	10,000	40	25	
	Initial > SSTL	3,775	12,800	26,300	4,700	6,970	475	55,020
	Subsequent (08/09/05)	3,290	10,600	1,820	11,000	4,950	0.0	
	Subsequent > SSTL	3,285	9,600	1,120	1,000	4,910	0.0	19,915
DMW-1	Initial (05/07/02)	215	430	50	50	1,780	250	
	SSTL	215	430	50	50	1,780	250	
	Initial > SSTL	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Subsequent (08/09/05)	0.0	0.0	0.0	0.0	0.0	0.0	
	Subsequent > SSTL	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DMW-2	Initial (05/07/02)	1.0	1.0	1.0	1.0	5.0	5.0	
	SSTL	1.0	1.0	1.0	1.0	5.0	5.0	
	Initial > SSTL	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Subsequent (08/09/05)	0.0	0.0	0.0	0.0	0.0	0.0	
	Subsequent > SSTL	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DMW-4	Initial (05/07/02)	1.0	1.0	1.0	1.0	5.0	5.0	
	SSTL	1.0	1.0	1.0	1.0	5.0	5.0	
	Initial > SSTL	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Subsequent (08/09/05)	0.0	0.0	0.0	0.0	0.0	0.0	
	Subsequent > SSTL	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTALS	Initial > SSTL	(Sum of Initial Concentration Above SSTL for all Wells)						12,046,007
	Subsequent > SSTL	(Sum of Subsequent Concentration Above SSTL for all Wells)						420,025.7

\*MW-8 contained 0.5 feet of free product. Data from 03/31/04 used.

µg/L - micrograms per liter

SSTL = Site Specific Target Levels

ND = Non-Detect

Results of Non-Detect and Negative Numbers are Treated as Zeros

Comparison of Analytical Data = [(12,046,007 – 420,025.7)/12,046,007]\*100 = 96.51

$$\frac{[05/07/02 \text{ Sample Concentration Above SSTL}] - [08/09/05 \text{ Sample Concentration Above SSTL}]}{[05/07/02 \text{ Sample Concentration Above SSTL}]}$$

\*100 = % Reduction

**APPENDIX C**  
**Laboratory Analytical Results and Chain-of-Custody**



## Misc. Forms

### Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

*[Faint, mostly illegible text, likely bleed-through from the reverse side of the page.]*

# CHAIN OF CUSTODY

4405 VINELAND ROAD • SUITE C-15  
ORLANDO, FL 32811  
TEL: 407-425-8700 • FAX: 407-425-0707

ACCUTEST # **F33972**  
ACCUTEST QUOTE

CLIENT INFORMATION		FACILITY INFORMATION				ANALYTICAL INFORMATION								MATRIX CODES								
<b>SEI Environmental, Inc.</b> NAME <b>3021 McNighten Drive, Ste. 9</b> ADDRESS <b>Columbia SC 29893</b> CITY STATE ZIP <b>www.sei-environmental.com</b> SEND REPORT TO: PHONE # <b>803-728-8585</b>		<b>Highway H Grocery</b> PROJECT NAME <b>Salem, SC</b> LOCATION <b>302169</b> PROJECT NO. FAX #				<i>STREY MTH. TIME</i>								DW - DRINKING WATER GW - GROUND WATER WW - WASTE WATER SO - SOIL SL - SLUDGE LIQ - OTHER LIQUID SOL - OTHER SOLID								
ACCUTEST SAMPLE #	FIELD ID / POINT OF COLLECTION	COLLECTION			PRESERVATION									LAB USE ONLY								
		DATE	TIME	SAMPLED BY:	SEAL BOX									ICE BOX	REF	REF	REF	REF	REF	REF	REF	REF
①	MW-1	8-9-05	1430	JR	6W									3	X							
②	MW-2		1345																			
③	MW-B4		1330																			
④	MW-5		1350																			
⑤	MW-6		1455																			
⑥	MW-7		1500																			
⑦	MW-8																					
⑧	MW-9		1150																			
⑨	MW-10		1315																			
⑩	MW-12		1210																			
⑪	MW-14		1200																			
DATA TURNAROUND INFORMATION				DATA DELIVERABLE INFORMATION				COMMENTS/REMARKS														
<input checked="" type="checkbox"/> STANDARD <input type="checkbox"/> 48 HOUR RUSH <input type="checkbox"/> 24 HOUR EMERGENCY <input type="checkbox"/> OTHER EMERGENCY OR RUSH IS FAX DATA UNLESS PREVIOUSLY APPROVED				<input checked="" type="checkbox"/> STANDARD <input type="checkbox"/> COMMERCIAL "B" <input type="checkbox"/> DISK DELIVERABLE <input type="checkbox"/> STATE FORMS <input type="checkbox"/> OTHER (SPECIFY)																		
SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING CARRIER DELIVERY																						
RELINQUISHED BY: 1. <i>[Signature]</i>		DATE TIME: 8/16/05 0930		RECEIVED BY: 1. <i>[Signature]</i>		DATE TIME: 8/16/05		RELINQUISHED BY: 2. <i>[Signature]</i>		DATE TIME: 8/16/05		RECEIVED BY: 2. <i>[Signature]</i>										
RELINQUISHED BY: 3.		DATE TIME:		RECEIVED BY: 3.		DATE TIME:		RELINQUISHED BY: 4.		DATE TIME:		RECEIVED BY: 4.										
RELINQUISHED BY: 5.		DATE TIME:		RECEIVED BY: 5.		DATE TIME:		RELINQUISHED BY:		DATE TIME:		RECEIVED BY:										
SEAL #										PRESERVE WHERE APPLICABLE		ON ICE <input type="checkbox"/> 26° TEMPERATURE C										

F33972: Chain of Custody  
Page 1 of 3

**CHAIN OF CUSTODY**

4408 VINELAND ROAD • SUITE G-15  
ORLANDO, FL 32811  
TEL: 407-425-6700 • FAX: 407-425-0707

ACCUTEST ID: **F33972**  
ACCUTEST QUOTE:

CLIENT INFORMATION		FACILITY INFORMATION		ANALYTICAL INFORMATION										MATRIX CODES				
<b>SEI Environmental</b> NAME: 8034 McNaughton Drive, Suite 9 ADDRESS: Columbia SC 29223 CITY, STATE, ZIP wood@sei-environmental.com SEND REPORT TO: 803-788-8586 PHONE #		<b>Highway 11 Grocery</b> PROJECT NAME: Salisbury, SC. LOCATION: 302169 PROJECT NO.: FAX #		DW - DRINKING WATER GW - GROUND WATER WW - WASTE WATER SO - SOIL SL - SLUDGE OI - OIL LIQ - OTHER LIQUID SOL - OTHER SOLID										LAB USE ONLY				
ACCUTEST SAMPLE #	FIELD ID / POINT OF COLLECTION	COLLECTION		SAMPLED BY:	ANALYST	# of BOTTLES	PRESERVATION				X	X	X	X				
		DATE	TIME				REF	REF	REF	REF								
①	DMW-1	8/9/05	1405	JF.	GM	3	X											
②	DMW-2		1520															
③	CK-1		1145															
④	CK-3		1215															
⑤	WM-1		1340															
<b>DATA TURNAROUND INFORMATION</b> <input checked="" type="checkbox"/> STANDARD <input type="checkbox"/> 48 HOUR RUSH <input type="checkbox"/> 24 HOUR EMERGENCY <input type="checkbox"/> OTHER APPROVED BY: _____ EMERGENCY OR RUSH IS FAX DATA UNLESS PREVIOUSLY APPROVED		<b>DATA DELIVERABLE INFORMATION</b> <input checked="" type="checkbox"/> STANDARD <input type="checkbox"/> COMMERCIAL "B" <input type="checkbox"/> DISK DELIVERABLE <input type="checkbox"/> STATE FORMS <input type="checkbox"/> OTHER (SPECIFY) _____		<b>COMMENTS/REMARKS</b>   														
<b>SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY</b>																		
RELINQUISHED BY: 1. <i>[Signature]</i>	DATE/TIME: 8/10/05 0930	RECEIVED BY: 1. <i>[Signature]</i>	RELINQUISHED BY: 2. <i>[Signature]</i>	DATE/TIME: 8/10/05	RECEIVED BY: 2. <i>[Signature]</i>	RELINQUISHED BY: 3. <i>[Signature]</i>	DATE/TIME: 8/10/05	RECEIVED BY: 3. <i>[Signature]</i>	RELINQUISHED BY: 4. <i>[Signature]</i>	DATE/TIME: 8/10/05	RECEIVED BY: 4. <i>[Signature]</i>	RELINQUISHED BY: 5. <i>[Signature]</i>	DATE/TIME: 8/10/05	RECEIVED BY: 5. <i>[Signature]</i>				
SEAL: <input type="checkbox"/> PRESERVE WHEN APPLICABLE <input type="checkbox"/> ON ICE <input type="checkbox"/> TEMPERATURE: 26 C																		

ACCUTEST LABORATORIES SAMPLE RECEIPT CONFIRMATION

ACCUTEST'S JOB NUMBER: F33972 CLIENT: SEI PROJECT: Highway N Grocery  
DATE/TIME RECEIVED: 8/11/05 09:14 # OF COOLERS RECEIVED: 1 COOLER TEMPS: 26  
METHOD OF DELIVERY: FEDEX UPS ACCUTEST COURIER GREYHOUND DELIVERY OTHER  
AIRBILL NUMBERS: 8497 8875 4389

COOLER INFORMATION

- CUSTODY SEAL NOT PRESENT OR NOT INTACT
- NO COC RECEIVED
- ANALYSIS REQUESTED IS UNCLEAR OR MISSING
- SAMPLE DATES OR TIMES UNCLEAR OR MISSING
- TEMPERATURE CRITERIA NOT MET

TRIP BLANK INFORMATION

- TRIP BLANK NOT PROVIDED
- TRIP BLANK NOT ON COC
- TRIP BLANK INTACT
- TRIP BLANK NOT INTACT
- RECEIVED WATER TRIP BLANK
- RECEIVED SOIL TRIP BLANK

SAMPLE INFORMATION

- SAMPLE LABELS PRESENT ON ALL BOTTLES
- CORRECT NUMBER OF CONTAINERS USED
- SAMPLE RECEIVED IMPROPERLY PRESERVED
- INSUFFICIENT VOLUME FOR ANALYSIS
- TIMES ON COC DON'T MATCH LABEL
- ID'S ON COC DON'T MATCH LABEL
- VOC VIALS HAVE HEADSPACE (MACRO BUBBLES)
- BOTTLES RECEIVED BUT ANALYSIS NOT REQUESTED
- NO BOTTLES RECEIVED FOR ANALYSIS REQUESTED
- UNCLEAR FILTERING INSTRUCTIONS
- UNCLEAR COMPOSITING INSTRUCTIONS
- SAMPLE(S) RECEIVED BROKEN
- % SOLIDS JAR NOT RECEIVED

SOIL INFORMATION

NUMBER OF ENCORES ? 0  
NUMBER OF SOSS FIELD KITS ? 0

SUMMARY OF COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

TECHNICIAN SIGNATURE/DATE CP 8/11/05 TECHNICIAN SIGNATURE/DATE Arthur Green 8-11-05

ASBD08/22/05

**GC/MS Volatiles**

**QC Data Summaries**

---

**Includes the following where applicable:**

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries



# Method Blank Summary

Job Number: F33972  
Account: SEISCC SEI-Columbia, SC  
Project: Hwy 11 Grocery; Salem, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VN263-MB	N0006238.D	1	08/22/05	KK	n/a	n/a	VN263

4.1  
4

The QC reported here applies to the following samples:

Method: SW846 8260B

F33972-2, F33972-3, F33972-4

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
91-20-3	Naphthalene	ND	2.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	3.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	104%	86-115%
17060-07-0	1,2-Dichloroethane-D4	114%	73-126%
2037-26-5	Toluene-D8	96%	86-112%
460-00-4	4-Bromofluorobenzene	109%	83-119%

# Method Blank Summary

Job Number: F33972  
Account: SEISCC SEI-Columbia, SC  
Project: Hwy 11 Grocery; Salem, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VM293-MB	M0006837.D1		08/23/05	KK	n/a	n/a	VM293

4.1  
4

The QC reported here applies to the following samples:

Method: SW846 8260B

F33972-5, F33972-7, F33972-8, F33972-9, F33972-11, F33972-12, F33972-13, F33972-15

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
91-20-3	Naphthalene	ND	2.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	3.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	99%	86-115%
17060-07-0	1,2-Dichloroethane-D4	87%	73-126%
2037-26-5	Toluene-D8	100%	86-112%
460-00-4	4-Bromofluorobenzene	101%	83-119%

# Method Blank Summary

Job Number: F33972  
 Account: SEISCC SEI-Columbia, SC  
 Project: Hwy 11 Grocery; Salem, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VN264-MB	N0006268.D	1	08/23/05	KK	n/a	n/a	VN264

4.1  
4

The QC reported here applies to the following samples:

Method: SW846 8260B

F33972-1, F33972-10, F33972-14

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
91-20-3	Naphthalene	ND	2.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	3.0	ug/l	

CAS No.	Surrogate Recoveries	Result	Limits
1868-53-7	Dibromofluoromethane	99%	86-115%
17060-07-0	1,2-Dichloroethane-D4	94%	73-126%
2037-26-5	Toluene-D8	99%	86-112%
460-00-4	4-Bromofluorobenzene	100%	83-119%

# Method Blank Summary

Job Number: F33972  
 Account: SEISCC SEI-Columbia, SC  
 Project: Hwy 11 Grocery; Salem, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VN265-MB	N0006287.D	1	08/24/05	KK	n/a	n/a	VN265

4.1  
4

The QC reported here applies to the following samples:

Method: SW846 8260B

F33972-1, F33972-6

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
91-20-3	Naphthalene	ND	2.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	3.0	ug/l	

CAS No.	Surrogate Recoveries	Result	Limits
1868-53-7	Dibromofluoromethane	98%	86-115%
17060-07-0	1,2-Dichloroethane-D4	92%	73-126%
2037-26-5	Toluene-D8	99%	86-112%
460-00-4	4-Bromofluorobenzene	99%	83-119%

# Blank Spike Summary

Job Number: F33972  
 Account: SEISCC SEI-Columbia, SC  
 Project: Hwy 11 Grocery; Salem, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VN263-BS	N0006230.D	1	08/22/05	KK	n/a	n/a	VN263

4.2  
4

The QC reported here applies to the following samples:

Method: SW846 8260B

F33972-2, F33972-3, F33972-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	25	23.3	93	80-120
100-41-4	Ethylbenzene	25	22.6	90	82-115
1634-04-4	Methyl Tert Butyl Ether	25	25.3	101	67-127
91-20-3	Naphthalene	25	24.6	98	62-129
108-88-3	Toluene	25	21.6	86	81-114
1330-20-7	Xylene (total)	75	69.2	92	81-118

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	98%	86-115%
17060-07-0	1,2-Dichloroethane-D4	96%	73-126%
2037-26-5	Toluene-D8	97%	86-112%
460-00-4	4-Bromofluorobenzene	99%	83-119%

# Blank Spike Summary

Job Number: F33972  
Account: SEISCC SEI-Columbia, SC  
Project: Hwy 11 Grocery; Salem, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VM293-BS	M0006836.D1		08/23/05	KK	n/a	n/a	VM293

42  
4

The QC reported here applies to the following samples:

Method: SW846 8260B

F33972-5, F33972-7, F33972-8, F33972-9, F33972-11, F33972-12, F33972-13, F33972-15

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	25	25.8	103	80-120
100-41-4	Ethylbenzene	25	25.5	102	82-115
1634-04-4	Methyl Tert Butyl Ether	25	22.6	90	67-127
91-20-3	Naphthalene	25	18.7	75	62-129
108-88-3	Toluene	25	25.0	100	81-114
1330-20-7	Xylene (total)	75	74.6	99	81-118

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	100%	86-115%
17060-07-0	1,2-Dichloroethane-D4	88%	73-126%
2037-26-5	Toluene-D8	99%	86-112%
460-00-4	4-Bromofluorobenzene	94%	83-119%

# Blank Spike Summary

Job Number: F33972  
Account: SEISCC SEI-Columbia, SC  
Project: Hwy 11 Grocery; Salem, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VN265-BS	N0006286.D	1	08/24/05	KK	n/a	n/a	VN265

4.2  
4

The QC reported here applies to the following samples:

Method: SW846 8260B

F33972-1, F33972-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	25	25.3	101	80-120
100-41-4	Ethylbenzene	25	24.6	98	82-115
1634-04-4	Methyl Tert Butyl Ether	25	28.8	115	67-127
91-20-3	Naphthalene	25	22.0	88	62-129
108-88-3	Toluene	25	22.6	90	81-114
1330-20-7	Xylene (total)	75	74.5	99	81-118

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	97%	86-115%
17060-07-0	1,2-Dichloroethane-D4	91%	73-126%
2037-26-5	Toluene-D8	100%	86-112%
460-00-4	4-Bromofluorobenzene	98%	83-119%

# Matrix Spike/Matrix Spike Duplicate Summary

Job Number: F33972  
 Account: SEISCC SEI-Columbia, SC  
 Project: Hwy 11 Grocery; Salem, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
F33966-5MS	N0006242.D	1	08/22/05	KK	n/a	n/a	VN263
F33966-5MSD	N0006243.D	1	08/22/05	KK	n/a	n/a	VN263
F33966-5	N0006241.D	1	08/22/05	KK	n/a	n/a	VN263

43  
4

The QC reported here applies to the following samples:

Method: SW846 8260B

F33972-2, F33972-3, F33972-4

CAS No.	Compound	F33966-5 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	2.2	25	25.5	93	25.2	92	1	72-125/7
100-41-4	Ethylbenzene	1.7	25	24.0	89	23.6	88	2	73-119/8
1634-04-4	Methyl Tert Butyl Ether	46.0	25	74.5	114	73.4	110	1	61-129/9
91-20-3	Naphthalene	14.3	25	38.6	97	38.4	96	1	52-127/13
108-88-3	Toluene	3.3	25	24.4	84	23.9	82	2	67-123/8
1330-20-7	Xylene (total)	10.3	75	80.7	94	78.3	91	3	73-122/7

CAS No.	Surrogate Recoveries	MS	MSD	F33966-5	Limits
1868-53-7	Dibromofluoromethane	103%	100%	100%	86-115%
17060-07-0	1,2-Dichloroethane-D4	105%	105%	103%	73-126%
2037-26-5	Toluene-D8	98%	98%	97%	86-112%
460-00-4	4-Bromofluorobenzene	97%	99%	97%	83-119%



# Matrix Spike/Matrix Spike Duplicate Summary

Job Number: F33972  
 Account: SEISCC SEI-Columbia, SC  
 Project: Hwy 11 Grocery; Salem, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
F33922-1MS	M0006839.D	100	08/23/05	KK	n/a	n/a	VM293
F33922-1MSD	M0006840.D	100	08/23/05	KK	n/a	n/a	VM293
F33922-1	M0006838.D	100	08/23/05	KK	n/a	n/a	VM293

4.3  
4

The QC reported here applies to the following samples:

Method: SW846 8260B

F33972-5, F33972-7, F33972-8, F33972-9, F33972-11, F33972-12, F33972-13, F33972-15

CAS No.	Compound	F33922-1 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	1430	2500	4150	109	4020	104	3	72-125/7
100-41-4	Ethylbenzene	1740	2500	4330	104	4240	100	2	73-119/8
1634-04-4	Methyl Tert Butyl Ether	ND	2500	2640	106	2630	105	0	61-129/9
91-20-3	Naphthalene	349	2500	2390	82	2440	84	2	52-127/13
108-88-3	Toluene	5940	2500	8200	90	8030	84	2	67-123/8
1330-20-7	Xylene (total)	8420	7500	15900	100	15700	97	1	73-122/7

CAS No.	Surrogate Recoveries	MS	MSD	F33922-1	Limits
1868-53-7	Dibromofluoromethane	100%	101%	97%	86-115%
17060-07-0	1,2-Dichloroethane-D4	89%	88%	86%	73-126%
2037-26-5	Toluene-D8	101%	100%	101%	86-112%
460-00-4	4-Bromofluorobenzene	93%	93%	96%	83-119%

# Matrix Spike/Matrix Spike Duplicate Summary

Job Number: F33972  
 Account: SEISCC SEI-Columbia, SC  
 Project: Hwy 11 Grocery; Salem, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
F34109-1MS	N0006270.D	1	08/23/05	KK	n/a	n/a	VN264
F34109-1MSD	N0006271.D	1	08/23/05	KK	n/a	n/a	VN264
F34109-1	N0006269.D	1	08/23/05	KK	n/a	n/a	VN264

4.3  
4

The QC reported here applies to the following samples:

Method: SW846 8260B

F33972-1, F33972-10, F33972-14

CAS No.	Compound	F34109-1 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND	25	25.3	101	24.9	100	2	72-125/7
100-41-4	Ethylbenzene	ND	25	24.1	96	23.8	95	1	73-119/8
1634-04-4	Methyl Tert Butyl Ether	ND	25	28.8	115	28.4	114	1	61-129/9
91-20-3	Naphthalene	ND	25	23.4	94	23.9	96	2	52-127/13
108-88-3	Toluene	ND	25	22.1	88	21.7	87	2	67-123/8
1330-20-7	Xylene (total)	ND	75	73.2	98	72.6	97	1	73-122/7

CAS No.	Surrogate Recoveries	MS	MSD	F34109-1	Limits
1868-53-7	Dibromofluoromethane	99%	99%	99%	86-115%
17060-07-0	1,2-Dichloroethane-D4	96%	97%	97%	73-126%
2037-26-5	Toluene-D8	98%	98%	99%	86-112%
460-00-4	4-Bromofluorobenzene	100%	101%	101%	83-119%

# Matrix Spike/Matrix Spike Duplicate Summary

Job Number: F33972  
 Account: SEISCC SEI-Columbia, SC  
 Project: Hwy 11 Grocery; Salem, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
F33972-6MS	N0006290.D	1	08/24/05	KK	n/a	n/a	VN265
F33972-6MSD	N0006291.D	1	08/24/05	KK	n/a	n/a	VN265
F33972-6 <sup>a</sup>	N0006289.D	1	08/24/05	KK	n/a	n/a	VN265

4.3  
4

The QC reported here applies to the following samples:

Method: SW846 8260B

F33972-1, F33972-6

CAS No.	Compound	F33972-6 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	52.0	25	84.8	131* <sup>b</sup>	83.8	127* <sup>b</sup>	1	72-125/7
100-41-4	Ethylbenzene	2.6	25	27.8	101	26.9	97	3	73-119/8
1634-04-4	Methyl Tert Butyl Ether	9.2	25	39.3	120	38.5	117	2	61-129/9
91-20-3	Naphthalene	ND	25	23.2	93	23.5	94	1	52-127/13
108-88-3	Toluene	55.9	25	86.9	124* <sup>b</sup>	85.5	118	2	67-123/8
1330-20-7	Xylene (total)	34.3	75	116	109	115	108	1	73-122/7

CAS No.	Surrogate Recoveries	MS	MSD	F33972-6	Limits
1868-53-7	Dibromofluoromethane	96%	95%	96%	86-115%
17060-07-0	1,2-Dichloroethane-D4	92%	89%	92%	73-126%
2037-26-5	Toluene-D8	101%	99%	99%	86-112%
460-00-4	4-Bromofluorobenzene	100%	100%	100%	83-119%

- (a) Sample re-analyzed beyond hold time; reported results are considered minimum values.
- (b) Outside control limits due to high level in sample relative to spike amount.

**SUMMARY OF CORRECTIVE ACTION AND GAUGING RESULTS**

Highway 11 Grocery

13527 N SC Hwy 11

Salem, South Carolina

Permit # 03439

CA # 17616

Oconee County

**PREPARED FOR:**

Mr. Steve Smith

Highway 11 Grocery

13527 N SC Hwy 11

Salem, South Carolina 29676-9801

**PREPARED BY:**

SEI Environmental, Inc.

3021 McNaughton Drive, Suite 9

Columbia, South Carolina 29223

(803) 788-2535



David B. Pittman

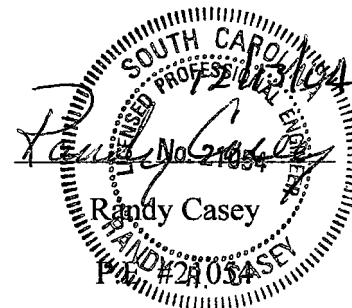
Project Manager

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UNDERGROUND STORAGE  
TANK PROGRAM

**51-TECH**



December 13, 2004

PL-100

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*(Appendix A, SCDHEC Directive Letter)*

*(Appendix B, Figure 1: Site Topographic Map and Figure 2: Site Map with Well Locations)*

*Provide a brief description or explanation of the site*

On April 29, 2004 the South Carolina Department of Health and Environmental Control (SCDHEC) submitted a directive for the conducting the required quarterly sampling and gauging event and identifying a 75% reduction corrective action milestone not met. Attached in Appendix A is a copy of the April 29, 2004 SCDHEC directive letter. On September 29, 2004 SEI personnel conducted the quarterly gauging and sampling event. Attached in Appendix B is Figure 1, a topographic map and Figure 2, a site map depicting the locations of the existing monitoring wells.

### **Activities and Assessment of Existing Conditions**

#### A. Potentiometric Data:

*(Appendix B, Figure 3: Potentiometric Map)*

*(Appendix C, Table 1: Historical Summary of Groundwater Elevation Data)*

SEI collected groundwater elevations from seventeen (17) monitoring wells. Groundwater elevation data collected from the groundwater monitoring wells during the September 29, 2004, indicates groundwater flowing in a easterly direction. Attached in Appendix C is Table 1, an historical summary of the Groundwater Elevation Data. Attached in Appendix B is Figure 3, a potentiometric map based on the September 29, 2004 gauging event observations.

#### B. Analytical Data:

*(Appendix B, Figure 4: Chemicals of Concern Site Map)*

*(Appendix C, Table 2: September 29, 2004 Field Screening Observations and Field Data Information Sheets)*

*(Appendix C, Table 3: Historical Summary of Laboratory Analytical Data, September 29, 2004 Laboratory Analytical Report, Chain of Custody)*

On September 29, 2004 SEI personnel mobilized to the site to gauge seventeen (17) Monitoring Wells, MW-1 through MW-2, MW-14, MW-15, DMW-1, DMW-2, and DMW-4. Please note that MW-13 was not located. Please note that free product was observed at MW-8, a total of 0.45 feet and 4.0 gallons of free product was removed. Please note that a strong petroleum odor was observed for at MW-1, MW-2, MW-7, MW-14, and DMW-1. Monitoring Wells DMW-2 and DMW-4 were purged and field screened.

Attached in Appendix C is Table 2, a summary of the September 29, 2004 Field Screening Observations and the Field Data Information Sheet(s) for Ground Water Sampling. One- Hundred (100.0) gallons of purged water were generated from the purging of the wells for later disposal at G and K Tank Services of Sumter, SC.

Upon completion of purging, collection of field screening information and gauging activities, a representative sample was collected from each sample point, MW-1 through MW-2, MW-14,





MW-15, DMW-1, DMW-2, and DMW-4; WW-1, the drinking water sample point; and CK-1 and CK-2, the surface water sample points. Each sample was submitted to Environmental Science Laboratory in Mount Juliet, Tennessee for analysis for Benzene, Toluene, Ethylbenzene, Xylene (BTEX) by EPA method 8260B, Methyl Tert-butyl Ether (MTBE) by EPA method 8260B, and Naphthalene by EPA method 8260B. Attached in Appendix B is Figure 4, the Chemicals of Concern (CoC) map based on the September 29, 2004 Laboratory Analytical results. Attached in Appendix C is Table 3, an Historical Summary of the Laboratory Analytical data and the September 29, 2004 Laboratory Analytical report. A total of sixty(60) gallons of purged water and free product was generated.

#### C. Percent Reduction Calculation

*(Appendix C. Table 4, Percent Reduction Calculation)*

The calculation of the November 3, 2004 Percent Concentration Reduction is determined through the comparison of the November 3, 2004 laboratory analytical data and the baseline data .The calculation is 98.22%. The formula for calculating the Percent Concentration Reduction is:

Percent of Concentration Reduction = ((Initial Mass Above SSTL) - (Current Mass Above SSTL)\*100)/(Initial Mass Above SSTL)

#### D. Summary of Disposal Activities

*(Appendix D, Disposal Manifest)*

On September 30, 2004, SEI personnel transported the purged water to G & K Tank Disposal Services, located in Sumter, South Carolina, for disposal. Attached in Appendix D are copies of the Non-Hazardous Waste Manifest and Certificate of Disposal.

### **Recommendations**

Based on the September 29, 2004 field observations and the subsequent laboratory analytical data, SEI recommends continued corrective action to include an Enhanced Fluid Recovery(EFR) event to remove free product from MW-8 , if observed during next scheduled sampling period.

Appendix A

SCDHEC Correspondence



C. Earl Hunter, Commissioner

*Promoting and protecting the health of the public and the environment.*

RECEIVED

APR 30 2004

APR 29 2004

MR STEVEN SMITH  
180 SCHALLOW FORD RD  
SALEM SC 29676

Re: Highway 11 Grocery, 13527 North SC-11, Salem, SC  
UST Permit #03439; CA #17616  
Release reported November 28, 2000  
Corrective Action System Evaluation (CASE) received April 23, 2004  
Oconee County

Dear Mr. Smith:

The Underground Storage Tank (UST) Program of the South Carolina Department of Health and Environmental Control (SCDHEC) has reviewed the referenced report. Sampling data in the report and data from verification samples taken March 31, 2004 by Program personnel indicate that free-phase product persists in monitoring well MW-8. Therefore, the seventy-five percent (75%) interim corrective action milestone has not been achieved. The data also document a substantial increase in concentrations of chemicals of concern (CoC) in monitoring well MW-12. This increase poses an immediate threat to the nearby creek and may be the cause of elevated CoC concentrations observed in creek sample CK-1. Please have your contractor take the necessary steps to reduce the CoC concentrations in MW-8 and MW-12.

The next CASE for the June 2004 quarterly gauging event is due on or before August 1, 2004. On all correspondence regarding this facility, please reference UST Permit #03439. If you have any questions regarding this correspondence, feel free to call me at (803) 896-6398 or (800) 826-5435 (within South Carolina only), or by fax at (803) 896-6245.

Sincerely,

Joel P. Padgett, P.G., Hydrogeologist  
Southwestern SC Corrective Action Section  
Underground Storage Tank Program  
Bureau of Land and Waste Management

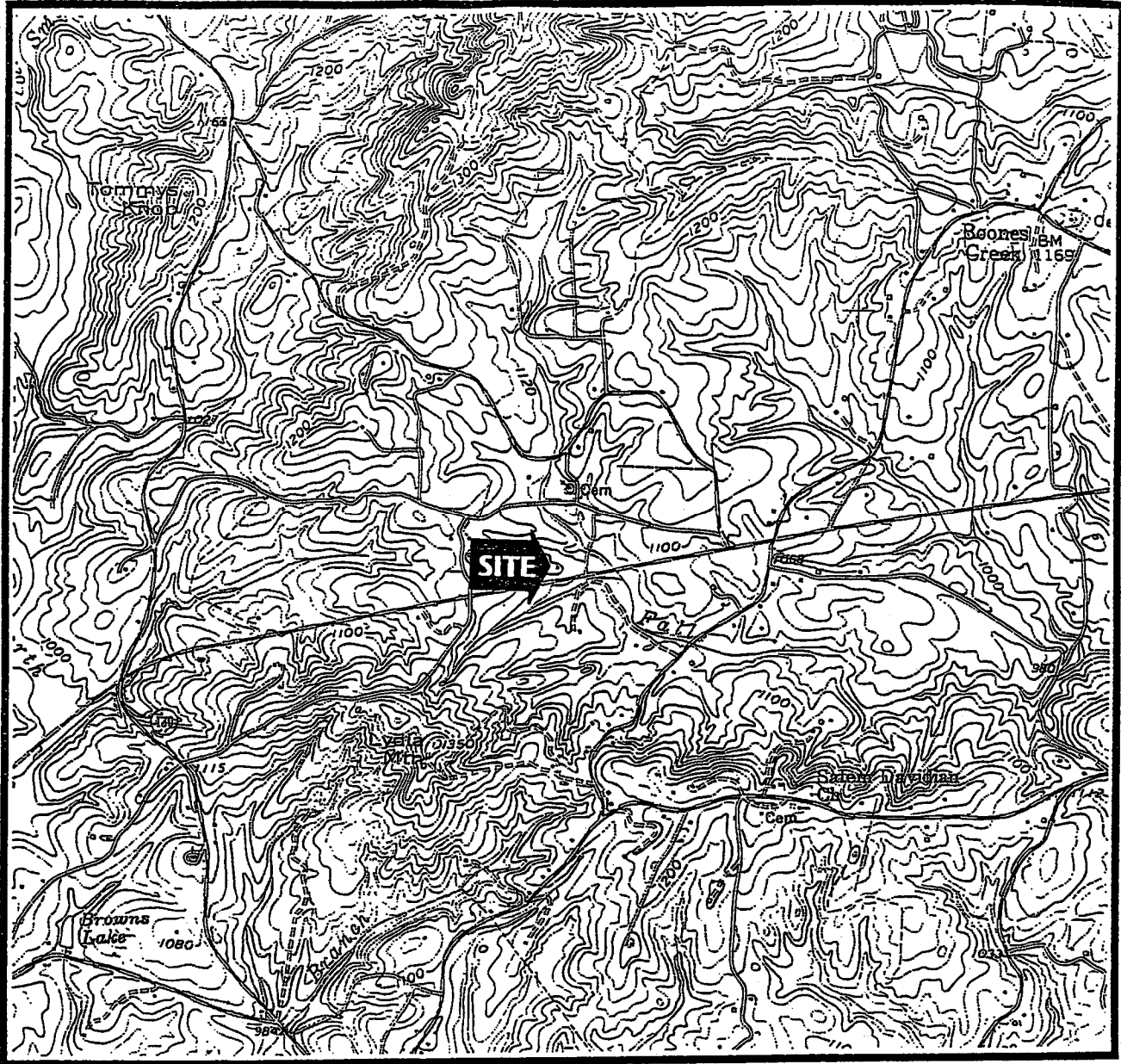
JPP/jpp  
03439.1

cc: SEI Environmental, Inc., 3021 McNaughton Drive, Suite 9, SC 29223  
Technical file

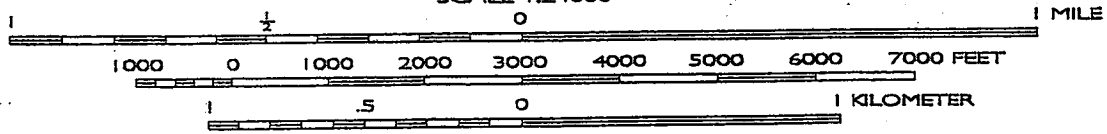
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Appendix B

Figures



SCALE 1:24000



### SEI Environmental, Inc.

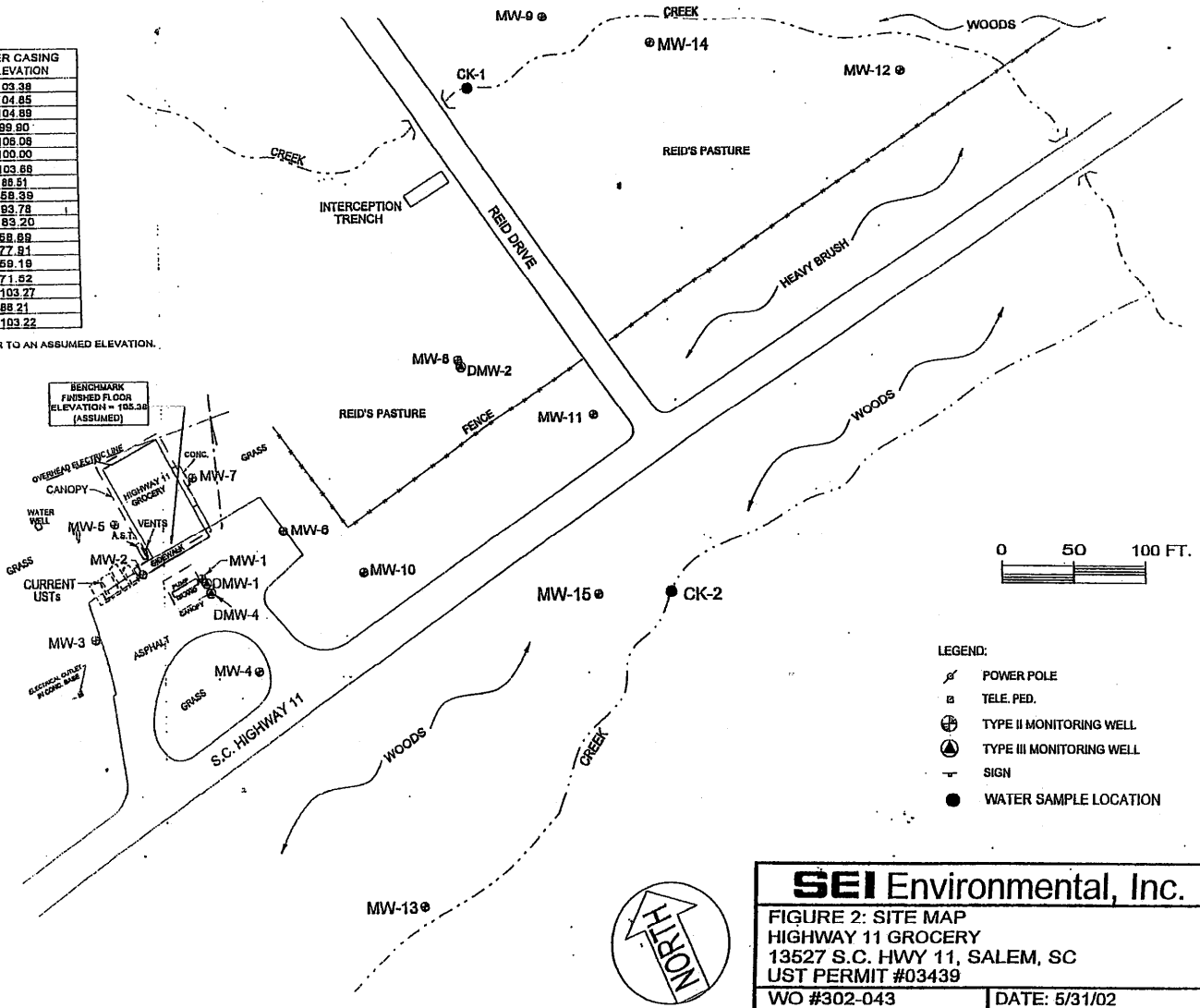
FIGURE 1: SITE LOCATION MAP  
 HIGHWAY 11 GROCERY  
 13527 S.C. HWY 11, SALEM, SC  
 UST PERMIT #03439

W.O. #: 300-388  
 DWG #

DATE: 9/5/01  
 DRAWN BY: JCI

WELL #	INNER CASING ELEVATION
MW-1	103.38
MW-2	104.85
MW-3	104.88
MW-4	99.90
MW-5	105.08
MW-6	100.00
MW-7	103.88
MW-8	88.51
MW-9	88.39
MW-10	93.78
MW-11	83.20
MW-12	88.88
MW-13	77.81
MW-14	89.19
MW-15	71.82
DMW-1	103.27
DMW-2	88.21
DMW-4	103.22

NOTE: ELEVATIONS REFER TO AN ASSUMED ELEVATION.



**SEI Environmental, Inc.**

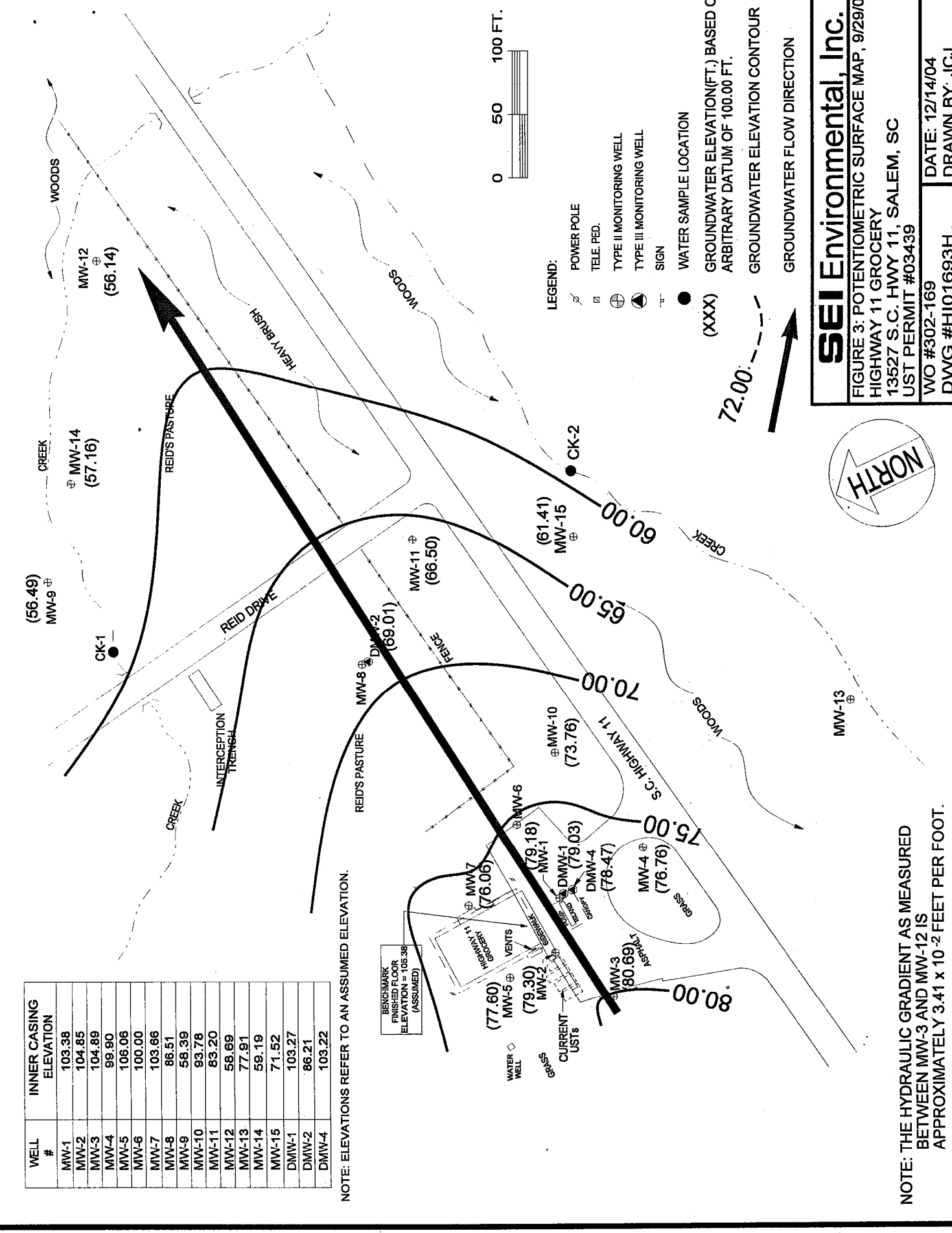
FIGURE 2: SITE MAP  
HIGHWAY 11 GROCERY  
13527 S.C. HWY 11, SALEM, SC  
UST PERMIT #03439

WO #302-043	DATE: 5/31/02
DWG #HI0388F1	DRAWN BY: JCJ

WELL #	INNER CASING ELEVATION
MW-1	103.38
MW-2	104.85
MW-3	104.89
MW-4	99.90
MW-5	106.06
MW-6	100.00
MW-7	103.66
MW-8	86.51
MW-9	58.39
MW-10	93.78
MW-11	83.20
MW-12	58.69
MW-13	77.91
MW-14	59.19
MW-15	71.52
DMW-1	103.27
DMW-2	86.21
DMW-4	103.22

NOTE: ELEVATIONS REFER TO AN ASSUMED ELEVATION.

BENCHMARK  
FINISHED FLOOR  
ELEVATION = 106.38  
(ASSUMED)

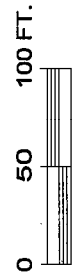


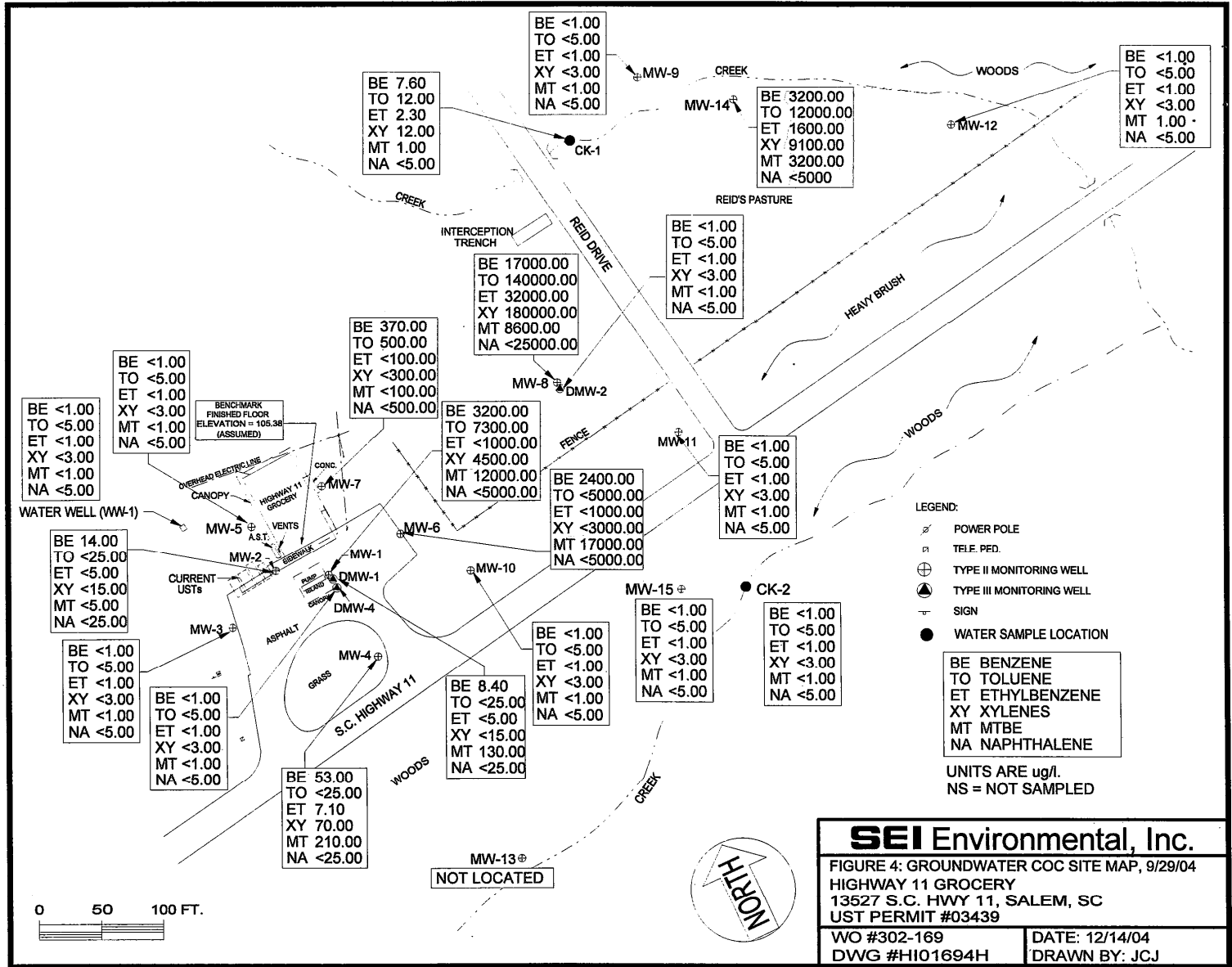
NOTE: THE HYDRAULIC GRADIENT AS MEASURED BETWEEN MW-3 AND MW-12 IS APPROXIMATELY 3.41 x 10<sup>-2</sup> FEET PER FOOT.

**SEI Environmental, Inc.**  
 FIGURE 3: POTENTIOMETRIC SURFACE MAP, 9/29/04  
 HIGHWAY 11 GROCERY  
 13527 S.C. HWY 11, SALEM, SC  
 UST PERMIT #03439  
 WO #302-169  
 DATE: 12/14/04  
 DWG #HI01693H



- LEGEND:
- ⊗ POWER POLE
  - ⊠ TELE. PED.
  - ⊕ TYPE II MONITORING WELL
  - ⊙ TYPE III MONITORING WELL
  - ⊙ SIGN
  - WATER SAMPLE LOCATION
  - (XXX) GROUNDWATER ELEVATION (FT.) BASED ON ARBITRARY DATUM OF 100.00 FT.
  - - - GROUNDWATER ELEVATION CONTOUR
  - GROUNDWATER FLOW DIRECTION





BE 7.60  
TO 12.00  
ET 2.30  
XY 12.00  
MT 1.00  
NA <5.00

BE <1.00  
TO <5.00  
ET <1.00  
XY <3.00  
MT <1.00  
NA <5.00

BE 3200.00  
TO 12000.00  
ET 1600.00  
XY 9100.00  
MT 3200.00  
NA <5000

BE <1.00  
TO <5.00  
ET <1.00  
XY <3.00  
MT 1.00  
NA <5.00

BE 370.00  
TO 500.00  
ET <100.00  
XY <300.00  
MT <100.00  
NA <500.00

BE <1.00  
TO <5.00  
ET <1.00  
XY <3.00  
MT <1.00  
NA <5.00

BE 17000.00  
TO 140000.00  
ET 32000.00  
XY 180000.00  
MT 8600.00  
NA <25000.00

BE <1.00  
TO <5.00  
ET <1.00  
XY <3.00  
MT <1.00  
NA <5.00

BENCH-MARK  
FINISHED FLOOR  
ELEVATION = 105.38  
(ASSUMED)

BE 3200.00  
TO 7300.00  
ET <1000.00  
XY 4500.00  
MT 12000.00  
NA <5000.00

BE 2400.00  
TO <5000.00  
ET <1000.00  
XY <3000.00  
MT 17000.00  
NA <5000.00

BE <1.00  
TO <5.00  
ET <1.00  
XY <3.00  
MT <1.00  
NA <5.00

BE <1.00  
TO <5.00  
ET <1.00  
XY <3.00  
MT <1.00  
NA <5.00

BE 14.00  
TO <25.00  
ET <5.00  
XY <15.00  
MT <5.00  
NA <25.00

BE <1.00  
TO <5.00  
ET <1.00  
XY <3.00  
MT <1.00  
NA <5.00

BE 8.40  
TO <25.00  
ET <5.00  
XY <15.00  
MT 130.00  
NA <25.00

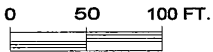
BE <1.00  
TO <5.00  
ET <1.00  
XY <3.00  
MT <1.00  
NA <5.00

BE <1.00  
TO <5.00  
ET <1.00  
XY <3.00  
MT <1.00  
NA <5.00

BE <1.00  
TO <5.00  
ET <1.00  
XY <3.00  
MT <1.00  
NA <5.00

BE 53.00  
TO <25.00  
ET 7.10  
XY 70.00  
MT 210.00  
NA <25.00

MW-13 ⊕  
NOT LOCATED





**Table 1**  
**Summary of Historical Gauging Results**  
**Highway 11 Grocery**  
**13527 South Carolina Highway 11**  
**Salem, South Carolina**  
**UST Permit #03439**

Sample ID	Gauging Date	Diameter Well (Inches)	Depth to Water (Feet)	LPH Thickness (Feet)	Depth of Well (Feet)	Well Head Elevation (Feet)	Groundwater Elevation (Feet)
MW-1	9/29/2004	2.00	24.20	0.00	30.00	103.38	
	3/31/2004		24.61	0.00			78.77
	12/18/2003		24.06	0.00			79.32
	10/23/2003		24.72	0.21			78.50
	10/2/2003		24.32	0.13			78.96
	9/15/2003		23.78	0.04			79.57
	7/30/2003		22.89	0.08			80.43
	7/1/2003		23.28	0.24			79.91
	5/8/2002		24.67	0.04			78.68
MW-2	9/29/2004	2.00	25.55	0.00	35.00	104.85	79.30
	3/31/2004		25.85	0.00			79.00
	12/18/2003		25.38	0.00			79.47
	10/23/2003		25.71	0.00			79.14
	10/2/2003		25.56	0.00			79.29
	9/15/2003		24.73	0.00			80.12
	7/30/2003		23.78	0.00			81.07
	7/1/2003		24.08	0.00			80.77
	5/8/2002		26.08	0.00			78.77
MW-3	9/29/2004	2.00	24.20	0.00	30.00	104.86	80.66
	3/31/2004		24.44	0.00			80.42
	12/18/2003		23.93	0.00			80.93
	10/23/2003		24.23	0.00			80.63
	10/2/2003		23.87	0.00			80.99
	9/15/2003		23.23	0.00			81.63
	7/30/2003		22.21	0.00			82.65
	7/1/2003		22.51	0.00			82.35
	5/8/2002		24.78	0.00			80.08

Table 1 - Continued  
 Summary of Historical Gauging Results  
 Highway 11 Grocery  
 Salem, South Carolina  
 UST Permit #03439

Sample ID	Gauging Date	Diameter Well (Inches)	Depth to Water (Feet)	LPH Thickness (Feet)	Depth of Well (Feet)	Well Head Elevation (Feet)	Groundwater Elevation (Feet)
MW-4	9/29/2004	2.00	23.14	0.00	35.00	99.90	76.76
	3/31/2004		23.49	0.00			76.41
	12/18/2003		22.95	0.00			76.95
	10/23/2003		23.69	0.00			76.21
	10/2/2003		23.32	0.00			76.58
	9/15/2003		22.90	0.00			77.00
	7/30/2003		22.09	0.00			77.81
	7/1/2003		22.10	0.00			77.80
	5/8/2002		23.38	0.00			76.52
MW-5	9/29/2004	2.00	28.46	0.00	35.00	106.06	77.60
	3/31/2004		28.56	0.00			77.50
	12/18/2003		28.40	0.00			77.66
	10/23/2003		28.40	0.00			77.66
	10/2/2003		27.92	0.00			78.14
	9/15/2003		27.40	0.00			78.66
	7/30/2003		26.53	0.00			79.53
	7/1/2003		26.82	0.00			79.24
	5/8/2002		28.82	0.00			77.24
MW-6	9/29/2004	2.00	21.33	0.00	35.00	100.00	78.67
	3/31/2004		21.71	0.00			78.29
	12/18/2003		21.00	0.00			79.00
	10/23/2003		21.74	0.00			78.26
	10/2/2003		21.34	0.00			78.66
	9/15/2003		20.63	0.00			79.37
	7/30/2003		19.88	0.00			80.12
	7/1/2003		19.77	0.00			80.23
	5/8/2002		21.66	0.00			78.34

**Table 1 - Continued**  
**Summary of Historical Gauging Results**  
**Highway 11 Grocery**  
**Salem, South Carolina**  
**UST Permit #03439**

Sample ID	Gauging Date	Diameter Well (Inches)	Depth to Water (Feet)	LPH Thickness (Feet)	Depth of Well (Feet)	Well Head Elevation (Feet)	Groundwater Elevation (Feet)
MW-7	9/29/2004	2.00	27.60	0.00	40.00	103.66	76.06
	3/31/2004		28.00	0.00			75.66
	12/18/2003		27.71	0.00			75.95
	10/23/2003		28.10	0.00			75.56
	10/2/2003		27.69	0.00			75.97
	9/15/2003		26.83	0.00			76.83
	7/30/2003		26.22	0.00			77.44
	7/1/2003		26.55	0.00			77.11
5/8/2002	28.12	0.00	75.54				
MW-8	9/29/2004	2.00	21.10	0.45	30.00	86.51	65.06
	3/31/2004		21.35	0.10			65.08
	12/18/2003		20.82	0.00			65.69
	10/23/2003		21.54	0.02			64.97
	10/2/2003		20.44	0.20			66.05
	9/15/2003		21.17	0.15			65.33
	7/30/2003		20.46	0.20			66.03
	7/1/2003		20.96	0.60			65.50
5/8/2002	21.00	0.06	65.51				
MW-9	9/29/2004	2.00	1.90	0.00	11.00	58.39	56.49
	3/31/2004		2.56	0.00			55.83
	12/18/2003		2.20	0.00			56.19
	10/23/2003		2.42	0.00			55.97
	10/2/2003		2.16	0.00			56.23
	9/15/2003		2.42	0.00			55.97
	7/30/2003		2.26	0.00			56.13
	7/1/2003		2.30	0.00			56.09
5/8/2002	2.47	0.00	55.92				

Table 1 - Continued  
 Summary of Historical Gauging Results  
 Highway 11 Grocery  
 Salem, South Carolina  
 UST Permit #03439

Sample ID	Gauging Date	Diameter Well (Inches)	Depth to Water (Feet)	LPH Thickness (Feet)	Depth of Well (Feet)	Well Head Elevation (Feet)	Groundwater Elevation (Feet)
MW-10	9/29/2004	2.00	20.02	0.00	24.00	93.78	73.76
	3/31/2004		18.85	0.00			74.93
	12/18/2003		19.83	0.00			73.95
	10/23/2003		20.51	0.00			73.27
	10/2/2003		20.19	0.00			73.59
	9/15/2003		16.53	0.00			77.25
	7/30/2003		18.95	0.00			74.83
	7/1/2003		16.20	0.00			77.58
	5/8/2002		20.04	0.00			73.74
MW-11	9/29/2004	2.00	16.70	0.00	23.00	83.20	66.50
	3/31/2004		17.35	0.00			65.85
	12/18/2003		16.40	0.00			66.80
	10/23/2003		17.83	0.00			65.37
	10/2/2003		17.58	0.00			65.62
	9/15/2003		16.21	0.00			66.99
	7/30/2003		15.92	0.00			67.28
	7/1/2003		15.93	0.00			67.27
	5/8/2002		16.86	0.00			66.34
MW-12	9/29/2004	2.00	2.55	0.00	11.00	58.69	56.14
	3/31/2004		3.26	0.00			55.43
	12/18/2003		2.60	0.00			56.09
	10/23/2003		3.50	0.00			55.19
	10/2/2003		2.97	0.00			55.72
	9/15/2003		3.19	0.00			55.50
	7/30/2003		3.02	0.00			55.67
	7/1/2003		3.10	0.00			55.59
	5/8/2002		3.12	0.00			55.57

Table 1 - Continued  
 Summary of Historical Gauging Results  
 Highway 11 Grocery  
 Salem, South Carolina  
 UST Permit #03439

Sample ID	Gauging Date	Diameter Well (Inches)	Depth to Water (Feet)	LPH Thickness (Feet)	Depth of Well (Feet)	Well Head Elevation (Feet)	Groundwater Elevation (Feet)
MW-13	9/29/2004	2.00	not located	0.00	13.00	77.72	#VALUE!
	3/31/2004		6.36	0.00			71.36
	12/18/2003		6.24	0.00			71.48
	10/23/2003		6.78	0.00			70.94
	10/2/2003		7.51	0.00			70.21
	9/15/2003		6.62	0.00			71.10
	7/30/2003		6.28	0.00			71.44
	7/1/2003		6.44	0.00			71.28
	5/8/2002		6.52	0.00			71.20
MW-14	9/29/2004	2.00	2.03	0.00	9.00	59.19	57.16
	3/31/2004		2.42	0.00			56.77
	12/18/2003		1.98	0.00			57.21
	10/23/2003		2.67	0.00			56.52
	10/2/2003		1.58	0.00			57.61
	9/15/2003		2.03	0.00			57.16
	7/30/2003		1.77	0.00			57.42
	7/1/2003		1.92	0.00			57.27
	5/8/2002		2.14	0.00			57.05
MW-15	9/29/2004	2.00	10.11	0.00	12.00	71.52	61.41
	3/31/2004		11.00	0.00			60.52
	12/18/2003		10.20	0.00			61.32
	10/23/2003		11.07	0.00			60.45
	10/2/2003		11.88	0.00			59.64
	9/15/2003		11.02	0.00			60.50
	7/30/2003		10.67	0.00			60.85
	7/1/2003		10.83	0.00			60.69
	5/8/2002		10.61	0.00			60.91

Table 1 - Continued  
 Summary of Historical Gauging Results  
 Highway 11 Grocery  
 Salem, South Carolina  
 UST Permit #03439

Sample ID	Gauging Date	Diameter Well (Inches)	Depth to Water (Feet)	LPH Thickness (Feet)	Depth of Well (Feet)	Well Head Elevation (Feet)	Groundwater Elevation (Feet)
DMW-1	9/29/2004	2.00	24.24	0.00	45.00	103.27	79.03
	3/31/2004		24.60	0.00			78.67
	12/18/2003		24.00	0.00			79.27
	10/23/2003		24.50	0.00			78.77
	10/2/2003		24.11	0.00			79.16
	9/15/2003		23.61	0.00			79.66
	7/30/2003		22.72	0.00			80.55
	7/1/2003		22.97	0.00			80.30
	5/8/2002		24.68	0.00			78.59
DMW-2	9/29/2004	2.00	17.20	0.00	75.00	86.21	69.01
	3/31/2004		17.31	0.00			68.90
	12/18/2003		16.80	0.00			69.41
	10/23/2003		17.63	0.00			68.58
	10/2/2003		17.11	0.00			69.10
	9/15/2003		15.75	0.00			70.46
	7/30/2003		16.49	0.00			69.72
	7/1/2003		16.44	0.00			69.77
	5/8/2002		17.22	0.00			68.99
DMW-4	9/29/2004	2.00	24.75	0.00	61.00	103.22	78.47
	3/31/2004		24.95	0.00			78.27
	12/18/2003		24.45	0.00			78.77
	10/23/2003		24.95	0.00			78.27
	10/2/2003		24.39	0.00			78.83
	9/15/2003		23.88	0.00			79.34
	7/30/2003		23.18	0.00			80.04
	7/1/2003		23.32	0.00			79.90
	5/8/2002		25.08	0.00			78.14

**Notes:** N/A = Not Applicable

Adjusted Depth to Water = Depth to Water - (LPH Thickness \* 0.78)

**Table 2**  
**Summary of Field Observations - September 29, 2004**  
**Highway 11 Grocery**  
**13527 South Carolina Highway 11**  
**Salem, South Carolina**  
**UST Permit #03439**

Sample ID	Frequency	Depth to Groundwater (Feet)	Total Well Depth (Feet)	Depth of Free Product (Feet)	pH (S.U.)	Specific Conductivity (umhos/cm)	Water Temperature (Degrees C)	Dissolved Oxygen (S.U.)	Volume Purged (Gal.)	Notes
MW-1	Initial	24.20	30.00	N/A	N/A	N/A	N/A	N/A	0.00	Strong Petroleum Odor
MW-2	Initial	25.55	35.00	N/A	N/A	N/A	N/A	N/A	0.00	Strong Petroleum Odor
MW-3	Initial	24.20	35.00	N/A	N/A	N/A	N/A	N/A	0.00	
MW-4	Initial	23.14	35.00	N/A	N/A	N/A	N/A	N/A	0.00	
MW-5	Initial	28.46	35.00	N/A	N/A	N/A	N/A	N/A	0.00	
MW-6	Initial	21.33	35.00	N/A	N/A	N/A	N/A	N/A	0.00	Strong Petroleum Odor
MW-7	Initial	27.60	40.00	N/A	N/A	N/A	N/A	N/A	0.00	Strong Petroleum Odor
MW-8 <sup>1</sup>	Initial	21.10	30.00	21.55	N/A	N/A	N/A	N/A	4.00	0.45 feet Free Product
MW-9	Initial	1.90	11.00	N/A	N/A	N/A	N/A	N/A	0.00	
MW-10	Initial	20.02	24.00	N/A	N/A	N/A	N/A	N/A	0.00	
MW-11	Initial	16.70	23.00	N/A	N/A	N/A	N/A	N/A	0.00	
MW-12	Initial	2.55	11.00	N/A	N/A	N/A	N/A	N/A	0.00	Strong Petroleum Odor
MW-13	Initial	not located	10.00	N/A	N/A	N/A	N/A	N/A	0.00	
MW-14	Initial	2.03	9.00	N/A	N/A	N/A	N/A	N/A	0.00	Strong Petroleum Odor
MW-15	Initial	10.11	12.00	N/A	N/A	N/A	N/A	N/A	0.00	
DMW-1	Initial	24.24	45.00	N/A	N/A	N/A	N/A	N/A	9.90	Strong Petroleum Odor
DMW-2	Initial	17.20	75.00	N/A	5.68	0.115	19.0	6.22	28.26	
	1st Volume			N/A	5.89	0.076	17.7	6.61		
	2nd Volume			N/A	5.90	0.061	17.5	5.05		
	3rd Volume			N/A	6.29	0.047	18.2	7.61		
	Post Sampling			N/A	6.16	0.046	17.4	6.16		
DMW-4	Initial	24.75	61.00	N/A	6.13	0.041	21.8	6.12	17.70	
	1st Volume			N/A	5.77	0.028	19.4	7.33		
	2nd Volume			N/A	5.64	0.028	18.9	7.36		
	3rd Volume			N/A	5.50	0.027	18.4	7.82		
	Post Sampling			N/A	5.46	0.029	18.1	8.08		

**Notes:** N/A = Not Applicable

Footnote 1: Presence of 0.45 feet of free product

South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Ground Water Sampling

Job # 302169

Date (mm/dd/yy): 9-29-04

Field Personnel: J. Weigand, J. Ford, M. Cade

General Weather Conditions: SUNNY, 76-82°F

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Ambient Air Temperature: \_\_\_\_\_ °C

**Quality Assurance**

pH Meter	Conductivity Meter
serial no. <u>1854</u>	serial no. <u>1854</u>
pH=4.0 <u>±0.002 pH@28°C</u>	standard <u>4.49ms/cm</u>
pH=7.0 _____	standard _____
pH=10.0 _____	standard _____

*AUTO CAL. SOLUTIONS PROVIDE PINE ENVIRONMENTAL SERVICE FOR HONORABLE Chain of Custody*

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Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name: Highway 11 Grocery

Site ID#: 03439 Monitoring Well # MW1

Water Supply Well \_\_\_\_\_ Public \_\_\_\_\_ Private

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C=0.163  
for a 4 inch well C=0.652

\* Free Product Thickness: \_\_\_\_\_ feet

Depth to Ground Water (DGW) 24.20 feet

Total Well Depth (TWD) 30 feet

Length of the water column (LWC=TWD-DGW) \_\_\_\_\_ feet

1 casing volume (CV=LWC X C)= \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals

3 casing volume (3 X CV)= \_\_\_\_\_ gals (standard purge volume)

Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals.

\*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling
Time (military)							
pH (s.u.)							1245
Specific Conductivity (µmhos/cm)							
Water Temperature (°C)							
Dissolved Oxygen							
PID readings, if required							

Remarks: hot well - NO purge



South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Ground Water Sampling

Job # 302169

Date (mm/dd/yy): 9-29-04

Field Personnel: J. Weigand, J. Ford, M. Cade

General Weather Conditions: Sunny, 78-88°F

Ambient Air Temperature: \_\_\_\_\_ °C

Quality Assurance

pH Meter serial no. <u>1854</u>	Conductivity Meter serial no. <u>1854</u>
pH=4.0 <u>± 0.002 PH @ 28°C</u>	standard <u>4.49 ms/cm</u>
pH=7.0 _____	standard _____
pH=10.0 _____	standard _____

*AUTO CAL. SOLUTION PROVIDE PINE ENVIRONMENTAL SERVICE FOR HONORABLE Chain of Custody*

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name: Highway 11 Grocery

Site ID#: 03439 Monitoring Well # MW 2

Water Supply Well Public \_\_\_\_\_ Private

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C=0.163  
for a 4 inch well C=0.652

\* Free Product Thickness: \_\_\_\_\_ feet

Depth to Ground Water (DGW) 25.55 feet

Total Well Depth (TWD) 35 feet

Length of the water column (LWC=TWD-DGW) \_\_\_\_\_ feet

1 casing volume (CV=LWC X C)= \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals  
3 casing volume (3 X CV)= \_\_\_\_\_ gals (standard purge volume)

Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals.  
\*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling
Time (military)							
pH (s.u.)							<u>1.00</u>
Specific Conductivity (µmhos/cm)							
Water Temperature (°C)							
Dissolved Oxygen							
PID readings, if required							

Remarks: hat well - No purge

**South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program**

**Field Data Information Sheet for Ground Water Sampling**

Job # 302169

Date (mm/dd/yy): 9-29-04

Field Personnel: J. Weigand, J. Ford, M. Cade

General Weather Conditions: Sunny, 76-82°F

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Ambient Air Temperature: \_\_\_\_\_ °C

**Quality Assurance**

pH Meter	Conductivity Meter
serial no. <u>1854</u>	serial no. <u>1854</u>
pH=4.0 <u>± 0.002 pH @ 25°C</u>	standard <u>4.49 ms/cm</u>
pH=7.0 _____	standard _____
pH=10.0 _____	standard _____

*AUTO CAL. SOLUTION PROVIDE PINE ENVIRONMENTAL SERVICE FOR HONORARY Chain of Custody*

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name: Highway 11 Grocery

Site ID#: 03439 Monitoring Well # MW 3

Water Supply Well \_\_\_\_\_ Public \_\_\_\_\_ Private

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C=0.163  
for a 4 inch well C=0.652

\* Free Product Thickness: \_\_\_\_\_ feet

Depth to Ground Water (DGW) 24.30 feet

Total Well Depth (TWD) 30 feet

Length of the water column (LWC=TWD-DGW) \_\_\_\_\_ feet

1 casing volume (CV=LWC X C)= \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals  
3 casing volume (3 X CV)= \_\_\_\_\_ gals (standard purge volume)

Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals.  
\*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling
Time (military)							
pH (s.u.)							<u>1330</u>
Specific Conductivity (µmhos/cm)							
Water Temperature (°C)							
Dissolved Oxygen							
PID readings, if required							

Remarks: no purge

**South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program**

**Field Data Information Sheet for Ground Water Sampling**

Job # 302169

Date (mm/dd/yy): 9-29-04

Field Personnel: J. Weinfeld, J. Ford, M. Cade

General Weather Conditions: SUNNY, 70-80°F

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Ambient Air Temperature: \_\_\_\_\_ °C

Quality Assurance

pH Meter serial no. 1854 Conductivity Meter serial no. 1854

pH=4.0 ± 0.002 PH @ 25°C standard 4.49ms/cm

pH=7.0 \_\_\_\_\_ standard \_\_\_\_\_

pH=10.0 \_\_\_\_\_ standard \_\_\_\_\_

*AUTO CAL. SOLUTION PROVIDE PINE ENVIRON-  
MENTAL SERVICE FOR HOUSA  
Chain of Custody*

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name: Highway 11 Grocery

Site ID#: 03439 Monitoring Well # MW 4

Water Supply Well Public \_\_\_\_\_ Private

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C=0.163  
for a 4 inch well C=0.652

\* Free Product Thickness: \_\_\_\_\_ feet

Depth to Ground Water (DGW) 23.14 feet

Total Well Depth (TWD) 35 feet

Length of the water column (LWC=TWD-DGW) \_\_\_\_\_ feet

1 casing volume (CV=LWC X C)= \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals

3 casing volume (3 X CV)= \_\_\_\_\_ gals (standard purge volume)

Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals.

\*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling
Time (military)							
pH (s.u.)							<u>1345</u>
Specific Conductivity (µmhos/cm)							
Water Temperature (°C)							
Dissolved Oxygen							
PID readings, if required							

Remarks: NO PURGE

**South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program  
Field Data Information Sheet for Ground Water Sampling**

Job # 302169

Date (mm/dd/yy): 9-29-04

Field Personnel: J. Weimer, J. Ford, M. Cade

General Weather Conditions: SUNNY, 78-82°F

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Ambient Air Temperature: \_\_\_\_\_ °C

**Quality Assurance**

pH Meter serial no. <u>1854</u>	Conductivity Meter serial no. <u>1854</u>
pH=4.0 <u>± 0.002 pH @ 25°C</u>	standard <u>4.49ms/cm</u>
pH=7.0 _____	standard _____
pH=10.0 _____	standard _____

*AUTO CAL. SOLUTION PROVIDE PINE ENVIRON-  
MENTAL SERVICE FOR HONORABLE  
Chain of Custody*

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_  
Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name: Highway 11 Grocery

Site ID#: 03439 Monitoring Well # MW5

Water Supply Well Public \_\_\_\_\_ Private

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C=0.163  
for a 4 inch well C=0.652

\* Free Product Thickness: \_\_\_\_\_ feet

Depth to Ground Water (DGW) 28.40 feet

Total Well Depth (TWD) 35 feet

Length of the water column (LWC=TWD-DGW) \_\_\_\_\_ feet

1 casing volume (CV=LWC X C)= \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals  
3 casing volume (3 X CV)= \_\_\_\_\_ gals (standard purge volume)

Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals.  
\*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling
Time (military)							<u>1315</u>
pH (s.u.)							
Specific Conductivity (µmhos/cm)							
Water Temperature (°C)							
Dissolved Oxygen							
PID readings, if required							

Remarks: NO PURGE

**South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program**

**Field Data Information Sheet for Ground Water Sampling**

Job # 302169

Date (mm/dd/yy): 9-29-04

Field Personnel: J. W. Wiggins, J. Ford, M. Cade

General Weather Conditions: Sunny, 78-82°F

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Ambient Air Temperature: \_\_\_\_\_ °C

**Quality Assurance**

pH Meter serial no. <u>1854</u>	Conductivity Meter serial no. <u>1854</u>
pH=4.0 <u>± 0.002 pH @ 25°C</u>	standard <u>4.49 ms/cm</u>
pH=7.0 _____	standard _____
pH=10.0 _____	standard _____

*AUTO CAL. SOLUTION PROVIDE PINE ENVIRONMENTAL SERVICE FOR HONBA Chain of Custody*

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name: Highway 11 Grocery

Site ID#: 03439 Monitoring Well # MW 6

Water Supply Well Public \_\_\_\_\_ Private

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C=0.163  
for a 4 inch well C=0.652

\* Free Product Thickness: \_\_\_\_\_ feet

Depth to Ground Water (DGW) 21.33 feet

Total Well Depth (TWD) 35 feet

Length of the water column (LWC=TWD-DGW) \_\_\_\_\_ feet

1 casing volume (CV=LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals  
3 casing volume (3 X CV) = \_\_\_\_\_ gals (standard purge volume)

Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals.  
\*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling
Time (military)							
pH (s.u.)							1230
Specific Conductivity (µmhos/cm)							
Water Temperature (°C)							
Dissolved Oxygen							
PID readings, if required							

Remarks: hot well - no purge

South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Ground Water Sampling

Job # 302169

Date (mm/dd/yy): 9-29-04

Field Personnel: J. Wajid, J. Ford, M. Cade

General Weather Conditions: sunny, 70-82°F

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Ambient Air Temperature: \_\_\_\_\_ °C

Quality Assurance

pH Meter serial no. 1854 Conductivity Meter serial no. 1854

pH=4.0 +0.002 pH @ 25°C standard 4.49ms/cm

pH=7.0 \_\_\_\_\_ standard \_\_\_\_\_

pH=10.0 \_\_\_\_\_ standard \_\_\_\_\_

*AUTO CAL. SOLUTION PROVIDE PINE ENVIRONMENTAL SERVICE FOR HOMBA Chain of Custody*

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name: Highway 11 Grocery

Site ID#: 03439 Monitoring Well # MW 7

Water Supply Well Public \_\_\_\_\_ Private

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C=0.163  
for a 4 inch well C=0.652

\* Free Product Thickness: \_\_\_\_\_ feet

Depth to Ground Water (DGW) 27.60 feet

Total Well Depth (TWD) 40 feet

Length of the water column (LWC=TWD-DGW) \_\_\_\_\_ feet

1 casing volume (CV=LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals

3 casing volume (3 X CV) = \_\_\_\_\_ gals (standard purge volume)

Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals.

\*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling
Time (military)							1235
pH (s.u.)							
Specific Conductivity (µmhos/cm)							
Water Temperature (°C)							
Dissolved Oxygen							
PID readings, if required							

Remarks: hot well - no purge

South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Ground Water Sampling

Job # 302169

Date (mm/dd/yy): 9-29-04

Field Personnel: J. Wejman, J. Ford, M. Cade

General Weather Conditions: Sunny 78-88°F

Ambient Air Temperature: \_\_\_\_\_ °C

**Quality Assurance**

pH Meter serial no. <u>1854</u>	Conductivity Meter serial no. <u>1854</u>
pH=4.0 <u>± 0.002 pH @ 25°C</u>	standard <u>4.49 ms/cm</u>
pH=7.0 _____	standard _____
pH=10.0 _____	standard _____

*AUTO CAL. SOLUTION PROVIDE PINE ENVIRONMENTAL SERVICE FOR HONBA Chain of Custody*

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name: Highway 11 Grocery

Site ID#: 03439 Monitoring Well # MW 8

Water Supply Well Public \_\_\_\_\_ Private

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C=0.163  
for a 4 inch well C=0.652

\* Free Product Thickness: .45" feet

Depth to Ground Water (DGW) 21.10 feet

Total Well Depth (TWD) 30 feet

Length of the water column (LWC=TWD-DGW) \_\_\_\_\_ feet

1 casing volume (CV=LWC X C)= \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals  
3 casing volume (3 X CV)= \_\_\_\_\_ gals (standard purge volume)

Total Volume of Water Purged Before Sampling 4.00 gals.  
\*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling
Time (military)							1410
pH (s.u.)							
Specific Conductivity (µmhos/cm)							
Water Temperature (°C)							
Dissolved Oxygen							
PID readings, if required							

Remarks: hot well - no purge - purged 4 gallons of free product

**South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program**

**Field Data Information Sheet for Ground Water Sampling**

Job # 302169

Date (mm/dd/yy): 9-29-04

Field Personnel: J. Wejins, J. Ford, M. Cade

General Weather Conditions: SUNNY, 76-82°F

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Ambient Air Temperature: \_\_\_\_\_ °C

**Quality Assurance**

pH Meter serial no. <u>1854</u>	Conductivity Meter serial no. <u>1854</u>
pH=4.0 <u>± 0.002 pH @ 25°C</u>	standard <u>4.49ms/cm</u>
pH=7.0 _____	standard _____
pH=10.0 _____	standard _____

*AUTO CAL. SOLUTION PROVIDED BY PINE ENVIRONMENTAL SERVICE FOR HONORARY Chain of Custody*

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name: Highway 11 Grocery

Site ID#: 03439 Monitoring Well # MW 9

Water Supply Well Public \_\_\_\_\_ Private

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C=0.163  
for a 4 inch well C=0.652

\* Free Product Thickness: \_\_\_\_\_ feet

Depth to Ground Water (DGW) 1.70 feet

Total Well Depth (TWD) 11 feet

Length of the water column (LWC=TWD-DGW) \_\_\_\_\_ feet

1 casing volume (CV=LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals

3 casing volume (3 X CV) = \_\_\_\_\_ gals (standard purge volume)

Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals.

\*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling
Time (military)							<u>1525</u>
pH (s.u.)							
Specific Conductivity (µmhos/cm)							
Water Temperature (°C)							
Dissolved Oxygen							
PID readings, if required							

Remarks: ~~1525~~ - no purge



**South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program  
Field Data Information Sheet for Ground Water Sampling**

Job# 302169

Date (mm/dd/yy): 9-29-04

Field Personnel: J. Weinfeld, J. Ford, M. Cade

General Weather Conditions: SUNNY, 78-82°F

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Ambient Air Temperature: \_\_\_\_\_ °C

**Quality Assurance**

pH Meter serial no. <u>1854</u>	Conductivity Meter serial no. <u>1854</u>
pH=4.0 <u>± 0.002 pH @ 25°C</u>	standard <u>4.49 ms/cm</u>
pH=7.0 _____	standard _____
pH=10.0 _____	standard _____

*ALTO CAL. SOLUTION PROVIDE PINE ENVIRON-  
MENTAL SERVICE FOR HOMBA  
Chain of Custody*

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_  
Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name: Highway 11 Grocery

Site ID#: 03439 Monitoring Well # MW 10

Water Supply Well Public \_\_\_\_\_ Private

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C=0.163  
for a 4 inch well C=0.652

\* Free Product Thickness: \_\_\_\_\_ feet

Depth to Ground Water (DGW) 20.02 feet

Total Well Depth (TWD) 24 feet

Length of the water column (LWC=TWD-DGW) \_\_\_\_\_ feet

1 casing volume (CV=LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals  
3 casing volume (3 X CV) = \_\_\_\_\_ gals (standard purge volume)

Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals.  
\*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)								
pH (s.u.)								1400
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: no plume

South Carolina Department of Health and Environmental Control  
 Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Ground Water Sampling

Job # 302169

Date (mm/dd/yy): 9-29-04

Field Personnel: J. A. Wiggins, J. Ford, M. Cade

General Weather Conditions: Sunny 77-80°F

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Ambient Air Temperature: \_\_\_\_\_ °C

Quality Assurance

pH Meter	Conductivity Meter
serial no. <u>1854</u>	serial no. <u>1854</u>
pH=4.0 <u>± 0.002 pH @ 25°C</u>	standard <u>4.49 ms/cm</u>
pH=7.0 _____	standard _____
pH=10.0 _____	standard _____

*AUTO CAL. SOLUTION PROVIDE FINE ENVIRONMENTAL SERVICE FOR FLORIDA Chain of Custody*

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name: Highway 11 Grocery

Site ID#: 03439 Monitoring Well # MW 11

Water Supply Well Public \_\_\_\_\_ Private

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C=0.163  
 for a 4 inch well C=0.652

\* Free Product Thickness: \_\_\_\_\_ feet

Depth to Ground Water (DGW) 16.70 feet

Total Well Depth (TWD) 23 feet

Length of the water column (LWC=TWD-DGW) \_\_\_\_\_ feet

1 casing volume (CV=LWC X C)= \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals  
 3 casing volume (3 X CV)= \_\_\_\_\_ gals (standard purge volume)

Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals.  
 \*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)								
pH (s.u.)								1220
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: no purge

**South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program  
Field Data Information Sheet for Ground Water Sampling**

Job # 302169

Date (mm/dd/yy): 9-29-04

Field Personnel: J. Weigand, J. Ford, M. Cade

General Weather Conditions: Sunny, 78°-82°F

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Ambient Air Temperature: \_\_\_\_\_ °C

**Quality Assurance**

pH Meter	Conductivity Meter
serial no. <u>1854</u>	serial no. <u>1854</u>
pH=4.0 <u>± 0.002 pH @ 25°C</u>	standard <u>4.49 ms/cm</u>
pH=7.0 _____	standard _____
pH=10.0 _____	standard _____

*AUTO CAL. SOLUTIONS PROVIDE PINE ENVIRONMENTAL SERVICE FOR HONBA Chain of Custody*

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Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name: Highway 11 Grocery

Site ID#: 03439 Monitoring Well # MW12

Water Supply Well \_\_\_\_\_ Public \_\_\_\_\_ Private

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C=0.163  
for a 4 inch well C=0.652

\* Free Product Thickness: \_\_\_\_\_ feet

Depth to Ground Water (DGW) 2.55 feet

Total Well Depth (TWD) 11 feet

Length of the water column (LWC=TWD-DGW) 9.45 feet

1 casing volume (CV=LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals  
3 casing volume (3 X CV) = \_\_\_\_\_ gals (standard purge volume)

Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals.  
\*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)								
pH (s.u.)								<u>1500</u>
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: NOT hat 2 - NO purge-

**South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program  
Field Data Information Sheet for Ground Water Sampling**

Job # 302169

Date (mm/dd/yy): 9-29-04

Field Personnel: J. Wajand, J. Ford, M. Cade

General Weather Conditions: sunny, 70-82°F

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Ambient Air Temperature: \_\_\_\_\_ °C

**Quality Assurance**

pH Meter serial no. <u>1854</u>	Conductivity Meter serial no. <u>1854</u>
pH=4.0 <u>± 0.002 pH @ 25°C</u>	standard <u>4.49ms/AC</u>
pH=7.0 _____	standard _____
pH=10.0 _____	standard _____

*AUTO CAL. SOLUTION PROVIDE PINE ENVIRON-  
MENTAL SERVICE FOR HONORARY  
Chain of Custody*

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_  
Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name: Highway 11 Grocery

Site ID#: 03439 Monitoring Well # MW13

Water Supply Well Public \_\_\_\_\_ Private

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C=0.163  
for a 4 inch well C=0.652

\* Free Product Thickness: \_\_\_\_\_ feet

Depth to Ground Water (DGW) \_\_\_\_\_ feet

Total Well Depth (TWD) 13 feet

Length of the water column (LWC=TWD-DGW) \_\_\_\_\_ feet

1 casing volume (CV=LWC X C)= \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals  
3 casing volume (3 X CV)= \_\_\_\_\_ gals (standard purge volume)

Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals.  
\*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)								
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: Not located, area extremely overgrown

**South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program  
Field Data Information Sheet for Ground Water Sampling**

Job # 302169

Date (mm/dd/yy): 9-29-04

Field Personnel: J. Weirund, J. Ford, M. Cade

General Weather Conditions: sunny, 78-82°F

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Ambient Air Temperature: \_\_\_\_\_ °C

**Quality Assurance**

pH Meter serial no. <u>1854</u>	Conductivity Meter serial no. <u>1854</u>
pH=4.0 <u>±0.002 pH@25°C</u>	standard <u>4.49ms/AC</u>
pH=7.0 _____	standard _____
pH=10.0 _____	standard _____

*AUTO CAL. SOLUTION PROVIDE PINE ENVIRON-  
MENTAL SERVICE FOR HOMBA  
Chain of Custody*

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_  
Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name: Highway 11 Gracey

Site ID#: 03439 Monitoring Well # MW 14

Water Supply Well Public \_\_\_\_\_ Private

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C=0.163  
for a 4 inch well C=0.652

\* Free Product Thickness: \_\_\_\_\_ feet

Depth to Ground Water (DGW) 2.03 feet

Total Well Depth (TWD) 9 feet

Length of the water column (LWC=TWD-DGW) \_\_\_\_\_ feet

1 casing volume (CV=LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals  
3 casing volume (3 X CV) = \_\_\_\_\_ gals (standard purge volume)

Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals.  
\*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)								
pH (s.u.)								1515
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: NO purge - hot well

South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Ground Water Sampling

Job # 302169

Date (mm/dd/yy): 9-29-04

Field Personnel: J. W. England, J. Ford; M. Cade

General Weather Conditions: SUNNY, 78-82°F

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Ambient Air Temperature: \_\_\_\_\_ °C

Quality Assurance

pH Meter	Conductivity Meter
serial no. <u>1854</u>	serial no. <u>1854</u>
pH=4.0 <u>±0.002 PH@25°C</u>	standard <u>4.49ms/cm</u>
pH=7.0 _____	standard _____
pH=10.0 _____	standard _____

*AUTO CAL. SOLUTION PROVIDE PINE ENVIRONMENTAL SERVICE FOR FLORIDA Chain of Custody*

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name: Highway 11 Grocery

Site ID#: 03439 Monitoring Well # MW 15

Water Supply Well Public \_\_\_\_\_ Private

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C=0.163  
for a 4 inch well C=0.652

\* Free Product Thickness: \_\_\_\_\_ feet

Depth to Ground Water (DGW) 10.11 feet

Total Well Depth (TWD) 12 feet

Length of the water column (LWC=TWD-DGW) \_\_\_\_\_ feet

1 casing volume (CV=LWC X C)= \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals  
3 casing volume (3 X CV)= \_\_\_\_\_ gals (standard purge volume)

Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals.  
\*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling
Time (military)							1600
pH (s.u.)							
Specific Conductivity (µmhos/cm)							
Water Temperature (°C)							
Dissolved Oxygen							
PID readings, if required							

Remarks: no purge

South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Ground Water Sampling

Job # 302169

Date (mm/dd/yy): 9-24-04

Field Personnel: J. Weigand, J. Ford, M. Cade

General Weather Conditions: sunny, 76-99°F

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Ambient Air Temperature: \_\_\_\_\_ °C

**Quality Assurance**

pH Meter serial no. <u>1854</u>	Conductivity Meter serial no. <u>1854</u>
pH=4.0 <u>± 0.002 pH @ 25°C</u>	standard <u>4.49 ms/cm</u>
pH=7.0 _____	standard _____
pH=10.0 _____	standard _____

*AUTO CAL. SOLUTION PROVIDES PINE ENVIRONMENTAL SERVICE FOR HOMER Chain of Custody*

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name: Highway 11 Grocery

Site ID#: 03439 Monitoring Well # DMW 1

Water Supply Well Public \_\_\_\_\_ Private

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C=0.163  
for a 4 inch well C=0.652

\* Free Product Thickness: \_\_\_\_\_ feet

Depth to Ground Water (DGW) 24.24 feet

Total Well Depth (TWD) 45 feet

Length of the water column (LWC=TWD-DGW) 20.76 feet

1 casing volume (CV=LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = 3.38 gals  
3 casing volume (3 X CV) = 10.1 gals (standard purge volume)

Total Volume of Water Purged Before Sampling 10.1 gals.  
\*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling
Time (military)							
pH (s.u.)							<u>1430</u>
Specific Conductivity (µmhos/cm)							
Water Temperature (°C)							
Dissolved Oxygen							
PID readings, if required							

Remarks: but small

South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Ground Water Sampling

Job # 302169

Date (mm/dd/yy): 9-29-04

Field Personnel: J. Wejand, J. Ford, M. Cade

General Weather Conditions: SUNNY, 78-39°F

Ambient Air Temperature: \_\_\_\_\_ °C

**Quality Assurance**

pH Meter serial no. 1854 Conductivity Meter serial no. 1854

pH=4.0 ± 0.002 PH @ 28°C standard 4.49 ms/cm

pH=7.0 \_\_\_\_\_ standard \_\_\_\_\_

pH=10.0 \_\_\_\_\_ standard \_\_\_\_\_

*AUTO CAL. SOLUTION PROVIDE PINE ENVIRON-  
MENTAL SERVICE FOR HOUBA  
Chain of Custody*

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name: Highway 11 Grocery

Site ID#: 03439 Monitoring Well # DMW2

Water Supply Well Public \_\_\_\_\_ Private

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C=0.163  
for a 4 inch well C=0.652

\* Free Product Thickness: \_\_\_\_\_ feet

Depth to Ground Water (DGW) 17.20 feet

Total Well Depth (TWD) 75 feet

Length of the water column (LWC=TWD-DGW) 57.80 feet

1 casing volume (CV=LWC X C) = 57.80 X .163 = 9.42 gals

3 casing volume (3 X CV) = 28.26 gals (standard purge volume)

Total Volume of Water Purged Before Sampling 28.26 gals.

\*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1400	
pH (s.u.)	5.68	5.89	5.90	6.29			6.13	
Specific Conductivity (µmhos/cm)	.115	.076	.061	.047			.046	
Water Temperature (°C)	19.0	17.7	17.5	18.2			17.4	
Dissolved Oxygen	6.22	6.61	5.05	7.61			6.16	
PID readings, if required								

Remarks: \_\_\_\_\_



South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Ground Water Sampling

Job # 302169

Date (mm/dd/yy): 9-29-04

Field Personnel: J. Weigand, J. Ford; M. Cade

General Weather Conditions: SUNNY, 77-90°F

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Ambient Air Temperature: \_\_\_\_\_ °C

Quality Assurance

pH Meter serial no. <u>1854</u>	Conductivity Meter serial no. <u>1854</u>
pH=4.0 <u>± 0.002 pH @ 28°C</u>	standard <u>4.49 mS/cm</u>
pH=7.0 _____	standard _____
pH=10.0 _____	standard _____

*AUTO CAL. SOLUTION PROVIDE PINE ENVIRONMENTAL SERVICE FOR HONORABLE Chain of Custody*

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name: Highway 11 Grocery

Site ID#: 03439 Monitoring Well # DMW4

Water Supply Well Public \_\_\_\_\_ Private

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C=0.163  
for a 4 inch well C=0.652

\* Free Product Thickness: \_\_\_\_\_ feet

Depth to Ground Water (DGW) 24.75 feet

Total Well Depth (TWD) 61 feet

Length of the water column (LWC=TWD-DGW) 36.25 feet

1 casing volume (CV=LWC X C)= \_\_\_\_\_ X \_\_\_\_\_ = 5.90 gals  
3 casing volume (3 X CV)= 17.7 gals (standard purge volume)

Total Volume of Water Purged Before Sampling 17.7 gals.  
\*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)								<u>1515</u>
pH (s.u.)	<u>6.13</u>	<u>5.77</u>	<u>5.64</u>	<u>5.50</u>				<u>5.46</u>
Specific Conductivity (µmhos/cm)	<u>0.641</u>	<u>0.28</u>	<u>0.28</u>	<u>0.27</u>				<u>0.29</u>
Water Temperature (°C)	<u>21.8</u>	<u>19.4</u>	<u>18.9</u>	<u>18.4</u>				<u>18.1</u>
Dissolved Oxygen	<u>6.12</u>	<u>7.33</u>	<u>7.36</u>	<u>7.82</u>				<u>8.08</u>
PID readings, if required								

Remarks: \_\_\_\_\_

**Table 3**  
**Summary of Historical Laboratory Analytical Result(s)**  
**Highway 11 Grocery**  
**13527 South Carolina Highway 11**  
**Salem, South Carolina**  
**UST Permit #03439**

Sample ID	Sample Date	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)	MTBE (ppb)	Naphthalene (ppb)	Total Concentration (ppb)
MW-1	SSTL	22.00	4,497.00	3,148.00	44,969.00	180.00	112.00	52,928.00
	5/7/2002	226,000.00	301,000.00	280,000.00	278,000.00	5,110,000.00	2,000.00	6,197,000.00
	7/1/2003	10,000.00	34,000.00	4,400.00	23,000.00	34,000.00	1,200.00	106,600.00
	7/30/2003	7,600.00	28,000.00	6,300.00	32,000.00	25,000.00	2,500.00	101,400.00
	12/18/2003	2,200.00	6,200.00	910.00	5,800.00	16,000.00	2,500.00	33,610.00
	3/31/2004	3,400.00	9,300.00	1,100.00	6,200.00	20,000.00	1,200.00	41,200.00
	9/29/2004	3,200.00	7,300.00	<1000.00	4,500.00	12,000.00	<5000.00	<34,000.00
MW-2	SSTL	13.00	8.00	1.00	5.00	5.00	5.00	37.00
	5/7/2002	13.00	8.00	1.00	5.00	5.00	5.00	37.00
	7/1/2003	4.70	5.00	1.00	3.00	1.00	5.00	19.70
	7/30/2003	5.80	5.00	1.00	5.30	1.00	5.00	23.10
	12/18/2003	2.20	5.00	1.00	3.00	1.00	5.00	17.20
	3/31/2004	2.60	5.00	1.00	3.00	1.00	5.00	17.60
	9/29/2004	14.00	<25.00	<5.00	<15.00	<5.00	<25.00	<89.00
MW-3	SSTL	1.00	1.00	1.00	1.00	5.00	5.00	14.00
	5/7/2002	1.00	1.00	1.00	1.00	5.00	5.00	14.00
	7/1/2003	1.00	5.00	1.00	3.00	1.00	5.00	16.00
	7/30/2003	1.00	5.00	1.00	3.00	1.00	5.00	16.00
	12/18/2003	1.00	5.00	1.00	3.00	1.00	5.00	16.00
	3/31/2004	1.00	5.00	1.00	3.00	1.00	5.00	16.00
	9/29/2004	<1.00	<5.00	<1.00	<3.00	<1.00	<5.00	<16.00
MW-4	SSTL	1,500.00	5,320.00	620.00	3,360.00	810.00	500.00	12,110.00
	5/7/2002	1,500.00	5,320.00	620.00	3,360.00	810.00	500.00	12,110.00
	7/1/2003	4,800.00	14,000.00	2,300.00	12,000.00	2,600.00	500.00	36,200.00
	7/30/2003	4,000.00	14,000.00	2,700.00	13,000.00	2,100.00	500.00	36,300.00
	12/18/2003	1,100.00	2,400.00	230.00	1,900.00	1,200.00	250.00	7,080.00
	3/31/2004	1.00	5.00	1.00	3.00	1.00	5.00	16.00
	9/29/2004	53.00	<25.00	7.10	70.00	210.00	<25.00	390.10

Table 3 - Continued  
 Summary of Historical Laboratory Analytical Result(s)  
 Highway 11 Grocery  
 Salem, South Carolina  
 UST Permit #03439

Sample ID	Sample Date	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)	MTBE (ppb)	Naphthalene (ppb)	Total Concentration (ppb)
MW-5	SSTL	1.00	1.00	1.00	1.00	5.00	5.00	14.00
	5/7/2002	1.00	1.00	1.00	1.00	5.00	5.00	14.00
	7/1/2003	1.00	5.00	1.00	3.00	1.00	5.00	16.00
	7/30/2003	4.20	17.00	3.60	18.00	2.20	5.00	50.00
	12/18/2003	2.30	5.00	1.00	3.20	1.30	5.00	17.80
	3/31/2004	1.00	5.00	1.00	3.00	1.00	5.00	16.00
9/29/2004	<1.00	<5.00	<1.00	<3.00	<1.00	<5.00	<16.00	
MW-6	SSTL	1,780.00	4,950.00	490.00	2,880.00	6,350.00	500.00	16,950.00
	5/7/2002	1,780.00	4,950.00	490.00	2,880.00	6,350.00	500.00	16,950.00
	7/1/2003	2,200.00	6,600.00	820.00	4,400.00	12,000.00	2,500.00	28,520.00
	7/30/2003	4,200.00	13,000.00	1,600.00	8,900.00	21,000.00	400.00	49,100.00
	12/18/2003	5,100.00	14,000.00	1,700.00	11,000.00	19,000.00	2,500.00	53,300.00
	3/31/2004	280.00	840.00	100.00	2,200.00	900.00	250.00	4,570.00
9/29/2004	2,400.00	<5000.00	<1000.00	<3000.00	17,000.00	<5000.00	<33,400.00	
MW-7	SSTL	22.00	20.00	1.00	8.00	7.00	5.00	63.00
	5/7/2002	34.00	20.00	1.00	8.00	7.00	5.00	75.00
	7/1/2003	37.00	36.00	1.70	20.00	9.20	5.00	108.90
	7/30/2003	18.00	18.00	1.00	9.70	1.00	5.00	52.70
	12/18/2003	41.00	20.00	1.00	3.00	1.00	5.00	71.00
	3/31/2004	30.00	34.00	1.00	16.00	1.00	5.00	87.00
9/29/2004	370.00	500.00	<100.00	<300.00	<100.00	<500.00	<1870.00	
MW-8 <sup>1</sup>	SSTL	204.00	40,888.00	28,622.00	278,000.00	1,362.00	1,021.00	350,097.00
	5/7/2002	226,000.00	301,000.00	280,000.00	278,000.00	5,110,000.00	2,000.00	6,197,000.00
	7/1/2003	12,000.00	51,000.00	7,800.00	40,000.00	11,000.00	2,500.00	124,300.00
	7/30/2003	12,000.00	40,000.00	3,600.00	18,000.00	15,000.00	660.00	89,260.00
	12/18/2003	10,000.00	27,000.00	3,300.00	18,000.00	14,000.00	2,500.00	74,800.00
	3/31/2004	17,000.00	140,000.00	32,000.00	180,000.00	8,600.00	<25000.00	<402,600.00
9/29/2004	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.00

FP .1'

Table 3 - Continued  
 Summary of Historical Laboratory Analytical Result(s)  
 Highway 11 Grocery  
 Salem, South Carolina  
 UST Permit #03439

Sample ID	Sample Date	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)	MTBE (ppb)	Naphthalene (ppb)	Total Concentration (ppb)
MW-9	SSTL	N/A	N/A	N/A	N/A	N/A	N/A	0.00
	5/7/2002	N/A	N/A	N/A	N/A	N/A	N/A	0.00
	7/1/2003	1.00	5.00	1.00	3.00	1.00	5.00	16.00
	7/30/2004	N/A	N/A	N/A	N/A	N/A	N/A	0.00
	12/18/2003	1.00	5.00	1.00	3.00	1.00	5.00	16.00
	3/31/2004	1.00	5.00	1.20	8.80	1.00	5.00	22.00
	9/29/2004	<1.00	<5.00	<1.00	<3.00	<1.00	<5.00	<16.00
MW-10	SSTL	115.00	185.00	68.00	328.00	86.00	9.00	791.00
	5/7/2002	115.00	185.00	68.00	328.00	86.00	9.00	791.00
	7/1/2003	1.00	5.00	1.00	3.00	1.00	5.00	16.00
	7/30/2003	170.00	420.00	43.00	240.00	540.00	6.50	1,419.50
	12/18/2003	89.00	280.00	74.00	480.00	91.00	25.00	1,039.00
	3/31/2004	1.00	5.00	1.00	3.00	1.00	5.00	16.00
	9/29/2004	<1.00	<5.00	<1.00	<3.00	<1.00	<5.00	<16.00
MW-11	SSTL	1.00	1.00	1.00	1.00	5.00	5.00	14.00
	5/7/2002	1.00	1.00	1.00	1.00	5.00	5.00	14.00
	7/1/2003	1.00	5.00	1.00	3.00	1.00	5.00	16.00
	7/30/2003	1.00	5.00	1.00	3.00	1.00	5.00	16.00
	12/18/2003	1.00	5.00	1.00	3.00	1.00	5.00	16.00
	3/31/2004	1.00	5.00	1.00	3.00	1.00	5.00	16.00
	9/29/2004	<1.00	<5.00	<1.00	<3.00	<1.00	<5.00	<16.00
MW-12	SSTL	N/A	N/A	N/A	N/A	N/A	N/A	0.00
	5/7/2002	N/A	N/A	N/A	N/A	N/A	N/A	0.00
	7/1/2003	1.00	5.00	1.00	3.00	1.00	5.00	16.00
	7/30/2003	N/A	N/A	N/A	N/A	N/A	N/A	0.00
	12/18/2003	1.00	5.00	1.00	3.00	1.00	5.00	16.00
	3/31/2004	5,500.00	17,000.00	2,600.00	13,000.00	7,100.00	570.00	45,770.00
	9/29/2004	<1.00	<5.00	<1.00	<3.00	1.00	<5.00	<16.00

Table 3 - Continued  
Summary of Historical Laboratory Analytical Result(s)  
Highway 11 Grocery  
Salem, South Carolina  
UST Permit #03439

Sample ID	Sample Date	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)	MTBE (ppb)	Naphthalene (ppb)	Total Concentration (ppb)
MW-13	SSTL	N/A	N/A	N/A	N/A	N/A	N/A	0.00
	5/7/2002	N/A	N/A	N/A	N/A	N/A	N/A	0.00
	7/1/2003	1.00	5.00	1.00	3.00	1.00	5.00	16.00
	7/30/2003	N/A	N/A	N/A	N/A	N/A	N/A	0.00
	12/18/2003	1.00	5.00	1.00	3.00	1.00	5.00	16.00
	3/31/2004	1.00	5.00	1.00	3.00	1.00	5.00	16.00
MW-14	SSTL	5.00	1,000.00	700.00	10,000.00	40.00	25.00	11,770.00
	5/7/2002	3,780.00	13,800.00	27,000.00	14,700.00	7,010.00	500.00	66,790.00
	7/1/2003	3,500.00	10,000.00	1,900.00	10,000.00	5,300.00	500.00	31,200.00
	7/30/2003	3,100.00	9,700.00	1,800.00	9,300.00	4,300.00	500.00	28,700.00
	12/18/2003	3,300.00	11,000.00	2,000.00	11,000.00	4,100.00	500.00	31,900.00
	3/31/2004	1.00	5.00	1.00	3.00	2.00	5.00	17.00
MW-15	SSTL	N/A	N/A	N/A	N/A	N/A	N/A	0.00
	5/7/2002	N/A	N/A	N/A	N/A	N/A	N/A	0.00
	7/1/2003	1.00	5.00	1.00	3.00	1.00	5.00	16.00
	7/30/2003	N/A	N/A	N/A	N/A	N/A	N/A	0.00
	12/18/2003	1.00	5.00	1.00	3.00	1.00	5.00	16.00
	3/31/2004	1.00	5.00	1.00	3.00	1.00	5.00	16.00
DMW-1	9/29/2004	<1.00	<5.00	<1.00	<3.00	<1.00	<5.00	<16.00
	SSTL	215.00	430.00	50.00	50.00	1,780.00	250.00	2,775.00
	5/7/2002	215.00	430.00	50.00	50.00	1,780.00	250.00	2,775.00
	7/1/2003	1.00	5.00	1.00	3.00	1.00	5.00	16.00
	7/30/2003	1.00	5.00	1.00	3.00	4.20	5.00	19.20
	12/18/2003	1.50	5.00	1.00	3.00	1.00	5.00	16.50
	3/31/2004	1.00	5.00	1.00	3.00	3.90	5.00	18.90
9/29/2004	8.40	<25.00	<5.00	<15.00	130.00	<25.00	<213.40	

Table 3 - Continued  
 Summary of Historical Laboratory Analytical Result(s)  
 Highway 11 Grocery  
 Salem, South Carolina  
 UST Permit #03439

Sample ID	Sample Date	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)	MTBE (ppb)	Naphthalene (ppb)	Total Concentration (ppb)
DMW-2	SSTL	1.00	1.00	1.00	1.00	5.00	5.00	14.00
	5/7/2002	1.00	1.00	1.00	1.00	5.00	5.00	14.00
	7/1/2003	1.00	5.00	1.00	3.00	6.40	5.00	21.40
	7/30/2003	1.00	8.40	6.80	30.00	1.00	6.70	53.90
	12/18/2003	1.00	5.00	1.00	3.00	1.00	5.00	16.00
	3/31/2004	1.00	5.00	1.00	3.00	1.00	5.00	16.00
	9/29/2004	<1.00	<5.00	<1.00	<3.00	<1.00	<5.00	<16.00
DMW-4	SSTL	1.00	1.00	1.00	1.00	5.00	5.00	14.00
	5/7/2002	1.00	1.00	1.00	1.00	5.00	5.00	14.00
	7/1/2003	1.00	5.00	1.00	3.00	1.00	5.00	16.00
	7/30/2003	1.00	5.00	1.00	3.00	1.00	5.00	16.00
	12/18/2003	1.00	5.00	1.00	3.00	1.00	5.00	16.00
	3/31/2004	1.00	5.00	1.00	3.00	1.00	5.00	16.00
	9/29/2004	<1.00	<5.00	<1.00	<3.00	<1.00	<5.00	<16.00
CK-1	SSTL	N/A	N/A	N/A	N/A	N/A	N/A	0.00
	5/7/2002	N/A	N/A	N/A	N/A	N/A	N/A	0.00
	7/1/2003	2.60	5.00	1.00	4.80	4.50	5.00	22.90
	7/30/2003	N/A	N/A	N/A	N/A	N/A	N/A	0.00
	12/18/2003	11.00	18.00	4.10	20.00	9.00	5.00	67.10
	3/31/2004	16.00	30.00	6.10	32.00	22.00	5.00	111.10
	3/31/2004	7.60	12.00	2.30	12.00	11.00	<5.00	<49.90
CK-2	SSTL	N/A	N/A	N/A	N/A	N/A	N/A	0.00
	5/7/2002	N/A	N/A	N/A	N/A	N/A	N/A	0.00
	7/1/2003	1.00	5.00	1.00	3.00	1.00	5.00	16.00
	7/30/2003	N/A	N/A	N/A	N/A	N/A	N/A	0.00
	12/18/2003	1.00	5.00	1.00	3.00	1.00	5.00	16.00
	3/31/2004	1.00	5.00	1.00	3.00	1.00	5.00	16.00
	9/29/2004	<1.00	<5.00	<1.00	<3.00	<1.00	<5.00	<16.00

Table 3 - Continued  
 Summary of Historical Laboratory Analytical Result(s)  
 Highway 11 Grocery  
 Salem, South Carolina  
 UST Permit #03439

Sample ID	Sample Date	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)	MTBE (ppb)	Naphthalene (ppb)	Total Concentration (ppb)
WW-1	SSTL	N/A	N/A	N/A	N/A	N/A	N/A	0.00
	5/7/2002	N/A	N/A	N/A	N/A	N/A	N/A	0.00
	7/1/2003	1.00	5.00	1.00	3.00	1.00	5.00	16.00
	7/30/2003	N/A	N/A	N/A	N/A	N/A	N/A	0.00
	12/18/2003	N/A	N/A	N/A	N/A	N/A	N/A	0.00
	3/31/2004	1.00	5.00	1.00	3.00	1.00	5.00	16.00
	9/29/2004	<1.00	<5.00	<1.00	<3.00	<1.00	<5.00	<16.00

**Notes:** Samples with Values At Below Detection Limit are Reported at Highest Detection Limit

N/A = Not Applicable

Footnote <sup>1</sup>: MW-8 Observed to have 0.10' of Free Phased Product

Company Name/Address:  
**SEI Environmental - Columbia, SC**  
 3021 McNaughton Drive, Suite 9  
 Columbia, SC 29223

Alternate billing information:

Analysis/Container/Preservative

Chain of Custody  
 Page 1 of 3  
 Prepared by:  
**ENVIRONMENTAL SCIENCE CORP.**  
 12065 Lebanon Road  
 Mt. Juliet, TN 37122  
 Phone (615) 758-5858  
 Phone (800) 767-5859  
 FAX (615) 758-5859

Report to: **MR. DAVID PATTMAN**

Email to: **DPattman@sei-environmental.com**

Project Description: **HWY 11 GROCERY**

City/State Collected: **SALEM, SC**

Phone: (803) 788-2535  
 FAX: (803) 788-2399

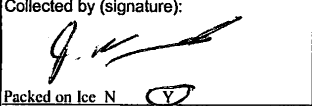
Client Project #: **302169**

ESC Key:

Collected by: **M. CADE, J. FORD**  
**J. W. FORD**

Site/Facility ID#: **03439**

P.O.#:

Collected by (signature):  


**[Rush?]** ( Lab MUST Be Notified )  
 \_\_\_ Same Day . . . . .200%  
 \_\_\_ Next Day . . . . .100%  
 \_\_\_ Two Day . . . . .50%

Date Results Needed: **10/09/04**  
 Email? \_\_\_ No \_\_\_ Yes  
 FAX? **NO** \_\_\_ Yes

No. of Cntrs


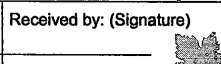
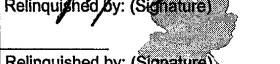
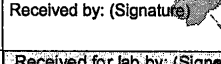
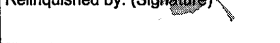

Packed on Ice N

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	Analysis/Container/Preservative	Remarks/Contaminant	Sample # (lab only)
MW1	G	GW		9/29/04	1245	2			L172006-01
MW2					1300				02
MW3					1330				03
MW4					1345				04
MW5					1315				05
MW6					1230				06
MW7					1235				07
MW8					1410				08
MW9					1525				09

BTEX, NapH, MTBE (22608)

\*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other \_\_\_\_\_ pH \_\_\_\_\_ Temp \_\_\_\_\_  
 Remarks: \_\_\_\_\_ Flow \_\_\_\_\_ Other \_\_\_\_\_

8446 7388 5324

Relinquished by: (Signature) 	Date: <b>9/30/04</b>	Time: <b>1600</b>	Received by: (Signature) 	Samples returned via: <input checked="" type="checkbox"/> UPS <input checked="" type="checkbox"/> FedEx <input type="checkbox"/> Courier <input type="checkbox"/>	Condition: (lab use only) <b>OK</b>
Relinquished by: (Signature) 	Date:	Time:	Received by: (Signature) 	Temp: <b>2.4</b>	Bottles Received: <b>40</b>
Relinquished by: (Signature) 	Date:	Time:	Received for lab by: (Signature) 	Date: <b>10-1-04</b>	Time: <b>09:30</b>
				pH Checked:	NCF:



Company Name/Address:  
**SEI Environmental - Columbia, SC**  
 3021 McNaughton Drive, Suite 9  
 Columbia, SC 29223

Alternate billing information:

Analysis/Container/Preservative

Chain of Custody Page 2 of 3  
 Prepared by:  
**ENVIRONMENTAL SCIENCE CORP.**  
 12065 Lebanon Road  
 Mt. Juliet, TN 37122  
 Phone (615) 758-5858  
 Phone (800) 767-5859  
 FAX (615) 758-5859

Report to: **MR. DAVID PATTMAN**

Email to: **DPattman@sei-environmental.com**

Project Description: **HWY 11 GROC**

City/State Collected: **SALEM, SC**

Phone: (803) 788-2535  
 FAX: (803) 788-2399

Client Project #: **302169**

ESC Key:

Collected by: **M. CADE, J. FORD, S. WEYAND**

Site/Facility ID#: **03439**

P.O.#:

Collected by (signature):

**Rush?** (Lab MUST Be Notified)  
 Same Day.....200%  
 Next Day.....100%  
 Two Day.....50%

Date Results Needed: **10/09/04**  
 Email?  No  Yes  
 FAX?  No  Yes

No. of Cntrs

Packed on Ice N

CoCode **SEICSC** (lab use only)  
 Template/Prelogin  
 Shipped Via:

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	Remarks/Contaminant	Sample # (lab only)
MW10	G	G-W		9/29/04	1400	2		L172006-10
MW11					1220			11
MW12					1500			12
<del>MW13</del>					<del>1400</del>		NOT IN SHIPMENT	
MW14					1515			13
MW15					1600			14
DMW1					1430			15
DMW2					1400			16
DMW4					1515			17

BOTTLES, NUPH, MTD (2308)

\*Matrix SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other  
 Remarks: **8446 7388 5324** pH \_\_\_\_\_ Temp \_\_\_\_\_ Flow \_\_\_\_\_ Other \_\_\_\_\_

Relinquished by: (Signature) 	Date: <b>9/30/04</b> Time: <b>1600</b>	Received by: (Signature) 	Samples returned via: <input checked="" type="checkbox"/> FedEx <input type="checkbox"/> UPS <input type="checkbox"/> Courier	Condition: (lab use only) <b>OK</b>
Relinquished by: (Signature) 	Date: _____ Time: _____	Received by: (Signature) 	Temp: <b>2.4</b> Bottles Received: <b>40</b>	
Relinquished by: (Signature) 	Date: _____ Time: _____	Received for lab by: (Signature) 	Date: <b>10-1-04</b> Time: <b>09:30</b>	pH Checked: _____ NCF: _____

Company Name/Address:  
**SEI Environmental - Columbia, SC**  
3021 McNaughton Drive, Suite 9  
Columbia, SC 29223

Alternate billing information:  
  
Report to: **MR DAVID PETTMAN**  
Email to: **DPettman@sei-environmental.com**

Analysis/Container/Preservative

Prepared by:  
**ENVIRONMENTAL SCIENCE CORP.**  
12065 Lebanon Road  
Mt. Juliet, TN 37122  
Phone (615) 758-5858  
Phone (800) 767-5859  
FAX (615) 758-5859

Project Description: **HWY 11 GROC**  
City/State Collected: **SALEM, SC**  
Phone: (803) 788-2535  
FAX: (803) 788-2399  
Client Project #: **302169**  
ESC Key:  
Collected by: **M. LADE J. FORD J. WEYAND**  
Site/Facility ID#: **03439**  
P.O.#:

Collected by (signature): *[Signature]*  
Packed on Ice N   
**Rush?** (Lab MUST Be Notified)  
 Same Day..... 200%  
 Next Day..... 100%  
 Two Day..... 50%  
 Date Results Needed: **10/07/04**  
 Email?  No  Yes  
 FAX?  No  Yes

CoCode **SEICSC** (lab use only)  
Template/Prelogin  
Shipped Via:

Sample ID	Comp/Grab	Matrix*	Depth	Date		Time	No. of Cntrs	Analysis/Container/Preservative	Remarks/Contaminant	Sample # (lab only)
				Date	Time					
WW1	G	DW		9/30/04	1445	2	+			
CK1	↓	OT		↓	1530	↓	↓			L172006 18
CK2	↓	OT		↓	1610	↓	↓			19
										20

\*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other SURFACE WATER / CREEK  
 Remarks: **8446 7388 5324**  
 pH \_\_\_\_\_ Temp \_\_\_\_\_  
 Flow \_\_\_\_\_ Other \_\_\_\_\_

Relinquished by: (Signature) <i>[Signature]</i>	Date: <b>9/30/04</b>	Time: <b>1600</b>	Received by: (Signature) <i>[Signature]</i>	Samples returned via: <input checked="" type="checkbox"/> FedEx <input type="checkbox"/> UPS <input type="checkbox"/> Courier	Condition: <b>OK</b> (lab use only)
Relinquished by: (Signature) <i>[Signature]</i>	Date:	Time:	Received by: (Signature) <i>[Signature]</i>	Temp: <b>2.4</b>	Bottles Received: <b>40</b>
Relinquished by: (Signature) <i>[Signature]</i>	Date:	Time:	Received for lab by: (Signature) <i>[Signature]</i>	Date: <b>10-1-04</b>	Time: <b>09:30</b>
				pH Checked:	NCF:



Table 4 - Continued  
 Concentration Reduction Calculation  
 Highway 11 Grocery  
 Salem, South Carolina  
 UST Permit #03439

Sample ID		Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylene (ppb)	MTBE (ppb)	Naphthalene (ppb)	Concentration > SSTL (ppb)
MW-5	Initial	1.00	1.00	1.00	1.00	5.00	5.00	
	SSTL	1.00	1.00	1.00	1.00	5.00	5.00	
	Initial > SSTL	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Subsequent	1.00	5.00	1.00	3.00	1.00	5.00	
	SSTL	1.00	1.00	1.00	1.00	5.00	5.00	
	Subsequent > SSTL	0.00	4.00	0.00	2.00	0.00	0.00	6.00
MW-6	Initial	1,780.00	4,950.00	490.00	2,880.00	6,350.00	500.00	
	SSTL	1,780.00	4,950.00	490.00	2,880.00	6,350.00	500.00	
	Initial > SSTL	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Subsequent	2,400.00	5,000.00	1,000.00	3,000.00	17,000.00	5,000.00	
	SSTL	1,780.00	4,950.00	490.00	2,880.00	6,350.00	500.00	
	Subsequent > SSTL	620.00	50.00	510.00	120.00	10,650.00	4,500.00	16,450.00
MW-7	Initial	34.00	20.00	1.00	8.00	7.00	5.00	
	SSTL	22.00	20.00	1.00	8.00	7.00	5.00	
	Initial > SSTL	12.00	0.00	0.00	0.00	0.00	0.00	12.00
	Subsequent	370.00	500.00	100.00	300.00	100.00	500.00	
	SSTL	22.00	20.00	1.00	8.00	7.00	5.00	
	Subsequent > SSTL	348.00	480.00	99.00	292.00	93.00	495.00	1,807.00
MW-8 <sup>1</sup>	Initial	226,000.00	301,000.00	280,000.00	278,000.00	5,110,000.00	2,000.00	
	SSTL	204.00	40,888.00	28,622.00	278,000.00	1,362.00	1,021.00	
	Initial > SSTL	225,796.00	260,112.00	251,378.00	0.00	5,108,638.00	979.00	5,846,903.00
	Subsequent	17,000.00	140,000.00	32,000.00	180,000.00	8,600.00	25,000.00	
	SSTL	204.00	40,888.00	28,622.00	278,000.00	1,362.00	1,021.00	
	Subsequent > SSTL	16,796.00	99,112.00	3,378.00	0.00	7,238.00	23,979.00	150,503.00



Table 4 - Continued  
 Concentration Reduction Calculation  
 Highway 11 Grocery  
 Salem, South Carolina  
 UST Permit #03439

Sample ID		Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylene (ppb)	MTBE (ppb)	Naphthalene (ppb)	Concentration > SSTL (ppb)
DMW-2	Initial	1.00	1.00	1.00	1.00	5.00	5.00	
	SSTL	1.00	1.00	1.00	1.00	5.00	5.00	
	Initial > SSTL	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Subsequent	1.00	5.00	1.00	3.00	1.00	5.00	
	SSTL	1.00	1.00	1.00	1.00	5.00	5.00	
	Subsequent > SSTL	0.00	4.00	0.00	2.00	0.00	0.00	6.00
DMW-4	Initial	1.00	1.00	1.00	1.00	5.00	5.00	
	SSTL	1.00	1.00	1.00	1.00	5.00	5.00	
	Initial > SSTL	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Subsequent	1.00	5.00	1.00	3.00	1.00	5.00	
	SSTL	1.00	1.00	1.00	1.00	5.00	5.00	
	Subsequent > SSTL	0.00	4.00	0.00	2.00	0.00	0.00	6.00
<b>Totals</b>	Initial > SSTL	(Sum of Initial Concentration Above SSTL for all Wells)						12,046,007.00
	Subsequent > SSTL	(Sum of Subsequent Concentration Above SSTL for all Wells)						214,761.00

CoC Mass Reduction = (Sum of Initial Conc. > SSTL - Sum of Subsequent Conc. > SSTL) / (Sum of Initial Conc. > SSTL) \* 100

CoC Mass Reduction = (12,046,007.00-53,062.00 / (12,046,007.00) \* 100

CoC Mass Reduction = 98.22%

**Notes:** Samples with Values At Below Detection Limit are Reported at Highest Detection Limit

N/A = Not Applicable NL- Not Located

Footnote <sup>1</sup>: MW-8 Observed to have 0.10' of Free Phased Product; Resulting in 12/18/03 Laboratory Analytical Data being Used in the Calculation of the System's Effectiveness



Appendix D  
Disposal Manifest

Please print or type  
 Form designed for use on elite (12-pin) typewriter

**NON-HAZARDOUS  
 WASTE MANIFEST**

1. Generator's US EPA ID No.

Manifest Document No.

2. Page 1 of

09/30/04

GK7033

3. Generator's Name and Mailing Address

SEI ENVIRONMENTAL, INC  
 3021 MCNAUGHTON DR SUITE 9  
 COLUMBIA, SC 29223

4. Generator's Phone ( )

5. Transporter 1 Company Name  
 SEI ENVIRONMENTAL, INC

6. US EPA ID Number

A. Transporter's Phone  
 803-788-2535

7. Transporter 2 Company Name

8. US EPA ID Number

B. Transporter's Phone

9. Designated Facility Name and Site Address

G & K TANK SERVICES  
 PO BOX 1384  
 SUMTER, SC 29151  
 987573557

C. Facility's Phone

800-800-6840

11. Waste Shipping Name and Description

12. Containers  
 No. Type

13. Total Quantity

14. Unit Wt/Vol

a. NON HAZARDOUS PETROLEUM CONTAMINATED WATER  
 HWY 11 GROCERY SALEM, SC

60.0 gal

GENERATOR

D. Additional Descriptions for Materials Listed Above

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

16. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name

Signature

Month Day Year

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name

Signature

Month Day Year

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name

Signature

Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

Printed/Typed Name

Signature

Month Day Year

TRANSPORTER FACILITY





Broad St. Extension • PO Box 1384 • Sumter, SC 29151  
(803) 494-4593 • 1-800-800-6840 • FAX: (803) 494-8598

## *Certificate of Disposal*

# Tons 60.0 gallons  
Hwy 11 Grocery  
Salem, SC

Contaminant NonHazardous Petroleum  
Contaminated Water

This is to certify the above <sup>water</sup> ~~oil~~ has been processed and disposed of by G & K Tank Services, Inc., in accordance with and exceeding EPA regulations on petroleum contaminated soils.

Certified by \_\_\_\_\_

Date 09/30/04



Pace Analytical Services, Inc.  
9800 Kinsey Avenue, Suite 100  
Huntersville, NC 28078  
Phone: 704.875.9092  
Fax: 704.875.9091

October 08, 2004

**RECEIVED**

OCT 13 2004

UNDERGROUND STORAGE  
TANK PROGRAM

Ms. Debra Thoma  
SCDHEC  
UST Program  
2600 Bull Street  
Columbia, SC 29201

RE: Lab Project Number: 9278284  
Client Project ID: HIGHWAY 11 GROCERY/03439

Dear Ms. Thoma:

Enclosed are the analytical results for sample(s) received by the laboratory on October 6, 2004. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report please feel free to contact me.

Sincerely,

Sherri Stabel  
Sherri.Stabel@pacelabs.com  
Project Manager

52-TECH

Enclosures

**REPORT OF LABORATORY ANALYSIS**

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, Inc.

Asheville Certification IDs  
NC Wastewater 40  
NC Drinking Water 37712  
SC Environmental 99030  
FL NELAP E87648



Charlotte Certification IDs  
NC Wastewater 12  
NC Drinking Water 37706  
SC 99006  
FL NELAP E87627

PC-157

Lab Project Number: 9278284  
Client Project ID: HIGHWAY 11 GROCERY/03439

Lab Sample No: 924802580 Project Sample Number: 9278284-001 Date Collected: 10/05/04 15:00  
Client Sample ID: REID WSW-2 Matrix: Water Date Received: 10/06/04 11:50

Parameters	Results	Units	Report Limit	DF	Analyzed	By	CAS No.	Qual	RegLmt
<b>GC/MS Volatiles</b>									
GC/MS VOCs by 8260 Method: EPA 8260									
Benzene	ND	ug/l	5.0	1.0	10/08/04 00:31	DLK	71-43-2		
Ethylbenzene	ND	ug/l	5.0	1.0	10/08/04 00:31	DLK	100-41-4		
Methyl-tert-butyl ether	ND	ug/l	5.0	1.0	10/08/04 00:31	DLK	1634-04-4		
Naphthalene	ND	ug/l	5.0	1.0	10/08/04 00:31	DLK	91-20-3		
Toluene	ND	ug/l	5.0	1.0	10/08/04 00:31	DLK	108-88-3		
m&p-Xylene	ND	ug/l	10.	1.0	10/08/04 00:31	DLK			
o-Xylene	ND	ug/l	5.0	1.0	10/08/04 00:31	DLK	95-47-6		
Toluene-d8 (S)	97	%		1.0	10/08/04 00:31	DLK	2037-26-5		
4-Bromofluorobenzene (S)	103	%		1.0	10/08/04 00:31	DLK	460-00-4		
Dibromofluoromethane (S)	97	%		1.0	10/08/04 00:31	DLK	1868-53-7		
1,2-Dichloroethane-d4 (S)	90	%		1.0	10/08/04 00:31	DLK	17060-07-0		

Date: 10/06/04

Page: 1 of 6

## REPORT OF LABORATORY ANALYSIS

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Charlotte Certification IDs  
NC Wastewater 12  
NC Drinking Water 37706  
SC 99006  
FL NELAP E87627

Lab Project Number: 9278284

Client Project ID: HIGHWAY 11 GROCERY/03439

Lab Sample No: 924802598

Project Sample Number: 9278284-002

Date Collected: 10/05/04 15:15

Client Sample ID: REID WSW-3

Matrix: Water

Date Received: 10/06/04 11:50

Parameters	Results	Units	Report Limit	DF	Analyzed	By	CAS No.	Qual	RegLmt
<b>GC/MS Volatiles</b>									
GC/MS VOCs by 8260 Method: EPA 8260									
Benzene	ND	ug/l	5.0	1.0	10/08/04 00:55	DLK	71-43-2		
Ethylbenzene	ND	ug/l	5.0	1.0	10/08/04 00:55	DLK	100-41-4		
Methyl-tert-butyl ether	ND	ug/l	5.0	1.0	10/08/04 00:55	DLK	1634-04-4		
Naphthalene	ND	ug/l	5.0	1.0	10/08/04 00:55	DLK	91-20-3		
Toluene	ND	ug/l	5.0	1.0	10/08/04 00:55	DLK	108-88-3		
m&p-Xylene	ND	ug/l	10.	1.0	10/08/04 00:55	DLK			
o-Xylene	ND	ug/l	5.0	1.0	10/08/04 00:55	DLK	95-47-6		
Toluene-d8 (S)	99	%		1.0	10/08/04 00:55	DLK	2037-26-5		
4-Bromofluorobenzene (S)	109	%		1.0	10/08/04 00:55	DLK	460-00-4		
Dibromofluoromethane (S)	101	%		1.0	10/08/04 00:55	DLK	1868-53-7		
1,2-Dichloroethane-d4 (S)	118	%		1.0	10/08/04 00:55	DLK	17060-07-0		

Date: 10/08/04

Page: 2 of 6

## REPORT OF LABORATORY ANALYSIS

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### Charlotte Certification IDs

NC Wastewater 12  
NC Drinking Water 37706  
SC 99006  
FL NELAP E87627

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**PARAMETER FOOTNOTES**

Dilution factor shown represents the factor applied to the reported result and reporting limit due to changes in sample preparation, dilution of the extract, or moisture content

Inorganic Wet Chemistry and Metals Analyses were performed at our Pace Asheville laboratory and Organic testing was performed at our Pace Charlotte laboratory unless otherwise footnoted.

Method 9071B modified to use ASE.

All pH, Free Chlorine, Total Chlorine and Ferrous Iron analyses conducted outside of EPA recommended immediate hold time.

ND Not detected at or above adjusted reporting limit  
NC Not Calculable  
J Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit  
MDL Adjusted Method Detection Limit  
(S) Surrogate

**REPORT OF LABORATORY ANALYSIS**

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Charlotte Certification IDs  
NC Wastewater 12  
NC Drinking Water 37706  
SC 99006  
FL NELAP E87627

QUALITY CONTROL DATA

Lab Project Number: 9278284

Client Project ID: HIGHWAY 11 GROCERY/03439

QC Batch: 111538      Analysis Method: EPA 8260  
 QC Batch Method: EPA 8260      Analysis Description: GC/MS VOCs by 8260  
 Associated Lab Samples:      924802580      924802598

METHOD BLANK: 924811854  
 Associated Lab Samples:      924802580      924802598

<u>Parameter</u>	<u>Units</u>	<u>Blank Result</u>	<u>Reporting Limit</u>	<u>Footnotes</u>
Benzene	ug/l	ND	5.0	
Ethylbenzene	ug/l	ND	5.0	
Methyl-tert-butyl ether	ug/l	ND	5.0	
Naphthalene	ug/l	ND	5.0	
Toluene	ug/l	ND	5.0	
m&p-Xylene	ug/l	ND	10.	
o-Xylene	ug/l	ND	5.0	
Toluene-d8 (S)	%	100		
4-Bromofluorobenzene (S)	%	105		
Dibromofluoromethane (S)	%	89		
1,2-Dichloroethane-d4 (S)	%	91		

LABORATORY CONTROL SAMPLE: 924811862

<u>Parameter</u>	<u>Units</u>	<u>Spike Conc.</u>	<u>LCS Result</u>	<u>LCS % Rec</u>	<u>Footnotes</u>
Benzene	ug/l	50.00	41.04	82	
Ethylbenzene	ug/l	50.00	44.55	89	
Methyl-tert-butyl ether	ug/l	50.00	35.02	70	
Naphthalene	ug/l	50.00	62.48	125	
Toluene	ug/l	50.00	42.17	84	
m&p-Xylene	ug/l	100.00	85.22	85	
o-Xylene	ug/l	50.00	38.55	77	
Toluene-d8 (S)				98	
4-Bromofluorobenzene (S)				102	
Dibromofluoromethane (S)				94	
1,2-Dichloroethane-d4 (S)				89	

**REPORT OF LABORATORY ANALYSIS**

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Asheville Certification IDs  
 NC Wastewater      40  
 NC Drinking Water      37712  
 SC Environmental      99030  
 FL NELAP      E87648



Charlotte Certification IDs  
 NC Wastewater      12  
 NC Drinking Water      37706  
 SC      99006  
 FL NELAP      E87627

QUALITY CONTROL DATA

Lab Project Number: 9278284

Client Project ID: HIGHWAY 11 GROCERY/03439

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 924811870 924811888

Parameter	Units	924802465 Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	RPD	Footnotes
Benzene	ug/l	0	50.00	37.29	45.04	75	90	19	
Toluene	ug/l	0	50.00	36.95	44.02	74	88	17	
Toluene-d8 (S)						100	99		
4-BromoFluorobenzene (S)						118	106		1
DibromoFluoromethane (S)						101	91		
1,2-Dichloroethane-d4 (S)						110	80		

Date: 10/08/04

Page: 5 of 6

**REPORT OF LABORATORY ANALYSIS**

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Charlotte Certification IDs  
NC Wastewater 12  
NC Drinking Water 37706  
SC 99006  
FL NELAP E87627



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**QUALITY CONTROL DATA PARAMETER FOOTNOTES**

Consistent with EPA guidelines, unrounded concentrations are displayed and have been used to calculate % Rec and RPD values.

- LCS(D) Laboratory Control Sample (Duplicate)
- MS(D) Matrix Spike (Duplicate)
- DUP Sample Duplicate
- ND Not detected at or above adjusted reporting limit
- NC Not Calculable
- J Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit
- MDL Adjusted Method Detection Limit
- RPD Relative Percent Difference
- (S) Surrogate
- [1] The surrogate and/or spike recovery was outside acceptance limits.

**REPORT OF LABORATORY ANALYSIS**

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FL NELAP E87648



Charlotte Certification IDs  
NC Wastewater 12  
NC Drinking Water 37706  
SC 99006  
FL NELAP E87627



# CHAIN-OF-CUSTODY / Analytical Request Document

*The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.*

701367

**Required Client Information: Section A**

Company: SCDHEC / JUST Program

Address: 2600 Bull St.  
Cola., S.C.

Phone: 803 896-6240 Fax: 803 896-6243

**Required Client Information: Section B**

Report To: D. Thont

Copy To: \_\_\_\_\_

Invoice To: Financ

P.O. #: 416276

Project Name: Highway 11 Grocery

Project Number: 03439

Page: 1 of 1

**To Be Completed by Pace Analytical and Client Section C**

Quote Reference: \_\_\_\_\_

Project Manager: \_\_\_\_\_

Project #: 9278284

Profile #: 1700 1

Requested Analysis: \_\_\_\_\_

ITEM #	Section D Required Client Information: SAMPLE ID				Valid Matrix Codes	MATRIX CODE	DATE COLLECTED	TIME COLLECTED	# Containers	Preservatives						Remarks /
	One character per box. (A-Z, 0-9 / . -)	Sample IDs MUST BE UNIQUE								MATRIX CODE	mm / dd / yy	hh: mm a/p	Unpreserved	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	
1	RE	ID	WS	W-1	WT	10/5/04	1500	3								92480258
2	RE	ID	WS	W-2	↓	↓	1515	↓								92480259B
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																

SHIPMENT METHOD	AIRBILL NO.	SHIPPING DATE	NO. OF COOLERS	ITEM NUMBER	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
			1	1	<u>R S nypsa</u>	<u>10/6/04</u>	<u>0900</u>	<u>R S nypsa</u>	<u>10/6/04</u>	<u>0900</u>
						<u>10/6/04</u>	<u>11:50</u>		<u>10/6</u>	<u>1150</u>

**SAMPLE CONDITION**

Temp in °C: 12

Received on Ice: UN

Sealed Cooler: UN

Samples Intact: UN

Additional Comments: \_\_\_\_\_

**SAMPLER NAME AND SIGNATURE**

PRINT Name of SAMPLER: \_\_\_\_\_

SIGNATURE of SAMPLER: [Signature]

DATE Signed: 10/07/04

**Instructions for completing Chain of Custody (COC)**

1. Complete all Client Information at top of sheet: name, address, phone, contact (person to whom report will be sent and contact can be made if questions arise), billing information if different from client, PO#, Project Name and/or Project Number as it will appear on the report.
2. Quote Reference, Project Manager, Project No. and Profile No. will be completed by Pace.
3. A separate COC must be filled out for each day of sample collection.
4. Sampler should print their name in the space provided and sign their name followed by the date of the sampling event.
5. Complete Sample Description as it will appear on the laboratory report; include time of sampling, sample matrix, no. of containers and preservative used.
6. Analysis Requested: Complete analysis on the lines provided and place a check in the column for the samples requiring the analysis. It may be necessary to use the space provided for additional comments or include attachments for extended lists of parameters.
7. Submission of samples to laboratory: Indicate Item Number of those samples being transferred; sign relinquished by, and include your affiliation.

**\* IMPORTANT NOTE:**

**Standard Turnaround Time is 2 weeks.** If this does not satisfy your requirements, arrangements must be made prior to samples being submitted to the laboratory. Contact your project manager.

**Special Project Requirements** such as Low Level Detection Limits or level of QC reported must be indicated on the chain of custody. (Use Additional Comments Section.)

OPTIONAL COMMENTS  
Date of collection  
Date of analysis  
Lab name  
Lab address  
Lab phone

**SEI**  
**Environmental, Inc.**

3021 McNaughton Drive  
Suite 9  
Columbia, SC 29223  
800-377-2826  
803-788-2535  
Fax 803-788-2399

April 22, 2004

Joel Padgett  
Hydrogeologist  
SCDHEC  
2600 Bull Street  
Columbia, SC 29201-1708

Re: Summary of March 31, 2004 Sampling Event  
Highway 11 Grocery  
13527 North Hwy 11  
Salem, South Carolina  
UST Permit #03439

Dear Mr. Padgett;

SEI Environmental, Inc. (SEI) submits the following summary of the gauging and sampling of the monitoring wells at the above referenced facility on March 31, 2004. Attached in Appendix A are Figure 1, a topographic map depicting the location of the site and Figure 2, a site map illustrating the location of the monitoring wells. Attached in Appendix B is a copy of the November 6, 2002, South Carolina Department of Health and Environmental Control (SCDHEC) directive letter.

March 31, 2004 SEI personnel were on site to gauge the monitoring wells and collect representative groundwater samples. Eighteen (18) monitoring wells and / or sample point(s) were gauged. 0.10' of free product was observed in monitoring well MW-8. Attached in Appendix C is Table 1, which summarizes the March 31, 2004 gauging observation(s) and Table 2, which summarizes the historical gauging observations. Attached in Appendix D is Figure 3, a potentiometric map based upon the March 31, 2004 gauging observation(s). Upon completion of gauging the wells, seventeen (17) out of the eighteen (18) monitoring well(s) were sampled; MW-8 was not sampled due to the presence of free-phased product. DMW-1, DMW-2, & DMW-4 were purged; the remaining well(s) per the direction of the onsite DHEC representative were not purged. Please note that upon arriving onsite, the SEI technician(s) discovered that the meter used for obtaining pH, Specific Conductivity, Water Temperature, and Dissolved Oxygen field screening was not in working order. Hence, no field screening data was obtained during this sampling event. Attached in Appendix E is Table 3, which summarizes the March 31, 2004 field screening information and copies of the SCDHEC Field Data Information Sheet(s) for Ground Water Sampling. Upon completion of purging, a representative sample was collected from twenty-one (21) monitoring well(s) and or sample point(s). After collection of the representative samples, they were labeled and placed on ice in a cooler in preparation for shipment for laboratory analysis. The samples were submitted to Environmental Science Laboratory in Nashville, Tennessee for analysis for Benzene, Toluene, Ethylbenzene, Xylene (BTEX) by EPA method 8260B, Methyl Tert-butyl Ether (MTBE) by EPA method 8260B, and Naphthalene by

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APR 23 2004

**UNDERGROUND STORAGE  
TANK PROGRAM**

**53-TRA**

EPA method 8260B. Attached in Appendix F are Table 4, which summarizes the laboratory analytical results and copies of the laboratory analytical results. Attached in Appendix G is Figure 4, a CoC map based on the March 31, 2004 laboratory analytical data. Attached in Appendix H is Table 5, which summarizes the historical laboratory analytical data. 31.1 gallon(s) of petroleum-impacted water was generated from the purging of the monitoring well(s).

April 13, 2004, the 31.1 gallon(s) of petroleum-impacted water was transported to G & K Tank Services, Inc.; located in Sumter, South Carolina for disposal. Attached in Appendix I are copies of the Non-Hazardous Waste Manifest and Certificate for Disposal. Please note that when SEI disposed of the water it was incorporated with petroleum-impacted water generated from a Winn Dixie facility. SEI's technician did not note on the non-hazardous waste manifest that 31.1 gallons was attributed to the Highway 11 Grocery facility. The result of these action(s) was that the manifest only reads that the disposal facility as Winn Dixie.

The evaluation of the corrective action activities effectiveness consists of comparing the March 31, 2004 laboratory analytical data against the May 7, 2002 laboratory data and determining the percent of total concentration reduction. The percent of total concentration reduction is calculated by using the following formula:

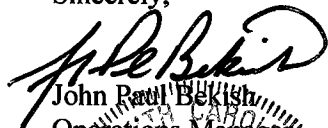
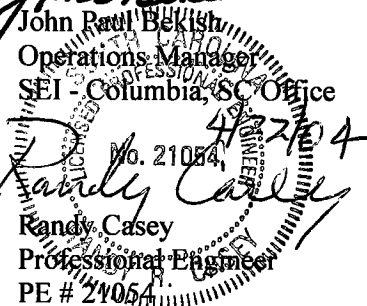
$$\text{Percent of Total Concentration Reduction} = ((\text{Initial Mass Above SSSL}) - (\text{Current Mass Above SSSL})) * (100) / (\text{Initial Mass Above SSSL})$$

The calculation for the March 31, 2004 Percent of Total Concentration Reduction was found to be 99.56%. Attached in Appendix I is Table 6, which illustrates the system's effectiveness analysis. Please note that the calculation of the March 31, 2004 Percent of Total Concentration Reduction is based on using the December 18, 2003 laboratory analytical data for MW-8 due to the presence of 0.10 feet of free product observed during the March 31, 2004 sampling event.

Based upon the March 31, 2004 field observation(s) and laboratory analytical results, SEI submits that corrective action will continue and that the next round of sampling will occur in May 2004.

If you have questions and / or comments concerning the information contained within this report, please contact John Paul Bekish at (803) 788-2535.

Sincerely,

  
John Paul Bekish  
Operations Manager  
SEI - Columbia, SC Office  
No. 21054  
  
Randy Casey  
Professional Engineer  
PE # 21054

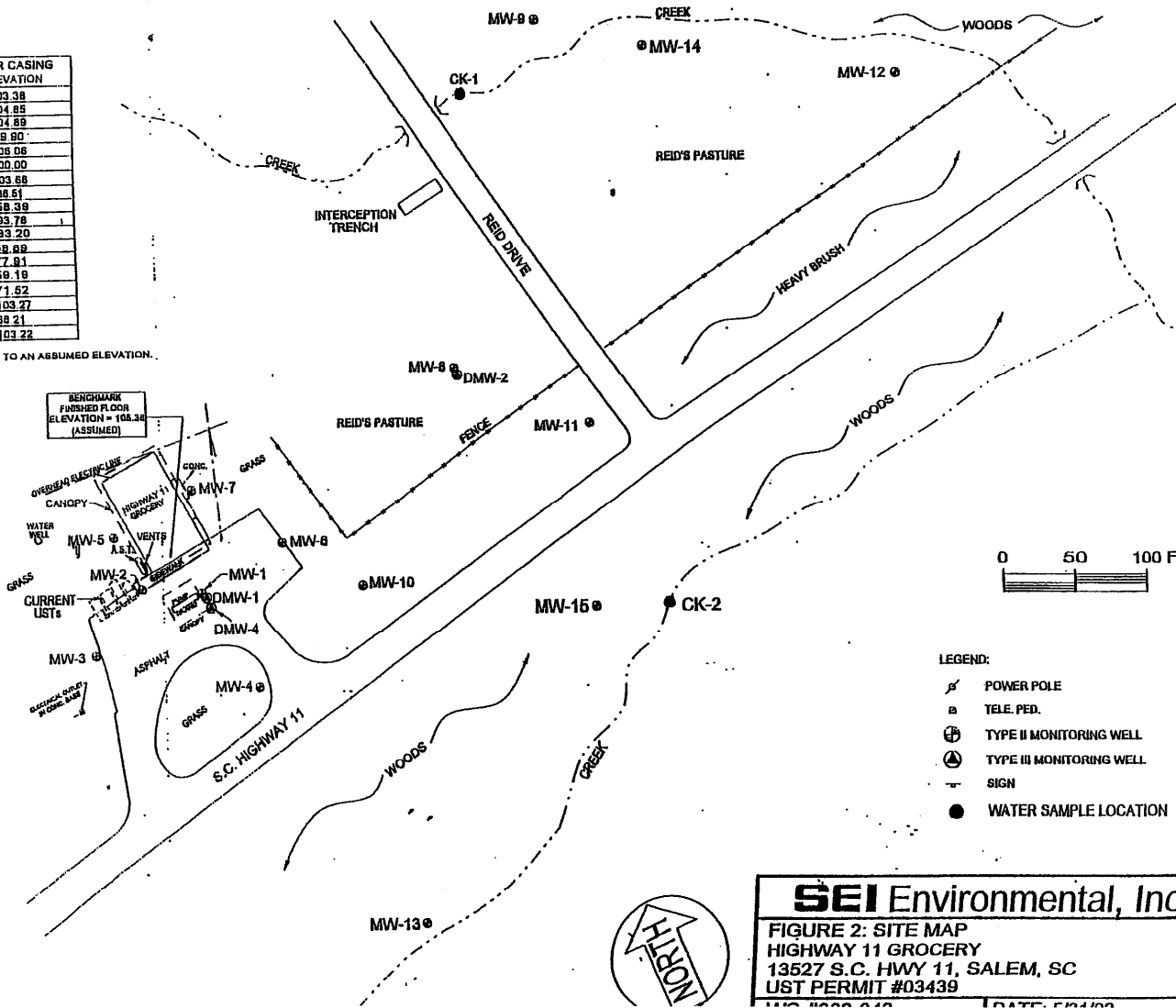
Attachment(s)

CC: Steve Smith – Property Owner – 180 Schallow Ford Road, Salem, South Carolina 29676  
SEI Project Files

**Appendix A**  
**Figure 1 – Topographic Map**  
**&**  
**Figure 2 – Site Map**

WELL #	INNER CASING ELEVATION
MW-1	103.38
MW-2	104.85
MW-3	104.89
MW-4	99.80
MW-5	106.06
MW-6	100.00
MW-7	103.68
MW-8	88.51
MW-9	58.39
MW-10	93.78
MW-11	83.20
MW-12	68.89
MW-13	77.81
MW-14	59.19
MW-15	71.52
DMW-1	103.27
DMW-2	88.21
DMW-4	103.22

NOTE: ELEVATIONS REFER TO AN ASSUMED ELEVATION.



**SEI Environmental, Inc**  
**FIGURE 2: SITE MAP**  
**HIGHWAY 11 GROCERY**  
**13527 S.C. HWY 11, SALEM, SC**  
**UST PERMIT #03439**

**Appendix B**  
**November 6, 2002 SCDHEC Directive Letter**





PROMOTE PROTECT PROSPER

2600 Bull Street  
Columbia, SC 29201-1708

**UNDERGROUND STORAGE TANK PROGRAM  
BUREAU OF LAND AND WASTE MANAGEMENT**

Phone (803) 896-6240 Fax (803) 896-6245

NOV 06 2002

MR FRED LYKE  
SEI ENVIRONMENTAL SERVICES INC  
3021 MCNAUGHTON DR SUITE 9  
COLUMBIA SOUTH CAROLINA 29223

Hwy. 11 Grocery, 13527 N Hwy 11, Salem, SC  
UST Permit #03439, CA #17616  
Release Reported November 28, 2000  
Corrective Action Solicitation Response Summary Form received November 4, 2002  
Oconee County

Dear Mr. Lyke:

The Underground Storage Tank (UST) Program recently served as a coordinator to obtain solicitation responses for a reasonable, cost-effective response for soil and/or groundwater contamination at the above referenced facility. The Program's role of coordinator does not imply a contractual obligation from the Department. Mr. Steven Smith selected your company to implement the corrective action. Additionally, Mr. Smith requested that reimbursement from the State Underground Petroleum Response Bank (SUPERB) Account for the corrective action activities be paid directly to your company. Although payment will be issued from the SUPERB Account, the relationship between you and Mr. Smith is crucial for the success of the corrective action. **The UST Program highly recommends that a written contractual agreement be developed between your company and Mr. Steven Smith. The Department, as the coordinator, will not be a party to any contractual obligations between you, Mr. Smith, subcontractors, or any third party.**

**By responding to the solicitation and/or agreeing to conduct the cleanup for the tank owner or operator, you are deemed to understand the specifications, terms, and conditions of the solicitation. Payment from the SUPERB Account will only be made for achieving the corrective action goals as specified in the solicitation package and that the required performance bond or irrevocable standby letter of credit shall specifically list the SUPERB Account as the payee.**

Cost Agreement #17616 has been established in the amount of \$116,000.00 for all costs associated with cleanup activities at the referenced facility in accordance with the specification package. Future invoices against this amount must comply with the State Underground Petroleum Environmental Response Bank (SUPERB) Site Rehabilitation and Fund Access Regulations, R.61-98 and the special conditions of the corrective action specifications. The established price is final and will not be increased for any reason (e.g., unanticipated iron fouling of a system, wells clogging because of biological activity or sediments, increased subcontractor costs, loss of utilities, modification to the system to meet the remediation goals, etc.) with the exception of unforeseen geologic circumstances or identification of additional chemicals of concern from another release.

Mr. Lyke

Page 2

The UST Program will conduct split-sampling events to verify that reduction milestones have been met. If you think you are approaching a milestone, please contact me approximately two weeks prior to your quarterly sampling event. I will inform you if UST Program personnel plan to join you to obtain split or duplicate groundwater samples.

**Any problems that occur during the implementation of the corrective action at the referenced facility should be immediately brought to the attention of the tank owner or operator, in writing, with a copy submitted to my attention.** As stated above, the UST Program and the SUPERB Account will not be liable for any costs associated with work outside the scope of the Corrective Action Solicitation or costs in excess of \$116,000.00.

On all correspondence regarding this site, please reference UST Permit #03439. If you have any questions, please contact me at (800) 826-5435 (within South Carolina only) or (803) 896-6647.

Sincerely,



Konstantine Akhvlediani, Hydrogeologist  
Owner/Operator Support Section  
Assessment and Corrective Action Division

cc: Mr. Steven Smith, 180 Schallow Ford Road, Salem, SC 29676  
Technical / Read Files  
Pat Holland, Financial Section

**Appendix C**

**Table 1 – Summary of March 31, 2004 Gauging Results  
&  
Table 2 – Summary of Historical Gauging Results**

**Table 1**  
**Summary of Gauging Results - March 31, 2004**  
**Highway 11 Grocery**  
**13527 South Carolina Highway 11**  
**Salem, South Carolina**  
**UST Permit #03439**

Sample ID	Gauging Date	Diameter Well (Inches)	Depth to Water (Feet)	LPH Thickness (Feet)	Depth of Well (Feet)	Well Head Elevation (Feet)	Groundwater Elevation (Feet)
MW-1	3/31/2004	2.00	24.61	0.00	30.00	103.38	78.77
MW-2	3/31/2004	2.00	25.85	0.00	35.00	104.85	79.00
MW-3	3/31/2004	2.00	24.44	0.00	30.00	104.89	80.45
MW-4	3/31/2004	2.00	23.49	0.00	35.00	99.90	76.41
MW-5	3/31/2004	2.00	28.56	0.00	35.00	106.06	77.50
MW-6	3/31/2004	2.00	21.71	0.00	35.00	100.00	78.29
MW-7	3/31/2004	2.00	28.00	0.00	40.00	103.66	75.66
MW-8	3/31/2004	2.00	21.35	0.10	30.00	86.51	65.08
MW-9	3/31/2004	2.00	2.58	0.00	11.00	58.39	55.81
MW-10	3/31/2004	2.00	18.85	0.00	24.00	93.78	74.93
MW-11	3/31/2004	2.00	17.35	0.00	23.00	83.20	65.85
MW-12	3/31/2004	2.00	3.26	0.00	11.00	58.69	55.43
MW-13	3/31/2004	2.00	6.36	0.00	13.00	77.72	71.36
MW-14	3/31/2004	2.00	2.42	0.00	9.00	59.19	56.77
MW-15	3/31/2004	2.00	11.00	0.00	12.00	71.52	60.52
DMW-1	3/31/2004	2.00	24.60	0.00	45.00	103.27	78.67
DMW-2	3/31/2004	2.00	17.31	0.00	75.00	86.21	68.90
DMW-4	3/31/2004	2.00	24.95	0.00	61.00	103.22	78.27

**Notes:** N/A = Not Applicable  
 MW-8 was Observed to have 0.10' Free Product Present

**Table 2**  
**Summary of Historical Gauging Results**  
**Highway 11 Grocery**  
**13527 South Carolina Highway 11**  
**Salem, South Carolina**  
**UST Permit #03439**

Sample ID	Gauging Date	Diameter Well (Inches)	Depth to Water (Feet)	LPH Thickness (Feet)	Depth of Well (Feet)	Well Head Elevation (Feet)	Groundwater Elevation (Feet)
MW-1	3/31/2004	2.00	24.61	0.00	30.00	103.38	78.77
	12/18/2003		24.06	0.00			79.32
	10/23/2003		24.72	0.21			78.50
	10/2/2003		24.32	0.13			78.96
	9/15/2003		23.78	0.04			79.57
	7/30/2003		22.89	0.08			80.43
	7/1/2003		23.28	0.24			79.91
	5/8/2002		24.67	0.04			78.68
MW-2	3/31/2004	2.00	25.85	0.00	35.00	104.85	79.00
	12/18/2003		25.38	0.00			79.47
	10/23/2003		25.71	0.00			79.14
	10/2/2003		25.56	0.00			79.29
	9/15/2003		24.73	0.00			80.12
	7/30/2003		23.78	0.00			81.07
	7/1/2003		24.08	0.00			80.77
	5/8/2002		26.08	0.00			78.77
MW-3	3/31/2004	2.00	24.44	0.00	30.00	104.86	80.42
	12/18/2003		23.93	0.00			80.93
	10/23/2003		24.23	0.00			80.63
	10/2/2003		23.87	0.00			80.99
	9/15/2003		23.23	0.00			81.63
	7/30/2003		22.21	0.00			82.65
	7/1/2003		22.51	0.00			82.35
	5/8/2002		24.78	0.00			80.08

**Table 2 - Continued**  
**Summary of Historical Gauging Results**  
**Highway 11 Grocery**  
**Salem, South Carolina**  
**UST Permit #03439**

Sample ID	Gauging Date	Diameter Well (Inches)	Depth to Water (Feet)	LPH Thickness (Feet)	Depth of Well (Feet)	Well Head Elevation (Feet)	Groundwater Elevation (Feet)
MW-4	3/31/2004	2.00	23.49	0.00	35.00	99.90	76.41
	12/18/2003		22.95	0.00			76.95
	10/23/2003		23.69	0.00			76.21
	10/2/2003		23.32	0.00			76.58
	9/15/2003		22.90	0.00			77.00
	7/30/2003		22.09	0.00			77.81
	7/1/2003		22.10	0.00			77.80
	5/8/2002		23.38	0.00			76.52
MW-5	3/31/2004	2.00	28.56	0.00	35.00	106.06	77.50
	12/18/2003		28.40	0.00			77.66
	10/23/2003		28.40	0.00			77.66
	10/2/2003		27.92	0.00			78.14
	9/15/2003		27.40	0.00			78.66
	7/30/2003		26.53	0.00			79.53
	7/1/2003		26.82	0.00			79.24
	5/8/2002		28.82	0.00			77.24
MW-6	3/31/2004	2.00	21.71	0.00	35.00	100.00	78.29
	12/18/2003		21.00	0.00			79.00
	10/23/2003		21.74	0.00			78.26
	10/2/2003		21.34	0.00			78.66
	9/15/2003		20.63	0.00			79.37
	7/30/2003		19.88	0.00			80.12
	7/1/2003		19.77	0.00			80.23
	5/8/2002		21.66	0.00			78.34

**Table 2 - Continued**  
**Summary of Historical Gauging Results**  
**Highway 11 Grocery**  
**Salem, South Carolina**  
**UST Permit #03439**

Sample ID	Gauging Date	Diameter Well (Inches)	Depth to Water (Feet)	LPH Thickness (Feet)	Depth of Well (Feet)	Well Head Elevation (Feet)	Groundwater Elevation (Feet)
MW-7	3/31/2004	2.00	28.00	0.00	40.00	103.66	75.66
	12/18/2003		27.71	0.00			75.95
	10/23/2003		28.10	0.00			75.56
	10/2/2003		27.69	0.00			75.97
	9/15/2003		26.83	0.00			76.83
	7/30/2003		26.22	0.00			77.44
	7/1/2003		26.55	0.00			77.11
	5/8/2002		28.12	0.00			75.54
MW-8	3/31/2004	2.00	21.35	0.10	30.00	86.51	65.08
	12/18/2003		20.82	0.00			65.69
	10/23/2003		21.54	0.02			64.97
	10/2/2003		20.44	0.20			66.05
	9/15/2003		21.17	0.15			65.33
	7/30/2003		20.46	0.20			66.03
	7/1/2003		20.96	0.60			65.50
	5/8/2002		21.00	0.06			65.51
MW-9	3/31/2004	2.00	2.56	0.00	11.00	58.39	55.83
	12/18/2003		2.20	0.00			56.19
	10/23/2003		2.42	0.00			55.97
	10/2/2003		2.16	0.00			56.23
	9/15/2003		2.42	0.00			55.97
	7/30/2003		2.26	0.00			56.13
	7/1/2003		2.30	0.00			56.09
	5/8/2002		2.47	0.00			55.92

**Table 2 - Continued**  
**Summary of Historical Gauging Results**  
**Highway 11 Grocery**  
**Salem, South Carolina**  
**UST Permit #03439**

Sample ID	Gauging Date	Diameter Well (Inches)	Depth to Water (Feet)	LPH Thickness (Feet)	Depth of Well (Feet)	Well Head Elevation (Feet)	Groundwater Elevation (Feet)
MW-10	3/31/2004	2.00	18.85	0.00	24.00	93.78	74.93
	12/18/2003		19.83	0.00			73.95
	10/23/2003		20.51	0.00			73.27
	10/2/2003		20.19	0.00			73.59
	9/15/2003		16.53	0.00			77.25
	7/30/2003		18.95	0.00			74.83
	7/1/2003		16.20	0.00			77.58
	5/8/2002		20.04	0.00			73.74
MW-11	3/31/2004	2.00	17.35	0.00	23.00	83.20	65.85
	12/18/2003		16.40	0.00			66.80
	10/23/2003		17.83	0.00			65.37
	10/2/2003		17.58	0.00			65.62
	9/15/2003		16.21	0.00			66.99
	7/30/2003		15.92	0.00			67.28
	7/1/2003		15.93	0.00			67.27
	5/8/2002		16.86	0.00			66.34
MW-12	3/31/2004	2.00	3.26	0.00	11.00	58.69	55.43
	12/18/2003		2.60	0.00			56.09
	10/23/2003		3.50	0.00			55.19
	10/2/2003		2.97	0.00			55.72
	9/15/2003		3.19	0.00			55.50
	7/30/2003		3.02	0.00			55.67
	7/1/2003		3.10	0.00			55.59
	5/8/2002		3.12	0.00			55.57



**Table 2 - Continued**  
**Summary of Historical Gauging Results**  
**Highway 11 Grocery**  
**Salem, South Carolina**  
**UST Permit #03439**

Sample ID	Gauging Date	Diameter Well (Inches)	Depth to Water (Feet)	LPH Thickness (Feet)	Depth of Well (Feet)	Well Head Elevation (Feet)	Groundwater Elevation (Feet)
MW-13	3/31/2004	2.00	6.36	0.00	13.00	77.72	71.36
	12/18/2003		6.24	0.00			71.48
	10/23/2003		6.78	0.00			70.94
	10/2/2003		7.51	0.00			70.21
	9/15/2003		6.62	0.00			71.10
	7/30/2003		6.28	0.00			71.44
	7/1/2003		6.44	0.00			71.28
	5/8/2002		6.52	0.00			71.20
MW-14	3/31/2004	2.00	2.42	0.00	9.00	59.19	56.77
	12/18/2003		1.98	0.00			57.21
	10/23/2003		2.67	0.00			56.52
	10/2/2003		1.58	0.00			57.61
	9/15/2003		2.03	0.00			57.16
	7/30/2003		1.77	0.00			57.42
	7/1/2003		1.92	0.00			57.27
	5/8/2002		2.14	0.00			57.05
MW-15	3/31/2004	2.00	11.00	0.00	12.00	71.52	60.52
	12/18/2003		10.20	0.00			61.32
	10/23/2003		11.07	0.00			60.45
	10/2/2003		11.88	0.00			59.64
	9/15/2003		11.02	0.00			60.50
	7/30/2003		10.67	0.00			60.85
	7/1/2003		10.83	0.00			60.69
	5/8/2002		10.61	0.00			60.91

**Table 2 - Continued**  
**Summary of Historical Gauging Results**  
**Highway 11 Grocery**  
**Salem, South Carolina**  
**UST Permit #03439**

Sample ID	Gauging Date	Diameter Well (Inches)	Depth to Water (Feet)	LPH Thickness (Feet)	Depth of Well (Feet)	Well Head Elevation (Feet)	Groundwater Elevation (Feet)
DMW-1	3/31/2004	2.00	24.60	0.00	45.00	103.27	78.67
	12/18/2003		24.00	0.00			79.27
	10/23/2003		24.50	0.00			78.77
	10/2/2003		24.11	0.00			79.16
	9/15/2003		23.61	0.00			79.66
	7/30/2003		22.72	0.00			80.55
	7/1/2003		22.97	0.00			80.30
	5/8/2002		24.68	0.00			78.59
DMW-2	3/31/2004	2.00	17.31	0.00	75.00	86.21	68.90
	12/18/2003		16.80	0.00			69.41
	10/23/2003		17.63	0.00			68.58
	10/2/2003		17.11	0.00			69.10
	9/15/2003		15.75	0.00			70.46
	7/30/2003		16.49	0.00			69.72
	7/1/2003		16.44	0.00			69.77
	5/8/2002		17.22	0.00			68.99
DMW-4	3/31/2004	2.00	24.95	0.00	61.00	103.22	78.27
	12/18/2003		24.45	0.00			78.77
	10/23/2003		24.95	0.00			78.27
	10/2/2003		24.39	0.00			78.83
	9/15/2003		23.88	0.00			79.34
	7/30/2003		23.18	0.00			80.04
	7/1/2003		23.32	0.00			79.90
	5/8/2002		25.08	0.00			78.14

**Notes:** N/A = Not Applicable  
Adjusted Depth to Water = Depth to Water - (LPH Thickness \* 0.78)

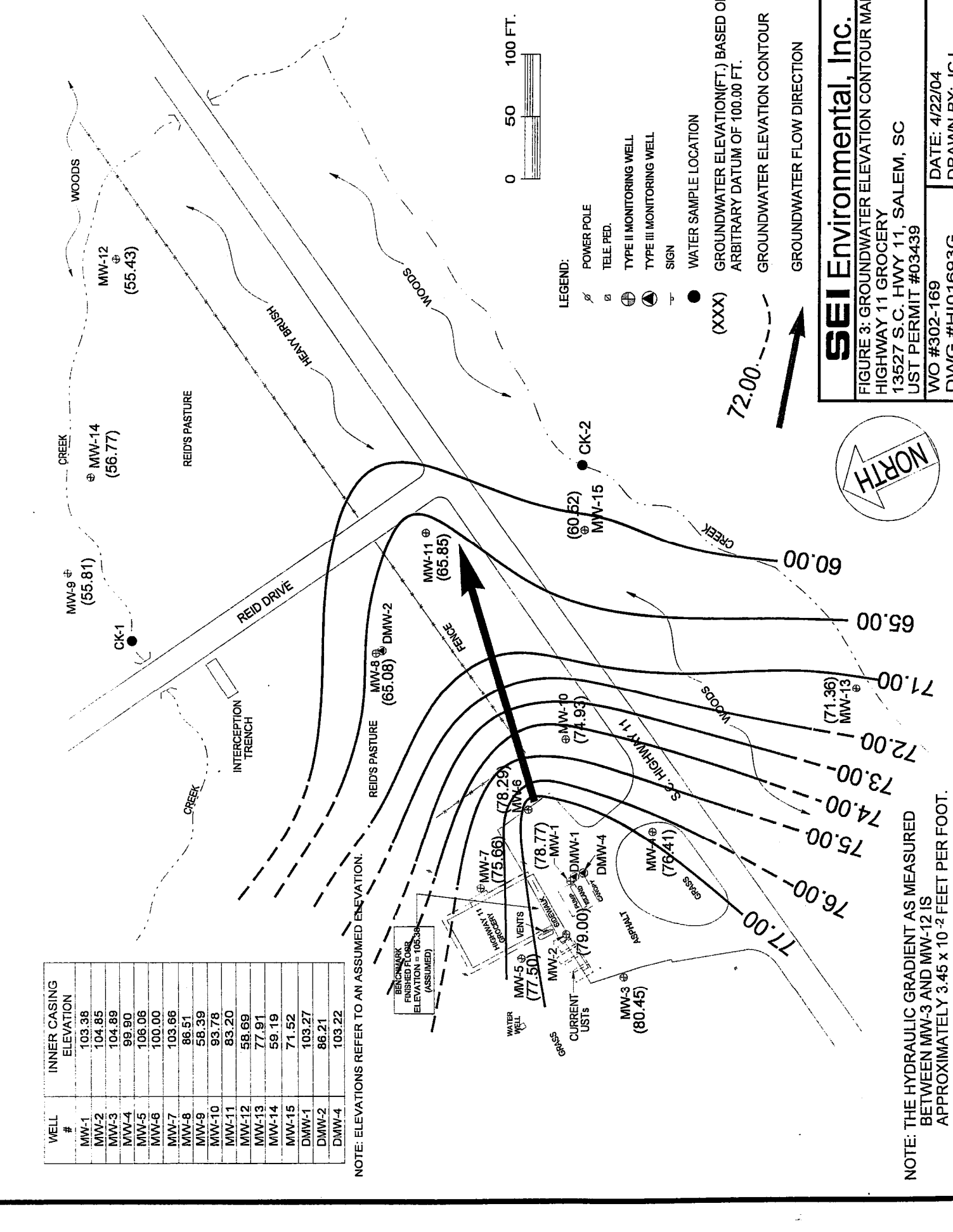
Appendix D

Figure 3 - Potentiometric Map Based on the March 31, 2004 Gauging Observations

WELL #	INNER CASING ELEVATION
MW-1	103.38
MW-2	104.85
MW-3	104.89
MW-4	99.90
MW-5	106.06
MW-6	100.00
MW-7	103.86
MW-8	86.51
MW-9	58.39
MW-10	93.78
MW-11	83.20
MW-12	58.69
MW-13	77.91
MW-14	59.19
MW-15	71.52
DMW-1	103.27
DMW-2	86.21
DMW-4	103.22

NOTE: ELEVATIONS REFER TO AN ASSUMED ELEVATION.

BENCHMARK  
FINISHED FLOOR  
ELEVATION = 105.38  
(ASSUMED)



LEGEND:

- ⊕ POWER POLE
- ⊞ TELE. PED.
- ⊕ TYPE II MONITORING WELL
- ⊕ TYPE III MONITORING WELL
- ⊞ SIGN
- WATER SAMPLE LOCATION
- (XXX) GROUNDWATER ELEVATION (FT.) BASED ON ARBITRARY DATUM OF 100.00 FT.
- - - GROUNDWATER ELEVATION CONTOUR
- GROUNDWATER FLOW DIRECTION

**SEI Environmental, Inc.**  
 FIGURE 3: GROUNDWATER ELEVATION CONTOUR MAP  
 HIGHWAY 11 GROCERY  
 13527 S.C. HWY 11, SALEM, SC  
 UST PERMIT #03439  
 WO #302-169  
 DWG #HI01693G  
 DATE: 4/22/04  
 DRAWN BY: JCJ

NOTE: THE HYDRAULIC GRADIENT AS MEASURED BETWEEN MW-3 AND MW-12 IS APPROXIMATELY 3.45 x 10<sup>-2</sup> FEET PER FOOT.

**Appendix E**  
**Table 3 – Summary Field Screening Observation(s)**  
**&**  
**SCDHEC Field Data Information Sheet for Ground Water Sampling**

**Table 3**  
**Summary of Field Observations - March 31, 2004**  
**Highway 11 Grocery**  
**13527 South Carolina Highway 11**  
**Salem, South Carolina**  
**UST Permit #03439**

Sample ID	Frequency	Depth to Groundwater (Feet)	Total Well Depth (Feet)	Depth of Free Product (Feet)	pH (S.U.)	Specific Conductivity (umhos/cm)	Water Temperature (Degrees C)	Dissolved Oxygen (S.U.)	Volume Purged (Gal.)	Notes
MW-1	Initial	24.61	30.00	N/A	N/A	N/A	N/A	N/A	0.00	Strong Petro. Odors
MW-2	Initial	25.85	35.00	N/A	N/A	N/A	N/A	N/A	0.00	Strong Petro. Odors
MW-3	Initial	24.44	35.00	N/A	N/A	N/A	N/A	N/A	0.00	Strong Petro. Odors
MW-4	Initial	23.49	35.00	N/A	N/A	N/A	N/A	N/A	0.00	Strong Petro. Odors
MW-5 <sup>1</sup>	Initial	28.56	35.00	N/A	N/A	N/A	N/A	N/A	0.00	Full Recharge
MW-6	Initial	21.71	35.00	N/A	N/A	N/A	N/A	N/A	0.00	Strong Petro. Odors
MW-7	Initial	28.00	40.00	N/A	N/A	N/A	N/A	N/A	0.00	Strong Petro. Odors
MW-8 <sup>2</sup>	Initial	21.35	30.00	21.25	N/A	N/A	N/A	N/A	2.00	0.10' Free Product
MW-9 <sup>1</sup>	Initial	2.56	11.00	N/A	N/A	N/A	N/A	N/A	0.00	Full Recharge
MW-10	Initial	18.85	24.00	N/A	N/A	N/A	N/A	N/A	0.00	Strong Petro. Odors
MW-11 <sup>1</sup>	Initial	17.35	23.00	N/A	N/A	N/A	N/A	N/A	0.00	Full Recharge
MW-12 <sup>1</sup>	Initial	3.26	11.00	N/A	N/A	N/A	N/A	N/A	0.00	Full Recharge
MW-13 <sup>1</sup>	Initial	6.36	10.00	N/A	N/A	N/A	N/A	N/A	0.00	Full Recharge
MW-14	Initial	2.49	9.00	N/A	N/A	N/A	N/A	N/A	0.00	Strong Petro. Odors
MW-15 <sup>3</sup>	Initial	11.00	12.00	N/A	N/A	N/A	N/A	N/A	0.00	No Purge - Only Sample
DMW-1 <sup>1</sup>	Initial	24.60	45.00	N/A	N/A	N/A	N/A	N/A	9.90	Full Recharge
DMW-2 <sup>1</sup>	Initial	17.31	75.00	N/A	N/A	N/A	N/A	N/A	9.40	Full Recharge
DMW-4 <sup>1</sup>	Initial	24.95	61.00	N/A	N/A	N/A	N/A	N/A	9.80	Full Recharge

**Notes:** N/A = Not Applicable

MW-1 - MW-15 were not Purged, only DMW-1, DMW-2, & DMW-4 were Purged

Footnote <sup>1</sup>: Unable to Collect Field Screening Data Due to Failure of Horiba

Footnote <sup>2</sup>: Presence of 0.10' of Free Product

Footnote <sup>3</sup>: MW-15 Sample Collected without Purging of the Well

**South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program  
Field Data Information Sheet for Ground Water Sampling**

job # ~~302169~~ 302169

Date (mm/dd/yy): 3.31.04

Field Personnel: V. Chisholm

General Weather Conditions: \_\_\_\_\_

---

Ambient Air Temperature: \_\_\_\_\_ °C

Quality Assurance

pH Meter serial no. <u>1854</u>	Conductivity Meter serial no. <u>1854</u>
pH=4.0 <u>± 0.002 pH @ 25°C</u>	standard <u>4.49ms/cm</u>
pH=7.0 _____	standard _____
pH=10.0 _____	standard _____

*ALTO CAL. SOLUTIONS PROVIDE FINE ENVIRONMENTAL SERVICE FOR HONORABLE Chain of Custody*

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name: Salem Hwy 11

Site ID#: \_\_\_\_\_ Monitoring Well # 1

Water Supply Well \_\_\_\_\_ Public \_\_\_\_\_ Private \_\_\_\_\_

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C=0.163  
for a 4 inch well C=0.652

\* Free Product Thickness: \_\_\_\_\_ feet

Depth to Ground Water (DGW) 24.61 feet

Total Well Depth (TWD) 30.00 feet

Length of the water column (LWC=TWD-DGW) 5.39 feet

1 casing volume (CV=LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals  
3 casing volume (3 X CV) = ~~1.5~~ gals (standard purge volume)

Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals.  
\*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling
Time (military)							<u>1315</u>
pH (s.u.)							
Specific Conductivity (µmhos/cm)							
Water Temperature (°C)							
Dissolved Oxygen							
PID readings, if required							

Remarks: not well - No Purge

**South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program**

**Field Data Information Sheet for Ground Water Sampling**

job # ~~30241~~ 302169

Date (mm/dd/yy): 3.31.04

Field Personnel: V. Chisholm

General Weather Conditions: \_\_\_\_\_

Ambient Air Temperature: \_\_\_\_\_ °C

Quality Assurance

pH Meter serial no. <u>1854</u>	Conductivity Meter serial no. <u>1854</u>
pH=4.0 <u>±0.002 pH @ 28°C</u>	standard <u>4.49ms/cm</u>
pH=7.0 _____	standard _____
pH=10.0 _____	standard _____

*ALTO CAL. SOLUTION PROVIDES PINE ENVIRONMENTAL SERVICE FOR HONOLULU Chain of Custody*

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name: Salem Hwy 11

Site ID#: \_\_\_\_\_ Monitoring Well # 2

Water Supply Well \_\_\_\_\_ Public \_\_\_\_\_ Private \_\_\_\_\_

Monitoring Well Diameter (D): 2' feet

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C=0.163  
for a 4 inch well C=0.652

\* Free Product Thickness: \_\_\_\_\_ feet

Depth to Ground Water (DGW) 25.85 feet

Total Well Depth (TWD) 35.00 feet

Length of the water column (LWC=TWD-DGW) 9.15 feet

1 casing volume (CV=LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals

3 casing volume (3 X CV) = ~~\_\_\_\_\_~~ gals (standard purge volume)

Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals.

\*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling
Time (military)							<u>1330</u>
pH (s.u.)							
Specific Conductivity (µmhos/cm)							
Water Temperature (°C)							
Dissolved Oxygen							
PID readings, if required							

Remarks: hot well - No Purge



**South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program  
Field Data Information Sheet for Ground Water Sampling**

job # ~~30241~~ 302169

Date (mm/dd/yy): 3.31.04

Field Personnel: V. Chisholm

General Weather Conditions: \_\_\_\_\_

Ambient Air Temperature: \_\_\_\_\_ °C

**Quality Assurance**

pH Meter serial no. <u>1854</u>	Conductivity Meter serial no. <u>1854</u>
pH=4.0 <u>±0.002 pH @ 25°C</u>	standard <u>4.49ms/cm</u>
pH=7.0 _____	standard _____
pH=10.0 _____	standard _____

*ALTO CAL. SOLUTIONS PROVIDES PINE ENVIRONMENTAL SERVICE FOR HONOLULU*  
Chain of Custody

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name: Salem Hwy 11

Site ID#: \_\_\_\_\_ Monitoring Well # 3

Water Supply Well \_\_\_\_\_ Public \_\_\_\_\_ Private \_\_\_\_\_

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C=0.163  
for a 4 inch well C=0.652

\* Free Product Thickness: \_\_\_\_\_ feet

Depth to Ground Water (DGW) 24.44 feet

Total Well Depth (TWD) 35.00 feet

Length of the water column (LWC=TWD-DGW) 10.53 feet

1 casing volume (CV=LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals

3 casing volume (3 X CV) = ~~31.59~~ gals (standard purge volume)

Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals.

\*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling
Time (military)							<u>1345</u> ✓
pH (s.u.)							
Specific Conductivity (µmhos/cm)							
Water Temperature (°C)							
Dissolved Oxygen							
PID readings, if required							

Remarks: hot well - No Purge

**South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program  
Field Data Information Sheet for Ground Water Sampling**

Job # ~~302141~~ 302169

Date (mm/dd/yy): 3.31.04

Field Personnel: V. Chisholm

General Weather Conditions: \_\_\_\_\_

Ambient Air Temperature: \_\_\_\_\_ °C

**Quality Assurance**

pH Meter serial no. <u>1854</u>	Conductivity Meter serial no. <u>1854</u>
pH=4.0 <u>± 0.002 pH @ 25°C</u>	standard <u>4.49ms/cm</u>
pH=7.0 _____	standard _____
pH=10.0 _____	standard _____

AUTO CAL. SOLUTIONS PROVIDE PINE ENVIRONMENTAL SERVICE FOR HONDA Chain of Custody

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name: Salem Hwy 11

Site ID#: \_\_\_\_\_ Monitoring Well # 4

Water Supply Well \_\_\_\_\_ Public \_\_\_\_\_ Private \_\_\_\_\_

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C=0.163  
for a 4 inch well C=0.652

\* Free Product Thickness: \_\_\_\_\_ feet

Depth to Ground Water (DGW) 23.49 feet

Total Well Depth (TWD) 35.00 feet

Length of the water column (LWC=TWD-DGW) 11.51 feet

1 casing volume (CV=LWC X C)= \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals

3 casing volume (3 X CV)= ~~\_\_\_\_\_~~ gals (standard purge volume)

Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals.

\*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling
Time (military)							<u>1400</u> ✓
pH (s.u.)							
Specific Conductivity (µmhos/cm)							
Water Temperature (°C)							
Dissolved Oxygen							
PID readings, if required							

Remarks: hot well - No Purge

**South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program**

**Field Data Information Sheet for Ground Water Sampling**

job # ~~302169~~ 302169

Date (mm/dd/yy): 3.31.04

Field Personnel: V. Chisholm

General Weather Conditions: \_\_\_\_\_

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Ambient Air Temperature: \_\_\_\_\_ °C

Quality Assurance

pH Meter serial no. <u>1854</u>	Conductivity Meter serial no. <u>1854</u>
pH=4.0 <u>±0.002 pH @ 28°C</u>	standard <u>4.49ms/cm</u>
pH=7.0 _____	standard _____
pH=10.0 _____	standard _____

*ALTO CAL. SOLUTION PROVIDES PINE ENVIRONMENTAL SERVICE FOR HONOLULU Chain of Custody*

Relinquished by _____	Date/Time _____	Received by _____	Date/Time _____
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Facility Name: Salem Hwy 11

Site ID#: \_\_\_\_\_ Monitoring Well # 5

Water Supply Well \_\_\_\_\_ Public \_\_\_\_\_ Private \_\_\_\_\_

Monitoring Well Diameter (D): 2' feet

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C=0.163  
for a 4 inch well C=0.652

\* Free Product Thickness: \_\_\_\_\_ feet

Depth to Ground Water (DGW) 28.56 feet

Total Well Depth (TWD) 35.00 feet

Length of the water column (LWC=TWD-DGW) 6.44 feet

1 casing volume (CV=LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = 1.0 gals

3 casing volume (3 X CV) = ~~3.0~~ gals (standard purge volume)

Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals.

\*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling
Time (military)							<u>1415</u>
pH (s.u.)							
Specific Conductivity (µmhos/cm)							
Water Temperature (°C)							
Dissolved Oxygen							
PID readings, if required							

Remarks: NO H2S by - No Purge

**South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program  
Field Data Information Sheet for Ground Water Sampling**

job # ~~302141~~ 302169

Date (mm/dd/yy): 3.31.04

Field Personnel: V. Chisholm

General Weather Conditions: \_\_\_\_\_

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Ambient Air Temperature: \_\_\_\_\_ °C

Quality Assurance

pH Meter serial no. <u>1854</u>	Conductivity Meter serial no. <u>1854</u>
pH=4.0 <u>± 0.002 pH @ 28°C</u>	standard <u>4.49 ms/cm</u>
pH=7.0 _____	standard _____
pH=10.0 _____	standard _____

*ALTO CAL. SOLUTIONS PROVIDE PINE ENVIRONMENTAL SERVICE FOR HONORA Chain of Custody*

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name: Salem Hwy 11

Site ID#: \_\_\_\_\_ Monitoring Well # 6

Water Supply Well \_\_\_\_\_ Public \_\_\_\_\_ Private \_\_\_\_\_

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C=0.163  
for a 4 inch well C=0.652

\* Free Product Thickness: \_\_\_\_\_ feet

Depth to Ground Water (DGW) 21.71 feet

Total Well Depth (TWD) 35.00 feet

Length of the water column (LWC=TWD-DGW) 13.29 feet

1 casing volume (CV=LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = 2.1 gals

3 casing volume (3 X CV) = ~~6.3~~ gals (standard purge volume)

Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals.

\*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling
Time (military)							<u>1430</u>
pH (s.u.)							
Specific Conductivity (µmhos/cm)							
Water Temperature (°C)							
Dissolved Oxygen							
PID readings, if required							

Remarks: not well - No force

**South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program**

**Field Data Information Sheet for Ground Water Sampling**

job # ~~302169~~ 302169

Date (mm/dd/yy): 3.31.04

Field Personnel: V. Chisholm

General Weather Conditions: \_\_\_\_\_

Ambient Air Temperature: \_\_\_\_\_ °C

**Quality Assurance**

pH Meter serial no. <u>1854</u>	Conductivity Meter serial no. <u>1854</u>
pH=4.0 <u>±0.002 pH @ 25°C</u>	standard <u>4.49ms/AC</u>
pH=7.0 _____	standard _____
pH=10.0 _____	standard _____

*ALTO CAL. SOLUTIONS PROVIDES PINE ENVIRONMENTAL SERVICE FOR HOUSA Chain of Custody*

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name: Salem Hwy 11

Site ID#: \_\_\_\_\_ Monitoring Well # 7

Water Supply Well \_\_\_\_\_ Public \_\_\_\_\_ Private \_\_\_\_\_

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C=0.163  
for a 4 inch well C=0.652

\* Free Product Thickness: \_\_\_\_\_ feet

Depth to Ground Water (DGW) 28.00 feet

Total Well Depth (TWD) 40.00 feet

Length of the water column (LWC=TWD-DGW) 12.00 feet

1 casing volume (CV=LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals

3 casing volume (3 X CV) = ~~36~~ gals (standard purge volume)

Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals.

\*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling
Time (military)							1445
pH (s.u.)							
Specific Conductivity (µmhos/cm)							
Water Temperature (°C)							
Dissolved Oxygen							
PID readings, if required							

Remarks: hot well - no Purge

**South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program**

**Field Data Information Sheet for Ground Water Sampling**

job # ~~30241~~ 302169

Date (mm/dd/yy): 3.31.04

Field Personnel: V. Chisholm

General Weather Conditions: \_\_\_\_\_

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Ambient Air Temperature: \_\_\_\_\_ °C

Quality Assurance

pH Meter serial no. <u>1854</u>	Conductivity Meter serial no. <u>1854</u>
pH=4.0 <u>± 0.002 pH @ 25°C</u>	standard <u>4.49ms/AC</u>
pH=7.0 _____	standard _____
pH=10.0 _____	standard _____

*ALTO CAL. SOLUTIONS PROVIDES PINE ENVIRONMENTAL SERVICE FOR HONOLULU Chain of Custody*

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name: Salem Hwy 11

Site ID#: \_\_\_\_\_ Monitoring Well # 8

Water Supply Well \_\_\_\_\_ Public \_\_\_\_\_ Private \_\_\_\_\_

Monitoring Well Diameter (D): 2' feet

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C=0.163  
for a 4 inch well C=0.652

\* Free Product Thickness: 21.25 feet

Depth to Ground Water (DGW) 21.35 feet

Total Well Depth (TWD) \_\_\_\_\_ feet

Length of the water column (LWC=TWD-DGW) \_\_\_\_\_ feet

1 casing volume (CV=LWC X C)= \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals

3 casing volume (3 X CV)= \_\_\_\_\_ gals (standard purge volume)

Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals.

\*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial					Post Sampling				
	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol
Time (military)										
pH (s.u.)										
Specific Conductivity (µmhos/cm)										
Water Temperature (°C)										
Dissolved Oxygen										
PID readings, if required										

Remarks: product NO sample

**South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program**

**Field Data Information Sheet for Ground Water Sampling**

job # ~~302169~~ 302169

Date (mm/dd/yy): 3.31.04

Field Personnel: V. Chisholm

General Weather Conditions: \_\_\_\_\_

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Ambient Air Temperature: \_\_\_\_\_ °C

Quality Assurance

pH Meter	Conductivity Meter
serial no. <u>1854</u>	serial no. <u>1854</u>
pH=4.0 <u>±0.002 pH @ 25°C</u>	standard <u>449ms/cm</u>
pH=7.0 _____	standard _____
pH=10.0 _____	standard _____

*ALTO CAL. SOLUTIONS PROVIDES PINE ENVIRONMENTAL SERVICE FOR FLORIDA Chain of Custody*

Relinquished by _____	Date/Time _____	Received by _____	Date/Time _____
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Facility Name: Salem Hwy 11

Site ID#: \_\_\_\_\_ Monitoring Well # 9

Water Supply Well \_\_\_\_\_ Public \_\_\_\_\_ Private \_\_\_\_\_

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C=0.163  
for a 4 inch well C=0.652

\* Free Product Thickness: \_\_\_\_\_ feet

Depth to Ground Water (DGW) 2.56 feet

Total Well Depth (TWD) 11.00 feet

Length of the water column (LWC=TWD-DGW) 8.44 feet

1 casing volume (CV=LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = 1.3 gals

3 casing volume (3 X CV) = ~~3.9~~ gals (standard purge volume)

Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals.

\*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling
Time (military)							<u>1500</u>
pH (s.u.)							
Specific Conductivity (µmhos/cm)							
Water Temperature (°C)							
Dissolved Oxygen							
PID readings, if required							

Remarks: NO H2S in 1 gal - NO Purge

**South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program**

**Field Data Information Sheet for Ground Water Sampling**

job # ~~302169~~ 302169

Date (mm/dd/yy): 3.31.04

Field Personnel: V. Chisholm

General Weather Conditions: \_\_\_\_\_

Ambient Air Temperature: \_\_\_\_\_ °C

Quality Assurance

pH Meter serial no. <u>1854</u>	Conductivity Meter serial no. <u>1854</u>
pH=4.0 <u>±0.002 pH @ 25°C</u>	standard <u>4.49ms/AC</u>
pH=7.0 _____	standard _____
pH=10.0 _____	standard _____

*AUTO CAL. SOLUTION PROVIDES PINE ENVIRONMENTAL SERVICE FOR HOUSA Chain of Custody*

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name: Salem Hwy 11

Site ID#: \_\_\_\_\_ Monitoring Well # 10

Water Supply Well \_\_\_\_\_ Public \_\_\_\_\_ Private \_\_\_\_\_

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C=0.163  
for a 4 inch well C=0.652

\* Free Product Thickness: \_\_\_\_\_ feet

Depth to Ground Water (DGW) 18.85 feet

Total Well Depth (TWD) 24.00 feet

Length of the water column (LWC=TWD-DGW) 5.15 feet

1 casing volume (CV=LWC X C)= \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals

3 casing volume (3 X CV)= ~~3~~ gals (standard purge volume)

Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals.

\*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling
Time (military)							<u>1515</u> ✓
pH (s.u.)							
Specific Conductivity (µmhos/cm)							
Water Temperature (°C)							
Dissolved Oxygen							
PID readings, if required							

Remarks: hot well - No Purge



**South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program**

**Field Data Information Sheet for Ground Water Sampling**

Job # ~~302169~~ 302169

Date (mm/dd/yy): 3.31.04

Field Personnel: V. Chisholm

General Weather Conditions: \_\_\_\_\_

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Ambient Air Temperature: \_\_\_\_\_ °C

Quality Assurance

pH Meter serial no. <u>1854</u>	Conductivity Meter serial no. <u>1854</u>
pH=4.0 <u>±0.002 pH @ 28°C</u>	standard <u>4.49ms/AC</u>
pH=7.0 _____	standard _____
pH=10.0 _____	standard _____

*ALTO CAL. SOLUTION PROVIDES PINE ENVIRONMENTAL SERVICE FOR HORIBA  
Chain of Custody*

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name: Salem Hwy 11

Site ID#: \_\_\_\_\_ Monitoring Well # 11

Water Supply Well \_\_\_\_\_ Public \_\_\_\_\_ Private \_\_\_\_\_

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C=0.163  
for a 4 inch well C=0.652

\* Free Product Thickness: \_\_\_\_\_ feet

Depth to Ground Water (DGW) 17.35 feet

Total Well Depth (TWD) 23.00 feet

Length of the water column (LWC=TWD-DGW) 5.65 feet

1 casing volume (CV=LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = 1.92 gals

3 casing volume (3 X CV) = ~~2.2~~ gals (standard purge volume)

Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals.

\*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling
Time (military)							<u>1530</u>
pH (s.u.)							
Specific Conductivity (µmhos/cm)							
Water Temperature (°C)							
Dissolved Oxygen							
PID readings, if required							

Remarks: NO Horiba - No Purge

South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Ground Water Sampling

job # ~~302169~~ 302169

Date (mm/dd/yy): 3.31.04

Field Personnel: V. Chisholm

General Weather Conditions: \_\_\_\_\_

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Ambient Air Temperature: \_\_\_\_\_ °C

**Quality Assurance**

pH Meter serial no. <u>1854</u>	Conductivity Meter serial no. <u>1854</u>
pH=4.0 <u>±0.002 pH @ 28°C</u>	standard <u>4.49ms/AC</u>
pH=7.0 _____	standard _____
pH=10.0 _____	standard _____

*ALTO CAL. SOLUTION PROVIDE PINE ENVIRONMENTAL SERVICE FOR HORIBA Chain of Custody*

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name: Salem Hwy 11

Site ID#: \_\_\_\_\_ Monitoring Well # 12

Water Supply Well \_\_\_\_\_ Public \_\_\_\_\_ Private \_\_\_\_\_

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C=0.163  
for a 4 inch well C=0.652

\* Free Product Thickness: \_\_\_\_\_ feet

Depth to Ground Water (DGW) 3.26 feet

Total Well Depth (TWD) 11.00 feet

Length of the water column (LWC=TWD-DGW) 7.74 feet

1 casing volume (CV=LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = 1.2 gals

3 casing volume (3 X CV) = ~~3.6~~ gals (standard purge volume)

Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals.

\*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling
Time (military)							<u>1545</u>
pH (s.u.)							
Specific Conductivity (µmhos/cm)							
Water Temperature (°C)							
Dissolved Oxygen							
PID readings, if required							

Remarks: NO Horiba - No Purge

**South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program**

**Field Data Information Sheet for Ground Water Sampling**

job # ~~302141~~ 302169

Date (mm/dd/yy): 3.31.04

Field Personnel: V. Chisholm

General Weather Conditions: \_\_\_\_\_

Ambient Air Temperature: \_\_\_\_\_ °C

**Quality Assurance**

pH Meter serial no. <u>1854</u>	Conductivity Meter serial no. <u>1854</u>
pH=4.0 <u>± 0.002 pH @ 28°C</u>	standard <u>4.49 mg/l = AC</u>
pH=7.0 _____	standard _____
pH=10.0 _____	standard _____

*ALTO CAL. SOLUTIONS PROVIDES PINE ENVIRONMENTAL SERVICE FOR HONOLULU*  
Chain of Custody

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name: Salem Hwy 11

Site ID#: \_\_\_\_\_ Monitoring Well # 13

Water Supply Well \_\_\_\_\_ Public \_\_\_\_\_ Private \_\_\_\_\_

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C=0.163  
for a 4 inch well C=0.652

\* Free Product Thickness: \_\_\_\_\_ feet

Depth to Ground Water (DGW) 6.36 feet

Total Well Depth (TWD) 10.00 feet

Length of the water column (LWC=TWD-DGW) 3.64 feet

1 casing volume (CV=LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = .59 gals

3 casing volume (3 X CV) = ~~1.77~~ gals (standard purge volume)

Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals.

\*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling
Time (military)							<u>1600</u> ✓
pH (s.u.)							
Specific Conductivity (µmhos/cm)							
Water Temperature (°C)							
Dissolved Oxygen							
PID readings, if required							

Remarks: NO HONOLULU - NO PURGE

**South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program**

**Field Data Information Sheet for Ground Water Sampling**

job # ~~30241~~ 302169

Date (mm/dd/yy): 3.31.04

Field Personnel: V. Chisholm

General Weather Conditions: \_\_\_\_\_

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Ambient Air Temperature: \_\_\_\_\_ °C

Quality Assurance

pH Meter serial no. <u>1854</u>	Conductivity Meter serial no. <u>1854</u>
pH=4.0 <u>± 0.002 pH @ 28°C</u>	standard <u>4.49 ms/cm</u>
pH=7.0 _____	standard _____
pH=10.0 _____	standard _____

*AUTO CAL. SOLUTION PROVIDES PINE ENVIRONMENTAL SERVICE FOR HONDA Chain of Custody*

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name: Salem Hwy 11

Site ID#: \_\_\_\_\_ Monitoring Well # 14

Water Supply Well \_\_\_\_\_ Public \_\_\_\_\_ Private \_\_\_\_\_

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C=0.163  
for a 4 inch well C=0.652

\* Free Product Thickness: \_\_\_\_\_ feet

Depth to Ground Water (DGW) 2.49 feet

Total Well Depth (TWD) 9.00 feet

Length of the water column (LWC=TWD-DGW) 6.58 feet

1 casing volume (CV=LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals

3 casing volume (3 X CV) = ~~2~~ gals (standard purge volume)

Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals.

\*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling
Time (military)							<u>1615</u>
pH (s.u.)							
Specific Conductivity (µmhos/cm)							
Water Temperature (°C)							
Dissolved Oxygen							
PID readings, if required							

Remarks: hot well - No Purge

**South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program**

**Field Data Information Sheet for Ground Water Sampling**

job # ~~302169~~ 302169

Date (mm/dd/yy): 3.31.04

Field Personnel: V. Chisholm

General Weather Conditions: \_\_\_\_\_

---

Ambient Air Temperature: \_\_\_\_\_ °C

Quality Assurance

pH Meter serial no. <u>1854</u>	Conductivity Meter serial no. <u>1854</u>
pH=4.0 <u>±0.002 pH @ 25°C</u>	standard <u>4.49ms/cm</u>
pH=7.0 _____	standard _____
pH=10.0 _____	standard _____

AUTO CAL. SOLUTION PROVIDES PINE ENVIRONMENTAL SERVICE FOR HOA'S Chain of Custody

Relinquished by _____	Date/Time _____	Received by _____	Date/Time _____
-----------------------	-----------------	-------------------	-----------------

Facility Name: Salem Hwy 11

Site ID#: \_\_\_\_\_ Monitoring Well # 15

Water Supply Well \_\_\_\_\_ Public \_\_\_\_\_ Private \_\_\_\_\_

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C=0.163  
for a 4 inch well C=0.652

\* Free Product Thickness: \_\_\_\_\_ feet

Depth to Ground Water (DGW) 11.00 feet

Total Well Depth (TWD) 12.00 feet

Length of the water column (LWC=TWD-DGW) 1.00 feet

1 casing volume (CV=LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = .16 gals

3 casing volume (3 X CV) = ~~0.48~~ gals (standard purge volume)

Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals.

\*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling
Time (military)							<u>1630</u>
pH (s.u.)							
Specific Conductivity (µmhos/cm)							
Water Temperature (°C)							
Dissolved Oxygen							
PID readings, if required							

Remarks: NO purge just sample

**South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program**

**Field Data Information Sheet for Ground Water Sampling**

job # ~~302169~~ 302169

Date (mm/dd/yy): 3.31.04

Field Personnel: V. Chisholm

General Weather Conditions: \_\_\_\_\_

Ambient Air Temperature: \_\_\_\_\_ °C

Quality Assurance

pH Meter serial no. <u>1854</u>	Conductivity Meter serial no. <u>1854</u>
pH=4.0 <u>± 0.002 pH @ 25°C</u>	standard <u>4.49ms/cm</u>
pH=7.0 _____	standard _____
pH=10.0 _____	standard _____

*ALTO CAL. SOLUTION PROVIDES PINE ENVIRONMENTAL SERVICE FOR HOUBA Chain of Custody*

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name: Salem Hwy 11

Site ID#: \_\_\_\_\_ Monitoring Well # DMW.1

Water Supply Well \_\_\_\_\_ Public \_\_\_\_\_ Private \_\_\_\_\_

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C=0.163  
for a 4 inch well C=0.652

\* Free Product Thickness: \_\_\_\_\_ feet

Depth to Ground Water (DGW) 24.60 feet

Total Well Depth (TWD) 45.00 feet

Length of the water column (LWC=TWD-DGW) 20.40 feet

1 casing volume (CV=LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = 3.3 gals

3 casing volume (3 X CV) = 9.9 gals (standard purge volume)

Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals.

\*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling
Time (military)							<u>1645</u>
pH (s.u.)							
Specific Conductivity (µmhos/cm)							
Water Temperature (°C)							
Dissolved Oxygen							
PID readings, if required							

Remarks: NO Horiba - Well was Purged

**South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program**

**Field Data Information Sheet for Ground Water Sampling**

job # ~~302141~~ 302169

Date (mm/dd/yy): 3.31.04

Field Personnel: V. Chisholm

General Weather Conditions: \_\_\_\_\_

---

Ambient Air Temperature: \_\_\_\_\_ °C

Quality Assurance

pH Meter serial no. <u>1854</u>	Conductivity Meter serial no. <u>1854</u>
pH=4.0 <u>± 0.002 pH @ 25°C</u>	standard <u>4.49ms/cm</u>
pH=7.0 _____	standard _____
pH=10.0 _____	standard _____

ALTO CAL. SOLUTION PROVIDES PINE ENVIRONMENTAL SERVICE FOR HONDA Chain of Custody

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name: Salem Hwy 11

Site ID#: \_\_\_\_\_ Monitoring Well # DMW.2

Water Supply Well \_\_\_\_\_ Public \_\_\_\_\_ Private \_\_\_\_\_

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C=0.163  
for a 4 inch well C=0.652

\* Free Product Thickness: \_\_\_\_\_ feet

Depth to Ground Water (DGW) 17.31 feet

Total Well Depth (TWD) 75.00 feet

Length of the water column (LWC=TWD-DGW) 5.76 feet

1 casing volume (CV=LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = 9.4 gals

3 casing volume (3 X CV) = 28.20 gals (standard purge volume)

Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals.

\*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling
Time (military)							<u>1700</u>
pH (s.u.)							
Specific Conductivity (µmhos/cm)							
Water Temperature (°C)							
Dissolved Oxygen							
PID readings, if required							

Remarks: NO Florida - Well was Purged

**South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program**

**Field Data Information Sheet for Ground Water Sampling**

job # ~~302141~~ 302169

Date (mm/dd/yy): 3.31.04

Field Personnel: V. Chisholm

General Weather Conditions: \_\_\_\_\_

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Ambient Air Temperature: \_\_\_\_\_ °C

Quality Assurance

pH Meter serial no. <u>1854</u>	Conductivity Meter serial no. <u>1854</u>
pH=4.0 <u>±0.002 pH @ 25°C</u>	standard <u>4.49ms/AC</u>
pH=7.0 _____	standard _____
pH=10.0 _____	standard _____

*AUTO CAL. SOLUTION PROVIDES PINE ENVIRONMENTAL SERVICE FOR HONORABLE Chain of Custody*

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name: Salem Hwy 11

Site ID#: \_\_\_\_\_ Monitoring Well # #0mw L

Water Supply Well \_\_\_\_\_ Public \_\_\_\_\_ Private \_\_\_\_\_

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C=0.163  
for a 4 inch well C=0.652

\* Free Product Thickness: \_\_\_\_\_ feet

Depth to Ground Water (DGW) 24.95 feet

Total Well Depth (TWD) 45.00 feet

Length of the water column (LWC=TWD-DGW) 20.05 feet

1 casing volume (CV=LWC X C) = \_\_\_\_\_ X \_\_\_\_\_ = 3.2 gals

3 casing volume (3 X CV) = 9.8 gals (standard purge volume)

Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals.

\*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling
Time (military)							<u>1715</u>
pH (s.u.)							
Specific Conductivity (µmhos/cm)							
Water Temperature (°C)							
Dissolved Oxygen							
PID readings, if required							

Remarks: NO Horizon-Well was Purged



**South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program  
Field Data Information Sheet for Ground Water Sampling**

job # ~~302169~~ 302169

Date (mm/dd/yy): 3.31.04

Field Personnel: V. Chisholm

General Weather Conditions: \_\_\_\_\_

---

Ambient Air Temperature: \_\_\_\_\_ °C

Quality Assurance

pH Meter serial no. <u>1854</u>	Conductivity Meter serial no. <u>1854</u>
pH=4.0 <u>± 0.002 pH @ 25°C</u>	standard <u>4.49ms/AC</u>
pH=7.0 _____	standard _____
pH=10.0 _____	standard _____

AUTO CAL. SOLUTION PROVIDES PINE ENVIRONMENTAL SERVICE FOR HONORABLE Chain of Custody

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name: Salem Hwy 11

Site ID#: \_\_\_\_\_ Monitoring Well # \_\_\_\_\_

Water Supply Well \_\_\_\_\_ Public \_\_\_\_\_ Private #1

WW-1

Monitoring Well Diameter (D): \_\_\_\_\_ feet

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C=0.163  
for a 4 inch well C=0.652

\* Free Product Thickness: \_\_\_\_\_ feet

Depth to Ground Water (DGW) \_\_\_\_\_ feet

Total Well Depth (TWD) \_\_\_\_\_ feet

Length of the water column (LWC=TWD-DGW) \_\_\_\_\_ feet

1 casing volume (CV=LWC X C)= \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals

3 casing volume (3 X CV)= \_\_\_\_\_ gals (standard purge volume)

Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals.

\*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling
Time (military)							1530
pH (s.u.)							
Specific Conductivity (µmhos/cm)							
Water Temperature (°C)							
Dissolved Oxygen							
PID readings, if required							

Remarks: Grab Sample

**South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program**

**Field Data Information Sheet for Ground Water Sampling**

job # ~~302169~~ 302169

Date (mm/dd/yy): 3.31.04

Field Personnel: V. Chisholm

General Weather Conditions: \_\_\_\_\_

Ambient Air Temperature: \_\_\_\_\_ °C

**Quality Assurance**

pH Meter	Conductivity Meter
serial no. <u>1854</u>	serial no. <u>1854</u>
pH=4.0 <u>± 0.002 pH @ 25°C</u>	standard <u>4.49ms/°C</u>
pH=7.0 _____	standard _____
pH=10.0 _____	standard _____

*AUTO CAL. SOLUTION PROVIDE PINE ENVIRONMENTAL SERVICE FOR HOUSA Chain of Custody*

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name: Salem Hwy 11

Site ID#: \_\_\_\_\_ Monitoring Well # CK11

Water Supply Well \_\_\_\_\_ Public \_\_\_\_\_ Private \_\_\_\_\_

Monitoring Well Diameter (D): \_\_\_\_\_ feet

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C=0.163  
for a 4 inch well C=0.652

\* Free Product Thickness: \_\_\_\_\_ feet

Depth to Ground Water (DGW) \_\_\_\_\_ feet

Total Well Depth (TWD) \_\_\_\_\_ feet

Length of the water column (LWC=TWD-DGW) \_\_\_\_\_ feet

1 casing volume (CV=LWC X C)= \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals

3 casing volume (3 X CV)= \_\_\_\_\_ gals (standard purge volume)

Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals.

\*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling
Time (military)							
pH (s.u.)							<u>1730</u>
Specific Conductivity (µmhos/cm)							
Water Temperature (°C)							
Dissolved Oxygen							
PID readings, if required							

Remarks: Grab Sample

**South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program**

**Field Data Information Sheet for Ground Water Sampling**

job # ~~302169~~ 302169

Date (mm/dd/yy): 3.31.04

Field Personnel: V. Chisholm

General Weather Conditions: \_\_\_\_\_

---

Ambient Air Temperature: \_\_\_\_\_ °C

Quality Assurance

pH Meter serial no. <u>1854</u>	Conductivity Meter serial no. <u>1854</u>
pH=4.0 <u>±0.002 pH @ 25°C</u>	standard <u>4.49ms/cm</u>
pH=7.0 _____	standard _____
pH=10.0 _____	standard _____

AUTO CAL. SOLUTION PROVIDE PINE ENVIRONMENTAL SERVICE FOR HONORARY Chain of Custody

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Facility Name: Salem Hwy 11

Site ID#: \_\_\_\_\_ Monitoring Well # CK-2

Water Supply Well \_\_\_\_\_ Public \_\_\_\_\_ Private \_\_\_\_\_

Monitoring Well Diameter (D): \_\_\_\_\_ feet

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C=0.163  
for a 4 inch well C=0.652

\* Free Product Thickness: \_\_\_\_\_ feet

Depth to Ground Water (DGW) \_\_\_\_\_ feet

Total Well Depth (TWD) \_\_\_\_\_ feet

Length of the water column (LWC=TWD-DGW) \_\_\_\_\_ feet

1 casing volume (CV=LWC X C)= \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ gals

3 casing volume (3 X CV)= \_\_\_\_\_ gals (standard purge volume)

Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals.

\*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling
Time (military)							<u>1740</u>
pH (s.u.)							
Specific Conductivity (µmhos/cm)							
Water Temperature (°C)							
Dissolved Oxygen							
PID readings, if required							

Remarks: Crab Sample

**Appendix F**

**Table 4, Summary of March 31, 2004 Laboratory Analytical Results  
&  
Copies of the Laboratory Analytical Results**

**Table 4**  
**Summary of March 31, 2004 Laboratory Analytical Result(s)**  
**Highway 11 Grocery**  
**13527 South Carolina Highway 11**  
**Salem, South Carolina**  
**UST Permit #03439**

Sample ID	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)	MTBE (ppb)	Naphthalene (ppb)	Total Concentration (ppb)
MW-1	3,400.00	9,300.00	1,100.00	6,200.00	20,000.00	1,200.00	41,200.00
MW-2	2.60	5.00	1.00	3.00	1.00	5.00	17.60
MW-3	1.00	5.00	1.00	3.00	1.00	5.00	16.00
MW-4	1.00	5.00	1.00	3.00	1.00	5.00	16.00
MW-5	1.00	5.00	1.00	3.00	1.00	5.00	16.00
MW-6	280.00	840.00	100.00	2,200.00	900.00	250.00	4,570.00
MW-7	30.00	34.00	1.00	16.00	1.00	5.00	87.00
MW-9	1.00	5.00	1.20	8.80	1.00	5.00	22.00
MW-10	1.00	5.00	1.00	3.00	1.00	5.00	16.00
MW-11	1.00	5.00	1.00	3.00	1.00	5.00	16.00
MW-12	5,500.00	17,000.00	2,600.00	13,000.00	7,100.00	570.00	45,770.00
MW-13	1.00	5.00	1.00	3.00	1.00	5.00	16.00
MW-14	1.00	5.00	1.00	3.00	2.00	5.00	17.00
MW-15	1.00	5.00	1.00	3.00	1.00	5.00	16.00
DMW-1	1.00	5.00	1.00	3.00	3.90	5.00	18.90
DMW-2	1.00	5.00	1.00	3.00	1.00	5.00	16.00
DMW-4	1.00	5.00	1.00	3.00	1.00	5.00	16.00
VW-1	1.00	5.00	1.00	3.00	1.00	5.00	16.00
CK-1	16.00	30.00	6.10	32.00	22.00	5.00	111.10
CK-2	1.00	5.00	1.00	3.00	1.00	5.00	16.00

**Notes:** Samples with Values At Below Detection Limit are Reported at Highest Detection Limit  
 MW-8 was Observed to have the Presence of a Sheen of Free Product

**SEI Environmental - Columbia, SC**  
 3021 McNaughton Drive, Suite 9  
 Columbia, SC 29223

Alternate billing information:  
  
 Report to: **Mr. Paul Bekish**  
 Email: **pbekish@sei-environmental.**

Analysis/Container/Preservative

Chain of Custody  
 Page 1 of 3

Prepared by:  
**ENVIRONMENTAL SCIENCE CORP.**  
 12065 Lebanon Road  
 Mt. Juliet, TN 37122  
 Phone (800) 767-5859  
 FAX (615) 758-5859

Project Description: **hwy 11 Grocery**  
 City/State Collected: **Salem, SC**  
 Client Project#: **302-169**  
 Lab Project #: **SEICSC-302169**  
 Site/Facility ID#: \_\_\_\_\_  
 P.O.#: \_\_\_\_\_

Collected by (print): **V. Chisholm**  
 Collected by (signature): *[Signature]*  
 Packed on Ice: **N**  **Y**  
 Rush? (Lab MUST Be Notified)  
 Same Day ..... 200%  
 Next Day ..... 100%  
 Two Day ..... 50%  
 Date Results Needed: **4.6.04**  
 Email?  No  Yes  
 FAX?  No  Yes  
 No. of Cntrs: \_\_\_\_\_

CoCode: **SEICSC** (lab use only)  
 Template/Prelogin: **T20015/P109126**  
 Cooler #: **3/24/04 CAH**  
 Shipped Via: **FedEX Ground**

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	Analysis/Container/Preservative	Remarks/Contaminant	Sample # (lab only)
MW-1	Grab	GW		3.31.04	1315	2	X		L149599-01
1 2		GW			1330	2	X		-02
1 3		GW			1345	2	X		-03
1 4		GW			1400	2	X		-04
1 5		GW			1415	2	X		-05
1 6		GW			1430	2	X		-06
1 7		GW			1445	2	X		-07
1 8		GW			1500	2	X		-08
1 10		GW			1515	2	X		-09

\*Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other \_\_\_\_\_

Remarks:

pH \_\_\_\_\_ Temp \_\_\_\_\_

Flow \_\_\_\_\_ Other \_\_\_\_\_

Relinquished by: (Signature) _____	Date: _____	Time: _____	Received by: (Signature) _____	Samples returned via: <input type="checkbox"/> UPS <input checked="" type="checkbox"/> FedEx <input type="checkbox"/> Courier <input type="checkbox"/> _____	Condition: _____ (lab use only)
Relinquished by: (Signature) _____	Date: _____	Time: _____	Received by: (Signature) _____	Temp: <b>3.8c</b> Bottles Received: <b>4/2</b>	<b>01c</b>
Relinquished by: (Signature) _____	Date: _____	Time: _____	Received for lab by: (Signature) _____	Date: <b>4/2/04</b> Time: <b>9:00</b>	pH Checked: _____ NCF: _____

**SEI Environmental - Columbia, SC**  
 3021 McNaughton Drive, Suite 9  
 Columbia, SC 29223

Alternate billing information:  
  
 Report to: **Mr. Paul Bekish**  
 Email: **pbekish@sei-environmental.**

Analysis/Container/Preservative	
V8260BTEXMN 40ml/Amib-FCI	

Chain of Custody  
 Page 2 of 3

Prepared by:  
**ENVIRONMENTAL SCIENCE CORP.**  
 12065 Lebanon Road  
 Mt. Juliet, TN 37122  
 Phone (800) 767-5859  
 FAX (615) 758-5859

Project Description: **Hwy 11 Grocery** City/State Collected: **Salem, SC**  
 Client Project #: **302-169** Lab Project #: **SEICSC-302169**  
 Phone: (803) 788-2535 FAX: (803) 788-2399  
 Collected by (print): **V. Chiskala** Site/Facility ID#: P.O.#:

Collected by (signature): **V. Chiskala**  
 Packed on Ice N   
**Rush?** ( Lab MUST Be Notified )  
 Same Day ..... 200%  
 Next Day ..... 100%  
 Two Day ..... 50%  
 Date Results Needed  
 Email?  No  Yes  
 FAX?  No  Yes  
 No. of Cntrs

GoCode: **SEICSC** (lab use only)  
 Template/Prelogin: **T20015/P109126**  
 Cooler #: **3/24/04 CAL**  
 Shipped Via: **FedEX Ground**

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	Analysis/Container/Preservative	Remarks/Contaminant	Sample # (lab only)
MW-11	Grab	GW		3.21.04	1530	2	X		L149579-10
12		GW			1545	2	X		-11
13		GW			1600	2	X		-12
14		GW			1615	2	X		-13
15		GW			1630	2	X		-14
DMW-1		GW			1645	2	X		-15
2		GW			1700	2	X		-16
4		GW			1715	2	X		-17
						2	X		


\*Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other \_\_\_\_\_  
 pH \_\_\_\_\_ Temp \_\_\_\_\_  
 Remarks: \_\_\_\_\_ Flow \_\_\_\_\_ Other \_\_\_\_\_

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Samples returned via: <input type="checkbox"/> UPS <input checked="" type="checkbox"/> FedEx <input type="checkbox"/> Courier	Condition: (lab use only)
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: <b>3.4c</b> Bottles Received: <b>96</b>	<b>OK</b>
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: <b>4/2/04</b> Time: <b>9:00</b>	pH Checked: NCF

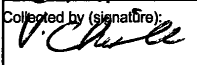
**SEI Environmental - Columbia, SC**  
 3021 McNaughton Drive, Suite 9  
 Columbia, SC 29223

Alternate billing information:  
  
 Report to: **Mr. Paul Bekish**  
 Email: **pbekish@sei-environmental.**

Analysis/Container/Preservative

Prepared by:  
  
**ENVIRONMENTAL SCIENCE CORP.**  
 12065 Lebanon Road  
 Mt. Juliet, TN 37122  
 Phone (800) 767-5859  
 FAX (615) 758-5859

Project Description: **Hwy 11 Grocery**  
 City/State Collected: **Salem, SC**  
 Client Project #: **302-169**  
 Lab Project #: **SEICSC-302169**  
 Phone: **(803) 788-2535**  
 FAX: **(803) 788-2399**  
 Collected by (print): **V. Chisholm**  
 Site/Facility ID#: \_\_\_\_\_  
 P.O.#: \_\_\_\_\_

Collected by (signature):   
 Packed on Ice:  **Y**  
 **N**  
**Rush?** ( Lab MUST Be Notified )  
 Same Day ..... 200%  
 Next Day ..... 100%  
 Two Day ..... 50%  
 Date Results Needed  
 Email?  No  Yes  
 FAX?  No  Yes  
 No. of Cntrs

CoCode: **SEICSC** (lab use only)  
 Template/Prelogin: **T20015/P109126**  
 Cooler #: **3/24/04 eah**  
 Shipped Via: **FedEX Ground**

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs					Remarks/Contaminant	Sample # (lab only)
WW-1	Grab	DW		3.31.04	1550	2	X					219599-18
CK-1	↓	OT		↓	1730	2	X					-19
CK-2	↓	OT		↓	1740							-20

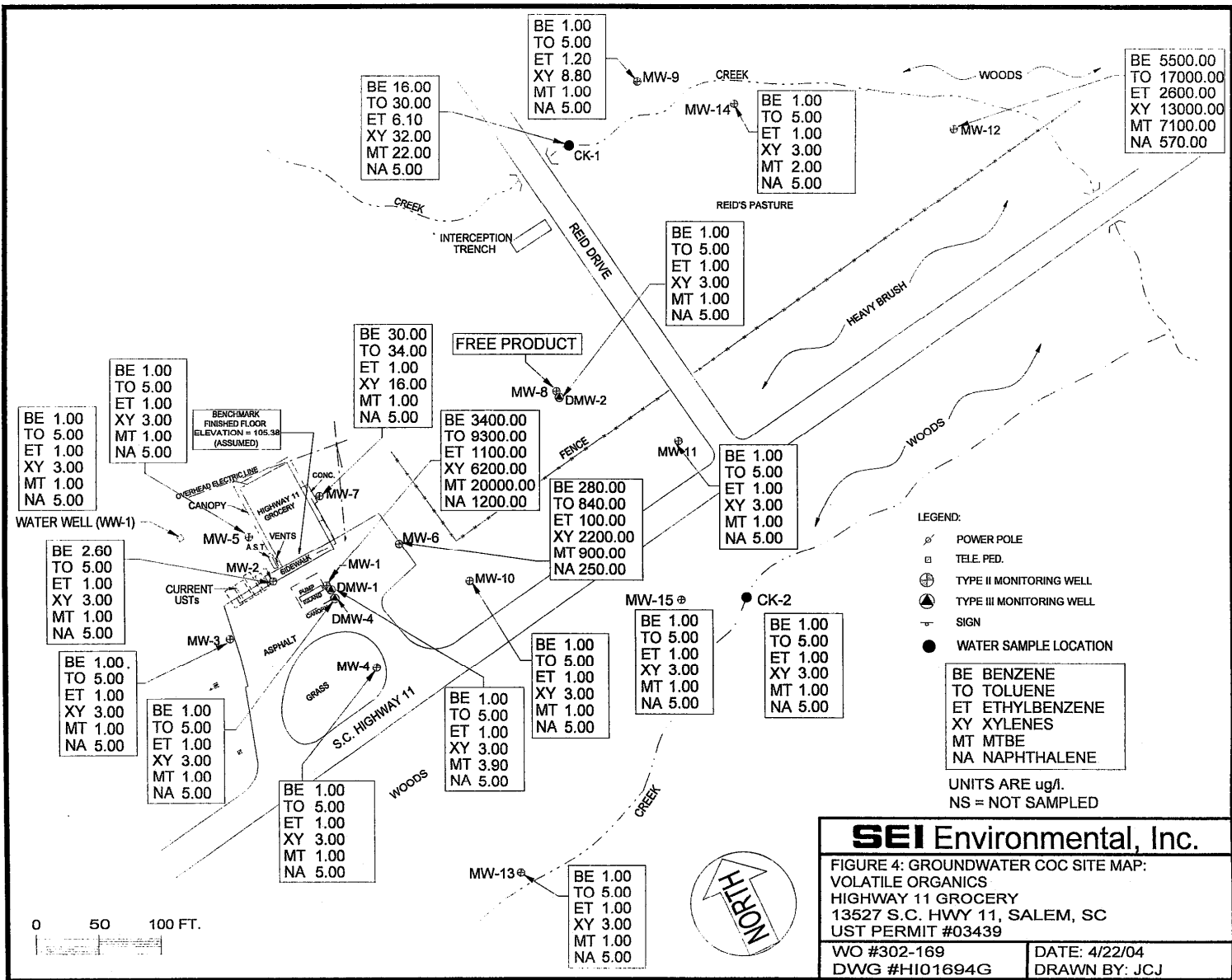
\*Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other Creek  
 pH \_\_\_\_\_ Temp \_\_\_\_\_  
 Remarks: \_\_\_\_\_ Flow \_\_\_\_\_ Other \_\_\_\_\_

Relinquished by: (Signature) _____	Date: _____	Time: _____	Received by: (Signature) _____	Samples returned via: <input type="checkbox"/> UPS <input checked="" type="checkbox"/> FedEx <input type="checkbox"/> Courier <input type="checkbox"/>	Condition: _____ (lab use only)
Relinquished by: (Signature) _____	Date: _____	Time: _____	Received by: (Signature) _____	Temp: <b>3.4°</b> Bottles Received: <b>400</b>	<b>0/c</b>
Relinquished by: (Signature) _____	Date: _____	Time: _____	Received for lab by: (Signature) _____	Date: <b>9/2/04</b> Time: <b>1:00</b>	pH Checked: _____ NCF: _____



**Appendix G**

**Figure 4, CoC Map based on the March 31, 2004 Laboratory Analytical  
Data**



**LEGEND:**

- ⊗ POWER POLE
- ⊠ TELE. PED.
- ⊕ TYPE II MONITORING WELL
- ⊗ TYPE III MONITORING WELL
- SIGN
- WATER SAMPLE LOCATION

BE BENZENE  
 TO TOLUENE  
 ET ETHYLBENZENE  
 XY XYLENES  
 MT MTBE  
 NA NAPHTHALENE

UNITS ARE ug/l.  
 NS = NOT SAMPLED

**SEI Environmental, Inc.**

FIGURE 4: GROUNDWATER COC SITE MAP:  
 VOLATILE ORGANICS  
 HIGHWAY 11 GROCERY  
 13527 S.C. HWY 11, SALEM, SC  
 UST PERMIT #03439

WO #302-169	DATE: 4/22/04
DWG #HI01694G	DRAWN BY: JCJ

0 50 100 FT.



**Appendix H**

**Table 5 – Summary of Historical Laboratory Analytical**

**Table 5**  
**Summary of Historical Laboratory Analytical Result(s)**  
**Highway 11 Grocery**  
**13527 South Carolina Highway 11**  
**Salem, South Carolina**  
**UST Permit #03439**

Sample ID	Sample Date	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)	MTBE (ppb)	Naphthalene (ppb)	Total Concentration (ppb)
MW-1	SSTL	22.00	4,497.00	3,148.00	44,969.00	180.00	112.00	52,928.00
	5/7/2002	226,000.00	301,000.00	280,000.00	278,000.00	5,110,000.00	2,000.00	6,197,000.00
	7/1/2003	10,000.00	34,000.00	4,400.00	23,000.00	34,000.00	1,200.00	106,600.00
	7/30/2003	7,600.00	28,000.00	6,300.00	32,000.00	25,000.00	2,500.00	101,400.00
	12/18/2003	2,200.00	6,200.00	910.00	5,800.00	16,000.00	2,500.00	33,610.00
	3/31/2004	3,400.00	9,300.00	1,100.00	6,200.00	20,000.00	1,200.00	41,200.00
MW-2	SSTL	13.00	8.00	1.00	5.00	5.00	5.00	37.00
	5/7/2002	13.00	8.00	1.00	5.00	5.00	5.00	37.00
	7/1/2003	4.70	5.00	1.00	3.00	1.00	5.00	19.70
	7/30/2003	5.80	5.00	1.00	5.30	1.00	5.00	23.10
	12/18/2003	2.20	5.00	1.00	3.00	1.00	5.00	17.20
	3/31/2004	2.60	5.00	1.00	3.00	1.00	5.00	17.60
MW-3	SSTL	1.00	1.00	1.00	1.00	5.00	5.00	14.00
	5/7/2002	1.00	1.00	1.00	1.00	5.00	5.00	14.00
	7/1/2003	1.00	5.00	1.00	3.00	1.00	5.00	16.00
	7/30/2003	1.00	5.00	1.00	3.00	1.00	5.00	16.00
	12/18/2003	1.00	5.00	1.00	3.00	1.00	5.00	16.00
	3/31/2004	1.00	5.00	1.00	3.00	1.00	5.00	16.00
MW-4	SSTL	1,500.00	5,320.00	620.00	3,360.00	810.00	500.00	12,110.00
	5/7/2002	1,500.00	5,320.00	620.00	3,360.00	810.00	500.00	12,110.00
	7/1/2003	4,800.00	14,000.00	2,300.00	12,000.00	2,600.00	500.00	36,200.00
	7/30/2003	4,000.00	14,000.00	2,700.00	13,000.00	2,100.00	500.00	36,300.00
	12/18/2003	1,100.00	2,400.00	230.00	1,900.00	1,200.00	250.00	7,080.00
	3/31/2004	1.00	5.00	1.00	3.00	1.00	5.00	16.00

**Table 5 - Continued**  
**Summary of Historical Laboratory Analytical Result(s)**  
**Highway 11 Grocery**  
**Salem, South Carolina**  
**UST Permit #03439**

Sample ID	Sample Date	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)	MTBE (ppb)	Naphthalene (ppb)	Total Concentration (ppb)
MW-5	SSTL	1.00	1.00	1.00	1.00	5.00	5.00	14.00
	5/7/2002	1.00	1.00	1.00	1.00	5.00	5.00	14.00
	7/1/2003	1.00	5.00	1.00	3.00	1.00	5.00	16.00
	7/30/2003	4.20	17.00	3.60	18.00	2.20	5.00	50.00
	12/18/2003	2.30	5.00	1.00	3.20	1.30	5.00	17.80
	3/31/2004	1.00	5.00	1.00	3.00	1.00	5.00	16.00
MW-6	SSTL	1,780.00	4,950.00	490.00	2,880.00	6,350.00	500.00	16,950.00
	5/7/2002	1,780.00	4,950.00	490.00	2,880.00	6,350.00	500.00	16,950.00
	7/1/2003	2,200.00	6,600.00	820.00	4,400.00	12,000.00	2,500.00	28,520.00
	7/30/2003	4,200.00	13,000.00	1,600.00	8,900.00	21,000.00	400.00	49,100.00
	12/18/2003	5,100.00	14,000.00	1,700.00	11,000.00	19,000.00	2,500.00	53,300.00
	3/31/2004	280.00	840.00	100.00	2,200.00	900.00	250.00	4,570.00
MW-7	SSTL	22.00	20.00	1.00	8.00	7.00	5.00	63.00
	5/7/2002	34.00	20.00	1.00	8.00	7.00	5.00	75.00
	7/1/2003	37.00	36.00	1.70	20.00	9.20	5.00	108.90
	7/30/2003	18.00	18.00	1.00	9.70	1.00	5.00	52.70
	12/18/2003	41.00	20.00	1.00	3.00	1.00	5.00	71.00
	3/31/2004	30.00	34.00	1.00	16.00	1.00	5.00	87.00
MW-8 <sup>1</sup>	SSTL	204.00	40,888.00	28,622.00	278,000.00	1,362.00	1,021.00	350,097.00
	5/7/2002	226,000.00	301,000.00	280,000.00	278,000.00	5,110,000.00	2,000.00	6,197,000.00
	7/1/2003	12,000.00	51,000.00	7,800.00	40,000.00	11,000.00	2,500.00	124,300.00
	7/30/2003	12,000.00	40,000.00	3,600.00	18,000.00	15,000.00	660.00	89,260.00
	12/18/2003	10,000.00	27,000.00	3,300.00	18,000.00	14,000.00	2,500.00	74,800.00
	3/31/2004	N/A	N/A	N/A	N/A	N/A	N/A	0.00

**Table 5 - Continued**  
**Summary of Historical Laboratory Analytical Result(s)**  
**Highway 11 Grocery**  
**Salem, South Carolina**  
**UST Permit #03439**

Sample ID	Sample Date	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)	MTBE (ppb)	Naphthalene (ppb)	Total Concentration (ppb)
MW-9	SSTL	N/A	N/A	N/A	N/A	N/A	N/A	0.00
	5/7/2002	N/A	N/A	N/A	N/A	N/A	N/A	0.00
	7/1/2003	1.00	5.00	1.00	3.00	1.00	5.00	16.00
	7/30/2004	N/A	N/A	N/A	N/A	N/A	N/A	0.00
	12/18/2003	1.00	5.00	1.00	3.00	1.00	5.00	16.00
	3/31/2004	1.00	5.00	1.20	8.80	1.00	5.00	22.00
MW-10	SSTL	115.00	185.00	68.00	328.00	86.00	9.00	791.00
	5/7/2002	115.00	185.00	68.00	328.00	86.00	9.00	791.00
	7/1/2003	1.00	5.00	1.00	3.00	1.00	5.00	16.00
	7/30/2003	170.00	420.00	43.00	240.00	540.00	6.50	1,419.50
	12/18/2003	89.00	280.00	74.00	480.00	91.00	25.00	1,039.00
	3/31/2004	1.00	5.00	1.00	3.00	1.00	5.00	16.00
MW-11	SSTL	1.00	1.00	1.00	1.00	5.00	5.00	14.00
	5/7/2002	1.00	1.00	1.00	1.00	5.00	5.00	14.00
	7/1/2003	1.00	5.00	1.00	3.00	1.00	5.00	16.00
	7/30/2003	1.00	5.00	1.00	3.00	1.00	5.00	16.00
	12/18/2003	1.00	5.00	1.00	3.00	1.00	5.00	16.00
	3/31/2004	1.00	5.00	1.00	3.00	1.00	5.00	16.00
MW-12	SSTL	N/A	N/A	N/A	N/A	N/A	N/A	0.00
	5/7/2002	N/A	N/A	N/A	N/A	N/A	N/A	0.00
	7/1/2003	1.00	5.00	1.00	3.00	1.00	5.00	16.00
	7/30/2003	N/A	N/A	N/A	N/A	N/A	N/A	0.00
	12/18/2003	1.00	5.00	1.00	3.00	1.00	5.00	16.00
	3/31/2004	5,500.00	17,000.00	2,600.00	13,000.00	7,100.00	570.00	45,770.00

**Table 5 - Continued**  
**Summary of Historical Laboratory Analytical Result(s)**  
**Highway 11 Grocery**  
**Salem, South Carolina**  
**UST Permit #03439**

Sample ID	Sample Date	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)	MTBE (ppb)	Naphthalene (ppb)	Total Concentration (ppb)
MW-13	SSTL	N/A	N/A	N/A	N/A	N/A	N/A	0.00
	5/7/2002	N/A	N/A	N/A	N/A	N/A	N/A	0.00
	7/1/2003	1.00	5.00	1.00	3.00	1.00	5.00	16.00
	7/30/2003	N/A	N/A	N/A	N/A	N/A	N/A	0.00
	12/18/2003	1.00	5.00	1.00	3.00	1.00	5.00	16.00
	3/31/2004	1.00	5.00	1.00	3.00	1.00	5.00	16.00
MW-14	SSTL	5.00	1,000.00	700.00	10,000.00	40.00	25.00	11,770.00
	5/7/2002	3,780.00	13,800.00	27,000.00	14,700.00	7,010.00	500.00	66,790.00
	7/1/2003	3,500.00	10,000.00	1,900.00	10,000.00	5,300.00	500.00	31,200.00
	7/30/2003	3,100.00	9,700.00	1,800.00	9,300.00	4,300.00	500.00	28,700.00
	12/18/2003	3,300.00	11,000.00	2,000.00	11,000.00	4,100.00	500.00	31,900.00
	3/31/2004	1.00	5.00	1.00	3.00	2.00	5.00	17.00
MW-15	SSTL	N/A	N/A	N/A	N/A	N/A	N/A	0.00
	5/7/2002	N/A	N/A	N/A	N/A	N/A	N/A	0.00
	7/1/2003	1.00	5.00	1.00	3.00	1.00	5.00	16.00
	7/30/2003	N/A	N/A	N/A	N/A	N/A	N/A	0.00
	12/18/2003	1.00	5.00	1.00	3.00	1.00	5.00	16.00
	3/31/2004	1.00	5.00	1.00	3.00	1.00	5.00	16.00
DMW-1	SSTL	215.00	430.00	50.00	50.00	1,780.00	250.00	2,775.00
	5/7/2002	215.00	430.00	50.00	50.00	1,780.00	250.00	2,775.00
	7/1/2003	1.00	5.00	1.00	3.00	1.00	5.00	16.00
	7/30/2003	1.00	5.00	1.00	3.00	4.20	5.00	19.20
	12/18/2003	1.50	5.00	1.00	3.00	1.00	5.00	16.50
	3/31/2004	1.00	5.00	1.00	3.00	3.90	5.00	18.90

**Table 5 - Continued**  
**Summary of Historical Laboratory Analytical Result(s)**  
**Highway 11 Grocery**  
**Salem, South Carolina**  
**UST Permit #03439**

Sample ID	Sample Date	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)	MTBE (ppb)	Naphthalene (ppb)	Total Concentration (ppb)
DMW-2	SSTL	1.00	1.00	1.00	1.00	5.00	5.00	14.00
	5/7/2002	1.00	1.00	1.00	1.00	5.00	5.00	14.00
	7/1/2003	1.00	5.00	1.00	3.00	6.40	5.00	21.40
	7/30/2003	1.00	8.40	6.80	30.00	1.00	6.70	53.90
	12/18/2003	1.00	5.00	1.00	3.00	1.00	5.00	16.00
	3/31/2004	1.00	5.00	1.00	3.00	1.00	5.00	16.00
DMW-4	SSTL	1.00	1.00	1.00	1.00	5.00	5.00	14.00
	5/7/2002	1.00	1.00	1.00	1.00	5.00	5.00	14.00
	7/1/2003	1.00	5.00	1.00	3.00	1.00	5.00	16.00
	7/30/2003	1.00	5.00	1.00	3.00	1.00	5.00	16.00
	12/18/2003	1.00	5.00	1.00	3.00	1.00	5.00	16.00
	3/31/2004	1.00	5.00	1.00	3.00	1.00	5.00	16.00
CK-1	SSTL	N/A	N/A	N/A	N/A	N/A	N/A	0.00
	5/7/2002	N/A	N/A	N/A	N/A	N/A	N/A	0.00
	7/1/2003	2.60	5.00	1.00	4.80	4.50	5.00	22.90
	7/30/2003	N/A	N/A	N/A	N/A	N/A	N/A	0.00
	12/18/2003	11.00	18.00	4.10	20.00	9.00	5.00	67.10
	3/31/2004	16.00	30.00	6.10	32.00	22.00	5.00	111.10
CK-2	SSTL	N/A	N/A	N/A	N/A	N/A	N/A	0.00
	5/7/2002	N/A	N/A	N/A	N/A	N/A	N/A	0.00
	7/1/2003	1.00	5.00	1.00	3.00	1.00	5.00	16.00
	7/30/2003	N/A	N/A	N/A	N/A	N/A	N/A	0.00
	12/18/2003	1.00	5.00	1.00	3.00	1.00	5.00	16.00
	3/31/2004	1.00	5.00	1.00	3.00	1.00	5.00	16.00



**Table 5 - Continued**  
**Summary of Historical Laboratory Analytical Result(s)**  
**Highway 11 Grocery**  
**Salem, South Carolina**  
**UST Permit #03439**

Sample ID	Sample Date	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)	MTBE (ppb)	Naphthalene (ppb)	Total Concentration (ppb)
WW-1	SSTL	N/A	N/A	N/A	N/A	N/A	N/A	0.00
	5/7/2002	N/A	N/A	N/A	N/A	N/A	N/A	0.00
	7/1/2003	1.00	5.00	1.00	3.00	1.00	5.00	16.00
	7/30/2003	N/A	N/A	N/A	N/A	N/A	N/A	0.00
	12/18/2003	N/A	N/A	N/A	N/A	N/A	N/A	0.00
	3/31/2004	1.00	5.00	1.00	3.00	1.00	5.00	16.00

**Notes:** Samples with Values At Below Detection Limit are Reported at Highest Detection Limit

N/A = Not Applicable

Footnote <sup>1</sup>: MW-8 Observed to have 0.10' of Free Phased Product

Appendix I  
Copies of the Non-Hazardous Waste Manifest  
&  
Certificate for Disposal

**NON-HAZARDOUS WASTE MANIFEST**

1. Generator's US EPA ID No.

Manifest Document No.

2. Page 1 of

3. Generator's Name and Mailing Address

SEI ENVIRONMENTAL, INC  
251 MONROUGHTON DR SUITE 9  
COLUMBIA, SC 29229

4. Generator's Phone ( )

5. Transporter 1 Company Name

SEI ENVIRONMENTAL, INC

6. US EPA ID Number

A. Transporter's Phone

803-768-0544

7. Transporter 2 Company Name

8. US EPA ID Number

B. Transporter's Phone

9. Designated Facility Name and Site Address

B & K TANK SERVICE  
50 FLYING DUTCHMAN  
SUMMER, SC 29161

10. US EPA ID Number

167573597

C. Facility's Phone

803-600-4444

11. Waste Shipping Name and Description

12. Containers  
No. Type

13. Total Quantity

14. Unit Wt/Vol

a. NON-HAZARDOUS PETROLEUM CONTAMINATED WATER  
WINN DIXIE STORE GREENVILLE SC

		272	gal

GENERATOR

D. Additional Descriptions for Materials Listed Above

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

16. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name

Signature

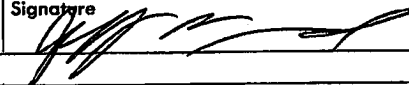
Month Day Year

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name

JEFF WEYAND

Signature



Month Day Year

4 13 04

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name

Signature

Month Day Year

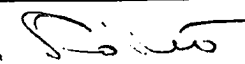
19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

Printed/Typed Name

S. Collier

Signature



Month Day Year

4 13 04

TRANSPORTER

FACILITY



Broad St. Extension • PO Box 1384 • Sumter, SC 29151  
(803) 494-4593 • 1-800-800-6840 • FAX: (803) 494-8598

## *Certificate of Disposal*

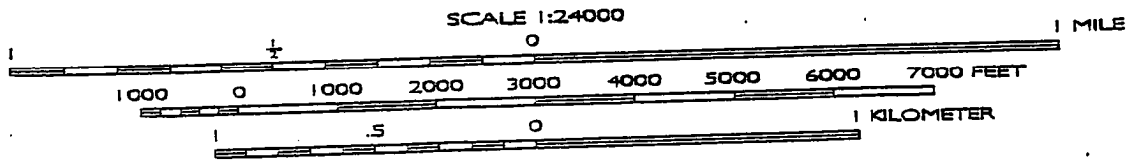
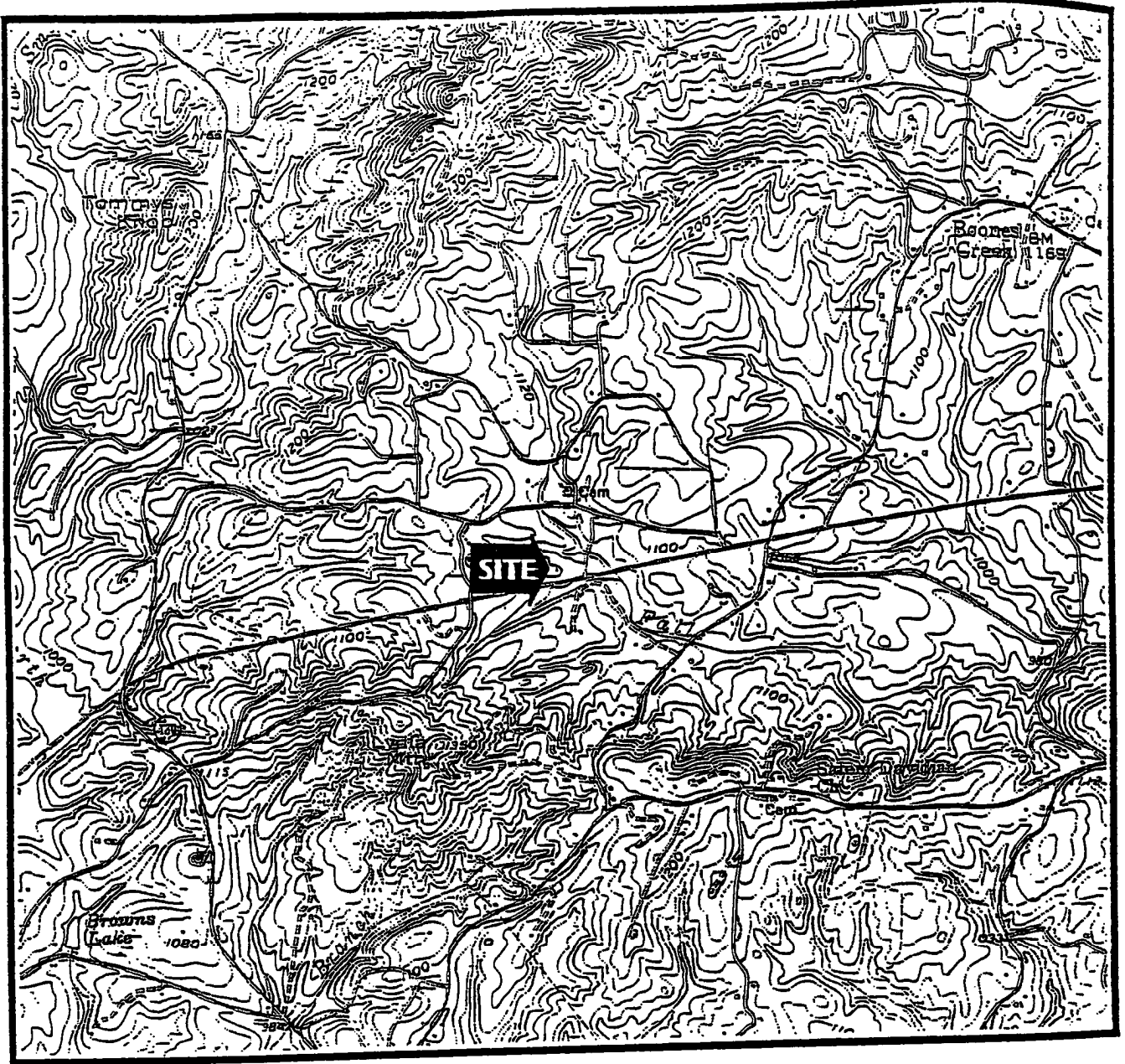
# Tons 272 Gallons  
Winn Dixie Store  
Greenville, SC

Contaminant NonHazardous Petroleum  
Contaminated Water

This is to certify the above ~~soil~~<sup>water</sup> has been processed and disposed of by G & K Tank Services, Inc., in accordance with and exceeding EPA regulations on petroleum contaminated soils.

Certified by *S. Soller*

Date 4/13/04



## SEI Environmental, Inc

FIGURE 1: SITE LOCATION MAP  
 HIGHWAY 11 GROCERY  
 13527 S.C. HWY 11, SALEM, SC  
 UST PERMIT #03439

W.O. #: 300-388  
 DWG #

DATE: 9/5/01  
 DRAWN BY: IC

**Appendix J**

**Table 6, Summary of March 31, 2004 System's Effectiveness Analysis**

**Table 6**  
**Concentration Reduction Calculation**  
**Highway 11 Grocery**  
**13527 South Carolina Highway 11**  
**Salem, South Carolina**  
**UST Permit #03439**

Sample ID		Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylene (ppb)	MTBE (ppb)	Naphthalene (ppb)	Concentration > SSTL (ppb)
MW-1	Initial	226,000.00	301,000.00	280,000.00	278,000.00	5,110,000.00	2,000.00	
	SSTL	22.00	4,497.00	3,148.00	44,969.00	180.00	112.00	
	Initial > SSTL	225,978.00	296,503.00	276,852.00	233,031.00	5,109,820.00	1,888.00	6,144,072.00
	Subsequent	3,400.00	9,300.00	1,100.00	6,200.00	20,000.00	1,200.00	
	SSTL	22.00	4,497.00	3,148.00	44,969.00	180.00	112.00	
	Subsequent > SSTL	3,378.00	4,803.00	0.00	0.00	19,820.00	1,088.00	29,089.00
MW-2	Initial	13.00	8.00	1.00	5.00	5.00	5.00	
	SSTL	13.00	8.00	1.00	5.00	5.00	5.00	
	Initial > SSTL	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Subsequent	2.60	5.00	1.00	3.00	1.00	5.00	
	SSTL	13.00	8.00	1.00	5.00	5.00	5.00	
	Subsequent > SSTL	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MW-3	Initial	1.00	1.00	1.00	1.00	5.00	5.00	
	SSTL	1.00	1.00	1.00	1.00	5.00	5.00	
	Initial > SSTL	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Subsequent	1.00	5.00	1.00	3.00	1.00	5.00	
	SSTL	1.00	1.00	1.00	1.00	5.00	5.00	
	Subsequent > SSTL	0.00	4.00	0.00	2.00	0.00	0.00	6.00
MW-4	Initial	1,500.00	5,320.00	620.00	3,360.00	810.00	500.00	
	SSTL	1,500.00	5,320.00	620.00	3,360.00	810.00	500.00	
	Initial > SSTL	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Subsequent	1.00	5.00	1.00	3.00	1.00	5.00	
	SSTL	1,500.00	5,320.00	620.00	3,360.00	810.00	500.00	
	Subsequent > SSTL	0.00	0.00	0.00	0.00	0.00	0.00	0.00

**Table 6 - Continued**  
**Concentration Reduction Calculation**  
**Highway 11 Grocery**  
**Salem, South Carolina**  
**UST Permit #03439**

Sample ID		Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylene (ppb)	MTBE (ppb)	Naphthalene (ppb)	Concentration > SSTL (ppb)
MW-5	Initial	1.00	1.00	1.00	1.00	5.00	5.00	
	SSTL	1.00	1.00	1.00	1.00	5.00	5.00	
	Initial > SSTL	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Subsequent	1.00	5.00	1.00	3.00	1.00	5.00	
	SSTL	1.00	1.00	1.00	1.00	5.00	5.00	
	Subsequent > SSTL	0.00	4.00	0.00	2.00	0.00	0.00	6.00
MW-6	Initial	1,780.00	4,950.00	490.00	2,880.00	6,350.00	500.00	
	SSTL	1,780.00	4,950.00	490.00	2,880.00	6,350.00	500.00	
	Initial > SSTL	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Subsequent	280.00	840.00	100.00	2,200.00	900.00	250.00	
	SSTL	1,780.00	4,950.00	490.00	2,880.00	6,350.00	500.00	
	Subsequent > SSTL	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MW-7	Initial	34.00	20.00	1.00	8.00	7.00	5.00	
	SSTL	22.00	20.00	1.00	8.00	7.00	5.00	
	Initial > SSTL	12.00	0.00	0.00	0.00	0.00	0.00	12.00
	Subsequent	30.00	34.00	1.00	16.00	1.00	5.00	
	SSTL	22.00	20.00	1.00	8.00	7.00	5.00	
	Subsequent > SSTL	8.00	14.00	0.00	8.00	0.00	0.00	30.00
MW-8 <sup>1</sup>	Initial	226,000.00	301,000.00	280,000.00	278,000.00	5,110,000.00	2,000.00	
	SSTL	204.00	40,888.00	28,622.00	278,000.00	1,362.00	1,021.00	
	Initial > SSTL	225,796.00	260,112.00	251,378.00	0.00	5,108,638.00	979.00	5,846,903.00
	Subsequent	10,000.00	27,000.00	3,300.00	18,000.00	14,000.00	2,500.00	
	SSTL	204.00	40,888.00	28,622.00	278,000.00	1,362.00	1,021.00	
	Subsequent > SSTL	9,796.00	0.00	0.00	0.00	12,638.00	1,479.00	23,913.00



Table 6 - Continued  
 Concentration Reduction Calculation  
 Highway 11 Grocery  
 Salem, South Carolina  
 UST Permit #03439

Sample ID		Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylene (ppb)	MTBE (ppb)	Naphthalene (ppb)	Concentration > SSTL (ppb)
MW-10	Initial	115.00	185.00	68.00	328.00	86.00	9.00	
	SSTL	115.00	185.00	68.00	328.00	86.00	9.00	
	Initial > SSTL	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Subsequent	1.00	5.00	1.00	3.00	1.00	5.00	
	SSTL	115.00	185.00	68.00	328.00	86.00	9.00	
	Subsequent > SSTL	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MW-11	Initial	1.00	1.00	1.00	1.00	5.00	5.00	
	SSTL	1.00	1.00	1.00	1.00	5.00	5.00	
	Initial > SSTL	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Subsequent	1.00	5.00	1.00	3.00	1.00	5.00	
	SSTL	1.00	1.00	1.00	1.00	5.00	5.00	
	Subsequent > SSTL	0.00	4.00	0.00	2.00	0.00	0.00	6.00
MW-14	Initial	3,780.00	13,800.00	27,000.00	14,700.00	7,010.00	500.00	
	SSTL	5.00	1,000.00	700.00	10,000.00	40.00	25.00	
	Initial > SSTL	3,775.00	12,800.00	26,300.00	4,700.00	6,970.00	475.00	55,020.00
	Subsequent	1.00	5.00	1.00	3.00	2.00	5.00	
	SSTL	5.00	1,000.00	700.00	10,000.00	40.00	25.00	
	Subsequent > SSTL	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DMW-1	Initial	215.00	430.00	50.00	50.00	1,780.00	250.00	
	SSTL	215.00	430.00	50.00	50.00	1,780.00	250.00	
	Initial > SSTL	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Subsequent	1.00	5.00	1.00	3.00	3.90	5.00	
	SSTL	215.00	430.00	50.00	50.00	1,780.00	250.00	
	Subsequent > SSTL	0.00	0.00	0.00	0.00	0.00	0.00	0.00

**Table 6 - Continued**  
**Concentration Reduction Calculation**  
**Highway 11 Grocery**  
**Salem, South Carolina**  
**UST Permit #03439**

Sample ID		Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylene (ppb)	MTBE (ppb)	Naphthalene (ppb)	Concentration > SSTL (ppb)
DMW-2	Initial	1.00	1.00	1.00	1.00	5.00	5.00	
	SSTL	1.00	1.00	1.00	1.00	5.00	5.00	
	Initial > SSTL	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Subsequent	1.00	5.00	1.00	3.00	1.00	5.00	
	SSTL	1.00	1.00	1.00	1.00	5.00	5.00	
	Subsequent > SSTL	0.00	4.00	0.00	2.00	0.00	0.00	6.00
DMW-4	Initial	1.00	1.00	1.00	1.00	5.00	5.00	
	SSTL	1.00	1.00	1.00	1.00	5.00	5.00	
	Initial > SSTL	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Subsequent	1.00	5.00	1.00	3.00	1.00	5.00	
	SSTL	1.00	1.00	1.00	1.00	5.00	5.00	
	Subsequent > SSTL	0.00	4.00	0.00	2.00	0.00	0.00	6.00
<b>Totals</b>	Initial > SSTL	(Sum of Initial Concentration Above SSTL for all Wells)						12,046,007.00
	Subsequent > SSTL	(Sum of Subsequent Concentration Above SSTL for all Wells)						53,062.00

CoC Mass Reduction = (Sum of Initial Conc. > SSTL - Sum of Subsequent Conc. > SSTL) / (Sum of Initial Conc. > SSTL) \* 100

CoC Mass Reduction = (12,046,007.00-53,062.00 / (12,046,007.00) \* 100

CoC Mass Reduction = 99.56%

**Notes:** Samples with Values At Below Detection Limit are Reported at Highest Detection Limit

N/A = Not Applicable

Footnote <sup>1</sup>: MW-8 Observed to have 0.10' of Free Phased Product; Resulting in 12/18/03 Laboratory Analytical Data being Used in the Calculation of the System's Effectiveness



**Pace Analytical Services, Inc.**  
9800 Kincey Avenue, Suite 100  
Huntersville, NC 28078  
Phone: 704.875.9092  
Fax: 704.875.9091

April 08, 2004

Ms. Debra Thoma  
SCDHEC  
UST Program  
2600 Bull Street  
Columbia, SC 29201

RE: Lab Project Number: 9263875  
Client Project ID: Hwy 11 Grocery 03439

Dear Ms. Thoma:

Enclosed are the analytical results for sample(s) received by the laboratory on April 2, 2004. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report please feel free to contact me.

Sincerely,

Sherri Stabel  
Sherri.Stabel@pacelabs.com  
Project Manager

Enclosures

**RECEIVED**

APR 23 2004

**UNDERGROUND STORAGE  
TANK PROGRAM**

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SC Environmental	99030
FL NELAP	E87648



<u>Charlotte Certification IDs</u>	
NC Wastewater	12
NC Drinking Water	37706
SC	99006
FL NELAP	E87621

Lab Project Number: 9263875  
Client Project ID: Hwy 11 Grocery 03439

Lab Sample No: 924062508      Project Sample Number: 9263875-001      Date Collected: 03/31/04 13:15  
Client Sample ID: MW-1      Matrix: Water      Date Received: 04/02/04 11:50

Parameters	Results	Units	Report Limit	DF	Analyzed	By	CAS No.	Qual	ReqLmt
<b>GC/MS Volatiles</b>									
GC/MS VOCs by 8260	Method: EPA 8260								
Benzene	6500	ug/l	1200	250	04/06/04 10:32	DLK	71-43-2		
Ethylbenzene	1300	ug/l	50.	10.0	04/06/04 10:32	DLK	100-41-4		
Methyl-tert-butyl ether	38000	ug/l	1200	250	04/06/04 10:32	DLK	1634-04-4		
Naphthalene	150	ug/l	50.	10.0	04/06/04 10:32	DLK	91-20-3		
Toluene	15000	ug/l	1200	250	04/06/04 10:32	DLK	108-88-3		
m&p-Xylene	6200	ug/l	2500	250	04/06/04 10:32	DLK			
o-Xylene	2700	ug/l	1200	250	04/06/04 10:32	DLK	95-47-6		
Toluene-d8 (S)	105	%		1.0	04/06/04 10:32	DLK	2037-26-5		
4-Bromofluorobenzene (S)	106	%		1.0	04/06/04 10:32	DLK	460-00-4		
Dibromofluoromethane (S)	101	%		1.0	04/06/04 10:32	DLK	1868-53-7		
1,2-Dichloroethane-d4 (S)	89	%		1.0	04/06/04 10:32	DLK	17060-07-0		

Date: 04/08/04

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SC Environmental 99030  
FL NELAP E87648

Charlotte Certification IDs  
NC Wastewater 12  
NC Drinking Water 37706  
SC 99006  
FL NELAP E87627

Lab Project Number: 9263875  
Client Project ID: Hwy 11 Grocery 03439

Lab Sample No: 924062516      Project Sample Number: 9263875-002      Date Collected: 03/31/04 13:30  
Client Sample ID: MW-2      Matrix: Water      Date Received: 04/02/04 11:50

Parameters	Results	Units	Report Limit	DF	Analyzed	By	CAS No.	Qual	RegLmt
<b>GC/MS Volatiles</b>									
GC/MS VOCs by 8260      Method: EPA 8260									
Benzene	9.4	ug/l	5.0	1.0	04/06/04 11:59	DLK	71-43-2		
Ethylbenzene	ND	ug/l	5.0	1.0	04/06/04 11:59	DLK	100-41-4		
Methyl-tert-butyl ether	ND	ug/l	5.0	1.0	04/06/04 11:59	DLK	1634-04-4		
Naphthalene	ND	ug/l	5.0	1.0	04/06/04 11:59	DLK	91-20-3		
Toluene	7.0	ug/l	5.0	1.0	04/06/04 11:59	DLK	108-88-3		
m&p-Xylene	4.6	J ug/l	10.	1.0	04/06/04 11:59	DLK			
o-Xylene	1.6	J ug/l	5.0	1.0	04/06/04 11:59	DLK	95-47-6		
Toluene-d8 (S)	102	%		1.0	04/06/04 11:59	DLK	2037-26-5		
4-Bromofluorobenzene (S)	104	%		1.0	04/06/04 11:59	DLK	460-00-4		
Dibromofluoromethane (S)	103	%		1.0	04/06/04 11:59	DLK	1868-53-7		
1,2-Dichloroethane-d4 (S)	94	%		1.0	04/06/04 11:59	DLK	17060-07-0		

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Charlotte Certification IDs

NC Wastewater 12  
NC Drinking Water 37706  
SC 99006  
FL NELAP E87627

Lab Project Number: 9263875  
Client Project ID: Hwy 11 Grocery 03439

Lab Sample No: 924062532      Project Sample Number: 9263875-003      Date Collected: 03/31/04 13:45  
Client Sample ID: MW-3      Matrix: Water      Date Received: 04/02/04 11:50

Parameters      Results      Units      Report Limit      DF      Analyzed      By      CAS No.      Qual      ReqLmt

**GC/MS Volatiles**

GC/MS VOCs by 8260

Method: EPA 8260

Parameters	Results	Units	Report Limit	DF	Analyzed	By	CAS No.	Qual	ReqLmt
Benzene	ND	ug/l	5.0	1.0	04/06/04 12:27	DLK	71-43-2		
Ethylbenzene	ND	ug/l	5.0	1.0	04/06/04 12:27	DLK	100-41-4		
Methyl-tert-butyl ether	ND	ug/l	5.0	1.0	04/06/04 12:27	DLK	1634-04-4		
Naphthalene	ND	ug/l	5.0	1.0	04/06/04 12:27	DLK	91-20-3		
Toluene	ND	ug/l	5.0	1.0	04/06/04 12:27	DLK	108-88-3		
m&p-Xylene	ND	ug/l	10.	1.0	04/06/04 12:27	DLK			
o-Xylene	ND	ug/l	5.0	1.0	04/06/04 12:27	DLK	95-47-6		
Toluene-d8 (S)	104	%		1.0	04/06/04 12:27	DLK	2037-26-5		
4-Bromofluorobenzene (S)	104	%		1.0	04/06/04 12:27	DLK	460-00-4		
Dibromofluoromethane (S)	107	%		1.0	04/06/04 12:27	DLK	1868-53-7		
1,2-Dichloroethane-d4 (S)	92	%		1.0	04/06/04 12:27	DLK	17060-07-0		

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Charlotte Certification IDs

NC Wastewater 12  
NC Drinking Water 37706  
SC 99006  
FL NELAP E87627

Lab Project Number: 9263875  
Client Project ID: Hwy 11 Grocery 03439

Lab Sample No: 924062540      Project Sample Number: 9263875-004      Date Collected: 03/31/04 14:00  
Client Sample ID: MW-4      Matrix: Water      Date Received: 04/02/04 11:50

Parameters	Results	Units	Report Limit	DF	Analyzed	By	CAS No.	Qual	RegLmt
<b>GC/MS Volatiles</b>									
GC/MS VOCs by 8260	Method: EPA 8260								
Benzene	ND	ug/l	5.0	1.0	04/06/04 12:57	DLK	71-43-2		
Ethylbenzene	ND	ug/l	5.0	1.0	04/06/04 12:57	DLK	100-41-4		
Methyl-tert-butyl ether	ND	ug/l	5.0	1.0	04/06/04 12:57	DLK	1634-04-4		
Naphthalene	ND	ug/l	5.0	1.0	04/06/04 12:57	DLK	91-20-3		
Toluene	ND	ug/l	5.0	1.0	04/06/04 12:57	DLK	108-88-3		
m&p-Xylene	ND	ug/l	10.	1.0	04/06/04 12:57	DLK			
o-Xylene	ND	ug/l	5.0	1.0	04/06/04 12:57	DLK	95-47-6		
Toluene-d8 (S)	104	%		1.0	04/06/04 12:57	DLK	2037-26-5		
4-Bromofluorobenzene (S)	103	%		1.0	04/06/04 12:57	DLK	460-00-4		
Dibromofluoromethane (S)	106	%		1.0	04/06/04 12:57	DLK	1868-53-7		
1,2-Dichloroethane-d4 (S)	95	%		1.0	04/06/04 12:57	DLK	17060-07-0		

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Charlotte Certification IDs  
NC Wastewater 12  
NC Drinking Water 37706  
SC 99006  
FL NELAP E87627

Lab Project Number: 9263875  
Client Project ID: Hwy 11 Grocery 03439

Lab Sample No: 924062557      Project Sample Number: 9263875-005      Date Collected: 03/31/04 14:15  
Client Sample ID: MW-5      Matrix: Water      Date Received: 04/02/04 11:50

Parameters	Results	Units	Report Limit	DF	Analyzed	By	CAS No.	Qual	ReqLmt
<b>GC/MS Volatiles</b>									
GC/MS VOCs by 8260	Method: EPA 8260								
Benzene	ND	ug/l	5.0	1.0	04/06/04 11:30	DLK	71-43-2		
Ethylbenzene	ND	ug/l	5.0	1.0	04/06/04 11:30	DLK	100-41-4		
Methyl-tert-butyl ether	ND	ug/l	5.0	1.0	04/06/04 11:30	DLK	1634-04-4		
Naphthalene	ND	ug/l	5.0	1.0	04/06/04 11:30	DLK	91-20-3		
Toluene	ND	ug/l	5.0	1.0	04/06/04 11:30	DLK	108-88-3		
m&p-Xylene	ND	ug/l	10.	1.0	04/06/04 11:30	DLK			
o-Xylene	ND	ug/l	5.0	1.0	04/06/04 11:30	DLK	95-47-6		
Toluene-d8 (S)	102	%		1.0	04/06/04 11:30	DLK	2037-26-5		
4-Bromofluorobenzene (S)	101	%		1.0	04/06/04 11:30	DLK	460-00-4		
Dibromofluoromethane (S)	106	%		1.0	04/06/04 11:30	DLK	1868-53-7		
1,2-Dichloroethane-d4 (S)	92	%		1.0	04/06/04 11:30	DLK	17060-07-0		

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Charlotte Certification IDs

NC Wastewater 12  
NC Drinking Water 37706  
SC 99006  
FL NELAP E87627



Lab Project Number: 9263875  
Client Project ID: Hwy 11 Grocery 03439

Lab Sample No: 924062565      Project Sample Number: 9263875-006      Date Collected: 03/31/04 14:30  
Client Sample ID: MW-6      Matrix: Water      Date Received: 04/02/04 11:50

Parameters	Results	Units	Report Limit	DF	Analyzed	By	CAS No.	Qual	RegLmt
<b>GC/MS Volatiles</b>									
GC/MS VOCs by 8260      Method: EPA 8260									
Benzene	290	ug/l	50.	10.0	04/08/04 04:42	DLK	71-43-2		
Ethylbenzene	110	ug/l	50.	10.0	04/08/04 04:42	DLK	100-41-4		
Methyl-tert-butyl ether	800	ug/l	50.	10.0	04/08/04 04:42	DLK	1634-04-4		
Naphthalene	120	ug/l	50.	10.0	04/08/04 04:42	DLK	91-20-3		
Toluene	980	ug/l	50.	10.0	04/08/04 04:42	DLK	108-88-3		
m&p-Xylene	2500	ug/l	100	10.0	04/08/04 04:42	DLK			
o-Xylene	1000	ug/l	50.	10.0	04/08/04 04:42	DLK	95-47-6		
Toluene-d8 (S)	101	%		1.0	04/08/04 04:42	DLK	2037-26-5		
4-Bromofluorobenzene (S)	111	%		1.0	04/08/04 04:42	DLK	460-00-4		
Dibromofluoromethane (S)	101	%		1.0	04/08/04 04:42	DLK	1868-53-7		
1,2-Dichloroethane-d4 (S)	85	%		1.0	04/08/04 04:42	DLK	17060-07-0		

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SC Environmental 99030  
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Charlotte Certification IDs

NC Wastewater 12  
NC Drinking Water 37706  
SC 99006  
FL NELAP E87627

Lab Project Number: 9263875  
Client Project ID: Hwy 11 Grocery 03439

Lab Sample No: 924062581      Project Sample Number: 9263875-007      Date Collected: 03/31/04 14:45  
Client Sample ID: MW-7      Matrix: Water      Date Received: 04/02/04 11:50

Parameters	Results	Units	Report Limit	DF	Analyzed	By	CAS No.	Qual	ReqLmt
<b>GC/MS Volatiles</b>									
GC/MS VOCs by 8260      Method: EPA 8260									
Benzene	62.	ug/l	5.0	1.0	04/06/04 22:20	DLK	71-43-2		
Ethylbenzene	ND	ug/l	5.0	1.0	04/06/04 22:20	DLK	100-41-4		
Methyl-tert-butyl ether	6.7	ug/l	5.0	1.0	04/06/04 22:20	DLK	1634-04-4		
Naphthalene	ND	ug/l	5.0	1.0	04/06/04 22:20	DLK	91-20-3		
Toluene	70.	ug/l	5.0	1.0	04/06/04 22:20	DLK	108-88-3		
m&p-Xylene	22.	ug/l	10.	1.0	04/06/04 22:20	DLK			
o-Xylene	8.8	ug/l	5.0	1.0	04/06/04 22:20	DLK	95-47-6		
Toluene-d8 (S)	104	%		1.0	04/06/04 22:20	DLK	2037-26-5		
4-Bromofluorobenzene (S)	103	%		1.0	04/06/04 22:20	DLK	460-00-4		
Dibromofluoromethane (S)	97	%		1.0	04/06/04 22:20	DLK	1868-53-7		
1,2-Dichloroethane-d4 (S)	87	%		1.0	04/06/04 22:20	DLK	17060-07-0		

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Charlotte Certification IDs  
NC Wastewater 12  
NC Drinking Water 37706  
SC 99006  
FL NELAP E87627

Lab Project Number: 9263875  
Client Project ID: Hwy 11 Grocery 03439

Lab Sample No: 924062599      Project Sample Number: 9263875-008      Date Collected: 03/31/04 15:00  
Client Sample ID: MW-9      Matrix: Water      Date Received: 04/02/04 11:50

Parameters	Results	Units	Report Limit	DF	Analyzed	By	CAS No.	Qual	ReqLmt
<b>GC/MS Volatiles</b>									
GC/MS VOCs by 8260      Method: EPA 8260									
Benzene	ND	ug/l	5.0	1.0	04/06/04 22:49	DLK	71-43-2		
Ethylbenzene	2.4	J ug/l	5.0	1.0	04/06/04 22:49	DLK	100-41-4		
Methyl-tert-butyl ether	ND	ug/l	5.0	1.0	04/06/04 22:49	DLK	1634-04-4		
Naphthalene	3.5	J ug/l	5.0	1.0	04/06/04 22:49	DLK	91-20-3		
Toluene	6.4	ug/l	5.0	1.0	04/06/04 22:49	DLK	108-88-3		
m&p-Xylene	11.	ug/l	10.	1.0	04/06/04 22:49	DLK			
o-Xylene	5.7	ug/l	5.0	1.0	04/06/04 22:49	DLK	95-47-6		
Toluene-d8 (S)	102	%		1.0	04/06/04 22:49	DLK	2037-26-5		
4-Bromofluorobenzene (S)	105	%		1.0	04/06/04 22:49	DLK	460-00-4		
Dibromofluoromethane (S)	100	%		1.0	04/06/04 22:49	DLK	1868-53-7		
1,2-Dichloroethane-d4 (S)	89	%		1.0	04/06/04 22:49	DLK	17060-07-0		

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Charlotte Certification IDs  
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NC Drinking Water 37706  
SC 99006  
FL NELAP E87627

Lab Project Number: 9263875  
Client Project ID: Hwy 11 Grocery 03439

Lab Sample No: 924062607      Project Sample Number: 9263875-009      Date Collected: 03/31/04 15:15  
Client Sample ID: MW-10      Matrix: Water      Date Received: 04/02/04 11:50

Parameters	Results	Units	Report Limit	DF	Analyzed	By	CAS No.	Qual	ReqLmt
<b>GC/MS Volatiles</b>									
GC/MS VOCs by 8260      Method: EPA 8260									
Benzene	ND	ug/l	5.0	1.0	04/06/04 23:18	DLK	71-43-2		
Ethylbenzene	ND	ug/l	5.0	1.0	04/06/04 23:18	DLK	100-41-4		
Methyl-tert-butyl ether	ND	ug/l	5.0	1.0	04/06/04 23:18	DLK	1634-04-4		
Naphthalene	ND	ug/l	5.0	1.0	04/06/04 23:18	DLK	91-20-3		
Toluene	ND	ug/l	5.0	1.0	04/06/04 23:18	DLK	108-88-3		
m&p-Xylene	ND	ug/l	10.	1.0	04/06/04 23:18	DLK			
o-Xylene	ND	ug/l	5.0	1.0	04/06/04 23:18	DLK	95-47-6		
Toluene-d8 (S)	102	%		1.0	04/06/04 23:18	DLK	2037-26-5		
4-Bromofluorobenzene (S)	105	%		1.0	04/06/04 23:18	DLK	460-00-4		
Dibromofluoromethane (S)	101	%		1.0	04/06/04 23:18	DLK	1868-53-7		
1,2-Dichloroethane-d4 (S)	87	%		1.0	04/06/04 23:18	DLK	17060-07-0		

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Charlotte Certification IDs  
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NC Drinking Water 37706  
SC 99006  
FL NELAP E87627

Lab Project Number: 9263875

Client Project ID: Hwy 11 Grocery 03439

Lab Sample No: 924062615  
Client Sample ID: MW-11

Project Sample Number: 9263875-010  
Matrix: Water

Date Collected: 03/31/04 15:30  
Date Received: 04/02/04 11:50

Parameters	Results	Units	Report Limit	DF	Analyzed	By	CAS No.	Qual	ReqLmt
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**GC/MS Volatiles**

GC/MS VOCs by 8260

Method: EPA 8260

Benzene	ND	ug/l	5.0	1.0	04/06/04 23:46	DLK	71-43-2		
Ethylbenzene	ND	ug/l	5.0	1.0	04/06/04 23:46	DLK	100-41-4		
Methyl-tert-butyl ether	ND	ug/l	5.0	1.0	04/06/04 23:46	DLK	1634-04-4		
Naphthalene	ND	ug/l	5.0	1.0	04/06/04 23:46	DLK	91-20-3		
Toluene	ND	ug/l	5.0	1.0	04/06/04 23:46	DLK	108-88-3		
m&p-Xylene	ND	ug/l	10.	1.0	04/06/04 23:46	DLK			
o-Xylene	ND	ug/l	5.0	1.0	04/06/04 23:46	DLK	95-47-6		
Toluene-d8 (S)	106	%		1.0	04/06/04 23:46	DLK	2037-26-5		
4-Bromofluorobenzene (S)	107	%		1.0	04/06/04 23:46	DLK	460-00-4		
Dibromofluoromethane (S)	104	%		1.0	04/06/04 23:46	DLK	1868-53-7		
1,2-Dichloroethane-d4 (S)	88	%		1.0	04/06/04 23:46	DLK	17060-07-0		

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Charlotte Certification IDs

NC Wastewater 12  
NC Drinking Water 37706  
SC 99006  
FL NELAP E87627

Lab Project Number: 9263875  
Client Project ID: Hwy 11 Grocery 03439

Lab Sample No: 924062623      Project Sample Number: 9263875-011      Date Collected: 03/31/04 15:45  
Client Sample ID: MW-12      Matrix: Water      Date Received: 04/02/04 11:50

Parameters	Results	Units	Report Limit	DF	Analyzed	By	CAS No.	Qual	RegLmt
<b>GC/MS Volatiles</b>									
GC/MS VOCs by 8260      Method: EPA 8260									
Benzene	4800	ug/l	1200	250	04/06/04 21:51	DLK	71-43-2		
Ethylbenzene	2800	ug/l	120	25.0	04/06/04 21:51	DLK	100-41-4		
Methyl-tert-butyl ether	5900	ug/l	1200	250	04/06/04 21:51	DLK	1634-04-4		
Naphthalene	210	ug/l	120	25.0	04/06/04 21:51	DLK	91-20-3		
Toluene	15000	ug/l	1200	250	04/06/04 21:51	DLK	108-88-3		
m&p-Xylene	9800	ug/l	250	25.0	04/06/04 21:51	DLK			
o-Xylene	4800	ug/l	120	25.0	04/06/04 21:51	DLK	95-47-6		
Toluene-d8 (S)	110	%		1.0	04/06/04 21:51	DLK	2037-26-5		
4-Bromofluorobenzene (S)	104	%		1.0	04/06/04 21:51	DLK	460-00-4		
Dibromofluoromethane (S)	100	%		1.0	04/06/04 21:51	DLK	1868-53-7		
1,2-Dichloroethane-d4 (S)	84	%		1.0	04/06/04 21:51	DLK	17060-07-0		

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NC Drinking Water 37706  
SC 99006  
FL NELAP E87627

Lab Project Number: 9263875  
Client Project ID: Hwy 11 Grocery 03439

Lab Sample No: 924062631      Project Sample Number: 9263875-012      Date Collected: 03/31/04 16:00  
Client Sample ID: MW-13      Matrix: Water      Date Received: 04/02/04 11:50

Parameters	Results	Units	Report Limit	DF	Analyzed	By	CAS No.	Qual	RegLmt
<b>GC/MS Volatiles</b>									
GC/MS VOCs by 8260      Method: EPA 8260									
Benzene	ND	ug/l	5.0	1.0	04/07/04 00:16	DLK	71-43-2		
Ethylbenzene	ND	ug/l	5.0	1.0	04/07/04 00:16	DLK	100-41-4		
Methyl-tert-butyl ether	ND	ug/l	5.0	1.0	04/07/04 00:16	DLK	1634-04-4		
Naphthalene	ND	ug/l	5.0	1.0	04/07/04 00:16	DLK	91-20-3		
Toluene	ND	ug/l	5.0	1.0	04/07/04 00:16	DLK	108-88-3		
m&p-Xylene	ND	ug/l	10.	1.0	04/07/04 00:16	DLK			
o-Xylene	ND	ug/l	5.0	1.0	04/07/04 00:16	DLK	95-47-6		
Toluene-d8 (S)	106	%		1.0	04/07/04 00:16	DLK	2037-26-5		
4-Bromofluorobenzene (S)	103	%		1.0	04/07/04 00:16	DLK	460-00-4		
Dibromofluoromethane (S)	103	%		1.0	04/07/04 00:16	DLK	1868-53-7		
1,2-Dichloroethane-d4 (S)	87	%		1.0	04/07/04 00:16	DLK	17060-07-0		

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NC Drinking Water 37706  
SC 99006  
FL NELAP E87627

Lab Project Number: 9263875  
Client Project ID: Hwy 11 Grocery 03439

Lab Sample No: 924062680      Project Sample Number: 9263875-013      Date Collected: 03/31/04 16:15  
Client Sample ID: MW-14      Matrix: Water      Date Received: 04/02/04 11:50

Parameters	Results	Units	Report Limit	DF	Analyzed	By	CAS No.	Qual	RegLmt
<b>GC/MS Volatiles</b>									
GC/MS VOCs by 8260      Method: EPA 8260									
Benzene	ND	ug/l	5.0	1.0	04/07/04 00:45	DLK	71-43-2		
Ethylbenzene	ND	ug/l	5.0	1.0	04/07/04 00:45	DLK	100-41-4		
Methyl-tert-butyl ether	ND	ug/l	5.0	1.0	04/07/04 00:45	DLK	1634-04-4		
Naphthalene	ND	ug/l	5.0	1.0	04/07/04 00:45	DLK	91-20-3		
Toluene	ND	ug/l	5.0	1.0	04/07/04 00:45	DLK	108-88-3		
m&p-Xylene	ND	ug/l	10.	1.0	04/07/04 00:45	DLK			
o-Xylene	ND	ug/l	5.0	1.0	04/07/04 00:45	DLK	95-47-6		
Toluene-d8 (S)	105	%		1.0	04/07/04 00:45	DLK	2037-26-5		
4-Bromofluorobenzene (S)	105	%		1.0	04/07/04 00:45	DLK	460-00-4		
Dibromofluoromethane (S)	103	%		1.0	04/07/04 00:45	DLK	1868-53-7		
1,2-Dichloroethane-d4 (S)	91	%		1.0	04/07/04 00:45	DLK	17060-07-0		

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Charlotte Certification IDs

NC Wastewater 12  
NC Drinking Water 37706  
SC 99006  
FL NELAP E87627



Lab Project Number: 9263875  
Client Project ID: Hwy 11 Grocery 03439

Lab Sample No: 924062698      Project Sample Number: 9263875-014      Date Collected: 03/31/04 16:30  
Client Sample ID: MW-15      Matrix: Water      Date Received: 04/02/04 11:50

Parameters	Results	Units	Report Limit	DF	Analyzed	By	CAS No.	Qual	RegLmt
<b>GC/MS Volatiles</b>									
GC/MS VOCs by 8260	Method: EPA 8260								
Benzene	ND	ug/l	5.0	1.0	04/07/04 01:14	DLK	71-43-2		
Ethylbenzene	ND	ug/l	5.0	1.0	04/07/04 01:14	DLK	100-41-4		
Methyl-tert-butyl ether	ND	ug/l	5.0	1.0	04/07/04 01:14	DLK	1634-04-4		
Naphthalene	ND	ug/l	5.0	1.0	04/07/04 01:14	DLK	91-20-3		
Toluene	ND	ug/l	5.0	1.0	04/07/04 01:14	DLK	108-88-3		
m&p-Xylene	ND	ug/l	10.	1.0	04/07/04 01:14	DLK			
o-Xylene	ND	ug/l	5.0	1.0	04/07/04 01:14	DLK	95-47-6		
Toluene-d8 (S)	107	%		1.0	04/07/04 01:14	DLK	2037-26-5		
4-Bromofluorobenzene (S)	107	%		1.0	04/07/04 01:14	DLK	460-00-4		
Dibromofluoromethane (S)	101	%		1.0	04/07/04 01:14	DLK	1868-53-7		
1,2-Dichloroethane-d4 (S)	86	%		1.0	04/07/04 01:14	DLK	17060-07-0		

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Charlotte Certification IDs

NC Wastewater 12  
NC Drinking Water 37706  
SC 99006  
FL NELAP E87627

Lab Project Number: 9263875  
Client Project ID: Hwy 11 Grocery 03439

Lab Sample No: 924062706      Project Sample Number: 9263875-015      Date Collected: 03/31/04 16:45  
Client Sample ID: DMW-1      Matrix: Water      Date Received: 04/02/04 11:50

Parameters	Results	Units	Report Limit	DF	Analyzed	By	CAS No.	Qual	RegLmt
<b>GC/MS Volatiles</b>									
GC/MS VOCs by 8260      Method: EPA 8260									
Benzene	ND	ug/l	5.0	1.0	04/07/04 01:43	DLK	71-43-2		
Ethylbenzene	ND	ug/l	5.0	1.0	04/07/04 01:43	DLK	100-41-4		
Methyl-tert-butyl ether	4.8	J ug/l	5.0	1.0	04/07/04 01:43	DLK	1634-04-4		
Naphthalene	ND	ug/l	5.0	1.0	04/07/04 01:43	DLK	91-20-3		
Toluene	ND	ug/l	5.0	1.0	04/07/04 01:43	DLK	108-88-3		
m&p-Xylene	ND	ug/l	10.	1.0	04/07/04 01:43	DLK			
o-Xylene	ND	ug/l	5.0	1.0	04/07/04 01:43	DLK	95-47-6		
Toluene-d8 (S)	106	%		1.0	04/07/04 01:43	DLK	2037-26-5		
4-Bromofluorobenzene (S)	105	%		1.0	04/07/04 01:43	DLK	460-00-4		
Dibromofluoromethane (S)	102	%		1.0	04/07/04 01:43	DLK	1868-53-7		
1,2-Dichloroethane-d4 (S)	89	%		1.0	04/07/04 01:43	DLK	17060-07-0		

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Charlotte Certification IDs

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NC Drinking Water 37706  
SC 99006  
FL NELAP E87627

Lab Project Number: 9263875  
Client Project ID: Hwy 11 Grocery 03439

Lab Sample No: 924062714      Project Sample Number: 9263875-016      Date Collected: 03/31/04 17:00  
Client Sample ID: DMW-2      Matrix: Water      Date Received: 04/02/04 11:50

Parameters	Results	Units	Report Limit	DF	Analyzed	By	CAS No.	Qual	RegLmt
<b>GC/MS Volatiles</b>									
GC/MS VOCs by 8260	Method: EPA 8260								
Benzene	ND	ug/l	5.0	1.0	04/07/04 02:12	DLK	71-43-2		
Ethylbenzene	ND	ug/l	5.0	1.0	04/07/04 02:12	DLK	100-41-4		
Methyl-tert-butyl ether	ND	ug/l	5.0	1.0	04/07/04 02:12	DLK	1634-04-4		
Naphthalene	ND	ug/l	5.0	1.0	04/07/04 02:12	DLK	91-20-3		
Toluene	ND	ug/l	5.0	1.0	04/07/04 02:12	DLK	108-88-3		
m&p-Xylene	ND	ug/l	10.	1.0	04/07/04 02:12	DLK			
o-Xylene	ND	ug/l	5.0	1.0	04/07/04 02:12	DLK	95-47-6		
Toluene-d8 (S)	105	%		1.0	04/07/04 02:12	DLK	2037-26-5		
4-Bromofluorobenzene (S)	111	%		1.0	04/07/04 02:12	DLK	460-00-4		
Dibromofluoromethane (S)	104	%		1.0	04/07/04 02:12	DLK	1868-53-7		
1,2-Dichloroethane-d4 (S)	91	%		1.0	04/07/04 02:12	DLK	17060-07-0		

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### Charlotte Certification IDs

NC Wastewater 12  
NC Drinking Water 37706  
SC 99006  
FL NELAP E87627

Lab Project Number: 9263875  
Client Project ID: Hwy 11 Grocery 03439

Lab Sample No: 924062722      Project Sample Number: 9263875-017      Date Collected: 03/31/04 17:15  
Client Sample ID: DMW-4      Matrix: Water      Date Received: 04/02/04 11:50

Parameters	Results	Units	Report Limit	DF	Analyzed	By	CAS No.	Qual	RegLmt
<b>GC/MS Volatiles</b>									
GC/MS VOCs by 8260      Method: EPA 8260									
Benzene	ND	ug/l	5.0	1.0	04/07/04 08:28	DLK	71-43-2		
Ethylbenzene	ND	ug/l	5.0	1.0	04/07/04 08:28	DLK	100-41-4		
Methyl-tert-butyl ether	ND	ug/l	5.0	1.0	04/07/04 08:28	DLK	1634-04-4		
Naphthalene	ND	ug/l	5.0	1.0	04/07/04 08:28	DLK	91-20-3		
Toluene	ND	ug/l	5.0	1.0	04/07/04 08:28	DLK	108-88-3		
m&p-Xylene	ND	ug/l	10.	1.0	04/07/04 08:28	DLK			
o-Xylene	ND	ug/l	5.0	1.0	04/07/04 08:28	DLK	95-47-6		
Toluene-d8 (S)	106	%		1.0	04/07/04 08:28	DLK	2037-26-5		
4-Bromofluorobenzene (S)	99	%		1.0	04/07/04 08:28	DLK	460-00-4		
Dibromofluoromethane (S)	105	%		1.0	04/07/04 08:28	DLK	1868-53-7		
1,2-Dichloroethane-d4 (S)	92	%		1.0	04/07/04 08:28	DLK	17060-07-0		

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Charlotte Certification IDs

NC Wastewater 12  
NC Drinking Water 37706  
SC 99006  
FL NELAP E87627

Lab Project Number: 9263875  
Client Project ID: Hwy 11 Grocery 03439

Lab Sample No: 924062730      Project Sample Number: 9263875-018      Date Collected: 03/31/04 17:30  
Client Sample ID: CK-1      Matrix: Water      Date Received: 04/02/04 11:50

Parameters	Results	Units	Report Limit	DF	Analyzed	By	CAS No.	Qual	RegLmt
<b>GC/MS Volatiles</b>									
GC/MS VOCs by 8260	Method: EPA 8260								
Benzene	15.	ug/l	5.0	1.0	04/07/04 08:56	DLK	71-43-2		
Ethylbenzene	6.2	ug/l	5.0	1.0	04/07/04 08:56	DLK	100-41-4		
Methyl-tert-butyl ether	19.	ug/l	5.0	1.0	04/07/04 08:56	DLK	1634-04-4		
Naphthalene	ND	ug/l	5.0	1.0	04/07/04 08:56	DLK	91-20-3		
Toluene	34.	ug/l	5.0	1.0	04/07/04 08:56	DLK	108-88-3		
m&p-Xylene	23.	ug/l	10.	1.0	04/07/04 08:56	DLK			
o-Xylene	10.	ug/l	5.0	1.0	04/07/04 08:56	DLK	95-47-6		
Toluene-d8 (S)	103	%		1.0	04/07/04 08:56	DLK	2037-26-5		
4-Bromofluorobenzene (S)	103	%		1.0	04/07/04 08:56	DLK	460-00-4		
Dibromofluoromethane (S)	108	%		1.0	04/07/04 08:56	DLK	1868-53-7		
1,2-Dichloroethane-d4 (S)	90	%		1.0	04/07/04 08:56	DLK	17060-07-0		

Date: 04/08/04

Page: 18 of 26

## REPORT OF LABORATORY ANALYSIS

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Asheville Certification IDs

NC Wastewater 40  
NC Drinking Water 37712  
SC Environmental 99030  
FL NELAP E87648



Charlotte Certification IDs

NC Wastewater 12  
NC Drinking Water 37706  
SC 99006  
FL NELAP E87627

Lab Project Number: 9263875  
Client Project ID: Hwy 11 Grocery 03439

Lab Sample No: 924062797      Project Sample Number: 9263875-019      Date Collected: 03/31/04 17:45  
Client Sample ID: CK-2      Matrix: Water      Date Received: 04/02/04 11:50

Parameters	Results	Units	Report Limit	DF	Analyzed	By	CAS No.	Qual	RegLmt
<b>GC/MS Volatiles</b>									
GC/MS VOCs by 8260	Method: EPA 8260								
Benzene	ND	ug/l	5.0	1.0	04/07/04 09:26	DLK	71-43-2		
Ethylbenzene	ND	ug/l	5.0	1.0	04/07/04 09:26	DLK	100-41-4		
Methyl-tert-butyl ether	ND	ug/l	5.0	1.0	04/07/04 09:26	DLK	1634-04-4		
Naphthalene	ND	ug/l	5.0	1.0	04/07/04 09:26	DLK	91-20-3		
Toluene	ND	ug/l	5.0	1.0	04/07/04 09:26	DLK	108-88-3		
m&p-Xylene	ND	ug/l	10.	1.0	04/07/04 09:26	DLK			
o-Xylene	ND	ug/l	5.0	1.0	04/07/04 09:26	DLK	95-47-6		
Toluene-d8 (S)	108	%		1.0	04/07/04 09:26	DLK	2037-26-5		
4-Bromofluorobenzene (S)	109	%		1.0	04/07/04 09:26	DLK	460-00-4		
Dibromofluoromethane (S)	108	%		1.0	04/07/04 09:26	DLK	1868-53-7		
1,2-Dichloroethane-d4 (S)	94	%		1.0	04/07/04 09:26	DLK	17060-07-0		

## REPORT OF LABORATORY ANALYSIS

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NC Wastewater 12  
NC Drinking Water 37706  
SC 99006  
FL NELAP E87627

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**PARAMETER FOOTNOTES**

Dilution factor shown represents the factor applied to the reported result and reporting limit due to changes in sample preparation, dilution of the extract, or moisture content

Inorganic Wet Chemistry and Metals Analyses were performed at our Pace Asheville laboratory and Organic testing was performed at our Pace Charlotte laboratory unless otherwise footnoted.

Method 9071B modified to use ASE.

ND Not detected at or above adjusted reporting limit  
NC Not Calculable  
J Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit  
MDL Adjusted Method Detection Limit  
(S) Surrogate

**REPORT OF LABORATORY ANALYSIS**

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Charlotte Certification IDs

NC Wastewater 12  
NC Drinking Water 37706  
SC 99006  
FL NELAP E87627





**QUALITY CONTROL DATA**

Lab Project Number: 9263875  
Client Project ID: Hwy 11 Grocery 03439

QC Batch: 96487  
QC Batch Method: EPA 8260  
Associated Lab Samples: 924062565 924062581 924062599 924062607 924062615  
924062623 924062631 924062680 924062698 924062706  
924062714

Analysis Method: EPA 8260  
Analysis Description: GC/MS VOCs by 8260

METHOD BLANK: 924075872  
Associated Lab Samples: 924062565 924062581 924062599 924062607 924062615 924062623 924062631  
924062680 924062698 924062706 924062714

Parameter	Units	Blank Result	Reporting Limit	Footnotes
Benzene	ug/l	ND	5.0	
Ethylbenzene	ug/l	ND	5.0	
Methyl-tert-butyl ether	ug/l	ND	5.0	
Naphthalene	ug/l	ND	5.0	
Toluene	ug/l	ND	5.0	
m&p-Xylene	ug/l	ND	10.	
o-Xylene	ug/l	ND	5.0	
Toluene-d8 (S)	%	102		
4-Bromofluorobenzene (S)	%	104		
Dibromofluoromethane (S)	%	96		
1,2-Dichloroethane-d4 (S)	%	87		

LABORATORY CONTROL SAMPLE: 924075880

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	Footnotes
Benzene	ug/l	50.00	47.78	96	
Ethylbenzene	ug/l	50.00	48.73	98	
Methyl-tert-butyl ether	ug/l	50.00	44.68	89	
Naphthalene	ug/l	50.00	39.59	79	
Toluene	ug/l	50.00	47.28	95	
m&p-Xylene	ug/l	100.00	98.11	98	
o-Xylene	ug/l	50.00	46.38	93	
Toluene-d8 (S)				105	
4-Bromofluorobenzene (S)				106	
Dibromofluoromethane (S)				100	
1,2-Dichloroethane-d4 (S)				93	

**REPORT OF LABORATORY ANALYSIS**

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NC Wastewater 40  
NC Drinking Water 37712  
SC Environmental 99030  
FL NELAP E87648

Charlotte Certification IDs  
NC Wastewater 12  
NC Drinking Water 37706  
SC 99006  
FL NELAP E87627



**QUALITY CONTROL DATA**

Lab Project Number: 9263875  
Client Project ID: Hwy 11 Grocery 03439

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 924075898 924075906

<u>Parameter</u>	<u>Units</u>	924062714 <u>Result</u>	Spike <u>Conc.</u>	MS <u>Result</u>	MSD <u>Result</u>	MS <u>% Rec</u>	MSD <u>% Rec</u>	<u>RPD</u>	<u>Footnotes</u>
Benzene	ug/l	0	50.00	56.17	50.56	112	101	11	
Toluene	ug/l	0	50.00	53.72	49.12	107	98	9	
Toluene-d8 (S)						107	105		
4-Bromofluorobenzene (S)						106	100		
Dibromofluoromethane (S)						94	98		
1,2-Dichloroethane-d4 (S)						89	93		

**REPORT OF LABORATORY ANALYSIS**

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NC Wastewater 40  
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SC Environmental 99030  
FL NELAP E87648



Charlotte Certification IDs

NC Wastewater 12  
NC Drinking Water 37706  
SC 99006  
FL NELAP E87627

**QUALITY CONTROL DATA**

Lab Project Number: 9263875  
Client Project ID: Hwy 11 Grocery 03439

QC Batch: 96488    Analysis Method: EPA 8260  
QC Batch Method: EPA 8260                              Analysis Description: GC/MS VOCs by 8260  
Associated Lab Samples:                              924062722      924062730      924062797

METHOD BLANK: 924075922  
Associated Lab Samples:      924062722      924062730      924062797

Parameter	Units	Blank Result	Reporting Limit	Footnotes
Benzene	ug/l	ND	5.0	
Ethylbenzene	ug/l	ND	5.0	
Methyl-tert-butyl ether	ug/l	ND	5.0	
Naphthalene	ug/l	ND	5.0	
Toluene	ug/l	ND	5.0	
m&p-Xylene	ug/l	ND	10.	
o-Xylene	ug/l	ND	5.0	
Toluene-d8 (S)	%	105		
4-Bromofluorobenzene (S)	%	106		
Dibromofluoromethane (S)	%	104		
1,2-Dichloroethane-d4 (S)	%	94		

LABORATORY CONTROL SAMPLE: 924075930

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	Footnotes
Benzene	ug/l	50.00	48.65	97	
Ethylbenzene	ug/l	50.00	49.96	100	
Methyl-tert-butyl ether	ug/l	50.00	42.75	86	
Naphthalene	ug/l	50.00	45.75	92	
Toluene	ug/l	50.00	46.77	94	
m&p-Xylene	ug/l	100.00	100.3	100	
o-Xylene	ug/l	50.00	47.42	95	
Toluene-d8 (S)				103	
4-Bromofluorobenzene (S)				111	
Dibromofluoromethane (S)				100	
1,2-Dichloroethane-d4 (S)				93	

**REPORT OF LABORATORY ANALYSIS**

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NC Drinking Water 37712  
SC Environmental 99030  
FL NELAP E87648

Charlotte Certification IDs  
NC Wastewater 12  
NC Drinking Water 37706  
SC 99006  
FL NELAP E87627



Lab Project Number: 9263875

Client Project ID: Hwy 11 Grocery 03439

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 924075948 924075955

Parameter	Units	924062797	Spike	MS	MSD	MS	MSD	RPD	Footnotes
		Result	Conc.	Result	Result	% Rec	% Rec		
Benzene	ug/l	0	50.00	44.21	53.97	88	108	20	
Toluene	ug/l	0	50.00	43.44	53.57	87	107	21	
Toluene-d8 (S)						104	107		
4-Bromofluorobenzene (S)						108	104		
Dibromofluoromethane (S)						97	101		
1,2-Dichloroethane-d4 (S)						91	95		

Date: 04/08/04

Page: 25 of 26

## REPORT OF LABORATORY ANALYSIS

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NC Wastewater 40  
NC Drinking Water 37712  
SC Environmental 99030  
FL NELAP E87648



Charlotte Certification IDs

NC Wastewater 12  
NC Drinking Water 37706  
SC 99006  
FL NELAP E87627

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**QUALITY CONTROL DATA PARAMETER FOOTNOTES**

Consistent with EPA guidelines, unrounded concentrations are displayed and have been used to calculate % Rec and RPD values.

- LCS(D) Laboratory Control Sample (Duplicate)
- MS(D) Matrix Spike (Duplicate)
- DUP Sample Duplicate
- ND Not detected at or above adjusted reporting limit
- NC Not Calculable
- J Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit
- MDL Adjusted Method Detection Limit
- RPD Relative Percent Difference
- (S) Surrogate

**REPORT OF LABORATORY ANALYSIS**

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Asheville Certification IDs

NC Wastewater 40  
NC Drinking Water 37712  
SC Environmental 99030  
FL NELAP E87648

Charlotte Certification IDs

NC Wastewater 12  
NC Drinking Water 37706  
SC 99006  
FL NELAP E87627



# CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

701347

Required Client Information: **Section A**

Company: **SCDHEC**  
 Address: **2600 Bull St**  
**Columbia, SC 29201**  
 Phone: **(803) 896-6240** Fax: **(803) 896-6245**  
 Report To: **P. Thomas, UST**  
 Copy To: \_\_\_\_\_  
 Invoice To: **Finance Dept, UST**  
 P.O.: **916276**  
 Project Name:  **Hwy 11 Grocery**  
 Project Number: **03439**

Page: 1 of 2

To Be Completed by Pace Analytical and Client **Section C**

Client Information (Check quote/contract):  
 Requested Due Date: \_\_\_\_\_ TAT: **7 Days**  
 \* Turn around times less than 14 days subject to laboratory and contractual obligations and may result in a Rush Turnaround Surcharge.  
 Turn Around Time (TAT) in calendar days.

Quote Reference: \_\_\_\_\_  
 Project Manager: \_\_\_\_\_  
 Project #: **9262875**  
 Profile #: **1700 1**  
 Requested Analytes: \_\_\_\_\_

ITEM #	Section D Required Client Information:										MATRIX CODE	DATE COLLECTED mm / dd / yy	TIME COLLECTED hh: mm a/p	# Containers	Preservatives							RETEK + NPD + MTSE (8260 8)	Remarks / Lab ID			
	SAMPLE ID One character per box. (A-Z, 0-9 / . -)														Unpreserved	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	HCl	NaOH	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	Metformin			Other		
1	M	W	-	1								WT	3/31/04	1315	3										924062508	
2	M	W	-	2										1330	3											924062516
3	M	W	-	3										1345	3											924062532
4	M	W	-	4										1400	3											924062540
5	M	W	-	5										1415	3											924062557
6	M	W	-	6										1430	3											924062565
7	M	W	-	7										1445	3											924062581
8	M	W	-	8										1500	3											924062599
9	M	W	-	9										1515	3											924062607
10	M	W	-	10										1530	3											924062615
11	M	W	-	11										1545	3											924062623
12	M	W	-	12										1600	3											924062631

SHIPMENT METHOD	AIRBILL NO.	SHIPPING DATE	NO. OF COOLERS	ITEM NUMBER	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
				1	J. P. Reckert	4/2/04	11:50	R.E. [Signature]	4/14/04	8:45
					R.A. Syon	4/2/04	11:50	[Signature]	4/2/04	11:50

**SAMPLE CONDITION**

Temp in °C: **2.1**

Received on Ice: **ON**

Sealed Cooler: **Y/N**

Samples Intact: **ON**

Additional Comments:

**SAMPLER NAME AND SIGNATURE**

PRINT Name of SAMPLER: **Joel P. Reckert**

SIGNATURE of SAMPLER: **[Signature]**

DATE Signed: (MM / DD / YY) **4/1/04**

FACTORY

Instructions for completing Chain of Custody (COC)

1. Complete all Client Information at top of sheet: name, address, phone, contact (person to whom report will be sent and contact can be made if questions arise), billing information if different from client, PO#, Project Name and/or Project Number as it will appear on the report.
2. Quote Reference, Project Manager, Project No. and Profile No. will be completed by Pace.
3. A separate COC must be filled out for each day of sample collection.
4. Sampler should print their name in the space provided and sign their name followed by the date of the sampling event.
5. Complete Sample Description as it will appear on the laboratory report; include time of sampling, sample matrix, no. of containers and preservative used.
6. Analysis Requested: Complete analysis on the lines provided and place a check in the column for the samples requiring the analysis. It may be necessary to use the space provided for additional comments or include attachments for extended lists of parameters.
7. Submission of samples to laboratory: Indicate Item Number of those samples being transferred; sign relinquished by, and include your affiliation.

\* IMPORTANT NOTE:

Standard Turnaround Time is 2 weeks. If this does not satisfy your requirements, arrangements must be made prior to samples being submitted to the laboratory. Contact your project manager.

Special Project Requirements such as Low Level Detection Limits or level of QC reported must be indicated on the chain of custody. (Use Additional Comments Section.)

ANY	YES	NO
ANY	YES	NO
ANY	YES	NO



# CHAIN-OF-CUSTODY / Analytical Request Document

*The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.*

**701322**

**Required Client Information: Section A**

Company: SCDHEC  
 Address: 2600 Bull St  
Columbia, SC 29201  
 Phone: (803) 896-6240 Fax: (803) 896-6245

**Required Client Information: Section B**

Report To: D. Thomas, UST  
 Copy To: \_\_\_\_\_  
 Invoice To: Finance Sect., UST  
 P.O. #: 416276  
 Project Name: Heavy M. Groc  
 Project Number: 03439

Page: 2 of 2

**To Be Completed by Pace Analytical and Client Section C**

**Section D Required Client Information:**

**SAMPLE ID**  
 One character per box.  
 (A-Z, 0-9 / -)

Sample IDs MUST BE UNIQUE

**Client Information (Check quote/contract):**

Requested Due Date: \_\_\_\_\_ TAT: 7 days

\* Turn around times less than 14 days subject to laboratory and contractual obligations and may result in a Rush Turnaround Surcharge.  
 Turn Around Time (TAT) in calendar days.

Quote Reference: \_\_\_\_\_  
 Project Manager: \_\_\_\_\_  
 Project #: 9263875  
 Profile #: \_\_\_\_\_  
 Requested Analysis: \_\_\_\_\_

ITEM #	Section D Required Client Information: SAMPLE ID										MATRIX CODE	DATE COLLECTED mm / dd / yy	TIME COLLECTED hh:mm a/p	# Containers	Preservatives							REMARKS / Lab ID	
	M	A	T	R	I	D									Unpreserved	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	HCl	NaOH	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	Methanol		Other
1	M	W	-	1	4						UST	3/31/04	1615	3								924062680	
2	M	W	-	1	5								1630	3									924062698
3	W	-	1										1645	3									924062706
4	D	M	W	-	2								1700	3									924062714
5	D	M	W	-	4								1715	3									924062722
6	C	K	-	1									1730	3									924062730
7	C	K	-	2									1745	3									924062777
8														3									
9														W									
10														W									
11														3									
12														3									

SHIPMENT METHOD	AIRBILL NO.	SHIPPING DATE	NO. OF COOLERS	ITEM NUMBER	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
					RA. Symon	4-2-4	11:45	<i>[Signature]</i>	4-2-4	11:50

**SAMPLE CONDITION**

Temp in °C: 21

Received on Ice:  N

Sealed Cooler:  N

Samples Intact:  N

Additional Comments:

**SAMPLER NAME AND SIGNATURE**

PRINT Name of SAMPLER: Paul P. Redgett

SIGNATURE of SAMPLER: *[Signature]*

DATE Signed: (MM / DD / YY) 4/1/04



0 notice2

1 to 5 page 1

9 notice2

Project and report form

A notice2

Additional chain of custody

Instructions for completing Chain of Custody (COC)

1. Complete all Client Information, at top of sheet, name, address, phone, contact (person to whom report will be sent and contact can be made if questions arise), billing information. If different from client, PO#, Project Name and/or Project Number as it will appear on the report.
2. Quote Reference, Project Manager, Project No. and Profile No. will be completed by Pace.
3. A separate COC must be filled out for each day of sample collection.
4. Sampler should print their name in the space provided and sign their name followed by the date of the sampling event.
5. Complete Sample Description as it will appear on the laboratory report; include time of sampling, sample matrix, no. of containers and preservative used.
6. Analysis Requested: Complete analysis on the lines provided and place a check in the column for the samples requiring the analysis. It may be necessary to use the space provided for additional comments or include attachments for extended lists of parameters.
7. Submission of samples to laboratory: Indicate Item Number of those samples being transferred; sign relinquished by, and include your affiliation.

\* IMPORTANT NOTE:

Standard Turnaround Time is 2 weeks. If this does not satisfy your requirements, arrangements must be made prior to samples being submitted to the laboratory. Contact your project manager.

Special Project Requirements such as Low Level Detection Limits or level of QC reported must be indicated on the chain of custody. (Use Additional Comments Section.)

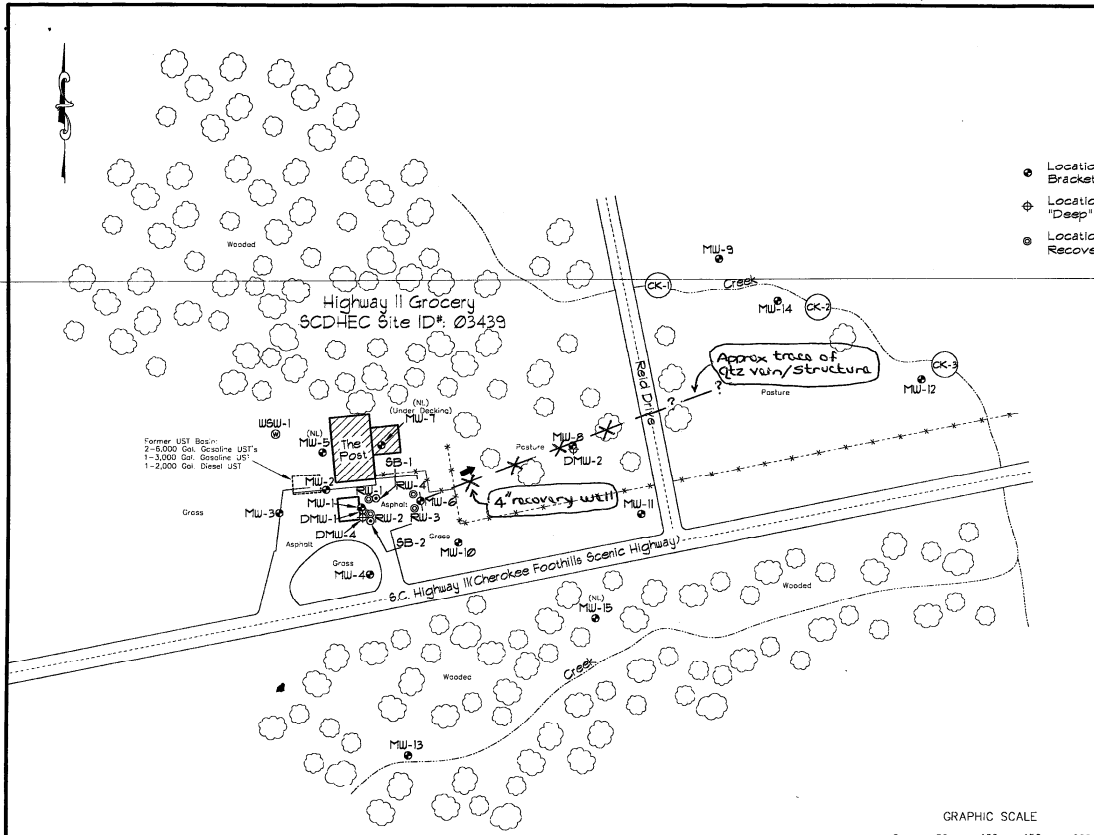
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DOCKETING

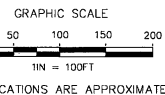
**Explanation:**

- Location of Water Table Bracketing Monitoring Well
- ⊕ Location of Double Cased "Deep" Monitoring Well
- ⊙ Location of 4-Inch Recovery Well
- ⊙ Location of Water Supply Well
- ↑ Estimated Groundwater Flow Direction
- Estimated Location of Removed Underground Storage Tanks

- ⊙ Location of Surface Water Sample Collection
- ⊙ Location of Soil Test Boring
- Fence
- Creek



Former UST Basin:  
2-6,000 Gal. Gasoline UST's  
1-3,000 Gal. Gasoline UST  
1-2,000 Gal. Diesel UST



Drawing Based on MECI Field Notes and SCDHEC Files. All Locations are Approximate.

Site Features	
Highway 11 Grocery Salem, South Carolina SCDHEC Site ID 03439	
	JOB NO. 10-3390
	DATE January 5, 2010
	FIGURE 2



Catherine B. Templeton, Director

Promoting and protecting the health of the public and the environment



SEP 17 2012

MIDLANDS ENVIRONMENTAL CONSULTANTS  
MR BRYAN SHANE  
PO BOX 854  
LEXINGTON SC 29071-0854

Re: Notice to Proceed for Recovery Well Installation  
Solicitation # 5400003229, PO# 4600117789

Dear Mr. Shane:

In accordance with the referenced bid solicitation # IFB-5400003229 the UST Management Division requests that a **report and invoice are due sixty (60) days from the date of this letter**. Please note that all applicable South Carolina certification requirements regarding, well installation, survey and report preparation must be met in accordance with the referenced solicitation. The final report should contain the requirements of the appropriate section of the bid solicitation. The final report should be submitted to Andrew McCormick, the contract manager.

The facilities have been assigned a Cost Agreement (CA) numbers have been approved by the project manager. Please reference the CA numbers and Purchase Order # 4600117789 on the appropriate invoices submitted for payment. As specified in the referenced bid, **the completed invoice forms and associated reports (include contract certification number) are expected on or before the designated due date (see below) after the technical and cost approval from the project manager.**

UST Permit #	Facility	ARRA	County	Project Manager	Work Scope	Due Date*
03439	Highway 11 Grocery	No	Oconee	Padgett	Recovery Well Installation	60 Days

\*From receipt of Notice to Proceed letter

Midland's Environmental Consultants, Inc. will perform services at the sites on behalf of the site's UST owners; however, payments will be made from the State Underground Petroleum Environmental Response Bank (SUPERB) Account. The site's UST owners have no obligation for payment for this scope of work. **Please note, if there are any changes in the established cost agreement amounts (e.g., additional water supply wells sampled, additional well footage, etc.) contact the site's project manager for technical and/or financial approval. Failure to do so prior to submittal of invoice may result in delay of payment.**

Under the terms of the American Recovery and Reinvestment Act (ARRA), the Department is required to pay funds for rehabilitation activities on or before September 31, 2012.

Implementation and Report submittal shall be performed in accordance with the referenced contract. Per Section 3.4.2., a late fee of \$50.00/day (not to exceed 20% of the cost agreement total) may be levied for each report submitted after the deadline established in the Notice to Proceed.

If you have any questions, please contact Minda Hornosky at (803) 896-6395 or via e-mail at [hornosms@dhec.sc.gov](mailto:hornosms@dhec.sc.gov).

Sincerely,



Minda Hornosky, Hydrogeologist  
Assessment Section  
Underground Storage Tank Management Division  
Bureau of Land and Waste Management

enc: Approved Cost Agreement (ACA)  
Information Packets

cc: Minda Hornosky, UST Management Division (w/o enc)  
Joel Padgett, UST Management Division (w/enc)  
Technical File (w/enc)

# Approved Cost Agreement 44524

Facility: 03439 HWY 11 GROCERY

PADGETJP

PO Number:

<u>Task / Description</u>	<u>Categories</u>	<u>Item Description</u>	<u>Qty / Pct</u>	<u>Unit Price</u>	<u>Amount</u>
04 MOB/DEMOB		A EQUIPMENT	1.0000	100.00	100.00
		B PERSONNEL	2.0000	100.00	200.00
09 WELL INSTALLATION		H RECOVERY WELL (4 INCH DIA)	120.0000	25.00	3,000.00
16 SUBSEQUENT SURVEY		SUBSEQUENT SURVEY	1.0000	150.00	150.00
17 DISPOSAL		A WASTEWATER	80.0000	0.30	24.00
<b>Total Amount</b>					<b>3,474.00</b>



**UNDERGROUND STORAGE TANK MANAGEMENT DIVISION  
BUREAU OF LAND AND WASTE MANAGEMENT  
2600 Bull Street, Columbia, South Carolina 29201  
Telephone: 803-896-6240**

**MEMORANDUM**

TO: Bryan Shane, Midlands Environmental Consultants, Inc.

FROM: Joel Padgett, P.G.

RE: NOTICE TO PROCEED

Facility Name: Highway 11 Grocery

Permit Number: 03439

County: Oconee

Work To Be Completed: Install four 4" recovery wells along quartz vein/structure at locations shown on enclosed site map. Screen 10-30 feet. Please coordinate with Mr. Larry Hinkle (site property owner) at (864) 944-0494 and Mr. James Reid (off-site property owner) at (864) 944-0360 for property access.

CA# 44524



Catherine B. Templeton, Director

*Promoting and protecting the health of the public and the environment*

## Monitoring Well Approval

**Approval is hereby granted to:** Midlands Environmental Consultants, Inc.  
**(On behalf of):** Mr. Steve Smith  
**Facility:** Highway 11 Grocery  
**UST Permit Number:** 03439  
**County:** Oconee

This approval is for the installation of four 4" shallow recovery wells. The wells are to be installed in the approved locations in accordance with the South Carolina Well Standards, R.61-71, and the applicable guidance documents.

**Please note that R.61-71 requires the following:**

1. All wells shall be drilled, constructed, and abandoned by a South Carolina certified well driller per R.61-71.D.1.
2. All monitoring wells shall be labeled as required by R.61-71.H.2.c.
3. A Water Well Record Form or other form provided or approved by the Agency shall be completed and submitted to the Agency within 30 days after well completion or abandonment unless another schedule has been approved by the Agency. The form should contain the "as-built" construction details and all other information required by R.61-71.H.1.f
4. All analytical data and water levels obtained from each monitoring well shall be submitted to the Agency within 30 days of receipt of laboratory results unless another schedule has been approved by the Agency as required by R.61-71.H.1.d.
5. If any of the information provided to the Agency changes, notification to Joel Padgett (tel: (803) 896-6398 or e-mail: padgettj@dhcc.sc.gov) shall be provided a minimum of twenty-four (24) hours prior to well construction as required by R.61-71.H.1.a.
6. All temporary monitoring wells shall be abandoned within 5 days of borehole completion using appropriate methods as required by R.61-71.H.4.c. All other wells shall be properly developed per R.61-71.H.2.d.
7. Agency approval is required prior to abandonment of all monitoring wells as required by R.61-71.H.1.a.

This approval is pursuant to the provisions of Section 44-55-40 of the 1976 South Carolina Code of Laws and R.61-71 of the South Carolina Well Standards and Regulations, dated April 26, 2002. A copy of this approval should be on the site during well installation.

**Date of Issue:** September 11, 2012

**Approval #:** UMW-24747

Joel P. Padgett, P.G., Geologist/Hydrologist  
Corrective Action Section  
Underground Storage Tank Management Division  
Bureau of Land and Waste Management

**UST Permit:** 03439  
**Facility:** Highway 11 Grocery  
**County:** Oconee

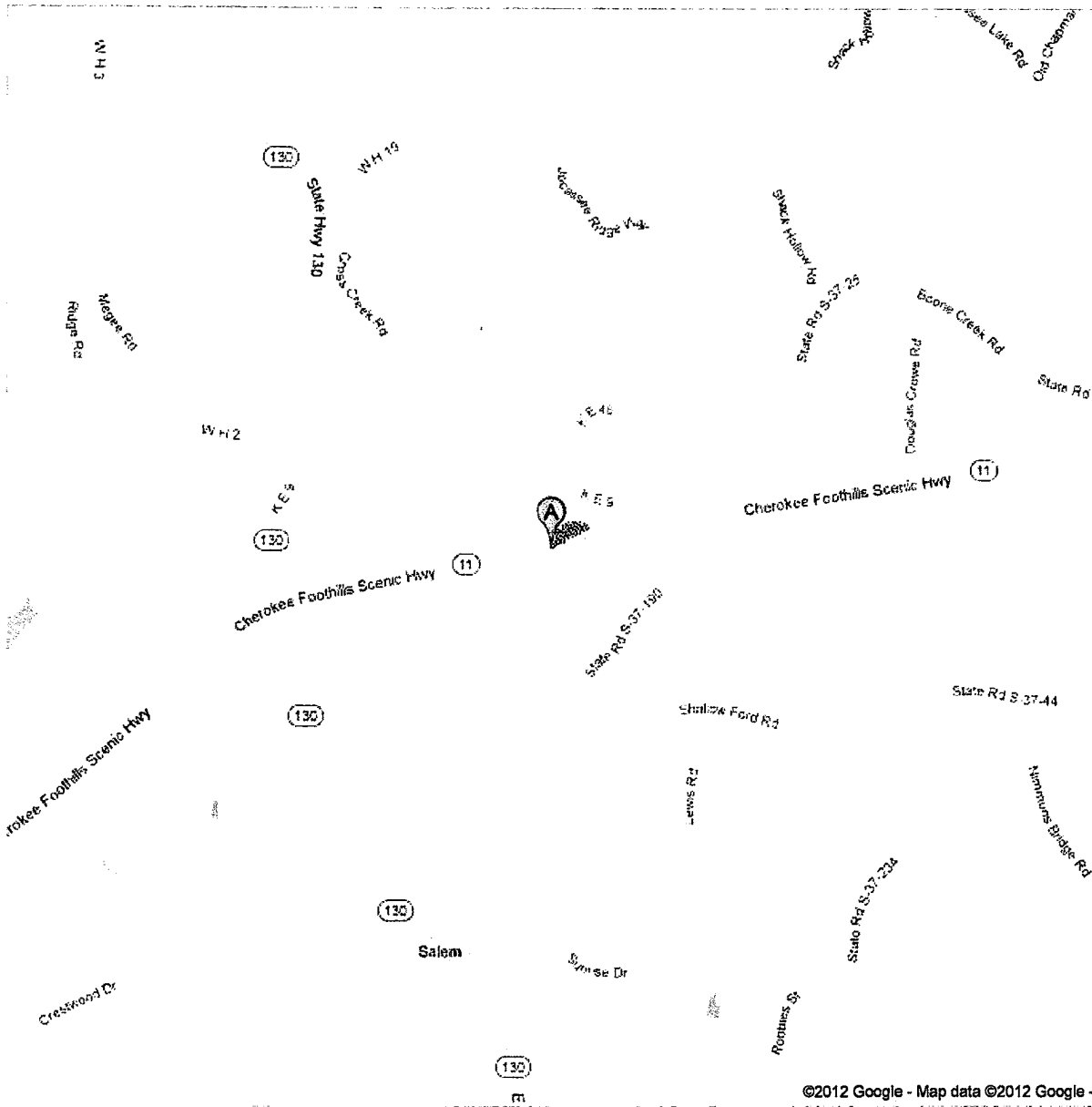
<b>WELL #</b>	<b>SCREEN</b>	<b>TOC</b>
MW-1	15-30'	103.38'
MW-2	20-35'	104.85'
MW-3	20-30'	104.89'
MW-4	20-35'	99.90'
MW-5	20-35'	106.06'
MW-6	20-35'	100.00'
MW-7	25-40'	103.66'
MW-8	15-30'	86.51'
MW-9	2-10'	58.39'
MW-10	13-28'	93.78'
MW-11	8-23'	83.20'
MW-12	2-12'	58.69'
MW-13	2-12'	77.91'
MW-14	2-10'	59.19'
MW-15	4-9'	71.52'
RW-1	10-30'	103.29'
RW-2	10-30'	102.85'
RW-3	10-30'	100.25'
RW-4	10-30'	101.00'
DMW-1	40-45'	103.27'
DMW-2	65-75'	86.21'
DMW-4	55-60'	103.22'

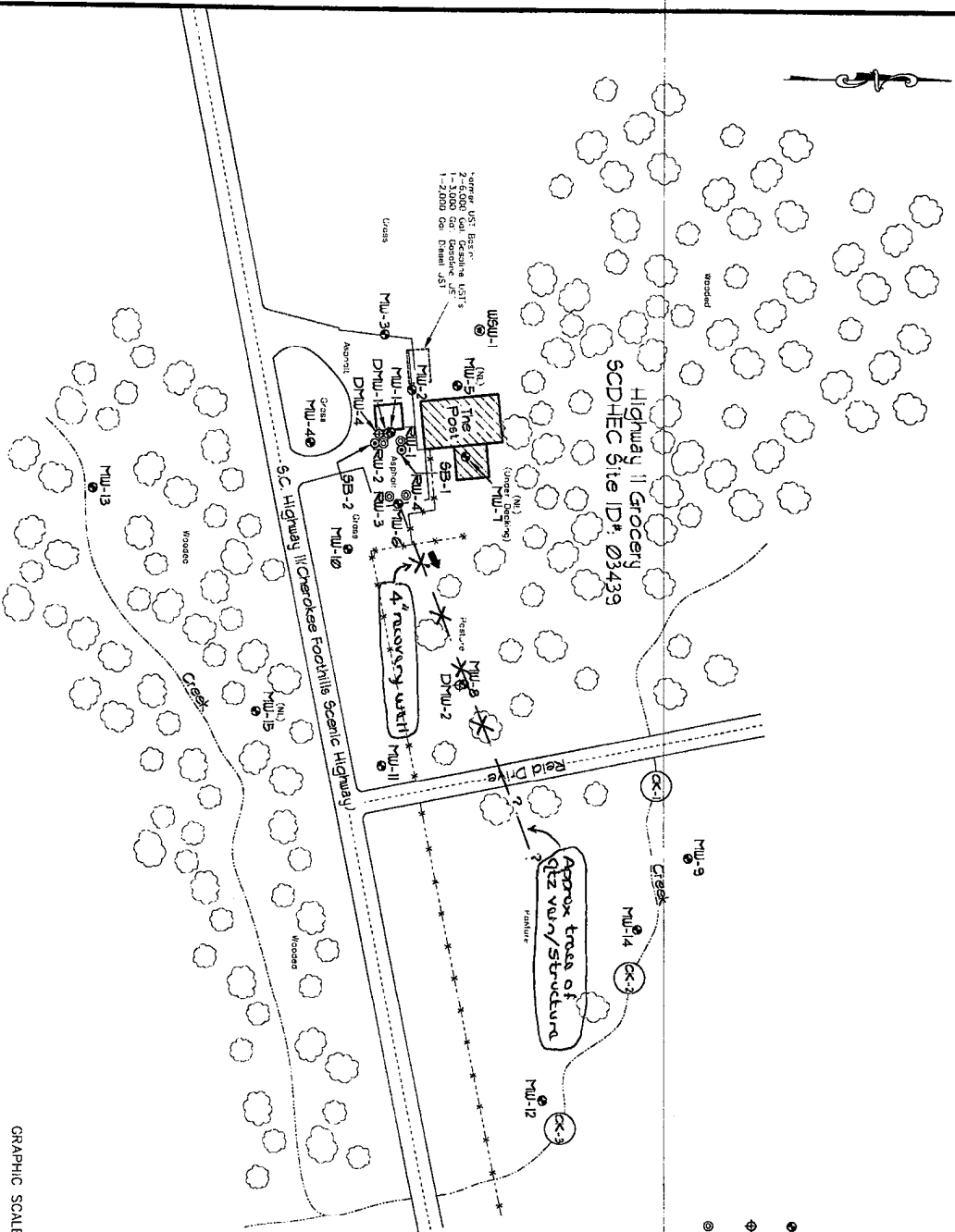




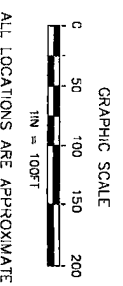
Address **13527 S Carolina 11**  
**Salem, SC 29676**

Highway 11 Grocery  
UST Permit #03439





Drawing Based on MECI Field Notes and SCDHEC Files. All Locations are Approximate.



**Explanation:**

- Location of Water Table
- ⊕ Bracketing Monitoring Well
- ⊕ Location of Double Cased "Deep" Monitoring Well
- ⊕ Recovery Well
- ⊙ Location of Water Supply Well
- ⊕ Estimated Groundwater Flow Direction
- ⊕ Estimated Location of Removed Underground Storage Tanks

- ⊙ Location of Surface Water Sample Collection
- ⊙ Location of Soil Test Boring
- Fence
- - - - - Creek

<b>Site Features</b>	
Highway 11 Grocery Salem, South Carolina SCDHEC Site ID 03439	
<b>Midlands Environmental Consultants, Inc.</b>	
JOB NO.	10-2000
DATE	January 5, 2010
TITLE	<b>2</b>

 **Midlands  
Environmental  
Consultants, Inc.**

November 14, 2012

Mr. Joel Padgett, P.G., Hydrologist  
Corrective Action Section  
Assessment and Corrective Action Division  
Underground Storage Tank Program  
Bureau of Land & Waste Management  
South Carolina Department of Health and  
Environmental Control  
2600 Bull Street  
Columbia, South Carolina 29201



Subject: Report of Recovery Well Installation  
Highway 11 Grocery  
13527 South Carolina Highway 11  
Salem, South Carolina  
SCDHEC Site ID# 03439 CA # 44524  
MECI Project Number 12-4170  
Certified Site Rehabilitation Contractor UCC-0009

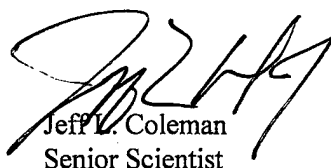



Dear Mr. Padgett,

Midlands Environmental Consultants Inc. (MECI) is pleased to submit the attached Report of Recovery Well Installation for the referenced site. This report describes assessment activities conducted at the site and results of those activities in general accordance with South Carolina Department of Health and Environmental Control (SCDHEC) guidelines, including adherence to the UST Division Programmatic Quality Assurance Program Plan (QAPP).

Midlands Environmental appreciates the opportunity to offer our professional environmental services to you on this project. Please feel free to contact us at 803-808-2043 if you have any immediate questions or comments.

Sincerely,  
**Midlands Environmental Consultants, Inc.**

  
Jeff L. Coleman  
Senior Scientist

  
Bryan T. Shafer, P.G.  
Principal Geologist

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- \*\*APPENDIX H – LOCAL ZONING REGULATIONS
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- APPENDIX K – DATA VERIFICATION CHECKLIST

**NOTE: ITEMS LISTED WITH AN \*\* BESIDE IT WERE NOT NEEDED AS A PART OF THIS SCOPE OF WORK**

## 1.0 INTRODUCTION

### A. Owner/Operator Information

Facility Name: Highway 11 Grocery UST Permit #: 03439  
Facility Address: 13527 South Carolina Highway 11, Salem, SC 29676  
Name: Mr. Steven Smith  
Address: N/A  
Telephone #: N/A

### B. Property Owner Information

Name: Jocassee Recreation Center, LLC.  
Tax Map #: Oconee County Tax Map#: 054-00-02-024  
Address: P.O. Box 878, Pickens, SC 29671  
Telephone #: (864) 944-0494 (Contact: Larry Hinkle)

### C. Contractor Information

Name: Midlands Environmental Consultants, Inc.  
Certification #: 9  
Address: P. O. Box 854, Lexington, SC 29071  
Telephone #: (803) 808-2043

### D. SCDHEC Certified Well Driller

Name: Environmental Drilling & Probing Services  
Driller: Joe Smith  
Certification #: B 01648  
Address: 17538 Greenhill Road, Charlotte, NC 28278  
Telephone #: (704) 607-7529

### E. SCDHEC Certified Laboratory

Name: N/A  
Certification #: N/A  
Address: N/A  
Telephone #: N/A

## 1.1 QAPP STATEMENT

This report conforms to the SCDHEC UST Management Division Programmatic QAPP. The Report, Tables (Table 1-Soil Analytical Data, Table 2-Field Parameters, Table 3-Groundwater Analytical Results, Table 4-Aquifer Characteristics, and Table 5-Site Conceptual Model), Figures (Figure 1-Topographic Map, Figure 2-Site Features, Figure 3-Soil CoC Site Map, Figure 4-Groundwater CoC Site Map, Figure 5-Groundwater Contour Map, and Figure 6-Geologic Cross Section), and Appendices are presented in accordance with formatting requirements set forth in section A9 of the UST Management Division Programmatic QAPP, Revision 1, June 2011. Some or all of the tables and figures in this report were not applicable to the scope of services presented, however have been included in order to conform to the SCDHEC UST Management Division Programmatic QAPP.

## 1.2 PROJECT INFORMATION

The subject site (Highway 11 Grocery) is located at 13527 South Carolina Highway 11 in Salem, South Carolina (see Figure 1). The property is currently a bar (The Post), which is adjoined to a vacant space for lease (former store front). The subject site previously maintained one 3,000 gallon gasoline underground storage tank (UST), two 6,000 gallon gasoline UST's, and one 2,000 gallon diesel UST. According to the South Carolina Underground Storage Tank Registry, these tanks were removed from the ground on September 15, 2009. The South Carolina Department of Health and Environmental Control (SCDHEC) reported and confirmed a release of petroleum product on November 28, 2000.

Prior to commencement of the field activities described in this document, a QAPP Contractors Addendum was completed by MECI personnel, submitted to SCDHEC and approved by the SCDHEC project manager.

The above project information is based on MECI field notes and SCDHEC files

## 2.0 SURROUNDING PROPERTY USAGE

The subject site (Highway 11 Grocery) is located at 13527 South Carolina Highway 11, Salem, Oconee County, South Carolina (Figure 1). Pastures and farm lands form the eastern border of the site, beyond which is residential properties. South Carolina Highway 11 forms the southern border of the subject site, beyond which are wooded areas and a creek. Wooded and pasture areas are also located to the north and west of the referenced property.

## 3.0 FIELD EXPLORATION

Field exploration conducted at the site included:

- construction of nine recovery wells; and,
- a subsequent survey to locate the newly installed recovery wells.

The recovery well locations were selected based on SCDHEC project manager instructions, existing site conditions, and drilling accessibility.

### 3.1 RECOVERY WELL INSTALLATION

From October 25 through 29, 2012, nine single cased 4-inch recovery wells were installed at the subject site. These wells were installed by Environmental Drilling & Probing Services (EDPS) of Charlotte, NC (S.C. Driller Certification: Joe Smith # B 01648) using a ATV-mounted drilling rig employing 10.0-inch outer diameter air hammer to construct the borehole. The following table presents new well installation details:

Well Number	Screened Interval (ft)	Total Depth (ft)
RW-5	10.0-30.0	30.0
RW-6	6.5-26.5	26.5

Well Number	Screened Interval (ft)	Total Depth (ft)
RW-7	10.0-30.0	30.0
RW-8	8.5-28.5	28.5
RW-9	10.0-30.0	30.0
RW-10	10.0-30.0	30.0
RW-11	7.0-27.0	27.0
RW-12	10.0-30.0	30.0
RW-13	9.0-29.0	29.0

The soils encountered during drilling activities generally consisted of sandy silts and silty sands of the Piedmont Province. Partially weathered rock was encountered at various depths below ground surface (BGS) which was underlain by bedrock, encountered around 30.0 feet BGS. Representative portions of soil samples were screened with a Photo Ionization Detector (PID) and classified by MECI personnel. Test boring records showing soil descriptions and screening result are attached in Appendix E.

Drill cuttings were containerized and transported to Waste Management/Palmetto Landfill in Wellford, SC by MECI personnel. A total of 2.67 tons was disposed of in this manner. A disposal manifest for these soils is attached at the end of this report.

Following completion of the monitoring wells, the wells were developed by purging until they were determined to be functioning properly and turbidity was reduced. These wells were developed utilizing a Whale-Mega Purger well pump. The drum of purge water was treated by MECI personnel using a granular activated carbon drum. A total of 36.0 gallons of purge/development water was disposed of in this manner. A disposal manifest for the treated purge water is presented in Appendix G.

### 3.2 SITE SURVEY

Following the well installation, a subsequent survey was conducted by MECI personnel, utilizing a fiberglass rod, level, and tape to determine the horizontal and vertical position of the newly installed monitoring wells. A TOC elevation of 86.21 for DMW-2 and a TOC elevation of 86.51 for MW-8 were used as a benchmark for surveying RW-5, RW-6, RW-7, RW-8, RW-9, RW-10, RW-11, RW-12 and RW-13. Elevations were based on site datum obtained from SCDHEC files. See Table 2 and Figure 5 for potentiometric data for the entire monitoring well network.

### 4.0 AREA GEOLOGY AND HYDROGEOLOGY

The mean elevation of the property, as depicted on the local USGS quadrangle (Salem & Old Pickens, South Carolina), appears to be approximately 305 meters above sea level. The site is located in the Piedmont Physiographic Province of South Carolina, an area underlain by ancient igneous and



metamorphic rocks. The soils in this province are generally residual soils that are underlain by rock at highly varying depths.

The soils encountered in this area are the product of in-place weathering of rocks similar to the rocks underlying the site. In areas not altered by erosion or disturbed by the activities of man, the typical residual soil profile consists of near surface clayey soils and underlying sandy silt and sand. The boundary between soil and rock is gradational. A transitional zone termed “weathered rock” is normally found overlying the parent bedrock. This zone is typically the most transmissive zone for groundwater movement. Consequently, the topography of the bedrock surface is uneven, even over short horizontal distances. It is not unusual to find lenses and boulders of hard rock and zones of weathered rock within the soil mantle well above the general bedrock level.

Local precipitation is the source of practically all of the groundwater in Oconee County. A portion of the precipitation infiltrates into the ground and moves under the influence of gravity to the surficial aquifer. After the water has reached the surficial aquifer, the direction of movement is generally parallel to the hydraulic gradient. In the Piedmont Province, the slope of the surficial aquifer’s surface under static conditions (no pumping interference) approximates the topography of an area. Thus, the movement of groundwater within the soil mantle is typically in the direction of the topographic slope. Local groundwater flow patterns may be affected by disturbed areas such as tank pits, utility trenches, building foundations, borings, wells, etc. Groundwater flow in fractured rock is often difficult to interpret due to the variability of fracture connectivity and orientation.

#### **4.1 LOCAL SUBSURFACE CONDITIONS**

Piedmont Residuum was encountered during drilling activities conducted at the site. The soils encountered in our borings generally consisted of sandy silts and silty sands. Partially weathered rock was encountered at various depths below ground surface (BGS) which was underlain by bedrock, encountered around 30.0 feet BGS. Test Boring Records, which depict the materials encountered in each boring, are located in Appendix E.

On November 14, 2012 stabilized product/groundwater levels were measured in the newly installed wells. Depth to groundwater in the newly installed recovery wells was between 17.02 and 24.34 feet below top of casing. Free phase petroleum product was detected in RW-6 at a thickness of 0.58 feet, in RW-7 at a thickness of 0.81 feet, and in RW-9 at a thickness of 0.11 feet. The groundwater measurements are summarized in the test boring log presented in Appendix E. Groundwater levels may fluctuate several feet with seasonal and rainfall variations and with change in the water level of adjacent drainage features. Normally, the highest groundwater levels occur in late winter and spring. The lowest levels occur in late summer and fall.

The above descriptions provide a general summary of the subsurface conditions encountered. The attached Test Boring Records (Appendix E) contain detailed information recorded from the newly installed replacement well. The Test Boring Records represent our interpretation of the field logs based on examination of the field samples. The lines designating the interfaces between various strata represent approximate boundaries, and the transition between strata may be gradational.

#### **5.0 QUALIFICATIONS OF REPORT**

The activities and evaluative approaches used in this assessment are consistent with those normally employed in hydrogeological assessment and waste management projects of this type. Our evaluation of site conditions has been based on our understanding of the site, project information

provided to us, and data obtained in our exploration. The general subsurface conditions utilized in our evaluation have been based on interpretation of subsurface data between borings. Contents of this report are intended for the sole use of SCDHEC under mutually agreed upon terms and conditions. If other parties wish to rely on this report please contact MECI prior to their use of this information so that a mutual understanding and agreement of the terms and conditions of our services can be established.

-oOo-

**TABLES**

**TABLE 1  
SOIL ANALYTICAL RESULTS  
SITE NAME  
SITE LOCATION, SOUTH CAROLINA  
MECI PROJECT NUMBER ##-####  
SCDHEC SITE ID NUMBER #####**

<b>Boring Number</b>	<b>Sample Date</b>	<b>Depth (feet BGS)</b>	<b>Benzene (µg/kg)</b>	<b>Toluene (µg/kg)</b>	<b>Ethylbenzene (µg/kg)</b>	<b>Total Xylenes (µg/kg)</b>	<b>MTBE (µg/kg)</b>	<b>Naphthalene (µg/kg)</b>
<p>Soil Samples for chemical analysis were not obtained during this assessment. In order to conform with formatting guidelines provided by the SCDHEC UST Management Division Programmatic Quality Assurance Program Plan (QAPP), this filler table is included to provide report continuity.</p>								
<p><b>Notes:</b></p> <div style="display: flex; justify-content: space-between;"> <div style="width: 30%;"> <p>1. BGS = Below Ground Surface</p> <p>2. µg/kg = micrograms per kilogram</p> </div> <div style="width: 30%;"> <p>3. "J" values report concentrations above the method detection limits (MDL) and below actual reporting limit (RL).</p> </div> <div style="width: 30%;"> <p>4. Soil Samples collected from discrete split samples during installation of Monitoring wells.</p> </div> </div>								

**TABLE 2  
PAGE 1 OF 2  
NOVEMBER 14, 2012 GAUGING EVENT  
POTENTIOMETRIC DATA  
HIGHWAY 11 GROCERY  
SALEM, SOUTH CAROLINA  
MECI PROJECT NUMBER 12-4170  
SCDHEC SITE ID NUMBER 03439**

Well Number	Screened Interval	Depth to Product (feet)	Depth to Water (feet)	Product Thickness (feet)	Well-head Elevation	Groundwater Elevation
MW-1	15-30	NM	NM	NM	103.38	NM
MW-2	20-35	NM	NM	NM	104.85	NM
MW-3	20-30	NM	NM	NM	104.89	NM
MW-4	20-35	NM	NM	NM	99.90	NM
MW-5	20-35	NM	NM	NM	106.06	NM
MW-6	20-35	NM	NM	NM	100.00	NM
MW-7	25-40	NM	NM	NM	103.66	NM
MW-8	15-30	NM	NM	NM	86.51	NM
MW-9	2-10	NM	NM	NM	58.39	NM
MW-10	13-28	NM	NM	NM	93.78	NM
MW-11	8-23	NM	NM	NM	83.20	NM
MW-12	2-12	NM	NM	NM	58.69	NM
MW-13	2-12	NM	NM	NM	77.91	NM
MW-14	2-10	NM	NM	NM	59.19	NM
MW-15	4-9	NM	NM	NM	71.52	NM
DMW-1	40-45	NM	NM	NM	103.27	NM

Notes:

1. Elevations based on assumed site datum.
2. Groundwater depths were measured from the top of the PVC riser pipe.
3. Groundwater levels measured on 11/14/12.
4. NM = Not Measured
5. Groundwater elevation for RW-6, RW-7 and RW-9 corrected for the presence of free phase petroleum product using a specific gravity for fuel of 0.85.

**TABLE 2  
PAGE 2 OF 2  
NOVEMBER 14, 2012 GAUGING EVENT  
POTENTIOMETRIC DATA  
HIGHWAY 11 GROCERY  
SALEM, SOUTH CAROLINA  
MECI PROJECT NUMBER 12-4170  
SCDHEC SITE ID NUMBER 03439**

Well Number	Screened Interval	Depth to Product (feet)	Depth to Water (feet)	Product Thickness (feet)	Well-head Elevation	Groundwater Elevation
DMW-2	65-75	NM	NM	NM	86.21	NM
DMW-4	55-60	NM	NM	NM	103.22	NM
RW-1	10-30	NM	NM	NM	103.29	NM
RW-2	10-30	NM	NM	NM	102.85	NM
RW-3	10-30	NM	NM	NM	100.25	NM
RW-4	10-30	NM	NM	NM	101.00	NM
RW-5	10-30	***	24.34	***	94.97	70.63
RW-6	6.5-26.5	18.43	19.01	0.58	88.05	69.53
RW-7	10-30	20.29	21.10	0.81	88.06	67.65
RW-8	8.5-28.5	***	19.65	***	87.06	67.41
RW-9	10-30	21.30	21.41	0.11	86.18	64.86
RW-10	10-30	***	21.20	***	84.49	63.29
RW-11	7-27	***	17.02	***	81.06	64.04
RW-12	10-30	***	19.60	***	82.22	62.62
RW-13	9-29	***	18.40	***	80.72	62.32

**Notes:**

1. Elevations based on assumed site datum.
2. Groundwater depths were measured from the top of the PVC riser pipe.
3. Groundwater levels measured on 11/14/12.
4. NM = Not Measured
5. Groundwater elevation for RW-6, RW-7 and RW-9 corrected for the presence of free phase petroleum product using a specific gravity for fuel of 0.85.

**TABLE 3  
GROUNDWATER ANALYTICAL DATA  
SITE NAME  
SITE LOCATION, SOUTH CAROLINA  
MECI PROJECT NUMBER ##-####  
SCDHEC SITE ID NUMBER #####**

Boring Number	Sample Date	Depth (feet BGS)	Benzene (µg/kg)	Toluene (µg/kg)	Ethylbenzene (µg/kg)	Total Xylenes (µg/kg)	MTBE (µg/kg)	Naphthalene (µg/kg)
---------------	-------------	------------------	-----------------	-----------------	----------------------	-----------------------	--------------	---------------------

Groundwater Samples for chemical analysis were not obtained during this assessment. In order to conform with formatting guidelines provided by the SCDHEC UST Management Division Programmatic Quality Assurance Program Plan (QAPP), this filler table is included to provide report continuity.

**Notes:**

1. BGS = Below Ground Surface	3. "J" values report concentrations above the method detection limits (MDL) and below actual reporting limit (RL).	4. Soil Samples collected from discrete split samples during installation of Monitoring wells.
2. µg/kg = micrograms per kilogram		

**TABLE 4 - AQUIFER CHARACTERISTICS (Page 1 of 2)**

SOUTH CAROLINA  
Department of Health and Environmental Control (DHEC)

**Site Data**

SITE ID # \_\_\_\_\_ COUNTY \_\_\_\_\_  
FACILITY NAME \_\_\_\_\_

**SLUG DATA**

See Appendix \_\_\_\_\_ Table \_\_\_\_\_ Figure \_\_\_\_\_ for a list of all data measurements.  
(water level logs, etc.)(Complete as appropriate).

Water Level Recovery Data was measured by \_\_\_\_\_ ORS Interface Probe \_\_\_\_\_.  
(Hermit Data Logger, Manually with Water Level Indicator, etc.)(List Method)

Complete the following table for each well tested.  
COMPLETE A SECOND SHEET IF MORE THAN FOUR WELLS ARE TESTED

Aquifer Characteristics were not obtained as part of this assessment. In order to conform with formatting guidelines provided by the SCDHEC UST Management Division Programmatic Quality Assurance Program Plan (QAPP), this filler table is included to provide report continuity.

**Calculations**

See Appendix \_\_\_\_\_ Table \_\_\_\_\_ Figure \_\_\_\_\_ for calculations

The method for aquifer calculations was \_\_\_\_\_ NAVFAC \_\_\_\_\_

Calculated values by well were as follows:

Slug Test Conducted in Well(s) number \_\_\_\_\_  
Hydraulic Conductivity \_\_\_\_\_ cm/sec

Thickness of the aquifer used to calculate hydraulic conductivity was \_\_\_\_\_ N/A \_\_\_\_\_ feet.

The aquifer is \_\_\_\_\_ confined \_\_\_\_\_ semi-confined \_\_\_\_\_ water table (Check as Appropriate).

**SEE SHEET 3**

The estimated seepage velocity is \_\_\_\_\_ feet per year based on a hydraulic conductivity of \_\_\_\_\_ cm/sec, a hydraulic gradient of \_\_\_\_\_ ft/ft, and a porosity of \_\_\_\_\_ percent for \_\_\_\_\_ soil.

**SUMMARY of SLUG TEST**



**TABLE 4 - AQUIFER CHARACTERISTICS (Page 2 of 2)**

SOUTH CAROLINA  
Department of Health and Environmental Control (DHEC)

**Site Data**

SITE ID #     0     COUNTY           0            
 FACILITY NAME                           0                          

**Hydraulic Conductivity (average)**

Hydraulic Conductivity Average =                    cm/sec  
 ( )  
                   ft./day  
                   ft./min

**Groundwater Seepage Velocity**

$V = (Ki)/(Ne)$                       \* Enter Values in Shaded Areas Only  
 (ft./day)

where:

K = Hydraulic Conductivity (ft./day)

I = Hydraulic Gradient (ft./ft.)

Ne = Effective Permeability

K =                    ft./day

I =                    ft./ft.

Ne =                   

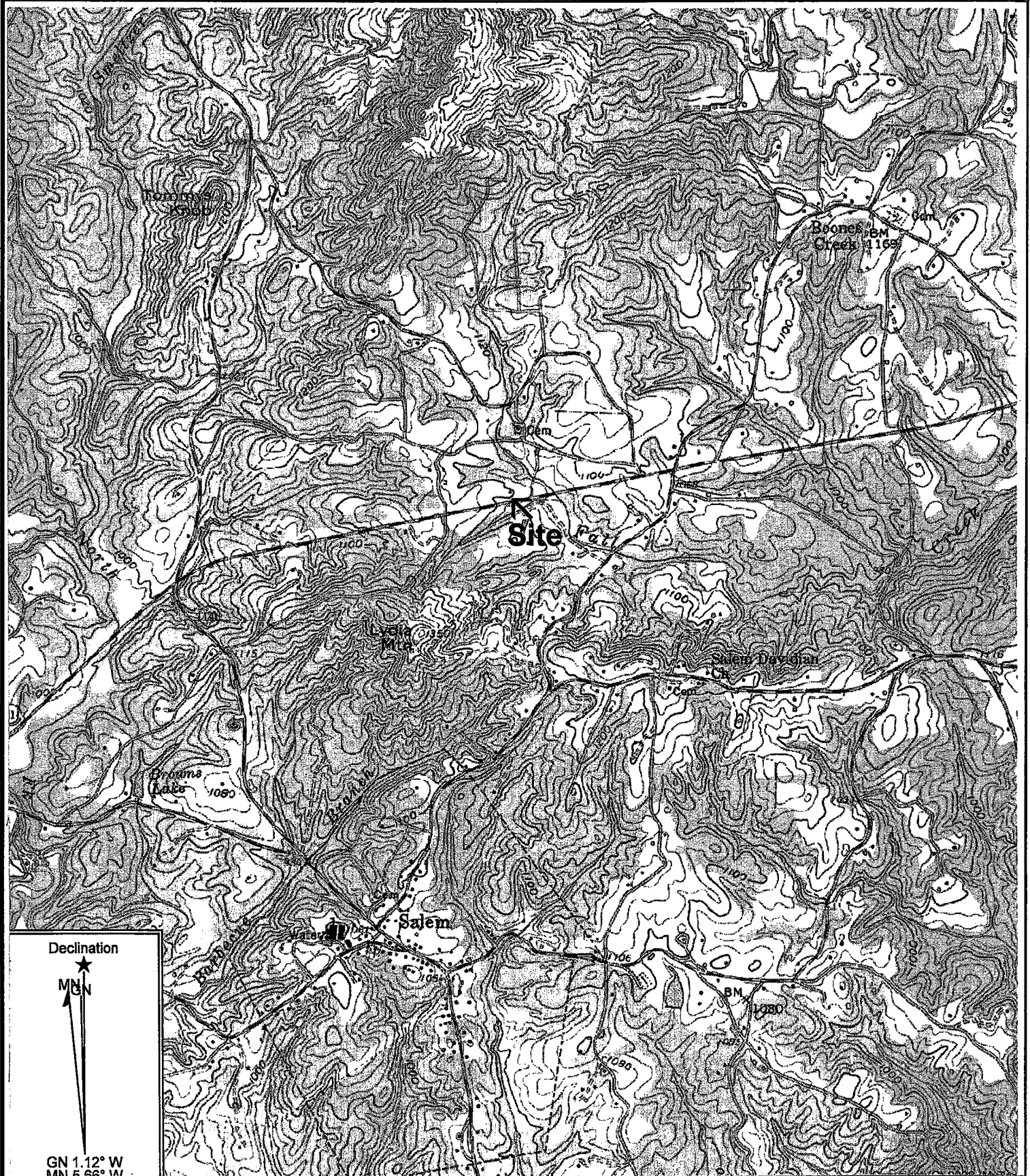
V =                    ft./day                             ft./year

**Groundwater Seepage Velocity Calculations**

**TABLE 5**  
**SITE CONCEPTUAL MODEL AND POSSIBLE EXPOSURE POINTS**  
**(CURRENT LAND USE)**

Potentially Exposed Population	Exposure Route, Medium, and Exposure Point	Pathway Selected for Evaluation?	Reason for Selection or Nonselection
Off-site Resident	Ingestion of groundwater from impacted water well Direct contact with surface soil Inhalation while showering Dermal contact while showering Inhalation of volatiles Ignition of vapors Dermal contact with surface water		<p style="text-align: center;"><u>A Site Conceptual Model was not required as part of this assessment. In order to conform with formatting guidelines provided by the SCDHEC UST Management Division Programmatic Quality Assurance Program Plan (QAPP), this filler table is included to provide report continuity.</u></p>
On-site Resident	Ingestion of groundwater Direct contact with surface soil Inhalation while showering Dermal contact while showering Inhalation of volatiles Ignition of vapors		
Worker	Ingestion of ground water Direct contact with surface soil Inhalation while showering Dermal contact while showering Inhalation of volatiles Ignition of vapors		
Visitor	Ingestion of ground water Direct contact with surface soil Inhalation while showering Dermal contact while showering Inhalation of volatiles Ignition of vapors Dermal contact with surface water		

**FIGURES**

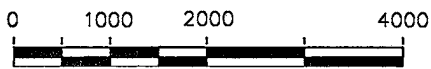


Declination



GN 1.12° W  
MN 1.66° W

GRAPHIC SCALE



1IN = 2000FT

Reference: Salem and Old Pickens, South Carolina  
Tamassee and Walhalla, South Carolina  
USGS 7.5 Min. Quad  
Countour Interval - 20 Feet

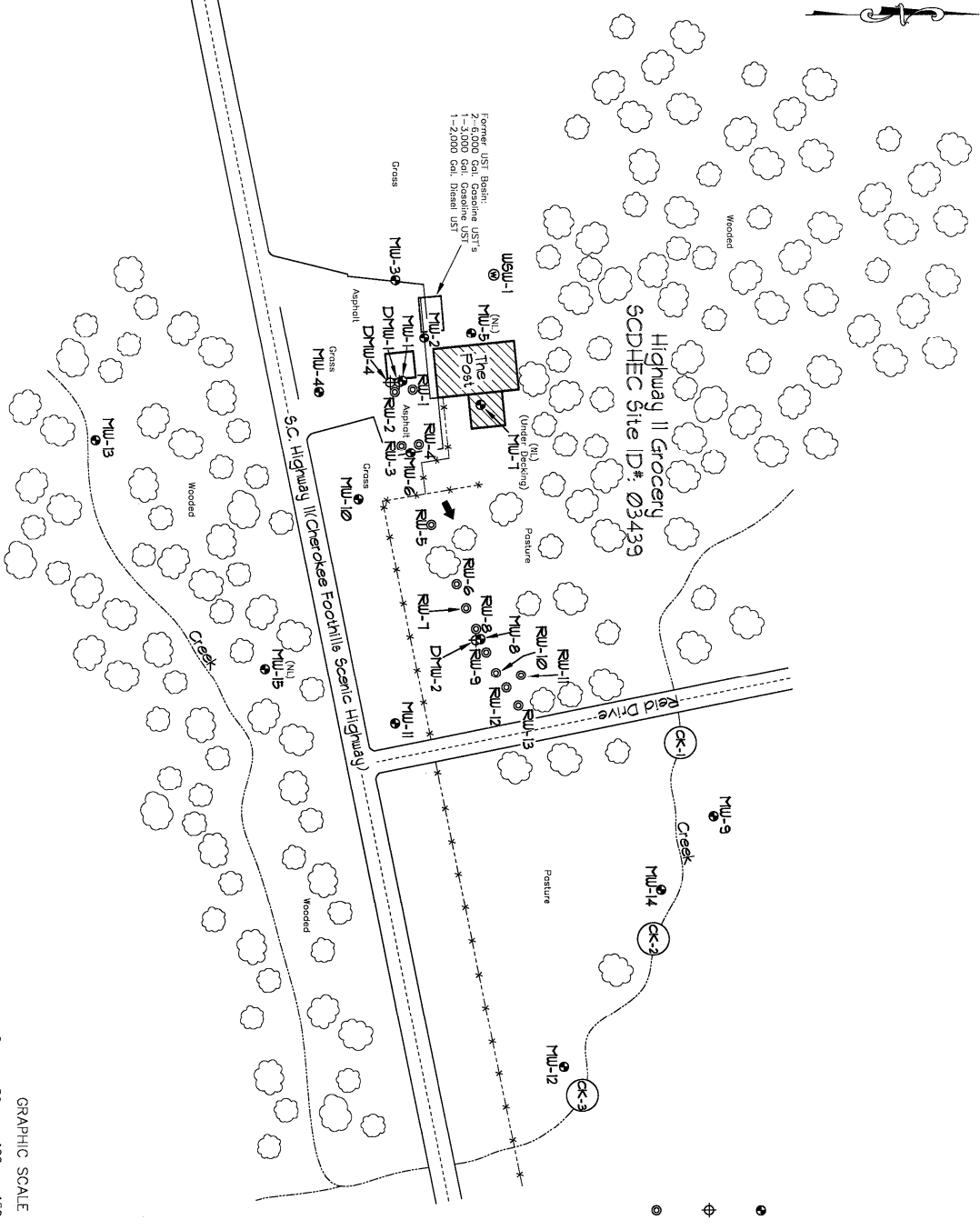
Midlands  
Environmental  
Consultants, Inc.

Site Location

Highway 11 Grocery  
13527 South Carolina Highway 11, Salem, SC  
SCDHEC Site ID# 03439

Figure 1

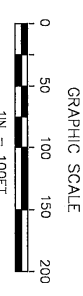
MECI 12-4170



**Explanation:**

- Location of Water Table
- ⬇ Bracketing Monitoring Well
- ⬇ Estimated groundwater Flow Direction
- ⊕ Location of Double Cased "Deep" Monitoring Well
- ⊕ Estimated Location of Removed Underground Storage Tanks
- ⊕ Location of 4-inch Recovery Well
- ⊕ Location of Surface Uls:er Sample Collection

— Fence  
 --- Stream




ALL LOCATIONS ARE APPROXIMATE


<b>Site Base Map</b>	
Highway II Grocery 13527 S.C. Highway II Salem, South Carolina SCDHEC Site ID 03439	
JOB NO. 2-4170	FIGURE 2
DATE November 14, 2012	

Drawing Based on MECI Field Notes and SCDHEC Files. All Locations are Approximate.

Soil Samples for chemical analysis were not obtained during this assessment. In order to conform with formatting guidelines provided by the SCDHEC UST Management Division Programmatic Quality Assurance Program Plan (QAPP), this filler Figure is included to provide report continuity.

 Midlands Environmental Consultants, Inc.	Soil CoC Site Map
Site Name Site Location, South Carolina SCDHEC Site ID: ****	
Figure 3	MECI *_****

Groundwater samples for chemical analysis were not obtained during this assessment. In order to conform with formatting guidelines provided by the SCDHEC UST Management Division Programmatic Quality Assurance Program Plan (QAPP), this filler Figure is included to provide report continuity.

 Midlands Environmental Consultants, Inc.	GW CoC Site Map
Site Name Site Location, South Carolina SCDHEC Site ID: #####	
Figure 4	MECI ##.####

**Explanation:**

- Location of Watertable Bracketing Monitoring Well
- ⊕ Location of Double Cased "Deep" Monitoring Well
- ⊙ Location of 4-Inch Recovery Well
- ↑ Estimated Groundwater Flow Direction
- Estimated Location of Removed Underground Storage Tanks
- ⊙ (SW-2) Location of Surface Water Sample Collection

— fence — Fence  
 — stream — Stream

Potentiometric Data						
Well #	Screened Interval (ft)	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)	Well Head Elevation	Groundwater Elevation
MW-1	15-30	NM	NM	NM	103.88	NM
MW-2	20-35	NM	NM	NM	104.85	NM
MW-3	20-30	NM	NM	NM	104.89	NM
MW-4	20-35	NM	NM	NM	99.90	NM
MW-5	20-35	NM	NM	NM	106.06	NM
MW-6	20-35	NM	NM	NM	100.00	NM
MW-7	25-40	NM	NM	NM	103.66	NM
MW-8	15-30	NM	NM	NM	86.51	NM
MW-9	2-10	NM	NM	NM	88.39	NM
MW-10	13-28	NM	NM	NM	93.78	NM
MW-11	8-23	NM	NM	NM	83.20	NM
MW-12	2-12	NM	NM	NM	59.09	NM
MW-13	2-12	NM	NM	NM	77.91	NM
MW-14	2-10	NM	NM	NM	59.19	NM
MW-15	4-9	NM	NM	NM	71.52	NM
DMW-1	40-45	NM	NM	NM	103.27	NM
DMW-2	65-75	NM	NM	NM	88.21	NM
DMW-4	55-60	NM	NM	NM	103.22	NM
RW-1	10-30	NM	NM	NM	103.29	NM
RW-2	10-30	NM	NM	NM	102.85	NM
RW-3	10-30	NM	NM	NM	100.25	NM
RW-4	10-30	NM	NM	NM	101.00	NM
RW-5	10-30	---	24.34	---	94.97	70.63
RW-6	8.5-26.5	18.43	19.01	0.58	88.05	69.53
RW-7	10-30	20.29	21.10	0.81	88.06	67.65
RW-8	8.5-28.5	---	19.65	---	87.06	67.41
RW-9	10-30	21.30	21.41	0.11	86.18	64.86
RW-10	10-30	---	21.20	---	84.49	63.29
RW-11	7-27	---	17.02	---	81.06	64.04
RW-12	10-30	---	19.60	---	82.22	62.62
RW-13	9-29	---	18.40	---	80.72	62.32

Notes: Depth to groundwater measured on November 14, 2012.

Groundwater elevation for RW-6, RW-7 and RW-9 corrected for the presence of free phase petroleum product using a specific gravity for fuel of 0.85.

Site Datum Based on Assumed Spot Elevation.

**Potentiometric Data Site Map  
 (Groundwater Contour)**

Highway 11 Grocery  
 13521 S.C. Highway 11  
 Salem, South Carolina  
 SCDHEC Site ID 03439

Midlands  
 Environmental  
 Consultants, Inc.

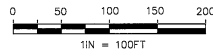
JOB NO. 12-4170

DATE November 14, 2012

FIGURE

5

GRAPHIC SCALE




ALL LOCATIONS ARE APPROXIMATE

Drawing Based on MECI Field Notes and SCDHEC Files. All Locations are Approximate.



Construction of Geologic Cross Sections were not part of this assessment. In order to conform with formatting guidelines provided by the SCDHEC UST Management Division Programmatic Quality Assurance Program Plan (QAPP), this filler Figure is included to provide report continuity.

 Midlands Environmental Consultants, Inc.	Geologic Cross Sections
Site Name Site Location, South Carolina SCDHEC Site ID: ****	
Figure 6	MECI #. ****

**APPENDIX A:  
SITE SURVEY**

**This appendix is not applicable to the scope of services presented in the subject report, however this page has been included in order to conform to the SCDHEC UST Management Division Programmatic QAPP and provide report continuity**

**APPENDIX B:**  
**SAMPLING LOGS, LABORATORY DATA SHEETS, & CHAIN-OF-CUSTODY FORMS**

**This appendix is not applicable to the scope of services presented in the subject report,  
however this page has been included in order to conform to the SCDHEC UST  
Management Division Programmatic QAPP and provide report continuity**

**APPENDIX C**  
**TAX MAP**




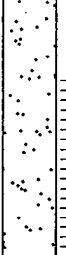
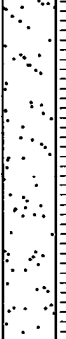
**This appendix is not applicable to the scope of services presented in the subject report,  
however this page has been included in order to conform to the SCDHEC UST  
Management Division Programmatic QAPP and provide report continuity**

**APPENDIX D:  
SOIL BORING/FIELD SCREENING LOGS & 1903 FORMS**



**This appendix is not applicable to the scope of services presented in the subject report, however this page has been included in order to conform to the SCDHEC UST Management Division Programmatic QAPP and provide report continuity**

**APPENDIX E:**  
**WELL COMPLETION LOGS & 1903 FORMS**

Depth (Feet)	Description	PID PPM	Well Diagram 0	Penetration Blows Per Foot																
				10	20	40	60	80	100											
	Grass and Topsoil																			
	PIEDMONT RESIDUUM: Orange, Fine to Medium Sandy SILT																			
5		0.9																		
	Brown, Fine to Medium Sandy SILT																			
10		1.5																		
	Partially Weathered Rock: Brown, Fine to Medium Sandy SILT with Small Quartz Fragments																			
15		3.0																		
20		8.5																		
	Partially Weathered Rock: Brown, Silty Fine to Medium SAND with Small Quartz Fragments																			
25		9.0																		
30		12.3																		
	Boring terminated at 30.0 Feet Below Ground Surface (BGS). Recovery Well Installed to 30.0 Feet BGS. Groundwater Measured at 24.34 Feet Below Top of Casing on 11/14/2012.																			
35																				

NO BLOWCOUNTS RECORDED

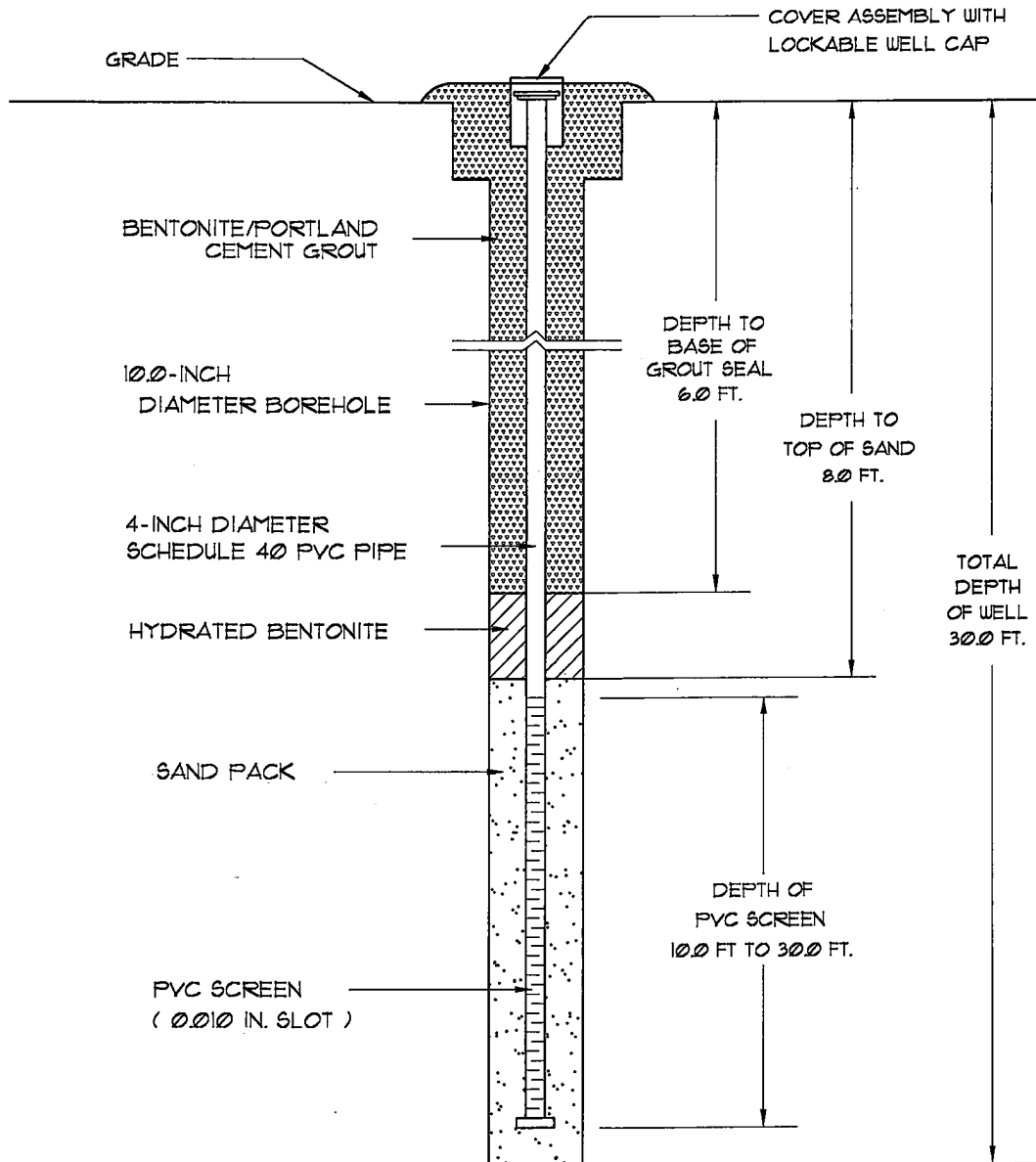
TEST BORING RECORD  
 Highway 11 Grocery  
 Salem, South Carolina  
 SCDHEC Site ID# 03439  
 MECI Project Number 12-4170

Boring Number:	RW-5 (03439)
Date Drilled:	10/29/2012
Drilled By:	Environmental Drilling & Probing Services, LLC
Logged By:	R. Ariail

Prepared By:  
 Midlands Environmental Consultants, Inc.  
 235 B Dooley Road  
 Lexington, South Carolina 29013  
 (803) 808-2043 Fax: 808-2048

# MONITORING WELL INSTALLATION RECORD

Highway 11 Grocery  
 Salem, South Carolina  
 SCDHEC Site ID# 03439  
 MECI Project Number 12-4170



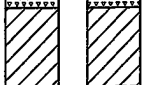


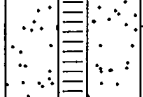
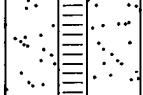
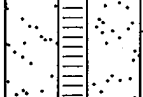


Well Number:	RW-5 (03439)
Date Drilled:	10/29/2012
Drilled By:	Environmental Drilling & Probing Services, LLC
Driller: J. Smith	S.C. I.D. #: B 01648
Logged By:	R. Ariail

Prepared By:

**Midlands Environmental Consultants, Inc.**

235-B Dooley Road  
 Lexington, South Carolina 29073  
 (803) 808-2043 fax: 808-2048

Depth (Feet)	Description	PID PPM	Well Diagram 0	Penetration Blows Per Foot														
				10	20	40	60	80	100									
	Grass and Topsoil																	
	PIEDMONT RESIDUUM: Brown, Micaceous Fine Sandy SILT																	
5		9.3		NO BLOWCOUNTS RECORDED														
	Partially Weathered Rock: Brown, Silty Fine to Medium SAND with Small Quartz Fragments	4.9																
10																		
	Brown, Silty Fine to Medium SAND with Small Quartz Fragments	4.6																
15																		
	Partially Weathered Rock: Brown, Fine to Medium SAND with Small Quartz Fragments	21.3																
20																		
		15.4																
25																		
	Boring terminated at 26.5 Feet Below Ground Surface (BGS). Recovery Well Installed to 26.5 Feet BGS. Groundwater Measured at 19.01 Feet Below Top of Casing on 11/14/2012.	10.4																
30																		
35																		

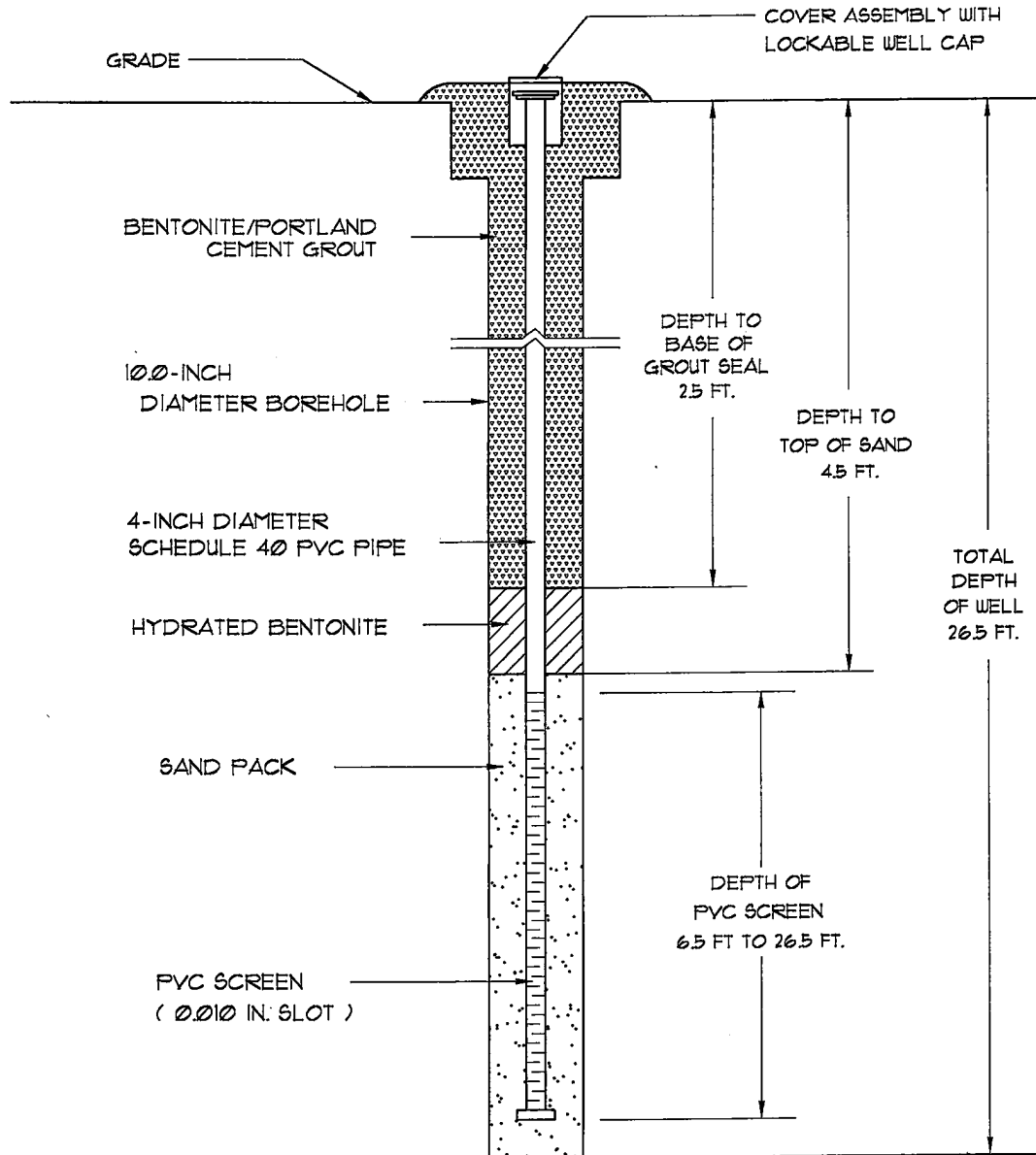
TEST BORING RECORD  
 Highway 11 Grocery  
 Salem, South Carolina  
 SCDHEC Site ID# 03439  
 MECI Project Number 12-4170

Boring Number:	RW-6 (03439)
Date Drilled:	10/29/2012
Drilled By:	Environmental Drilling & Probing Services, LLC
Logged By:	R. Ariail

Prepared By:  
 Midlands  
 Environmental  
 Consultants, Inc.  
 235 B Dooley Road  
 Lexington, South Carolina 29073  
 (803) 808-2043 fax: 808-2048

# MONITORING WELL INSTALLATION RECORD

Highway 11 Grocery  
 Salem, South Carolina  
 SCDHEC Site ID# 03439  
 MECI Project Number 12-4170



Well Number:	RW-6 (03439)
Date Drilled:	10/29/2012
Drilled By:	Environmental Drilling & Probing Services, LLC
Driller: J. Smith	S.C. I.D. #: B 01648
Logged By:	R. Ariall

Prepared By:



235-B Dooley Road  
 Lexington, South Carolina 29013  
 (803) 808-2043 Fax: 808-2048

Depth (Feet)	Description	PID PPM	Well Diagram 0	Penetration Blows Per Foot													
				10	20	40	60	80	100								
0	Topsoil																
5	PIEDMONT RESIDUUM: Orange, Micaceous Silty Fine to Medium SAND	3.2															
10	Partially Weathered Rock: Tan, Fine to Medium SAND with Small Quartz Fragments	0.6															
15		3.0															
20		336															
25	Partially Weathered Rock: Brown, Silty Fine to Medium SAND with Small Quartz Fragments	155															
30	Boring terminated at 30.0 Feet Below Ground Surface (BGS). Recovery Well Installed to 30.0 Feet BGS. Groundwater Measured at 21.10 Feet Below Top of Casing on 11/14/2012.	30.2															
35																	

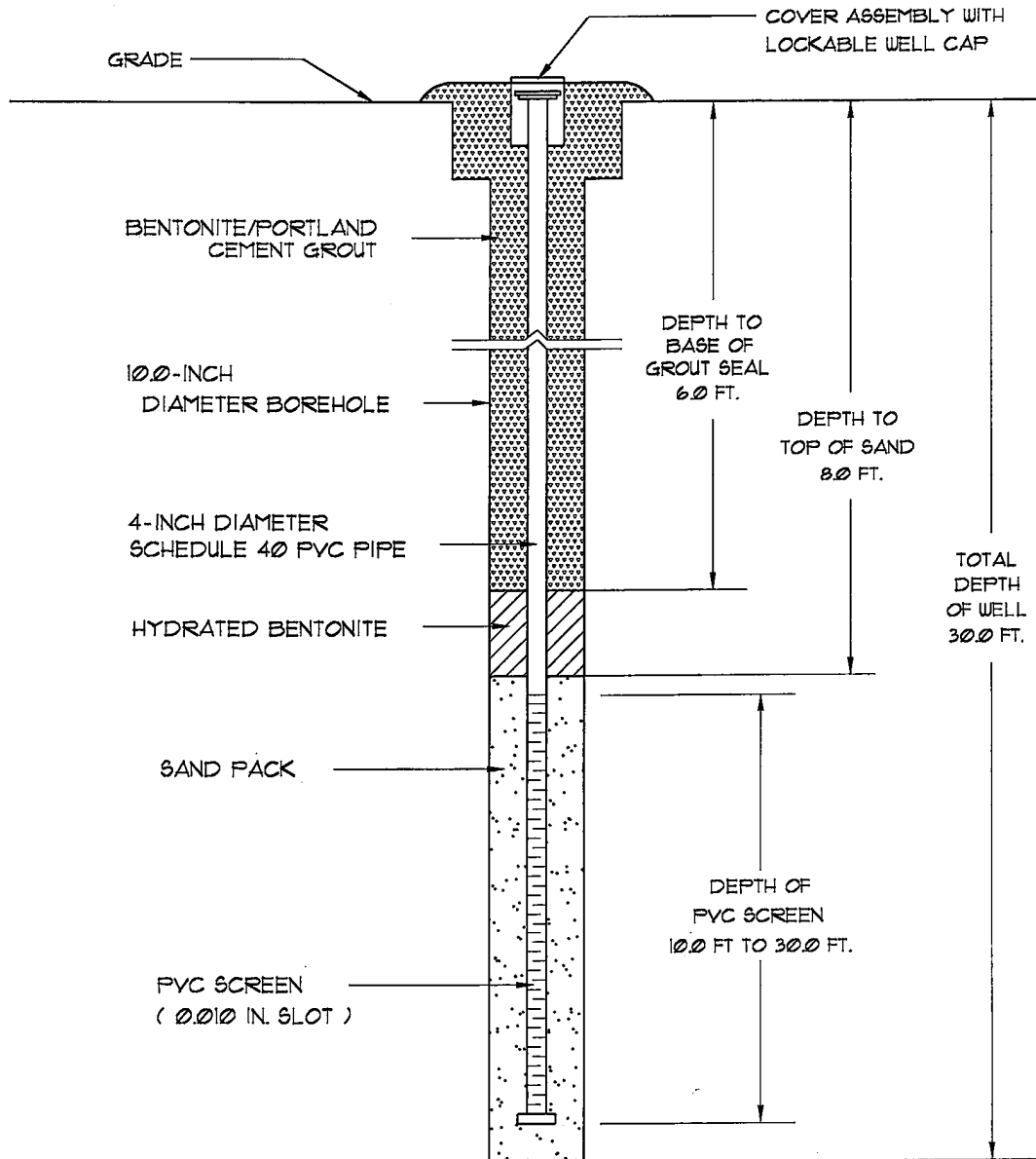
TEST BORING RECORD  
 Highway 11 Grocery  
 Salem, South Carolina  
 SCDHEC Site ID# 03439  
 MECI Project Number 12-4170

Boring Number:	RW-7 (03439)
Date Drilled:	10/25/2012
Drilled By:	Environmental Drilling & Probing Services, LLC
Logged By:	R. Ariail

Prepared By:  
 Midlands  
 Environmental  
 Consultants, Inc.  
 235 B Doolley Road  
 Lexington, South Carolina 29073  
 (803) 808-2043 Fax: 808-2048

# MONITORING WELL INSTALLATION RECORD

Highway 11 Grocery  
 Salem, South Carolina  
 SCDHEC Site ID# 03439  
 MECI Project Number 12-4170



Well Number:	RW-7 (03439)
Date Drilled:	10/25/2012
Drilled By:	Environmental Drilling & Probing Services, LLC
Driller: J. Smith	S.C. I.D. #: B 01648
Logged By:	R. Ariall

Prepared By:

**Midlands**  
**Environmental**  
**Consultants, Inc.**

235-B Dooley Road  
 Lexington, South Carolina 29073  
 (803) 808-2043 Fax: 808-2048



Depth (Feet)	Description	PID PPM	Well Diagram 0	Penetration Blows Per Foot													
				10	20	40	60	80	100								
0	Grass and Topsoil																
0 - 5	PIEDMONT RESIDUUM: Orange, Fine to Medium Sandy SILT																
5		2.0															
10	Brown, Fine to Medium Sandy SILT with Quartz Fragments	4.4															
15		4.1															
20	Partially Weathered Rock: Gray and Brown, Silty Fine to Medium SAND with Small Quartz Fragments	241															
25		49.4															
30	Boring terminated at 28.5 Feet Below Ground Surface (BGS). Recovery Well Installed to 28.5 Feet BGS. Groundwater Measured at 19.65 Feet Below Top of Casing on 11/14/2012.	46.9															
35																	

NO BLOWCOUNTS RECORDED

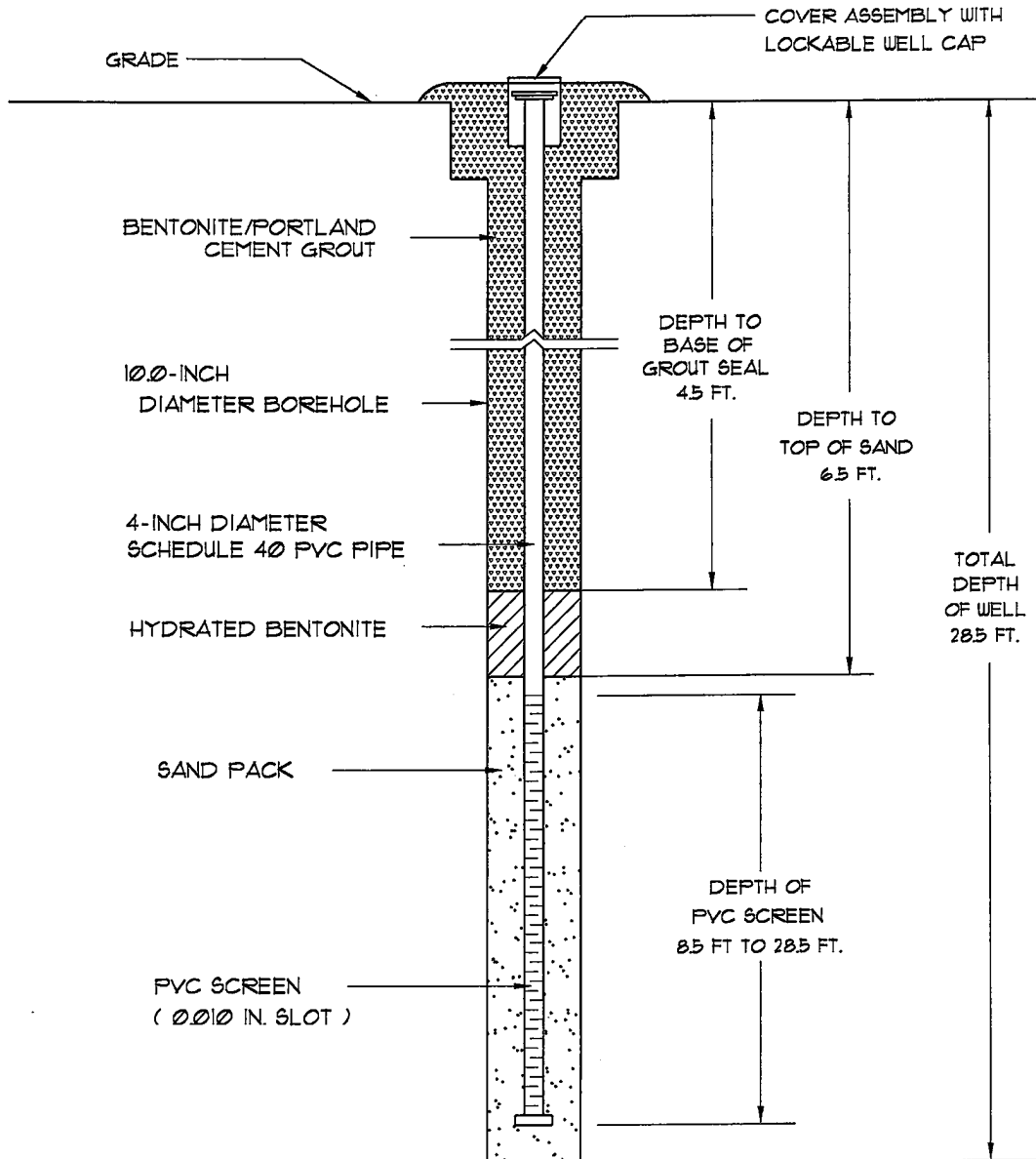
TEST BORING RECORD  
 Highway 11 Grocery  
 Salem, South Carolina  
 SCDHEC Site ID# 03439  
 MECI Project Number 12-4170

Boring Number:	RW-8 (03439)
Date Drilled:	10/25/2012
Drilled By:	Environmental Drilling & Probing Services, LLC
Logged By:	R. Ariail

Prepared By:  
 Midlands Environmental Consultants, Inc.  
 235 B Dooley Road  
 Lexington, South Carolina 29073  
 (803) 808-2043 fax: 808-2048

# MONITORING WELL INSTALLATION RECORD

Highway 11 Grocery  
 Salem, South Carolina  
 SCDHEC Site ID# 03439  
 MECI Project Number 12-4170



Well Number:	RW-8 (03439)
Date Drilled:	10/25/2012
Drilled By:	Environmental Drilling & Probing Services, LLC
Driller: J. Smith	S.C. I.D. #: B 01648
Logged By:	R. Ariall

Prepared By:

**Midlands**  
**Environmental**  
**Consultants, Inc.**

235-B Dooley Road  
 Lexington, South Carolina 29013  
 (803) 808-2043 Fax: 808-2048

Depth (Feet)	Description	PID PPM	Well Diagram 0	Penetration Blows Per Foot					
				10	20	40	60	80	100
0	Grass and Topsoil								
0-4.0	PIEDMONT RESIDUUM: Orange, Micaceous Fine to Medium Sandy SILT			NO BLOWCOUNTS RECORDED					
4.0-4.8	Brown, Micaceous Silty Fine to Medium SAND with Small Quartz Fragments	4.0							
4.8-4.4		4.8							
4.4-1.061	Partially Weathered Rock: Brown, Micaceous Fine to Medium SAND with Small Quartz Fragments	4.4							
1.061-182		1,061							
182-362	Partially Weathered Rock: Brown, Silty Fine to Medium SAND with Small Quartz Fragments	182							
362-30.0	Boring terminated at 30.0 Feet Below Ground Surface (BGS). Recovery Well Installed to 30.0 Feet BGS. Groundwater Measured at 21.41 Feet Below Top of Casing on 11/14/2012.	362							
30.0-35.0									

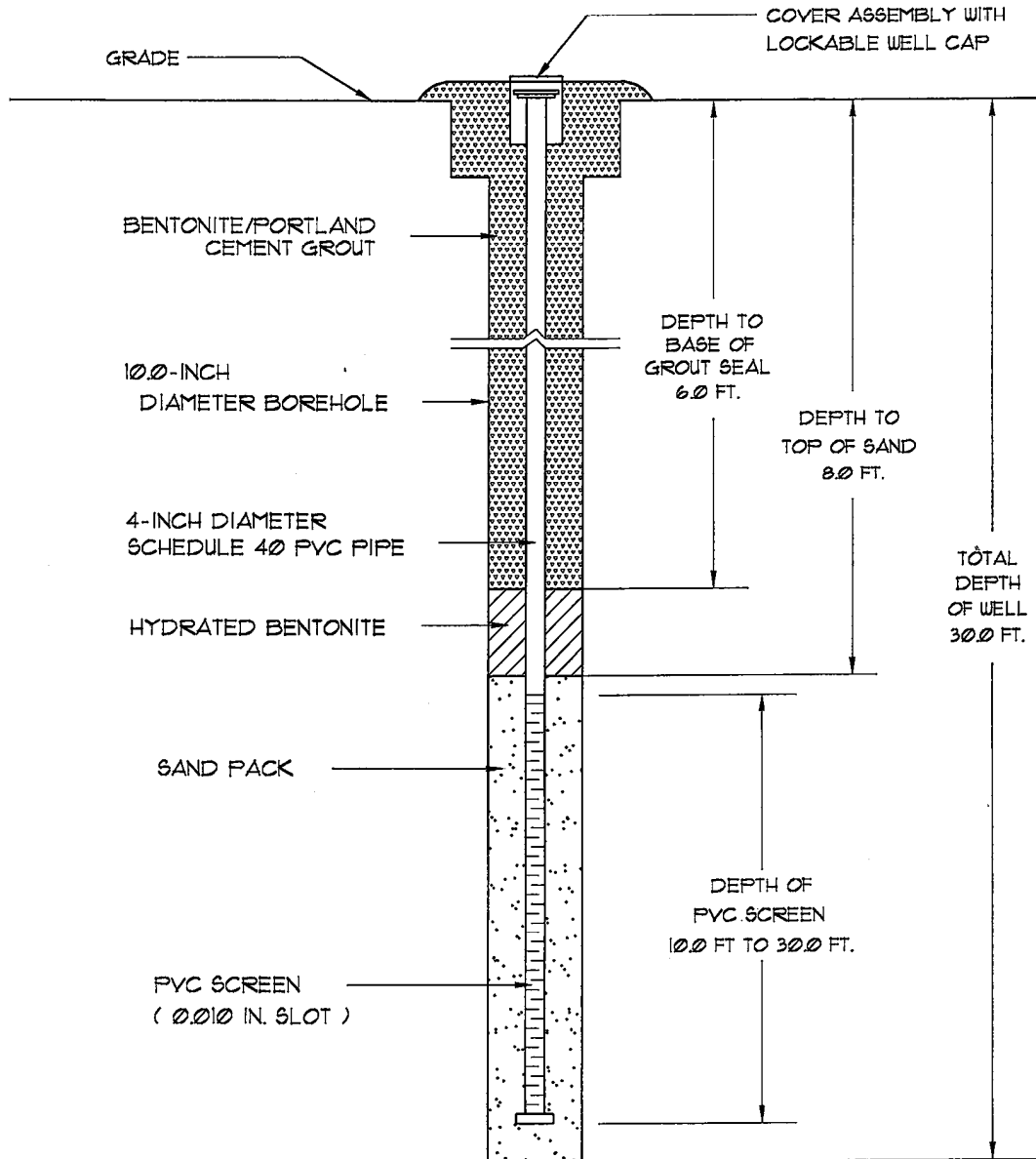
TEST BORING RECORD  
 Highway 11 Grocery  
 Salem, South Carolina  
 SCDHEC Site ID# 03439  
 MECI Project Number 12-4170

Boring Number:	RW-9 (03439)
Date Drilled:	10/26/2012
Drilled By:	Environmental Drilling & Probing Services, LLC
Logged By:	R. Ariail

Prepared By:  
 Midlands  
 Environmental  
 Consultants, Inc.  
 235 B Dooley Road  
 Lexington, South Carolina 29073  
 (803) 808-2043 fax: 808-2048

# MONITORING WELL INSTALLATION RECORD

Highway 11 Grocery  
 Salem, South Carolina  
 SCDHEC Site ID# 03439  
 MECI Project Number 12-4170



Well Number:	RW-9 (03439)
Date Drilled:	10/26/2012
Drilled By:	Environmental Drilling & Probing Services, LLC
Driller: J. Smith	S.C. I.D. #: B 01648
Logged By:	R. Ariall

Prepared By:

**Midlands**  
**Environmental**  
**Consultants, Inc.**

235-B Dooley Road  
 Lexington, South Carolina 29013  
 (803) 808-2043 Fax: 808-2048

Depth (Feet)	Description	PID PPM	Well Diagram 0	Penetration Blows Per Foot														
				10	20	40	60	80	100									
0	Grass and Topsoil																	
5	PIEDMONT RESIDUUM: Orange, Fine to Medium Sandy SILT	4.3																
10	Brown, Silty Fine to Medium SAND with Small Quartz Fragments	7.1																
15		7.5																
20	Partially Weathered Rock: Gray and Brown, Silty Fine to Medium SAND with Small Quartz Fragments	24.4																
25		38.7																
30	Boring terminated at 30.0 Feet Below Ground Surface (BGS). Recovery Well Installed to 30.0 Feet BGS. Groundwater Measured at 21.20 Feet Below Top of Casing on 11/14/2012.	83.1																
35																		

NO BLOWCOUNTS RECORDED

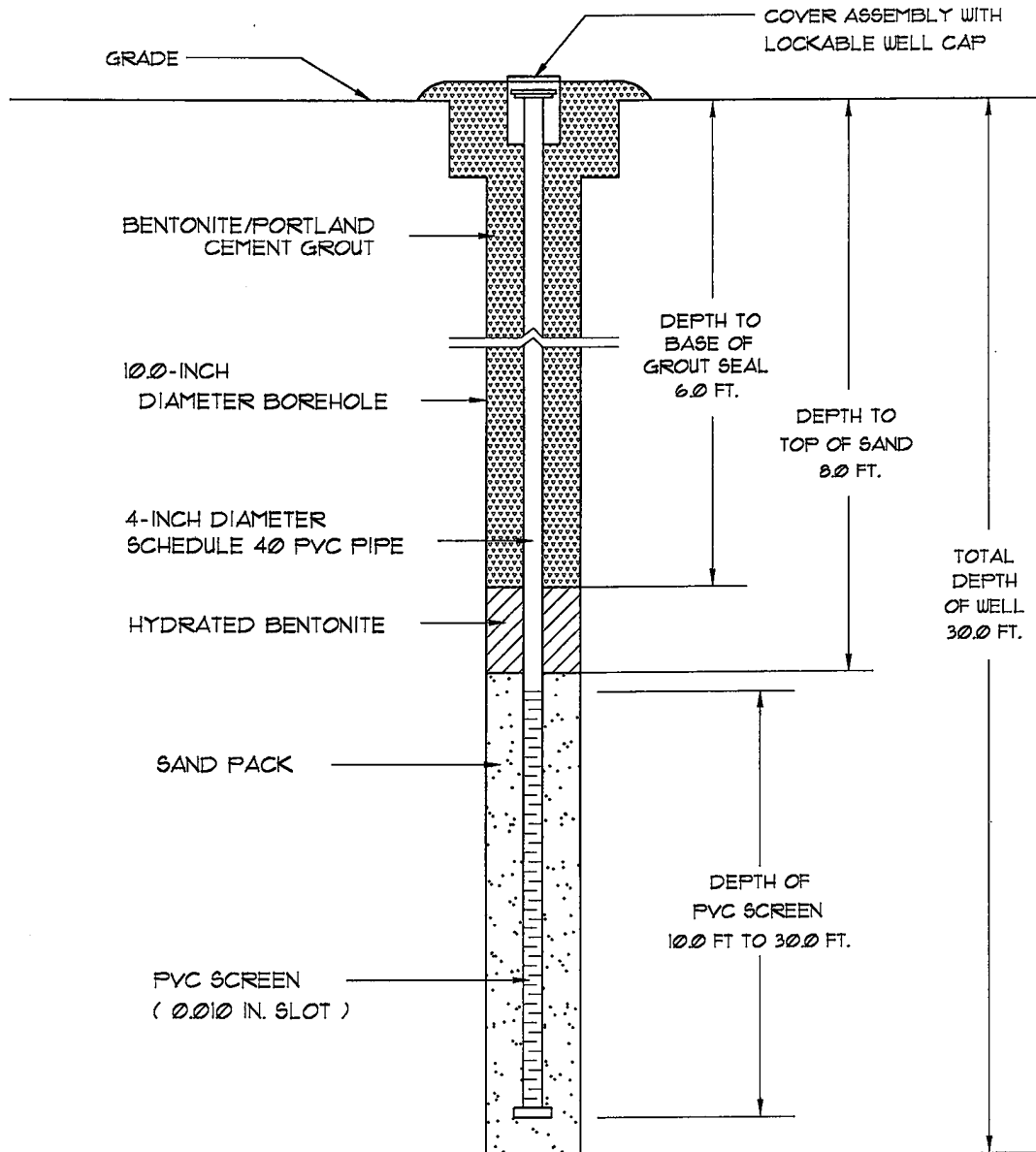
TEST BORING RECORD  
 Highway 11 Grocery  
 Salem, South Carolina  
 SCDHEC Site ID# 03439  
 MECI Project Number 12-4170

Boring Number: RW-10 (03439)  
 Date Drilled: 10/26/2012  
 Drilled By: Environmental Drilling & Probing Services, LLC  
 Logged By: R. Ariail

Prepared By:  
 Midlands Environmental Consultants, Inc.  
 235 B Dooley Road  
 Lexington, South Carolina 29073  
 (803) 808-2043 fax: 808-2048

# MONITORING WELL INSTALLATION RECORD

Highway 11 Grocery  
 Salem, South Carolina  
 SCDHEC Site ID# 03439  
 MECI Project Number 12-4170



Well Number:	RW-10 (03439)
Date Drilled:	10/26/2012
Drilled By:	Environmental Drilling & Probing Services, LLC
Driller:	J. Smith S.C. I.D. #: B 01648
Logged By:	R. Ariail

Prepared By:

**Midlands Environmental Consultants, Inc.**

235-B Dooley Road  
 Lexington, South Carolina 29073  
 (803) 208-2043 Fax: 808-2048

Depth (Feet)	Description	PID PPM	Well Diagram 0	Penetration Blows Per Foot						
				10	20	40	60	80	100	
0	Grass and Topsoil									
0	PIEDMONT RESIDUUM: Orange, Fine to Medium Sandy SILT									
5		2.6		NO BLOWCOUNTS RECORDED						
10	Partially Weathered Rock: Brown, Silty Fine to Medium SAND with Small Quartz Fragments	1.5								
15	Partially Weathered Rock: Brown, Fine to Medium SAND with Small Rock Fragments	83.5								
20	Partially Weathered Rock: Brown, Fine to Medium SAND with Small Rock Fragments and Small Quartz Fragments	15.1								
25	Partially Weathered Rock: Brown, Silty Fine to Medium SAND with Small Quartz Fragments	14.8								
24.3	Boring terminated at 27.0 Feet Below Ground Surface (BGS). Recovery Well Installed to 27.0 Feet BGS. Groundwater Measured at 17.02 Feet Below Top of Casing on 11/14/2012.									
30										
35										

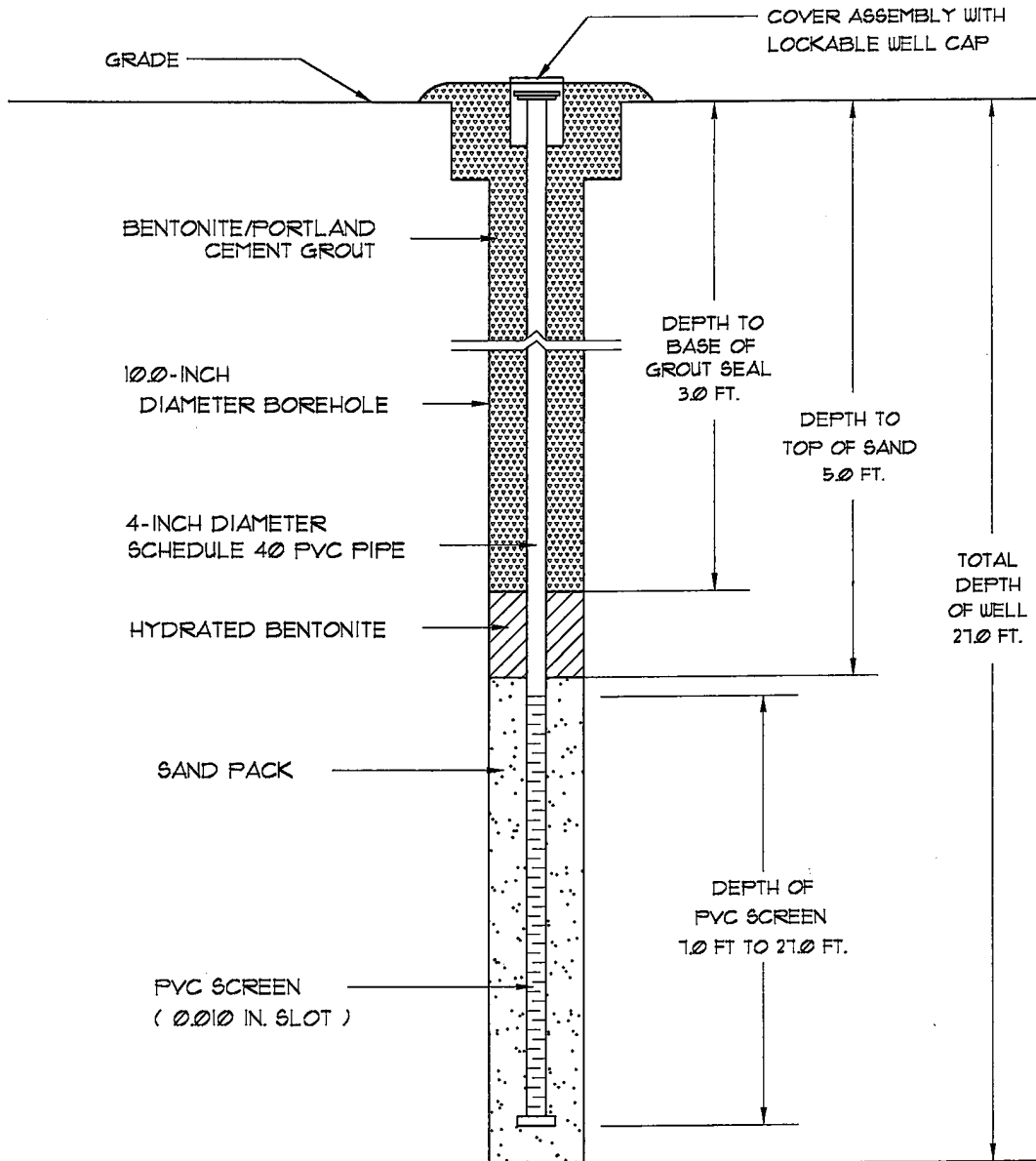
TEST BORING RECORD  
 Highway 11 Grocery  
 Salem, South Carolina  
 SCDHEC Site ID# 03439  
 MECI Project Number 12-4170

Boring Number:	RW-11 (03439)
Date Drilled:	10/29/2012
Drilled By:	Environmental Drilling & Probing Services, LLC
Logged By:	R. Ariail

Prepared By:  
 Midlands Environmental Consultants, Inc.  
 235 B Dooley Road  
 Lexington, South Carolina 29073  
 (803) 808-2043 fax: 808-2048

# MONITORING WELL INSTALLATION RECORD

Highway 11 Grocery  
 Salem, South Carolina  
 SCDHEC Site ID# 03439  
 MECI Project Number 12-4170






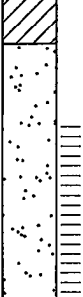
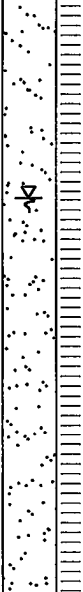
Well Number:	RW-11 (03439)
Date Drilled:	10/29/2012
Drilled By:	Environmental Drilling & Probing Services, LLC
Driller: J. Smith	S.C. I.D. #: B 01648
Logged By:	R. Ariail

Prepared By:

**Midlands**  
**Environmental**  
**Consultants, Inc.**

235-B Dooley Road  
 Lexington, South Carolina 29013  
 (803) 808-2043 fax: 808-2048



Depth (Feet)	Description	PID PPM	Well Diagram 0	Penetration Blows Per Foot																
				10	20	40	60	80	100											
	Grass and Topsoil																			
	PIEDMONT RESIDUUM: Orange, Fine to Medium Sandy SILT																			
5		2.2																		
	Brown, Fine to Medium Sandy SILT with Small Quartz Fragments																			
10		2.7																		
	Gray and Brown, Silty Fine to Medium SAND with Small Quartz Fragments																			
15		2.9																		
	Partially Weathered Rock: Brown, Silty Fine to Medium SAND with Small Quartz Fragments																			
20		33.0																		
25		27.5																		
30	Boring terminated at 30.0 Feet Below Ground Surface (BGS). Recovery Well Installed to 30.0 Feet BGS. Groundwater Measured at 19.60 Feet Below Top of Casing on 11/14/2012.	26.2																		
35																				

NO BLOWCOUNTS RECORDED

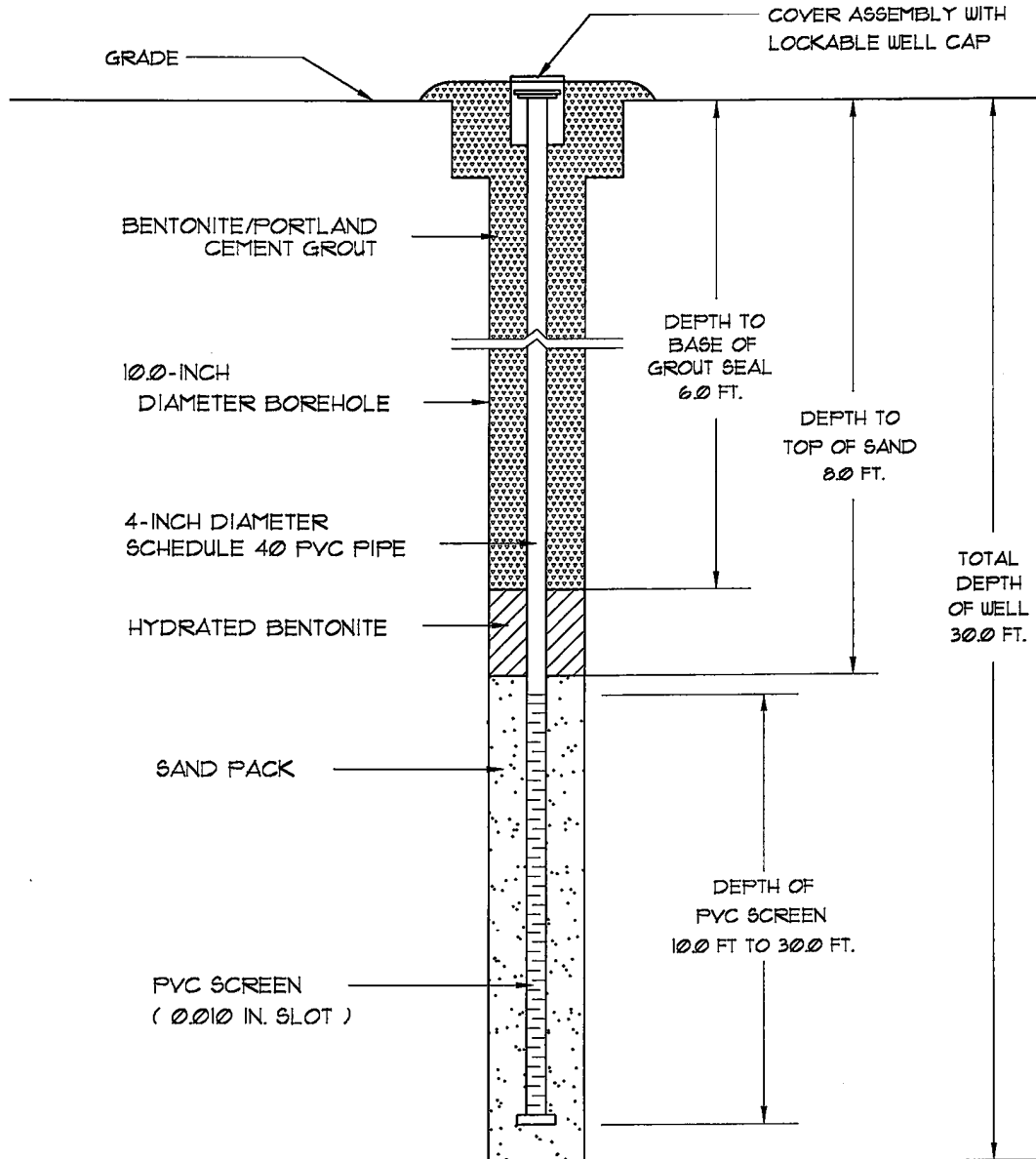
TEST BORING RECORD  
 Highway 11 Grocery  
 Salem, South Carolina  
 SCDHEC Site ID# 03439  
 MECI Project Number 12-4170

Boring Number: RW-12 (03439)  
 Date Drilled: 10/29/2012  
 Drilled By: Environmental Drilling & Probing Services, LLC  
 Logged By: R. Ariail

Prepared By:  
 Midlands Environmental Consultants, Inc.  
 235 B Dooleys Road  
 Lexington, South Carolina 29013  
 (803) 808-2043 fax: 808-2048

# MONITORING WELL INSTALLATION RECORD

Highway 11 Grocery  
 Salem, South Carolina  
 SCDHEC Site ID# 03439  
 MECI Project Number 12-4170



Well Number:	RW-12 (03439)
Date Drilled:	10/29/2012
Drilled By:	Environmental Drilling & Probing Services, LLC
Driller: J. Smith	S.C. I.D. #: B 01648
Logged By:	R. Arfoll

Prepared By:

**Midlands Environmental Consultants, Inc.**

235-B Dooley Road  
 Lexington, South Carolina 29073  
 (803) 808-2043 fax: 808-2048

Depth (Feet)	Description	PID PPM	Well Diagram	Penetration Blows Per Foot														
				0	10	20	40	60	80	100								
0	Grass and Topsoil																	
0	PIEDMONT RESIDUUM: Orange, Fine to Medium Sandy SILT																	
5		3.0																
10	Brown, Fine to Medium Sandy SILT with Small Quartz Fragments	2.7																
15	Brown, Silty Fine to Medium SAND with Small Quartz Fragments	2.3																
20		39.6																
25	Partially Weathered Rock: Brown, Silty Fine to Medium SAND with Small Quartz Fragments	11.6																
30	Partially Weathered Rock: Brown, Silty Fine to Medium SAND with Small Rock Fragments and Small Quartz Fragments	8.3																
30	Boring terminated at 29.0 Feet Below Ground Surface (BGS). Recovery Well Installed to 29.0 Feet BGS. Groundwater Measured at 18.40 Feet Below Top of Casing on 11/14/2012.																	
35																		

NO BLOWCOUNTS RECORDED

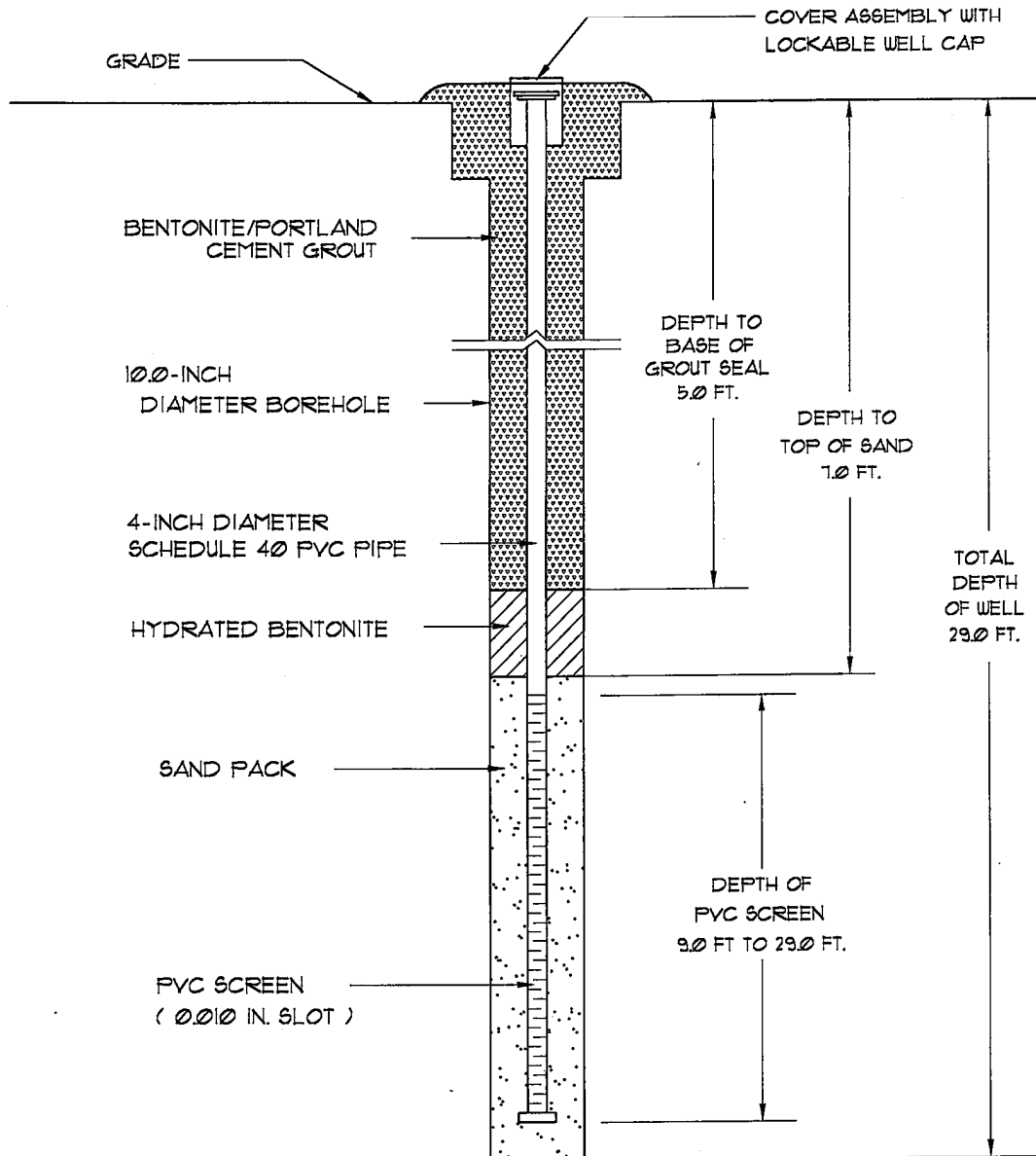
TEST BORING RECORD  
 Highway 11 Grocery  
 Salem, South Carolina  
 SCDHEC Site ID# 03439  
 MECI Project Number 12-4170

Boring Number:	RW-13 (03439)
Date Drilled:	10/29/2012
Drilled By:	Environmental Drilling & Probing Services, LLC
Logged By:	R. Ariail

Prepared By:  
 Midlands Environmental Consultants, Inc.  
 235 B Dooley Road  
 Lexington, South Carolina 29073  
 (803) 208-2043 Fax: 808-2048

# MONITORING WELL INSTALLATION RECORD

Highway 11 Grocery  
 Salem, South Carolina  
 SCDHEC Site ID# 03439  
 MECI Project Number 12-4170



Well Number:	RW-13 (03439)
Date Drilled:	10/29/2012
Drilled By:	Environmental Drilling & Probing Services, LLC
Driller: J. Smith	S.C. I.D. #: B 01648
Logged By:	R. Ariall

Prepared By:

**Midlands Environmental Consultants, Inc.**

235-B Dooley Road  
 Lexington, South Carolina 29013  
 (803) 808-2043 fax: 808-2048









Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

1. WELL OWNER INFORMATION:
Name: SCDHEC
Address: 2600 Bull Street
City: Columbia State: SC Zip: 29201-1708
Telephone: Work: (803) 898-4300 Home:

7. PERMIT NUMBER: UMW-24747

2. LOCATION OF WELL: COUNTY: Oconee
Name: Highway 11 Grocery
Street Address: 13527 S.C. Highway 11
City: Salem Zip: 29676-2926
Latitude: Longitude:

8. USE:
Residential Public Supply Process
Irrigation Air Conditioning Emergency
Test Well Monitor Well Replacement

3. PUBLIC SYSTEM NAME: PUBLIC SYSTEM NUMBER:
03439 RW-8

9. WELL DEPTH (completed) Date Started: 10/25/2012
28.5 ft. Date Completed: 10/25/2012

4. ABANDONMENT: Yes No
Grouted Depth: from ft to ft.

10. CASING: Threaded Welded
Diam.: 4 Inch
Type: PVC Galvanized
Steel Other
4.0 in. to 8.5 ft. depth
Height: Above /Below Surface 0.0 ft.
Weight lb./ft.
Drive Shoe? Yes No

5. REMARKS: RW-8

11. SCREEN:
Type: Schedule 40 PVC Diam.: 4 Inch
Slot/Gauge: 0.010 Length: 20.0 Feet
Set Between: 8.5 ft. and 28.5 ft. NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis Yes (please enclose) No

Table with 3 columns: Formation Description, Thickness of Stratum, Depth to Bottom of Stratum. Rows include Grass and Topsoil, Orange, Sandy SILT, Brown, Sandy SILT with Quartz, Weathered Rock with Quartz.

12. STATIC WATER LEVEL 19.65 ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
ft. after hrs. Pumping G.P.M.
Pumping Test: Yes (please enclose) No
Yield:

14. WATER QUALITY
Chemical Analysis Yes No Bacterial Analysis Yes No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) Yes No
Installed from 6.5 ft to 28.5 ft.
Effective size Uniformity Coefficient

16. WELL GROUTED? Yes No
Neat Cement Bentonite Bentonite/Cement Other
Depth: From 0.0 ft. to 4.5 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ft. direction
Type
Well Disinfected Yes No Type: Amount:

18. PUMP: Date installed: Not installed
Mfr. Name: Model No.:
H.P. Volts Length of drop pipe ft. Capacity gpm
TYPE: Submersible Jet (shallow) Turbine
Jet (deep) Reciprocating Centrifugal

19. WELL DRILLER: Joe Smith CERT. NO.: 01648
Address: (Print) Level: A B C D (circle one)
17538 Greenhill Road
Charlotte, North Carolina 28278
Telephone No.: 704-607-7529 Fax No.: 803-548-2233

20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.

Signed: [Signature] Date: 11/14/2012
Well Driller
If D Level Driller, provide supervising driller's name:







**Water Well Record**  
**Bureau of Water**  
 2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

**1. WELL OWNER INFORMATION:**  
 Name: SCDHEC (last) (first)  
 Address: 2600 Bull Street  
 City: Columbia State: SC Zip: 29201-1708  
 Telephone: Work: (803) 898-4300 Home:

**2. LOCATION OF WELL:** COUNTY: Oconee  
 Name: Highway 11 Grocery  
 Street Address: 13527 S.C. Highway 11  
 City: Salem Zip: 29676-2926  
 Latitude: Longitude:

**3. PUBLIC SYSTEM NAME:** PUBLIC SYSTEM NUMBER:  
 03439 RW-10

**4. ABANDONMENT:**  Yes  No  
 Grouted Depth: from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
Grass and Topsoil	0.5	0.5
Orange, Sandy SILT	4.5	5.0
Brown, Silty SAND with Quartz	9.0	14.0
Weathered Rock	16.0	30.0

\*Indicate Water Bearing Zones  
 (Use a 2nd sheet if needed)

**5. REMARKS:**  
 RW-10

**6. TYPE:**  Mud Rotary  Jetted  Bored  
 Dug  Air Rotary  Driven  
 Cable tool  Other

**7. PERMIT NUMBER:** UMW-24747

**8. USE:**  
 Residential  Public Supply  Process  
 Irrigation  Air Conditioning  Emergency  
 Test Well  Monitor Well  Replacement

**9. WELL DEPTH (completed)** Date Started: 10/26/2012  
 30.0 ft. Date Completed: 10/26/2012

**10. CASING:**  Threaded  Welded  
 Diam.: 4 Inch  
 Type:  PVC  Galvanized  
 Steel  Other  
 4.0 in. to 10.0 ft. depth  
 \_\_\_\_\_ in. to \_\_\_\_\_ ft. depth  
 Height: Above /Below Surface 0.0 ft.  
 Weight \_\_\_\_\_ lb./ft.  
 Drive Shoe?  Yes  No

**11. SCREEN:**  
 Type: Schedule 40 PVC Diam.: 4 Inch  
 Slot/Gauge: 0.010 Length: 20.0 Feet  
 Set Between: 10.0 ft. and 30.0 ft. NOTE: MULTIPLE SCREENS  
 \_\_\_\_\_ ft. and \_\_\_\_\_ ft. USE SECOND SHEET  
 Sieve Analysis  Yes (please enclose)  No

**12. STATIC WATER LEVEL** 21.20 ft. below land surface after 24 hours

**13. PUMPING LEVEL** Below Land Surface.  
 \_\_\_\_\_ ft. after \_\_\_\_\_ hrs. Pumping \_\_\_\_\_ G.P.M.  
 Pumping Test:  Yes (please enclose)  No  
 Yield: \_\_\_\_\_

**14. WATER QUALITY**  
 Chemical Analysis  Yes  No Bacterial Analysis  Yes  No  
 Please enclose lab results.

**15. ARTIFICIAL FILTER (filter pack)**  Yes  No  
 Installed from 8.0 ft. to 30.0 ft.  
 Effective size \_\_\_\_\_ Uniformity Coefficient \_\_\_\_\_

**16. WELL GROUTED?**  Yes  No  
 Neat Cement  Bentonite  Bentonite/Cement  Other \_\_\_\_\_  
 Depth: From 0.0 ft. to 6.0 ft.

**17. NEAREST SOURCE OF POSSIBLE CONTAMINATION:** \_\_\_\_\_ ft. \_\_\_\_\_ direction  
 Type \_\_\_\_\_  
 Well Disinfected  Yes  No Type: \_\_\_\_\_ Amount: \_\_\_\_\_

**18. PUMP:** Date installed: \_\_\_\_\_ Not installed   
 Mfr. Name: \_\_\_\_\_ Model No.: \_\_\_\_\_  
 H.P. \_\_\_\_\_ Volts \_\_\_\_\_ Length of drop pipe \_\_\_\_\_ ft. Capacity \_\_\_\_\_ gpm  
 TYPE:  Submersible  Jet (shallow)  Turbine  
 Jet (deep)  Reciprocating  Centrifugal

**19. WELL DRILLER: Joe Smith** CERT. NO.: 01648  
 Address: (Print) \_\_\_\_\_ Level: A B C D (circle one)  
 17538 Greenhill Road  
 Charlotte, North Carolina 28278  
 Telephone No.: 704-607-7529 Fax No.: 803-548-2233

**20. WATER WELL DRILLER'S CERTIFICATION:** This well was drilled under  
 my direction and this report is true to the best of my knowledge and belief.

Signed:  Date: 11/14/2012  
 Well Driller

If D Level Driller, provide supervising driller's name:





## Water Well Record

### Bureau of Water

2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

**1. WELL OWNER INFORMATION:**  
 Name: SCDHEC (last) (first)  
 Address: 2600 Bull Street  
 City: Columbia State: SC Zip: 29201-1708  
 Telephone: Work: (803) 898-4300 Home:

**2. LOCATION OF WELL: COUNTY: Oconee**  
 Name: Highway 11 Grocery  
 Street Address: 13527 S.C. Highway 11  
 City: Salem Zip: 29676-2926  
 Latitude: Longitude:

**3. PUBLIC SYSTEM NAME: PUBLIC SYSTEM NUMBER:**  
 03439 RW-12

**4. ABANDONMENT:**  Yes  No  
 Grouted Depth: from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
Grass and Topsoil	0.5	0.5
Orange, Sandy SILT	6.5	7.0
Brown, Sandy SILT with Quartz	3.0	10.0
Brown, Silty SAND with Quartz	10.0	20.0
Weathered Rock with Quartz	10.0	30.0

\*Indicate Water Bearing Zones  
 (Use a 2nd sheet if needed)

**5. REMARKS:**  
 RW-12

**6. TYPE:**  Mud Rotary  Jetted  Bored  
 Dug  Air Rotary  Driven  
 Cable tool  Other

**7. PERMIT NUMBER:** UMW-24747

**8. USE:**  
 Residential  Public Supply  Process  
 Irrigation  Air Conditioning  Emergency  
 Test Well  Monitor Well  Replacement

**9. WELL DEPTH (completed)** Date Started: 10/29/2012  
 30.0 ft. Date Completed: 10/29/2012

**10. CASING:**  Threaded  Welded  
 Diam.: 4 Inch  
 Type:  PVC  Galvanized  
 Steel  Other  
 4.0 in. to 10.0 ft. depth  
 \_\_\_\_\_ in. to \_\_\_\_\_ ft. depth  
 Height: Above /Below Surface 0.0 ft.  
 Weight \_\_\_\_\_ lb./ft.  
 Drive Shoe?  Yes  No

**11. SCREEN:**  
 Type: Schedule 40 PVC Diam.: 4 Inch  
 Slot/Gauge: 0.010 Length: 20.0 Feet  
 Set Between: 10.0 ft. and 30.0 ft. NOTE: MULTIPLE SCREENS  
 \_\_\_\_\_ ft. and \_\_\_\_\_ ft. USE SECOND SHEET  
 Sieve Analysis  Yes (please enclose)  No

**12. STATIC WATER LEVEL** 19.60 ft. below land surface after 24 hours

**13. PUMPING LEVEL** Below Land Surface.  
 \_\_\_\_\_ ft. after \_\_\_\_\_ hrs. Pumping \_\_\_\_\_ G.P.M.  
 Pumping Test:  Yes (please enclose)  No  
 Yield: \_\_\_\_\_

**14. WATER QUALITY**  
 Chemical Analysis  Yes  No Bacterial Analysis  Yes  No  
 Please enclose lab results.

**15. ARTIFICIAL FILTER (filter pack)**  Yes  No  
 Installed from 8.0 ft. to 30.0 ft.  
 Effective size \_\_\_\_\_ Uniformity Coefficient \_\_\_\_\_

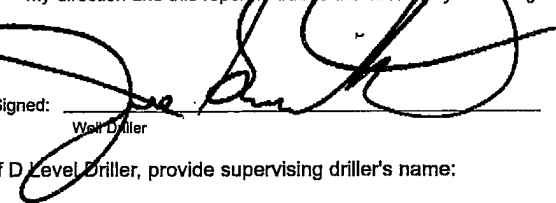
**16. WELL GROUDED?**  Yes  No.  
 Neat Cement  Bentonite  Bentonite/Cement  Other \_\_\_\_\_  
 Depth: From 0.0 ft. to 6.0 ft.

**17. NEAREST SOURCE OF POSSIBLE CONTAMINATION:** \_\_\_\_\_ ft. \_\_\_\_\_ direction  
 Type \_\_\_\_\_  
 Well Disinfected  Yes  No Type: \_\_\_\_\_ Amount: \_\_\_\_\_

**18. PUMP:** Date installed: \_\_\_\_\_ Not installed   
 Mfr. Name: \_\_\_\_\_ Model No.: \_\_\_\_\_  
 H.P. \_\_\_\_\_ Volts \_\_\_\_\_ Length of drop pipe \_\_\_\_\_ ft. Capacity \_\_\_\_\_ gpm  
 TYPE:  Submersible  Jet (shallow)  Turbine  
 Jet (deep)  Reciprocating  Centrifugal

**19. WELL DRILLER: Joe Smith** CERT. NO.: 01648  
 Address: (Print) Level: A B C D (circle one)  
 17538 Greenhill Road  
 Charlotte, North Carolina 28278  
 Telephone No.: 704-607-7529 Fax No.: 803-548-2233

**20. WATER WELL DRILLER'S CERTIFICATION:** This well was drilled under my direction and this report is true to the best of my knowledge and belief.

Signed:  Date: 11/14/2012  
 Well Driller  
 If D Level Driller, provide supervising driller's name:



## Water Well Record

### Bureau of Water

2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

**1. WELL OWNER INFORMATION:**  
 Name: SCDHEC  
 (last) (first)  
 Address: 2600 Bull Street  
 City: Columbia State: SC Zip: 29201-1708  
 Telephone: Work: (803) 898-4300 Home: \_\_\_\_\_

**7. PERMIT NUMBER:** UMW-24747

**2. LOCATION OF WELL:** COUNTY: Oconce  
 Name: Highway 11 Grocery  
 Street Address: 13527 S.C. Highway 11  
 City: Salem Zip: 29676-2926  
 Latitude: \_\_\_\_\_ Longitude: \_\_\_\_\_

**8. USE:**  
 Residential  Public Supply  Process  
 Irrigation  Air Conditioning  Emergency  
 Test Well  Monitor Well  Replacement

**3. PUBLIC SYSTEM NAME:** PUBLIC SYSTEM NUMBER:  
 03439 RW-13

**9. WELL DEPTH (completed)** Date Started: 10/29/2012  
 29.0 ft. Date Completed: 10/29/2012

**4. ABANDONMENT:**  Yes  No  
 Grouted Depth: from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

**10. CASING:**  Threaded  Welded  
 Diam.: 4 Inch  
 Type:  PVC  Galvanized  
 Steel  Other  
 4.0 in. to 9.0 ft. depth  
 \_\_\_\_\_ in. to \_\_\_\_\_ ft. depth  
 Height: Above /Below  
 Surface 0.0 ft.  
 Weight \_\_\_\_\_ lb./ft.  
 Drive Shoe?  Yes  No

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
Grass and Topsoil	0.5	0.5
Orange, Sandy SILT	4.5	5.0
Brown, Sandy SILT with Quartz	7.0	12.0
Brown, Silty SAND with Quartz	9.0	21.0
Weathered Rock with Quartz	8.0	29.0

**11. SCREEN:**  
 Type: Schedule 40 PVC Diam.: 4 Inch  
 Slot/Gauge: 0.010 Length: 20.0 Feet  
 Set Between: 9.0 ft. and 29.0 ft. NOTE: MULTIPLE SCREENS  
 \_\_\_\_\_ ft. and \_\_\_\_\_ ft. USE SECOND SHEET  
 Sieve Analysis  Yes (please enclose)  No

\*Indicate Water Bearing Zones  
 (Use a 2nd sheet if needed)

**12. STATIC WATER LEVEL** 18.40 ft. below land surface after 24 hours

**13. PUMPING LEVEL** Below Land Surface.  
 \_\_\_\_\_ ft. after \_\_\_\_\_ hrs. Pumping \_\_\_\_\_ G.P.M.  
 Pumping Test:  Yes (please enclose)  No  
 Yield: \_\_\_\_\_

**14. WATER QUALITY**  
 Chemical Analysis  Yes  No Bacterial Analysis  Yes  No  
 Please enclose lab results.

**15. ARTIFICIAL FILTER (filter pack)**  Yes  No  
 Installed from 7.0 ft. to 29.0 ft.  
 Effective size \_\_\_\_\_ Uniformity Coefficient \_\_\_\_\_

**16. WELL GROUTED?**  Yes  No  
 Neat Cement  Bentonite  Bentonite/Cement  Other \_\_\_\_\_  
 Depth: From 0.0 ft. to 5.0 ft.

**17. NEAREST SOURCE OF POSSIBLE CONTAMINATION:** \_\_\_\_\_ ft. \_\_\_\_\_ direction  
 Type \_\_\_\_\_  
 Well Disinfected  Yes  No Type: \_\_\_\_\_ Amount: \_\_\_\_\_

**18. PUMP:** Date installed: \_\_\_\_\_ Not installed   
 Mfr. Name: \_\_\_\_\_ Model No.: \_\_\_\_\_  
 H.P. \_\_\_\_\_ Volts \_\_\_\_\_ Length of drop pipe \_\_\_\_\_ ft. Capacity \_\_\_\_\_ gpm  
 TYPE:  Submersible  Jet (shallow)  Turbine  
 Jet (deep)  Reciprocating  Centrifugal

**19. WELL DRILLER: Joe Smith** CERT. NO.: 01648  
 Address: (Print) Level: A B C D (circle one)  
 17538 Greenhill Road  
 Charlotte, North Carolina 28278  
 Telephone No.: 704-607-7529 Fax No.: 803-548-2233

**5. REMARKS:**  
 RW-13

**20. WATER WELL DRILLER'S CERTIFICATION:** This well was drilled under my direction and this report is true to the best of my knowledge and belief.

Signed: \_\_\_\_\_ Date: 11/14/2012  
 Well Driller

**6. TYPE:**  Mud Rotary  Jetted  Bored  
 Dug  Air Rotary  Driven  
 Cable tool  Other

If D Level Driller, provide supervising driller's name:

**APPENDIX F:  
AQUIFER EVALUATION SUMMARY FORMS, DATA, GRAPHS, EQUATIONS**

**This appendix is not applicable to the scope of services presented in the subject report, however this page has been included in order to conform to the SCDHEC UST Management Division Programmatic QAPP and provide report continuity**

**APPENDIX G:  
DISPOSAL MANIFEST**





November 14, 2012

Re: Treatment of Purge Water  
Highway 11 Grocery  
Salem, South Carolina  
SCDHEC Site ID Number 03439  
MECI Project Number 12-4170

To Whom it May Concern;

Midlands Environmental Consultants, Inc. is providing the following letter as certification that treatment of the referenced purge water complied with the conditions of "Proposed Conditions for Use of Portable Activated Carbon Units for the Treatment of Small Volumes of Petroleum Hydrocarbon Contaminated Groundwater", as described in the following:

Applicability:

Groundwater treated was obtained as a result development of wells and sampling.

Conditions:

1. The purge/bail water from all wells is mixed before usage of the Activated Carbon Unit.
2. No free-product was detected in any of the purge water drums.
3. Analytical results of from well sampling show average concentrations of petroleum hydrocarbon constituents less than 5000 parts per billion (ppb) Benzene and less than 20,000 ppb total BTEX.
4. The existing carbon pack will be replaced/reactivated every 5,000 gallons.
5. Record of usage is maintained by Contractor.
6. Any and all recommendations and conditions issued by the Manufacturer have been adhered to.
7. Any and all recommendations and conditions (even on a site by site basis) issued by the SCDHEC must be adhered to.

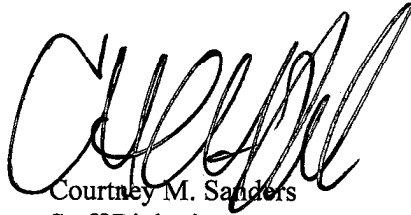
All purge waters were treated on-site using an up-flow treatment drum loaded with 30 pounds of activated carbon. Carbon will be loaded to a maximum of 3 pounds of total organic compounds or 5,000 gallons of development/purge water, whichever occurs first.

**36.0 Gallons of development water was treated on October 29, 2012 at the referenced site.**

Midlands Environmental also tracks cumulative organic compounds adsorbed on the activated carbon to ensure the capacity of carbon mass is not over-charged. This data is available upon request.

Should you have any questions or comments, please contact the undersigned.

Sincerely,  
Midlands Environmental Consultants, Inc.



Courtney M. Sanders  
Staff Biologist



Richland County LF  
 1047 Highway Church Road  
 Elgin, SC, 29045  
 Ph: (803) 788-3054

Original  
 Ticket# 1202158

Customer Name MIDLANDSENVIRON MIDLANDS ENVI Carrier MIDLANDSENVIRON MIDLANDS ENVIRONMENT  
 Ticket Date 10/29/2012 Vehicle# 1 Volume  
 Payment Type Credit Account Container  
 Manual Ticket# Driver  
 Hauling Ticket# Check#  
 Route Billing # 0000469  
 State Waste Code Gen EPA ID  
 Manifest @  
 Destination  
 PO  
 Profile VA2718 (SOIL FROM UST ASSESSMENT)  
 Generator 126-MIDLANDSENVIRONMENTAL MIDLANDS ENVIRONMENTAL

	Time	Scale	ScaleMaster	Gross	14420 lb
In	10/29/2012 06:41:28	Scale1	joyce	Tare	9220 lb
Out	10/29/2012 06:59:47	Scale2	joyce	Net	5200 lb
				Tons	2.60


Comments

Product	LD%	Qty	UDM	Rate	Fee	Amount	Origin
1 SOIL-Cont. Soil -	100	2.60	Tons				37-OCONEE
2 FUEL-Fuel Surcharg	100		%				37-OCONEE
3 EVF-P-Standard Env	100		%				37-OCONEE

Total Fees  
 Total Ticket

SIGNATURE

# SPECIAL WASTE MANIFEST

WASTE ID NUMBER VA2718	<i>Richland Landfill</i> 1047 Highway Church Road Elgin, SC 29045  Special Waste Phone: 803-744-3346 Fax: 866-904-7194	
EXPIRATION DATE November 17, 2013		
Prepared by: Karen Truett/Carol Weldon		
GENERATOR OF WASTE: Midlands Env. Consultants, Inc. - Various	ACCOUNT NUMBER: 820-469	
CUSTOMER Midlands Env. Consultants		
LOCATION OF WASTE: Site Address: Hwy 11		
CITY: Salem	COUNTY: Oconee	
PHONE NUM 803-808-2043	CONTACT: Bryan Shane	
FAX NUMBER:		
GENERATOR'S SIGNATURE <i>Pup A...</i>	DATE: 10/29/12	
TRANSPORTER OF WASTE: MECI		
DATE: 10/29/12	TRUCK NUMBER: 1	
DRIVER'S SIGNATURE <i>Pup A...</i>		
**** TO BE COMPLETED BY RICHLAND LANDFILL*****		
DISPOSAL SITE: RICHLAND LANDFILL ELGIN, SC	Waste Class: Soil	
DESCRIPTION OF WASTE: Soil from UST Assessment		
TICKET NUMBER: 1202158		
RECEIVED BY: <i>[Signature]</i>		

Columbia Matinece 0.86 tons / Hwy 11 Grocery



Palmetto Landfill  
 251 New Hope Road  
 Wellford, SC, 29385  
 Ph: (864) 439-8426

Original  
 Ticket# 596873

Customer Name MIDLANDS ENVIRONMENTAL CONSUL Carrier MIDLANDSENV MIDL  
 Ticket Date 11/02/2012 Vehicle# 1 Volume 8.0  
 Payment Type Credit Account Container  
 Hauling Ticket# Check#  
 Route Billing # 0001433  
 State Waste Code Gen EPA ID  
 Manifest 84752 Manual Ticket #  
 Destination  
 PO  
 Profile VA2718 (SOIL FROM UST ASSESSMENT)  
 Generator 126-MIDLANDSENVIRONMENTAL MIDLANDS ENVIRONMENTAL

Time	Scale	Operator	Gross	12880 lb
In 11/02/2012 13:39:19	Scale1	mahaffe	Tare	9160 lb
Out 11/02/2012 13:49:54	Scale2	mahaffe	Net	3720 lb
			Tons	1.86

Comments

Product	LD%	Qty	UOM	Rate	Fee	Amount	Origin
1 WM-Cont Soil Snd-T 100		1.86	Tons	38.19		\$71.03	GREENVILLE
2 FUEL-Fuel Surcharg 100			%	8.32		\$6.06	GREENVILLE
3 EVF-P-Standard Env 100			%	10.00		\$7.29	GREENVILLE
4 HF-SPARTANBURG COU 100		1.86	Tons	1.00		\$1.86	GREENVILLE

Total Fees  
 Total Ticket \$86.24

1/2 Hwy 11 Grocery / Former Ellison Grocery 1/2

Signature



Gate Ticket No. 596873

**NON-HAZARDOUS WASTE MANIFEST**

**84752**

**GENERATOR**

Generator: Middlelands Environmental Mailing Address  
 Shipping Location (Return completed manifest to):  
 Street: \_\_\_\_\_ Street or P.O. Box: 235 B Doolley Rd  
 City: \_\_\_\_\_ State: \_\_\_\_\_ City: Lexington  
 County: \_\_\_\_\_ State: SC Zip Code: 29073  
 Phone: (\_\_\_\_) \_\_\_\_\_ Phone: (803) 808 2643

Description of Waste Materials	Profile Number	Total Quantity	Unit of Measure	Container Type
<u>UST - Soil</u>	<u>1A2718</u>	<u>1.80</u>		

I hereby certify that the above-described materials are not hazardous wastes as defined by 40 CFR, Part 261 or any applicable state law, have been fully and accurately described, classified and packaged, and are in proper condition for transportation according to applicable regulations.

RYAN ARIAIL Ryan Aerial 11/2/12  
 Generator Authorized Agent Name (Print) Signature Delivery Date

**TRANSPORTER**

Transporter Name MFCI  
 Address 235 B Doolley Rd  
Lexington, SC 29073

Driver Name (Print) RYAN ARIAIL  
 Truck Number 1

I hereby acknowledge receipt of the above described materials for transport from the generator site listed above.

I hereby acknowledge receipt of the above described materials:  
 were received from the generator site, and were transported without incident, to the destination as stated on this form.

Ryan Aerial 11/2/12  
 Driver Signature Shipment Date

Ryan Aerial 11/2/12  
 Driver Signature Delivery Date

**DESTINATION**

Site Name: Palmetto Landfill & Recycling Center Phone Number: (864) 439-8426 • Fax: 439-0097  
 Address: 251 New Hope Road, Wellford, South Carolina 29385  
 Disposal Location: North 34 West 82 Level 853

I hereby acknowledge receipt of the above described materials.  
Michelle Mahaffey Michelle Mahaffey 11/2/12  
 Name of Authorized Agent (Print) Signature Receipt Date

NOTE: MANIFEST MUST BE FILLED OUT COMPLETELY BEFORE DISPOSAL

**APPENDIX H:  
LOCAL ZONING REGULATIONS**

**This appendix is not applicable to the scope of services presented in the subject report,  
however this page has been included in order to conform to the SCDHEC UST  
Management Division Programmatic QAPP and provide report continuity**



**APPENDIX I:  
FATE AND TRANSPORT MODELING**

**This appendix is not applicable to the scope of services presented in the subject report, however this page has been included in order to conform to the SCDHEC UST Management Division Programmatic QAPP and provide report continuity**

**APPENDIX J:**  
**ACCESS AGREEMENTS**

**This appendix is not applicable to the scope of services presented in the subject report, however this page has been included in order to conform to the SCDHEC UST Management Division Programmatic QAPP and provide report continuity**

**APPENDIX K:  
DATA VERIFICATION CHECKLIST**

**Contractor Checklist**

Item#	Item	Yes	No	N/A
1	Are Facility Name, Permit #, and address provided?	X		
2	Is UST Owner/Operator name, address, & phone number provided?	X		
3	Is name, address, & phone number of current property owner provided?	X		
4	Is the DHEC Certified UST Site Rehabilitation Contractor's Name, Address, telephone number, and certification number provided?	X		
5	Is the name, address, telephone number, and certification number of the well driller that installed borings/monitoring wells provided?	X		
6	Is the name, address, telephone number, and certification number of the certified laboratory(ies) performing analytical analyses provided?			X
7	Has the facility history been summarized?	X		
8	Has the regional geology and hydrogeology been described?	X		
9	Are the receptor survey results provided as required?			X
10	Has current use of the site and adjacent land been described?	X		
11	Has the site-specific geology and hydrogeology been described?	X		
12	Has the primary soil type been described?	X		
13	Have field screening results been described?			X
14	Has a description of the soil sample collection and preservation been detailed?			X
15	Has the field screening methodology and procedure been detailed?			X
16	Has the monitoring well installation and development dates been provided?	X		
17	Has the method of well development been detailed?	X		
18	Has justification been provided for the locations of the monitoring wells?	X		
19	Have the monitoring wells been labeled in accordance with the UST QAPP guidelines?	X		
20	Has the groundwater sampling methodology been detailed?			X
21	Have the groundwater sampling dates and <u>groundwater measurements</u> been provided? (Appendix E)	X		
22	Has the purging methodology been detailed?			X
23	Has the volume of water purged from each well been provided along with measurements to verify that purging is complete? (Appendix B)			X
24	If free-product is present, has the thickness been provided?	X		
25	Does the report include a brief discussion of the assessment done and the results?	X		
26	Does the report include a brief discussion of the aquifer evaluation and results?			X
27	Does the report include a brief discussion of the fate & transport models used?			X

Item#	Item	Yes	No	N/A
28	Are the site-conceptual model tables included? (Tier 1 Risk Evaluation)			X
29	Have the exposure pathways been analyzed? (Tier 2 Risk Evaluation)			X
30	Have the SSTLs for each compound and pathway been calculated? (Tier 2 Risk Evaluation)			X
31	Have recommendations for further action been provided and explained?			X
32	Has the soil analytical data for the site been provided in tabular format? (Table 1)			X
33	Has the potentiometric data for the site been provided in tabular format? (Table 2)	X		
34	Has the <u>current</u> and historical laboratory data been provided in tabular format? (Tables 3 & 3A)			X
35	Have the aquifer characteristics been provided and summarized on the appropriate form? (Appendix F)			X
36	Have the Site conceptual model tables been included? (Tier 1 Risk Evaluation)			X
37	Has the topographic map been provided with all required elements? (Figure 1)	X		
38	Has the site base map been provided with all required elements? (Figure 2)	X		
39	Have the CoC site maps been provided? (Figure 4)			X
40	Has the site potentiometric map been provided? (Figure 5)	X		
41	Have the geologic cross-sections been provided? (Figure 2)			X
42	Have maps showing the predicted migration of the CoCs through time been provided? (Tier 2 Risk Evaluation)			X
43	Has the site survey been provided and include all necessary elements? (Appendix A)			X
44	Have the sampling logs, chain of custody forms, and the analytical data package been included with all required elements? (Appendix B)			X
45	Is the laboratory performing the analyses properly certified?			X
46	Has the tax map been included with all necessary elements? (Appendix C)			X
47	Have the soil boring/field screening logs been provided? (Appendix D)			X
48	Have the well completion logs and SCDHEC Form 1903 been provided? (Appendix E)	X		
49	Have the aquifer evaluation forms, data, graphs, equations, etc. been provided? (Appendix F)			X
50	Have the disposal manifests been provided? (Appendix G)	X		
51	Has a copy of the local zoning regulations been provided? (Appendix H)			X
52	Has all fate and transport modeling been provided? (Appendix I)			X
53	Have copies of all access agreements obtained by the contractor been provided? (Appendix J)			X
54	Has a copy of this form been attached to the final report and are explanations for any missing or incomplete data been provided? (Appendix K)	X		



Catherine B. Templeton, Director

*Promoting and protecting the health of the public and the environment*

MR LARRY HINKLE  
JOCASSEE RECREATION CENTER LLC  
PO BOX 878  
PICKENS SC 29671-0878

DEC 04 2012



Re: Recovery well installation report review letter  
Highway 11 Grocery, 13527 SC-11, Salem, SC  
UST Permit #03439  
Recovery well installation report received November 16, 2012  
Oconee County

Dear Mr. Reid:

The Underground Storage Tank (UST) Management Division has reviewed the referenced report (see enclosure) submitted by Midlands Environmental Consultants. The report documents that nine recovery wells were installed along a fractured quartz vein to intercept potential free-phase product (FPP). Three of the wells, RW-6, RW-7, and RW-9, successfully intercepted measurable FPP. The next appropriate scope of work will be to conduct AFVR events on the newly installed wells and existing monitoring well MW-8 to remove FPP.

On all correspondence or inquiries regarding this project, please reference UST Permit #03439. If you have any questions or need additional information, you can reach me by phone at (803) 896-6398, fax (803) 896-6245, or email at [padgettj@dhcc.sc.gov](mailto:padgettj@dhcc.sc.gov).

Sincerely,

Joel P. Padgett, P.G, Geologist/Hydrologist  
Corrective Action Section  
UST Management Division  
Bureau of Land and Waste Management

enc.: Recovery well installation report  
cc: Technical file (w/o enc.)

DHEC/UST/JPP/113012





Catherine B. Templeton, Director

*Promoting and protecting the health of the public and the environment*

DEC 04 2012

MR JAMES W REID  
185 REID DR  
SALEM SC 29676

Re: Recovery well installation report review letter  
Highway 11 Grocery, 13527 SC-11, Salem, SC  
UST Permit #03439  
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Sincerely,

Joel P. Padgett, P.G, Geologist/Hydrologist  
Corrective Action Section  
UST Management Division  
Bureau of Land and Waste Management

enc.: Recovery well installation report  
cc: Technical file (w/o enc.)

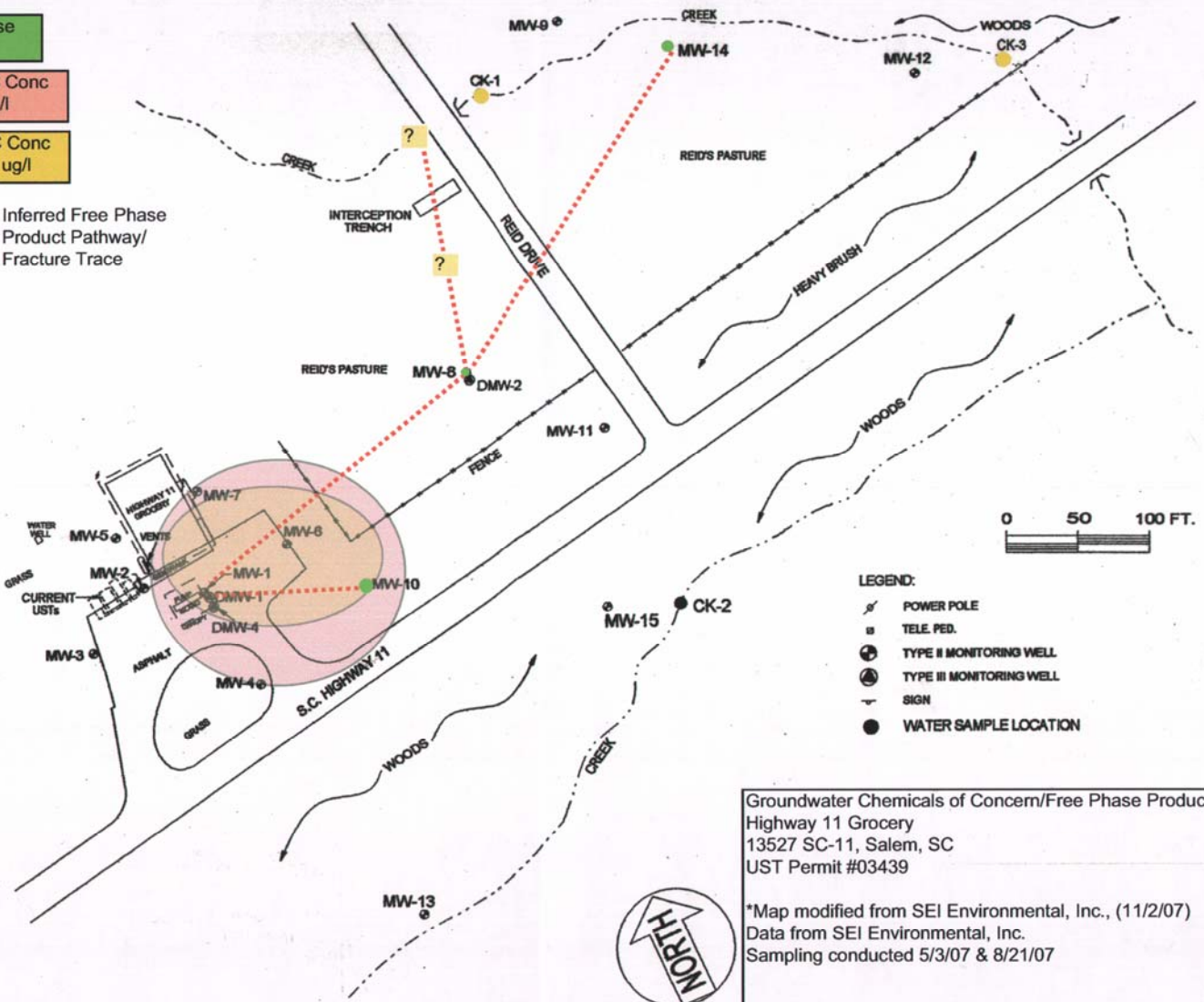
DHEC/UST/JPP/113012

Free Phase Product

Total CoC Conc  
10-100 ug/l

Total CoC Conc  
100-2500 ug/l

----- Inferred Free Phase Product Pathway/  
Fracture Trace



- LEGEND:
- ⚡ POWER POLE
  - ▣ TELE. PED.
  - ⊕ TYPE II MONITORING WELL
  - ⊙ TYPE III MONITORING WELL
  - ⚡ SIGN
  - WATER SAMPLE LOCATION

Groundwater Chemicals of Concern/Free Phase Product  
Highway 11 Grocery  
13527 SC-11, Salem, SC  
UST Permit #03439

\*Map modified from SEI Environmental, Inc., (11/2/07)  
Data from SEI Environmental, Inc.  
Sampling conducted 5/3/07 & 8/21/07



Catherine B. Templeton, Director

*Promoting and protecting the health of the public and the environment*

BRYAN SHANE  
MIDLANDS ENVIRONMENTAL CONSULTANTS  
PO BOX 854  
LEXINGTON SC 29071

MAR 15 2013



Re: **QAPP Contractor Addendum Request**  
Groundwater Sampling Contract  
Solicitation # IFB-5400002759, PO#4600088529

Dear Mr. Shane:

In accordance with bid solicitation # IFB-5400002759 and the UST Management Division Quality Assurance Program Plan (QAPP), it is requested that you submit a Contractor Addendum for each site listed below. The Addendums must be submitted within 15 business days in my attention. The project manager for each site will issue a notice to proceed once the Addendum has been reviewed and approved. Please note, site reconnaissance should be conducted during the Addendum review so that any issues that arise may be addressed prior to commencing work at the site.

UST Permit #	Site Name	County	# samples and requested analysis*	Project Manager
09210	Brownies Super Service	York	36-BTEXMN, DCA, Oxygenates, & EDB	D. Thoma
09395	Sharon Quick Stop	York	27-BTEXMN, DCA, Oxygenates, & EDB	D. Thoma
12581	AA Kelley & Sons	Lee	30-BTEXMN, DCA, Oxygenates, & EDB	D. Thoma
14681	Olanta Royal Market	Florence	16-BTEXMN, DCA, Oxygenates, & EDB	M. Rivers
15170	Silken Webb Flower	Beaufort	18-BTEXMN, DCA, Oxygenates, & EDB	S. Burson
03439	Highway 11 Grocery	Oconee	40-BTEXMN, DCA, Oxygenates, & EDB	J. Padgett
01496	Charleston Public Works	Charleston	23-BTEXMN, DCA, & Oxygenates	J. Padgett

\* The number of samples may not include trip blanks, field blanks, or field duplicates.

Please contact me with the sampling schedule before commencing work at these facilities. In addition, a weekly update for each site is required to be submitted via e-mail to the site's project manager and myself. If you have any questions or need further assistance, please contact me at (803) 896-6397 or [thomadl@dhec.sc.gov](mailto:thomadl@dhec.sc.gov).

Sincerely,

Debra L. Thoma, Hydrogeologist  
Corrective Action Section  
UST Management Division  
Bureau of Land & Waste Management

Enc: Site Information Packets

cc: Technical Files

March 27, 2013

**Midlands  
Environmental  
Consultants, Inc.**

Ms. Debra Thoma, Hydrogeologist  
Corrective Action Section  
Assessment and Corrective Action Division  
Underground Storage Tank Program  
Bureau of Land and Waste Management  
South Carolina Department of Health  
and Environmental Control  
2600 Bull Street  
Columbia, South Carolina 29201



Subject: QAPP Contractor Addendum – Revision 0  
Highway 11 Grocery  
Salem, South Carolina  
SCDHEC Site ID Number 03439  
MECI Project Number 13-4392  
Certified Site Rehabilitation Contractor UCC-0009



Dear Ms. Thoma,

Midlands Environmental Consultants Inc. (MECI) is pleased to submit the attached QAPP Contractor Addendum for the referenced site.

On March 26, 2013, MECI personnel performed a site visit to the subject site to evaluate site conditions, locate monitoring wells and identify potential problems for future sampling activities.

If you have any question or comments please feel free to contact us at 803-808-2043.

Sincerely,  
**Midlands Environmental Consultants, Inc.**

Courtney M. Sanders  
Staff Biologist

Jeff L. Coleman  
Senior Scientist

Section A: Project Management

**A1 Title and Approval Page**

Quality Assurance Project Plan  
Addendum to the SC DHEC UST Programmatic QAPP  
For

---

Highway 11 Grocery, SCDHEC Site ID# 03439

---

13527 Highway 11, Salem, South Carolina

---

*Prepared by:*  
**Courtney M. Sanders**  
*Staff Biologist*  
Midlands Environmental Consultants, Inc.  
(Certified Site Rehabilitation Contractor UCC-0009)  
235-B Dooley Road  
Lexington, SC 29073  
(803)808-2043

---

Date: March 27, 2013


---

Approvals


Joel P. Padgett, P.G.  
SC DHEC Project Manager

 Signature \_\_\_\_\_ Date \_\_\_\_\_


Courtney M. Sanders  
Contractor QA Manager

 Signature \_\_\_\_\_ Date 3/27/13

Jeff L. Coleman  
Site Rehabilitation Contractor

 Signature \_\_\_\_\_ Date 3/27/13

Daniel J. Wright  
Laboratory Director

 Signature \_\_\_\_\_ Date 03/27/2013

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### A3 Distribution List

Name	Title	Organization/Address	Telephone Number	Fax Number	Email Address
Joel P. Padgett, P.G.	SC DHEC Technical Project Manager	SCDHEC, UST Management Division, 2600 Bull St., Columbia, SC, 29201	803-896-6398	803-896-6245	padgettjp@dhec.sc.gov
Jeff L. Coleman	Site Rehabilitation Contractor	Midlands Environmental Consultants, Inc. 235-B Dooley Road Lexington, SC 29073	803-808-2043	803-808-2048	jlc@meci.net
Courtney M. Sanders	Quality Assurance Officer	Midlands Environmental Consultants, Inc. 235-B Dooley Road Lexington, SC 29073	803-808-2043	803-808-2048	cms@meci.net
Kyle V. Pudney	Field Manager	Midlands Environmental Consultants, Inc. 235-B Dooley Road Lexington, SC 29073	803-808-2043	803-808-2048	kvp@meci.net
Daniel J. Wright	Laboratory Director	Shealy Environmental Services, Inc. 106 Vantage Point Dr. West Columbia, SC 29172	803-791-9700	803-791-9111	dwright@shealylab.com
	Well Services/Driller				

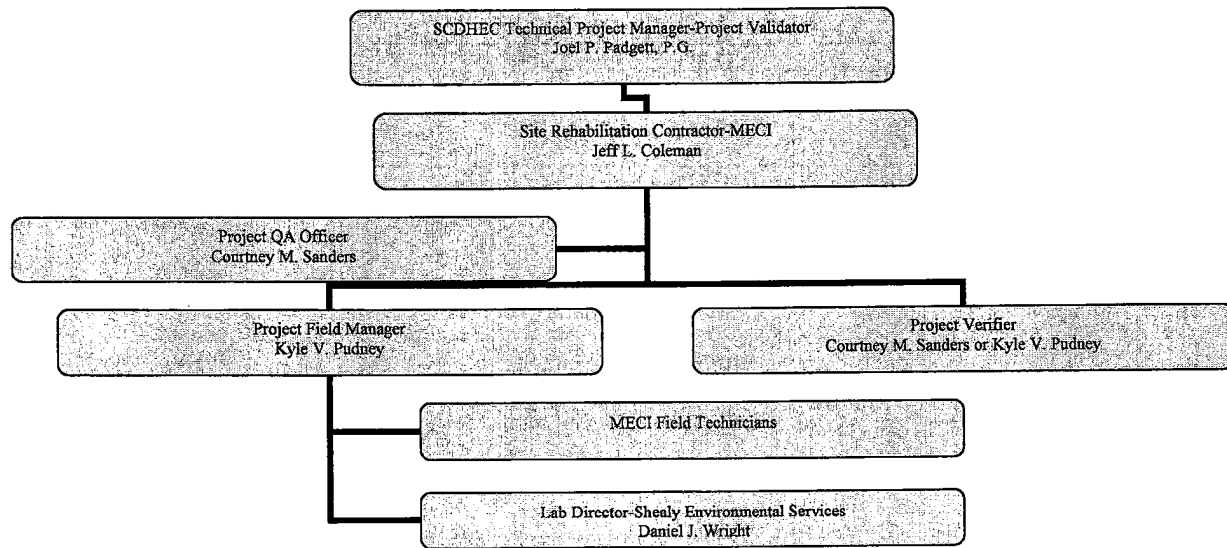
Table 1A Addendum Distribution List

### A4 Project Organization

Role from the UST Master QAPP	Person in this Role for Project	Organization/Address	Telephone Number	Fax Number	Email Address
Project Manager	Joel P. Padgett, P.G.	SCDHEC, UST Management Division, 2600 Bull St., Columbia, SC, 29201	803-896-6398	803-896-6245	padgettjp@dhec.sc.gov
Site Rehabilitation Contractor	Jeff L. Coleman	Midlands Environmental Consultants, Inc. 235-B Dooley Road Lexington, SC 29073	803-808-2043	803-808-2048	jlc@meci.net
Quality Assurance Officer	Courtney M. Sanders	Midlands Environmental Consultants, Inc. 235-B Dooley Road Lexington, SC 29073	803-808-2043	803-808-2048	cms@meci.net
Field Manager	Kyle V. Pudney	Midlands Environmental Consultants, Inc.	803-808-2043	803-808-2048	kvp@meci.net

Role from the UST Master QAPP	Person in this Role for Project	Organization/Address	Telephone Number	Fax Number	Email Address
		235-B Dooley Road Lexington, SC 29073			
Analytical Laboratory Director	Daniel J. Wright	Shealy Environmental Services, Inc. 106 Vantage Point Dr. West Columbia, SC 29172	803-791-9700	803-791-9111	dwright@shealylab.com
Project Verifier	Courtney M. Sanders or Kyle V. Pudney	Midlands Environmental Consultants, Inc. 235-B Dooley Road Lexington, SC 29073	803-808-2043	803-808-2048	cms@meci.net

**Table 2A Addendum Role Identification and Contact Information**



**Figure 1A Organizational Chart**

Project Manager (Joel P. Padgett, P.G.) – The project manager is responsible for direct oversight of contractors conducting assessment and site rehabilitation of releases at UST sites.

Site Rehabilitation Contractor (Jeff L. Coleman) – The Site Rehabilitation Contractor is an independent contractor responsible for managing and coordinating field and office activities needed for assessments or cleanup.

- Final Review of all work produced for a scope of work.
- Final say on technical interpretation of data.



Quality Assurance Officer (Courtney M. Sanders) – The Quality Assurance Officer is responsible for the oversight of all quality assurance activities associated with projects performed by the Site Rehabilitation Contractor.

- In charge of producing and maintaining the QAPPA for MECI.
- Reviews (and Audits, if necessary) all work produced in conjunction with a scope of work.
- Quality control of data entry and report preparation.

Field Manager (Kyle Pudney) –The field manager will oversee all work done on any given project.

- Assign, direct and oversee all field personnel working on each project.
- Responsible for coordinating with the SCDHEC project manager, should any problems or clarifications arise.
- Responsible for all reporting done in conjunction with field work.

Analytical Laboratory Director (Daniel J. Wright) – The Laboratory Director is directly responsible for the Analytical Laboratory used during a scope of work. The Analytical Laboratory receives the soil and water samples from the site rehabilitation contractor, performs the requested analyses, and provides analytical reports.

Project Verifier (Courtney M. Sanders) – The project verifier is responsible for verifying the quality of data produced during a scope of work. This includes review of field work and laboratory reports for potential quality issues.

Field Technicians (various employees) – Responsible for all field activities for a given scope of work.

- Conduct all initial site visit, and record findings
- Conduct all field activities associated with a scope of work. All work will be conducted according to the MECI SOP. Will be responsible for reporting any potential problems or inconsistencies found during assessment activities.
- Completes the chain of custody upon completion of sampling event and delivers samples to lab or office for later lab pick-up.

## **A5 Problem Definition/Background**

***Discuss the background (as much as is known) of the site and appropriate historical information, and why this site is being assessed.***

The subject site (Highway 11 Grocery) is located at 13527 Highway 11 Grocery, Salem Oconee County, South Carolina. The subject site formerly maintained one 2,000 gallon diesel underground storage tank (UST), one 3,000 gallon gasoline UST's, and two 6,000 gallon gasoline UST's. The subject tanks were abandoned by removal from the ground in September of 2009. The South Carolina Department of Health and Environmental Control (SCDHEC) reported and confirmed a release of petroleum product from the subject tanks in November of 2000. The subject site is currently rated a Class 1E.

The site is being sampled in conjunction with the SCDHEC Groundwater Sampling Contract (Solicitation # IFB-5400002759, PO# 4600088529).

**Please answer the following: Does this project fall under UST or Brownfields area?**

Underground Storage Tank Division

### **A6 Project/Task Description**

- 1. Summarize what is known about the work to be done. This can be a short sentence indicating what the Scope of this project is (see Master QAPP Section A6).**

The subject site (Highway 11 Grocery) will be sampled in conjunction with the SCDHEC Groundwater Sampling Contract (Solicitation # IFB-5400002759, PO# 4600088529). During assessment activities monitoring wells will be sampled for petroleum constituents.

- 2. The work will begin within fourteen (14) days of receipt of approved QAPP contractors addendum after cost approval and sampling should be complete by twenty-one (21) days of receipt of approved QAPP contractors addendum.**

- 3. Are there are time or resource constraints? Include those factors that may interfere with the tentative schedule.**

Factors that may prevent schedule work will be, but not limited to, inclement weather, equipment malfunction, and machine failure.

### **A7 Data Quality Objectives (DQOs) and Data Quality Indicators (DQIs)**

The subject site (Highway 11 Grocery) is located at 13527 Highway 11, Salem Oconee County, South Carolina. The site is currently occupied by a bar, The Post.

### **A8 Training and Certificates**

Required training and licenses:

Title/Job	Name	Training Required	Date training received	Type of License	License Number
Principal Geologist	Bryan T. Shane, P.G.	Professional Geologist	10/30/1993	State of South Carolina	1102
Senior Scientist	Jeff Coleman	OSHA 40 hr HAZWOPER	7/27/2007	N/A	N/A
		OSHA 8 hr HAZWOPER refresher	12/10/2012	N/A	N/A
Staff Geologist	John Bryant	OSHA 40 hr HAZWOPER	4/17/2009	N/A	N/A
		OSHA 8 hr HAZWOPER refresher	12/10/2012	N/A	N/A
Staff	Courtney Sanders	OSHA 40 hr	12/10/2010	N/A	N/A

Title/Job	Name	Training Required	Date training received	Type of License	License Number
Biologist		HAZWOPER			
		OSHA 8 hr HAZWOPER refresher	12/10/2012	N/A	N/A
Staff Biologist	Kyle Pudney	OSHA 40 hr HAZWOPER	12/10/2010	N/A	N/A
		OSHA 8 hr HAZWOPER refresher	12/10/2012	N/A	N/A
Staff Biologist	Chris Lashley	OSHA 40 hr HAZWOPER	12/10/2010	N/A	N/A
		OSHA 8 hr HAZWOPER refresher	12/10/2012	N/A	N/A
Staff Biologist	Gavin Globensky	OSHA 40 hr HAZWOPER	7/29/2011	N/A	N/A
		OSHA 8 hr HAZWOPER refresher	12/10/2012	N/A	N/A
Staff Biologist	Ryan Ariail	OSHA 40 hr HAZWOPER	9/23/2011	N/A	N/A
		OSHA 8 hr HAZWOPER refresher	12/10/2012	N/A	N/A
Staff Geologist	Patrick Boylan	OSHA 40 hr HAZWOPER	07/20/2012	N/A	N/A
Lab Manager	Daniel J. Wright	***	***	Lab Certification	SC 32010

Table 3A Required Training and Licenses

Courtney M. Sanders of Midlands Environmental Consultants, Inc. is responsible to ensuring that personnel participating in this project receive the proper training. All training records will be stored in the following location: 235-B Dooley Road, Lexington, SC 29073.

**It is understood that training records will be produced if requested by SC DHEC.**

The Following Laboratory(ies) will be used for this Project:

**Commercial Lab(s)**

Full Name of the Laboratory Shealy Environmental Services, Inc.

Name of Lab Director Daniel J. Wright

SC DHEC Certification Number 32010

Parameters this Lab will analyze for this project:

All samples will be analyzed for BTEX, Naphthalene, MTBE, 1,2 DCA, 8-Oxygenates (EPA Method 8260-B), and EDB (EPA Method 8011).

Please note: SC DHEC may require that the contractor submit some or all of the Laboratory's SOPs as part of this QAPP.

## A9 Documents and Records

**Personnel will receive the most current version of the QAPP Addendum via:  
 (Check all that apply)**

US Mail     Courier     Hand delivered

Other (please specify): E-mailed electronic copies

Record	Produced By	Hardcopy/ Electronic	Storage Location For how long?	Archival
Instrument Raw Data	Target, Thermospec, or Iteva software	Hardcopy and Electronic	Hardcopy: Offsite storage for 7 yrs Electronic: Two external storage device backups – one offsite, one onsite storage for 10 yrs	Yes
Final Reports	LIMS	Electronic	Electronic: Two external storage device backups – one offsite, one onsite storage for 10 years	Yes
Field Work	Field Staff	Hardcopy	MECI office: 235/B Dooley Road / Min. 5 years	Yes
Chain of Custody	Field Staff	Hardcopy	MECI office: 235B Dooley Road / Min. 5 years	Yes
QAPP Addendum	Courtney Sanders	Hardcopy & Electronic	MECI office: 235B Dooley Road / Min. 5 years	Yes
Internal QC record	Courtney Sanders	Hardcopy	MECI office: 235B Dooley Road / Min. 5 years	Yes
Sampling Report	Courtney Sanders	Hardcopy & Electronic	MECI office: 235B Dooley Road / Min. 5 years	Yes

Table 4A Record Identification, Storage, and Disposal

## Section B Measurement/Data Acquisition

### B1 Sampling Process/Experimental Design

Item	Start Date	End Date	Comments
Site Reconnaissance	3/26/13	3/26/13	Already Completed
QAPP preparation	3/27/13	3/27/13	In progress
QAPP approval	3/29/13	4/21/13	Assuming three week turnaround

Item	Start Date	End Date	Comments
Monitoring well Sampling	4/22/13	5/6/13	Sampled within 2 weeks of QAPP approval
Report Preparation	5/7/13	5/28/13	Three weeks to prepare/submit report

Table 5A Sampling Activities

## B2 Sampling Methods

Please note: The contractor must follow sampling protocols as given in the UST QAPP.

**Estimate the number of samples of each matrix that are expected to be collected:**

Soil	_____
Ground Water from monitoring wells	_____ 25 _____
From Drinking/Irrigation water wells	_____
Field Duplicate Collection	_____ 2 _____
Field Blank Collection	_____ 1 _____
Trip Blank	_____ 1 _____
From surface water features	_____ 3 _____
Total number of Water samples	_____ 32 _____

**Notes:**

During the March 26, 2013 site visit, twenty five (25) monitoring wells and three surface water features were located. Monitoring wells MW-3, MW-6, and MW-13 were not located during the initial site visit. If the monitoring wells are located during sampling activities, the newly located wells will be sampled accordingly.

During the site visit it was noted that all located wells were in good condition.

All monitoring well samples will be analyzed by BTEX, Naphthalene, MTBE, 1,2 DCA, 8-Oxygenates (EPA Method 8260-B) and EDB (EPA Method 8011).

***For the sample matrices indicated above, please describe how samples will be collected and the equipment needed.***

Please see MECI Monitoring Well Sampling SOP for sampling procedures and type of materials used for sampling.

***Will Sampling Equipment have to be cleaned and decontaminated or is everything disposable?***

All equipment, excluding electronic water level indicators, field probes and turbidity tubes, is disposable.

***If sampling equipment must be cleaned please give a detailed description of how this is done and the disposal of by-products from the cleaning and decontamination.***

Please see MECI Monitoring Well Sampling SOP for decontamination procedures.

***Identify any equipment and support facilities needed. This may include such things as Fed-ex to ship the samples, a Geoprobe, field analysis done by another contractor (who must be certified), and electricity to run sampling equipment.***

All samples will be shipped to the lab via courier or overnight shipping company. Please see MECI Monitoring Well Sampling SOP for sample shipping procedures.

***Address the actions to be taken when problems occur in the field, and the person responsible for taking corrective action and how the corrective action will be documented.***

Failure	Response	Documentation	Individual Responsible
Water level indicator not working properly	Attempt to clean probe, change battery, use back-up indicator if need be.	Record on field sheets, notify office staff. Take indicator out of rotation until problem identified and corrected.	Field Staff, Field Manager
Field meters not working	Attempt to clean probes, recalibrate in the field.	Record on field sheets, notify office staff. Take meters out of rotation until problem identified and corrected.	Field Staff, Field Manager
Wells not located	Use metal detector, measure from known points, contact project manager for additional information.	Record method used to attempt to locate the well on field sheets, and possibly reasoning for the well to be missing	Field Staff

Table 6A Field Corrective Action

### B3 Sample Handling and Custody

***1. How will the samples get from the Site to the Lab to ensure holding requirements are met?***

Following sample collection, the samples are immediately place in a laboratory provided cooler, pre-filled with wet ice obtained from the MECI office. Samples are transported to the MECI office once a sampling event is complete. A Chain of Custody (CoC) is filled out following the sampling event by the field staff. See attached CoC. If a lab provided courier is scheduled to visit the MECI offices the day following a sampling event, sampling coolers are repacked with wet ice, and left at the office for pick-up the following morning. If no courier is schedule to visit the MECI office the day following a sampling event, all sampling

coolers are repacked with ice and are dropped off at a lab approved shipping company for overnight delivery to the lab.

**2. How will the contactors cool the samples and keep the samples cool?**

All samples are kept on wet ice, obtained from MECI office.

**3. How will the lab determine the temperature of the samples upon receipt? Will they be using a temperature blank?**

A calibrated thermometer and temperature blank will be used to document sample temperature. The temperature blank is immediately checked by the sample receiving technician upon arrival at the laboratory.

**4. Where will the samples be stored in the Lab once they are received?**

All samples are stored in clean refrigeration units monitored and maintained at 4 degrees C + or - 2 degrees. Volatile organic samples are stored separately from all other samples.

**5. Describe the chain of custody procedure and attach a copy of each chain of custody that will be used. If a Chain of Custody SOP exists from the Lab and the Contractor is willing to adhere to it, then this may be attached.**

A chain of custody (COC) will be filled out for each sampling event at each project site. COC to be signed by MECI and Shealy Environmental technician at time physical transfer of samples occurs to courier. Shealy uses the following COC procedures to protect sample integrity following pickup by their courier: A full time Sample Receiving Technician receives all samples and completes a Sample Receipt Checklist (SRC), which will identify any anomalies, if any exist the Sample Receiving Technician or Project Manager must resolve the deviation internally and/or notify the client to resolve the anomaly

**B4 Analytical Methods**

**1. Identify the SOPs which will be used to analyze the samples, the method which the SOP references and the equipment or instrumentation that is needed:**

Parameter	SOP ID*	Method Referenced	Equipment	Comments
BTEX+Naph+MTBE+Oxygentaes	S-VO-002	8260B	GC/MS	
PAH's	S-SV-021	8270D	GC/MS	
EDB	S-SV-012	8011	GC	
Lead,T.	S-IM-022	6010C	ICP	
Ferrous Iron	S-IN-009	SM 3500-FED	Spectrophotometer	
Nitrate	S-IN-042	353.2	Auto-analyzer/Lachate	
Sulfate	S-IN-010	300.0	Ion Chromatograph	
Methane	S-VO-004	RSK-175	GC	
TOC	S-IN-030	Walkley-Black	N/A	

DRO - TPH	S-SV-001	8015C	GC	
pH	MECI SOP 4.3.6	*	YSI 63	
Conductivity	MECI SOP 4.3.6	*	YSI 63	
Dissolved Oxygen	MECI SOP 4.3.6	*	YSI 550A	
Temperature	MECI SOP 4.3.6	*	YSI 550A	
Turbidity	MECI SOP 4.3.6	*	60 cm Turbidity Tube	

Table 7A Analytical SOPs and Referenced Methods

- This can be a full name of a SOP, an abbreviation, or a number. In the latter two cases, the abbreviation or number must be associated with the full name of the SOP. See also Table 8A SOP Abbreviation Key.

Abbreviation	Lab Identification of this SOP	Full Name of the SOP
S-VO-002	S-VO-002	GC/MS VOLATILES ANALYSIS BASED ON EPA METHODS 8260B AND 624 PREPARED BY EPA METHODS 5030B, 5035 AND 3585
S-SV-021	S-SV-021	GC/MS ANALYSIS BASED ON EPA METHOD 8270D PREPARED BY EPA METHODS 3520C, 3550C AND 3580A
S-SV-012	S-SV-012	GC/ECD ANALYSIS OF EDB AND DBCP BASED ON METHOD 8011 & 504.1
S-IM-022	S-IM-022	INDUCTIVELY COUPLED PLASMA ATOMIC EMISSION SPECTROSCOPY-PECTROMETRIC METHOD for TRACE ELEMENT ANALYSES METHOD 6010C
S-IN-009	S-IN-009	FERROUS IRON (PHENANTHROLINE METHOD) STANDARD METHOD 3500-Fe D
S-IN-042	S-IN-042	NITRATE+NITRITE NITROGEN BY EPA METHOD 353.2, NITRATE NITROGEN BY 353.2 SUBTRACTION, AND NITRITE NITROGEN BY EPA METHOD 353.2
S-IN-010	S-IN-010	INORGANIC ANIONS BY ION CHROMATOGRAPHY EPA METHOD 300.0 and SW-846 9056 and 9056A
S-VO-004	S-VO-004	STANDARD OPERATING PROCEDURE GC ANALYSIS BASED ON METHOD RSKSOP-175
S-IN-030	S-IN-030	TOTAL ORGANIC CARBON (TOC) WALKLEY-BLACK PROCEDURE
S-SV-001	S-SV-001	GC/FID DIESEL RANGE ORGANICS ANALYSIS BASED ON METHOD 8015B and/or 8015C PREPARED BY EPA METHODS 3520C, 3550C and 3580A
MECI SOP 4.3.6	MECI SOP 4.3.6	Sampling Standard operating procedures

Table 8A SOP Abbreviation Key

2. Identify procedures to follow when failures occur, identify the individual responsible for corrective action and appropriate documentation:

Failure	Response	Documented Where?	Individual Responsible



Field meters not working	Attempt to clean probes, recalibrate in the field.	Record on field sheets, notify office staff. Take meters out of rotation until problem identified and corrected.	Field Staff, Field Manager
COC or Sample Receiving issues	Call Client	Sample Receiving Checklist (SRC)	PM – Kelly Maberry <a href="mailto:kmaberry@shealylab.com">kmaberry@shealylab.com</a>
Analytical errors	Corrective Action Form (CAF)	CAF filled out by PM	Lab Director – Daniel J. Wright <a href="mailto:dwright@shealylab.com">dwright@shealylab.com</a>
QA/QC Failure	Corrective Action Form (CAF)	CAF filled out by PM	Lab Director –Daniel J. Wright <a href="mailto:dwright@shealylab.com">dwright@shealylab.com</a> QA/QC Officer – Jami Savje <a href="mailto:Jsavje@shealylab.com">Jsavje@shealylab.com</a>
On time delivery	Corrective Action Form (CAF)	CAF filled out by PM	Lab Director –Daniel J. Wright <a href="mailto:dwright@shealylab.com">dwright@shealylab.com</a> QA/QC Officer – Jami Savje <a href="mailto:Jsavje@shealylab.com">Jsavje@shealylab.com</a>

Table 9A Corrective Action Procedures

3. Identify sample disposal procedures.

Analysis	Matrix	Schedule for disposal	Method for disposal	Comments
BTEX+Naph+MTBE+Oxygenates	Waters/Soils	Six Weeks	Tested for Hazardous Constituents and disposed as Hazardous or non-Hazardous waste.	
PAH's	Waters/Soils	Six Weeks	Tested for Hazardous Constituents and disposed as Hazardous or non-Hazardous waste.	
EDB	Waters/Soils	Six Weeks	Tested for Hazardous Constituents and disposed as Hazardous or non-Hazardous waste.	
Lead	Waters/Soils	Six Weeks	Tested for	

			Hazardous Constituents and disposed as Hazardous or non-Hazardous waste.	
Ferrous Iron	Waters/Soils	Six Weeks	Tested for Hazardous Constituents and disposed as Hazardous or non-Hazardous waste.	
Nitrate,Sulfate	Waters/Soils	Six Weeks	Tested for Hazardous Constituents and disposed as Hazardous or non-Hazardous waste.	
Methane	Waters/Soils	Six Weeks	Tested for Hazardous Constituents and disposed as Hazardous or non-Hazardous waste.	
All	Water	On-Site	Portable Granulated Activated Carbon (GAC) Unit	All waste water produced from sampling and decontamination activities will be run through a GAC unit

Table 10A Sample Disposal Procedures

- Provide SOPs for the Kerr Method or the Ferrous Iron Method if these are parameters for this study. This can be attached or written here. If attached please note that it is an attachment and where it is located (if applicable).

### B5 Quality Control Requirements:

All QC will follow the requirements laid out in Section B5 of the UST Programmatic QAPP.

### B6 Field Instrument and Equipment Testing, Inspection and Maintenance

- Identify all field and laboratory equipment needing periodic maintenance, the schedule for this, and the person responsible. Note the availability and location of spare parts.

Instrument	Serial Number	Type of Maintenance	Frequency	Parts	Person responsible
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				<b>needed/Location</b>	
Volatiles Mass Spec	Shealy SOP S-SV-021 Page 7	Change traps, clean ion source, replace filaments	Periodic	Laboratory	MSV Analyst
Semivolatile Mass Specc	Shealy SOP S-SV-021 Page 7	Injection port maintenance, ion source maintenance, column replacement	Periodic	Laboratory	MSSV Analyst
ECD GC	Shealy SOP S-SV-012 Page 5	Injection port maintenance, column replacement	Periodic	Laboratory	GC Analyst
Dionex IC	Shealy SOP S-IN-010 Page 6	Replace auto sampler filter, tubing, line filter, sample Line and Waste Line, as needed. Check Reagent levels, flow rate, waste line.	Periodic	Laboratory	IC Analyst
ICP	Shealy SOP S-IM-005 Page 6 & 7	Clean Sample introduction system , auto sampler, torch, Change spray chamber, torch tubing, tubing	Periodic	Laboratory	ICP Analyst
Leeman Mercury Analyzer	Shealy SOP S-IM-006 Page 5	Clean GLS, Change Pump tubing, Nafion Dryer, Lamp	Periodic	Laboratory	Mercury Analyst
Flow Injection Analysis – Lachat 8000	Shealy SOP S-IN-042 Page 5	Replace sample and reagent lines, replace light source, re-wrap heating coil, replace column	Periodic/As Needed	Laboratory	Nitrate Analyst
YSI 63	09C 101302, 10K 101895, 07M 100905	Replace probe tip	Yearly	Order from YSI	C. Sanders
YSI 63	09C 101302, 10K 101895, 07M 100905	Replace batteries	As Needed	In stock at office	Field Staff
YSI 63	09C 101302, 10K 101895, 07M 100905	General inspection for wear and tear on equipment	Daily	Major fixes will be done out of office	Field Staff
YSI 63	09C 101302, 10K 101895, 07M 100905	Check buffer solutions for expiration	Weekly	In stock at office	C. Sanders
YSI 550A	04L 2026AK, 08B 101407, 04A 0912AI	Replace membrane	4 to 8 weeks	In stock at office	Field Staff
YSI 550A	04L 2026AK, 08B 101407, 04A 0912AI	Replace batteries	As Needed	In stock at office	Field Staff
YSI 550A	04L 2026AK,	General inspection for	Daily	Major fixes will be	Field Staff

	08B 101407, 04A 0912AI	wear and tear on equipment		done out of office	
Turbidity Tube	#1, #2, #3	General inspection for wear and tear on equipment, clarity of Secchi Disk	Daily	Tubes will be cleaned/fixd in office	Field Staff

**Table 11A Instrument and Equipment Maintenance**

2. Identify the testing criteria for each lab or field instrument that is used to ensure the equipment is performing properly. Indicate how deficiencies, if found, will be resolved, re-inspections performed, and effectiveness of corrective action determined and documented. Give the person responsible for this

Instrument/Equipment & Serial Number	Type of Inspection	Requirement	Individual Responsible	Resolution of Deficiencies
Volatiles Mass Spec Shealy SOP S-SV-021 Page 7	Daily calibration check	Method Requirements	MSV Analyst	Recalibration or instrument maintenance
Semi-volatiles Mass Spec Shealy SOP S-SV-021 Page 7	Daily calibration check	Method Requirements	MSSV Analyst	Recalibration or instrument maintenance
ECD GC Shealy SOP S-SV-012 Page 5	Daily calibration check	Method Requirements	GC Analyst	Recalibration or instrument maintenance
Dionex IC Shealy SOP S-IN-010 Page 6	Daily calibration check	Method Requirements	IC Analyst	Recalibration or instrument maintenance
ICP Shealy SOP S-IM-005 Page 6 & 7	Daily calibration check	Method Requirements	ICP Analyst	Recalibration or instrument maintenance
Leeman Mercury Analyzer Shealy SOP S-IM-006 Page 5	Daily calibration check	Method Requirements	Mercury Analyst	Recalibration or instrument maintenance
Flow Injection Analysis -- Lachat 8000 Shealy SOP S-IN-042 Page 5	Daily and continuing calibration check	See calibration criteria	Nitrate Analyst	Recalibration or instrument maintenance
YSI 63 - 09C 101302, 10K 101895, 07M 100905	Daily calibration check	See calibration criteria	Field Staff	Recalibrate, general maintenance then recalibrate. Ship off for service by manufacturer
YSI 550A - 04L 2026AK, 08B 101407, 04A 0912AI	Daily calibration check	See calibration criteria	Field Staff	Recalibrate, general maintenance then recalibrate. Ship off for service by manufacturer

Table 12A Instrument and Equipment Inspection

## B7 Instrument Calibration and Frequency

1. Identify equipment, tools, and instruments for field or lab work that should be calibrated and the frequency.
2. Describe how the calibrations should be performed and documented, indicating test criteria and standards or certified equipment.
3. Identify how deficiencies should be resolved and documented. Identify the person responsible for corrective action.

Instrument	Calibration Procedure	Frequency of Calibration	Acceptance Criteria	Corrective Action (CA)	Person Responsible for CA	SOP Reference*
Volatiles Mass Spec	Minimum of 5 calibration standards for all compounds	When indicated by continuous calibration verification standard	Method Criteria	Detailed in SOP	MSV Analyst	S-VO-002
Semi-volatile Mass Spec	Minimum of 5 calibration standards for all compounds	When indicated by calibration verification standard	Method Criteria	Detailed in SOP	MSSV Analyst	S-SV-021
GC ECD	Minimum of 5 calibration standards for all compounds	When indicated by calibration verification standard	Method Criteria	Detailed in SOP	GC Analyst	S-SV-012
Dionex IC	Minimum of 5 calibration standards for all compounds	When indicated by calibration verification standard	Method Criteria	Detailed in SOP	IC Analyst	S-IN-010
ICP	Minimum of 3 calibration standards for all compounds	When indicated by calibration verification standard	Method Criteria	Detailed in SOP	ICP Analyst	S-IM-022
Cetac Mercury Analyzer	Minimum of 5 calibration standards for all compounds	When indicated by calibration verification standard	Method Criteria	Detailed in SOP	Mercury Analyst	S-IM-006
Lacaht QuickChem 8000	Minimum of 5 calibration standards	Daily or when indicated by calibration verification standard	Method Criteria	Detailed in SOP	Nitrate Analyst	S-IN-042
YSI 63	pH Calibration	Daily	+/- 0.2 pH units	clean/replace probe tip, recalibrate	Field Staff	4.3.6
YSI 63	Conductivity Calibration	As directed by manufacturer	+/- 10 uS	clean/replace probe tip,	Field Staff	4.3.6

Instrument	Calibration Procedure	Frequency of Calibration	Acceptance Criteria	Corrective Action (CA)	Person Responsible for CA	SOP Reference*
				recalibrate		
YSI 550A	DO calibration	Daily	+/- 0.25 mg/l	clean/replace probe tip, recalibrate	Field Staff	4.3.6
YSI 550A	Temperature Calibration	Daily	+/- 1 °C	clean/replace probe tip, recalibrate	Field Staff	4.3.6
Electronic Water Level Indicator	Checked vs. Standard	Monthly	+/- 0.01 foot per 10 foot length	Replace probe tape	Field Staff	***
Oil/Water Interface probe	Checked vs. Standard	Monthly	+/- 0.01 foot per 10 foot length	Replace probe tape	Field Staff	***

Table 13A Instrument Calibration Criteria and Corrective Action

\* This can be a full name of a SOP, an abbreviation, or a number. In the latter two cases, the abbreviation or number must be associated with the full name of the SOP. See also Table 8A SOP Abbreviation Key.

## B8 Inspection/Acceptance Requirements for Supplies and Consumables

1. Identify critical supplies and consumables for field and laboratory, noting supply source, acceptance criteria, and procedures for tracking, storing and retrieving these materials.
2. Identify the individual(s) responsible for this.

Item	Vendor	Acceptance criteria	Handling/Storage Conditions	Person responsible for inspection and tracking.
Laboratory Chemicals	Fisher, VWR	Certificates of analysis and laboratory testing	Laboratory storage	Receiving and laboratory personnel
Laboratory standards	O2Si, Restek, High Purity, VHG, Supelco	Certificates of analysis and laboratory verifications	Vendor specific storage conditions	Laboratory Analysts
Sample Containers	Daniels Scientific, QEC	Certificates of analysis and laboratory testing	Bottle storage area	Sample receiving personnel
Clear, Disposable polyethylene Bailers	Preferred Pump	Individual sleeves intact, ball valve operational	Stored in Vehicle Bay, Off of the ground	C. Sanders, Field Staff
Nylon Rope	Preferred Pump	Covered with plastic	Stored in Vehicle Bay, Off of the ground	C. Sanders, Field Staff
Nitrile Gloves	Preferred Pump	Unopened box, no holes	Stored in Vehicle Bay, Off of the ground	C. Sanders, Field Staff
40 mL HCL preserved amber vials	Shealy Environmental Services	Custody seal intact	Stored in Vehicle Bay, Off of the ground	C. Sanders, Field Staff
250 mL HNO3 preserved metals vials	Shealy Environmental Services	Custody seal intact	Stored in Vehicle Bay, Off of the ground	C. Sanders, Field Staff
Coolers	Shealy	Intact	Stored in Vehicle	C. Sanders, Field Staff

	Environmental Services		Bay, Off of the ground	
pH Buffer	TRS Environmental, Enviroequipment	Within expiration date	Stored in calibration room	C. Sanders, Field Staff
Conductivity Standard	TRS Environmental, Enviroequipment	Within expiration date	Stored in calibration room	C. Sanders, Field Staff
DO Membranes	YSI, Enviroequipment	Clean, in box	Stored in calibration room	C. Sanders, Field Staff
Batteries	Any Store	Not previously used	Stored in calibration room	C. Sanders, Field Staff

Table 14A List of Consumables and Acceptance Criteria

### B9 Data Acquisition Requirements (Non-Direct Measurements)

1. Identify data sources, for example, computer databases or literature files, or models that should be accessed or used.
2. Describe the intended use of this information and the rationale for their selection, i.e., its relevance to project.
3. Indicate the acceptance criteria for these data sources and/or models.

Data Source	Used for	Justification for use in this project	Comments
Historical Data	Site Maps and Well Construction Information	Well Location and Detail	

Table 15A Non-Direct Measurements

4. Identify key resources/support facilities needed.

There are no non-direct measurements in this project

### B10 Data Management

1. Describe the data management scheme from field to final use and storage.

Following sample collection and chain of custody production, samples are shipped to the lab. Field work from the field staff is reviewed by the MECI project manager, and converted into digital form. All data entry is subsequently checked to validate the data entry. The original copies of the field work are stored in MECI files for a minimum of 5 years. Digital copies of the work are stored on the MECI server, which is backed up weekly, and stored for a minimum of 5 years. The digital copy of the field work is presented to SCDHEC with the final report.

2. How does the lab and field staff ensure that no unauthorized changes are made to the chain of custody, sampling notebooks, laboratory notebooks and computer records?

The laboratory maintains comprehensive Quality Control and Training Programs. All sample receipt data, sample log-in, and analytical data is peer reviewed, including review for inappropriate changes. Data management, review procedures and the Quality Systems Program are documented in the laboratory's Quality Manual and Standard Operating Procedures. The Quality Assurance Department oversees adherence to and review of these programs.

All MECI field work is produced using ink-pens. Any attempt to alter field data, after sampling is complete, can be readily identified. MECI keeps a carbon copy of the chain of custody after it is shipped to the lab. This copy is kept with the field work. If any change to the CoC are suspected, this original carbon copy can be use to identify potential changes.

3. How does the lab ensure that there are no errors in samples records including times when sample information is compiled, data calculated and/or transmitted?

Sample data acquisition software is reviewed periodically. The LIMS database is backed up daily and is able to be restored in the event of a system failure. These procedures are documented in laboratory SOP S-AD-003, LIMS. The IT Manager is responsible for these systems and procedures."

4. How will the data be archived once the report is produced? How can it be retrieved? (This applies to both electronic and hard copies).

Laboratory Hardcopy data stored off site is logged, maintained and archived by the Quality Assurance Department. Laboratory Electronic Data Reports are maintained through IT back up under the responsibility of the IT Systems Manager.

MECI keeps all field work and paper copies of reports in its in-house filing system. All paper copies are stored for a minimum of 5 years. Any file can be retrieved easily by going to the correct filing cabinet/box.

All electronic copies of reports generated are kept on the MECI server. This server is backed-up on a weekly basis. Any file stored on the MECI server can be retrieved instantly, by accessing the server. All electronic files are stored for a minimum of 5 years on the server.

## **Section C Assessment and Oversight**

### **C1 Assessment and Response Actions**

1. *The Contractor is supposed to observe field personnel daily during sampling activities to ensure samples are collected and handled properly and report problems to DHEC within 24 hours. . Please state who is responsible for doing this and what observations will be made. Will this person have the authority to stop work if severe problems are seen?*



Field audits can be conducted on any field personnel at any time. MECI field audits can be conducted by the Field Manger, who will be responsible for ensuring that field personnel adhere to the QAPP. If during a random field audit, severe problems are found, work will be stopped by the field manager and the QA officer contacted to determine corrective action. All problems must be corrected prior to any additional work being performed. Should it be requested, an On-site Field Audit can be scheduled with the SCDHEC project manager. If severe problems are identified by the SCDHEC project manager, the project manager can stop the work until the problems are corrected.

- 2. The SCDHEC UST QAPP states that the Lab will receive an Offsite Technical System Audit. For this project, what assessments will be done on the Commercial Lab(s) that are being used—other than their certification audit? When or how often are these done? Who will the results be given to and who has the ability to stop work if problems are severe?*

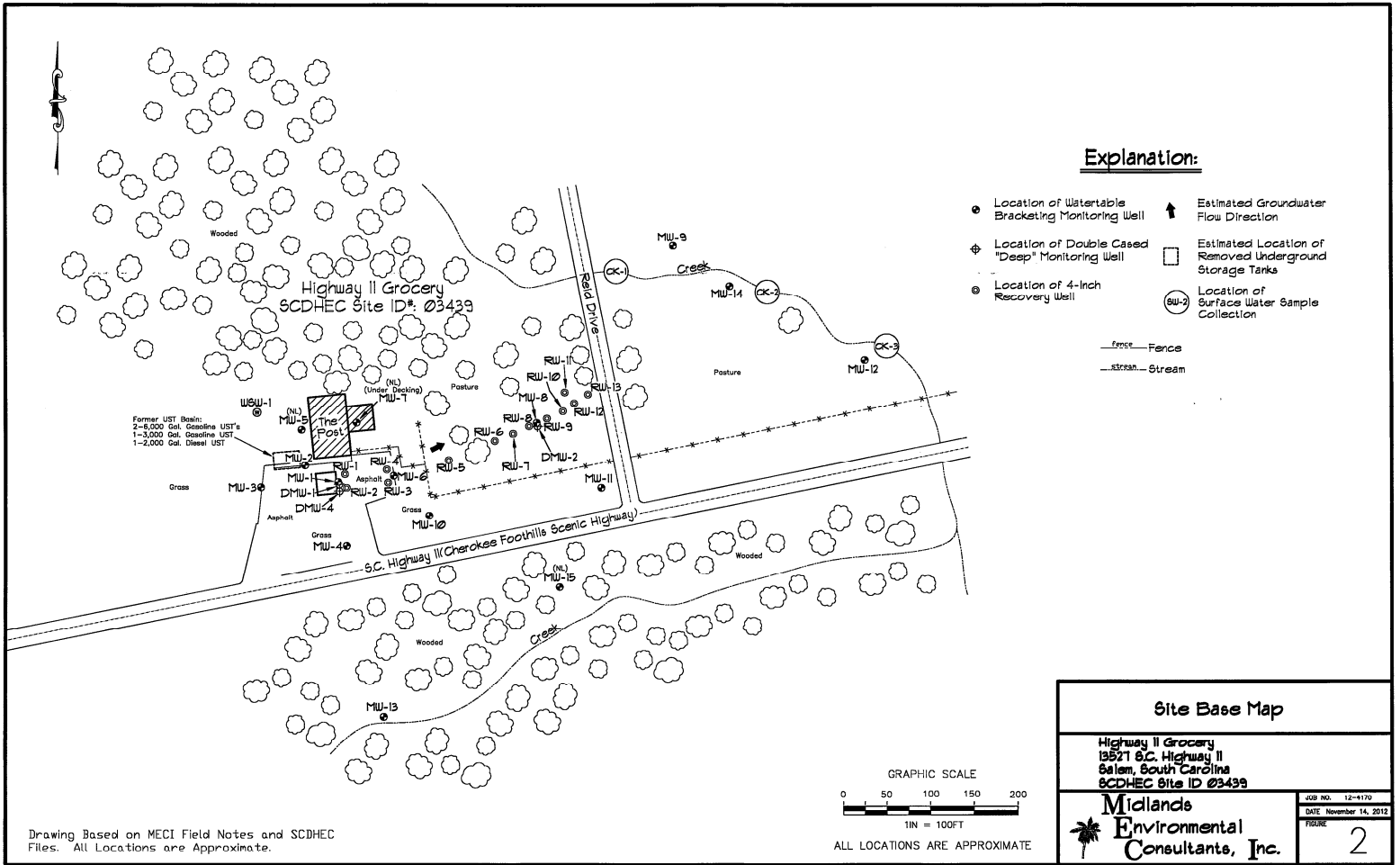
The laboratory participates in annual Proficiency Testing through an approved vendor, Wibby Environmental. If during a random audit, severe problems are found, work will be stopped by the according Wibby Environmental representative and the QA officer contacted to determine corrective action. Proficiency Testing results are provided to the Office of Environmental Laboratory Certification.

## **C2 Reports to Management**

See the SC DHEC UST Programmatic QAPP (UST Master QAPP).

## **Section D Data Validation and Usability**

See the SC DHEC UST Programmatic QAPP (UST Master QAPP).



Drawing Based on MECI Field Notes and SCDHEC Files. All Locations are Approximate.



Chain of Custody Record

Shealy Environmental Services, Inc.
106 Vantage Point Drive
West Columbia, South Carolina 29172
Telephone No. (803) 791-9700 Fax No. (803) 791-9111
www.shealylab.com

Number

Form containing fields for Client, Report to Contact, Sampler (Printed Name), Quote No., Address, Telephone No., Fax No., Email, Waybill No., Page, City, State, Zip Code, Preservative, Project Name, Project Number, P.O Number, Matrix, Sample ID / Description, Date, Time, Analysis, Remarks / Cooler ID, Turn Around Time Required, Sample Disposal, QC Requirements, Possible Hazard Identification, and a table for Relinquished by / Sampler.



Catherine B. Templeton, Director

*Promoting and protecting the health of the public and the environment*



APR 26 2013

BRYAN SHANE PG  
MIDLANDS ENVIRONMENTAL CONSULTANTS  
PO BOX 854  
LEXINGTON SC 29071

Re: Notice to Proceed-Groundwater sampling/QAPP Contractor Addendum approval  
Groundwater sampling contract  
Solicitation #IFB-5400002759, PO #4600088529  
Highway 11 Grocery, 13527 SC-11, Salem, SC  
UST Permit #03439; CA #45515 (MECI); CA #45516 (Shealy)  
Oconee County

Dear Mr. Shane:

In accordance with bid solicitation #IFB-5400002759 and the Quality Assurance Program Plan (QAPP) for the UST Management Division, the QAPP Contractor Addendum has been reviewed and approved. In accordance with the QAPP, a project status report should be provided on a weekly basis via e-mail. If any quality assurance problems arise, you must contact me within 24 hours via phone or e-mail. In addition, a discussion of the problem(s) encountered (including quality assurance problems), the actions taken, and the results must be included in the final report submitted to the UST Management Division.

Midlands Environmental Consultants, Inc. will perform services at the site on behalf of the release owner/operator (O/O) and payment for the services will be made from the State Underground Petroleum Environmental Response Bank (SUPERB) account. The release O/O has no obligation to pay for this scope of work. Please coordinate access to the facility with the property owner. The Agency grants pre-approval for transportation of virgin petroleum impacted soil and groundwater from the referenced site to a permitted treatment facility. There can be no spillage or leakage in transport. All investigation-derived waste (IDW) must be properly contained and labeled prior to disposal. A copy of the disposal manifest and/or acceptance letter from the receiving facility that clearly designates the quantity received must be included with the final report. The SUPERB Account will not reimburse for transportation or treatment of soil and/or groundwater with concentrations below RBSLs. **Please note, the final report is due within 3 weeks from the date the site is sampled. If the site is not sampled by the specified due date or the report is not received in the specified time period, a late fee may be imposed.**

The final report should contain the requirements of Section III.2.15 of the bid solicitation. Please submit the report to Debra Thoma, the contract manager.

If you have any site-specific questions, please contact me at (803) 896-6398 or via e-mail at [padgetjp@dhec.sc.gov](mailto:padgetjp@dhec.sc.gov). If you have any contract-specific questions, please contact Debra Thoma at (803) 896-6397 or via e-mail at [thomadl@dhec.sc.gov](mailto:thomadl@dhec.sc.gov).

Sincerely,



Joel P. Padgett, P.G., Geologist/Hydrologist  
Corrective Action Section  
UST Management Division  
Bureau of Land & Waste Management

JPP/jpp  
03439.mr1

enc: Approved QAPP Contractor Addendum signature page  
Approved cost agreement

cc: Debra Thoma, Corrective Action Section (w/o enc)  
Kelly Maberry, Shealy Environmental, 106 Vantage Point Dr., West Columbia, SC, 29172 (w/approved CA)  
Technical files (w/enc)

Section A: Project Management

A1 Title and Approval Page

Quality Assurance Project Plan  
Addendum to the SC DHEC UST Programmatic QAPP  
For

Highway 11 Grocery, SCDHEC Site ID# 03439

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13527 Highway 11, Salem, South Carolina

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Prepared by:  
Courtney M. Sanders  
Staff Biologist  
Midlands Environmental Consultants, Inc.  
(Certified Site Rehabilitation Contractor UCC-0009)  
235-B Dooley Road  
Lexington, SC 29073  
(803)808-2043

Date: March 27, 2013


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Approvals

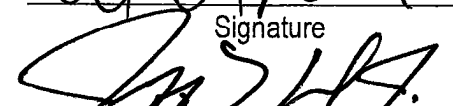
Joel P. Padgett, P.G.  
SC DHEC Project Manager

  
Signature Date 4/24/13

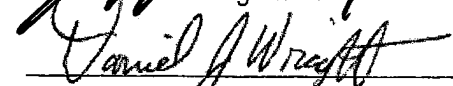
Courtney M. Sanders  
Contractor QA Manager

  
Signature Date 3/27/13

Jeff L. Coleman  
Site Rehabilitation Contractor

  
Signature Date 3/27/13

Daniel J. Wright  
Laboratory Director

  
Signature Date 03/27/2013



UNDERGROUND STORAGE TANK MANAGEMENT DIVISION  
BUREAU OF LAND AND WASTE MANAGEMENT  
2600 Bull Street, Columbia, South Carolina 29201  
Telephone: 803-896-6240

**MEMORANDUM**

TO: Midlands Environmental Consultants, Inc

FROM: Joel Padgett

RE: NOTICE TO PROCEED

Facility Name: Highway 11 Grocery

Permit Number: 03439

County: Oconee

Work To Be Completed: Sample all MW/RW and surface water locations CK-1 through CK-3 for BTEX+naph+MtBE+DCA+oxygenates, EDB. Do not sample wells containing measurable free-phase product. Please coordinate with Mr. Larry Hinkle (site property owner) at (864) 944-0494 and Mr. James Reid (off-site property owner) at (864) 944-0360 for property access.

Shealy Environmental 45516

MECI 45515

# Approved Cost Agreement 45515

Facility: 03439 HWY 11 GROCERY

PADGETJP

PO Number:

<u>Task / Description</u>	<u>Categories</u>	<u>Item Description</u>	<u>Qty / Pct</u>	<u>Unit Price</u>	<u>Amount</u>
04 MOB/DEMOB		B PERSONNEL	3.0000	100.00	300.00
10 SAMPLE COLLECTION		A GROUND WATER	31.0000	4.50	139.50
		C WATER SUPPLY	5.0000	2.00	10.00
		H FIELD BLANK	2.0000	2.00	4.00
17 DISPOSAL		A WASTEWATER	155.0000	0.10	15.50
18 MISCELLANEOUS		QAPP PREP	1.0000	0.00	0.00
<b>Total Amount</b>					<b>469.00</b>



# Approved Cost Agreement 45516

Facility: 03439 HWY 11 GROCERY

PADGETJP

PO Number:

<u>Task / Description</u>	<u>Categories</u>	<u>Item Description</u>	<u>Qty / Pct</u>	<u>Unit Price</u>	<u>Amount</u>
11 ANALYSES	GW GROUNDWATER	A1 BTEXNM+OXYGS+1,2-DCA+ETH-8260B	40.0000	35.00	1,400.00
		F EDB	40.0000	20.00	800.00
		<b>Total Amount</b>			<b>2,200.00</b>



# Midlands Environmental Consultants, Inc.

May 16, 2013

Ms. Debra Thoma, Hydrogeologist  
Corrective Action Section  
Underground Storage Tank Program  
Bureau of Land and Waste Management  
South Carolina Department of Health  
and Environmental Control  
2600 Bull Street  
Columbia, South Carolina 29201



Subject: Report of Groundwater Sampling  
Highway 11 Grocery  
13527 SC Highway 11  
Salem, South Carolina  
SCDHEC Site ID Number 03439; CA #45515  
MECI Project Number 13-4392  
Certified Site Rehabilitation Contractor UCC-0009



Dear Ms. Thoma,

Midlands Environmental Consultants Inc. (MECI) is pleased to submit the attached Report of Groundwater Sampling for the referenced site. This report describes site activities conducted at the site in general accordance with South Carolina Department of Health and Environmental Control's (SCDHEC) Quality Assurance Program Plan for the Underground Storage Tank Management Division (QAPP).

## PROJECT INFORMATION

The subject site (Highway 11 Grocery) is located at 13527 Highway 11 Grocery, Salem Oconee County, South Carolina. The subject site formerly maintained one 2,000 gallon diesel underground storage tank (UST), one 3,000 gallon gasoline UST's, and two 6,000 gallon gasoline UST's. The subject tanks were abandoned by removal from the ground in September of 2009. The South Carolina Department of Health and Environmental Control (SCDHEC) reported and confirmed a release of petroleum product from the subject tanks in November of 2000. The subject site is currently rated a Class 1E.

The above information is based on reports and correspondence obtained from MECI field notes and SCDHEC files.

## MONITORING WELL SAMPLING AND CHEMICAL ANALYSIS

On May 14, 2013, MECI personnel collected samples from twelve (12) monitoring wells, seven (7) recovery wells, three (3) surface water samples, and one (1) water supply well at the subject site. MECI personnel utilized an electronic water level indicator for water level measurements and an

oil/water interface probe for free phase petroleum product level measurements. Monitoring wells MW-1 and MW-8, and recovery wells RW-1, RW-2, RW-5, RW-6, RW-7, and RW-9 were all gauged and found to have free-standing product. These wells were not sampled. Monitoring wells MW-3, MW-5, MW-7, and MW-15 were all not located and subsequently not sampled. Based on a request by SCDHEC personnel, all of the wells were to be purged prior to sampling. Twelve (12) monitoring wells and seven (7) recovery wells were purged prior to sample collection. Where applicable, purging was completed by bailing at least five well volumes of water from the well, until pH, conductivity, dissolved oxygen stabilized to within 10%, or all water was evacuated from the well, whichever occurred first. Sampling/purging was completed utilizing a prepackaged, clear, disposable polyethylene bailer and nylon rope. A new set of nitrile gloves were worn at each monitoring well, and at all time samples were handled. Field measurements of pH, conductivity, dissolved oxygen, water temperature, and turbidity were obtained before well sampling process. MECI utilized YSI550A meter for DO (mg/L) and temperature readings (°C), YSI63 meters for pH and conductivity (uS) readings and a MicroTPI/TPW turbidimeter for turbidity readings (NTU). The attached Field Data Information Sheets presents the results of the field measurements obtained. The wells were sampled in accordance with SCDHEC's Quality Assurance Program Plan for the Underground Storage Tank Management Division (QAPP, Dated June 2011) and MECI's Standard Operating Procedures (MECI SOP, Dated August, 2011).

Groundwater samples obtained were sent to Shealy Environmental Services, Inc. of West Columbia, SC (SCDHEC Laboratory Certification #32010) for analysis.

The following sampling matrix contains well development and requested analyses for each well:

Monitoring Well	Purge	No Purge	Product	Not Located	BTEX, Naphthalene, MTBE (EPA Method 8260-B)	EDB (EPA Method 8011)	1,2 DCA (EPA Method 8260-B)	8 Oxygenates (EPA Method 8260-B)	Total Lead (EPA Method 6010)	Sulfate (EPA Method 375.2)	Nitrate (EPA Method 335.2)	Methane (RSK Method)	PAH's (EPA Method 8270)	Ferrous Iron (Field Test)
					Analyte Sampled									
MW-1			X											
MW-2	X				X	X	X	X						
MW-3				X										
MW-4	X				X	X	X	X						
MW-5				X										
MW-6	X				X	X	X	X						
MW-7				X										
MW-8			X											
MW-9	X				X	X	X	X						
MW-10	X				X	X	X	X						
MW-11	X				X	X	X	X						
MW-12	X				X	X	X	X						
MW-13	X				X	X	X	X						
MW-14	X				X	X	X	X						
MW-15				X										
DMW-1	X				X	X	X	X						
DMW-2	X				X	X	X	X						

Notes: BTEX = benzene, toluene, ethylbenzene, & total xylenes MTBE=methyl tertiary butyl ether 1,2 DCA = 1,2 dichloroethane  
PAH = polycyclic aromatic hydrocarbons  
Trip Blank provided by Shealy Environmental, temperature obtained upon receipt at Laboratory

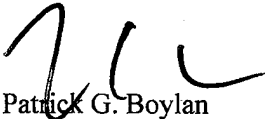
Monitoring Well	Purge	No Purge	Product	Not Located	BTEX, Naphthalene, MTBE (EPA Method 8260-B)	EDB (EPA Method 8011)	1,2 DCA (EPA Method 8260-B)	8 Oxygenates (EPA Method 8260-B)	Total Lead (EPA Method 6010)	Sulfate (EPA Method 375.2)	Nitrate (EPA Method 335.2)	Methane (RSK Method)	PAH's (EPA Method 8270)	Ferrous Iron (field Test)
Analyte Sampled														
DMW-4	X				X	X	X	X						
RW-1			X											
RW-2			X											
RW-3	X				X	X	X	X						
RW-4	X				X	X	X	X						
RW-5			X											
RW-6			X											
RW-7			X											
RW-8	X				X	X	X	X						
RW-9			X											
RW-10	X				X	X	X	X						
RW-11	X				X	X	X	X						
RW-12	X				X	X	X	X						
RW-13	X				X	X	X	X						
CK-1					X	X	X	X						
CK-2					X	X	X	X						
CK-3					X	X	X	X						
WSW-1					X	X	X	X						
RW-3 Dup					X	X	X	X						
RW-4 Dup					X	X	X	X						
Field Blank					X	X	X	X						
Trip Blank					X		X	X						

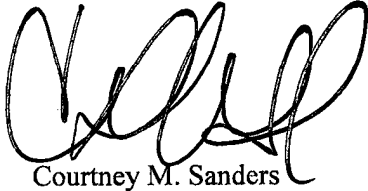
Notes: BTEX = benzene, toluene, ethylbenzene, & total xylenes MTBE=methyl tertiary butyl ether 1,2 DCA = 1,2 dicloroethane  
PAH = polycyclic aromatic hydrocarbons  
Trip Blank provided by Shealy Environmental, temperature obtained upon receipt at Laboratory

Purge water produced by the purging process was treated on-site utilizing a granular activated carbon unit. A total of 197.0 gallons of purge water was disposed of in this manner. A disposal manifest for the referenced purge water is attached at the end of this report.

Please feel free to contact us at 803-808-2043 if you have any immediate questions or comments.

Sincerely,  
Midlands Environmental Consultants, Inc.

  
Patrick G. Boylan  
Staff Geologist

  
Courtney M. Sanders  
Project Biologist

Attachments:

**Contractor Checklist**

Item#	Item	Yes	No	N/A
1	Is Facility Name, Permit #, and address provided?	X		
2	Is UST Owner/Operator name, address, & phone number provided?			X
3	Is name, address, & phone number of current property owner provided?			X
4	Is the DHEC Certified UST Site Rehabilitation Contractor's Name, Address, telephone number, and certification number provided?	X		
5	Is the name, address, telephone number, and certification number of the well driller that installed borings/monitoring wells provided?			X
6	Is the name, address, telephone number, and certification number of the certified laboratory(ies) performing analytical analyses provided?	X		
7	Has the facility history been summarized?	X		
8	Has the regional geology and hydrogeology been described?			X
9	Are the receptor survey results provided as required?			X
10	Has current use of the site and adjacent land been described?			X
11	Has the site-specific geology and hydrogeology been described?			X
12	Has the primary soil type been described?			X
13	Have field screening results been described?			X
14	Has a description of the soil sample collection and preservation been detailed?			X
15	Has the field screening methodology and procedure been detailed?			X
16	Has the monitoring well installation and development dates been provided?			X
17	Has the method of well development been detailed?			X
18	Has justification been provided for the locations of the monitoring wells?			X
19	Have the monitoring wells been labeled in accordance with the UST QAPP guidelines?			X
20	Has the groundwater sampling methodology been detailed? See MECI SOP	X		
21	Have the groundwater sampling dates and groundwater measurements been provided? See attached Site Activity Summary Sheet	X		
22	Has the purging methodology been detailed? See MECI SOP	X		
23	Has the volume of water purged from each well been provided along with measurements to verify that purging is complete? See attached Field Data Information Sheets	X		
24	If free-product is present, has the thickness been provided? See attached Site Activity Summary Sheets	X		
25	Does the report include a brief discussion of the assessment done and the results?			X
26	Does the report include a brief discussion of the aquifer evaluation and results?			X
27	Does the report include a brief discussion of the fate & transport models used?			X

Item#	Item	Yes	No	N/A
28	Are the site-conceptual model tables included? (Tier 1 Risk Evaluation)			X
29	Have the exposure pathways been analyzed? (Tier 2 Risk Evaluation)			X
30	Have the SSTLs for each compound and pathway been calculated? (Tier 2 Risk Evaluation)			X
31	Have recommendations for further action been provided and explained?			X
32	Has the soil analytical data for the site been provided in tabular format? (Table 1)			X
33	Has the potentiometric data for the site been provided in tabular format? (Table 2)			X
34	Has the current and historical laboratory data been provided in tabular format?			X
35	Have the aquifer characteristics been provided and summarized on the appropriate form?			X
36	Have the Site conceptual model tables been included? (Tier 1 Risk Evaluation)			X
37	Has the topographic map been provided with all required elements? (Figure 1)	X		
38	Has the site base map been provided with all required elements? (Figure 2)	X		
39	Have the CoC site maps been provided? (Figure 3 & Figure 4)			X
40	Has the site potentiometric map been provided? (Figure 5)			X
41	Have the geologic cross-sections been provided? (Figure 6)			X
42	Have maps showing the predicted migration of the CoCs through time been provided? (Tier 2 Risk Evaluation)			X
43	Has the site survey been provided and include all necessary elements? (Appendix A)			X
44	Have the sampling logs, chain of custody forms, and the analytical data package been included with all required elements? (Appendix B)	X		
45	Is the laboratory performing the analyses properly certified?	X		
46	Has the tax map been included with all necessary elements? (Appendix C)			X
47	Have the soil boring/field screening logs been provided? (Appendix D)			X
48	Have the well completion logs and SCDHEC Form 1903 been provided? (Appendix E)			X
49	Have the aquifer evaluation forms, data, graphs, equations, etc. been provided? (Appendix F)			X
50	Have the disposal manifests been provided? See attached	X		
51	Has a copy of the local zoning regulations been provided? (Appendix H)			X
52	Has all fate and transport modeling been provided? (Appendix I)			X
53	Have copies of all access agreements obtained by the contractor been provided? (Appendix J)			X
54	Has a copy of this form been attached to the final report and are explanations for any missing or incomplete data been provided?	X		

**Site Activity Summary**

UST Permit #: 03439  
 Facility Name: Highway 11 Grocery  
 County: Oconee  
 Field Personnel: Patrick Boylan, Gavin Globensky, Ryan Ariail, John Bryant



Sample ID	Sampled?	Date	Time	Screened Interval	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)	DO (mg/l)	# Gals. Purged	Comments
MW-1	N	5/14/13	***	15-30	23.98	24.03	0.05	***	***	Product
MW-2	Y	5/14/13	12:51	20-35	***	25.50	***	2.69	3.0	No Odor
MW-3	N	5/14/13	***	20-30	***	***	***	***	***	Not Located
MW-4	Y	5/14/13	13:19	20-35	***	22.00	***	0.98	3.0	Slight Odor
MW-5	N	5/14/13	***	20-35	***	***	***	***	***	Not Located
MW-6	Y	5/14/13	11:59	20-35	***	20.97	***	0.80	7.0	Odor
MW-7	N	5/14/13	***	25-40	***	***	***	***	***	Not Located
MW-8	N	5/14/13	***	15-30	20.32	20.59	0.27	***	***	Product
MW-9	Y	5/14/13	12:31	2-10	***	2.18	***	5.36	3.0	No Odor
MW-10	Y	5/14/13	13:37	13-28	***	18.62	***	0.91	1.5	No Odor
MW-11	Y	5/14/13	15:11	8-23	***	15.02	***	7.79	2.0	No Odor
MW-12	Y	5/14/13	12:07	2-12	***	2.93	***	2.90	3.0	No Odor
MW-13	Y	5/14/13	15:35	2-12	***	1.36	***	3.92	1.5	No Odor
MW-14	Y	5/14/13	12:17	2-10	***	1.53	***	1.30	3.0	No Odor
MW-15	N	5/14/13	***	4-9	***	***	***	***	***	Not Located
									27.00	<b>TOTAL GALLONS PURGED</b>

**Site Activity Summary**

UST Permit #: 03439  
 Facility Name: Highway 11 Grocery  
 County: Oconee  
 Field Personnel: Patrick Boylan, Gavin Globensky, Ryan Ariail, John Bryant



Sample ID	Sampled?	Date	Time	Screened Interval	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)	DO (mg/l)	# Gals. Purged	Comments
DMW-1	Y	5/14/13	12:16	40-45	***	23.98	***	4.49	17.0	No Odor
DMW-2	Y	5/14/13	13:16	65-75	***	16.31	***	1.10	7.0	No Odor
DMW-4	Y	5/14/13	12:40	55-60	***	24.30	***	6.04	24.0	No Odor
RW-1	N	5/14/13	***	10-30	24.12	24.16	0.04	***	***	Product
RW-2	N	5/14/13	***	10-30	23.40	23.70	0.30	***	***	Product
RW-3	Y	5/14/13	11:50	10-30	***	21.11	***	0.48	15.0	Odor, Sheen, Duplicated
RW-4	Y	5/14/13	11:36	10-30	***	19.85	***	0.80	33.0	Odor, Sheen, Duplicated
RW-5	N	5/14/13	***	10-30	22.14	23.53	1.39	***	***	Product
RW-6	N	5/14/13	***	6.5-26.5	16.08	19.32	3.24	***	***	Product
RW-7	N	5/14/13	***	10-30	18.23	23.22	4.99	***	***	Product
RW-8	Y	5/14/13	14:56	8.5-28.5	***	18.42	***	0.93	24.0	Odor
RW-9	N	5/14/13	***	10-30	19.95	20.55	0.60	***	***	Product
RW-10	Y	5/14/13	14:20	10-30	***	19.93	***	1.50	10.0	Odor
RW-11	Y	5/14/13	13:47	10-30	***	15.48	***	1.03	20.0	Odor
RW-12	Y	5/14/13	13:59	10-30	***	18.43	***	0.96	10.0	Odor
									160.00	<b>TOTAL GALLONS PURGED</b>



**Site Activity Summary**

UST Permit #: 03439  
 Facility Name: Highway 11 Grocery  
 County: Oconee  
 Field Personnel: Patrick Boylan, Gavin Globensky, Ryan Ariail, John Bryant



Sample ID	Sampled?	Date	Time	Screened Interval	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)	DO (mg/l)	# Gals. Purged	Comments
RW-13	Y	5/14/13	13:33	20-30	***	17.41	***	1.27	10.0	Odor
CK-1	Y	5/14/13	12:15	***	***	***	***	***	***	Surface Water
CK-2	Y	5/14/13	12:25	***	***	***	***	***	***	Surface Water
CK-3	Y	5/14/13	0.52	***	***	***	***	***	***	Surface Water
WSW-1	Y	5/14/13	0.65	***	***	***	***	***	***	Water Supply Well
RW-3 Dup	Y	5/14/13	11:50	***	***	***	***	***	***	Duplicate Sample
RW-4 Dup	Y	5/14/13	11:36	***	***	***	***	***	***	Duplicate Sample
Field Blank	Y	5/14/13	11:40	***	***	***	***	***	***	Field Blank
Trip Blank	Y	5/14/13	11:40	***	***	***	***	***	***	Trip Blank
									10.00	<b>TOTAL GALLONS PURGED</b>



**South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program  
Field Data Information Sheet for Groundwater Sampling**

Date (mm/dd/yy): 5/14/2013

Field Personnel: Patrick Boylan, Gavin Globensky, John Bryant, Ryan Ariail

General Weather Conditions: Clear

---

Ambient Air Temperature: 22.0 °C

Quality Assurance

<u>pH/Conductivity Meter</u>	<u>DO Meter</u>	
<u>YSI 63</u>	<u>YSI 550A</u>	
09C 101302	04L 2026AK	
10K 101895	08B 101895	
07M 100905	04A 0912AI	<u>X</u>
Calibration Buffer: <u>4, 7, &amp; 10</u>		

Chain of Custody

Relinquished by	Date/Time	Received by	Date/Time

Facility Name: Highway 11 Grocery

Site ID#: 03439 Monitoring Well # MW-4

Water Supply Well Public Private Private

Monitoring Well Diameter (D): 2 inches

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C=0.163  
for a 4 inch well C=0.652

\* Free Product Thickness: \_\_\_\_\_ feet

Depth to Free Product (DFP) \_\_\_\_\_ feet

Depth to Ground Water (DGW) 22.00 feet

Total Well Depth (TWD) 35 feet

Length of the water column (LWC=TWD-DGW) 13 feet

1 casing volume (CV=LWC X C)= X 0.163 2.12 gallons

5 casing volume (5 X CV)= 5 10.60 gallons

Total Volume of Water Purged Before Sampling 3 gals.

\*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling
Time (military)	13:17	13:19					
pH (s.u.)	5.00	5.26					
Specific Conductivity (µmhos/cm)	54.5	36.9					
Water Temperature (°C)	18.9	18.6					
Dissolved Oxygen	0.98	1.67					
Turbidity (NTU)	306.5	572.2					
PID readings, if required							

Remarks: Sample Time: 13:19 Dry @ 3.0 gallons

**South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program  
Field Data Information Sheet for Groundwater Sampling**

Date (mm/dd/yy): 5/14/2013

Field Personnel: Patrick Boylan, Gavin Globensky, John Bryant, Ryan Ariail

General Weather Conditions: Clear

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Ambient Air Temperature: 22.0 °C

Quality Assurance

<b>pH/Conductivity Meter</b>	<b>DO Meter</b>	
<b>YSI 63</b>	<b>YSI 550A</b>	
09C 101302	04L 2026AK	
10K 101895	08B 101895	
07M 100905	04A 0912AI	<u>X</u>
Calibration Buffer: <u>4, 7, &amp; 10</u>		

Chain of Custody

Relinquished by	Date/Time	Received by	Date/Time

Facility Name: Highway 11 Grocery

Site ID#: 03439 Monitoring Well # MW-6

Water Supply Well Public Private  

Monitoring Well Diameter (D): 2 inches

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C=0.163  
for a 4 inch well C=0.652

\* Free Product Thickness:   feet

Depth to Free Product (DFP)   feet

Depth to Ground Water (DGW) 20.97 feet

Total Well Depth (TWD) 35 feet

Length of the water column (LWC=TWD-DGW) 14.03 feet

1 casing volume (CV=LWC X C)=   X 0.163 2.29 gallons

5 casing volume (5 X CV)= 5 X 11.43 gallons

Total Volume of Water Purged Before Sampling 7 gals.

\*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling
Time (military)	11:54	11:56	11:59				
pH (s.u.)	5.33	5.28	5.23				
Specific Conductivity (µmhos/cm)	67.2	31.4	60.3				
Water Temperature (°C)	19.7	19.1	18.8				
Dissolved Oxygen	0.80	1.52	1.85				
Turbidity (NTU)	61.44	674.0	523.4				
PID readings, if required							

Remarks:   Sample Time: 11:59 Dry @ 7.0 gallons





**South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program  
Field Data Information Sheet for Groundwater Sampling**

Date (mm/dd/yy): 5/14/2013

Field Personnel: John Bryant, Ryan Ariail, Gavin Globensky, Patrick Boylan

General Weather Conditions: Clear

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Ambient Air Temperature: 22.1 °C

Quality Assurance

<b>pH/Conductivity Meter</b>	<b>DO Meter</b>
<b>YSI 63</b>	<b>YSI 550A</b>
09C 101302	04L 2026AK
10K 101895 <u>X</u>	08B 101895 <u>X</u>
07M 100905	04A 0912AI
Calibration Buffer: <u>4, 7, &amp; 10</u>	

Chain of Custody

Relinquished by	Date/Time	Received by	Date/Time

Facility Name: Highway 11 Grocery

Site ID#: 03439 Monitoring Well # MW-11

Water Supply Well Public Private  

Monitoring Well Diameter (D): 2 inches

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C=0.163  
for a 4 inch well C=0.652

\* Free Product Thickness:   feet

Depth to Free Product (DFP)   feet

Depth to Ground Water (DGW) 15.02 feet

Total Well Depth (TWD) 23 feet

Length of the water column (LWC=TWD-DGW) 7.98 feet

1 casing volume (CV=LWC X C)=   X 0.163 1.30 gallons

5 casing volume (5 X CV)= 5 6.50 gallons

Total Volume of Water Purged Before Sampling 2 gals.

\*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling
Time (military)	15:09	15:11					
pH (s.u.)	5.51	5.42					
Specific Conductivity (µmhos/cm)	23.6	22.1					
Water Temperature (°C)	15.5	14.9					
Dissolved Oxygen	5.36	5.74					
Turbidity (NTU)	120.2	221.3					
PID readings, if required							

Remarks:   Sample Time: 15:11 Dry @ 2.0 gallons

**South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program  
Field Data Information Sheet for Groundwater Sampling**

Date (mm/dd/yy): 5/14/2013

Field Personnel: John Bryant, Ryan Ariail, Gavin Globensky, Patrick Boylan

General Weather Conditions: Clear

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Ambient Air Temperature: 22.1 °C

Quality Assurance

<b>pH/Conductivity Meter</b>	<b>DO Meter</b>
<b>YSI 63</b>	<b>YSI 550A</b>
09C 101302	04L 2026AK
10K 101895 <u>X</u>	08B 101895 <u>X</u>
07M 100905	04A 0912AI
Calibration Buffer: <u>4, 7, &amp; 10</u>	

Chain of Custody

Relinquished by	Date/Time	Received by	Date/Time

Facility Name: Highway 11 Grocery

Site ID#: 03439 Monitoring Well # MW-12

Water Supply Well Public Private  

Monitoring Well Diameter (D): 2 inches

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C=0.163  
for a 4 inch well C=0.652

\* Free Product Thickness:   feet

Depth to Free Product (DFP)   feet

Depth to Ground Water (DGW) 2.93 feet

Total Well Depth (TWD) 12 feet

Length of the water column (LWC=TWD-DGW) 9.07 feet

1 casing volume (CV=LWC X C)=   X 0.163 1.48 gallons

5 casing volume (5 X CV)= 5 7.39 gallons

Total Volume of Water Purged Before Sampling 3 gals.

\*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling
Time (military)	12:02	12:05	12:07				
pH (s.u.)	5.37	5.10	5.08				
Specific Conductivity (µmhos/cm)	16.7	17.4	17.4				
Water Temperature (°C)	16.2	15.3	15.2				
Dissolved Oxygen	2.90	3.05	3.01				
Turbidity (NTU)	20.00	246.3	265.3				
PID readings, if required							

Remarks:   Sample Time: 12:07 Dry @ 3.0 gallons



**South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program  
Field Data Information Sheet for Groundwater Sampling**

**Date (mm/dd/yy):** 5/14/2013

**Field Personnel:** John Bryant, Ryan Ariail, Gavin Globensky, Patrick Boylan

**General Weather Conditions:** Clear

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**Ambient Air Temperature:** 22.1 °C

Quality Assurance

<b>pH/Conductivity Meter</b>	<b>DO Meter</b>
<b>YSI 63</b>	<b>YSI 550A</b>
09C 101302	04L 2026AK
10K 101895 <u>X</u>	08B 101895 <u>X</u>
07M 100905	04A 0912AI
Calibration Buffer: <u>4, 7, &amp; 10</u>	

Chain of Custody

Relinquished by _____	Date/Time _____	Received by _____	Date/Time _____
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**Facility Name:** Highway 11 Grocery

**Site ID#:** 03439 **Monitoring Well #** MW-13

**Water Supply Well** Public **Private** \_\_\_\_\_

Monitoring Well Diameter (D): 2 inches

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C=0.163  
for a 4 inch well C=0.652

\* Free Product Thickness: \_\_\_\_\_ feet

Depth to Free Product (DFP) \_\_\_\_\_ feet

Depth to Ground Water (DGW) 1.36 feet

Total Well Depth (TWD) 12 feet

Length of the water column (LWC=TWD-DGW) 10.64 feet

1 casing volume (CV=LWC X C)= X 0.163 1.73 gallons

5 casing volume (5 X CV)= 5 8.67 gallons

Total Volume of Water Purged Before Sampling 1.5 gals.

\*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial							Post Sampling	
	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol			
Time (military)	15:30	15:35							
pH (s.u.)	4.76	4.66							
Specific Conductivity (µmhos/cm)	30.8	31.1							
Water Temperature (°C)	21.1	20.2							
Dissolved Oxygen	3.92	3.22							
Turbidity (NTU)	51.2	282.1							
PID readings, if required									

Remarks: Sample Time: 15:35 Dry @ 1.5 gallons

**South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program  
Field Data Information Sheet for Groundwater Sampling**

**Date (mm/dd/yy):** 5/14/2013

**Field Personnel:** John Bryant, Ryan Ariail, Gavin Globensky, Patrick Boylan

**General Weather Conditions:** Clear

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**Ambient Air Temperature:** 22.1 °C

Quality Assurance

<b>pH/Conductivity Meter</b>	<b>DO Meter</b>	
<b>YSI 63</b>	<b>YSI 550A</b>	
09C 101302	04L 2026AK	
10K 101895	08B 101895	<u>X</u>
07M 100905	04A 0912AI	
Calibration Buffer:	<u>4, 7, &amp; 10</u>	

Chain of Custody

Relinquished by	Date/Time	Received by	Date/Time

**Facility Name:** Highway 11 Grocery

**Site ID#:** 03439      **Monitoring Well #** MW-14

**Water Supply Well**      **Public** \_\_\_\_\_ **Private** \_\_\_\_\_

**Monitoring Well Diameter (D):** 2 inches

**Conversion Factor (C):**  $3.14 \times (D/2)^2$       for a 2 inch well C=0.163  
for a 4 inch well C=0.652

\* Free Product Thickness: \_\_\_\_\_ feet

Depth to Free Product (DFP) \_\_\_\_\_ feet

Depth to Ground Water (DGW) 1.53 feet

Total Well Depth (TWD) 10 feet

Length of the water column (LWC=TWD-DGW) 8.47 feet

1 casing volume (CV=LWC X C)= \_\_\_\_\_ X 0.163 1.38 gallons

5 casing volume (5 X CV)= \_\_\_\_\_ X 5 6.90 gallons

**Total Volume of Water Purged Before Sampling** 3 gals.

\*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling
Time (military)	12:10	12:15	12:17				
pH (s.u.)	5.67	Sheen	Sheen				
Specific Conductivity (µmhos/cm)	40.9	Sheen	Sheen				
Water Temperature (°C)	15.8	Sheen	Sheen				
Dissolved Oxygen	1.30	Sheen	Sheen				
Turbidity (NTU)	40.00	Sheen	Sheen				
PID readings, if required							

**Remarks:** \_\_\_\_\_ **Sample Time:** 12:17      **Dry @ 3.0 gallons**

**South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program  
Field Data Information Sheet for Groundwater Sampling**

**Date (mm/dd/yy):** 5/14/2013

**Field Personnel:** Patrick Boylan, Gavin Globensky, John Bryant, Ryan Ariail

**General Weather Conditions:** Clear

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**Ambient Air Temperature:** 22.0 °C

Quality Assurance

<b>pH/Conductivity Meter</b>	<b>DO Meter</b>
<b>YSI 63</b>	<b>YSI 550A</b>
09C 101302	04L 2026AK
10K 101895	08B 101895
07M 100905	04A 0912AI
Calibration Buffer: <u>4, 7, &amp; 10</u>	<u>X</u>

Chain of Custody

Relinquished by	Date/Time	Received by	Date/Time
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**Facility Name:** Highway 11 Grocery

**Site ID#:** 03439      **Monitoring Well #** DMW-1

**Water Supply Well**      **Public** \_\_\_\_\_ **Private** \_\_\_\_\_

**Monitoring Well Diameter (D):** 2 inches

**Conversion Factor (C):**  $3.14 \times (D/2)^2$       for a 2 inch well C=0.163  
for a 4 inch well C=0.652

\* Free Product Thickness: \_\_\_\_\_ feet

Depth to Free Product (DFP) \_\_\_\_\_ feet

Depth to Ground Water (DGW) 23.98 feet

Total Well Depth (TWD) 45 feet

Length of the water column (LWC=TWD-DGW) 21.02 feet

1 casing volume (CV=LWC X C)= \_\_\_\_\_ X 0.163 3.43 gallons

5 casing volume (5 X CV)= 5 17.13 gallons

**Total Volume of Water Purged Before Sampling** 17 gals.

\*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)	12:07	12:09	12:11	12:12	12:14	12:16		
pH (s.u.)	5.29	5.04	4.97	4.63	4.83	4.98		
Specific Conductivity (µmhos/cm)	28.1	17.7	20.2	23.30	23.8	24		
Water Temperature (°C)	19.3	18.7	18.6	18.60	18.5	18.4		
Dissolved Oxygen	4.49	4.09	3.92	4.38	4.36	4.27		
Turbidity (NTU)	28.59	27.62	32.18	24.59	135.7	242.9		
PID readings, if required								

**Remarks:** \_\_\_\_\_ **Sample Time:** 12:16

**South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program  
Field Data Information Sheet for Groundwater Sampling**

**Date (mm/dd/yy):** 5/14/2013

**Field Personnel:** John Bryant, Ryan Ariail, Gavin Globensky, Patrick Boylan

**General Weather Conditions:** Clear

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**Ambient Air Temperature:** 22.1 °C

Quality Assurance

<b>pH/Conductivity Meter</b>	<b>DO Meter</b>
<b>YSI 63</b>	<b>YSI 550A</b>
09C 101302	04L 2026AK
10K 101895	08B 101895
07M 100905	04A 0912AI

Calibration Buffer: 4, 7, & 10

Chain of Custody

Relinquished by	Date/Time	Received by	Date/Time
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**Facility Name:** Highway 11 Grocery

**Site ID#:** 03439      **Monitoring Well #** DMW-2

**Water Supply Well**      **Public**      **Private**

Monitoring Well Diameter (D): 2 inches

Conversion Factor (C):  $3.14 \times (D/2)^2$       for a 2 inch well C=0.163  
for a 4 inch well C=0.652

\* Free Product Thickness: \_\_\_\_\_ feet

Depth to Free Product (DFP) \_\_\_\_\_ feet

Depth to Ground Water (DGW) 16.31 feet

Total Well Depth (TWD) 75 feet

Length of the water column (LWC=TWD-DGW) 58.69 feet

1 casing volume (CV=LWC X C)= \_\_\_\_\_ X 0.163 9.57 gallons

5 casing volume (5 X CV)= \_\_\_\_\_ X 5 47.83 gallons

Total Volume of Water Purged Before Sampling 7 gals.

\*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling
Time (military)	13:08	13:16					
pH (s.u.)	6.33	6.49					
Specific Conductivity (µmhos/cm)	50.1	46.50					
Water Temperature (°C)	17.4	18.50					
Dissolved Oxygen	1.10	2.51					
Turbidity (NTU)	34.61	613.2					
PID readings, if required							

Remarks: \_\_\_\_\_ Sample Time: 13:16 Dry @ 7.0 gallons

**South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program  
Field Data Information Sheet for Groundwater Sampling**

**Date (mm/dd/yy):** 5/14/2013

**Field Personnel:** Patrick Boylan, Gavin Globensky, John Bryant, Ryan Ariail

**General Weather Conditions:** Clear

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**Ambient Air Temperature:** 22.0 °C

Quality Assurance

<b>pH/Conductivity Meter</b>	<b>DO Meter</b>
<b>YSI 63</b>	<b>YSI 550A</b>
09C 101302	04L 2026AK
10K 101895	08B 101895
07M 100905	04A 0912AI
Calibration Buffer: <u>4, 7, &amp; 10</u>	<u>X</u>

Chain of Custody

Relinquished by	Date/Time	Received by	Date/Time
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**Facility Name:** Highway 11 Grocery

**Site ID#:** 03439      **Monitoring Well #** DMW-4

**Water Supply Well**      **Public** \_\_\_\_\_ **Private** \_\_\_\_\_

**Monitoring Well Diameter (D):** 2 inches

**Conversion Factor (C):**  $3.14 \times (D/2)^2$       for a 2 inch well C=0.163  
for a 4 inch well C=0.652

**\* Free Product Thickness:** \_\_\_\_\_ feet

**Depth to Free Product (DFP)** \_\_\_\_\_ feet

**Depth to Ground Water (DGW)** 24.30 feet

**Total Well Depth (TWD)** 60 feet

**Length of the water column (LWC=TWD-DGW)** 35.7 feet

**1 casing volume (CV=LWC X C)=** \_\_\_\_\_ X 0.163 = 5.82 gallons

**5 casing volume (5 X CV)=** 5 X 5.82 = 29.10 gallons

**Total Volume of Water Purged Before Sampling** 24 gals.

*\*If free product is present over 1/8 inch, sampling will not be required.*

Cumulative Volume Purged (gallons)	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling
Time (military)	12:19	12:24	12:29	12:35	12:40		
pH (s.u.)	5.27	5.38	5.41	5.40	5.38		
Specific Conductivity (µmhos/cm)	27.7	27.2	22.3	24.6	25.7		
Water Temperature (°C)	19.1	18.0	17.9	17.8	17.7		
Dissolved Oxygen	6.04	6.74	7.41	7.53	6.98		
Turbidity (NTU)	18.34	28.05	18.85	18.36	18.21		
PID readings, if required							

**Remarks:** \_\_\_\_\_ **Sample Time:** 12:40

**South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program  
Field Data Information Sheet for Groundwater Sampling**

**Date (mm/dd/yy):** 5/14/2013

**Field Personnel:** Patrick Boylan, Gavin Globensky, John Bryant, Ryan Ariail

**General Weather Conditions:** Clear

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**Ambient Air Temperature:** 22.0 °C

Quality Assurance

<b>pH/Conductivity Meter</b>	<b>DO Meter</b>
<b>YSI 63</b>	<b>YSI 550A</b>
09C 101302	04L 2026AK
10K 101895	08B 101895
07M 100905	04A 0912AI
Calibration Buffer: <u>4, 7, &amp; 10</u>	<u>X</u>

Chain of Custody

Relinquished by	Date/Time	Received by	Date/Time
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**Facility Name:** Highway 11 Grocery

**Site ID#:** 03439      **Monitoring Well #** RW-3

**Water Supply Well**      **Public** \_\_\_\_\_ **Private** \_\_\_\_\_

**Monitoring Well Diameter (D):** 2 inches

**Conversion Factor (C):**  $3.14 \times (D/2)^2$       for a 2 inch well C=0.163  
for a 4 inch well C=0.652

\* Free Product Thickness: \_\_\_\_\_ feet

Depth to Free Product (DFP) \_\_\_\_\_ feet

Depth to Ground Water (DGW) 21.11 feet

Total Well Depth (TWD) 30 feet

Length of the water column (LWC=TWD-DGW) 8.89 feet

1 casing volume (CV=LWC X C)= \_\_\_\_\_ X 0.653 5.81 gallons

5 casing volume (5 X CV)= \_\_\_\_\_ X 5 29.03 gallons

**Total Volume of Water Purged Before Sampling** 15 gals.

\*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling
Time (military)	11:40	11:45	11:50				
pH (s.u.)	5.21	Sheen	Sheen				
Specific Conductivity (µmhos/cm)	40.0	Sheen	Sheen				
Water Temperature (°C)	19.6	Sheen	Sheen				
Dissolved Oxygen	0.48	Sheen	Sheen				
Turbidity (NTU)	26.81	149.8	643.4				
PID readings, if required							

**Remarks:** \_\_\_\_\_ **Sample Time:** 11:50      **Dry @ 15.0 gallons, Duplicated**

**South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program  
Field Data Information Sheet for Groundwater Sampling**

**Date (mm/dd/yy):** 5/14/2013

**Field Personnel:** Patrick Boylan, Gavin Globensky, John Bryant, Ryan Ariail

**General Weather Conditions:** Clear

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**Ambient Air Temperature:** 22.0 °C

Quality Assurance

<b>pH/Conductivity Meter</b>	<b>DO Meter</b>
<b>YSI 63</b>	<b>YSI 550A</b>
09C 101302 _____	04L 2026AK _____
10K 101895 _____	08B 101895 _____
07M 100905 <u>X</u>	04A 0912AI <u>X</u>
Calibration Buffer: <u>4, 7, &amp; 10</u>	

Chain of Custody

Relinquished by _____	Date/Time _____	Received by _____	Date/Time _____
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**Facility Name:** Highway 11 Grocery

**Site ID#:** 03439      **Monitoring Well #** RW-4

**Water Supply Well**      **Public** \_\_\_\_\_      **Private** \_\_\_\_\_

**Monitoring Well Diameter (D):** 2 inches

**Conversion Factor (C):**  $3.14 \times (D/2)^2$       for a 2 inch well C=0.163  
for a 4 inch well C=0.652

\* Free Product Thickness: \_\_\_\_\_ feet

Depth to Free Product (DFP) \_\_\_\_\_ feet

Depth to Ground Water (DGW) 19.85 feet

Total Well Depth (TWD) 30 feet

Length of the water column (LWC=TWD-DGW) 10.15 feet

1 casing volume (CV=LWC X C)= \_\_\_\_\_ X 0.653 6.63 gallons

5 casing volume (5 X CV)= 5 33.14 gallons

**Total Volume of Water Purged Before Sampling** 33 gals.

\*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)	11:09	11:14	11:20	11:25	11:31	11:36		
pH (s.u.)	5.47	Sheen	Sheen	Sheen	Sheen	Sheen		
Specific Conductivity (µmhos/cm)	78.3	Sheen	Sheen	Sheen	Sheen	Sheen		
Water Temperature (°C)	19.8	Sheen	Sheen	Sheen	Sheen	Sheen		
Dissolved Oxygen	0.80	Sheen	Sheen	Sheen	Sheen	Sheen		
Turbidity (NTU)	56.94	364.3	411.9	563.40	501.20	487.8		
PID readings, if required								

Remarks: \_\_\_\_\_      Sample Time: 11:50

**South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program  
Field Data Information Sheet for Groundwater Sampling**

**Date (mm/dd/yy):** 5/14/2013

**Field Personnel:** John Bryant, Ryan Ariail, Gavin Globensky, Patrick Boylan

**General Weather Conditions:** Clear

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**Ambient Air Temperature:** 22.1 °C

Quality Assurance

<b>pH/Conductivity Meter</b>	<b>DO Meter</b>	
<b>YSI 63</b>	<b>YSI 550A</b>	
09C 101302	04L 2026AK	
10K 101895	08B 101895	<u>X</u>
07M 100905	04A 0912AI	
Calibration Buffer:	<u>4, 7, &amp; 10</u>	

Chain of Custody

Relinquished by	Date/Time	Received by	Date/Time

**Facility Name:** Highway 11 Grocery

**Site ID#:** 03439      **Monitoring Well #** RW-8

**Water Supply Well**      **Public**      **Private**

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**Monitoring Well Diameter (D):** 2 inches

**Conversion Factor (C):**  $3.14 \times (D/2)^2$       for a 2 inch well C=0.163  
for a 4 inch well C=0.652

\* Free Product Thickness: \_\_\_\_\_ feet

Depth to Free Product (DFP) \_\_\_\_\_ feet

Depth to Ground Water (DGW) 18.42 feet

Total Well Depth (TWD) 28.5 feet

Length of the water column (LWC=TWD-DGW) 10.08 feet

1 casing volume (CV=LWC X C)= \_\_\_\_\_ X 0.653 6.58 gallons

5 casing volume (5 X CV)= \_\_\_\_\_ X 5 32.91 gallons

Total Volume of Water Purged Before Sampling 33 gals.

\*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)	14:25	14:31	14:38	14:43	14:50	14:56		
pH (s.u.)	5.46	5.74	5.72	5.68	5.65	5.66		
Specific Conductivity (µmhos/cm)	72.5	70.00	69.60	69.6	70.2	70.1		
Water Temperature (°C)	17.9	17.50	17.30	17.5	17.5	17.6		
Dissolved Oxygen	0.93	1.56	1.93	1.98	2.04	2.11		
Turbidity (NTU)	18.41	656.4	789.80	596.2	522.1	435.9		
PID readings, if required								

Remarks: \_\_\_\_\_ Sample Time: 14:56





**South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program  
Field Data Information Sheet for Groundwater Sampling**

**Date (mm/dd/yy):** 5/14/2013

**Field Personnel:** John Bryant, Ryan Ariail, Gavin Globensky, Patrick Boylan

**General Weather Conditions:** Clear

---

**Ambient Air Temperature:** 22.1 °C

Quality Assurance

<u>pH/Conductivity Meter</u>	<u>DO Meter</u>
<b>YSI 63</b>	<b>YSI 550A</b>
09C 101302	04L 2026AK
10K 101895	08B 101895
07M 100905	04A 0912AI
Calibration Buffer: <u>4, 7, &amp; 10</u>	

Chain of Custody

Relinquished by	Date/Time	Received by	Date/Time
-----------------	-----------	-------------	-----------

**Facility Name:** Highway 11 Grocery

**Site ID#:** 03439      **Monitoring Well #** RW-11

**Water Supply Well**      **Public** \_\_\_\_\_ **Private** \_\_\_\_\_

**Monitoring Well Diameter (D):** 2 inches

**Conversion Factor (C):**  $3.14 \times (D/2)^2$       for a 2 inch well C=0.163  
for a 4 inch well C=0.652

\* Free Product Thickness: \_\_\_\_\_ feet

Depth to Free Product (DFP) \_\_\_\_\_ feet

Depth to Ground Water (DGW) 15.48 feet

Total Well Depth (TWD) 27 feet

Length of the water column (LWC=TWD-DGW) 11.52 feet

1 casing volume (CV=LWC X C)= \_\_\_\_\_ X 0.653 7.52 gallons

5 casing volume (5 X CV)= 5 37.61 gallons

**Total Volume of Water Purged Before Sampling** 20 gals.

\*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)	13:38	13:42	13:47					
pH (s.u.)	5.29	4.91	4.86					
Specific Conductivity (µmhos/cm)	55.7	52.50	51.40					
Water Temperature (°C)	17.4	16.80	16.70					
Dissolved Oxygen	1.03	1.26	1.25					
Turbidity (NTU)	26.30	313.1	310.2					
PID readings, if required								

**Remarks:** Sample Time: 13:47      Dry @ 20 gallons

**South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program  
Field Data Information Sheet for Groundwater Sampling**

Date (mm/dd/yy): 5/14/2013

Field Personnel: John Bryant, Ryan Ariail, Gavin Globensky, Patrick Boylan

General Weather Conditions: Clear

---

Ambient Air Temperature: 22.1 °C

Quality Assurance

<b>pH/Conductivity Meter</b>	<b>DO Meter</b>
<b>YSI 63</b>	<b>YSI 550A</b>
09C 101302	04L 2026AK
10K 101895	08B 101895
07M 100905	04A 0912A1

Calibration Buffer: 4, 7, & 10

Chain of Custody

Relinquished by	Date/Time	Received by	Date/Time
-----------------	-----------	-------------	-----------

Facility Name: Highway 11 Grocery

Site ID#: 03439 Monitoring Well # RW-12

Water Supply Well Public Private \_\_\_\_\_

Monitoring Well Diameter (D): 2 inches

Conversion Factor (C):  $3.14 \times (D/2)^2$  for a 2 inch well C=0.163  
for a 4 inch well C=0.652

\* Free Product Thickness: \_\_\_\_\_ feet

Depth to Free Product (DFP) \_\_\_\_\_ feet

Depth to Ground Water (DGW) 18.43 feet

Total Well Depth (TWD) 30 feet

Length of the water column (LWC=TWD-DGW) 11.57 feet

1 casing volume (CV=LWC X C)= 0.653 X 7.56 gallons

5 casing volume (5 X CV)= 5 X 37.78 gallons

Total Volume of Water Purged Before Sampling 10 gals.

\*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling
Time (military)	13:55	13:42					
pH (s.u.)	5.62	5.95					
Specific Conductivity (µmhos/cm)	70.9	81.40					
Water Temperature (°C)	19.1	17.00					
Dissolved Oxygen	1.27	2.12					
Turbidity (NTU)	41.20	387.4					
PID readings, if required							

Remarks: Sample Time: 13:42 Dry @ 10 gallons

**South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management Underground Storage Tank Program  
Field Data Information Sheet for Groundwater Sampling**

**Date (mm/dd/yy):** 5/14/2013

**Field Personnel:** John Bryant, Ryan Ariail, Gavin Globensky, Patrick Boylan

**General Weather Conditions:** Clear

---

**Ambient Air Temperature:** 22.1 °C

Quality Assurance

<b>pH/Conductivity Meter</b>	<b>DO Meter</b>	
<b>YSI 63</b>	<b>YSI 550A</b>	
09C 101302	04L 2026AK	
10K 101895	08B 101895	<u>X</u>
07M 100905	04A 0912AI	
Calibration Buffer:	<u>4, 7, &amp; 10</u>	

Chain of Custody

Relinquished by	Date/Time	Received by	Date/Time

**Facility Name:** Highway 11 Grocery

**Site ID#:** 03439      **Monitoring Well #** RW-13

**Water Supply Well**      **Public**             **Private**       

Monitoring Well Diameter (D): 2 inches

Conversion Factor (C):  $3.14 \times (D/2)^2$       for a 2 inch well C=0.163  
for a 4 inch well C=0.652

\* Free Product Thickness: \_\_\_\_\_ feet

Depth to Free Product (DFP) \_\_\_\_\_ feet

Depth to Ground Water (DGW) 17.41 feet

Total Well Depth (TWD) 30 feet

Length of the water column (LWC=TWD-DGW) 12.59 feet

1 casing volume (CV=LWC X C)= \_\_\_\_\_ X 0.653 8.22 gallons

5 casing volume (5 X CV)= \_\_\_\_\_ X 5 41.11 gallons

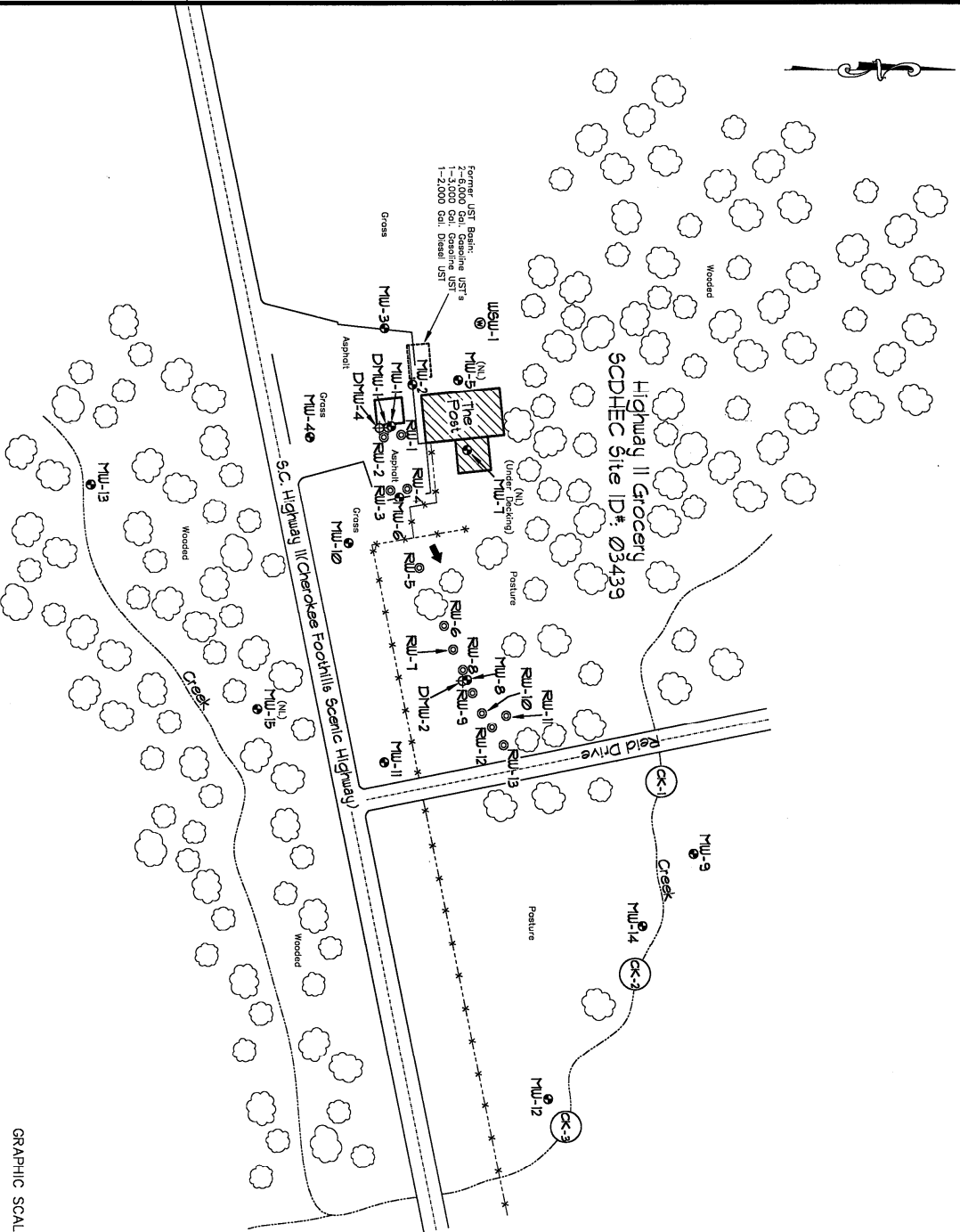
Total Volume of Water Purged Before Sampling 10 gals.

\*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)	13:30	13:33						
pH (s.u.)	6.29	6.27						
Specific Conductivity (µmhos/cm)	70.9	69.10						
Water Temperature (°C)	19.1	12.50						
Dissolved Oxygen	1.27	1.59						
Turbidity (NTU)	41.20	287.1						
PID readings, if required								

Remarks: \_\_\_\_\_ Sample Time: 13:33 **Dry @ 10 gallons**

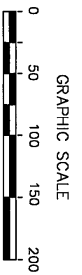
Drawing Based on MECI Field Notes and SCJHEC Files. All Locations are Approximate.



**Explanation:**

- Location of Waterable Bracketing Monitoring Well
- ▲ Estimated Groundwater Flow Direction
- ⊕ Location of Double Cased 'Deep' Monitoring Well
- ⊙ Location of 4-inch Recovery Well
- ⊙ (MW) Location of Surface Water Sample Collection
- Estimated Location of Removed Underground Storage Tanks

— Fence  
 --- Across Stream



ALL LOCATIONS ARE APPROXIMATE

<b>Site Base Map</b>	
Highway II Grocery 1957 S.C. Highway II Salem, South Carolina SCJHEC Site ID 03439	
JOB NO. 12-4170 DATE November 14, 2012 FIGURE	<b>2</b>



Chain of Custody Record

Shealy Environmental Services, Inc.

106 Vantage Point Drive
West Columbia, South Carolina 29172
Telephone No. (803) 791-9700 Fax No. (803) 791-9111
www.shealylab.com

Number 16304

Client: SEDNEI, Report to Contact: Home, Sampler: John C. Bivert, Quote No.
Address: 2600 Bull Street, Telephone No. / Fax No. / Email, Waybill No., Page
City: Columbia, State: SC, Zip Code, Preservative: 1. Unpres., 4. HNO3, 7. NaOH, 2. NaOH/ZnA, 5. HCL, 3. H2SO4, 6. Na Thio.
Project Name: Highway 11, Project Number: 03439, P.O Number: 4600088529, Matrix: G=Grab, C=Composite, GW, DW, WW, S, Other
Sample ID / Description, Date, Time, Analysis: STEAM, 1/2 DIA. 804, EDB
Remarks / Cooler ID: Product / 7 bottles, No odor / 3 bottles, Not located, Sl odor / 7 bottles, Not located, Odor, Not located, Product, No odor, No odor / 2 bottles
Turn Around Time Required, Sample Disposal, QC Requirements, Possible Hazard Identification
1. Relinquished by / Sampler, Date: 5/14, Time: 18:00, Received by: [Signature], Date: 5/14/15, Time: 18:00
2. Relinquished by, Date: 5-15-13, Time: 17:30, Received by: [Signature], Date: 5-15-15, Time: 17:30
3. Relinquished by, Date, Time, Received by, Date, Time
4. Relinquished by, Date, Time, Laboratory Received by, Date, Time
Note: All samples are retained for six weeks from receipt unless other arrangements are made.
LAB USE ONLY
Received on Ice (Check) Yes No Ice Pack Receipt Temp. °C Temp. Blank Y / N



Chain of Custody Record

Shealy Environmental Services, Inc.

106 Vantage Point Drive  
West Columbia, South Carolina 29172

Telephone No. (803) 791-9700 Fax No. (803) 791-9111

www.shealylab.com

Number 16303

Client SCDHEC		Report to Contact D. Thomas		Sampler (Printed Name) John C. Bryant		Quote No.					
Address 2600 Bull St		Telephone No. / Fax No. / Email		Waybill No.		Page of					
City Columbia	State SC	Zip Code	Preservative					Number of Containers			
Project Name Highway 11			1. Unpres. 4. HNO3 7. NaOH 2. NaOH/ZnA 5. HCL 3. H2SO4 6. Na Thio.					Bottle (See Instructions on back)			
Project Number 03439/CAT# 45516			P.O Number 460068529		Matrix		Preservative				
Sample ID / Description (Containers for each sample may be combined on one line)		Date	Time	G-Grab C-Composite	GW	DW	WW	S	Other	Analysis SHEALY 12/18/13 FID	Remarks / Cooler ID
MW-11		5/14	15:11	G	✓						
MW-12			17:07	G	✓						NO 0002
MW-13			15:35	G	X						NO 0002
MW-14		5/14	12:17	G	X						0002
MW-15											Not Located
PMW-1		5/14	12:16	G	Y						NO 0002
PMW-2		5/14	13:16	G	X						NO 0002
PMW-4		5/14	12:40	G	X						NO 0002/130H
DW-1											Product
RW-2											Product
Turn Around Time Required (Prior lab approval required for expedited TAT) <input type="checkbox"/> Standard <input type="checkbox"/> Rush (Please Specify)			Sample Disposal <input type="checkbox"/> Return to Client <input type="checkbox"/> Disposal by Lab			QC Requirements (Specify)			Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison <input type="checkbox"/> Unknown		
1. Relinquished by / Sampler		Date	Time	1. Received by		Date	Time				
2. Relinquished by		Date	Time	2. Received by		Date	Time				
3. Relinquished by		Date	Time	3. Received by		Date	Time				
4. Relinquished by		Date	Time	4. Laboratory Received by		Date	Time				
Note: All samples are retained for six weeks from receipt unless other arrangements are made.				LAB USE ONLY Received on Ice (Check) <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Ice Pack			Receipt Temp. _____ °C		Temp. Blank <input type="checkbox"/> Y / <input type="checkbox"/> N		



Chain of Custody Record

Shealy Environmental Services, Inc.
106 Vantage Point Drive
West Columbia, South Carolina 29172
Telephone No. (803) 791-9700 Fax No. (803) 791-9111
www.shealylab.com

Number 16302

Client: SCANA, Report to Contact: D. Thoma, Sampler: John C. Binant, Quote No.
Address: 7100 Bell St., City: Columbia, State: SC, Zip Code:
Preservative: 1. Unpres., 4. HNO3, 7. NaOH, 2. NaOH/ZnA, 5. HCL, 3. H2SO4, 6. Na Thio.
Project Name: Highway 11, Project Number: 3439/CA# 45516, P.O Number: 4620088529
Sample ID / Description, Date, Time, Matrix (G-Grab, C-Composite, GW, DW, WW, S, Other), Analysis (EPA, DCA, S, DCA, EDB)
Remarks / Cooler ID: 0DOR, Product
Turn Around Time Required, Sample Disposal, QC Requirements, Possible Hazard Identification
1. Relinquished by / Sampler: Date 5/14, Time 18:00, 1. Received by: Date 5/15/13, Time 1600
2. Relinquished by: Date 5/15/13, Time 12:30, 2. Received by: Date 5/15/13, Time 12:30
3. Relinquished by: Date, Time, 3. Received by: Date, Time
4. Relinquished by: Date, Time, 4. Laboratory Received by: Date, Time
Note: All samples are retained for six weeks from receipt unless other arrangements are made.
LAB USE ONLY
Received on Ice (Check) Yes No Ice Pack Receipt Temp. °C Temp. Blank Y / N





Chain of Custody Record

Shealy Environmental Services, Inc.
106 Vantage Point Drive
West Columbia, South Carolina 29172
Telephone No. (803) 791-9700 Fax No. (803) 791-9111
www.shealylab.com

Number 16301

Client: SDOHLC, Report to Contact: D. Thomas, Sampler: John C. Bryant, Quote No.
Address: 7600 Bull Street, City: Columbia, State: SC, Zip Code:
Preservative: 1. Unpres., 2. NaOH/ZnA, 3. H2SO4, 4. HNO3, 5. HCL, 6. Na Thio., 7. NaOH
Project Name: Pig Bank #11, Project Number: 03439/PA 45516, P.O Number: 460088529
Sample ID / Description, Date, Time, Matrix (G, C, Composite, GW, DW, WW, S, Other), Analysis (BTEXNM, 12PA, 8-Ox7, IDB)
Turn Around Time Required, Sample Disposal, QC Requirements, Possible Hazard Identification
1. Relinquished by / Sampler: Date 5/14, Time 18:00, Received by: Date 5/14/13, Time 18:00
2. Relinquished by: Date 5/13, Time 12:30, Received by: Date 5/13, Time 12:30
3. Relinquished by: Date, Time, Received by: Date, Time
4. Relinquished by: Date, Time, Laboratory Received by: Date, Time
Note: All samples are retained for six weeks from receipt unless other arrangements are made.
LAB USE ONLY
Received on Ice (Check) Yes No Ice Pack Receipt Temp. °C Temp. Blank Y / N



May 16, 2013

Re: Treatment of Purge Water  
Highway 11 Grocery  
Salem, South Carolina  
SCDHEC Site ID Number 03439  
MECI Project Number 13-4392

To Whom It May Concern;

Midlands Environmental Consultants, Inc. is providing the following letter as certification that treatment of the referenced purge water complied with the conditions of "Proposed Conditions for Use of Portable Activated Carbon Units for the Treatment of Small Volumes of Petroleum Hydrocarbon Contaminated Groundwater", as described in the following:

Applicability:

Groundwater treated was obtained as a result development of wells and sampling.

Conditions:

1. The purge/bail water from all wells is mixed before usage of the Activated Carbon Unit.
2. No free-product was detected in any of the purge water drums.
3. Analytical results of from well sampling show average concentrations of petroleum hydrocarbon constituents less than 5000 parts per billion (ppb) Benzene and less than 20,000 ppb total BTEX.
4. The existing carbon pack will be replaced/reactivated every 5,000 gallons.
5. Record of usage is maintained by Contractor.
6. Any and all recommendations and conditions issued by the Manufacturer have been adhered to.
7. Any and all recommendations and conditions (even on a site by site basis) issued by the SCDHEC must be adhered to.

All purge waters were treated on-site using an up-flow treatment drum loaded with 30 pounds of activated carbon. Carbon will be loaded to a maximum of 3 pounds of total organic compounds or 5,000 gallons of development/purge water, whichever occurs first.

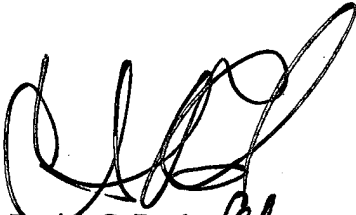
May 16, 2013

A total of 197.0 gallons were treated on May 14, 2013 at the referenced site.

Midlands Environmental also tracks cumulative organic compounds adsorbed on the activated carbon to ensure the capacity of carbon mass is not over-charged. This data is available upon request.

Should you have any questions or comments, please contact the undersigned.

Sincerely,  
Midlands Environmental Consultants, Inc.

A handwritten signature in black ink, appearing to read 'P. G. Boylan', written over the printed name.

Patrick G. Boylan  
Senior Geologist

# SHEALY ENVIRONMENTAL SERVICES, INC.

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## Report of Analysis

**SC DHEC - UST Management**  
2600 Bull Street  
Columbia, SC 29201  
Attention: Debra Thoma

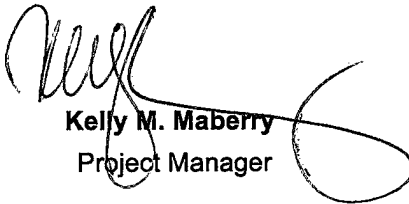


Project Name: **Highway 11 Grocery**

Project Number: **UST Permit #03439/CA #45516**

Lot Number: **OE15089**

Date Completed: **05/29/2013**

  
**Kelly M. Maberry**  
Project Manager



This report shall not be reproduced, except in its entirety, without the written approval of Shealy Environmental Services, Inc.

The following non-paginated documents are considered part of this report: Chain of Custody Record and Sample Receipt Checklist.



# SHEALY ENVIRONMENTAL SERVICES, INC.

SC DHEC No: 32010

NELAC No: E87653

NC DENR No: 329

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## Case Narrative

### SC DHEC - UST Management

#### Lot Number: OE15089

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This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved NELAC standards, the Shealy Environmental Services, Inc. ("Shealy") Quality Assurance Management Plan (QAMP), standard operating procedures (SOPs), and Shealy policies. Any exceptions to the NELAC standards, the QAMP, SOPs or policies are qualified on the results page or discussed below.

If you have any questions regarding this report please contact the Shealy Project Manager listed on the cover page.

#### Volatiles

The MS/MSD associated with batch 21292 had MTBE recovered outside of the acceptance limits. The MS associated with batch 21292 had toluene recovered outside of the acceptance limits. Since the associated LCS/LCSD recoveries were within control limits the data were reported.

# SHEALY ENVIRONMENTAL SERVICES, INC.

## Sample Summary SC DHEC - UST Management

Lot Number: OE15089

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	MW-2	Aqueous	05/14/2013 1251	05/15/2013
002	MW-4	Aqueous	05/14/2013 1319	05/15/2013
003	MW-6	Aqueous	05/14/2013 1159	05/15/2013
004	MW-9	Aqueous	05/14/2013	05/15/2013
005	MW-10	Aqueous	05/14/2013 1337	05/15/2013
006	MW-11	Aqueous	05/14/2013 1511	05/15/2013
007	MW-12	Aqueous	05/14/2013 1207	05/15/2013
008	MW-13	Aqueous	05/14/2013 1535	05/15/2013
009	MW-14	Aqueous	05/14/2013 1217	05/15/2013
010	DMW-1	Aqueous	05/14/2013 1216	05/15/2013
011	DMW-2	Aqueous	05/14/2013 1316	05/15/2013
012	DMW-4	Aqueous	05/14/2013 1240	05/15/2013
013	RW-3	Aqueous	05/14/2013 1150	05/15/2013
014	RW-3 Dup	Aqueous	05/14/2013 1150	05/15/2013
015	RW-4	Aqueous	05/14/2013 1136	05/15/2013
016	RW-4 Dup	Aqueous	05/14/2013 1136	05/15/2013
017	RW-8	Aqueous	05/14/2013 1456	05/15/2013
018	RW-10	Aqueous	05/14/2013 1420	05/15/2013
019	RW-11	Aqueous	05/14/2013 1347	05/15/2013
020	RW-12	Aqueous	05/14/2013 1359	05/15/2013
021	RW-13	Aqueous	05/14/2013 1333	05/15/2013
022	WSW-1	Aqueous	05/14/2013 1530	05/15/2013
023	Field Blank	Aqueous	05/14/2013 1545	05/15/2013
024	Trip Blank	Aqueous	05/14/2013 1545	05/15/2013
025	Ck-1	Aqueous	05/14/2013 1215	05/15/2013
026	Ck-2	Aqueous	05/14/2013 1225	05/15/2013
027	Ck-3	Aqueous	05/14/2013 1235	05/15/2013

(27 samples)

# SHEALY ENVIRONMENTAL SERVICES, INC.

## Executive Summary SC DHEC - UST Management Lot Number: OE15089

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
002	MW-4	Aqueous	Benzene	8260B	140		ug/L	8
002	MW-4	Aqueous	Ethylbenzene	8260B	250		ug/L	8
002	MW-4	Aqueous	Methyl tertiary butyl ether (MTBE)	8260B	31		ug/L	8
002	MW-4	Aqueous	Naphthalene	8260B	39		ug/L	8
002	MW-4	Aqueous	Toluene	8260B	480		ug/L	8
002	MW-4	Aqueous	Xylenes (total)	8260B	1000		ug/L	8
003	MW-6	Aqueous	tert-Amyl alcohol (TAA)	8260B	2300	J	ug/L	9
003	MW-6	Aqueous	tert-Amyl methyl ether (TAME)	8260B	910	J	ug/L	9
003	MW-6	Aqueous	Benzene	8260B	7500		ug/L	9
003	MW-6	Aqueous	1,2-Dichloroethane	8260B	210	J	ug/L	9
003	MW-6	Aqueous	Diisopropyl ether (IPE)	8260B	470	J	ug/L	9
003	MW-6	Aqueous	Ethylbenzene	8260B	1900		ug/L	9
003	MW-6	Aqueous	Methyl tertiary butyl ether (MTBE)	8260B	22000		ug/L	9
003	MW-6	Aqueous	Naphthalene	8260B	380	J	ug/L	9
003	MW-6	Aqueous	Toluene	8260B	27000		ug/L	9
003	MW-6	Aqueous	Xylenes (total)	8260B	13000		ug/L	9
005	MW-10	Aqueous	Benzene	8260B	6.0		ug/L	11
009	MW-14	Aqueous	tert-Amyl alcohol (TAA)	8260B	420	J	ug/L	15
009	MW-14	Aqueous	tert-Amyl methyl ether (TAME)	8260B	55	J	ug/L	15
009	MW-14	Aqueous	Benzene	8260B	1100		ug/L	15
009	MW-14	Aqueous	Diisopropyl ether (IPE)	8260B	35	J	ug/L	15
009	MW-14	Aqueous	Ethylbenzene	8260B	1200		ug/L	15
009	MW-14	Aqueous	Methyl tertiary butyl ether (MTBE)	8260B	830		ug/L	15
009	MW-14	Aqueous	Naphthalene	8260B	350		ug/L	15
009	MW-14	Aqueous	Toluene	8260B	4700		ug/L	15
009	MW-14	Aqueous	Xylenes (total)	8260B	7100		ug/L	15
010	DMW-1	Aqueous	Methyl tertiary butyl ether (MTBE)	8260B	0.68	J	ug/L	16
013	RW-3	Aqueous	tert-Amyl alcohol (TAA)	8260B	870	J	ug/L	19
013	RW-3	Aqueous	tert-Amyl methyl ether (TAME)	8260B	420	J	ug/L	19
013	RW-3	Aqueous	Benzene	8260B	4900		ug/L	19
013	RW-3	Aqueous	Diisopropyl ether (IPE)	8260B	260	J	ug/L	19
013	RW-3	Aqueous	Ethylbenzene	8260B	1400		ug/L	19
013	RW-3	Aqueous	Methyl tertiary butyl ether (MTBE)	8260B	7400		ug/L	19
013	RW-3	Aqueous	Naphthalene	8260B	280	J	ug/L	19
013	RW-3	Aqueous	Toluene	8260B	17000		ug/L	19
013	RW-3	Aqueous	Xylenes (total)	8260B	8200		ug/L	19
014	RW-3 Dup	Aqueous	tert-Amyl alcohol (TAA)	8260B	1200	J	ug/L	20
014	RW-3 Dup	Aqueous	tert-Amyl methyl ether (TAME)	8260B	360	J	ug/L	20
014	RW-3 Dup	Aqueous	Benzene	8260B	3900		ug/L	20
014	RW-3 Dup	Aqueous	Diisopropyl ether (IPE)	8260B	220	J	ug/L	20
014	RW-3 Dup	Aqueous	Ethylbenzene	8260B	1200		ug/L	20
014	RW-3 Dup	Aqueous	Methyl tertiary butyl ether (MTBE)	8260B	5600		ug/L	20
014	RW-3 Dup	Aqueous	Naphthalene	8260B	460	J	ug/L	20
014	RW-3 Dup	Aqueous	Toluene	8260B	13000		ug/L	20
014	RW-3 Dup	Aqueous	Xylenes (total)	8260B	7100		ug/L	20

## Executive Summary (Continued)

Lot Number: OE15089

Sample ID	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
015	RW-4	Aqueous	tert-Amyl alcohol (TAA)	8260B	1700	J	ug/L	21
015	RW-4	Aqueous	tert-Amyl methyl ether (TAME)	8260B	650	J	ug/L	21
015	RW-4	Aqueous	Benzene	8260B	4000		ug/L	21
015	RW-4	Aqueous	1,2-Dichloroethane	8260B	97	J	ug/L	21
015	RW-4	Aqueous	Diisopropyl ether (IPE)	8260B	370	J	ug/L	21
015	RW-4	Aqueous	Ethylbenzene	8260B	990	J	ug/L	21
015	RW-4	Aqueous	Methyl tertiary butyl ether (MTBE)	8260B	22000		ug/L	21
015	RW-4	Aqueous	tert-butyl alcohol (TBA)	8260B	1400	J	ug/L	21
015	RW-4	Aqueous	Toluene	8260B	13000		ug/L	21
015	RW-4	Aqueous	Xylenes (total)	8260B	5900		ug/L	21
016	RW-4 Dup	Aqueous	tert-Amyl alcohol (TAA)	8260B	1900	J	ug/L	22
016	RW-4 Dup	Aqueous	tert-Amyl methyl ether (TAME)	8260B	780	J	ug/L	22
016	RW-4 Dup	Aqueous	Benzene	8260B	3900		ug/L	22
016	RW-4 Dup	Aqueous	1,2-Dichloroethane	8260B	93	J	ug/L	22
016	RW-4 Dup	Aqueous	Ethylbenzene	8260B	1000		ug/L	22
016	RW-4 Dup	Aqueous	Methyl tertiary butyl ether (MTBE)	8260B	26000	S	ug/L	22
016	RW-4 Dup	Aqueous	tert-butyl alcohol (TBA)	8260B	1600	J	ug/L	22
016	RW-4 Dup	Aqueous	Toluene	8260B	12000	S	ug/L	22
016	RW-4 Dup	Aqueous	Xylenes (total)	8260B	6100		ug/L	22
017	RW-8	Aqueous	tert-Amyl methyl ether (TAME)	8260B	430	J	ug/L	23
017	RW-8	Aqueous	Benzene	8260B	8400		ug/L	23
017	RW-8	Aqueous	Diisopropyl ether (IPE)	8260B	250	J	ug/L	23
017	RW-8	Aqueous	Ethylbenzene	8260B	3000		ug/L	23
017	RW-8	Aqueous	Methyl tertiary butyl ether (MTBE)	8260B	6100		ug/L	23
017	RW-8	Aqueous	Toluene	8260B	33000		ug/L	23
017	RW-8	Aqueous	Xylenes (total)	8260B	16000		ug/L	23
017	RW-8	Aqueous	1,2-Dibromoethane (EDB)	8011	0.059	P	ug/L	23
018	RW-10	Aqueous	tert-Amyl methyl ether (TAME)	8260B	300	J	ug/L	24
018	RW-10	Aqueous	Benzene	8260B	6300		ug/L	24
018	RW-10	Aqueous	Diisopropyl ether (IPE)	8260B	210	J	ug/L	24
018	RW-10	Aqueous	Ethylbenzene	8260B	3500		ug/L	24
018	RW-10	Aqueous	Methyl tertiary butyl ether (MTBE)	8260B	4300		ug/L	24
018	RW-10	Aqueous	Toluene	8260B	31000		ug/L	24
018	RW-10	Aqueous	Xylenes (total)	8260B	19000		ug/L	24
019	RW-11	Aqueous	tert-Amyl methyl ether (TAME)	8260B	350	J	ug/L	25
019	RW-11	Aqueous	Benzene	8260B	6400		ug/L	25
019	RW-11	Aqueous	Ethylbenzene	8260B	3000		ug/L	25
019	RW-11	Aqueous	Methyl tertiary butyl ether (MTBE)	8260B	3700		ug/L	25
019	RW-11	Aqueous	Toluene	8260B	29000		ug/L	25
019	RW-11	Aqueous	Xylenes (total)	8260B	17000		ug/L	25
020	RW-12	Aqueous	tert-Amyl methyl ether (TAME)	8260B	390	J	ug/L	26
020	RW-12	Aqueous	Benzene	8260B	6800		ug/L	26
020	RW-12	Aqueous	Diisopropyl ether (IPE)	8260B	240	J	ug/L	26
020	RW-12	Aqueous	Ethylbenzene	8260B	3200		ug/L	26
020	RW-12	Aqueous	Methyl tertiary butyl ether (MTBE)	8260B	6100		ug/L	26
020	RW-12	Aqueous	Naphthalene	8260B	570	J	ug/L	26
020	RW-12	Aqueous	Toluene	8260B	26000		ug/L	26
020	RW-12	Aqueous	Xylenes (total)	8260B	17000		ug/L	26



## Executive Summary (Continued)

Lot Number: OE15089

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
021	RW-13	Aqueous	tert-Amyl methyl ether (TAME)	8260B	230	J	ug/L	27
021	RW-13	Aqueous	Benzene	8260B	2800		ug/L	27
021	RW-13	Aqueous	Diisopropyl ether (IPE)	8260B	140	J	ug/L	27
021	RW-13	Aqueous	Ethylbenzene	8260B	990		ug/L	27
021	RW-13	Aqueous	Methyl tertiary butyl ether (MTBE)	8260B	4100		ug/L	27
021	RW-13	Aqueous	Naphthalene	8260B	230	J	ug/L	27
021	RW-13	Aqueous	Toluene	8260B	5100		ug/L	27
021	RW-13	Aqueous	Xylenes (total)	8260B	5300		ug/L	27
025	Ck-1	Aqueous	Benzene	8260B	4.6	J	ug/L	31
025	Ck-1	Aqueous	Ethylbenzene	8260B	2.4	J	ug/L	31
025	Ck-1	Aqueous	Methyl tertiary butyl ether (MTBE)	8260B	5.4		ug/L	31
025	Ck-1	Aqueous	Toluene	8260B	9.1		ug/L	31
025	Ck-1	Aqueous	Xylenes (total)	8260B	13		ug/L	31
026	Ck-2	Aqueous	tert-Amyl alcohol (TAA)	8260B	7.8	J	ug/L	32
026	Ck-2	Aqueous	tert-Amyl methyl ether (TAME)	8260B	1.3	J	ug/L	32
026	Ck-2	Aqueous	Benzene	8260B	24		ug/L	32
026	Ck-2	Aqueous	Ethylbenzene	8260B	15		ug/L	32
026	Ck-2	Aqueous	Methyl tertiary butyl ether (MTBE)	8260B	21		ug/L	32
026	Ck-2	Aqueous	Naphthalene	8260B	3.5	J	ug/L	32
026	Ck-2	Aqueous	Toluene	8260B	75		ug/L	32
026	Ck-2	Aqueous	Xylenes (total)	8260B	89		ug/L	32
027	Ck-3	Aqueous	tert-Amyl methyl ether (TAME)	8260B	0.73	J	ug/L	33
027	Ck-3	Aqueous	Benzene	8260B	12		ug/L	33
027	Ck-3	Aqueous	Diisopropyl ether (IPE)	8260B	0.43	J	ug/L	33
027	Ck-3	Aqueous	Ethylbenzene	8260B	7.4		ug/L	33
027	Ck-3	Aqueous	Methyl tertiary butyl ether (MTBE)	8260B	12		ug/L	33
027	Ck-3	Aqueous	Toluene	8260B	36		ug/L	33
027	Ck-3	Aqueous	Xylenes (total)	8260B	40		ug/L	33

(121 detections)

Description: MW-2

Matrix: Aqueous

Date Sampled: 05/14/2013 1251

Date Received: 05/15/2013

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch			
1	5030B	8260B	1	05/24/2013 0516	JAC		21215			
Parameter		CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run	
tert-Amyl alcohol (TAA)		75-85-4	8260B	ND		100	6.7	ug/L	1	
tert-Amyl methyl ether (TAME)		994-05-8	8260B	ND		10	0.20	ug/L	1	
Benzene		71-43-2	8260B	ND		5.0	0.20	ug/L	1	
tert-Butyl formate (TBF)		762-75-4	8260B	ND		100	1.0	ug/L	1	
1,2-Dichloroethane		107-06-2	8260B	ND		5.0	0.30	ug/L	1	
Diisopropyl ether (IPE)		108-20-3	8260B	ND		10	0.40	ug/L	1	
3,3-Dimethyl-1-butanol		624-95-3	8260B	ND		100	1.0	ug/L	1	
Ethanol		64-17-5	8260B	ND		1000	33	ug/L	1	
Ethylbenzene		100-41-4	8260B	ND		5.0	1.7	ug/L	1	
Ethyl-tert-butyl ether (ETBE)		637-92-3	8260B	ND		100	0.20	ug/L	1	
Methyl tertiary butyl ether (MTBE)		1634-04-4	8260B	ND		5.0	0.40	ug/L	1	
Naphthalene		91-20-3	8260B	ND		5.0	1.7	ug/L	1	
tert-butyl alcohol (TBA)		75-65-0	8260B	ND		100	6.7	ug/L	1	
Toluene		108-88-3	8260B	ND		5.0	1.7	ug/L	1	
Xylenes (total)		1330-20-7	8260B	ND		5.0	1.7	ug/L	1	

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		110	70-130
Bromofluorobenzene		101	70-130
Toluene-d8		104	70-130

## EDB &amp; DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch			
1	8011	8011	1	05/23/2013 0934	AMY	05/16/2013 2025	20659			
Parameter		CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run	
1,2-Dibromoethane (EDB)		106-93-4	8011	ND		0.020	0.020	ug/L	1	
Surrogate	Q	Run 1 % Recovery	Acceptance Limits							
1,1,1,2-Tetrachloroethane		101	57-137							

PQL = Practical quantitation limit    B = Detected in the method blank    E = Quantitation of compound exceeded the calibration range    H = Out of holding time    Q = Surrogate failure  
 ND = Not detected at or above the MDL    J = Estimated result < PQL and ≥ MDL    P = The RPD between two GC columns exceeds 40%    N = Recovery is out of criteria    L = LCS/LCSD failure  
 Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"    S = MS/MSD failure

Description: MW-4

Matrix: Aqueous

Date Sampled: 05/14/2013 1319

Date Received: 05/15/2013

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	5030B	8260B	5	05/24/2013 1800	JJG		21292		
Parameter		CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
tert-Amyl alcohol (TAA)		75-85-4	8260B	ND		500	34	ug/L	1
tert-Amyl methyl ether (TAME)		994-05-8	8260B	ND		50	1.0	ug/L	1
<b>Benzene</b>		<b>71-43-2</b>	<b>8260B</b>	<b>140</b>		<b>25</b>	<b>1.0</b>	<b>ug/L</b>	<b>1</b>
tert-Butyl formate (TBF)		762-75-4	8260B	ND		500	5.0	ug/L	1
1,2-Dichloroethane		107-06-2	8260B	ND		25	1.5	ug/L	1
Diisopropyl ether (IPE)		108-20-3	8260B	ND		50	2.0	ug/L	1
3,3-Dimethyl-1-butanol		624-95-3	8260B	ND		500	5.0	ug/L	1
Ethanol		64-17-5	8260B	ND		5000	170	ug/L	1
<b>Ethylbenzene</b>		<b>100-41-4</b>	<b>8260B</b>	<b>250</b>		<b>25</b>	<b>8.5</b>	<b>ug/L</b>	<b>1</b>
Ethyl-tert-butyl ether (ETBE)		637-92-3	8260B	ND		500	1.0	ug/L	1
<b>Methyl tertiary butyl ether (MTBE)</b>		<b>1634-04-4</b>	<b>8260B</b>	<b>31</b>		<b>25</b>	<b>2.0</b>	<b>ug/L</b>	<b>1</b>
<b>Naphthalene</b>		<b>91-20-3</b>	<b>8260B</b>	<b>39</b>		<b>25</b>	<b>8.5</b>	<b>ug/L</b>	<b>1</b>
tert-butyl alcohol (TBA)		75-65-0	8260B	ND		500	34	ug/L	1
<b>Toluene</b>		<b>108-88-3</b>	<b>8260B</b>	<b>480</b>		<b>25</b>	<b>8.5</b>	<b>ug/L</b>	<b>1</b>
<b>Xylenes (total)</b>		<b>1330-20-7</b>	<b>8260B</b>	<b>1000</b>		<b>25</b>	<b>8.5</b>	<b>ug/L</b>	<b>1</b>

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		105	70-130
Bromofluorobenzene		118	70-130
Toluene-d8		123	70-130

## EDB &amp; DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	8011	8011	1	05/23/2013 0956	AMY	05/16/2013 2025	20659		
Parameter		CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
1,2-Dibromoethane (EDB)		106-93-4	8011	ND		0.019	0.019	ug/L	1
Surrogate	Q	Run 1 % Recovery	Acceptance Limits						
1,1,1,2-Tetrachloroethane		135	57-137						

PQL = Practical quantitation limit    B = Detected in the method blank    E = Quantitation of compound exceeded the calibration range    H = Out of holding time    Q = Surrogate failure  
 ND = Not detected at or above the MDL    J = Estimated result < PQL and ≥ MDL    P = The RPD between two GC columns exceeds 40%    N = Recovery is out of criteria    L = LCS/LCSD failure  
 Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"    S = MS/MSD failure

Description: MW-6

Matrix: Aqueous

Date Sampled: 05/14/2013 1159

Date Received: 05/15/2013

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch			
1	5030B	8260B	200	05/24/2013 1845	JJG		21292			
Parameter		CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run	
tert-Amyl alcohol (TAA)		75-85-4	8260B	2300	J	20000	1300	ug/L	1	
tert-Amyl methyl ether (TAME)		994-05-8	8260B	910	J	2000	40	ug/L	1	
Benzene		71-43-2	8260B	7500		1000	40	ug/L	1	
tert-Butyl formate (TBF)		762-75-4	8260B	ND		20000	200	ug/L	1	
1,2-Dichloroethane		107-06-2	8260B	210	J	1000	60	ug/L	1	
Diisopropyl ether (IPE)		108-20-3	8260B	470	J	2000	80	ug/L	1	
3,3-Dimethyl-1-butanol		624-95-3	8260B	ND		20000	200	ug/L	1	
Ethanol		64-17-5	8260B	ND		200000	6600	ug/L	1	
Ethylbenzene		100-41-4	8260B	1900		1000	340	ug/L	1	
Ethyl-tert-butyl ether (ETBE)		637-92-3	8260B	ND		20000	40	ug/L	1	
Methyl tertiary butyl ether (MTBE)		1634-04-4	8260B	22000		1000	80	ug/L	1	
Naphthalene		91-20-3	8260B	380	J	1000	340	ug/L	1	
tert-butyl alcohol (TBA)		75-65-0	8260B	ND		20000	1300	ug/L	1	
Toluene		108-88-3	8260B	27000		1000	340	ug/L	1	
Xylenes (total)		1330-20-7	8260B	13000		1000	340	ug/L	1	
Surrogate	Q	Run 1 % Recovery	Acceptance Limits							
1,2-Dichloroethane-d4		94	70-130							
Bromofluorobenzene		104	70-130							
Toluene-d8		103	70-130							

## EDB &amp; DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch			
1	8011	8011	1	05/23/2013 1018	AMY	05/16/2013 2025	20659			
Parameter		CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run	
1,2-Dibromoethane (EDB)		106-93-4	8011	ND		0.020	0.020	ug/L	1	
Surrogate	Q	Run 1 % Recovery	Acceptance Limits							
1,1,1,2-Tetrachloroethane		106	57-137							

PQL = Practical quantitation limit    B = Detected in the method blank    E = Quantitation of compound exceeded the calibration range    H = Out of holding time    Q = Surrogate failure  
 ND = Not detected at or above the MDL    J = Estimated result < PQL and ≥ MDL    P = The RPD between two GC columns exceeds 40%    N = Recovery is out of criteria    L = LCS/LCSD failure  
 Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"    S = MS/MSD failure

Description: MW-9

Matrix: Aqueous

Date Sampled: 05/14/2013

Date Received: 05/15/2013

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch			
1	5030B	8260B	1	05/24/2013 0539	JAC		21215			
Parameter		CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run	
tert-Amyl alcohol (TAA)		75-85-4	8260B	ND		100	6.7	ug/L	1	
tert-Amyl methyl ether (TAME)		994-05-8	8260B	ND		10	0.20	ug/L	1	
Benzene		71-43-2	8260B	ND		5.0	0.20	ug/L	1	
tert-Butyl formate (TBF)		762-75-4	8260B	ND		100	1.0	ug/L	1	
1,2-Dichloroethane		107-06-2	8260B	ND		5.0	0.30	ug/L	1	
Diisopropyl ether (IPE)		108-20-3	8260B	ND		10	0.40	ug/L	1	
3,3-Dimethyl-1-butanol		624-95-3	8260B	ND		100	1.0	ug/L	1	
Ethanol		64-17-5	8260B	ND		1000	33	ug/L	1	
Ethylbenzene		100-41-4	8260B	ND		5.0	1.7	ug/L	1	
Ethyl-tert-butyl ether (ETBE)		637-92-3	8260B	ND		100	0.20	ug/L	1	
Methyl tertiary butyl ether (MTBE)		1634-04-4	8260B	ND		5.0	0.40	ug/L	1	
Naphthalene		91-20-3	8260B	ND		5.0	1.7	ug/L	1	
tert-butyl alcohol (TBA)		75-65-0	8260B	ND		100	6.7	ug/L	1	
Toluene		108-88-3	8260B	ND		5.0	1.7	ug/L	1	
Xylenes (total)		1330-20-7	8260B	ND		5.0	1.7	ug/L	1	

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		112	70-130
Bromofluorobenzene		99	70-130
Toluene-d8		104	70-130

## EDB &amp; DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch			
1	8011	8011	1	05/23/2013 1040	AMY	05/16/2013 2025	20659			
Parameter		CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run	
1,2-Dibromoethane (EDB)		106-93-4	8011	ND		0.020	0.020	ug/L	1	
Surrogate	Q	Run 1 % Recovery	Acceptance Limits							
1,1,1,2-Tetrachloroethane		107	57-137							

PQL = Practical quantitation limit      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      H = Out of holding time      Q = Surrogate failure  
 ND = Not detected at or above the MDL      J = Estimated result < PQL and ≥ MDL      P = The RPD between two GC columns exceeds 40%      N = Recovery is out of criteria      L = LCS/LCSD failure  
 Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"      S = MS/MSD failure

Description: MW-10

Matrix: Aqueous

Date Sampled: 05/14/2013 1337

Date Received: 05/15/2013

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch			
1	5030B	8260B	1	05/24/2013 0602	JAC		21215			
Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run		
tert-Amyl alcohol (TAA)	75-85-4	8260B	ND		100	6.7	ug/L	1		
tert-Amyl methyl ether (TAME)	994-05-8	8260B	ND		10	0.20	ug/L	1		
<b>Benzene</b>	<b>71-43-2</b>	<b>8260B</b>	<b>6.0</b>		<b>5.0</b>	<b>0.20</b>	<b>ug/L</b>	<b>1</b>		
tert-Butyl formate (TBF)	762-75-4	8260B	ND		100	1.0	ug/L	1		
1,2-Dichloroethane	107-06-2	8260B	ND		5.0	0.30	ug/L	1		
Diisopropyl ether (IPE)	108-20-3	8260B	ND		10	0.40	ug/L	1		
3,3-Dimethyl-1-butanol	624-95-3	8260B	ND		100	1.0	ug/L	1		
Ethanol	64-17-5	8260B	ND		1000	33	ug/L	1		
Ethylbenzene	100-41-4	8260B	ND		5.0	1.7	ug/L	1		
Ethyl-tert-butyl ether (ETBE)	637-92-3	8260B	ND		100	0.20	ug/L	1		
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		5.0	0.40	ug/L	1		
Naphthalene	91-20-3	8260B	ND		5.0	1.7	ug/L	1		
tert-butyl alcohol (TBA)	75-65-0	8260B	ND		100	6.7	ug/L	1		
Toluene	108-88-3	8260B	ND		5.0	1.7	ug/L	1		
Xylenes (total)	1330-20-7	8260B	ND		5.0	1.7	ug/L	1		
Surrogate	Q	Run 1 % Recovery	Acceptance Limits							
1,2-Dichloroethane-d4		110	70-130							
Bromofluorobenzene		101	70-130							
Toluene-d8		103	70-130							

## EDB &amp; DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch			
1	8011	8011	1	05/23/2013 1102	AMY	05/16/2013 2025	20659			
Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run		
1,2-Dibromoethane (EDB)	106-93-4	8011	ND		0.020	0.020	ug/L	1		
Surrogate	Q	Run 1 % Recovery	Acceptance Limits							
1,1,1,2-Tetrachloroethane		102	57-137							

PQL = Practical quantitation limit      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      H = Out of holding time      Q = Surrogate failure  
 ND = Not detected at or above the MDL      J = Estimated result < PQL and ≥ MDL      P = The RPD between two GC columns exceeds 40%      N = Recovery is out of criteria      L = LCS/LCSD failure  
 Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"      S = MS/MSD failure

Description: MW-11

Matrix: Aqueous

Date Sampled: 05/14/2013 1511

Date Received: 05/15/2013

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	5030B	8260B	1	05/24/2013 0624	JAC		21215		
Parameter		CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
tert-Amyl alcohol (TAA)		75-85-4	8260B	ND		100	6.7	ug/L	1
tert-Amyl methyl ether (TAME)		994-05-8	8260B	ND		10	0.20	ug/L	1
Benzene		71-43-2	8260B	ND		5.0	0.20	ug/L	1
tert-Butyl formate (TBF)		762-75-4	8260B	ND		100	1.0	ug/L	1
1,2-Dichloroethane		107-06-2	8260B	ND		5.0	0.30	ug/L	1
Diisopropyl ether (IPE)		108-20-3	8260B	ND		10	0.40	ug/L	1
3,3-Dimethyl-1-butanol		624-95-3	8260B	ND		100	1.0	ug/L	1
Ethanol		64-17-5	8260B	ND		1000	33	ug/L	1
Ethylbenzene		100-41-4	8260B	ND		5.0	1.7	ug/L	1
Ethyl-tert-butyl ether (ETBE)		637-92-3	8260B	ND		100	0.20	ug/L	1
Methyl tertiary butyl ether (MTBE)		1634-04-4	8260B	ND		5.0	0.40	ug/L	1
Naphthalene		91-20-3	8260B	ND		5.0	1.7	ug/L	1
tert-butyl alcohol (TBA)		75-65-0	8260B	ND		100	6.7	ug/L	1
Toluene		108-88-3	8260B	ND		5.0	1.7	ug/L	1
Xylenes (total)		1330-20-7	8260B	ND		5.0	1.7	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		113	70-130
Bromofluorobenzene		100	70-130
Toluene-d8		103	70-130

## EDB &amp; DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	8011	8011	1	05/23/2013 1431	AMY	05/16/2013 2032	20660		
Parameter		CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
1,2-Dibromoethane (EDB)		106-93-4	8011	ND		0.019	0.019	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,1,1,2-Tetrachloroethane		99	57-137

PQL = Practical quantitation limit    B = Detected in the method blank    E = Quantitation of compound exceeded the calibration range    H = Out of holding time    Q = Surrogate failure  
 ND = Not detected at or above the MDL    J = Estimated result < PQL and ≥ MDL    P = The RPD between two GC columns exceeds 40%    N = Recovery is out of criteria    L = LCS/LCSD failure  
 Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"    S = MS/MSD failure

Description: MW-12

Matrix: Aqueous

Date Sampled: 05/14/2013 1207

Date Received: 05/15/2013

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch			
1	5030B	8260B	1	05/24/2013 1630	JJG		21292			
Parameter		CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run	
tert-Amyl alcohol (TAA)		75-85-4	8260B	ND		100	6.7	ug/L	1	
tert-Amyl methyl ether (TAME)		994-05-8	8260B	ND		10	0.20	ug/L	1	
Benzene		71-43-2	8260B	ND		5.0	0.20	ug/L	1	
tert-Butyl formate (TBF)		762-75-4	8260B	ND		100	1.0	ug/L	1	
1,2-Dichloroethane		107-06-2	8260B	ND		5.0	0.30	ug/L	1	
Diisopropyl ether (IPE)		108-20-3	8260B	ND		10	0.40	ug/L	1	
3,3-Dimethyl-1-butanol		624-95-3	8260B	ND		100	1.0	ug/L	1	
Ethanol		64-17-5	8260B	ND		1000	33	ug/L	1	
Ethylbenzene		100-41-4	8260B	ND		5.0	1.7	ug/L	1	
Ethyl-tert-butyl ether (ETBE)		637-92-3	8260B	ND		100	0.20	ug/L	1	
Methyl tertiary butyl ether (MTBE)		1634-04-4	8260B	ND		5.0	0.40	ug/L	1	
Naphthalene		91-20-3	8260B	ND		5.0	1.7	ug/L	1	
tert-butyl alcohol (TBA)		75-65-0	8260B	ND		100	6.7	ug/L	1	
Toluene		108-88-3	8260B	ND		5.0	1.7	ug/L	1	
Xylenes (total)		1330-20-7	8260B	ND		5.0	1.7	ug/L	1	

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		94	70-130
Bromofluorobenzene		80	70-130
Toluene-d8		95	70-130

## EDB &amp; DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch			
1	8011	8011	1	05/23/2013 1453	AMY	05/16/2013 2032	20660			
Parameter		CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run	
1,2-Dibromoethane (EDB)		106-93-4	8011	ND		0.020	0.020	ug/L	1	

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,1,1,2-Tetrachloroethane		105	57-137

PQL = Practical quantitation limit    B = Detected in the method blank    E = Quantitation of compound exceeded the calibration range    H = Out of holding time    Q = Surrogate failure  
 ND = Not detected at or above the MDL    J = Estimated result < PQL and ≥ MDL    P = The RPD between two GC columns exceeds 40%    N = Recovery is out of criteria    L = LCS/LCSD failure  
 Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"    S = MS/MSD failure



Description: MW-13

Matrix: Aqueous

Date Sampled: 05/14/2013 1535

Date Received: 05/15/2013

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch			
1	5030B	8260B	1	05/24/2013 1653	JJG		21292			
Parameter		CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run	
tert-Amyl alcohol (TAA)		75-85-4	8260B	ND		100	6.7	ug/L	1	
tert-Amyl methyl ether (TAME)		994-05-8	8260B	ND		10	0.20	ug/L	1	
Benzene		71-43-2	8260B	ND		5.0	0.20	ug/L	1	
tert-Butyl formate (TBF)		762-75-4	8260B	ND		100	1.0	ug/L	1	
1,2-Dichloroethane		107-06-2	8260B	ND		5.0	0.30	ug/L	1	
Diisopropyl ether (IPE)		108-20-3	8260B	ND		10	0.40	ug/L	1	
3,3-Dimethyl-1-butanol		624-95-3	8260B	ND		100	1.0	ug/L	1	
Ethanol		64-17-5	8260B	ND		1000	33	ug/L	1	
Ethylbenzene		100-41-4	8260B	ND		5.0	1.7	ug/L	1	
Ethyl-tert-butyl ether (ETBE)		637-92-3	8260B	ND		100	0.20	ug/L	1	
Methyl tertiary butyl ether (MTBE)		1634-04-4	8260B	ND		5.0	0.40	ug/L	1	
Naphthalene		91-20-3	8260B	ND		5.0	1.7	ug/L	1	
tert-butyl alcohol (TBA)		75-65-0	8260B	ND		100	6.7	ug/L	1	
Toluene		108-88-3	8260B	ND		5.0	1.7	ug/L	1	
Xylenes (total)		1330-20-7	8260B	ND		5.0	1.7	ug/L	1	
Surrogate	Q	Run 1 % Recovery	Acceptance Limits							
1,2-Dichloroethane-d4		108	70-130							
Bromofluorobenzene		117	70-130							
Toluene-d8		98	70-130							

## EDB &amp; DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch			
1	8011	8011	1	05/23/2013 1515	AMY	05/16/2013 2032	20660			
Parameter		CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run	
1,2-Dibromoethane (EDB)		106-93-4	8011	ND		0.020	0.020	ug/L	1	
Surrogate	Q	Run 1 % Recovery	Acceptance Limits							
1,1,1,2-Tetrachloroethane		97	57-137							

PQL = Practical quantitation limit

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

H = Out of holding time

Q = Surrogate failure

ND = Not detected at or above the MDL

J = Estimated result &lt; PQL and ≥ MDL

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

L = LCS/LCSD failure

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

S = MS/MSD failure

Description: MW-14

Matrix: Aqueous

Date Sampled: 05/14/2013 1217

Date Received: 05/15/2013

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch			
1	5030B	8260B	50	05/24/2013 0817	JAC		21215			
Parameter		CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run	
tert-Amyl alcohol (TAA)		75-85-4	8260B	420	J	5000	340	ug/L	1	
tert-Amyl methyl ether (TAME)		994-05-8	8260B	55	J	500	10	ug/L	1	
Benzene		71-43-2	8260B	1100		250	10	ug/L	1	
tert-Butyl formate (TBF)		762-75-4	8260B	ND		5000	50	ug/L	1	
1,2-Dichloroethane		107-06-2	8260B	ND		250	15	ug/L	1	
Diisopropyl ether (IPE)		108-20-3	8260B	35	J	500	20	ug/L	1	
3,3-Dimethyl-1-butanol		624-95-3	8260B	ND		5000	50	ug/L	1	
Ethanol		64-17-5	8260B	ND		50000	1700	ug/L	1	
Ethylbenzene		100-41-4	8260B	1200		250	85	ug/L	1	
Ethyl-tert-butyl ether (ETBE)		637-92-3	8260B	ND		5000	10	ug/L	1	
Methyl tertiary butyl ether (MTBE)		1634-04-4	8260B	830		250	20	ug/L	1	
Naphthalene		91-20-3	8260B	350		250	85	ug/L	1	
tert-butyl alcohol (TBA)		75-65-0	8260B	ND		5000	340	ug/L	1	
Toluene		108-88-3	8260B	4700		250	85	ug/L	1	
Xylenes (total)		1330-20-7	8260B	7100		250	85	ug/L	1	

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		111	70-130
Bromofluorobenzene		106	70-130
Toluene-d8		105	70-130

## EDB &amp; DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch			
1	8011	8011	1	05/23/2013 1537	AMY	05/16/2013 2032	20660			
Parameter		CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run	
1,2-Dibromoethane (EDB)		106-93-4	8011	ND		0.020	0.020	ug/L	1	
Surrogate	Q	Run 1 % Recovery	Acceptance Limits							
1,1,1,2-Tetrachloroethane		130	57-137							

PQL = Practical quantitation limit    B = Detected in the method blank    E = Quantitation of compound exceeded the calibration range    H = Out of holding time    Q = Surrogate failure  
 ND = Not detected at or above the MDL    J = Estimated result < PQL and ≥ MDL    P = The RPD between two GC columns exceeds 40%    N = Recovery is out of criteria    L = LCS/LCSD failure  
 Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"    S = MS/MSD failure

Description: DMW-1

Matrix: Aqueous

Date Sampled: 05/14/2013 1216

Date Received: 05/15/2013

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	5030B	8260B	1	05/24/2013 1715	JJG		21292		
Parameter		CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
tert-Amyl alcohol (TAA)		75-85-4	8260B	ND		100	6.7	ug/L	1
tert-Amyl methyl ether (TAME)		994-05-8	8260B	ND		10	0.20	ug/L	1
Benzene		71-43-2	8260B	ND		5.0	0.20	ug/L	1
tert-Butyl formate (TBF)		762-75-4	8260B	ND		100	1.0	ug/L	1
1,2-Dichloroethane		107-06-2	8260B	ND		5.0	0.30	ug/L	1
Diisopropyl ether (IPE)		108-20-3	8260B	ND		10	0.40	ug/L	1
3,3-Dimethyl-1-butanol		624-95-3	8260B	ND		100	1.0	ug/L	1
Ethanol		64-17-5	8260B	ND		1000	33	ug/L	1
Ethylbenzene		100-41-4	8260B	ND		5.0	1.7	ug/L	1
Ethyl-tert-butyl ether (ETBE)		637-92-3	8260B	ND		100	0.20	ug/L	1
<b>Methyl tertiary butyl ether (MTBE)</b>		<b>1634-04-4</b>	<b>8260B</b>	<b>0.68</b>	<b>J</b>	<b>5.0</b>	<b>0.40</b>	<b>ug/L</b>	<b>1</b>
Naphthalene		91-20-3	8260B	ND		5.0	1.7	ug/L	1
tert-butyl alcohol (TBA)		75-85-0	8260B	ND		100	6.7	ug/L	1
Toluene		108-88-3	8260B	ND		5.0	1.7	ug/L	1
Xylenes (total)		1330-20-7	8260B	ND		5.0	1.7	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		110	70-130
Bromofluorobenzene		125	70-130
Toluene-d8		130	70-130

## EDB &amp; DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	8011	8011	1	05/23/2013 1559	AMY	05/16/2013 2032	20660		
Parameter		CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
1,2-Dibromoethane (EDB)		106-93-4	8011	ND		0.020	0.020	ug/L	1
Surrogate	Q	Run 1 % Recovery	Acceptance Limits						
1,1,1,2-Tetrachloroethane		103	57-137						

PQL = Practical quantitation limit    B = Detected in the method blank    E = Quantitation of compound exceeded the calibration range    H = Out of holding time    Q = Surrogate failure  
 ND = Not detected at or above the MDL    J = Estimated result < PQL and ≥ MDL    P = The RPD between two GC columns exceeds 40%    N = Recovery is out of criteria    L = LCS/LCSD failure  
 Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"    S = MS/MSD failure

Description: DMW-2

Matrix: Aqueous

Date Sampled: 05/14/2013 1316

Date Received: 05/15/2013

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch			
2	5030B	8260B	1	05/26/2013 2151	AAC		21361			
Parameter		CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run	
tert-Amyl alcohol (TAA)		75-85-4	8260B	ND		100	6.7	ug/L	2	
tert-Amyl methyl ether (TAME)		994-05-8	8260B	ND		10	0.20	ug/L	2	
Benzene		71-43-2	8260B	ND		5.0	0.20	ug/L	2	
tert-Butyl formate (TBF)		762-75-4	8260B	ND		100	1.0	ug/L	2	
1,2-Dichloroethane		107-06-2	8260B	ND		5.0	0.30	ug/L	2	
Diisopropyl ether (IPE)		108-20-3	8260B	ND		10	0.40	ug/L	2	
3,3-Dimethyl-1-butanol		624-95-3	8260B	ND		100	1.0	ug/L	2	
Ethanol		64-17-5	8260B	ND		1000	33	ug/L	2	
Ethylbenzene		100-41-4	8260B	ND		5.0	1.7	ug/L	2	
Ethyl-tert-butyl ether (ETBE)		637-92-3	8260B	ND		100	0.20	ug/L	2	
Methyl tertiary butyl ether (MTBE)		1634-04-4	8260B	ND		5.0	0.40	ug/L	2	
Naphthalene		91-20-3	8260B	ND		5.0	1.7	ug/L	2	
tert-butyl alcohol (TBA)		75-65-0	8260B	ND		100	6.7	ug/L	2	
Toluene		108-88-3	8260B	ND		5.0	1.7	ug/L	2	
Xylenes (total)		1330-20-7	8260B	ND		5.0	1.7	ug/L	2	

Surrogate	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		77	70-130
Bromofluorobenzene		98	70-130
Toluene-d8		84	70-130

## EDB &amp; DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch			
1	8011	8011	1	05/23/2013 1705	AMY	05/16/2013 2032	20660			
Parameter		CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run	
1,2-Dibromoethane (EDB)		106-93-4	8011	ND		0.020	0.020	ug/L	1	
Surrogate	Q	Run 1 % Recovery	Acceptance Limits							
1,1,1,2-Tetrachloroethane		73	57-137							

PQL = Practical quantitation limit    B = Detected in the method blank    E = Quantitation of compound exceeded the calibration range    H = Out of holding time    Q = Surrogate failure  
 ND = Not detected at or above the MDL    J = Estimated result < PQL and ≥ MDL    P = The RPD between two GC columns exceeds 40%    N = Recovery is out of criteria    L = LCS/LCSD failure  
 Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"    S = MS/MSD failure

Description: DMW-4

Matrix: Aqueous

Date Sampled: 05/14/2013 1240

Date Received: 05/15/2013

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	5030B	8260B	1	05/24/2013 1344	JJG		21288		
Parameter		CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
tert-Amyl alcohol (TAA)		75-85-4	8260B	ND		100	6.7	ug/L	1
tert-Amyl methyl ether (TAME)		994-05-8	8260B	ND		10	0.20	ug/L	1
Benzene		71-43-2	8260B	ND		5.0	0.20	ug/L	1
tert-Butyl formate (TBF)		762-75-4	8260B	ND		100	1.0	ug/L	1
1,2-Dichloroethane		107-06-2	8260B	ND		5.0	0.30	ug/L	1
Diisopropyl ether (IPE)		108-20-3	8260B	ND		10	0.40	ug/L	1
3,3-Dimethyl-1-butanol		624-95-3	8260B	ND		100	1.0	ug/L	1
Ethanol		64-17-5	8260B	ND		1000	33	ug/L	1
Ethylbenzene		100-41-4	8260B	ND		5.0	1.7	ug/L	1
Ethyl-tert-butyl ether (ETBE)		637-92-3	8260B	ND		100	0.20	ug/L	1
Methyl tertiary butyl ether (MTBE)		1634-04-4	8260B	ND		5.0	0.40	ug/L	1
Naphthalene		91-20-3	8260B	ND		5.0	1.7	ug/L	1
tert-butyl alcohol (TBA)		75-65-0	8260B	ND		100	6.7	ug/L	1
Toluene		108-88-3	8260B	ND		5.0	1.7	ug/L	1
Xylenes (total)		1330-20-7	8260B	ND		5.0	1.7	ug/L	1
Surrogate	Q	Run 1 % Recovery	Acceptance Limits						
1,2-Dichloroethane-d4		103	70-130						
Bromofluorobenzene		99	70-130						
Toluene-d8		104	70-130						

## EDB &amp; DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	8011	8011	1	05/23/2013 1727	AMY	05/16/2013 2032	20660		
Parameter		CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
1,2-Dibromoethane (EDB)		106-93-4	8011	ND		0.020	0.020	ug/L	1
Surrogate	Q	Run 1 % Recovery	Acceptance Limits						
1,1,1,2-Tetrachloroethane		92	57-137						

PQL = Practical quantitation limit      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      H = Out of holding time      Q = Surrogate failure  
 ND = Not detected at or above the MDL      J = Estimated result < PQL and ≥ MDL      P = The RPD between two GC columns exceeds 40%      N = Recovery is out of criteria      L = LCS/LCSD failure  
 Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"      S = MS/MSD failure

Description: RW-3

Matrix: Aqueous

Date Sampled: 05/14/2013 1150

Date Received: 05/15/2013

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch			
1	5030B	8260B	100	05/24/2013 0903	JAC		21215			
Parameter		CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run	
tert-Amyl alcohol (TAA)		75-85-4	8260B	870	J	10000	670	ug/L	1	
tert-Amyl methyl ether (TAME)		994-05-8	8260B	420	J	1000	20	ug/L	1	
Benzene		71-43-2	8260B	4900		500	20	ug/L	1	
tert-Butyl formate (TBF)		762-75-4	8260B	ND		10000	100	ug/L	1	
1,2-Dichloroethane		107-06-2	8260B	ND		500	30	ug/L	1	
Diisopropyl ether (IPE)		108-20-3	8260B	260	J	1000	40	ug/L	1	
3,3-Dimethyl-1-butanol		624-95-3	8260B	ND		10000	100	ug/L	1	
Ethanol		64-17-5	8260B	ND		100000	3300	ug/L	1	
Ethylbenzene		100-41-4	8260B	1400		500	170	ug/L	1	
Ethyl-tert-butyl ether (ETBE)		637-92-3	8260B	ND		10000	20	ug/L	1	
Methyl tertiary butyl ether (MTBE)		1634-04-4	8260B	7400		500	40	ug/L	1	
Naphthalene		91-20-3	8260B	280	J	500	170	ug/L	1	
tert-butyl alcohol (TBA)		75-65-0	8260B	ND		10000	670	ug/L	1	
Toluene		108-88-3	8260B	17000		500	170	ug/L	1	
Xylenes (total)		1330-20-7	8260B	8200		500	170	ug/L	1	
Surrogate	Q	Run 1 % Recovery	Acceptance Limits							
1,2-Dichloroethane-d4		103	70-130							
Bromofluorobenzene		105	70-130							
Toluene-d8		105	70-130							

## EDB &amp; DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch			
1	8011	8011	1	05/23/2013 1748	AMY	05/16/2013 2032	20660			
Parameter		CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run	
1,2-Dibromoethane (EDB)		106-93-4	8011	ND		0.019	0.019	ug/L	1	
Surrogate	Q	Run 1 % Recovery	Acceptance Limits							
1,1,1,2-Tetrachloroethane		117	57-137							

PQL = Practical quantitation limit    B = Detected in the method blank    E = Quantitation of compound exceeded the calibration range    H = Out of holding time    Q = Surrogate failure  
 ND = Not detected at or above the MDL    J = Estimated result < PQL and ≥ MDL    P = The RPD between two GC columns exceeds 40%    N = Recovery is out of criteria    L = LCS/LCSD failure  
 Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"    S = MS/MSD failure

Description: RW-3 Dup

Matrix: Aqueous

Date Sampled: 05/14/2013 1150

Date Received: 05/15/2013

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
2	5030B	8260B	100	05/26/2013 2319	AAC		21361		
Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run	
tert-Amyl alcohol (TAA)	75-85-4	8260B	1200	J	10000	670	ug/L	2	
tert-Amyl methyl ether (TAME)	994-05-8	8260B	360	J	1000	20	ug/L	2	
Benzene	71-43-2	8260B	3900		500	20	ug/L	2	
tert-Butyl formate (TBF)	762-75-4	8260B	ND		10000	100	ug/L	2	
1,2-Dichloroethane	107-06-2	8260B	ND		500	30	ug/L	2	
Diisopropyl ether (IPE)	108-20-3	8260B	220	J	1000	40	ug/L	2	
3,3-Dimethyl-1-butanol	624-95-3	8260B	ND		10000	100	ug/L	2	
Ethanol	64-17-5	8260B	ND		100000	3300	ug/L	2	
Ethylbenzene	100-41-4	8260B	1200		500	170	ug/L	2	
Ethyl-tert-butyl ether (ETBE)	637-92-3	8260B	ND		10000	20	ug/L	2	
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	5600		500	40	ug/L	2	
Naphthalene	91-20-3	8260B	460	J	500	170	ug/L	2	
tert-butyl alcohol (TBA)	75-65-0	8260B	ND		10000	670	ug/L	2	
Toluene	108-88-3	8260B	13000		500	170	ug/L	2	
Xylenes (total)	1330-20-7	8260B	7100		500	170	ug/L	2	
Surrogate	Q	Run 2 % Recovery	Acceptance Limits						
1,2-Dichloroethane-d4		75	70-130						
Bromofluorobenzene		97	70-130						
Toluene-d8		87	70-130						

## EDB &amp; DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	8011	8011	1	05/23/2013 1811	AMY	05/16/2013 2032	20660		
Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run	
1,2-Dibromoethane (EDB)	106-93-4	8011	ND		0.020	0.020	ug/L	1	
Surrogate	Q	Run 1 % Recovery	Acceptance Limits						
1,1,1,2-Tetrachloroethane		119	57-137						

PQL = Practical quantitation limit      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      H = Out of holding time      Q = Surrogate failure  
 ND = Not detected at or above the MDL      J = Estimated result < PQL and ≥ MDL      P = The RPD between two GC columns exceeds 40%      N = Recovery is out of criteria      L = LCS/LCSD failure  
 Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"      S = MS/MSD failure

Description: RW-4

Matrix: Aqueous

Date Sampled: 05/14/2013 1136

Date Received: 05/15/2013

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch			
1	5030B	8260B	200	05/24/2013 1908	JJG		21292			
Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run		
tert-Amyl alcohol (TAA)	75-85-4	8260B	1700	J	20000	1300	ug/L	1		
tert-Amyl methyl ether (TAME)	994-05-8	8260B	650	J	2000	40	ug/L	1		
Benzene	71-43-2	8260B	4000		1000	40	ug/L	1		
tert-Butyl formate (TBF)	762-75-4	8260B	ND		20000	200	ug/L	1		
1,2-Dichloroethane	107-06-2	8260B	97	J	1000	60	ug/L	1		
Diisopropyl ether (IPE)	108-20-3	8260B	370	J	2000	80	ug/L	1		
3,3-Dimethyl-1-butanol	624-95-3	8260B	ND		20000	200	ug/L	1		
Ethanol	64-17-5	8260B	ND		200000	6600	ug/L	1		
Ethylbenzene	100-41-4	8260B	990	J	1000	340	ug/L	1		
Ethyl-tert-butyl ether (ETBE)	637-92-3	8260B	ND		20000	40	ug/L	1		
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	22000		1000	80	ug/L	1		
Naphthalene	91-20-3	8260B	ND		1000	340	ug/L	1		
tert-butyl alcohol (TBA)	75-65-0	8260B	1400	J	20000	1300	ug/L	1		
Toluene	108-88-3	8260B	13000		1000	340	ug/L	1		
Xylenes (total)	1330-20-7	8260B	5900		1000	340	ug/L	1		

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		105	70-130
Bromofluorobenzene		107	70-130
Toluene-d8		101	70-130

## EDB &amp; DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch			
1	8011	8011	1	05/23/2013 1833	AMY	05/16/2013 2032	20660			
Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run		
1,2-Dibromoethane (EDB)	106-93-4	8011	ND		0.020	0.020	ug/L	1		

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,1,1,2-Tetrachloroethane		113	57-137

PQL = Practical quantitation limit    B = Detected in the method blank    E = Quantitation of compound exceeded the calibration range    H = Out of holding time    Q = Surrogate failure  
 ND = Not detected at or above the MDL    J = Estimated result < PQL and ≥ MDL    P = The RPD between two GC columns exceeds 40%    N = Recovery is out of criteria    L = LCS/LCSD failure  
 Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"    S = MS/MSD failure



Description: RW-4 Dup

Matrix: Aqueous

Date Sampled: 05/14/2013 1136

Date Received: 05/15/2013

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch			
1	5030B	8260B	200	05/24/2013 1930	JJG		21292			
Parameter		CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run	
tert-Amyl alcohol (TAA)		75-85-4	8260B	1900	J	20000	1300	ug/L	1	
tert-Amyl methyl ether (TAME)		994-05-8	8260B	780	J	2000	40	ug/L	1	
Benzene		71-43-2	8260B	3900		1000	40	ug/L	1	
tert-Butyl formate (TBF)		762-75-4	8260B	ND		20000	200	ug/L	1	
1,2-Dichloroethane		107-06-2	8260B	93	J	1000	60	ug/L	1	
Diisopropyl ether (IPE)		108-20-3	8260B	ND		2000	80	ug/L	1	
3,3-Dimethyl-1-butanol		624-95-3	8260B	ND		20000	200	ug/L	1	
Ethanol		64-17-5	8260B	ND		200000	6600	ug/L	1	
Ethylbenzene		100-41-4	8260B	1000		1000	340	ug/L	1	
Ethyl-tert-butyl ether (ETBE)		637-92-3	8260B	ND		20000	40	ug/L	1	
Methyl tertiary butyl ether (MTBE)		1634-04-4	8260B	26000	S	1000	80	ug/L	1	
Naphthalene		91-20-3	8260B	ND		1000	340	ug/L	1	
tert-butyl alcohol (TBA)		75-65-0	8260B	1600	J	20000	1300	ug/L	1	
Toluene		108-88-3	8260B	12000	S	1000	340	ug/L	1	
Xylenes (total)		1330-20-7	8260B	6100		1000	340	ug/L	1	
Surrogate	Q	Run 1 % Recovery	Acceptance Limits							
1,2-Dichloroethane-d4		107	70-130							
Bromofluorobenzene		108	70-130							
Toluene-d8		104	70-130							

## EDB &amp; DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch			
1	8011	8011	1	05/23/2013 1855	AMY	05/16/2013 2032	20660			
Parameter		CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run	
1,2-Dibromoethane (EDB)		106-93-4	8011	ND		0.020	0.020	ug/L	1	
Surrogate	Q	Run 1 % Recovery	Acceptance Limits							
1,1,1,2-Tetrachloroethane		108	57-137							

PQL = Practical quantitation limit

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

H = Out of holding time

Q = Surrogate failure

ND = Not detected at or above the MDL

J = Estimated result &lt; PQL and ≥ MDL

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

L = LCS/LCSD failure

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

S = MS/MSD failure

Description: RW-8

Matrix: Aqueous

Date Sampled: 05/14/2013 1456

Date Received: 05/15/2013

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	5030B	8260B	500	05/24/2013 1432	JJG		21288		
Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run	
tert-Amyl alcohol (TAA)	75-85-4	8260B	ND		50000	3400	ug/L	1	
tert-Amyl methyl ether (TAME)	994-05-8	8260B	430	J	5000	100	ug/L	1	
Benzene	71-43-2	8260B	8400		2500	100	ug/L	1	
tert-Butyl formate (TBF)	762-75-4	8260B	ND		50000	500	ug/L	1	
1,2-Dichloroethane	107-06-2	8260B	ND		2500	150	ug/L	1	
Diisopropyl ether (IPE)	108-20-3	8260B	250	J	5000	200	ug/L	1	
3,3-Dimethyl-1-butanol	624-95-3	8260B	ND		50000	500	ug/L	1	
Ethanol	64-17-5	8260B	ND		500000	17000	ug/L	1	
Ethylbenzene	100-41-4	8260B	3000		2500	850	ug/L	1	
Ethyl-tert-butyl ether (ETBE)	637-92-3	8260B	ND		50000	100	ug/L	1	
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	6100		2500	200	ug/L	1	
Naphthalene	91-20-3	8260B	ND		2500	850	ug/L	1	
tert-butyl alcohol (TBA)	75-65-0	8260B	ND		50000	3400	ug/L	1	
Toluene	108-88-3	8260B	33000		2500	850	ug/L	1	
Xylenes (total)	1330-20-7	8260B	16000		2500	850	ug/L	1	

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		99	70-130
Bromofluorobenzene		101	70-130
Toluene-d8		102	70-130

## EDB &amp; DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	8011	8011	1	05/23/2013 1917	AMY	05/16/2013 2032	20660		
Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run	
1,2-Dibromoethane (EDB)	106-93-4	8011	0.059	P	0.020	0.020	ug/L	1	

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,1,1,2-Tetrachloroethane		111	57-137

PQL = Practical quantitation limit    B = Detected in the method blank    E = Quantitation of compound exceeded the calibration range    H = Out of holding time    Q = Surrogate failure  
 ND = Not detected at or above the MDL    J = Estimated result < PQL and ≥ MDL    P = The RPD between two GC columns exceeds 40%    N = Recovery is out of criteria    L = LCS/LCSD failure  
 Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"    S = MS/MSD failure

Description: RW-10

Matrix: Aqueous

Date Sampled: 05/14/2013 1420

Date Received: 05/15/2013

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch			
1	5030B	8260B	500	05/24/2013 1455	JJG		21288			
Parameter		CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run	
tert-Amyl alcohol (TAA)		75-85-4	8260B	ND		50000	3400	ug/L	1	
tert-Amyl methyl ether (TAME)		994-05-8	8260B	300	J	5000	100	ug/L	1	
Benzene		71-43-2	8260B	6300		2500	100	ug/L	1	
tert-Butyl formate (TBF)		762-75-4	8260B	ND		50000	500	ug/L	1	
1,2-Dichloroethane		107-06-2	8260B	ND		2500	150	ug/L	1	
Diisopropyl ether (IPE)		108-20-3	8260B	210	J	5000	200	ug/L	1	
3,3-Dimethyl-1-butanol		624-95-3	8260B	ND		50000	500	ug/L	1	
Ethanol		64-17-5	8260B	ND		500000	17000	ug/L	1	
Ethylbenzene		100-41-4	8260B	3500		2500	850	ug/L	1	
Ethyl-tert-butyl ether (ETBE)		637-92-3	8260B	ND		50000	100	ug/L	1	
Methyl tertiary butyl ether (MTBE)		1634-04-4	8260B	4300		2500	200	ug/L	1	
Naphthalene		91-20-3	8260B	ND		2500	850	ug/L	1	
tert-butyl alcohol (TBA)		75-65-0	8260B	ND		50000	3400	ug/L	1	
Toluene		108-88-3	8260B	31000		2500	850	ug/L	1	
Xylenes (total)		1330-20-7	8260B	19000		2500	850	ug/L	1	
Surrogate	Q	Run 1 % Recovery	Acceptance Limits							
1,2-Dichloroethane-d4		99	70-130							
Bromofluorobenzene		101	70-130							
Toluene-d8		102	70-130							

## EDB &amp; DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch			
1	8011	8011	1	05/23/2013 1938	AMY	05/16/2013 2032	20660			
Parameter		CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run	
1,2-Dibromoethane (EDB)		106-93-4	8011	ND		0.022	0.022	ug/L	1	
Surrogate	Q	Run 1 % Recovery	Acceptance Limits							
1,1,1,2-Tetrachloroethane		114	57-137							

PQL = Practical quantitation limit

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

H = Out of holding time

Q = Surrogate failure

ND = Not detected at or above the MDL

J = Estimated result &lt; PQL and ≥ MDL

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

L = LCS/LCSD failure

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

S = MS/MSD failure

Description: RW-11

Matrix: Aqueous

Date Sampled: 05/14/2013 1347

Date Received: 05/15/2013

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch				
1	5030B	8260B	500	05/24/2013 1518	JJG		21288				
Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run			
tert-Amyl alcohol (TAA)	75-85-4	8260B	ND		50000	3400	ug/L	1			
tert-Amyl methyl ether (TAME)	994-05-8	8260B	350	J	5000	100	ug/L	1			
Benzene	71-43-2	8260B	6400		2500	100	ug/L	1			
tert-Butyl formate (TBF)	762-75-4	8260B	ND		50000	500	ug/L	1			
1,2-Dichloroethane	107-06-2	8260B	ND		2500	150	ug/L	1			
Diisopropyl ether (IPE)	108-20-3	8260B	ND		5000	200	ug/L	1			
3,3-Dimethyl-1-butanol	624-95-3	8260B	ND		50000	500	ug/L	1			
Ethanol	64-17-5	8260B	ND		500000	17000	ug/L	1			
Ethylbenzene	100-41-4	8260B	3000		2500	850	ug/L	1			
Ethyl-tert-butyl ether (ETBE)	637-92-3	8260B	ND		50000	100	ug/L	1			
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	3700		2500	200	ug/L	1			
Naphthalene	91-20-3	8260B	ND		2500	850	ug/L	1			
tert-butyl alcohol (TBA)	75-65-0	8260B	ND		50000	3400	ug/L	1			
Toluene	108-88-3	8260B	29000		2500	850	ug/L	1			
Xylenes (total)	1330-20-7	8260B	17000		2500	850	ug/L	1			
Surrogate	Q	Run 1 % Recovery	Acceptance Limits								
1,2-Dichloroethane-d4		101	70-130								
Bromofluorobenzene		103	70-130								
Toluene-d8		104	70-130								

## EDB &amp; DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch				
1	8011	8011	1	05/23/2013 2000	AMY	05/16/2013 2032	20660				
Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run			
1,2-Dibromoethane (EDB)	106-93-4	8011	ND		0.020	0.020	ug/L	1			
Surrogate	Q	Run 1 % Recovery	Acceptance Limits								
1,1,1,2-Tetrachloroethane		115	57-137								

PQL = Practical quantitation limit      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      H = Out of holding time      Q = Surrogate failure  
 ND = Not detected at or above the MDL      J = Estimated result < PQL and ≥ MDL      P = The RPD between two GC columns exceeds 40%      N = Recovery is out of criteria      L = LCS/LCSD failure  
 Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"      S = MS/MSD failure

Description: RW-12

Matrix: Aqueous

Date Sampled: 05/14/2013 1359

Date Received: 05/15/2013

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch			
1	5030B	8260B	200	05/24/2013 1409	JJG		21288			
Parameter		CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run	
tert-Amyl alcohol (TAA)		75-85-4	8260B	ND		20000	1300	ug/L	1	
tert-Amyl methyl ether (TAME)		994-05-8	8260B	390	J	2000	40	ug/L	1	
Benzene		71-43-2	8260B	6800		1000	40	ug/L	1	
tert-Butyl formate (TBF)		762-75-4	8260B	ND		20000	200	ug/L	1	
1,2-Dichloroethane		107-06-2	8260B	ND		1000	60	ug/L	1	
Diisopropyl ether (IPE)		108-20-3	8260B	240	J	2000	80	ug/L	1	
3,3-Dimethyl-1-butanol		624-95-3	8260B	ND		20000	200	ug/L	1	
Ethanol		64-17-5	8260B	ND		200000	6600	ug/L	1	
Ethylbenzene		100-41-4	8260B	3200		1000	340	ug/L	1	
Ethyl-tert-butyl ether (ETBE)		637-92-3	8260B	ND		20000	40	ug/L	1	
Methyl tertiary butyl ether (MTBE)		1634-04-4	8260B	6100		1000	80	ug/L	1	
Naphthalene		91-20-3	8260B	570	J	1000	340	ug/L	1	
tert-butyl alcohol (TBA)		75-65-0	8260B	ND		20000	1300	ug/L	1	
Toluene		108-88-3	8260B	26000		1000	340	ug/L	1	
Xylenes (total)		1330-20-7	8260B	17000		1000	340	ug/L	1	
Surrogate	Q	Run 1 % Recovery	Acceptance Limits							
1,2-Dichloroethane-d4		102	70-130							
Bromofluorobenzene		103	70-130							
Toluene-d8		104	70-130							

## EDB &amp; DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch			
1	8011	8011	1	05/23/2013 2022	AMY	05/16/2013 2032	20660			
Parameter		CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run	
1,2-Dibromoethane (EDB)		106-93-4	8011	ND		0.020	0.020	ug/L	1	
Surrogate	Q	Run 1 % Recovery	Acceptance Limits							
1,1,1,2-Tetrachloroethane		113	57-137							

PQL = Practical quantitation limit    B = Detected in the method blank    E = Quantitation of compound exceeded the calibration range    H = Out of holding time    Q = Surrogate failure  
 ND = Not detected at or above the MDL    J = Estimated result < PQL and ≥ MDL    P = The RPD between two GC columns exceeds 40%    N = Recovery is out of criteria    L = LCS/LCSD failure  
 Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"    S = MS/MSD failure

Description: RW-13

Matrix: Aqueous

Date Sampled: 05/14/2013 1333

Date Received: 05/15/2013

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch			
1	5030B	8260B	50	05/24/2013 1949	JJG		21288			
Parameter		CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run	
tert-Amyl alcohol (TAA)		75-85-4	8260B	ND		5000	340	ug/L	1	
tert-Amyl methyl ether (TAME)		994-05-8	8260B	230	J	500	10	ug/L	1	
Benzene		71-43-2	8260B	2800		250	10	ug/L	1	
tert-Butyl formate (TBF)		762-75-4	8260B	ND		5000	50	ug/L	1	
1,2-Dichloroethane		107-06-2	8260B	ND		250	15	ug/L	1	
Diisopropyl ether (IPE)		108-20-3	8260B	140	J	500	20	ug/L	1	
3,3-Dimethyl-1-butanol		624-95-3	8260B	ND		5000	50	ug/L	1	
Ethanol		64-17-5	8260B	ND		50000	1700	ug/L	1	
Ethylbenzene		100-41-4	8260B	990		250	85	ug/L	1	
Ethyl-tert-butyl ether (ETBE)		637-92-3	8260B	ND		5000	10	ug/L	1	
Methyl tertiary butyl ether (MTBE)		1634-04-4	8260B	4100		250	20	ug/L	1	
Naphthalene		91-20-3	8260B	230	J	250	85	ug/L	1	
tert-butyl alcohol (TBA)		75-65-0	8260B	ND		5000	340	ug/L	1	
Toluene		108-88-3	8260B	5100		250	85	ug/L	1	
Xylenes (total)		1330-20-7	8260B	5300		250	85	ug/L	1	

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		106	70-130
Bromofluorobenzene		105	70-130
Toluene-d8		103	70-130

## EDB &amp; DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch			
1	8011	8011	1	05/23/2013 2044	AMY	05/16/2013 2032	20660			
Parameter		CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run	
1,2-Dibromoethane (EDB)		106-93-4	8011	ND		0.020	0.020	ug/L	1	

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,1,1,2-Tetrachloroethane		91	57-137

PQL = Practical quantitation limit    B = Detected in the method blank    E = Quantitation of compound exceeded the calibration range    H = Out of holding time    Q = Surrogate failure  
 ND = Not detected at or above the MDL    J = Estimated result < PQL and ≥ MDL    P = The RPD between two GC columns exceeds 40%    N = Recovery is out of criteria    L = LCS/LCSD failure  
 Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"    S = MS/MSD failure

Description: WSW-1

Matrix: Aqueous

Date Sampled: 05/14/2013 1530

Date Received: 05/15/2013

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	5030B	8260B	1	05/24/2013 2011	JJG		21288		
Parameter		CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
tert-Amyl alcohol (TAA)		75-85-4	8260B	ND		100	6.7	ug/L	1
tert-Amyl methyl ether (TAME)		994-05-8	8260B	ND		10	0.20	ug/L	1
Benzene		71-43-2	8260B	ND		1.0	0.13	ug/L	1
tert-Butyl formate (TBF)		762-75-4	8260B	ND		100	1.0	ug/L	1
1,2-Dichloroethane		107-06-2	8260B	ND		1.0	0.15	ug/L	1
Diisopropyl ether (IPE)		108-20-3	8260B	ND		10	0.40	ug/L	1
3,3-Dimethyl-1-butanol		624-95-3	8260B	ND		100	1.0	ug/L	1
Ethanol		64-17-5	8260B	ND		1000	33	ug/L	1
Ethylbenzene		100-41-4	8260B	ND		1.0	0.33	ug/L	1
Ethyl-tert-butyl ether (ETBE)		637-92-3	8260B	ND		100	0.20	ug/L	1
Methyl tertiary butyl ether (MTBE)		1634-04-4	8260B	ND		1.0	0.40	ug/L	1
Naphthalene		91-20-3	8260B	ND		1.0	0.40	ug/L	1
tert-butyl alcohol (TBA)		75-65-0	8260B	ND		100	6.7	ug/L	1
Toluene		108-88-3	8260B	ND		1.0	0.33	ug/L	1
Xylenes (total)		1330-20-7	8260B	ND		1.0	0.33	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		110	70-130
Bromofluorobenzene		99	70-130
Toluene-d8		104	70-130

## EDB &amp; DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	8011	8011	1	05/23/2013 2106	AMY	05/16/2013 2032	20660		
Parameter		CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
1,2-Dibromoethane (EDB)		106-93-4	8011	ND		0.019	0.019	ug/L	1
Surrogate	Q	Run 1 % Recovery	Acceptance Limits						
1,1,1,2-Tetrachloroethane		92	57-137						

PQL = Practical quantitation limit    B = Detected in the method blank    E = Quantitation of compound exceeded the calibration range    H = Out of holding time    Q = Surrogate failure  
 ND = Not detected at or above the MDL    J = Estimated result < PQL and ≥ MDL    P = The RPD between two GC columns exceeds 40%    N = Recovery is out of criteria    L = LCS/LCSD failure  
 Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"    S = MS/MSD failure

Description: Field Blank

Matrix: Aqueous

Date Sampled: 05/14/2013 1545

Date Received: 05/15/2013

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch			
1	5030B	8260B	1	05/24/2013 0300	JAC		21215			
Parameter		CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run	
tert-Amyl alcohol (TAA)		75-85-4	8260B	ND		100	6.7	ug/L	1	
tert-Amyl methyl ether (TAME)		994-05-8	8260B	ND		10	0.20	ug/L	1	
Benzene		71-43-2	8260B	ND		5.0	0.20	ug/L	1	
tert-Butyl formate (TBF)		762-75-4	8260B	ND		100	1.0	ug/L	1	
1,2-Dichloroethane		107-06-2	8260B	ND		5.0	0.30	ug/L	1	
Diisopropyl ether (IPE)		108-20-3	8260B	ND		10	0.40	ug/L	1	
3,3-Dimethyl-1-butanol		624-95-3	8260B	ND		100	1.0	ug/L	1	
Ethanol		64-17-5	8260B	ND		1000	33	ug/L	1	
Ethylbenzene		100-41-4	8260B	ND		5.0	1.7	ug/L	1	
Ethyl-tert-butyl ether (ETBE)		637-92-3	8260B	ND		100	0.20	ug/L	1	
Methyl tertiary butyl ether (MTBE)		1634-04-4	8260B	ND		5.0	0.40	ug/L	1	
Naphthalene		91-20-3	8260B	ND		5.0	1.7	ug/L	1	
tert-butyl alcohol (TBA)		75-65-0	8260B	ND		100	6.7	ug/L	1	
Toluene		108-88-3	8260B	ND		5.0	1.7	ug/L	1	
Xylenes (total)		1330-20-7	8260B	ND		5.0	1.7	ug/L	1	

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		109	70-130
Bromofluorobenzene		100	70-130
Toluene-d8		104	70-130

## EDB &amp; DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch			
1	8011	8011	1	05/23/2013 2127	AMY	05/16/2013 2032	20660			
Parameter		CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run	
1,2-Dibromoethane (EDB)		106-93-4	8011	ND		0.020	0.020	ug/L	1	

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,1,1,2-Tetrachloroethane		91	57-137

PQL = Practical quantitation limit      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      H = Out of holding time      Q = Surrogate failure  
 ND = Not detected at or above the MDL      J = Estimated result < PQL and ≥ MDL      P = The RPD between two GC columns exceeds 40%      N = Recovery is out of criteria      L = LCS/LCSD failure  
 Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"      S = MS/MSD failure



Description: Trip Blank

Matrix: Aqueous

Date Sampled: 05/14/2013 1545

Date Received: 05/15/2013

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	5030B	8260B	1	05/24/2013 0323	JAC		21215		
Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run	
tert-Amyl alcohol (TAA)	75-85-4	8260B	ND		100	6.7	ug/L	1	
tert-Amyl methyl ether (TAME)	994-05-8	8260B	ND		10	0.20	ug/L	1	
Benzene	71-43-2	8260B	ND		5.0	0.20	ug/L	1	
tert-Butyl formate (TBF)	782-75-4	8260B	ND		100	1.0	ug/L	1	
1,2-Dichloroethane	107-06-2	8260B	ND		5.0	0.30	ug/L	1	
Diisopropyl ether (IPE)	108-20-3	8260B	ND		10	0.40	ug/L	1	
3,3-Dimethyl-1-butanol	624-95-3	8260B	ND		100	1.0	ug/L	1	
Ethanol	64-17-5	8260B	ND		1000	33	ug/L	1	
Ethylbenzene	100-41-4	8260B	ND		5.0	1.7	ug/L	1	
Ethyl-tert-butyl ether (ETBE)	637-92-3	8260B	ND		100	0.20	ug/L	1	
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		5.0	0.40	ug/L	1	
Naphthalene	91-20-3	8260B	ND		5.0	1.7	ug/L	1	
tert-butyl alcohol (TBA)	75-65-0	8260B	ND		100	6.7	ug/L	1	
Toluene	108-88-3	8260B	ND		5.0	1.7	ug/L	1	
Xylenes (total)	1330-20-7	8260B	ND		5.0	1.7	ug/L	1	
Surrogate	Q	Run 1 % Recovery	Acceptance Limits						
1,2-Dichloroethane-d4		106	70-130						
Bromofluorobenzene		99	70-130						
Toluene-d8		104	70-130						

PQL = Practical quantitation limit      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      H = Out of holding time      Q = Surrogate failure  
 ND = Not detected at or above the MDL      J = Estimated result < PQL and ≥ MDL      P = The RPD between two GC columns exceeds 40%      N = Recovery is out of criteria      L = LCS/LCSD failure  
 Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"      S = MS/MSD failure

Description: Ck-1

Matrix: Aqueous

Date Sampled: 05/14/2013 1215

Date Received: 05/15/2013

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	5030B	8260B	1	05/24/2013 0647	JAC		21215		
Parameter		CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
tert-Amyl alcohol (TAA)		75-85-4	8260B	ND		100	6.7	ug/L	1
tert-Amyl methyl ether (TAME)		994-05-8	8260B	ND		10	0.20	ug/L	1
<b>Benzene</b>		<b>71-43-2</b>	<b>8260B</b>	<b>4.6</b>	<b>J</b>	<b>5.0</b>	<b>0.20</b>	<b>ug/L</b>	<b>1</b>
tert-Butyl formate (TBF)		762-75-4	8260B	ND		100	1.0	ug/L	1
1,2-Dichloroethane		107-06-2	8260B	ND		5.0	0.30	ug/L	1
Diisopropyl ether (IPE)		108-20-3	8260B	ND		10	0.40	ug/L	1
3,3-Dimethyl-1-butanol		624-95-3	8260B	ND		100	1.0	ug/L	1
Ethanol		64-17-5	8260B	ND		1000	33	ug/L	1
<b>Ethylbenzene</b>		<b>100-41-4</b>	<b>8260B</b>	<b>2.4</b>	<b>J</b>	<b>5.0</b>	<b>1.7</b>	<b>ug/L</b>	<b>1</b>
Ethyl-tert-butyl ether (ETBE)		637-92-3	8260B	ND		100	0.20	ug/L	1
<b>Methyl tertiary butyl ether (MTBE)</b>		<b>1634-04-4</b>	<b>8260B</b>	<b>5.4</b>		<b>5.0</b>	<b>0.40</b>	<b>ug/L</b>	<b>1</b>
Naphthalene		91-20-3	8260B	ND		5.0	1.7	ug/L	1
tert-butyl alcohol (TBA)		75-65-0	8260B	ND		100	6.7	ug/L	1
<b>Toluene</b>		<b>108-88-3</b>	<b>8260B</b>	<b>9.1</b>		<b>5.0</b>	<b>1.7</b>	<b>ug/L</b>	<b>1</b>
<b>Xylenes (total)</b>		<b>1330-20-7</b>	<b>8260B</b>	<b>13</b>		<b>5.0</b>	<b>1.7</b>	<b>ug/L</b>	<b>1</b>
Surrogate	Q	Run 1 % Recovery	Acceptance Limits						
1,2-Dichloroethane-d4		112	70-130						
Bromofluorobenzene		101	70-130						
Toluene-d8		103	70-130						

## EDB &amp; DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	8011	8011	1	05/23/2013 2149	AMY	05/16/2013 2032	20660		
Parameter		CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
1,2-Dibromoethane (EDB)		106-93-4	8011	ND		0.020	0.020	ug/L	1
Surrogate	Q	Run 1 % Recovery	Acceptance Limits						
1,1,1,2-Tetrachloroethane		74	57-137						

PQL = Practical quantitation limit      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      H = Out of holding time      Q = Surrogate failure  
 ND = Not detected at or above the MDL      J = Estimated result < PQL and ≥ MDL      P = The RPD between two GC columns exceeds 40%      N = Recovery is out of criteria      L = LCS/LCSD failure  
 Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"      S = MS/MSD failure

Description: Ck-2

Matrix: Aqueous

Date Sampled: 05/14/2013 1225

Date Received: 05/15/2013

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	5030B	8260B	1	05/24/2013 0709	JAC		21215		
Parameter		CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
tert-Amyl alcohol (TAA)		75-85-4	8260B	7.8	J	100	6.7	ug/L	1
tert-Amyl methyl ether (TAME)		994-05-8	8260B	1.3	J	10	0.20	ug/L	1
Benzene		71-43-2	8260B	24		5.0	0.20	ug/L	1
tert-Butyl formate (TBF)		762-75-4	8260B	ND		100	1.0	ug/L	1
1,2-Dichloroethane		107-06-2	8260B	ND		5.0	0.30	ug/L	1
Diisopropyl ether (IPE)		108-20-3	8260B	ND		10	0.40	ug/L	1
3,3-Dimethyl-1-butanol		624-95-3	8260B	ND		100	1.0	ug/L	1
Ethanol		64-17-5	8260B	ND		1000	33	ug/L	1
Ethylbenzene		100-41-4	8260B	15		5.0	1.7	ug/L	1
Ethyl-tert-butyl ether (ETBE)		637-92-3	8260B	ND		100	0.20	ug/L	1
Methyl tertiary butyl ether (MTBE)		1634-04-4	8260B	21		5.0	0.40	ug/L	1
Naphthalene		91-20-3	8260B	3.5	J	5.0	1.7	ug/L	1
tert-butyl alcohol (TBA)		75-65-0	8260B	ND		100	6.7	ug/L	1
Toluene		108-88-3	8260B	75		5.0	1.7	ug/L	1
Xylenes (total)		1330-20-7	8260B	89		5.0	1.7	ug/L	1
Surrogate	Q	Run 1 % Recovery	Acceptance Limits						
1,2-Dichloroethane-d4		110	70-130						
Bromofluorobenzene		105	70-130						
Toluene-d8		105	70-130						

## EDB &amp; DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch		
1	8011	8011	1	05/23/2013 2211	AMY	05/16/2013 2032	20660		
Parameter		CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
1,2-Dibromoethane (EDB)		106-93-4	8011	ND		0.020	0.020	ug/L	1
Surrogate	Q	Run 1 % Recovery	Acceptance Limits						
1,1,1,2-Tetrachloroethane		99	57-137						

PQL = Practical quantitation limit    B = Detected in the method blank    E = Quantitation of compound exceeded the calibration range    H = Out of holding time    Q = Surrogate failure  
 ND = Not detected at or above the MDL    J = Estimated result < PQL and ≥ MDL    P = The RPD between two GC columns exceeds 40%    N = Recovery is out of criteria    L = LCS/LCSD failure  
 Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"    S = MS/MSD failure

Description: Ck-3

Matrix: Aqueous

Date Sampled: 05/14/2013 1235

Date Received: 05/15/2013

## Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch			
1	5030B	8260B	1	05/24/2013 0732	JAC		21215			
Parameter		CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run	
tert-Amyl alcohol (TAA)		75-85-4	8260B	ND		100	6.7	ug/L	1	
tert-Amyl methyl ether (TAME)		994-05-8	8260B	0.73	J	10	0.20	ug/L	1	
Benzene		71-43-2	8260B	12		5.0	0.20	ug/L	1	
tert-Butyl formate (TBF)		762-75-4	8260B	ND		100	1.0	ug/L	1	
1,2-Dichloroethane		107-06-2	8260B	ND		5.0	0.30	ug/L	1	
Diisopropyl ether (IPE)		108-20-3	8260B	0.43	J	10	0.40	ug/L	1	
3,3-Dimethyl-1-butanol		624-95-3	8260B	ND		100	1.0	ug/L	1	
Ethanol		64-17-5	8260B	ND		1000	33	ug/L	1	
Ethylbenzene		100-41-4	8260B	7.4		5.0	1.7	ug/L	1	
Ethyl-tert-butyl ether (ETBE)		637-92-3	8260B	ND		100	0.20	ug/L	1	
Methyl tertiary butyl ether (MTBE)		1634-04-4	8260B	12		5.0	0.40	ug/L	1	
Naphthalene		91-20-3	8260B	ND		5.0	1.7	ug/L	1	
tert-butyl alcohol (TBA)		75-85-0	8260B	ND		100	6.7	ug/L	1	
Toluene		108-88-3	8260B	36		5.0	1.7	ug/L	1	
Xylenes (total)		1330-20-7	8260B	40		5.0	1.7	ug/L	1	

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		107	70-130
Bromofluorobenzene		103	70-130
Toluene-d8		102	70-130

## EDB &amp; DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch			
1	8011	8011	1	05/23/2013 2337	AMY	05/17/2013 2308	20770			
Parameter		CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run	
1,2-Dibromoethane (EDB)		106-93-4	8011	ND		0.020	0.020	ug/L	1	

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,1,1,2-Tetrachloroethane		121	57-137

PQL = Practical quantitation limit    B = Detected in the method blank    E = Quantitation of compound exceeded the calibration range    H = Out of holding time    Q = Surrogate failure  
 ND = Not detected at or above the MDL    J = Estimated result < PQL and ≥ MDL    P = The RPD between two GC columns exceeds 40%    N = Recovery is out of criteria    L = LCS/LCSD failure  
 Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"    S = MS/MSD failure

## QC Summary

## Volatile Organic Compounds by GC/MS - MB

Sample ID: OQ21215-001

Matrix: Aqueous

Batch: 21215

Prep Method: 5030B

Analytical Method: 8260B

Parameter	Result	Q	DII	PQL	MDL	Units	Analysis Date
tert-Amyl alcohol (TAA)	ND		1	100	6.7	ug/L	05/24/2013 0044
tert-Amyl methyl ether (TAME)	ND		1	10	0.20	ug/L	05/24/2013 0044
Benzene	ND		1	5.0	0.20	ug/L	05/24/2013 0044
tert-Butyl formate (TBF)	ND		1	100	1.0	ug/L	05/24/2013 0044
1,2-Dichloroethane	ND		1	5.0	0.30	ug/L	05/24/2013 0044
Diisopropyl ether (IPE)	ND		1	10	0.40	ug/L	05/24/2013 0044
3,3-Dimethyl-1-butanol	ND		1	100	1.0	ug/L	05/24/2013 0044
Ethanol	ND		1	1000	33	ug/L	05/24/2013 0044
Ethylbenzene	ND		1	5.0	1.7	ug/L	05/24/2013 0044
Ethyl-tert-butyl ether (ETBE)	ND		1	100	0.20	ug/L	05/24/2013 0044
Methyl tertiary butyl ether (MTBE)	ND		1	5.0	0.40	ug/L	05/24/2013 0044
Naphthalene	ND		1	5.0	1.7	ug/L	05/24/2013 0044
tert-butyl alcohol (TBA)	ND		1	100	6.7	ug/L	05/24/2013 0044
Toluene	ND		1	5.0	1.7	ug/L	05/24/2013 0044
Xylenes (total)	ND		1	5.0	1.7	ug/L	05/24/2013 0044

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		100	70-130
1,2-Dichloroethane-d4		102	70-130
Toluene-d8		102	70-130

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and ≥ MDL

+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

**Note: Calculations are performed before rounding to avoid round-off errors in calculated results**

## Volatile Organic Compounds by GC/MS - LCS

Sample ID: OQ21215-002

Matrix: Aqueous

Batch: 21215

Prep Method: 5030B

Analytical Method: 8260B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	DII	% Rec	% Rec Limit	Analysis Date
tert-Amyl alcohol (TAA)	1000	980		1	98	70-130	05/23/2013 2314
tert-Amyl methyl ether (TAME)	50	52		1	105	70-130	05/23/2013 2314
Benzene	50	53		1	107	70-130	05/23/2013 2314
tert-Butyl formate (TBF)	250	280		1	111	70-130	05/23/2013 2314
1,2-Dichloroethane	50	53		1	106	70-130	05/23/2013 2314
Diisopropyl ether (IPE)	50	50		1	100	70-130	05/23/2013 2314
3,3-Dimethyl-1-butanol	1000	1100		1	110	70-130	05/23/2013 2314
Ethanol	5000	4600		1	92	70-130	05/23/2013 2314
Ethylbenzene	50	54		1	109	70-130	05/23/2013 2314
Ethyl-tert-butyl ether (ETBE)	50	52		1	105	70-130	05/23/2013 2314
Methyl tertiary butyl ether (MTBE)	50	49		1	99	70-130	05/23/2013 2314
Naphthalene	50	65		1	130	70-130	05/23/2013 2314
tert-butyl alcohol (TBA)	1000	950		1	95	70-130	05/23/2013 2314
Toluene	50	55		1	110	70-130	05/23/2013 2314
Xylenes (total)	100	110		1	109	70-130	05/23/2013 2314
Surrogate	Q	% Rec	Acceptance Limit				
Bromofluorobenzene		99	70-130				
1,2-Dichloroethane-d4		95	70-130				
Toluene-d8		99	70-130				

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and  $\geq$  MDL

+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

**Note: Calculations are performed before rounding to avoid round-off errors in calculated results**

## Volatile Organic Compounds by GC/MS - LCSD

Sample ID: OQ21215-003

Matrix: Aqueous

Batch: 21215

Prep Method: 5030B

Analytical Method: 8260B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	DII	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
tert-Amyl alcohol (TAA)	1000	1000		1	105	6.3	70-130	20	05/23/2013 2337
tert-Amyl methyl ether (TAME)	50	54		1	109	4.1	70-130	20	05/23/2013 2337
Benzene	50	53		1	106	0.96	70-130	20	05/23/2013 2337
tert-Butyl formate (TBF)	250	290		1	116	3.7	70-130	20	05/23/2013 2337
1,2-Dichloroethane	50	54		1	109	2.3	70-130	20	05/23/2013 2337
Diisopropyl ether (IPE)	50	50		1	99	0.89	70-130	20	05/23/2013 2337
3,3-Dimethyl-1-butanol	1000	1200		1	117	6.6	70-130	20	05/23/2013 2337
Ethanol	5000	5100		1	102	10	70-130	20	05/23/2013 2337
Ethylbenzene	50	51		1	102	6.9	70-130	20	05/23/2013 2337
Ethyl-tert-butyl ether (ETBE)	50	54		1	108	3.0	70-130	20	05/23/2013 2337
Methyl tertiary butyl ether (MTBE)	50	50		1	101	2.2	70-130	20	05/23/2013 2337
Naphthalene	50	62		1	124	4.8	70-130	20	05/23/2013 2337
tert-butyl alcohol (TBA)	1000	1000		1	101	7.1	70-130	20	05/23/2013 2337
Toluene	50	53		1	105	4.3	70-130	20	05/23/2013 2337
Xylenes (total)	100	100		1	104	4.4	70-130	20	05/23/2013 2337
Surrogate	Q	% Rec	Acceptance Limit						
Bromofluorobenzene		99	70-130						
1,2-Dichloroethane-d4		98	70-130						
Toluene-d8		99	70-130						

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and ≥ MDL

+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

**Note: Calculations are performed before rounding to avoid round-off errors in calculated results**



## Volatile Organic Compounds by GC/MS - Duplicate

Sample ID: OE15089-009DU

Matrix: Aqueous

Batch: 21215

Prep Method: 5030B

Analytical Method: 8260B

Parameter	Sample Amount (ug/L)	Result (ug/L)	Q	DII	% RPD	% RPD Limit	Analysis Date
tert-Amyl alcohol (TAA)	420	430	J	50	2.3	20	05/24/2013 0840
tert-Amyl methyl ether (TAME)	55	53	J	50	3.4	20	05/24/2013 0840
Benzene	1100	1100		50	3.7	20	05/24/2013 0840
tert-Butyl formate (TBF)	ND	ND		50	0.00	20	05/24/2013 0840
1,2-Dichloroethane	ND	ND		50	0.00	20	05/24/2013 0840
Diisopropyl ether (IPE)	35	34	J	50	2.7	20	05/24/2013 0840
3,3-Dimethyl-1-butanol	ND	ND		50	0.00	20	05/24/2013 0840
Ethanol	ND	ND		50	0.00	20	05/24/2013 0840
Ethylbenzene	1200	1200		50	4.1	20	05/24/2013 0840
Ethyl-tert-butyl ether (ETBE)	ND	ND		50	0.00	20	05/24/2013 0840
Methyl tertiary butyl ether (MTBE)	830	850		50	1.5	20	05/24/2013 0840
Naphthalene	350	400		50	12	20	05/24/2013 0840
tert-butyl alcohol (TBA)	ND	ND		50	0.00	20	05/24/2013 0840
Toluene	4700	4800		50	2.6	20	05/24/2013 0840
Xylenes (total)	7100	7300		50	3.5	20	05/24/2013 0840
Surrogate	Q	% Rec	Acceptance Limit				
1,2-Dichloroethane-d4		104	70-130				
Bromofluorobenzene		105	70-130				
Toluene-d8		104	70-130				

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and ≥ MDL

+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

**Note: Calculations are performed before rounding to avoid round-off errors in calculated results**

## Volatile Organic Compounds by GC/MS - MS

Sample ID: OE15089-013MS

Matrix: Aqueous

Batch: 21215

Prep Method: 5030B

Analytical Method: 8260B

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	DII	% Rec	% Rec Limit	Analysis Date
tert-Amyl alcohol (TAA)	870	100000	110000		100	105	70-130	05/24/2013 0926
tert-Amyl methyl ether (TAME)	420	5000	6200		100	115	70-130	05/24/2013 0926
Benzene	4900	5000	11000		100	116	70-130	05/24/2013 0926
tert-Butyl formate (TBF)	ND	25000	28000		100	111	70-130	05/24/2013 0926
1,2-Dichloroethane	ND	5000	5900		100	118	70-130	05/24/2013 0926
Diisopropyl ether (IPE)	260	5000	5600		100	108	70-130	05/24/2013 0926
3,3-Dimethyl-1-butanol	ND	100000	110000		100	111	70-130	05/24/2013 0926
Ethanol	ND	500000	410000		100	81	70-130	05/24/2013 0926
Ethylbenzene	1400	5000	7000		100	113	70-130	05/24/2013 0926
Ethyl-tert-butyl ether (ETBE)	ND	5000	5700		100	115	70-130	05/24/2013 0926
Methyl tertiary butyl ether (MTBE)	7400	5000	12000		100	98	70-130	05/24/2013 0926
Naphthalene	280	5000	5800		100	111	70-130	05/24/2013 0926
tert-butyl alcohol (TBA)	ND	100000	100000		100	101	70-130	05/24/2013 0926
Toluene	17000	5000	23000	E	100	117	70-130	05/24/2013 0926
Xylenes (total)	8200	10000	19000		100	112	70-130	05/24/2013 0926
Surrogate	Q	% Rec	Acceptance Limit					
1,2-Dichloroethane-d4		97	70-130					
Bromofluorobenzene		99	70-130					
Toluene-d8		104	70-130					

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and  $\geq$  MDL

+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

**Note: Calculations are performed before rounding to avoid round-off errors in calculated results**

## Volatile Organic Compounds by GC/MS - MB

Sample ID: OQ21288-001

Matrix: Aqueous

Batch: 21288

Prep Method: 5030B

Analytical Method: 8260B

Parameter	Result	Q	DII	PQL	MDL	Units	Analysis Date
tert-Amyl alcohol (TAA)	ND		1	100	6.7	ug/L	05/24/2013 1312
tert-Amyl methyl ether (TAME)	ND		1	10	0.20	ug/L	05/24/2013 1312
Benzene	ND		1	1.0	0.20	ug/L	05/24/2013 1312
tert-Butyl formate (TBF)	ND		1	100	1.0	ug/L	05/24/2013 1312
1,2-Dichloroethane	ND		1	1.0	0.30	ug/L	05/24/2013 1312
Diisopropyl ether (IPE)	ND		1	10	0.40	ug/L	05/24/2013 1312
3,3-Dimethyl-1-butanol	ND		1	100	1.0	ug/L	05/24/2013 1312
Ethanol	ND		1	1000	33	ug/L	05/24/2013 1312
Ethylbenzene	ND		1	1.0	1.7	ug/L	05/24/2013 1312
Ethyl-tert-butyl ether (ETBE)	ND		1	100	0.20	ug/L	05/24/2013 1312
Methyl tertiary butyl ether (MTBE)	ND		1	1.0	0.40	ug/L	05/24/2013 1312
Naphthalene	ND		1	1.0	1.7	ug/L	05/24/2013 1312
tert-butyl alcohol (TBA)	ND		1	100	6.7	ug/L	05/24/2013 1312
Toluene	ND		1	1.0	1.7	ug/L	05/24/2013 1312
Xylenes (total)	ND		1	1.0	1.7	ug/L	05/24/2013 1312

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		98	70-130
1,2-Dichloroethane-d4		102	70-130
Toluene-d8		103	70-130

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and ≥ MDL

+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

**Note: Calculations are performed before rounding to avoid round-off errors in calculated results**

## Volatile Organic Compounds by GC/MS - LCS

Sample ID: OQ21288-002

Matrix: Aqueous

Batch: 21288

Prep Method: 5030B

Analytical Method: 8260B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	DII	% Rec	% Rec Limit	Analysis Date
tert-Amyl alcohol (TAA)	1000	1000		1	100	70-130	05/24/2013 1141
tert-Amyl methyl ether (TAME)	50	54		1	107	70-130	05/24/2013 1141
Benzene	50	53		1	105	70-130	05/24/2013 1141
tert-Butyl formate (TBF)	250	270		1	109	70-130	05/24/2013 1141
1,2-Dichloroethane	50	53		1	106	70-130	05/24/2013 1141
Diisopropyl ether (IPE)	50	50		1	100	70-130	05/24/2013 1141
3,3-Dimethyl-1-butanol	1000	1100		1	111	70-130	05/24/2013 1141
Ethanol	5000	4600		1	93	70-130	05/24/2013 1141
Ethylbenzene	50	53		1	106	70-130	05/24/2013 1141
Ethyl-tert-butyl ether (ETBE)	50	53		1	106	70-130	05/24/2013 1141
Methyl tertiary butyl ether (MTBE)	50	51		1	102	70-130	05/24/2013 1141
Naphthalene	50	59		1	118	70-130	05/24/2013 1141
tert-butyl alcohol (TBA)	1000	980		1	98	70-130	05/24/2013 1141
Toluene	50	54		1	109	70-130	05/24/2013 1141
Xylenes (total)	100	110		1	106	70-130	05/24/2013 1141
Surrogate	Q	% Rec	Acceptance Limit				
Bromofluorobenzene		100	70-130				
1,2-Dichloroethane-d4		97	70-130				
Toluene-d8		101	70-130				

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and ≥ MDL

+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

**Note: Calculations are performed before rounding to avoid round-off errors in calculated results**

# Volatile Organic Compounds by GC/MS - LCSD

Sample ID: OQ21288-003

Matrix: Aqueous

Batch: 21288

Prep Method: 5030B

Analytical Method: 8260B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	DII	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
tert-Amyl alcohol (TAA)	1000	1000		1	102	1.4	70-130	20	05/24/2013 1204
tert-Amyl methyl ether (TAME)	50	52		1	105	2.4	70-130	20	05/24/2013 1204
Benzene	50	53		1	106	0.44	70-130	20	05/24/2013 1204
tert-Butyl formate (TBF)	250	270		1	107	1.4	70-130	20	05/24/2013 1204
1,2-Dichloroethane	50	53		1	106	0.028	70-130	20	05/24/2013 1204
Dilsopropyl ether (IPE)	50	50		1	100	0.51	70-130	20	05/24/2013 1204
3,3-Dimethyl-1-butanol	1000	1100		1	110	0.49	70-130	20	05/24/2013 1204
Ethanol	5000	4800		1	97	3.9	70-130	20	05/24/2013 1204
Ethylbenzene	50	53		1	105	0.39	70-130	20	05/24/2013 1204
Ethyl-tert-butyl ether (ETBE)	50	53		1	106	0.49	70-130	20	05/24/2013 1204
Methyl tertiary butyl ether (MTBE)	50	49		1	98	4.5	70-130	20	05/24/2013 1204
Naphthalene	50	63		1	127	7.6	70-130	20	05/24/2013 1204
tert-butyl alcohol (TBA)	1000	990		1	99	0.50	70-130	20	05/24/2013 1204
Toluene	50	54		1	108	0.88	70-130	20	05/24/2013 1204
Xylenes (total)	100	110		1	106	0.62	70-130	20	05/24/2013 1204
Surrogate	Q	% Rec	Acceptance Limit						
Bromofluorobenzene		100	70-130						
1,2-Dichloroethane-d4		96	70-130						
Toluene-d8		100	70-130						

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and ≥ MDL

+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

**Note: Calculations are performed before rounding to avoid round-off errors in calculated results**

## Volatile Organic Compounds by GC/MS - MS

Sample ID: OE15089-020MS

Matrix: Aqueous

Batch: 21288

Prep Method: 5030B

Analytical Method: 8260B

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	DII	% Rec	% Rec Limit	Analysis Date
tert-Amyl alcohol (TAA)	ND	200000	200000		200	102	70-130	05/24/2013 2034
tert-Amyl methyl ether (TAME)	390	10000	11000		200	102	70-130	05/24/2013 2034
Benzene	6800	10000	17000		200	103	70-130	05/24/2013 2034
tert-Butyl formate (TBF)	ND	50000	53000		200	107	70-130	05/24/2013 2034
1,2-Dichloroethane	ND	10000	11000		200	113	70-130	05/24/2013 2034
Diisopropyl ether (IPE)	240	10000	9600		200	94	70-130	05/24/2013 2034
3,3-Dimethyl-1-butanol	ND	200000	210000		200	106	70-130	05/24/2013 2034
Ethanol	ND	1000000	910000		200	91	70-130	05/24/2013 2034
Ethylbenzene	3200	10000	14000		200	107	70-130	05/24/2013 2034
Ethyl-tert-butyl ether (ETBE)	ND	10000	10000		200	101	70-130	05/24/2013 2034
Methyl tertiary butyl ether (MTBE)	6100	10000	16000		200	96	70-130	05/24/2013 2034
Naphthalene	570	10000	11000		200	108	70-130	05/24/2013 2034
tert-butyl alcohol (TBA)	ND	200000	190000		200	96	70-130	05/24/2013 2034
Toluene	26000	10000	36000		200	102	70-130	05/24/2013 2034
Xylenes (total)	17000	20000	39000		200	108	70-130	05/24/2013 2034
Surrogate	Q	% Rec	Acceptance Limit					
1,2-Dichloroethane-d4		103	70-130					
Bromofluorobenzene		102	70-130					
Toluene-d8		99	70-130					

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and ≥ MDL

+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

**Note: Calculations are performed before rounding to avoid round-off errors in calculated results**

# Volatile Organic Compounds by GC/MS - MSD

Sample ID: OE15089-020MD

Matrix: Aqueous

Batch: 21288

Prep Method: 5030B

Analytical Method: 8260B

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	DII	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
tert-Amyl alcohol (TAA)	ND	200000	220000		200	110	7.5	70-130	20	05/24/2013 2056
tert-Amyl methyl ether (TAME)	390	10000	12000		200	112	9.0	70-130	20	05/24/2013 2056
Benzene	6800	10000	18000		200	114	6.3	70-130	20	05/24/2013 2056
tert-Butyl formate (TBF)	ND	50000	59000		200	118	9.9	70-130	20	05/24/2013 2056
1,2-Dichloroethane	ND	10000	12000		200	117	3.9	70-130	20	05/24/2013 2056
Diisopropyl ether (IPE)	240	10000	11000		200	103	9.4	70-130	20	05/24/2013 2056
3,3-Dimethyl-1-butanol	ND	200000	230000		200	116	9.0	70-130	20	05/24/2013 2056
Ethanol	ND	1000000	1000000		200	102	11	70-130	20	05/24/2013 2056
Ethylbenzene	3200	10000	15000		200	116	6.5	70-130	20	05/24/2013 2056
Ethyl-tert-butyl ether (ETBE)	ND	10000	11000		200	111	10	70-130	20	05/24/2013 2056
Methyl tertiary butyl ether (MTBE)	6100	10000	17000		200	108	7.5	70-130	20	05/24/2013 2056
Naphthalene	570	10000	13000		200	121	11	70-130	20	05/24/2013 2056
tert-butyl alcohol (TBA)	ND	200000	210000		200	104	7.9	70-130	20	05/24/2013 2056
Toluene	26000	10000	38000		200	123	5.8	70-130	20	05/24/2013 2056
Xylenes (total)	17000	20000	41000		200	116	4.3	70-130	20	05/24/2013 2056
Surrogate	Q	% Rec	Acceptance Limit							
1,2-Dichloroethane-d4		100	70-130							
Bromofluorobenzene		102	70-130							
Toluene-d8		103	70-130							

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and ≥ MDL

+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

**Note: Calculations are performed before rounding to avoid round-off errors in calculated results**

## Volatile Organic Compounds by GC/MS - MB

Sample ID: OQ21288-001

Matrix: Aqueous

Batch: 21288

Prep Method: 5030B

Analytical Method: 8260B

Parameter	Result	Q	DII	PQL	MDL	Units	Analysis Date
tert-Amyl alcohol (TAA)	ND		1	100	6.7	ug/L	05/24/2013 1312
tert-Amyl methyl ether (TAME)	ND		1	10	0.20	ug/L	05/24/2013 1312
Benzene	ND		1	1.0	0.13	ug/L	05/24/2013 1312
tert-Butyl formate (TBF)	ND		1	100	1.0	ug/L	05/24/2013 1312
1,2-Dichloroethane	ND		1	1.0	0.15	ug/L	05/24/2013 1312
Diisopropyl ether (IPE)	ND		1	10	0.40	ug/L	05/24/2013 1312
3,3-Dimethyl-1-butanol	ND		1	100	1.0	ug/L	05/24/2013 1312
Ethanol	ND		1	1000	33	ug/L	05/24/2013 1312
Ethylbenzene	ND		1	1.0	0.33	ug/L	05/24/2013 1312
Ethyl-tert-butyl ether (ETBE)	ND		1	100	0.20	ug/L	05/24/2013 1312
Methyl tertiary butyl ether (MTBE)	ND		1	1.0	0.40	ug/L	05/24/2013 1312
Naphthalene	ND		1	1.0	0.40	ug/L	05/24/2013 1312
tert-butyl alcohol (TBA)	ND		1	100	6.7	ug/L	05/24/2013 1312
Toluene	ND		1	1.0	0.33	ug/L	05/24/2013 1312
Xylenes (total)	ND		1	1.0	0.33	ug/L	05/24/2013 1312

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		98	70-130
1,2-Dichloroethane-d4		102	70-130
Toluene-d8		103	70-130

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and ≥ MDL

+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

**Note: Calculations are performed before rounding to avoid round-off errors in calculated results**



## Volatile Organic Compounds by GC/MS - LCS

Sample ID: OQ21288-002

Batch: 21288

Matrix: Aqueous

Prep Method: 5030B

Analytical Method: 8260B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	DII	% Rec	% Rec Limit	Analysis Date
tert-Amyl alcohol (TAA)	1000	1000		1	100	70-130	05/24/2013 1141
tert-Amyl methyl ether (TAME)	50	54		1	107	70-130	05/24/2013 1141
Benzene	50	53		1	105	70-130	05/24/2013 1141
tert-Butyl formate (TBF)	250	270		1	109	70-130	05/24/2013 1141
1,2-Dichloroethane	50	53		1	106	70-130	05/24/2013 1141
Diisopropyl ether (IPE)	50	50		1	100	70-130	05/24/2013 1141
3,3-Dimethyl-1-butanol	1000	1100		1	111	70-130	05/24/2013 1141
Ethanol	5000	4600		1	93	70-130	05/24/2013 1141
Ethylbenzene	50	53		1	106	70-130	05/24/2013 1141
Ethyl-tert-butyl ether (ETBE)	50	53		1	106	70-130	05/24/2013 1141
Methyl tertiary butyl ether (MTBE)	50	51		1	102	70-130	05/24/2013 1141
Naphthalene	50	59		1	118	70-130	05/24/2013 1141
tert-butyl alcohol (TBA)	1000	980		1	98	70-130	05/24/2013 1141
Toluene	50	54		1	109	70-130	05/24/2013 1141
Xylenes (total)	100	110		1	106	70-130	05/24/2013 1141
Surrogate	Q	% Rec	Acceptance Limit				
Bromofluorobenzene		100	70-130				
1,2-Dichloroethane-d4		97	70-130				
Toluene-d8		101	70-130				

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and ≥ MDL

+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

**Note: Calculations are performed before rounding to avoid round-off errors in calculated results**

## Volatile Organic Compounds by GC/MS - LCSD

Sample ID: OQ21288-003

Matrix: Aqueous

Batch: 21288

Prep Method: 5030B

Analytical Method: 8260B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	DII	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
tert-Amyl alcohol (TAA)	1000	1000		1	102	1.4	70-130	20	05/24/2013 1204
tert-Amyl methyl ether (TAME)	50	52		1	105	2.4	70-130	20	05/24/2013 1204
Benzene	50	53		1	106	0.44	70-130	20	05/24/2013 1204
tert-Butyl formate (TBF)	250	270		1	107	1.4	70-130	20	05/24/2013 1204
1,2-Dichloroethane	50	53		1	106	0.028	70-130	20	05/24/2013 1204
Diisopropyl ether (IPE)	50	50		1	100	0.51	70-130	20	05/24/2013 1204
3,3-Dimethyl-1-butanol	1000	1100		1	110	0.49	70-130	20	05/24/2013 1204
Ethanol	5000	4800		1	97	3.9	70-130	20	05/24/2013 1204
Ethylbenzene	50	53		1	105	0.39	70-130	20	05/24/2013 1204
Ethyl-tert-butyl ether (ETBE)	50	53		1	106	0.49	70-130	20	05/24/2013 1204
Methyl tertiary butyl ether (MTBE)	50	49		1	98	4.5	70-130	20	05/24/2013 1204
Naphthalene	50	63		1	127	7.6	70-130	20	05/24/2013 1204
tert-butyl alcohol (TBA)	1000	990		1	99	0.50	70-130	20	05/24/2013 1204
Toluene	50	54		1	108	0.88	70-130	20	05/24/2013 1204
Xylenes (total)	100	110		1	106	0.62	70-130	20	05/24/2013 1204
Surrogate	Q	% Rec	Acceptance Limit						
Bromofluorobenzene		100	70-130						
1,2-Dichloroethane-d4		96	70-130						
Toluene-d8		100	70-130						

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and ≥ MDL

+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

**Note: Calculations are performed before rounding to avoid round-off errors in calculated results**

## Volatile Organic Compounds by GC/MS - MB

Sample ID: OQ21292-001

Matrix: Aqueous

Batch: 21292

Prep Method: 5030B

Analytical Method: 8260B

Parameter	Result	Q	DII	PQL	MDL	Units	Analysis Date
tert-Amyl alcohol (TAA)	ND		1	100	6.7	ug/L	05/24/2013 1330
tert-Amyl methyl ether (TAME)	ND		1	10	0.20	ug/L	05/24/2013 1330
Benzene	ND		1	5.0	0.20	ug/L	05/24/2013 1330
tert-Butyl formate (TBF)	ND		1	100	1.0	ug/L	05/24/2013 1330
1,2-Dichloroethane	ND		1	5.0	0.30	ug/L	05/24/2013 1330
Diisopropyl ether (IPE)	ND		1	10	0.40	ug/L	05/24/2013 1330
3,3-Dimethyl-1-butanol	ND		1	100	1.0	ug/L	05/24/2013 1330
Ethanol	ND		1	1000	33	ug/L	05/24/2013 1330
Ethylbenzene	ND		1	5.0	1.7	ug/L	05/24/2013 1330
Ethyl-tert-butyl ether (ETBE)	ND		1	100	0.20	ug/L	05/24/2013 1330
Methyl tertiary butyl ether (MTBE)	ND		1	5.0	0.40	ug/L	05/24/2013 1330
Naphthalene	ND		1	5.0	1.7	ug/L	05/24/2013 1330
tert-butyl alcohol (TBA)	ND		1	100	6.7	ug/L	05/24/2013 1330
Toluene	ND		1	5.0	1.7	ug/L	05/24/2013 1330
Xylenes (total)	ND		1	5.0	1.7	ug/L	05/24/2013 1330
Surrogate	Q	% Rec	Acceptance Limit				
Bromofluorobenzene		111	70-130				
1,2-Dichloroethane-d4		101	70-130				
Toluene-d8		118	70-130				

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and ≥ MDL

+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

**Note: Calculations are performed before rounding to avoid round-off errors in calculated results**

## Volatile Organic Compounds by GC/MS - LCS

Sample ID: OQ21292-002

Batch: 21292

Matrix: Aqueous

Prep Method: 5030B

Analytical Method: 8260B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	DII	% Rec	% Rec Limit	Analysis Date
tert-Amyl alcohol (TAA)	1000	1100		1	107	70-130	05/24/2013 1200
tert-Amyl methyl ether (TAME)	50	50		1	100	70-130	05/24/2013 1200
Benzene	50	49		1	99	70-130	05/24/2013 1200
tert-Butyl formate (TBF)	250	260		1	105	70-130	05/24/2013 1200
1,2-Dichloroethane	50	52		1	103	70-130	05/24/2013 1200
Diisopropyl ether (IPE)	50	54		1	109	70-130	05/24/2013 1200
3,3-Dimethyl-1-butanol	1000	1200		1	116	70-130	05/24/2013 1200
Ethanol	5000	5400		1	107	70-130	05/24/2013 1200
Ethylbenzene	50	55		1	110	70-130	05/24/2013 1200
Ethyl-tert-butyl ether (ETBE)	50	57		1	114	70-130	05/24/2013 1200
Methyl tertiary butyl ether (MTBE)	50	54		1	108	70-130	05/24/2013 1200
Naphthalene	50	57		1	114	70-130	05/24/2013 1200
tert-butyl alcohol (TBA)	1000	1100		1	108	70-130	05/24/2013 1200
Toluene	50	57		1	114	70-130	05/24/2013 1200
Xylenes (total)	100	110		1	112	70-130	05/24/2013 1200
Surrogate	Q	% Rec	Acceptance Limit				
Bromofluorobenzene		108	70-130				
1,2-Dichloroethane-d4		102	70-130				
Toluene-d8		109	70-130				

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and  $\geq$  MDL

+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

**Note: Calculations are performed before rounding to avoid round-off errors in calculated results**

## Volatile Organic Compounds by GC/MS - MS

Sample ID: OE15089-016MS

Matrix: Aqueous

Batch: 21292

Prep Method: 5030B

Analytical Method: 8260B

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	DII	% Rec	% Rec Limit	Analysis Date
tert-Amyl alcohol (TAA)	1900	200000	170000		200	82	70-130	05/24/2013 1953
tert-Amyl methyl ether (TAME)	780	10000	9800		200	90	70-130	05/24/2013 1953
Benzene	3900	10000	14000		200	99	70-130	05/24/2013 1953
tert-Butyl formate (TBF)	ND	50000	56000		200	113	70-130	05/24/2013 1953
1,2-Dichloroethane	93	10000	11000		200	104	70-130	05/24/2013 1953
Diisopropyl ether (IPE)	ND	10000	10000		200	100	70-130	05/24/2013 1953
3,3-Dimethyl-1-butanol	ND	200000	190000		200	93	70-130	05/24/2013 1953
Ethanol	ND	1000000	910000		200	91	70-130	05/24/2013 1953
Ethylbenzene	1000	10000	13000		200	118	70-130	05/24/2013 1953
Ethyl-tert-butyl ether (ETBE)	ND	10000	9700		200	97	70-130	05/24/2013 1953
Methyl tertiary butyl ether (MTBE)	26000	10000	32000	N	200	59	70-130	05/24/2013 1953
Naphthalene	ND	10000	12000		200	119	70-130	05/24/2013 1953
tert-butyl alcohol (TBA)	1600	200000	170000		200	86	70-130	05/24/2013 1953
Toluene	12000	10000	27000	N	200	148	70-130	05/24/2013 1953
Xylenes (total)	6100	20000	27000		200	107	70-130	05/24/2013 1953
Surrogate	Q	% Rec	Acceptance Limit					
1,2-Dichloroethane-d4		119	70-130					
Bromofluorobenzene		116	70-130					
Toluene-d8		122	70-130					

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and ≥ MDL

+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

**Note: Calculations are performed before rounding to avoid round-off errors in calculated results**

## Volatile Organic Compounds by GC/MS - MSD

Sample ID: OE15089-016MD

Matrix: Aqueous

Batch: 21292

Prep Method: 5030B

Analytical Method: 8260B

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	DII	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
tert-Amyl alcohol (TAA)	1900	200000	190000		200	92	11	70-130	20	05/24/2013 2016
tert-Amyl methyl ether (TAME)	780	10000	11000		200	104	14	70-130	20	05/24/2013 2016
Benzene	3900	10000	14000		200	101	1.4	70-130	20	05/24/2013 2016
tert-Butyl formate (TBF)	ND	50000	54000		200	107	5.1	70-130	20	05/24/2013 2016
1,2-Dichloroethane	93	10000	12000		200	116	10	70-130	20	05/24/2013 2016
Diisopropyl ether (IPE)	ND	10000	9600		200	96	4.1	70-130	20	05/24/2013 2016
3,3-Dimethyl-1-butanol	ND	200000	180000		200	92	1.6	70-130	20	05/24/2013 2016
Ethanol	ND	1000000	870000		200	87	4.5	70-130	20	05/24/2013 2016
Ethylbenzene	1000	10000	12000		200	109	7.0	70-130	20	05/24/2013 2016
Ethyl-tert-butyl ether (ETBE)	ND	10000	10000		200	105	7.2	70-130	20	05/24/2013 2016
Methyl tertiary butyl ether (MTBE)	26000	10000	32000	N	200	63	1.3	70-130	20	05/24/2013 2016
Naphthalene	ND	10000	12000		200	119	0.30	70-130	20	05/24/2013 2016
tert-butyl alcohol (TBA)	1600	200000	220000	+	200	108	23	70-130	20	05/24/2013 2016
Toluene	12000	10000	24000		200	115	13	70-130	20	05/24/2013 2016
Xylenes (total)	6100	20000	28000		200	111	3.2	70-130	20	05/24/2013 2016
Surrogate	Q	% Rec	Acceptance Limit							
1,2-Dichloroethane-d4		125	70-130							
Bromofluorobenzene		119	70-130							
Toluene-d8		111	70-130							

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and ≥ MDL

+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

**Note: Calculations are performed before rounding to avoid round-off errors in calculated results**

## Volatile Organic Compounds by GC/MS - MB

Sample ID: OQ21361-001

Matrix: Aqueous

Batch: 21361

Prep Method: 5030B

Analytical Method: 8260B

Parameter	Result	Q	DII	PQL	MDL	Units	Analysis Date
tert-Amyl alcohol (TAA)	ND		1	100	6.7	ug/L	05/26/2013 1632
tert-Amyl methyl ether (TAME)	ND		1	10	0.20	ug/L	05/26/2013 1632
Benzene	ND		1	5.0	0.20	ug/L	05/26/2013 1632
tert-Butyl formate (TBF)	ND		1	100	1.0	ug/L	05/26/2013 1632
1,2-Dichloroethane	ND		1	5.0	0.30	ug/L	05/26/2013 1632
Diisopropyl ether (IPE)	ND		1	10	0.40	ug/L	05/26/2013 1632
<b>3,3-Dimethyl-1-butanol</b>	<b>3.5</b>	<b>J</b>	<b>1</b>	<b>100</b>	<b>1.0</b>	<b>ug/L</b>	<b>05/26/2013 1632</b>
Ethanol	ND		1	1000	33	ug/L	05/26/2013 1632
Ethylbenzene	ND		1	5.0	1.7	ug/L	05/26/2013 1632
Ethyl-tert-butyl ether (ETBE)	ND		1	100	0.20	ug/L	05/26/2013 1632
Methyl tertiary butyl ether (MTBE)	ND		1	5.0	0.40	ug/L	05/26/2013 1632
Naphthalene	ND		1	5.0	1.7	ug/L	05/26/2013 1632
tert-butyl alcohol (TBA)	ND		1	100	6.7	ug/L	05/26/2013 1632
Toluene	ND		1	5.0	1.7	ug/L	05/26/2013 1632
Xylenes (total)	ND		1	5.0	1.7	ug/L	05/26/2013 1632

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		97	70-130
1,2-Dichloroethane-d4		75	70-130
Toluene-d8		86	70-130

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and ≥ MDL

+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

**Note: Calculations are performed before rounding to avoid round-off errors in calculated results**

## Volatile Organic Compounds by GC/MS - LCS

Sample ID: OQ21361-002

Matrix: Aqueous

Batch: 21361

Prep Method: 5030B

Analytical Method: 8260B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	DII	% Rec	% Rec Limit	Analysis Date
tert-Amyl alcohol (TAA)	1000	760		1	76	70-130	05/26/2013 1501
tert-Amyl methyl ether (TAME)	50	45		1	89	70-130	05/26/2013 1501
Benzene	50	45		1	89	70-130	05/26/2013 1501
tert-Butyl formate (TBF)	250	210		1	83	70-130	05/26/2013 1501
1,2-Dichloroethane	50	42		1	85	70-130	05/26/2013 1501
Diisopropyl ether (IPE)	50	45		1	90	70-130	05/26/2013 1501
3,3-Dimethyl-1-butanol	1000	710		1	71	70-130	05/26/2013 1501
Ethanol	5000	4300		1	85	70-130	05/26/2013 1501
Ethylbenzene	50	48		1	96	70-130	05/26/2013 1501
Ethyl-tert-butyl ether (ETBE)	50	43		1	87	70-130	05/26/2013 1501
Methyl tertiary butyl ether (MTBE)	50	44		1	88	70-130	05/26/2013 1501
Naphthalene	50	36		1	72	70-130	05/26/2013 1501
tert-butyl alcohol (TBA)	1000	760		1	76	70-130	05/26/2013 1501
Toluene	50	47		1	94	70-130	05/26/2013 1501
Xylenes (total)	100	96		1	96	70-130	05/26/2013 1501
Surrogate	Q	% Rec	Acceptance Limit				
Bromofluorobenzene		95	70-130				
1,2-Dichloroethane-d4		75	70-130				
Toluene-d8		88	70-130				

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and  $\geq$  MDL

+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

**Note: Calculations are performed before rounding to avoid round-off errors in calculated results**



## Volatile Organic Compounds by GC/MS - LCSD

Sample ID: OQ21361-003

Matrix: Aqueous

Batch: 21361

Prep Method: 5030B

Analytical Method: 8260B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	DII	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
tert-Amyl alcohol (TAA)	1000	750		1	75	0.87	70-130	20	05/26/2013 1523
tert-Amyl methyl ether (TAME)	50	45		1	89	0.078	70-130	20	05/26/2013 1523
Benzene	50	44		1	89	0.53	70-130	20	05/26/2013 1523
tert-Butyl formate (TBF)	250	210		1	86	3.0	70-130	20	05/26/2013 1523
1,2-Dichloroethane	50	43		1	85	0.32	70-130	20	05/26/2013 1523
Diisopropyl ether (IPE)	50	45		1	90	0.42	70-130	20	05/26/2013 1523
3,3-Dimethyl-1-butanol	1000	710		1	71	0.64	70-130	20	05/26/2013 1523
Ethanol	5000	4200		1	84	1.6	70-130	20	05/26/2013 1523
Ethylbenzene	50	48		1	95	1.2	70-130	20	05/26/2013 1523
Ethyl-tert-butyl ether (ETBE)	50	44		1	87	0.21	70-130	20	05/26/2013 1523
Methyl tertiary butyl ether (MTBE)	50	44		1	87	0.56	70-130	20	05/26/2013 1523
Naphthalene	50	36		1	72	0.73	70-130	20	05/26/2013 1523
tert-butyl alcohol (TBA)	1000	750		1	75	1.6	70-130	20	05/26/2013 1523
Toluene	50	47		1	94	0.16	70-130	20	05/26/2013 1523
Xylenes (total)	100	95		1	95	1.3	70-130	20	05/26/2013 1523
Surrogate	Q	% Rec	Acceptance Limit						
Bromofluorobenzene		96	70-130						
1,2-Dichloroethane-d4		74	70-130						
Toluene-d8		88	70-130						

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and ≥ MDL

+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

**Note: Calculations are performed before rounding to avoid round-off errors in calculated results**

## EDB & DBCP by Microextraction - MB

Sample ID: OQ20659-001

Matrix: Aqueous

Batch: 20659

Prep Method: 8011

Analytical Method: 8011

Prep Date: 05/16/2013 2025

Parameter	Result	Q	DII	PQL	MDL	Units	Analysis Date
1,2-Dibromoethane (EDB)	ND		1	0.020	0.020	ug/L	05/23/2013 0239
Surrogate	Q	% Rec	Acceptance Limit				
1,1,1,2-Tetrachloroethane		103	57-137				

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and ≥ MDL

+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

**Note: Calculations are performed before rounding to avoid round-off errors in calculated results**

## EDB & DBCP by Microextraction - LCS

Sample ID: OQ20659-002

Matrix: Aqueous

Batch: 20659

Prep Method: 8011

Analytical Method: 8011

Prep Date: 05/16/2013 2025

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	DII	% Rec	% Rec Limit	Analysis Date
1,2-Dibromoethane (EDB)	0.25	0.26		1	105	60-140	05/23/2013 0301
Surrogate	Q	% Rec	Acceptance Limit				
1,1,1,2-Tetrachloroethane	110	57-137					

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and  $\geq$  MDL

+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

**Note: Calculations are performed before rounding to avoid round-off errors in calculated results**

# EDB & DBCP by Microextraction - MB

Sample ID: OQ20660-001

Batch: 20660

Analytical Method: 8011

Matrix: Aqueous

Prep Method: 8011

Prep Date: 05/16/2013 2032

Parameter	Result	Q	DII	PQL	MDL	Units	Analysis Date
1,2-Dibromoethane (EDB)	ND		1	0.020	0.020	ug/L	05/23/2013 1347
Surrogate	Q	% Rec	Acceptance Limit				
1,1,1,2-Tetrachloroethane		115	57-137				

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and  $\geq$  MDL

+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

**Note: Calculations are performed before rounding to avoid round-off errors in calculated results**

## EDB & DBCP by Microextraction - LCS

Sample ID: OQ20660-002

Matrix: Aqueous

Batch: 20660

Prep Method: 8011

Analytical Method: 8011

Prep Date: 05/16/2013 2032

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	DII	% Rec	% Rec Limit	Analysis Date
1,2-Dibromoethane (EDB)	0.25	0.26		1	104	60-140	05/23/2013 1409
Surrogate	Q	% Rec	Acceptance Limit				
1,1,1,2-Tetrachloroethane	115	57-137					

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and ≥ MDL

+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

**Note: Calculations are performed before rounding to avoid round-off errors in calculated results**

## EDB & DBCP by Microextraction - MS

Sample ID: OE15089-010MS

Matrix: Aqueous

Batch: 20660

Prep Method: 8011

Analytical Method: 8011

Prep Date: 05/16/2013 2032

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	DII	% Rec	% Rec Limit	Analysis Date
1,2-Dibromoethane (EDB)	ND	0.24	0.24		1	97	60-140	05/23/2013 1621
Surrogate	Q	% Rec	Acceptance Limit					
1,1,1,2-Tetrachloroethane		87	57-137					

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and ≥ MDL

+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

**Note: Calculations are performed before rounding to avoid round-off errors in calculated results**

## EDB & DBCP by Microextraction - MSD

Sample ID: OE15089-010MD

Matrix: Aqueous

Batch: 20660

Prep Method: 8011

Analytical Method: 8011

Prep Date: 05/16/2013 2032

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	DII	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
1,2-Dibromoethane (EDB)	ND	0.24	0.22		1	89	8.1	60-140	20	05/23/2013 1643
Surrogate	Q	% Rec	Acceptance Limit							
1,1,1,2-Tetrachloroethane		91	57-137							

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and ≥ MDL

+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

**Note: Calculations are performed before rounding to avoid round-off errors in calculated results**

# EDB & DBCP by Microextraction - MB

Sample ID: OQ20770-001

Batch: 20770

Analytical Method: 8011

Matrix: Aqueous

Prep Method: 8011

Prep Date: 05/17/2013 2308

Parameter	Result	Q	DII	PQL	MDL	Units	Analysis Date
1,2-Dibromoethane (EDB)	ND		1	0.020	0.020	ug/L	05/23/2013 2254
Surrogate	Q	% Rec	Acceptance Limit				
1,1,1,2-Tetrachloroethane		113	57-137				

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and  $\geq$  MDL

+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

**Note: Calculations are performed before rounding to avoid round-off errors in calculated results**



## EDB & DBCP by Microextraction - LCS

Sample ID: OQ20770-002

Matrix: Aqueous

Batch: 20770

Prep Method: 8011

Analytical Method: 8011

Prep Date: 05/17/2013 2308

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	DII	% Rec	% Rec Limit	Analysis Date
1,2-Dibromoethane (EDB)	0.25	0.31		1	123	60-140	05/23/2013 2316
Surrogate	Q	% Rec	Acceptance Limit				
1,1,1,2-Tetrachloroethane		117	57-137				

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and ≥ MDL

+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

**Note: Calculations are performed before rounding to avoid round-off errors in calculated results**



Chain of Custody Record

Shealy Environmental Services, Inc.
106 Vantage Point Drive
West Columbia, South Carolina 29172
Telephone No. (803) 791-9700 Fax No. (803) 791-9111
www.shealylab.com

Number 16304

Client: SCDHEC, Report to Contact: D. Thome, Sampler: John C. Bryant, Quote No.
Address: 2600 Bullstreet, City: Columbia, State: SC, Zip Code:
Project Name: Highway 11, Project Number: 03439 CA 45516, P.O. Number: 460008852A
Sample ID / Description: (Containers for each sample may be combined on one line)
Analysis: METAL, 12, 20, 9-04, EDB
Remarks / Cooler ID: Product / 2 bolts, No odor / 3 bolts, Not Located, SL odor / 2 bolts, Not Located, Odor, Not Located, Product, No odor, No odor / 2 bolts
Turn Around Time Required: Standard or Rush
Sample Disposal: Return to Client or Disposal by Lab
QC Requirements: 1. Received by, 2. Received by, 3. Received by, 4. Laboratory Received by
Possible Hazard Identification: Non-Hazard, Flammable, Skin Irritant, Poison, Unknown
Note: All samples are retained for six weeks from receipt unless other arrangements are made.
LAB USE ONLY: Received on Ice (Check) Yes No Ice Pack Receipt Temp: 10 °C Temp. Blank: Y / N



Chain of Custody Record

Shealy Environmental Services, Inc.
106 Vantage Point Drive
West Columbia, South Carolina 29172
Telephone No. (803) 791-9700 Fax No. (803) 791-9111
www.shealylab.com

Number 16303

Client: SCDHEL, Report to Contact: D. Thorne, Sampler: John C. Bryant, Quote No.
Address: 2600 Bull st, City: Columbia, State: SC, Zip Code:
Project Name: Highway 11, Project Number: 03439/CAF 45516, P.O Number: 460008522
Sample ID / Description, Date, Time, Matrix, Analysis (STX, M, H2O2, S-Oil, EDB)
Turn Around Time Required, Sample Disposal, QC Requirements, Possible Hazard Identification
Note: All samples are retained for six weeks from receipt unless other arrangements are made.



Chain of Custody Record

Shealy Environmental Services, Inc.
106 Vantage Point Drive
West Columbia, South Carolina 29172
Telephone No. (803) 791-9700 Fax No. (803) 791-9111
www.shealylab.com

Number 16302

Client: SCDFEC, Report to Contact: D. Thoma, Sampler: John C. Bryant, Quote No.
Address: 2600 Bull St., City: Columbia, SC, Zip Code:
Preservative: 1. Unpres., 4. HNO3, 7. NaOH, 2. NaOH/ZnA, 5. HCL, 3. H2SO4, 6. Na Tho.
Project Name: Highway 11, Project Number: 03439/CA# 45516, P.O Number: 4600088529
Sample ID / Description, Date, Time, Matrix, Analysis: BERM, 1/2 DUA, 8-DAY, FDB
RW-3, RW-3 Dup., RW-4, RW-4 Dup., RW-5, RW-6, RW-7, RW-8, RW-9, RW-10
Turn Around Time Required, Sample Disposal, QC Requirements, Possible Hazard Identification
1. Relinquished by / Sampler, Date: 5/14, Time: 18:00, 1. Received by, Date: 5/14/13, Time: 1800
2. Relinquished by, Date: 5/15/13, Time: 1430, 2. Received by, Date: 5/15/13, Time: 1430
3. Relinquished by, Date, Time, 3. Received by, Date, Time
4. Relinquished by, Date: 5/15/13, Time: 1511, 4. Laboratory Received by, Date: 5/15/13, Time: 1515
Note: All samples are retained for six weeks from receipt unless other arrangements are made.
LAB USE ONLY
Received on Ice (Check) Yes No Ice Pack Receipt Temp 10.2 °C Temp. Blank Y / N



Chain of Custody Record

Shealy Environmental Services, Inc.
106 Vantage Point Drive
West Columbia, South Carolina 29172
Telephone No. (803) 791-9700 Fax No. (803) 791-9111
www.shealylab.com

Number 16301

Client: SCDHEC, Report to Contact: D. Thoma, Sampler: John C. Bryant, Quote No.
Address: 2600 Bull street, Telephone No. / Fax No. / Email, Waybill No., Page of
City: Columbia, State: SC, Zip Code, Preservative: 1. Unpres. 4. HNO3 7. NaOH
Project Name: Highway 11, 2. NaOH/ZnA 5. HCL, 3. H2SO4 6. Na Thio.
Project Number: 03439/CNA 45576, P.O Number: 460008852A, Matrix:
Sample ID / Description (Containers for each sample may be combined on one line), Date, Time, Ge-Grab, C-Composite, Matrix (GW, DW, WW, S, Other), Analysis (METHAN, 1,2,4,6,8-ox, EDB)
RW-11, RW-12, RW-13, WSW-1, Field Blank, Trip Blank, Ck-1, Ck-2, Ck-3
Remarks / Cooler ID: 06/5079, ODO2, No ODO2, No EDB
Turn Around Time Required (Prior lab approval required for expedited TAT)
Sample Disposal: Return to Client, Disposal by Lab
QC Requirements (Specify)
Possible Hazard Identification: Non-Hazard, Flammable, Skin Irritant, Poison, Unknown
1. Relinquished by / Sampler: Date 5/14, Time 18:00, 1. Received by: Date 5/14-13, Time 1800
2. Relinquished by: Date 5-15-13, Time 1430, 2. Received by: Date 5-15-13, Time 1430
3. Relinquished by: Date, Time, 3. Received by: Date, Time
4. Relinquished by: Date 5/15/13, Time 1515, 4. Laboratory Received by: Date 5-15-13, Time 1515
Note: All samples are retained for six weeks from receipt unless other arrangements are made.
LAB USE ONLY
Received on Ice (Check) [ ] Yes [ ] No [ ] Ice Pack, Receipt Temp: 10 °C, Temp. Blank: [ ] Y [ ] N

### Sample Receipt Checklist (SRC)

Client: SCMHC Cooler Inspected by/date: WAC 5/15/13 Lot #: 0215089

Means of receipt: <input checked="" type="checkbox"/> SESI <input type="checkbox"/> Client <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> Airborne Exp <input type="checkbox"/> Other			
Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	1. Were custody seals present on the cooler?	
Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	2. If custody seals were present, were they intact and unbroken?	
Cooler ID/temperature upon receipt <u>1309/1.0</u> °C / / °C / / °C / / °C			
Method: <input checked="" type="checkbox"/> Temperature Blank <input type="checkbox"/> Against Bottles			
Method of coolant: <input checked="" type="checkbox"/> Wet Ice <input type="checkbox"/> Blue Ice <input type="checkbox"/> Dry Ice <input type="checkbox"/> None			
If response is No (or Yes for 14, 15, 16), an explanation/resolution must be provided.			
Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>	3. If temperature of any cooler exceeded 6.0°C, was Project Manager notified? PM notified by SRC, phone, note (circle one), other: _____ . (For coolers received via commercial courier, PMs are to be notified immediately.)
Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>	4. Is the commercial courier's packing slip attached to this form?
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		5. Were proper custody procedures (relinquished/received) followed?
Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>	5a Were samples relinquished by client to commercial courier?
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		6. Were sample IDs listed?
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	<u>5/15/13</u>	7. Was collection date & time listed?
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		8. Were tests to be performed listed on the COC?
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		9. Did all samples arrive in the proper containers for each test?
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		10. Did all container label information (ID, date, time) agree with COC?
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		11. Did all containers arrive in good condition (unbroken, lids on, etc.)?
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		12. Was adequate sample volume available?
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		13. Were all samples received within 1/2 the holding time or 48 hours, whichever comes first?
Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		14. Were any samples containers missing?
Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		15. Were there any excess samples not listed on COC?
Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	NA <input type="checkbox"/>	16. Were bubbles present >"pea-size" (1/4" or 6mm in diameter) in any VOA vials?
Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>	17. Were all metals/O&G/HEM/nutrient samples received at a pH of <2?
Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>	18. Were all cyanide and/or sulfide samples received at a pH >12?
Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>	19. Were all applicable NH3/TKN/cyanide/phenol (<0.2mg/L) samples free of residual chlorine?
Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>	20. Were collection temperatures documented on the COC for NC samples?
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	NA <input type="checkbox"/>	21. Were client remarks/requests (i.e. requested dilutions, MS/MSD designations, etc...) correctly transcribed from the COC into the comment section in LIMS?
<b>Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)</b>			
Sample(s) _____ were received incorrectly preserved and were adjusted accordingly in sample receiving with _____ (H <sub>2</sub> SO <sub>4</sub> , HNO <sub>3</sub> , HCl, NaOH) with the SR # (number) _____			
Sample(s) _____ were received with bubbles >6 mm in diameter.			
Sample(s) _____ were received with TRC >0.2 mg/L for NH <sub>3</sub> /TKN/cyanide/phenol			
Sample labels verified by: <u>[Signature]</u>			Date: <u>5/15/13</u>

**Corrective Action taken, if necessary:**

Was client notified: Yes  No  Did client respond: Yes  No   
 SESI employee: \_\_\_\_\_ Date of response: \_\_\_\_\_

Comments: mw-9 sample is missing time not on COC or LIMS

	MR	MR	AR	MR
MW-1	2/14/08	4/27/10	12/13/10	5/14/13
DTW	FP	FP	26.92	FP
Benzene	(0.03')	(0.55')	4530	(0.05')
Toluene			8750	
Ethylbenzene			1150	
Xylenes			6430	
MTBE			30400	
Naphthalene			529	
Lead			na	
DCA			<250	
EDB			na	
DIPE			449	
TAA			3430	
TAME			735	
TBA			1600	



	2/14/08	4/27/10	12/13/10	5/14/13
MW-2	2/14/08	4/27/10	12/13/10	5/14/13
DTW	27.53	25.39	28.00	25.50
Benzene	4	4	<5	<5
Toluene	<1	<5	<5	<5
Ethylbenzene	<1	<5	<5	<5
Xylenes	1	3	<10	<10
MTBE	<1	<5	<5	<5
Naphthalene	<2	<5	<5	<5
Lead	na	<5	na	na
DCA	na	<5	<5	<5
EDB	na	<0.02	na	<0.02
DIPE	na	<5	<5	<5
TAA	na	<100	<100	<100
TAME	na	<10	<10	<10
TBA	na	<100	<100	<100

	2/14/08	4/27/10	12/13/10	5/14/13
MW-3	2/14/08	4/27/10	12/13/10	5/14/13
DTW	26.21	24.09	26.71	well
Benzene	<1	<5	<5	not
Toluene	<1	<5	<5	located
Ethylbenzene	<1	<5	<5	
Xylenes	1	<10	<10	
MTBE	<1	<5	<5	
Naphthalene	<2	<5	<5	
Lead	na	9	na	
DCA	na	<5	<5	
EDB	na	<0.02	na	
DIPE	na	<5	<5	
TAA	na	<100	<100	
TAME	na	<10	<10	
TBA	na	<100	<100	

	2/14/08	4/27/10	12/13/10	5/14/13
MW-4	2/14/08	4/27/10	12/13/10	5/14/13
DTW	26.44	22.28	24.04	22.00
Benzene	<1	532	520	140
Toluene	<1	906	224	480
Ethylbenzene	<1	179	55	250
Xylenes	<3	895	482	1000
MTBE	1	381	763	31
Naphthalene	<2	31	18	39
Lead	na	<5	na	na
DCA	na	<5	<25	<25
EDB	na	<0.02	na	<0.02
DIPE	na	22	25	<50
TAA	na	355	342	<500
TAME	na	14	<50	<50
TBA	na	<100	<500	<500

	2/14/08	4/27/10	12/13/10	5/14/13
MW-5	2/14/08	4/27/10	12/13/10	5/14/13
DTW	30.60	well	well	well
Benzene	<1	not	not	not
Toluene	<1	located	located	located
Ethylbenzene	<1			
Xylenes	<3			
MTBE	<1			
Naphthalene	<2			
Lead	na			
DCA	na			
EDB	na			
DIPE	na			
TAA	na			
TBA	na			
TAME	na			

MW-6	2/14/08	4/27/10	12/13/10	5/14/13
DTW	22.77	21.02	23.60	20.97
Benzene	162	5570	1300	7500
Toluene	750	19900	6340	27000
Ethylbenzene	26	2260	360	1900
Xylenes	575	12300	7910	13000
MTBE	11	35300	2500	22000
Naphthalene	12	463	<250	380
Lead	na	8	na	na
DCA	na	<5	<250	210
EDB	na	<0.02	na	<0.02
DIPE	na	536	<250	470
TAA	na	3110	<6000	2300
TAME	na	914	<500	910
TBA	na	<100	<5000	<20000

MW-7	2/14/08	4/27/10	12/13/10	5/14/13
DTW	26.64	well	well	well
Benzene	59	not	not	not
Toluene	60	accessible	located	located
Ethylbenzene	3			
Xylenes	41			
MTBE	2			
Naphthalene	<2			
Lead	na			
DCA	na			
EDB	na			
DIPE	na			
TAA	na			
TAME	na			
TBA	na			

MW-8	2/14/08	4/27/10	12/13/10	5/14/13
DTW	FP	FP	FP	FP
Benzene	(1.93')	(0.45')	(1.00')	(0.27')
Toluene				
Ethylbenzene				
Xylenes				
MTBE				
Naphthalene				
Lead				
DCA				
EDB				
DIPE				
TAME				
TBA				

MW-9	2/14/08	4/27/10	12/13/10	5/14/13
DTW	2.22	nm	2.30	2.18
Benzene	<1	<5	<5	<5
Toluene	<1	<5	<5	<5
Ethylbenzene	<1	<5	<5	<5
Xylenes	<3	<10	<10	<10
MTBE	<1	<5	<5	<5
Naphthalene	<2	<5	<5	<5
Lead	na	<5	na	na
DCA	na	<5	<5	<5
EDB	na	<0.02	na	<0.02
DIPE	na	<5	<5	<5
TAA	na	<100	<100	<100
TAME	na	<10	<10	<10
TBA	na	<100	<100	<100

MW-10	2/14/08	4/27/10	12/13/10	5/14/13
DTW	20.72	18.91	20.59	18.62
Benzene	401	<5	50	6
Toluene	129	<5	8	<5
Ethylbenzene	167	<5	5	<5
Xylenes	721	<10	52	<10
MTBE	296	4	23	<5
Naphthalene	46	<5	<5	<5
Lead	na	4	na	na
DCA	na	<5	<5	<5
EDB	na	<0.02	na	<0.02
DIPE	na	<5	<5	<5
TAA	na	<100	<100	<100
TAME	na	<10	<10	<10
TBA	na	<100	<100	<100



MW-11	2/14/08	4/27/10	12/13/10	5/14/13
DTW	16.90	16.04	15.80	15.02
Benzene	<1	<5	<5	<5
Toluene	2	3	<5	<5
Ethylbenzene	1	<5	<5	<5
Xylenes	7	4	<10	<10
MTBE	2	<5	<5	<5
Naphthalene	1	<5	<5	<5
Lead	na	<5	na	na
DCA	na	<5	<5	<5
EDB	na	<0.02	na	<0.02
DIPE	na	<5	<5	<5
TAA	na	<100	<100	<100
TAME	na	<10	<10	<10
TBA	na	<100	<100	<100

MW-12	2/14/08	4/27/10	12/13/10	5/14/13
DTW	3.15	2.71	3.33	2.93
Benzene	<1	<5	<5	<5
Toluene	<1	<5	<5	<5
Ethylbenzene	<1	<5	<5	<5
Xylenes	<3	<10	<10	<10
MTBE	<1	<5	<5	<5
Naphthalene	<2	<5	<5	<5
Lead	na	4	na	na
DCA	na	<5	<5	<5
EDB	na	<0.02	na	<0.02
DIPE	na	<5	<5	<5
TAA	na	<100	<100	<100
TAME	na	<10	<10	<10
TBA	na	<100	<100	<100

MW-13	2/14/08	4/27/10	12/13/10	5/14/13
DTW	well	6.31	6.27	1.36
Benzene	not	<5	<5	<5
Toluene	located	<5	<5	<5
Ethylbenzene		<5	<5	<5
Xylenes		<10	<10	<10
MTBE		<5	<5	<5
Naphthalene		<5	<5	<5
Lead		6	na	na
DCA		<5	<5	<5
EDB		0.05	na	<0.02
DIPE		<5	<5	<5
TAA		<100	<100	<100
TAME		<10	<10	<10
TBA		<100	<100	<100

MW-14	2/14/08	4/27/10	12/13/10	5/14/13
DTW	2.09	2.21	2.53	1.53
Benzene	3640	1770	1410	1100
Toluene	14500	6420	4840	4700
Ethylbenzene	2700	1560	1490	1200
Xylenes	14300	8850	8450	7100
MTBE	5500	2020	1500	830
Naphthalene	439	432	359	350
Lead	na	<5	na	na
DCA	na	<5	<250	<250
EDB	na	<0.02	na	<0.02
DIPE	na	96	<250	35
TAA	na	717	<5000	420
TAME	na	134	<500	55
TBA	na	<100	<5000	<5000

MW-15	2/14/08	4/27/10	12/13/10	5/14/13
DTW	nm	10.30	well	well
Benzene	ns	<5	not	not
Toluene		<5	located	located
Ethylbenzene		<5		
Xylenes		<10		
MTBE		<5		
Naphthalene		<5		
Lead		<5		
DCA		<5		
EDB		<0.02		
DIPE		<5		
TAA		<100		
TAME		<10		
TBA		<100		

DMW-1	2/14/08	4/27/10	12/13/10	5/14/13
DTW	26.18	24.12	26.45	23.98
Benzene	<1	<5	3	<5
Toluene	<1	3	4	<5
Ethylbenzene	<1	<5	<5	<5
Xylenes	<3	5	3	<10
MTBE	12	<5	104	<1
Naphthalene	<2	4	<5	<5
Lead	na	<5	na	na
DCA	na	<5	<5	<5
EDB	na	<0.02	na	<0.02
DIPE	na	<5	<5	<5
TAA	na	<100	<100	<100
TAME	na	<10	<10	<10
TBA	na	<100	<100	<100

DMW-2	2/14/08	4/27/10	12/13/10	5/14/13
DTW	20.86	24.20	17.85	16.31
Benzene	<1	<5	<5	<5
Toluene	<1	<5	<5	<5
Ethylbenzene	<1	<5	<5	<5
Xylenes	<3	3	<10	<10
MTBE	<1	<5	<5	<5
Naphthalene	<2	<5	<5	<5
Lead	na	<5	na	na
DCA	na	<5	<5	<5
EDB	na	<0.02	na	<0.02
DIPE	na	<5	<5	<5
TAA	na	<100	<100	<100
TAME	na	<10	<10	<10
TBA	na	<100	<100	<100

DMW-4	2/14/08	4/27/10	12/13/10	5/14/13
DTW	26.44	24.41	26.90	24.30
Benzene	<1	<5	<5	<5
Toluene	<1	<5	<5	<5
Ethylbenzene	<1	<5	<5	<5
Xylenes	<3	<10	<10	<10
MTBE	<1	<5	<5	<5
Naphthalene	<2	<5	<5	<5
Lead	na	<5	na	na
DCA	na	<5	<5	<5
EDB	na	<0.02	na	<0.02
DIPE	na	<5	<5	<5
TAA	na	<100	<100	<100
TAME	na	<10	<10	<10
TBA	na	<100	<100	<100

RW-1			12/13/10	5/14/13
DTW			26.65	FP
Benzene			3550	(0.04')
Toluene			13500	
Ethylbenzene			1190	
Xylenes			6220	
MTBE			24500	
Naphthalene			874	
Lead			na	
DCA			<125	
EDB			na	
DIPE			373	
TAA			3850	
TAME			586	
TBA			5200	

RW-2			12/13/10	5/14/13
DTW			FP	FP
Benzene			(0.02')	(0.30')
Toluene				
Ethylbenzene				
Xylenes				
MTBE				
Naphthalene				
Lead				
DCA				
EDB				
DIPE				
TAA				
TAME				
TBA				

RW-3			12/13/10	5/14/13
DTW			23.68	21.11
Benzene			4860	4900
Toluene			20800	17000
Ethylbenzene			3240	1400
Xylenes			17500	8200
MTBE			10200	7400
Naphthalene			1290	280
Lead			na	na
DCA			<250	<500
EDB			na	<0.02
DIPE			284	260
TAA			<5000	870
TAME			454	420
TBA			<5000	<10000

RW-4			12/13/10	5/14/13
DTW			24.34	10.85
Benzene			2390	4000
Toluene			6720	13000
Ethylbenzene			467	990
Xylenes			4020	5900
MTBE			7780	22000
Naphthalene			169	<1000
Lead			na	na
DCA			<5	97
EDB			na	<0.02
DIPE			203	370
TAA			581	1700
TAME			259	650
TBA			764	1400

RW-5				5/14/13
DTW				FP
Benzene				(1.39')
Toluene				
Ethylbenzene				
Xylenes				
MTBE				
Naphthalene				
Lead				
DCA				
EDB				
DIPE				
TAA				
TAME				
TBA				

RW-6				5/14/13
DTW				FP
Benzene				(3.24')
Toluene				
Ethylbenzene				
Xylenes				
MTBE				
Naphthalene				
Lead				
DCA				
EDB				
DIPE				
TAA				
TAME				
TBA				

RW-7				5/14/13
DTW				FP
Benzene				(4.99')
Toluene				
Ethylbenzene				
Xylenes				
MTBE				
Naphthalene				
Lead				
DCA				
EDB				
DIPE				
TAA				
TAME				
TBA				

RW-8				5/14/13
DTW				18.42
Benzene				8400
Toluene				33000
Ethylbenzene				3000
Xylenes				16000
MTBE				6100
Naphthalene				<2500
Lead				na
DCA				<2500
EDB				0.08
DIPE				250
TAA				<50000
TAME				430
TBA				<50000

RW-9				5/14/13
DTW				FP
Benzene				(0.60')
Toluene				
Ethylbenzene				
Xylenes				
MTBE				
Naphthalene				
Lead				
DCA				
EDB				
DIPE				
TAA				
TAME				
TBA				

RW-10				5/14/13
DTW				19.93
Benzene				6300
Toluene				31000
Ethylbenzene				3500
Xylenes				19000
MTBE				4300
Naphthalene				<2500
Lead				na
DCA				<2500
EDB				<0.02
DIPE				210
TAA				<50000
TAME				300
TBA				<50000

RW-11				5/14/13
DTW				15.48
Benzene				6400
Toluene				29000
Ethylbenzene				3000
Xylenes				17000
MTBE				3700
Naphthalene				<2500
Lead				na
DCA				<2500
EDB				<0.02
DIPE				<5000
TAA				<50000
TAME				350
TBA				<50000

RW-12				5/14/13
DTW				18.43
Benzene				6800
Toluene				26000
Ethylbenzene				3200
Xylenes				17000
MTBE				6100
Naphthalene				570
Lead				na
DCA				<1000
EDB				<0.02
DIPE				240
TAA				<20000
TAME				390
TBA				<20000

RW-13				5/14/13
DTW				17.41
Benzene				2800
Toluene				5100
Ethylbenzene				990
Xylenes				5300
MTBE				4100
Naphthalene				230
Lead				na
DCA				<250
EDB				<0.02
DIPE				140
TAA				<5000
TAME				230
TBA				<5000

CK-1	2/14/08	4/27/10	12/13/10	5/14/13
DTW				
Benzene	9	3	4	<5
Toluene	17	6	6	9
Ethylbenzene	5	2	2	2
Xylenes	24	8	9	13
MTBE	12	5	5	5
Naphthalene	1	<5	<5	<5
Lead	na	na	na	na
DCA	na	<5	<5	<5
EDB	na	<0.02	na	<0.02
DIPE	na	<5	<5	<10
TAA	na	<100	<100	<100
TAME	na	<10	<10	<10
TBA	na	<100	<100	<100

CK-2	2/14/08	4/27/10	12/13/10	5/14/13
DTW				
Benzene	ns	13	16	24
Toluene		36	36	75
Ethylbenzene		6	7	15
Xylenes		32	34	89
MTBE		17	23	21
Naphthalene		<5	7	3
Lead		na	na	na
DCA		<5	<5	<5
EDB		<0.02	na	<0.02
DIPE		<5	<5	<10
TAA		<100	<100	8
TAME		<10	<10	1
TBA		<100	<100	<100

CK-3	2/14/08	4/27/10	12/13/10	5/14/13
DTW				
Benzene	21	13	18	12
Toluene	54	38	39	36
Ethylbenzene	10	7	8	7
Xylenes	62	37	42	40
MTBE	<40	19	28	12
Naphthalene	4	<5	4	<5
Lead	na	na	na	na
DCA	na	<5	<5	<5
EDB	na	<0.02	na	<0.02
DIPE	na	<5	<5	<1
TAA	na	<100	<100	<100
TAME	na	<10	<10	<1
TBA	na	<100	<100	<100

WSW-1	2/14/08	4/27/10	12/13/10	5/14/13
DTW				
Benzene	<1	ns	<5	<1
Toluene	<1		<5	<1
Ethylbenzene	<1		<5	<1
Xylenes	<3		<10	<1
MTBE	<1		<5	<1
Naphthalene	<2		<5	<1
Lead	na		na	na
DCA	na		<5	<1
EDB	na		na	<0.02
DIPE	na		<5	<10
TAA	na		<100	<100
TAME	na		<10	<10
TBA	na		<100	<100

FP- free-phase product  
na- not analyzed  
nd- not detected  
nm- not measured  
ns- not sampled



Catherine B. Templeton, Director

*Promoting and protecting the health of the public and the environment*

MR LARRY HINKLE  
JOCASSEE RECREATION CENTER LLC  
PO BOX 878  
PICKENS SC 29671-0878

JUN 12 2013



Re: Monitoring report review  
Former Highway 11 Grocery, 13527 SC-11 North, Salem, SC  
UST Permit #03439  
Release reported November 28, 2000  
Monitoring report received May 23, 2013  
Oconee County

Dear Mr. Hinkle:

The Underground Storage Tank (UST) Management Division has reviewed the referenced monitoring report that documents a ground-water sampling event conducted on May 14, 2013. A copy of the report and a table showing historical analytical results are enclosed for your records.

The report documents that free-phase product (FPP) has emerged or increased in recovery wells RW-1, RW-2RW-5, RW-6, RW-7, and RW-9. The Division will direct several long duration, aggressive fluid and vapor recovery (AFVR) event on the wells in the near future to remove the FPP.

On all correspondence concerning this site, please reference the UST Permit #03439. If you have any questions or comments, feel free to contact me by telephone at (803) 898-0655, by fax at (803) 898-0673, or by e-mail at [padgettj@dhc.sc.gov](mailto:padgettj@dhc.sc.gov).

Sincerely,

Joel P. Padgett, P.G., Geologist/Hydrologist  
Corrective Action Section  
Underground Storage Tank Management Division  
Bureau of Land and Waste Management

JPP/jpp  
03439.cclet1

enc: Monitoring report  
Historical analytical table  
cc: Technical file (w/o enc)

DHEC/UST/JPP/061113



Catherine B. Templeton, Director

*Promoting and protecting the health of the public and the environment*

MR JAMES W REID  
185 REID DR  
SALEM SC 29676

JUN 12 2013



Re: Monitoring report review  
Former Highway 11 Grocery, 13527 SC-11 North, Salem, SC  
UST Permit #03439  
Release reported November 28, 2000  
Monitoring report received May 23, 2013  
Oconee County

Dear Mr. Reid:

The Underground Storage Tank (UST) Management Division has reviewed the referenced monitoring report that documents a ground-water sampling event conducted on May 14, 2013. A copy of the report and a table showing historical analytical results are enclosed for your records.

The report documents that free-phase product (FPP) has emerged or increased in recovery wells RW-1, RW-2RW-5, RW-6, RW-7, and RW-9. The Division will direct several long duration, aggressive fluid and vapor recovery (AFVR) event on the wells in the near future to remove the FPP.

On all correspondence concerning this site, please reference the UST Permit #03439. If you have any questions or comments, feel free to contact me by telephone at (803) 898-0655, by fax at (803) 898-0673, or by e-mail at [padgettj@dhc.sc.gov](mailto:padgettj@dhc.sc.gov).

Sincerely,

Joel P. Padgett, P.G., Geologist/Hydrologist  
Corrective Action Section  
Underground Storage Tank Management Division  
Bureau of Land and Waste Management

JPP/jpp  
03439.cclet1

enc: Monitoring report  
Historical analytical table  
cc: Technical file (w/o enc)

DHEC/UST/JPP/061113



Catherine B. Templeton, Director

Promoting and protecting the health of the public and the environment

MR RONNY LOWDER  
EMERALD INC  
P O BOX 3050  
SUMTER SC 29151-3050

JUN 26 2013



Re: AFVR  
Contract #IFB-5400005023-11/8/12-EMW; PO #4600220167  
Notice to proceed

Dear Mr. Lowder:

Under the terms and conditions of the referenced contract, and per the schedule submitted to the Underground Storage Tank (UST) Management Division on June 24, 2013, free-phase product (FPP) recovery using aggressive fluid vapor recovery (AFVR) has been approved for the UST facilities listed below. Emerald, Inc. may proceed upon receipt of this letter. Enclosed are packets containing necessary information to perform FPP recovery at each facility. Each facility has been assigned an individual cost agreement (CA) number, work scope, work scope start date, and report due date. As specified in the contract, a report and invoice must be submitted on or before the due date. The appropriate CA number and Purchase Order (PO) #4600220167 should be referenced on each invoice submitted.

Permit	Facility	County	Work Scope	CA	Start Date	Due Date
01496	Charleston Comm. of Public Works	Charleston	1 48-hour event	46059	11/18/13	11/26/13
02093	Fort Lawn Marathon	Chester	1 96-hour event	44160	10/21/13	11/1/13
02532	Wood Brothers Store	Colleton	2 8-hour events	45866	9/1/13	11/15/13
03144	Ridgeway Section Shed	Fairfield	1 96-hour event	46006	11/11/13	11/19/13
03439	Former Highway 11 Grocery	Oconee	2 96-hour events	46106	7/15/13	12/1/13
05265	Okatee Club	Jasper	2 8-hour events	45854	9/1/13	11/15/13
06291	Bennettsville Maint.	Marlboro	2 24-hour events	45832	9/14/13	11/15/13
06738	Former Carroll's Union 76	Oconee	4 96-hour events	45926	7/22/13	12/1/13
08937	H.Q. Heath Self Serve 1	Sumter	1 24-hour event	45933 45934	7/15/13	8/1/13
11702	Colonel Creek Landing	Fairfield	1 96-hour event	46099	10/21/13	11/1/13



Permit	Facility	County	Work Scope	CA	Start Date	Due Date
12097	Greenwave Amoco #1	Dorchester	1 48-hour event	46022	10/21/13	11/15/13
12418	Joseph Brooks Grocery	Richland	1 96-hour event	45918	10/11/13	11/12/13
12655	Hilton's Grocery	York	1 48-hour event	45917	9/16/13	9/20/13
14162	Getsinger's Grocery	Anderson	1 96-hour event	46096	11/4/13	11/11/13
14472	Southside Grocery	Chester	1 24-hour event	45831	9/1/13	9/10/13
16604	Pit Stop 31	Lexington	3 24-hour events	45989	8/1/13	10/27/13
17042	Former Mike's Jiffy Mart	Bamberg	1 24-hour event	45965	10/24/13	11/15/13
18787	Blitchington's Grocery	Orangeburg	1-96-hour event	46032	11/4/13	12/1/13
18955	Former Donnie's Muffler Shop	Sumter	1 48-hour event	46095	7/15/13	8/1/13
19328	Phillips Rental Property	Orangeburg	1 96-hour event	46060	11/11/13	12/1/13

The FPP recovery at each facility will be performed on behalf of the UST Owner/Operator (O/O) and payment will be made from the State Underground Petroleum Environmental Response Bank (SUPERB) Account. The O/O has no obligation to pay for the specified work scope. Please note that Sections 44-2-110(4) and 44-2-130(B) of the SUPERB Statute state that no costs will be allowed (considered for payment) unless prior approval from the South Carolina Department of Health and Environmental Control (Agency) is obtained.

Any changes to the work scope must be pre-approved by UST Management Division in order for Emerald to seek payment. Please contact the UST Project Manager for technical and/or financial approval. Any item that is not clearly or completely addressed in the report will not be compensated by SUPERB.

The Division grants pre-approval for transportation of FPP and petroleum-contaminated groundwater from the referenced UST facility to a permitted treatment facility. The FPP and contaminated groundwater must be accepted by the approved treatment facility. There can be no spillage or leakage in transport. A copy of the disposal manifest from the receiving facility that clearly designates the quantity received must be included as an appendix to the report.

If you have any questions concerning this correspondence or need further assistance, please contact me by phone at (803) 898-0655, by fax at (803) 898-0673, or by e-mail at [padgettj@dhc.sc.gov](mailto:padgettj@dhc.sc.gov).

Sincerely,



Joel P. Padgett, Geologist/Hydrologist  
 Corrective Action Section  
 UST Management Division  
 Bureau of Land and Waste Management

enc: Information packets  
 AFVR Schedule 3  
 cc: Technical file (w/o enc)

# Emerald, Inc.

CONSULTING AND ENGINEERING  
SERVICES IN ENVIRONMENTAL AFFAIRS

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2520 TAHOE DRIVE • POST OFFICE BOX 3050 • SUMTER, SOUTH CAROLINA 29151

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WEBSITE:  
www.emeraldinc-us.com

TELEPHONE (803) 469-5454  
FAX (803) 469-5465

October 30, 2013

Joel Padgett, P.G. Hydrogeologist  
Corrective Action Section  
Underground Storage Tank Management Division  
Bureau of Underground Storage Tank Management  
South Carolina Department of Health and  
Environmental Control  
2600 Bull Street  
Columbia, SC 29201



Aggressive Fluid Vapor Recovery Report  
Former Highway 11 Grocery  
Salem, South Carolina  
UST Permit #03439  
Emerald Job 13-055A

Mr. Padgett,

Please find the attached Aggressive Fluid Vapor Recovery (AFVR) Report for a 96-hour event conducted at the Former Highway 11 Grocery site. A site reconnaissance was conducted on October 10, 2013 to locate each monitoring well, gauge extraction wells, and assess site conditions. Prior to conducting this AFVR event information gathered during the site reconnaissance was presented to the SCDHEC project manager for review.

## **AGGRESSIVE FLUID VAPOR RECOVERY EVENTS**

On October 14 through 18, 2013, Emerald, Inc. personnel performed a 96-hour AFVR event using RW-7, RW-8 and RW-9 as extraction locations. This 96-hour AFVR event was conducted to remove free product previously detected at the subject site. Free phase petroleum product was detected in RW-7 at a thickness of 6.04 ft., RW-8 at a thickness of 0.01 ft., RW-9 at a thickness of 0.75 ft. prior to the event. At the conclusion of the event free phase

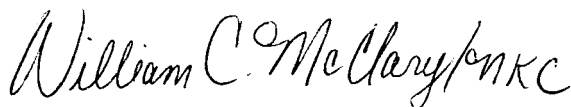
product was detected in RW-7 at a thickness of 0.02 ft. Monitoring well locations are presented on the attached site map provided by SCDHEC.

Table 1 presents the recorded data for the off-gas concentrations (by PID), post treatment off-gas concentrations (if required), off-gas velocities, knockout tank vacuum. Table 2 presents the stinger depths, wellhead vacuum measurements for each extraction well utilized during the event. Table 2 also contains water levels measurements and magnehelic readings for selected nearby monitoring wells. Emerald, Inc. field personnel collected data at thirty minute intervals for the first eight hours of the event, then at one hour intervals from hours nine through twenty four and at two hour intervals from twenty four through ninety six hours of the event. During the hours of midnight to 8 AM event monitoring was suspended. Due to the location of the site being vacant, off-gas treatment was not utilized during this event.

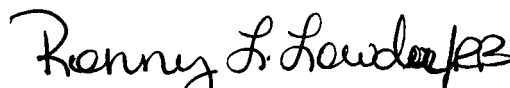
According to the calculations as presented on Table 1, a total of 888.87 pounds of hydrocarbons (as vapor) and 142.13 equivalent gallons of hydrocarbons were removed during this event. Approximately 10.30 gallons of free phase product was detected in the knockout tank during this event. A total of 9,502 gallons of petroleum contaminated groundwater was transported to the Blue Meadows Wastewater Treatment Facility in Belton, SC for proper disposal. A copy of the disposal manifest for this event is included as an attachment.

If you have any questions or concerns please feel free to contact Emerald, Inc. at 803-469-5454.

Sincerely,  
Emerald, Inc.



William C. McClary, P.G.  
Project Manager



Ronny L. Lowder  
President

Attachments

**TABLE 1  
AFVR MONITORING DATA  
FORMER HIGHWAY 11 GROCERY  
SALEM, SOUTH CAROLINA  
SCDHEC SITE ID #03439  
EMERALD JOB #13-055A**

Extraction Wells	Date	Time (hh:mm)	Differential Time (hr)	Knockout Tank Vacuum (in. Hg)	Off-Gas Concentration (PPM)	Post-Treatment Concentration (PPM)	Offgas Velocity (ft/min)	Flow Rate (CFM)	CG:M (mg/dsm <sup>3</sup> )	Cg (Lb/Dscf)	Removal Rate (Lbs/Hr)	Interval Removal (Lbs)
RW-7	10/14/13	12:30	Start	12	> 5,000	N/A	3,017	147.83	26,589	1.66E-03	14.72	-
RW-8		13:00 ↓	0.5	12	> 5,000	N/A	3,537	173.31	26,589	1.66E-03	17.26	8.00
RW-9		13:30 ↓	0.5	12	> 5,000	N/A	3,430	168.07	26,589	1.66E-03	16.74	8.50
		14:00 ↓	0.5	14	> 5,000	N/A	3,211	157.34	26,589	1.66E-03	15.67	8.10
		14:30 ↓	0.5	14	> 5,000	N/A	3,048	149.35	26,589	1.66E-03	14.87	7.64
		15:00 ↓	0.5	14	> 5,000	N/A	2,910	142.59	26,589	1.66E-03	14.20	7.27
		15:30 ↓	0.5	14	> 5,000	N/A	2,736	134.06	26,589	1.66E-03	13.35	6.89
		16:00 ↓	0.5	14	> 5,000	N/A	2,640	129.36	26,589	1.66E-03	12.88	6.56
		16:30 ↓	0.5	14	> 5,000	N/A	2,607	127.74	26,589	1.66E-03	12.72	6.40
		17:00 ↓	0.5	14	> 5,000	N/A	2,653	130.00	26,589	1.66E-03	12.95	6.42
		17:30 ↓	0.5	14	> 5,000	N/A	2,590	126.91	26,589	1.66E-03	12.64	6.40
		18:00 ↓	0.5	14	> 5,000	N/A	2,596	127.20	26,589	1.66E-03	12.67	6.33
		18:30 ↓	0.5	14	> 5,000	N/A	2,407	117.94	26,589	1.66E-03	11.75	6.10
		19:00 ↓	0.5	14	> 5,000	N/A	2,350	115.15	26,589	1.66E-03	11.47	5.80
		19:30 ↓	0.5	14	> 5,000	N/A	2,201	107.85	26,589	1.66E-03	10.74	5.55
		20:00 ↓	0.5	14	> 5,000	N/A	2,163	105.99	26,589	1.66E-03	10.56	5.32
		20:30 ↓	0.5	14	> 5,000	N/A	2,084	102.12	26,589	1.66E-03	10.17	5.18
		21:30 ↓	1.0	13	> 5,000	N/A	2,245	110.01	26,589	1.66E-03	10.96	10.56
		22:30	1.0	13	> 5,000	N/A	2,256	110.54	26,589	1.66E-03	11.01	10.98
		23:30 ↓	1.0	13	> 5,000	N/A	2,119	103.83	26,589	1.66E-03	10.34	10.68
	10/15/13	0:00	0.5	10	> 5,000	N/A	2,307	113.04	26,589	1.66E-03	11.26	5.40
		8:00 ↑	8.0	12	> 5,000	N/A	2,368	116.03	26,589	1.66E-03	11.56	91.26
		9:00 ↓	1.0	12	> 5,000	N/A	2,387	116.96	26,589	1.66E-03	11.65	11.60
		10:00 ↓	1.0	13	> 5,000	N/A	2,391	117.16	26,589	1.66E-03	11.67	11.66
		11:00 ↓	1.0	13	> 5,000	N/A	2,410	118.09	26,589	1.66E-03	11.76	11.71
		12:00 ↓	1.0	14	> 5,000	N/A	5,441	266.61	26,589	1.66E-03	26.55	19.16
		13:00 ↓	1.0	14	> 5,000	N/A	2,511	123.04	26,589	1.66E-03	12.25	19.40
		15:00 ↓	2.0	14	4,698	N/A	2,764	135.44	24,983	1.56E-03	12.67	24.93
		17:00 ↓	2.0	14	3,961	N/A	2,811	137.74	21,063	1.31E-03	10.87	23.54
		19:00 ↓	2.0	13	3,270	N/A	2,843	139.31	17,389	1.09E-03	9.07	19.94
		21:00	2.0	12	3,127	N/A	2,944	144.26	16,628	1.04E-03	8.99	18.06
		23:00	2.0	11	3,049	N/A	3,120	152.88	16,214	1.01E-03	9.28	18.27

**TABLE 1 Cont'd.  
AFVR MONITORING DATA  
FORMER HIGHWAY 11 GROCERY  
SALEM, SOUTH CAROLINA  
SCDHEC SITE ID #03439  
EMERALD JOB #13-055A**

Extraction Wells	Date	Time (hh:mm)	Differential Time (hr)	Knockout Tank Vacuum (in. Hg)	Off-Gas Concentration (PPM)	Post-Treatment Concentration (PPM)	Offgas Velocity (ft/min)	Flow Rate (CFM)	CG:M (mg/dsm <sup>3</sup> )	Cg (Lb/Dscf)	Removal Rate (Lbs/Hr)	Interval Removal (Lbs)
RW-7	10/16/13	0:00	2.0	11	2,911	N/A	3,023	148.13	15,480	9.66E-04	8.59	17.87
RW-8		8:00	↑ 8.0	11.5	3,696	N/A	2,345	114.91	19,654	1.23E-03	8.46	68.19
RW-9		10:00	2.0	13	3,805	N/A	2,386	116.91	20,234	1.26E-03	8.86	17.32
		12:00	2.0	14	3,650	N/A	2,291	112.26	19,410	1.21E-03	8.16	17.02
		14:00	2.0	14	3,321	N/A	2,303	112.85	17,660	1.10E-03	7.46	15.63
		16:00	2.0	14	3,187	N/A	2,314	113.39	16,948	1.06E-03	7.20	14.66
		18:00	2.0	14	3,274	N/A	2,411	118.14	17,410	1.09E-03	7.70	14.90
		20:00	2.0	14	3,259	N/A	2,389	117.06	17,330	1.08E-03	7.60	15.30
		22:00	2.0	13	3,107	N/A	2,427	118.92	16,522	1.03E-03	7.36	14.96
	10/17/13	0:00	2.0	13	3,115	N/A	2,453	120.20	16,565	1.03E-03	7.46	14.82
		8:00	8.0	12	3,417	N/A	2,104	103.10	18,171	1.13E-03	7.02	57.90
		10:00	2.0	12.5	3,910	N/A	2,207	108.14	20,792	1.30E-03	8.42	15.44
		12:00	2.0	12.5	3,115	N/A	2,214	108.49	16,565	1.03E-03	6.73	15.15
		14:00	2.0	13	3,646	N/A	2,190	107.31	19,388	1.21E-03	7.79	14.52
		16:00	2.0	13	4,071	N/A	2,147	105.20	21,648	1.35E-03	8.53	16.32
		18:00	2.0	13	4,107	N/A	2,153	105.50	21,840	1.36E-03	8.63	17.16
		20:00	2.0	13	4,013	N/A	2,169	106.28	21,340	1.33E-03	8.50	17.13
		22:00	2.0	13	3,927	N/A	2,191	107.36	20,883	1.30E-03	8.40	16.89
	10/18/13	0:00	2.0	12	3,996	N/A	2,209	108.24	21,250	1.33E-03	8.62	17.01
		8:00	8.0	11	3,621	N/A	2,037	99.81	19,255	1.20E-03	7.20	63.26
		10:00	2.0	13	3,217	N/A	2,099	102.85	17,107	1.07E-03	6.59	15.21
		12:00	2.0	14	3,184	N/A	2,116	103.68	16,932	1.06E-03	6.58	13.78
		12:30	0.5	14	3,101	N/A	2,174	106.53	16,490	1.03E-03	6.58	3.29
<b>Well Gauging Data:</b>			<b>Prior to AFVR Event</b>			<b>After AFVR Event</b>			<b>Equations</b>			
<b>Well No.</b>	<b>Diameter (in)</b>	<b>Screened Interval (ft)</b>	<b>Depth to Product (ft)</b>	<b>Depth to Water (ft)</b>	<b>Product Thickness (ft)</b>	<b>Depth to Product (ft)</b>	<b>Depth to Water (ft)</b>	<b>Product Thickness (ft)</b>	$Cg,m = PPMg*(Mg/K3)$ Removal Rate = Cg * Flow Rate * 60Min/Hr Interval Removal = (T <sub>1</sub> + T <sub>2</sub> )/2 PPM = Part per Million (by PID) Cg,m = mg/dsm <sup>3</sup> (mass concentration of gasoline emission) Mg = 128 mg/mg-mole, molecular weight of gasoline K3 = 24.07 dsm <sup>3</sup> /1E6 mg-mole, mass to volume conversion Cg = lb/dscf, mass concentration of gasoline by emission Removal Rate = lb/hr,pollutant mass removal rate of emission			
RW-7	4	10-30	18.75	24.79	6.04	23.07	23.09	0.02				
RW-8	4	8.5-28.5	19.11	19.12	0.01	-	21.93	-				
RW-9	4	10-30	20.81	21.56	0.75	-	24.00	-				
<b>Product Thickness</b>			<b>Recovery / Disposal Information</b>									
Product observed in Sight Tube? 0.43 ft.			Hydrocarbons Removed (vapor):			888.87	Pounds					
Product detected in Tanker? No			Hydrocarbons Removed (liquid):			10.30	Gallons					
<b>Weather Conditions</b>		<b>Emerald, Inc. Personnel</b>		<b>Total Hydrocarbons Removed:</b>		142.13	<b>Equivalent Gallons</b>					
10/14/13	Cloudy, 64-73°F	C. Racer		<b>Molecular Weight Utilized:</b>		128	<b>mg/mg-mole</b>					
10/15/13	Cloudy, 62-70°F	S. Hutcheson		<b>Disposal Facility:</b>		Blue Meadows Treatment Facility in Belton, SC						
10/16/13	Sunny, 57-73°F			<b>Total Liquids Removed:</b>		9,502	<b>Gallons</b>					
10/17/13	Rain, 64-70°F											
<b>Notes</b>												
↑ = Stinger raised    ↓ = Stinger lowered												

**TABLE 2  
AFVR MONITORING DATA  
FORMER HIGHWAY 11 GROCERY  
SALEM, SOUTH CAROLINA  
SCDHEC SITE ID #03439  
EMERALD JOB #13-055A**

Date	Time (hh:mm)	Extraction Wells						Event Monitoring						
		RW-7		RW-8		RW-9		MW-8			RW-10		RW-12	
		Stinger Depth (ft.)	Wellhead Vacuum (in. Hg)	Stinger Depth (ft.)	Wellhead Vacuum (in. Hg)	Stinger Depth (ft.)	Wellhead Vacuum (in. Hg)	Magnehelic Reading (inches of water)	Depth to Product	Depth to Water	Magnehelic Reading (inches of water)	Depth to Water	Magnehelic Reading (inches of water)	Depth to Water
10/14/13	12:30	19	10	19.5	10	21	9.5	Pre	21.90	21.98	Pre	20.83	Pre	19.23
	13:00	19.5	10	20	10	21.5	10	4.20	22.00	22.08	2.40	20.90	0.90	19.27
	13:30	20	10.5	20.5	11	22	10.5	>5	22.19	22.27	2.50	20.99	1.00	19.31
	14:00	20.5	12	21	11.5	22.5	11	>5	22.45	22.51	2.70	21.09	1.00	19.36
	14:30	21	13	21.5	11.5	23	11	>5	22.70	22.76	2.80	21.18	1.10	19.40
	15:00	21.5	13.5	22	12	23.5	12	>5	23.00	23.05	3.00	21.27	1.10	19.46
	15:30	22	13.5	22.5	12.5	24	12.5	>5	23.38	23.41	3.10	21.36	1.10	19.51
	16:00	22.5	13.5	23	12.5	24.5	13	>5	23.80	23.82	3.30	21.44	1.20	19.55
	16:30	23	13	23.5	12	25	12	>5	23.99	24.00	3.10	21.51	1.20	19.58
	17:00	23.5	13	24	11.5	25.5	11.5	>5	-	24.19	2.60	21.57	1.20	19.60
	17:30	24	12.5	24.5	11.5	26	11	>5	-	24.38	2.30	21.66	1.10	19.63
	18:00	24.5	12	25	11	26.5	11	>5	-	24.57	2.10	21.74	1.10	19.66
	18:30	25	12	25.5	11	27	11	>5	-	24.56	2.10	21.75	1.10	19.65
	19:00	25.5	12	26	11	27.5	11	>5	-	24.43	2.20	21.77	1.00	19.65
	19:30	26	12	26.5	11	28	11	>5	-	24.35	2.30	21.79	1.00	19.67
	20:00	26.5	12	27	11	28.5	11	>5	-	24.26	2.30	21.81	1.10	19.68
	20:30	27	12	27	11	29	11	>5	-	24.15	2.40	21.81	1.10	19.69
	21:30	28	12	27	11	29	11	>5	-	24.07	2.50	21.80	1.10	19.69
	22:30	29	12	27	10	29	10	>5	-	23.96	2.90	21.75	1.10	19.70
	23:30	29.5	11	27	10	29	9.5	>5	-	23.89	3.20	21.69	1.10	19.72
10/15/13	0:00	29.5	9	27	8.5	29	9	>5	-	23.83	3.30	21.64	1.10	19.73
	8:00	19	11	19.5	10	21	10	>5	-	23.91	2.60	21.78	1.00	19.80
	9:00	20	11.5	20.5	10	22	10	>5	-	23.91	2.70	21.78	1.00	19.80
	10:00	21	11.5	21.5	11	23	10.5	>5	-	23.92	2.90	21.77	1.10	19.81
	11:00	22	12	22.5	11	24	10.5	>5	-	23.93	3.00	21.75	1.10	19.81
	12:00	23	12	23.5	11.5	25	10.5	>5	-	23.94	3.20	21.74	1.20	19.82
	13:00	24	12.5	24.5	12	26	11	>5	-	24.09	3.30	21.73	1.40	19.82
	15:00	26	12.5	26.5	12	28	11	>5	-	24.23	2.80	21.71	1.40	19.83
	17:00	28	12	27	11.5	29	11	>5	-	24.47	2.80	21.84	1.50	19.86
	19:00	29.5	12	27	11	29	11	>5	-	24.73	2.80	21.97	1.50	19.89
	21:00	29.5	12	27	11	29	10.5	>5	-	24.79	2.80	21.99	1.50	19.91
	23:00	29.5	11	27	10.5	29	10.5	>5	-	24.85	2.70	22.01	1.50	19.93

Notes:



**Explanation:**

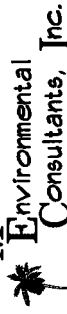
- Location of Waterable Bracketing Monitoring Well
- ⊕ Location of Double Cased "Deep" Monitoring Well
- ⊙ Location of 4-inch Recovery Well
- ↑ Estimated Groundwater Flow Direction
- Estimated Location of Removed Underground Storage Tanks
- ⊙(SU-2) Location of Surface Water Sample Collection

— Fence  
 --- Stream

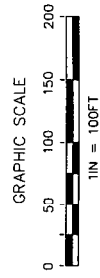
**Site Base Map**

Highway 11 Grocery  
 13527 S.C. Highway 11  
 Salem, South Carolina  
 SCDHEC Site ID # 03439

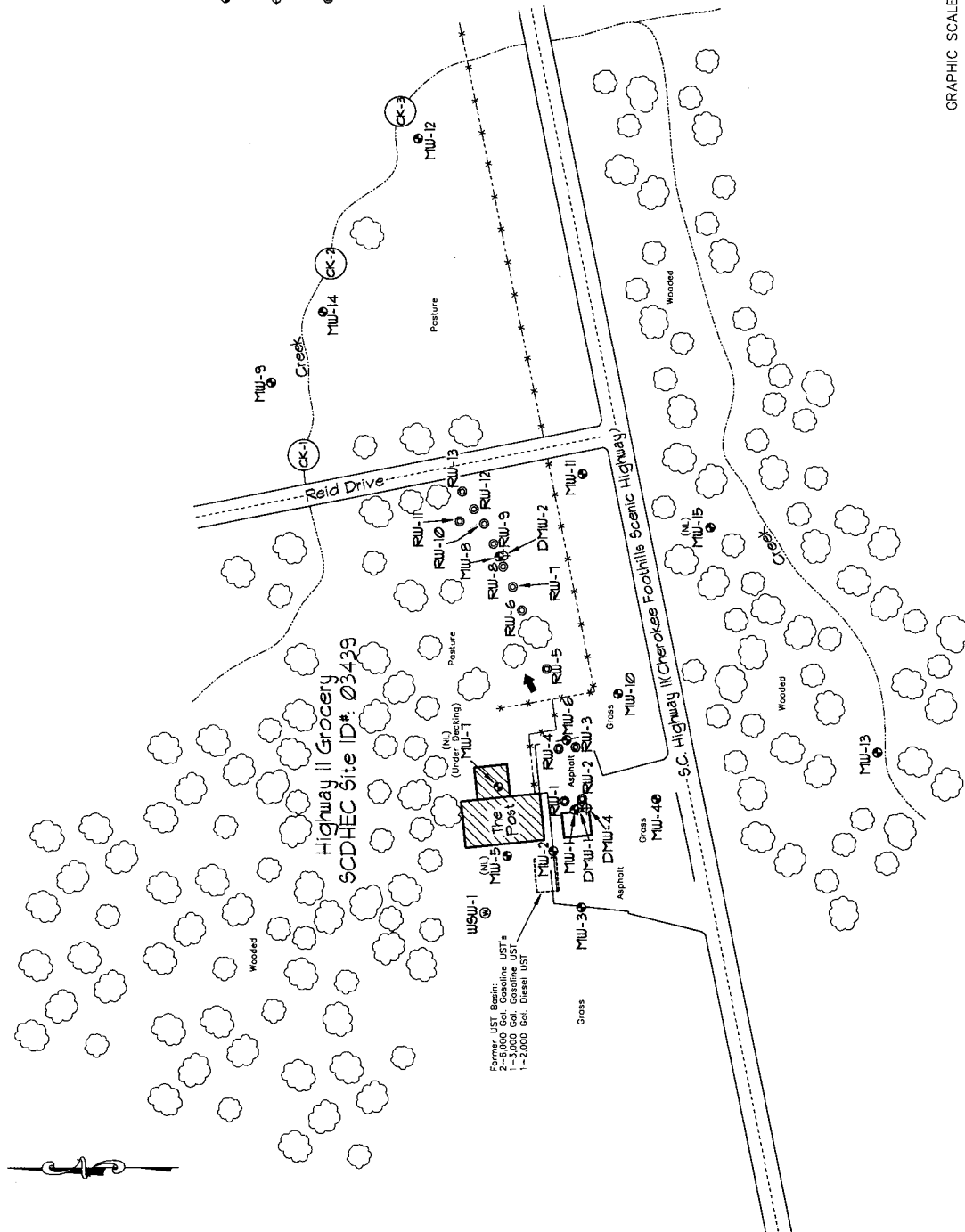
JOB NO. 12-1170  
 DATE November 14, 2012  
 FIGURE



Drawing Based on MECI Field Notes and SCDHEC Files. All Locations are Approximate.



ALL LOCATIONS ARE APPROXIMATE





NON-HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No.	Material Document No. <i>206</i>	2. Page 1 of 1
3. Generator's Name and Mailing Address <i>Fmr. Hwy. 11 Grocery Salem, SC</i>		UST Permit # <i>03439</i>		
4. Generator's Phone ( )	5. Transporter 1 Company Name	6. US EPA ID Number	A. State Transporter's ID	B. Transporter 1 Phone
	7. Transporter 2 Company Name	8. US EPA ID Number	C. State Transporter's ID	D. Transporter 2 Phone
9. Designated Facility Name and Site Address <i>Blue Meadows Facility Bolton, IL</i>	10. US EPA ID Number	E. State Facility's ID	F. Facility's Phone	
11. WASTE DESCRIPTION		12. Containers	13. Total Quantity	14. Unit Wt./Vol.
a. NON-HAZARDOUS PETROLEUM CONTAMINATED WATER-PROFILE #		No.	Type	
b.				
c. <i>PH</i>				
d. <i>8.4</i>				
15. Special Handling Instructions and Additional Information		16. Generator's Certification: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.		
17. Transporter 1 Acknowledgement of Receipt of Materials		18. Transporter 2 Acknowledgement of Receipt of Materials		
Printed/Typed Name <i>Corey Racer</i>	Signature <i>[Signature]</i>	Date Month Day Year <i>10   16   13</i>		
Printed/Typed Name <i>Buddy Cothran</i>	Signature <i>[Signature]</i>	Date Month Day Year <i>10   16   13</i>		
Printed/Typed Name	Signature	Date Month Day Year		
19. Discrepancy Indication Space		20. Facility Owner or Operator, Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.		
Printed/Typed Name <i>Clayton St. John</i>	Signature <i>[Signature]</i>	Date Month Day Year <i>10   16   13</i>		

GENERATOR

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NON-HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No.		Manifest Document No. 207		2. Page 1 of 1	
3. Generator's Name and Mailing Address Fmr. Hwy. 11 Grocery Salem, SC Job# 13-055A							
4. Generator's Phone		6. US EPA ID Number		A. State Transporter's ID			
5. Transporter 1 Company Name		7. Transporter 2 Company Name		B. Transporter 1 Phone			
8. Designated Facility Name and Site Address Blue Meadows Facility Belton, SC		9. US EPA ID Number		C. State Transporter's ID			
				D. Transporter 2 Phone			
				E. State Facility's ID			
				F. Facility's Phone			
11. WASTE DESCRIPTION			12. Containers		13. Total Quantity	14. Unit Wt./Vol.	
a. NON-HAZARDOUS PETROLEUM CONTAMINATED WATER-PROFILE #			PH		4,633	gal.	
b.			8.2				
c.			10,57				
d.							
6. Additional Descriptions for Materials Listed Above				H. Handling Codes for Wastes Listed Above			
15. Special Handling Instructions and Additional Information							
16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.							
Printed/Typed Name Corey Racer			Signature 			Date Month Day Year 10   18   13	
17. Transporter 1 Acknowledgment of Receipt of Materials			Printed/Typed Name Buddy Athan			Signature 	
						Date Month Day Year 10   18   13	
18. Transporter 2 Acknowledgment of Receipt of Materials			Printed/Typed Name			Signature	
						Date Month Day Year	
19. Discrepancy Indication Space							
20. Facility Owner or Operator, Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.							
Printed/Typed Name Chad Szibulak			Signature 			Date Month Day Year 10   18   13	

GENERATOR

TRANSPORTER

FACILITY

# Emerald, Inc.

CONSULTING AND ENGINEERING  
SERVICES IN ENVIRONMENTAL AFFAIRS

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2520 TAHOE DRIVE • POST OFFICE BOX 3050 • SUMTER, SOUTH CAROLINA 29151

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WEBSITE:  
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TELEPHONE (803) 469-5454  
FAX (803) 469-5465

October 30, 2013

Joel Padgett P.G., Hydrogeologist  
Corrective Action Section  
Underground Storage Tank Management Division  
Bureau of Underground Storage Tank Management  
South Carolina Department of Health and  
Environmental Control  
2600 Bull Street  
Columbia, SC 29201

Aggressive Fluid Vapor Recovery Report  
Former Highway 11 Grocery  
Salem, South Carolina  
UST Permit #03439  
Emerald Job 13-055B

Mr. Padgett,

Please find the attached Aggressive Fluid Vapor Recovery (AFVR) Report for a 96-hour event conducted at the Former Highway 11 Grocery site. Prior to conducting this AFVR event, information gathered during the site reconnaissance was presented to the SCDHEC project manager for review.

## **AGGRESSIVE FLUID VAPOR RECOVERY EVENTS**


On October 14 through 18, 2013, Emerald, Inc. personnel performed a 96-hour AFVR event using RW-5 and RW-6 as extraction locations. This 96-hour AFVR event was conducted to remove free product previously detected at the subject site. Free phase petroleum product was detected in RW-5 at a thickness of 1.52 ft. and RW-6 at a thickness of 3.49 ft. At the conclusion of the event free phase product was not detected in the extraction wells. Monitoring well locations are presented on the attached site map provided by SCDHEC.

Table 1 presents the recorded data for the off-gas concentrations (by PID), post treatment off-gas concentrations (if required), off-gas velocities, knockout tank vacuum. Table 2 presents the stinger depths, wellhead vacuum measurements for each extraction well utilized during the event. Table 2 also contains water levels measurements and magnehelic readings for selected nearby monitoring wells. Emerald, Inc. field personnel collected data at thirty minute intervals for the first eight hours of the event, then at one hour intervals from hours nine through twenty four and at two hour intervals from twenty four through ninety six hours of the event. During the hours of midnight to 8 AM event monitoring was suspended. Due to the location of the site being vacant, off-gas treatment was not utilized during this event.

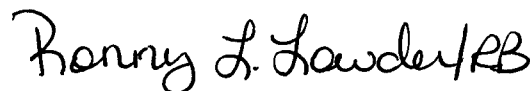
According to the calculations as presented on Table 1, a total of 938.91 pounds of hydrocarbons (as vapor) and 150.13 equivalent gallons of hydrocarbons were removed during this event. Approximately 7.91 gallons of free phase product was detected in the knockout tank during this event. A total of 9,554 gallons of petroleum contaminated groundwater was transported to the Blue Meadows Wastewater Treatment Facility in Belton, SC for proper disposal. A copy of the disposal manifests for this event is included as an attachment.

If you have any questions or concerns please feel free to contact Emerald, Inc. at 803-469-5454.

Sincerely,  
Emerald, Inc.



William C. McClary, P.G.  
Project Manager



Ronny L. Lowder  
President

Attachments

**TABLE 1**  
**AFVR MONITORING DATA**  
**FORMER HIGHWAY 11 GROCERY**  
**SALEM, SOUTH CAROLINA**  
**SCDHEC SITE ID #03439**  
**EMERALD JOB #13-055B**

Extraction Wells	Date	Time (hh:mm)	Differential Time (hr)	Knockout Tank Vacuum (in. Hg)	Off-Gas Concentration (PPM)	Post-Treatment Concentration (PPM)	Offgas Velocity (ft/min)	Flow Rate (CFM)	CG:M (mg/dsm <sup>3</sup> )	Cg (Lb/Dscf)	Removal Rate (Lbs/Hr)	Interval Removal (Lbs)
RW-5	10/18/13	12:30	Start	15	> 5,000	N/A	2,156	105.64	26,589	1.66E-03	10.52	-
RW-6		13:00 ↓	0.5	15	> 5,000	N/A	2,202	107.90	26,589	1.66E-03	10.75	5.32
		13:30 ↓	0.5	16	> 5,000	N/A	2,014	98.69	26,589	1.66E-03	9.83	5.14
		14:00 ↓	0.5	17	> 5,000	N/A	1,871	91.68	26,589	1.66E-03	9.13	4.74
		14:30 ↓	0.5	17	> 5,000	N/A	1,643	80.51	26,589	1.66E-03	8.02	4.29
		15:00 ↓	0.5	17	> 5,000	N/A	1,748	85.65	26,589	1.66E-03	8.53	4.14
		15:30 ↓	0.5	17	> 5,000	N/A	1,787	87.56	26,589	1.66E-03	8.72	4.31
		16:00 ↓	0.5	17	> 5,000	N/A	1,812	88.79	26,589	1.66E-03	8.84	4.39
		16:30 ↓	0.5	17	> 5,000	N/A	1,872	91.73	26,589	1.66E-03	9.14	4.49
		17:00 ↓	0.5	17	> 5,000	N/A	1,861	91.19	26,589	1.66E-03	9.08	4.55
		17:30 ↓	0.5	17	> 5,000	N/A	1,874	91.83	26,589	1.66E-03	9.15	4.56
		18:00 ↓	0.5	17	> 5,000	N/A	1,886	92.41	26,589	1.66E-03	9.20	4.59
		18:30 ↓	0.5	17	> 5,000	N/A	1,881	92.17	26,589	1.66E-03	9.18	4.60
		19:00	0.5	17	> 5,000	N/A	1,892	92.71	26,589	1.66E-03	9.23	4.60
		19:30	0.5	17	> 5,000	N/A	1,907	93.44	26,589	1.66E-03	9.31	4.63
		20:00	0.5	17	> 5,000	N/A	1,912	93.69	26,589	1.66E-03	9.33	4.66
		20:30	0.5	16	> 5,000	N/A	1,957	95.89	26,589	1.66E-03	9.55	4.72
		21:30	1.0	16	> 5,000	N/A	1,949	95.50	26,589	1.66E-03	9.51	9.53
		22:30	1.0	16	> 5,000	N/A	1,966	96.33	26,589	1.66E-03	9.59	9.55
		23:30	1.0	15	> 5,000	N/A	1,984	97.22	26,589	1.66E-03	9.68	9.64
	10/19/13	0:00	0.5	15	> 5,000	N/A	2,004	98.20	26,589	1.66E-03	9.78	4.87
		8:00 ↑	8.0	14	> 5,000	N/A	1,836	89.96	26,589	1.66E-03	8.96	74.96
		9:00	1.0	14	> 5,000	N/A	1,896	92.90	26,589	1.66E-03	9.25	9.11
		10:00	1.0	15	> 5,000	N/A	1,901	93.15	26,589	1.66E-03	9.28	9.26
		11:00	1.0	15	> 5,000	N/A	1,977	96.87	26,589	1.66E-03	9.65	9.46
		12:00	1.0	15	> 5,000	N/A	2,005	98.25	26,589	1.66E-03	9.78	9.72
		14:00	2.0	15	> 5,000	N/A	2,103	103.05	26,589	1.66E-03	10.26	20.05
		16:00	2.0	15	> 5,000	N/A	2,116	103.68	26,589	1.66E-03	10.33	20.59
		18:00	2.0	15	> 5,000	N/A	2,119	103.83	26,589	1.66E-03	10.34	20.67
		20:00	2.0	15	> 5,000	N/A	2,097	102.75	26,589	1.66E-03	10.23	20.57
		22:00	2.0	14	> 5,000	N/A	2,104	103.10	26,589	1.66E-03	10.27	20.50

**TABLE 1 Cont'd.**  
**AFVR MONITORING DATA**  
**FORMER HIGHWAY 11 GROCERY**  
**SALEM, SOUTH CAROLINA**  
**SCDHEC SITE ID #03439**  
**EMERALD JOB #13-055B**

Extraction Wells	Date	Time (hh:mm)	Differential Time (hr)	Knockout Tank Vacuum (in. Hg)	Off-Gas Concentration (PPM)	Post-Treatment Concentration (PPM)	Offgas Velocity (ft/min)	Flow Rate (CFM)	CG-M (mg/dsm <sup>3</sup> )	Cg (Lb/Dscf)	Removal Rate (Lbs/Hr)	Interval Removal (Lbs)
RW-5	10/20/13	0:00	2.0	13	> 5,000	N/A	2,126	104.17	26,589	1.66E-03	10.38	20.64
RW-6		8:00	8.0	11	> 5,000	N/A	2,208	108.19	26,589	1.66E-03	10.78	84.60
		10:00	2.0	12	> 5,000	N/A	2,241	109.81	26,589	1.66E-03	10.94	21.71
		12:00	2.0	14	> 5,000	N/A	2,278	111.62	26,589	1.66E-03	11.12	22.05
		14:00	2.0	14	> 5,000	N/A	2,311	113.24	26,589	1.66E-03	11.28	22.40
		16:00	2.0	14	> 5,000	N/A	2,330	114.17	26,589	1.66E-03	11.37	22.65
		18:00	2.0	14	> 5,000	N/A	2,356	115.44	26,589	1.66E-03	11.50	22.87
		20:00	2.0	13	> 5,000	N/A	2,413	118.24	26,589	1.66E-03	11.78	23.27
		22:00	2.0	11	> 5,000	N/A	2,497	122.35	26,589	1.66E-03	12.19	23.96
	10/21/13	0:00	2.0	10	> 5,000	N/A	2,555	125.20	26,589	1.66E-03	12.47	24.65
		8:00	8.0	10	> 5,000	N/A	2,316	113.48	26,589	1.66E-03	11.30	95.09
		10:00	2.0	11	> 5,000	N/A	2,369	116.08	26,589	1.66E-03	11.56	22.86
		12:00	2.0	12	4,703	N/A	2,394	117.31	25,009	1.56E-03	10.99	22.55
		14:00	2.0	13	3,917	N/A	2,400	117.60	20,829	1.30E-03	9.18	20.16
		16:00	2.0	13.5	3,381	N/A	2,412	118.19	17,979	1.12E-03	7.96	17.14
		18:00	2.0	13.5	2,860	N/A	2,431	119.12	15,209	9.49E-04	6.79	14.75
		20:00	2.0	13	3,075	N/A	2,472	121.13	16,352	1.02E-03	7.42	14.21
		22:00	2.0	13	3,256	N/A	2,512	123.09	17,314	1.08E-03	7.98	15.40
	10/22/13	0:00	2.0	12	3,261	N/A	2,619	128.33	17,341	1.08E-03	8.34	16.32
		8:00	8.0	13	3,877	N/A	2,454	120.25	20,617	1.29E-03	9.29	70.49
		10:00	2.0	14	3,854	N/A	2,514	123.19	20,494	1.28E-03	9.46	17.79
		12:00	2.0	14	3,793	N/A	2,604	127.60	20,170	1.26E-03	9.64	18.93
		12:30	0.5	14	3,461	N/A	2,576	126.22	18,405	1.15E-03	8.70	4.54
<b>Well Gauging Data:</b>			<b>Prior to AFVR Event</b>			<b>After AFVR Event</b>			<b>Equations</b>			
<b>Well No.</b>	<b>Diameter (in)</b>	<b>Screened Interval (ft)</b>	<b>Depth to Product (ft)</b>	<b>Depth to Water (ft)</b>	<b>Product Thickness (ft)</b>	<b>Depth to Product (ft)</b>	<b>Depth to Water (ft)</b>	<b>Product Thickness (ft)</b>	$Cg, m = PPM * (Mg/K3)$ Removal Rate = Cg * Flow Rate * 60Min/Hr Interval Removal = (T <sub>1</sub> + T <sub>2</sub> )/2 PPM = Part per Million (by PID) Cg, m = mg/dsm <sup>3</sup> (mass concentration of gasoline emission) Mg = 128 mg/mg-mole, molecular weight of gasoline K3 = 24.07 dsm <sup>3</sup> /1E6 mg-mole, mass to volume conversion Cg = lb/dscf, mass concentration of gasoline by emission Removal Rate = lb/hr, pollutant mass removal rate of emission			
RW-5	4	10-30	24.19	25.71	1.52	-	25.88	-				
RW-6	4	TD=26.30	19.12	22.61	3.49	-	22.57	-				
<b>Product Thickness</b>			<b>Recovery / Disposal Information</b>									
Product observed in Sight Tube? 0.33 ft.			Hydrocarbons Removed (vapor):			938.91	Pounds					
Product detected in Tanker? No			Hydrocarbons Removed (liquid):			7.91	Gallons					
<b>Weather Conditions</b>		<b>Emerald, Inc. Personnel</b>	<b>Total Hydrocarbons Removed:</b>			150.13	<b>Equivalent Gallons</b>					
10/18/13	Cloudy, 64-73°F	C. Racer	<b>Molecular Weight Utilized:</b>			128	<b>mg/mg-mole</b>					
10/19/13	Cloudy, 62-70°F	S. Hutcheson	<b>Disposal Facility:</b>			Blue Meadows Wastewater Treatment in Belton, SC						
10/20/13	Sunny, 57-73°F		<b>Total Liquids Removed:</b>			9,554	<b>Gallons</b>					
10/21/13	Rain, 64-70°F											
<b>Notes</b>												
↑ = Stinger raised    ↓ = Stinger lowered												
TD = Total Depth												

**TABLE 2  
AFVR MONITORING DATA  
FORMER HIGHWAY 11 GROCERY  
SALEM, SOUTH CAROLINA  
SCDHEC SITE ID #03439  
EMERALD JOB #13-055B**

Date	Time (hh:mm)	Extraction Wells				Event Monitoring						
		RW-5		RW-6		MW-8		RW-7			RW-10	
		Stinger Depth (ft.)	Wellhead Vacuum (in. Hg)	Stinger Depth (ft.)	Wellhead Vacuum (in. Hg)	Magnehelic Reading (inches of water)	Depth to Water	Magnehelic Reading (inches of water)	Depth to Product	Depth to Water	Magnehelic Reading (inches of water)	Depth to Water
10/18/13	12:30	24.5	14	19.5	13	Pre	24.57	Pre	23.07	23.09	Pre	21.97
	13:00	25	14	20	13.5	1.40	24.21	2.10	22.81	22.84	0.20	21.87
	13:30	25.5	14	20.5	13.5	1.40	23.85	2.20	22.55	22.58	0.20	21.77
	14:00	26	15	21	14	1.40	23.49	2.20	22.29	22.32	0.20	21.66
	14:30	26.5	16	21.5	15	1.40	23.12	2.20	22.06	22.10	0.20	21.56
	15:00	27	16	22	15	1.40	23.08	2.30	22.10	22.13	0.20	21.53
	15:30	27.5	15	22.5	14	1.50	23.01	2.30	22.12	22.15	0.20	21.52
	16:00	28	15	23	14	1.50	22.91	2.30	22.15	22.17	0.20	21.51
	16:30	28.5	14.5	23.5	14	1.60	22.94	2.40	22.18	22.20	0.20	21.50
	17:00	29	14.5	24	13.5	1.60	22.90	2.40	22.20	22.22	0.20	21.49
	17:30	29.5	14.5	24.5	13.5	1.60	22.87	2.40	22.23	22.25	0.20	21.48
	18:00	29.5	14.5	25	13.5	1.70	22.83	2.40	22.26	22.28	0.20	21.46
	18:30	29.5	14	25.5	13.5	1.60	22.79	2.50	22.28	22.30	0.20	21.45
	19:00	29.5	14	25.5	13	1.60	22.76	2.50	22.30	22.33	0.20	21.44
	19:30	29.5	14	25.5	13	1.60	22.72	2.50	22.33	22.35	0.20	21.43
	20:00	29.5	13.5	25.5	13	1.60	22.67	2.50	22.35	22.37	0.20	21.42
	20:30	29.5	13.5	25.5	13	1.60	22.65	2.50	22.37	22.39	0.20	21.40
	21:30	29.5	13	25.5	13	1.50	22.59	2.50	22.41	22.43	0.20	21.39
	22:30	29.5	13	25.5	12.5	1.50	22.55	2.50	22.45	22.47	0.20	21.38
	23:30	29.5	13	25.5	12.5	1.50	22.51	2.50	22.50	22.53	0.20	21.37
10/19/13	0:00	29.5	13	25.5	12.5	1.50	22.49	2.50	22.53	20.56	0.20	21.36
	8:00	26	14	22.5	11	1.50	22.38	2.40	22.50	22.55	0.30	21.32
	9:00	26	14	22.5	11	1.50	22.38	2.40	22.51	22.56	0.30	21.31
	10:00	26	14	22.5	11	1.60	22.36	2.40	22.52	22.56	0.30	21.31
	11:00	26	14	22.5	11	1.60	22.35	2.50	22.52	22.56	0.30	21.30
	12:00	26	14	22.5	11.5	1.60	22.33	2.50	22.52	22.56	0.40	21.30
	14:00	26	14	22.5	11.5	1.70	22.31	2.50	22.54	22.58	0.40	21.29
	16:00	26	14	22.5	11.5	1.70	22.29	2.50	22.54	22.59	0.40	21.29
	18:00	26	14	22.5	11	1.70	22.28	2.40	22.56	22.61	0.30	21.29
	20:00	26	14	22.5	11	1.70	22.27	2.30	22.57	22.62	0.30	21.28
	22:00	26	13.5	22.5	11	1.60	22.26	2.20	22.58	22.63	0.20	21.28

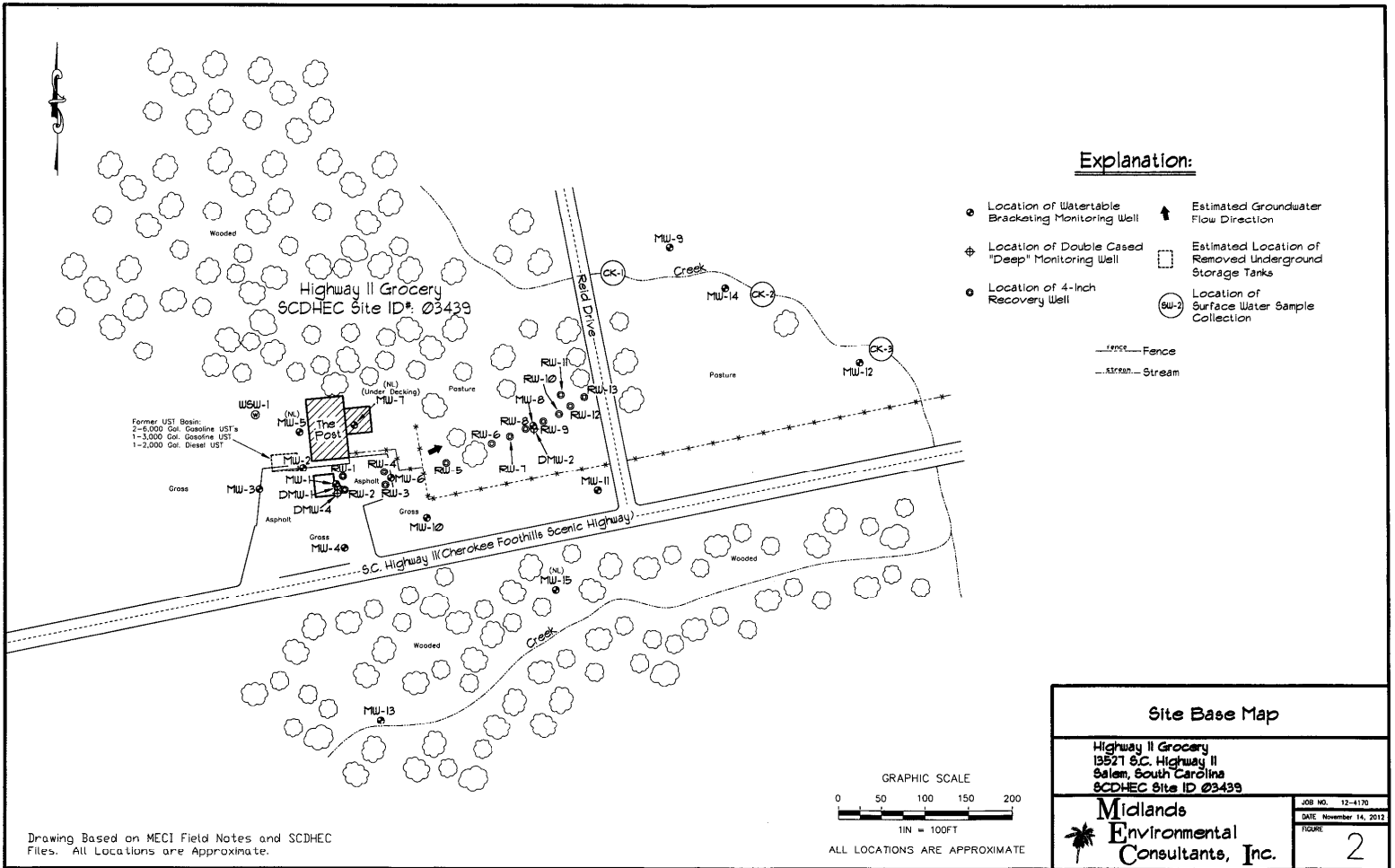
Notes:

**TABLE 2 Cont'd.**  
**AFVR MONITORING DATA**  
**FORMER HIGHWAY 11 GROCERY**  
**SALEM, SOUTH CAROLINA**  
**SCDHEC SITE ID #03439**  
**EMERALD JOB #13-055B**

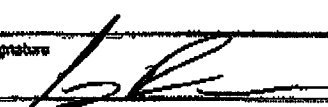

Date	Time (hh:mm)	Extraction Wells				Event Monitoring						
		RW-5		RW-6		MW-8		RW-7			RW-10	
		Stinger Depth (ft.)	Wellhead Vacuum (in. Hg)	Stinger Depth (ft.)	Wellhead Vacuum (in. Hg)	Magnehelic Reading (inches of water)	Depth to Water	Magnehelic Reading (inches of water)	Depth to Product	Depth to Water	Magnehelic Reading (inches of water)	Depth to Water
10/20/13	0:00	26	13	22.5	10.5	1.50	22.25	2.20	22.59	22.64	0.20	21.28
	8:00	26	12	22.5	10	1.50	22.21	2.20	22.52	22.58	0.30	21.27
	10:00	26	12	22.5	10	1.50	22.20	2.30	22.51	22.57	0.30	21.27
	12:00	26	12.5	22.5	10.5	1.60	22.18	2.30	22.50	22.57	0.30	21.26
	14:00	26	12.5	22.5	11	1.60	22.17	2.40	22.49	22.56	0.40	21.26
	16:00	26	13	22.5	11	1.60	22.15	2.40	22.49	22.56	0.40	21.25
	18:00	26	12.5	22.5	10.5	1.50	22.14	2.20	22.48	22.53	0.40	21.25
	20:00	26	12.5	22.5	10.5	1.40	22.14	2.10	22.48	22.53	0.30	21.25
	22:00	26	12	22.5	10.5	1.40	22.13	2.00	22.47	22.51	0.30	21.26
	10/21/13	0:00	26	11.5	22.5	10	1.30	22.13	1.90	22.47	22.51	0.20
8:00		26	11	22.5	9	1.40	22.09	2.10	22.36	22.42	0.20	21.25
10:00		26	12	22.5	9	1.40	22.09	2.10	22.37	22.42	0.20	21.26
12:00		26	12	22.5	10	1.40	22.09	2.10	22.37	22.43	0.20	21.26
14:00		26	13	22.5	11	1.40	22.08	2.10	22.38	22.44	0.20	21.26
16:00		26	13	22.5	11	1.50	22.08	2.20	22.39	22.45	0.20	21.25
18:00		26	12	22.5	11	1.50	22.08	2.20	22.40	22.46	0.20	21.25
20:00		26	12	22.5	10	1.50	22.08	2.20	22.41	22.47	0.20	21.25
22:00		26	12	22.5	9.5	1.50	22.09	2.10	22.50	22.55	0.20	21.24
10/22/13		0:00	26	11.5	22.5	9.5	1.50	22.11	2.00	22.53	22.58	0.20
	8:00	26	12	22.5	10	1.50	22.15	2.20	22.50	22.66	0.30	21.25
	10:00	26	12.5	22.5	11	1.60	22.15	2.50	22.61	22.67	0.40	21.26
	12:00	26	12.5	22.5	11.5	1.60	22.16	2.50	22.61	22.67	0.40	21.26
	12:30	26	12.5	22.5	12	1.60	22.16	2.40	22.62	22.68	0.40	21.26

Notes:





Drawing Based on MECI Field Notes and SCDHEC Files. All Locations are Approximate.

NON-HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No.		Original Document No. <b>208</b>		2. Page 1 of	
3. Generator's Name and Mailing Address <b>Fmr. Hwy. 11 Grocery Salem, SC</b>							
6. Generator's Phone ( ) <b>Job# 13-055 78</b>							
5. Transporter 1 Company Name		8. US EPA ID Number		A. State Transporter's ID			
7. Transporter 2 Company Name		9. US EPA ID Number		B. Transporter 1 Phone			
8. Designated Facility Name and Site Address <b>Blue Meadows Facility Belton, SC</b>		10. US EPA ID Number		C. State Transporter's ID			
				D. Transporter 2 Phone			
				E. State Facility's ID			
				F. Facility's Phone			
11. WASTE DESCRIPTION			12. Containers		13. Total Quantity		14. Unit
* NON-HAZARDOUS PETROLEUM CONTAMINATED WATER-PROFILE #					5,093		gal.
b. PH							
c. 6.9							
d.							
G. Additional Descriptions for Materials Listed Above				H. Handling Codes for Wastes Listed Above			
15. Special Handling Instructions and Additional Information							
16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.							
Printed/Typed Name <b>Cory Racer</b>			Signature 			Date Month Day Year <b>10 20 13</b>	
17. Transporter 1 Acknowledgement of Receipt of Materials						Date	
Printed/Typed Name			Signature			Month Day Year	
18. Transporter 2 Acknowledgement of Receipt of Materials						Date	
Printed/Typed Name			Signature			Month Day Year	
19. Discrepancy Indication Space							
20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 18.							
Printed/Typed Name <b>Stephen T. ...</b>			Signature 			Date Month Day Year <b>10 20 13</b>	

GENERATOR

TRANSPORTER

FACILITY

NON-HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No.		Manifest Document No. <b>209</b>		2. Page 1 of	
3. Generator's Name and Mailing Address <b>Fmr. Hwy-11 Grocery Salem, SC Job# 13-055B</b>							
4. Generator's Phone ( )							
5. Transporter 1 Company Name		6. US EPA ID Number		A. State Transporter's ID			
7. Transporter 2 Company Name		8. US EPA ID Number		B. Transporter 1 Phone			
9. Designated Facility Name and Site Address <b>Blue Meadows Facility Belton, SC</b>		10. US EPA ID Number		C. State Transporter's ID			
				D. Transporter 2 Phone			
				E. State Facility's ID			
				F. Facility's Phone			
11. WASTE DESCRIPTION			12. Containers		13. Total Quantity	14. Unit Weight	
a. NON-HAZARDOUS PETROLEUM CONTAMINATED WATER-PROFILE #							
			PH		4461	gal.	
b.			7.7				
c.							
d.							
15. Additional Descriptions for Materials Listed Above				16. Handling Codes for Wastes Listed Above			
15. Special Handling Instructions and Additional Information							
16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.							
Printed/Typed Name <b>Corey Racer</b>				Signature <i>[Signature]</i>		Date Month Day Year <b>10/22/13</b>	
17. Transporter 1 Acknowledgment of Receipt of Materials				Signature <i>[Signature]</i>		Date Month Day Year <b>10/22/13</b>	
Printed/Typed Name <b>Buddy Cothran</b>				Signature <i>[Signature]</i>		Date Month Day Year <b>10/22/13</b>	
18. Transporter 2 Acknowledgment of Receipt of Materials				Signature		Date	
Printed/Typed Name				Signature		Date	
19. Discrepancy Indication Space							
20. Facility Owner or Operator, Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.							
Printed/Typed Name <b>C. S. T. [Signature]</b>				Signature <i>[Signature]</i>		Date Month Day Year <b>2:47 10/22/13</b>	

GENERATOR FACILITY



Catherine B. Templeton, Director

*Promoting and protecting the health of the public and the environment*

MR LARRY HINKLE  
JOCASSEE RECREATION CENTER LLC  
PO BOX 878  
PICKENS SC 29671-0878

NOV 07 2013



Re: Aggressive Fluid and Vapor Recovery (AFVR) report review  
Former Highway 11 Grocery, 13527 SC-11 North, Salem, SC  
UST Permit #03439  
Release reported November 28, 2000  
Monitoring report received May 23, 2013  
Oconee County

Dear Mr. Hinkle:

The Underground Storage Tank (UST) Management Division has reviewed the referenced AFVR reports that document two 96-hour events conducted on October 14, 2013 through October 22, 2013. Copies of the reports are enclosed for your records.

The reports document recovery of 292 gallons of free-phase product and 19,056 gallons of petroleum-contaminated groundwater from recovery wells RW-5 through RW-9. The Division plans to install four additional recovery wells and conduct two additional 96-hour events in the near future.

On all correspondence concerning this site, please reference the UST Permit #03439. If you have any questions or comments, feel free to contact me by telephone at (803) 898-0655, by fax at (803) 898-0673, or by e-mail at [padgetjp@dhec.sc.gov](mailto:padgetjp@dhec.sc.gov).

Sincerely,

Joel P. Padgett, P.G., Geologist/Hydrologist  
Corrective Action Section  
Underground Storage Tank Management Division  
Bureau of Land and Waste Management

JPP/jpp  
03439.cclet3

enc: AFVR reports  
cc: Technical file (w/o enc)

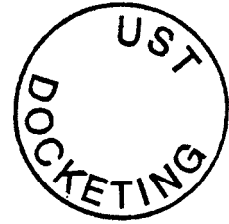


Catherine B. Templeton, Director

*Promoting and protecting the health of the public and the environment*

MR JAMES W REID  
185 REID DR  
SALEM SC 29676

NOV 07 2013



Re: Aggressive Fluid and Vapor Recovery (AFVR) report review  
Former Highway 11 Grocery, 13527 SC-11 North, Salem, SC  
UST Permit #03439  
Release reported November 28, 2000  
Monitoring report received May 23, 2013  
Oconee County

Dear Mr. Reid:

The Underground Storage Tank (UST) Management Division has reviewed the referenced AFVR reports that document two 96-hour events conducted on October 14, 2013 through October 22, 2013. Copies of the reports are enclosed for your records.

The reports document recovery of 292 gallons of free-phase product and 19,056 gallons of petroleum-contaminated groundwater from recovery wells RW-5 through RW-9. The Division plans to install four additional recovery wells and conduct two additional 96-hour events in the near future.

On all correspondence concerning this site, please reference the UST Permit #03439. If you have any questions or comments, feel free to contact me by telephone at (803) 898-0655, by fax at (803) 898-0673, or by e-mail at [padgettjp@dhec.sc.gov](mailto:padgettjp@dhec.sc.gov).

Sincerely,

Joel P. Padgett, P.G., Geologist/Hydrologist  
Corrective Action Section  
Underground Storage Tank Management Division  
Bureau of Land and Waste Management

JPP/jpp  
03439.ccllet3

enc: AFVR reports  
cc: Technical file (w/o enc)



Catherine B. Templeton, Director

*Promoting and protecting the health of the public and the environment*

MR BRYAN SHANE PG  
MIDLANDS ENVIRONMENTAL CONSULTANTS  
PO BOX 854  
LEXINGTON SC 29071-0854

MAR 21 2014



Re: Notice to proceed for small scope- No site-specific work plan required  
Former Highway 11 Grocery, 13527 North SC-11, Salem, SC  
UST Permit #03439; CA #47745; MWA #UMW-25433  
Solicitation #5400006561, PO #4600301871  
Release reported November 28, 2000  
Oconee County

Dear Mr. Shane:

In accordance with the bid solicitation #IFB-5400006561 and the UST Management Division Quality Assurance Program Plan (QAPP) Revision 2.0, recovery well installation at the referenced site may proceed. If a problem or problems occur, you must contact me within 24 hours by phone or e-mail. The final report must document the problem(s) and the mitigation action(s) taken.

**A report meeting the contract specifications of Section 3.10, 3.11, or 3.12 and invoice are due sixty (60) days from the date of this letter.** A monitoring well approval is enclosed. The solicitation requires adherence to all applicable South Carolina certification requirements for laboratory analyses, well installation, and report preparation.

Midlands Environmental Consultants, Inc. will perform services at the site on behalf of the UST owner/operator (O/O) and payment will be made from the SUPERB Account. The O/O has no obligation for payment of this scope of work. Please coordinate access to the facility and adjacent properties with the property owners. The Agency grants pre-approval for transportation of virgin petroleum impacted soil and groundwater from the referenced site to a permitted treatment facility. There can be no spillage or leakage in transport. All investigation-derived waste (IDW) must be properly contained and labeled prior to disposal. The SUPERB Account will not reimburse for transportation or treatment of soil and/or groundwater with concentrations below risk-Based Screening Levels.

On all correspondence, please reference UST Permit #03439. If you have any site-specific questions, please contact me by telephone at (803) 898-0655 or by e-mail at padgettjp@dhec.sc.gov. If you have any contract-specific questions, please contact Minda Hornosky by telephone at (803) 898-7542 or by e-mail at hornosms@dhec.sc.gov.

Sincerely,

Joel P. Padgett, P.G., Geologist/Hydrologist  
Corrective Action Section  
Underground Storage Tank Management Division

enc: Approved cost agreement (CA)  
Monitoring well approval

cc: Minda Hornosky, Assessment Section, UST Management Division (w/ca copy)  
Technical file (w/enc)

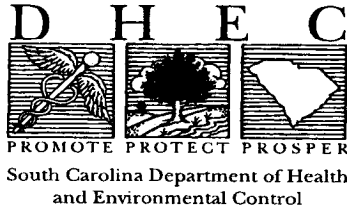
# Approved Cost Agreement 47745

Facility: 03439 HWY 11 GROCERY

PADGETJP

PO Number:

<u>Task / Description</u>	<u>Categories</u>	<u>Item Description</u>	<u>Qty / Pct</u>	<u>Unit Price</u>	<u>Amount</u>
04 MOB/DEMOB		A1 EQUIPMENT	1.0000	250.00	250.00
		B1 PERSONNEL	2.0000	200.00	400.00
09 WELL INSTALLATION		H1 RECOVERY WELL (4" DIA)	120.0000	28.00	3,360.00
16 SUBSEQUENT SURVEY		A1 SUBSEQUENT SURVEY	1.0000	300.00	300.00
17 DISPOSAL		AA WASTEWATER	80.0000	1.25	100.00
		C1 SOIL TREATMENT DISPOSAL	2.5000	50.04	125.10
<b>Total Amount</b>					<b>4,535.10</b>



**UNDERGROUND STORAGE TANK MANAGEMENT DIVISION  
BUREAU OF LAND AND WASTE MANAGEMENT  
2600 Bull Street, Columbia, South Carolina 29201  
Telephone: 803-898-2544**

**MEMORANDUM**

TO: Bryan Shane, Midlands Environmental Consultants, Inc.

FROM: Joel Padgett, P.G.

RE: Notice to Proceed

Facility Name: Former Highway 11 Grocery

Permit Number: 03439

County: Oconee

Work To Be Completed: Install four 4" RW at locations marked at site with pin flags. **Please contact Project Manager if pin flags are not found.** Approximate locations are shown on enclosed site map. Screen wells from 10-30'. Please coordinate RW installation with property owners.

CA# 47745





Catherine B. Templeton, Director

*Promoting and protecting the health of the public and the environment*

### Monitoring Well Approval

**Approval is hereby granted to:** Midlands Environmental Consultants, Inc.  
**(On behalf of):** Mr. Steve Smith  
**Facility:** Former Highway 11 Grocery  
**UST Permit Number:** 03439  
**County:** Oconee

This approval is for the installation of four four-inch recovery wells. The wells are to be installed in the approved locations in accordance with the South Carolina Well Standards, R.61-71, and the applicable guidance documents. Please note that R.61-71 requires the following:

1. All wells shall be drilled, constructed, and abandoned by a South Carolina certified well driller per R.61-71.D.1.
2. All monitoring wells shall be labeled as required by R.61-71.H.2.c.
3. A Water Well Record Form or other form provided or approved by the South Carolina Department of Health and Environmental Control (Agency) shall be completed and submitted to the Agency within 30 days after well completion or abandonment unless another schedule has been approved by the Agency. The form should contain the "as-built" construction details and all other information required by R.61-71.H.1.f.
4. All analytical data and water levels obtained from each monitoring well shall be submitted to the Agency within 30 days of receipt of laboratory results unless another schedule has been approved by the Agency required by R.61-71.H.1.d.
5. If any of the information provided to the Agency changes, notification to Joel Padgett (tel: (803) 896-6398 or e-mail: padgettj@dhcec.sc.gov) shall be provided a minimum of twenty-four (24) hours prior to well construction as required by R.61-71.H.1.a.
6. All temporary monitoring wells shall be abandoned within 5 days of borehole completion using appropriate methods as required by R.61-71.H.4.c. All other wells shall be properly developed per R.61-71.H.2.d.
7. Agency approval is required prior to abandonment of all monitoring wells as required by R.61-71.H.1.a.

This approval is pursuant to the provisions of Section 44-55-40 of the 1976 South Carolina Code of Laws and R.61-71 of the South Carolina Well Standards and Regulations, dated April 26, 2002. A copy of this approval should be on the site during well installation.

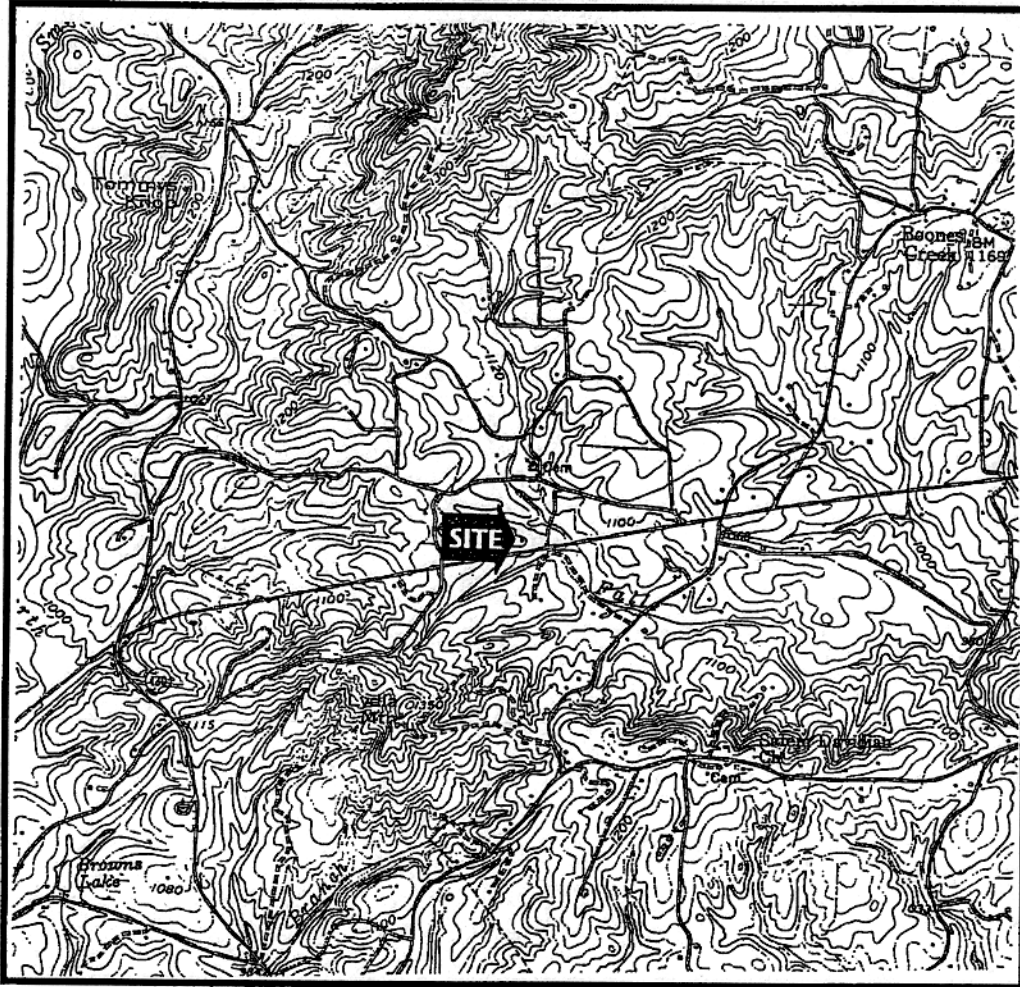
**Date of Issue:** March 17, 2014

**Approval #:** UMW-25433

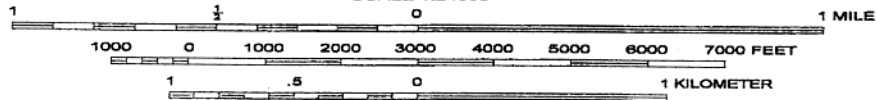
Joel P. Padgett, P.G., Geologist/Hydrologist  
Corrective Action Section  
Underground Storage Tank Management Division  
Bureau of Land and Waste Management

7.5 MINUTE SERIES(TOPOGRAPHIC)

SALEM QUADRANGLE



SCALE 1:24000



**SEI Environmental, Inc.**

FIGURE 1: SITE LOCATION MAP  
HIGHWAY 11 GROCERY  
13527 S.C. HWY 11, SALEM, SC  
UST PERMIT #03439

WO #302-169  
DWG #

DATE: 11/20/02  
DRAWN BY: JCJ

**UST Permit:** 03439  
**Facility:** Highway 11 Grocery  
**County:** Oconee

<b>WELL #</b>	<b>SCREEN</b>	<b>TOC</b>
MW-1	15-30'	103.38'
MW-2	20-35'	104.85'
MW-3	20-30'	104.86'
MW-4	20-35'	99.90'
MW-5	20-35'	106.06'
MW-6	20-35'	100.00'
MW-7	25-40'	103.66'
MW-8	15-30'	86.51'
MW-9	2-10'	58.39'
MW-10	13-28'	93.78'
MW-11	8-23'	83.20'
MW-12	2-12'	58.69'
MW-13	2-12'	77.72'
MW-14	2-10'	59.19'
MW-15	4-9'	71.52'
DMW-1	40-45'	103.27'
DMW-2	65-75'	86.21'
DMW-4	55-60'	103.22'
RW-1	10-30'	103.29'
RW-2	10-30'	102.85'
RW-3	10-30'	100.25'
RW-4	10-30'	101.00'
RW-5	10-30'	94.97'
RW-6	6.5-26.5'	88.05'
RW-7	10-30'	88.06'
RW-8	8.5-28.5'	87.06'
RW-9	10-30'	86.18'
RW-10	10-30'	84.49'
RW-11	7-27'	81.06'
RW-12	10-30'	82.22'
RW-13	9-29'	80.72'



2600 Bull Street  
Columbia, SC 29201-1708

**UNDERGROUND STORAGE TANK PROGRAM  
BUREAU OF LAND AND WASTE MANAGEMENT**

2600 Bull St., Columbia, SC 29201  
Phone (800) 826-5435 Fax (803) 898-4330

**NOV 30 2000**

Mr. Steve Smith  
180 Schallow Ford Rd.  
Salem, SC 29676

Re: Hwy 11 Grocery  
UST Permit #03439  
Release Report received November 28, 2000  
Oconee County

Dear Mr. Smith:

The Bureau of Land and Waste Management (BLWM) of the South Carolina Department of Health and Environmental Control (SCDHEC) has reviewed the referenced report. To determine what risk the release may pose to the environment and public health, and in accordance with Section 280.65 of the South Carolina Underground Storage Tank Control Regulations, implementation of the scope of work as outlined in the enclosed Tier II Assessment document is necessary. The Bureau requests that a Tier II Assessment Plan be submitted within 30 days.

If this release becomes qualified for funding through the State Underground Petroleum Environmental Response Bank (SUPERB) Act, eligible costs exceeding the \$25,000 deductible (according to Section 44-2-40 (D) of the SUPERB Act) can be compensated. As the tank owner, you are liable for the first \$25,000 of actual costs incurred for rehabilitation activities from your financial responsibility mechanism or other financial means. By law, the SUPERB Account cannot compensate any costs that are not pre-approved. To insure any expenditure you make do apply towards the deductible, the Department must pre-approve any such costs along with your technical plan of action.

To proceed with the qualification process for the SUPERB Act, the following information is required:

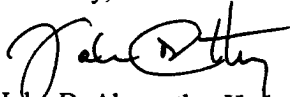
- Written confirmation of the existence or nonexistence of an environmental insurance policy for this site. **The tank owner and a notary public must sign this information.** For your convenience, an insurance statement form has been enclosed. If an environmental insurance policy existed at the time of the release, a copy of the policy with all endorsements must be submitted with the insurance statement. **Please complete and return the enclosed Insurance Information Form within 14 days from the date of this letter.**
- **All rehabilitation activities associated with a UST release must be performed by a SCDHEC certified site rehabilitation contractor as required by R.61-98.** A list of certified UST contractors is attached for your information. **Please complete and return the enclosed Owner/Operator Information Sheet within 14 days from the date of this letter.**

UST PROGRAM DOCKETING # 70Tech

Mr. Smith  
Page 2

On all correspondence regarding this site and scope of work, please reference UST Permit #03439. If you have any questions concerning this correspondence, please contact me at (803) 898-4367 or 1-800-826-5435 (within South Carolina only).

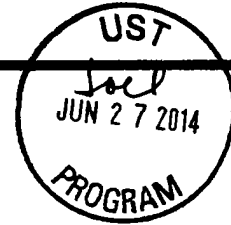
Sincerely,



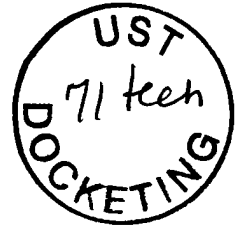
John D. Abernathy, Hydrogeologist  
State Lead and Field Services Section  
Assessment and Corrective Action Division  
Underground Storage Tank Program

enc: Insurance Information Sheet  
Tier II Assessment document  
Information Sheet  
Certified Contractors List

cc:  Read Files



# REPORT OF RECOVERY WELL INSTALLATION



Highway 11 Grocery  
13527 North South Carolina Highway 11  
Salem, South Carolina  
SCDHEC SITE ID 03439  
CA # 47745

*Prepared By:*



231 Dooley Road, Lexington, SC 29073  
(803) 808-2043 Fax: 808-2048

June 24, 2014

MECI Project No. 14-4782

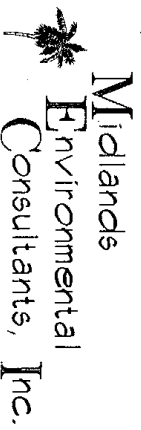
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# REPORT OF RECOVERY WELL INSTALLATION

Highway 11 Grocery  
13527 North South Carolina Highway 11  
Salem, South Carolina  
SCDHEC SITE ID 03439  
CA # 47745

*Prepared By:*

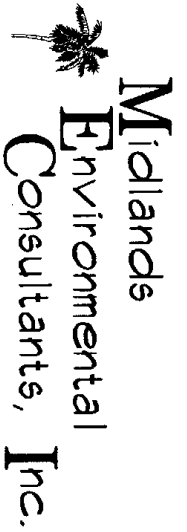


231 Dooley Road, Lexington, SC 29073  
(803) 808-2043 fax: 808-2048

June 24, 2014

MECI Project No. 14-4782

---



June 24, 2014

Mr. Joel Padgett, P.G., Hydrologist  
Corrective Action Section  
Assessment and Corrective Action Division  
Underground Storage Tank Program  
Bureau of Land & Waste Management  
South Carolina Department of Health and  
Environmental Control  
2600 Bull Street  
Columbia, South Carolina 29201

Subject: Report of Recovery Well Installation  
Highway 11 Grocery  
13527 North South Carolina Highway 11  
Salem, South Carolina  
SCDHEC Site ID# 03439, CA # 47745  
MECI Project Number 14-4782  
Certified Site Rehabilitation Contractor UCC-0009

Dear Mr. Padgett,

Midlands Environmental Consultants Inc. (MECI) is pleased to submit the attached Report of Recovery Well Installation for the referenced site. This report describes assessment activities conducted at the site and results of those activities in general accordance with South Carolina Department of Health and Environmental Control (SCDHEC) guidelines, including adherence to the UST Division Programmatic Quality Assurance Program Plan (QAPP).

Midlands Environmental appreciates the opportunity to offer our professional environmental services to you on this project. Please feel free to contact us at 803-808-2043 if you have any immediate questions or comments.

Sincerely,  
Midlands Environmental Consultants, Inc.

A handwritten signature in black ink, appearing to read "John L. Coleman".

John L. Coleman  
Senior Scientist

A handwritten signature in black ink, appearing to read "Bryan T. Shane".

Bryan T. Shane, P.G.  
Principal Geologist



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- \*\*APPENDIX H – LOCAL ZONING REGULATIONS
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- \*\*APPENDIX J – ACCESS AGREEMENTS
- APPENDIX K – DATA VERIFICATION CHECKLIST

NOTE: ITEMS LISTED WITH AN \*\* BESIDE IT WERE NOT NEEDED AS A PART OF THIS SCOPE OF WORK

## 1.0 INTRODUCTION

### A. Owner/Operator Information

Facility Name: \_\_\_\_\_ UST Permit #: 03439  
Highway 11 Grocery  
Facility Address: 13527 South Carolina Highway 11, Salem, SC 29676  
Name: Mr. Steven Smith  
Address: \_\_\_\_\_  
Telephone #: \_\_\_\_\_  
N/A

### B. Property Owner Information

Name: Jocassee Recreation Center, LLC.  
Tax Map #: \_\_\_\_\_  
Oconee County Tax Map#: 054-00-02-024  
Address: P.O. Box 878, Pickens, SC 29671  
Telephone #: (864) 944-0494 (Contact: Larry Hinkle)

### C. Contractor Information

Name: Midlands Environmental Consultants, Inc.  
Certification #: 9  
Address: P. O. Box 854, Lexington, SC 29071  
Telephone #: (803) 808-2043

### D. SCDHEC Certified Well Driller

Name: Environmental Drilling & Probing Services  
Driller: David Brown  
Certification #: B 02053  
Address: 17538 Greenhill Road, Charlotte, NC 28278  
Telephone #: (704) 607-7529

### E. SCDHEC Certified Laboratory

Name: \_\_\_\_\_  
Certification #: \_\_\_\_\_  
Address: \_\_\_\_\_  
Telephone #: \_\_\_\_\_  
N/A  
N/A  
N/A  
N/A

### 1.1 PROJECT INFORMATION

The subject site (Highway 11 Grocery) is located at 13527 South Carolina Highway 11 in Salem, South Carolina (see Figure 1). The property is currently a bar (The Post), which is adjoined to a vacant space for lease (former store front). The subject site previously maintained one 3,000 gallon gasoline underground storage tank (UST), two 6,000 gallon gasoline UST's, and one 2,000 gallon diesel UST. According to the South Carolina Underground Storage Tank Registry, these tanks were removed from the ground on September 15, 2009. The South Carolina Department of Health and Environmental Control (SCDHEC) reported and confirmed a release of petroleum product on November 28, 2000.

Prior to commencement of the field activities described in this document, a QAPP Contractors Addendum was completed by MECI personnel, submitted to SCDHEC and approved by the SCDHEC project manager.

The above project information is based on MECI field notes and SCDHEC files

## 2.0 SURROUNDING PROPERTY USAGE

The subject site (Highway 11 Grocery) is located at 13527 South Carolina Highway 11, Salem, Oconee County, South Carolina (Figure 1). Pastures and farm lands form the eastern border of the site, beyond which is residential properties. South Carolina Highway 11 forms the southern border of the subject site, beyond which are wooded areas and a creek. Wooded and pasture areas are also located to the north and west of the referenced property.

## 3.0 FIELD EXPLORATION

A site visit was performed at the referenced site on March 27, 2014 to evaluate current site conditions, gain property access, and determine drilling accessibility. Field exploration conducted at the site included:

- construction of four recovery wells; and,
- a subsequent survey to locate the newly installed recovery wells.

The recovery well locations were selected based on SCDHEC project manager instructions, existing site conditions, and drilling accessibility.

## 3.1 RECOVERY WELL INSTALLATION

On May 21<sup>st</sup> and 22<sup>nd</sup>, 2014, four single cased 4-inch recovery wells were installed at the subject site. These wells were installed by Environmental Drilling & Probing Services (EDPS) of Charlotte, NC (S.C. Driller Certification: David Brown # B 02053) using a ATV-mounted drilling rig employing 10.0-inch outer diameter air hammer to construct the borehole. The following table presents new well installation details:

Well Number	Screened Interval (ft)	Total Depth (ft)
RW-14	10.0-30.0	30.04
RW-15	10.0-30.0	30.18
RW-16	10.0-30.0	30.07
RW-17	10.0-30.0	29.81

The soils encountered during drilling activities generally consisted of sandy silts and silty sands of the Piedmont Province. Partially weathered rock was encountered at depths ranging from 18.0 feet below ground surface (BGS) to 22.0 feet BGS. Representative portions of soil samples were

screened with a Photo Ionization Detector (PID) and classified by MECI personnel. Test boring records showing soil descriptions and screening result are attached in Appendix E.

Drill cuttings were containerized and transported to Waste Management/Richland Landfill in Elgin, SC by MECI personnel. A total of 1.51 tons was disposed of in this manner. A disposal manifest for these soils is attached at the end of this report.

Following completion of the monitoring wells, the wells were developed by purging until they were determined to be functioning properly and turbidity was reduced. These wells were developed utilizing a Whale-Mega Purger well pump. The drum of purge water was treated by MECI personnel using a granular activated carbon drum. A total of 42.0 gallons of purge/development water was disposed of in this manner. A disposal manifest for the treated purge water is presented in Appendix G.

### 3.2 SITE SURVEY

On June 18<sup>th</sup>, 2014, a subsequent survey was conducted by MECI personnel, utilizing a fiberglass rod, level, and tape to determine the horizontal and vertical position of the newly installed monitoring wells. A TOC elevation of 101.00 for RW-4 and a TOC elevation of 94.97 for RW-5 were used as a benchmark for surveying RW-14, RW-15, RW-16 and RW-17. Elevations were based on site datum obtained from SCDHEC files. See Table 2 and Figure 5 for potentiometric data for the entire monitoring well network.

### 4.0 AREA GEOLOGY AND HYDROGEOLOGY

The mean elevation of the property, as depicted on the local USGS quadrangle (Salem & Old Pickens, South Carolina), appears to be approximately 305 meters above sea level. The site is located in the Piedmont Physiographic Province of South Carolina, an area underlain by ancient igneous and metamorphic rocks. The soils in this province are generally residual soils that are underlain by rock at highly varying depths.

The soils encountered in this area are the product of in-place weathering of rocks similar to the rocks underlying the site. In areas not altered by erosion or disturbed by the activities of man, the typical residual soil profile consists of near surface clayey soils and underlying sandy silt and sand. The boundary between soil and rock is gradational. A transitional zone termed “weathered rock” is normally found overlying the parent bedrock. This zone is typically the most transmissive zone for groundwater movement. Consequently, the topography of the bedrock surface is uneven, even over short horizontal distances. It is not unusual to find lenses and boulders of hard rock and zones of weathered rock within the soil mantle well above the general bedrock level.

Local precipitation is the source of practically all of the groundwater in Oconee County. A portion of the precipitation infiltrates into the ground and moves under the influence of gravity to the surficial aquifer. After the water has reached the surficial aquifer, the direction of movement is generally parallel to the hydraulic gradient. In the Piedmont Province, the slope of the surficial aquifer’s surface under static conditions (no pumping interference) approximates the topography of an area. Thus, the movement of groundwater within the soil mantle is typically in the direction of the topographic slope. Local groundwater flow patterns may be affected by disturbed areas such as tank pits, utility trenches, building foundations, borings, wells, etc. Groundwater flow in fractured rock is often difficult to interpret due to the variability of fracture connectivity and orientation.

#### 4.1 LOCAL SUBSURFACE CONDITIONS

Piedmont Residuum was encountered during drilling activities conducted at the site. The soils encountered in our borings generally consisted of sandy silts and silty sands. Partially weathered rock was encountered at depths ranging from 18.0 feet below ground surface (BGS) to 22.0 feet BGS. Test Boring Records, which depict the materials encountered in each boring, are located in Appendix E.

On June 18, 2014, stabilized product/groundwater levels were measured in the newly installed wells. Depth to groundwater in the newly installed recovery wells was between 18.87 and 24.57 feet below top of casing. Free phase petroleum product was detected in RW-14 at a thickness of 0.21 feet, in RW-15 at a thickness of 0.10 feet, and in RW-16 at a thickness of 0.15 feet. The groundwater measurements are summarized in the test boring log presented in Appendix E. Groundwater levels may fluctuate several feet with seasonal and rainfall variations and with change in the water level of adjacent drainage features. Normally, the highest groundwater levels occur in late winter and spring. The lowest levels occur in late summer and fall.

The above descriptions provide a general summary of the subsurface conditions encountered. The attached Test Boring Records (Appendix E) contain detailed information recorded from the newly installed replacement well. The Test Boring Records represent our interpretation of the field logs based on examination of the field samples. The lines designating the interfaces between various strata represent approximate boundaries, and the transition between strata may be gradational.

#### 5.0 QUALIFICATIONS OF REPORT

The activities and evaluative approaches used in this assessment are consistent with those normally employed in hydrogeological assessment and waste management projects of this type. Our evaluation of site conditions has been based on our understanding of the site, project information provided to us, and data obtained in our exploration. The general subsurface conditions utilized in our evaluation have been based on interpretation of subsurface data between borings. Contents of this report are intended for the sole use of SCDHEC under mutually agreed upon terms and conditions. If other parties wish to rely on this report please contact MECI prior to their use of this information so that a mutual understanding and agreement of the terms and conditions of our services can be established.

-00-

**TABLES**

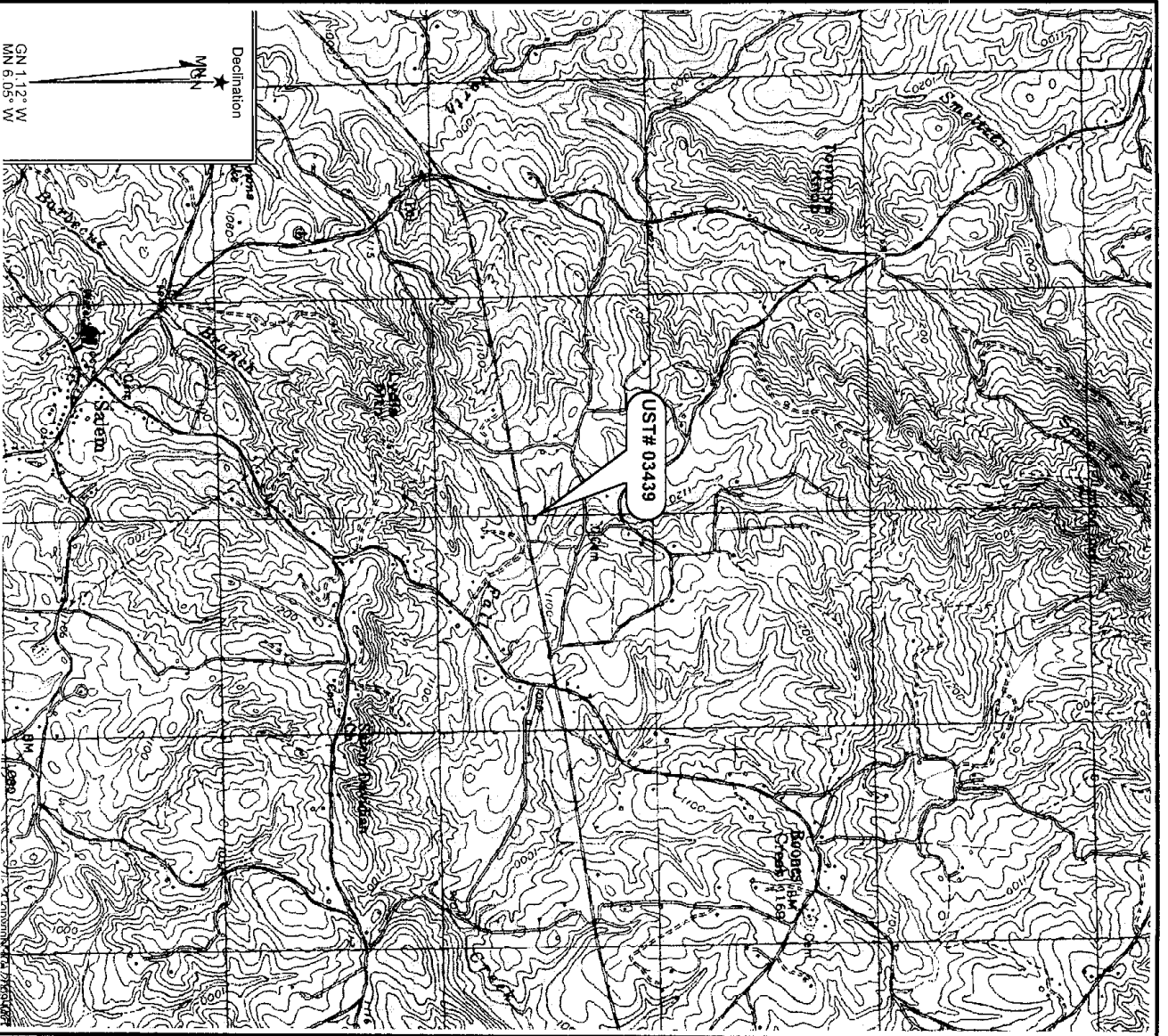
**TABLE 2**  
**JUNE 18, 2014 GAUGING EVENT**  
**POTENTIOMETRIC DATA**  
**HIGHWAY 11 GROCERY**  
**SALEM, SOUTH CAROLINA**  
**MCCI PROJECT NUMBER 14-4782**  
**SCDHEC SITE ID NUMBER 03439**

MMW-1	15-30	NM	NM	NM	103.38	NM
MMW-2	20-35	NM	NM	NM	104.85	NM
MMW-3	20-30	NM	NM	NM	104.89	NM
MMW-4	20-35	NM	NM	NM	99.90	NM
MMW-5	20-35	NM	NM	NM	106.06	NM
MMW-6	20-35	NM	NM	NM	100.00	NM
MMW-7	25-40	NM	NM	NM	103.66	NM
MMW-8	15-30	NM	NM	NM	86.51	NM
MMW-9	2-10	NM	NM	NM	58.39	NM
MMW-10	13-28	NM	NM	NM	93.78	NM
MMW-11	8-23	NM	NM	NM	83.20	NM
MMW-12	2-12	NM	NM	NM	58.69	NM
MMW-13	2-12	NM	NM	NM	77.91	NM
MMW-14	2-10	NM	NM	NM	59.19	NM
MMW-15	4-9	NM	NM	NM	71.52	NM
DMMW-1	40-45	NM	NM	NM	103.27	NM
DMMW-2	65-75	NM	NM	NM	86.21	NM
DMMW-4	55-60	NM	NM	NM	103.22	NM
RW-1	10-30	NM	NM	NM	103.29	NM
RW-2	10-30	NM	NM	NM	102.85	NM
RW-3	10-30	NM	NM	NM	100.25	NM
RW-4	10-30	NM	NM	NM	101.00	NM
RW-5	10-30	NM	NM	NM	94.97	NM
RW-6	6.5-26.5	NM	NM	NM	88.05	NM
RW-7	10-30	NM	NM	NM	88.06	NM
RW-8	8.5-28.5	NM	NM	NM	87.06	NM
RW-9	10-30	NM	NM	NM	86.18	NM
RW-10	10-30	NM	NM	NM	84.49	NM
RW-11	7-27	NM	NM	NM	81.06	NM
RW-12	10-30	NM	NM	NM	82.22	NM
RW-13	9-29	NM	NM	NM	80.72	NM
RW-14	10-30	24.36	24.57	0.21	98.66	74.27
RW-15	10-30	21.74	21.85	0.11	95.62	73.86
RW-16	10-30	23.13	23.28	0.15	92.26	69.11
RW-17	10-30	***	18.87	***	88.47	69.60

Notes:  
1. Elevations based on assumed site datum.  
2. Groundwater depths were measured from the top of the PVC riser pipe.  
3. Groundwater levels measured on 6/18/2014.  
4. NM = Not Measured.  
5. Groundwater elevation for RW-14, RW-15 and RW-16 corrected for the presence of free phase petroleum product using a specific gravity for fuel of 0.66.

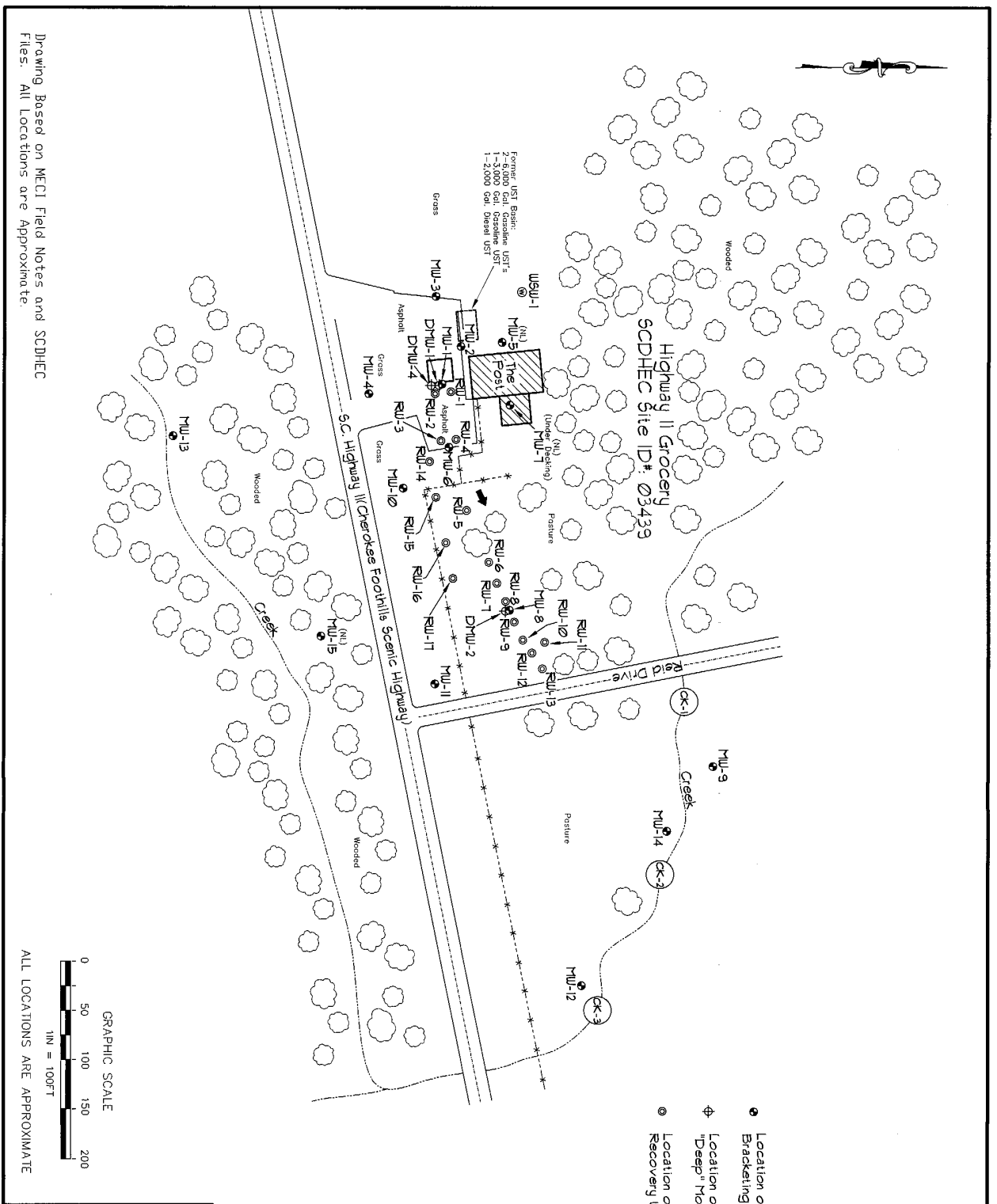


## FIGURES



Reference: Salem and Old Pickens, South Carolina  
 Tomasee and Walhalla, South Carolina  
 USGS 7.5 Min. Quoc  
 Contour Interval - 20 Feet

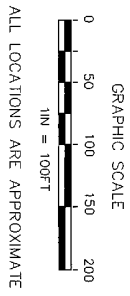
<p>Midlands          Environmental          Consultants, Inc.</p>	<p>Site Location</p>
<p>Highway 11 Grocery          1321 South Carolina Highway 11, Salem, SC          SCDHEC Site ID# 03439</p>	
<p>Figure 1</p>	
<p>MEC114-4182</p>	



**Explanation:**

- Location of Waterable Bracketing Monitoring Well
- Location of Double Cased "Deep" Monitoring Well
- Location of 4-Inch Recovery Well
- ▲ Estimated Groundwater Flow Direction
- Estimated Location of Removed Underground Storage Tanks
- (SU-2) Location of Surface Water Sample Collection

— Fence  
--- Stream

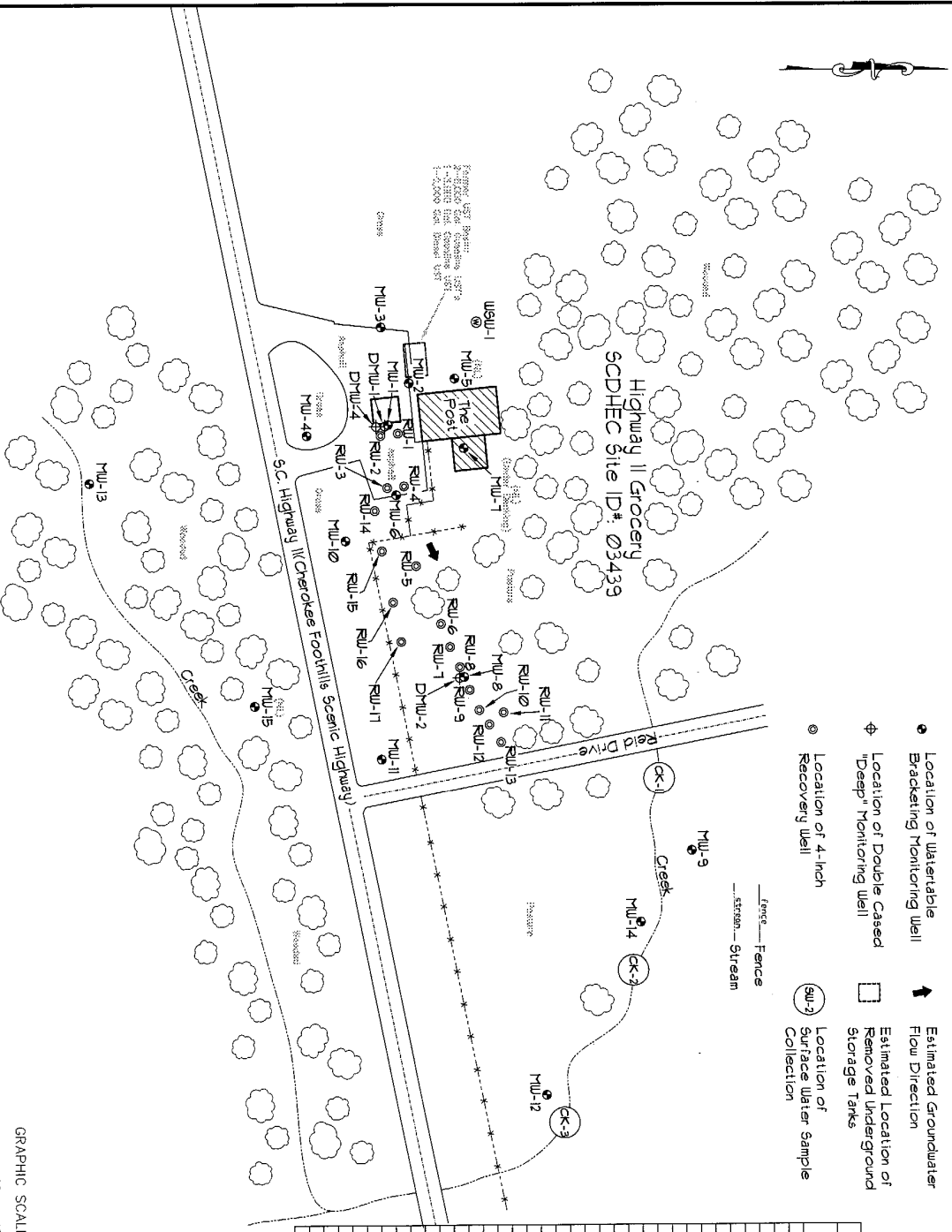


Drawing Based on MECI Field Notes and SCDHEC Files. All Locations are Approximate.

<b>Site Base Map</b>	
Highway II Grocery 13521 S.C. Highway II Salem, South Carolina SCDHEC Site ID 03439	
JOB NO. 14-4782 DATE: June 26, 2014 FIGURE	<b>2</b>

**Explanation:**

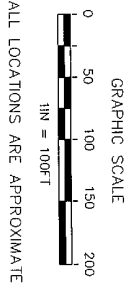
- Location of Waterable Bracketing Monitoring Well
- ↑ Estimated Groundwater Flow Direction
- ⊕ Location of Double Cased "Deep" Monitoring Well
- Estimated Location of Removed Underground Storage Tanks
- ⊙ Location of 4-inch Recovery Well
- ⊙ (SW-2) Location of Surface Water Sample Collection
- Fence
- Stream



Well #	Screened Interval (ft)	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)	Well Head Elevation	Groundwater Elevation
MW-1	15-30	NM	NM	NM	103.38	NM
MW-2	20-35	NM	NM	NM	104.85	NM
MW-3	20-35	NM	NM	NM	104.89	NM
MW-4	20-35	NM	NM	NM	99.50	NM
MW-5	20-35	NM	NM	NM	109.06	NM
MW-6	20-35	NM	NM	NM	100.00	NM
MW-7	25-40	NM	NM	NM	103.66	NM
MW-8	15-30	NM	NM	NM	86.51	NM
MW-9	2-10	NM	NM	NM	98.39	NM
MW-10	13-28	NM	NM	NM	83.78	NM
MW-11	8-23	NM	NM	NM	58.69	NM
MW-12	2-12	NM	NM	NM	77.91	NM
MW-13	2-12	NM	NM	NM	59.19	NM
MW-14	2-10	NM	NM	NM	71.52	NM
MW-15	4-9	NM	NM	NM	103.27	NM
DW-1	40-45	NM	NM	NM	66.21	NM
DW-2	65-75	NM	NM	NM	103.22	NM
DW-4	55-60	NM	NM	NM	103.29	NM
RW-1	10-30	NM	NM	NM	100.25	NM
RW-2	10-30	NM	NM	NM	102.85	NM
RW-3	10-30	NM	NM	NM	100.25	NM
RW-4	10-30	NM	NM	NM	101.00	NM
RW-5	10-30	NM	NM	NM	94.97	NM
RW-6	6.5-26.5	NM	NM	NM	88.05	NM
RW-7	10-30	NM	NM	NM	87.06	NM
RW-8	8.5-28.5	NM	NM	NM	86.18	NM
RW-9	10-30	NM	NM	NM	81.06	NM
RW-10	10-30	NM	NM	NM	82.22	NM
RW-11	7-27	NM	NM	NM	80.72	NM
RW-12	9-29	NM	NM	NM	24.57	98.66
RW-13	10-30	NM	NM	NM	21.74	95.62
RW-14	10-30	NM	NM	NM	23.13	82.26
RW-15	10-30	NM	NM	NM	18.87	69.60
RW-16	10-30	NM	NM	NM		
RW-17	10-30	NM	NM	NM		

**Notes:** Depth to groundwater measured on June 18, 2014.  
 Groundwater elevation for RW-14, RW-15 and RW-16 corrected for the presence of free phase petroleum product using a specific gravity for fuel of 0.85.  
 Site Datum Based on Assumed Spot Elevation.

Drawing Based on MECL Field Notes and SCDHEC Files. All Locations are Approximate.



**Potentiometric Data Site Map**

Highway II Grocery  
 13521 S.C. Highway II  
 Salem, South Carolina  
 SCDHEC Site ID #03439

**Midlands Environmental Consultants, Inc.**

JOB NO. 14-7282  
 DATE June 24, 2014  
 TITLE

5

**APPENDIX A:  
SITE SURVEY  
(Not Applicable)**

**APPENDIX B:**  
**SAMPLING LOGS, LABORATORY DATA SHEETS, & CHAIN-OF-CUSTODY FORMS**  
*(Not Applicable)*

**APPENDIX C:**  
**TAX MAP**  
**(Not Applicable)**

**APPENDIX D:**  
**SOIL BORING/FIELD SCREENING LOGS & 1903 FORMS**  
**(Not Applicable)**



**APPENDIX E:  
WELL COMPLETION LOGS & 1903 FORMS**

Depth (feet)	Description	PIU PPM	Well Diagram	Penetration Blows Per Foot
0	Grass and Topsoil			
	PIEDMONT RESIDUUM: Red, CLAY			
5	Tan, SILT	0.0		NO BLOWCOUNTS RECORDED
	Tan, Clayey Fine Sandy SILT			
10		0.0		
	Tan, Clayey Fine Sandy SILT			
15	Brown, Silty Medium to Coarse SAND w/ quartz Fragments	0.2		
20		2.4		
	Partially Weathered Rock: Brown, Silty Medium to Coarse SAND with Small quartz Fragments			
25		4.75		
	Partially weathered Rock: Grey, Medium to Coarse SAND with Small Quartz Fragments			
30	Boring terminated at 30.0 Feet Below Ground Surface (BGS). Recovery Well Installed to 30.0 Feet BGS. Free Phase Product Measured at 24.36 Feet and Groundwater Measured at 24.57 Feet Below Top of Casing on June 18, 2014.	501		
35				

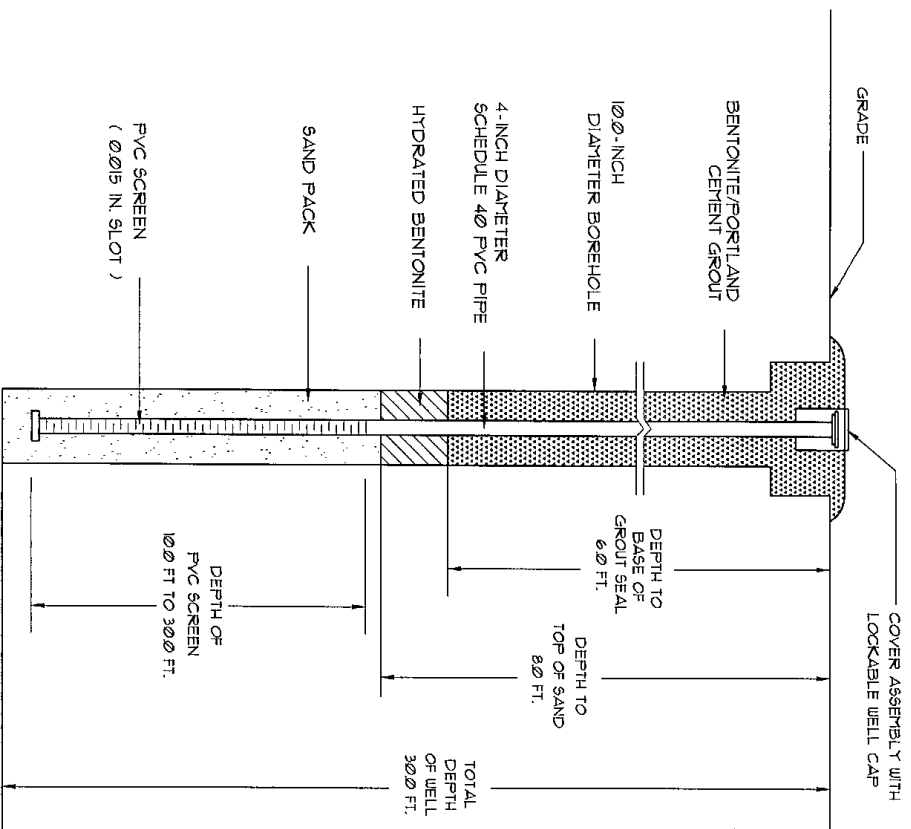
TEST BORING RECORD  
 Highway II Grocery  
 Salem, South Carolina  
 SCDHEC Site ID# 03439  
 MECI Project Number 14-4782

Boring Number: RW-14 (03439)  
 Date Drilled: 5/22/2014  
 Drilled By: Environmental Drilling & Probing Services, LLC  
 Logged By: P. Boylan

Prepared By:  
 Midlands  
 Environmental  
 Consultants, Inc.  
 235 B Dealey Road  
 Lexington, South Carolina 29273  
 (803) 665-3663 Fax: 803-16148

# MONITORING WELL INSTALLATION RECORD

Highway 11 Grocery  
 Salem, South Carolina  
 SCDHEC Site ID# 03439  
 MECI Project Number 14-4182



Well Number:	RW-14 (03439)
Date Drilled:	5/22/2014
Drilled By:	Environmental Drilling & Probing Services, LLC
Driller: D. Brown	S.C. I.D. #: B 02053
Logged By:	P. Boylan

Prepared By:  
**Midlands Environmental Consultants, Inc.**  
 231 Doodle Road  
 Lexington, South Carolina 29073  
 (803) 808-2043 Fax: 808-2048

Depth (feet)	Description	PID PPM	Well Diagram 0	Penetration Blows Per Foot																
				10	20	40	60	80	100											
0-5	Grass and Topsoil																			
5-10	PIEDMONT RESIDUUM: Red, CLAY																			
10-15	Tan, Fine Sandy Clayey SILT	1.6																		
15-20	Tan, Clayey Silty Fine SAND	3.0																		
20-25	Partially Weathered Rock: Brown, Silty Medium to Coarse SAND with Small Quartz Fragments	2.6																		
25-30		0.2																		
30-35	Boring terminated at 30.0 Feet Below Ground Surface (BGS). Recovery Well installed to 30.0 Feet BGS. Free Phase Product measured at 21.74 Feet and Groundwater Measured at 21.85 Feet Below Top of Casing on June 18, 2014.	1.3																		
		327																		

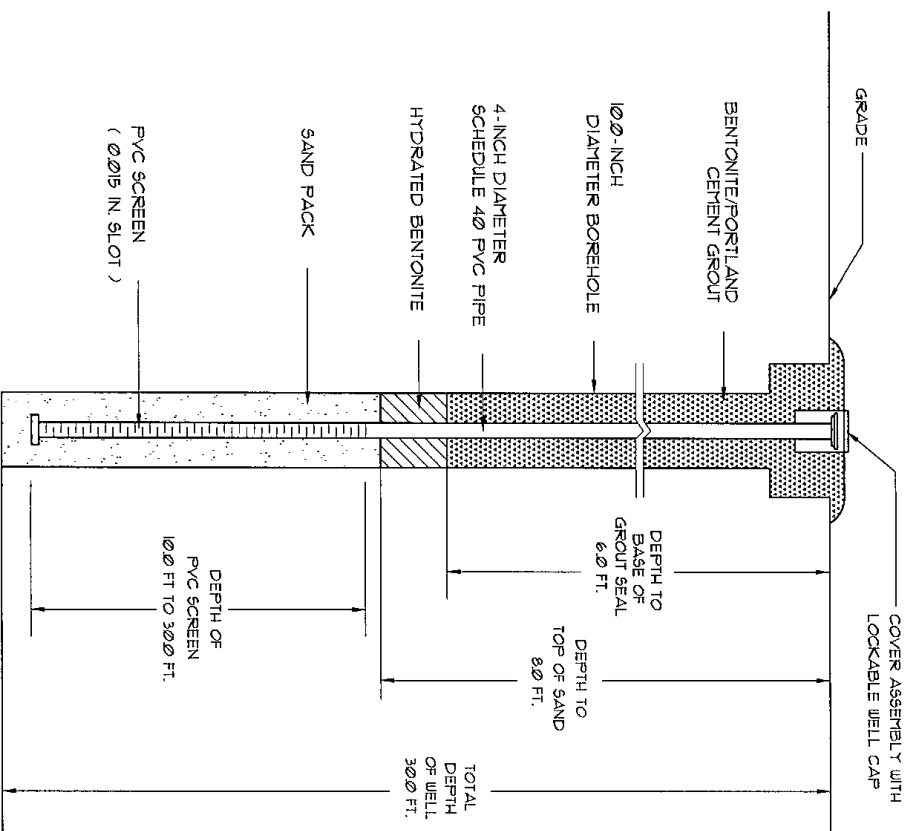
**TEST BORING RECORD**  
 Highway 11 Grocery  
 Salem, South Carolina  
 SCDHEC Site ID# 03439  
 MECI Project Number 14-4782

Boring Number: RW-15 (03439)  
 Date Drilled: 5/21/2014  
 Drilled By: Environmental Drilling & Environmental Services, LLC  
 Logged By: P. Boylan

Prepared By:  
 Midlands Environmental Consultants, Inc.  
 135 B Doolittle Road  
 Columbia, SC 29914  
 (803) 866-7043 Fax: 803-264-6

# MONITORING WELL INSTALLATION RECORD

Highway 11 Grocery  
 Salem, South Carolina  
 SCDHEC Site ID# 03439  
 MECI Project Number 14-4782



Well Number:	RW-15 (03439)
Date Drilled:	5/21/2014
Drilled By:	Environmental Drilling & Probing Services, LLC
Driller:	D. Brown S.C. I.D. #: B 02053
Logged By:	P. Boylan

Prepared By:  
**Midlands Environmental Consultants, Inc.**  
 231 Dooley Road  
 Lexington, South Carolina 29073  
 (803) 828-7043 Fax: 828-7048

Depth (feet)	Description	PID PPM	Well Diagram	Penetration Blows Per Foot
0 - 5	Grass and Topsoil			
5 - 10	PIEDMONT RESIDUUM: Red, Silty CLAY	0.0		NO BLOWCOUNTS RECORDED
10 - 15	Tan, Silty Fine to Medium SAND	1.3		
15 - 20	Grey, Silty Fine to Medium SAND with Small Rock Fragments	0.0		
20 - 25	Partially Weathered Rock: Tan, Medium to Coarse SAND with Small Quartz Fragments	3.1		
25 - 30		384		
30 - 35	Boring terminated at 30.0 Feet Below Ground Surface (BGS). Recovery Well installed to 30.0 Feet BGS. Free Phase Product measured at 23.13 Feet and Groundwater Measured at 23.28 Feet Below Top of Casing on June 18, 2014.	785		

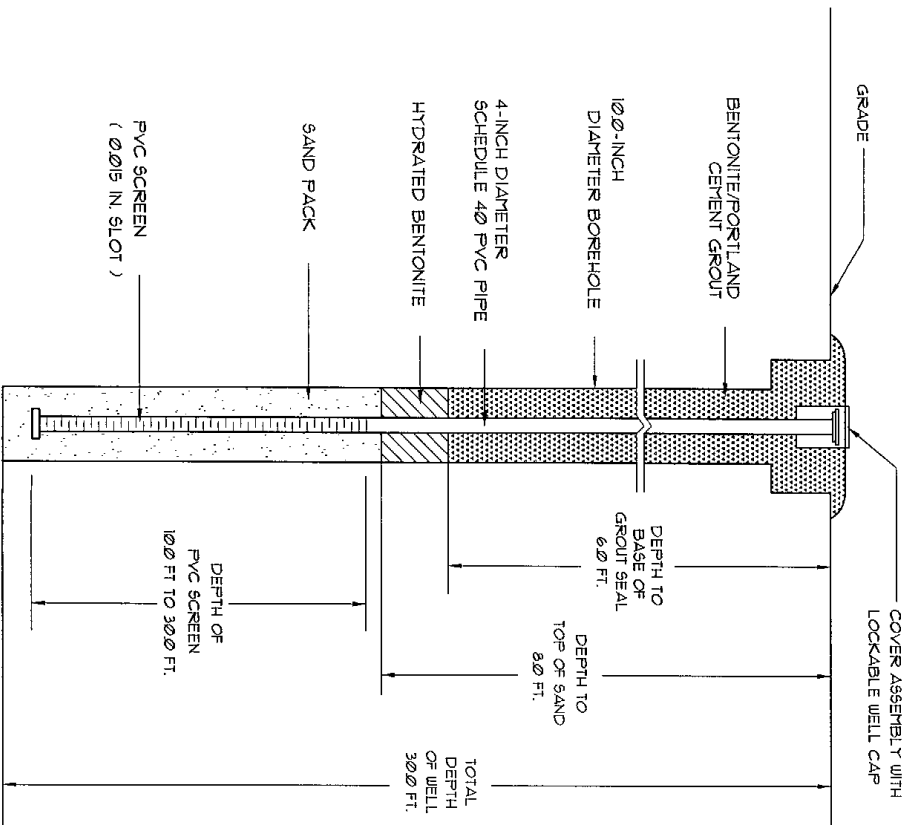
**TEST BORING RECORD**  
 Highway II Grocery  
 Salem, South Carolina  
 SCDHEC Site ID# 03439  
 MECI Project Number 14-4782

Boring Number: RW-16 (03439)  
 Date Drilled: 5/21/2014  
 Drilled By: Environmental Drilling & Probing Services, LLC  
 Logged By: P. Boylan

Prepared By:  
**Midlands Environmental Consultants, Inc.**  
 235 B Docking Road  
 Columbia, SC 29203  
 (803) 266-3243 Fax: 803-707-0748

# MONITORING WELL INSTALLATION RECORD

Highway 11 Grocery  
 Salem, South Carolina  
 SCDHEC Site ID# 03439  
 MECI Project Number 14-4182



Well Number:	RW-16 (03439)
Date Drilled:	5/21/2014
Drilled By:	Environmental Drilling & Probing Services, LLC
Driller:	D. Brown S.C. ID: # B 02053
Logged By:	P. Boylan

Prepared By:  
**Midlands Environmental Consultants, Inc.**  
 131 Dordick Road  
 Myrtle Beach, South Carolina 29573  
 (803) 808-7043 Fax: 803-2049

Depth (Feet)	Description	PPD PPM	Well Diagram	Penetration Blows Per Foot
0 - 1.0	Grass and Topsoil			
1.0 - 12.4	PIEDMONT RESIDUUM: Red, Clayey SILT	1.0		NO BLOWCOUNTS RECORDED
12.4 - 15	Tan, Fine to Medium Sandy SILT	0.2		
15 - 20	Brown, Silty Medium to Coarse SAND with Rock Fragments	12.4		
20 - 25	Partially Weathered Rock: Grey, Medium to Coarse SAND with Small Quartz Fragments	71.6		
25 - 30	Partially Weathered Rock: Tan, Silty Medium to Coarse SAND with Small Rock Fragments	12.7		
30 - 42.7	Boring terminated at 30.0 Feet Below Ground Surface (BGS). Recovery Well Installed at 30.0 Feet BGS. Groundwater Measured at 18.87 Feet Below Top of Casing on June 10, 2014.	42.7		
30 - 35				

**TEST BORING RECORD**

Highway 11 Grocery  
 Salem, South Carolina  
 SCDHEC Site ID# 03439  
 MECI Project Number 14-4182

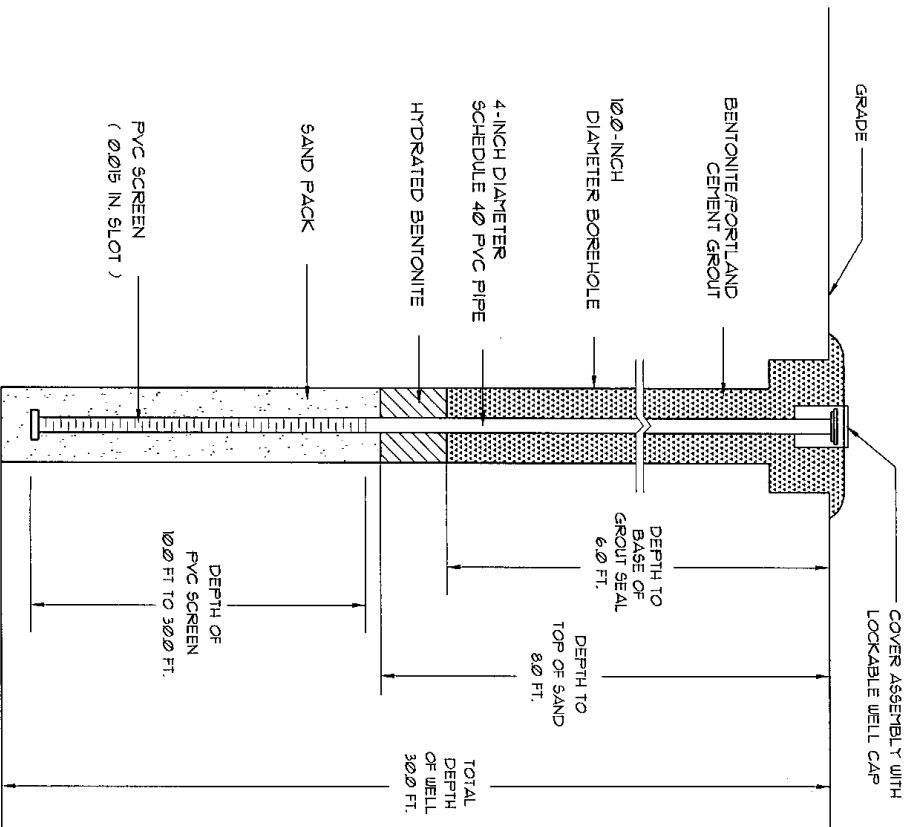
Boring Number:	RW-17 (03439)
Date Drilled:	5/22/2014
Drilled By:	Environmental Drilling & Probing Services, LLC
Logged By:	P. Boylan

Prepared By:  
**Midlands Environmental Consultants, Inc.**  
 225 N. Pickett Road  
 Lexington, South Carolina, 29073  
 (803) 503-2643 Fax: 803-2646



# MONITORING WELL INSTALLATION RECORD

Highway II Grocery  
 Salem, South Carolina  
 SCDHEC Site ID# 03439  
 MECI Project Number 14-4182



Well Number:	RW-11 (03439)
Date Drilled:	5/22/2014
Drilled By:	Environmental Drilling & Probing Services, LLC
Driller:	J. Smith
Logged By:	P. Boylan
SC. I.D. #:	B 02053

Prepared By:  
**Midlands Environmental Consultants, Inc.**  
 331 Doodleway Road  
 Lakewood, South Carolina 29073  
 (803) 808-2043 FAX: 808-2048



Water Well Record  
Bureau of Water  
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

1. WELL OWNER INFORMATION:

Name: SCDHEC (last) (first)  
Address: 2600 Bull Street  
City: Columbia State: SC Zip: 29201-1708  
Telephone: Work: (803) 898-4300 Home:

2. LOCATION OF WELL: COUNTY: Oconee

Name: Highway 11 Grocery  
Street Address: 13527 S.C. Highway 11  
City: Salem Zip: 29676-2926  
Latitude: Longitude:

3. PUBLIC SYSTEM NAME: PUBLIC SYSTEM NUMBER:

03439 RW-14

4. ABANDONMENT:  Yes  No

Give Details Below  
Grouted Depth: from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

Formation Description

Grass/Topsoil 0.5  
Red CLAY 3.5  
Tan, SILT 3.0  
Tan, Clayey Sandy SILT 7.0  
Brown, Silty SAND w/ Rocks 8.0  
PWR: Brown, Silty SAND w/ Rocks 6.0  
PWR: Grey, SAND w/ Rocks 2.0

Thickness of Stratum

Bottom of Stratum  
0.5  
0.5  
7.0  
14.0  
22.0  
28.0  
30.0

7. PERMIT NUMBER: UMW-25433

8. USE:

Residential  Public Supply  Process  
 Irrigation  Air Conditioning  Emergency  
 Test Well  Monitor Well  Replacement

9. WELL DEPTH (completed) Date Started: 5/22/2014

30.0 ft. Date Completed: 5/22/2014

10. CASING:  Threaded  Welded

Diam.: 4 Inch Height: Above/Below  
Type:  PVC  Galvanized Surface: \_\_\_\_\_ ft.  
 Steel  Other Weight: \_\_\_\_\_ lb./ft.  
4.0 in. to 10.0 ft. depth Drive Shoe?  Yes  No

11. SCREEN: Schedule 40 PVC Diam.: 4 Inch

Type: \_\_\_\_\_ Slot/Gauge: 0.015 Length: 20.0 Feet  
Set Between: 10.0 ft and 30.0 ft NOTE: MULTIPLE SCREENS  
Sieve Analysis  Yes (please enclose)  No USE SECOND SHEET

12. STATIC WATER LEVEL 24.57 ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface: \_\_\_\_\_ ft. after \_\_\_\_\_ hrs. Pumping \_\_\_\_\_ G.P.M.  
Pumping Test:  Yes (please enclose)  No Yield: \_\_\_\_\_

14. WATER QUALITY

Chemical Analysis  Yes  No Bacterial Analysis  Yes  No  
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack)  Yes  No

Installed from 8.0 ft. to 30.0 ft.  
Effective size \_\_\_\_\_ Uniformity Coefficient \_\_\_\_\_

16. WELL GROUTED?  Yes  No

Neat Cement  Bentonite/Cement  Other \_\_\_\_\_  
Depth: From 0.0 ft. to 6.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: \_\_\_\_\_ ft. \_\_\_\_\_ direction

Type \_\_\_\_\_ Well Disinfected  Yes  No Type: \_\_\_\_\_ Amount: \_\_\_\_\_

18. PUMP: Date installed: \_\_\_\_\_ Model No.: \_\_\_\_\_ Not installed

Mfr. Name: \_\_\_\_\_ H.P. \_\_\_\_\_ Volts \_\_\_\_\_ Length of drop pipe \_\_\_\_\_ ft. Capacity \_\_\_\_\_ gpm  
TYPE:  Submersible  Jet (shallow)  Turbine  
 Jet (deep)  Reciprocating  Centrifugal

19. WELL DRILLER: David Brown CERT NO.: 02053

Address: (Print) Level: A B C D (circle one)  
17539 Greenhill Road  
Charlotte, North Carolina 28278  
Telephone No.: 704-807-7229 Fax No.: 803-548-2233

20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under

my direction and this report is true to the best of my knowledge and belief.  
Signed: *David Brown* Date: 6/19/2014  
Well Driller

If D Level Driller, provide supervising driller's name:

6. TYPE:  Mud Rotary  Jetted  Bored  
 Dug  Air Rotary  Driven  
 Cable tool  Other

5. REMARKS:

RW-14

\*Indicate Water Bearing Zones  
(Use a 2nd sheet if needed)



**Water Well Record**  
**Bureau of Water**  
 Columbia, SC 29201-1708; (803) 898-4300

2600 Bull Street, Columbia, SC 29201-1708

**1. WELL OWNER INFORMATION:**

Name: **SCDHEC** (last) (first)  
 Address: 2600 Bull Street  
 City: Columbia State: SC Zip: 29201-1708  
 Telephone: Work: (803) 898-4300 Home:

**2. LOCATION OF WELL:**

County: Oconee  
 Name: Highway 11 Grocery  
 Street Address: 13527 S.C. Highway 11  
 City: Salem Zip: 29676-2926  
 Latitude: Longitude:

**3. PUBLIC SYSTEM NAME: PUBLIC SYSTEM NUMBER:**

03439 RW-15

**4. ABANDONMENT:**  Yes  No

Give Details Below  
 Grouted Depth: from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

Formation Description	Thickness of Stratum	Depth to Bottom of Stratum
Grass/Topsoil	0.5	0.5
Red CLAY	4.5	5.0
Tan, Sandy Clayey SILT	7.0	12.0
Tan, Clayey Silty SAND	9.0	21.0
PVR: Brown, Silty SAND w/ Rocks	9.0	30.0

**7. PERMIT NUMBER:** UMW-25433

**8. USE:**

Residential  Public Supply  Process  
 Irrigation  Air Conditioning  Emergency  
 Test Well  Monitor/Well  Replacement

**9. WELL DEPTH (completed):** Date Started: 5/21/2014  
 30.0 ft. Date Completed: 5/21/2014

**10. CASING:**  Threaded  Welded  
 Diam.: 4 Inch  
 Type:  PVC  Galvanized  Steel  Other  
 4.0 in. to 10.0 ft. depth  
 Surface: \_\_\_\_\_ ft.  
 Weight: \_\_\_\_\_ lb./ft.  
 Drive Shoe?  Yes  No

**11. SCREEN:** Schedule 40 PVC  
 Type: \_\_\_\_\_ Diam.: 4 Inch  
 Slot/Gauge: 0.015 Length: 20.0 Feet  
 Set Between: 10.0 ft. and 30.0 ft. NOTE: MULTIPLE SCREENS  
 Sieve Analysis  Yes (please enclose)  No USE SECOND SHEET

**12. STATIC WATER LEVEL:** 21.85 ft. below land surface after 24 hours

**13. PUMPING LEVEL Below Land Surface:**  
 Pumping Test:  Yes (please enclose)  No  
 Yield: \_\_\_\_\_ hrs. Pumping \_\_\_\_\_ G.P.M.

**14. WATER QUALITY**  
 Chemical Analysis  Yes  No Bacterial Analysis  Yes  No  
 Please enclose lab results.

**15. ARTIFICIAL FILTER (filter pack)  Yes  No**  
 Installed from 8.0 ft. to 30.0 ft.  
 Effective size \_\_\_\_\_ Uniformity Coefficient \_\_\_\_\_

**16. WELL GROUTED?  Yes  No**  
 Neat Cement  Bentonite  Bentonite/Cement  Other \_\_\_\_\_  
 Depth: From 0.0 ft. to 6.0 ft.

**17. NEAREST SOURCE OF POSSIBLE CONTAMINATION:** \_\_\_\_\_ ft. \_\_\_\_\_ direction  
 Type \_\_\_\_\_ Well Disinfected  Yes  No Type: \_\_\_\_\_ Amount: \_\_\_\_\_

**18. PUMP:** Date installed: \_\_\_\_\_ Model No.: \_\_\_\_\_ Not installed   
 Mfr. Name: \_\_\_\_\_ H.P. \_\_\_\_\_ Volts \_\_\_\_\_ Length of drop pipe \_\_\_\_\_ ft. Capacity \_\_\_\_\_ gpm  
 TYPE:  Submersible  Jet (shallow)  Turbine  
 Jet (deep)  Reciprocating  Centrifugal

**19. WELL DRILLER: DAVID BROWN** CERT. NO.: 02053  
 Address: (Print) Level: A B C D (circle one)  
 17539 Greenhill Road  
 Charlotte, North Carolina 28278  
 Telephone No.: 704-507-7229 Fax No.: 803-548-2233

**20. WATER WELL DRILLER'S CERTIFICATION:** This well was drilled under  
 my direction and this report is true to the best of my knowledge and belief.

Signed: *David Brown* Date: 6/19/2014  
 Well Driller

If D Level Driller, provide supervising driller's name:

**5. REMARKS:**

RW-15

**6. TYPE:**  Mud Rotary  Jetted  Bored  
 Dug  Air Rotary  Driven  
 Cable tool  Other



**Water Well Record**  
**Bureau of Water**  
 2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

**1. WELL OWNER INFORMATION:**  
 Name: SCDHEC (last) (first)  
 Address: 2600 Bull Street  
 City: Columbia State: SC Zip: 29201-1708  
 Telephone: Work: (803) 898-4300 Home:

**2. LOCATION OF WELL:** COUNTY: Oconee  
 Name: Highway 11 Grocery  
 Street Address: 13527 S.C. Highway 11  
 City: Salem Zip: 29676-2926  
 Latitude: Longitude:

**3. PUBLIC SYSTEM NAME:** PUBLIC SYSTEM NUMBER:  
 03439 RW-16

**4. ABANDONMENT:**  Yes  No  
 Give Details Below  
 Grouted Depth: from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

Formation Description	Thickness of Stratum	Depth to Bottom of Stratum
Grass/Topsoil	0.5	0.5
Red. Silty CLAY	2.5	3.0
Tan, Silty SAND	9.0	12.0
Grey, Silty SAND w/ Rocks	6.0	18.0
PWR: Tan, SAND w/ Rocks	12.0	30.0

**7. PERMIT NUMBER:** UMW-25433

**8. USE:**  
 Residential  Public Supply  Process  
 Irrigation  Air Conditioning  Emergency  
 Test Well  Monitor Well  Replacement

**9. WELL DEPTH (completed)** Date Started: 5/21/2014  
 30.0 ft Date Completed: 5/21/2014

**10. CASING:**  Threaded  Welded  
 Diam.: 4 Inch Height: Above/Below \_\_\_\_\_ ft.  
 Type:  PVC  Galvanized Surface \_\_\_\_\_ ft.  
 Steel  Other Weight \_\_\_\_\_ lb./ft.  
 4.0 in. to 10.0 ft. depth Drive Shoe?  Yes  No  
 in. to \_\_\_\_\_ ft. depth

**11. SCREEN:** Diam.: 4 Inch  
 Type: Schedule 40 PVC Length: 20.0 Feet  
 Slot/Gauge: 0.015 ft. and 30.0 ft. NOTE: MULTIPLE SCREENS  
 Set Between: \_\_\_\_\_ ft. and \_\_\_\_\_ ft. USE SECOND SHEET  
 Sieve Analysis  Yes (please enclose)  No

**12. STATIC WATER LEVEL:** 23.28 ft. below land surface after 24 hours  
**13. PUMPING LEVEL BELOW LAND SURFACE:**  
 Pumping Test:  Yes (please enclose)  No \_\_\_\_\_ G.P.M.  
 Yield: \_\_\_\_\_

**14. WATER QUALITY**  
 Chemical Analysis  Yes  No Bacterial Analysis  Yes  No  
 Please enclose lab results.

**15. ARTIFICIAL FILTER (filter pack):**  Yes  No  
 Installed from 8.0 ft. to 30.0 ft.  
 Effective size \_\_\_\_\_ Uniformity Coefficient \_\_\_\_\_

**16. WELL GROUTED?**  Yes  No  
 Neat Cement  Bentonite  Bentonite/Cement  Other \_\_\_\_\_  
 Depth: From 0.0 ft. to 6.0 ft.

**17. NEAREST SOURCE OF POSSIBLE CONTAMINATION:** \_\_\_\_\_ ft. \_\_\_\_\_ direction  
 Type \_\_\_\_\_  
 Well Disinfected  Yes  No Type \_\_\_\_\_ Amount \_\_\_\_\_

**18. PUMP:** Date installed: \_\_\_\_\_ Not installed   
 Mfr. Name: \_\_\_\_\_ Model No.: \_\_\_\_\_  
 H.P. \_\_\_\_\_ Volts \_\_\_\_\_ Length of drop pipe \_\_\_\_\_ ft. Capacity \_\_\_\_\_ gpm  
 TYPE:  Submersible  Jet (shallow)  Turbine  
 Jet (deep)  Reciprocating  Centrifugal

**19. WELL DRILLER:** David Brown CERT. NO.: 02053  
 Address: (Print) Level: A B C D (circle one)  
 17539 Greenhill Road  
 Charlotte, North Carolina 28278  
 Telephone No.: 704-807-7529 Fax No.: 803-548-2233

**20. WATER WELL DRILLER'S CERTIFICATION:** This well was drilled under  
 my direction and this report is true to the best of my knowledge and belief.

Signed: *David Brown* Date: 6/19/2014  
 Well Driller

If D Level Driller, provide supervising driller's name:



Water Well Record  
Bureau of Water

2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

1. WELL OWNER INFORMATION:

Name: SCDHEC (last) (first)  
Address: 2600 Bull Street  
City: Columbia State: SC Zip: 29201-1708  
Telephone: Work: (803) 898-4300 Home:  
2. LOCATION OF WELL: COUNTY: Oconee

Name: Highway 11 Grocery  
Street Address: 13527 S.C. Highway 11  
City: Salem Zip: 29676-2926  
Latitude: Longitude:

3. PUBLIC SYSTEM NAME: PUBLIC SYSTEM NUMBER:  
03439 RW-17

4. ABANDONMENT:  Yes  No  
Give Details Below  
Grouted Depth: from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

Formation Description	Thickness of Stratum	Depth to Bottom of Stratum
Grass/Topsoil	0.5	0.5
Red. Clayey SILT	2.5	3.0
Tan, Sandy SILT	12.0	15.0
Brown, Silty SAND w/ Rocks	3.0	18.0
PWR: Grey, SAND w/ Rocks	9.0	27.0
PWR: Tan, Silty SAND w/ Rocks	3.0	30.0

5. REMARKS:  
RW-17  
(Use a 2nd sheet if needed)

\*Indicate Water Bearing Zones

6. TYPE:  Mud Rotary  Jetted  Bored  
 Dug  Air Rotary  Driven  
 Cable tool  Other

7. PERMIT NUMBER: UMW-25433

8. USE:  Residential  Public Supply  Process  
 Irrigation  Air Conditioning  Emergency  
 Test Well  Monitor/Well  Replacement

9. WELL DEPTH (completed) Date Started: 5/22/2014  
30.0 ft. Date Completed: 5/22/2014

10. CASING:  Threaded  Welded  
Diam.: 4 Inch Height: Above/Below  
Type:  PVC  Galvanized Surface: \_\_\_\_\_ ft.  
 Steel  Other Weight: \_\_\_\_\_ lb/ft.  
4.0 in. to 10.0 ft. depth Drive Shoe?  Yes  No

11. SCREEN: Schedule 40 PVC Diam.: 4 Inch  
Type: \_\_\_\_\_ Slot/Gauge: 0.015 Length: 20.0 Feet  
Set Between: 10.0 ft. and 30.0 ft. NOTE: MULTIPLE SCREENS  
Sieve Analysis  Yes (please enclose)  No USE SECOND SHEET

12. STATIC WATER LEVEL: 18.87 ft. below land surface after 24 hours  
13. PUMPING LEVEL Below Land Surface: \_\_\_\_\_ ft. after \_\_\_\_\_ hrs. Pumping \_\_\_\_\_ G.P.M.  
Pumping Test:  Yes (please enclose)  No Yield: \_\_\_\_\_

14. WATER QUALITY Chemical Analysis  Yes  No Bacterial Analysis  Yes  No  
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack)  Yes  No  
Installed from 8.0 ft. to 30.0 ft.  
Effective size \_\_\_\_\_ Uniformity Coefficient \_\_\_\_\_

16. WELL GROUTED?  Yes  No  
 Neat Cement  Bentonite  Bentonite/Cement  Other \_\_\_\_\_  
Depth: From 0.0 ft. to 6.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: \_\_\_\_\_ ft. \_\_\_\_\_ direction  
Type \_\_\_\_\_ Well Disinfected  Yes  No Type: \_\_\_\_\_ Amount: \_\_\_\_\_

18. PUMP: Mfr. Name: \_\_\_\_\_ Model No.: \_\_\_\_\_ Not installed   
H.P. \_\_\_\_\_ Volts \_\_\_\_\_ Length of drop pipe \_\_\_\_\_ ft. Capacity \_\_\_\_\_ gpm  
TYPE:  Submersible  Jet (shallow)  Turbine  
 Jet (deep)  Reciprocating  Centrifugal

19. WELL DRILLER: David Brown CERT. NO.: 02053  
Address: (Print) Level: A B C D (circle one)  
17539 Greenhill Road  
Charlotte, North Carolina 28278  
Telephone No.: 704-507-9229 Fax No.: 803-548-2233

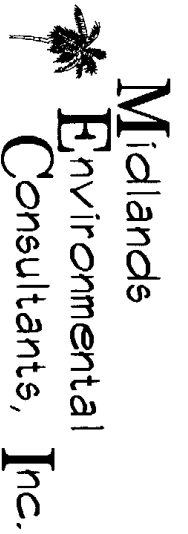
20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under \_\_\_\_\_  
my direction and this report is true to the best of my knowledge and belief.

Signed: *David Brown* Date: 6/19/2014  
Well Driller

If D Level Driller, provide supervising driller's name:

**APPENDIX F:**  
**AQUIFER EVALUATION SUMMARY FORMS, DATA, GRAPHS, EQUATIONS**  
*(Not Applicable)*

**APPENDIX G:  
DISPOSAL MANIFEST**



June 24, 2014

Re: Treatment of Purge Water  
Highway 11 Grocery  
Salem, South Carolina  
SCDHEC Site ID Number 03439  
MECI Project Number 14-4782

To Whom it May Concern:

Midlands Environmental Consultants, Inc. is providing the following letter as certification that treatment of the referenced purge water complied with the conditions of "Proposed Conditions for Use of Portable Activated Carbon Units for the Treatment of Small Volumes of Petroleum Hydrocarbon Contaminated Groundwater", as described in the following:

Applicability:

Groundwater treated was obtained as a result development of wells and sampling.

Conditions:

1. The purge/bail water from all wells is mixed before usage of the Activated Carbon Unit.
2. No free-product was detected in any of the purge water drums.
3. Analytical results of from well sampling show average concentrations of petroleum hydrocarbon constituents less than 5000 parts per billion (ppb) Benzene and less than 20,000 ppb total BTEX.
4. The existing carbon pack will be replaced/reactivated every 5,000 gallons.
5. Record of usage is maintained by Contractor.
6. Any and all recommendations and conditions issued by the Manufacturer have been adhered to.
7. Any and all recommendations and conditions (even on a site by site basis) issued by the SCDHEC must be adhered to.



June 24, 2014

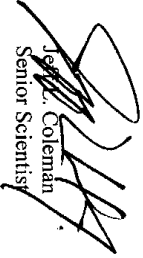
All purge waters were treated on-site using an up-flow treatment drum loaded with 30 pounds of activated carbon. Carbon will be loaded to a maximum of 3 pounds of total organic compounds or 5,000 gallons of development/purge water, whichever occurs first.

**42.0 Gallons of development water was treated on May 22, 2014 at the referenced site.**

Midlands Environmental also tracks cumulative organic compounds adsorbed on the activated carbon to ensure the capacity of carbon mass is not over-charged. This data is available upon request.

Should you have any questions or comments, please contact the undersigned.

Sincerely,  
Midlands Environmental Consultants, Inc.



Jesse L. Coleman  
Senior Scientist



Richland County LP  
 1047 Highway Church Road  
 Efling, SC, 29045  
 Ph: (803) 788-3054

Original  
 Ticket# 1312238

Customer Name MIDLANDSENVIRON MIDLANDS ENVI  
 Ticket Date 05/30/2014  
 Payment Type Credit Account  
 Manual Ticket#  
 Hauling Ticket#  
 Route  
 State Waste Code  
 Manifest  
 Destination  
 PG  
 Carrier MIDLANDSENVIRON MIDLANDS ENVIRONMENTAL  
 Vehicle# 3975  
 Container  
 Driver  
 Check#  
 Billing # 0000465  
 Gen EPA ID  
 Volume

Profile VAE2718 (SOIL FROM UST ASSESSMENT)  
 Generator 125-MIDLANDSENVIRONMENTAL MIDLANDS ENVIRONMENTAL

Time Scale ScaleMaster  
 In 05/30/2014 08:30:27 Inbound #2 Dwayne  
 Out 05/30/2014 08:40:23 Outbound Dwayne  
 Gross 15300 lb  
 Tare 9260 lb  
 Net 6040 lb  
 Tons 3.02

Product	LDX	Qty	UOM	Rate	Fee	Amount	Origin
1 SOIL-Cont. Soil - 100		3.02	Tons				40-RICHLAN
2 FUEL-Fuel Surcharg 100		%	%				40-RICHLAN
3 EYF-P-Standard Env 100		%	%				40-RICHLAN
4 RCR-P-Regulatory C 100		%	%				40-RICHLAN

Total Fees  
 Total Ticket

SIGNATURE Robert B. Baker



# SPECIAL WASTE MANIFEST

WASTE ID NUMBER VA2718	
EXPIRATION DATE December 11, 2016	Richland Landfill 1047 Highway Church Road Elgin, SC 29045 Special Waste Phone: 803-744-3345 Fax: 866-904-7194 Prepared by: Sandra Reeves
GENERATOR OF WASTE: CUSTOMER: LOCATION OF WASTE: CITY: PHONE NUMBER: FAX NUMBER: GENERATOR'S SIGNATURE:	MIDLANDS ENV. CONSULTANTS, INC. - VARIOUS ACCOUNT NUMBER: 820-469 COUNTY: CONTACT: LYNN SHANE DATE:
TRANSPORTER OF WASTE: DATE:	Midlands Environmental Consultants 5/30/14 TRUCK NUMBER: 3975
DRIVER'S SIGNATURE:	Patricia Rogers
*** TO BE COMPLETED BY RICHLAND LANDFILL *** DISPOSAL SITE: RICHLAND LANDFILL, ELGIN, SC Waste Class: SOIL	
DESCRIPTION OF WASTE: SOIL FROM UST ASSESSMENT TICKET NUMBER: 1312238	TONNAGE:
RECEIVED BY: DCM	

Highway 11 Gateway 50%  
 Roberts Energy 30%  
 Holly Dale 20%

**APPENDIX H:**  
**LOCAL ZONING REGULATIONS**  
*(Not Applicable)*

**APPENDIX I:**  
**FATE AND TRANSPORT MODELING**  
*(Not Applicable)*

**APPENDIX J:**  
**ACCESS AGREEMENTS**  
*(Not Applicable)*

**APPENDIX K:  
DATA VERIFICATION CHECKLIST**

**Contractor Checklist**

Item#	Item	Yes	No	N/A
1	Are Facility Name, Permit #, and address provided?	X		
2	Is UST Owner/Operator name, address, & phone number provided?	X		
3	Is name, address, & phone number of current property owner provided?	X		
4	Is the DHEC Certified UST Site Rehabilitation Contractor's Name, Address, telephone number, and certification number provided?	X		
5	Is the name, address, telephone number, and certification number of the well driller that installed borings/monitoring wells provided?	X		
6	Is the name, address, telephone number, and certification number of the certified laboratory(ies) performing analytical analyses provided?			X
7	Has the facility history been summarized?	X		
8	Has the regional geology and hydrogeology been described?	X		
9	Are the receptor survey results provided as required?			X
10	Has current use of the site and adjacent land been described?	X		
11	Has the site-specific geology and hydrogeology been described?	X		
12	Has the primary soil type been described?	X		
13	Have field screening results been described?			X
14	Has a description of the soil sample collection and preservation been detailed?			X
15	Has the field screening methodology and procedure been detailed?			X
16	Has the monitoring well installation and development dates been provided?	X		
17	Has the method of well development been detailed?	X		
18	Has justification been provided for the locations of the monitoring wells?	X		
19	Have the monitoring wells been labeled in accordance with the UST QAPP guidelines?	X		
20	Has the groundwater sampling methodology been detailed?			X
21	Have the groundwater sampling dates and groundwater measurements been provided? (Appendix E)	X		
22	Has the purging methodology been detailed?			X
23	Has the volume of water purged from each well been provided along with measurements to verify that purging is complete? (Appendix B)			X
24	If free-product is present, has the thickness been provided?	X		
25	Does the report include a brief discussion of the assessment done and the results?	X		
26	Does the report include a brief discussion of the aquifer evaluation and results?			X
27	Does the report include a brief discussion of the fate & transport models used?			X



Item#	Item	Yes	No	N/A
28	Are the site-conceptual model tables included? (Tier 1 Risk Evaluation)			X
29	Have the exposure pathways been analyzed? (Tier 2 Risk Evaluation)			X
30	Have the SSTLs for each compound and pathway been calculated? (Tier 2 Risk Evaluation)			X
31	Have recommendations for further action been provided and explained?			X
32	Has the soil analytical data for the site been provided in tabular format? (Table 1)			X
33	Has the potentiometric data for the site been provided in tabular format? (Table 2)	X		
34	Has the current and historical laboratory data been provided in tabular format? (Tables 3 & 3A)			X
35	Have the aquifer characteristics been provided and summarized on the appropriate form? (Appendix F)			X
36	Have the Site conceptual model tables been included? (Tier 1 Risk Evaluation)			X
37	Has the topographic map been provided with all required elements? (Figure 1)	X		
38	Has the site base map been provided with all required elements? (Figure 2)	X		
39	Have the CoC site maps been provided? (Figure 4)			X
40	Has the site potentiometric map been provided? (Figure 5)	X		
41	Have the geologic cross-sections been provided? (Figure 2)			X
42	Have maps showing the predicted migration of the CoCs through time been provided? (Tier 2 Risk Evaluation)			X
43	Has the site survey been provided and include all necessary elements? (Appendix A)			X
44	Have the sampling logs, chain of custody forms, and the analytical data package been included with all required elements? (Appendix B)			X
45	Is the laboratory performing the analyses properly certified?			X
46	Has the tax map been included with all necessary elements? (Appendix C)			X
47	Have the soil boring/field screening logs been provided? (Appendix D)			X
48	Have the well completion logs and SCDHEC Form 1903 been provided? (Appendix E)	X		
49	Have the aquifer evaluation forms, data, graphs, equations, etc. been provided? (Appendix F)			X
50	Have the disposal manifests been provided? (Appendix G)	X		
51	Has a copy of the local zoning regulations been provided? (Appendix H)			X
52	Has all fate and transport modeling been provided? (Appendix I)			X
53	Have copies of all access agreements obtained by the contractor been provided? (Appendix J)			X
54	Has a copy of this form been attached to the final report and are explanations for any missing or incomplete data been provided? (Appendix K)	X		





W. Marshall Taylor Jr., Acting Director

*Promoting and protecting the health of the public and the environment*

**MR RONNY LOWDER  
EMERALD INC  
P O BOX 3050  
SUMTER SC 29151-3050**

JAN 27 2015



Re: AFVR  
Contract #IFB-5400005023-11/8/12-EMW; PO #4600368249  
Notice to proceed

Dear Mr. Lowder:

Under the terms and conditions of the referenced contract, and per the schedule submitted to the Underground Storage Tank (UST) Management Division on October 14, 2014, free-phase product (FPP) recovery using aggressive fluid vapor recovery (AFVR) has been approved for the UST facilities listed below. Emerald, Inc. may proceed upon receipt of this letter. Enclosed are packets containing necessary information to perform FPP recovery at each facility. Each facility has been assigned an individual cost agreement (CA) number, work scope, work scope start date, and report due date. As specified in the contract, a report and invoice must be submitted on or before the due date. The appropriate CA number and Purchase Order (PO) #4600368249 should be referenced on each invoice submitted.

Permit	Facility	County	Work Scope	CA	Start Date	Due Date
00479	Service Station	Anderson	1 96-hour event	48990	4/20/15	6/22/15
00540	Delta Mills	Greenville	2 96-hour events	48069	5/17/15	6/22/15
00849	Hilda Garage	Barnwell	1 96-hour event	49099	4/13/15	4/21/15
01854	Freeman Mechanical	Charleston	2 96-hour events	49176	5/11/15	6/22/15
02618	Terry's Food Mart	Lee	1 96-hour event	48241	3/23/15	3/30/15
02906	Strickland's Auto	Dillon	2 48-hour events	48723	5/11/15	6/22/15
03198	Summer's Store	Fairfield	1 96-hour event	48603	3/30/15	4/8/15
03439	Highway 11 Grocery	Oconee	2 96-hour events	48443	4/27/15	5/8/15
05278	Brown Bag	Jasper	2 96-hour events	49018	5/4/15	6/29/15
05878	Purolator	Lexington	2 96-hour events	48008	3/30/15	5/8/15
08071	Waldensian Bakeries	Spartanburg	1 96-hour event	48453	4/20/15	4/28/15
09089	Pressley & Son	Williamsburg	1 96-hour event	49530	4/6/15	4/14/15
10658	Joker Joe's	Jasper	1 96-hour event	48363	5/4/15	5/13/15
11781	Cooper's Gas King	Greenville	1 96-hour event	48832	5/17/15	5/26/15

Permit	Facility	County	Work Scope	CA	Start Date	Due Date
11890	Stanco Inc.	Lexington	1 96-hour event	48475	3/30/15	4/9/15
14102	Holly Oak	Greenwood	3 48-hour events	48568	5/17/15	6/1/15
14162	Getsinger's Grocery	Anderson	1 96-hour event	48989	4/13/15	6/22/15
15857	Grant's Grocery	Chester	2 96-hour events	49082	3/23/15	4/30/15
16009	Mary Moorhead	Anderson	1 96-hour event	48597	5/31/15	6/8/15
16093	Fry Enterprises	Jasper	1 96-hour event	48450	5/4/15	5/13/15
18529	B J's Wholesale	Greenville	2 48-hour events	48637	4/20/15	6/22/15
18787	Blitchington's Grocery	Orangeburg	1 96-hour event	48600	4/13/15	4/21/15
19340	Former Minute Saver	Dorchester	2 48-hour events	49116	5/11/15	5/20/15
19646	Former Dabney's Amoco	Kershaw	1 96-hour event	48617	4/16/15	5/1/15
19683	Former Adams Service	Orangeburg	1 96-hour event	48625	5/11/15	6/22/15

The FPP recovery at each facility will be performed on behalf of the UST Owner/Operator (O/O) and payment will be made from the State Underground Petroleum Environmental Response Bank (SUPERB) Account. The O/O has no obligation to pay for the specified work scope. Please note that Sections 44-2-110(4) and 44-2-130(B) of the SUPERB Statute state that no costs will be allowed (considered for payment) unless prior approval from the South Carolina Department of Health and Environmental Control (Agency) is obtained.

Any changes to the work scope must be pre-approved by UST Management Division in order for Emerald to seek payment. Please contact the UST Project Manager for technical and/or financial approval. Any item that is not clearly or completely addressed in the report will not be compensated by SUPERB.

The Division grants pre-approval for transportation of FPP and petroleum-contaminated groundwater from the referenced UST facility to a permitted treatment facility. The FPP and contaminated groundwater must be accepted by the approved treatment facility. There can be no spillage or leakage in transport. A copy of the disposal manifest from the receiving facility that clearly designates the quantity received must be included as an appendix to the report.

If you have any questions concerning this correspondence or need further assistance, please contact me by phone at (803) 898-0655, by fax at (803) 898-0673, or by e-mail at [padgettjp@dhec.sc.gov](mailto:padgettjp@dhec.sc.gov).

Sincerely,



Joel P. Padgett, Geologist/Hydrologist  
 Corrective Action Section  
 UST Management Division  
 Bureau of Land and Waste Management

enc: Information packets  
 AFVR Schedule 13  
 cc: Technical file (w/o enc)

# Emerald, Inc.

CONSULTING AND ENGINEERING  
SERVICES IN ENVIRONMENTAL AFFAIRS

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2520 TAHOE DRIVE • POST OFFICE BOX 3050 • SUMTER, SOUTH CAROLINA 29151

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WEBSITE:  
www.emeraldinc-us.com

TELEPHONE (803) 469-5454  
FAX (803) 469-5465

July 2, 2015

Joel P. Padgett, P. G., Hydrogeologist  
Corrective Action Section  
Underground Storage Tank Management Division  
Bureau of Underground Storage Tank Management  
South Carolina Department of Health and  
Environmental Control  
2600 Bull Street  
Columbia, SC 29201

Aggressive Fluid Vapor Recovery Report  
Former Highway 11 Grocery  
Salem, South Carolina  
Oconee County  
UST Permit #03439; CA #48443  
Emerald Job 14-090A



Mr. Padgett,

Please find the attached Aggressive Fluid Vapor Recovery (AFVR) Report for the Former Highway 11 Grocery site. A site reconnaissance was conducted on May 12, 2015 to locate monitoring wells, gauge extraction wells, and assess site conditions. Prior to conducting this AFVR event information gathered during the site reconnaissance was presented to the SCDHEC project manager for review.

## **AGGRESSIVE FLUID VAPOR RECOVERY EVENT**

On June 15 through 19, 2015, Emerald, Inc. personnel performed a 96-hour AFVR event using RW-16 and RW-17 as extraction locations. This 96-hour AFVR event was conducted to remove free product previously detected at the subject site. Free phase petroleum product was detected in RW-16 at a thickness of 0.69 ft. prior to the event. At the conclusion of the

*Celebrating 25 Years*

1990-2015

event free phase product was not detected. Monitoring well locations are presented on the attached site map provided by SCDHEC.

Table 1 presents the off-gas concentrations (using a Photoionization Detector), post treatment off-gas concentrations, off-gas velocity, and knockout tank vacuum. Table 2 presents the stinger depths, wellhead vacuum measurements, water levels measurements and magnehelic readings obtained during the event. Emerald, Inc. field personnel normally record data at thirty minute intervals for the first eight hours of the event, then at one hour intervals from hours nine through twenty four and at two hour intervals from hour twenty four until the conclusion of the event. During the hours of midnight to 8 AM event monitoring was suspended. Due to the location of the site being vacant, off-gas treatment was not utilized during this event.

According to the calculations as presented on Table 1, a total of 1,407.21 pounds of hydrocarbons (as vapor) and 225.01 equivalent gallons of hydrocarbons were removed during this event. Approximately 0.50 gallons of Free phase petroleum product was detected in the knockout tank. A total of 8,841 gallons of petroleum contaminated groundwater was transported to the Blue Meadows Treatment Facility in Belton, SC for proper disposal. A copy of the disposal manifests for this event is included as an attachment.

If you have any questions or concerns please feel free to contact Emerald, Inc. at 803-469-5454.

Sincerely,  
Emerald, Inc.



William C. McClary, P.G.  
Project Manager



Ronny L. Lowder  
President

Attachments

**TABLE 1  
AFVR MONITORING DATA  
FORMER HIGHWAY 11 GROCERY  
SALEM, SOUTH CAROLINA  
SCDHEC SITE ID #03439  
EMERALD JOB #14-090A**

Extraction Wells	Date	Time (hh:mm)	Differential Time (hr)	Knockout Tank Vacuum (in. Hg)	Off-Gas Concentration (PPM)	Post-Treatment Concentration (PPM)	Offgas Velocity (ft/min)	Flow Rate (CFM)	CG:M (mg/dsm <sup>3</sup> )	Cg (Lb/Dscf)	Removal Rate (Lbs/Hr)	Interval Removal (Lbs)
RW-16	6/15/15	10:00	Start	15	4,438	N/A	1,862	91.40	23,600	1.47E-03	8.08	-
RW-17		10:30 ↓	0.5	15	4,872	N/A	1,804	88.55	25,908	1.62E-03	8.59	4.17
		11:00 ↓	0.5	15	4,501	N/A	1,721	84.48	23,935	1.49E-03	7.57	4.04
		11:30 ↓	0.5	15	4,923	N/A	1,844	90.51	26,179	1.63E-03	8.88	4.11
		12:00 ↓	0.5	15	> 5,000	N/A	1,881	92.33	26,589	1.66E-03	9.20	4.52
		12:30 ↓	0.5	15	> 5,000	N/A	1,815	89.09	26,589	1.66E-03	8.87	4.52
		13:00 ↓	0.5	15	> 5,000	N/A	1,792	87.96	26,589	1.66E-03	8.76	4.41
		13:30 ↓	0.5	15	> 5,000	N/A	1,836	90.12	26,589	1.66E-03	8.98	4.43
		14:00 ↓	0.5	15	> 5,000	N/A	1,889	92.72	26,589	1.66E-03	9.23	4.55
		14:30 ↓	0.5	15	> 5,000	N/A	1,932	94.83	26,589	1.66E-03	9.44	4.67
		15:00 ↓	0.5	15	> 5,000	N/A	1,858	91.20	26,589	1.66E-03	9.08	4.63
		15:30 ↓	0.5	15	> 5,000	N/A	1,809	88.79	26,589	1.66E-03	8.84	4.48
		16:00 ↓	0.5	15	> 5,000	N/A	1,867	91.64	26,589	1.66E-03	9.13	4.49
		16:30 ↓	0.5	15	> 5,000	N/A	1,754	86.10	26,589	1.66E-03	8.57	4.43
		17:00 ↓	0.5	15	> 5,000	N/A	1,831	89.87	26,589	1.66E-03	8.95	4.38
		17:30 ↓	0.5	15	> 5,000	N/A	1,824	89.53	26,589	1.66E-03	8.92	4.47
		18:00 ↓	0.5	15	> 5,000	N/A	1,762	86.49	26,589	1.66E-03	8.61	4.38
		19:00 ↓	1.0	15	> 5,000	N/A	2,418	118.69	26,589	1.66E-03	11.82	10.22
		20:00 ↓	1.0	15	> 5,000	N/A	1,879	92.23	26,589	1.66E-03	9.19	10.50
		21:00 ↓	1.0	15	> 5,000	N/A	2,056	100.92	26,589	1.66E-03	10.05	9.62
		22:00 ↓	1.0	15	> 5,000	N/A	1,844	90.51	26,589	1.66E-03	9.01	9.53
		23:00	1.0	15	> 5,000	N/A	1,962	96.30	26,589	1.66E-03	9.59	9.30
	6/16/15	0:00	1.0	15	> 5,000	N/A	1,815	89.09	26,589	1.66E-03	8.87	9.23
		8:00	8.0	15	> 5,000	N/A	1,778	87.27	26,589	1.66E-03	8.69	70.26
		10:00	2.0	15	> 5,000	N/A	1,842	90.41	26,589	1.66E-03	9.00	17.70
		12:00 ↑	2.0	15	> 5,000	N/A	2,166	106.32	26,589	1.66E-03	10.59	19.59
		14:00 ↓	2.0	15	8,973	N/A	2,139	104.99	47,716	2.98E-03	18.77	29.35
		16:00 ↓	2.0	15	9,237	N/A	2,234	109.66	49,120	3.07E-03	20.18	38.94
		18:00 ↓	2.0	15	7,041	N/A	2,018	99.05	37,442	2.34E-03	13.89	34.07
		20:00 ↓	2.0	15	7,033	N/A	2,113	103.72	37,399	2.33E-03	14.53	28.42
		22:00 ↓	2.0	15	7,017	N/A	2,350	115.35	37,314	2.33E-03	16.12	30.65

**TABLE 1 Cont'd.  
AFVR MONITORING DATA  
FORMER HIGHWAY 11 GROCERY  
SALEM, SOUTH CAROLINA  
SCDHEC SITE ID #03439  
EMERALD JOB #14-090A**

Extraction Wells	Date	Time (hh:mm)	Differential Time (hr)	Knockout Tank Vacuum (in. Hg)	Off-Gas Concentration (PPM)	Post-Treatment Concentration (PPM)	Offgas Velocity (ft/min)	Flow Rate (CFM)	CG:M (mg/dsm <sup>3</sup> )	Cg (Lb/Dscf)	Removal Rate (Lbs/Hr)	Interval Removal (Lbs)
RW-16	6/17/15	0:00 ↓	2.0	15	8,985	N/A	2,107	103.42	37,144	2.32E-03	14.39	30.51
RW-17		8:00 ↓	8.0	15	4,671	N/A	2,254	110.64	24,839	1.55E-03	10.29	98.73
		10:00 ↓	2.0	15	7,836	N/A	2,319	113.83	41,689	2.80E-03	17.77	28.06
		12:00 ↓	2.0	15	8,230	N/A	2,158	105.93	43,765	2.73E-03	17.36	35.13
		14:00 ↓	2.0	15	7,022	N/A	2,277	111.77	37,341	2.33E-03	15.63	33.00
		16:00 ↓	2.0	16	9,273	N/A	2,382	116.94	49,311	3.08E-03	21.41	37.05
		18:00 ↓	2.0	15	7,844	N/A	2,219	108.92	40,648	2.54E-03	16.58	38.00
		20:00 ↓	2.0	15	7,631	N/A	2,175	106.76	40,579	2.53E-03	16.23	32.81
		22:00 ↓	2.0	15	7,587	N/A	2,037	99.99	40,345	2.52E-03	15.11	31.34
	6/18/15	0:00 ↓	2.0	15	7,479	N/A	2,133	104.70	39,771	2.48E-03	15.60	30.71
		8:00 ↑	8.0	15	4,361	N/A	2,372	116.43	23,190	1.45E-03	10.11	102.85
		10:00 ↓	2.0	15	8,470	N/A	2,453	120.41	45,041	2.81E-03	20.31	30.43
		12:00 ↓	2.0	15	9,289	N/A	2,279	111.86	49,396	3.08E-03	20.70	41.01
		14:00 ↓	2.0	15	8,984	N/A	2,346	115.15	47,668	2.98E-03	20.56	41.26
		16:00 ↓	2.0	15	6,527	N/A	2,391	117.36	34,709	2.17E-03	15.26	35.82
		18:00 ↑	2.0	15	10,246	N/A	2,272	111.52	54,485	3.40E-03	22.78	38.02
		20:00 ↓	2.0	15	10,221	N/A	2,263	111.08	54,352	3.39E-03	22.61	45.38
		22:00 ↓	2.0	15	10,118	N/A	2,119	104.01	53,804	3.36E-03	20.96	43.58
	6/19/15	0:00 ↓	2.0	15	10,103	N/A	2,127	104.40	53,725	3.35E-03	21.01	41.97
		8:00 ↓	8.0	15	7,978	N/A	2,436	119.57	42,425	2.65E-03	19.00	160.05
		10:00 ↓	2.0	15	6,547	N/A	2,254	110.64	34,815	2.17E-03	14.43	33.43

Well Gauging Data			Before AFVR Event			After AFVR Event			Equations
Well No.	Diameter (in)	Screened Interval (ft)	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)	
RW-16	2	10-25	21.30	21.99	0.69	-	24.36	-	
RW-17	2	10-25	-	18.43	-	-	22.15	-	

Product Thickness		Recovery / Disposal Information	
Product observed in Sight Tube?	Yes	Hydrocarbons Removed (vapor):	1,407.21 Pounds
Product detected in Tanker?	No	Hydrocarbons Removed (liquid):	0.50 Gallons
Weather Conditions	Emerald, Inc. Personnel	Total Hydrocarbons Removed:	225.01 Equivalent Gallons
6/15/15 Sunny, 84-93°F	C. Clark	Molecular Weight Utilized:	128 mg/mg-mole
6/16/15 Sunny, 86-94°F	D. Ridgeway	Disposal Facility:	Blue Meadows Treatment Facility, Belton, SC
6/17/15 Sunny, 88-94°F		Total Liquids Removed:	8,841 Gallons
6/18/15 Sunny, 88-95°F			
6/19/15 Sunny, 88-91°F			

Notes	
↑ = Stinger raised	↓ = Stinger lowered



**TABLE 2  
EVENT MONITORING DATA  
FORMER HIGHWAY 11 GROCERY  
SALEM, SOUTH CAROLINA  
SCDHEC SITE ID #03439  
EMERALD JOB #14-090A**

Date	Time (hh:mm)	Extraction Wells				Event Monitoring					
		RW-16		RW-17		RW-5		RW-6		RW-7	
		Stinger Depth (ft.)	Wellhead Vacuum (in. Hg)	Stinger Depth (ft.)	Wellhead Vacuum (in. Hg)	Magnehelic Reading (Inches of water)	Depth to Water	Magnehelic Reading (Inches of water)	Depth to Water	Magnehelic Reading (Inches of water)	Depth to Water
6/15/15	10:00	20.5	14	17.5	14	Pre	23.48	Pre	21.17	Pre	21.33
	10:30	21.0	14	18.0	14	<1	23.54	<1	21.21	<1	21.41
	11:00	21.5	14	18.5	14	0.4	23.63	<1	21.28	<1	21.49
	11:30	22.0	14	19.0	14	0.4	23.68	<1	21.36	<1	21.57
	12:00	22.5	14	19.5	14	0.4	23.75	<1	21.47	<1	21.66
	12:30	23.0	14	20.0	14	0.4	23.87	<1	21.59	<1	21.71
	13:00	23.5	14	20.5	14	0.4	23.98	<1	21.65	<1	21.8
	13:30	24.0	14	21.0	14	0.4	24.01	<1	21.68	<1	21.88
	14:00	24.5	14	21.5	14	0.5	24.06	<1	21.71	<1	21.98
	14:30	25.0	14	22.0	14	0.4	24.11	<1	21.75	<1	22.07
	15:00	25.5	14	22.5	14	0.3	24.15	<1	21.78	<1	22.15
	15:30	26.0	14	23.0	14	0.4	24.18	<1	21.82	<1	22.25
	16:00	26.5	14	23.5	14	0.4	24.23	<1	21.87	<1	22.31
	16:30	27.0	14	24.0	14	0.4	24.28	<1	21.92	<1	22.39
	17:00	27.5	14	24.5	14	0.4	24.31	<1	21.98	<1	22.47
	17:30	28.0	14	25.0	14	0.4	24.35	<1	22.03	<1	22.56
	18:00	28.5	14	25.5	14	0.5	24.38	<1	22.09	<1	22.65
	19:00	29.0	14	26.0	14	0.5	24.41	<1	22.18	<1	22.73
	20:00	29.0	14	27.0	14	0.5	24.51	<1	22.31	<1	22.85
	21:00	29.0	14	28.0	14	0.5	24.46	<1	22.28	<1	22.87
	22:00	29.0	14	29.0	14	0.4	24.49	<1	22.25	<1	22.71
	23:00	29.0	14	29.0	14	0.4	24.51	<1	22.21	<1	22.63
6/16/15	0:00	29.0	14	29.0	14	0.4	24.53	<1	22.15	<1	22.55
	8:00	29.0	14	29.0	14	0.5	24.62	<1	22.11	<1	22.59
	10:00	29.0	14	29.0	14	0.6	24.66	<1	22.16	<1	22.68
	12:00	20.0	14	17.0	14	0.5	24.72	<1	22.21	<1	22.79
	14:00	21.0	14	18.0	14	0.7	24.77	<1	22.32	<1	22.86
	16:00	22.0	14	19.0	14	0.3	24.83	<1	22.39	<1	22.97
	18:00	23.0	14	20.0	14	0.4	24.88	<1	22.47	<1	23.21
	20:00	24.0	14	21.0	14	0.4	24.93	<1	22.53	<1	23.48
	22:00	25.0	14	22.0	14	0.4	24.95	<1	22.55	<1	23.53

Notes:

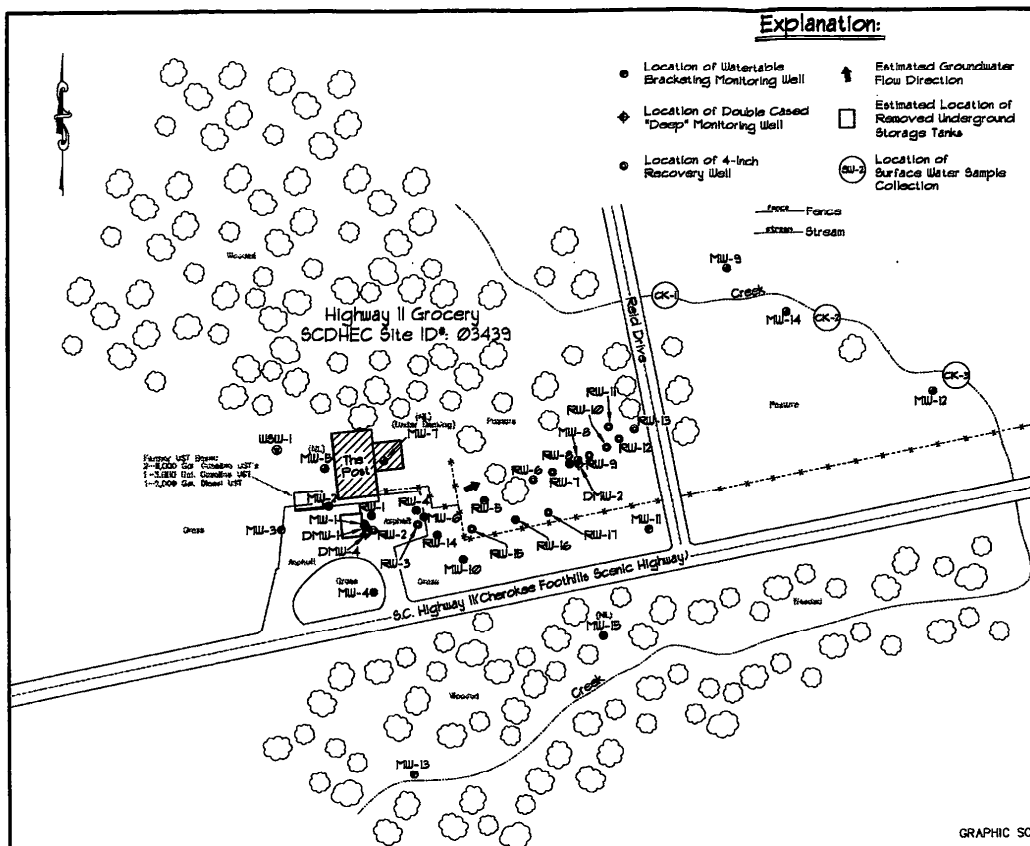
**TABLE 2 Cont'd.  
 EVENT MONITORING DATA  
 FORMER HIGHWAY 11 GROCERY  
 SALEM, SOUTH CAROLINA  
 SCDHEC SITE ID #03439  
 EMERALD JOB #14-090A**

Date	Time (hh:mm)	Extraction Wells				Event Monitoring					
		RW-16		RW-17		RW-5		RW-6		RW-7	
		Stinger Depth (ft.)	Wellhead Vacuum (in. Hg)	Stinger Depth (ft.)	Wellhead Vacuum (in. Hg)	Magnehelic Reading (Inches of water)	Depth to Water	Magnehelic Reading (Inches of water)	Depth to Water	Magnehelic Reading (Inches of water)	Depth to Water
6/17/15	0:00	25.0	14	23.0	14	0.4	24.98	<1	22.58	<1	23.58
	8:00	25.0	14	24.0	14	0.7	25.04	<1	22.66	<1	23.65
	10:00	25.0	14	25.0	14	0.3	25.06	<1	22.68	<1	23.66
	12:00	25.0	14	25.0	14	0.5	25.08	<1	22.69	<1	23.67
	14:00	25.0	14	25.0	14	0.5	25.10	<1	22.70	<1	23.68
	16:00	25.0	14	25.0	14	0.4	25.11	<1	22.70	<1	23.69
	18:00	25.0	14	25.0	14	0.6	25.12	<1	22.71	<1	23.71
	20:00	25.0	14	25.0	14	0.3	25.13	<1	22.72	<1	23.72
	22:00	25.0	14	25.0	14	0.4	25.13	<1	22.72	<1	23.74
	6/18/15	0:00	25.0	14	25.0	14	0.4	25.11	<1	2.73	<1
8:00		19.0	14	16.0	14	0.7	25.15	<1	22.74	<1	23.80
10:00		20.0	14	17.0	14	0.4	25.16	<1	22.75	<1	23.81
12:00		21.0	14	18.0	14	0.5	25.16	<1	22.76	<1	23.82
14:00		22.0	14	19.0	14	0.4	25.17	<1	22.77	<1	23.83
16:00		23.0	14	20.0	14	0.4	25.18	<1	22.78	<1	23.83
18:00		20.0	14	18.0	14	0.5	25.19	<1	22.79	<1	23.84
20:00		21.0	14	19.0	14	0.5	25.19	<1	22.81	<1	23.85
6/19/15	0:00	22.0	14	20.0	14	0.4	25.22	<1	22.85	<1	23.91
	8:00	22.0	14	20.0	14	0.5	25.24	<1	22.89	<1	23.96
	10:00	22.0	14	20.0	14	0.4	25.11	<1	22.60	<1	23.69

**Notes:**

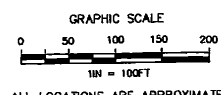
**Explanation:**

- Location of Waterable Bracketing Monitoring Well
- ◆ Location of Double Cased "Deep" Monitoring Well
- Location of 4-inch Recovery Well
- ↑ Estimated Groundwater Flow Direction
- Estimated Location of Removed Underground Storage Tanks
- (SU-2) Location of Surface Water Sample Collection



Potentiometric Data						
Well #	Screened Interval (ft)	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)	Well Head Elevation	Groundwater Elevation
MW-1	15-30	NM	NM	NM	103.38	NM
MW-2	20-35	NM	NM	NM	104.85	NM
MW-3	20-30	NM	NM	NM	104.88	NM
MW-4	20-35	NM	NM	NM	89.90	NM
MW-5	20-35	NM	NM	NM	106.06	NM
MW-6	20-35	NM	NM	NM	101.00	NM
MW-7	25-40	NM	NM	NM	103.46	NM
MW-8	15-30	NM	NM	NM	88.51	NM
MW-9	2-10	NM	NM	NM	58.39	NM
MW-10	13-28	NM	NM	NM	93.78	NM
MW-11	8-23	NM	NM	NM	83.20	NM
MW-12	2-12	NM	NM	NM	58.88	NM
MW-13	2-12	NM	NM	NM	77.81	NM
MW-14	2-10	NM	NM	NM	58.19	NM
MW-15	4-9	NM	NM	NM	71.52	NM
DMW-1	40-45	NM	NM	NM	103.27	NM
DMW-2	65-75	NM	NM	NM	88.21	NM
DMW-4	55-60	NM	NM	NM	103.22	NM
RW-1	10-30	NM	NM	NM	103.25	NM
RW-2	10-30	NM	NM	NM	102.85	NM
RW-3	10-30	NM	NM	NM	100.25	NM
RW-4	10-30	NM	NM	NM	101.00	NM
RW-5	10-30	NM	NM	NM	84.87	NM
RW-6	8.5-26.5	NM	NM	NM	88.05	NM
RW-7	10-30	NM	NM	NM	88.08	NM
RW-8	8.5-26.5	NM	NM	NM	87.08	NM
RW-9	10-30	NM	NM	NM	88.18	NM
RW-10	10-30	NM	NM	NM	84.48	NM
RW-11	7-27	NM	NM	NM	81.05	NM
RW-12	10-30	NM	NM	NM	82.22	NM
RW-13	9-29	NM	NM	NM	80.72	NM
RW-14	10-30	24.38	24.57	0.21	83.86	74.27
RW-15	10-30	21.74	21.88	0.11	95.82	73.88
RW-16	10-30	23.13	23.28	0.15	92.28	68.11
RW-17	10-30	---	18.87	---	88.47	68.60

Notes: Depth to groundwater measured on June 18, 2014.  
 Groundwater elevation for RW-14, RW-15 and RW-16 corrected for the presence of free phase petroleum product using a specific gravity for fuel of 0.85.  
 Site Datum Based on Assumed Spot Elevation.



Drawing Based on MECI Field Notes and SCDHEC Files. All Locations are Approximate.

**Potentiometric Data Site Map**

Highway 11 Grocery  
 13871 S.C. Highway 11  
 Salem, South Carolina  
 SCDHEC Site ID #2439

**Midlands**  
 Environmental  
 Consultants, Inc.

JOB NO. 14-1782  
 DATE June 24, 2014  
 PAGE 5

NON-HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No.	Manifest Document No. 785-1	2. Page 1 of 1
3. Generator's Name and Mailing Address Former Highway 11 Grocery 13527 SC Hwy. 11 Salem, SC UST #03439				
4. Generator's Phone (803) 468-9718	6. US EPA ID Number		A. State Transporter's ID	
5. Transporter 1 Company Name Emerald INC	7. US EPA ID Number		B. Transporter 1 Phone	
7. Transporter 2 Company Name	8. US EPA ID Number		C. State Transporter's ID	
9. Designated Facility Name and Site Address Blue Meadows Facility Belton, SC		10. US EPA ID Number		D. Transporter 2 Phone
				E. State Facility's ID
				F. Facility's Phone
11. WASTE DESCRIPTION		12. Containers		13. Total Quantity
a. NON-HAZARDOUS PETROLEUM CONTAMINATED WATER-PROFILE #		No.	Type	4524
b.				
c.				
d.				
8. Additional Descriptions for Materials Listed Above		H. Handling Codes for Wastes Listed Above		
13. Special Handling Instructions and Additional Information				
10. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.				
Printed/Typed Name DANIEL F. RIDGEMAN		Signature <i>[Signature]</i>		Date 6/17/15
17. Transporter 1 Acknowledgment of Receipt of Materials		Date		
Printed/Typed Name Michael Rivers		Signature <i>[Signature]</i>		Month Day Year 6/17/15
18. Transporter 2 Acknowledgment of Receipt of Materials		Date		
Printed/Typed Name Michael Rivers		Signature		Month Day Year
19. Discrepancy Indication Space				
20. Facility Owner or Operator Certification of receipt of the waste materials covered by this manifest, except as noted in item 13.				
Printed/Typed Name		Signature <i>[Signature]</i>		Date 6/17/15

GENERATOR FACILITY

<b>NON-HAZARDOUS WASTE MANIFEST</b>		1. Generator's US EPA ID No.	Manifest Document No. 785-2	A. Page 1 of
2. Generator's Name and Mailing Address Former Highway 11 Grocery 13527 SC Hwy. 11				
4. Generator's Phone 803 468-0118 Belton, SC UST #03439				
6. Transporter 1 Company Name Emerald INC	9. US EPA ID Number	A. State Transporter's ID		
		B. Transporter 1 Phone		
7. Transporter 2 Company Name	8. US EPA ID Number	C. State Transporter's ID		
		D. Transporter 2 Phone		
8. Designated Facility Name and Site Address Blue Meadows Facility Belton, SC		10. US EPA ID Number	E. State Facility's ID	
		F. Facility's Phone		
11. WASTE DESCRIPTION		12. Containers No. Type	13. Total Capacity	14. Unit Weight
a. NON-HAZARDOUS PETROLEUM CONTAMINATED WATER-PROFILE #			4317	
b.				
c.				
d.				
16. Additional Descriptions for Materials Listed Above		H. Handling Codes for Wastes Listed Above		
18. Special Handling Instructions and Additional Information				
19. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this manifest are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.				
Printed/Typed Name DANIEL C. RIDGEWAY		Signature <i>Daniel C. Ridgeway</i>	Date 6/19/15	
17. Transporter 1 Acknowledgment of Receipt of Materials		Date		
Printed/Typed Name Michael Rivers		Signature <i>Michael Rivers</i>	Month Day Year	
18. Transporter 2 Acknowledgment of Receipt of Materials		Date		
Printed/Typed Name		Signature	Month Day Year	
19. Discrepancy (Indicate on Space)				
20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 18.				
Printed/Typed Name		Signature <i>Clyde Stokeland</i>	Date 6/19/15	

GENERATOR FACILITY

# Emerald, Inc.

CONSULTING AND ENGINEERING  
SERVICES IN ENVIRONMENTAL AFFAIRS

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2520 TAHOE DRIVE • POST OFFICE BOX 3050 • SUMTER, SOUTH CAROLINA 29151

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WEBSITE:  
www.emeraldinc-us.com

TELEPHONE (803) 469-5454  
FAX (803) 469-5465

July 2, 2015

Joel P. Padgett, P. G., Hydrogeologist  
Corrective Action Section  
Underground Storage Tank Management Division  
Bureau of Underground Storage Tank Management  
South Carolina Department of Health and  
Environmental Control  
2600 Bull Street  
Columbia, SC 29201



Aggressive Fluid Vapor Recovery Report  
Former Highway 11 Grocery  
Salem, South Carolina  
Oconee County  
UST Permit #03439; CA #48443  
Emerald Job 14-090B

Mr. Padgett,

Please find the attached Aggressive Fluid Vapor Recovery (AFVR) Report for the Former Highway 11 Grocery site. Prior to conducting this AFVR event information gathered during the site reconnaissance was presented to the SCDHEC project manager for review.

## **AGGRESSIVE FLUID VAPOR RECOVERY EVENT**

On June 19 through 23, 2015, Emerald, Inc. personnel performed a 96-hour AFVR event using RW-14 and RW-15 as extraction locations. This 96-hour AFVR event was conducted to remove free product previously detected at the subject site. Free phase petroleum product was detected in RW-14 at a thickness of 0.32 ft. and RW-15 at a thickness of 0.33 ft. prior to the event. At the conclusion of the event free phase product was not detected. Monitoring well locations are presented on the attached site map provided by SCDHEC.

*Celebrating 25 Years*

1990-2015

Table 1 presents the off-gas concentrations (using a Photoionization Detector), post treatment off-gas concentrations, off-gas velocity, and knockout tank vacuum. Table 2 presents the stinger depths, wellhead vacuum measurements, water levels measurements and magnehelic readings obtained during the event. Emerald, Inc. field personnel normally record data at thirty minute intervals for the first eight hours of the event, then at one hour intervals from hours nine through twenty four and at two hour intervals from hour twenty four until the conclusion of the event. During the hours of midnight to 8 AM event monitoring was suspended. Due to the location of the site being vacant, off-gas treatment was not utilized during this event.

According to the calculations as presented on Table 1, a total of 1,692.32 pounds of hydrocarbons (as vapor) and 270.60 equivalent gallons of hydrocarbons were removed during this event. Approximately 2 gallons of free phase petroleum product was detected in the knockout tank. A total of 5,315 gallons of petroleum contaminated groundwater was transported to the Blue Meadows Treatment Facility in Belton, SC for proper disposal. A copy of the disposal manifest for this event is included as an attachment.

If you have any questions or concerns please feel free to contact Emerald, Inc. at 803-469-5454.

Sincerely,  
Emerald, Inc.



William C. McClary, P.G.  
Project Manager



Ronny L. Lowder  
President

Attachments

**TABLE 1  
AFVR MONITORING DATA  
FORMER HIGHWAY 11 GROCERY  
SALEM, SOUTH CAROLINA  
SCDHEC SITE ID #03439  
EMERALD JOB #14-090B**

Extraction Wells	Date	Time (hh:mm)	Differential Time (hr)	Knockout Tank Vacuum (In. Hg)	Off-Gas Concentration (PPM)	Post-Treatment Concentration (PPM)	Offgas Velocity (ft/min)	Flow Rate (CFM)	CG:M (mg/dsm <sup>3</sup> )	Cg (Lb/Dscf)	Removal Rate (Lbs/Hr)	Interval Removal (Lbs)
RW-14	6/19/15	10:00	Start	15	3,728	N/A	2,462	120.85	19,824	1.24E-03	8.97	-
RW-15		10:30 ↓	0.5	15	7,536	N/A	2,329	114.32	40,074	2.50E-03	17.16	6.53
		11:00 ↓	0.5	15	8,290	N/A	2,481	121.78	44,084	2.75E-03	20.11	9.32
		11:30 ↓	0.5	16	7,441	N/A	2,292	112.50	39,569	2.47E-03	16.67	9.20
		12:00 ↓	0.5	16	6,284	N/A	2,314	113.58	33,416	2.09E-03	14.22	7.72
		12:30 ↓	0.5	16	7,375	N/A	2,367	116.18	39,218	2.45E-03	17.07	7.82
		13:00 ↓	0.5	16	7,991	N/A	2,246	110.24	42,494	2.65E-03	17.55	8.65
		13:30 ↓	0.5	16	8,436	N/A	2,355	115.60	44,860	2.80E-03	19.42	9.24
		14:00 ↓	0.5	16	7,132	N/A	2,384	117.02	37,926	2.37E-03	16.62	9.01
		14:30 ↓	0.5	16	8,499	N/A	2,236	109.75	45,195	2.82E-03	18.58	8.80
		15:00 ↓	0.5	16	7,254	N/A	2,370	116.33	38,575	2.41E-03	16.81	8.85
		15:30 ↓	0.5	16	6,332	N/A	2,321	113.93	33,672	2.10E-03	14.37	7.79
		16:00 ↓	0.5	16	7,008	N/A	2,302	112.99	37,266	2.33E-03	15.77	7.54
		16:30 ↓	0.5	16	7,563	N/A	2,259	110.88	40,218	2.51E-03	16.70	8.12
		17:00 ↓	0.5	16	7,092	N/A	2,316	113.68	37,713	2.35E-03	16.06	8.19
		17:30 ↓	0.5	16	6,744	N/A	2,364	116.04	35,863	2.24E-03	15.59	7.91
		18:00 ↓	0.5	16	7,891	N/A	2,293	112.55	41,962	2.62E-03	17.69	8.32
		19:00 ↓	1.0	16	7,367	N/A	2,322	113.98	39,175	2.45E-03	16.73	17.21
		20:00 ↓	1.0	16	7,353	N/A	2,279	111.86	39,101	2.44E-03	16.38	16.55
		21:00 ↓	1.0	16	7,331	N/A	2,152	105.63	38,984	2.43E-03	15.42	15.90
		22:00 ↓	1.0	16	7,229	N/A	2,073	101.75	38,442	2.40E-03	14.65	15.04
		23:00 ↓	1.0	16	7,217	N/A	2,113	103.72	38,378	2.40E-03	14.91	14.78
	6/20/15	0:00 ↓	1.0	16	7,199	N/A	2,098	102.98	38,282	2.39E-03	14.77	14.84
		8:00 ↓	8.0	16	5,364	N/A	2,360	115.84	28,524	1.78E-03	12.38	108.58
		10:00 ↑	2.0	16	7,833	N/A	2,289	112.36	41,654	2.60E-03	17.53	29.91
		12:00 ↓	2.0	16	6,491	N/A	2,372	116.43	34,517	2.15E-03	15.05	32.58
		14:00 <sup>1</sup> ↓	2.0	16	7,984	N/A	2,344	115.06	42,457	2.65E-03	18.30	33.35
		16:00 ↓	2.0	16	9,476	N/A	2,315	113.63	50,391	3.15E-03	21.45	39.75
		18:00 ↓	2.0	16	7,682	N/A	2,253	110.59	40,851	2.55E-03	16.92	38.37
		20:00 ↓	2.0	16	7,496	N/A	2,177	106.86	39,861	2.49E-03	15.96	32.88
		22:00 ↓	2.0	16	7,378	N/A	2,099	103.03	39,234	2.45E-03	15.14	31.10



**TABLE 1 Cont'd.  
AFVR MONITORING DATA  
FORMER HIGHWAY 11 GROCERY  
SALEM, SOUTH CAROLINA  
SCDHEC SITE ID #03439  
EMERALD JOB #14-090B**

Extraction Wells	Date	Time (hh:mm)	Differential Time (hr)	Knockout Tank Vacuum (in. Hg)	Off-Gas Concentration (PPM)	Post-Treatment Concentration (PPM)	Offgas Velocity (ft/min)	Flow Rate (CFM)	CG:M (mg/dsm <sup>3</sup> )	Cg (Lb/Dscf)	Removal Rate (Lbs/Hr)	Interval Removal (Lbs)	
RW-14	6/21/15	0:00	2.0	16	7,083	N/A	2,131	104.80	37,665	2.35E-03	14.76	29.90	
RW-15		8:00 ↑	8.0	16	5,964	N/A	2,253	110.59	31,715	1.98E-03	13.14	111.58	
		10:00 ↓	2.0	16	7,462	N/A	2,349	115.30	39,681	2.48E-03	17.14	30.28	
		12:00 ↓	2.0	16	8,915	N/A	2,277	111.77	47,407	2.96E-03	19.85	36.99	
		14:00 ↓	2.0	16	9,337	N/A	2,281	111.96	49,651	3.10E-03	20.82	40.67	
		16:00 ↑	2.0	16	9,860	N/A	2,324	114.07	62,433	3.27E-03	22.40	43.23	
		18:00 ↓	2.0	16	10,733	N/A	2,391	117.36	57,075	3.56E-03	25.09	47.50	
		20:00 ↓	2.0	16	10,696	N/A	2,286	112.21	56,878	3.55E-03	23.91	49.00	
		22:00 ↓	2.0	16	10,479	N/A	2,177	108.86	55,724	3.48E-03	22.30	46.21	
	6/22/15	0:00 ↓	2.0	16	10,181	N/A	2,032	99.74	54,140	3.38E-03	20.23	42.53	
		8:00	8.0	16	8,636	N/A	2,193	107.64	45,924	2.87E-03	18.52	154.98	
		10:00 ↑	2.0	16	8,021	N/A	2,260	110.93	42,653	2.66E-03	17.72	36.24	
		12:00	2.0	16	10,368	N/A	2,251	110.49	55,134	3.44E-03	22.82	40.54	
		14:00 ↓	2.0	16	9,743	N/A	2,189	107.45	51,810	3.23E-03	20.85	43.67	
		16:00	2.0	16	10,869	N/A	2,294	112.60	57,798	3.61E-03	24.38	45.23	
		18:00 ↓	2.0	16	8,711	N/A	2,223	109.12	46,322	2.89E-03	18.93	43.31	
		20:00	2.0	16	8,589	N/A	2,177	108.86	45,674	2.85E-03	18.28	37.21	
		22:00	2.0	16	8,373	N/A	2,065	101.36	44,525	2.78E-03	16.91	35.19	
	6/23/15	0:00	2.0	16	8,161	N/A	2,043	100.28	43,398	2.71E-03	16.30	33.21	
		8:00	8.0	16	8,351	N/A	2,188	107.30	44,408	2.77E-03	17.85	136.60	
		10:00	2.0	16	8,173	N/A	2,072	101.70	43,482	2.71E-03	16.56	34.41	
<b>Well Gauging Data</b>			<b>Before AFVR Event</b>			<b>After AFVR Event</b>			<b>Equations</b>				
<b>Well No.</b>	<b>Diameter (in)</b>	<b>Screened Interval (ft)</b>	<b>Depth to Product (ft)</b>	<b>Depth to Water (ft)</b>	<b>Product Thickness (ft)</b>	<b>Depth to Product (ft)</b>	<b>Depth to Water (ft)</b>	<b>Product Thickness (ft)</b>	$Cg:m = PPMg*(Mg/K3)$ Removal Rate = Cg * Flow Rate * 60Min/Hr Interval Removal = (T <sub>1</sub> + T <sub>2</sub> )/2 PPM = Part per Million (by PID) Cg:m = mg/dsm <sup>3</sup> (mass concentration of gasoline emission) Mg = 128 mg/mg-mole, molecular weight of gasoline K3 = 24.07 dsm <sup>3</sup> /1E6 mg-mole, mass to volume conversion Cg = lb/dscf, mass concentration of gasoline by emission Removal Rate = lb/hr, pollutant mass removal rate of emission				
RW-14	2	10-25	24.78	25.10	0.32	-	25.23	-					
RW-15	2	10-25	23.95	24.28	0.33	-	24.33	-					
<b>Product Thickness</b>			<b>Recovery / Disposal Information</b>										
Product observed in Sight Tube? Yes			Hydrocarbons Removed (vapor):			1,692.32	Pounds						
Product detected in Tanker? No			Hydrocarbons Removed (liquid):			2.00	Gallons						
<b>Weather Conditions</b>			<b>Emerald, Inc. Personnel</b>			<b>Total Hydrocarbons Removed:</b>			<b>Equivalent Gallons</b>				
6/19/15	Sunny, 68-91°F		C. Clark			270.60			128 mg/mg-mole				
6/20/15	Rain, 67-89°F		D. Ridgeway			Disposal Facility:			Blue Meadows Treatment Facility, Belton, SC				
6/21/15	Sunny, 67-92°F					Total Liquids Removed:			5,315 Gallons				
6/22/15	Sunny, 65-95°F												
6/23/15	Sunny, 72-95°F												
<b>Notes</b>													
↑ = Stinger raised    ↓ = Stinger lowered													
<sup>1</sup> Readings not recorded due to heavy rain. Average readings of 12:00 and 16:00 used for 14:00 calculations on 6/20/15.													

**TABLE 2  
EVENT MONITORING DATA  
FORMER HIGHWAY 11 GROCERY  
SALEM, SOUTH CAROLINA  
SCDHEC SITE ID #03439  
EMERALD JOB #14-090B**

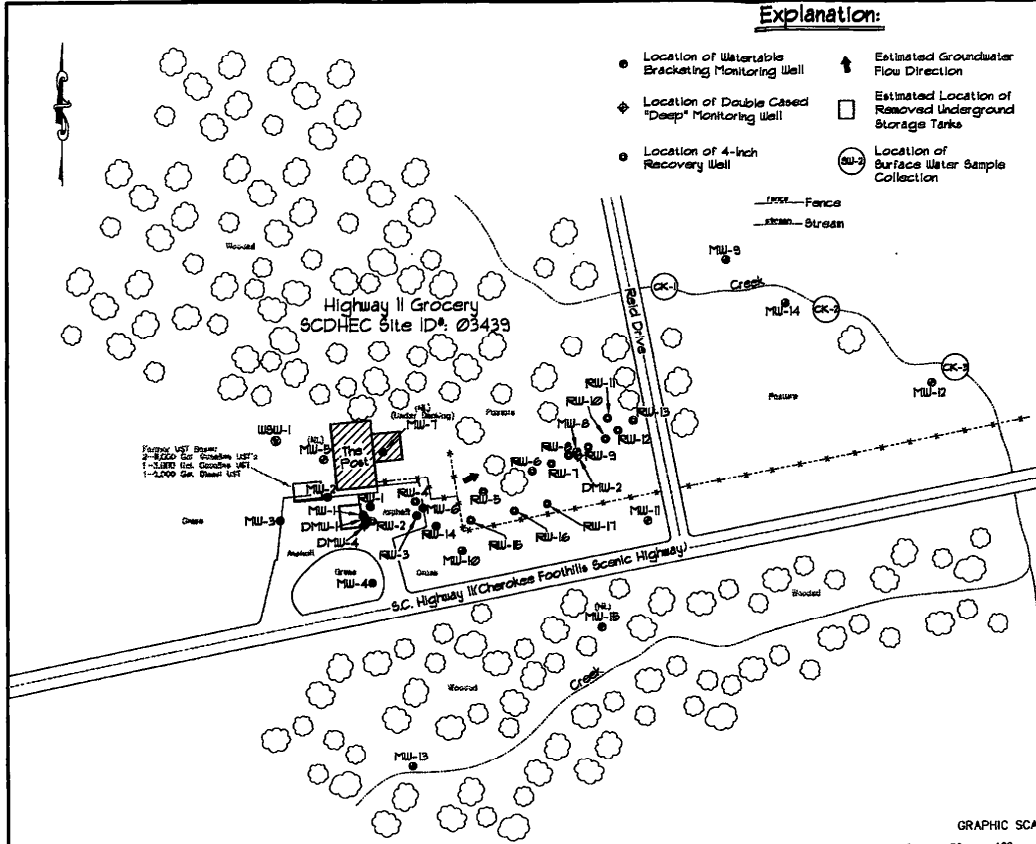
Date	Time (hh:mm)	Extraction Wells				Event Monitoring					
		RW-14		RW-15		RW-3		RW-5		RW-16	
		Stinger Depth (ft.)	Wellhead Vacuum (in. Hg)	Stinger Depth (ft.)	Wellhead Vacuum (in. Hg)	Magnehelic Reading (Inches of water)	Depth to Water	Magnehelic Reading (Inches of water)	Depth to Water	Magnehelic Reading (Inches of water)	Depth to Water
6/19/15	10:00	24.0	14	23.0	14	Pre	22.18	Pre	25.11	Pre	24.36
	10:30	24.5	14	23.5	14	<1	22.18	0.4	25.12	<1	24.36
	11:00	25.0	14	24.0	14	<1	22.18	0.9	25.14	<1	24.31
	11:30	25.5	15	24.5	15	<1	22.19	1.1	25.17	<1	24.29
	12:00	26.0	15	25.0	15	<1	22.21	1.4	25.19	<1	24.27
	12:30	26.5	15	25.5	15	<1	22.22	1.8	25.24	<1	24.24
	13:00	27.0	15	26.0	15	<1	22.23	1.3	25.29	<1	24.20
	13:30	27.5	15	26.5	15	<1	22.25	1.7	25.35	<1	24.18
	14:00	28.0	15	27.0	15	<1	22.26	1.7	25.41	<1	24.16
	14:30	28.5	15	27.5	15	<1	22.27	1.7	25.49	<1	24.13
	15:00	29.0	15	28.0	15	<1	22.29	1.7	25.58	<1	24.08
	15:30	29.0	15	28.5	15	<1	22.33	1.5	25.67	<1	24.06
	16:00	29.0	15	29.0	15	<1	22.36	1.6	25.76	<1	24.01
	16:30	29.0	15	29.0	15	<1	22.38	1.6	25.89	<1	23.96
	17:00	29.0	15	29.0	15	<1	22.41	1.4	25.16	<1	23.92
	17:30	29.0	15	29.0	15	<1	22.43	1.7	25.24	<1	23.89
	18:00	29.0	15	29.0	15	<1	22.44	1.7	25.29	<1	23.87
	19:00	29.0	15	29.0	15	<1	22.45	1.6	26.33	<1	23.85
	20:00	29.0	15	29.0	15	<1	22.51	1.8	26.16	<1	23.80
	21:00	29.0	15	29.0	15	<1	22.54	1.9	26.08	<1	23.76
	22:00	29.0	15	29.0	15	<1	22.55	1.5	26.09	<1	23.71
	23:00	29.0	15	29.0	15	<1	22.56	1.5	26.09	<1	23.71
6/20/15	0:00	29.0	15	29.0	15	<1	22.56	1.5	26.11	<1	23.70
	8:00	29.0	15	29.0	15	<1	22.55	1.4	26.11	<1	23.70
	10:00	23.0	15	22.0	15	<1	22.55	1.4	26.12	<1	23.71
	12:00	24.0	15	23.0	15	<1	22.55	1.3	26.12	<1	23.71
	14:00 <sup>1</sup>	24.0	15	23.0	15	NR	NR	NR	NR	NR	NR
	16:00	25.0	15	24.0	15	<1	22.55	1.4	26.10	<1	23.70
	18:00	25.0	15	25.0	15	<1	22.55	1.2	26.09	<1	23.68
	20:00	25.0	16	25.0	16	<1	22.65	1.1	25.07	<1	23.69
	22:00	25.0	15	25.0	15	<1	22.62	1.1	25.07	<1	23.69

Notes: <sup>1</sup> Readings not recorded due to heavy rain.



**Explanation:**

- Location of Waterable Bracketing Monitoring Well
- ◆ Location of Double Cased "Deep" Monitoring Well
- Location of 4-inch Recovery Well
- ↑ Estimated Groundwater Flow Direction
- Estimated Location of Recovered Underground Storage Tanks
- (SW) Location of Surface Water Sample Collection



Potentiometric Data						
Well #	Screened Interval (ft)	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)	Well Head Elevation	Groundwater Elevation
MW-1	15-30	NM	NM	NM	103.36	NM
MW-2	20-35	NM	NM	NM	104.85	NM
MW-3	20-30	NM	NM	NM	104.89	NM
MW-4	20-35	NM	NM	NM	99.50	NM
MW-5	20-35	NM	NM	NM	106.06	NM
MW-6	20-35	NM	NM	NM	100.00	NM
MW-7	25-40	NM	NM	NM	103.44	NM
MW-8	15-30	NM	NM	NM	99.51	NM
MW-9	2-10	NM	NM	NM	98.38	NM
MW-10	13-28	NM	NM	NM	93.78	NM
MW-11	8-23	NM	NM	NM	83.20	NM
MW-12	2-12	NM	NM	NM	98.89	NM
MW-13	2-12	NM	NM	NM	77.91	NM
MW-14	2-10	NM	NM	NM	98.19	NM
MW-15	4-8	NM	NM	NM	71.52	NM
DMW-1	40-45	NM	NM	NM	103.27	NM
DMW-2	85-75	NM	NM	NM	98.21	NM
DMW-4	55-80	NM	NM	NM	103.22	NM
RW-1	10-30	NM	NM	NM	103.29	NM
RW-2	10-30	NM	NM	NM	102.85	NM
RW-3	10-30	NM	NM	NM	100.95	NM
RW-4	10-30	NM	NM	NM	101.00	NM
RW-5	10-30	NM	NM	NM	94.87	NM
RW-6	8.5-28.5	NM	NM	NM	85.05	NM
RW-7	10-30	NM	NM	NM	85.66	NM
RW-8	8.5-28.5	NM	NM	NM	87.60	NM
RW-9	10-30	NM	NM	NM	88.18	NM
RW-10	10-30	NM	NM	NM	84.48	NM
RW-11	7-22	NM	NM	NM	81.08	NM
RW-12	10-30	NM	NM	NM	82.22	NM
RW-13	9-29	NM	NM	NM	80.72	NM
RW-14	10-30	24.38	24.57	0.21	85.88	74.27
RW-15	10-30	21.74	21.83	0.11	85.82	73.85
RW-16	10-30	23.13	23.28	0.15	92.28	68.11
RW-17	10-30	---	18.87	---	88.47	69.60

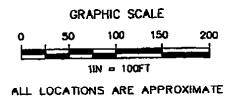
Notes: Depth to groundwater measured on June 18, 2014.  
 Groundwater elevation for RW-14, RW-15 and RW-16 corrected for the presence of free phase petroleum product using a specific gravity for fuel of 0.85.  
 Site Datum Based on Assumed Spot Elevation.

**Potentiometric Data Site Map**

Highway 11 Grocery  
19521 S.C. Highway 11  
Belton, South Carolina  
SCDHEC Site ID #03439

**Midlands Environmental Consultants, Inc.**

JOB NO. 14-082  
DATE June 24, 2014  
PAGE 5



Drawing Based on MECI Field Notes and SCDHEC Files. All Locations are Approximate.

# NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.

Manifest Document No. **786-1**

2. Page 1 of

3. Generator's Name and Mailing Address

Former Highway 11 Grocery  
13527 SC Hwy. 11  
Salem, SC UST #03439

4. Generator's Phone ( )

5. Transporter 1 Company Name

**Emerald, Inc.**

6. US EPA ID Number

A. State Transporter's ID

B. Transporter 1 Phone

7. Transporter 2 Company Name

8. US EPA ID Number

C. State Transporter's ID

D. Transporter 2 Phone

9. Designated Facility Name and Site Address

Blue Meadows Facility  
Belton, SC

10. US EPA ID Number

E. State Facility's ID

F. Facility's Phone

11. WASTE DESCRIPTION

12. Containers  
No. Type

13. Total  
Quantity

14. Unit  
wt./Vol.

a. NON-HAZARDOUS PETROLEUM CONTAMINATED  
WATER-PROFILE #

**PA 7.6**

**5315**

b.

c.

d.

15. Additional Descriptions for Materials Listed Above

H. Handling Codes for Wastes Listed Above

16. Special Handling Instructions and Additional Information

**P**

18. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name

**CURTIS CLARK**

Signature

*Curtis Clark*

Date

Month Day Year  
**6 23 15**

17. Transporter 1 Acknowledgment of Receipt of Materials

Printed/Typed Name

**Lee Stogner**

Signature

*Lee Stogner*

Date

Month Day Year  
**6 23 15**

18. Transporter 2 Acknowledgment of Receipt of Materials

Printed/Typed Name

Signature

Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.

Printed/Typed Name

**Clayton Stuckland**

Signature

*Clayton Stuckland*

Date

Month Day Year  
**6 23 15**

GENERATOR

TRANSPORTER

FACILITY



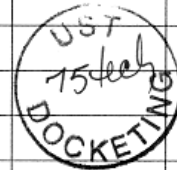
**Underground Storage Tank Management Division  
Field Data Information Sheet – Monitoring Well Gauging**

**Site Information**

Date: 7/28/15	Site ID #: 03439	Site Name: Highway 11 Grocery
County: Oconee	Project Manager: J. Padgett	Field Personnel: J. Padgett, B. Faller

**Well Gauging Information**

Well ID:	Total Well Depth (ft.)	Screened Interval (ft.)	Depth to Free Product (ft.)	Depth to Ground water (ft.)	Free Product Thickness (ft.)	Confirmed with Bailer?	Photos Taken ?	Well Pad OK?	Bolts in Well Cover?	Water in Well Vault?
MW-1				25.30						
MW-8			21.38	21.42	0.04					
RW-1			25.50	25.80	0.30					
RW-2			24.71	25.00	0.29					
RW-3				22.64						
RW-4			23.31	23.39	0.08					
RW-5				24.03						
RW-6			18.15	20.85	2.70					
RW-7			19.72	21.74	2.02					
RW-8				18.91						
RW-9			21.05	21.43	0.38					
RW-10				20.93						
RW-14			24.58	24.90	0.32					



Notes: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 Signature: *J. Padgett*

**-UST Field Data Information Sheet – Monitoring Well Gauging**

- Purpose of the form is to record information gathered during a monitoring well gauging event
- DHEC UST Project Managers and Field Staff
- Item-by-item instructions for completing the form:
  - Fill in all Site Information boxes
  - Record Well Gauging Information for all necessary wells
  - Record any applicable notes
  - Sign the form
- Form is scanned and saved electronically; Record Group Number 169, Retention Schedule 10304



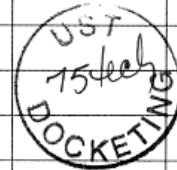
**Underground Storage Tank Management Division  
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County: Oconee	Project Manager: J. Padgett	Field Personnel: J. Padgett, B. Faller

**Well Gauging Information**

Well ID:	Total Well Depth (ft.)	Screened Interval (ft.)	Depth to Free Product (ft.)	Depth to Ground water (ft.)	Free Product Thickness (ft.)	Confirmed with Bailer?	Photos Taken ?	Well Pad OK?	Bolts in Well Cover?	Water in Well Vault?
MW-1				25.30						
MW-8			21.38	21.42	0.04					
RW-1			25.50	25.80	0.30					
RW-2			24.71	25.00	0.29					
RW-3				22.64						
RW-4			23.31	23.39	0.08					
RW-5				24.03						
RW-6			18.15	20.85	2.70					
RW-7			19.72	21.74	2.02					
RW-8				18.91						
RW-9			21.05	21.43	0.38					
RW-10				20.93						
RW-14			24.58	24.90	0.32					



Notes: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 Signature: *J. Padgett*



**-UST Field Data Information Sheet – Monitoring Well Gauging**

- Purpose of the form is to record information gathered during a monitoring well gauging event
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03439

Catherine E. Heigel, Director

*Promoting and protecting the health of the public and the environment*

**MR RONNY LOWDER  
EMERALD INC  
P O BOX 3050  
SUMTER SC 29151-3050**

**' APR 22 2016**



Re: Aggressive fluid and vapor recovery (AFVR) directive  
Contract #IFB-5400010441-11/24/15-EMW; PO #4600462870  
Notice to proceed

Dear Mr. Lowder:

Under the terms and conditions of the referenced contract, and per the schedule submitted to the Underground Storage Tank (UST) Management Division on April 19, 2016, aggressive fluid and vapor recovery (AFVR) has been approved for the UST facilities listed below. Emerald, Inc. may proceed upon receipt of this letter. Enclosed are packets containing necessary information to perform AFVR at each facility. Each facility has been assigned an individual cost agreement (CA) number, work scope, work scope start date, and report due date. As specified in the contract, a report and invoice must be submitted on or before the due date. The appropriate CA number and Purchase Order (PO) #4600462870 should be referenced on each invoice submitted.

Permit	Facility	County	Work Scope	CA	Start Date	Report Date
15857	Grant's Grocery	Chester	1 96-hour event	51856	5/9/16	5/18/16
04733	Handy Pantry 89	Greenwood	1 96-hour event	51875	5/16/16	5/25/16
02698	Johnnie's Truck Stop	Darlington	1 96-hour event	51849/ 51850	5/16/16	5/25/16
03198	Summers Store	Fairfield	1 96-hour event	51753	5/23/16	6/1/16
16009	Mary Moorhead Property	Anderson	1 96-hour event	51741	5/23/16	6/1/16
02429	Sportsman Shop	Clarendon	1 96-hour event	51775	5/31/16	6/9/16
08911	Rembert Grocery	Sumter	2 96-hour events	51768	5/31/16	6/9/16
02728	Handee Shop	Darlington	1 96-hour event	51758	6/6/16	6/15/16
00479	Former Service Station	Anderson	1 96-hour event	51743	6/6/16	6/15/16
19535	Former Perry's	Calhoun	1 96-hour event	51877	6/6/16	6/15/16
08795	Blue Ridge Transfer	Sumter	1 96-hour event	51759	6/13/16	6/22/16
14262	Getsinger's Grocery	Anderson	1 96-hour event	51742	6/13/16	6/22/16

00046	Rocket Service Station	Abbeville	1 96-hour event	51761	6/13/16	6/22/16
05265	Okeetee Club	Jasper	1 96-hour event	51876	6/20/16	6/29/16
03439	Highway 11 Grocery	Oconee	4 96 hour events	52106	6/27/16	7/6/16
12151	Sportsman's Corner	Clarendon	1 96-hour event	51774	6/27/16	7/6/16
02802	Former Hess Station	Darlington	1 96-hour event	51802	6/27/16	7/6/16
12974	Pic & Pay	Hampton	1 96-hour event	51757	7/11/16	7/20/16
11776	Munn E Saver 105	Sumter	1 96-hour event	51781	7/11/16	7/20/16
17042	Mike's Jiffy Mart	Bamberg	1 96-hour event	51878	7/11/16	7/20/16
04877	Nicklepumper 235	Hampton	1 96-hour event	51756	7/18/16	7/27/16
14821	Kings Property	Horry	1 96-hour event	51916	7/18/16	7/27/16
05353	Red Hill Convenience	Lee	1 96-hour event	51881	7/18/16	7/27/16
09391	Bob's Superette	York	1 96-hour event	51661	7/23/16	8/1/16
08484	Tillman Johnson	Cherokee	1 96-hour event	51816	7/25/16	8/3/16

AFVR at each facility will be performed in accordance with the referenced contract on behalf of the UST Owner/Operator (O/O). Payment for approved costs will be made from the State Underground Petroleum Environmental Response Bank (SUPERB) Account. The O/O has no obligation to pay for the specified work scope. Please note that Sections 44-2-110(4) and 44-2-130(B) of the SUPERB Statute state that no costs will be allowed (considered for payment) unless prior approval from the South Carolina Department of Health and Environmental Control (Agency) is obtained.

Any changes to the work scope must be pre-approved by UST Management Division in order for Emerald to seek payment. Please contact the UST Project Manager for technical and/or financial approval. Any item that is not clearly or completely addressed in the report will not be compensated by SUPERB.

The Division grants pre-approval for transportation of free-phase product (FPP) and/or petroleum-contaminated groundwater from the referenced UST facility to a permitted treatment facility. The FPP and/or contaminated groundwater must be accepted by the approved treatment facility. There can be no spillage or leakage in transport. A copy of the disposal manifest from the receiving facility that clearly designates the quantity received must be included as an appendix to the report.

If you have any questions concerning this correspondence or need further assistance, please contact me by phone at (803) 898-0655, by fax at (803) 898-0673, or by e-mail at [padgetjp@dhec.sc.gov](mailto:padgetjp@dhec.sc.gov).

Mr. Lowder  
AFVR directive- Schedule 20  
Page 3

Sincerely,

Handwritten signature of Joel P. Padgett in black ink.

Joel P. Padgett, Geologist/Hydrologist  
Corrective Action Section  
UST Management Division  
Bureau of Land and Waste Management

enc: Information packets  
AFVR Schedule 20  
cc:: Technical file (w/o enc)



GEOTECHNICAL, ENVIRONMENTAL AND CONSTRUCTION MATERIALS CONSULTANTS

**BUNNELL-LAMMONS ENGINEERING, INC.**  
6004 Ponders Court  
Greenville, SC 29615

**Phone:** 864-288-1265  
**Fax:** 864-288-4430



## TRANSMITTAL LETTER



**TO:** Mr. Joel Padgett, P.G. - SCDHEC UST Section

**PROJECT NAME:** UST Permit #03439  
Highway 11 Grocery

**DATE:** May 24, 2016

**PROJECT NO.:**

**RE:** O/O Form Submittal

**WE ARE SENDING YOU:**

- Attached       Under separate cover via the following item(s).
- |   |  |                                       |                                  |   |
|---|--|---------------------------------------|----------------------------------|---|
| <input type="checkbox"/> Draft report     | <input type="checkbox"/> Prints            | <input type="checkbox"/> Change order | <input type="checkbox"/> Letter  | <input type="checkbox"/> Report         |
| <input checked="" type="checkbox"/> Other | <input type="checkbox"/> W.A.S.            | <input type="checkbox"/> Plans        | <input type="checkbox"/> Invoice | <input type="checkbox"/> Specifications |
| <input type="checkbox"/> Proposals        | <input type="checkbox"/> Preliminary Data: |                                       |                                  |   |

<i>Copies</i>	<i>Date</i>	<i>No.</i>	<i>Description</i>
1	5/24/16	1	O/O Form - UST Permit #03439

**THESE ARE TRANSMITTED AS CHECKED BELOW:**

- For your approval     For your use     As requested     For review and comment     Other

**REMARKS:**

Joel,

Enclosed is the signed O/O form for UST Permit #03439 associated with the Highway 11 Grocery facility in Salem, SC (Oconee County). The O/O form for this site is signed by Mr. Steven Smith (Responsible Party). Please update your files to reflect BLE as the contractor of choice for this site. If you have any questions, please feel free to contact me.

Sincerely,

Trevor Benton

**ORIGINAL TO:** SCDHEC UST Program

**SIGNED:**   
Trevor Benton, P.G.

**UNDERGROUND STORAGE TANK (UST)  
OWNER/OPERATOR LEAD INFORMATION SHEET**

**1. CONTRACTOR OF CHOICE**

As the UST Owner/Operator of UST Permit #(s) 03439, I would like to use the contractor or person(s)\* listed below and request that they represent me for:

- Current Work Scope Only  
 All future assessment scopes \*\*

Name of Contractor/Person(s) Bunnell-Lammons Engineering, Inc.

Address 6004 Ponders Court

Greenville, SC

29615

Telephone Number (864) 288-1265

Note: After September 20, 1997, rehabilitation activities must be performed by a SC Certified Site Rehabilitation Contractor.

\*Indicate if the person listed is your own employee

**\*\* If you would like the contractor to perform all future assessment activities at this and/or other UST sites that have confirmed releases, please provide a list of all sites on your letterhead and provide the information requested in items 2 and 3 below within the context of the letter.**

**2. FINANCIAL OR FAMILIAL RELATIONSHIP**

Does a financial or familial relationship, as defined below, exist between you and the contractor/person that you listed above?      Yes   X   No (please initial)

*Financial Relationship:* A connection or association through a material interest of sources of income, which exceed five percent of annual gross income from a business entity.

*Familial Relationship:* A connection or association by family or relatives, in which a family member or relative has a material interest. Family or relatives include: father, mother, son, daughter, brother, sister, uncle, aunt, first cousin, nephew, niece, husband, wife, father-in-law, mother-in-law, son-in-law, daughter-in-law, stepfather, stepmother, stepson, stepdaughter, stepbrother, stepsister, half brother, half sister, grandparent, grandchild, great grandchild, step grandparent, step great grandparent, step grandchild, step great grandchild, or fiancé.

**3. PAYMENT**

You can pay the contractor and, upon the submittal of the canceled check (front and back) or a notarized statement from the contractor verifying payment, be compensated from the SUPERB Account, or have payment issued directly from the SUPERB Account to the contractor. (Check one)

     I request that payment be made to me after I have paid the contractor.

  X   I request that payment be made directly to the contractor.

(Note: all costs must receive prior financial approval from the Department regardless of payment option.)

Underground Storage Tank Owner/Operator Signature SA M SMT

Date 5-24-16

# Emerald, Inc.

CONSULTING AND ENGINEERING  
SERVICES IN ENVIRONMENTAL AFFAIRS

2520 TAHOE DRIVE • POST OFFICE BOX 3050 • SUMTER, SOUTH CAROLINA 29151

WEBSITE:  
www.emeraldinc-us.com

TELEPHONE (803) 469-5454  
FAX (803) 469-5465

May 27, 2016

Joel Padgett, P.G. Hydrogeologist  
Corrective Action Section  
Underground Storage Tank Management Division  
Bureau of Underground Storage Tank Management  
South Carolina Department of Health and  
Environmental Control  
2600 Bull Street  
Columbia, SC 29201

Aggressive Fluid Vapor Recovery Report  
Former Highway 11 Grocery  
Salem, South Carolina  
UST Permit #03439  
Emerald Job 16-041C

Mr. Padgett,

Please find the attached Aggressive Fluid Vapor Recovery (AFVR) Report for a 96-hour event conducted at Highway 11 Grocery. This AFVR event was conducted in accordance with the approved Emerald, Inc. Standard Operating Procedures document dated January 6, 2015.

## AGGRESSIVE FLUID VAPOR RECOVERY EVENTS

On May 20 through 24, 2016, Emerald, Inc. personnel performed a 96-hour AFVR event using RW-3, RW-4 and RW-14 as extraction locations. This 96-hour AFVR event was conducted to remove free product previously detected at the subject site. Free phase petroleum product was detected in RW-3 at a thickness of 0.24 ft. and RW-4 at a thickness of 0.39 ft. prior to the event. At the conclusion of the event free phase product was not detected. Monitoring well locations are presented on the attached site map provided by SCDHEC.





Table 1 presents the recorded data for the off-gas concentrations (by PID), post treatment off-gas concentrations (if required), off-gas velocities, knockout tank vacuum. Table 2 presents the stinger depths, wellhead vacuum measurements for each extraction well utilized during the event. Table 2 also contains water levels measurements and magnehelic readings for selected nearby monitoring wells. Emerald, Inc. field personnel collected data at thirty minute intervals for the first eight hours of the event, then at one hour intervals from hours nine through twenty four and at two hour intervals from twenty four through ninety six hours of the event. During the hours of midnight to 8 AM event monitoring was suspended. Due to the location of the site being vacant, off-gas treatment was not utilized during this event.

According to the calculations as presented on Table 1, a total of 519.29 pounds of hydrocarbons (as vapor) and 83.03 equivalent gallons of hydrocarbons were removed during this event. Free phase product was not detected in the knockout tank during this event. According to the meter, a total of 7,880 gallons of petroleum contaminated groundwater was transported to the Blue Meadows Wastewater Treatment Facility in Belton, SC for proper disposal. A copy of the disposal manifest for this event is included as an attachment.

If you have any questions or concerns please feel free to contact Emerald, Inc. at 803-469-5454.

Sincerely,  
Emerald, Inc.

  
William C. McClary, P.G.  
Project Manager

  
Ronny L. Lowder  
President

Attachments



**TABLE 1  
AFVR MONITORING DATA  
HIGHWAY 11 GROCERY  
SALEM, SOUTH CAROLINA  
SCDHEC SITE ID #03439  
EMERALD JOB #16-041C**

Extraction Wells	Date	Time (hh:mm)	Differential Time (hr)	Knockout Tank Vacuum (in. Hg)	Off-Gas Concentration (PPM)	Post-Treatment Concentration (PPM)	Offgas Velocity (ft/min)	Flow Rate (SCFM)	CG:M (mg/dsm <sup>3</sup> )	Cg (Lb/Dscf)	Removal Rate (Lbs/Hr)	Interval Removal (Lbs)
RW-3	5/20/16	11:00	Start	15	862	<0.1	N/A	150	4,584	2.86E-04	2.58	-
RW-4		11:30	↓	0.5	15	429	<0.1	N/A	2,281	1.42E-04	1.28	0.96
RW-14		12:00	↓	0.5	15	377	<0.1	N/A	2,005	1.25E-04	1.13	0.60
		12:30	↓	0.5	15	348	<0.1	N/A	1,851	1.16E-04	1.04	0.54
		13:00	↓	0.5	15	398	<0.1	N/A	2,116	1.32E-04	1.19	0.56
		13:30	↓	0.5	15	736	<0.1	N/A	3,914	2.44E-04	2.20	0.85
		14:00	↓	0.5	15	1,013	<0.1	N/A	5,387	3.36E-04	3.03	1.31
		14:30	↓	0.5	15	1,469	<0.1	N/A	7,812	4.88E-04	4.39	1.85
		15:00	↓	0.5	15	972	<0.1	N/A	5,169	3.23E-04	2.90	1.82
		15:30	↓	0.5	15	1,106	<0.1	N/A	5,881	3.67E-04	3.30	1.55
		16:00	↓	0.5	15	1,388	<0.1	N/A	7,381	4.61E-04	4.15	1.86
		16:30	↓	0.5	15	1,527	<0.1	N/A	8,120	5.07E-04	4.56	2.18
		17:00	↓	0.5	15	1,282	<0.1	N/A	6,817	4.26E-04	3.83	2.10
		17:30	↓	0.5	15	1,141	<0.1	N/A	6,067	3.79E-04	3.41	1.81
		18:00	↓	0.5	15	934	<0.1	N/A	4,967	3.10E-04	2.79	1.55
		18:30	↓	0.5	15	9,119	<0.1	N/A	48,492	3.03E-03	27.25	7.51
		19:00	↓	0.5	15	889	<0.1	N/A	4,727	2.95E-04	2.66	7.48
		20:00	↓	1.0	15	910	<0.1	N/A	4,839	3.02E-04	2.72	2.69
		21:00	↓	1.0	15	1,105	<0.1	N/A	5,876	3.67E-04	3.30	3.01
		22:00	↓	1.0	15	1,127	<0.1	N/A	5,993	3.74E-04	3.37	3.33
		23:00	↓	1.0	15	1,025	<0.1	N/A	5,451	3.40E-04	3.06	3.21
		24:00	↓	1.0	15	957	<0.1	N/A	5,089	3.18E-04	2.86	2.96
	5/21/16	8:00	8.0	15	739	<0.1	N/A	150	3,930	2.45E-04	2.21	20.27
		9:00	↓	1.0	15	671	<0.1	N/A	3,568	2.23E-04	2.00	2.11
		10:00	↓	1.0	15	694	<0.1	N/A	3,690	2.30E-04	2.07	2.04
		11:00	↓	1.0	15	729	<0.1	N/A	3,877	2.42E-04	2.18	2.13
		12:00	↑	1.0	15	1,320	<0.1	N/A	7,019	4.38E-04	3.94	3.06
		14:00	↓	2.0	15	2,762	<0.1	N/A	14,687	9.17E-04	8.25	12.20
		16:00	↓	2.0	15	2,618	<0.1	N/A	13,922	8.69E-04	7.82	16.07
		18:00	↓	2.0	15	2,184	<0.1	N/A	11,614	7.25E-04	6.53	14.35
		20:00	↓	2.0	15	2,346	<0.1	N/A	12,475	7.79E-04	7.01	13.53

**TABLE 1 Cont'd.  
AFVR MONITORING DATA  
HIGHWAY 11 GROCERY  
SALEM, SOUTH CAROLINA  
SCDHEC SITE ID #03439  
EMERALD JOB #16-041C**

Extraction Wells	Date	Time (hh:mm)	Differential Time (hr)	Knockout Tank Vacuum (in. Hg)	Off-Gas Concentration (PPM)	Post-Treatment Concentration (PPM)	Offgas Velocity (ft/min)	Flow Rate (SCFM)	CG:M (mg/dsm <sup>3</sup> )	Cg (Lb/Dscf)	Removal Rate (Lbs/Hr)	Interval Removal (Lbs)
RW-3	5/21/16	22:00	2.0	15	2,283	<0.1	NA	150	12,140	7.58E-04	6.82	13.83
RW-4		24:00	2.0	15	2,175	<0.1	NA	150	11,566	7.22E-04	6.50	13.32
RW-14	5/22/16	8:00	8.0	15	1,936	<0.1	NA	150	10,295	6.43E-04	5.78	49.13
		10:00	↓ 2.0	15	2,184	<0.1	NA	150	11,614	7.25E-04	6.53	12.31
		12:00	2.0	15	2,062	<0.1	NA	150	10,965	6.85E-04	6.16	12.69
		14:00	2.0	15	1,829	<0.1	NA	150	9,726	6.07E-04	5.46	11.63
		16:00	2.0	15	1,891	<0.1	NA	150	10,058	6.28E-04	5.65	11.11
		18:00	↓ 2.0	15	2,018	<0.1	NA	150	10,731	6.70E-04	6.03	11.68
		20:00	2.0	15	2,285	<0.1	NA	150	12,151	7.59E-04	6.83	12.86
		22:00	2.0	15	2,191	<0.1	NA	150	11,651	7.27E-04	6.55	13.37
		24:00	↓ 2.0	15	2,088	<0.1	NA	150	11,103	6.93E-04	6.24	12.79
	5/23/16	8:00	↑ 8.0	15	2,377	<0.1	NA	150	12,840	7.89E-04	7.10	53.36
		10:00	2.0	15	2,124	<0.1	NA	150	11,295	7.05E-04	6.35	13.45
		12:00	2.0	15	1,962	<0.1	NA	200	10,433	6.51E-04	7.82	14.16
		14:00	↓ 2.0	15	2,437	<0.1	NA	200	12,959	8.09E-04	9.71	17.52
		16:00	2.0	15	2,018	<0.1	NA	190	10,731	6.70E-04	7.64	17.35
		18:00	2.0	15	2,156	<0.1	NA	110	11,465	7.16E-04	4.72	12.36
		20:00	↓ 2.0	15	1,897	<0.1	NA	110	10,088	6.30E-04	4.16	8.88
		22:00	2.0	15	1,763	<0.1	NA	110	9,375	5.85E-04	3.86	8.02
		24:00	2.0	15	1,682	<0.1	NA	110	8,944	5.58E-04	3.69	7.55
	5/24/16	8:00	8.0	15	2,709	<0.1	NA	110	14,406	8.99E-04	5.94	38.48
		10:00	2.0	15	2,807	<0.1	NA	110	14,927	9.32E-04	6.15	12.09
		11:00	1.0	15	2,534	<0.1	NA	110	13,475	8.41E-04	5.55	5.85

Well No.	Diameter (in)	Screened Interval (ft)	Before AFVR Event			After AFVR Event			Equations
			Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)	
RW-3	4	10-30	25.46	25.70	0.24	—	25.76	—	Cg:m = PPM*(Mg/K3) Removal Rate = Cg * Flow Rate * 60Min/Hr Interval Removal = (T <sub>1</sub> + T <sub>2</sub> )/2 PPM = Part per Million (by PID) Cg:m = mg/dsm <sup>3</sup> (mass concentration of gasoline emission) Mg = 128 mg/mg-mole, molecular weight of gasoline K3 = 24.07 dsm <sup>3</sup> /1E6 mg-mole, mass to volume conversion Cg = lb/dscf, mass concentration of gasoline by emission Removal Rate = lb/hr,pollutant mass removal rate of emission
RW-4	4	10-30	24.75	25.14	0.39	—	25.58	—	
RW-14	4	10-30	—	24.01	—	—	24.33	—	
Product Thickness			Recovery / Disposal Information						
Product observed in Sight Tube? No			Hydrocarbons Removed (vapor):			519.29	Pounds		
Product detected in Tanker? No			Hydrocarbons Removed (liquid):			0.00	Gallons		
Weather Conditions			Total Hydrocarbons Removed:			83.03	Equivalent Gallons		
Emerald, Inc. Personnel			Molecular Weight Utilized:			128	mg/mg-mole		
5/20/16 Cloudy, 60-81°F			Disposal Facility:			City of Manning Wastewater Treatment Facility			<b>Notes</b> ↑ = Stinger raised    ↓ = Stinger lowered
5/21/16 Sunny, 60-81°F									
5/22/16 Sunny, 57-82°F									
5/23/16 Sunny, 59-74°F									
5/24/16 Sunny, 59-84°F									

**TABLE 2  
EVENT MONITORING DATA  
HIGHWAY 11 GROCERY  
SALEM, SOUTH CAROLINA  
SCDHEC SITE ID #03439  
EMERALD JOB #16-041C**

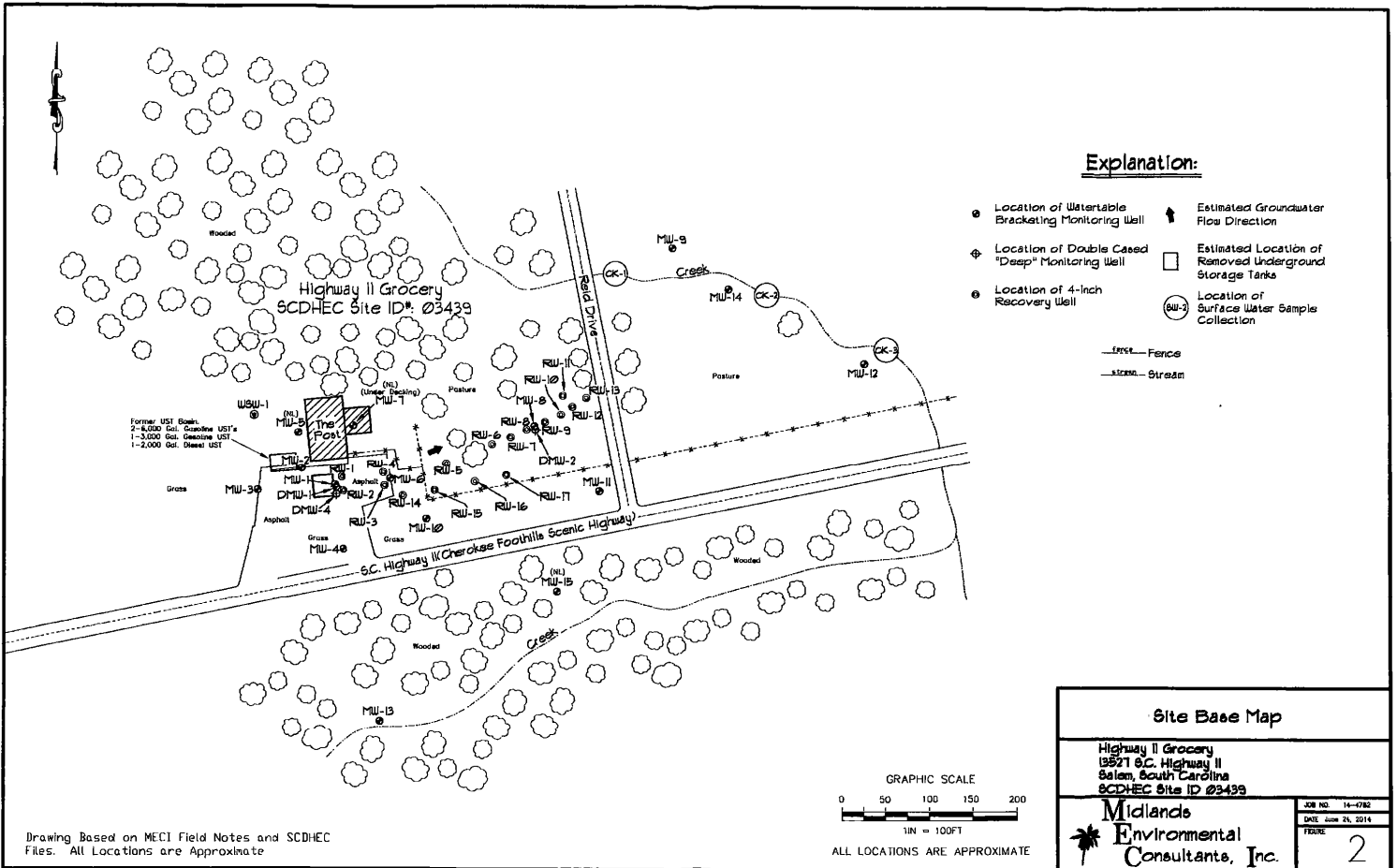
Date	Time (hh:mm)	Extraction Wells						Event Monitoring			
		RW-3		RW-4		RW-14		RW-1		RW-15	
		Stinger Depth (ft.)	Wellhead Vacuum (in. Hg)	Stinger Depth (ft.)	Wellhead Vacuum (in. Hg)	Stinger Depth (ft.)	Wellhead Vacuum (in. Hg)	Magnehelic Reading (inches of water)	Depth to Water	Magnehelic Reading (inches of water)	Depth to Water
5/20/16	11:00	24.0	14	24.0	14	24.0	14	Pre	27.73	Pre	24.39
	11:30	24.5	14	24.5	14	24.5	14	---	---	---	---
	12:00	25.0	14	25.0	14	25.0	14	---	---	---	---
	12:30	25.5	14	25.5	14	25.5	14	---	---	---	---
	13:00	26.0	14	26.0	14	26.0	14	<0.1	27.21	<0.1	24.44
	13:30	26.5	15	26.5	15	26.5	15	---	---	---	---
	14:00	27.0	15	27.0	15	27.0	15	---	---	---	---
	14:30	27.5	15	27.5	15	27.5	15	---	---	---	---
	15:00	28.0	15	28.0	15	28.0	15	<0.1	26.82	<0.1	24.72
	15:30	28.5	15	28.5	15	28.5	15	---	---	---	---
	16:00	29.0	15	29.0	15	29.0	15	---	---	---	---
	16:30	29.0	15	29.0	15	29.0	15	---	---	---	---
	17:00	29.0	15	29.0	15	29.0	15	<0.1	26.32	<0.1	25.18
	17:30	29.0	15	29.0	15	29.0	15	---	---	---	---
	18:00	29.0	15	29.0	15	29.0	15	---	---	---	---
	18:30	29.0	15	29.0	15	29.0	15	---	---	---	---
	19:00	29.0	15	29.0	15	29.0	15	<0.1	26.18	<0.1	25.66
	20:00	29.0	15	29.0	15	29.0	15	---	---	---	---
	21:00	29.0	15	29.0	15	29.0	15	<0.1	26.14	<0.1	25.75
	22:00	29.0	15	29.0	15	29.0	15	---	---	---	---
	23:00	29.0	15	29.0	15	29.0	15	<0.1	26.11	<0.1	25.83
	24:00	29.0	15	29.0	15	29.0	15	---	---	---	---
5/21/16	8:00	29.0	15	29.0	15	29.0	15	<0.1	25.88	<0.1	25.90
	9:00	29.0	15	29.0	15	29.0	15	---	---	---	---
	10:00	29.0	15	29.0	15	29.0	15	<0.1	25.91	<0.1	25.76
	11:00	29.0	15	29.0	15	29.0	15	---	---	---	---
	12:00	24.0	15	24.0	15	24.0	15	<0.1	26.02	<0.1	25.58
	14:00	24.0	15	24.0	15	24.0	15	<0.1	26.10	<0.1	25.22
	16:00	25.0	15	25.0	15	25.0	15	<0.1	26.18	<0.1	25.01
	18:00	25.0	15	25.0	15	25.0	15	<0.1	26.25	<0.1	24.93
	20:00	26.0	15	26.0	15	26.0	15	<0.1	26.33	<0.1	24.81

Notes:



**Explanation:**

- Location of Watertable Bracketing Monitoring Well
- ⊕ Location of Double Cased "Deep" Monitoring Well
- Location of 4-Inch Recovery Well
- ↑ Estimated Groundwater Flow Direction
- Estimated Location of Removed Underground Storage Tanks
- (SW-1) Location of Surface Water Sample Collection
- Fence
- Stream



Drawing Based on MECI Field Notes and SCDHEC Files. All Locations are Approximate

# NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.

Manifest Document No. 896-10

2. Page 1 of 1

3. Generator's Name and Mailing Address

Highway 11 Grocery  
13527 SC Highway 11  
Salem S.C. UST #03439

4. Generator's Phone ( )

5. Transporter 1 Company Name

*Nimmors Associated*

6. US EPA ID Number

7. Transporter 2 Company Name

8. US EPA ID Number

9. Designated Facility Name and Site Address

Blue Meadows Facility  
Belton, SC

10. US EPA ID Number

A. State Transporter's ID

B. Transporter 1 Phone

C. State Transporter's ID

D. Transporter 2 Phone

E. State Facility's ID

F. Facility's Phone

11. WASTE DESCRIPTION

12. Containers

No.

Type

13. Total Quantity

14. Unit Wt./Vol.

a. NON-HAZARDOUS PETROLEUM CONTAMINATED GROUNDWATER

*PA*

*6-T*

*1648*

*GAL*

b.

c.

d.

G. Additional Descriptions for Materials Listed Above

H. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Date

Printed/Typed Name

*CURTIS CLARK*

Signature

*[Signature]*

Month Day Year  
*5 | 23 | 16*

17. Transporter 1 Acknowledgement of Receipt of Materials

Date

Printed/Typed Name

*Steve Nimmors*

Signature

*[Signature]*

Month Day Year  
*5 | 23 | 16*

18. Transporter 2 Acknowledgement of Receipt of Materials

Date

Printed/Typed Name

Signature

Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.

Date

Printed/Typed Name

*Charles Stone Hand*

Signature

*[Signature]*

Month Day Year  
*5 | 23 | 16*

GENERATOR

TRANSPORTER

FACILITY

# NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.

Manifest Document No. 896-111

2. Page 1 of

3. Generator's Name and Mailing Address

Highway 11 Grocery  
13527 SC Highway 11  
Salem S.C. UST #03439

4. Generator's Phone ( )

5. Transporter 1 Company Name

*Vimmer's Assets*

6. US EPA ID Number

A. State Transporter's ID

B. Transporter 1 Phone

7. Transporter 2 Company Name

8. US EPA ID Number

C. State Transporter's ID

D. Transporter 2 Phone

9. Designated Facility Name and Site Address

Blue Meadows Facility  
Belton, SC

10. US EPA ID Number

E. State Facility's ID

F. Facility's Phone

11. WASTE DESCRIPTION

12. Containers

No. Type

13. Total Quantity

14. Unit Wt./Vol.

a. NON-HAZARDOUS PETROLEUM CONTAMINATED GROUNDWATER

*14 23*

*3376*

b.

c.

d.

G. Additional Descriptions for Materials Listed Above

H. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name

*DANIEL F. RIDGWAY*

Signature

*Daniel F. Ridgway*

Date

Month Day Year  
*5 23 16*

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name

*Sack/Vimmer*

Signature

*[Signature]*

Date

Month Day Year  
*5 23 16*

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name

Signature

Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.

Printed/Typed Name

*Charles Stirkland*

Signature

*Charles Stirkland*

Date

Month Day Year  
*5 23 16*

QUANTIFIABLE

TRANSPORTER

FACILITY

# NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.

Manifest Document No. **896-13**

2. Page 1 of

3. Generator's Name and Mailing Address  
**HWY 11 GROCERY  
 13527 SC HWY 11**

4. Generator's Phone ( ) **SALEM, SC** UST # **03439**

5. Transporter 1 Company Name  
**Nimmoo's Associated**

6. US EPA ID Number

A. State Transporter's ID

B. Transporter 1 Phone

7. Transporter 2 Company Name

8. US EPA ID Number

C. State Transporter's ID

D. Transporter 2 Phone

9. Designated Facility Name and Site Address  
**Blue Meadows Facility  
 Belton, SC**

10. US EPA ID Number

E. State Facility's ID

F. Facility's Phone

11. WASTE DESCRIPTION

12. Containers

No. Type

13. Total Quantity

14. Lbs./Vol.

a. **NON-HAZARDOUS PETROLEUM CONTAMINATED WATER-PROFILE #**

**2856**

b.

c.

d.

15. Additional Descriptions for Materials Listed Above

H. Handling Codes for Wastes Listed Above

16. Special Handling Instructions and Additional Information

16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name

**DANIEL F. RIDGEWAY**

Signature

*[Signature]*

Date

Month Day Year  
**5 | 24 | 16**

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name

**Jack Nimmoo's**

Signature

*[Signature]*

Date

Month Day Year  
**5 | 24 | 16**

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name

Signature

Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.

Printed/Typed Name

Signature

*[Signature]*

Date

Month Day Year  
**5 | 24 | 16**

GENERATOR

HAZARDOUS FACILITY



# Emerald, Inc.

CONSULTING AND ENGINEERING  
SERVICES IN ENVIRONMENTAL AFFAIRS

---

2520 TAHOE DRIVE • POST OFFICE BOX 3050 • SUMTER, SOUTH CAROLINA 29151

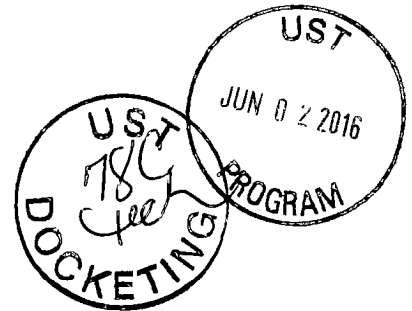
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WEBSITE:  
www.emeraldinc-us.com

TELEPHONE (803) 469-5454  
FAX (803) 469-5465

May 27, 2016

Joel Padgett, P.G. Hydrogeologist  
Corrective Action Section  
Underground Storage Tank Management Division  
Bureau of Underground Storage Tank Management  
South Carolina Department of Health and  
Environmental Control  
2600 Bull Street  
Columbia, SC 29201



Aggressive Fluid Vapor Recovery Report  
Former Highway 11 Grocery  
Salem, South Carolina  
UST Permit #03439  
Emerald Job 16-041D

Mr. Padgett,

Please find the attached Aggressive Fluid Vapor Recovery (AFVR) Report for a 96-hour event conducted at Highway 11 Grocery. This AFVR event was conducted in accordance with the approved Emerald, Inc. Standard Operating Procedures document dated January 6, 2015.

## **AGGRESSIVE FLUID VAPOR RECOVERY EVENTS**


On May 16 through 20, 2016, Emerald, Inc. personnel performed a 96-hour AFVR event using RW-1 and RW-2 as extraction locations. This 96-hour AFVR event was conducted to remove free product previously detected at the subject site. Free phase petroleum product was detected in RW-1 at a thickness of 0.34 ft. and RW-2 at a thickness of 0.33 ft. prior to the event. At the conclusion of the event free phase product was not detected. Monitoring well locations are presented on the attached site map provided by SCDHEC.

Table 1 presents the recorded data for the off-gas concentrations (by PID), post treatment off-gas concentrations (if required), off-gas velocities, knockout tank vacuum. Table 2 presents the stinger depths, wellhead vacuum measurements for each extraction well utilized during the event. Table 2 also contains water levels measurements and magnehelic readings for selected nearby monitoring wells. Emerald, Inc. field personnel collected data at thirty minute intervals for the first eight hours of the event, then at one hour intervals from hours nine through twenty four and at two hour intervals from twenty four through ninety six hours of the event. During the hours of midnight to 8 AM event monitoring was suspended. Due to the proximity of the building, off-gas treatment was utilized during this event.

According to the calculations as presented on Table 1, a total of 450.04 pounds of hydrocarbons (as vapor) and 71.96 equivalent gallons of hydrocarbons were removed during this event. Free phase product was not detected in the knockout tank during this event. According to the meter, a total of 11,034 gallons of petroleum contaminated groundwater was transported to the Blue Meadows Wastewater Treatment Facility in Belton, SC for proper disposal. A copy of the disposal manifest for this event is included as an attachment.

If you have any questions or concerns please feel free to contact Emerald, Inc. at 803-469-5454.

Sincerely,  
Emerald, Inc.

  
William C. McClary, P.G.  
Project Manager

  
Ronny L. Lowder  
President

Attachments

**TABLE 1  
AFVR MONITORING DATA  
HIGHWAY 11 GROCERY  
SALEM, SOUTH CAROLINA  
SCDHEC SITE ID #03439  
EMERALD JOB #16-041D**

Extraction Wells	Date	Time (h:mm)	Differential Time (hr)	Knockout Tank Vacuum (in. Hg)	Off-Gas Concentration (PPM)	Post-Treatment Concentration (PPM)	Offgas Velocity (ft/min)	Flow Rate (SCFM)	CG:M (mg/dsm <sup>3</sup> )	Cg (Lb/Dscf)	Removal Rate (Lbs/Hr)	Interval Removal (Lbs)
RW-1	5/16/16	10:00	Start	8	912	<0.1	N/A	240	4,850	3.03E-04	4.36	-
RW-2		10:30	↑	9	762	<0.1	N/A	220	4,052	2.53E-04	3.34	1.92
		11:00	↑	9	720	<0.1	N/A	220	3,829	2.39E-04	3.16	1.62
		11:30	↑	9	847	<0.1	N/A	220	4,504	2.81E-04	3.71	1.72
		12:00	↑	18	3,039	1.1	N/A	110	16,160	1.01E-03	6.66	2.59
		12:30	↑	18	2,891	1.2	N/A	110	15,373	9.60E-04	6.33	3.25
		13:00	↑	18	2,236	1.2	N/A	110	11,890	7.42E-04	4.90	2.81
		13:30	↑	18	1,748	1.0	N/A	110	9,295	5.80E-04	3.83	2.18
		14:00	↑	18	2,012	<0.1	N/A	110	10,699	6.68E-04	4.41	2.06
		14:30	↑	18	1,892	<0.1	N/A	110	10,061	6.28E-04	4.15	2.14
		15:00	↑	18	1,541	<0.1	N/A	110	8,195	5.12E-04	3.38	1.88
		15:30	0.5	18	1,711	<0.1	N/A	110	9,099	5.68E-04	3.75	1.78
		16:00	0.5	18	1,621	<0.1	N/A	110	8,620	5.38E-04	3.55	1.83
		16:30	0.5	18	1,340	<0.1	N/A	110	7,126	4.45E-04	2.84	1.62
		17:00	0.5	20	1,566	<0.1	N/A	90	8,228	5.20E-04	2.81	1.44
		17:30	0.5	20	1,375	<0.1	N/A	90	7,312	4.56E-04	2.46	1.32
		18:00	0.5	20	1,308	<0.1	N/A	90	6,956	4.34E-04	2.34	1.20
		19:00	1.0	20	1,264	<0.1	N/A	90	6,722	4.20E-04	2.27	2.31
		20:00	1.0	20	1,648	<0.1	N/A	90	8,764	5.47E-04	2.95	2.61
		21:00	1.0	20	3,010	1.1	N/A	90	16,006	9.99E-04	5.40	4.18
		22:00	1.0	20	3,000	1.1	N/A	90	15,953	9.96E-04	5.38	5.39
		23:00	1.0	20	3,227	1.2	N/A	90	17,160	1.07E-03	5.79	5.58
		24:00	1.0	20	3,304	1.2	N/A	90	17,570	1.10E-03	5.92	5.85
5/17/16		8:00	8.0	18	2,889	<0.1	N/A	110	15,363	9.59E-04	6.33	49.01
		9:00	1.0	18	2,691	<0.1	N/A	110	14,310	8.93E-04	5.90	6.11
		10:00	1.0	18	2,513	<0.1	N/A	110	13,363	8.34E-04	5.51	5.70
		12:00	2.0	18	2,464	<0.1	N/A	110	13,103	8.18E-04	5.40	10.91
		14:00	2.0	20	2,327	<0.1	N/A	90	12,374	7.73E-04	4.17	9.57
		16:00	2.0	20	2,766	<0.1	N/A	90	14,709	9.18E-04	4.96	9.13
		18:00	2.0	20	2,519	<0.1	N/A	90	13,395	8.36E-04	4.52	9.47
		20:00	2.0	20	2,997	<0.1	N/A	90	15,937	9.95E-04	5.37	9.89

**TABLE 1 Cont'd.  
AFVR MONITORING DATA  
HIGHWAY 11 GROCERY  
SALEM, SOUTH CAROLINA  
SCDHEC SITE ID #03439  
EMERALD JOB #16-041D**

Extraction Wells	Date	Time (hh:mm)	Differential Time (hr)	Knockout Tank Vacuum (in. Hg)	Off-Gas Concentration (PPM)	Post-Treatment Concentration (PPM)	Offgas Velocity (ft/min)	Flow Rate (SCFM)	CG:M (mg/dsm <sup>3</sup> )	Cg (Lb/Dscf)	Removal Rate (Lbs/Hr)	Interval Removal (Lbs)
RW-1	5/17/16	22:00	2.0	20	3,597	<0.1	NA	90	19,128	1.19E-03	6.45	11.82
RW-2	5/18/16	24:00	2.0	20	3,155	<0.1	NA	90	16,777	1.05E-03	5.66	12.10
		8:00	8.0	20	3,378	<0.1	NA	90	17,963	1.12E-03	6.06	46.85
		10:00	2.0	20	2,672	<0.1	NA	90	14,209	8.87E-04	4.79	10.85
		12:00	2.0	20	2,755	<0.1	NA	90	14,650	9.15E-04	4.94	9.73
		14:00	2.0	20	2,633	<0.1	NA	90	14,002	8.74E-04	4.72	9.66
		16:00	2.0	20	2,819	<0.1	NA	90	14,991	9.36E-04	5.05	9.77
		18:00	2.0	20	2,490	<0.1	NA	90	13,241	8.27E-04	4.46	9.52
		20:00	2.0	20	1,932	<0.1	NA	90	10,274	6.41E-04	3.46	7.93
		22:00	2.0	20	2,363	<0.1	NA	90	12,566	7.84E-04	4.24	7.70
		24:00	2.0	20	2,246	<0.1	NA	90	11,944	7.46E-04	4.03	8.26
	5/19/16	8:00	8.0	20	2,639	<0.1	NA	90	14,033	8.76E-04	4.73	35.03
		10:00	2.0	20	2,118	<0.1	NA	90	11,263	7.03E-04	3.80	8.53
		12:00	2.0	20	1,917	<0.1	NA	90	10,194	6.36E-04	3.44	7.23
		14:00	2.0	20	2,076	<0.1	NA	90	11,040	6.89E-04	3.72	7.16
		16:00	2.0	20	1,862	<0.1	NA	90	9,902	6.18E-04	3.34	7.06
		18:00	2.0	20	2,122	<0.1	NA	90	11,284	7.04E-04	3.80	7.14
		20:00	2.0	20	2,735	<0.1	NA	90	14,544	9.08E-04	4.90	8.71
		22:00	2.0	20	2,954	<0.1	NA	90	15,708	9.81E-04	5.30	10.20
		24:00	2.0	20	2,535	<0.1	NA	90	13,480	8.42E-04	4.54	9.84
	5/20/16	8:00	8.0	20	1,860	<0.1	NA	90	9,891	6.17E-04	3.33	31.52
		10:00	2.0	20	1,691	<0.1	NA	90	8,992	5.61E-04	3.03	6.37

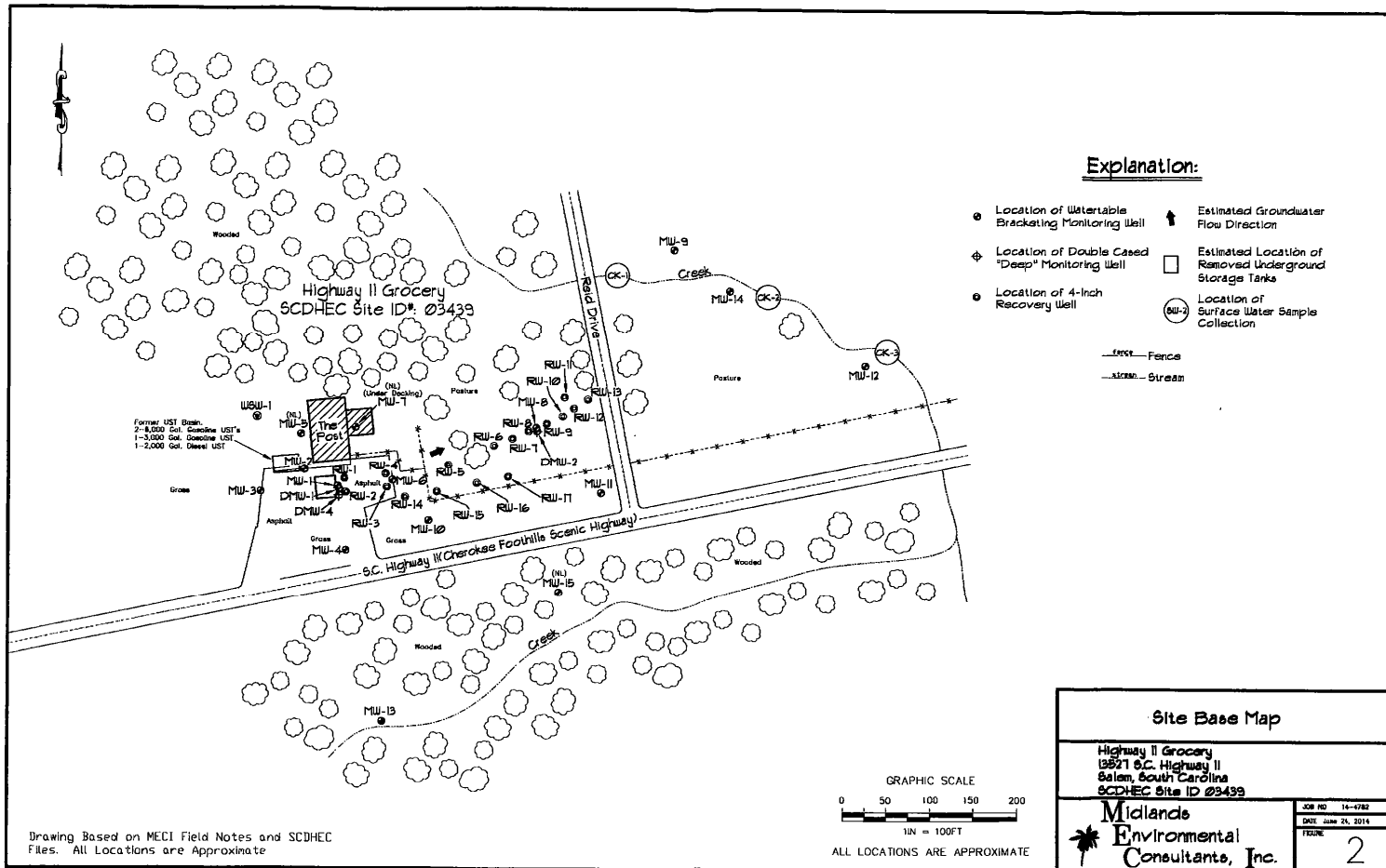
		Before AFVR Event				After AFVR Event				Equations		
Well No.	Diameter (in)	Screened Interval (ft)	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)				
RW-1	4	10-30	24.90	25.24	0.34	--	27.73	--	Cg,m = PPMg*(Mg/K3) Removal Rate = Cg * Flow Rate * 60Min/Hr Interval Removal = (T <sub>1</sub> + T <sub>2</sub> )/2 PPM = Part per Million (by PID)			
RW-2	4	10-30	24.12	24.45	0.33	--	26.12	--	Cg,m = mg/dsm <sup>3</sup> (mass concentration of gasoline emission) Mg = 128 mg/mg-mole, molecular weight of gasoline K3 = 24.07 dsm <sup>3</sup> /E6 mg-mole, mass to volume conversion Cg = lb/dscf, mass concentration of gasoline by emission Removal Rate = lb/hr,pollutant mass removal rate of emission			
<b>Product Thickness</b>												
Product observed in Sight Tube? No												
Product detected in Tanker? No												
<b>Weather Conditions</b>												
5/16/16	Cloudy, 60-81°F	Emerald, Inc. Personnel	D. Ridgeway	Hydrocarbons Removed (vapor):	450.04	Pounds	Hydrocarbons Removed (liquid):	0.00	Gallons	Total Hydrocarbons Removed:	71.96	Equivalent Gallons
5/17/16	Sunny, 60-81°F		C. Clark	Molecular Weight Utilized:	128	mg/mg-mole	Disposal Facility:	City of Manning Wastewater Treatment Facility				
5/18/16	Sunny, 57-82°F			Total Liquids Removed:	11,034	Gallons						
5/19/16	Sunny, 59-74°F											
5/20/16	Sunny, 59-84°F											
<b>Notes</b>												
↑ = Stinger raised ↓ = Stinger lowered												

**TABLE 2  
EVENT MONITORING DATA  
HIGHWAY 11 GROCERY  
SALEM, SOUTH CAROLINA  
SCDHEC SITE ID #03439  
EMERALD JOB #16-041D**

Date	Time (hh:mm)	Extraction Wells				Event Monitoring			
		RW-1		RW-2		MW-1		MW-2	
		Stinger Depth (ft.)	Wellhead Vacuum (in. Hg)	Stinger Depth (ft.)	Wellhead Vacuum (in. Hg)	Magnehelic Reading (Inches of water)	Depth to Water	Magnehelic Reading (inches of water)	Depth to Water
5/16/16	10:00	24.0	8	24.0	8	Pre	25.06	Pre	26.13
	10:30	24.0	9	24.0	9	---	---	---	---
	11:00	25.0	9	25.0	9	---	---	---	---
	11:30	25.0	9	25.0	9	---	---	---	---
	12:00	26.0	17	26.0	18	4.5	26.15	<0.1	26.13
	12:30	26.0	17	26.0	18	---	---	---	---
	13:00	27.0	18	27.0	18	---	---	---	---
	13:30	27.0	18	27.0	18	---	---	---	---
	14:00	28.0	18	28.0	18	2.0	26.31	<0.1	26.21
	14:30	28.0	18	28.0	18	---	---	---	---
	15:00	29.0	18	29.0	18	---	---	---	---
	15:30	29.0	18	29.0	18	---	---	---	---
	16:00	29.0	18	29.0	18	2.1	26.66	<0.1	26.29
	16:30	29.0	18	29.0	18	---	---	---	---
	17:00	29.0	19	29.0	19	---	---	---	---
	17:30	29.0	20	29.0	20	---	---	---	---
	18:00	29.0	20	29.0	20	3.4	26.90	<0.1	26.32
	19:00	29.0	20	29.0	20	---	---	---	---
	20:00	29.0	20	29.0	20	3.7	27.48	<0.1	26.42
	21:00	29.0	20	29.0	20	---	---	---	---
	22:00	29.0	20	29.0	20	4.3	27.51	<0.1	26.48
	23:00	29.0	20	29.0	20	---	---	---	---
5/21/16	24:00	29.0	20	29.0	20	4.8	27.53	<0.1	26.51
	8:00	29.0	20	29.0	20	>5.0	27.56	<0.1	26.61
	9:00	29.0	20	29.0	20	---	---	---	---
	10:00	24.0	20	24.0	20	2.8	27.62	---	26.63
	12:00	25.0	20	25.0	20	3.5	27.68	<0.1	26.66
	14:00	26.0	20	26.0	20	3.1	27.69	<0.1	26.68
	16:00	26.0	20	26.0	20	>5.0	27.72	<0.1	26.69
	18:00	26.0	20	26.0	20	>5.0	27.76	<0.1	26.72
	20:00	26.0	20	26.0	20	>5.0	27.84	<0.1	26.72

Notes:





Drawing Based on MECI Field Notes and SCDHEC Files. All Locations are Approximate

# NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.

Manifest Document No. **896-2**

2. Page 1 of

3. Generator's Name and Mailing Address

**HWY 11 GROCERY**  
**13527 SC HWY 11**  
**SALEM, SC US # 03439**

4. Generator's Phone ( )

5. Transporter 1 Company Name

**Nimmors Associate I**

6. US EPA ID Number

A. State Transporter's ID

B. Transporter 1 Phone

7. Transporter 2 Company Name

8. US EPA ID Number

C. State Transporter's ID

D. Transporter 2 Phone

9. Designated Facility Name and Site Address

**City of Manning**  
**Wastewater Treatment Facility**  
**PO Box 546**  
**Manning, SC 29102**

10. US EPA ID Number

**BLUE MEADOWS FACILITY**  
**BELTON, SC**

E. State Facility's ID

F. Facility's Phone

11. WASTE DESCRIPTION

12. Containers

No. Type

13. Total Quantity

14. Unit Wt./Vol.

a. **NON-HAZARDOUS PETROLEUM CONTAMINATED**  
~~**WATER PROFILE #**~~ **GROUNDWATER**

**3798**

**GAL**

b.

**PA70**

c.

d.

6. Additional Descriptions for Materials Listed Above

H. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name

**CRUIS CLARK**

Signature

*Cr Clark*

Date

Month Day Year  
**5 | 15 | 16**

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name

**Jack Nimmors**

Signature

*Jack Nimmors*

Date

Month Day Year  
**5 | 18 | 16**

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name

Signature

Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator; Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.

Printed/Typed Name

**Stacy Womack**

Signature

*Stacy Womack*

Date

Month Day Year  
**05 | 16 | 16**

GENERATOR

TRANSPORTER

FACILITY



# NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.

Manifest Document No. 896-4

2. Page 1 of

3. Generator's Name and Mailing Address

Highway 11 Grocery  
13527 SC Highway 11  
Salem S.C. UST #03439

4. Generator's Phone ( )

5. Transporter 1 Company Name

6. US EPA ID Number

A. State Transporter's ID

B. Transporter 1 Phone

7. Transporter 2 Company Name

8. US EPA ID Number

C. State Transporter's ID

D. Transporter 2 Phone

9. Designated Facility Name and Site Address

Blue Meadows Facility  
Belton, SC

10. US EPA ID Number

E. State Facility's ID

F. Facility's Phone

11. WASTE DESCRIPTION

12. Containers  
No. Type

13. Total Quantity

14. Unit (Wt./Vol.)

a. NON-HAZARDOUS PETROLEUM CONTAMINATED GROUNDWATER

3216

PH 7.6

b.

c.

d.

G. Additional Descriptions for Materials Listed Above

H. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name

DANIEL F. RIDGEWAY

Signature

*Daniel F. Ridgeway*

Date  
Month Day Year  
5 18 16

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name

Jack Nimmons

Signature

*Jack Nimmons*

Date  
Month Day Year  
5 18 16

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name

Signature

Date  
Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in Item 19.

Printed/Typed Name

Steven L. Brown

Signature

*Steven L. Brown*

Date  
Month Day Year  
05 18 16

GENERATOR

TRANSPORTER

FACILITY

# NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.

Manifest Document No. 896-6

2. Page 1 of

3. Generator's Name and Mailing Address

Highway 11 Grocery  
13527 SC Highway 11  
Salem S.C. UST #03439

4. Generator's Phone ( )

5. Transporter 1 Company Name

*Nimmous Associate L*

6. US EPA ID Number

A. State Transporter's ID

B. Transporter 1 Phone

7. Transporter 2 Company Name

8. US EPA ID Number

C. State Transporter's ID

D. Transporter 2 Phone

9. Destination Facility Name and Site Address

Blue Meadows Facility  
Belton, SC

10. US EPA ID Number

E. State Facility's ID

F. Facility's Phone

11. WASTE DESCRIPTION

12. Containers

No.

Type

13. Total Quantity

14. Unit Wt/Vol.

a. NON-HAZARDOUS PETROLEUM CONTAMINATED GROUNDWATER

*3009*

b.

c.

d.

G. Additional Descriptions for Materials Listed Above

H. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name

*DANIEL F. RIDGEWAY*

Signature

*Daniel F. Ridgeway*

Date

Month Day Year  
*5 20 16*

17. Transporter 1 Acknowledgment of Receipt of Materials

Printed/Typed Name

*Jack Nimmous*

Signature

*Jack Nimmous*

Date

Month Day Year  
*5 20 2016*

18. Transporter 2 Acknowledgment of Receipt of Materials

Printed/Typed Name

Signature

Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.

Printed/Typed Name

*John Womack*

Signature

*John Womack*

Date

Month Day Year  
*05 20 16*

GENERATOR

TRANSPORTER

FACILITY

# NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.

Manifest Document No. 896-7

2. Page 1 of

3. Generator's Name and Mailing Address

Highway 11 Grocery  
13527 SC Highway 11  
Salem S.C. UST #03439

4. Generator's Phone ( )

5. Transporter 1 Company Name

*Nimmers Associated*

6. US EPA ID Number

7. Transporter 2 Company Name

8. US EPA ID Number

9. Designated Facility Name and Site Address

Blue Meadows Facility  
Belton, SC

10. US EPA ID Number

A. State Transporter's ID

B. Transporter 1 Phone

C. State Transporter's ID

D. Transporter 2 Phone

E. State Facility's ID

F. Facility's Phone

11. WASTE DESCRIPTION

12. Containers

13. Total Quantity

14. Unit Wt./Vol.

a. NON-HAZARDOUS PETROLEUM CONTAMINATED GROUNDWATER

*PA 6.4*

*1011*

b.

c.

d.

G. Additional Descriptions for Materials Listed Above

H. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name

*DANIEL F. RIDGEWAY*

Signature

*Daniel F. Ridgeway*

Date

Month Day Year  
*5 | 20 | 16*

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name

*Jack Nimmers*

Signature

*Jack Nimmers*

Date

Month Day Year  
*5 | 23 | 16*

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name

Signature

Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.

Printed/Typed Name

*Clayton Strickland*

Signature

*Clayton Strickland*

Date

Month Day Year  
*5 | 13 | 16*

GENERATOR

RECEIVED BY FACILITY

# Emerald, Inc.

CONSULTING AND ENGINEERING  
SERVICES IN ENVIRONMENTAL AFFAIRS

---

2520 TAHOE DRIVE • POST OFFICE BOX 3050 • SUMTER, SOUTH CAROLINA 29151

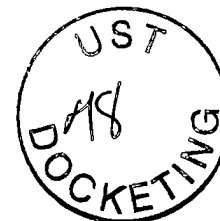
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WEBSITE:  
www.emeraldinc-us.com

TELEPHONE (803) 469-5454  
FAX (803) 469-5465

May 26, 2016

Joel Padgett, P.G. Hydrogeologist  
Corrective Action Section  
Underground Storage Tank Management Division  
Bureau of Underground Storage Tank Management  
South Carolina Department of Health and  
Environmental Control  
2600 Bull Street  
Columbia, SC 29201



Aggressive Fluid Vapor Recovery Report  
Former Highway 11 Grocery  
Salem, South Carolina  
UST Permit #03439  
Emerald Job 16-041A



Mr. Padgett,

Please find the attached Aggressive Fluid Vapor Recovery (AFVR) Report for a 96-hour event conducted at the Former Highway 11 Grocery site. A site reconnaissance was conducted on May 11, 2016 to locate each monitoring well, gauge extraction wells, and assess site conditions. Prior to conducting this AFVR event information gathered during the site reconnaissance was presented to the SCDHEC project manager for review. This AFVR event was conducted in accordance with the approved Emerald, Inc. Standard Operating Procedures document dated January 6, 2015.

## **AGGRESSIVE FLUID VAPOR RECOVERY EVENTS**

On May 20 through 24, Emerald, Inc. personnel performed a 96-hour AFVR event using MW-8 and RW-8 as extraction locations. This 96-hour AFVR event was conducted to aid in reducing dissolved levels of chemicals of concern previously detected at the subject site. Free

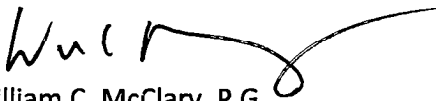
phase petroleum product was not detected prior to initiation or at the conclusion of this event. Monitoring well locations are presented on the attached site map provided by SCDHEC.


Table 1 presents the recorded data for the off-gas concentrations (by PID), post treatment off-gas concentrations (if required), off-gas velocities, knockout tank vacuum. Table 2 presents the stinger depths, wellhead vacuum measurements for each extraction well utilized during the event. Table 2 also contains water levels measurements and magnehelic readings for selected nearby monitoring wells. Emerald, Inc. field personnel collected data at thirty minute intervals for the first eight hours of the event, then at one hour intervals from hours nine through twenty four and at two hour intervals from twenty four through ninety six hours of the event. During the hours of midnight to 8 AM event monitoring was suspended. Due to the location of the site being vacant, off-gas treatment was not utilized during this event.

According to the calculations as presented on Table 1, a total of 894.67 pounds of hydrocarbons (as vapor) and 143.06 equivalent gallons of hydrocarbons were removed during this event. Free phase product was not detected in the knockout tank during this event. According to the meter, a total of 6,391 gallons of petroleum contaminated groundwater was transported to the Blue Meadows Wastewater Treatment Facility in Belton, SC for proper disposal. A copy of the disposal manifest for this event is included as an attachment.

If you have any questions or concerns please feel free to contact Emerald, Inc. at 803-469-5454.

Sincerely,  
Emerald, Inc.

  
William C. McClary, P.G.  
Project Manager

  
Ronny L. Lowder  
President

Attachments

**TABLE 1  
AFVR MONITORING DATA  
HIGHWAY 11 GROCERY  
SALEM, SOUTH CAROLINA  
SCDHEC SITE ID #03439  
EMERALD JOB #16-041A**

Extraction Well	Date	Time (hh:mm)	Differential Time (hr)	Knockout Tank Vacuum (in. Hg)	Off-Gas Concentration (PPM)	Post-Treatment Concentration (PPM)	Offgas Velocity (ft/min)	Flow Rate (CFM)	CG:M (mg/dsm <sup>3</sup> )	Cg (Lb/Dscf)	Removal Rate (Lbs/Hr)	Interval Removal (Lbs)
MW-8	5/20/16	11:00	0.5	13	2,885	N/A	3,812	187.11	15,342	9.58E-04	10.75	—
RW-8		11:30 ↓	0.5	13	2,791	N/A	3,841	188.54	14,842	9.27E-04	10.48	5.31
		12:00 ↓	0.5	13	2,962	N/A	3,727	182.94	15,751	9.83E-04	10.79	5.32
		12:30 ↓	0.5	13	2,808	N/A	3,780	185.54	14,932	9.32E-04	10.38	5.29
		13:00 ↓	0.5	13	2,859	N/A	3,824	187.70	15,203	9.49E-04	10.69	5.27
		13:30 ↓	0.5	15	3,161	N/A	3,560	174.74	16,809	1.05E-03	11.00	5.42
		14:00 ↓	0.5	15	3,230	N/A	3,428	168.26	17,176	1.07E-03	10.83	5.46
		14:30 ↓	0.5	15	3,016	N/A	3,494	171.50	16,038	1.00E-03	10.30	5.28
		15:00 ↓	0.5	15	2,984	N/A	3,321	163.01	15,868	9.91E-04	9.69	5.00
		15:30 ↓	0.5	15	3,119	N/A	3,457	169.69	16,586	1.04E-03	10.54	5.06
		16:00 ↓	0.5	15	3,486	N/A	3,418	167.77	18,538	1.16E-03	11.65	5.55
		16:30 ↓	0.5	15	3,240	N/A	3,370	165.42	17,229	1.08E-03	10.68	5.58
		17:00 ↓	0.5	15	2,873	N/A	3,422	167.97	15,278	9.54E-04	9.61	5.07
		17:30 ↓	0.5	15	2,614	N/A	3,518	172.68	13,900	8.68E-04	8.99	4.65
		18:00 ↓	0.5	15	2,738	N/A	3,456	169.64	14,560	9.09E-04	9.25	4.56
		18:30	0.5	15	2,504	N/A	3,621	177.74	13,316	8.31E-04	8.87	4.53
		19:00	0.5	15	2,866	N/A	3,611	177.25	15,241	9.51E-04	10.12	4.75
		20:00	1.0	15	2,785	N/A	3,622	177.79	14,810	9.25E-04	9.86	9.99
		21:00	1.0	15	2,693	N/A	3,344	164.14	14,321	8.94E-04	8.80	9.33
		22:00	1.0	15	2,661	N/A	3,325	163.21	14,150	8.83E-04	8.65	8.73
		23:00	1.0	15	2,475	N/A	3,422	167.97	13,161	8.22E-04	8.28	8.47
		24:00	1.0	15	2,288	N/A	3,575	175.48	12,167	7.60E-04	8.00	8.14
	5/21/16	8:00	8.0	15	2,418	N/A	3,812	187.11	12,858	8.03E-04	9.01	68.04
		9:00	1.0	15	2,040	N/A	3,621	177.74	10,848	6.77E-04	7.22	8.12
		10:00	1.0	15	1,928	N/A	3,752	184.17	10,253	6.40E-04	7.07	7.15
		11:00	1.0	15	1,306	N/A	3,680	180.63	6,945	4.34E-04	4.70	5.89
		12:00 ↑	1.0	15	1,465	N/A	3,524	172.98	7,790	4.86E-04	5.05	4.87
		14:00	2.0	15	3,422	N/A	3,629	178.13	18,197	1.14E-03	12.14	17.19
		16:00 ↓	2.0	15	3,108	N/A	3,592	176.31	16,527	1.03E-03	10.92	23.06
		18:00	2.0	15	3,257	N/A	3,618	177.59	17,320	1.08E-03	11.52	22.44
		20:00	2.0	15	3,365	N/A	3,522	172.88	17,894	1.12E-03	11.59	23.11

**TABLE 1 Cont'd.  
AFVR MONITORING DATA  
HIGHWAY 11 GROCERY  
SALEM, SOUTH CAROLINA  
SCDHEC SITE ID #03439  
EMERALD JOB #16-041A**

Extraction Wells	Date	Time (hh:mm)	Differential Time (hr)	Knockout Tank Vacuum (In. Hg)	Off-Gas Concentration (PPM)	Post-Treatment Concentration (PPM)	Offgas Velocity (ft/min)	Flow Rate (CFM)	CG:M (mg/dsm <sup>3</sup> )	Cg (Lb/Dscf)	Removal Rate (Lbs/Hr)	Interval Removal (Lbs)
MW-8	5/21/16	22:00	2.0	15	3,268	N/A	3,512	172.39	17,485	1.09E-03	11.29	22.88
RW-8		24:00	2.0	15	3,163	N/A	3,503	171.94	16,820	1.05E-03	10.83	22.12
	5/22/16	8:00	8.0	15	2,916	N/A	3,629	178.13	15,506	9.68E-04	10.35	84.72
		10:00 ↓	2.0	15	3,037	N/A	3,553	174.40	16,150	1.01E-03	10.55	20.90
		12:00	2.0	15	2,840	N/A	3,499	171.75	15,102	9.43E-04	9.72	20.27
		14:00	2.0	15	2,971	N/A	3,462	169.93	15,799	9.86E-04	10.06	19.77
		16:00 ↓	2.0	15	3,156	N/A	3,518	172.68	16,783	1.05E-03	10.86	20.91
		18:00	2.0	15	3,098	N/A	3,584	175.92	16,474	1.03E-03	10.86	21.71
		20:00	2.0	15	3,083	N/A	3,525	173.02	16,394	1.02E-03	10.63	21.48
		22:00 ↓	2.0	15	2,965	N/A	3,455	169.59	15,767	9.84E-04	10.02	20.64
		24:00	2.0	15	2,883	N/A	3,432	168.46	15,331	9.57E-04	9.67	19.69
	5/23/16	8:00	8.0	15	2,722	N/A	3,527	173.12	14,475	9.04E-04	9.39	76.24
		10:00 ↓	2.0	15	2,784	N/A	3,549	174.20	14,804	9.24E-04	9.66	19.05
		12:00	2.0	20	3,809	N/A	2,618	128.50	20,255	1.26E-03	9.75	19.41
		14:00	2.0	20	3,094	N/A	2,532	124.28	16,453	1.03E-03	7.66	17.41
		16:00	2.0	18	3,167	N/A	2,852	139.99	16,841	1.05E-03	8.83	16.49
		18:00	2.0	18	2,933	N/A	2,929	143.77	15,597	9.74E-04	8.40	17.23
		20:00	2.0	18	1,925	N/A	3,651	179.21	10,237	6.39E-04	6.87	15.27
		22:00	2.0	18	1,885	N/A	3,575	175.48	10,024	6.26E-04	6.59	13.46
		24:00	2.0	18	1,793	N/A	3,412	167.48	9,535	5.95E-04	5.98	12.57
	5/24/16	8:00	8.0	18	2,809	N/A	3,087	151.53	14,937	9.33E-04	8.48	57.84
		10:00	2.0	18	3,135	N/A	3,335	163.70	16,671	1.04E-03	10.22	18.70
		11:00	1.0	18	2,742	N/A	3,127	153.49	14,581	9.10E-04	8.38	9.30
<b>Well Gauging Data</b>			<b>Before AFVR Event</b>			<b>After AFVR Event</b>			<b>Equations</b>			
<b>Well No.</b>	<b>Diameter (In)</b>	<b>Screened Interval (ft)</b>	<b>Depth to Product (ft)</b>	<b>Depth to Water (ft)</b>	<b>Product Thickness (ft)</b>	<b>Depth to Product (ft)</b>	<b>Depth to Water (ft)</b>	<b>Product Thickness (ft)</b>	$Cg:m = PPMg^*(Mg/K3)$ $Removal Rate = Cg * Flow Rate * 60Min/Hr$ $Interval Removal = (T_1 + T_2)/2$ $PPM = Part per Million (by PID)$ $Cg:m = mg/dsm^3(\text{mass concentration of gasoline emission})$ $Mg = 128 \text{ mg/mg-mole, molecular weight of gasoline}$ $K3 = 24.07 \text{ dsm}^3/1E6 \text{ mg-mole, mass to volume conversion}$ $Cg = lb/dscf, \text{ mass concentration of gasoline by emission}$ $Removal Rate = lb/hr, \text{ pollutant mass removal rate of emission}$			
MW-8	2	15-30	---	22.48	---	---	24.39	---				
RW-8	4	8.5-28.5	---	20.69	---	---	24.72	---				
<b>Product Thickness</b>			<b>Recovery / Disposal Information</b>									
Product observed in Sight Tube? No			Hydrocarbons Removed (vapor): 894.67			Pounds						
Product detected in Tanker? No			Hydrocarbons Removed (liquid): 0.00			Gallons						
<b>Weather Conditions</b>		<b>Emerald, Inc. Personnel</b>		<b>Total Hydrocarbons Removed:</b>		143.06		<b>Equivalent Gallons</b>				
5/20/16	Cloudy, 60-81°F	D. Ridgeway		<b>Molecular Weight Utilized:</b>		128		<b>mg/mg-mole</b>				
5/21/16	Sunny, 60-81°F	C. Clark		<b>Disposal Facility:</b>		Blue Meadows Wastewater Treatment Facility						
5/22/16	Sunny, 57-82°F			<b>Total Liquids Removed:</b>		6,391		<b>Gallons</b>				
5/23/16	Sunny, 59-74°F											
5/24/16	Sunny, 56-84°F											
<b>Notes</b>												
↑ = Stinger raised    ↓ = Stinger lowered												

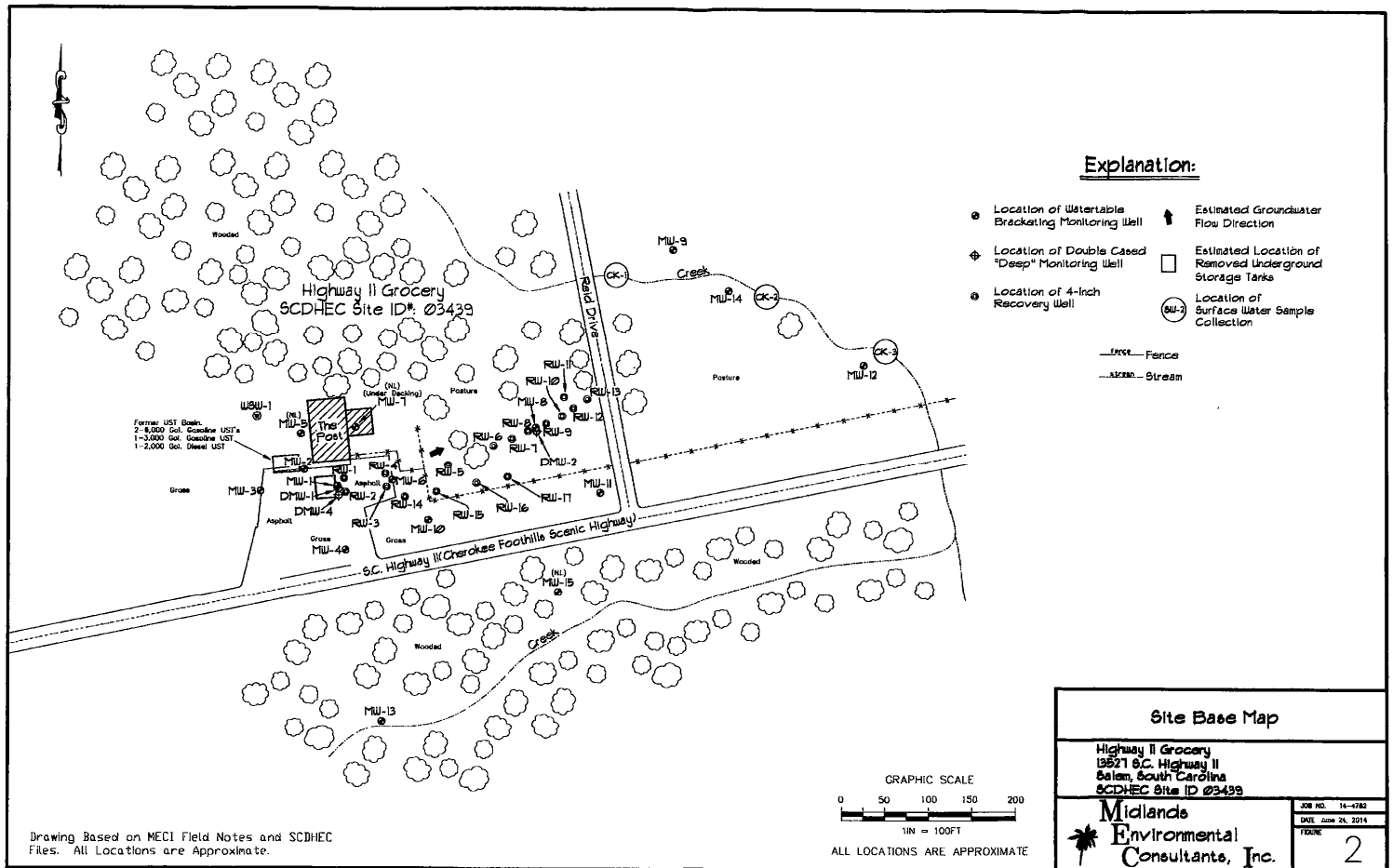
**TABLE 2  
EVENT MONITORING DATA  
HIGHWAY 11 GROCERY  
SALEM, SOUTH CAROLINA  
SCDHEC SITE ID #03439  
EMERALD JOB #16-041A**

Date	Time (hh:mm)	Event Monitoring							
		MW-8		RW-8		RW-7		RW-9	
		Stinger Depth (ft.)	Wellhead Vacuum (in. Hg)	Stinger Depth (ft.)	Wellhead Vacuum (in. Hg)	Magnehelic Reading (inches of water)	Depth to Water	Magnehelic Reading (inches of water)	Depth to Water
5/20/16	11:00	20.0	13	20.0	13	<0.1	25.19	<0.1	22.25
	11:30	20.5	13	20.5	13	---	---	---	---
	12:00	21.0	13	21.0	13	---	---	---	---
	12:30	21.5	13	21.5	13	---	---	---	---
	13:00	22.0	13	22.0	13	<0.1	24.82	<0.1	22.38
	13:30	22.5	15	22.5	15	---	---	---	---
	14:00	23.0	15	23.0	15	---	---	---	---
	14:30	23.5	15	23.5	15	---	---	---	---
	15:00	24.0	15	24.0	15	<0.1	24.51	<0.1	22.51
	15:30	24.5	15	24.5	15	---	---	---	---
	16:00	25.0	15	25.0	15	---	---	---	---
	16:30	25.5	15	25.5	15	---	---	---	---
	17:00	26.0	15	26.0	15	<0.1	24.23	<0.1	22.80
	17:30	26.5	15	26.5	15	---	---	---	---
	18:00	27.0	15	27.0	15	---	---	---	---
	18:30	27.0	15	27.5	15	---	---	---	---
	19:00	27.0	15	28.0	15	<0.1	23.98	<0.1	23.16
	20:00	27.0	15	29.0	15	---	---	---	---
	21:00	27.0	15	29.0	15	<0.1	23.88	<0.1	23.39
	22:00	27.0	15	29.0	15	---	---	---	---
	23:00	27.0	15	29.0	15	<0.1	23.82	<0.1	23.51
	24:00	27.0	15	29.0	15	---	---	---	---
5/21/16	8:00	27.0	15	29.0	15	<0.1	23.67	<0.1	23.62
	9:00	27.0	15	29.0	15	---	---	---	---
	10:00	27.0	15	29.0	15	<0.1	23.44	<0.1	23.50
	11:00	27.0	15	29.0	15	---	---	---	---
	12:00	20.0	15	20.0	15	<0.1	23.30	<0.1	23.42
	14:00	20.0	15	20.0	15	<0.1	23.22	<0.1	23.39
	16:00	21.0	15	21.0	15	<0.1	23.14	<0.1	23.34
	18:00	21.0	15	21.0	15	<0.1	22.98	<0.1	23.27
	20:00	21.0	15	21.0	15	<0.1	22.80	<0.1	23.22

Notes:







Drawing Based on MECI Field Notes and SCDHEC Files. All Locations are Approximate.

**Site Base Map**

Highway II Grocery  
 13521 S.C. Highway II  
 Salem, South Carolina  
 SCDHEC Site ID 03439

**Midlands Environmental Consultants, Inc.**

JOB NO. 14-0983

DATE: June 24, 2014

FRAME

2

# NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.

Manifest Document No. 896-~~11~~9

2. Page 1 of

3. Generator's Name and Mailing Address

Highway 11 Grocery  
13527 SC Highway 11  
Salem S.C. UST #03439

4. Generator's Phone ( )

5. Transporter 1 Company Name

*NIMMOUS Associated*

6. US EPA ID Number

7. Transporter 2 Company Name

8. US EPA ID Number

9. Designated Facility Name and Site Address

Blue Meadows Facility  
Belton, SC

10. US EPA ID Number

A. State Transporter's ID

B. Transporter 1 Phone

C. State Transporter's ID

D. Transporter 2 Phone

E. State Facility's ID

F. Facility's Phone

11. WASTE DESCRIPTION

12. Containers

No. Type

13. Total Quantity

14. Unit Wt./Vol.

a. NON-HAZARDOUS PETROLEUM CONTAMINATED GROUNDWATER

*PH 6.2*

*1805*

*GAL*

b.

c.

d.

G. Additional Descriptions for Materials Listed Above

H. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name

*CHRIS CLARK*

Signature

*Chris Clark*

Date

Month Day Year  
*5 | 23 | 16*

17. Transporter 1 Acknowledgment of Receipt of Materials

Printed/Typed Name

*Jack Nimmo*

Signature

*Jack Nimmo*

Date

Month Day Year  
*5 | 23 | 16*

18. Transporter 2 Acknowledgment of Receipt of Materials

Printed/Typed Name

Signature

Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.

Printed/Typed Name

*Clyde Strickland*

Signature

*Clyde Strickland*

Date

Month Day Year  
*5 | 23 | 16*

GENERATOR

TRANSPORTER

FACILITY

# NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.

Manifest Document No. 896-012

2. Page 1 of

3. Generator's Name and Mailing Address

Highway 11 Grocery  
13527 SC Highway 11  
Salem S.C. UST #03439

4. Generator's Phone ( )

5. Transporter 1 Company Name

*Nimmus Associated*

6. US EPA ID Number

A. State Transporter's ID

B. Transporter 1 Phone

7. Transporter 2 Company Name

8. US EPA ID Number

C. State Transporter's ID

D. Transporter 2 Phone

9. Designated Facility Name and Site Address

Blue Meadows Facility  
Belton, SC

10. US EPA ID Number

E. State Facility's ID

F. Facility's Phone

11. WASTE DESCRIPTION

12. Containers

No.

Type

13. Total Quantity

14. Unit (Wt./Vol.)

a. NON-HAZARDOUS PETROLEUM CONTAMINATED GROUNDWATER

*73*

*2818*

G. Additional Descriptions for Materials Listed Above

H. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name

*DANIEL F. RIDGEWAY*

Signature

*Daniel F. Ridgeway*

Date

Month Day Year  
*5 | 23 | 16*

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name

*Steve Nimmus*

Signature

*Steve Nimmus*

Date

Month Day Year  
*5 | 23 | 16*

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name

Signature

Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.

Printed/Typed Name

*Rhode Strickland*

Signature

*Rhode Strickland*

Date

Month Day Year  
*5 | 23 | 16*

GENERATOR

TRANSPORTER

FACILITY

**NON-HAZARDOUS WASTE MANIFEST**

1. Generator's US EPA ID No.

Manifest Document No. **896-14**

2. Page 1 of

3. Generator's Name and Mailing Address  
**HWY 11 GROCERY  
 13527 SC HWY 11**

4. Generator's Phone ( ) **SALEM, SC** UST # **03439**

5. Transporter 1 Company Name **Nimmow Associated** 6. US EPA ID Number

A. State Transporter's ID

B. Transporter 1 Phone

7. Transporter 2 Company Name 8. US EPA ID Number

C. State Transporter's ID

D. Transporter 2 Phone

9. Designated Facility Name and Site Address 10. US EPA ID Number

**Blue Meadows Facility  
 Belton, SC**

E. State Facility's ID

F. Facility's Phone

11. WASTE DESCRIPTION

12. Containers  
 No. Type

13. Total Quantity

14. Unit Wt./Vol.

**NON-HAZARDOUS PETROLEUM CONTAMINATED WATER-PROFILE #**

**1768**

GENERATOR FACILITY

8. Additional Descriptions for Materials Listed Above

H. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name  
**DANIEL F. RIDGEWAY**

Signature  
*Daniel F. Ridgeway*

Date  
 Month Day Year  
**5 | 24 | 16**

17. Transporter 1 Acknowledgment of Receipt of Materials

Printed/Typed Name  
**Steve Nimmow**

Signature  
*Steve Nimmow*

Date  
 Month Day Year  
**5 | 24 | 16**

18. Transporter 2 Acknowledgment of Receipt of Materials

Printed/Typed Name

Signature

Date  
 Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in Item 19.

Printed/Typed Name

Signature

Date  
 Month Day Year

TRANSPORTER FACILITY

# Emerald, Inc.

CONSULTING AND ENGINEERING  
SERVICES IN ENVIRONMENTAL AFFAIRS

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2520 TAHOE DRIVE • POST OFFICE BOX 3050 • SUMTER, SOUTH CAROLINA 29151

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WEBSITE:  
www.emeraldinc-us.com

TELEPHONE (803) 469-5454  
FAX (803) 469-5465

May 27, 2016

Joel Padgett, P.G. Hydrogeologist  
Corrective Action Section  
Underground Storage Tank Management Division  
Bureau of Underground Storage Tank Management  
South Carolina Department of Health and  
Environmental Control  
2600 Bull Street  
Columbia, SC 29201

Aggressive Fluid Vapor Recovery Report  
Former Highway 11 Grocery  
Salem, South Carolina  
UST Permit #03439  
Emerald Job 16-041B

Mr. Padgett,

Please find the attached Aggressive Fluid Vapor Recovery (AFVR) Report for a 96-hour event conducted at Highway 11 Grocery. This AFVR event was conducted in accordance with the approved Emerald, Inc. Standard Operating Procedures document dated January 6, 2015.

## **AGGRESSIVE FLUID VAPOR RECOVERY EVENTS**

On May 16 through 20, 2016, Emerald, Inc. personnel performed a 96-hour AFVR event using RW-6 and RW-7 as extraction locations. This 96-hour AFVR event was conducted to remove free product previously detected at the subject site. Free phase petroleum product was detected in RW-6 at a thickness of 1.45 ft. and RW-7 at a thickness of 2.18 ft. prior to the event. At the conclusion of the event free phase product was not detected. Monitoring well locations are presented on the attached site map provided by SCDHEC.

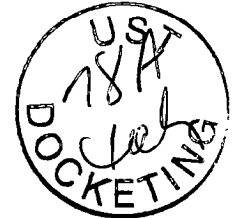


Table 1 presents the recorded data for the off-gas concentrations (by PID), post treatment off-gas concentrations (if required), off-gas velocities, knockout tank vacuum. Table 2 presents the stinger depths, wellhead vacuum measurements for each extraction well utilized during the event. Table 2 also contains water levels measurements and magnehelic readings for selected nearby monitoring wells. Emerald, Inc. field personnel collected data at thirty minute intervals for the first eight hours of the event, then at one hour intervals from hours nine through twenty four and at two hour intervals from twenty four through ninety six hours of the event. During the hours of midnight to 8 AM event monitoring was suspended. Due to the location of the site being vacant, off-gas treatment was not utilized during this event.

According to the calculations as presented on Table 1, a total of 636.78 pounds of hydrocarbons (as vapor) and 101.82 equivalent gallons of hydrocarbons were removed during this event. Free phase product was not detected in the knockout tank during this event. According to the meter, a total of 9,067 gallons of petroleum contaminated groundwater was transported to the Blue Meadows Wastewater Treatment Facility in Belton, SC for proper disposal. A copy of the disposal manifest for this event is included as an attachment.

If you have any questions or concerns please feel free to contact Emerald, Inc. at 803-469-5454.

Sincerely,  
Emerald, Inc.



William C. McClary, P.G.  
Project Manager



Ronny L. Lowder  
President

Attachments

**TABLE 1  
AFVR MONITORING DATA  
HIGHWAY 11 GROCERY  
SALEM, SOUTH CAROLINA  
SCDHEC SITE ID #03439  
EMERALD JOB #16-041B**

Extraction Well	Date	Time (hh:mm)	Differential Time (hr)	Knockout Tank Vacuum (in. Hg)	Off-Gas Concentration (PPM)	Post-Treatment Concentration (PPM)	Offgas Velocity (ft/min)	Flow Rate (CFM)	CG:M (mg/dsm <sup>3</sup> )	Cg (Lb/Dscf)	Removal Rate (Lbs/Hr)	Interval Removal (Lbs)
RW-6	5/16/16	10:00	0.5	12	> 5,000	N/A	2,814	138.13	26,589	1.66E-03	13.76	—
RW-7		10:30	0.5	12	> 5,000	N/A	3,021	148.29	26,589	1.66E-03	14.77	7.13
		11:00 ↓	0.5	12	> 5,000	N/A	3,044	149.41	26,589	1.66E-03	14.88	7.41
		11:30	0.5	13	> 5,000	N/A	3,127	153.49	26,589	1.66E-03	15.29	7.54
		12:00 ↓	0.5	13	> 5,000	N/A	3,691	181.17	26,589	1.66E-03	18.04	8.33
		12:30	0.5	14	2,628	N/A	3,488	171.21	13,975	8.72E-04	8.96	6.75
		13:00 ↓	0.5	14	2,579	N/A	3,364	165.12	13,714	8.56E-04	8.48	4.36
		13:30	0.5	15	2,199	N/A	3,041	149.27	11,694	7.30E-04	6.54	3.76
		14:00 ↓	0.5	15	2,216	N/A	3,011	147.79	11,784	7.36E-04	6.52	3.27
		14:30	0.5	16	1,972	N/A	2,747	134.84	10,487	6.55E-04	5.30	2.96
		15:00 ↓	0.5	17	1,840	N/A	2,582	126.74	9,785	6.11E-04	4.65	2.49
		15:30	0.5	18	1,963	N/A	2,483	121.88	10,439	6.52E-04	4.77	2.35
		16:00 ↓	0.5	18	2,008	N/A	2,446	120.06	10,678	6.67E-04	4.80	2.39
		16:30	0.5	18	2,442	N/A	2,375	116.58	12,986	8.11E-04	5.67	2.62
		17:00	0.5	18	2,619	N/A	2,384	117.02	13,927	8.69E-04	6.10	2.94
		17:30	0.5	17	2,587	N/A	2,316	113.68	13,757	8.59E-04	5.86	2.99
		18:00	0.5	17	2,979	N/A	2,340	114.86	15,841	9.89E-04	6.82	3.17
		19:00	1.0	17	2,883	N/A	2,322	113.98	15,331	9.57E-04	6.55	6.68
		20:00	1.0	17	2,446	N/A	2,343	115.01	13,007	8.12E-04	5.60	6.07
		21:00	1.0	17	2,367	N/A	3,329	163.40	12,587	7.86E-04	7.70	6.65
		22:00	1.0	17	2,467	N/A	2,483	121.88	13,119	8.19E-04	5.99	6.85
		23:00	1.0	17	2,382	N/A	2,461	120.80	12,667	7.91E-04	5.73	5.86
		24:00	1.0	17	2,365	N/A	2,422	118.88	12,576	7.85E-04	5.60	5.67
	5/17/16	8:00	8.0	18	2,481	N/A	2,408	118.20	13,193	8.24E-04	5.84	45.77
		9:00	1.0	18	2,631	N/A	2,376	116.63	13,991	8.73E-04	6.11	5.98
		10:00	1.0	18	2,319	N/A	2,439	119.72	12,332	7.70E-04	5.53	5.82
		12:00 ↑	2.0	18	2,481	N/A	2,484	121.93	13,193	8.24E-04	6.03	11.56
		14:00 ↓	2.0	18	2,642	N/A	2,509	123.15	14,049	8.77E-04	6.48	12.51
		16:00 ↓	2.0	18	2,138	N/A	2,401	117.85	11,369	7.10E-04	5.02	11.50
		18:00 ↓	2.0	18	2,345	N/A	2,476	121.53	12,470	7.79E-04	5.68	10.70
		20:00	2.0	18	2,145	N/A	3,651	179.21	11,406	7.12E-04	7.66	13.33



**TABLE 1 Cont'd.  
AFVR MONITORING DATA  
HIGHWAY 11 GROCERY  
SALEM, SOUTH CAROLINA  
SCDHEC SITE ID #03439  
EMERALD JOB #16-041B**

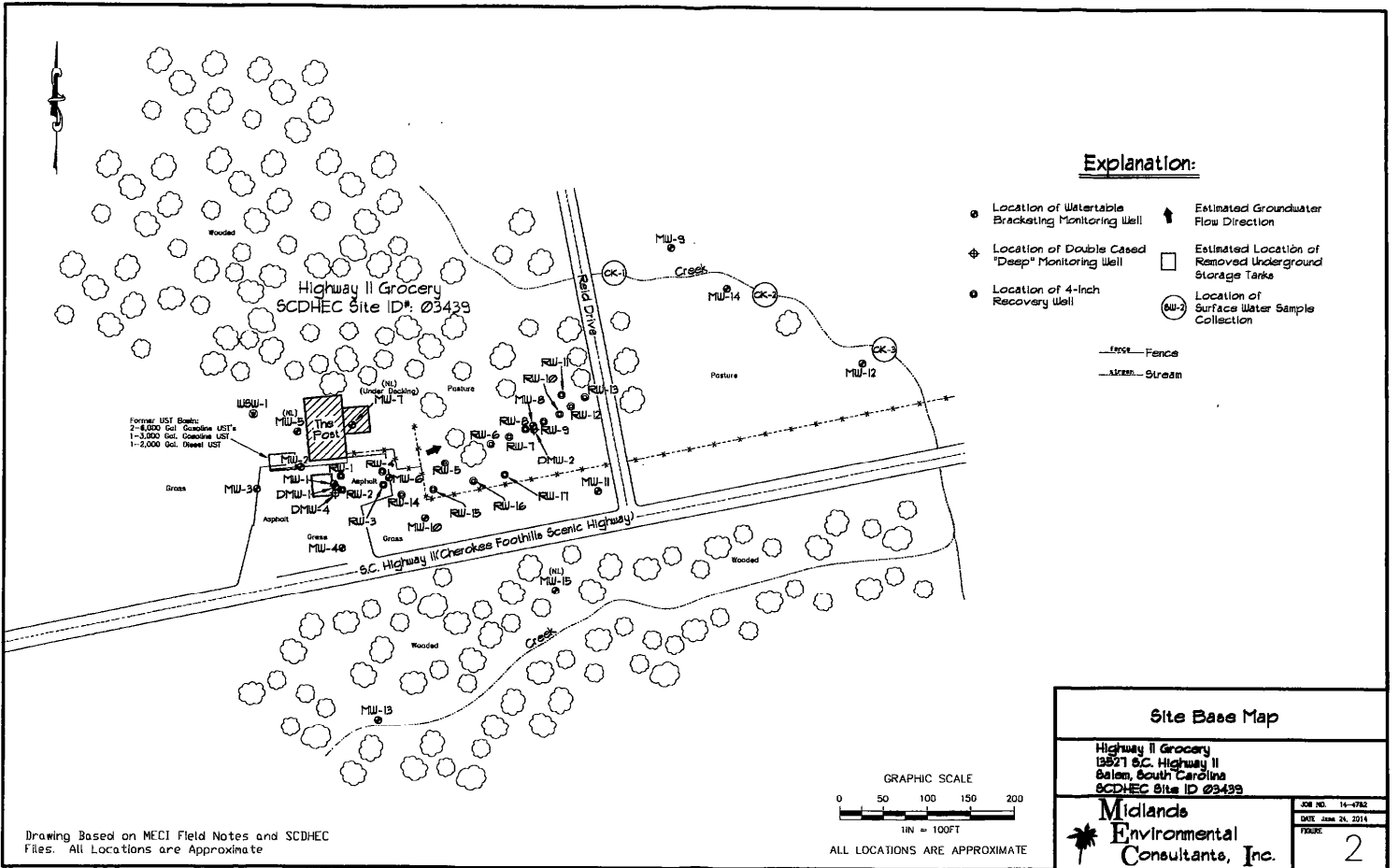
Extraction Wells	Date	Time (hh:mm)	Differential Time (hr)	Knockout Tank Vacuum (In. Hg)	Off-Gas Concentration (PPM)	Post-Treatment Concentration (PPM)	Offgas Velocity (ft/min)	Flow Rate (CFM)	CG:M (mg/dsm <sup>3</sup> )	Cg (Lb/Dscf)	Removal Rate (Lbs/Hr)	Interval Removal (Lbs)	
RW-6	5/17/16	22:00	2.0	18	1,907	N/A	5,329	281.57	10,141	6.33E-04	9.94	17.59	
RW-7		24:00	2.0	18	1,852	N/A	3,275	160.75	9,848	6.15E-04	5.93	15.87	
	5/18/16	8:00	8.0	18	2,251	N/A	2,804	137.63	11,970	7.47E-04	6.17	48.41	
		10:00 ↓	2.0	18	3,327	N/A	2,990	146.76	17,692	1.10E-03	9.73	15.90	
		12:00	2.0	18	3,049	N/A	3,214	157.76	16,214	1.01E-03	9.58	19.31	
		14:00	2.0	18	2,861	N/A	3,159	155.06	15,214	9.50E-04	8.84	18.42	
		16:00	2.0	18	2,615	N/A	2,947	144.65	13,906	8.68E-04	7.53	16.37	
		18:00 ↓	2.0	18	2,932	N/A	3,224	158.25	15,591	9.73E-04	9.24	16.78	
		20:00	2.0	18	2,163	N/A	3,892	191.04	11,502	7.18E-04	8.23	17.47	
		22:00	2.0	18	2,210	N/A	2,805	137.68	11,752	7.34E-04	6.06	14.29	
		24:00	2.0	18	2,145	N/A	2,822	138.52	11,406	7.12E-04	5.92	11.98	
	5/19/16	8:00	8.0	18	2,376	N/A	2,741	134.54	12,635	7.89E-04	6.37	49.14	
		10:00	2.0	18	2,192	N/A	2,833	139.08	11,656	7.28E-04	6.07	12.44	
		12:00 ↓	2.0	18	1,762	N/A	2,954	145.00	9,370	5.85E-04	5.09	11.16	
		14:00	2.0	18	1,641	N/A	2,918	143.23	8,726	5.45E-04	4.68	9.77	
		16:00	2.0	18	1,362	N/A	3,156	154.91	7,243	4.52E-04	4.20	8.88	
		18:00	2.0	18	1,819	N/A	2,819	138.37	9,673	6.04E-04	5.01	9.22	
		20:00	2.0	18	2,700	N/A	3,409	167.33	14,358	8.96E-04	9.00	14.01	
		22:00	2.0	18	2,202	N/A	3,329	163.40	11,710	7.31E-04	7.17	16.17	
		24:00	2.0	18	2,037	N/A	3,043	149.37	10,832	6.76E-04	6.06	13.23	
	5/20/16	8:00	8.0	18	1,621	N/A	3,157	154.96	8,620	5.38E-04	5.00	44.26	
		10:00	2.0	18	1,943	N/A	3,011	147.79	10,332	6.45E-04	5.72	10.72	
<b>Well Gauging Data</b>			<b>Before AFVR Event</b>			<b>After AFVR Event</b>			<b>Equations</b>				
<b>Well No.</b>	<b>Diameter (in)</b>	<b>Screened Interval (ft)</b>	<b>Depth to Product (ft)</b>	<b>Depth to Water (ft)</b>	<b>Product Thickness (ft)</b>	<b>Depth to Product (ft)</b>	<b>Depth to Water (ft)</b>	<b>Product Thickness (ft)</b>	$Cg:m = PPMg*(Mg/K3)$ Removal Rate = $Cg * Flow Rate * 60Min/Hr$ Interval Removal = $(T_1 + T_2)/2$ PPM = Part per Million (by PID) $Cg:m = mg/dsm^3$ (mass concentration of gasoline emission) Mg = 128 mg/mg-mole, molecular weight of gasoline $K3 = 24.07 dsm^3/1E6 mg-mole$ , mass to volume conversion $Cg = lb/dscf$ , mass concentration of gasoline by emission Removal Rate = lb/hr, pollutant mass removal rate of emission				
RW-6	4	6.5-26.5	18.14	19.59	1.45	—	NR	—					
RW-7	4	10-30	19.55	21.73	2.18	—	25.19	—					
<b>Product Thickness</b>			<b>Recovery / Disposal Information</b>										
Product observed in Sight Tube? No			Hydrocarbons Removed (vapor):			636.78	Pounds						
Product detected in Tanker? No			Hydrocarbons Removed (liquid):			0.00	Gallons						
<b>Weather Conditions</b>		<b>Emerald, Inc. Personnel</b>		<b>Total Hydrocarbons Removed:</b>		101.82	<b>Equivalent Gallons</b>						
5/16/16	Sunny, 51-73°F	D. Ridgeway		<b>Molecular Weight Utilized:</b>		128	<b>mg/mg-mole</b>						
1/0/00	Rain, 61-75°F	C. Clark		<b>Disposal Facility:</b>		Blue Meadows Wastewater Treatment Facility							
5/18/16	Cloudy, 64-82°F			<b>Total Liquids Removed:</b>		9,067	Gallons						
5/19/16	Cloudy, 63-71°F												
5/20/16	Sunny, 60-81°F												
<b>Notes</b>													
↑ = Stinger raised ↓ = Stinger lowered													
NR= Not recorded													

**TABLE 2  
EVENT MONITORING DATA  
HIGHWAY 11 GROCERY  
SALEM, SOUTH CAROLINA  
SCDHEC SITE ID #03439  
EMERALD JOB #16-041B**

Date	Time (hh:mm)	RW-6			RW-7			Event Monitoring				
		Stinger Depth (ft.)	Wellhead Vacuum (in. Hg)	Stinger Depth (ft.)	Wellhead Vacuum (in. Hg)	RW-8		RW-17		Depth to Water	Magnehelic Reading (inches of water)	Depth to Water
						Magnehelic Reading (inches of water)	Depth to Water	Magnehelic Reading (inches of water)	Depth to Water			
5/16/16	10:00	19.0	11	20.0	11	<0.1	18.89	<0.1	<0.1	18.59		
	10:30	19.0	11	20.0	11	--	--	--	--	--		
	11:00	20.0	11	21.0	11	--	--	--	--	--		
	11:30	20.0	12	21.0	12	--	--	--	--	--		
	12:00	21.0	12	22.0	12	<0.1	19.99	<0.1	<0.1	19.08		
	12:30	21.0	12	22.0	13	--	--	--	--	--		
	13:00	22.0	13	23.0	13	--	--	--	--	--		
	13:30	22.0	13	23.0	13	--	--	--	--	--		
	14:00	23.0	13	24.0	14	<0.1	19.90	<0.1	<0.1	18.99		
	14:30	23.0	14	24.0	14	--	--	--	--	--		
	15:00	24.0	14	25.0	15	--	--	--	--	--		
	15:30	24.0	15	25.0	15	--	--	--	--	--		
	16:00	25.0	15	26.0	15	<0.1	20.38	<0.1	<0.1	19.20		
	16:30	25.0	15	26.0	15	--	--	--	--	--		
	17:00	25.0	15	27.0	16	--	--	--	--	--		
	17:30	25.0	15	27.0	16	--	--	--	--	--		
	18:00	25.0	16	28.0	16	<0.1	20.68	<0.1	<0.1	19.43		
	19:00	25.0	16	28.0	16	--	--	--	--	--		
	20:00	25.0	16	29.0	16	<0.1	20.75	<0.1	<0.1	19.56		
	21:00	25.0	16	29.0	16	--	--	--	--	--		
	22:00	25.0	16	29.0	16	<0.1	20.91	<0.1	<0.1	19.68		
	23:00	25.0	16	29.0	16	--	--	--	--	--		
	24:00	25.0	16	29.0	16	<0.1	21.00	<0.1	<0.1	19.75		
5/17/16	8:00	25.0	16	25.0	16	<0.1	21.19	<0.1	<0.1	20.01		
	9:00	25.0	16	25.0	16	--	--	--	--	--		
	10:00	25.0	16	25.0	16	<0.1	21.24	<0.1	<0.1	20.00		
	12:00	19.0	16	19.0	16	<0.1	21.27	<0.1	<0.1	20.02		
	14:00	20.0	16	20.0	16	<0.1	21.31	<0.1	<0.1	20.04		
	16:00	21.0	16	21.0	16	<0.1	21.37	<0.1	<0.1	20.08		
	18:00	22.0	16	22.0	16	<0.1	21.45	<0.1	<0.1	20.11		
	20:00	22.0	16	22.0	16	<0.1	21.53	<0.1	<0.1	20.12		
	22:00	22.0	16	22.0	16	<0.1	21.51	<0.1	<0.1	20.14		

**Notes:**





Drawing Based on MECI Field Notes and SCDHEC Files. All Locations are Approximate

# NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.

Manifest Document No. 896-1

2. Page 1 of

3. Generator's Name and Mailing Address

Highway 11 Grocery  
13527 SC Highway 11  
Salem S.C. UST #03439

4. Generator's Phone ( )

5. Transporter 1 Company Name

6. US EPA ID Number

A. State Transporter's ID

B. Transporter 1 Phone

7. Transporter 2 Company Name

8. US EPA ID Number

C. State Transporter's ID

D. Transporter 2 Phone

9. Designated Facility Name and Site Address

Blue Meadows Facility  
Belton, SC

10. US EPA ID Number

E. State Facility's ID

F. Facility's Phone

11. WASTE DESCRIPTION

12. Containers

13. Total Quantity

14. Unit Wt./Vol.

a. NON-HAZARDOUS PETROLEUM CONTAMINATED GROUNDWATER

~~2400~~  
2402

GAL

G. Additional Descriptions for Materials Listed Above

H. Handling Codes for Wastes Listed Above

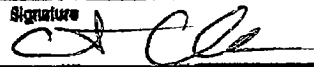
15. Special Handling Instructions and Additional Information

16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name

CURTIS CLARK

Signature



Date  
Month Day Year  
5/18/16

17. Transporter 1 Acknowledgment of Receipt of Materials

Printed/Typed Name

JACK NIMMONS

Signature



Date  
Month Day Year  
5/18/16

18. Transporter 2 Acknowledgment of Receipt of Materials

Printed/Typed Name

Signature

Date  
Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.

Printed/Typed Name

Steve Womack

Signature



Date  
Month Day Year  
05/18/16

GENERATOR

TRANSPORTER

FACILITY

# NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.

Manifest Document No. 896-3

2. Page 1 of

3. Generator's Name and Mailing Address

Highway 11 Grocery  
13527 SC Highway 11  
Salem S.C. UST #03439

4. Generator's Phone ( )

5. Transporter 1 Company Name

*Nimmans Associated*

6. US EPA ID Number

A. State Transporter's ID

B. Transporter 1 Phone

7. Transporter 2 Company Name

8. US EPA ID Number

C. State Transporter's ID

D. Transporter 2 Phone

9. Designated Facility Name and Site Address

Blue Meadows Facility  
Belton, SC

10. US EPA ID Number

E. State Facility's ID

F. Facility's Phone

11. WASTE DESCRIPTION

12. Containers  
No. Type

13. Total  
Quantity

14. Unit  
Wt./Vol.

a. NON-HAZARDOUS PETROLEUM CONTAMINATED GROUNDWATER

2336

b.

PH 7.6

c.

d.

6. Additional Descriptions for Materials Listed Above

H. Handling Codes for Wastes Listed Above

19. Special Handling Instructions and Additional Information

16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name

*DANIEL E. RIDGEWAY*

Signature

*Daniel E. Ridgeway*

Date

Month Day Year  
5 | 18 | 16

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name

*Jack Nimmans*

Signature

*Jack Nimmans*

Date

Month Day Year  
5 | 18 | 16

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name

Signature

Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.

Printed/Typed Name

*Steven Womack*

Signature

*Steven Womack*

Date

Month Day Year  
05 | 15 | 16

GENERATOR

TRANSPORTER

FACILITY

# NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.

Manifest Document No. 896-5

2. Page 1 of

3. Generator's Name and Mailing Address

Highway 11 Grocery  
13527 SC Highway 11  
Salem S.C. UST #03439

4. Generator's Phone ( )

5. Transporter 1 Company Name

*Nimmo's Associated*

6. US EPA ID Number

A. State Transporter's ID

B. Transporter 1 Phone

7. Transporter 2 Company Name

8. US EPA ID Number

C. State Transporter's ID

D. Transporter 2 Phone

9. Designated Facility Name and Site Address

Blue Meadows Facility  
Belton, SC

10. US EPA ID Number

E. State Facility's ID

F. Facility's Phone

11. WASTE DESCRIPTION

12. Containers

No.

Type

13. Total Quantity

14. Unit Wt./Vol.

a. NON-HAZARDOUS PETROLEUM CONTAMINATED GROUNDWATER

3188

b.

c.

d.

G. Additional Descriptions for Materials Listed Above

H. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Date

Printed/Typed Name

*DANIEL F. RIDGEWAY*

Signature

*Daniel F. Ridgeway*

Month Day Year  
5 | 20 | 16

17. Transporter 1 Acknowledgement of Receipt of Materials

Date

Printed/Typed Name

*Jack Nimmo*

Signature

*Jack Nimmo*

Month Day Year  
5 | 20 | 16

18. Transporter 2 Acknowledgement of Receipt of Materials

Date

Printed/Typed Name

Signature

Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.

Date

Printed/Typed Name

*Steve L. Brown*

Signature

*Steve L. Brown*

Month Day Year

GENERATOR FACILITY TRANSPORTER

# NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.

Manifest Document No. **896-S**

2. Page 1 of

3. Generator's Name and Mailing Address  
**Hwy 11 Groceries**  
**13527 SC Hwy 11**  
**SALEM, SC JST# 03439**

4. Generator's Phone ( )

5. Transporter 1 Company Name **Nimmuss Associated** 6. US EPA ID Number

7. Transporter 2 Company Name 8. US EPA ID Number

9. Designated Facility Name and Site Address 10. US EPA ID Number

A. State Transporter's ID

B. Transporter 1 Phone

C. State Transporter's ID

D. Transporter 2 Phone

E. State Facility's ID

F. Facility's Phone

11. WASTE DESCRIPTION

12. Containers

13. Total Quantity

14. Unit Wt/Vol

a. **NON-HAZARDOUS PETROLEUM CONTAMINATED WATER PROFILES - GROUNDWATER**

**PY 6.4**

**1141**

**GAL**

b.

c.

d.

6. Additional Descriptions for Materials Listed Above

H. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name

Signature

Date

Month Day Year

**Curtis Clark**

*Curtis Clark*

**5 | 20 | 16**

17. Transporter 1 Acknowledgment of Receipt of Materials

Printed/Typed Name

Signature

Date

Month Day Year

**Jack Nimmuss**

*Jack Nimmuss*

**5 | 23 | 16**

18. Transporter 2 Acknowledgment of Receipt of Materials

Printed/Typed Name

Signature

Date

Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator, Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.

Printed/Typed Name

Signature

Date

Month Day Year

**Clyde Stubbins**

*Clyde Stubbins*

**5 | 23 | 16**

GENERATOR

TRANSPORTER

FACILITY





Catherine E. Heigel, Director

*Promoting and protecting the health of the public and the environment*



MR STEVE SMITH  
180 SHALLOW FORD RD  
SALEM SC 29676

JUN 14 2016

Re: Aggressive fluid and vapor recovery (AFVR) directive  
Former Highway 11 Grocery, 13527 North SC-11, Salem, SC  
UST Permit #03439; CA #52702  
Release reported November 28, 2000  
Oconee County

Dear Mr. Smith:

The Underground Storage Tank (UST) Management Division of the South Carolina Department of Health and Environmental Control (Agency) recognizes your commitment to continue work at this site using Bunnell-Lammons Engineering, Inc. The next appropriate remedial activity is to continue aggressive fluid and vapor recovery (AFVR) to remove free-phase product and to reduce ground-water concentrations of chemicals of concern (CoC). Please have your contractor conduct one 96-hour AFVR event on monitoring/recovery wells MW-8, RW-8, and RW-9, one 96-hour event on RW-6 and RW-7, one 96-hour event on RW-3, RW-4, and RW-14, and one 96-hour event on RW-1 and RW-2. The events must be conducted in accordance with the UST Quality Assurance Program Plan (QAPP) Revision 3.0. A copy of QAPP Revision 3.0 is available at <http://www.scdhec.gov/Environment/docs/QAPPRevision3.0.pdf>.

**Please notify the UST Management Division prior to commencing AFVR at the site.** The stingers must be advanced to a target depth of 25 feet in RW-6, 27 feet in MW-8, and 29 feet in RW-1 through RW-4, RW-7, RW-8, and RW-14 within the first 8 hours of each event. Thereafter, the stingers should be adjusted to achieve the highest vapor recovery while maintaining dewatering of the smear zone. Off-gas treatment will be necessary for the event on RW-1 and RW-2, and the event on RW-3, RW-4, and RW-14.

Cost Agreement (CA) #52702 has been approved in the amount shown on the enclosed cost agreement form for the AFVR events. Please note that all applicable South Carolina certification requirements apply to report preparation. Further, all site rehabilitation activities must be performed and submitted by a South Carolina-Certified Underground Storage Tank Site Rehabilitation Contractor.

An AFVR report and invoice are due within 90 days from the date of this letter. Your contractor may directly bill the State Underground Petroleum Environmental Response Bank (SUPERB) Account. Interim invoices may not be submitted for this scope of work. If the invoice is not submitted within 120 days from the date of this letter, monies allocated to pay this invoice will be uncommitted. This means that the invoice will not be processed for payment until all other committed funds are paid or monies become available.

Mr. Smith  
AFVR directive  
Former Highway 11 Grocery, UST Permit #03439  
Page 2

Sections 44-2-110(4) and 44-2-130 of the SUPERB Statute state that no costs will be allowed unless prior approval from the Agency is obtained. If for any reason additional tasks will be completed, these additional tasks and the associated cost must be pre-approved by the Agency for the cost to be paid. The Agency reserves the authority to pay only for work properly performed and/or technically justified and will only pay rates in accordance with established criteria. Further, the Agency reserves the right to question and/or reject costs if deemed unreasonable and the right to audit project records at any time during the project or after completion of work.

The UST Management Division grants pre-approval for transportation of petroleum-contaminated, investigative-derived waste (IDW) from the referenced site to a permitted treatment/disposal facility. The transport and disposal must be conducted in accordance with QAPP Revision 3.0.

On all correspondence concerning this facility, please reference UST Permit #03439. If there are any questions concerning this project, feel free to contact me by telephone at (803) 898-0655, by fax at (803) 898-0673, or by e-mail at [padgettjp@dhec.sc.gov](mailto:padgettjp@dhec.sc.gov).

Sincerely,



Joel P. Padgett, P.G., Geologist/Hydrologist  
Corrective Action Section  
Underground Storage Tank Management Division  
Bureau of Land and Waste Management

JPP/jpp  
03439.afvr4

enc: Site map  
Approved cost agreement form

cc: Bunnell-Lammons Engineering, Inc., 6004 Ponders Court, Greenville, SC 29615 (w/enc)  
Technical file (w/enc)

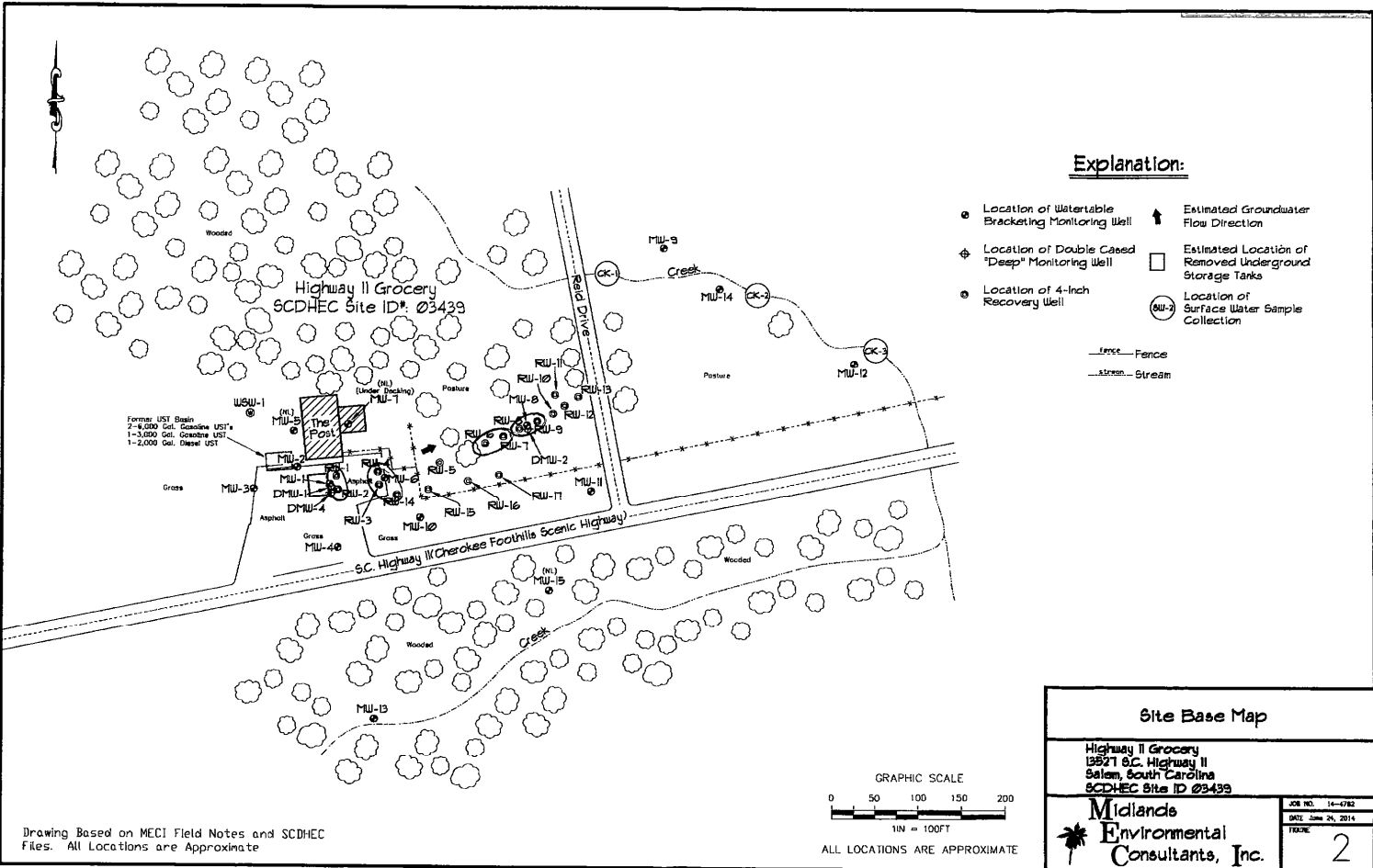
**Approved Cost Agreement****52702**

Facility: 03439 HWY 11 GROCERY

PADGETJP

PO Number:

<u>Task / Description</u>	<u>Categories</u>	<u>Item Description</u>	<u>Qty / Pct</u>	<u>Unit Price</u>	<u>Amount</u>
19 RPT/PROJECT MNGT & COORDINATIO		PRT REPORT PREPARATION	0.1200	\$71,199.250	8,543.91
23 EFR		A4 96 HOUR EVENT	4.0000	\$12,567.500	50,270.00
		C4 OFF GAS TREATMENT 96 HOUR	2.0000	\$780.000	1,560.00
		D SITE RECONNAISSANCE	1.0000	\$203.250	203.25
		F1 EFFLUENT DISPOSAL	40,000.0000	\$0.440	17,600.00
		G AFVR EQUIPMENT MOB	4.0000	\$391.500	1,566.00
		<b>Total Amount</b>			<b>79,743.16</b>



Drawing Based on MECI Field Notes and SCDHEC Files. All Locations are Approximate

<b>Site Base Map</b>	
Highway 11 Grocery 13521 S.C. Highway 11 Salem, South Carolina SCDHEC Site ID 03439	
<b>Midlands</b> Environmental Consultants, Inc.	JOB NO. 14-0782 DATE June 24, 2014 DRAWING NO. <b>2</b>

## Document Receipt Information

Hard Copy

CD

Email

Date Received 11-10-16

Permit Number 03439

Project Manager Joel Padgett

Name of Contractor BLE

UST Certification Number \_\_\_\_\_

Docket Number 80 tech

Scanned \_\_\_\_\_

AFVIL Events



**BUNNELL-LAMMONS ENGINEERING, INC.**

**GEOTECHNICAL, ENVIRONMENTAL AND CONSTRUCTION MATERIALS CONSULTANTS**

# **REPORT OF MULTIPLE 96-HOUR AGGRESSIVE FLUID VAPOR RECOVERY EVENTS**

**FORMER HIGHWAY 11 GROCERY  
13527 NORTH SC-11  
SALEM, OCONEE COUNTY, SOUTH CAROLINA  
UST PERMIT #03439; COST AGREEMENT #52702**

*Prepared For*

**Mr. Steve Smith  
180 Shallow Ford Road  
Salem, South Carolina 29676**

*Prepared By*

**Bunnell-Lammons Engineering, Inc.  
6004 Ponders Court  
Greenville, South Carolina 29615  
SCDHEC Certified Contractor No. UCC-0010**

**November 3, 2016**

**BLE Project Number J16-10768-01**



**BUNNELL-LAMMONS ENGINEERING, INC.**  
GEOTECHNICAL, ENVIRONMENTAL AND CONSTRUCTION MATERIALS CONSULTANTS

November 3, 2016

South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management  
Underground Storage Tank Management Division  
2600 Bull Street  
Columbia, South Carolina 29201-1708

Attention: Mr. Joel P. Padgett, P.G., Geologist/Hydrologist

Subject: **Report of Multiple 96-Hour Aggressive Fluid Vapor Recovery Events  
Former Highway 11 Grocery  
13527 North SC-11  
Salem, Oconee County, South Carolina  
UST Permit #03439; Cost Agreement #52702  
BLE Project No. J16-10768-01**

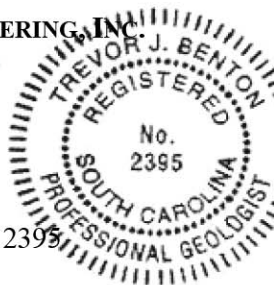
Dear Mr. Padgett:

On behalf of Mr. Steve Smith, Bunnell-Lammons Engineering, Inc. (BLE) has completed four 96-hour Aggressive Fluid Vapor Recovery (AFVR) events at the subject site. This scope of work was performed pursuant to a South Carolina Department of Health and Environmental Control (SCDHEC) directive dated June 14, 2016. This report describes the work performed and presents the results obtained, along with our comments and recommendations. Please do not hesitate to contact us if you have any questions concerning this report.

Sincerely,

**BUNNELL-LAMMONS ENGINEERING, INC.**

Trevor J. Benton, P.G.  
Senior Hydrogeologist  
Registered, South Carolina No. 2395



Thomas L. Lammons, P.G., CHMM  
Principal Hydrogeologist  
Registered, South Carolina No. 893



cc: Mr. Steve Smith, 180 Shallow Ford Road, Salem, South Carolina 29676.



**SITE INFORMATION**

**Facility Identification:**

Facility Name                      Former Highway 11 Grocery  
 UST Permit Number                03439  
 Facility Address                    13527 North SC-11  
    Salem, Oconee County, South Carolina

**Release Information:**

Release #	Date Reported	Quantity	Type	Cause	Status
1	November 28, 2000	Unknown	Unknown	Unknown	Open

**Responsible Party:**

Name                                 Mr. Steve Smith  
 Address                                180 Shallow Ford Rd.  
    Salem, South Carolina 29676

**Property Owner Information:**

Name                                 Jocassee Recreation Center, LLC  
 Address                                P.O. Box 878  
    Pickens, South Carolina 29671

**Current Site Use:**

Vacant store

**UST Site Rehabilitation Contractor:**

Name                                 Bunnell-Lammons Engineering, Inc.  
 Address                                6004 Ponders Court  
    Greenville, South Carolina 29615  
 Phone                                 (864) 288-1265  
 Certification Number                UCC-0010



**UST System Summary:**

UST #	Size (Gallons)	Product	Currently in use (Yes or No)	If not in use, Date Removed
1	6,000	Gasoline	No	Removed – September 15, 2009
2	6,000	Gasoline	No	Removed – September 15, 2009
3	3,000	Gasoline	No	Removed – September 15, 2009
4	2,000	Diesel	No	Removed – September 15, 2009

**AGGRESSIVE FLUID VAPOR RECOVERY EVENTS**

On July 7, 2016, BLE personnel mobilized to the facility to evaluate site access and to determine staging locations for the AFVR equipment. From July 25–29, 2016, August 1–5, 2016, August 8–12, 2016, and August 13–17, 2016, Landprobe Drilling Services (Landprobe) of Greenville, South Carolina mobilized to the site to perform 96-hour AFVR events. Personnel from BLE’s Greenville, South Carolina office were on-site for observation and monitoring during the events. A site location map (Figure 1) and AFVR well location plans (Figures 2 – 5) are provided with this report. A summary of the AFVR events is provided below.

**AFVR Event #1 – July 25-29, 2016**

AFVR Well(s)	RW-01 and RW-02
Gauged Well(s)	MW-1 and RW-04
Pre-AFVR Free-Product Thickness	3.01-feet in RW-01 and 0.02-feet in RW-02
Post-AFVR Free-Product Thickness	<0.01-feet in RW-01 and RW-02
Duration of AFVR Event	96 hours
Total Volume of Liquid Removed	4,642 gallons

Volume of Free-Product in Holding Tank	0.0 gallons
Total Pounds of Free-Product Recovered (Vapor)	1,376.5 pounds
Total Gallons of Free-Product Recovered (Vapor)	190.3 gallons
General Weather Conditions	07/25/16– Partly Cloudy, Average Temp. - 88°F 07/26/16– Partly Cloudy, Average Temp. - 87°F 07/27/16– Clear, Average Temp. - 88°F 07/28/16– Partly Cloudy, Average Temp. - 84°F 07/29/16– Partly Cloudy, Average Temp. - 83°F

Pertinent data collected throughout the AFVR event is included in Table 1 and shown on Figure 2. Waste transportation and disposal records for this AFVR event are provided in Appendix A.

**AFVR Event #2 – August 1-5, 2016**

AFVR Well(s)	RW-03, RW-04, and RW-14
Gauged Well(s)	RW-01
Pre-AFVR Free-Product Thickness	0.10-feet in RW-03, 0.06-feet in RW-04, and 0.27-feet in RW-14
Post-AFVR Free-Product Thickness	0.59-feet in RW-03 and <0.01-feet in RW-04 and RW-14
Duration of AFVR Event	96 hours
Total Volume of Liquid Removed	6,638 gallons
Volume of Free-Product in Holding Tank	1.5 gallons
Total Pounds of Free-Product Recovered (Vapor)	1,223.6 pounds
Total Gallons of Free-Product Recovered (Vapor)	169.2 gallons



General Weather Conditions	08/01/16– Mostly Cloudy / Rain, Average Temp. - 82°F
	08/02/16– Overcast / Thunderstorms, Average Temp. - 82°F
	08/03/16– Overcast, Average Temp. - 83°F
	08/04/16– Overcast, Average Temp. – 81°F
	08/05/16– Overcast, Average Temp. - 83°F

Pertinent data collected throughout the AFVR event is included in Table 2 and shown on Figure 3. Waste transportation and disposal records for this AFVR event are provided in Appendix A.

**AFVR Event #3 – August 8-12, 2016**

AFVR Well(s)	MW-08, RW-08, and RW-09
Gauged Well(s)	RW-7 and RW-10
Pre-AFVR Free-Product Thickness	<0.01-feet in MW-08, 0.10-feet in RW-08, and <0.01-feet in RW-09
Post-AFVR Free-Product Thickness	<0.01-feet in MW-08, RW-08, and RW-09
Duration of AFVR Event	96 hours
Total Volume of Liquid Removed	1,780 gallons
Volume of Free-Product in Holding Tank	0.0 gallons
Total Pounds of Free-Product Recovered (Vapor)	486.1 pounds
Total Gallons of Free-Product Recovered (Vapor)	67.2 gallons
General Weather Conditions	08/08/16– Overcast, Average Temp. - 82°F
	08/09/16– Overcast, Average Temp. - 82°F
	08/10/16– Overcast / Light Rain, Average Temp. - 81°F
	08/11/16– Overcast / Light Rain, Average Temp. - 84°F

08/12/16– Overcast / Rain,  
 Average Temp. - 83°F

Pertinent data collected throughout the AFVR event is included in Table 3 and shown on Figure 4.  
 Waste transportation and disposal records for this AFVR event are provided in Appendix A.

**AFVR Event #4 – August 13-17, 2016**

AFVR Well(s)	RW-06 and RW-07
Gauged Well(s)	MW-08
Pre-AFVR Free-Product Thickness	0.81-feet in RW-06, 0.30-feet in RW-07
Post-AFVR Free-Product Thickness	<0.01-feet in RW-06, and RW-07
Duration of AFVR Event	96 hours
Total Volume of Liquid Removed	2,790 gallons
Volume of Free-Product in Holding Tank	2.0 gallons
Total Pounds of Free-Product Recovered (Vapor)	574.2 pounds
Total Gallons of Free-Product Recovered (Vapor)	79.4 gallons
General Weather Conditions	08/13/16– Overcast, Average Temp. - 83°F 08/14/16– Clear, Average Temp. - 84°F 08/15/16– Partly Cloudy, Average Temp. - 83°F 08/16/16– Overcast, Average Temp. - 85°F 08/17/16– Partly Cloudy, Average Temp. - 86°F

Pertinent data collected throughout the AFVR event is included in Table 4 and shown on Figure 5.  
 Waste transportation and disposal records for this AFVR event are provided in Appendix A.

## CONCLUSIONS

Four 96-hour AFVR events were conducted on wells MW-08, RW-01, RW-02, RW-03, RW-04, RW-06, RW-07, RW-08, RW-09, and RW-14. At the completion of the AFVR events, a total volume of 15,875-gallons of petroleum-impacted groundwater was determined to have been recovered from the site. Approximately 3.5 gallons of free-phase petroleum product was measured in the holding tanks and 506.1-gallons of gasoline were calculated to have been recovered via vapor-phase emissions. Additional petroleum product emulsified in the groundwater and/or volatilized during the AFVR event, could not be quantified.

## RECOMMENDATIONS

The AFVR event appears to have been effective in reducing free-phase and vapor-phase product during the current scope of work. Therefore, we recommend four additional AFVR events be performed on the same well pairs as conducted during this event. Following the conclusion of the last AFVR event, we recommend a comprehensive groundwater sampling event of all monitoring wells associated with the site be conducted to evaluate contaminant concentration trends and to monitor for possible accumulation of free-product in other wells.

## QUALIFICATION OF REPORT

The activities and evaluative approaches used in this assessment are consistent with those normally employed in hydrogeological assessments of this type. Our evaluation of site conditions has been based on our understanding of the site and project information and the data obtained in our exploration.

This report has been prepared on behalf of and exclusively for the use of Mr. Steve Smith. This report and the findings contained herein shall not, in whole or in part, be used or relied upon by any other party without BLE's prior written consent. Any unauthorized use or distribution of BLE's work shall be at third parties risk and without liability to BLE.

## **TABLES**

**TABLE 1**  
**AFVR Event Data**  
 July 25 - 29, 2016  
 Former Highway 11 Grocery  
 Salem, Onslow County, South Carolina  
 SCDHEC UST Permit #03439; Cost Agreement #52702  
 BLE Project Number J16-10768 01

Date	Time (hh:mm)	Elapsed Time (hours)	Monitoring Well Gauging Data						AFVR Field Measurements				Air Emissions		
			AFVR Well Vacuum (in. of Hg)		AFVR Well Slinger Depths (feet below)		Adjacent Well Vacuum (in. of Hg)		Vacuum at Pump (in. Hg)	Temperature (°F)	Relative Humidity (%)	Velocity (ft/min)	Airflow (CFM)	Influent (ppm)	Effluent (ppm)
			03439-RW01	03439-RW02	03439-RW01	03439-RW02	03439-MW01	03439-RW04							
7/25/2016	9:00	0.0	12.5	13.0	26.5	26.0	0.00	0.00	22.0	88	79.8	1,400	122	14,837	10.7
7/25/2016	9:30	0.5	12.5	13.0	27.0	26.5	0.00	0.00	23.0	90	78.8	1,510	112	14,815	10.7
7/25/2016	10:00	1.0	12.5	13.0	27.5	27.0	0.00	0.00	23.0	92	79.3	1,500	109	14,764	10.7
7/25/2016	10:30	1.5	12.5	13.0	28.0	27.5	0.00	0.00	23.0	96	86.7	1,610	140	14,690	10.7
7/25/2016	11:00	2.0	12.5	13.0	28.5	28.0	0.00	0.00	23.0	98	88.9	1,580	138	14,689	10.7
7/25/2016	11:30	2.5	12.5	13.0	29.0	28.5	0.00	0.00	23.0	100	92.6	1,500	136	14,694	10.7
7/25/2016	12:00	3.0	12.5	13.0	29.0	29.0	0.00	0.00	23.0	99	93.0	1,567	137	15,000	10.7
7/25/2016	12:30	3.5	12.5	13.0	29.0	29.0	0.00	0.00	23.0	90	93.0	1,500	136	15,000	10.7
7/25/2016	13:00	4.0	12.5	13.0	29.0	29.0	0.00	0.00	23.0	90	91.5	1,532	134	15,000	10.7
7/25/2016	13:30	4.5	12.5	13.0	29.0	29.0	0.00	0.00	23.0	90	90.8	1,517	132	15,000	10.7
7/25/2016	14:00	5.0	12.5	13.0	29.0	29.0	0.00	0.00	23.0	95	90.0	1,660	145	15,000	10.7
7/25/2016	14:30	5.5	12.5	13.0	29.0	29.0	0.00	0.00	23.0	98	89.7	1,580	138	15,000	10.7
7/25/2016	15:00	6.0	12.5	13.0	29.0	29.0	0.00	0.00	23.0	95	92.5	1,574	137	15,000	10.8
7/25/2016	15:30	6.5	12.5	13.0	29.0	29.0	0.00	0.00	23.0	93	91.3	1,592	139	15,000	10.8
7/25/2016	16:00	7.0	12.5	13.0	29.0	29.0	0.00	0.00	23.0	91	90.5	1,555	136	15,000	10.8
7/25/2016	16:30	7.5	12.5	13.0	29.0	29.0	0.00	0.00	23.0	88	88.6	1,630	142	15,000	10.8
7/25/2016	17:00	8.0	12.5	13.0	29.0	29.0	0.00	0.00	23.0	89	82.9	1,677	146	14,538	11.0
7/25/2016	18:00	9.0	12.5	13.0	29.0	29.0	0.00	0.00	23.0	87	85.5	1,687	147	14,640	11.0
7/25/2016	19:00	10.0	12.5	13.0	29.0	29.0	0.00	0.00	23.0	86	84.4	1,668	146	14,783	11.0
7/25/2016	20:00	11.0	12.5	13.0	29.0	29.0	0.00	0.00	23.0	86	85.6	1,710	149	14,008	11.0
7/25/2016	21:00	12.0	12.5	13.0	29.0	29.0	0.00	0.00	23.0	84	86.7	1,690	147	14,050	11.0
7/25/2016	22:00	13.0	12.5	13.0	29.0	29.0	0.00	0.00	23.0	86	87.0	1,650	144	14,001	11.0
7/25/2016	23:00	14.0	12.5	13.0	29.0	29.0	0.00	0.00	23.0	76	79.0	1,710	149	13,966	13.0
7/26/2016	0:00	15.0	12.5	13.0	29.0	29.0	0.00	0.00	23.0	82	81.9	1,694	148	13,953	13.0
7/26/2016	8:00	23.0	12.5	13.0	27.0	27.0	0.00	0.00	23.0	86	84.7	1,687	147	13,852	13.0
7/26/2016	9:00	24.0	12.5	13.0	27.0	27.0	0.00	0.00	23.0	87	85.9	1,680	147	13,765	13.0
7/26/2016	10:00	25.0	12.5	13.0	27.5	27.5	0.00	0.00	23.0	89	87.7	1,582	138	13,420	13.0
7/26/2016	12:00	27.0	12.5	13.0	28.0	28.0	0.00	0.00	23.0	91	87.0	1,672	146	13,689	13.0
7/26/2016	14:00	29.0	12.5	13.0	28.5	28.5	0.00	0.00	23.0	90	89.3	1,654	144	13,553	13.0
7/26/2016	16:00	31.0	12.5	13.0	29.0	29.0	0.00	0.00	23.0	88	90.5	1,634	143	13,489	13.0
7/26/2016	18:00	33.0	12.5	13.0	29.0	29.0	0.00	0.00	23.0	87	89.1	1,676	146	13,450	13.0
7/26/2016	20:00	35.0	12.5	13.0	29.0	29.0	0.00	0.00	23.0	88	90.3	1,590	139	13,320	13.0
7/26/2016	22:00	37.0	12.5	13.0	29.0	29.0	0.00	0.00	23.0	90	86.5	1,610	140	13,105	13.0
7/27/2016	0:00	39.0	12.5	13.0	29.0	29.0	0.00	0.00	23.0	89	82.9	1,634	143	13,098	13.0
7/27/2016	8:00	47.0	12.5	13.0	27.0	27.0	0.00	0.00	23.0	82	85.6	1,582	138	11,976	13.0
7/27/2016	10:00	49.0	12.5	13.0	27.5	27.5	0.00	0.00	23.0	90	87.9	1,610	140	11,980	13.0
7/27/2016	12:00	51.0	12.5	13.0	28.0	28.0	0.00	0.00	23.0	110	88.7	1,690	145	11,926	13.0
7/27/2016	14:00	53.0	12.5	13.0	28.5	28.5	0.00	0.00	23.0	109	89.4	1,654	144	11,924	13.0
7/27/2016	16:00	55.0	12.5	13.0	29.0	29.0	0.00	0.00	23.0	98	90.6	1,666	145	11,490	13.0
7/27/2016	18:00	57.0	12.5	13.0	29.0	29.0	0.00	0.00	23.0	95	87.4	1,650	144	11,372	14.0
7/27/2016	20:00	59.0	12.5	13.0	29.0	29.0	0.00	0.00	23.0	93	86.6	1,675	146	11,015	15.0
7/27/2016	22:00	61.0	12.5	13.0	29.0	29.0	0.00	0.00	23.0	95	87.3	1,650	144	10,909	15.0
7/28/2016	0:00	63.0	12.5	12.0	29.0	29.0	0.00	0.00	23.0	88	81.7	1,616	141	10,848	22.0
7/28/2016	8:00	71.0	12.5	12.0	27.0	27.0	0.00	0.00	23.0	90	82.9	1,645	144	10,850	44.0
7/28/2016	10:00	73.0	12.5	12.0	27.5	27.5	0.00	0.00	22.0	96	85.6	1,598	139	10,852	49.0
7/28/2016	12:00	75.0	12.5	12.0	28.0	28.0	0.00	0.00	22.0	110	89.7	1,634	143	10,561	49.0
7/28/2016	14:00	77.0	12.5	12.0	28.5	28.5	0.00	0.00	22.0	109	89.3	1,638	143	10,832	49.0
7/28/2016	16:00	79.0	12.5	12.0	29.0	29.0	0.00	0.00	22.0	107	90.6	1,654	144	10,910	49.0
7/28/2016	18:00	81.0	12.5	12.0	29.0	29.0	0.00	0.00	22.0	100	88.5	1,627	142	10,901	49.0
7/28/2016	20:00	83.0	12.5	12.0	29.0	29.0	0.00	0.00	22.0	90	88.0	1,652	142	10,908	49.0
7/28/2016	22:00	85.0	12.5	12.0	29.0	29.0	0.00	0.00	22.0	100	89.3	1,610	140	10,945	52.7
7/29/2016	0:00	87.0	12.5	12.0	29.0	29.0	0.00	0.00	22.0	100	88.7	1,648	144	10,965	53.8
7/29/2016	8:00	95.0	12.5	12.0	29.0	29.0	0.00	0.00	22.0	100	79.3	1,591	139	9,912	66.5
7/29/2016	9:00	96.0	12.5	12.0	29.0	29.0	0.00	0.00	22.0	100	80.9	1,610	140	9,963	68.3

Monitoring Well Number	Initial Depth to FPP (ft below)	Initial Depth to Water (ft below)	Initial FPP Thickness (ft)	Final Depth to FPP (ft below)	Final Depth to Water (ft below)	Final FPP Thickness (ft)	Water Level Change (ft)
03439-RW01	26.39	29.40	3.01	NFPF	30.37	NFPF	0.97
03439-RW02	26.41	26.61	0.02	NFPF	26.61	NFPF	0.00
03439-MW01	26.45	26.52	0.07	NFPF	26.93	NFPF	0.41
03439-RW04	21.46	21.52	0.06	NFPF	21.06	NFPF	0.54

Recovery Information	
Total Volume of Water (gallons)	4,612
Total Volume of FPP (gallons)	0.09
Total Calculated Carbon Recovered as Emissions (pounds)	1,189.4
Total Calculated Gasoline Recovered as Emissions (pounds)	1,326.5
Total Calculated Gasoline Recovered as Emissions (gallons)	192.7

Notes: 4-inch diameter stack size  
 bsc - below top of casing  
 Vapor concentrations measured with portable MiniRAE® 3000 PID.  
 PID - Photo-Ionization Detector  
 Temperature and Relative Humidity measured with an Etech 45160 Thermo-Hygro-Anemometer.  
 in. of Hg - inches of mercury  
 ppm - parts per million  
 Water Level Change (ft) = Final depth to water - initial depth to water  
 NFPF - No Free Phase Product  
 °F - Fahrenheit  
 CFM - Cubic feet per minute  
 FPP - Free-Phase Product

**TABLE 2**  
**AFVR Event Data**  
 August 1 - 5, 2016  
 Former Highway 11 Grocery  
 Salem, Ocean County, South Carolina  
 SCDHEC LVI Permit 03439; Cost Agreement 052702  
 BLE Project Number J16-10768-01

Date	Time (hh:mm)	Elapsed Time (hours)	Monitoring Well Gauging Data							AFVR Field Measurements					Air Emissons	
			AFVR Well Vacuum (in. of Hg)			AFVR Well Slinger Depths (feet base)			Adjacent Well Vacuum (in. of Hg)	Vacuum at Pump (in. Hg)	Temperature (°F)	Relative Humidity (%)	Velocity (ft/min)	Airflow (CFM)	Inflow (ppm)	Effluent (ppm)
			03439-RW03	03439-RW04	03439-RW14	03439-RW03	03439-RW04	03439-RW14	03439-RW01							
8/1/2016	7:00	0.0	14.0	23.0	23.0	24.0	24.0	26.5	0.00	22.0	70	71.3	1,409	123	15,000	40.9
8/1/2016	7:30	0.5	14.0	23.0	23.0	24.5	24.5	27.0	0.00	22.0	78	72.6	1,378	120	15,000	41.0
8/1/2016	8:00	1.0	14.0	23.0	23.0	25.0	25.0	27.5	0.00	22.0	80	73.7	1,410	123	15,000	41.0
8/1/2016	8:30	1.5	14.0	23.0	23.0	25.5	25.5	28.0	0.00	22.0	85	78.1	1,397	122	15,000	41.0
8/1/2016	9:00	2.0	14.0	23.0	23.0	26.0	26.0	28.5	0.20	23.0	86	78.8	1,410	123	15,000	41.1
8/1/2016	9:30	2.5	14.0	23.0	23.0	26.5	26.5	29.0	0.20	23.0	90	79.3	1,411	123	15,000	41.1
8/1/2016	10:00	3.0	14.0	23.0	23.0	27.0	26.5	29.0	0.20	23.0	93	80.9	1,410	123	15,000	44.1
8/1/2016	10:30	3.5	14.0	23.0	23.0	27.5	27.0	29.0	0.20	23.0	101	82.7	1,440	126	15,000	44.1
8/1/2016	11:00	4.0	14.0	23.0	23.0	28.0	27.5	29.0	0.20	23.0	103	83.1	1,462	128	15,000	44.1
8/1/2016	11:30	4.5	14.0	23.0	23.0	28.5	28.0	29.0	0.20	23.0	99	84.4	1,423	124	15,000	42.4
8/1/2016	12:00	5.0	14.0	23.0	23.0	29.0	28.5	29.0	0.20	23.0	97	83.5	1,456	127	15,000	42.4
8/1/2016	12:30	5.5	14.0	23.0	23.0	29.0	29.0	29.0	0.20	23.0	98	83.8	1,437	125	15,000	42.0
8/1/2016	13:00	6.0	14.0	23.0	23.0	29.0	29.0	29.0	0.20	23.0	95	84.5	1,450	127	15,000	42.0
8/1/2016	13:30	6.5	14.0	23.0	23.0	29.0	29.0	29.0	0.20	23.0	93	86.0	1,420	124	15,000	42.0
8/1/2016	14:00	7.0	14.0	23.0	23.0	29.0	29.0	29.0	0.20	23.0	95	87.9	1,468	128	14,889	42.7
8/1/2016	14:30	7.5	14.0	23.0	23.0	29.0	29.0	29.0	0.20	23.0	92	86.3	1,475	129	14,560	42.9
8/1/2016	15:00	8.0	14.0	23.0	23.0	29.0	29.0	29.0	0.20	23.0	92	85.7	1,462	128	14,376	45.8
8/1/2016	16:00	9.0	14.0	23.0	23.0	29.0	29.0	29.0	0.20	23.0	90	84.4	1,487	130	14,129	45.8
8/1/2016	17:00	10.0	14.0	23.0	23.0	29.0	29.0	29.0	0.20	23.0	89	83.7	1,432	125	14,112	45.9
8/1/2016	18:00	11.0	14.0	23.0	23.0	29.0	29.0	29.0	0.20	23.0	95	84.6	1,410	123	13,992	45.9
8/1/2016	19:00	12.0	14.0	23.0	23.0	29.0	29.0	29.0	0.20	23.0	110	86.9	1,460	127	13,849	45.9
8/1/2016	20:00	13.0	14.0	23.0	23.0	29.0	29.0	29.0	0.20	23.0	120	88.7	1,456	127	13,872	45.9
8/1/2016	21:00	14.0	14.0	23.0	23.0	29.0	29.0	29.0	0.20	23.0	121	84.4	1,410	123	13,846	45.9
8/1/2016	22:00	15.0	14.0	23.0	23.0	29.0	29.0	29.0	0.20	23.0	119	83.9	1,516	132	13,820	43.7
8/1/2016	23:00	16.0	14.0	23.0	23.0	29.0	29.0	29.0	0.20	23.0	93	76.3	1,490	130	13,790	43.7
8/2/2016	0:00	17.0	14.0	23.0	23.0	29.0	29.0	29.0	0.20	23.0	94	81.4	1,476	129	13,760	43.7
8/2/2016	8:00	25.0	14.0	23.0	23.0	27.0	27.0	27.0	0.20	23.0	96	83.7	1,436	125	13,710	43.8
8/2/2016	10:00	27.0	14.0	23.0	23.0	27.5	27.5	27.5	0.20	23.0	102	87.3	1,474	129	13,645	44.1
8/2/2016	12:00	29.0	14.0	23.0	23.0	28.0	28.0	28.0	0.20	23.0	111	79.4	1,481	129	13,601	44.1
8/2/2016	14:00	31.0	14.0	23.0	23.0	28.5	28.5	28.5	0.20	23.0	109	84.6	1,477	129	13,302	44.1
8/2/2016	16:00	33.0	14.0	23.0	23.0	29.0	29.0	29.0	0.20	23.0	107	85.8	1,465	128	12,996	44.1
8/2/2016	18:00	35.0	14.0	23.0	23.0	29.0	29.0	29.0	0.20	23.0	99	86.4	1,433	124	12,503	45.6
8/2/2016	20:00	37.0	14.0	23.0	23.0	29.0	29.0	29.0	0.20	23.0	98	87.8	1,476	129	11,997	47.3
8/2/2016	22:00	39.0	14.0	23.0	23.0	29.0	29.0	29.0	0.20	23.0	97	84.3	1,454	127	11,993	48.9
8/3/2016	0:00	41.0	14.0	23.0	23.0	29.0	29.0	29.0	0.20	23.0	81	78.3	1,396	122	11,592	48.9
8/3/2016	8:00	49.0	14.0	23.0	23.0	27.0	27.0	27.0	0.20	23.0	88	80.1	1,464	128	11,504	48.9
8/3/2016	10:00	51.0	14.0	23.0	23.0	27.5	27.5	27.5	0.20	24.0	91	80.2	1,410	123	11,499	48.9
8/3/2016	12:00	53.0	14.0	23.0	23.0	28.0	28.0	28.0	0.20	24.0	100	81.6	1,454	127	11,484	48.9
8/3/2016	14:00	55.0	14.0	23.0	23.0	28.5	28.5	28.5	0.20	24.0	102	88.8	1,425	124	11,510	48.1
8/3/2016	16:00	57.0	14.0	23.0	23.0	29.0	29.0	29.0	0.20	24.0	100	90.6	1,436	125	11,539	48.9
8/3/2016	18:00	59.0	14.0	23.0	23.0	29.0	29.0	29.0	0.20	24.0	97	88.5	1,458	127	11,821	48.9
8/3/2016	20:00	61.0	14.0	23.0	23.0	29.0	29.0	29.0	0.20	24.0	96	88.1	1,465	128	11,492	48.9
8/3/2016	22:00	63.0	14.0	23.0	23.0	29.0	29.0	29.0	0.20	24.0	77	84.7	1,399	122	11,487	51.3
8/4/2016	0:00	65.0	14.0	23.0	23.0	29.0	29.0	29.0	0.20	24.0	70	81.6	1,410	123	11,444	60.1
8/4/2016	8:00	73.0	14.0	23.0	23.0	27.0	27.0	27.0	0.20	24.0	79	82.7	1,436	125	11,412	60.1
8/4/2016	10:00	75.0	14.0	23.0	23.0	27.5	27.5	27.5	0.20	24.0	87	83.8	1,410	123	11,400	60.2
8/4/2016	12:00	77.0	14.0	23.0	23.0	28.0	28.0	28.0	0.20	24.0	89	82.5	1,404	128	11,001	60.2
8/4/2016	14:00	79.0	14.0	23.0	23.0	28.5	28.5	28.5	0.20	24.0	89	83.3	1,423	124	10,981	60.1
8/4/2016	16:00	81.0	14.0	23.0	23.0	29.0	29.0	29.0	0.20	24.0	88	86.4	1,457	127	10,943	60.1
8/4/2016	18:00	83.0	14.0	23.0	23.0	29.0	29.0	29.0	0.20	24.0	89	85.3	1,439	128	10,995	62.3
8/4/2016	20:00	85.0	14.0	23.0	23.0	29.0	29.0	29.0	0.20	24.0	87	84.4	1,454	127	10,815	61.2
8/4/2016	22:00	87.0	14.0	23.0	23.0	29.0	29.0	29.0	0.20	24.0	84	81.3	1,469	128	10,811	61.2
8/5/2016	0:00	89.0	14.0	23.0	23.0	29.0	29.0	29.0	0.20	24.0	85	79.8	1,410	123	10,730	61.2
8/5/2016	7:00	96.0	14.0	23.0	23.0	29.0	29.0	29.0	0.20	24.0	89	76.4	1,455	127	10,694	62.9

Monitoring Well Number	Initial Depth to FFP (ft base)	Initial Depth to Water (ft base)	Initial FFP Thickness (ft)	Final Depth to FFP (ft base)	Final Depth to Water (ft base)	Final FFP Thickness (ft)	Water Level Change (ft)
03439-RW03	23.42	23.42	0.00	26.76	27.45	0.59	3.93
03439-RW04	23.66	23.72	0.06	N/FPF	28.12	N/FPF	4.40
03439-RW14	26.02	26.29	0.27	N/FPF	DoY	N/FPF	N/A
03439-RW01	N/FPF	24.40	N/FPF	N/FPF	24.45	N/FPF	0.05

Notes: 4-inch diameter stack size  
 base - below top of casing  
 Vapor concentrations measured with portable MiniRAE® 3000 PFD.  
 PFD - Photo-Ionization Detector  
 Temperature and Relative Humidity measured with an Extech 45160  
 Thermo-Hygro-Anemometer.  
 in. of Hg - inches of mercury  
 ppm - parts per million  
 Water Level Change (ft) = Final depth to water - initial depth to water  
 N/FPF - No Free Phase Product  
 °F - Fahrenheit  
 CFM - Cubic feet per minute  
 FFP - Free-Phase Product

Recovery Information	
Total Volume of Water (gallons)	6,638
Total Volume of FFP (gallons)	1.52
Total Calculated Carbon Recovered as Emissions (pounds)	1,077.3
Total Calculated Gasoline Recovered as Emissions (pounds)	1,223.6
Total Calculated Gasoline Recovered as Emissions (gallons)	169.2



**TABLE 3**  
**AFVR Event Data**  
 August 8 - 12, 2016  
 Former Highway 11 Grocery  
 Salton, Oconee County, South Carolina  
 SCDHEC UST Permit 00439; Cost Agreement 052702  
 BLE Project Number J16-10748-01

Date	Time (hh:mm)	Elapsed Time (hours)	Monitoring Well Gauging Data						AFVR Field Measurements				Air Emissions				
			AFVR Well Vacuum (in. of Hg)			AFVR Well Slinger Depths (feet bsc)			Adjacent Well Vacuum (in. of Hg)		Vacuum at Pump (in. Hg)	Temperature (°F)	Relative Humidity (%)	Velocity (ft/min)	Airflow (CFM)	Influent (ppm)	Effluent (ppm)
8/8/2016	08:00	0.0	15.0	15.0	14.0	23.0	20.0	0.0	0.0	18.0	98	76.2	760	66	14,398	14.2	
8/8/2016	08:30	0.5	15.0	15.0	14.0	23.5	20.5	23.5	0.0	0.0	18.0	98	77.9	765	69	14,790	14.2
8/8/2016	09:00	1.0	15.0	15.0	14.0	24.0	21.0	24.0	0.0	0.0	18.0	100	78.3	760	66	14,782	14.2
8/8/2016	09:30	1.5	15.0	15.0	14.0	24.5	21.5	24.5	0.0	0.0	18.0	120	80.7	745	65	14,876	14.2
8/8/2016	10:00	2.0	15.0	15.0	14.0	25.0	22.0	25.0	0.0	0.0	18.0	120	80.9	768	67	14,829	14.2
8/8/2016	10:30	2.5	15.0	15.0	14.0	25.5	22.5	25.5	0.0	0.0	18.0	120	81.7	716	62	14,807	14.7
8/8/2016	11:00	3.0	15.0	15.0	14.0	26.0	23.0	26.0	0.0	0.0	18.0	120	84.9	726	63	14,792	14.7
8/8/2016	11:30	3.5	13.0	13.0	14.0	26.5	23.5	26.5	0.0	0.0	18.0	120	85.2	728	64	14,791	14.7
8/8/2016	12:00	4.0	13.0	13.0	14.0	27.0	24.0	27.0	0.0	0.0	18.0	120	87.0	717	63	14,654	14.7
8/8/2016	12:30	4.5	13.0	13.0	14.0	27.0	24.5	27.5	0.0	0.0	18.0	120	87.5	734	64	14,999	14.7
8/8/2016	13:00	5.0	13.0	13.0	14.0	27.0	25.0	28.0	0.0	0.0	18.0	120	87.3	730	64	14,420	14.7
8/8/2016	13:30	5.5	13.0	13.0	14.0	27.0	25.5	28.5	0.0	0.0	18.0	120	88.6	728	64	14,737	14.7
8/8/2016	14:00	6.0	13.0	13.0	14.0	27.0	26.0	29.0	0.0	0.0	18.0	120	89.3	733	64	14,654	14.7
8/8/2016	14:30	6.5	13.0	13.0	14.0	27.0	26.5	29.0	0.0	0.0	18.0	120	88.6	765	67	14,392	14.7
8/8/2016	15:00	7.0	13.0	13.0	14.0	27.0	27.0	29.0	0.0	0.0	18.0	120	89.6	751	66	14,191	14.7
8/8/2016	15:30	7.5	13.0	13.0	14.0	27.0	27.5	29.0	0.0	0.0	18.0	120	87.4	767	67	14,011	14.7
8/8/2016	16:00	8.0	13.0	13.0	14.0	27.0	28.0	29.0	0.0	0.0	18.0	120	90.3	734	64	13,927	14.7
8/8/2016	17:00	9.0	13.0	13.0	14.0	27.0	28.5	29.0	0.0	0.0	18.0	120	91.2	742	65	13,914	14.7
8/8/2016	18:00	10.0	13.0	13.0	14.0	27.0	29.0	29.0	0.0	0.0	18.0	120	89.6	760	66	13,779	14.7
8/8/2016	19:00	11.0	13.0	13.0	14.0	27.0	29.0	29.0	0.0	0.0	18.0	120	88.5	716	62	13,745	14.7
8/8/2016	20:00	12.0	13.0	13.0	14.0	27.0	29.0	29.0	0.0	0.0	18.0	120	89.7	690	60	13,691	14.7
8/8/2016	21:00	13.0	13.0	13.0	14.0	27.0	29.0	29.0	0.0	0.0	18.0	120	90.3	734	64	13,537	15.1
8/8/2016	22:00	14.0	13.0	13.0	14.0	27.0	29.0	29.0	0.0	0.0	18.0	120	87.7	716	62	13,442	15.1
8/8/2016	23:00	15.0	13.0	13.0	14.0	27.0	29.0	29.0	0.0	0.0	18.0	120	81.0	745	65	13,414	15.1
8/9/2016	00:00	16.0	13.0	13.0	14.0	27.0	29.0	29.0	0.0	0.0	18.0	115	86.6	726	63	13,412	15.1
8/9/2016	01:00	17.0	13.0	13.0	14.0	27.0	29.0	29.0	0.0	0.0	18.0	108	84.7	716	62	10,537	15.1
8/9/2016	10:00	26.0	13.0	13.0	14.0	25.5	27.5	27.5	0.0	0.0	18.0	110	86.7	724	63	10,312	15.1
8/9/2016	12:00	28.0	13.0	13.0	14.0	26.0	28.0	28.0	0.0	0.0	18.0	110	88.9	736	64	11,002	15.1
8/9/2016	14:00	30.0	13.0	13.0	14.0	26.5	28.5	28.5	0.0	0.0	18.0	110	89.3	727	63	10,531	15.1
8/9/2016	16:00	32.0	13.0	13.0	14.0	27.0	29.0	29.0	0.0	0.0	18.0	110	88.7	753	66	13,537	15.1
8/9/2016	18:00	34.0	13.0	13.0	14.0	27.0	29.0	29.0	0.0	0.0	18.0	110	89.7	724	63	11,005	15.0
8/9/2016	20:00	36.0	13.0	13.0	14.0	27.0	29.0	29.0	0.0	0.0	18.0	110	90.1	732	64	10,312	15.1
8/9/2016	22:00	38.0	13.0	13.0	14.0	27.0	29.0	29.0	0.0	0.0	18.0	108	90.7	716	62	10,079	15.1
8/10/2016	00:00	40.0	13.0	13.0	14.0	27.0	29.0	29.0	0.0	0.0	18.0	108	72.4	738	64	8,373	15.1
8/10/2016	01:00	41.0	13.0	13.0	14.0	27.0	29.0	29.0	0.0	0.0	18.0	88	77.1	742	65	8,478	15.1
8/10/2016	10:00	50.0	13.0	13.0	14.0	25.5	27.5	27.5	0.0	0.0	18.0	92	76.9	742	65	8,517	15.1
8/10/2016	12:00	52.0	13.0	13.0	14.0	26.0	28.0	28.0	0.0	0.0	18.0	110	82.6	762	66	8,392	15.1
8/10/2016	14:00	54.0	13.0	13.0	14.0	26.5	28.5	28.5	0.0	0.0	18.0	110	83.3	760	65	8,565	15.1
8/10/2016	16:00	56.0	13.0	13.0	14.0	27.0	29.0	29.0	0.0	0.0	18.0	110	85.6	776	68	8,570	15.1
8/10/2016	18:00	58.0	13.0	13.0	14.0	27.0	29.0	29.0	0.0	0.0	18.0	110	86.0	734	64	8,636	15.1
8/10/2016	20:00	60.0	13.0	13.0	14.0	27.0	29.0	29.0	0.0	0.0	18.0	110	87.3	742	65	8,669	15.1
8/10/2016	22:00	62.0	13.0	13.0	14.0	27.0	29.0	29.0	0.0	0.0	18.0	110	81.3	762	66	8,445	15.1
8/11/2016	00:00	64.0	13.0	13.0	14.0	27.0	29.0	29.0	0.0	0.0	18.0	110	79.2	727	63	8,273	15.1
8/11/2016	01:00	65.0	13.0	13.0	14.0	27.0	29.0	29.0	0.0	0.0	18.0	110	81.7	736	64	8,114	15.1
8/11/2016	10:00	74.0	13.0	13.0	14.0	25.5	27.5	27.5	0.0	0.0	18.0	120	82.9	734	64	8,003	15.1
8/11/2016	12:00	76.0	13.0	13.0	14.0	26.0	28.0	28.0	0.0	0.0	18.0	120	84.4	721	63	8,440	15.1
8/11/2016	14:00	78.0	13.0	13.0	14.0	26.5	28.5	28.5	0.0	0.0	18.0	120	86.7	744	66	8,504	15.1
8/11/2016	16:00	80.0	13.0	13.0	14.0	27.0	29.0	29.0	0.0	0.0	18.0	120	88.2	736	64	8,320	15.1
8/11/2016	18:00	82.0	13.0	13.0	14.0	27.0	29.0	29.0	0.0	0.0	18.0	120	89.0	724	63	8,729	15.1
8/11/2016	20:00	84.0	13.0	13.0	14.0	27.0	29.0	29.0	0.0	0.0	18.0	120	87.6	771	67	8,334	15.1
8/11/2016	22:00	86.0	13.0	13.0	14.0	27.0	29.0	29.0	0.0	0.0	18.0	120	83.2	765	67	8,003	15.1
8/12/2016	00:00	88.0	13.0	13.0	14.0	27.0	29.0	29.0	0.0	0.0	18.0	110	79.3	716	62	7,813	16.0
8/12/2016	01:00	89.0	13.0	13.0	14.0	27.0	29.0	29.0	0.0	0.0	18.0	92	86.9	744	63	7,537	16.0

Monitoring Well Number	Initial Depth to FPP (ft bsc)	Initial Depth to Water (ft bsc)	Initial FPP Thickness (ft)	Final Depth to FPP (ft bsc)	Final Depth to Water (ft bsc)	Final FPP Thickness (ft)	Water Level Change (ft)
03439-MW08	N/FPF	22.18	N/FPF	N/FPF	23.96	N/FPF	1.78
03439-RW08	22.24	22.24	0.10	N/FPF	23.31	N/FPF	0.97
03439-RW09	N/FPF	18.89	N/FPF	N/FPF	20.25	N/FPF	0.86
03439-RW07	21.16	21.47	0.31	N/FPF	21.67	N/FPF	0.20
03439-RW10	N/FPF	21.50	N/FPF	N/FPF	21.78	N/FPF	0.10

Recovery Information	
Total Volume of Water (gallons)	1,780
Total Volume of FPP (gallons)	0.00
Total Calculated Carbon Recovered as Emissions (pounds)	420.1
Total Calculated Gasoline Recovered as Emissions (pounds)	486.1
Total Calculated Gasoline Recovered as Emissions (gallons)	67.2

Notes: 4-inch diameter stack size  
 bsc - below top of casing  
 Vapor concentrations measured with portable MiniRAE® 3000 PID.  
 PID - Photo-Ionization Detector  
 Temperature and Relative Humidity measured with an Extech 45160 Thermo-Hygro-Anemometer.  
 in. of Hg - inches of mercury  
 ppm - parts per million  
 Water Level Change (ft) = Final depth to water - initial depth to water  
 N/FPF - No Free Phase Product  
 °F - Fahrenheit  
 CFM - Cubic feet per minute  
 FPP - Free-Phase Product

**TABLE 4**  
**AFVR Event Data**  
 August 13, 17, 2016  
 Former Highway 11 Grocery  
 Salem, Ocean County, South Carolina  
 SCDHEC LVI Permit 03439, Cost Agreement 052702  
 BLE Project Number J16-10768-01

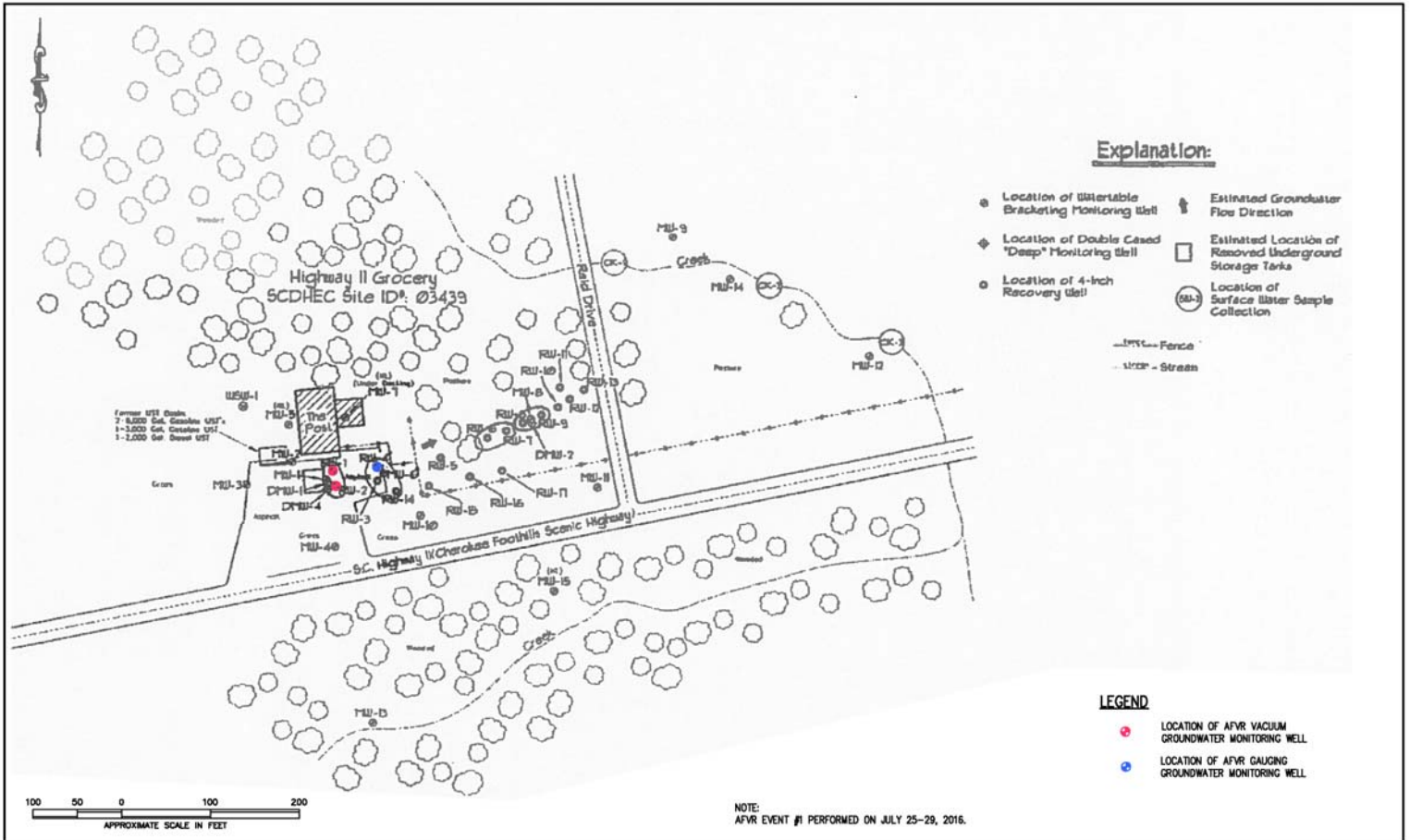
Date	Time (hh:mm)	Elapsed Time (hours)	Monitoring Well Gauging Data					AFVR Field Measurements				Air Emissions		
			AFVR Well Vacuum (in. of Hg)		AFVR Well Storage Depth (feet bsc)		Adjacent Well Vacuum (in. of Hg)	Vacuum at Pump (in. Hg)	Temperature (°C)	Relative Humidity (%)	Velocity (ft/min)	Airflow (CFM)	Influent (ppm)	Effluent (ppm)
			03439-RW06	03439-RW07	03439-RW06	03439-RW07	03439-MW08							
8/13/2016	06:00	0.0	15.0	8.0	21.0	21.0	0.00	20.0	100	92.0	701	81	15,000	12.0
8/13/2016	06:30	0.5	15.0	8.0	21.5	21.5	0.00	20.0	102	93.7	716	62	15,000	12.0
8/13/2016	07:00	1.0	15.0	8.0	22.0	22.0	0.00	20.0	108	91.6	714	64	15,000	12.0
8/13/2016	07:30	1.5	15.0	8.0	22.5	22.5	0.00	20.0	110	93.6	701	61	15,000	12.0
8/13/2016	08:00	2.0	15.0	8.0	23.0	23.0	0.00	20.0	108	92.4	716	62	15,000	12.1
8/13/2016	08:30	2.5	15.0	8.0	23.5	23.5	0.00	20.0	110	93.7	714	64	15,000	12.1
8/13/2016	09:00	3.0	15.0	8.0	24.0	24.0	0.00	20.0	110	92.9	716	62	15,000	12.1
8/13/2016	09:30	3.5	15.0	8.0	24.5	24.5	0.00	20.0	110	93.4	776	68	15,000	12.1
8/13/2016	10:00	4.0	15.0	8.0	25.0	25.0	0.00	20.0	112	91.2	701	61	15,000	12.1
8/13/2016	10:30	4.5	15.0	8.0	25.0	25.5	0.00	21.5	113	89.8	648	97	15,000	12.1
8/13/2016	11:00	5.0	15.0	8.0	25.0	26.0	0.00	22.0	115	88.2	596	52	15,000	12.1
8/13/2016	11:30	5.5	15.0	8.0	25.0	26.5	0.00	22.0	118	88.7	652	67	15,000	12.2
8/13/2016	12:00	6.0	15.0	8.0	25.0	27.0	0.00	23.0	120	87.9	514	45	15,000	12.2
8/13/2016	12:30	6.5	15.0	8.0	25.0	27.5	0.00	24.0	121	88.1	508	50	15,000	12.2
8/13/2016	13:00	7.0	15.0	8.0	25.0	28.0	0.00	25.0	122	86.7	542	47	15,000	12.2
8/13/2016	13:30	7.5	15.0	8.0	25.0	28.5	0.00	25.0	123	88.6	514	45	15,000	12.2
8/13/2016	14:00	8.0	15.0	8.0	25.0	29.0	0.00	25.5	124	87.5	584	51	15,000	12.2
8/13/2016	15:00	9.0	15.0	8.0	25.0	29.0	0.00	25.5	124	86.2	469	36	15,000	12.2
8/13/2016	16:00	10.0	15.0	8.0	25.0	29.0	0.00	25.0	123	84.7	311	27	15,000	12.2
8/13/2016	17:00	11.0	15.0	8.0	25.0	29.0	0.00	24.5	123	83.2	309	32	15,000	12.2
8/13/2016	18:00	12.0	15.0	8.0	25.0	29.0	0.00	23.5	120	85.7	314	29	15,000	12.2
8/13/2016	19:00	13.0	15.0	8.0	25.0	29.0	0.00	23.0	117	86.2	311	27	15,000	12.2
8/13/2016	20:00	14.0	15.0	8.0	25.0	29.0	0.00	22.0	112	87.0	594	52	15,000	12.2
8/13/2016	21:00	15.0	15.0	8.0	25.0	29.0	0.00	21.5	110	88.1	492	43	15,000	12.2
8/13/2016	22:00	16.0	15.0	8.0	25.0	29.0	0.00	21.0	109	89.4	311	27	15,000	12.2
8/13/2016	23:00	17.0	15.0	8.0	25.0	29.0	0.00	21.0	110	82.3	723	63	15,000	12.2
8/14/2016	06:00	18.0	15.0	8.0	25.0	29.0	0.00	21.0	110	84.4	717	69	15,000	12.2
8/14/2016	08:00	20.0	15.0	8.0	25.0	27.0	0.00	21.0	110	85.1	720	63	15,000	14.6
8/14/2016	10:00	22.0	15.0	8.0	23.5	27.5	0.00	21.0	110	88.4	737	64	15,000	14.6
8/14/2016	12:00	24.0	15.0	8.0	24.0	28.0	0.00	21.0	110	89.6	725	63	15,000	14.7
8/14/2016	14:00	26.0	15.0	8.0	24.5	28.5	0.00	21.5	118	89.0	564	49	15,000	14.7
8/14/2016	16:00	28.0	15.0	8.0	25.0	29.0	0.00	25.0	122	85.9	369	32	15,000	14.8
8/14/2016	18:00	30.0	15.0	8.0	25.0	29.0	0.00	24.0	114	87.1	309	27	15,000	14.8
8/14/2016	20:00	32.0	15.0	8.0	25.0	29.0	0.00	22.0	109	88.0	337	20	15,000	14.9
8/14/2016	22:00	34.0	15.0	8.0	25.0	29.0	0.00	21.0	109	87.2	349	30	15,000	14.9
8/15/2016	06:00	36.0	15.0	8.0	25.0	29.0	0.00	21.0	110	83.5	545	48	15,000	15.0
8/15/2016	10:00	40.0	15.0	8.0	23.5	27.5	0.00	21.0	110	85.6	687	57	15,000	22.8
8/15/2016	12:00	42.0	15.0	8.0	24.0	28.0	0.00	21.0	110	87.3	665	58	15,000	29.3
8/15/2016	14:00	44.0	15.0	8.0	24.5	28.5	0.00	22.0	110	88.5	615	57	15,000	29.6
8/15/2016	16:00	46.0	15.0	8.0	25.0	29.0	0.00	25.0	115	86.2	492	43	15,000	29.6
8/15/2016	18:00	48.0	15.0	8.0	25.0	29.0	0.00	23.5	114	85.9	564	49	15,000	31.8
8/15/2016	20:00	50.0	15.0	8.0	25.0	29.0	0.00	23.5	112	87.5	370	32	15,000	31.8
8/15/2016	22:00	52.0	14.5	8.0	24.0	29.0	0.00	21.5	109	86.6	509	44	15,000	34.2
8/16/2016	06:00	54.0	14.5	8.0	25.0	29.0	0.00	21.0	108	88.5	389	34	15,000	35.9
8/16/2016	08:00	56.0	14.5	8.0	23.0	27.0	0.00	21.0	90	81.3	602	55	14,111	44.0
8/16/2016	10:00	58.0	14.5	8.0	23.5	27.5	0.00	21.0	104	82.7	617	54	14,111	46.8
8/16/2016	12:00	60.0	14.5	8.0	24.0	28.0	0.00	21.0	112	81.9	622	54	13,172	48.0
8/16/2016	14:00	62.0	14.5	8.0	24.5	28.5	0.00	21.0	120	82.7	617	54	13,011	49.7
8/16/2016	16:00	64.0	14.5	8.0	25.0	29.0	0.00	21.0	120	84.4	628	55	13,159	49.7
8/16/2016	18:00	66.0	14.5	8.0	25.0	29.0	0.00	21.0	120	86.3	672	59	13,095	50.3
8/16/2016	20:00	68.0	14.5	8.0	25.0	29.0	0.00	21.0	120	85.1	656	57	13,099	52.7
8/16/2016	22:00	70.0	14.5	8.0	25.0	29.0	0.00	21.0	120	86.7	680	59	12,988	53.8
8/17/2016	06:00	72.0	14.5	8.0	25.0	29.0	0.00	21.0	120	87.6	710	62	12,972	58.7
8/17/2016	08:00	74.0	14.5	8.0	25.0	29.0	0.00	21.0	110	81.3	732	64	13,011	65.3

Monitoring Well Number	Initial Depth to FFP (ft bsc)	Initial Depth to Water (ft bsc)	Initial FFP Thickness (ft)	Final Depth to FFP (ft bsc)	Final Depth to Water (ft bsc)	Final FFP Thickness (ft)	Water Level Change (ft)
03439-RW06	19.69	20.50	0.81	NFPF	26.49	NFPF	5.99
03439-RW07	21.10	21.40	0.30	NFPF	25.42	NFPF	4.02
03439-MW08	NFPF	22.31	NFPF	NFPF	22.51	NFPF	6.20

Recovery Information	
Total Volume of Water (gallons)	2,790
Total Volume of FFP (gallons)	2.00
Total Calculated Carbon Recovered as Emissions (pounds)	408.1
Total Calculated Gasoline Recovered as Emissions (pounds)	574.2
Total Calculated Gasoline Recovered as Emissions (gallons)	79.4

Notes: 4-inch diameter stack size  
 bsc - below top of casing  
 Vapor concentrations measured with portable MiniRAE® 5000 PID.  
 PID - Photo-Ionization Detector  
 Temperature and Relative Humidity measured with an Entech 45160  
 Thermo-Hygro-Anemometer.  
 in. of Hg - inches of mercury  
 ppm - parts per million  
 Water Level Change (ft) = Final depth to water - initial depth to water  
 NFPF - No Free Phase Product  
 T - Fahrenheit  
 CFM - Cubic feet per minute  
 FFP - Free-Phase Product

## **FIGURES**



DRAWN BY:	ACE	DATE:	11-04-16
CHECKED BY:	RAD	FILE:	FHWY11GROCERY-AFVRE1
APPROVED BY:	TJB	JOB NO:	J16-10769-01

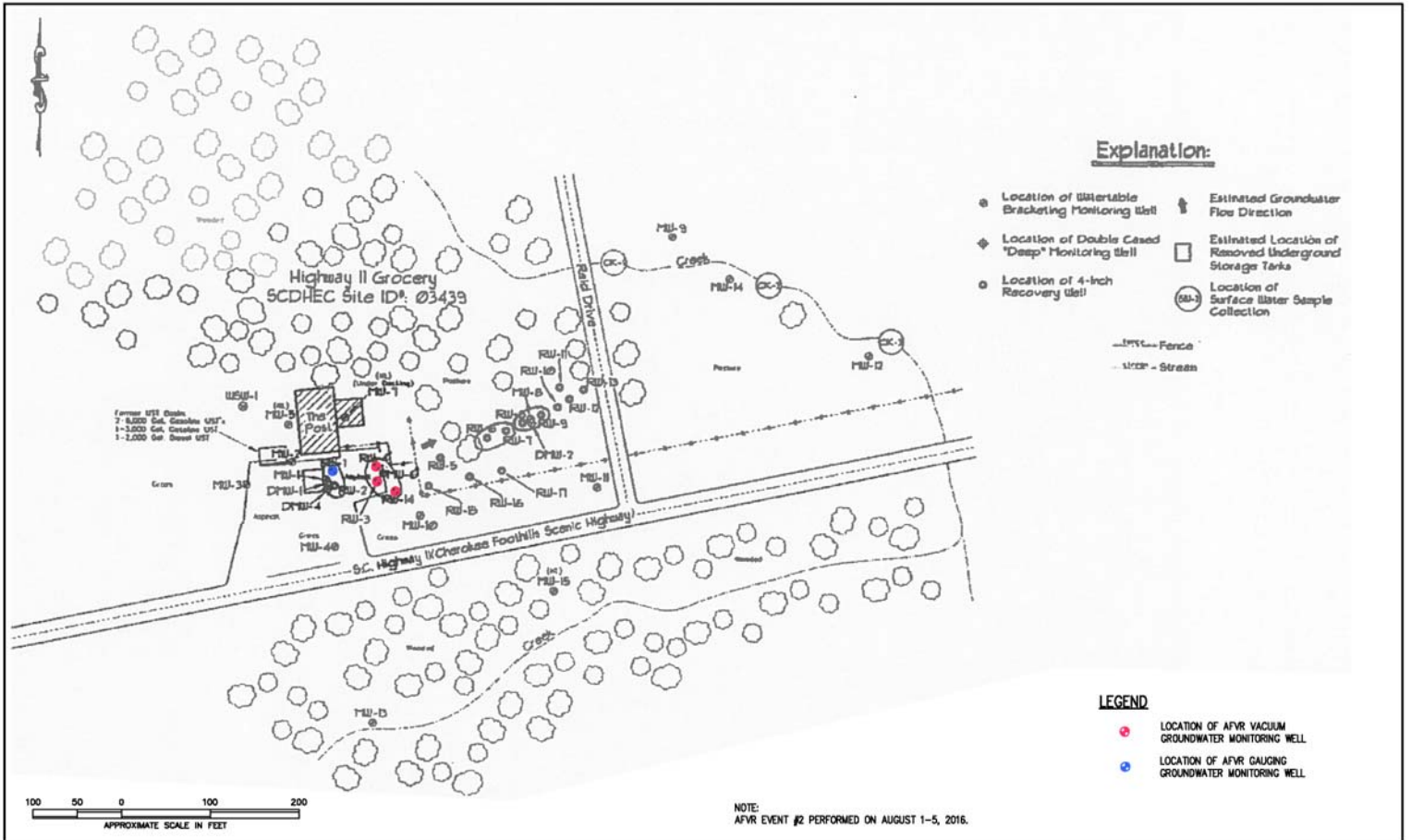
REVISIONS		BY
No.	DESCRIPTION	



**DUNNELL-LAMBORN ENGINEERING, INC.**  
 8004 PONDERS COURT  
 GREENVILLE, SOUTH CAROLINA 29615  
 PHONE: (864)298-1200 FAX: (864)298-4430

AFVR EVENT #1  
 FORMER HIGHWAY 11 GROCERY  
 UST PERMIT #03439  
 13527 HIGHWAY 11 NORTH  
 SALEM, SOUTH CAROLINA

FIGURE  
**2**



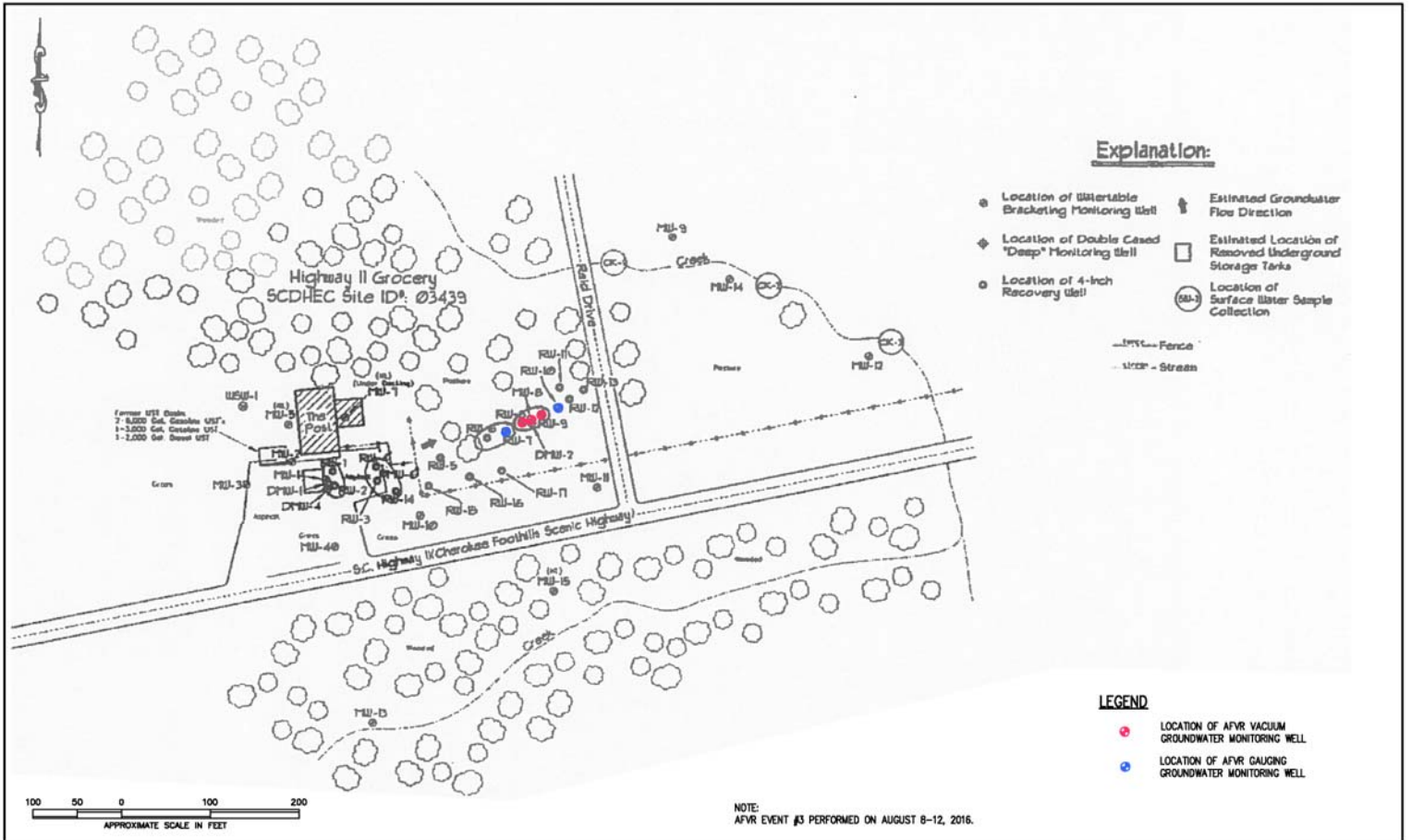
DRAWN BY:	ACE	DATE:	11-04-16
CHECKED BY:	RAD	FILE:	FHWY11GROCERY-AFVRE2
APPROVED BY:	TJB	JOB NO.:	J16-10769-01

REVISIONS		BY
No.	DESCRIPTION	

**IBL** **BUNNELL-LAMBORN ENGINEERING, INC.**  
 8004 PONDERS COURT  
 GREENVILLE, SOUTH CAROLINA 29615  
 PHONE: (864)298-1200 FAX: (864)298-4430

AFVR EVENT #2  
 FORMER HIGHWAY 11 GROCERY  
 UST PERMIT #03439  
 13527 HIGHWAY 11 NORTH  
 SALEM, SOUTH CAROLINA

FIGURE  
**3**



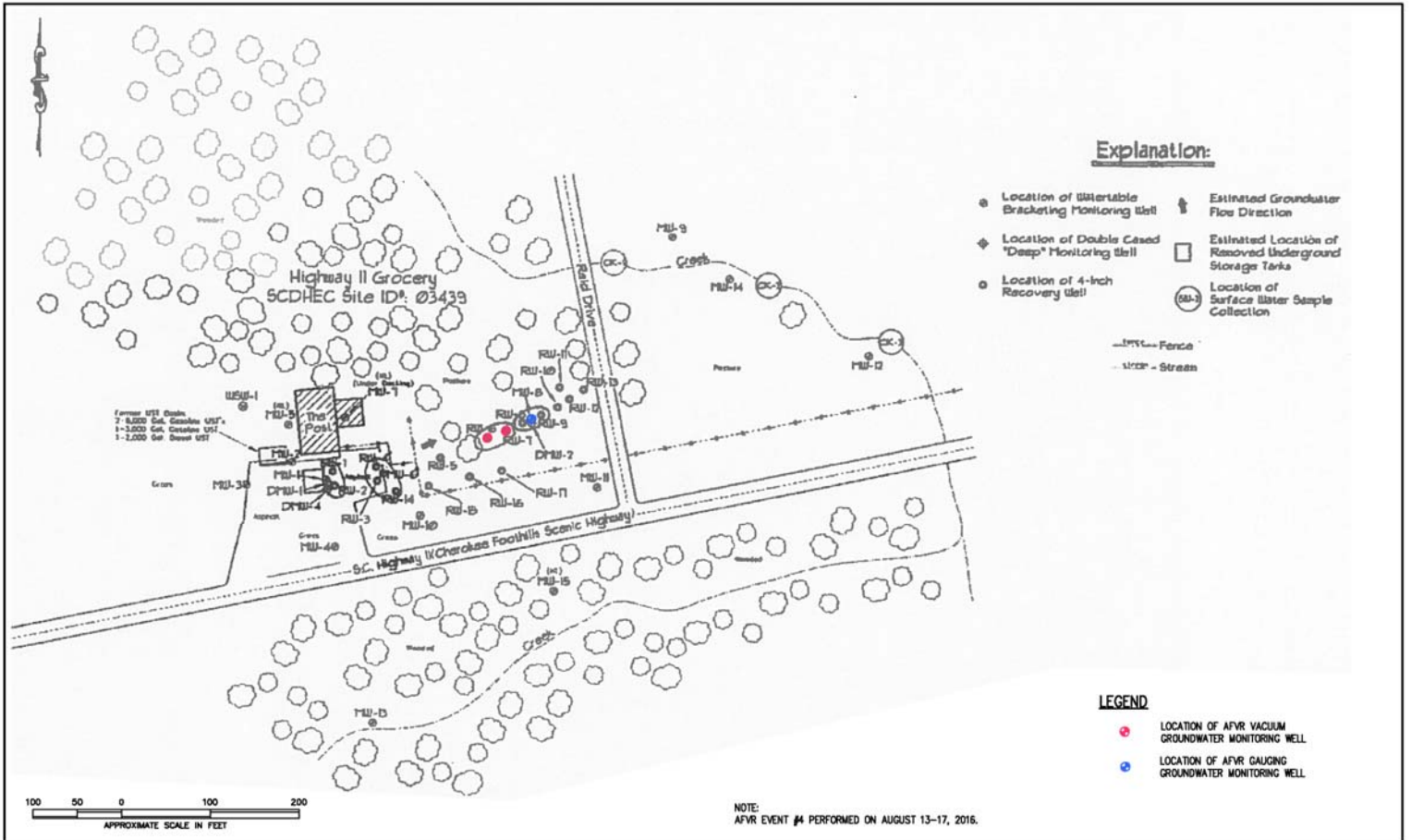
DRAWN BY:	ACE	DATE:	11-04-16
CHECKED BY:	RAD	FILE:	FHWY11GROCERY-AFVREJ
APPROVED BY:	TJB	JOB NO:	J16-10769-01

REVISIONS		BY
No.	DESCRIPTION	

**IBLE** INC. **DUNNELL-LAMBORN ENGINEERING, INC.**  
 8004 PONDERS COURT  
 GREENVILLE, SOUTH CAROLINA 29615  
 PHONE: (864)298-1200 FAX: (864)298-4430

AFVR EVENT #3  
 FORMER HIGHWAY 11 GROCERY  
 UST PERMIT #03439  
 13527 HIGHWAY 11 NORTH  
 SALEM, SOUTH CAROLINA

FIGURE  
**4**



DRAWN BY:	ACE	DATE:	11-04-16
CHECKED BY:	RAD	FILE:	FHWY11GROCERY-AFVRE4
APPROVED BY:	TJB	JOB NO:	J16-10769-01

REVISIONS		BY
No.	DESCRIPTION	

**IBLE** INC. **DUNNELL-LAMBORN ENGINEERING, INC.**  
 8004 PONDERS COURT  
 GREENVILLE, SOUTH CAROLINA 29615  
 PHONE (864)298-1200 FAX (864)298-4430

AFVR EVENT #4  
 FORMER HIGHWAY 11 GROCERY  
 LUST PERMIT #03439  
 13527 HIGHWAY 11 NORTH  
 SALEM, SOUTH CAROLINA

FIGURE  
**5**

## **APPENDICES**



**APPENDIX A**

**WASTE TRANSPORTATION AND DISPOSAL RECORDS**



<b>NON-HAZARDOUS WASTE MANIFEST</b>	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number <b>72716 AJ</b>			
5. Generator's Name and Mailing Address <b>BUNNELL-LAMMON ENG, INC   HWY 11 GROCERY</b> 6004 PONDERS COURT GREENVILLE, SC 29615		Generator's Site Address (if different than mailing address) <b>FORMER HIGHWAY 11 GROCERY</b> 13527 SC HWY 11 SLAME, SC 29676					
Generator's Phone: <b>864-289-1265</b>							
6. Transporter 1 Company Name <b>SPARKS INDUSTRIAL SERVICE</b>			U.S. EPA ID Number <b>SCR000771725</b>				
7. Transporter 2 Company Name			U.S. EPA ID Number				
8. Designated Facility Name and Site Address <b>VLS RECOVERY SERVICES, LLC</b> 305 S. MAIN STREET MAULDIN, SC 29662			U.S. EPA ID Number <b>SCR000752468</b>				
Facility's Phone: <b>864-952-9953</b>							
GENERATOR	9. Waste Shipping Name and Description		10. Containers	11. Total Quantity	12. Unit Wt./Vol.		
	1. <b>NON HAZARDOUS NON REGULATED WELL WATER #20777</b>		No. <b>001</b>	Type <b>TT</b>	<b>G</b>		
	<i>Highway 11 grocery Salem, SC custo 3439</i>						
	2.						
	3.						
4.							
13. Special Handling Instructions and Additional Information <b>P/U: 12-14:00 WEDNESDAY 07.27.2016</b> <i>IN 3:00 PM OUT 4:00 PM VAC 1 HR T-2445 TANKER 30</i>							
14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.							
Generator's/Offoror's Printed/Typed Name <b>Brandon Huggins</b>		Signature <i>[Signature]</i>		Month <b>7</b>	Day <b>27</b>	Year <b>16</b>	
INT'L	15. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S.		Port of entry/exit: Date leaving U.S.:				
	Transporter Signature (for exports only):						
TRANSPORTER	16. Transporter Acknowledgment of Receipt of Materials						
	Transporter 1 Printed/Typed Name <b>Max Jackson</b>		Signature <i>[Signature]</i>		Month <b>7</b>	Day <b>27</b>	Year <b>16</b>
	Transporter 2 Printed/Typed Name		Signature		Month	Day	Year
DESIGNATED FACILITY	17. Discrepancy						
	17a. Discrepancy Indication Space <input checked="" type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection						
	<b>3209 gallons based on weight</b>						
	17b. Alternate Facility (or Generator)		Manifest Reference Number:			U.S. EPA ID Number	
Facility's Phone:							
17c. Signature of Alternate Facility (or Generator)							
Month					Day	Year	
18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a							
Printed/Typed Name		Signature <i>[Signature]</i>		Month <b>7</b>	Day <b>27</b>	Year <b>16</b>	

45260

# SCALE TICKET

07/27/2016	0411784
RCPD I.D. number	2445 30
GROSS	2500 00
TARE (S)	2000 00
NET WEIGHT	500 00

Scale Company: ✓ VLS

Weighed By: \_\_\_\_\_

Carrier: SPARKS

Customer: BLE

PO/BOL/Manifest 25216 A3

Tractor Number: 2445

Trailer Number: 30

Driver Signature: [Signature]

**WHITE - Driver    YELLOW - Driver    CARD - Scale**



Waste Tracking Number: ML080116-C

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number

2. Page 1 of

3. Emergency Response Phone

5. Generator's Name and Mailing Address

Generator's Site Address (if different than mailing address)

BUNNELL-LAMMON ENG, INC | HWY 11 GROCERY  
6004 PONDERS COURT  
GREENVILLE, SC 29615

FORMER HIGHWAY 11 GROCERY  
13527 SC HWY 11  
SLAME, SC 29676

Generator's Phone: 864-288-1265

6. Transporter 1 Company Name

SPARKS INDUSTRIAL SERVICE

U.S. EPA ID Number

SCR000771725

7. Transporter 2 Company Name

U.S. EPA ID Number

8. Designated Facility Name and Site Address

VLS RECOVERY SERVICES, LLC  
305 S. MAIN STREET  
MAULDIN, SC 29652

U.S. EPA ID Number

SCR000762468

Facility's Phone: 864-962-9953

9. Waste Shipping Name and Description

10. Containers

11. Total Quantity

12. Unit Wt./Vol.

1. NON HAZARDOUS NON REGULATED WELL WATER #20777

Handwritten: Hwy 11 Grocery Sclm SC 45703134

No.

Type

001

TT

EST 2500

G

Handwritten: 1883 gal

13. Special Handling Instructions and Additional Information

PAU: 2:00  
MONDAY 08.01.2016

Handwritten: # 2809175

Handwritten: #35 TRL226405 Vac Time 100 HR

14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offoror's Printed/Typed Name

Signature

Month Day Year

Handwritten: Brandon Hussins

Handwritten: [Signature]

Handwritten: 08/01/16

15. International Shipments

Import to U.S.

Export from U.S.

Port of entry/exit:

Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name

Signature

Month Day Year

Handwritten: Mitchell Lopezena

Handwritten: [Signature]

Handwritten: 08/01/16

Transporter 2 Printed/Typed Name

Signature

Month Day Year

17. Discrepancy

17a. Discrepancy Indication Space

Quantity

Type

Residue

Partial Rejection

Full Rejection

Handwritten: 1883 gallons based on weight

Manifest Reference Number:

17b. Alternate Facility (or Generator)

U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator)

Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in item 17a

Printed/Typed Name

Signature

Month Day Year

Handwritten: Steve Lohan

Handwritten: [Signature]

Handwritten: 8/1/16

GENERATOR

INT'L

TRANSPORTER

DESIGNATED FACILITY

# SCALE TICKET

53820  
 32500  
 -----  
 21320

2530  
 673  
 -----  
 1853

Scale Company: VCS

Weighed By: Mop

Carrier: SPARKS

Customer: BLE

PO/BOL/Manifest ML080116-C

Tractor Number: 35

Trailer Number: 226

Driver Signature: ML

WHITE - Driver    YELLOW - Driver    CARD - Scale

<b>NON-HAZARDOUS WASTE MANIFEST</b>	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number <b>ML080316-C</b>		
5. Generator's Name and Mailing Address <b>BUNNELL-LAMMON ENG, INC   HWY 11 GROCERY 6004 PONDERS COURT GREENVILLE, SC 29615</b>		Generator's Site Address (if different than mailing address) <b>FORMER HIGHWAY 11 GROCERY 13527 SC HWY 11 SLAME, SC 29676</b>				
Generator's Phone: <b>864-288-1265</b>						
6. Transporter 1 Company Name <b>SPARKS INDUSTRIAL SERVICE</b>			U.S. EPA ID Number <b>SCR000771725</b>			
7. Transporter 2 Company Name			U.S. EPA ID Number			
8. Designated Facility Name and Site Address <b>VLS RECOVERY SERVICES, LLC 305 S. MAIN STREET MAULDIN, SC 29662</b>			U.S. EPA ID Number <b>SCR000762468</b>			
Facility's Phone: <b>864-962-9953</b>						
GENERATOR	9. Waste Shipping Name and Description		10. Containers		11. Total Quantity	12. Unit WT./Vol.
	1. <b>NON HAZARDOUS NON REGULATED WELL WATER #20777</b>		No.	Type		
	<b>HWY 11 GROCERY</b>		<b>001</b>	<b>TT</b>	<b>EST</b>	<b>G</b>
	<b>Salem, x</b>				<b>2500</b>	
	<b>43503134</b>					
2.						
3.						
4.						
13. Special Handling Instructions and Additional Information <b>PAJ: WEDNESDAY 08.03.2016</b>						
<b>#35 TRL 0226405</b>						
<b>Via Time 1.00 HR</b>						
14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.						
Generator's/Offor's Printed/Typed Name <b>Brandon Hussins</b>		Signature <i>[Signature]</i>		Month <b>08</b>	Day <b>03</b>	Year <b>16</b>
15. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: Date leaving U.S.:						
TRANSPORTER	16. Transporter Acknowledgment of Receipt of Materials					
	Transporter 1 Printed/Typed Name <b>Mitchell Lopezera</b>		Signature <i>[Signature]</i>		Month <b>08</b>	Day <b>03</b>
Transporter 2 Printed/Typed Name		Signature		Month	Day	Year
DESIGNATED FACILITY	17. Discrepancy					
	17a. Discrepancy Indication Space <input checked="" type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection					
	<b>3372 gallons based on weight</b>					
17b. Alternate Facility (or Generator)				U.S. EPA ID Number		
Facility's Phone:						
17c. Signature of Alternate Facility (or Generator)				Month	Day	Year
18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a						
Printed/Typed Name <b>Steven Luban</b>		Signature <i>[Signature]</i>		Month <b>08</b>	Day <b>04</b>	Year <b>16</b>

# SCALE TICKET

08/03/2016	03:54PM
RcPD I.D. number	S 35 226
Gross	60620 lb
Tare(*)	32500 lb
* Preset weight	
Net	28120 lb

3372

Scale Company: US

Weighed By: ~~\_\_\_\_\_~~

Carrier: SPARKS

Customer: BLE

PO/BOL/Manifest M1080316-C

Tractor Number: 35

Trailer Number: 226

Driver Signature: \_\_\_\_\_

WHITE - Driver    YELLOW - Driver    CARD - Scale



NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number

2. Page 1 of

3. Emergency Response Phone

4. Waste Tracking Number

BLE8516R

5. Generator's Name and Mailing Address

Generator's Site Address (if different than mailing address)

BUNNELL-LAMMON ENG, INC | HWY 11 GROCERY  
6004 PONDER'S COURT  
GREENVILLE, SC 29615

FORMER HIGHWAY 11 GROCERY  
13527 SC HWY 11  
SALEM, SC 29676

Generator's Phone: 864-288-1265

6. Transporter 1 Company Name

SPARKS INDUSTRIAL SERVICE

U.S. EPA ID Number

SCR000771725

7. Transporter 2 Company Name

U.S. EPA ID Number

8. Designated Facility Name and Site Address

VLS RECOVERY SERVICES, LLC  
305 S. MAIN STREET  
MAULDIN, SC 29662

U.S. EPA ID Number

SCR000762468

Facility's Phone: 864-962-9953

9. Waste Shipping Name and Description

10. Containers

11. Total Quantity

12. Unit Wt./Vol.

1. NON HAZARDOUS NON REGULATED WELL WATER #20777

Highway 11 Grocery  
Salem SC  
USF 03439

No. 001

Type TT

Est. 3000

G

13. Special Handling Instructions and Additional Information

PAJ:  
FRIDAY 08.05.2016

Thruvac

14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offorer's Printed/Typed Name

Signature

Month Day Year

8 5 16

15. International Shipments

Import to U.S.

Export from U.S.

Port of entry/exit:

Date leaving U.S.:

Transporter Signature (for exports only):

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name

Signature

Month Day Year

8 5 16

Transporter 2 Printed/Typed Name

Signature

Month Day Year

8 5 16

17. Discrepancy

17a. Discrepancy Indication Space

Quantity

Type

Residue

Partial Rejection

Full Rejection

2866 gallons based on weight

Manifest Reference Number:

U.S. EPA ID Number

17b. Alternate Facility (or Generator)

Facility's Phone:

17c. Signature of Alternate Facility (or Generator)

Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name

Signature

Month Day Year

8 18 16

GENERATOR

INT'L

TRANSPORTER

DESIGNATED FACILITY



# SCALE TICKET

08/05/2016	10:16F
RCPD I.D. number	S 2445 3
Gross	60400 1
Tare(%)	36500 1
* Preset weight	
Net	23900 1

Scale Company: VCS

Weighed By: [Signature]

Carrier: Sprinks

Customer: BLE

PO/BOL/Manifest BLE 8516 B

Tractor Number: 2445

Trailer Number: 32

Driver Signature: [Signature]

**WHITE - Driver    YELLOW - Driver    CARD - Scale**



MANIFEST NUMBER  
ML081116-A

NON-HAZARDOUS WASTE MANIFEST 1. Generator ID Number 2. Page 1 of 3. Emergency Response Phone

5. Generator's Name and Mailing Address: BUNNELL-LAMMON ENG, INC | HWY 11 GROCERY 6004 PONDERS COURT GREENVILLE, SC 29615  
Generator's Site Address (if different than mailing address): FORMER HIGHWAY 11 GROCERY 13527 SC HWY 11 SALEM, SC 29676  
Generator's Phone: 864-288-1265

6. Transporter 1 Company Name: SPARKS INDUSTRIAL SERVICE U.S. EPA ID Number: SCR000771725  
7. Transporter 2 Company Name U.S. EPA ID Number

8. Designated Facility Name and Site Address: VLS RECOVERY SERVICES, LLC 305 S. MAIN STREET MAULDIN, SC 29652 U.S. EPA ID Number: SCR000762468  
Facility's Phone: 864-962-9953

9. Waste Shipping Name and Description	10. Containers		11. Total Quantity	12. Unit Wt./Vol.
	No.	Type		
1. NON HAZARDOUS NON REGULATED WELL WATER #20777 <i>Highway 11 Grocery 216m SC 457639</i>	001	TT	EST 2300	G
2.				
3.				
4.				

13. Special Handling Instructions and Additional Information  
PAU:  
THURSDAY 08.11.2016  
*#35 TRL 30 VICTIME 100 H2*

14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offlor's Printed/Typed Name: *Brian K. White* Signature: *Brian K. White* Month: 08 Day: 11 Year: 16

15. International Shipments  Import to U.S.  Export from U.S. Port of entry/exit: Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials  
Transporter 1 Printed/Typed Name: *Mitchell Cooper* Signature: *Mitchell Cooper* Month: 08 Day: 11 Year: 16  
Transporter 2 Printed/Typed Name: Signature: Month: Day: Year:

17. Discrepancy

17a. Discrepancy Indication Space  Quantity  Type  Residue  Partial Rejection  Full Rejection  
*1755 gallons based on weight*

17b. Alternate Facility (or Generator) Manifest Reference Number: U.S. EPA ID Number:

Facility's Phone: 17c. Signature of Alternate Facility (or Generator) Month: Day: Year:

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name: *Daniel Whitman* Signature: *Daniel Whitman* Month: 8 Day: 11 Year: 16

GENERATOR  
INT'L  
TRANSPORTER  
DESIGNATED FACILITY

56147

# SCALE TICKET

08/11/2016	11:26AM
RCPD I.D. number	S 35 30
Gross	47980 lb
Tare(*)	33340 lb
* Preset weight	
Net	14640 lb

1755

Scale Company: VLS

Weighed By: Mlop

Carrier: SPARKS

Customer: BLE SALVAGE

PO/BOL/Manifest MLO81166-A

Tractor Number: 35

Trailer Number: 30

Driver Signature: Mlop

WHITE - Driver    YELLOW - Driver    CARD - Scale

Waste Tracking Number  
**ML081716-C**

**NON-HAZARDOUS WASTE MANIFEST**

1. Generator ID Number

2. Page 1 of

3. Emergency Response Phone

5. Generator's Name and Mailing Address

Generator's Site Address (if different than mailing address)

**BUNNELL-LAMMON ENG, INC | HWY 11 GROCERY**  
6004 PONDRS COURT  
GREENVILLE, SC 29615

**FORMER HIGHWAY 11 GROCERY**  
13527 SC HWY 11  
SALEM, SC 29676

Generator's Phone: **864-288-1265**

6. Transporter 1 Company Name

**SPARKS INDUSTRIAL SERVICE**

U.S. EPA ID Number

**SCR000771725**

7. Transporter 2 Company Name

U.S. EPA ID Number

8. Designated Facility Name and Site Address

**VLS RECOVERY SERVICES, LLC**  
305 S. MAIN STREET  
MAULDIN, SC 29662

U.S. EPA ID Number

**SCR000762468**

Facility's Phone: **864-962-9953**

9. Waste Shipping Name and Description

10. Containers

11. Total Quantity

12. Unit Wt./Vol.

1. **NON HAZARDOUS NON REGULATED WELL WATER #20777**

*HWY 11 GROCERY  
Salem SC  
45T 05437*

No. **001**

Type **TT**

*EST 2500*

**G**

13. Special Handling Instructions and Additional Information

**PAJ:  
WEDNESDAY 08.17.2015**

*#35 TRL 30.*

*Vaccine 1.00 HR.*

14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offoror's Printed/Typed Name

*Brian Davis*

Signature

*Brian Davis*

Month Day Year  
**8 | 17 | 15**

15. International Shipments

Import to U.S.

Export from U.S.

Port of entry/exit:

Date leaving U.S.:

Transporter Signature (for exports only):

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name

Transporter 2 Printed/Typed Name

Signature

17. Discrepancy

17a. Discrepancy Indication Space

Quantity

Type

Residue

Partial Rejection

Full Rejection

*1896 gallons based on weight*

Manifest Reference Number:

U.S. EPA ID Number

17b. Alternate Facility (or Generator)

Facility's Phone:

17c. Signature of Alternate Facility (or Generator)

Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name

*Steven Lukan*

Signature

*[Signature]*

Month Day Year  
**8 | 17 | 15**

GENERATOR

INT'L

TRANSPORTER

DESIGNATED FACILITY

56314

# SCALE TICKET

08/17/2016	05:37PM
RcPD I.D. number	S 35 30
Gross	49160 lb
Tare(*)	33340 lb
* Preset weight	
Net	15820 lb

1894

Scale Company: \_\_\_\_\_

Weighed By: \_\_\_\_\_

Carrier: \_\_\_\_\_

Customer: \_\_\_\_\_

PO/BOL/Manifest \_\_\_\_\_

Tractor Number: \_\_\_\_\_

Trailer Number: \_\_\_\_\_

Driver Signature: \_\_\_\_\_

**WHITE - Driver    YELLOW - Driver    CARD - Scale**

<b>NON-HAZARDOUS WASTE MANIFEST</b>	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number <b>BLE81916B</b>		
5. Generator's Name and Mailing Address <b>BUNNELL-LAMMON ENG, INC   HWY 11 GROCERY</b> 6004 PONDRS COURT GREENVILLE, SC 29615		Generator's Site Address (if different than mailing address) <b>FORMER HIGHWAY 11 GROCERY</b> 13527 SC HWY 11 SALEM, SC 29676				
Generator's Phone: <b>864-288-1265</b>						
6. Transporter 1 Company Name <b>SPARKS INDUSTRIAL SERVICE</b>			U.S. EPA ID Number <b>SCR000771725</b>			
7. Transporter 2 Company Name			U.S. EPA ID Number			
8. Designated Facility Name and Site Address <b>VLS RECOVERY SERVICES, LLC</b> 305 S. MAIN STREET MAULDIN, SC 29662			U.S. EPA ID Number <b>SCR000762468</b>			
Facility's Phone: <b>864-952-9953</b>						
GENERATOR	9. Waste Shipping Name and Description		10. Containers		11. Total Quantity	12. Unit Wt./Vol.
	1. <b>NON HAZARDOUS NON REGULATED WELL WATER #20777</b>		No. <b>001</b>	Type <b>TT</b>	<b>1500</b>	<b>G</b>
	<i>HWY 11 Groc</i> <i>Salem SC</i> <i>201 03439</i>					
	2.					
	3.					
4.						
13. Special Handling Instructions and Additional Information <b>PAU: 14:00</b> <b>FRIDAY 08.19.2016</b> <i>1hr vac</i>						
14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.						
Generator's/Offorer's Printed/Typed Name <i>Signature on file</i>			Signature <i>Signature on file</i>		Month Day Year <b>8 19 16</b>	
TRANSPORTER	15. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: _____ Date leaving U.S.: _____					
	16. Transporter Acknowledgment of Receipt of Materials					
Transporter 1 Printed/Typed Name <i>Jerry Sore</i>			Signature <i>[Signature]</i>		Month Day Year <b>8 19 16</b>	
Transporter 2 Printed/Typed Name			Signature		Month Day Year	
DESIGNATED FACILITY	17. Discrepancy					
	17a. Discrepancy Indication Space <input checked="" type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection					
	<i>894 gal on based on weight</i>			Manifest Reference Number:		
	17b. Alternate Facility (or Generator)			U.S. EPA ID Number		
Facility's Phone:						
17c. Signature of Alternate Facility (or Generator)					Month Day Year	
18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a						
Printed/Typed Name <i>Flora Luban</i>			Signature <i>[Signature]</i>		Month Day Year <b>8 19 16</b>	

56000

# SCALE TICKET

08/19/2016	04:52PM
RcPD I.D. number	S 2445 226
Gross	41180 lb
Tare(*)	33720 lb
* Preset weight	
Net	7460 lb

894

Scale Company: VLS

Weighed By: [Signature]

Carrier: Sparks

Customer: BLE (Salmon)

PO/BOL/Manifest BLE81916B

Tractor Number: 2445

Trailer Number: 226

Driver Signature: [Signature]

WHITE - Driver    YELLOW - Driver    CARD - Scale



NOV 16 2016



MR STEVE SMITH  
180 SHALLOW FORD RD  
SALEM SC 29676

Re: Site-specific work plan request  
Former Highway 11 Grocery, 13527 North SC-11, Salem, SC  
UST Permit #03439  
Release reported November 28, 2000  
Oconee County

Dear Mr. Smith:

The Underground Storage Tank (UST) Management Division of the South Carolina Department of Health and Environmental Control (DHEC) recognizes your commitment to continue work at this site using Bunnell-Lammons Engineering, Inc. as your contractor. The next scope of work is ground-water sampling as outlined in your contractor's Annual Contractor Quality Assurance Plan (ACQAP). Please have your contractor plan to sample all monitoring wells, recovery wells, and surface water locations CK-1 through CK-3 for BTEX+naph+MtBE+DCA+oxygenates and EDB. Do not sample wells containing measurable (0.01') free-phase product. All work must be done in accordance with your contractor's ACQAP, and in compliance with all applicable regulations..

Your contractor must complete and submit a site-specific work plan and cost proposal for the sampling within 30 days of the date of this letter. Upon review and approval of the plan and cost proposal, the Division will issue a directive to you for the work.

On all correspondence concerning this site, please reference UST Permit #03439. If there are any questions, feel free to contact me by telephone at (803) 898-0655, by fax at (803) 898-0673, or by e-mail at padgettjp@dhec.sc.gov.

Sincerely,

Joel P. Padgett, P.G., Geologist/Hydrologist  
Corrective Action Section  
Underground Storage Tank Management Division  
Bureau of Land and Waste Management

JPP/jpp  
03439.sswp1

cc: Bunnell-Lammons Engineering, Inc., 6004 Ponders Court, Greenville, SC 29615  
Technical file



## Document Receipt Information

Hard Copy

CD

Email

Date Received 2/9/17

Permit Number 03139

Project Manager Lee's Box for Joel P

Name of Contractor BLE

UST Certification Number \_\_\_\_\_

Docket Number 821

Scanned \_\_\_\_\_

*SSWP YWS Event*



**BUNNELL-LAMMONS ENGINEERING, INC.**  
GEOTECHNICAL, ENVIRONMENTAL AND CONSTRUCTION MATERIALS CONSULTANTS

February 6, 2017

South Carolina Department of Health and Environmental Control  
Underground Storage Tank Management Division  
2600 Bull Street  
Columbia, South Carolina 29201-1708

Attention: Mr. Joel P. Padgett, P.G., Hydrogeologist

Subject: **Site Specific Work Plan – Groundwater Sampling Event**  
**Former Highway 11 Grocery**  
**13527 Highway 11 North**  
**Salem, Oconee County, South Carolina**  
**UST Permit #03439**  
**BLE Project No. J16-10769-02**

Dear Mr. Padgett:

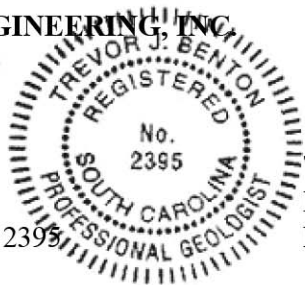
On behalf of Steve Smith, Bunnell-Lammons Engineering, Inc. (BLE) submits herein the completed Site Specific Work Plan (SSWP) for the subject site. This submittal is in response to the South Carolina Department of Health and Environmental Control’s (SCDHEC) SSWP request dated November 16, 2016, for the implementation of a groundwater sampling event at the subject site.

Please do not hesitate to contact us if you have any questions concerning this submittal.

Sincerely,

**BUNNELL-LAMMONS ENGINEERING, INC.**

Trevor J. Benton, P.G.  
Senior Hydrogeologist  
Registered, South Carolina No. 2395



Thomas L. Lammons, P.G., CHMM  
Principal Hydrogeologist  
Registered, South Carolina No. 893



cc: Mr. Steve Smith, 180 Shallow Ford Road, Salem, South Carolina 29676



## Site-Specific Work Plan for Approved ACQAP Underground Storage Tank Management Division

To: Mr. Joel Padgett, P.G. (SCDHEC Project Manager)  
From: Mr. Trevor J. Benton, P.G. (Contractor Project Manager)  
Contractor: Bunnell-Lammons Engineering, Inc. UST Contractor Certification Number: UCC-0010

Facility Name: Highway 11 Grocery UST Permit #: 03439  
Facility Address: 13527 North Highway 11, Salem, South Carolina  
Responsible Party: Mr. Steve Smith Phone: \_\_\_\_\_  
RP Address: 180 Shallow Ford Road, Salem, South Carolina 29676  
Property Owner (if different): Jocassee Recreation Center, LLC  
Property Owner Address: P.O. Box 878, Pickens, South Carolina  
Current Use of Property: Closed gas station

### Scope of Work (Please check all that apply)

- |                                 |   |  |                              |
|---------------------------------|---|--|------------------------------|
| <input type="checkbox"/> IGWA   | <input type="checkbox"/> Tier II                      | <input checked="" type="checkbox"/> Groundwater Sampling | <input type="checkbox"/> GAC |
| <input type="checkbox"/> Tier I | <input type="checkbox"/> Monitoring Well Installation | <input type="checkbox"/> Other _____                     |                              |

### Analyses (Please check all that apply)

#### Groundwater/Surface Water:

- |  |  |                                      |   |
|--|--|--------------------------------------|---|
| <input checked="" type="checkbox"/> BTEXNMDCA (8260B)  | <input type="checkbox"/> Lead          | <input type="checkbox"/> BOD         | <input type="checkbox"/> Methane        |
| <input checked="" type="checkbox"/> Oxygenates (8260B) | <input type="checkbox"/> 8 RCRA Metals | <input type="checkbox"/> Nitrate     | <input type="checkbox"/> Ethanol        |
| <input checked="" type="checkbox"/> EDB (8011)         | <input type="checkbox"/> TPH           | <input type="checkbox"/> Sulfate     | <input type="checkbox"/> Dissolved Iron |
| <input type="checkbox"/> PAH (8270D)                   | <input type="checkbox"/> pH            | <input type="checkbox"/> Other _____ |   |

#### Soil:

- |                                |  |  |                                     |
|--------------------------------|--|--|-------------------------------------|
| <input type="checkbox"/> BTEXN | <input type="checkbox"/> 8 RCRA Metals       | <input type="checkbox"/> TPH-DRO (3550B/8015B) | <input type="checkbox"/> Grain Size |
| <input type="checkbox"/> PAH   | <input type="checkbox"/> Oil & Grease (9071) | <input type="checkbox"/> TPH-GRO (5030B/8015B) | <input type="checkbox"/> TOC        |

#### Air:

- BTEXN

### Sample Collection (Estimate the number of samples of each matrix that are expected to be collected.)

_____ Soil	<u>1</u> Water Supply Wells	_____ Air	<u>3</u> Field Blank
<u>31</u> Monitoring Wells	<u>3</u> Surface Water	<u>3</u> Duplicate	<u>1</u> Trip Blank

### Field Screening Methodology

Estimate number and total completed depth for each point, and include their proposed locations on the attached map.

# of shallow points proposed: 0 Estimated Footage: 0 feet per point  
# of deep points proposed: 0 Estimated Footage: 0 feet per point  
Field Screening Methodology: NA

### Permanent Monitoring Wells

Estimate number and total completed depth for each well, and include their proposed locations on the attached map.

# of shallow wells: 0 Estimated Footage: 0 feet per point  
# of deep wells: 0 Estimated Footage: 0 feet per point  
# of recovery wells: 0 Estimated Footage: 0 feet per point

Monitoring Well development method (consistent with SOP): NA

Comments, if warranted:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

UST Permit #: 10633 Facility Name: Food Mart 111

**Implementation Schedule** (Number of calendar days from approval)

Field Work Start-Up: 14 Field Work Completion: 45  
Report Submittal: 60 # of Copies Provided to Property Owners: 1

**Aquifer Characterization**

Pump Test:  Slug Test:  (Check one and provide explanation below for choice)

NA  
\_\_\_\_\_  
\_\_\_\_\_

**Investigation Derived Waste Disposal**

Soil: 0 Tons Purge Water: 250 Gallons  
Drilling Fluids: 0 Gallons Free-Phase Product: 0 Gallons

**Additional Details For This Scope of Work**

For example, list wells to be sampled, wells to be abandoned/repared, well pads/bolts/caps to replace, details of AFVR event, etc.

Sample existing monitoring wells MW-01 through MW-15, DMW-01, DMW-02, DMW-04, RW-01 through RW-13, WSW-01, and creek samples CK-01, CK-02, and CK-03. Since the wells were last sampled in 2013, all wells will be purged prior to sample collection in accordance with BLE's approved Annual Contractor Quality Assurance Plan (ACQAP).  
\_\_\_\_\_

As required, an additional field duplicate and field blank will be collected for the water supply well sample and analyzed for the appropriate drinking water methods.  
\_\_\_\_\_

**Compliance With Annual Contractor Quality Assurance Plan (ACQAP)**

Yes Laboratory as indicated in ACQAP? (Yes/No) If no, indicate laboratory information below.

Name of Laboratory: \_\_\_\_\_  
SCDHEC Certification Number: \_\_\_\_\_  
Name of Laboratory Director: \_\_\_\_\_

NA Well Driller as indicated in ACQAO? (Yes/No) If no, indicate driller information below.

Name of Well Driller: \_\_\_\_\_  
SCLLR Certification Number: \_\_\_\_\_

No Other variations from ACQAP. Please describe below.

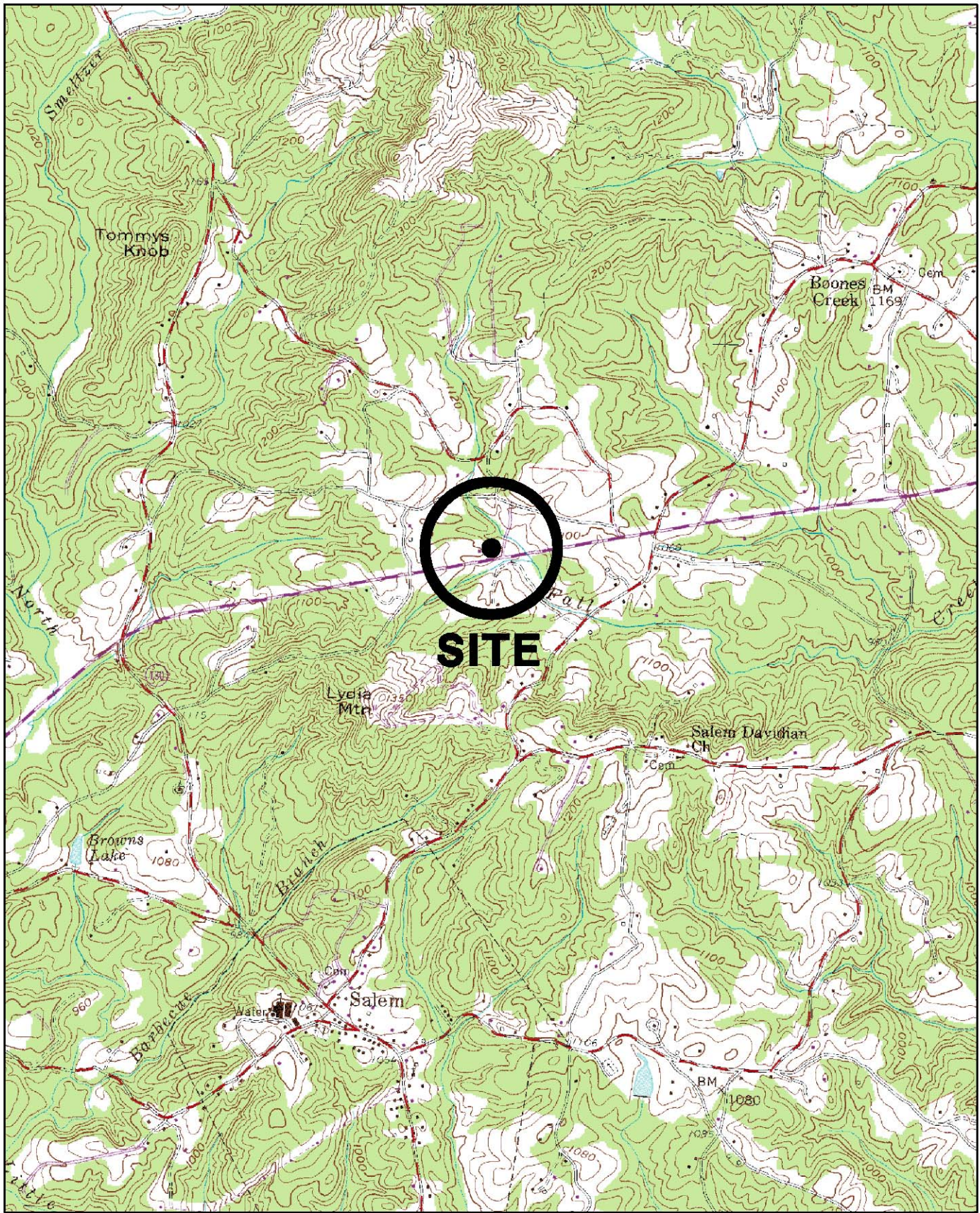
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Attachments**

1. Attach a copy of the relevant portion of the USGS topographic map showing the site location.
2. Prepare a site base map. This map must be accurately scaled, but does not need to be surveyed. The map must include the following:

North Arrow	Proposed monitoring well locations
Location of property lines	Legend with facility name and address, UST permit number, and bar scale
Location of buildings	Streets or highways (indicate names and numbers)
Previous soil sampling locations	Location of all present and former ASTs and USTs
Previous monitoring well locations	Location of all potential receptors
Proposed soil boring locations	
3. Assessment Component Cost Agreement, SCDHEC Form D-3664

## **FIGURES**



2000 1000 0 2000 4000  
 APPROXIMATE SCALE IN FEET

REFERENCE:  
 USGS TOPOGRAPHIC MAP, 7.5 MINUTE SERIES,  
 SALEM, S.C. QUADRANGLE, PHOTOREVISED 1980.

DRAWN: ACE	DATE: 02-03-17
CHECKED: TJB	CAD: FHWHY11GROCERY-02SLM
APPROVED:	JOB NO: J16-10769-02

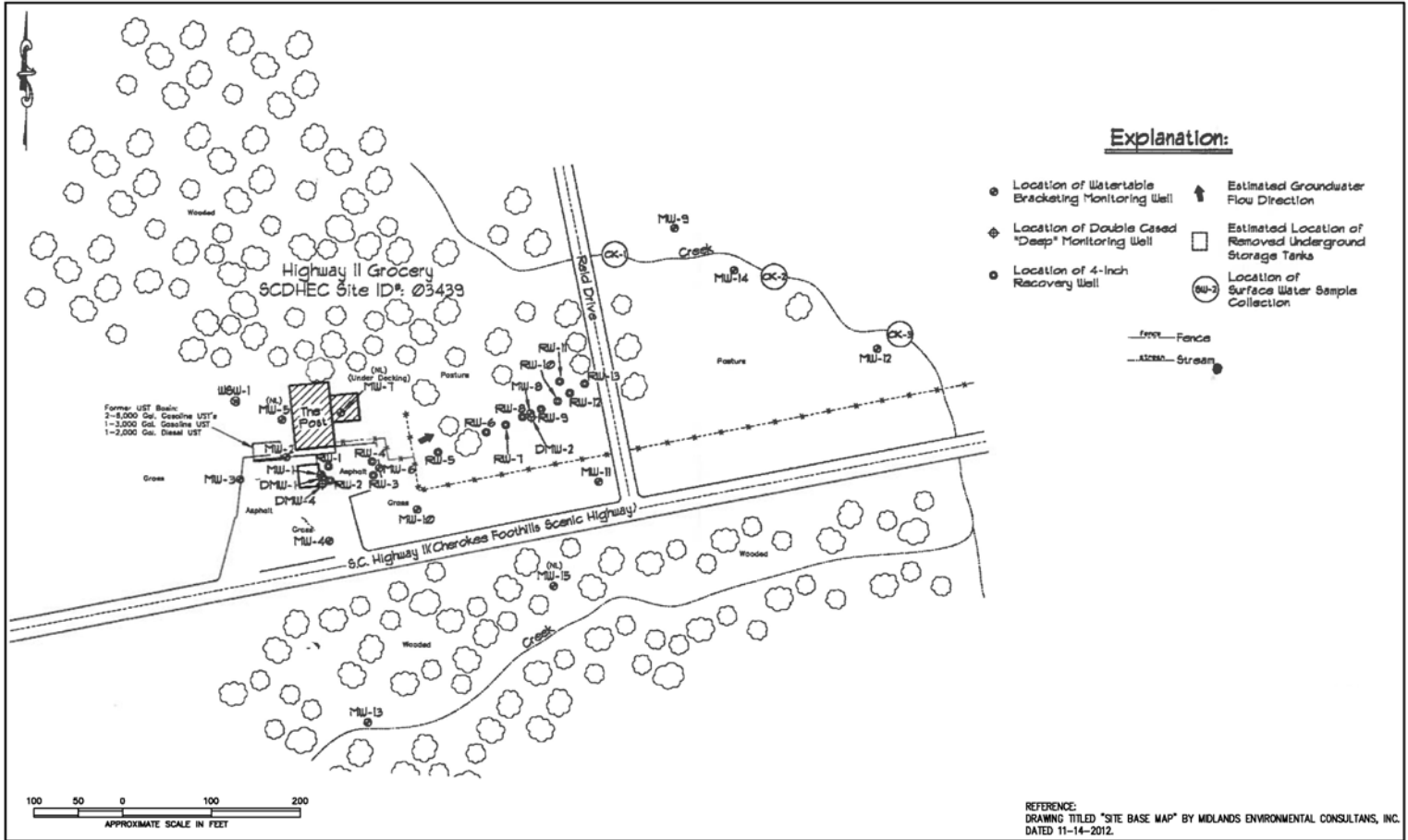
**IBLE**  
 INC.

**BUNNELL-LANNONS ENGINEERING, INC.**

6004 PONDERS COURT  
 GREENVILLE, SOUTH CAROLINA 29615  
 PHONE: (864)288-1265 FAX: (864)288-4430

SITE LOCATION MAP  
 FORMER HIGHWAY 11 GROCERY  
 UST PERMIT #03439  
 13527 HIGHWAY 11 NORTH  
 SALEM, SOUTH CAROLINA

FIGURE  
**1**



DRAWN BY: ACE  
 CHECKED BY: TJB  
 APPROVED BY:

REVISIONS		
No.	DESCRIPTION	BY

**IBLE INC.** **BUNNELL-LAMBORN ENGINEERING, INC.**  
 8004 POWERS COURT  
 GREENVILLE, SOUTH CAROLINA 29615  
 PHONE: (864)286-1285 FAX: (864)286-4430

SITE PLAN  
 FORMER HIGHWAY 11 GROCERY  
 UST PERMIT #03439  
 13527 HIGHWAY 11 NORTH  
 SALEM, SOUTH CAROLINA

FIGURE  
**2**

**ASSESSMENT COMPONENT INVOICE**





**ASSESSMENT COMPONENT COST AGREEMENT  
SOUTH CAROLINA**

Department of Health and Environmental Control  
Underground Storage Tank Management Division  
State Underground Petroleum Environmental Response Bank Account  
August 16, 2016

**Facility Name:** Former Highway 11 Grocery

**UST Permit #:** 03439

**Cost Agreement #:** \_\_\_\_\_

ITEM	QUANTITY	UNIT	UNIT PRICE	TOTAL
<b>1. Plan Preparation</b>				
A1. Site-specific Work Plan	1	each	\$150.00	\$150.00
B1. Tax Map		each	\$70.00	\$0.00
C1. Tier II or Comp. Plan /QAPP Appendix B		each	\$250.00	\$0.00
<b>2. A1. Receptor Survey *</b>				
		each	\$551.00	\$0.00
<b>3. Survey (500 ft x 500 ft)</b>				
A1. Comprehensive Survey		each	\$1,040.00	\$0.00
<b>B. Subsurface Geophysical Survey</b>				
1B. < 10 meters below grade		each	\$1,300.00	\$0.00
2B. > 10 meters below grade		each	\$2,310.00	\$0.00
C1. Geophysical UST or Drum Survey		each	\$910.00	\$0.00
<b>4. Mob/Demob</b>				
A1. Equipment		each	\$1,020.00	\$0.00
B1. Personnel	35 samples	3 each	\$423.00	\$1,269.00
C1. Adverse Terrain Vehicle		each	\$500.00	\$0.00
<b>5. A1. Soil Borings (hand auger)*</b>				
		foot	\$5.00	\$0.00
<b>6. Soil Borings (requiring equipment, push technology, etc)* or Field Screening (including water sample, soil sample, soil gas sample, etc.)*</b>				
AA. Standard		per foot	\$15.00	\$0.00
C1. Fractured Rock		per foot	\$20.20	\$0.00
<b>7. A1. Soil Leachability Model</b>				
		each	\$60.00	\$0.00
<b>8. Abandonment (per foot)*</b>				
A1. 2" diameter or less		per foot	\$3.10	\$0.00
B1. Greater than 2" to 6" diameter		per foot	\$4.50	\$0.00
C1. Dug/Bored well (up to 6 feet diameter)		per foot	\$15.00	\$0.00
<b>9. Well Installation (per foot)*</b>				
A1. Water Table (hand augered)		per foot	\$10.60	\$0.00
B1. Water Table (drill rig)		per foot	\$38.00	\$0.00
CC. Telescoping		per foot	\$50.00	\$0.00
DD. Rock Drilling		per foot	\$58.00	\$0.00
E1. 2" Rock Coring		per foot	\$30.90	\$0.00
G1. Rock Multi-sampling ports/screens		per foot	\$33.40	\$0.00
HH. Recovery Well (4" diameter)		per foot	\$45.00	\$0.00
II. Pushed Pre-packed screen (1.25" dia)		per foot	\$15.00	\$0.00
J1. Rotasonic (2" diameter)		per foot	\$44.00	\$0.00
K. Re-develop Existing Well		per foot	\$11.00	\$0.00
<b>10. Groundwater Sample Collection / Gauge Depth to Water or Product *</b>				
A1. Groundwater Purge	31	per well/receptor	\$60.00	\$1,860.00
B1. Air or Vapors		per receptor	\$12.00	\$0.00
C1. Water Supply	1	per well/receptor	\$22.00	\$22.00
D1. Groundwater No Purge or Duplicate	6	per well/receptor	\$28.00	\$168.00
E1. Gauge Well only		per well	\$7.00	\$0.00
F1. Sample Below Product		per well	\$12.00	\$0.00
G1. Passive Diffusion Bag		each	\$26.00	\$0.00
H1. Field Blank	3	each	\$24.60	\$73.80

<b>11. Laboratory Analyses-Groundwater</b>				
A2. BTEXNM+Oxyg's+1,2 DCA+Eth(8260B)	40	per sample	\$122.00	\$4,880.00
AA1. Lead, Filtered		per sample	\$13.80	\$0.00
B2. Rush EPA Method 8260B (All of item A.)		per sample	\$153.60	\$0.00
C2. Trimethal, Butyl, and Isopropyl Benzenes		per sample	\$36.40	\$0.00
D1. PAH's		per sample	\$60.60	\$0.00
E1. Lead		per sample	\$16.00	\$0.00
F1. EDB by EPA 8011	39	per sample	\$45.20	\$1,762.80
FF1. EDB by EPA Method 8011 Rush		per sample	\$68.20	\$0.00
G1. 8 RCRA Metals		per sample	\$63.40	\$0.00
H1. TPH (9070)		per sample	\$41.00	\$0.00
II. pH		per sample	\$5.20	\$0.00
J1. BOD		per sample	\$20.00	\$0.00
PP. Ethanol		per sample	\$14.80	\$0.00
<b>11. Analyses-Drinking Water</b>				
L. BTEXNM+1,2 DCA (524.2)	2	per sample	\$124.05	\$248.10
M. 7-OXYGENATES & ETHANOL (8260B)	2	per sample	\$91.75	\$183.50
N. EDB (504.1)	2	per sample	\$79.50	\$159.00
O. RCRA METALS (200.8)		per sample	\$100.00	\$0.00
<b>11. Analyses-Soil</b>				
Q1. BTEX + Naphth.		per sample	\$64.00	\$0.00
R1. PAH's		per sample	\$64.04	\$0.00
S1. 8 RCRA Metals		per sample	\$56.40	\$0.00
U1. TPH-DRO (3550C/8015C)		per sample	\$40.00	\$0.00
V1. TPH- GRO (5030B/8015C)		per sample	\$35.96	\$0.00
W1. Grain size/hydrometer		per sample	\$104.00	\$0.00
X1. Total Organic Carbon		per sample	\$30.60	\$0.00
<b>11. Analyses-Air</b>				
Y1. BTEX + Naphthalene		per sample	\$216.00	\$0.00
<b>11. Analyses-Free Phase Product</b>				
Z1. Hydrocarbon Fuel Identification		per sample	\$357.00	\$0.00
<b>12. Aquifer Characterization</b>				
A1. Pumping Test*		per hour	\$23.00	\$0.00
B1. Slug Test*		per test	\$191.00	\$0.00
C1. Fractured Rock		per test	\$100.00	\$0.00
<b>13. A1. Free Product Recovery Rate Test*</b>				
		each	\$38.00	\$0.00
<b>14. Fate/Transport Modeling</b>				
A1. Mathematical Model		each	\$100.00	\$0.00
B1. Computer Model		each	\$100.00	\$0.00
<b>15. Risk Evaluation</b>				
A. Tier I Risk Evaluation		each	\$300.00	\$0.00
B1. Tier II Risk Evaluation		each	\$100.00	\$0.00
<b>16. A1. Subsequent Survey*</b>				
		each	\$260.00	\$0.00
<b>17. Disposal (gallons or tons)*</b>				
AA. Wastewater	250	gallon	\$0.56	\$140.00
BB. Free Product		gallon	\$0.50	\$0.00
C1. Soil Treatment/Disposal		ton	\$60.00	\$0.00
D1. Drilling fluids		gallon	\$0.42	\$0.00
<b>18. Miscellaneous (attach receipts)</b>				
		each	\$0.00	\$0.00
		each	\$0.00	\$0.00
		each	\$0.00	\$0.00
<b>20. Tier I Assessment (Use DHEC 3665 form)</b>				
		standard		\$0.00
<b>21. IGWA (Use DHEC 3666 form)</b>				
		standard		\$0.00
<b>22. Corrective Action (Use DHEC 3667 form)</b>				
		PPF Bid		\$0.00

<b>23. Aggressive Fluid &amp; Vapor Recovery (AFVR)</b>					
A1. 8-hour Event*		each	\$1,375.00		\$0.00
AA. 24-hour Event*		each	\$3,825.00		\$0.00
A3. 48-hour Event*		each	\$6,265.00		\$0.00
A4. 96-hour Event*		each	\$12,567.50		\$0.00
C1. Off-gas Treatment 8 hour		per event	\$122.50		\$0.00
C2. Off-gas Treatment 24 hour		per event	\$241.50		\$0.00
C3. Off-gas Treatment 48 hour		per event	\$327.00		\$0.00
C4. Off-gas Treatment 96 hour		per event	\$780.00		\$0.00
D. Site Reconnaissance		each	\$203.25		\$0.00
E1. Additional Hook-ups		each	\$25.75		\$0.00
F1. Effluent Disposal		gallon	\$0.44		\$0.00
G. AFVR Mobilization/Demobilization		each	\$391.50		\$0.00
<b>24. Granulated Activated Carbon (GAC) filter system installation &amp; service:</b>					
A1. New GAC System Installation*		each	\$1,900.00		\$0.00
BB. Refurbished GAC Sys. Install*		each	\$900.00		\$0.00
C1. Filter replacement/removal*		each	\$350.00		\$0.00
DD. GAC System removal, cleaning, & refurbishment*		each	\$275.00		\$0.00
E1. GAC System housing*		each	\$250.00		\$0.00
F. In-line particulate filter		each	\$150.00		\$0.00
G1. Additional piping & fittings		foot	\$1.50		\$0.00
<b>25. Well Repair</b>					
A1. Additional Copies of the Report Delivered	1	each	\$50.00		\$50.00
B1. Repair 2x2 MW pad*		each	\$50.00		\$0.00
C1. Repair 4x4 MW pad*		each	\$88.00		\$0.00
D1. Repair well vault*		each	\$118.00		\$0.00
F1. Replace well cover bolts		each	\$2.60		\$0.00
G. Replace locking well cap & lock		each	\$15.00		\$0.00
H1. Replace/Repair stick-up*		each	\$134.00		\$0.00
II. Convert Flush-mount to Stick-up*		each	\$150.00		\$0.00
J1. Convert Stick-up to Flush-mount*		each	\$130.00		\$0.00
K1. Replace missing/illegible well ID plate		each	\$12.00		\$0.00
<b>Report Prep &amp; Project Management</b>	12%	percent	\$10,966.20		\$1,315.94
<b>TOTAL</b>					\$12,282.14

DHEC 8-2016 \*The appropriate mobilization cost can be added to complete these tasks, as necessary



**MR STEVE SMITH**  
**180 SHALLOW FORD ROAD**  
**OCONEE SC 29676**

**JUL 13 2017**



Re: **Groundwater Sampling Directive**  
Former Highway 11 Grocery, 13527 North Highway 11, Salem, SC 29676  
UST Permit# 03439; CA# 55090  
Release Reported November 28, 2000  
Site-Specific Work Plan received February 9, 2017  
Oconee County

Dear Mr. Smith:

The Underground Storage Tank (UST) Management Division of the South Carolina Department of Health and Environmental Control (DHEC) has reviewed the referenced Site Specific Work Plan submitted on your behalf by Bunnell-Lammons Engineering, Inc. The next appropriate scope of work at the site is a comprehensive groundwater sampling event. All work should be conducted in accordance with the UST Quality Assurance Program Plan (QAPP) Revision 3.1, the Annual Contractors Quality Assurance Plan (ACQAP) and must be conducted in compliance with all applicable regulations. A copy of the QAPP Revision 3.1, for the UST Management Division is available at <http://www.dhec.sc.gov/Environment/LW/UST/ReleaseAssessmentCleanup/QualityAssurance/>.

Groundwater sampling activities at the site should begin immediately upon receipt of this letter. Cost agreement # 55090 has been approved for the amount shown on the enclosed cost agreement form for sampling all monitoring wells associated with the referenced release. Groundwater samples should be collected and analyzed for BTEX, naphthalene, MtBE, 8 oxygenates, 1,2 DCA and EDB. Analyses should be in accordance with Appendix F of the QAPP to include duplicate samples, field and trip blanks.

In accordance with the ACQAP, a weekly status report of the project should be provided via e-mail. If any quality assurance problems arise, you must contact me within 24 hours via phone or e-mail. In addition, a discussion of the problem(s) encountered, including quality assurance problems, the actions taken, and the results must be included in the final report submitted to the UST Management Division.

**The Monitoring Report, contractor checklist (QAPP Appendix K), and invoice are due within 60 days from the date of this letter.** The report submitted at the completion of these activities should include the required information outlined in the ACQAP. Please note that all applicable South Carolina certification requirements apply to the services and report preparation. All site rehabilitation activities must be performed and submitted by a South Carolina Certified Underground Storage Tank Site Rehabilitation Contractor.

Bunnell-Lammons Engineering, Inc. can submit an invoice for direct payment from State Underground Petroleum Environmental Response Bank (SUPERB) Account for pre-approved costs. By law, the SUPERB Account cannot compensate any costs that are not pre-approved. Please note that applicable South Carolina certification requirements regarding laboratory services and report preparation must be satisfied. If the invoice is not submitted within 120 days from the date of this letter, monies allocated to pay this invoice will be uncommitted. This means that the invoice will not be processed for payment until all other committed funds are paid or monies become available.

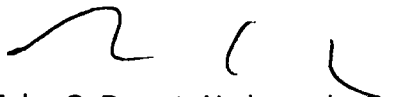
Please note that Sections 44-2-110(4) and 44-2-130 of the SUPERB Statute state that no costs will be allowed unless prior approval from DHEC is obtained. If for any reason additional tasks will be completed, these additional tasks and the associated cost must be pre-approved by DHEC for the cost to be paid. DHEC reserves the authority to pay only for work properly performed and/or technically justified and will only pay rates in accordance with established criteria. Further, DHEC reserves the right to question and/or reject costs if deemed unreasonable and the right to audit project records at any time during the project or after completion of work.

Please note, if unnecessary dilutions are completed resulting in reporting limits of individual chemical of concern (CoC) in excess of Risk-Based Screening Levels (RBSLs), the data cannot be used. In those cases, the Division may deny payment for any non-detect analysis where the reporting limit exceeds the RBSL. The UST Management Division encourages the use of 'J' values as necessary so the appropriate action can be determined for a release.

DHEC grants pre-approval for transportation of virgin petroleum impacted soil and groundwater from the referenced site to a permitted treatment facility. The transport and disposal must be conducted in accordance with the QAPP. If the CoC concentrations based on laboratory analysis are below RBSLs, please contact the project manager for approval to dispose of soil and/or groundwater on site. The SUPERB Account will not reimburse for transportation or treatment of soil and/or groundwater with concentrations below RBSLs.

On all correspondence regarding this site, please reference UST Permit # 03439. If you have any questions regarding this correspondence, please contact me by telephone at (803) 898-0606, by fax at (803) 898-0673, or by e-mail at [bryantjc@dhec.sc.gov](mailto:bryantjc@dhec.sc.gov).

Sincerely,



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

enc: Approved Cost Agreement

cc: Bunnell-Lammons Engineering, Inc., 6004 Ponders Court, Greenville, SC 29615 (with enc.)  
Technical File (with enc.)

**Approved Cost Agreement**

**55090**

Facility: 03439 HWY 11 GROCERY

PADGETJP

PO Number:

<u>Task / Description</u>	<u>Categories</u>	<u>Item Description</u>	<u>Qty / Pct</u>	<u>Unit Price</u>	<u>Amount</u>
01 PLAN		A1 SITE SPECIFIC WORK PLAN	1.0000	\$150.000	150.00
04 MOB/DEMOB		B1 PERSONNEL	3.0000	\$423.000	1,269.00
10 SAMPLE COLLECTION		A1 GROUNDWATER (PURGE)	31.0000	\$60.000	1,860.00
		C1 WATER SUPPLY	1.0000	\$22.000	22.00
		D1 GROUNDWATER NO PURGE/DUPLICATE	6.0000	\$28.000	168.00
		H1 FIELD BLANK	3.0000	\$24.600	73.80
11 ANALYSES					
	GW GROUNDWATER	A2 BTEXNM+OXYGS+1,2-DCA+ETH-8260B	40.0000	\$122.000	4,880.00
		F1 EDB BY 8011	39.0000	\$45.200	1,762.80
	WATER DRINKING WATER	L BTEXNM+1,2 DCA (524.2)	4.0000	\$124.050	496.20
		M 7-OXYGENATES & ETHANOL (8260B)	4.0000	\$91.750	367.00
		N EDB (504.1)	3.0000	\$79.500	238.50
17 DISPOSAL		AA WASTEWATER	250.0000	\$0.560	140.00
19 RPT/PROJECT MNGT & COORDINATIO		PRT REPORT PREPARATION	0.1200	\$11,477.300	1,377.28
25 WELL REPAIR		A1 ADDITIONAL COPIES OF REPORT	1.0000	\$50.000	50.00
				<b>Total Amount</b>	<b>12,854.58</b>

# Document Receipt Information

Hard Copy

CD

Email

Date Received Dec 27, 2017  
Permit Number 03439  
Project Manager Adam Looper  
Name of Contractor BLE Inc  
UST Certification Number Report of GWS Event - Oct 2017  
Docket Number 844eh  
Scanned \_\_\_\_\_



**BUNNELL-LAMMONS ENGINEERING, INC.**

GEOTECHNICAL, ENVIRONMENTAL AND CONSTRUCTION MATERIALS CONSULTANTS

**REPORT OF COMPREHENSIVE  
GROUNDWATER SAMPLING EVENT -  
OCTOBER 2017**

**FORMER HIGHWAY 11 GROCERY  
13527 NORTH HIGHWAY 11  
SALEM, OCONEE COUNTY, SOUTH CAROLINA  
UST PERMIT #03439; COST AGREEMENT #55090**

*Prepared For*

**Mr. Steve Smith  
180 Shallow Ford Road  
Oconee, South Carolina 29676**

*Prepared By*

**Bunnell-Lammons Engineering, Inc.  
6004 Ponders Court  
Greenville, South Carolina 29615  
SCDHEC Certified Contractor No. UCC-0010**

**December 19, 2017**

**BLE Project Number J17-10768-02**





**BUNNELL-LAMMONS ENGINEERING, INC.**  
GEOTECHNICAL, ENVIRONMENTAL AND CONSTRUCTION MATERIALS CONSULTANTS

December 19, 2017

South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management  
Underground Storage Tank Management Division  
2600 Bull Street  
Columbia, South Carolina 29201-1708

Attention: Mr. Adam Looper, Hydrogeologist

Subject: **Report of Comprehensive Groundwater Sampling Event – October 2017**  
**Former Highway 11 Grocery**  
**13527 North Highway 11**  
**Salem, Oconee County, South Carolina**  
**UST Permit #03439; Cost Agreement #55090**  
**BLE Project No. J17-10768-02**

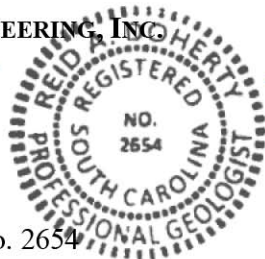
Dear Mr. Looper:

On behalf of Mr. Steve Smith, Bunnell-Lammons Engineering, Inc. (BLE) has completed a comprehensive groundwater sampling event at the subject site. This scope of work was performed in response to a South Carolina Department of Health and Environmental Control (SCDHEC) directive dated July 13, 2017 and in accordance with BLE's Site Specific Work Plan (SSWP) submitted on February 6, 2017. This report describes the work performed and presents the results obtained, along with our comments and recommendations. Please do not hesitate to contact us if you have any questions concerning this report.

Sincerely,

**BUNNELL-LAMMONS ENGINEERING, INC.**

Reid A. Doherty, P.G.  
Project Hydrogeologist  
Registered, South Carolina No. 2654



Trevor J. Benton, P.G.  
Senior Hydrogeologist  
Registered, South Carolina No. 2395



cc: Mr. Steve Smith, 180 Shallow Ford Road, Oconee, SC 29676.

## BACKGROUND INFORMATION

The subject property is located at 13527 North Highway 11 in Salem, Oconee County, South Carolina (**Figure 1**). The site is currently utilized for residential and commercial office purposes; however, the it was formerly utilized for convenience store/petroleum retail operations with four underground storage tanks (USTs) (two 6,000-gallon gasoline USTs, one 3,000-gallon gasoline UST, and one 2,000-gallon diesel UST) and associated piping and fueling dispensers. According to the SCDHEC UST registry the four USTs were abandoned by removal on September 15, 2009. A release at the subject site was reported and confirmed to the SCDHEC on November 28, 2000.

In response to the reported release, various environmental assessment activities have been conducted, including the installation of 18 groundwater monitoring wells and 17 groundwater recovery wells. The most recent environmental activities include the performance of four 96-hour aggressive fluid vapor recovery (AFVR) events from July 25, 2016 to August 17, 2016, to address the presence of free-product in several wells at the site.

In an effort to evaluate the effectiveness of the most recent AFVR events and determine what risk the petroleum release may pose to human health and the environment, the SCDHEC requested an updated comprehensive groundwater sampling event be conducted at the facility. Details of the groundwater sampling event and our findings are provided herein.

## GROUNDWATER SAMPLING

Date Sampled:	October 2-3, 2017	
Total Number of Wells Associated with Site:	36	MW-01 through MW-15, DMW-01, DMW-02, DMW-04, and RW-01 through RW-17.
Total Number of Wells Sampled:	21	MW-01 through MW-04, MW-08, MW-09, MW-11 through MW-13, MW-15, DMW-01, DMW-02, DMW-04, RW-1, RW-3, RW-4, RW-08 RW-10, RW-12, and RW-13, and WW-01
Total Number of Wells NOT Sampled:	15	MW-05, MW-06, MW-07, MW-10, and RW-17 (Not Located); RW-03 (Well Dry); and

		RW-02, RW-05, RW-06, RW-07, RW-09, RW-11, RW-14, RW-15, and RW-16 (Free Product)
Water Supply Wells Sampled	1	WW-01
Surface Water Locations Sampled	3	CK-01 through CK-03
QA / QC Samples	7	3 Duplicate Samples (MW-01 DUP, RW-01 DUP, and WW-01 DUP), 3 Field Blanks, and 1 Trip Blank
Total Purge Volume (gallons)	178	Disposal Manifest Included in Appendix A
Analytical Laboratory	Pace Analytical Services, LLC	
Analytical Methods	EPA Method 8260B, EPA Method 8011, EPA Method 524.2, and EPA Method 504.1	
Free-Phase Petroleum Product	RW-02 (0.61-feet), RW-05 (0.38-feet), RW-06 (3.74-feet), RW-07 (0.83-feet), RW-09 (0.04-feet), RW-11 (0.04-feet), RW-14 (0.42-feet), RW-15 (1.09-feet), and RW-16 (1.11-feet)	
Contaminants Exceeding Risk Based Screening Level Concentrations	Benzene, Toluene, Ethylbenzene, Xylenes, Methyl Tertiary Butyl Ether (MTBE), Naphthalene, Tert-Amyl Methyl Ether (TAME), Tert-Butyl Alcohol (TBA), Diisopropyl Ether (IPE)	
Groundwater Level Measurements	See Table 1	
Groundwater Sampling Logs and Procedures	See Appendix B	
Laboratory Analytical Summary	See Table 2A and Table 2B	
Laboratory Analytical Results	See Appendix C	
Potentiometric Map	See Figure 2	
CoC Map	See Figure 3	

## CONCLUSIONS AND RECOMMENDATIONS

Based on the current laboratory analytical results, the horizontal extent of the contaminant plume does not appear to be defined in the downgradient direction. Additionally, free-phase petroleum

product and/or chemicals of concern (CoC) at or above effective solubility limits for gasoline constituents, were identified in wells MW-01, RW-01, RW-02, RW-05, RW-06, RW-07, RW-09, RW-11, RW-14, RW-15, and RW-16. CoC concentrations were also detected above their respective RBSLs in surface water sampling locations CK-01 through CK-03.

In an effort to fully delineate the groundwater contaminant plume, we recommend a groundwater screening assessment be conducted to the north/east of the current recovery well network. Upon receipt of the field screening data, we recommend the installation of shallow monitoring wells to supplement the existing network and to define the extent of the groundwater contaminant plume (**Figure 4**).

In conjunction with the groundwater screening assessment and monitoring well installations, we recommend a series of four 96-Hour AFVR events be conducted on the aforementioned monitoring and recovery wells in order to: 1) remove residual free-phase petroleum product from the area around the extraction points, 2) remove petroleum hydrocarbon vapors from the unsaturated zone, and 3) remove petroleum impacted groundwater from the subsurface.

At least 30 days following the final AFVR event, we recommend a comprehensive groundwater sampling event be performed to evaluate the effectiveness of the events, obtain current CoC concentration data, and to establish CoC concentration trends.

## **QUALIFICATION OF REPORT**

The activities and evaluative approaches used in this assessment are consistent with those normally employed in hydrogeological assessments of this type. Our evaluation of site conditions has been based on our understanding of the site and project information and the data obtained in our exploration.

This report has been prepared on behalf of and exclusively for the use of Mr. Steve Smith. This report and the findings contained herein shall not, in whole or in part, be used or relied upon by any other party without BLE's prior written consent. Any unauthorized use or distribution of BLE's work shall be at third parties risk and without liability to BLE.

## **TABLES**

TABLE 1

MONITORING WELL AND GROUNDWATER ELEVATION DATA

Former Highway 11 Grocery  
 13527 North Highway 11  
 Salem, Oconee County, South Carolina  
 UST Permit #03439; Cost Agreement #55090  
 BLE Project No. J17-10768-02

Well ID	Date	Top of Casing Elevation	Free-Product Thickness	Groundwater Depth (btoc)	Groundwater Elevation	Well Depth	Screen Depth	Screen Elevation	
03439-MW01	5/8/2002	103.38	0.04	24.67	78.71	30.00	15.0 - 30.0	88.38 - 73.38	
	7/1/2003		0.24	23.28	80.10				
	7/30/2003		0.08	22.89	80.49				
	9/15/2003		0.04	23.78	79.60				
	10/2/2003		0.13	24.32	79.06				
	10/23/2003		0.21	24.72	78.66				
	12/18/2003		---	24.06	79.32				
	3/31/2004		---	24.61	78.77				
	2/14/2008		0.03	NA	NA				
	4/27/2010		0.55	NA	NA				
	12/13/2010		---	26.92	76.46				
	5/14/2013		0.05	NA	NA				
	10/2/2017		---	29.70	73.68				
03439-MW02	5/8/2002	104.85	---	26.08	78.77	35.00	20.0 - 35.0	84.85 - 69.85	
	7/1/2003		---	24.08	80.77				
	7/30/2003		---	23.78	81.07				
	9/15/2003		---	24.73	80.12				
	10/2/2003		---	25.56	79.29				
	10/23/2003		---	25.71	79.14				
	12/18/2003		---	23.38	81.47				
	3/31/2004		---	25.85	79.00				
	2/14/2008		---	27.53	77.32				
	4/27/2010		---	25.39	79.46				
	12/13/2010		---	28.00	76.85				
	5/14/2013		---	25.50	79.35				
	10/2/2017		---	27.44	77.41				
03439-MW03	5/8/2002	104.89	---	24.78	80.11	30.00	15.0 - 30.0	89.89 - 74.89	
	7/1/2003		---	22.51	82.38				
	7/30/2003		---	22.21	82.68				
	9/15/2003		---	23.23	81.66				
	10/2/2003		---	23.87	81.02				
	10/23/2003		---	24.23	80.66				
	12/18/2003		---	23.93	80.96				
	3/31/2004		---	24.44	80.45				
	2/14/2008		---	26.21	78.68				
	4/27/2010		---	24.09	80.80				
	12/13/2010		---	26.71	78.18				
	5/14/2013		Not Located						
	10/2/2017		---	26.22	78.67				
03439-MW04	5/8/2002	99.90	---	23.38	76.52	35.00	20.0 - 35.0	79.90 - 64.90	
	7/1/2003		---	22.10	77.80				
	7/30/2003		---	22.09	77.81				
	9/15/2003		---	22.90	77.00				
	10/2/2003		---	23.32	76.58				
	10/23/2003		---	23.69	76.21				
	12/18/2003		---	22.95	76.95				
	3/31/2004		---	23.49	76.41				
	2/14/2008		---	26.44	73.46				
	4/27/2010		---	22.28	77.62				
	12/13/2010		---	24.04	75.86				
	5/14/2013		---	22.00	77.90				
	10/2/2017		---	23.87	76.03				
03439-MW05	5/8/2002	106.06	---	28.82	77.24	35.00	20.0 - 35.0	86.06 - 71.06	
	7/1/2003		---	26.82	79.24				
	7/30/2003		---	26.53	79.53				
	9/15/2003		---	27.40	78.66				
	10/2/2003		---	27.92	78.14				
	10/23/2003		---	28.40	77.66				
	12/18/2003		---	28.40	77.66				
	3/31/2004		---	28.56	77.50				
	2/14/2008		---	30.60	75.46				
	4/27/2010		Not Located						
	12/13/2010		Not Located						
	5/14/2013		Not Located						
	10/2/2017		Not Located						
03439-MW06	5/8/2002	100.00	---	21.66	78.34	35.00	20.0 - 35.0	80.00 - 65.00	
	7/1/2003		---	19.77	80.23				
	7/30/2003		---	19.88	80.12				
	9/15/2003		---	20.63	79.37				
	10/2/2003		---	21.34	78.66				
	10/23/2003		---	21.74	78.26				
	12/18/2003		---	21.00	79.00				
	3/31/2004		---	21.71	78.29				
	2/14/2008		---	22.77	77.23				
	4/27/2010		---	21.02	78.98				
	12/13/2010		---	23.60	76.40				
	5/14/2013		---	20.97	79.03				
	10/2/2017		Not Located						
03439-MW07	5/8/2002	103.66	---	28.12	75.54	40.00	25.0 - 40.0	78.66 - 63.66	
	7/1/2003		---	26.55	77.11				
	7/30/2003		---	26.22	77.44				
	9/15/2003		---	26.83	76.83				
	10/2/2003		---	27.69	75.97				
	10/23/2003		---	28.10	75.56				
	12/18/2003		---	27.71	75.95				
	3/31/2004		---	28.00	75.66				
	2/14/2008		---	26.64	77.02				
	4/27/2010		---	NA	NA				
	12/13/2010		Not Located						
	5/14/2013		Not Located						
	10/2/2017		Not Located						

TABLE 1

MONITORING WELL AND GROUNDWATER ELEVATION DATA  
 Former Highway 11 Grocery  
 13527 North Highway 11  
 Salem, Oconee County, South Carolina  
 UST Permit #03439; Cost Agreement #55090  
 BLE Project No. J17-10768-02

Well ID	Date	Top of Casing Elevation	Free-Product Thickness	Groundwater Depth (btoc)	Groundwater Elevation	Well Depth	Screen Depth	Screen Elevation
03439-MW08	5/8/2002	86.51	0.06	21.00	65.51	30.00	15.0 - 30.0	71.51 - 56.51
	7/1/2003		0.60	20.96	65.55			
	7/30/2003		0.20	20.46	66.05			
	9/15/2003		0.15	21.17	65.34			
	10/2/2003		0.20	20.44	66.07			
	10/23/2003		0.02	21.54	64.97			
	12/18/2003		---	20.82	65.69			
	3/31/2004		---	21.35	65.16			
	2/14/2008		1.93	NA	NA			
	4/27/2010		0.45	NA	NA			
	12/13/2010		1.00	NA	NA			
	5/14/2013		0.27	NA	NA			
	10/2/2017		---	21.60	64.91			
	03439-MW09		5/8/2002	58.39	---			
7/1/2003		---	2.30		56.09			
7/30/2003		---	2.26		56.13			
9/15/2003		---	2.42		55.97			
10/2/2003		---	2.16		56.23			
10/23/2003		---	2.42		55.97			
12/18/2003		---	2.20		56.19			
3/31/2004		---	2.56		55.83			
2/14/2008		---	2.22		56.17			
4/27/2010		Not Measured						
12/13/2010		---	2.30		56.09			
5/14/2013		---	2.18		56.21			
10/2/2017		---	3.41		54.98			
03439-MW10		5/8/2002	93.78		---	20.04	73.74	28.00
	7/1/2003	---		16.20	77.58			
	7/30/2003	---		18.95	74.83			
	9/15/2003	---		16.53	77.25			
	10/2/2003	---		20.19	73.59			
	10/23/2003	---		20.51	73.27			
	12/18/2003	---		19.83	73.95			
	3/31/2004	---		18.85	74.93			
	2/14/2008	---		20.72	73.06			
	4/27/2010	---		18.91	74.87			
	12/13/2010	---		20.59	73.19			
	5/14/2013	---		18.62	75.16			
	10/2/2017	Not Located						
	03439-MW11	5/8/2002		83.20	---	16.86	66.34	
7/1/2003		---	15.93		67.27			
7/30/2003		---	15.92		67.28			
9/15/2003		---	16.21		66.99			
10/2/2003		---	17.58		65.62			
10/23/2003		---	17.83		65.37			
12/18/2003		---	16.40		66.80			
3/31/2004		---	17.35		65.85			
2/14/2008		---	16.90		66.30			
4/27/2010		---	16.04		67.16			
12/13/2010		---	15.80		67.40			
5/14/2013		---	15.02		68.18			
10/2/2017		---	17.08		66.12			
03439-MW12		5/8/2002	58.69		---	3.12	55.57	12.00
	7/1/2003	---		3.10	55.59			
	7/30/2003	---		3.02	55.67			
	9/15/2003	---		3.19	55.50			
	10/2/2003	---		2.97	55.72			
	10/23/2003	---		3.50	55.19			
	12/18/2003	---		2.60	56.09			
	3/31/2004	---		3.26	55.43			
	2/14/2008	---		3.15	55.54			
	4/27/2010	---		2.71	55.98			
	12/13/2010	---		3.33	55.36			
	5/14/2013	---		2.93	55.76			
	10/2/2017	---		3.56	55.13			
	03439-MW13	5/8/2002		77.91	---	6.52	71.39	
7/1/2003		---	6.44		71.47			
7/30/2003		---	6.28		71.63			
9/15/2003		---	6.62		71.29			
10/2/2003		---	7.51		70.40			
10/23/2003		---	6.78		71.13			
12/18/2003		---	6.24		71.67			
3/31/2004		---	6.36		71.55			
2/14/2008		Not Located						
4/27/2010		---	6.31		71.60			
12/13/2010		---	6.27		71.64			
5/14/2013		---	1.36		76.55			
10/2/2017		---	8.79		69.12			
03439-MW14		5/8/2002	59.19		---	2.14	57.05	10.00
	7/1/2003	---		1.92	57.27			
	7/30/2003	---		1.77	57.42			
	9/15/2003	---		2.03	57.16			
	10/2/2003	---		1.58	57.61			
	10/23/2003	---		2.67	56.52			
	12/18/2003	---		1.98	57.21			
	3/31/2004	---		2.42	56.77			
	2/14/2008	---		2.09	57.10			
	4/27/2010	---		2.21	56.98			
	12/13/2010	---		2.53	56.66			
	5/14/2013	---		1.53	57.66			
	10/2/2017	---		3.62	55.57			

**TABLE 1**  
**MONITORING WELL AND GROUNDWATER ELEVATION DATA**  
Former Highway 11 Grocery  
13527 North Highway 11  
Salem, Oconee County, South Carolina  
UST Permit #03439; Cost Agreement #55090  
BLE Project No. J17-10768-02

Well ID	Date	Top of Casing Elevation	Free-Product Thickness	Groundwater Depth (btoc)	Groundwater Elevation	Well Depth	Screen Depth	Screen Elevation
03439-MW15	5/8/2002	71.52	---	10.61	60.91	9.00	4.0 - 9.0	67.52 - 62.52
	7/1/2003		---	10.83	60.69			
	7/30/2003		---	10.67	60.85			
	9/15/2003		---	11.02	60.50			
	10/2/2003		---	11.88	59.64			
	10/23/2003		---	11.07	60.45			
	12/18/2003		---	10.20	61.32			
	3/31/2004		---	11.00	60.52			
	2/14/2008		---	Not Measured				
	4/27/2010		---	10.30	61.22			
	12/13/2010		---	Not Located				
	5/14/2013		---	Not Located				
	10/2/2017		---	11.27	60.25			
	03439-DMW01		5/8/2002	103.27	---			
7/1/2003		---	22.97		80.30			
7/30/2003		---	22.72		80.55			
9/15/2003		---	23.61		79.66			
10/2/2003		---	24.11		79.16			
10/23/2003		---	24.50		78.77			
12/18/2003		---	24.00		79.27			
3/31/2004		---	24.60		78.67			
2/14/2008		---	26.18		77.09			
4/27/2010		---	24.12		79.15			
12/13/2010		---	26.45		76.82			
5/14/2013		---	23.98		79.29			
10/2/2017		---	25.87		77.40			
03439-DMW02		5/8/2002	86.21		---	17.22	68.99	75.00
	7/1/2003	---		16.44	69.77			
	7/30/2003	---		16.49	69.72			
	9/15/2003	---		15.75	70.46			
	10/2/2003	---		17.11	69.10			
	10/23/2003	---		17.63	68.58			
	12/18/2003	---		16.80	69.41			
	3/31/2004	---		17.31	68.90			
	2/14/2008	---		20.86	65.35			
	4/27/2010	---		24.20	62.01			
	12/13/2010	---		17.85	68.36			
	5/14/2013	---		16.31	69.90			
	10/2/2017	---		16.81	69.40			
	03439-DMW04	5/8/2002		103.22	---	25.08	78.14	
7/1/2003		---	23.32		79.90			
7/30/2003		---	23.18		80.04			
9/15/2003		---	23.88		79.34			
10/2/2003		---	24.39		78.83			
10/23/2003		---	24.95		78.27			
12/18/2003		---	24.45		78.77			
3/31/2004		---	24.95		78.27			
2/14/2008		---	26.44		76.78			
4/27/2010		---	24.41		78.81			
12/13/2010		---	26.90		76.32			
5/14/2013		---	24.30		78.92			
10/2/2017		---	26.45		76.77			
03439-RW01		12/13/2010	103.29		---	26.65	76.64	30.00
	5/14/2013	0.04		NA	NA			
	10/2/2017	---		25.98	77.31			
03439-RW02	12/13/2010	102.85	0.02	NA	NA	30.00	9.7 - 29.7	93.15 - 73.15
	5/14/2013		0.30	NA	NA			
	10/2/2017*		0.61	25.21	77.64			
03439-RW03	12/13/2010	100.25	---	23.68	76.57	30.00	10.0 - 30.0	90.25 - 70.25
	5/14/2013		---	21.11	79.14			
	10/2/2017		---	Well Dry at Time of Sampling Event				
03439-RW04	12/13/2010	101.00	---	24.34	76.66	30.00	9.7 - 29.7	91.30 - 71.30
	5/14/2013		---	10.85	90.15			
	10/2/2017		---	23.69	77.31			
03439-RW05	5/14/2013	94.97	1.39	NA	NA	30.00	10.0 - 30.0	84.97 - 64.97
	10/2/2017*		0.38	24.43	70.54			
03439-RW06	5/14/2013	88.05	3.24	NA	NA	26.50	6.5 - 26.5	81.55 - 61.55
	10/2/2017*		3.74	19.47	68.58			
03439-RW07	5/14/2013	88.06	4.99	NA	NA	30.00	10.0 - 30.0	78.06 - 58.06
	10/2/2017*		0.83	20.67	67.39			
03439-RW08	5/14/2013	87.06	---	18.42	68.64	28.50	8.2 - 28.2	78.86 - 58.86
	10/2/2017		---	19.61	67.45			
03439-RW09	5/14/2013	86.18	0.60	NA	NA	30.00	10.0 - 30.0	76.18 - 56.18
	10/2/2017*		0.04	21.39	64.79			
03439-RW10	5/14/2013	84.49	---	19.93	64.56	30.00	10.0 - 30.0	74.49 - 54.49
	10/2/2017		---	21.03	63.46			
03439-RW11	5/14/2013	81.06	---	15.48	65.58	27.00	6.7 - 26.7	74.36 - 54.36
	10/2/2017*		0.04	17.21	63.85			
03439-RW12	5/14/2013	82.22	---	18.43	63.79	30.00	10.0 - 30.0	72.22 - 52.22
	10/2/2017		---	19.49	62.73			
03439-RW13	5/14/2013	80.72	---	17.41	63.31	29.00	9.0 - 29.0	71.72 - 51.72
	10/2/2017		---	18.28	62.44			
03439-RW14	10/2/2017*	98.66	0.42	25.13	73.53	30.00	10.0 - 30.0	88.66 - 68.66
03439-RW15	10/2/2017*	95.62	1.09	23.79	71.83	30.00	10.0 - 30.0	85.62 - 65.62
03439-RW16	10/2/2017*	92.26	1.11	22.26	70.00	30.00	10.0 - 30.0	82.26 - 62.26
03439-RW17	10/2/2017	88.47	---	Not Located		30.00	10.0 - 30.0	78.47 - 58.47

**NOTES:**  
Monitoring well construction and groundwater elevation data were obtained from historical reports obtained from an SCDHEC FOI search. BLE is not responsible for the accuracy of this data.  
Measurements are in feet; elevations are relative to an arbitrary site datum.  
btoc = below top of casing  
NA = Not Available / Unknown  
\* - Groundwater elevation corrected for the presence of free-product using the specific gravity of 0.70 g/ml



TABLE 2A

**Historical Laboratory Analytical Results**  
 Former Highway 11 Grocery  
 13527 North Highway 11  
 Salem, Oconee County, South Carolina  
 UST Permit #03439; Cost Agreement #55090  
 BLE Project No. J17-10768-02

Well	Date Sampled	Free-Product Thickness	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	Naphthalene (µg/L)	EDB (µg/L)	1,2-DCA (µg/L)	
SC DHEC RBSL			5	1,000	700	10,000	40	25	0.05	5	
03439-MW01	5/7/2002	0.04	226,000	301,000	280,000	278,000	5,110,000	2,000	NA	NA	
	7/1/2003	0.24	10,000	34,000	4,400	23,000	34,000	1,200	NA	NA	
	7/30/2003	0.08	7,600	28,000	6,300	32,000	25,000	2,500	NA	NA	
	12/18/2003	---	2,200	6,200	910	5,800	16,000	2,500	NA	NA	
	3/31/2004	---	3,400	9,300	1,100	6,200	20,000	1,200	NA	NA	
	2/14/2008	0.03	Not Sampled Due to the Presence of Free Product								
	4/27/2010	0.55	Not Sampled Due to the Presence of Free Product								
	12/13/2010	---	4,530	8,750	1,150	6,430	30,400	529	NT	<250	
	5/14/2013	0.05	Not Sampled Due to the Presence of Free Product								
10/2/2017	---	9,020	25,600	2,030	11,200	60,700	382 J	<0.020	<120		
03439-MW01 DUP	10/2/2017	---	9,300	25,400	2,030	10,900	58,500	374 J	<0.020	<120	
03439-MW02	5/7/2002	---	13.0	8.0	1.0	5.0	5.0	5.0	NA	NA	
	7/1/2003	---	4.7	5.0	1.0	3.0	1.0	5.0	NA	NA	
	7/30/2003	---	5.8	5.0	1.0	5.0	1.0	5.0	NA	NA	
	12/18/2003	---	2.2	5.0	1.0	3.0	1.0	5.0	NA	NA	
	3/31/2004	---	2.6	5.0	1.0	3.0	1.0	5.0	NA	NA	
	2/14/2008	---	4	<1	<1	1	<1	<2	NT	NT	
	4/27/2010	---	4	<5	<5	3	<5	<5	<0.02	<5	
	12/13/2010	---	<5	<5	<5	<10	<5	<5	NT	<5	
	5/14/2013	---	<5	<5	<5	<10	<5	<5	<0.02	<5	
10/2/2017	---	<0.25	<0.26	<0.30	<1.0	<0.21	<0.24	<0.019	<0.24		
03439-MW03	5/7/2002	---	1.0	1.0	1.0	1.0	5.0	5.0	NA	NA	
	7/1/2003	---	1.0	5.0	1.0	3.0	1.0	5.0	NA	NA	
	7/30/2003	---	1.0	5.0	1.0	3.0	1.0	5.0	NA	NA	
	12/18/2003	---	1.0	5.0	1.0	3.0	1.0	5.0	NA	NA	
	3/31/2004	---	1.0	5.0	1.0	3.0	1.0	5.0	NA	NA	
	2/14/2008	---	<1	<1	<1	1	<1	<2	NT	NT	
	4/27/2010	---	<5	<5	<5	<10	<5	<5	<0.02	<5	
	12/13/2010	---	<5	<5	<5	<10	<5	<5	NT	<5	
	5/14/2013	NA	Not Located								
10/2/2017	---	<0.25	<0.26	<0.30	<1.0	<0.21	<0.24	<0.019	<0.24		
03439-MW04	5/7/2002	---	1,500	5,320	620	3,360	810	500	NA	NA	
	7/1/2003	---	4,800	14,000	2,300	12,000	2,600	500	NA	NA	
	7/30/2003	---	4,000	14,000	2,700	13,000	2,100	500	NA	NA	
	12/18/2003	---	1,100	2,400	230	1,900	1,200	250	NA	NA	
	3/31/2004	---	1	5	1	3	1.0	5	NA	NA	
	2/14/2008	---	<1	<1	<1	<3	1	<2	NA	NA	
	4/27/2010	---	532	906	179	895	381	31	<0.02	<5	
	12/13/2010	---	520	224	55	482	763	18	NA	<25	
	5/14/2013	---	140	480	250	1,000	31	39	<0.02	NA	
10/3/2017	---	63.5	177	260	1,420	6.2	73.0	<0.019	<0.96		
03439-MW05	5/7/2002	---	1.0	1.0	1.0	1.0	5.0	5.0	NA	NA	
	7/1/2003	---	1.0	5.0	1.0	3.0	1.0	5.0	NA	NA	
	7/30/2003	---	4.2	17.0	3.6	18	2.2	5.0	NA	NA	
	12/18/2003	---	2.3	5.0	1.0	3.2	1.3	5.0	NA	NA	
	3/31/2004	---	1.0	5.0	1.0	3.0	1.0	5.0	NA	NA	
	2/14/2008	---	<1	<1	<1	<3	<1	<2	NA	NA	
	4/27/2010	NA	Not Located								
	12/13/2010	NA	Not Located								
	5/14/2013	NA	Not Located								
10/2/2017	NA	Not Located									
03439-MW06	5/7/2002	---	1,780	4,950	490	2,880	6,350	500	NA	NA	
	7/1/2003	---	2,200	6,600	820	4,400	12,000	2,500	NA	NA	
	7/30/2003	---	4,200	13,000	1,600	8,900	21,000	400	NA	NA	
	12/18/2003	---	5,100	14,000	1,700	11,000	19,000	2,500	NA	NA	
	3/31/2004	---	280	840	100	2,200	900	250	NA	NA	
	2/14/2008	---	162	750	26	575	11	12	NA	NA	
	4/27/2010	---	5,570	19,900	2,260	12,300	35,300	463	<0.02	<5	
	12/13/2010	---	1,300	6,340	360	7,910	2,500	<250	NT	<250	
	5/14/2013	---	7,500	27,000	1,900	13,000	22,000	380	<0.02	210	
10/2/2017	NA	Not Located									

TABLE 2A

Historical Laboratory Analytical Results  
 Former Highway 11 Grocery  
 13527 North Highway 11  
 Salem, Oconee County, South Carolina  
 UST Permit #03439; Cost Agreement #55090  
 BLE Project No. J17-10768-02

Well	Date Sampled	Free-Product Thickness	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	Naphthalene (µg/L)	EDB (µg/L)	1,2-DCA (µg/L)
SC DHEC RBSL			5	1,000	700	10,000	40	25	0.05	5
03439-MW07	5/7/2002	---	34	20	1.0	8.0	7	5.0	NA	NA
	7/1/2003	---	37	36	1.7	20	9	5.0	NA	NA
	7/30/2003	---	18	18	1.0	9.7	1	5.0	NA	NA
	12/18/2003	---	41	20	1.0	3.0	1	5.0	NA	NA
	3/31/2004	---	30	34	1.0	16	1	5.0	NA	NA
	2/14/2008	---	59	60	3	41	2	<2	NA	NA
	4/27/2010	NA	Not Accessible							
	12/13/2010	NA	Not Located							
	5/14/2013	NA	Not Located							
10/2/2017	NA	Not Located								
03439-MW08	5/7/2002	0.06	226,000	301,000	280,000	278,000	5,100,000	2,000	NA	NA
	7/1/2003	0.60	12,000	51,000	7,800	40,000	11,000	2,500	NA	NA
	7/30/2003	0.20	12,000	40,000	3,600	18,000	15,000	660	NA	NA
	12/18/2003	---	10,000	27,000	3,300	18,000	14,000	2,500	NA	NA
	3/31/2004	0.10	Not Sampled Due to the Presence of Free Product							
	2/14/2008	1.93	Not Sampled Due to the Presence of Free Product							
	4/27/2010	0.45	Not Sampled Due to the Presence of Free Product							
	12/13/2010	1.00	Not Sampled Due to the Presence of Free Product							
	5/14/2013	0.27	Not Sampled Due to the Presence of Free Product							
10/2/2017	---	2,370	14,600	2,090	11,200	386	386	<0.019	<24.0	
03439-MW09	5/7/2002	---	NA	NA	NA	NA	86.0	9	NA	NA
	7/1/2003	---	1.0	5.0	1.0	3.0	1.0	5	NA	NA
	7/30/2003	---	NA	NA	NA	NA	540.0	6.5	NA	NA
	12/18/2003	---	1.0	5.0	1.0	3.0	91.0	ND	NA	NA
	3/31/2004	---	1.0	5.0	2.0	8.8	1.0	ND	NA	NA
	2/14/2008	---	<1	<1	<1	<3	<1	<2	NA	NA
	4/27/2010	---	<5	<5	<5	<10	<5	<5	<0.02	<5
	12/13/2010	---	<5	<5	<5	<10	<5	<5	NT	<5
	5/14/2013	---	<5	<5	<5	<10	<5	<5	<0.02	<5
10/3/2017	---	<0.25	<0.26	<0.30	<1.0	<0.21	<0.24	<0.019	<0.24	
03439-MW10	5/7/2002	---	115	185	68.0	328	86	9.0	NA	NA
	7/1/2003	---	1.0	5.0	1.0	3.0	1.0	5.0	NA	NA
	7/30/2003	---	170	420	43.0	240	540	6.5	NA	NA
	12/18/2003	---	89	280	74.0	480	91	25	NA	NA
	3/31/2004	---	1.0	5.0	1.0	3.0	1.0	5.0	NA	NA
	2/14/2008	---	401	129	167	721	296	46	NA	NA
	4/27/2010	---	<5	<5	<5	<10	4	<5	<0.02	<5
	12/13/2010	---	50	8	5	52	23	<5	NA	<5
	5/14/2013	---	6	<5	<5	<10	<5	<5	<0.02	<5
10/2/2017	NA	Not Located								
03439-MW11	5/7/2002	---	1.0	1.0	1.0	1.0	5.0	5.0	NA	NA
	7/1/2003	---	1.0	5.0	1.0	3.0	1.0	5.0	NA	NA
	7/30/2003	---	1.0	5.0	1.0	3.0	1.0	5.0	NA	NA
	12/18/2003	---	1.0	5.0	1.0	3.0	1.0	5.0	NA	NA
	3/31/2004	---	1.0	5.0	1.0	3.0	1.0	5.0	NA	NA
	2/14/2008	---	<1	2	1	7	2	1	NA	NA
	4/27/2010	---	<5	3	<5	4	<5	<5	<0.02	<5
	12/13/2010	---	<5	<5	<5	<10	<5	<5	NA	<5
	5/14/2013	---	<5	<5	<5	<10	<5	<5	<0.02	<5
10/3/2017	---	<0.25	0.73 J	1.1	7.0	<0.21	1.3	<0.019	<0.24	
03439-MW12	5/7/2002	---	NA	NA	NA	NA	NA	NA	NA	NA
	7/1/2003	---	1.0	5.0	1.0	3.0	1.0	5.0	NA	NA
	7/30/2003	---	NA	NA	NA	NA	NA	NA	NA	NA
	12/18/2003	---	1.0	5.0	1.0	3.0	1.0	5.0	NA	NA
	3/31/2004	---	5,500	17,000	2,600	13,000	7,100	570	NA	NA
	2/14/2008	---	<1	<1	<1	<3	<1	<2	NA	NA
	4/27/2010	---	<5	<5	<5	<10	<5	<5	<0.02	<5
	12/13/2010	---	<5	<5	<5	<10	<5	<5	NA	<5
	5/14/2013	---	<5	<5	<5	<10	<5	<5	<0.02	<5
10/3/2017	---	<0.25	<0.26	<0.30	<1.0	<0.21	<0.24	<0.019	<0.24	

TABLE 2A

Historical Laboratory Analytical Results  
 Former Highway 11 Grocery  
 13527 North Highway 11  
 Salem, Oconee County, South Carolina  
 UST Permit #03439; Cost Agreement #55090  
 BLE Project No. J17-10768-02

Well	Date Sampled	Free-Product Thickness	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	Naphthalene (µg/L)	EDB (µg/L)	1,2-DCA (µg/L)
SC DHEC RBSL			5	1,000	700	10,000	40	25	0.05	5
03439-MW13	5/7/2002	---	NA	NA	NA	NA	NA	NA	NA	NA
	7/1/2003	---	1	5	1	3	1	5	NA	NA
	7/30/2003	---	NA	NA	NA	NA	NA	NA	NA	NA
	12/18/2003	---	1	5	1	3	1	5	NA	NA
	3/31/2004	---	1	5	1	3	1	5	NA	NA
	2/14/2008	NA	Not Located							
	4/27/2010	---	<5	<5	<5	<10	<5	<5	0.05	<5
	12/13/2010	---	<5	<5	<5	<10	<5	<5	NA	<5
5/14/2013	---	<5	<5	<5	<10	<5	<5	<0.02	<5	
10/2/2017	---	<0.25	<0.26	<0.30	<1.0	<0.21	<0.24	<0.020	<0.24	
03439-MW14	5/7/2002	---	3,780	13,800	27,000	14,700	7,010	500	NA	NA
	7/1/2003	---	3,500	10,000	1,900	10,000	5,300	500	NA	NA
	7/30/2003	---	3,100	9,700	1,800	9,300	4,300	500	NA	NA
	12/18/2003	---	3,300	11,000	2,000	11,000	4,100	500	NA	NA
	3/31/2004	---	1	5	1	3	2.0	5	NA	NA
	2/14/2008	---	3,640	14,500	2,700	14,300	5,500	439	NA	NA
	4/27/2010	---	1,770	6,420	1,560	8,850	2,020	432	<0.02	<5
	12/13/2010	---	1,410	4,840	1,490	8,450	1,500	359	NA	<250
	5/14/2013	---	1,100	4,700	1,200	7,100	830	350	<0.02	<250
	10/3/2017	---	371	706	551	3,220	88.1	179	<0.020	<2.4
03439-MW15	5/7/2002	---	NA	NA	NA	NA	NA	NA	NA	NA
	7/1/2003	---	1	5	1	3	1	5	NA	NA
	7/30/2003	---	NA	NA	NA	NA	NA	NA	NA	NA
	12/18/2003	---	1	5	1	3	1	5	NA	NA
	3/31/2004	---	1	5	1	3	1	5	NA	NA
	2/14/2008	NA	Not Sampled							
	4/27/2010	---	<5	<5	<5	<10	<5	<5	<0.02	<5
	12/13/2010	NA	Not Located							
5/14/2013	NA	Not Located								
10/2/2017	---	<0.25	<0.26	<0.30	<1.0	<0.21	<0.24	<0.020	<0.24	
03439-DMW01	5/7/2002	---	215	430	50	50	1,780	250	NA	NA
	7/1/2003	---	1.0	5.0	1.0	3.0	1.0	5.0	NA	NA
	7/30/2003	---	1.0	5.0	1.0	3.0	4.2	5.0	NA	NA
	12/18/2003	---	1.0	5.0	1.0	3.0	1.0	5.0	NA	NA
	3/31/2004	---	1.0	5.0	1.0	3.0	3.9	5.0	NA	NA
	2/14/2008	---	<1	<1	<1	<3	12	<2	NA	NA
	4/27/2010	---	<5	3	<5	5	<5	4	<0.02	<5
	12/13/2010	---	3	4	<5	3	104	<5	NA	<5
	5/14/2013	---	<5	<5	<5	<10	<1	<5	<0.02	<5
	10/3/2017	---	<0.25	<0.26	<0.30	<1.0	0.29 J	<0.24	<0.019	<0.24
03439-DMW02	5/7/2002	---	1.0	1.0	1.0	1.0	5.0	5.0	NA	NA
	7/1/2003	---	1.0	5.0	1.0	3.0	6.4	5.0	NA	NA
	7/30/2003	---	1.0	8.4	6.8	30	1.0	6.7	NA	NA
	12/18/2003	---	1.0	5.0	1.0	3.0	1.0	5.0	NA	NA
	3/31/2004	---	1.0	5.0	1.0	3.0	1.0	5.0	NA	NA
	2/14/2008	---	<1	<1	<1	<3	<1	<2	NA	NA
	4/27/2010	---	<5	<5	<5	3	<5	<5	<0.02	<5
	12/13/2010	---	<5	<5	<5	<10	<5	<5	NA	<5
	5/14/2013	---	<5	<5	<5	<10	<5	<5	<0.02	<5
10/3/2017	---	<0.25	6.9	7.6	53.4	<0.21	3.0	<0.020	<0.24	
03439-DMW04	5/7/2002	---	1.0	1.0	1.0	1.0	5.0	5.0	NA	NA
	7/1/2003	---	1.0	5.0	1.0	3.0	1.0	5.0	NA	NA
	7/30/2003	---	1.0	5.0	1.0	3.0	1.0	5.0	NA	NA
	12/18/2003	---	1.0	5.0	1.0	3.0	1.0	5.0	NA	NA
	3/31/2004	---	1.0	5.0	1.0	3.0	1.0	5.0	NA	NA
	2/14/2008	---	<1	<1	<1	<3	<1	<2	NA	NA
	4/27/2010	---	<5	<5	<5	<10	<5	<5	<0.02	<5
	12/13/2010	---	<5	<5	<5	<10	<5	<5	NA	<5
	5/14/2013	---	<5	<5	<5	<10	<5	<5	<0.02	<5
10/3/2017	---	<0.25	0.90 J	<0.30	<1.0	0.28 J	0.85 J	<0.011	<0.24	
03439-RW01	12/13/2010	---	3,550	13,500	1,190	6,220	24,500	874	NA	<125
	5/14/2013	0.04	Not Sampled Due to the Presence of Free Product							
	10/3/2017	---	5,340	31,400	3,430	21,700	7,920	700	<0.019	<60.0
03439-RW01 DUP	10/3/2017	---	2,440	9,230	1,060	6,200	10,200	274	<0.019	<24.0

TABLE 2A

Historical Laboratory Analytical Results  
 Former Highway 11 Grocery  
 13527 North Highway 11  
 Salem, Oconee County, South Carolina  
 UST Permit #03439; Cost Agreement #55090  
 BLE Project No. J17-10768-02

Well	Date Sampled	Free-Product Thickness	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	Naphthalene (µg/L)	EDB (µg/L)	1,2-DCA (µg/L)
SC DHEC RBSL			5	1,000	700	10,000	40	25	0.05	5
03439-RW02	12/13/2010	0.02	Not Sampled Due to the Presence of Free Product							
	5/14/2013	0.30	Not Sampled Due to the Presence of Free Product							
	10/2/2017	0.61	Not Sampled Due to the Presence of Free Product							
03439-RW03	12/13/2010	---	4,860	20,800	3,240	17,500	10,200	1,290	NA	<250
	5/14/2013	---	4,900	17,000	1,400	8,200	7,400	280	<0.02	<500
	10/2/2017	NA	Well Dry at Time of Sampling Event							
03439-RW04	12/13/2010	---	2,390	6,720	467	4,020	7,780	169	NA	<5
	5/14/2013	---	4,000	13,000	990	5,900	22,000	<1,000	<0.02	97
	10/3/2017	---	391	1,370	273	2,060	20.6	261	<0.020	<2.4
03439-RW05	5/14/2013	1.39	Not Sampled Due to the Presence of Free Product							
	10/2/2017	0.38	Not Sampled Due to the Presence of Free Product							
03439-RW06	5/14/2013	3.24	Not Sampled Due to the Presence of Free Product							
	10/2/2017	3.74	Not Sampled Due to the Presence of Free Product							
03439-RW07	5/14/2013	4.99	Not Sampled Due to the Presence of Free Product							
	10/2/2017	0.83	Not Sampled Due to the Presence of Free Product							
03439-RW08	5/14/2013	---	8,400	33,000	3,000	16,000	6,100	<2,500	0.06	<2,500
	10/3/2017	---	2,900	14,100	2,030	10,300	472	467	<0.019	<24.0
03439-RW09	5/14/2013	0.60	Not Sampled Due to the Presence of Free Product							
	10/2/2017	0.04	Not Sampled Due to the Presence of Free Product							
03439-RW10	5/14/2013	---	6,300	31,000	3,500	19,000	4,300	<2,500	<0.02	<2,500
	10/3/2017	---	2,650	10,900	2,150	11,200	480	401	<0.020	<24.0
03439-RW11	5/14/2013	---	6,400	29,000	3,000	17,000	3,700	<2,500	<0.02	<2,500
	10/2/2017	0.04	Not Sampled Due to the Presence of Free Product							
03439-RW12	5/14/2013	---	6,800	26,000	3,200	17,000	6,100	570	<0.02	<1,000
	10/3/2017	---	818	5,810	1,960	10,800	118	447	<0.020	<12.0
03439-RW13	5/14/2013	---	2,800	5,100	990	5,300	4,100	230	<0.02	<250
	10/3/2017	---	52.6	355	230	1,480	5.1 J	128	<0.020	<2.4
03439-RW14	10/2/2017	0.42	Not Sampled Due to the Presence of Free Product							
03439-RW15	10/2/2017	1.09	Not Sampled Due to the Presence of Free Product							
03439-RW16	10/2/2017	1.11	Not Sampled Due to the Presence of Free Product							
03439-RW17	10/2/2017	NA	Not Located / Not Accessible / Under Fallen Tree							
03439-CK01	5/7/2002	---	NA	NA	NA	NA	NA	NA	NA	NA
	7/1/2003	---	2.6	5	1.0	4.8	4.5	5.0	NA	NA
	7/30/2003	---	NA	NA	NA	NA	NA	NA	NA	NA
	12/18/2003	---	11	18	4.1	20	9.0	5.0	NA	NA
	3/31/2004	---	16	30	6.1	32	22	5.0	NA	NA
	2/14/2008	---	9	17	5	24	12	1	NA	NA
	4/27/2010	---	3	6	2	8	5	<5	<0.02	<5
	12/13/2010	---	4	6	2	9	5	<5	NA	<5
	5/14/2013	---	<5	9	2	13	5	<5	<0.02	<5
	10/2/2017	---	4.7	6.8	3.7	18.8	5.8	0.83 J	<0.019	<0.24
03439-CK02	5/7/2002	---	NA	NA	NA	NA	NA	NA	NA	NA
	7/1/2003	---	1.0	5.0	1.0	3.0	1.0	5.0	NA	NA
	7/30/2003	---	NA	NA	NA	NA	NA	NA	NA	NA
	12/18/2003	---	1.0	5.0	1.0	3.0	1.0	5.0	NA	NA
	3/31/2004	---	1.0	5.0	1.0	3.0	1.0	5.0	NA	NA
	2/14/2008	NA	Not Sampled							
	4/27/2010	---	13	36	6	32	17	<5	<0.02	<5
	12/13/2010	---	16	36	7	34	23	7	NA	<5
	5/14/2013	---	24	75	15	89	21	3	<0.02	<5
10/2/2017	---	17.1	39.6	14.4	75.8	14.4	3.4	<0.019	<0.24	
03439-CK03	2/14/2008	---	21	54	10	62	<40	4	NA	NA
	4/27/2010	---	13	38	7	37	19	<5	<0.02	<5
	12/13/2010	---	18	39	8	42	28	4	NA	<5
	5/14/2013	---	12	36	7	40	12	<5	<0.02	<5
	10/2/2017	---	13.0	27.5	10.4	58.2	13.0	2.9	<0.019	<0.24

TABLE 2A

**Historical Laboratory Analytical Results**  
 Former Highway 11 Grocery  
 13527 North Highway 11  
 Salem, Oconee County, South Carolina  
 UST Permit #03439; Cost Agreement #55090  
 BLE Project No. J17-10768-02

Well	Date Sampled	Free-Product Thickness	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	Naphthalene (µg/L)	EDB (µg/L)	1,2-DCA (µg/L)
SC DHEC RBSL			5	1,000	700	10,000	40	25	0.05	5
03439WW01	5/7/2002	---	NA	NA	NA	NA	NA	NA	NA	NA
	7/1/2003	---	1.0	5.0	1.0	3.0	1.0	5.0	NA	NA
	7/30/2003	---	NA	NA	NA	NA	NA	NA	NA	NA
	12/18/2003	---	NA	NA	NA	NA	NA	NA	NA	NA
	3/31/2004	---	1.0	5.0	1.0	3.0	5.0	5.0	NA	NA
	2/14/2008	---	<1	<1	<1	<3	<1	<2	NA	NA
	4/27/2010	NA	Not Sampled							
	12/13/2010	---	<5	<5	<5	<10	<5	<5	NA	<5
	5/14/2013	---	<1	<1	<1	<1	<1	<1	<0.02	<1
	10/2/2017	---	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.019	<0.25
03439WW01 Dup	10/2/2017	---	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.020	<0.25
Field Blank 01	10/2/2017	NA	<0.25	<0.26	<0.30	<1.0	<0.21	<0.24	<0.019	<0.24
Field Blank 02	10/3/2007	NA	<0.25	<0.26	<0.30	<1.0	<0.21	<0.24	<0.019	<0.24
Field Blank 03	10/2/2017	NA	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.019	<0.25
Trip Blank	10/2/2017	NA	<0.21	<0.24	<0.21	<0.32	<0.23	<0.14	NA	NA

**Notes:**

µg/L = micrograms/liter = approximate Parts Per Billion (ppb)

Historical analytical results obtained from historical reports obtained from SCDHEC FOI search. BLE is not responsible for the accuracy of this data.

**Bold** values indicate detections

Shaded cells indicate concentrations above RBSLs

RBSL = Risk Based Screening Level

NA = Not Available / Unknown

ND = Not Detected at the Method Detection Limit

NS = Not Sampled

NT = Not Tested

MTBE = Methyl tertiary butyl ether

EDB = 1,2-Dibromoethane

1,2-DCA = 1,2-Dichloroethane

TABLE 2B

Historical Laboratory Analytical Results - 8-Oxygenates  
 Former Highway 11 Grocery  
 13527 North Highway 11  
 Salem, Oconee County, South Carolina  
 UST Permit #03439; Cost Agreement #55090  
 BLE Project No. J17-10768-02

Well	Date Sampled	Free Product Thickness	Tert-Amyl Methyl Ether (TAME) (µg/L)	Tert-Amyl Alcohol (TAA) (µg/L)	Tert-Butyl Formate (TBF) (µg/L)	Tert-Butyl Alcohol (TBA) (µg/L)	Diisopropyl Ether (IPE) (µg/L)	Ethanol (µg/L)	Ethyl-Tert-Butyl Ether (ETBE) (µg/L)	Ethyl-Tert-Butyl Alcohol (ETBA) (µg/L)
SC DHEC RBSL			128	240	NE	1,400	150	10,000	47	NE
03439-MW01	5/7/2002	0.04	Not Sampled Due to the Presence of Free Product							
	7/1/2003	0.24	Not Sampled Due to the Presence of Free Product							
	7/30/2003	0.08	Not Sampled Due to the Presence of Free Product							
	12/18/2003	---	NA	NA	NA	NA	NA	NA	NA	NA
	3/31/2004	---	NA	NA	NA	NA	NA	NA	NA	NT
	2/14/2008	0.03	Not Sampled Due to the Presence of Free Product							
	4/27/2010	0.55	Not Sampled Due to the Presence of Free Product							
	12/13/2010	---	735	3,430	NA	1,600	449	NA	NA	NA
	5/14/2013	0.05	Not Sampled Due to the Presence of Free Product							
03439-MW01 DUP	10/2/2017	---	1,760 J	<25,000	<945	20,000 J	1,130	<65,500	<35.0	<25,000
03439-MW02	12/2/2017	---	1,880 J	<25,000	<945	16,900 J	1,100	<65,500	<35.0	<25,000
03439-MW02	5/7/2002	---	NA	NA	NA	NA	NA	NA	NA	NA
	7/1/2003	---	NA	NA	NA	NA	NA	NA	NA	NA
	7/30/2003	---	NA	NA	NA	NA	NA	NA	NA	NA
	12/18/2003	---	NA	NA	NA	NA	NA	NA	NA	NA
	3/31/2004	---	NA	NA	NA	NA	NA	NA	NA	NA
	2/14/2008	---	NA	NA	NA	NA	NA	NA	NA	NA
	4/27/2010	---	<10	<100	NA	<100	<5	NA	NA	NA
	12/13/2010	---	<10	<100	NA	<100	<5	NA	NA	NA
	5/14/2013	---	<10	<100	NA	<100	<5	NA	NA	NA
03439-MW03	10/2/2017	---	<0.10	<50.0	<1.9	<3.6	0.13 J	<131	<0.070	<50.0
03439-MW03	5/7/2002	---	NA	NA	NA	NA	NA	NA	NA	NA
	7/1/2003	---	NA	NA	NA	NA	NA	NA	NA	NA
	7/30/2003	---	NA	NA	NA	NA	NA	NA	NA	NA
	12/18/2003	---	NA	NA	NA	NA	NA	NA	NA	NA
	3/31/2004	---	NA	NA	NA	NA	NA	NA	NA	NA
	2/14/2008	---	NA	NA	NA	NA	NA	NA	NA	NA
	4/27/2010	---	<10	<100	NA	<100	<5	NA	NA	NA
	12/13/2010	---	<10	<100	NA	<100	<5	NA	NA	NA
	5/14/2013	---	<10	<100	NA	<100	<5	NA	NA	NA
03439-MW04	10/2/2017	---	<0.10	<50.0	<1.9	<3.6	<0.12	<131	<0.070	<50.0
03439-MW04	5/7/2002	---	NA	NA	NA	NA	NA	NA	NA	NA
	7/1/2003	---	NA	NA	NA	NA	NA	NA	NA	NA
	7/30/2003	---	NA	NA	NA	NA	NA	NA	NA	NA
	12/18/2003	---	NA	NA	NA	NA	NA	NA	NA	NA
	3/31/2004	---	NA	NA	NA	NA	NA	NA	NA	NA
	2/14/2008	---	NA	NA	NA	NA	NA	NA	NA	NA
	4/27/2010	---	14	355	NA	<100	22	NA	NA	NA
	12/13/2010	---	<50	342	NA	<500	25	NA	NA	NA
	5/14/2013	---	<50	<500	NA	<500	<50	NA	NA	NA
03439-MW05	10/3/2017	---	<0.40	<200	<7.6	<14.5	0.74 J	<524	<0.28	<200
03439-MW05	5/7/2002	---	NA	NA	NA	NA	NA	NA	NA	NA
	7/1/2003	---	NA	NA	NA	NA	NA	NA	NA	NA
	7/30/2003	---	NA	NA	NA	NA	NA	NA	NA	NA
	12/18/2003	---	NA	NA	NA	NA	NA	NA	NA	NA
	3/31/2004	---	NA	NA	NA	NA	NA	NA	NA	NA
	2/14/2008	---	NA	NA	NA	NA	NA	NA	NA	NA
	4/27/2010	NA	Not Located							
	12/13/2010	NA	Not Located							
	5/14/2013	NA	Not Located							
03439-MW06	10/2/2017	NA	Not Located							
03439-MW06	5/7/2002	---	NA	NA	NA	NA	NA	NA	NA	NA
	7/1/2003	---	NA	NA	NA	NA	NA	NA	NA	NA
	7/30/2003	---	NA	NA	NA	NA	NA	NA	NA	NA
	12/18/2003	---	NA	NA	NA	NA	NA	NA	NA	NA
	3/31/2004	---	NA	NA	NA	NA	NA	NA	NA	NA
	2/14/2008	---	NA	NA	NA	NA	NA	NA	NA	NA
	4/27/2010	---	914	3,110	NA	<100	536	NA	NA	NA
	12/13/2010	---	<500	<5,000	NA	<5,000	<250	NA	NA	NA
	5/14/2013	---	910	2,300	NA	<20,000	470	NA	NA	NA

TABLE 2B

Historical Laboratory Analytical Results - 8-Oxygenates  
 Former Highway 11 Grocery  
 13527 North Highway 11  
 Salem, Oconee County, South Carolina  
 UST Permit #03439; Cost Agreement #55090  
 BLE Project No. J17-10768-02

Well	Date Sampled	Free Product Thickness	Tert-Amyl Methyl Ether (TAME) (µg/L)	Tert-Amyl Alcohol (TAA) (µg/L)	Tert-Butyl Formate (TBF) (µg/L)	Tert-Butyl Alcohol (TBA) (µg/L)	Diisopropyl Ether (IPE) (µg/L)	Ethanol (µg/L)	Ethyl-Tert-Butyl Ether (ETBE) (µg/L)	Ethyl-Tert-Butyl Alcohol (ETBA) (µg/L)	
SC DHEC RBSL			128	240	NE	1,400	150	10,000	47	NE	
03439-MW07	5/7/2002	---	NA	NA	NA	NA	NA	NA	NA	NA	
	7/1/2003	---	NA	NA	NA	NA	NA	NA	NA	NA	
	7/30/2003	---	NA	NA	NA	NA	NA	NA	NA	NA	
	12/18/2003	---	NA	NA	NA	NA	NA	NA	NA	NA	
	3/31/2004	---	NA	NA	NA	NA	NA	NA	NA	NA	
	2/14/2008	---	NA	NA	NA	NA	NA	NA	NA	NA	
	4/27/2010	NA	Not Accessible								
	12/13/2010	NA	Not Located								
	5/14/2013	NA	Not Located								
	10/2/2017	NA	Not Located								
03439-MW08	5/7/2002	0.06	Not Sampled Due to the Presence of Free Product								
	7/1/2003	0.60	Not Sampled Due to the Presence of Free Product								
	7/30/2003	0.20	Not Sampled Due to the Presence of Free Product								
	12/18/2003	---	NA	NA	NA	NA	NA	NA	NA	NA	
	3/31/2004	0.1	Not Sampled Due to the Presence of Free Product								
	2/14/2008	1.93	Not Sampled Due to the Presence of Free Product								
	4/27/2010	0.45	Not Sampled Due to the Presence of Free Product								
	12/13/2010	1.00	Not Sampled Due to the Presence of Free Product								
	5/14/2013	0.27	Not Sampled Due to the Presence of Free Product								
	10/3/2017	---	<10.0	<5,000	<189	<362	60.4 J	<13,100	<7.0	<5,000	
03439-MW09	5/7/2002	---	NA	NA	NA	NA	NA	NA	NA	NA	
	7/1/2003	---	NA	NA	NA	NA	NA	NA	NA	NA	
	7/30/2003	---	NA	NA	NA	NA	NA	NA	NA	NA	
	12/18/2003	---	NA	NA	NA	NA	NA	NA	NA	NA	
	3/31/2004	---	NA	NA	NA	NA	NA	NA	NA	NA	
	2/14/2008	---	NA	NA	NA	NA	NA	NA	NA	NA	
	4/27/2010	---	<10	<100	NA	<100	<5	NA	NA	NA	
	12/13/2010	---	<10	<100	NA	<100	<5	NA	NA	NA	
	5/14/2013	---	<10	<100	NA	<100	<5	NA	NA	NA	
	10/3/2017	---	<0.10	<50.0	<1.9	<3.6	<0.12	<131	<0.070	<50.0	
03439-MW10	5/7/2002	---	NA	NA	NA	NA	NA	NA	NA	NA	
	7/1/2003	---	NA	NA	NA	NA	NA	NA	NA	NA	
	7/30/2003	---	NA	NA	NA	NA	NA	NA	NA	NA	
	12/18/2003	---	NA	NA	NA	NA	NA	NA	NA	NA	
	3/31/2004	---	NA	NA	NA	NA	NA	NA	NA	NA	
	2/14/2008	---	NA	NA	NA	NA	NA	NA	NA	NA	
	4/27/2010	---	<10	<100	NA	<100	<5	NA	NA	NA	
	12/13/2010	---	<10	<100	NA	<100	<5	NA	NA	NA	
	5/14/2013	---	<10	<100	NA	<100	<5	NA	NA	NA	
	10/2/2017	NA	Not Located								
03439-MW11	5/7/2002	---	NA	NA	NA	NA	NA	NA	NA	NA	
	7/1/2003	---	NA	NA	NA	NA	NA	NA	NA	NA	
	7/30/2003	---	NA	NA	NA	NA	NA	NA	NA	NA	
	12/18/2003	---	NA	NA	NA	NA	NA	NA	NA	NA	
	3/31/2004	---	NA	NA	NA	NA	NA	NA	NA	NA	
	2/14/2008	---	NA	NA	NA	NA	NA	NA	NA	NA	
	4/27/2010	---	<10	<100	NA	<100	<5	NA	NA	NA	
	12/13/2010	---	<10	<100	NA	<100	<5	NA	NA	NA	
	5/14/2013	---	<10	<100	NA	<100	<5	NA	NA	NA	
	10/3/2017	---	<0.10	<50.0	<1.9	<3.6	<0.12	<131	<0.070	<50.0	
03439-MW12	5/7/2002	---	NA	NA	NA	NA	NA	NA	NA	NA	
	7/1/2003	---	NA	NA	NA	NA	NA	NA	NA	NA	
	7/30/2003	---	NA	NA	NA	NA	NA	NA	NA	NA	
	12/18/2003	---	NA	NA	NA	NA	NA	NA	NA	NA	
	3/31/2004	---	NA	NA	NA	NA	NA	NA	NA	NA	
	2/14/2008	---	NA	NA	NA	NA	NA	NA	NA	NA	
	4/27/2010	---	<10	<100	NA	<100	<5	NA	NA	NA	
	12/13/2010	---	<10	<100	NA	<100	<5	NA	NA	NA	
	5/14/2013	---	<10	<100	NA	<100	<5	NA	NA	NA	
	10/3/2017	---	<0.10	<50.0	<1.9	<3.6	<0.12	<131	<0.070	NT	

TABLE 2B

Historical Laboratory Analytical Results - 8-Oxygenates  
 Former Highway 11 Grocery  
 13527 North Highway 11  
 Salem, Oconee County, South Carolina  
 UST Permit #03439; Cost Agreement #55090  
 BLE Project No. J17-10768-02

Well	Date Sampled	Free Product Thickness	Tert-Amyl Methyl Ether (TAME) (µg/L)	Tert-Amyl Alcohol (TAA) (µg/L)	Tert-Butyl Formate (TBF) (µg/L)	Tert-Butyl Alcohol (TBA) (µg/L)	Diisopropyl Ether (IPE) (µg/L)	Ethanol (µg/L)	Ethyl-Tert-Butyl Ether (ETBE) (µg/L)	Ethyl-Tert-Butyl Alcohol (ETBA) (µg/L)	
SC DHEC RBSL			128	240	NE	1,400	150	10,000	47	NE	
03439-MW13	5/7/2002	---	NA	NA	NA	NA	NA	NA	NA	NA	
	7/1/2003	---	NA	NA	NA	NA	NA	NA	NA	NA	
	7/30/2003	---	NA	NA	NA	NA	NA	NA	NA	NA	
	12/18/2003	---	NA	NA	NA	NA	NA	NA	NA	NA	
	3/31/2004	---	NA	NA	NA	NA	NA	NA	NA	NA	
	2/14/2008	---	NA	NA	NA	NA	NA	NA	NA	NA	
	4/27/2010	---	<10	<100	NA	<100	<5	NA	NA	NA	
	12/13/2010	---	<10	<100	NA	<100	<5	NA	NA	NA	
	5/14/2013	---	<10	<100	NA	<100	<5	NA	NA	NA	
10/2/2017	---	<0.10	<50.0	<1.9	<3.6	<0.12	<131	<0.070	NT		
03439-MW14	5/7/2002	---	NA	NA	NA	NA	NA	NA	NA	NA	
	7/1/2003	---	NA	NA	NA	NA	NA	NA	NA	NA	
	7/30/2003	---	NA	NA	NA	NA	NA	NA	NA	NA	
	12/18/2003	---	NA	NA	NA	NA	NA	NA	NA	NA	
	3/31/2004	---	NA	NA	NA	NA	NA	NA	NA	NA	
	2/14/2008	---	NA	NA	NA	NA	NA	NA	NA	NA	
	4/27/2010	---	134	717	NA	<100	96	NA	NA	NA	
	12/13/2010	---	<500	<5,000	NA	<5,000	<250	NA	NA	NA	
	5/14/2013	---	55	420	NA	<5,000	35	NA	NA	NA	
10/3/2017	---	<1.0	<500	<18.9	<36.2	9.8 J	<1,310	<0.70	<500		
03439-MW15	5/7/2002	---	NA	NA	NA	NA	NA	NA	NA	NA	
	7/1/2003	---	NA	NA	NA	NA	NA	NA	NA	NA	
	7/30/2003	---	NA	NA	NA	NA	NA	NA	NA	NA	
	12/18/2003	---	NA	NA	NA	NA	NA	NA	NA	NA	
	3/31/2004	---	NA	NA	NA	NA	NA	NA	NA	NA	
	2/14/2008	NA	Not Sampled								
	4/27/2010	---	<10	<100	NA	<100	<5	NA	NA	NA	
	12/13/2010	NA	Not Located								
	5/14/2013	NA	Not Located								
10/2/2017	---	<0.10	<50.0	<1.9	<3.6	<0.12	<131	<0.070	<50.0		
03439-DMW01	5/7/2002	---	NA	NA	NA	NA	NA	NA	NA	NA	
	7/1/2003	---	NA	NA	NA	NA	NA	NA	NA	NA	
	7/30/2003	---	NA	NA	NA	NA	NA	NA	NA	NA	
	12/18/2003	---	NA	NA	NA	NA	NA	NA	NA	NA	
	3/31/2004	---	NA	NA	NA	NA	NA	NA	NA	NA	
	2/14/2008	---	NA	NA	NA	NA	NA	NA	NA	NA	
	4/27/2010	---	<10	<100	NA	<100	<5	NA	NA	NA	
	12/13/2010	---	<10	<100	NA	<100	<5	NA	NA	NA	
	5/14/2013	---	<10	<100	NA	<100	<5	NA	NA	NA	
10/3/2017	---	<0.10	<50.0	<1.9	<3.6	<0.12	<131	<0.070	<50.0		
03439-DMW02	5/7/2002	---	NA	NA	NA	NA	NA	NA	NA	NA	
	7/1/2003	---	NA	NA	NA	NA	NA	NA	NA	NA	
	7/30/2003	---	NA	NA	NA	NA	NA	NA	NA	NA	
	12/18/2003	---	NA	NA	NA	NA	NA	NA	NA	NA	
	3/31/2004	---	NA	NA	NA	NA	NA	NA	NA	NA	
	2/14/2008	---	NA	NA	NA	NA	NA	NA	NA	NA	
	4/27/2010	---	<10	<100	NA	<100	<5	NA	NA	NA	
	12/13/2010	---	<10	<100	NA	<100	<5	NA	NA	NA	
	5/14/2013	---	<10	<100	NA	<100	<5	NA	NA	NA	
10/3/2017	---	<0.10	<50.0	<1.9	<3.6	<0.12	<131	<0.070	<50.0		
03439-DMW04	5/7/2002	---	NA	NA	NA	NA	NA	NA	NA	NA	
	7/1/2003	---	NA	NA	NA	NA	NA	NA	NA	NA	
	7/30/2003	---	NA	NA	NA	NA	NA	NA	NA	NA	
	12/18/2003	---	NA	NA	NA	NA	NA	NA	NA	NA	
	3/31/2004	---	NA	NA	NA	NA	NA	NA	NA	NA	
	2/14/2008	---	NA	NA	NA	NA	NA	NA	NA	NA	
	4/27/2010	---	<10	<100	NA	<100	<5	NA	NA	NA	
	12/13/2010	---	<10	<100	NA	<100	<5	NA	NA	NA	
	5/14/2013	---	<10	<100	NA	<100	<5	NA	NA	NA	
10/3/2017	---	<0.10	<50.0	<1.9	<3.6	<0.12	<131	<0.070	<50.0		
03439-RW01	12/13/2010	---	586	3,850	NA	5,200	373	NA	NA	NA	
	5/14/2013	0.04	Not Sampled Due to the Presence of Free Product								
	10/3/2017	---	551 J	<12,500	<472	<905	327	<32,800	<17.5	<12,500	
03439-RW01 DUP	10/3/2017	---	367 J	<5,000	<189	2,690 J	213	<13,100	<7.0	<5,000	



TABLE 2B

Historical Laboratory Analytical Results - 8-Oxygenates  
 Former Highway 11 Grocery  
 13527 North Highway 11  
 Salem, Oconee County, South Carolina  
 UST Permit #03439; Cost Agreement #55090  
 BLE Project No. J17-10768-02

Well	Date Sampled	Free Product Thickness	Tert-Amyl Methyl Ether (TAME) (µg/L)	Tert-Amyl Alcohol (TAA) (µg/L)	Tert-Butyl Formate (TBF) (µg/L)	Tert-Butyl Alcohol (TBA) (µg/L)	Diisopropyl Ether (IPE) (µg/L)	Ethanol (µg/L)	Ethyl-Tert-Butyl Ether (ETBE) (µg/L)	Ethyl-Tert-Butyl Alcohol (ETBA) (µg/L)
SC DHEC RBSL			128	240	NE	1,400	150	10,000	47	NE
03439-RW02	12/13/2010	0.02	Not Sampled Due to the Presence of Free Product							
	5/14/2013	0.30	Not Sampled Due to the Presence of Free Product							
	10/2/2017	0.61	Not Sampled Due to the Presence of Free Product							
03439-RW03	12/13/2010	---	454	<5,000	NA	<5,000	284	NA	NA	NA
	5/14/2013	---	420	870	NA	<10,000	260	NA	NA	NA
	10/2/2017	NA	Well Dry at Time of Sampling Event							
03439-RW04	12/13/2010	---	259	581	NA	764	203	NA	NA	NA
	5/14/2013	---	650	1,700	NA	1,400	370	NA	NA	NA
	10/3/2017	---	<1.0	<500	<18.9	<36.2	3.9 J	<1,310	<0.70	<500
03439-RW05	5/14/2013	1.39	Not Sampled Due to the Presence of Free Product							
	10/2/2017	0.38	Not Sampled Due to the Presence of Free Product							
03439-RW06	5/14/2013	3.24	Not Sampled Due to the Presence of Free Product							
	10/2/2017	3.74	Not Sampled Due to the Presence of Free Product							
03439-RW07	5/14/2013	4.99	Not Sampled Due to the Presence of Free Product							
	10/2/2017	0.83	Not Sampled Due to the Presence of Free Product							
03439-RW08	5/14/2013	---	430	<50,000	NA	<50,000	250	NA	NA	NA
	10/3/2017	---	<0.20	<6.7	<1.0	<6.7	<0.40	<33	<0.20	<5,000
03439-RW09	5/14/2013	0.60	Not Sampled Due to the Presence of Free Product							
	10/2/2017	0.04	Not Sampled Due to the Presence of Free Product							
03439-RW10	5/14/2013	---	300	<50,000	NA	<50,000	210	NA	NA	NA
	10/3/2017	---	<10.0	<5,000	<189	<362	58.1 J	<13,100	<7.0	<5,000
03439-RW11	5/14/2013	---	350	<50,000	NA	<50,000	<5,000	NA	NA	NA
	10/2/2017	0.04	Not Sampled Due to the Presence of Free Product							
03439-RW12	5/14/2013	---	390	<20,000	NA	<20,000	240	NA	NA	NA
	10/3/2017	---	<5.0	<2,500	<94.5	<181	17.3 J	<6,550	<3.5	<2,500
03439-RW13	5/14/2013	---	230	<5,000	NA	<5,000	140	NA	NA	NA
	10/3/2017	---	<1.0	<500	<18.9	<36.2	<1.2	<1,310	<0.70	<500
03439-RW14	10/2/2017	0.42	Not Sampled Due to the Presence of Free Product							
03439-RW15	10/2/2017	1.09	Not Sampled Due to the Presence of Free Product							
03439-RW16	10/2/2017	1.11	Not Sampled Due to the Presence of Free Product							
03439-RW17	10/2/2017	NA	Not Located / Not Accessible / Under Fallen Tree							
03439-CK01	5/7/2002	---	NA	NA	NA	NA	NA	NA	NA	NA
	7/1/2003	---	NA	NA	NA	NA	NA	NA	NA	NA
	7/30/2003	---	NA	NA	NA	NA	NA	NA	NA	NA
	12/18/2003	---	NA	NA	NA	NA	NA	NA	NA	NA
	3/31/2004	---	NA	NA	NA	NA	NA	NA	NA	NA
	2/14/2008	---	NA	NA	NA	NA	NA	NA	NA	NA
	4/27/2010	---	<10	<100	NA	<100	<5	NA	NA	NA
	12/13/2010	---	<10	<100	NA	<100	<5	NA	NA	NA
	5/14/2013	---	<10	<100	NA	<100	<5	NA	NA	NA
	10/2/2017	---	<0.10	<50.0	<1.9	<3.6	0.23 J	<131	<0.070	<50.0
03439-CK02	5/7/2002	---	NA	NA	NA	NA	NA	NA	NA	NA
	7/1/2003	---	NA	NA	NA	NA	NA	NA	NA	NA
	7/30/2003	---	NA	NA	NA	NA	NA	NA	NA	NA
	12/18/2003	---	NA	NA	NA	NA	NA	NA	NA	NA
	3/31/2004	---	NA	NA	NA	NA	NA	NA	NA	NA
	2/14/2008	---	NA	NA	NA	NA	NA	NA	NA	NA
	4/27/2010	---	<10	<100	NA	<100	<5	NA	NA	NA
	12/13/2010	---	<10	<100	NA	<100	<5	NA	NA	NA
	5/14/2013	---	<1	8	NA	<100	<10	NA	NA	NA
	10/2/2017	---	1.1 J	<50.0	<1.9	<3.6	0.79 J	<131	<0.070	<50.0
03439-CK03	2/14/2008	---	NA	NA	NA	NA	NA	NA	NA	NA
	4/27/2010	---	<10	<100	NA	<100	<5	NA	NA	NA
	12/13/2010	---	<10	<100	NA	<100	<5	NA	NA	NA
	5/14/2013	---	<1	<100	NA	<100	<1	NA	NA	NA
	10/2/2017	---	<0.10	<50.0	<1.9	<3.6	0.72 J	<131	<0.070	<50.0

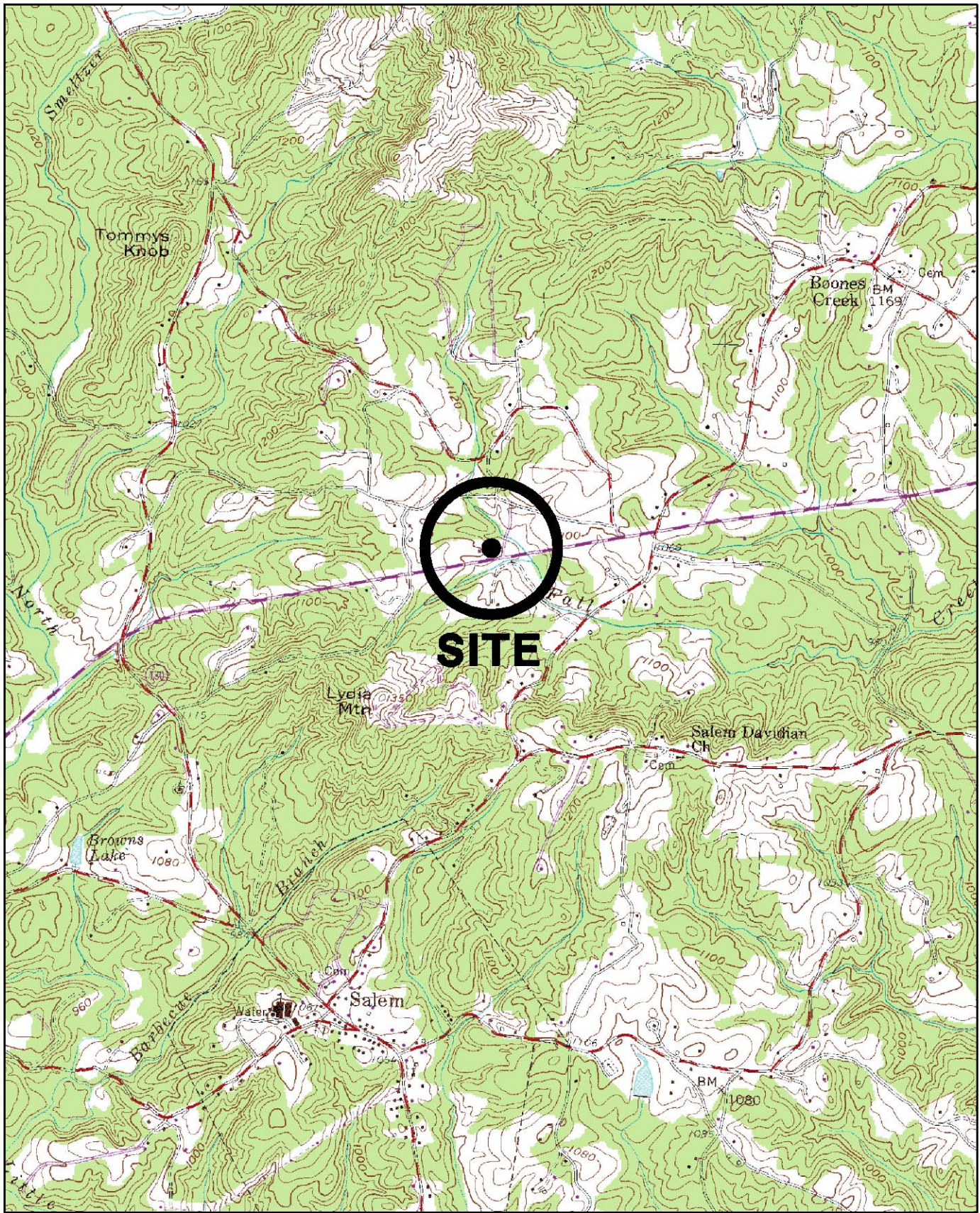
TABLE 2B

**Historical Laboratory Analytical Results - 8-Oxygenates**  
 Former Highway 11 Grocery  
 13527 North Highway 11  
 Salem, Oconee County, South Carolina  
 UST Permit #03439; Cost Agreement #55090  
 BLE Project No. J17-10768-02

Well	Date Sampled	Free Product Thickness	Tert-Amyl Methyl Ether (TAME) (µg/L)	Tert-Amyl Alcohol (TAA) (µg/L)	Tert-Butyl Formate (TBF) (µg/L)	Tert-Butyl Alcohol (TBA) (µg/L)	Diisopropyl Ether (IPE) (µg/L)	Ethanol (µg/L)	Ethyl-Tert-Butyl Ether (ETBE) (µg/L)	Ethyl-Tert-Butyl Alcohol (ETBA) (µg/L)
SC DHEC RBSL			128	240	NE	1,400	150	10,000	47	NE
03439-WW01	5/7/2002	---	NA	NA	NA	NA	NA	NA	NA	NA
	7/1/2003	---	NA	NA	NA	NA	NA	NA	NA	NA
	7/30/2003	---	NA	NA	NA	NA	NA	NA	NA	NA
	12/18/2003	---	NA	NA	NA	NA	NA	NA	NA	NA
	3/31/2004	---	NA	NA	NA	NA	NA	NA	NA	NA
	2/14/2008	---	NA	NA	NA	NA	NA	NA	NA	NA
	4/27/2010	NA	Not Sampled							
	12/13/2010	---	<10	<100	NA	<100	<5	NA	NA	NA
	5/14/2013	---	<10	<100	NA	<100	<10	NA	NA	NA
10/2/2017	---	<0.10	<50.0	<1.9	<3.6	<0.12	<131	<0.070	<50.0	
03439-WW01 Dup	10/2/2017	---	<0.10	<50.0	<1.9	<3.6	<0.12	<131	<0.070	<50.0
Field Blank 01	10/2/2017	NA	<0.10	<50.0	<1.9	<b>10.5 J</b>	<0.12	<131	<0.070	<50.0
Field Blank 02	10/3/2017	NA	<0.10	<50.0	<1.9	<b>15.0 J</b>	<0.12	<131	<0.070	<50.0
Field Blank 03	10/2/2017	NA	<0.10	<50.0	<1.9	<b>13.7 J</b>	<0.12	<131	<0.070	<50.0
Trip Blank	10/2/2017	NA	<0.25	<1.5	<0.66	<2.3	<0.26	<19	<0.13	NT

**Notes:**  
 µg/L = micrograms/liter = approximate Parts Per Billion (ppb)  
 Historical analytical results obtained from historical reports obtained from SCDHEC FOI search. BLE is not responsible for the accuracy of this data.  
**Bold** values indicate detections  
 Shaded cells indicate concentrations above RBSLs  
 RBSL = Risk Based Screening Level  
 NA = Not Available / Unknown  
 ND = Not Detected  
 NE = RBSL has not been established  
 NS = Not Sampled

## **FIGURES**



2000 1000 0 2000 4000  
 APPROXIMATE SCALE IN FEET

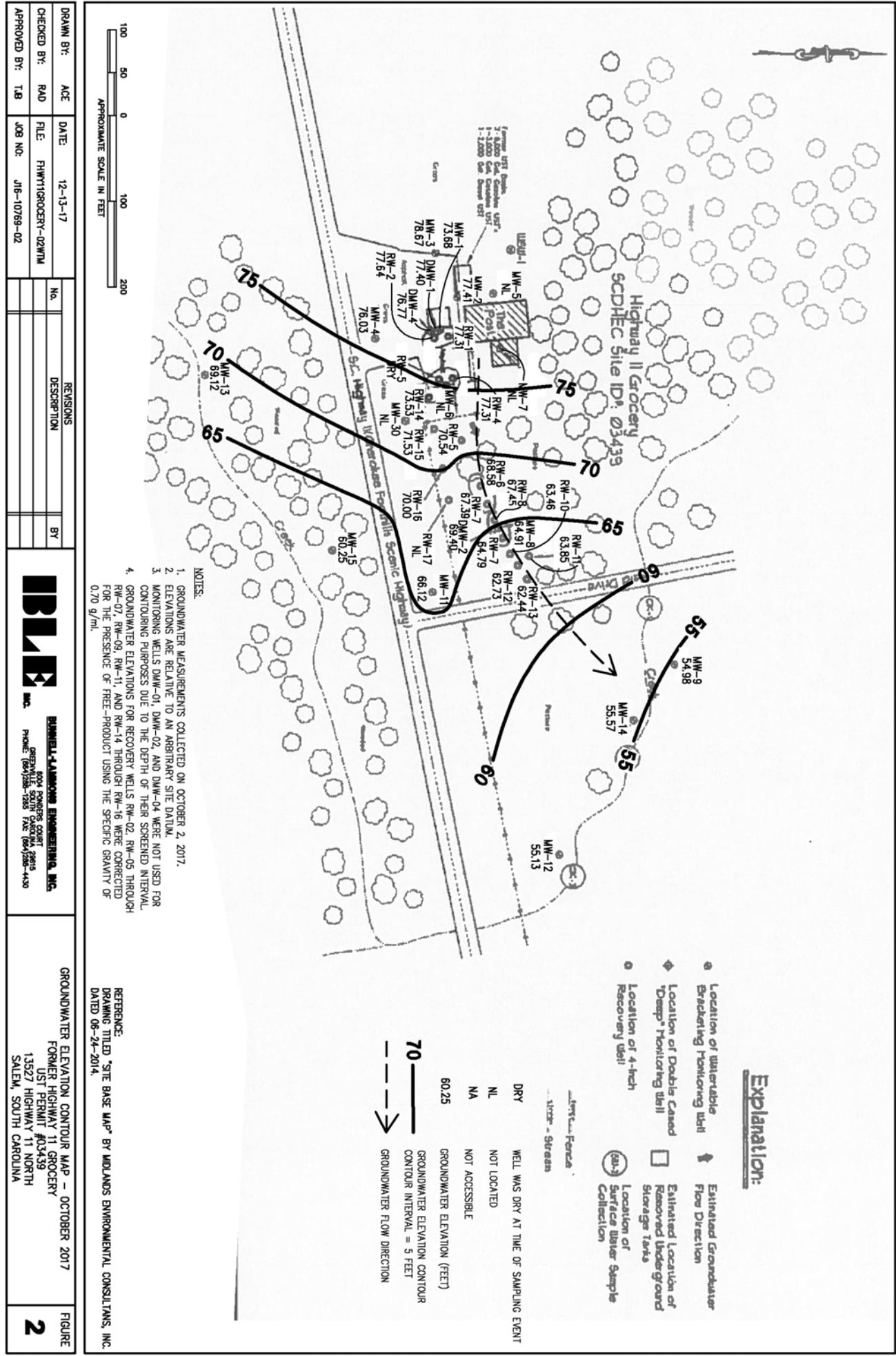
REFERENCE:  
 USGS TOPOGRAPHIC MAP, 7.5 MINUTE SERIES,  
 SALEM, S.C. QUADRANGLE, PHOTOREVISED 1980.

DRAWN: ACE	DATE: 02-03-17
CHECKED: TJB	CAD: FHWHY11GROCERY-02SLM
APPROVED:	JOB NO: J16-10769-02

**IBLE**  
**BUNNELL-LANNONS ENGINEERING, INC.**  
 6004 PONDERS COURT  
 GREENVILLE, SOUTH CAROLINA 29615  
 PHONE: (864)288-1265 FAX: (864)288-4430

SITE LOCATION MAP  
 FORMER HIGHWAY 11 GROCERY  
 UST PERMIT #03439  
 13527 HIGHWAY 11 NORTH  
 SALEM, SOUTH CAROLINA

FIGURE  
**1**



DESIGNED BY:	ACE	DATE:	12-13-17
CHECKED BY:	ROAD	FILE:	FHW11GROCERY-02NIM
APPROVED BY:	TJB	JOB NO.:	J16-10769-02

REVISIONS	
No.	DESCRIPTION

**IBL** **INTERNATIONAL ENGINEERING, INC.**  
 800 POWERS COURT #201  
 GREENSBORO, NC 27409  
 PHONE: (336) 225-1288 FAX: (336) 225-4400

GROUNDWATER ELEVATION CONTOUR MAP - OCTOBER 2017  
 FORMER HIGHWAY 11 GROCERY  
 UST PERMIT #03439  
 13527 HIGHWAY 11 NORTH  
 SALEM, SOUTH CAROLINA

FIGURE **2**

- NOTES:**
1. GROUNDWATER MEASUREMENTS COLLECTED ON OCTOBER 2, 2017.
  2. ELEVATIONS ARE RELATIVE TO AN ARBITRARY SITE DATUM.
  3. MONITORING WELLS DMW-01, DMW-02, AND DMW-04 WERE NOT USED FOR CONTOURING PURPOSES DUE TO THE DEPTH OF THEIR SCREENED INTERVAL.
  4. GROUNDWATER ELEVATIONS FOR RECOVERY WELLS RW-02, RW-05 THROUGH RW-07, RW-09, RW-11, AND RW-14 THROUGH RW-16 WERE CORRECTED FOR THE PRESENCE OF FREE-PRODUCT USING THE SPECIFIC GRAVITY OF 0.70 g/ml.

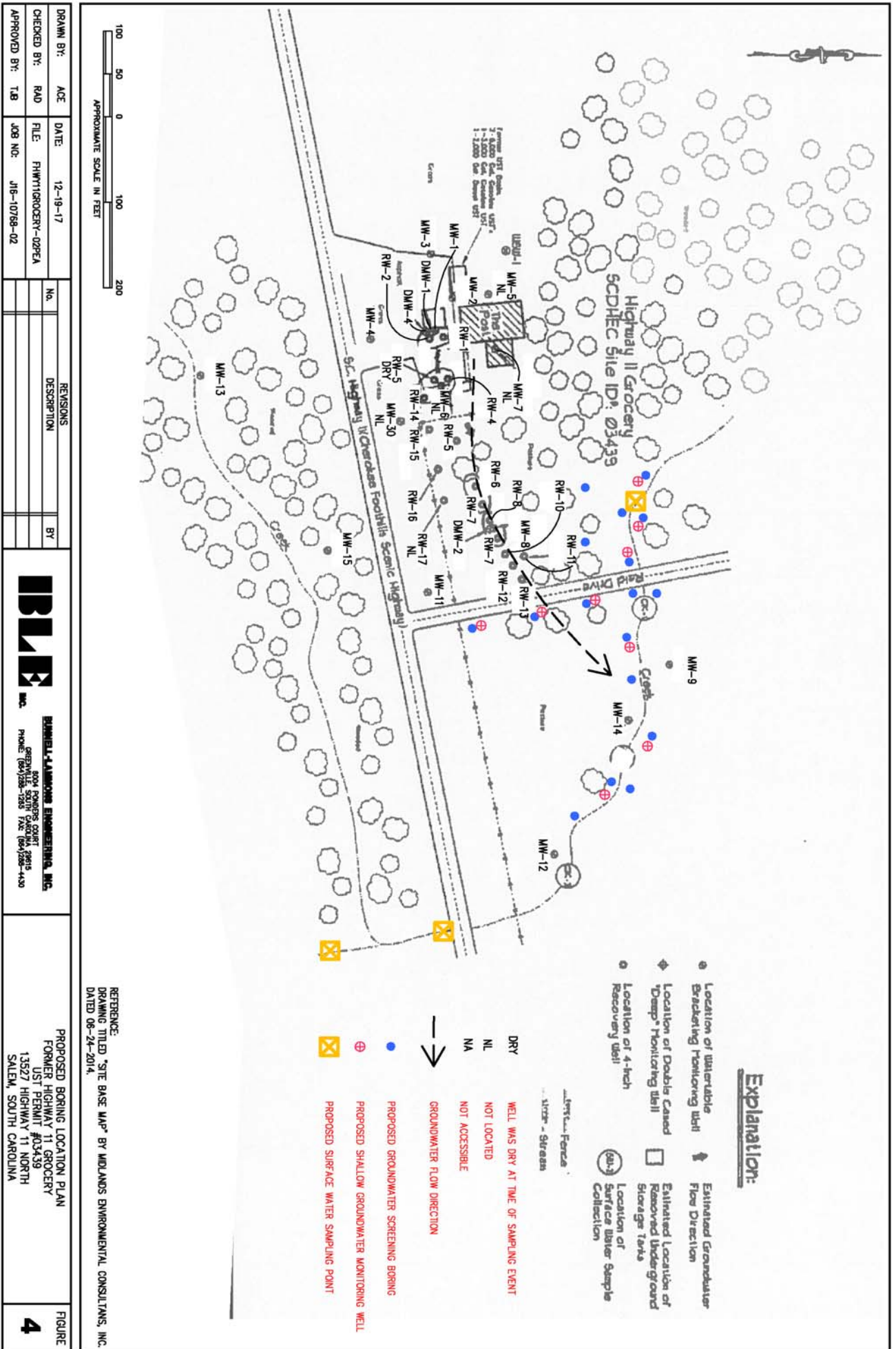
**REFERENCE:**  
 DRAWING TITLED "SITE BASE MAP" BY MIDLANDS ENVIRONMENTAL CONSULTANTS, INC.  
 DATED 08-24-2014.

- Explanation:**
- Location of water table
  - Estimated Groundwater Flow Direction
  - Location of Double Cased "Deep" Monitoring Well
  - Estimated Location of Recovered Underground Storage Tanks
  - Location of 4-inch Recovery Well
  - Location of Surface Water Sample Collection

70 ——— GROUNDWATER ELEVATION (FEET)  
 --- GROUNDWATER ELEVATION CONTOUR INTERVAL = 5 FEET  
 → GROUNDWATER FLOW DIRECTION

DRY WELL WAS DRY AT TIME OF SAMPLING EVENT  
 NL NOT LOCATED  
 NA NOT ACCESSIBLE





DRAWN BY: ACE DATE: 12-19-17  
 CHECKED BY: RAD FILE: FHWT11GROCERY-02PEA  
 APPROVED BY: TJB JOB NO: JB-10788-02

REFERENCE:  
 DRAWING TITLED "SITE BASE MAP" BY MIDLANDS ENVIRONMENTAL CONSULTANTS, INC.  
 DATED 08-24-2014

## **APPENDICES**



**APPENDIX A**  
**DISPOSAL MANIFESTS**



NON-HAZARDOUS WASTE MANIFEST 1. Generator ID Number 2. Page 1 of 3. Emergency Response Phone 4. Waste Tracking Number **BSKW-BLE-10-11-17**

5. Generator's Name and Mailing Address: **BUNNELL-LAMMON ENG, INC**  
 6004 PONDERS COURT  
 GREENVILLE, SC 29615  
 Generator's Site Address (if different than mailing address)  
 Generator's Phone: **864-288-1265**

6. Transporter 1 Company Name: **BLE SPARKS Ind Service** U.S. EPA ID Number

7. Transporter 2 Company Name U.S. EPA ID Number

8. Designated Facility Name and Site Address: **VLS RECOVERY SERVICES, LLC**  
 305 S. MAIN STREET  
 MAULDIN, SC 29652  
 U.S. EPA ID Number: **SCR000762468**  
 Facility's Phone: **854-962-9953**

9. Waste Shipping Name and Description	10. Containers		11. Total Quantity	12. Unit Wt./Vol.
	No.	Type		
1. NON HAZARDOUS NON REGULATED WELL WATER   PROFILE # 11312 <i>(Purse) Hb 6000</i>	1	11	80	G
2. <i>(Development) Spinx 247</i>			110	G
3. <i>(Purse) Former Hwy 11 Greenery</i>			178	G
4. <i>(Purse) Sh 600ms</i>			5	G

13. Special Handling Instructions and Additional Information: *Shealy + son Electric (Purse) US # 05866*  
**777 TRL 226405**

14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offoror's Printed/Typed Name: **Brian K. White** Signature: *Brian K. White* Month: **10** Day: **11** Year: **17**

15. International Shipments  Import to U.S.  Export from U.S. Port of entry/exit: Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: **Mitchell Caperena** Signature: *Mitchell* Month: **10** Day: **11** Year: **17**

17. Discrepancy

17a. Discrepancy Indication Space  Quantity  Type  Residue  Partial Rejection  Full Rejection

17b. Alternate Facility (or Generator) Manifest Reference Number: U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator) Month: Day: Year:

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name: **Jon Brown** Signature: *Jon Brown* Month: **10** Day: **11** Year: **17**

GENERATOR

TRANSPORTER

DESIGNATED FACILITY

INT'L

**APPENDIX B**

**MONITORING WELL PURGING AND SAMPLING FIELD PROCEDURES AND  
MONITORING WELL PURGING AND SAMPLING LOGS**

## APPENDIX B

### MONITORING WELL PURGING AND SAMPLING PROCEDURES

The monitoring wells were purged prior to sample collection to remove any stagnant water from the well so that the samples collected were representative of the groundwater quality in the vicinity of each well. For wells that recovered quickly, a minimum of three volumes of water were evacuated. Specific conductance, pH, water temperature, and turbidity were measured periodically during well evacuation using instruments which were calibrated daily. Wells that were evacuated to dryness with less than three well volumes being removed were sampled as soon as the well had recovered enough to yield sufficient volume for a sample.

The monitoring wells were purged using a 3-foot long by 1.6-inch diameter disposable polyethylene bailer attached to an unused polypropylene cord. The wells were also sampled using a bailer as described above. To minimize the potential for cross-contamination between wells, a new clean bailer was used at each well.

Samples were placed in the appropriate laboratory supplied containers and marked with identifying numbers. Samples were maintained at 4°Celsius in a refrigerated sample cooler and shipped to Pace Analytical Services, LLC in Huntersville, North Carolina via courier service for analysis.

### INSTRUMENT CALIBRATION AND FREQUENCY QUALITY ASSURANCE / QUALITY CONTROL (QA/QC)

All Instrument Calibration and frequency methods are consistent with the procedures as outlined in BLE’s Annual Contractor Quality Assurance Plan (ACQAP). The following calibration standards were used for calibration purposes on October 2-3, 2017.

Quality Assurance			
<b>pH Sensor:</b>	Oakton 35630-62	<b>Conductivity Sensor:</b>	35630-32
serial no.	324976	serial no.	324976
pH = 4.0	4.0	Standard	15,000
pH = 7.0	7.0	Standard	1,413
pH = 10.0	10.0	Standard	447
<b>DO Meter</b>	YSI 60	Standard	84
Standard	0% cal	<b>Turbidity:</b>	1.0-10.0 NTU
Chain of Custody			
Michael Parks	10/4/17 : 1205	Pace Analytical	10/4/17 : 1205



BUNNELL-LAMMONS ENGINEERING, INC

# Field Data Information Sheet for Ground Water Sampling Division of Underground Storage Tank Management

Date 10/22/17

Field Personnel MVP

General weather Conditions Sunny

Ambient Air Temperature (°C) 22°

Facility Name: Former Highway 11 Grocery Site ID# 03439

Quality Assurance

pH Sensor: Oakton 35630-62 Conductivity Sensor: 35630-32

serial no. 324976 serial no. 324976

pH = 4.0 4.0 Standard 15,000

pH = 7.0 7.0 Standard 1,413

pH = 10.0 10.0 Standard 447

DO Meter YSI 60 Standard 84

Standard 0% cal Turbidity: 1.0-10.0 NTU

Chain of Custody

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Well # 03439-MW01

Well Diameter (D) 2 inch of 30.00 feet(ft)

conversion factor (C):  $3.143 \cdot (D/2)^2$   
for a 2 inch well C = 0.163  
for a 4 inch well C = 0.652

\*Free Product Thickness \_\_\_\_\_ ft

Total Well Depth (TWD) 30.00 ft

Depth to Groundwater (DGW) 25.70 ft

Length of Water Column (LWC = TWD-DGW) 4.30 ft

1 Casing Volume (LWC \* C) = 0.73 gals

3 Casing Volumes = 2.19 gals

(Standard Purge Volume)

Total Volume of Water Purged Before Sampling 1.0 gals

\*If free product is present over 1/8 inch, sampling will not be required.

Volume Purged (gallons)	Initial	1st Vol.	2nd Vol.	3rd Vol.	4th Vol.	5th Vol.	6th Vol.	7th Vol.	8th Vol.	Post
Time (military)	<u>1759</u>	<u>1.0</u>								
pH (s.u)	<u>5.19</u>	<u>1603</u>								
Specific Conductivity (µS)	<u>139.5</u>	<u>5.51</u>								
Water Temperature (°C)	<u>20.2</u>	<u>176.1</u>								
Turbidity (NTU)	<u>4.17</u>	<u>20.1</u>								
Dissolved Oxygen (mg/l)	<u>1.2</u>	<u>12.3</u>								
		<u>1.2</u>								

Remarks: Well sampled at 1604 on 10/22/17

Strong odor  
well found dry @ 1.0 gallons

# Field Data Information Sheet for Ground Water Sampling Division of Underground Storage Tank Management



BUNNELL-LAMMONS ENGINEERING, INC

Date 10/2/17

Field Personnel MW

General weather Conditions Sunny

Ambient Air Temperature (°C) 22°

Facility Name: Former Highway 11 Grocery Site ID# 03439

Quality Assurance

pH Sensor: Oakton 35630-62 Conductivity Sensor: 35630-32

serial no. 324976 serial no. 324976

pH = 4.0 4.0 Standard 15,000

pH = 7.0 7.0 Standard 1,413

pH = 10.0 10.0 Standard 447

DO Meter YSI 60 Standard 84

Standard 0% cal Turbidity: 1.0-10.0 NTU

Chain of Custody

Well # 03439-MW02

Well Diameter (D) 2 inch of 35.00 feet(ft)

conversion factor (C):  $3.143 \cdot (D/2)^2$   
for a 2 inch well C = 0.163  
for a 4 inch well C = 0.652

\*Free Product Thickness \_\_\_\_\_ ft

Total Well Depth (TWD) 35.00 ft

Depth to Groundwater (DGW) 27.44 ft

Length of Water Column (LWC = TWD - DGW) 7.56 ft

1 Casing Volume (LWC \* C) = 7.56 X .17 = 1.28 gals

3 Casing Volumes = 3 X 1.28 = 3.84 gals  
(Standard Purge Volume)

Total Volume of Water Purged Before Sampling 4.0 gals

\*If free product is present over 1/8 inch, sampling will not be required.

Relinquished by	Date/Time	Received by	Date/Time	1st Vol.	2nd Vol.	3rd Vol.	4th Vol.	5th Vol.	6th Vol.	7th Vol.	8th Vol.	Post
Volume Purged (gallons)												
Time (military)	<u>1446</u>	<u>1507</u>	<u>1512</u>	<u>1.8</u>	<u>7.0</u>	<u>4.0</u>						
pH (s.u)	<u>4.71</u>	<u>4.79</u>	<u>4.62</u>		<u>1515</u>	<u>1518</u>						
Specific Conductivity (µS)	<u>3223</u>	<u>35.05</u>	<u>30.27</u>		<u>4.61</u>	<u>4.61</u>						
Water Temperature (°C)	<u>18.7</u>	<u>19.0</u>	<u>19.1</u>		<u>22.99</u>	<u>23.18</u>						
Turbidity (NTU)	<u>1.4</u>	<u>2.44</u>	<u>12.91</u>		<u>18.9</u>	<u>19.6</u>						
Dissolved Oxygen (mg/l)	<u>1.4</u>	<u>1.4</u>	<u>1.4</u>		<u>12.8</u>	<u>8.44</u>						
		<u>Initial</u>	<u>1.4</u>		<u>1.4</u>	<u>1.4</u>						
				<u>2.0</u>	<u>2.0</u>	<u>3.0</u>						

Remarks: Well sampled at 1118 on 10/2/17

~~total purged 4.0 gals~~

# Field Data Information Sheet for Ground Water Sampling Division of Underground Storage Tank Management



Date 10/2/17  
 Field Personnel mwj  
 General weather Conditions Sunny  
 Ambient Air Temperature (°C) 22  
 Facility Name: Former Highway 11 Grocery Site ID# 03439  
 Quality Assurance

**pH Sensor:** Oakton 35630-62 **Conductivity Sensor:** 35630-32  
 serial no. 324976 serial no. 324976  
 pH = 4.0 4.0 Standard 15.000  
 pH = 7.0 7.0 Standard 1.413  
 pH = 10.0 10.0 Standard 447  
**DO Meter** YSI 60 Standard 84  
 Standard 0% cal **Turbidity:** 1.0-10.0 NTU  
 Chain of Custody

Well # 03439-MW03  
 Well Diameter (D) 2 inch of 30.00 feet(ff)  
 conversion factor (C):  $3.143 \cdot (D/2)^2$   
 for a 2 inch well C = 0.163  
 for a 4 inch well C = 0.652  
 \*Free Product Thickness \_\_\_\_\_ ft  
 Total Well Depth (TWD) 26.22 ft  
 Depth to Groundwater (DGW) 3.78 ft  
 Length of Water Column (LWC = TWD-DGW) \_\_\_\_\_ ft  
 1 Casing Volume (LWC \* C) = 1.28 X .17 = 0.64 gals  
 3 Casing Volumes = 3 X 0.64 = 1.92 gals  
 (Standard Purge Volume)  
 Total Volume of Water Purged Before Sampling 1.0 gals  
 \*If free product is present over 1/8 inch, sampling will not be required.

Relinquished by	Date/Time	Received by	Date/Time
Initial	1st Vol.	2nd Vol.	3rd Vol.
Volume Purged (gallons)	---	1.0	
Time (military)	1440	1445	
pH (s.u)	8.11	5.07	
Specific Conductivity (µS)	31.12	37.92	
Water Temperature (°C)	18.7	18.7	
Turbidity (NTU)	4.79	13.4	
Dissolved Oxygen (mg/l)	1.7	1.7	
	4th Vol.	5th Vol.	6th Vol.
	7th Vol.	8th Vol.	Post

Remarks: Well sampled at 1446 on 10/2/17 well purged dry @ 1.0 gallons



BUNNELL-LAMMONS ENGINEERING, INC

# Field Data Information Sheet for Ground Water Sampling Division of Underground Storage Tank Management

Date 10/19/17  
 Field Personnel M. W. P. / S. Minny  
 General weather Conditions \_\_\_\_\_  
 Ambient Air Temperature (°C) 20  
 Facility Name: Former Highway 11 Grocery Site ID# 03439  
 Well # 03439-MW04  
 Well Diameter (D) 2 inch of 35.00 feet(ft)  
 conversion factor (C):  $3.143 \cdot (D/2)^2$   
 for a 2 inch well C = 0.163  
 for a 4 inch well C = 0.652  
 \*Free Product Thickness \_\_\_\_\_ ft  
 Total Well Depth (TWD) 27.87 ft  
 Depth to Groundwater (DGW) \_\_\_\_\_ ft  
 Length of Water Column (LWC = TWD-DGW) 11.13 ft  
 1 Casing Volume (LWC \* C) = 11.13 X .17 = 1.89 gals  
 3 Casing Volumes = 3 X 1.89 = 5.67 gals  
 (Standard Purge Volume)  
 Total Volume of Water Purged Before Sampling 6.0 gals  
 \*if free product is present over 1/8 inch, sampling will not be required.

Relinquished by	Date/Time	Received by	Date/Time	1st Vol.	2nd Vol.	3rd Vol.	4th Vol.	5th Vol.	6th Vol.	7th Vol.	8th Vol.	Post
Volume Purged (gallons)	Initial	---	---	2	4	6						
Time (military)	1043	1046	1050	1053								
pH (s.u)	5.69	5.79	5.73	5.77								
Specific Conductivity (µS)	97.26	98.41	100.3	99.87								
Water Temperature (°C)	19.8	19.7	19.7	19.7								
Turbidity (NTU)	4.77	10.4	10.3	8.21								
Dissolved Oxygen (mg/l)	1.3	1.7	1.7	1.7								

Remarks: Well sampled at 1053 on 10/19/17





BUNNELL-LAMMONS ENGINEERING, INC

# Field Data Information Sheet for Ground Water Sampling Division of Underground Storage Tank Management

Date 10/2/17  
 Field Personnel MWP  
 General weather Conditions Sunny  
 Ambient Air Temperature (°C) 20°  
 Facility Name: Former Highway 11 Grocery Site ID# 03439  
 Quality Assurance

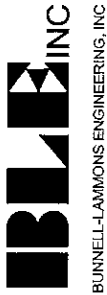
pH Sensor: Oakton 35630-62 Conductivity Sensor: 35630-32  
 serial no. 324976 serial no. 324976  
 pH = 4.0 4.0 Standard 15,000  
 pH = 7.0 7.0 Standard 1,413  
 pH = 10.0 10.0 Standard 447  
 DO Meter YSI 60 Standard 84  
 Standard 0% cal Turbidity: 1.0-10.0 NTU  
 Chain of Custody

Well # 03439-MW05  
 Well Diameter (D) 2 inch of 35.00 feet(ft)  
 conversion factor (C):  $3.143 \cdot (D/2)^2$   
 for a 2 inch well C = 0.163  
 for a 4 inch well C = 0.652  
 \*Free Product Thickness \_\_\_\_\_ ft  
 Total Well Depth (TWD) 35.00 ft  
 Depth to Groundwater (DGW) \_\_\_\_\_ ft  
 Length of Water Column (LWC = TWD-DGW) \_\_\_\_\_ ft  
 1 Casing Volume (LWC°C) = \_\_\_\_\_ X .17 = \_\_\_\_\_ gals  
 3 Casing Volumes = 3 X \_\_\_\_\_ = \_\_\_\_\_ gals  
 (Standard Purge Volume)  
 Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals  
 \*If free product is present over 1/8 inch, sampling will not be required.

Relinquished by	Date/Time	Received by	Date/Time	1st Vol.	2nd Vol.	3rd Vol.	4th Vol.	5th Vol.	6th Vol.	7th Vol.	8th Vol.	Post
Volume Purged (gallons)	Initial	---										
Time (military)												
pH (s.u)												
Specific Conductivity (µS)												
Water Temperature (°C)												
Turbidity (NTU)												
Dissolved Oxygen (mg/l)												

Remarks: Well sampled at \_\_\_\_\_ on \_\_\_\_\_

*well not located @ time of sampling.*



BUNNELL-LAMMONS ENGINEERING, INC

# Field Data Information Sheet for Ground Water Sampling Division of Underground Storage Tank Management

Date: 10/2/17

Field Personnel: mf

General weather Conditions: 14.1

Ambient Air Temperature (°C): 22.6

Facility Name: Former Highway 11 Grocery Site ID#: 03439

Quality Assurance

pH Sensor: Oakton 35630-62 Conductivity Sensor: 35630-32

serial no. 324976 serial no. 324976

pH = 4.0 4.0 Standard 15,000

pH = 7.0 7.0 Standard 1,413

pH = 10.0 10.0 Standard 447

DO Meter YSI 60 Standard 84

Standard 0% cal Turbidity: 1.0-10.0 NTU

Chain of Custody

Well # 03439-MW06

Well Diameter (D) 2 inch of 35.00 feet(ft)

conversion factor (C):  $3.143 \cdot (D/2)^2$   
 for a 2 inch well C = 0.163  
 for a 4 inch well C = 0.652

\*Free Product Thickness \_\_\_\_\_ ft

Total Well Depth (TWD) 35.00 ft

Depth to Groundwater (DGW) \_\_\_\_\_ ft

Length of Water Column (LWC = TWD-DGW) \_\_\_\_\_ ft

1 Casing Volume (LWC \* C) = \_\_\_\_\_ X .17 = \_\_\_\_\_ gals

3 Casing Volumes = 3 X \_\_\_\_\_ = \_\_\_\_\_ gals  
 (Standard Purge Volume)

Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals

\*If free product is present over 1/8 inch, sampling will not be required.

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

	Initial	1st Vol.	2nd Vol.	3rd Vol.	4th Vol.	5th Vol.	6th Vol.	7th Vol.	8th Vol.	Post
Volume Purged (gallons)	---									
Time (military)										
pH (s.u)										
Specific Conductivity (µS)										
Water Temperature (°C)										
Turbidity (NTU)										
Dissolved Oxygen (mg/l)										

Remarks: Well sampled at \_\_\_\_\_ on \_\_\_\_\_ well not sampled @ time of sampling.



BUNNELL-LAMMONS ENGINEERING, INC

# Field Data Information Sheet for Ground Water Sampling Division of Underground Storage Tank Management

Date 10/12/17

Field Personnel mmf

General weather Conditions Sunny

Ambient Air Temperature ( °C ) 27°

Facility Name: Former Highway 11 Grocery Site ID# 03439

Quality Assurance

pH Sensor: Oakton 35630-62 Conductivity Sensor: 35630-32

serial no. 324976 serial no. 324976

pH = 4.0 4.0 Standard 15,000

pH = 7.0 7.0 Standard 1,413

pH = 10.0 10.0 Standard 447

DO Meter YSI 60 Standard 84

Standard 0% cal Turbidity: 1.0-10.0 NTU

Chain of Custody

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Well # 03439-MW07

Well Diameter (D) 2 inch of 40.00 feet(ft)

conversion factor ( C ):  $3.143 \cdot (D/2)^2$   
 for a 2 inch well C = 0.163  
 for a 4 inch well C = 0.652

\*Free Product Thickness \_\_\_\_\_ ft

Total Well Depth (TWD) 40.00 ft

Depth to Groundwater (DGW) \_\_\_\_\_ ft

Length of Water Column (LWC = TWD-DGW) \_\_\_\_\_ ft

1 Casing Volume (LWC \* C) = \_\_\_\_\_ X .17 = \_\_\_\_\_ gals

3 Casing Volumes = 3 X \_\_\_\_\_ = \_\_\_\_\_ gals  
(Standard Purge Volume)

Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals

\*If free product is present over 1/8 inch, sampling will not be required.

	Initial	1st Vol.	2nd Vol.	3rd Vol.	4th Vol.	5th Vol.	6th Vol.	7th Vol.	8th Vol.	Post
Volume Purged (gallons)	---									
Time (military)										
pH (s.u)										
Specific Conductivity (µS)										
Water Temperature ( °C )										
Turbidity (NTU)										
Dissolved Oxygen (mg/l)										

Remarks: Well sampled at \_\_\_\_\_ on \_\_\_\_\_

well not sampled @ time of sampling.

# Field Data Information Sheet for Ground Water Sampling Division of Underground Storage Tank Management



BUNNELL-LAMMONS ENGINEERING, INC.

Date 10/13/17  
 Field Personnel AWP  
 General weather Conditions Sunny  
 Ambient Air Temperature (°C) 20  
 Facility Name: Former Highway 11 Grocery Site ID# 03439

Well # 03439-MW08  
 Well Diameter (D) 2 inch of 30.00 feet(ft)  
 conversion factor (C):  $3.143 \cdot (D/2)^2$   
 for a 2 inch well C = 0.163  
 for a 4 inch well C = 0.652  
 \*Free Product Thickness \_\_\_\_\_ ft  
 Total Well Depth (TWD) 21.60 ft  
 Depth to Groundwater (DGW) 8.40 ft  
 Length of Water Column (LWC = TWD-DGW) \_\_\_\_\_ ft  
 1 Casing Volume (LWC \* C) = 8.40 X .17 = 1.43 gals  
 3 Casing Volumes = 3 X 1.43 = 4.29 gals  
 (Standard Purge Volume)

pH Sensor: Oakton 35630-62 Conductivity Sensor: 35630-32  
 serial no. 324976 serial no. 324976  
 pH = 4.0 Standard 15,000  
 pH = 7.0 Standard 1,413  
 pH = 10.0 Standard 447  
 DO Meter YSI 60 Standard 84  
 Standard 0% cal Turbidity: 1.0-10.0 NTU

Total Volume of Water Purged Before Sampling 4.5 gals  
 \*If free product is present over 1/8 inch, sampling will not be required.

Relinquished by	Date/Time	Received by	Date/Time

	Initial	1st Vol.	2nd Vol.	3rd Vol.	4th Vol.	5th Vol.	6th Vol.	7th Vol.	8th Vol.	Post
Volume Purged (gallons)	---	1.5	3.0	4.5						
Time (military)	1223	1225	1329	1232						
pH (s.u)	5.72	5.78	5.76	5.77						
Specific Conductivity (µS)	69.08	68.89	69.01	69.11						
Water Temperature (°C)	19.6	19.5	19.6	19.6						
Turbidity (NTU)	4.47	13.9	11.2	8.47						
Dissolved Oxygen (mg/l)	0.9	0.9	0.9	0.9						

Remarks: Well sampled at 1272 on 10/13/17



BUNNELL-LAMMONS ENGINEERING, INC

# Field Data Information Sheet for Ground Water Sampling Division of Underground Storage Tank Management

Date: 10/3/17

Field Personnel: MWP

General weather Conditions: 54.7y

Ambient Air Temperature (°C): 20.0

Facility Name: Former Highway 11 Grocery Site ID#: 03439

Quality Assurance

pH Sensor: Oakton 35630-62 Conductivity Sensor: 35630-32

serial no. 324976 serial no. 324976

pH = 4.0 4.0 Standard 15,000

pH = 7.0 7.0 Standard 1,413

pH = 10.0 10.0 Standard 447

DO Meter YSI 60 Standard 84

Standard 0% cal Turbidity: 1.0-10.0 NTU

Chain of Custody

Well # 03439-MW09

Well Diameter (D) 2 inch of 10.00 feet(ft)

conversion factor (C):  $3.143 \cdot (D/2)^2$   
for a 2 inch well C = 0.163  
for a 4 inch well C = 0.652

\*Free Product Thickness \_\_\_\_\_ ft

Total Well Depth (TWD) 10.00 ft

Depth to Groundwater (DGW) 3.41 ft

Length of Water Column (LWC = TWD-DGW) 6.59 ft

1 Casing Volume (LWC·C) = 6.59 X .17 = 1.12 gals

3 Casing Volumes = 3 X 1.12 = 3.36 gals  
(Standard Purge Volume)

Total Volume of Water Purged Before Sampling 3.5 gals

\*If free product is present over 1/8 inch, sampling will not be required.

Relinquished by	Date/Time	Received by	Date/Time	1st Vol.	2nd Vol.	3rd Vol.	4th Vol.	5th Vol.	6th Vol.	7th Vol.	8th Vol.	Post
Volume Purged (gallons)	---	1.5	2.5	3.5								
Time (military)	1420	1425	1430	1437								
pH (s.u)	6.11	6.14	6.15	6.15								
Specific Conductivity (µS)	56.77	54.99	57.02	57.11								
Water Temperature (°C)	20.8	20.6	20.6	20.7								
Turbidity (NTU)	4.41	12.3	10.2	9.81								
Dissolved Oxygen (mg/l)	1.2	1.2	1.2	1.2								

Remarks: Well sampled at 1435 on 10/3/17

# Field Data Information Sheet for Ground Water Sampling Division of Underground Storage Tank Management



Date	<u>10/21/17</u>		
Field Personnel	<u>myl</u>		
General weather Conditions	<u>Sunny</u>		
Ambient Air Temperature (°C)	<u>22.0</u>		
Facility Name:	<u>Former Highway 11 Grocery</u>	Site ID#	<u>03439</u>
Quality Assurance			
pH Sensor:	<u>Oakton 35630-62</u>	Conductivity Sensor:	<u>35630-32</u>
serial no.	<u>324976</u>	serial no.	<u>324976</u>
pH = 4.0	<u>4.0</u>	Standard	<u>15,000</u>
pH = 7.0	<u>7.0</u>	Standard	<u>1,413</u>
pH = 10.0	<u>10.0</u>	Standard	<u>447</u>
DO Meter	<u>YSI 60</u>	Standard	<u>84</u>
Standard	<u>0% cal</u>	Turbidity:	<u>1.0-10.0 NTU</u>
Chain of Custody			
Relinquished by	Date/Time	Received by	Date/Time

Volume Purged (gallons)	Initial	1st Vol.	2nd Vol.	3rd Vol.	4th Vol.	5th Vol.	6th Vol.	7th Vol.	8th Vol.	Post
Time (military)	---									
pH (s.u)										
Specific Conductivity (µS)										
Water Temperature (°C)										
Turbidity (NTU)										
Dissolved Oxygen (mg/l)										

Well # 03439-MW10

Well Diameter (D) 2 inch of 28.00 feet(ft)

conversion factor (C):  $3.143 \cdot (D/2)^2$   
 for a 2 inch well C = 0.163  
 for a 4 inch well C = 0.652

\*Free Product Thickness \_\_\_\_\_ ft

Total Well Depth (TWD) 28.00 ft

Depth to Groundwater (DGW) \_\_\_\_\_ ft

Length of Water Column (LWC = TWD-DGW) \_\_\_\_\_ ft

1 Casing Volume (LWC°C) = \_\_\_\_\_ X .17 = \_\_\_\_\_ gals

3 Casing Volumes = 3 X \_\_\_\_\_ = \_\_\_\_\_ gals  
(Standard Purge Volume)

Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals

\*If free product is present over 1/8 inch, sampling will not be required.

Remarks: Well sampled at \_\_\_\_\_ on \_\_\_\_\_

*well not tested @ time of sampling*



# Field Data Information Sheet for Ground Water Sampling Division of Underground Storage Tank Management

Date 10/3/17  
 Field Personnel AMP  
 General weather Conditions 5400Y  
 Ambient Air Temperature (°C) 20.1  
 Facility Name: Former Highway 11 Grocery Site ID# 03439  
 Quality Assurance

pH Sensor: Oakton 35630-62 Conductivity Sensor: 35630-32  
 serial no. 324976 serial no. 324976  
 pH = 4.0 4.0 Standard 15,000  
 pH = 7.0 7.0 Standard 1,413  
 pH = 10.0 10.0 Standard 447  
 DO Meter YSI 60 Standard 84  
 Standard 0% cal Turbidity: 1.0-10.0 NTU  
 Chain of Custody

Well # 03439-MW11  
 Well Diameter (D) 2 inch of 23.00 feet(ft)  
 conversion factor (C):  $3.143 \cdot (D/2)^2$   
 for a 2 inch well C = 0.163  
 for a 4 inch well C = 0.652  
 \*Free Product Thickness  
 Total Well Depth (TWD) 23.00 ft  
 Depth to Groundwater (DGW) 19.08 ft  
 Length of Water Column (LWC = TWD-DGW) 5.92 ft  
 1 Casing Volume (LWC \* C) = 5.92 X .17 = 1.006 gals  
 3 Casing Volumes = 3 X 1.006 = 3.018 gals  
 (Standard Purge Volume)  
 Total Volume of Water Purged Before Sampling 3.0 gals  
 \*If free product is present over 1/8 inch, sampling will not be required.

Relinquished by	Date/Time	Received by	Date/Time	1st Vol.	2nd Vol.	3rd Vol.	4th Vol.	5th Vol.	6th Vol.	7th Vol.	8th Vol.	Post
Volume Purged (gallons)	---											
Time (military)	<u>1109</u>	<u>1111</u>	<u>1115</u>	<u>1118</u>								
pH (s.u)	<u>5.36</u>	<u>5.42</u>	<u>5.44</u>	<u>5.44</u>								
Specific Conductivity (µS)	<u>20.37</u>	<u>21.24</u>	<u>21.18</u>	<u>21.31</u>								
Water Temperature (°C)	<u>20.5</u>	<u>20.5</u>	<u>20.5</u>	<u>20.5</u>								
Turbidity (NTU)	<u>4.31</u>	<u>11.1</u>	<u>10.3</u>	<u>8.22</u>								
Dissolved Oxygen (mg/l)	<u>1.7</u>	<u>1.7</u>	<u>1.7</u>	<u>1.7</u>								

Remarks: Well sampled at 1118 on 10/3/17



BUNELL-LAMMONS ENGINEERING, INC

# Field Data Information Sheet for Ground Water Sampling Division of Underground Storage Tank Management

Date 10/1/17

Field Personnel mwf

General weather Conditions 14 mm

Ambient Air Temperature (°C) 20°

Facility Name: Former Highway 11 Grocery Site ID# 03439

Quality Assurance

pH Sensor: Oakton 35630-62 Conductivity Sensor: 35630-32

serial no. 324976 serial no. 324976

pH = 4.0 4.0 Standard 15,000

pH = 7.0 7.0 Standard 1,413

pH = 10.0 10.0 Standard 447

DO Meter YSI 60 Standard 84

Standard 0% cal Turbidity: 1.0-10.0 NTU

Chain of Custody

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Well # 03439-MW12

Well Diameter (D) 2 inch of 12.00 feet(ft)

conversion factor (C):  $3.143 \cdot (D/2)^2$

for a 2 inch well C = 0.163

for a 4 inch well C = 0.652

\*Free Product Thickness \_\_\_\_\_ ft

Total Well Depth (TWD) 12.00 ft

Depth to Groundwater (DGW) 7.56 ft

Length of Water Column (LWC = TWD-DGW) 8.44 ft

1 Casing Volume (LWC \* C) = 8.44 X .17 = 1.43 gals

3 Casing Volumes = 3 X 1.43 = 4.29 gals

(Standard Purge Volume)

Total Volume of Water Purged Before Sampling 4.5 gals

\*If free product is present over 1/8 inch, sampling will not be required.

Initial	1st Vol.	2nd Vol.	3rd Vol.	4th Vol.	5th Vol.	6th Vol.	7th Vol.	8th Vol.	Post
Volume Purged (gallons)	<u>1.5</u>	<u>2.0</u>	<u>4.5</u>						
Time (military)	<u>1520</u>	<u>1531</u>	<u>1537</u>						
pH (s.u)	<u>6.22</u>	<u>6.28</u>	<u>6.90</u>						
Specific Conductivity (µS)	<u>42.14</u>	<u>47.82</u>	<u>44.11</u>						
Water Temperature (°C)	<u>20.9</u>	<u>20.8</u>	<u>20.6</u>						
Turbidity (NTU)	<u>4.61</u>	<u>11.1</u>	<u>8.41</u>						
Dissolved Oxygen (mg/l)	<u>0.7</u>	<u>0.2</u>	<u>0.2</u>						

Remarks: Well sampled at 1537 on 10/1/17





BUNNELL-LAMMONS ENGINEERING, INC

# Field Data Information Sheet for Ground Water Sampling Division of Underground Storage Tank Management

Date 10/2/17

Field Personnel MW?

General weather Conditions Sunny

Ambient Air Temperature (°C) 22.0

Facility Name: Former Highway 11 Grocery Site ID# 03439

Quality Assurance

pH Sensor: Oakton 35630-62 Conductivity Sensor: 35630-32

serial no. 324976 serial no. 324976

pH = 4.0 4.0 Standard 15,000

pH = 7.0 7.0 Standard 1,413

pH = 10.0 10.0 Standard 447

DO Meter YSI 60 Standard 84

Standard 0% cal Turbidity: 1.0-10.0 NTU

Chain of Custody

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Well # 03439-MW13

Well Diameter (D) 2 inch of 12.00 feet(ft)

conversion factor (C):  $3.143 \cdot (D/2)^2$   
for a 2 inch well C = 0.163  
for a 4 inch well C = 0.652

\*Free Product Thickness \_\_\_\_\_ ft

Total Well Depth (TWD) 8.79 ft

Depth to Groundwater (DGW) 3.21 ft

Length of Water Column (LWC = TWD-DGW) 5.58 ft

1 Casing Volume (LWC \* C) = 0.55 gals

3 Casing Volumes = 1.65 gals

(Standard Purge Volume)

Total Volume of Water Purged Before Sampling 0.5 gals

\*If free product is present over 1/8 inch, sampling will not be required.

	Initial	1st Vol.	2nd Vol.	3rd Vol.	4th Vol.	5th Vol.	6th Vol.	7th Vol.	8th Vol.	Post
Volume Purged (gallons)	---	<u>0.5</u>								
Time (military)	<u>1635</u>	<u>1639</u>								
pH (s.u)	<u>5.48</u>	<u>5.51</u>								
Specific Conductivity (µS)	<u>1776</u>	<u>57.48</u>								
Water Temperature (°C)	<u>20.0</u>	<u>19.9</u>								
Turbidity (NTU)	<u>12.4</u>	<u>11.8</u>								
Dissolved Oxygen (mg/l)	<u>1.3</u>	<u>1.3</u>								

Remarks: Well sampled at 1640 on 10/2/17 well found dry @ 25 gallons

# Field Data Information Sheet for Ground Water Sampling Division of Underground Storage Tank Management



BUNNELL-LAMMONS ENGINEERING, INC.

Date 10/3/17  
 Field Personnel SM  
 General weather Conditions  Sunny  
 Ambient Air Temperature (°C)  20°  
 Facility Name:  Former Highway 11 Grocery Site ID#  03439  
 Quality Assurance

**pH Sensor:**  Oakton 35630-62 Conductivity Sensor:  35630-32  
 serial no.  324976 serial no.  324976  
 pH = 4.0  Standard 15,000  
 pH = 7.0  Standard 1,413  
 pH = 10.0  Standard 447  
**DO Meter**  YSI 60 Standard 84  
 Standard 0% cal Turbidity:  1.0-10.0 NTU  
 Chain of Custody

Well #  03439-MW14  
 Well Diameter (D)  2 inch of  10.00 feet(ft)  
 conversion factor ( C ):  $3.143 \cdot (D/2)^2$   
 for a 2 inch well C = 0.163  
 for a 4 inch well C = 0.652  
 \*Free Product Thickness \_\_\_\_\_ ft  
 Total Well Depth (TWD)  3.67 ft  
 Depth to Groundwater (DGW)  6.93 ft  
 Length of Water Column (LWC = TWD-DGW) \_\_\_\_\_ ft  
 1 Casing Volume (LWC \* C) =  6.33 X  .17 =  1.07 gals  
 3 Casing Volumes = 3 X  1.07 =  3.21 gals  
 (Standard Purge Volume)  
 Total Volume of Water Purged Before Sampling  3.5 gals  
 \*If free product is present over 1/8 inch, sampling will not be required.

Relinquished by	Date/Time	Received by	Date/Time	1st Vol.	2nd Vol.	3rd Vol.	4th Vol.	5th Vol.	6th Vol.	7th Vol.	8th Vol.	Post
Volume Purged (gallons)	Initial	1.5	2.5	1.5	2.5	1.5						
Time (military)	1450	1455	1500	1505								
pH (s.u)	6.42	6.37	6.17	6.41								
Specific Conductivity (µS)	89.42	90.11	90.77	90.67								
Water Temperature (°C)	21.5	21.5	21.5	21.4								
Turbidity (NTU)	8.2	17.41	11.28	9.94								
Dissolved Oxygen (mg/l)	1.1	1.1	1.1	1.1								

Remarks:  Well sampled at 1505 on  10/3/17

# Field Data Information Sheet for Ground Water Sampling Division of Underground Storage Tank Management



Date 10/2/17  
 Field Personnel [Signature]  
 General weather Conditions 54°F  
 Ambient Air Temperature (°C) 22°  
 Facility Name: Former Highway 11 Grocery Site ID# 03439  
 Quality Assurance

**pH Sensor:** Oakton 35630-62 Conductivity Sensor: 35630-32  
 serial no. 324976 serial no. 324976  
 pH = 4.0 Standard 15,000  
 pH = 7.0 Standard 1,413  
 pH = 10.0 Standard 447  
**DO Meter** YSI 60 Standard 84  
 Standard 0% cal Turbidity: 1.0-10.0 NTU  
 Chain of Custody

Well # 03439-MW15  
 Well Diameter (D) 2 inch of 9.00 feet(ft)  
 conversion factor (C):  $3.143 \cdot (D/2)^2$   
 for a 2 inch well C = 0.163  
 for a 4 inch well C = 0.652  
 \*Free Product Thickness  
 Total Well Depth (TWD) 11.27 ft 12.35 ft  
 Depth to Groundwater (DGW) 1.08 ft  
 Length of Water Column (LWC = TWD-DGW) 1.08 ft  
 1 Casing Volume (LWC \* C) = 1.08 X .17 = 0.18 gals  
 3 Casing Volumes = 3 X 0.18 = 0.54 gals  
 (Standard Purge Volume)  
 Total Volume of Water Purged Before Sampling 0.5 gals  
 \*If free product is present over 1/8 inch, sampling will not be required.

Relinquished by	Date/Time	Received by	Date/Time	1st Vol.	2nd Vol.	3rd Vol.	4th Vol.	5th Vol.	6th Vol.	7th Vol.	8th Vol.	Post
Volume Purged (gallons)	---			0.5								
Time (military)	1619			1621								
pH (s.u)	5.95			5.98								
Specific Conductivity (µS)	91.72			92.94								
Water Temperature (°C)	20.8			19.9								
Turbidity (NTU)	1.27			12.1								
Dissolved Oxygen (mg/l)	1.5			1.5								

Remarks: Well sampled at 1621 on 10/2/17 Well Purged @ 0.5 gallons



BUNNELL-LAMMONS ENGINEERING, INC

# Field Data Information Sheet for Ground Water Sampling Division of Underground Storage Tank Management

Date 10/3/17  
 Field Personnel MWP  
 General weather Conditions  Sunny  
 Ambient Air Temperature (°C) 20.6  
 Facility Name: Former Highway 11 Grocery Site ID# 03439  
 Quality Assurance

pH Sensor: Oakton 35630-62 Conductivity Sensor: 35630-32  
 serial no. 324976 serial no. 324976  
 pH = 4.0 4.0 Standard 15,000  
 pH = 7.0 7.0 Standard 1,413  
 pH = 10.0 10.0 Standard 447  
 DO Meter YSI 60 Standard 84  
 Standard 0% cal Turbidity: 1.0-10.0 NTU  
 Chain of Custody

Well # 03439-RW01  
 Well Diameter (D) 2 inch of 30.00 feet(ft)  
 conversion factor (C):  $3.143 \cdot (D/2)^2$   
 for a 2 inch well C = 0.163  
 for a 4 inch well C = 0.652  
 \*Free Product Thickness \_\_\_\_\_ ft  
 Total Well Depth (TWD) 30.00 ft  
 Depth to Groundwater (DGW) 25.98 ft  
 Length of Water Column (LWC = TWD-DGW) 4.02 ft  
 1 Casing Volume (LWC \* C) = 4.02 X .65 = 2.61 gals  
 3 Casing Volumes = 3 X 2.61 = 7.83 gals  
 (Standard Purge Volume)  
 Total Volume of Water Purged Before Sampling 8.0 gals  
 \*If free product is present over 1/8 inch, sampling will not be required.

Initial	1st Vol.	2nd Vol.	3rd Vol.	4th Vol.	5th Vol.	6th Vol.	7th Vol.	8th Vol.	Post
Volume Purged (gallons)	---	3.0	6.0						
Time (military)	900	908	912						
pH (s.u)	6.03	6.11	6.13						
Specific Conductivity (µS)	147.6	150.2	151.1						
Water Temperature (°C)	20.4	20.3	20.2						
Turbidity (NTU)	2.24	13.2	7.91						
Dissolved Oxygen (mg/l)	0.8	0.8	0.8						

Purged line 913 on 10/3/17  
 g/k  
 Remarks: Well sampled at ~~10/3/17~~ on 10/3/17

# Field Data Information Sheet for Ground Water Sampling Division of Underground Storage Tank Management

Date 10/22/17  
 Field Personnel MWP  
 General weather Conditions Sunny  
 Ambient Air Temperature (°C) 22°  
 Facility Name: Former Highway 11 Grocery Site ID# 03439  
 Quality Assurance

**pH Sensor:** Oakton 35630-62 **Conductivity Sensor:** 35630-32  
 serial no. 324976 serial no. 324976  
 pH = 4.0 Standard 15,000  
 pH = 7.0 Standard 1,413  
 pH = 10.0 Standard 447  
**DO Meter** YSI 60 **Turbidity:** 84  
 Standard 0% cal **Chain of Custody** 1.0-10.0 NTU

Relinquished by: \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by: \_\_\_\_\_ Date/Time \_\_\_\_\_

Well # 03439-RW02  
 Well Diameter (D) 2 inch of 30.00 feet(ft)  
 conversion factor (C):  $3.143 \cdot (D/2)^2$   
 for a 2 inch well C = 0.163  
 for a 4 inch well C = 0.652  
 \*Free Product Thickness 0.61 ft  
 Total Well Depth (TWD) 30.00 ft  
 Depth to Groundwater (DGW) 25.64 ft  
 Length of Water Column (LWC = TWD-DGW) 4.36 ft  
 1 Casing Volume (LWC \* C) = 4.76 X .65 = 2.83 gals  
 3 Casing Volumes = 3 X 2.83 = 8.49 gals  
 (Standard Purge Volume)  
 Total Volume of Water Purged Before Sampling N/A gals

\*If free product is present over 1/8 inch, sampling will not be required.

Initial	1st Vol.	2nd Vol.	3rd Vol.	4th Vol.	5th Vol.	6th Vol.	7th Vol.	8th Vol.	Post
---									
Volume Purged (gallons)									
Time (military)									
pH (s.u)									
Specific Conductivity (µS)									
Water Temperature (°C)									
Turbidity (NTU)									
Dissolved Oxygen (mg/l)									

Remarks: Well sampled at \_\_\_\_\_ on \_\_\_\_\_ well not sampled due to FPT > 2.01'



# Field Data Information Sheet for Ground Water Sampling Division of Underground Storage Tank Management

Date: 10/13/17

Field Personnel: Maui

General weather Conditions: Sunny

Ambient Air Temperature (°C): 20°

Facility Name: Former Highway 11 Grocery Site ID#: 03439

Quality Assurance

pH Sensor: Oakton 35630-62 Conductivity Sensor: 35630-32

serial no. 324976 serial no. 324976

pH = 4.0 4.0 Standard 15,000

pH = 7.0 7.0 Standard 1,413

pH = 10.0 10.0 Standard 447

DO Meter YSI 60 Standard 84

Standard 0% cal Turbidity: 1.0-10.0 NTU

Chain of Custody

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Well # 03439-RW03

Well Diameter (D) 2 inch of 30.00 feet(ft)

conversion factor (C):  $3.143 \cdot (D/2)^2$   
 for a 2 inch well C = 0.163  
 for a 4 inch well C = 0.652

\*Free Product Thickness \_\_\_\_\_ ft

Total Well Depth (TWD) 30.00 ft

Depth to Groundwater (DGW) 29.97 ft

Length of Water Column (LWC = TWD-DGW) \_\_\_\_\_ ft

1 Casing Volume (LWC \* C) = \_\_\_\_\_ X .65 = \_\_\_\_\_ gals

3 Casing Volumes = 3 X \_\_\_\_\_ = \_\_\_\_\_ gals  
 (Standard Purge Volume)

Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals

\*If free product is present over 1/8 inch, sampling will not be required.

	Initial	1st Vol.	2nd Vol.	3rd Vol.	4th Vol.	5th Vol.	6th Vol.	7th Vol.	8th Vol.	Post
Volume Purged (gallons)	---									
Time (military)										
pH (s.u.)										
Specific Conductivity (µS)										
Water Temperature (°C)										
Turbidity (NTU)										
Dissolved Oxygen (mg/l)										

Remarks: Well sampled at \_\_\_\_\_ on \_\_\_\_\_ well dry @ time of sampling.

# Field Data Information Sheet for Ground Water Sampling Division of Underground Storage Tank Management



Date 10/31/17  
 Field Personnel mmf  
 General weather Conditions  Sunny  
 Ambient Air Temperature (°C) 20°  
 Facility Name: Former Highway 11 Grocery Site ID# 03439  
 Quality Assurance

**pH Sensor:** Oakton 35630-62 Conductivity Sensor: 35630-32  
 serial no. 324976 serial no. 324976  
 pH = 4.0 Standard 15,000  
 pH = 7.0 Standard 1,413  
 pH = 10.0 Standard 447  
**DO Meter** YSI 60 Standard 84  
 Standard 0% cal Turbidity: 1.0-10.0 NTU  
 Chain of Custody

Well # 03439-RW04  
 Well Diameter (D) 2 inch of 30.00 feet(ft)  
 conversion factor (C):  $3.143 \cdot (D/2)^2$   
 for a 2 inch well C = 0.163  
 for a 4 inch well C = 0.652  
 \*Free Product Thickness \_\_\_\_\_ ft  
 Total Well Depth (TWD) 27.69 ft  
 Depth to Groundwater (DGW) 6.31 ft  
 Length of Water Column (LWC = TWD-DGW) \_\_\_\_\_ ft  
 1 Casing Volume (LWC \* C) =  $6.31 \cdot .65 = 4.10$  gals  
 3 Casing Volumes =  $3 \cdot 4.10 = 12.30$  gals  
 (Standard Purge Volume)  
 Total Volume of Water Purged Before Sampling 12.3 gals  
 \*If free product is present over 1/8 inch, sampling will not be required.

Relinquished by	Date/Time	Received by	Date/Time	1st Vol.	2nd Vol.	3rd Vol.	4th Vol.	5th Vol.	6th Vol.	7th Vol.	8th Vol.	Post
Volume Purged (gallons)	---	4.5	8.5	12.5								
Time (military)	1015	1020	1023	1027								
pH (s.u)	5.24	5.21	5.19	5.20								
Specific Conductivity (µS)	3796	3921	3973	3989								
Water Temperature (°C)	20.3	20.2	20.1	20.1								
Turbidity (NTU)	4.77	12.3	10.8	9.42								
Dissolved Oxygen (mg/l)	1.0	1.0	1.0	1.0								

Remarks: Well sampled at 1027 on 10/31/17



BUNNELL-LAMMONS ENGINEERING, INC

# Field Data Information Sheet for Ground Water Sampling Division of Underground Storage Tank Management

Date 10/21/7  
 Field Personnel MWP  
 General weather Conditions Sunny  
 Ambient Air Temperature (°C) 22°  
 Facility Name: Former Highway 11 Grocery Site ID# 03439  
 Quality Assurance

**pH Sensor:** Oakton 35630-62 Conductivity Sensor: 35630-32  
 serial no. 324976 serial no. 324976  
 pH = 4.0 4.0 Standard 15,000  
 pH = 7.0 7.0 Standard 1,413  
 pH = 10.0 10.0 Standard 447  
**DO Meter** YSI 60 Standard 84  
 Standard 0% cal Turbidity: 1.0-10.0 NTU  
 Chain of Custody

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Well # 03439-RW05  
 Well Diameter (D) 2 inch of 30.00 feet(ft)  
 conversion factor (C):  $3.143 \cdot (D/2)^2$   
 for a 2 inch well C = 0.163  
 for a 4 inch well C = 0.652  
 \*Free Product Thickness 0.38 ft  
 Total Well Depth (TWD) 30.00 ft  
 Depth to Groundwater (DGW) 24.70 ft  
 Length of Water Column (LWC = TWD-DGW) 5.30 ft  
 1 Casing Volume (LWC \* C) = 5.30 X .65 = 3.45 gals  
 3 Casing Volumes = 3 X 3.45 = 10.35 gals  
 (Standard Purge Volume)  
 Total Volume of Water Purged Before Sampling N/A gals  
 \*If free product is present over 1/8 inch, sampling will not be required.

	Initial	1st Vol.	2nd Vol.	3rd Vol.	4th Vol.	5th Vol.	6th Vol.	7th Vol.	8th Vol.	Post
Volume Purged (gallons)										
Time (military)										
pH (s.u)										
Specific Conductivity (µS)										
Water Temperature (°C)										
Turbidity (NTU)										
Dissolved Oxygen (mg/l)										

Well not sampled due to FPT > 0.01'

Remarks: Well sampled at \_\_\_\_\_ on \_\_\_\_\_





BUNNELL-LAWMONS ENGINEERING, INC

# Field Data Information Sheet for Ground Water Sampling Division of Underground Storage Tank Management

Date: 10/2/17

Field Personnel: MWP

General weather Conditions: F42N

Ambient Air Temperature (°C): 22

Facility Name: Former Highway 11 Grocery Site ID#: 03439

Quality Assurance

pH Sensor: Oakton 35630-62 Conductivity Sensor: 35630-32

serial no. 324976 serial no. 324976

pH = 4.0 4.0 Standard 15,000

pH = 7.0 7.0 Standard 1,413

pH = 10.0 10.0 Standard 447

DO Meter YSI 60 Standard 84

Standard 0% cal Turbidity: 1.0-10.0 NTU

Chain of Custody

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Well # 03439-RW06

Well Diameter (D) 2 inch of 26.50 feet(ft)

conversion factor (C):  $3.143 \cdot (D/2)^2$   
for a 2 inch well C = 0.163  
for a 4 inch well C = 0.652

\*Free Product Thickness 3.74 ft

Total Well Depth (TWD) 26.50 ft

Depth to Groundwater (DGW) 22.09 ft

Length of Water Column (LWC = TWD-DGW) 3.41 ft

1 Casing Volume (LWC \* C) = 7.91 X .65 = 2.22 gals

3 Casing Volumes = 3 X 9.22 = 6.66 gals  
(Standard Purge Volume)

Total Volume of Water Purged Before Sampling N/A gals

\*If free product is present over 1/8 inch, sampling will not be required.

Volume Purged (gallons)	1st Vol.	2nd Vol.	3rd Vol.	4th Vol.	5th Vol.	6th Vol.	7th Vol.	8th Vol.	Post
Time (military)									
pH (s.u)									
Specific Conductivity (µS)									
Water Temperature (°C)									
Turbidity (NTU)									
Dissolved Oxygen (mg/l)									

Remarks: Well sampled at \_\_\_\_\_ on \_\_\_\_\_

*well not sampled due to FPT > 0.01'*



BUNNELL-LAMMONS ENGINEERING, INC

# Field Data Information Sheet for Ground Water Sampling Division of Underground Storage Tank Management

Date 10/21/17

Field Personnel Amr

General weather Conditions Funny

Ambient Air Temperature (°C) 22°

Facility Name: Former Highway 11 Grocery Site ID# 03439

Quality Assurance

pH Sensor: Oakton 35630-62 Conductivity Sensor: 35630-32

serial no. 324976 serial no. 324976

pH = 4.0 4.0 Standard 15,000

pH = 7.0 7.0 Standard 1,413

pH = 10.0 10.0 Standard 447

DO Meter YSI 60 Standard 84

Standard 0% cal Turbidity: 1.0-10.0 NTU

Chain of Custody

Well # 03439-RW07

Well Diameter (D) 2 inch of 30.00 feet(ft)

conversion factor (C):  $3.143 \cdot (D/2)^2$   
for a 2 inch well C = 0.163  
for a 4 inch well C = 0.652

\*Free Product Thickness 0.83 ft

Total Well Depth (TWD) 30.00 ft

Depth to Groundwater (DGW) 21.25 ft

Length of Water Column (LWC = TWD-DGW) 8.75 ft

1 Casing Volume (LWC \* C) = 8.75 X .65 = 5.69 gals

3 Casing Volumes = 3 X 5.69 = 17.07 gals  
(Standard Purge Volume)

Total Volume of Water Purged Before Sampling N/A gals

\*If free product is present over 1/8 inch, sampling will not be required.

	Initial	1st Vol.	2nd Vol.	3rd Vol.	4th Vol.	5th Vol.	6th Vol.	7th Vol.	8th Vol.	Post
Volume Purged (gallons)	---									
Time (military)										
pH (s.u)										
Specific Conductivity (µS)										
Water Temperature (°C)										
Turbidity (NTU)										
Dissolved Oxygen (mg/l)										

Remarks: Well sampled at \_\_\_\_\_ on \_\_\_\_\_

*well not sampled due to FPT > 0.01'*

# Field Data Information Sheet for Ground Water Sampling Division of Underground Storage Tank Management



Date 10/3/17

Field Personnel MWP

General weather Conditions Clear

Ambient Air Temperature (°C) 30°

Facility Name: Former Highway 11 Grocery Site ID# 03439

Quality Assurance

pH Sensor: Oakton 35630-62 Conductivity Sensor: 35630-32

serial no. 324976 serial no. 324976

pH = 4.0 4.0 Standard 15,000

pH = 7.0 7.0 Standard 1,413

pH = 10.0 10.0 Standard 447

DO Meter YSI 60 Standard 84

Standard 0% cal Turbidity: 1.0-10.0 NTU

Chain of Custody

Well # 03439-RW08

Well Diameter (D) 2 inch of 28.50 feet(ft)

conversion factor (C):  $3.143 \cdot (D/2)^2$

for a 2 inch well C = 0.163

for a 4 inch well C = 0.652

\*Free Product Thickness \_\_\_\_\_ ft

Total Well Depth (TWD) 19.61 ft

Depth to Groundwater (DGW) 8.89 ft

Length of Water Column (LWC = TWD-DGW) \_\_\_\_\_ ft

1 Casing Volume (LWC \* C) = 4.89 X .65 = 3.177 gals

3 Casing Volumes = 3 X 3.177 = 9.531 gals

(Standard Purge Volume)

Total Volume of Water Purged Before Sampling 17.5 gals

\*if free product is present over 1/8 inch, sampling will not be required.

Relinquished by	Date/Time	Received by	Date/Time	1st Vol.	2nd Vol.	3rd Vol.	4th Vol.	5th Vol.	6th Vol.	7th Vol.	8th Vol.	Post
Volume Purged (gallons)	--	6.0	12.0	17.5								
Time (military)	1200	1204	1213									
pH (s.u)	5.92	6.02	6.08									
Specific Conductivity (µS)	141.7	147.2	147.1									
Water Temperature (°C)	19.6	19.5	19.4									
Turbidity (NTU)	4.41	1.22	0.81									
Dissolved Oxygen (mg/l)	0.6	0.6	0.6									

Remarks: Well sampled at 1213 on 10/3/17.

# Field Data Information Sheet for Ground Water Sampling Division of Underground Storage Tank Management



Date 10/21/13  
 Field Personnel AWP  
 General weather Conditions 54my  
 Ambient Air Temperature (°C) 27.8  
 Facility Name: Former Highway 11 Grocery Site ID# 03439  
 Quality Assurance

**pH Sensor:** Oakton 35630-62 Conductivity Sensor: 35630-32  
 serial no. 324976 serial no. 324976  
 pH = 4.0 4.0 Standard 15,000  
 pH = 7.0 7.0 Standard 1,413  
 pH = 10.0 10.0 Standard 447  
**DO Meter** YSI 60 Standard 84  
 Standard 0% cal Turbidity: 1.0-10.0 NTU  
 Chain of Custody

Well # 03439-RW09  
 Well Diameter (D) 2 inch of 30.00 feet(ft)  
 conversion factor (C):  $3.143 \cdot (D/2)^2$   
 for a 2 inch well C = 0.163  
 for a 4 inch well C = 0.652  
 \*Free Product Thickness 0.04 ft  
 Total Well Depth (TWD) 30.00 ft  
 Depth to Groundwater (DGW) 21.44 ft  
 Length of Water Column (LWC = TWD-DGW) 8.58 ft  
 1 Casing Volume (LWC \* C) = 8.58 X .65 = 5.58 gals  
 3 Casing Volumes = 3 X 5.58 = 16.74 gals  
 (Standard Purge Volume)  
 Total Volume of Water Purged Before Sampling N/A gals  
 \*If free product is present over 1/8 inch, sampling will not be required.

Relinquished by	Date/Time	Received by	Date/Time	1st Vol.	2nd Vol.	3rd Vol.	4th Vol.	5th Vol.	6th Vol.	7th Vol.	8th Vol.	Post
Volume Purged (gallons)	---											
Time (military)												
pH (s.u)												
Specific Conductivity (µS)												
Water Temperature (°C)												
Turbidity (NTU)												
Dissolved Oxygen (mg/l)												

Remarks: Well sampled at 10/21/13 on 10/21/13  
well not sampled due to FPT > 0.01'.



BUNNELL-LAMMONS ENGINEERING, INC

# Field Data Information Sheet for Ground Water Sampling Division of Underground Storage Tank Management

Date 10/31/17

Field Personnel AW

General weather Conditions Sunny

Ambient Air Temperature (°C) 20

Facility Name: Former Highway 11 Grocery Site ID# 03439

Quality Assurance

pH Sensor: Oakton 35630-62 Conductivity Sensor: 35630-32

serial no. 324976 serial no. 324976

pH = 4.0 4.0 Standard 15,000

pH = 7.0 7.0 Standard 1,413

pH = 10.0 10.0 Standard 447

DO Meter YSI 60 Standard 84

Standard 0% cal Turbidity: 1.0-10.0 NTU

Chain of Custody

Well # 03439-RW10

Well Diameter (D) 2 inch of 30.00 feet(ft)

conversion factor (C):  $3.143 \cdot (D/2)^2$   
for a 2 inch well C = 0.163  
for a 4 inch well C = 0.652

\*Free Product Thickness \_\_\_\_\_ ft

Total Well Depth (TWD) 25.98 ft

Depth to Groundwater (DGW) 4.02 ft

Length of Water Column (LWC = TWD-DGW) \_\_\_\_\_ ft

1 Casing Volume (LWC \* C) = 4.02 X .65 = 2.61 gals

3 Casing Volumes = 3 X 2.61 = 7.77 gals  
(Standard Purge Volume)

Total Volume of Water Purged Before Sampling 8.0 gals

\*If free product is present over 1/8 inch, sampling will not be required.

Relinquished by	Date/Time	Received by	Date/Time	Initial	1st Vol.	2nd Vol.	3rd Vol.	4th Vol.	5th Vol.	6th Vol.	7th Vol.	8th Vol.	Post
Volume Purged (gallons)	--	<u>3.0</u>	<u>6.0</u>	<u>8.0</u>									
Time (military)	<u>1245</u>	<u>1249</u>	<u>1255</u>	<u>1300</u>									
pH (s.u)	<u>6.11</u>	<u>6.19</u>	<u>6.21</u>	<u>6.22</u>									
Specific Conductivity (µS)	<u>149.9</u>	<u>151.3</u>	<u>152.3</u>	<u>151.9</u>									
Water Temperature (°C)	<u>19.9</u>	<u>19.9</u>	<u>19.8</u>	<u>19.9</u>									
Turbidity (NTU)	<u>3.11</u>	<u>12.8</u>	<u>10.4</u>	<u>8.97</u>									
Dissolved Oxygen (mg/l)	<u>1.1</u>	<u>1.1</u>	<u>1.1</u>	<u>1.1</u>									

Remarks: Well sampled at 1300 on 10/31/17



# Field Data Information Sheet for Ground Water Sampling Division of Underground Storage Tank Management

Date 10/2/17  
 Field Personnel MLP  
 General weather Conditions Sunny  
 Ambient Air Temperature (°C) 22°  
 Facility Name: Former Highway 11 Grocery Site ID# 03439  
 Quality Assurance

pH Sensor: Oakton 35630-62 Conductivity Sensor: 35630-32  
 serial no. 324976 serial no. 324976  
 pH = 4.0 4.0 Standard 15,000  
 pH = 7.0 7.0 Standard 1,413  
 pH = 10.0 10.0 Standard 447  
 DO Meter YSI 60 Standard 84  
 Standard 0% cal Turbidity: 1.0-10.0 NTU  
 Chain of Custody

Well # 03439-RW11  
 Well Diameter (D) 2 inch of 27.00 feet(ft)  
 conversion factor (C):  $3.143 \cdot (D/2)^2$   
 for a 2 inch well C = 0.163  
 for a 4 inch well C = 0.652  
 \*Free Product Thickness 0.04 ft  
 Total Well Depth (TWD) 27.00 ft  
 Depth to Groundwater (DGW) 17.24 ft  
 Length of Water Column (LWC = TWD-DGW) 9.76 ft  
 1 Casing Volume (LWC \* C) = 9.76 X .65 = 6.34 gals  
 3 Casing Volumes = 3 X 6.34 = 19.02 gals  
 (Standard Purge Volume)  
 Total Volume of Water Purged Before Sampling N/A gals  
 \*if free product is present over 1/8 inch, sampling will not be required.

	Initial	1st Vol.	2nd Vol.	3rd Vol.	4th Vol.	5th Vol.	6th Vol.	7th Vol.	8th Vol.	Post
Volume Purged (gallons)	---									
Time (military)										
pH (s.u)										
Specific Conductivity (µS)										
Water Temperature (°C)										
Turbidity (NTU)										
Dissolved Oxygen (mg/l)										

Remarks: Well sampled at \_\_\_\_\_ on \_\_\_\_\_  
 well not sampled due to FPT > 0.01'.



BUNNELL-LAMMONS ENGINEERING, INC

# Field Data Information Sheet for Ground Water Sampling Division of Underground Storage Tank Management

Date: 10/13/17 Well # 03439-RW12

Field Personnel: MWP

General weather Conditions: Sunny

Ambient Air Temperature (°C): 20°

Well Diameter (D): 2 inch of 30.00 feet(ft)

conversion factor (C):  $3.143 \cdot (D/2)^2$   
for a 2 inch well C = 0.163  
for a 4 inch well C = 0.652

Facility Name: Former Highway 11 Grocery Site ID# 03439

Quality Assurance

pH Sensor: Oakton 35630-62 Conductivity Sensor: 35630-32

serial no. 324976 serial no. 324976

pH = 4.0 4.0 Standard 15,000

pH = 7.0 7.0 Standard 1,413

pH = 10.0 10.0 Standard 447

DO Meter YSI 60 Standard 84

Standard 0% cal Turbidity: 1.0-10.0 NTU

Chain of Custody

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

\*Free Product Thickness \_\_\_\_\_ ft

Total Well Depth (TWD) 30.00 ft

Depth to Groundwater (DGW) 19.49 ft

Length of Water Column (LWC = TWD-DGW) 10.51 ft

1 Casing Volume (LWC \* C) = 10.51 X .65 = 6.83 gals

3 Casing Volumes = 3 X 6.83 RW-11 = 20.49 gals  
(Standard Purge Volume)

Total Volume of Water Purged Before Sampling 20.5 gals

\*If free product is present over 1/8 inch, sampling will not be required.

	Initial	1st Vol.	2nd Vol.	3rd Vol.	4th Vol.	5th Vol.	6th Vol.	7th Vol.	8th Vol.	Post
Volume Purged (gallons)	---	7.0	19.0	20.5						
Time (military)	1320	1325	1330	1335						
pH (s.u)	6.14	6.19	6.21	6.20						
Specific Conductivity (µS)	167.9	169.2	168.3	167.7						
Water Temperature (°C)	19.6	19.6	19.2	19.5						
Turbidity (NTU)	2.82	13.2	12.7	9.41						
Dissolved Oxygen (mg/l)	0.4	0.4	0.4	0.4						

Remarks: Well sampled at 1315 on 10/13/17

# Field Data Information Sheet for Ground Water Sampling Division of Underground Storage Tank Management



Date 10/17/17

Field Personnel Asmp

General weather Conditions 14.14

Ambient Air Temperature (°C) 20

Facility Name: Former Highway 11 Grocery Site ID# 03439

Quality Assurance

pH Sensor: Oakton 35630-62 Conductivity Sensor: 35630-32

serial no. 324976 serial no. 324976

pH = 4.0 Standard 15,000

pH = 7.0 Standard 1,413

pH = 10.0 Standard 447

DO Meter YSI 60 84

Standard 0% cal Turbidity: 1.0-10.0 NTU

Chain of Custody

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Well # 03439-RW13

Well Diameter (D) 2 inch of 29.00 feet(ft)

conversion factor (C):  $3.143 \cdot (D/2)^2$   
for a 2 inch well C = 0.163  
for a 4 inch well C = 0.652

\*Free Product Thickness \_\_\_\_\_ ft

Total Well Depth (TWD) 19.18 ft

Depth to Groundwater (DGW) \_\_\_\_\_ ft

Length of Water Column (LWC = TWD-DGW) 10.72 ft

1 Casing Volume (LWC \* C) = 10.72 X .65 = 6.97 gals

3 Casing Volumes = 3 X 6.97 = 20.91 gals  
(Standard Purge Volume)

Total Volume of Water Purged Before Sampling 21 gals

\*If free product is present over 1/8 inch, sampling will not be required.

	Initial	1st Vol.	2nd Vol.	3rd Vol.	4th Vol.	5th Vol.	6th Vol.	7th Vol.	8th Vol.	Post
Volume Purged (gallons)	---	7.0	14.0	21.0						
Time (military)	1356	1356	1402	1408						
pH (s.u)	6.02	5.98	5.97	5.99						
Specific Conductivity (µS)	99.01	98.97	98.93	98.89						
Water Temperature (°C)	19.8	19.7	19.7	19.7						
Turbidity (NTU)	3.21	14.6	11.8	8.99						
Dissolved Oxygen (mg/l)	1.0	1.0	1.0	1.0						

Remarks: Well sampled at 1408 on 10/17/17





# Field Data Information Sheet for Ground Water Sampling Division of Underground Storage Tank Management

Date 10/21/17 Well # 03439-RW14

Field Personnel Ampl  
 General weather Conditions Sunny  
 Ambient Air Temperature (°C) 22°

Well Diameter (D) 2 inch of 30.00 feet(ft)  
 conversion factor (C):  $3.143 \times (D/2)^2$   
 for a 2 inch well C = 0.163  
 for a 4 inch well C = 0.652

Facility Name: Former Highway 11 Grocery Site ID# 03439

Quality Assurance

pH Sensor: Oakton 35630-62 Conductivity Sensor: 35630-32  
 serial no. 324976 serial no. 324976  
 pH = 4.0 4.0 Standard 15,000  
 pH = 7.0 7.0 Standard 1,413  
 pH = 10.0 10.0 Standard 447

DO Meter YSI 60 Standard 84  
 Standard 0% cal Turbidity: 1.0-10.0 NTU  
 Chain of Custody

\*Free Product Thickness 0.42 ft  
 Total Well Depth (TWD) 30.00 ft  
 Depth to Groundwater (DGW) 25.42 ft  
 Length of Water Column (LWC = TWD-DGW) 4.58 ft  
 1 Casing Volume (LWC\*C) = 4.58 X .65 = 2.98 gals  
 3 Casing Volumes = 3 X 2.98 = 8.94 gals  
 (Standard Purge Volume)

Total Volume of Water Purged Before Sampling N/A gals  
 \*If free product is present over 1/8 inch, sampling will not be required.

Relinquished by	Date/Time	Received by	Date/Time	1st Vol.	2nd Vol.	3rd Vol.	4th Vol.	5th Vol.	6th Vol.	7th Vol.	8th Vol.	Post
Volume Purged (gallons)	---											
Time (military)												
pH (s.u)												
Specific Conductivity (µS)												
Water Temperature (°C)												
Turbidity (NTU)												
Dissolved Oxygen (mg/l)												

Well not sampled due to FPT > 0.01'

Remarks: Well sampled at \_\_\_\_\_ on \_\_\_\_\_



# Field Data Information Sheet for Ground Water Sampling Division of Underground Storage Tank Management

Date 10/22/17

Field Personnel Map

General weather Conditions 54.0F

Ambient Air Temperature (°C) 21°

Facility Name: Former Highway 11 Grocery Site ID# 03439

Quality Assurance

pH Sensor: Oakton 35630-62 Conductivity Sensor: 35630-32

serial no. 324976 serial no. 324976

pH = 4.0 4.0 Standard 15,000

pH = 7.0 7.0 Standard 1,413

pH = 10.0 10.0 Standard 447

DO Meter YSI 60 Standard 84

Standard 0% cal Turbidity: 1.0-10.0 NTU

Chain of Custody

Relinquished by	Date/Time	Received by	Date/Time

Well # 03439-RW15

Well Diameter (D) 2 inch of 30.00 feet(ft)

conversion factor (C):  $3.143 \cdot (D/2)^2$   
 for a 2 inch well C = 0.163  
 for a 4 inch well C = 0.652

\*Free Product Thickness 1.09 ft

Total Well Depth (TWD) 30.00 ft

Depth to Groundwater (DGW) 24.55 ft

Length of Water Column (LWC = TWD-DGW) 5.45 ft

1 Casing Volume (LWC \* C) = 5.45 X .65 = 3.54 gals

3 Casing Volumes = 3 X 3.54 = 10.62 gals  
 (Standard Purge Volume)

Total Volume of Water Purged Before Sampling N/A gals

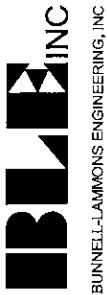
\*If free product is present over 1/8 inch, sampling will not be required.

Initial	1st Vol.	2nd Vol.	3rd Vol.	4th Vol.	5th Vol.	6th Vol.	7th Vol.	8th Vol.	Post
Volume Purged (gallons)	---								
Time (military)									
pH (s.u)									
Specific Conductivity (µS)									
Water Temperature (°C)									
Turbidity (NTU)									
Dissolved Oxygen (mg/l)									

well not sampled due to FPT > 0.01!

Remarks: Well sampled at \_\_\_\_\_ on \_\_\_\_\_

# Field Data Information Sheet for Ground Water Sampling Division of Underground Storage Tank Management



Date 10/11/17  
 Field Personnel MWJ  
 General weather Conditions Sunny  
 Ambient Air Temperature (°C) 27°  
 Facility Name: Former Highway 11 Grocery Site ID# 03439  
 Quality Assurance

pH Sensor: Oakton 35630-62 Conductivity Sensor: 35630-32  
 serial no. 324976 serial no. 324976  
 pH = 4.0 Standard 15,000  
 pH = 7.0 Standard 1,413  
 pH = 10.0 Standard 447  
 DO Meter YSI 60 Standard 84  
 Standard 0% cal Turbidity: 1.0-10.0 NTU  
 Chain of Custody

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Well # 03439-RW16  
 Well Diameter (D) 2 inch of 30.00 feet(ft)  
 conversion factor (C):  $3.143 \times (D/2)^2$   
 for a 2 inch well C = 0.163  
 for a 4 inch well C = 0.652  
 \*Free Product Thickness 1.11 ft  
 Total Well Depth (TWD) 27.04 ft  
 Depth to Groundwater (DGW) 6.96 ft  
 Length of Water Column (LWC = TWD-DGW) 6.96 ft  
 1 Casing Volume (LWC\*C) = 6.96 X .65 = 4.52 gals  
 3 Casing Volumes = 3 X 4.52 = 13.56 gals  
 (Standard Purge Volume)  
 Total Volume of Water Purged Before Sampling N/A gals  
 \*if free product is present over 1/8 inch, sampling will not be required.

	Initial	1st Vol.	2nd Vol.	3rd Vol.	4th Vol.	5th Vol.	6th Vol.	7th Vol.	8th Vol.	Post
Volume Purged (gallons)	---									
Time (military)										
pH (s.u)										
Specific Conductivity (µS)										
Water Temperature (°C)										
Turbidity (NTU)										
Dissolved Oxygen (mg/l)										

Remarks: Well sampled at \_\_\_\_\_ on \_\_\_\_\_  
*Well not sampled due to FPT 70.01'*



BUNNELL-LAMMONS ENGINEERING, INC

# Field Data Information Sheet for Ground Water Sampling Division of Underground Storage Tank Management

Date 10/2/17 Map  
 Field Personnel \_\_\_\_\_  
 General weather Conditions Sunny  
 Ambient Air Temperature (°C) 22°  
 Facility Name: Former Highway 11 Grocery Site ID# 03439  
 Quality Assurance

pH Sensor: Oakton 35630-62 Conductivity Sensor: 35630-32  
 serial no. 324976 serial no. 324976  
 pH = 4.0 4.0 Standard 15,000  
 pH = 7.0 7.0 Standard 1,413  
 pH = 10.0 10.0 Standard 447  
 DO Meter YSI 60 Standard 84  
 Standard 0% cal Turbidity: 1.0-10.0 NTU  
 Chain of Custody

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Well # 03439-RW17  
 Well Diameter (D) 2 inch of 30.00 feet(ft)  
 conversion factor (C):  $3.143 \cdot (D/2)^2$   
 for a 2 inch well C = 0.163  
 for a 4 inch well C = 0.652  
 \*Free Product Thickness \_\_\_\_\_ ft  
 Total Well Depth (TWD) 30.00 ft  
 Depth to Groundwater (DGW) \_\_\_\_\_ ft  
 Length of Water Column (LWC = TWD-DGW) \_\_\_\_\_ ft  
 1 Casing Volume (LWC\*C) = \_\_\_\_\_ X .65 = \_\_\_\_\_ gals  
 3 Casing Volumes = 3 X \_\_\_\_\_ = \_\_\_\_\_ gals  
 (Standard Purge Volume)  
 Total Volume of Water Purged Before Sampling \_\_\_\_\_ gals  
 \*If free product is present over 1/8 inch, sampling will not be required.

	Initial	1st Vol.	2nd Vol.	3rd Vol.	4th Vol.	5th Vol.	6th Vol.	7th Vol.	8th Vol.	Post
Volume Purged (gallons)	---									
Time (military)										
pH (s.u)										
Specific Conductivity (µS)										
Water Temperature (°C)										
Turbidity (NTU)										
Dissolved Oxygen (mg/l)										

Remarks: Well sampled at \_\_\_\_\_ on \_\_\_\_\_ well not accessible due to fallen tree.



BUNNELL-LAMMONS ENGINEERING, INC

# Field Data Information Sheet for Ground Water Sampling Division of Underground Storage Tank Management

Date 10/3/17  
 Field Personnel mw  
 General weather Conditions Sunny  
 Ambient Air Temperature (°C) 20  
 Facility Name: Former Highway 11 Grocery Site ID# 03439  
 Quality Assurance

**pH Sensor:** Oakton 35630-62 Conductivity Sensor: 35630-32  
 serial no. 324976 serial no. 324976  
 pH = 4.0 Standard 15,000  
 pH = 7.0 Standard 1,413  
 pH = 10.0 Standard 447  
**DO Meter** YSI 60 Standard 84  
 Standard 0% cal Turbidity: 1.0-10.0 NTU  
 Chain of Custody

Well # 03439-DMW01  
 Well Diameter (D) 2 inch of 45.00 feet(ft)  
 conversion factor (C):  $3.143 \cdot (D/2)^2$   
 for a 2 inch well C = 0.163  
 for a 4 inch well C = 0.652  
 \*Free Product Thickness \_\_\_\_\_ ft  
 Total Well Depth (TWD) 45.00 ft  
 Depth to Groundwater (DGW) 25.87 ft  
 Length of Water Column (LWC = TWD-DGW) 19.13 ft  
 1 Casing Volume (LWC \* C) = 19.13 X .17 = 3.25 gals  
 3 Casing Volumes = 3 X 3.25 = 9.75 gals  
 (Standard Purge Volume)  
 Total Volume of Water Purged Before Sampling 16.0 gals  
 \*If free product is present over 1/8 inch, sampling will not be required.

Relinquished by	Date/Time	Received by	Date/Time	1st Vol.	2nd Vol.	3rd Vol.	4th Vol.	5th Vol.	6th Vol.	7th Vol.	8th Vol.	Post
Volume Purged (gallons)	---	7.5	7.0	10.0								
Time (military)	959	957	1000	1003								
pH (s.u)	5.91	6.02	6.09	6.11								
Specific Conductivity (µS)	45.27	47.11	44.98	45.03								
Water Temperature (°C)	20.3	20.0	19.9	19.9								
Turbidity (NTU)	8.31	1.47	10.7	9.41								
Dissolved Oxygen (mg/l)	1.2	1.2	1.2	1.2								

Remarks: Well sampled at 1003 on 10/3/17

# Field Data Information Sheet for Ground Water Sampling Division of Underground Storage Tank Management



Date 10/19/17 Field Personnel MD

General weather Conditions 5/14/17

Ambient Air Temperature (°C) 20°

Facility Name: Former Highway 11 Grocery Site ID# 03439

Quality Assurance

**pH Sensor:** Oakton 35630-62 Conductivity Sensor: 35630-32

serial no. 324976 serial no. 324976

pH = 4.0 4.0 Standard 15,000

pH = 7.0 7.0 Standard 1,413

pH = 10.0 10.0 Standard 447

**DO Meter** YSI 60 Standard 84

Standard 0% cal Turbidity: 1.0-10.0 NTU

Chain of Custody

Well # 03439-DMW02

Well Diameter (D) 2 inch of 75.00 feet(ft)

conversion factor (C):  $3.143 \times (D/2)^2$   
for a 2 inch well C = 0.163  
for a 4 inch well C = 0.652

\*Free Product Thickness \_\_\_\_\_ ft

Total Well Depth (TWD) 1687 ft

Depth to Groundwater (DGW) 58.13 ft

Length of Water Column (LWC = TWD - DGW) 9.88 gals

1 Casing Volume (LWC \* C) = 9.88 X .17 = 1.68 gals

3 Casing Volumes = 3 X \_\_\_\_\_ = \_\_\_\_\_ gals

(Standard Purge Volume)

Total Volume of Water Purged Before Sampling 30.0 gals

\*If free product is present over 1/8 inch, sampling will not be required.

Relinquished by	Date/Time	Received by	Date/Time	1st Vol.	2nd Vol.	3rd Vol.	4th Vol.	5th Vol.	6th Vol.	7th Vol.	8th Vol.	Post
Volume Purged (gallons)	---	10	20	30								
Time (military)	1130	1138	1142	1148								
pH (s.u)	6.10	6.21	6.18	6.19								
Specific Conductivity (µS)	84.84	88.44	85.23	84.91								
Water Temperature (°C)	20.0	19.8	19.7	19.7								
Turbidity (NTU)	4.28	4.8	4.7	8.7								
Dissolved Oxygen (mg/l)	2.2	2.2	2.2	2.2								

Remarks: Well sampled at 1148 on 10/19/17



# Field Data Information Sheet for Ground Water Sampling Division of Underground Storage Tank Management

Date 10/19/17  
 Field Personnel AWP  
 General weather Conditions Sunny  
 Ambient Air Temperature (°C) 20  
 Facility Name: Former Highway 11 Grocery Site ID# 03439  
 Quality Assurance

pH Sensor: Oakton 35630-62 Conductivity Sensor: 35630-32  
 serial no. 324976 serial no. 324976  
 pH = 4.0 Standard 15,000  
 pH = 7.0 Standard 1,413  
 pH = 10.0 Standard 447  
 DO Meter YSI 60 Standard 84  
 Standard 0% cal Turbidity: 1.0-10.0 NTU  
 Chain of Custody

Well # 03439-DMW04  
 Well Diameter (D) 2 inch of 60.00 feet(ft)  
 conversion factor (C):  $3.143 \cdot (D/2)^2$   
 for a 2 inch well C = 0.163  
 for a 4 inch well C = 0.652  
 \*Free Product Thickness  
 Total Well Depth (TWD) 60.00 ft  
 Depth to Groundwater (DGW) 26.45 ft  
 Length of Water Column (LWC = TWD-DGW) 33.55 ft  
 1 Casing Volume (LWC \* C) = 37.55 X .17 = 5.20 gals  
 3 Casing Volumes = 3 X 5.20 (Standard Purge Volume) = 15.60 gals  
 Total Volume of Water Purged Before Sampling 18.0 gals  
 \*If free product is present over 1/8 inch, sampling will not be required.

	Initial	1st Vol.	2nd Vol.	3rd Vol.	4th Vol.	5th Vol.	6th Vol.	7th Vol.	8th Vol.	Post
Volume Purged (gallons)	---	<u>6.0</u>	<u>12.0</u>	<u>18.0</u>						
Time (military)	<u>936</u>	<u>939</u>	<u>938</u>	<u>944</u>						
pH (s.u)	<u>5.81</u>	<u>5.84</u>	<u>5.86</u>	<u>5.87</u>						
Specific Conductivity (µS)	<u>46.71</u>	<u>47.71</u>	<u>48.12</u>	<u>48.73</u>						
Water Temperature (°C)	<u>20.1</u>	<u>19.9</u>	<u>19.8</u>	<u>19.8</u>						
Turbidity (NTU)	<u>8.47</u>	<u>11.2</u>	<u>10.4</u>	<u>9.84</u>						
Dissolved Oxygen (mg/l)	<u>1.1</u>	<u>1.1</u>	<u>1.1</u>	<u>1.1</u>						

Remarks: Well sampled at 942 on 10/19/17

**APPENDIX C**

**LABORATORY DATA SHEETS**



October 12, 2017

Mr. Trevor Benton  
Bunnell-Lammons Engineering  
6004 Ponders Ct.  
Greenville, SC 29615

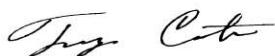
RE: Project: Hwy 11 Grocery WSW  
Pace Project No.: 92357762

Dear Mr. Trevor Benton:

Enclosed are the analytical results for sample(s) received by the laboratory on October 04, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Trey Carter  
treycarter@pacelabs.com  
(704)875-9092  
Project Manager

Enclosures



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: Hwy 11 Grocery WSW  
Pace Project No.: 92357762

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### Ormond Beach Certification IDs

8 East Tower Circle, Ormond Beach, FL 32174  
Alabama Certification #: 41320  
Connecticut Certification #: PH-0216  
Delaware Certification: FL NELAC Reciprocity  
Florida Certification #: E83079  
Georgia Certification #: 955  
Guam Certification: FL NELAC Reciprocity  
Hawaii Certification: FL NELAC Reciprocity  
Illinois Certification #: 200068  
Indiana Certification: FL NELAC Reciprocity  
Kansas Certification #: E-10383  
Louisiana Certification #: FL NELAC Reciprocity  
Louisiana Environmental Certificate #: 05007  
Maryland Certification: #346  
Michigan Certification #: 9911  
Mississippi Certification: FL NELAC Reciprocity  
Missouri Certification #: 236  
Montana Certification #: Cert 0074

Nebraska Certification: NE-OS-28-14  
Nevada Certification: FL NELAC Reciprocity  
New Jersey Certification #: FL022  
New York Certification #: 11608  
North Carolina Environmental Certificate #: 667  
North Carolina Certification #: 12710  
Oklahoma Certification #: D9947  
Pennsylvania Certification #: 68-00547  
Puerto Rico Certification #: FL01264  
South Carolina Certification: #96042001  
Tennessee Certification #: TN02974  
Texas Certification: FL NELAC Reciprocity  
US Virgin Islands Certification: FL NELAC Reciprocity  
Virginia Environmental Certification #: 460165  
Wyoming Certification: FL NELAC Reciprocity  
West Virginia Certification #: 9962C  
Wisconsin Certification #: 399079670  
Wyoming (EPA Region 8): FL NELAC Reciprocity

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### Charlotte Certification IDs

9800 Kincey Ave. Ste 100, Huntersville, NC 28078  
Louisiana/NELAP Certification # LA170028  
North Carolina Drinking Water Certification #: 37706  
North Carolina Field Services Certification #: 5342  
North Carolina Wastewater Certification #: 12

South Carolina Certification #: 99006001  
Florida/NELAP Certification #: E87627  
Kentucky UST Certification #: 84  
Virginia/VELAP Certification #: 460221

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: Hwy 11 Grocery WSW  
Pace Project No.: 92357762

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92357762001	#03439 WSW	Water	10/02/17 15:00	10/04/17 13:30
92357762002	#03439 WSW-DUP	Water	10/02/17 15:02	10/04/17 13:30
92357762003	#03439 FB-1	Water	10/02/17 14:50	10/04/17 13:30

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### SAMPLE ANALYTE COUNT

Project: Hwy 11 Grocery WSW

Pace Project No.: 92357762

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92357762001	#03439 WSW	EPA 504.1	KPS	2	PASI-C
		EPA 524.2	JLR	10	PASI-O
		EPA 8260	CAH	11	PASI-C
92357762002	#03439 WSW-DUP	EPA 504.1	KPS	2	PASI-C
		EPA 524.2	JLR	10	PASI-O
		EPA 8260	CAH	11	PASI-C
92357762003	#03439 FB-1	EPA 504.1	KPS	2	PASI-C
		EPA 524.2	JLR	10	PASI-O
		EPA 8260	CAH	11	PASI-C

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## ANALYTICAL RESULTS

Project: Hwy 11 Grocery WSW

Pace Project No.: 92357762

Sample: #03439 WSW      Lab ID: 92357762001      Collected: 10/02/17 15:00      Received: 10/04/17 13:30      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>504 GCS EDB and DBCP</b> Analytical Method: EPA 504.1      Preparation Method: EPA 504.1									
1,2-Dibromoethane (EDB)	ND	ug/L	0.019	0.019	1	10/06/17 13:54	10/06/17 21:55	106-93-4	
<b>Surrogates</b>									
1-Chloro-2-bromopropane (S)	108	%	70-130		1	10/06/17 13:54	10/06/17 21:55	301-79-56	
<b>524.2 MSV</b> Analytical Method: EPA 524.2									
Benzene	ND	ug/L	0.50	0.25	1		10/11/17 01:41	71-43-2	
1,2-Dichloroethane	ND	ug/L	0.50	0.25	1		10/11/17 01:41	107-06-2	
Ethylbenzene	ND	ug/L	0.50	0.25	1		10/11/17 01:41	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	0.50	0.25	1		10/11/17 01:41	1634-04-4	
Naphthalene	ND	ug/L	0.50	0.25	1		10/11/17 01:41	91-20-3	
Toluene	ND	ug/L	0.50	0.25	1		10/11/17 01:41	108-88-3	
Xylene (Total)	ND	ug/L	0.50	0.25	1		10/11/17 01:41	1330-20-7	
<b>Surrogates</b>									
4-Bromofluorobenzene (S)	99	%	70-130		1		10/11/17 01:41	460-00-4	
Toluene-d8 (S)	108	%	70-130		1		10/11/17 01:41	2037-26-5	
1,2-Dichloroethane-d4 (S)	116	%	70-130		1		10/11/17 01:41	17060-07-0	
<b>8260 MSV Low Level SC</b> Analytical Method: EPA 8260									
tert-Amyl Alcohol	ND	ug/L	100	50.0	1		10/08/17 17:41	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	0.10	1		10/08/17 17:41	994-05-8	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	50.0	1		10/08/17 17:41	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	3.6	1		10/08/17 17:41	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	1.9	1		10/08/17 17:41	762-75-4	
Diisopropyl ether	ND	ug/L	1.0	0.12	1		10/08/17 17:41	108-20-3	
Ethanol	ND	ug/L	200	131	1		10/08/17 17:41	64-17-5	
Ethyl-tert-butyl ether	ND	ug/L	10.0	0.070	1		10/08/17 17:41	637-92-3	
<b>Surrogates</b>									
4-Bromofluorobenzene (S)	97	%	70-130		1		10/08/17 17:41	460-00-4	
1,2-Dichloroethane-d4 (S)	104	%	70-130		1		10/08/17 17:41	17060-07-0	
Toluene-d8 (S)	102	%	70-130		1		10/08/17 17:41	2037-26-5	

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### ANALYTICAL RESULTS

Project: Hwy 11 Grocery WSW

Pace Project No.: 92357762

Sample: #03439 WSW-DUP      Lab ID: 92357762002      Collected: 10/02/17 15:02      Received: 10/04/17 13:30      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>504 GCS EDB and DBCP</b> Analytical Method: EPA 504.1      Preparation Method: EPA 504.1									
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	10/06/17 13:54	10/06/17 22:15	106-93-4	
<b>Surrogates</b>									
1-Chloro-2-bromopropane (S)	98	%	70-130		1	10/06/17 13:54	10/06/17 22:15	301-79-56	
<b>524.2 MSV</b> Analytical Method: EPA 524.2									
Benzene	ND	ug/L	0.50	0.25	1		10/11/17 02:07	71-43-2	
1,2-Dichloroethane	ND	ug/L	0.50	0.25	1		10/11/17 02:07	107-06-2	
Ethylbenzene	ND	ug/L	0.50	0.25	1		10/11/17 02:07	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	0.50	0.25	1		10/11/17 02:07	1634-04-4	
Naphthalene	ND	ug/L	0.50	0.25	1		10/11/17 02:07	91-20-3	
Toluene	ND	ug/L	0.50	0.25	1		10/11/17 02:07	108-88-3	
Xylene (Total)	ND	ug/L	0.50	0.25	1		10/11/17 02:07	1330-20-7	
<b>Surrogates</b>									
4-Bromofluorobenzene (S)	97	%	70-130		1		10/11/17 02:07	460-00-4	
Toluene-d8 (S)	107	%	70-130		1		10/11/17 02:07	2037-26-5	
1,2-Dichloroethane-d4 (S)	114	%	70-130		1		10/11/17 02:07	17060-07-0	
<b>8260 MSV Low Level SC</b> Analytical Method: EPA 8260									
tert-Amyl Alcohol	ND	ug/L	100	50.0	1		10/08/17 17:59	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	0.10	1		10/08/17 17:59	994-05-8	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	50.0	1		10/08/17 17:59	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	3.6	1		10/08/17 17:59	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	1.9	1		10/08/17 17:59	762-75-4	
Diisopropyl ether	ND	ug/L	1.0	0.12	1		10/08/17 17:59	108-20-3	
Ethanol	ND	ug/L	200	131	1		10/08/17 17:59	64-17-5	
Ethyl-tert-butyl ether	ND	ug/L	10.0	0.070	1		10/08/17 17:59	637-92-3	
<b>Surrogates</b>									
4-Bromofluorobenzene (S)	101	%	70-130		1		10/08/17 17:59	460-00-4	
1,2-Dichloroethane-d4 (S)	106	%	70-130		1		10/08/17 17:59	17060-07-0	
Toluene-d8 (S)	98	%	70-130		1		10/08/17 17:59	2037-26-5	

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## ANALYTICAL RESULTS

Project: Hwy 11 Grocery WSW

Pace Project No.: 92357762

Sample: #03439 FB-1      Lab ID: 92357762003      Collected: 10/02/17 14:50      Received: 10/04/17 13:30      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>504 GCS EDB and DBCP</b> Analytical Method: EPA 504.1      Preparation Method: EPA 504.1									
1,2-Dibromoethane (EDB)	ND	ug/L	0.019	0.019	1	10/06/17 13:54	10/06/17 22:35	106-93-4	
<b>Surrogates</b>									
1-Chloro-2-bromopropane (S)	106	%	70-130		1	10/06/17 13:54	10/06/17 22:35	301-79-56	
<b>524.2 MSV</b> Analytical Method: EPA 524.2									
Benzene	ND	ug/L	0.50	0.25	1		10/11/17 02:33	71-43-2	
1,2-Dichloroethane	ND	ug/L	0.50	0.25	1		10/11/17 02:33	107-06-2	
Ethylbenzene	ND	ug/L	0.50	0.25	1		10/11/17 02:33	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	0.50	0.25	1		10/11/17 02:33	1634-04-4	
Naphthalene	ND	ug/L	0.50	0.25	1		10/11/17 02:33	91-20-3	
Toluene	ND	ug/L	0.50	0.25	1		10/11/17 02:33	108-88-3	
Xylene (Total)	ND	ug/L	0.50	0.25	1		10/11/17 02:33	1330-20-7	
<b>Surrogates</b>									
4-Bromofluorobenzene (S)	100	%	70-130		1		10/11/17 02:33	460-00-4	
Toluene-d8 (S)	107	%	70-130		1		10/11/17 02:33	2037-26-5	
1,2-Dichloroethane-d4 (S)	114	%	70-130		1		10/11/17 02:33	17060-07-0	
<b>8260 MSV Low Level SC</b> Analytical Method: EPA 8260									
tert-Amyl Alcohol	ND	ug/L	100	50.0	1		10/08/17 16:33	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	0.10	1		10/08/17 16:33	994-05-8	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	50.0	1		10/08/17 16:33	624-95-3	
tert-Butyl Alcohol	13.7J	ug/L	100	3.6	1		10/08/17 16:33	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	1.9	1		10/08/17 16:33	762-75-4	
Diisopropyl ether	ND	ug/L	1.0	0.12	1		10/08/17 16:33	108-20-3	
Ethanol	ND	ug/L	200	131	1		10/08/17 16:33	64-17-5	
Ethyl-tert-butyl ether	ND	ug/L	10.0	0.070	1		10/08/17 16:33	637-92-3	
<b>Surrogates</b>									
4-Bromofluorobenzene (S)	95	%	70-130		1		10/08/17 16:33	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	70-130		1		10/08/17 16:33	17060-07-0	
Toluene-d8 (S)	102	%	70-130		1		10/08/17 16:33	2037-26-5	

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### QUALITY CONTROL DATA

Project: Hwy 11 Grocery WSW  
Pace Project No.: 92357762

QC Batch: 397847 Analysis Method: EPA 524.2  
QC Batch Method: EPA 524.2 Analysis Description: 524.2 MSV  
Associated Lab Samples: 92357762001, 92357762002, 92357762003

METHOD BLANK: 2171215 Matrix: Water  
Associated Lab Samples: 92357762001, 92357762002, 92357762003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,2-Dichloroethane	ug/L	ND	0.50	0.25	10/11/17 00:49	
Benzene	ug/L	ND	0.50	0.25	10/11/17 00:49	
Ethylbenzene	ug/L	ND	0.50	0.25	10/11/17 00:49	
Methyl-tert-butyl ether	ug/L	ND	0.50	0.25	10/11/17 00:49	
Naphthalene	ug/L	ND	0.50	0.25	10/11/17 00:49	
Toluene	ug/L	ND	0.50	0.25	10/11/17 00:49	
Xylene (Total)	ug/L	ND	0.50	0.25	10/11/17 00:49	
1,2-Dichloroethane-d4 (S)	%	113	70-130		10/11/17 00:49	
4-Bromofluorobenzene (S)	%	96	70-130		10/11/17 00:49	
Toluene-d8 (S)	%	107	70-130		10/11/17 00:49	

LABORATORY CONTROL SAMPLE & LCSD: 2171216

Parameter	Units	Spike Conc.	2171217		LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
			LCS Result	LCSD Result						
1,2-Dichloroethane	ug/L	5	5.5	5.7	110	113	70-130	3	40	
Benzene	ug/L	5	4.6	4.3	92	86	70-130	7	40	
Ethylbenzene	ug/L	5	4.3	4.4	87	88	70-130	1	40	
Methyl-tert-butyl ether	ug/L	5	5.4	5.5	108	109	70-130	1	40	
Naphthalene	ug/L	5	4.5	4.5	90	90	70-130	0	40	
Toluene	ug/L	5	4.4	4.4	88	88	70-130	1	40	
Xylene (Total)	ug/L	15	15.1	15.4	101	102	70-130	2	40	
1,2-Dichloroethane-d4 (S)	%				109	109	70-130			
4-Bromofluorobenzene (S)	%				100	101	70-130			
Toluene-d8 (S)	%				99	97	70-130			

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### QUALITY CONTROL DATA

Project: Hwy 11 Grocery WSW  
Pace Project No.: 92357762

QC Batch: 381373 Analysis Method: EPA 8260  
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV Low Level SC  
Associated Lab Samples: 92357762003

METHOD BLANK: 2113616 Matrix: Water  
Associated Lab Samples: 92357762003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
3,3-Dimethyl-1-Butanol	ug/L	ND	100	50.0	10/08/17 12:17	
Diisopropyl ether	ug/L	ND	1.0	0.12	10/08/17 12:17	
Ethanol	ug/L	ND	200	131	10/08/17 12:17	
Ethyl-tert-butyl ether	ug/L	ND	10.0	0.070	10/08/17 12:17	
tert-Amyl Alcohol	ug/L	ND	100	50.0	10/08/17 12:17	
tert-Amylmethyl ether	ug/L	ND	10.0	0.10	10/08/17 12:17	
tert-Butyl Alcohol	ug/L	ND	100	3.6	10/08/17 12:17	
tert-Butyl Formate	ug/L	ND	50.0	1.9	10/08/17 12:17	
1,2-Dichloroethane-d4 (S)	%	100	70-130		10/08/17 12:17	
4-Bromofluorobenzene (S)	%	99	70-130		10/08/17 12:17	
Toluene-d8 (S)	%	102	70-130		10/08/17 12:17	

LABORATORY CONTROL SAMPLE: 2113617

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
3,3-Dimethyl-1-Butanol	ug/L	1000	1020	102	70-130	
Diisopropyl ether	ug/L	50	49.1	98	70-130	
Ethanol	ug/L	2000	2020	101	70-130	
Ethyl-tert-butyl ether	ug/L	100	97.3	97	70-130	
tert-Amyl Alcohol	ug/L	1000	953	95	70-130	
tert-Amylmethyl ether	ug/L	100	96.9	97	70-130	
tert-Butyl Alcohol	ug/L	500	449	90	70-130	
tert-Butyl Formate	ug/L	400	406	102	70-130	
1,2-Dichloroethane-d4 (S)	%			98	70-130	
4-Bromofluorobenzene (S)	%			104	70-130	
Toluene-d8 (S)	%			99	70-130	

MATRIX SPIKE SAMPLE: 2113618

Parameter	Units	92357782015 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
3,3-Dimethyl-1-Butanol	ug/L	ND	400	446	111	70-130	
Diisopropyl ether	ug/L	ND	20	21.2	106	70-130	
Ethanol	ug/L	ND	800	780	97	70-130	
Ethyl-tert-butyl ether	ug/L	ND	40	41.6	104	70-130	
tert-Amyl Alcohol	ug/L	ND	400	452	113	70-130	
tert-Amylmethyl ether	ug/L	ND	40	42.6	106	70-130	
tert-Butyl Alcohol	ug/L	ND	200	265	133	70-130 M1	
tert-Butyl Formate	ug/L	ND	160	73.6	46	70-130 M1,P5	

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### QUALITY CONTROL DATA

Project: Hwy 11 Grocery WSW

Pace Project No.: 92357762

MATRIX SPIKE SAMPLE: 2113618		92357782015	Spike	MS	MS	% Rec	
Parameter	Units	Result	Conc.	Result	% Rec	Limits	Qualifiers
1,2-Dichloroethane-d4 (S)	%				102	70-130	
4-Bromofluorobenzene (S)	%				103	70-130	
Toluene-d8 (S)	%				97	70-130	

SAMPLE DUPLICATE: 2113619

Parameter	Units	92357553001	Dup	RPD	Max	
		Result	Result		RPD	Qualifiers
3,3-Dimethyl-1-Butanol	ug/L	ND	ND		30	
Diisopropyl ether	ug/L	ND	ND		30	
Ethanol	ug/L	ND	ND		30	
Ethyl-tert-butyl ether	ug/L	ND	ND		30	
tert-Amyl Alcohol	ug/L	ND	ND		30	
tert-Amylmethyl ether	ug/L	ND	ND		30	
tert-Butyl Alcohol	ug/L	ND	ND		30	
tert-Butyl Formate	ug/L	ND	ND		30	
1,2-Dichloroethane-d4 (S)	%	105	105	0		
4-Bromofluorobenzene (S)	%	99	100	1		
Toluene-d8 (S)	%	102	101	1		

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### QUALITY CONTROL DATA

Project: Hwy 11 Grocery WSW  
Pace Project No.: 92357762

QC Batch: 381399 Analysis Method: EPA 8260  
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV Low Level SC  
Associated Lab Samples: 92357762001, 92357762002

METHOD BLANK: 2113660 Matrix: Water  
Associated Lab Samples: 92357762001, 92357762002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
3,3-Dimethyl-1-Butanol	ug/L	ND	100	50.0	10/08/17 12:35	
Diisopropyl ether	ug/L	ND	1.0	0.12	10/08/17 12:35	
Ethanol	ug/L	ND	200	131	10/08/17 12:35	
Ethyl-tert-butyl ether	ug/L	ND	10.0	0.070	10/08/17 12:35	
tert-Amyl Alcohol	ug/L	ND	100	50.0	10/08/17 12:35	
tert-Amylmethyl ether	ug/L	ND	10.0	0.10	10/08/17 12:35	
tert-Butyl Alcohol	ug/L	ND	100	3.6	10/08/17 12:35	
tert-Butyl Formate	ug/L	ND	50.0	1.9	10/08/17 12:35	
1,2-Dichloroethane-d4 (S)	%	98	70-130		10/08/17 12:35	
4-Bromofluorobenzene (S)	%	93	70-130		10/08/17 12:35	
Toluene-d8 (S)	%	103	70-130		10/08/17 12:35	

LABORATORY CONTROL SAMPLE: 2113661

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
3,3-Dimethyl-1-Butanol	ug/L	1000	1090	109	70-130	
Diisopropyl ether	ug/L	50	49.5	99	70-130	
Ethanol	ug/L	2000	2520	126	70-130	
Ethyl-tert-butyl ether	ug/L	100	97.5	97	70-130	
tert-Amyl Alcohol	ug/L	1000	1030	103	70-130	
tert-Amylmethyl ether	ug/L	100	97.6	98	70-130	
tert-Butyl Alcohol	ug/L	500	489	98	70-130	
tert-Butyl Formate	ug/L	400	416	104	70-130	
1,2-Dichloroethane-d4 (S)	%			97	70-130	
4-Bromofluorobenzene (S)	%			100	70-130	
Toluene-d8 (S)	%			99	70-130	

MATRIX SPIKE SAMPLE: 2113662

Parameter	Units	92357553002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
3,3-Dimethyl-1-Butanol	ug/L	ND	400	440	110	70-130	
Diisopropyl ether	ug/L	ND	20	21.0	105	70-130	
Ethanol	ug/L	ND	800	876	109	70-130	
Ethyl-tert-butyl ether	ug/L	ND	40	40.5	101	70-130	
tert-Amyl Alcohol	ug/L	ND	400	454	113	70-130	
tert-Amylmethyl ether	ug/L	ND	40	41.4	103	70-130	
tert-Butyl Alcohol	ug/L	ND	200	284	142	70-130	M1
tert-Butyl Formate	ug/L	ND	160	45.5J	28	70-130	M1,P5

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### QUALITY CONTROL DATA

Project: Hwy 11 Grocery WSW

Pace Project No.: 92357762

MATRIX SPIKE SAMPLE: 2113662		92357553002	Spike	MS	MS	% Rec	
Parameter	Units	Result	Conc.	Result	% Rec	Limits	Qualifiers
1,2-Dichloroethane-d4 (S)	%				100	70-130	
4-Bromofluorobenzene (S)	%				99	70-130	
Toluene-d8 (S)	%				92	70-130	

SAMPLE DUPLICATE: 2113663

Parameter	Units	92357762001	Dup	RPD	Max	
		Result	Result		RPD	Qualifiers
3,3-Dimethyl-1-Butanol	ug/L	ND	ND		30	
Diisopropyl ether	ug/L	ND	ND		30	
Ethanol	ug/L	ND	ND		30	
Ethyl-tert-butyl ether	ug/L	ND	ND		30	
tert-Amyl Alcohol	ug/L	ND	ND		30	
tert-Amylmethyl ether	ug/L	ND	ND		30	
tert-Butyl Alcohol	ug/L	ND	ND		30	
tert-Butyl Formate	ug/L	ND	ND		30	
1,2-Dichloroethane-d4 (S)	%	104	101	3		
4-Bromofluorobenzene (S)	%	97	99	2		
Toluene-d8 (S)	%	102	99	4		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: Hwy 11 Grocery WSW  
Pace Project No.: 92357762

QC Batch: 381156 Analysis Method: EPA 504.1  
QC Batch Method: EPA 504.1 Analysis Description: GCS 504 EDB DBCP  
Associated Lab Samples: 92357762001, 92357762002, 92357762003

METHOD BLANK: 2112282 Matrix: Water  
Associated Lab Samples: 92357762001, 92357762002, 92357762003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,2-Dibromoethane (EDB)	ug/L	ND	0.020	0.020	10/06/17 16:52	
1-Chloro-2-bromopropane (S)	%	97	70-130		10/06/17 16:52	

LABORATORY CONTROL SAMPLE & LCSD: 2112283 2112284

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,2-Dibromoethane (EDB)	ug/L	.25	0.18	0.24	73	98	70-130	30	20	R1
1-Chloro-2-bromopropane (S)	%				94	105	70-130			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2112285 2112286

Parameter	Units	92357348001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,2-Dibromoethane (EDB)	ug/L	ND	.24	.24	0.41	0.36	169	146	65-135	14	20	M1
1-Chloro-2-bromopropane (S)	%						127	107	70-130			

SAMPLE DUPLICATE: 2112287

Parameter	Units	92357802001 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2-Dibromoethane (EDB)	ug/L	ND	ND		20	
1-Chloro-2-bromopropane (S)	%	91	93	1		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

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## QUALIFIERS

Project: Hwy 11 Grocery WSW  
Pace Project No.: 92357762

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### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### LABORATORIES

PASI-C Pace Analytical Services - Charlotte

PASI-O Pace Analytical Services - Ormond Beach

### ANALYTE QUALIFIERS

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

P5 The EPA or method required sample preservation degrades this compound, therefore acceptable recoveries may not be achieved in sample matrix spikes.

R1 RPD value was outside control limits.

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE


Project: Hwy 11 Grocery WSW

Pace Project No.: 92357762

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92357762001	#03439 WSW	EPA 504.1	381156	EPA 504.1	381257
92357762002	#03439 WSW-DUP	EPA 504.1	381156	EPA 504.1	381257
92357762003	#03439 FB-1	EPA 504.1	381156	EPA 504.1	381257
92357762001	#03439 WSW	EPA 524.2	397847		
92357762002	#03439 WSW-DUP	EPA 524.2	397847		
92357762003	#03439 FB-1	EPA 524.2	397847		
92357762001	#03439 WSW	EPA 8260	381399		
92357762002	#03439 WSW-DUP	EPA 8260	381399		
92357762003	#03439 FB-1	EPA 8260	381373		

### REPORT OF LABORATORY ANALYSIS

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	Document Name:	Document Revised: July 25, 2017
	Sample Condition Upon Receipt(SCUR)	Page 1 of 2
	Document No: F-CAR-CS-033-Rev.03	Issuing Authority: Pace Quality Office

Laboratory receiving samples:  
 Asheville  Eden  Greenwood  Huntersville  Raleigh  Mechanicsville

Sample Condition Upon Receipt	Client Name: <u>Bunnell-Lammons Eng.</u>	Project WO#: <b>92357762</b>
Courier: <input type="checkbox"/> Commercial <input checked="" type="checkbox"/> Pace	<input type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> USPS <input type="checkbox"/> Other:	<input type="checkbox"/> Client
Custody Seal Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Seals Intact? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Date/Initials Person Examining Contents: <u>10-4-17 AS</u>
Packing Material: <input type="checkbox"/> Bubble Wrap <input checked="" type="checkbox"/> Bubble Bags <input type="checkbox"/> None <input type="checkbox"/> Other	Biological Tissue Frozen? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Thermometer: <input type="checkbox"/> IR Gun ID: <u>5</u>	Type of Ice: <input checked="" type="checkbox"/> Wet <input type="checkbox"/> Blue <input type="checkbox"/> None	
Correction Factor: Cooler Temp Corrected (°C): <u>2.2</u>	Temp should be above freezing to 6°C <input type="checkbox"/> Samples out of temp criteria. Samples on ice, cooling process has begun	

USDA Regulated Soil (  N/A, water sample )  
 Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)?  Yes  No  
 Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)?  Yes  No

	Comments/Discrepancy:
Chain of Custody Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Samples Arrived within Hold Time? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Short Hold Time Analysis (<72 hr.)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	3.
Rush Turn Around Time Requested? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	4.
Sufficient Volume? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Correct Containers Used? -Pace Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6.
Containers Intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7.
Dissolved analysis: Samples Field Filtered? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	8.
Sample Labels Match COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Includes Date/Time/ID/Analysis Matrix: <u>DW</u>	
Headspace in VOA Vials (>5-6mm)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	10.
Trip Blank Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	11.
Trip Blank Custody Seals Present? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	

CLIENT NOTIFICATION/RESOLUTION  
 Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
 Comments/Sample Discrepancy: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Project Manager SCURF Review: TC Date: 10/11/17  
 Project Manager SRF Review: TC Date: 10/11/17

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. Out of hold, incorrect preservative, out of temp, incorrect containers)





Document Name: Sample Condition Upon Receipt(SCUR)  
 Document No.: F-CAR-CS-033-Rev.03  
 Document Revised: July 25, 2017  
 Page 2 of 2  
 Issuing Authority: Pace Quality Office

\*Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.  
 \*\*Bottom half of box is to list number of bottles

Project: **WO#: 92357762**  
 PH: RWC Due Date: 10/13/17  
 CLIENT: 92-BLE

Item#	Description	Quantity
1	BP4U-125 mL Plastic Unpreserved (N/A) (C-)	3
2	BP4U-250 mL Plastic Unpreserved (N/A)	3
3	BP5U-500 mL Plastic Unpreserved (N/A)	3
4	BP1U-1 liter Plastic Unpreserved (N/A)	
5	BP4S-125 mL Plastic H2SO4 (pH < 2) (C-)	
6	BP4S-250 mL Plastic HNO3 (pH < 2)	
7	BP4S-250 mL Plastic Zn Acetate & NaOH (pH > 12) (C-)	
8	BP4S-250 mL Plastic NaOH (pH > 12) (C-)	
9	WGRU-Wide-mouthed Glass Jar Unpreserved	
10	AG5H-1 liter Amber Unpreserved (N/A) (C-)	
11	AG5H-1 liter Amber HCl (pH < 2)	
12	AG5U-250 mL Amber Unpreserved (N/A) (C-)	
	AG5S-1 liter Amber H2SO4 (pH < 2)	
	AG5S-250 mL Amber H2SO4 (pH < 2)	
	AG5A(DG3A)-250 mL Amber HNO3 (N/A)(C-)	
	DG5H-40 mL VOA HCl (N/A)	
	VG5T-40 mL VOA Na2S2O3 (N/A)	
	V55U-20 mL VOA Vials (N/A)	
	DG5P-40 mL VOA H3PO4 (N/A)	
	VOAK (6 vials per bag)-2015 lot (N/A)	
	V70K (1 vial per bag)-VPH/Gas lot (N/A)	
	SP5T-125 mL Sterile Plastic (N/A - lab)	
	SP5T-250 mL Sterile Plastic (N/A - lab)	
	BP5A-250 mL Plastic (N/A)(2504) (9.3-9.7)	
	Calibrator	
	V55U-20 mL Scintillation vials (N/A)	
	GR	

**pH Adjustment Log for Preserved Samples**

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

CHAIN-OF-CUSTODY / Analytical Request Document  
 The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 1

<b>Section A</b> Request of Court Information Case Name: [Blank] Case No: [Blank] Court: [Blank]		<b>Section B</b> Request of Party Information Party Name: [Blank] Party Address: [Blank] Party Phone: [Blank]		<b>Section C</b> Project Information Agency Name: [Blank] Agency Address: [Blank] Agency Phone: [Blank]	
Request of Evidence Information Evidence ID: [Blank] Evidence Description: [Blank]		Matrix Code: [Blank] Matrix Type: [Blank]		Sample Temp at Collection: [Blank] # of Containers: [Blank]	
Evidence Location: [Blank]		Evidence Date: [Blank]		Evidence Time: [Blank]	

ITEM #	SAMPLE ID	Matrix Code	Matrix Type	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	PRESERVATION				Analyses Test	Y/N	Residual Chlorine (Y/N)
				START DATE	END DATE			Unpreserved	H2SO4	HNO3	HCl			
1	4# 0309 v12		Pb/C	10/26/1920	10/26/1920	9	✓	✓	✓	✓	✓	✓	✓	92357762
2	# 0309F v3 - P4P			10/26/1920	10/26/1920									001
3	# 0309F v3 - P4P			10/26/1920	10/26/1920									002
4														003
5														
6														
7														
8														
9														
10														
11														
12														

ADDITIONAL COMMENTS		REMOVED BY / REVISION		DATE		TIME		ACCEPTED BY / APPROVAL		DATE		TIME		SAMPLE CONDITIONS	
		Michael Anderson		10-4-17		12:05		St. Paul		10-4-17		12:00		T N T	
		S. Paul		10-4-17		13:30		A. Wilson / P. A. R.		10-4-17		13:30		T N T	

SEALER NAME AND SIGNATURE		FIRST NAME OF SEALER:		SIGNATURE OF SEALER:		DATE SIGNED:	
		Michael		[Signature]		10/4/17	

TEMP in C	Received on	Sealed	Sealed	Sealed	Sealed	Sealed	Sealed
	ice	✓	✓	✓	✓	✓	✓
	dry	✓	✓	✓	✓	✓	✓
	Sealed	✓	✓	✓	✓	✓	✓
	Center	✓	✓	✓	✓	✓	✓
	Sealed	✓	✓	✓	✓	✓	✓
	Sealed	✓	✓	✓	✓	✓	✓
	Sealed	✓	✓	✓	✓	✓	✓

### Intra-Regional Chain of Custody



Workorder: 92357782      Workorder Name: Hwy 11 Grocery WSW

Owner Received Date: 10/4/2017      Due Date: 10/13/2017

Received At:  
 Face Analytical Asheville  
 202 Kroyer Ave  
 Asheville, NC 28804  
 Phone (704)975-9092

Sent To Lab:  
 6001 Kroyer Ave, Suite 100  
 Huntersville, NC 28078  
 Phone (704)975-9092

Report To:  
 Trey Carter

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers			LAB USE ONLY
						HCL	MSDS	EPV506	
1	92357782-1	PS	10/02/2017 15:00	92357782001	Water	X	X	X	
2	92357782-2	PS	10/02/2017 15:02	92357782002	Water	X	X	X	
3	92357782-3	PS	10/02/2017 14:50	92357782003	Water	X	X	X	
4									
5									

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1	A. L. V. S. G. N. / K. V. /	10/4/17 12:24	Michelle Carter / K. V. /	10/11/2017	
2	Michelle Carter / K. V. /	10/11/2017	Michelle Carter / K. V. /	10/17/2017	
3					
4					

Cooler Temperature on Receipt:  °C      Custody Seal:  Y or  N      Received on Ice:  Y or  N      Samples Intact:  Y or  N

\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.

October 12, 2017

Mr. Trevor Benton  
Bunnell-Lammons Engineering  
6004 Ponders Ct.  
Greenville, SC 29615

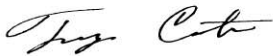
RE: Project: Hwy 11 Grocery MW  
Pace Project No.: 92357775

Dear Mr. Trevor Benton:

Enclosed are the analytical results for sample(s) received by the laboratory on October 04, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Trey Carter  
treycarter@pacelabs.com  
(704)875-9092  
Project Manager

Enclosures



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: Hwy 11 Grocery MW  
Pace Project No.: 92357775

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### Charlotte Certification IDs

9800 Kincey Ave. Ste 100, Huntersville, NC 28078  
Louisiana/NELAP Certification # LA170028  
North Carolina Drinking Water Certification #: 37706  
North Carolina Field Services Certification #: 5342  
North Carolina Wastewater Certification #: 12

South Carolina Certification #: 99006001  
Florida/NELAP Certification #: E87627  
Kentucky UST Certification #: 84  
Virginia/VELAP Certification #: 460221

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: Hwy 11 Grocery MW  
Pace Project No.: 92357775

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92357775001	03439 MW-1	Water	10/02/17 16:04	10/04/17 13:30
92357775002	03439 MW-1 Dup	Water	10/02/17 16:05	10/04/17 13:30
92357775003	03439 MW-2	Water	10/02/17 15:18	10/04/17 13:30
92357775004	03439 MW-3	Water	10/02/17 14:46	10/04/17 13:30
92357775005	03439 MW-4	Water	10/03/17 10:53	10/04/17 13:30
92357775006	03439 MW-8	Water	10/03/17 12:32	10/04/17 13:30
92357775007	03439 MW-9	Water	10/03/17 14:35	10/04/17 13:30
92357775008	03439 MW-11	Water	10/03/17 11:18	10/04/17 13:30
92357775009	03439 MW-12	Water	10/03/17 15:37	10/04/17 13:30
92357775010	03439 MW-13	Water	10/02/17 16:40	10/04/17 13:30
92357775011	03439 MW-14	Water	10/03/17 15:05	10/04/17 13:30
92357775012	03439 MW-15	Water	10/02/17 16:22	10/04/17 13:30
92357775013	03439 RW-1	Water	10/03/17 09:12	10/04/17 13:30
92357775014	03439 RW-1 Dup	Water	10/03/17 09:13	10/04/17 13:30
92357775015	03439 RW-4	Water	10/03/17 10:27	10/04/17 13:30
92357775016	03439 RW-8	Water	10/03/17 12:13	10/04/17 13:30
92357775017	03439 RW-10	Water	10/03/17 13:00	10/04/17 13:30
92357775018	03439 RW-12	Water	10/03/17 13:35	10/04/17 13:30
92357775019	03439 RW-13	Water	10/03/17 14:08	10/04/17 13:30
92357775020	03439 DMW-1	Water	10/03/17 10:03	10/04/17 13:30
92357775021	03439 DMW-2	Water	10/03/17 11:48	10/04/17 13:30
92357775022	03439 DMW-4	Water	10/03/17 09:42	10/04/17 13:30
92357775023	03439 CK-1	Water	10/02/17 14:00	10/04/17 13:30
92357775024	03439 CK-2	Water	10/02/17 14:10	10/04/17 13:30
92357775025	03439 CK-3	Water	10/02/17 14:15	10/04/17 13:30
92357775026	03439 FB-1	Water	10/02/17 13:50	10/04/17 13:30
92357775027	03439 FB-2	Water	10/03/17 08:00	10/04/17 13:30

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: Hwy 11 Grocery MW  
Pace Project No.: 92357775

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92357775001	03439 MW-1	EPA 8011	RES	2	PASI-C
		EPA 8260	ZDO	20	PASI-C
92357775002	03439 MW-1 Dup	EPA 8011	RES	2	PASI-C
		EPA 8260	ZDO	20	PASI-C
92357775003	03439 MW-2	EPA 8011	RES	2	PASI-C
		EPA 8260	ZDO	20	PASI-C
92357775004	03439 MW-3	EPA 8011	KPS	2	PASI-C
		EPA 8260	ZDO	20	PASI-C
92357775005	03439 MW-4	EPA 8011	KPS	2	PASI-C
		EPA 8260	GAW	20	PASI-C
92357775006	03439 MW-8	EPA 8011	KPS	2	PASI-C
		EPA 8260	ZDO	20	PASI-C
92357775007	03439 MW-9	EPA 8011	KPS	2	PASI-C
		EPA 8260	ZDO	20	PASI-C
92357775008	03439 MW-11	EPA 8011	KPS	2	PASI-C
		EPA 8260	ZDO	20	PASI-C
92357775009	03439 MW-12	EPA 8011	KPS	2	PASI-C
		EPA 8260	ZDO	20	PASI-C
92357775010	03439 MW-13	EPA 8011	KPS	2	PASI-C
		EPA 8260	ZDO	20	PASI-C
92357775011	03439 MW-14	EPA 8011	KPS	2	PASI-C
		EPA 8260	ZDO	20	PASI-C
92357775012	03439 MW-15	EPA 8011	KPS	2	PASI-C
		EPA 8260	ZDO	20	PASI-C
92357775013	03439 RW-1	EPA 8011	KPS	2	PASI-C
		EPA 8260	ZDO	20	PASI-C
92357775014	03439 RW-1 Dup	EPA 8011	KPS	2	PASI-C
		EPA 8260	ZDO	20	PASI-C
92357775015	03439 RW-4	EPA 8011	KPS	2	PASI-C
		EPA 8260	ZDO	20	PASI-C
92357775016	03439 RW-8	EPA 8011	KPS	2	PASI-C
		EPA 8260	ZDO	20	PASI-C
92357775017	03439 RW-10	EPA 8011	KPS	2	PASI-C
		EPA 8260	ZDO	20	PASI-C
92357775018	03439 RW-12	EPA 8011	KPS	2	PASI-C
		EPA 8260	ZDO	20	PASI-C
92357775019	03439 RW-13	EPA 8011	KPS	2	PASI-C

### REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: Hwy 11 Grocery MW

Pace Project No.: 92357775

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92357775020	03439 DMW-1	EPA 8260	GAW	20	PASI-C
		EPA 8011	KPS	2	PASI-C
92357775021	03439 DMW-2	EPA 8260	ZDO	20	PASI-C
		EPA 8011	KPS	2	PASI-C
92357775022	03439 DMW-4	EPA 8260	ZDO	20	PASI-C
		EPA 8011	KPS	2	PASI-C
92357775023	03439 CK-1	EPA 8260	ZDO	20	PASI-C
		EPA 8011	KPS	2	PASI-C
92357775024	03439 CK-2	EPA 8260	ZDO	20	PASI-C
		EPA 8011	KPS	2	PASI-C
92357775025	03439 CK-3	EPA 8260	ZDO	20	PASI-C
		EPA 8011	KPS	2	PASI-C
92357775026	03439 FB-1	EPA 8260	ZDO	20	PASI-C
		EPA 8011	KPS	2	PASI-C
92357775027	03439 FB-2	EPA 8260	ZDO	20	PASI-C
		EPA 8011	KPS	2	PASI-C

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: Hwy 11 Grocery MW  
Pace Project No.: 92357775

Sample: 03439 MW-1      Lab ID: 92357775001      Collected: 10/02/17 16:04      Received: 10/04/17 13:30      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>8011 GCS EDB and DBCP</b> Analytical Method: EPA 8011      Preparation Method: EPA 8011									
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	10/05/17 14:16	10/06/17 01:28	106-93-4	
<b>Surrogates</b>									
1-Chloro-2-bromopropane (S)	97	%	60-140		1	10/05/17 14:16	10/06/17 01:28	301-79-56	
<b>8260 MSV Low Level SC</b> Analytical Method: EPA 8260									
tert-Amyl Alcohol	ND	ug/L	50000	25000	500		10/09/17 19:02	75-85-4	
tert-Amylmethyl ether	1760J	ug/L	5000	50.0	500		10/09/17 19:02	994-05-8	
Benzene	9020	ug/L	500	125	500		10/09/17 19:02	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	50000	25000	500		10/09/17 19:02	624-95-3	
tert-Butyl Alcohol	20000J	ug/L	50000	1810	500		10/09/17 19:02	75-65-0	
tert-Butyl Formate	ND	ug/L	25000	945	500		10/09/17 19:02	762-75-4	
1,2-Dichloroethane	ND	ug/L	500	120	500		10/09/17 19:02	107-06-2	
Diisopropyl ether	1130	ug/L	500	60.0	500		10/09/17 19:02	108-20-3	
Ethanol	ND	ug/L	100000	65500	500		10/09/17 19:02	64-17-5	
Ethylbenzene	2030	ug/L	500	150	500		10/09/17 19:02	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	5000	35.0	500		10/09/17 19:02	637-92-3	
Methyl-tert-butyl ether	60700	ug/L	500	105	500		10/09/17 19:02	1634-04-4	
Naphthalene	382J	ug/L	500	120	500		10/09/17 19:02	91-20-3	
Toluene	25600	ug/L	500	130	500		10/09/17 19:02	108-88-3	
Xylene (Total)	11200	ug/L	500	500	500		10/09/17 19:02	1330-20-7	
m&p-Xylene	7700	ug/L	1000	330	500		10/09/17 19:02	179601-23-1	
o-Xylene	3460	ug/L	500	115	500		10/09/17 19:02	95-47-6	
<b>Surrogates</b>									
4-Bromofluorobenzene (S)	96	%	70-130		500		10/09/17 19:02	460-00-4	
1,2-Dichloroethane-d4 (S)	104	%	70-130		500		10/09/17 19:02	17060-07-0	
Toluene-d8 (S)	102	%	70-130		500		10/09/17 19:02	2037-26-5	

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## ANALYTICAL RESULTS

Project: Hwy 11 Grocery MW  
Pace Project No.: 92357775

Sample: 03439 MW-1 Dup      Lab ID: 92357775002      Collected: 10/02/17 16:05      Received: 10/04/17 13:30      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>8011 GCS EDB and DBCP</b>		Analytical Method: EPA 8011      Preparation Method: EPA 8011							
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	10/05/17 14:16	10/06/17 01:48	106-93-4	
<b>Surrogates</b>									
1-Chloro-2-bromopropane (S)	95	%	60-140		1	10/05/17 14:16	10/06/17 01:48	301-79-56	
<b>8260 MSV Low Level SC</b>		Analytical Method: EPA 8260							
tert-Amyl Alcohol	ND	ug/L	50000	25000	500		10/09/17 19:19	75-85-4	
tert-Amylmethyl ether	<b>1880J</b>	ug/L	5000	50.0	500		10/09/17 19:19	994-05-8	
Benzene	<b>9300</b>	ug/L	500	125	500		10/09/17 19:19	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	50000	25000	500		10/09/17 19:19	624-95-3	
tert-Butyl Alcohol	<b>16900J</b>	ug/L	50000	1810	500		10/09/17 19:19	75-65-0	
tert-Butyl Formate	ND	ug/L	25000	945	500		10/09/17 19:19	762-75-4	
1,2-Dichloroethane	ND	ug/L	500	120	500		10/09/17 19:19	107-06-2	
Diisopropyl ether	<b>1100</b>	ug/L	500	60.0	500		10/09/17 19:19	108-20-3	
Ethanol	ND	ug/L	100000	65500	500		10/09/17 19:19	64-17-5	
Ethylbenzene	<b>2030</b>	ug/L	500	150	500		10/09/17 19:19	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	5000	35.0	500		10/09/17 19:19	637-92-3	
Methyl-tert-butyl ether	<b>58500</b>	ug/L	500	105	500		10/09/17 19:19	1634-04-4	
Naphthalene	<b>374J</b>	ug/L	500	120	500		10/09/17 19:19	91-20-3	
Toluene	<b>25400</b>	ug/L	500	130	500		10/09/17 19:19	108-88-3	
Xylene (Total)	<b>10900</b>	ug/L	500	500	500		10/09/17 19:19	1330-20-7	
m&p-Xylene	<b>7660</b>	ug/L	1000	330	500		10/09/17 19:19	179601-23-1	
o-Xylene	<b>3250</b>	ug/L	500	115	500		10/09/17 19:19	95-47-6	
<b>Surrogates</b>									
4-Bromofluorobenzene (S)	93	%	70-130		500		10/09/17 19:19	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	70-130		500		10/09/17 19:19	17060-07-0	
Toluene-d8 (S)	105	%	70-130		500		10/09/17 19:19	2037-26-5	

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## ANALYTICAL RESULTS

Project: Hwy 11 Grocery MW  
Pace Project No.: 92357775

Sample: 03439 MW-2      Lab ID: 92357775003      Collected: 10/02/17 15:18      Received: 10/04/17 13:30      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>8011 GCS EDB and DBCP</b> Analytical Method: EPA 8011      Preparation Method: EPA 8011									
1,2-Dibromoethane (EDB)	ND	ug/L	0.019	0.019	1	10/05/17 14:16	10/06/17 02:07	106-93-4	
<b>Surrogates</b>									
1-Chloro-2-bromopropane (S)	87	%	60-140		1	10/05/17 14:16	10/06/17 02:07	301-79-56	
<b>8260 MSV Low Level SC</b> Analytical Method: EPA 8260									
tert-Amyl Alcohol	ND	ug/L	100	50.0	1		10/07/17 21:00	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	0.10	1		10/07/17 21:00	994-05-8	
Benzene	ND	ug/L	1.0	0.25	1		10/07/17 21:00	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	50.0	1		10/07/17 21:00	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	3.6	1		10/07/17 21:00	75-65-0	M1
tert-Butyl Formate	ND	ug/L	50.0	1.9	1		10/07/17 21:00	762-75-4	P5
1,2-Dichloroethane	ND	ug/L	1.0	0.24	1		10/07/17 21:00	107-06-2	
Diisopropyl ether	0.13J	ug/L	1.0	0.12	1		10/07/17 21:00	108-20-3	
Ethanol	ND	ug/L	200	131	1		10/07/17 21:00	64-17-5	
Ethylbenzene	ND	ug/L	1.0	0.30	1		10/07/17 21:00	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	0.070	1		10/07/17 21:00	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.21	1		10/07/17 21:00	1634-04-4	
Naphthalene	ND	ug/L	1.0	0.24	1		10/07/17 21:00	91-20-3	
Toluene	ND	ug/L	1.0	0.26	1		10/07/17 21:00	108-88-3	
Xylene (Total)	ND	ug/L	1.0	1.0	1		10/07/17 21:00	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		10/07/17 21:00	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		10/07/17 21:00	95-47-6	
<b>Surrogates</b>									
4-Bromofluorobenzene (S)	102	%	70-130		1		10/07/17 21:00	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	70-130		1		10/07/17 21:00	17060-07-0	
Toluene-d8 (S)	109	%	70-130		1		10/07/17 21:00	2037-26-5	

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### ANALYTICAL RESULTS

Project: Hwy 11 Grocery MW  
Pace Project No.: 92357775

Sample: 03439 MW-3      Lab ID: 92357775004      Collected: 10/02/17 14:46      Received: 10/04/17 13:30      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>8011 GCS EDB and DBCP</b> Analytical Method: EPA 8011      Preparation Method: EPA 8011									
1,2-Dibromoethane (EDB)	ND	ug/L	0.019	0.019	1	10/09/17 15:39	10/09/17 17:55	106-93-4	
<b>Surrogates</b>									
1-Chloro-2-bromopropane (S)	104	%	60-140		1	10/09/17 15:39	10/09/17 17:55	301-79-56	
<b>8260 MSV Low Level SC</b> Analytical Method: EPA 8260									
tert-Amyl Alcohol	ND	ug/L	100	50.0	1		10/07/17 21:17	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	0.10	1		10/07/17 21:17	994-05-8	
Benzene	ND	ug/L	1.0	0.25	1		10/07/17 21:17	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	50.0	1		10/07/17 21:17	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	3.6	1		10/07/17 21:17	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	1.9	1		10/07/17 21:17	762-75-4	
1,2-Dichloroethane	ND	ug/L	1.0	0.24	1		10/07/17 21:17	107-06-2	
Diisopropyl ether	ND	ug/L	1.0	0.12	1		10/07/17 21:17	108-20-3	
Ethanol	ND	ug/L	200	131	1		10/07/17 21:17	64-17-5	
Ethylbenzene	ND	ug/L	1.0	0.30	1		10/07/17 21:17	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	0.070	1		10/07/17 21:17	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.21	1		10/07/17 21:17	1634-04-4	
Naphthalene	ND	ug/L	1.0	0.24	1		10/07/17 21:17	91-20-3	
Toluene	ND	ug/L	1.0	0.26	1		10/07/17 21:17	108-88-3	
Xylene (Total)	ND	ug/L	1.0	1.0	1		10/07/17 21:17	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		10/07/17 21:17	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		10/07/17 21:17	95-47-6	
<b>Surrogates</b>									
4-Bromofluorobenzene (S)	99	%	70-130		1		10/07/17 21:17	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	70-130		1		10/07/17 21:17	17060-07-0	
Toluene-d8 (S)	107	%	70-130		1		10/07/17 21:17	2037-26-5	

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### ANALYTICAL RESULTS

Project: Hwy 11 Grocery MW  
Pace Project No.: 92357775

Sample: 03439 MW-4      Lab ID: 92357775005      Collected: 10/03/17 10:53      Received: 10/04/17 13:30      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>8011 GCS EDB and DBCP</b> Analytical Method: EPA 8011      Preparation Method: EPA 8011									
1,2-Dibromoethane (EDB)	ND	ug/L	0.019	0.019	1	10/06/17 13:56	10/07/17 02:14	106-93-4	
<b>Surrogates</b>									
1-Chloro-2-bromopropane (S)	108	%	60-140		1	10/06/17 13:56	10/07/17 02:14	301-79-56	
<b>8260 MSV Low Level SC</b> Analytical Method: EPA 8260									
tert-Amyl Alcohol	ND	ug/L	400	200	4		10/10/17 14:08	75-85-4	
tert-Amylmethyl ether	ND	ug/L	40.0	0.40	4		10/10/17 14:08	994-05-8	
Benzene	63.5	ug/L	4.0	1.0	4		10/10/17 14:08	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	400	200	4		10/10/17 14:08	624-95-3	
tert-Butyl Alcohol	ND	ug/L	400	14.5	4		10/10/17 14:08	75-65-0	
tert-Butyl Formate	ND	ug/L	200	7.6	4		10/10/17 14:08	762-75-4	
1,2-Dichloroethane	ND	ug/L	4.0	0.96	4		10/10/17 14:08	107-06-2	
Diisopropyl ether	0.74J	ug/L	4.0	0.48	4		10/10/17 14:08	108-20-3	
Ethanol	ND	ug/L	800	524	4		10/10/17 14:08	64-17-5	
Ethylbenzene	260	ug/L	4.0	1.2	4		10/10/17 14:08	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	40.0	0.28	4		10/10/17 14:08	637-92-3	
Methyl-tert-butyl ether	6.2	ug/L	4.0	0.84	4		10/10/17 14:08	1634-04-4	
Naphthalene	73.0	ug/L	4.0	0.96	4		10/10/17 14:08	91-20-3	
Toluene	177	ug/L	4.0	1.0	4		10/10/17 14:08	108-88-3	
Xylene (Total)	1420	ug/L	4.0	4.0	4		10/10/17 14:08	1330-20-7	
m&p-Xylene	974	ug/L	8.0	2.6	4		10/10/17 14:08	179601-23-1	
o-Xylene	450	ug/L	4.0	0.92	4		10/10/17 14:08	95-47-6	
<b>Surrogates</b>									
4-Bromofluorobenzene (S)	101	%	70-130		4		10/10/17 14:08	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	70-130		4		10/10/17 14:08	17060-07-0	
Toluene-d8 (S)	111	%	70-130		4		10/10/17 14:08	2037-26-5	

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### ANALYTICAL RESULTS

Project: Hwy 11 Grocery MW  
Pace Project No.: 92357775

Sample: 03439 MW-8      Lab ID: 92357775006      Collected: 10/03/17 12:32      Received: 10/04/17 13:30      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>8011 GCS EDB and DBCP</b> Analytical Method: EPA 8011      Preparation Method: EPA 8011									
1,2-Dibromoethane (EDB)	ND	ug/L	0.019	0.019	1	10/06/17 13:56	10/07/17 02:34	106-93-4	
<b>Surrogates</b>									
1-Chloro-2-bromopropane (S)	122	%	60-140		1	10/06/17 13:56	10/07/17 02:34	301-79-56	
<b>8260 MSV Low Level SC</b> Analytical Method: EPA 8260									
tert-Amyl Alcohol	ND	ug/L	10000	5000	100		10/08/17 02:29	75-85-4	
tert-Amylmethyl ether	ND	ug/L	1000	10.0	100		10/08/17 02:29	994-05-8	
Benzene	2370	ug/L	100	25.0	100		10/08/17 02:29	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	10000	5000	100		10/08/17 02:29	624-95-3	
tert-Butyl Alcohol	ND	ug/L	10000	362	100		10/08/17 02:29	75-65-0	
tert-Butyl Formate	ND	ug/L	5000	189	100		10/08/17 02:29	762-75-4	
1,2-Dichloroethane	ND	ug/L	100	24.0	100		10/08/17 02:29	107-06-2	
Diisopropyl ether	60.4J	ug/L	100	12.0	100		10/08/17 02:29	108-20-3	
Ethanol	ND	ug/L	20000	13100	100		10/08/17 02:29	64-17-5	
Ethylbenzene	2090	ug/L	100	30.0	100		10/08/17 02:29	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	1000	7.0	100		10/08/17 02:29	637-92-3	
Methyl-tert-butyl ether	386	ug/L	100	21.0	100		10/08/17 02:29	1634-04-4	
Naphthalene	386	ug/L	100	24.0	100		10/08/17 02:29	91-20-3	
Toluene	14600	ug/L	100	26.0	100		10/08/17 02:29	108-88-3	
Xylene (Total)	11200	ug/L	100	100	100		10/08/17 02:29	1330-20-7	
m&p-Xylene	7460	ug/L	200	66.0	100		10/08/17 02:29	179601-23-1	
o-Xylene	3740	ug/L	100	23.0	100		10/08/17 02:29	95-47-6	
<b>Surrogates</b>									
4-Bromofluorobenzene (S)	97	%	70-130		100		10/08/17 02:29	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	70-130		100		10/08/17 02:29	17060-07-0	
Toluene-d8 (S)	106	%	70-130		100		10/08/17 02:29	2037-26-5	

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## ANALYTICAL RESULTS

Project: Hwy 11 Grocery MW  
Pace Project No.: 92357775

Sample: 03439 MW-9      Lab ID: 92357775007      Collected: 10/03/17 14:35      Received: 10/04/17 13:30      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>8011 GCS EDB and DBCP</b> Analytical Method: EPA 8011      Preparation Method: EPA 8011									
1,2-Dibromoethane (EDB)	ND	ug/L	0.019	0.019	1	10/06/17 13:56	10/07/17 02:54	106-93-4	
<b>Surrogates</b>									
1-Chloro-2-bromopropane (S)	100	%	60-140		1	10/06/17 13:56	10/07/17 02:54	301-79-56	
<b>8260 MSV Low Level SC</b> Analytical Method: EPA 8260									
tert-Amyl Alcohol	ND	ug/L	100	50.0	1		10/07/17 21:35	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	0.10	1		10/07/17 21:35	994-05-8	
Benzene	ND	ug/L	1.0	0.25	1		10/07/17 21:35	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	50.0	1		10/07/17 21:35	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	3.6	1		10/07/17 21:35	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	1.9	1		10/07/17 21:35	762-75-4	
1,2-Dichloroethane	ND	ug/L	1.0	0.24	1		10/07/17 21:35	107-06-2	
Diisopropyl ether	ND	ug/L	1.0	0.12	1		10/07/17 21:35	108-20-3	
Ethanol	ND	ug/L	200	131	1		10/07/17 21:35	64-17-5	
Ethylbenzene	ND	ug/L	1.0	0.30	1		10/07/17 21:35	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	0.070	1		10/07/17 21:35	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.21	1		10/07/17 21:35	1634-04-4	
Naphthalene	ND	ug/L	1.0	0.24	1		10/07/17 21:35	91-20-3	
Toluene	ND	ug/L	1.0	0.26	1		10/07/17 21:35	108-88-3	
Xylene (Total)	ND	ug/L	1.0	1.0	1		10/07/17 21:35	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		10/07/17 21:35	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		10/07/17 21:35	95-47-6	
<b>Surrogates</b>									
4-Bromofluorobenzene (S)	102	%	70-130		1		10/07/17 21:35	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	70-130		1		10/07/17 21:35	17060-07-0	
Toluene-d8 (S)	109	%	70-130		1		10/07/17 21:35	2037-26-5	

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### ANALYTICAL RESULTS

Project: Hwy 11 Grocery MW  
Pace Project No.: 92357775

Sample: 03439 MW-11      Lab ID: 92357775008      Collected: 10/03/17 11:18      Received: 10/04/17 13:30      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>8011 GCS EDB and DBCP</b> Analytical Method: EPA 8011      Preparation Method: EPA 8011									
1,2-Dibromoethane (EDB)	ND	ug/L	0.019	0.019	1	10/06/17 13:56	10/07/17 03:14	106-93-4	
<b>Surrogates</b>									
1-Chloro-2-bromopropane (S)	106	%	60-140		1	10/06/17 13:56	10/07/17 03:14	301-79-56	
<b>8260 MSV Low Level SC</b> Analytical Method: EPA 8260									
tert-Amyl Alcohol	ND	ug/L	100	50.0	1		10/07/17 21:52	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	0.10	1		10/07/17 21:52	994-05-8	
Benzene	ND	ug/L	1.0	0.25	1		10/07/17 21:52	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	50.0	1		10/07/17 21:52	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	3.6	1		10/07/17 21:52	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	1.9	1		10/07/17 21:52	762-75-4	
1,2-Dichloroethane	ND	ug/L	1.0	0.24	1		10/07/17 21:52	107-06-2	
Diisopropyl ether	ND	ug/L	1.0	0.12	1		10/07/17 21:52	108-20-3	
Ethanol	ND	ug/L	200	131	1		10/07/17 21:52	64-17-5	
Ethylbenzene	1.1	ug/L	1.0	0.30	1		10/07/17 21:52	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	0.070	1		10/07/17 21:52	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.21	1		10/07/17 21:52	1634-04-4	
Naphthalene	1.3	ug/L	1.0	0.24	1		10/07/17 21:52	91-20-3	
Toluene	0.73J	ug/L	1.0	0.26	1		10/07/17 21:52	108-88-3	
Xylene (Total)	7.0	ug/L	1.0	1.0	1		10/07/17 21:52	1330-20-7	
m&p-Xylene	4.8	ug/L	2.0	0.66	1		10/07/17 21:52	179601-23-1	
o-Xylene	2.3	ug/L	1.0	0.23	1		10/07/17 21:52	95-47-6	
<b>Surrogates</b>									
4-Bromofluorobenzene (S)	97	%	70-130		1		10/07/17 21:52	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	70-130		1		10/07/17 21:52	17060-07-0	
Toluene-d8 (S)	109	%	70-130		1		10/07/17 21:52	2037-26-5	

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### ANALYTICAL RESULTS

Project: Hwy 11 Grocery MW  
Pace Project No.: 92357775

Sample: 03439 MW-12      Lab ID: 92357775009      Collected: 10/03/17 15:37      Received: 10/04/17 13:30      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>8011 GCS EDB and DBCP</b> Analytical Method: EPA 8011      Preparation Method: EPA 8011									
1,2-Dibromoethane (EDB)	ND	ug/L	0.019	0.019	1	10/06/17 13:56	10/07/17 03:34	106-93-4	
<b>Surrogates</b>									
1-Chloro-2-bromopropane (S)	108	%	60-140		1	10/06/17 13:56	10/07/17 03:34	301-79-56	
<b>8260 MSV Low Level SC</b> Analytical Method: EPA 8260									
tert-Amyl Alcohol	ND	ug/L	100	50.0	1		10/07/17 22:10	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	0.10	1		10/07/17 22:10	994-05-8	
Benzene	ND	ug/L	1.0	0.25	1		10/07/17 22:10	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	50.0	1		10/07/17 22:10	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	3.6	1		10/07/17 22:10	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	1.9	1		10/07/17 22:10	762-75-4	
1,2-Dichloroethane	ND	ug/L	1.0	0.24	1		10/07/17 22:10	107-06-2	
Diisopropyl ether	ND	ug/L	1.0	0.12	1		10/07/17 22:10	108-20-3	
Ethanol	ND	ug/L	200	131	1		10/07/17 22:10	64-17-5	
Ethylbenzene	ND	ug/L	1.0	0.30	1		10/07/17 22:10	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	0.070	1		10/07/17 22:10	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.21	1		10/07/17 22:10	1634-04-4	
Naphthalene	ND	ug/L	1.0	0.24	1		10/07/17 22:10	91-20-3	
Toluene	ND	ug/L	1.0	0.26	1		10/07/17 22:10	108-88-3	
Xylene (Total)	ND	ug/L	1.0	1.0	1		10/07/17 22:10	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		10/07/17 22:10	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		10/07/17 22:10	95-47-6	
<b>Surrogates</b>									
4-Bromofluorobenzene (S)	96	%	70-130		1		10/07/17 22:10	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	70-130		1		10/07/17 22:10	17060-07-0	
Toluene-d8 (S)	111	%	70-130		1		10/07/17 22:10	2037-26-5	

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### ANALYTICAL RESULTS

Project: Hwy 11 Grocery MW  
Pace Project No.: 92357775

Sample: 03439 MW-13      Lab ID: 92357775010      Collected: 10/02/17 16:40      Received: 10/04/17 13:30      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>8011 GCS EDB and DBCP</b> Analytical Method: EPA 8011      Preparation Method: EPA 8011									
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	10/06/17 13:56	10/07/17 04:33	106-93-4	
<b>Surrogates</b>									
1-Chloro-2-bromopropane (S)	82	%	60-140		1	10/06/17 13:56	10/07/17 04:33	301-79-56	
<b>8260 MSV Low Level SC</b> Analytical Method: EPA 8260									
tert-Amyl Alcohol	ND	ug/L	100	50.0	1		10/07/17 22:27	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	0.10	1		10/07/17 22:27	994-05-8	
Benzene	ND	ug/L	1.0	0.25	1		10/07/17 22:27	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	50.0	1		10/07/17 22:27	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	3.6	1		10/07/17 22:27	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	1.9	1		10/07/17 22:27	762-75-4	
1,2-Dichloroethane	ND	ug/L	1.0	0.24	1		10/07/17 22:27	107-06-2	
Diisopropyl ether	ND	ug/L	1.0	0.12	1		10/07/17 22:27	108-20-3	
Ethanol	ND	ug/L	200	131	1		10/07/17 22:27	64-17-5	
Ethylbenzene	ND	ug/L	1.0	0.30	1		10/07/17 22:27	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	0.070	1		10/07/17 22:27	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.21	1		10/07/17 22:27	1634-04-4	
Naphthalene	ND	ug/L	1.0	0.24	1		10/07/17 22:27	91-20-3	
Toluene	ND	ug/L	1.0	0.26	1		10/07/17 22:27	108-88-3	
Xylene (Total)	ND	ug/L	1.0	1.0	1		10/07/17 22:27	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		10/07/17 22:27	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		10/07/17 22:27	95-47-6	
<b>Surrogates</b>									
4-Bromofluorobenzene (S)	103	%	70-130		1		10/07/17 22:27	460-00-4	
1,2-Dichloroethane-d4 (S)	106	%	70-130		1		10/07/17 22:27	17060-07-0	
Toluene-d8 (S)	111	%	70-130		1		10/07/17 22:27	2037-26-5	

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### ANALYTICAL RESULTS

Project: Hwy 11 Grocery MW  
Pace Project No.: 92357775

Sample: 03439 MW-14      Lab ID: 92357775011      Collected: 10/03/17 15:05      Received: 10/04/17 13:30      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>8011 GCS EDB and DBCP</b>		Analytical Method: EPA 8011      Preparation Method: EPA 8011							
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	10/06/17 13:56	10/07/17 04:53	106-93-4	
<b>Surrogates</b>									
1-Chloro-2-bromopropane (S)	116	%	60-140		1	10/06/17 13:56	10/07/17 04:53	301-79-56	
<b>8260 MSV Low Level SC</b>		Analytical Method: EPA 8260							
tert-Amyl Alcohol	ND	ug/L	1000	500	10		10/09/17 19:36	75-85-4	
tert-Amylmethyl ether	ND	ug/L	100	1.0	10		10/09/17 19:36	994-05-8	
Benzene	371	ug/L	10.0	2.5	10		10/09/17 19:36	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	1000	500	10		10/09/17 19:36	624-95-3	
tert-Butyl Alcohol	ND	ug/L	1000	36.2	10		10/09/17 19:36	75-65-0	
tert-Butyl Formate	ND	ug/L	500	18.9	10		10/09/17 19:36	762-75-4	
1,2-Dichloroethane	ND	ug/L	10.0	2.4	10		10/09/17 19:36	107-06-2	
Diisopropyl ether	9.8J	ug/L	10.0	1.2	10		10/09/17 19:36	108-20-3	
Ethanol	ND	ug/L	2000	1310	10		10/09/17 19:36	64-17-5	
Ethylbenzene	551	ug/L	10.0	3.0	10		10/09/17 19:36	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	100	0.70	10		10/09/17 19:36	637-92-3	
Methyl-tert-butyl ether	88.1	ug/L	10.0	2.1	10		10/09/17 19:36	1634-04-4	
Naphthalene	179	ug/L	10.0	2.4	10		10/09/17 19:36	91-20-3	
Toluene	706	ug/L	10.0	2.6	10		10/09/17 19:36	108-88-3	
Xylene (Total)	3220	ug/L	10.0	10.0	10		10/09/17 19:36	1330-20-7	
m&p-Xylene	2210	ug/L	20.0	6.6	10		10/09/17 19:36	179601-23-1	
o-Xylene	1000	ug/L	10.0	2.3	10		10/09/17 19:36	95-47-6	
<b>Surrogates</b>									
4-Bromofluorobenzene (S)	97	%	70-130		10		10/09/17 19:36	460-00-4	
1,2-Dichloroethane-d4 (S)	97	%	70-130		10		10/09/17 19:36	17060-07-0	
Toluene-d8 (S)	103	%	70-130		10		10/09/17 19:36	2037-26-5	

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### ANALYTICAL RESULTS

Project: Hwy 11 Grocery MW  
Pace Project No.: 92357775

Sample: 03439 MW-15      Lab ID: 92357775012      Collected: 10/02/17 16:22      Received: 10/04/17 13:30      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>8011 GCS EDB and DBCP</b> Analytical Method: EPA 8011      Preparation Method: EPA 8011									
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	10/06/17 13:57	10/07/17 05:13	106-93-4	
<b>Surrogates</b>									
1-Chloro-2-bromopropane (S)	114	%	60-140		1	10/06/17 13:57	10/07/17 05:13	301-79-56	
<b>8260 MSV Low Level SC</b> Analytical Method: EPA 8260									
tert-Amyl Alcohol	ND	ug/L	100	50.0	1		10/07/17 22:44	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	0.10	1		10/07/17 22:44	994-05-8	
Benzene	ND	ug/L	1.0	0.25	1		10/07/17 22:44	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	50.0	1		10/07/17 22:44	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	3.6	1		10/07/17 22:44	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	1.9	1		10/07/17 22:44	762-75-4	
1,2-Dichloroethane	ND	ug/L	1.0	0.24	1		10/07/17 22:44	107-06-2	
Diisopropyl ether	ND	ug/L	1.0	0.12	1		10/07/17 22:44	108-20-3	
Ethanol	ND	ug/L	200	131	1		10/07/17 22:44	64-17-5	
Ethylbenzene	ND	ug/L	1.0	0.30	1		10/07/17 22:44	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	0.070	1		10/07/17 22:44	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.21	1		10/07/17 22:44	1634-04-4	
Naphthalene	ND	ug/L	1.0	0.24	1		10/07/17 22:44	91-20-3	
Toluene	ND	ug/L	1.0	0.26	1		10/07/17 22:44	108-88-3	
Xylene (Total)	ND	ug/L	1.0	1.0	1		10/07/17 22:44	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		10/07/17 22:44	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		10/07/17 22:44	95-47-6	
<b>Surrogates</b>									
4-Bromofluorobenzene (S)	98	%	70-130		1		10/07/17 22:44	460-00-4	
1,2-Dichloroethane-d4 (S)	105	%	70-130		1		10/07/17 22:44	17060-07-0	
Toluene-d8 (S)	106	%	70-130		1		10/07/17 22:44	2037-26-5	

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## ANALYTICAL RESULTS

Project: Hwy 11 Grocery MW  
Pace Project No.: 92357775

Sample: 03439 RW-1      Lab ID: 92357775013      Collected: 10/03/17 09:12      Received: 10/04/17 13:30      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>8011 GCS EDB and DBCP</b> Analytical Method: EPA 8011      Preparation Method: EPA 8011									
1,2-Dibromoethane (EDB)	ND	ug/L	0.019	0.019	1	10/06/17 13:57	10/07/17 05:33	106-93-4	
<b>Surrogates</b>									
1-Chloro-2-bromopropane (S)	119	%	60-140		1	10/06/17 13:57	10/07/17 05:33	301-79-56	
<b>8260 MSV Low Level SC</b> Analytical Method: EPA 8260									
tert-Amyl Alcohol	ND	ug/L	25000	12500	250		10/08/17 03:03	75-85-4	
tert-Amylmethyl ether	551J	ug/L	2500	25.0	250		10/08/17 03:03	994-05-8	
Benzene	5340	ug/L	250	62.5	250		10/08/17 03:03	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	25000	12500	250		10/08/17 03:03	624-95-3	
tert-Butyl Alcohol	ND	ug/L	25000	905	250		10/08/17 03:03	75-65-0	
tert-Butyl Formate	ND	ug/L	12500	472	250		10/08/17 03:03	762-75-4	
1,2-Dichloroethane	ND	ug/L	250	60.0	250		10/08/17 03:03	107-06-2	
Diisopropyl ether	327	ug/L	250	30.0	250		10/08/17 03:03	108-20-3	
Ethanol	ND	ug/L	50000	32800	250		10/08/17 03:03	64-17-5	
Ethylbenzene	3430	ug/L	250	75.0	250		10/08/17 03:03	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	2500	17.5	250		10/08/17 03:03	637-92-3	
Methyl-tert-butyl ether	7920	ug/L	250	52.5	250		10/08/17 03:03	1634-04-4	
Naphthalene	700	ug/L	250	60.0	250		10/08/17 03:03	91-20-3	
Toluene	31400	ug/L	250	65.0	250		10/08/17 03:03	108-88-3	
Xylene (Total)	21700	ug/L	250	250	250		10/08/17 03:03	1330-20-7	
m&p-Xylene	14400	ug/L	500	165	250		10/08/17 03:03	179601-23-1	
o-Xylene	7310	ug/L	250	57.5	250		10/08/17 03:03	95-47-6	
<b>Surrogates</b>									
4-Bromofluorobenzene (S)	103	%	70-130		250		10/08/17 03:03	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	70-130		250		10/08/17 03:03	17060-07-0	
Toluene-d8 (S)	105	%	70-130		250		10/08/17 03:03	2037-26-5	

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