D H E C

PROMOTE PROTECT PROSPER

C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment.

MR BERNIE WRIGHT
PO BOX 275
ORANGEBURG SC 29116-0275

NOV 18 2008

Re: Request for Property Access
Vacant Lot, 2309 Russell St., Orangeburg, SC
UST Permit # 19268
Access to your property at 2309 Russell St., Orangeburg, SC
York County

Dear Mr. Bernie Wright:

The Underground Storage Tank (UST) Program of the South Carolina Department of Health and Environmental Control (SCDHEC) is conducting work to assess a gasoline release reported at the vacant lot located at 2309 Russell Street, Orangeburg, South Carolina. The UST Program confirmed a release at the referenced site on October 18, 2006 and the release was qualified to receive funds from the State Underground Petroleum Environmental Response Bank (SUPERB). Costs for this work will be paid by the SUPERB Account at *no cost to you or a future landowner*. As the current property owner, the Bureau is requesting that you provide property access for assessment activities. The Bureau will keep you apprised of all pending activities and will copy you on all correspondence. Midlands Environmental Consulting will be conducting an environmental assessment and will require access to your property/referenced facility in order to install a monitoring well, with the possibility that more wells may need to be installed in the future.

The monitoring wells will be constructed in accordance with the South Carolina Well Standards and Regulations. It will be completed at grade and will have a small diameter manhole cover and concrete pad. It will not interfere with normal usage of your property. The wells will be properly abandoned upon completion, and no permanent effects will remain on your property.

Please sign the enclosed SCDHEC right of entry and return it to my attention within fifteen days of the date you received this letter. If you have any questions, please contact me by phone at (803) 896-6629 or by fax at (803) 896-6245, or by email at mccormat@dhec.sc.gov.

Sincerely,

Andrew McCormick, Hydrogeologist
Assessment Section
Assessment and Corrective Action Division
Underground Storage Tank Program
Bureau of Land and Waste Management

enc: Right of Entry Form
Lab results for water sample taken at B-1
Map showing proposed location of monitoring well

cc: Technical file (with enc.)

UST DOCKET
Tech

Please Return to Andrew McCormick,
Assessment Section UST Program,
2600 Bull Street,
Columbia, SC 29201

RIGHT OF ENTRY

I, _____certify that I am the legal owner or the authorized representative for _____ (owner) of the property described below. I have witnessed the planned locations / have been provided a sketch map indicating the location(s) of the work to be performed. Permission is hereby granted to the South Carolina Department of Health and Environmental Control (SCDHEC) and its agents to enter the referenced property for the following purposes:

Name of Facility (if appropriate) : _____

Street Address : _____

City, State, ZIP : _____

1) Drilling of screening points. The work will be properly abandoned upon completion, and no permanent effects shall remain on site.
2) Installation of monitoring/ recovery wells. I understand that these wells will remain on the property until cleanup is complete. Additionally, SCDHEC or its agents will access the property at reasonable times for measurement and/or collection of samples.
3) The monitoring wells will be properly abandoned upon completion of remediation activities.

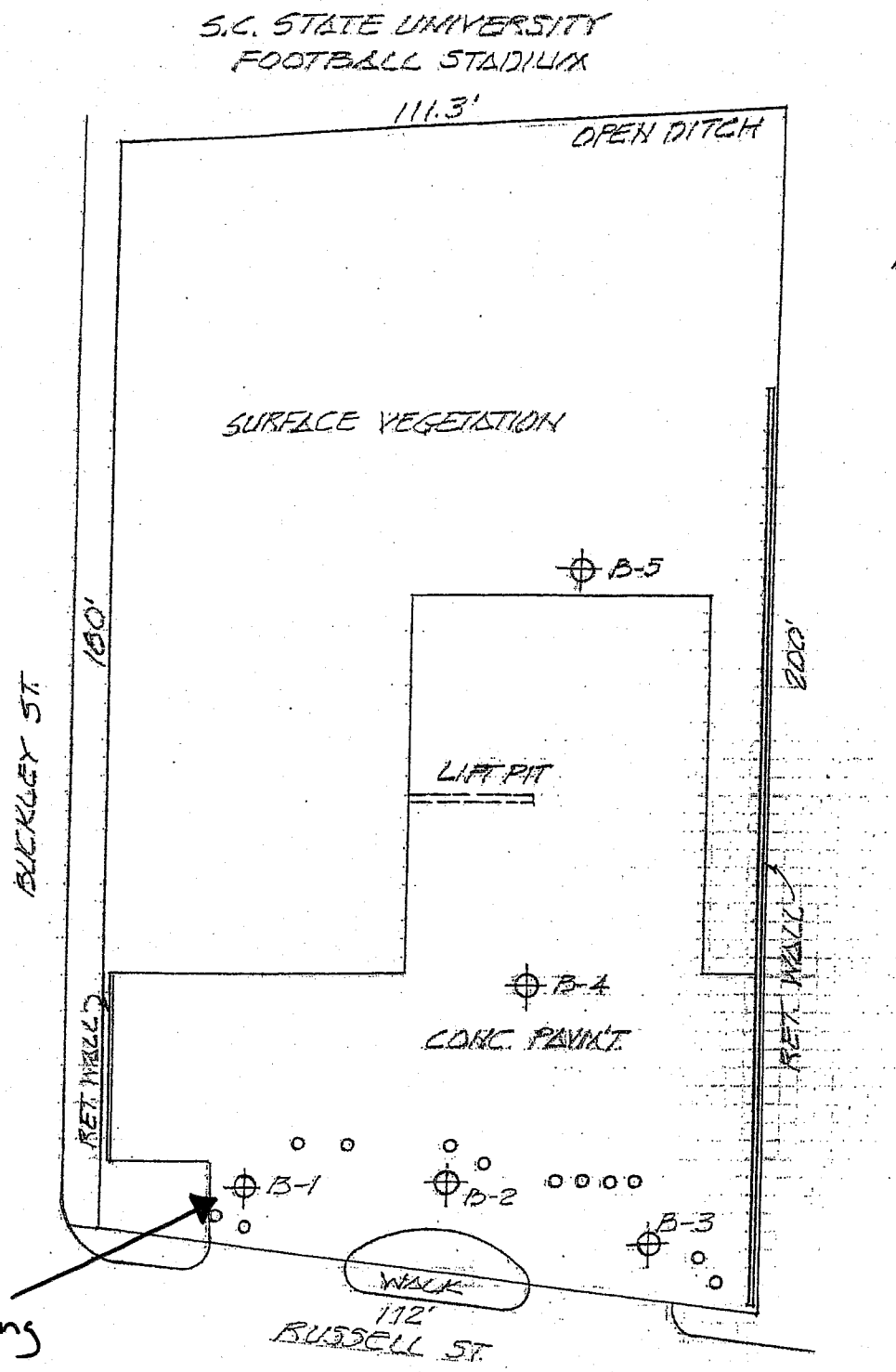
NAME (Please print) : _____

SIGNATURE : _____

WITNESS : _____

DATE: _____Mo _____Day _____Year

Reference UST Permit # 19268



We would like to install a monitoring well here

o=MANHOLES

⊕=BORE LOCATION (PROPOSED)

PROPOSED BORE LOCATION PLAN

ORANGEBURG, S.C.

SCALE: 1"=30' 9-14-06

F&ME CONSULTANTS E4303.23

FIGURE 3

TestAmerica
ANALYTICAL TESTING CORPORATION
2960 Foster Creighton Road Nashville, TN 37204 * 800-765-0980 * Fax 615-726-3404

Client F & ME Consultants (2201)
P. O. Box 5855
Columbia, SC 29250
Attn Robert Powell

Work Order: NPI3570
Project Name: F & ME Consultants
Project Number: E4303.23 / 2309 Russell St.
Received: 09/27/06 08:00

ANALYTICAL REPORT

Analyte	Result	Flag	Units	MRL	Dilution Factor	Analysis Date/Time	Method	Batch
Sample ID: NPI3570-02 (B-1 - Water) Sampled: 09/25/06 11:07								
Total Metals by EPA Method 6010B								
Lead	**0.00540**		mg/L	0.00500	1	09/29/06 16:59	SW846 6010B	6095442
Selected Volatile Organic Compounds by EPA Method 8260B								
Benzene	**8.95**		ug/L	1.00	1	10/04/06 00:11	SW846 8260B	6100260
Ethylbenzene	ND		ug/L	1.00	1	10/04/06 00:11	SW846 8260B	6100260
Methyl tert-Butyl Ether	**733**		ug/L	10.0	10	10/04/06 15:32	SW846 8260B	6100731
Naphthalene	**23.7**		ug/L	5.00	1	10/04/06 00:11	SW846 8260B	6100260
Toluene	ND		ug/L	1.00	1	10/04/06 00:11	SW846 8260B	6100260
Xylenes, total	ND		ug/L	3.00	1	10/04/06 00:11	SW846 8260B	6100260
Surr: 1,2-Dichloroethane-d4 (70-130%)	*100 %*					*10/04/06 00:11*	*SW846 8260B*	*6100260*
Surr: 1,2-Dichloroethane-d4 (70-130%)	*102 %*					*10/04/06 15:32*	*SW846 8260B*	*6100731*
Surr: Dibromofluoromethane (79-122%)	*101 %*					*10/04/06 00:11*	*SW846 8260B*	*6100260*
Surr: Dibromofluoromethane (79-122%)	*102 %*					*10/04/06 15:32*	*SW846 8260B*	*6100731*
Surr: Toluene-d8 (78-121%)	*96 %*					*10/04/06 00:11*	*SW846 8260B*	*6100260*
Surr: Toluene-d8 (78-121%)	*83 %*					*10/04/06 15:32*	*SW846 8260B*	*6100731*
Surr: 4-Bromofluorobenzene (78-126%)	*109 %*					*10/04/06 00:11*	*SW846 8260B*	*6100260*
Surr: 4-Bromofluorobenzene (78-126%)	*103 %*					*10/04/06 15:32*	*SW846 8260B*	*6100731*
Polyaromatic Hydrocarbons by EPA 8270C								
Acenaphthene	ND	S10	ug/L	2.08	1	10/02/06 17:36	SW846 8270C	6095410
Acenaphthylene	ND	S10	ug/L	2.08	1	10/02/06 17:36	SW846 8270C	6095410
Anthracene	ND	S10	ug/L	2.08	1	10/02/06 17:36	SW846 8270C	6095410
Benzo (a) anthracene	ND	S10	ug/L	2.08	1	10/02/06 17:36	SW846 8270C	6095410
Benzo (a) pyrene	ND	S10	ug/L	2.08	1	10/02/06 17:36	SW846 8270C	6095410
Benzo (b) fluoranthene	ND	S10	ug/L	2.08	1	10/02/06 17:36	SW846 8270C	6095410
Benzo (g,h,i) perylene	ND	S10	ug/L	2.08	1	10/02/06 17:36	SW846 8270C	6095410
Benzo (k) fluoranthene	ND	S10	ug/L	2.08	1	10/02/06 17:36	SW846 8270C	6095410
Chrysene	ND	S10	ug/L	2.08	1	10/02/06 17:36	SW846 8270C	6095410
Dibenz (a,h) anthracene	ND	S10	ug/L	2.08	1	10/02/06 17:36	SW846 8270C	6095410
Fluoranthene	ND	S10	ug/L	2.08	1	10/02/06 17:36	SW846 8270C	6095410
Fluorene	ND	S10	ug/L	2.08	1	10/02/06 17:36	SW846 8270C	6095410
Indeno (1,2,3-cd) pyrene	ND	S10	ug/L	2.08	1	10/02/06 17:36	SW846 8270C	6095410
Naphthalene	**13.8**	S10	ug/L	2.08	1	10/02/06 17:36	SW846 8270C	6095410
Phenanthrene	ND	S10	ug/L	2.08	1	10/02/06 17:36	SW846 8270C	6095410
Pyrene	ND	S10	ug/L	2.08	1	10/02/06 17:36	SW846 8270C	6095410
Surr: Terphenyl-d14 (31-111%)	*67 %*	*S10*				*10/02/06 17:36*	*SW846 8270C*	*6095410*
Surr: 2-Fluorobiphenyl (33-101%)	*77 %*	*S10*				*10/02/06 17:36*	*SW846 8270C*	*6095410*
Surr: Nitrobenzene-d5 (31-112%)	*73 %*	*S10*				*10/02/06 17:36*	*SW846 8270C*	*6095410*

Limit for Benzene is 5 µg/L
Limit for MtBE is 40 µg/L

Please Return to Andrew McCormick,
Assessment Section UST Program,
2600 Bull Street,
Columbia, SC 29201

DEC 16 2008

UNDERGROUND STORAGE TANK PROGRAM

RIGHT OF ENTRY

I, Bernie L Wright certify that I am the legal owner or the authorized representative for Same (owner) of the property described below. I have witnessed the planned locations / have been provided a sketch map indicating the location(s) of the work to be performed. Permission is hereby granted to the South Carolina Department of Health and Environmental Control (SCDHEC) and its agents to enter the referenced property for the following purposes:

Name of Facility (if appropriate) : Vacant Lot 2309 Russell Street
Street Address : 2309 Russell Street
City, State, ZIP : Orangeburg, SC 29115

1) Drilling of screening points. The work will be properly abandoned upon completion, and no permanent effects shall remain on site.
2) Installation of monitoring/ recovery wells. I understand that these wells will remain on the property until cleanup is complete. Additionally, SCDHEC or its agents will access the property at reasonable times for measurement and/or collection of samples.
3) The monitoring wells will be properly abandoned upon completion of remediation activities.

NAME (Please print) : Bernie L Wright
SIGNATURE : Bernie L Wright
WITNESS : Beverly A Wright
DATE: December Mo 08 Day 08 Year

Reference UST Permit # 19268

UST DOCKET
2 tech

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PROMOTE PROTECT PROSPER

C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment.

DEC 19 2008

BRYAN SHANE
MIDLANDS ENVIRONMENTAL CONSULTANTS INC
P O BOX 854
LEXINGTON SC 29071

Re: Bid # IFB-34007-6/3/08-EMW; PO# 732429
Notice to Proceed

Dear Mr. Shane:

Based on the award of the referenced bid package, enclosed are the information packets to conduct assessments at several facilities. The packets contain the necessary approval for work to begin. The facilities have been assigned Cost Agreement (CA) numbers as listed below. Please reference the CA numbers and Purchase Order # 732429 on the appropriate invoices submitted for payment against the facilities. 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).**

UST Permit#	Facility	County	Release #	Work Scope	Due Date*	CA #	Approved Amt
03032	Sunshine Food Store	Dorchester	1	Tier I Assessment	60 Days	34655	$3,981.00
19268	Vacant Lot	Orangeburg	1	IGWA	60 Days	34487	$250.00
19328	Phillips Rental Property	Orangeburg	1	Monitoring Well Installation	60 Days	34150	$13,074.00

*From receipt of letter

UST POCKET 3 file

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 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.**

The Bureau grants preapproval for transportation of drums of virgin petroleum contaminated soil and drums of groundwater from the referenced site to a permitted treatment facility. The contaminated soil and/or groundwater must be properly stored in labeled 55-gallon drums or equivalent containers. The contaminated soil and/or 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 final report. Please note, transportation of waste oil contaminated soil must receive preapproval from the Division of Waste Assessment & Emergency Response.

Please provide this office with a schedule of drilling dates and coordinate all work with me before commencing work at the facility. If you have any questions or need further assistance, please contact me at (803) 896-6633.

Sincerely,

Cathleen Ridgley

Cathleen Ridgley, Hydrogeologist
Assessment Section
Assessment & Corrective Action Division
Underground Storage Tank Program
Bureau of Land and Waste Management

enc.: Monitoring Well Approvals (MWA)
Approved Cost Agreements (ACA)
Information Packets

cc: Cathleen Ridgley, UST Program (w/out enc)
Technical Files (w/ copy of MWA, ACA, Site Map)

D H E C

PROMOTE PROTECT PROSPER

C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment.

Monitoring Well Approval

Approval is hereby granted to:	Midlands Environmental Consultants, Inc.
Facility:	Vacant Lot, 2309 Russell Street, Orangeburg, SC
UST Permit Number:	19268
County:	Orangeburg

This approval is for the installation of one shallow groundwater monitoring well. The monitoring well is to be installed in the approved location. The monitoring well is to be installed following 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 Department shall be completed and submitted to the Department within 30 days after well completion or abandonment unless another schedule has been approved by the Department. 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 Department within 30 days of receipt of laboratory results unless another schedule has been approved by the Department as required by R.61-71.H.1.d.

5. If any of the information provided to the Department changes, notification to the project manager Andrew McCormick (tel: 803-896-6629 or e-mail: mccormat@dhec.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. Departmental 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 Issuance: December 10, 2008 Approval #: UMW-22265

Andrew McCormick, Hydrogeologist
Assessment Section
Division of Assessment and Corrective Action
Bureau of Land and Waste Management

Approved Cost Agreement 34487

Facility: 19268 VACANT LOT
MCCORMAT
PO Number:

Task / Description	Categories	Item	Description	Qty / Pct	Unit Price	Amount
21 INITIAL GROUNDWATER ASSESSMENT						
		IGWA		1.0000	250.00	250.00
			Total Amount			250.00

Midlands Environmental Consultants, Inc.

March 9, 2009

UST
MAR 1 1 2009
PROGRAM

Mr. Andrew McCormick, Hydrogeologist
Assessment Section
Assessment and Corrective Action Division
Underground Storage Tank Program
South Carolina Department of Health
and Environmental Control
2600 Bull Street
Columbia, South Carolina 29201

Subject: Initial Groundwater Assessment Report
Vacant Lot
Orangeburg, South Carolina
SCDHEC Site ID# 19268, CA # 34487
MECI Project Number 09-2101

Dear Mr. McCormick,

Midlands Environmental Consultants, Inc. (MECI) is pleased to submit the attached Initial Ground-Water Assessment (IGWA) Report for the referenced site. This report describes assessment activities conducted at the site, and results of an IGWA evaluation in general accordance with South Carolina Department of Health and Environmental Control (SCDHEC) guidelines. As outlined, please find attached well construction logs, laboratory data, topographic and site base maps, along with Disposal Manifests.

MECI appreciates the opportunity to offer our professional environmental related 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.

Clark S. Baer
Staff Biologist

UST
DOCKET
241

William C. McClary, P.G.
Senior Geologist

Post Office Box 854, Lexington SC 29071 • 235-B Dooley Road, Lexington, SC 29073
Telephone: (803) 808-2043 • fax: (803) 808-2048

INITIAL GROUND-WATER ASSESSMENT REPORT

Facility Name: Vacant Lot
Facility Address: 2309 Russell Street, Orangeburg, SC 29116
Facility Phone Number:
UST Permit Number: 19268
UST Owner or Operator's Name: Orphan
Address:
Phone Number:
Property Owner's Name: Bernie Wright
Address: PO Box 275, Orangeburg, SC 29115
Phone Number: 803-378-7071
Contractor: Midlands Environmental Consultants Cert. # 9
Address: 235 B Dooley Road, Lexington, SC 29073
Phone Number: 803-808-2043
Well Driller: Geologic Exploration Inc. (S. Sloan) Cert. # 01681
Address: 176 Commerce Boulevard, Statesville, North Carolina 28625
Phone Number: 800-752-8853

Receptor and Site Data
Please place a check in the appropriate answer block for each question:

Receptor Survey Questions	No	Yes *
Is there a drinking water supply well (public or private) or surface water supply intake within 1000 feet of the UST?	X	
Are irrigation or other non-drinking water wells located within 1000 feet of the UST?	X	
Are there other potential receptors (i.e., utilities, surface waters, wetlands) less than 500 feet from the UST?		X

*If "yes" provide additional information:

Buried water and sewer lines run along Russell Street on the south side of the site.

A ditch with flowing water runs along the northern edge of the site, approximately 160 feet from MW-1.

Were any WSW's within 250 ft radius sampled? _____ Yes __X__ No
(Show on site base map)
Is a public water supply line in the area? __X__ Yes _____ No
(Show on site base map)
Is the current use of the site and surrounding properties commercial, residential, agricultural or industrial?

Site: Abandoned Commercial Adjacent Properties: Residential and Commercial

Soil and Boring/Monitoring Well Data

Primary Soil Type: CLAY

Well Installation Method and Date: Hollow Stem Auger 2/17/09

Development Method: Bailed five Gallons

Soil Sample obtained at 2 feet.

SOIL ANALYTICAL DATA

Benzene (ug/kg)	Toluene (ug/kg)	Ethylbenzene (ug/kg)	Total Xylenes (ug/kg)	Naphthalene (ug/kg)	Total PAH (ug/kg)
690	**146J**	**793**	**1,120**	**390**	**1605.6**

Benzo(a)-anthracene (ug/kg)	Benzo(b)-fluoranthene (ug/kg)	Benzo(k)-fluoranthene (ug/kg)	Chrysene (ug/kg)	Dibenz(a,h)-anthracene (ug/kg)	Lead (mg/kg)
<370	**75.6J**	**74.2J**	**60.8J**	<370	**46.4**

*For waste oil UST releases only:

Chromium* (ug/kg)	Mercury* (ug/kg)	Selenium* (kg/ug)	Silver* (ug/kg)	Arsenic* (ug/kg)	Barium* (kg/ug)	Cadmium* (ug/kg)
NA	NA	NA	NA	NA	NA	NA

Include Laboratory Data and Chain of Custody Form in Appendix B.

Ground-Water Data:

Depth to Ground Water: 4.31 Depth to FP, if present: NA

Free Product Thickness: NA

Well Purging/Sampling Method: Purged 5 gallons

Date Sampled: 2/24/2009

Equilibriated values: Temperature: 16.7 pH: 6.01

Dissolved Oxygen: 0.54 Conductivity: 252.1

Soil/Water Disposal Method: Waste Management - Richland County / Activated Carbon
*Include in Appendix D. Costs for work cannot be compensated without Manifests.

GROUND-WATER ANALYTICAL DATA

Benzene (ug/l)	Toluene (ug/l)	Ethylbenzene (ug/l)	Total Xylenes (ug/l)	MTBE (ug/l)	EDB (ug/l)	Naphthalene (ug/l)
<25.0	<25.0	<25.0	<50.0	**27.2**	<0.021	<25.0

Benzo(a)-anthracene (ug/l)	Benzo(b)-fluoranthene (ug/l)	Benzo(k)-fluoranthene (ug/l)	Chrysene (ug/l)	Dibenz(a,h)-anthracene (ug/l)	Total PAH (ug/l)	Total Lead (ug/l)
<15.2	<15.2	<15.2	<15.2	<15.2	BDL	**63.6**

Filtered Lead (ug/l)
<5.0

*For waste oil UST releases only:

Chromium* (ug/l)	Mercury* (ug/l)	Selenium* (ug/l)	Silver* (ug/l)	Arsenic* (ug/l)	Barium* (ug/l)	Cadmium* (ug/l)
NA	NA	NA	NA	NA	NA	NA

Include Laboratory Data and Chain of Custody Form in Appendix B.

Report Completed By (Print Name): William C. McClary

Signature : Wil McC

Contractor Certification # 9 Date: 3/9/2009

Appendices

The appendices required for this report are as follows:

Appendix A. Well Construction Log

Appendix B. Laboratory Data

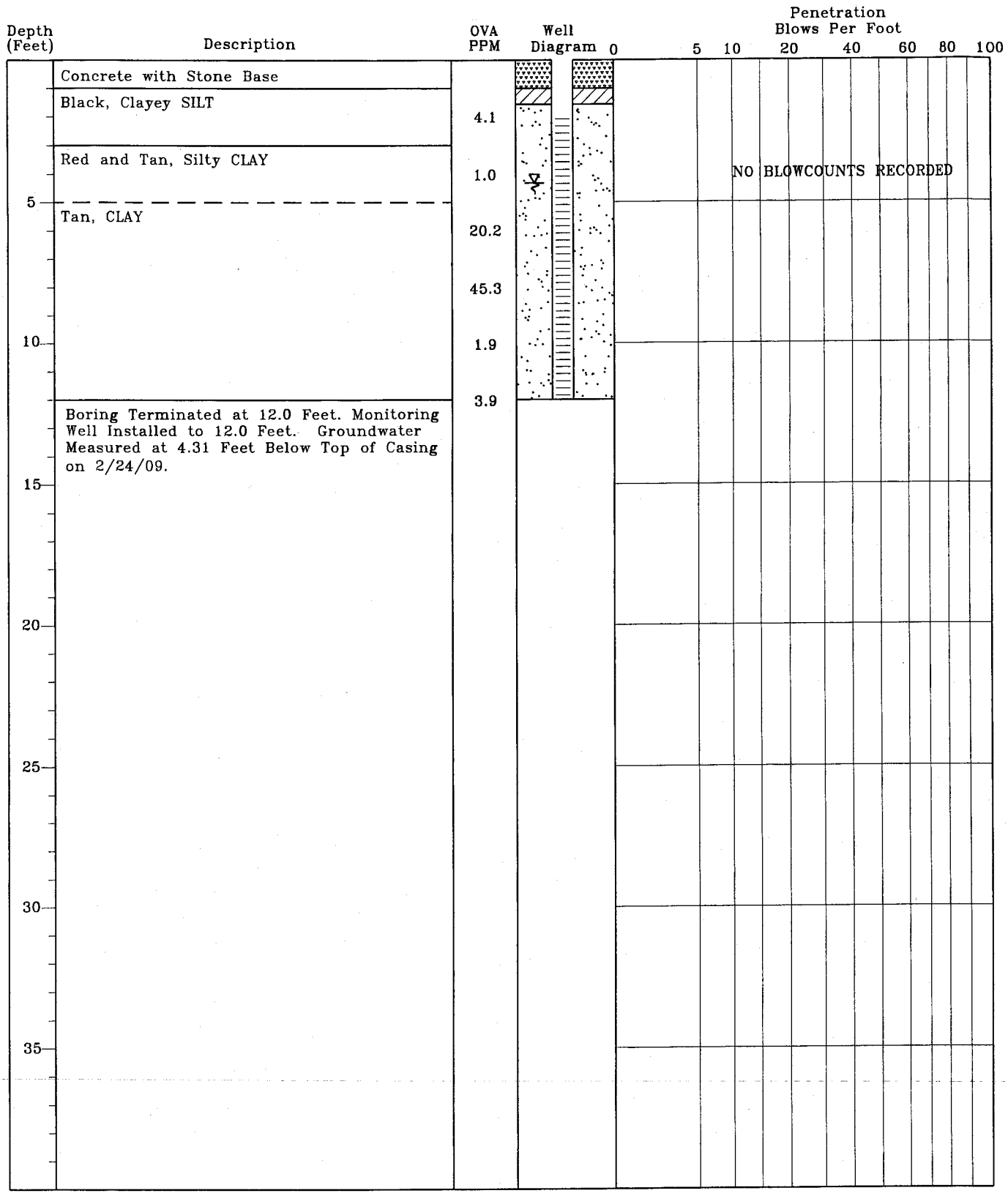
Appendix C. Maps (Topographic and Site Base)

Appendix D. Disposal Manifest(s). (Must be included for payment for SUPERB)

Appendix E. Additional Data (Property owner name, address, phone number for any water supply wells or surface water bodies sampled.)

Appendix F. Invoice Form (SUPERB payment only)

APPENDIX A
BORING LOGS



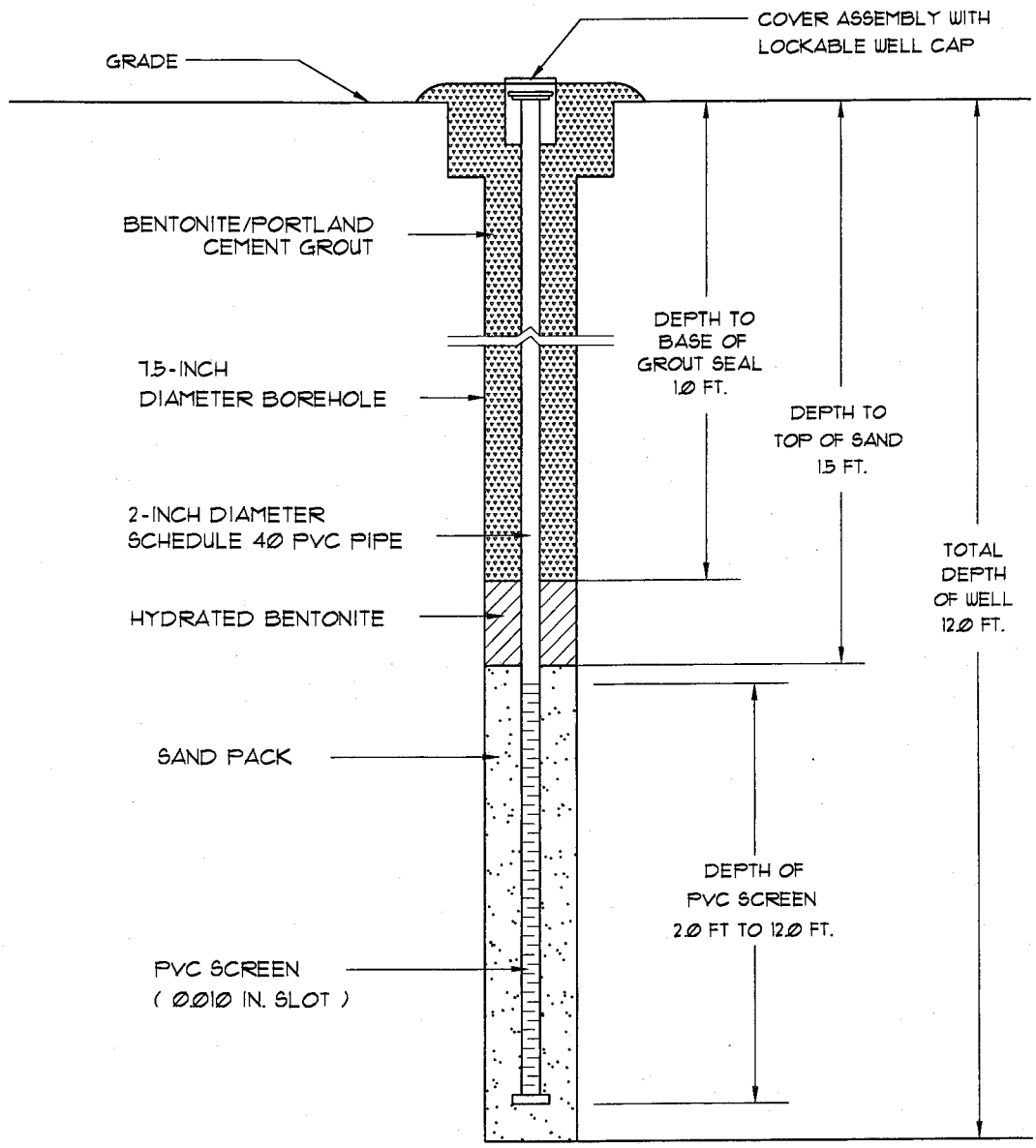
TEST BORING RECORD
Vacant Lot
Orangeburg, South Carolina
SCDHEC Site ID# 19268
MECI Project Number 09-2101

Boring Number:	MW-1
Date Drilled:	2/17/2009
Drilled By:	Geologic Exploration Inc.
Logged By:	J. Bryant

Prepared By:
Midlands Environmental Consultants, Inc.
235-B Dooley Road
Lexington, South Carolina 29073
(803) 808-2043 fax: 808-2048

MONITORING WELL INSTALLATION RECORD

Vacant Lot
Orangeburg, South Carolina
SCDHEC Site ID# 19268
MECI Project Number 09-2101



Well Number:	MW-1
Date Drilled:	2/17/09
Drilled By:	Geologic Exploration Inc.
Driller: S. Sloan	S.C. I.D. #: C 01681
Logged By:	J. Bryant

Prepared By:
Midlands Environmental Consultants, Inc.
235-B Dooley Road
Lexington, South Carolina 29073
(803) 808-2043 fax: 808-2048

09-2101

DHEC
PROMOTE PROTECT PROSPER

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

1. WELL OWNER INFORMATION:
Name: WRIGHT, BERNIE (last) (first)
Address: 2309 RUSSELL STREET
City: ORANGEBURG State: SC Zip: 29117
Telephone: Work: Home:

2. LOCATION OF WELL: SC **COUNTY:** ORANGEBURG
Name: VACANT LOT
Street Address: 2309 RUSSELL STREET
City: ORANGEBURG Zip: 29117
Latitude: Longitude:

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
CONCRETE/GRAVEL	1.0	1.0
BROWN SILTY CLAY	5.0	6.0
TAN/GRAY PLASTIC CLAY	6.0	12.0
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-1 BENTONITE SEAL FROM 1.0 TO 1.5 FT.

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other AUGER

7. PERMIT NUMBER:

8. USE:
☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 12.0 ft. Date Started: 02/17/09 Date Completed: 02/17/09

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2 INCH
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 2.0 ft. depth
_____ in. to _____ ft. depth
Height: Above ☐ Below ☐
Surface 0.0 ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☐ No

11. SCREEN:
Type: SCH 40 PVC Diam.: 2 INCH
Slot/Gauge: .010 Length: 10.0 FEET
Set Between: 2.0 ft. and 12.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 6.0 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 1.5 ft. to 12.0 ft.
Effective size 1.43 Uniformity Coefficient 1.30

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 0.0 ft. to 1.0 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: STEPHEN SLOAN **CERT. NO.:** 01681
Address: (Print) 176 COMMERCE BLVD
STATESVILLE, NC 28625
Level: A B C D (circle one) ☐ ☐ ☑ ☐
Telephone No.: 704-872-7686 Fax No.: 704-872-0248

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: Stephen B Sloan Well Driller Date: 02/18/09

If D Level Driller, provide supervising driller's name:

DHEC 1903 (07/2003) **COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)**

APPENDIX B
ANALYTICAL DATA

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(704)875-9092

February 27, 2009

Mr. Bryan Shane
Midlands Environmental
PO Box 854
Lexington, SC 29071

RE: Project: VACANT LOT
Pace Project No.: 9238304

Dear Mr. Shane:
Enclosed are the analytical results for sample(s) received by the laboratory on February 18, 2009. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

Inorganic Wet Chemistry and Metals analyses were performed at our Pace Asheville laboratory and Organic testing was performed at our Pace Huntersville laboratory unless otherwise footnoted. All Microbiological analyses were performed at the laboratory where the samples were received.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Renee Spencer

Renee Spencer

renee.spencer@pacelabs.com
Project Manager

Enclosures

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CERTIFICATIONS

Project: VACANT LOT
Pace Project No.: 9238304

Charlotte Certification IDs
West Virginia Certification #: 357
Virginia Certification #: 00213
Tennessee Certification #: 04010
South Carolina Drinking Water Cert. #: 990060003
South Carolina Certification #: 990060001
Pennsylvania Certification #: 68-00784
Connecticut Certification #: PH-0104
North Carolina Field Services Certification #: 5342
North Carolina Drinking Water Certification #: 37706
New Jersey Certification #: NC012
Louisiana/LELAP Certification #: 04034
Kentucky UST Certification #: 84
Florida/NELAP Certification #: E87627
North Carolina Wastewater Certification #: 12

Asheville Certification IDs
West Virginia Certification #: 356
Virginia Certification #: 00072
Connecticut Certification #: PH-0106
Florida/NELAP Certification #: E87648
Tennessee Certification #: 2980
South Carolina Certification #: 99030001
South Carolina Bioassay Certification #: 99030002
Pennsylvania Certification #: 68-03578
North Carolina Wastewater Certification #: 40
North Carolina Drinking Water Certification #: 37712
North Carolina Bioassay Certification #: 9
New Jersey Certification #: NC011
Massachusetts Certification #: M-NC030
Louisiana/LELAP Certification #: 03095

Eden Certification IDs
North Carolina Wastewater Certification #: 633
Virginia Drinking Water Certification #: 00424
North Carolina Drinking Water Certification #: 37738

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SAMPLE SUMMARY

Project: VACANT LOT
Pace Project No.: 9238304

Lab ID	Sample ID	Matrix	Date Collected	Date Received
9238304001	MW-1 (2')	Solid	02/17/09 16:00	02/18/09 15:50

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SAMPLE ANALYTE COUNT

Project: VACANT LOT
Pace Project No.: 9238304

Lab ID	Sample ID	Method	Analysts	Analytes Reported
9238304001	**MW-1 (2')**	ASTM D2974-87	KDF	1
		EPA 6010	SHB	1
		EPA 8260	DLK	11
		EPA 8270	BET	21

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ANALYTICAL RESULTS

Project: VACANT LOT
Pace Project No.: 9238304

Sample: MW-1 (2') **Lab ID: 9238304001** Collected: 02/17/09 16:00 Received: 02/18/09 15:50 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050								
Lead	**46.4**	mg/kg	0.41	0.40	1	02/19/09 14:55	02/19/09 21:40	7439-92-1	
8270 MSSV Microwave	Analytical Method: EPA 8270 Preparation Method: EPA 3546								
Acenaphthene	ND	ug/kg	370	85.1	1	02/24/09 10:30	02/26/09 02:19	83-32-9	
Acenaphthylene	ND	ug/kg	370	87.4	1	02/24/09 10:30	02/26/09 02:19	208-96-8	
Anthracene	**152J**	ug/kg	370	82.9	1	02/24/09 10:30	02/26/09 02:19	120-12-7	
Benzo(a)anthracene	ND	ug/kg	370	68.3	1	02/24/09 10:30	02/26/09 02:19	56-55-3	
Benzo(a)pyrene	ND	ug/kg	370	70.6	1	02/24/09 10:30	02/26/09 02:19	50-32-8	
Benzo(b)fluoranthene	**75.6J**	ug/kg	370	63.8	1	02/24/09 10:30	02/26/09 02:19	205-99-2	
Benzo(g,h,i)perylene	ND	ug/kg	370	94.1	1	02/24/09 10:30	02/26/09 02:19	191-24-2	
Benzo(k)fluoranthene	**74.2J**	ug/kg	370	72.8	1	02/24/09 10:30	02/26/09 02:19	207-08-9	
Chrysene	**60.8J**	ug/kg	370	49.3	1	02/24/09 10:30	02/26/09 02:19	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	370	78.4	1	02/24/09 10:30	02/26/09 02:19	53-70-3	
Fluoranthene	**59.8J**	ug/kg	370	53.8	1	02/24/09 10:30	02/26/09 02:19	206-44-0	
Fluorene	ND	ug/kg	370	76.2	1	02/24/09 10:30	02/26/09 02:19	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	370	76.2	1	02/24/09 10:30	02/26/09 02:19	193-39-5	
1-Methylnaphthalene	**307J**	ug/kg	370	96.3	1	02/24/09 10:30	02/26/09 02:19	90-12-0	
2-Methylnaphthalene	**331J**	ug/kg	370	79.5	1	02/24/09 10:30	02/26/09 02:19	91-57-6	
Naphthalene	**322J**	ug/kg	370	90.7	1	02/24/09 10:30	02/26/09 02:19	91-20-3	
Phenanthrene	**149J**	ug/kg	370	61.6	1	02/24/09 10:30	02/26/09 02:19	85-01-8	
Pyrene	**74.2J**	ug/kg	370	62.7	1	02/24/09 10:30	02/26/09 02:19	129-00-0	
Nitrobenzene-d5 (S)	71	%	30-150		1	02/24/09 10:30	02/26/09 02:19	4165-60-0	
2-Fluorobiphenyl (S)	71	%	46-120		1	02/24/09 10:30	02/26/09 02:19	321-60-8	
Terphenyl-d14 (S)	89	%	38-108		1	02/24/09 10:30	02/26/09 02:19	1718-51-0	
8260/5035A Volatile Organics	Analytical Method: EPA 8260								
Benzene	**690**	ug/kg	207	66.4	50		02/26/09 21:36	71-43-2	
Ethylbenzene	**793**	ug/kg	207	74.7	50		02/26/09 21:36	100-41-4	
Naphthalene	**390**	ug/kg	207	49.8	50		02/26/09 21:36	91-20-3	
Toluene	**146J**	ug/kg	207	74.7	50		02/26/09 21:36	108-88-3	
Xylene (Total)	**1120**	ug/kg	415	149	50		02/26/09 21:36	1330-20-7	
m&p-Xylene	**1030**	ug/kg	415	149	50		02/26/09 21:36	1330-20-7	
o-Xylene	**85.5J**	ug/kg	207	78.8	50		02/26/09 21:36	95-47-6	
Dibromofluoromethane (S)	94	%	79-116		50		02/26/09 21:36	1868-53-7	
Toluene-d8 (S)	103	%	88-110		50		02/26/09 21:36	2037-26-5	
4-Bromofluorobenzene (S)	96	%	74-115		50		02/26/09 21:36	460-00-4	
1,2-Dichloroethane-d4 (S)	91	%	69-121		50		02/26/09 21:36	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**10.7**	%	0.10	0.10	1		02/19/09 08:40		

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QUALITY CONTROL DATA

Project: VACANT LOT
Pace Project No.: 9238304

QC Batch: OEXT/5971
QC Batch Method: EPA 3546
Analysis Method: EPA 8270
Analysis Description: 8270 Solid MSSV Microwave
Associated Lab Samples: 9238304001

METHOD BLANK: 240820
Matrix: Solid
Associated Lab Samples: 9238304001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1-Methylnaphthalene	ug/kg	ND	330	02/25/09 17:27	
2-Methylnaphthalene	ug/kg	ND	330	02/25/09 17:27	
Acenaphthene	ug/kg	ND	330	02/25/09 17:27	
Acenaphthylene	ug/kg	ND	330	02/25/09 17:27	
Anthracene	ug/kg	ND	330	02/25/09 17:27	
Benzo(a)anthracene	ug/kg	ND	330	02/25/09 17:27	
Benzo(a)pyrene	ug/kg	ND	330	02/25/09 17:27	
Benzo(b)fluoranthene	ug/kg	ND	330	02/25/09 17:27	
Benzo(g,h,i)perylene	ug/kg	ND	330	02/25/09 17:27	
Benzo(k)fluoranthene	ug/kg	ND	330	02/25/09 17:27	
Chrysene	ug/kg	ND	330	02/25/09 17:27	
Dibenz(a,h)anthracene	ug/kg	ND	330	02/25/09 17:27	
Fluoranthene	ug/kg	ND	330	02/25/09 17:27	
Fluorene	ug/kg	ND	330	02/25/09 17:27	
Indeno(1,2,3-cd)pyrene	ug/kg	ND	330	02/25/09 17:27	
Naphthalene	ug/kg	ND	330	02/25/09 17:27	
Phenanthrene	ug/kg	ND	330	02/25/09 17:27	
Pyrene	ug/kg	ND	330	02/25/09 17:27	
2-Fluorobiphenyl (S)	%	75	46-120	02/25/09 17:27	
Nitrobenzene-d5 (S)	%	78	30-150	02/25/09 17:27	
Terphenyl-d14 (S)	%	86	38-108	02/25/09 17:27	

LABORATORY CONTROL SAMPLE: 240821

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1-Methylnaphthalene	ug/kg	1330	910	68	50-150	
2-Methylnaphthalene	ug/kg	1330	756	57	50-150	
Acenaphthene	ug/kg	1330	853	64	50-150	
Acenaphthylene	ug/kg	1330	953	71	50-150	
Anthracene	ug/kg	1330	944	71	50-150	
Benzo(a)anthracene	ug/kg	1330	909	68	50-150	
Benzo(a)pyrene	ug/kg	1330	910	68	50-150	
Benzo(b)fluoranthene	ug/kg	1330	813	61	50-150	
Benzo(g,h,i)perylene	ug/kg	1330	820	62	24-117	
Benzo(k)fluoranthene	ug/kg	1330	803	60	50-150	
Chrysene	ug/kg	1330	898	67	50-150	
Dibenz(a,h)anthracene	ug/kg	1330	889	67	17-128	
Fluoranthene	ug/kg	1330	874	66	50-150	
Fluorene	ug/kg	1330	875	66	50-150	
Indeno(1,2,3-cd)pyrene	ug/kg	1330	873	65	19-128	
Naphthalene	ug/kg	1330	835	63	50-150	

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QUALITY CONTROL DATA

Project: VACANT LOT
Pace Project No.: 9238304

LABORATORY CONTROL SAMPLE: 240821

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Phenanthrene	ug/kg	1330	906	68	50-150	
Pyrene	ug/kg	1330	890	67	50-150	
2-Fluorobiphenyl (S)	%			68	46-120	
Nitrobenzene-d5 (S)	%			73	30-150	
Terphenyl-d14 (S)	%			72	38-108	

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QUALITY CONTROL DATA

Project: VACANT LOT
Pace Project No.: 9238304

QC Batch: MSV/6198
QC Batch Method: EPA 8260
Analysis Method: EPA 8260
Analysis Description: 8260 MSV 5035A Volatile Organics
Associated Lab Samples: 9238304001

METHOD BLANK: 240802
Matrix: Solid
Associated Lab Samples: 9238304001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/kg	ND	5.0	02/25/09 14:55	
Ethylbenzene	ug/kg	ND	5.0	02/25/09 14:55	
m&p-Xylene	ug/kg	ND	10.0	02/25/09 14:55	
Naphthalene	ug/kg	ND	5.0	02/25/09 14:55	
o-Xylene	ug/kg	ND	5.0	02/25/09 14:55	
Toluene	ug/kg	ND	5.0	02/25/09 14:55	
Xylene (Total)	ug/kg	ND	10.0	02/25/09 14:55	
1,2-Dichloroethane-d4 (S)	%	107	69-121	02/25/09 14:55	
4-Bromofluorobenzene (S)	%	96	74-115	02/25/09 14:55	
Dibromofluoromethane (S)	%	106	79-116	02/25/09 14:55	
Toluene-d8 (S)	%	107	88-110	02/25/09 14:55	

LABORATORY CONTROL SAMPLE: 240803

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/kg	50	48.3	97	71-140	
Ethylbenzene	ug/kg	50	48.5	97	69-141	
m&p-Xylene	ug/kg	100	96.6	97	72-138	
Naphthalene	ug/kg	50	53.5	107	61-138	
o-Xylene	ug/kg	50	48.3	97	74-137	
Toluene	ug/kg	50	47.5	95	69-139	
Xylene (Total)	ug/kg	150	145	97	73-138	
1,2-Dichloroethane-d4 (S)	%			100	69-121	
4-Bromofluorobenzene (S)	%			98	74-115	
Dibromofluoromethane (S)	%			99	79-116	
Toluene-d8 (S)	%			99	88-110	

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QUALITY CONTROL DATA

Project: VACANT LOT
Pace Project No.: 9238304

QC Batch: MPRP/3853
QC Batch Method: EPA 3050
Analysis Method: EPA 6010
Analysis Description: 6010 MET
Associated Lab Samples: 9238304001

METHOD BLANK: 238857 Matrix: Solid
Associated Lab Samples: 9238304001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Lead	mg/kg	ND	0.50	02/19/09 20:10	

LABORATORY CONTROL SAMPLE: 238858

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lead	mg/kg	50	49.4	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 238859 238860

Parameter	Units	9238207001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Lead	mg/kg	63.4	31.2	47.1	87.1	131	76	143	75-125	40	20	M0,R1

SAMPLE DUPLICATE: 238861

Parameter	Units	9238207002 Result	Dup Result	RPD	Max RPD	Qualifiers
Lead	mg/kg	36.7	61.4	50	20	R1

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QUALITY CONTROL DATA

Project: VACANT LOT
Pace Project No.: 9238304

QC Batch: PMST/2292
QC Batch Method: ASTM D2974-87
Associated Lab Samples: 9238304001

Analysis Method: ASTM D2974-87
Analysis Description: Dry Weight/Percent Moisture

SAMPLE DUPLICATE: 238782

Parameter	Units	9238295001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	27.4	26.7	3	25	

SAMPLE DUPLICATE: 238783

Parameter	Units	9238217010 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	5.7	5.7	.08	25	

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QUALIFIERS

Project: VACANT LOT
Pace Project No.: 9238304

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

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.

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U - Indicates the compound was analyzed for, but not detected.

ANALYTE QUALIFIERS

M0	Matrix spike recovery was outside laboratory control limits.
R1	RPD value was outside control limits.

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: of

1162270

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: MFC	Report To: B. Shone	Attention:
Address: 735B Dooley Rd Lexington SC 29073	Copy To:	Company Name:
Email To: bcmaccl.net	Purchase Order No.:	Address:
Phone: 808-2043 Fax:	Project Name: Vacant lot	Pace Quote Reference:
Requested Due Date/TAT:	Project Number:	Pace Project Manager: R. Spencer
		Pace Profile #:

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☒ UST ☐ RCRA ☐ OTHER

Site Location STATE: SC

Requested Analysis Filtered (Y/N)

ITEM #	Section D Required Client Information: SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE	Matrix Codes MATRIX / CODE: Drinking Water DW, Water WT, Waste Water WW, Product P, Soil/Solid SL, Oil OL, Wipe WP, Air AR, Tissue TS, Other OT	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED: COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	8260 Pkg + Naph	PAH	Pb (1,2,4)	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	MW-1(2')		SL	G			2-17	4:00PM		6	3					2	1		X	X	X			
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
Please Report "J" values	Morgan K	2/15/09	9:35	Georg Moody Pace	2-16-09	9:35	

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: John C Bryant

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 2-17-09

Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

2

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March 04, 2009

Mr. Bryan Shane
Midlands Environmental
PO Box 854
Lexington, SC 29071

RE: Project: VACANT LOT 09-2101
Pace Project No.: 9238783

Dear Mr. Shane:
Enclosed are the analytical results for sample(s) received by the laboratory on February 25, 2009. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

Inorganic Wet Chemistry and Metals analyses were performed at our Pace Asheville laboratory and Organic testing was performed at our Pace Huntersville laboratory unless otherwise footnoted. All Microbiological analyses were performed at the laboratory where the samples were received.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Renee Spencer

Renee Spencer

renee.spencer@pacelabs.com
Project Manager

Enclosures

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CERTIFICATIONS

Project: VACANT LOT 09-2101
Pace Project No.: 9238783

Charlotte Certification IDs
West Virginia Certification #: 357
Virginia Certification #: 00213
Tennessee Certification #: 04010
South Carolina Drinking Water Cert. #: 990060003
South Carolina Certification #: 990060001
Pennsylvania Certification #: 68-00784
Connecticut Certification #: PH-0104
North Carolina Field Services Certification #: 5342
North Carolina Drinking Water Certification #: 37706
New Jersey Certification #: NC012
Louisiana/LELAP Certification #: 04034
Kentucky UST Certification #: 84
Florida/NELAP Certification #: E87627
North Carolina Wastewater Certification #: 12

Asheville Certification IDs
West Virginia Certification #: 356
Virginia Certification #: 00072
Connecticut Certification #: PH-0106
Florida/NELAP Certification #: E87648
Tennessee Certification #: 2980
South Carolina Certification #: 99030001
South Carolina Bioassay Certification #: 99030002
Pennsylvania Certification #: 68-03578
North Carolina Wastewater Certification #: 40
North Carolina Drinking Water Certification #: 37712
North Carolina Bioassay Certification #: 9
New Jersey Certification #: NC011
Massachusetts Certification #: M-NC030
Louisiana/LELAP Certification #: 03095

Eden Certification IDs
North Carolina Wastewater Certification #: 633
Virginia Drinking Water Certification #: 00424
North Carolina Drinking Water Certification #: 37738

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SAMPLE SUMMARY

Project: VACANT LOT 09-2101
Pace Project No.: 9238783

Lab ID	Sample ID	Matrix	Date Collected	Date Received
9238783001	**MW-1**	Water	02/24/09 14:00	02/25/09 17:05

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SAMPLE ANALYTE COUNT

Project: VACANT LOT 09-2101
Pace Project No.: 9238783

Lab ID	Sample ID	Method	Analysts	Analytes Reported
9238783001	MW-1	EPA 6010	SHB	1
		EPA 6010	SHB	1
		EPA 8011	CAH	2
		EPA 8260	MCK	13
		EPA 8270	BET	21

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ANALYTICAL RESULTS

Project: VACANT LOT 09-2101
Pace Project No.: 9238783

Sample: MW-1 **Lab ID: 9238783001** Collected: 02/24/09 14:00 Received: 02/25/09 17:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.021	0.021	1	03/01/09 14:50	03/03/09 01:54	106-93-4	
1-Chloro-2-bromopropane (S)	103	%	60-140		1	03/01/09 14:50	03/03/09 01:54	301-79-56	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Lead	**63.6**	ug/L	5.0	4.0	1	02/27/09 10:40	02/27/09 20:18	7439-92-1	
6010 MET ICP, Lab Filtered	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Lead, Dissolved	ND	ug/L	5.0	4.0	1	03/02/09 15:50	03/02/09 17:15	7439-92-1	
8270 MSSV PAH SPE	Analytical Method: EPA 8270 Preparation Method: EPA 3535								
Acenaphthene	ND	ug/L	15.2	0.73	1	02/27/09 09:30	03/03/09 16:26	83-32-9	
Acenaphthylene	ND	ug/L	15.2	0.70	1	02/27/09 09:30	03/03/09 16:26	208-96-8	
Anthracene	ND	ug/L	15.2	0.97	1	02/27/09 09:30	03/03/09 16:26	120-12-7	
Benzo(a)anthracene	ND	ug/L	15.2	1.1	1	02/27/09 09:30	03/03/09 16:26	56-55-3	
Benzo(a)pyrene	ND	ug/L	15.2	0.94	1	02/27/09 09:30	03/03/09 16:26	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	15.2	0.86	1	02/27/09 09:30	03/03/09 16:26	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	15.2	1.0	1	02/27/09 09:30	03/03/09 16:26	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	15.2	1.0	1	02/27/09 09:30	03/03/09 16:26	207-08-9	
Chrysene	ND	ug/L	15.2	1.1	1	02/27/09 09:30	03/03/09 16:26	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	15.2	0.86	1	02/27/09 09:30	03/03/09 16:26	53-70-3	
Fluoranthene	ND	ug/L	15.2	1.1	1	02/27/09 09:30	03/03/09 16:26	206-44-0	
Fluorene	ND	ug/L	15.2	0.97	1	02/27/09 09:30	03/03/09 16:26	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	15.2	0.88	1	02/27/09 09:30	03/03/09 16:26	193-39-5	
1-Methylnaphthalene	ND	ug/L	15.2	15.2	1	02/27/09 09:30	03/03/09 16:26	90-12-0	
2-Methylnaphthalene	ND	ug/L	15.2	0.47	1	02/27/09 09:30	03/03/09 16:26	91-57-6	
Naphthalene	ND	ug/L	15.2	0.65	1	02/27/09 09:30	03/03/09 16:26	91-20-3	
Phenanthrene	ND	ug/L	15.2	1.0	1	02/27/09 09:30	03/03/09 16:26	85-01-8	
Pyrene	ND	ug/L	15.2	1.0	1	02/27/09 09:30	03/03/09 16:26	129-00-0	
Nitrobenzene-d5 (S)	66	%	10-120		1	02/27/09 09:30	03/03/09 16:26	4165-60-0	
2-Fluorobiphenyl (S)	49	%	10-120		1	02/27/09 09:30	03/03/09 16:26	321-60-8	
Terphenyl-d14 (S)	84	%	10-116		1	02/27/09 09:30	03/03/09 16:26	1718-51-0	
8260 MSV	Analytical Method: EPA 8260								
Benzene	ND	ug/L	25.0	6.0	5		03/03/09 06:29	71-43-2	
1,2-Dichloroethane	ND	ug/L	25.0	6.5	5		03/03/09 06:29	107-06-2	
Ethylbenzene	ND	ug/L	25.0	5.5	5		03/03/09 06:29	100-41-4	
Methyl-tert-butyl ether	**27.2**	ug/L	25.0	10.0	5		03/03/09 06:29	1634-04-4	D3
Naphthalene	ND	ug/L	25.0	14.5	5		03/03/09 06:29	91-20-3	
Toluene	ND	ug/L	25.0	9.0	5		03/03/09 06:29	108-88-3	
Xylene (Total)	ND	ug/L	50.0	13.5	5		03/03/09 06:29	1330-20-7	
m&p-Xylene	ND	ug/L	50.0	13.5	5		03/03/09 06:29	1330-20-7	
o-Xylene	ND	ug/L	25.0	8.5	5		03/03/09 06:29	95-47-6	
4-Bromofluorobenzene (S)	108	%	87-109		5		03/03/09 06:29	460-00-4	
Dibromofluoromethane (S)	97	%	85-115		5		03/03/09 06:29	1868-53-7	
1,2-Dichloroethane-d4 (S)	95	%	79-120		5		03/03/09 06:29	17060-07-0	

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ANALYTICAL RESULTS

Project: VACANT LOT 09-2101
Pace Project No.: 9238783

Sample: MW-1 **Lab ID: 9238783001** Collected: 02/24/09 14:00 Received: 02/25/09 17:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Toluene-d8 (S)	101	%	70-120		5		03/03/09 06:29	2037-26-5	

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QUALITY CONTROL DATA

Project: VACANT LOT 09-2101
Pace Project No.: 9238783

QC Batch: MSV/6275
QC Batch Method: EPA 8260
Analysis Method: EPA 8260
Analysis Description: 8260 MSV
Associated Lab Samples: 9238783001

METHOD BLANK: 243907 Matrix: Water
Associated Lab Samples: 9238783001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2-Dichloroethane	ug/L	ND	5.0	03/02/09 23:46	
Benzene	ug/L	ND	5.0	03/02/09 23:46	
Ethylbenzene	ug/L	ND	5.0	03/02/09 23:46	
m&p-Xylene	ug/L	ND	10.0	03/02/09 23:46	
Methyl-tert-butyl ether	ug/L	ND	5.0	03/02/09 23:46	
Naphthalene	ug/L	ND	5.0	03/02/09 23:46	
o-Xylene	ug/L	ND	5.0	03/02/09 23:46	
Toluene	ug/L	ND	5.0	03/02/09 23:46	
Xylene (Total)	ug/L	ND	10.0	03/02/09 23:46	
1,2-Dichloroethane-d4 (S)	%	95	79-120	03/02/09 23:46	
4-Bromofluorobenzene (S)	%	106	87-109	03/02/09 23:46	
Dibromofluoromethane (S)	%	96	85-115	03/02/09 23:46	
Toluene-d8 (S)	%	100	70-120	03/02/09 23:46	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 243909 243910

Parameter	Units	9238787026 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Benzene	ug/L	6.9	50	50	66.0	66.4	118	119	74-136	.5	30	
Toluene	ug/L	ND	50	50	59.7	60.1	116	117	73-131	.7	30	
1,2-Dichloroethane-d4 (S)	%						95	97	79-120			
4-Bromofluorobenzene (S)	%						105	104	87-109			
Dibromofluoromethane (S)	%						97	97	85-115			
Toluene-d8 (S)	%						99	101	70-120			

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QUALITY CONTROL DATA

Project: VACANT LOT 09-2101
Pace Project No.: 9238783

QC Batch: MPRP/3890
QC Batch Method: EPA 3010
Analysis Method: EPA 6010
Analysis Description: 6010 MET
Associated Lab Samples: 9238783001

METHOD BLANK: 242855 Matrix: Water
Associated Lab Samples: 9238783001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Lead	ug/L	ND	5.0	02/27/09 18:26	

LABORATORY CONTROL SAMPLE: 242856

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lead	ug/L	500	452	90	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 242857 242858

Parameter	Units	9238775001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Lead	ug/L	ND	500	500	438	446	88	89	75-125	2	20	

SAMPLE DUPLICATE: 242859

Parameter	Units	9238781021 Result	Dup Result	RPD	Max RPD	Qualifiers
Lead	ug/L	300	310	3	20	

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QUALITY CONTROL DATA

Project: VACANT LOT 09-2101
Pace Project No.: 9238783

QC Batch: OEXT/6012
QC Batch Method: EPA 3535
Analysis Method: EPA 8270
Analysis Description: 8270 Water PAH MSSV
Associated Lab Samples: 9238783001

METHOD BLANK: 242936 Matrix: Water
Associated Lab Samples: 9238783001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1-Methylnaphthalene	ug/L	ND	10.0	03/03/09 10:47	
2-Methylnaphthalene	ug/L	ND	10.0	03/03/09 10:47	
Acenaphthene	ug/L	ND	10.0	03/03/09 10:47	
Acenaphthylene	ug/L	ND	10.0	03/03/09 10:47	
Anthracene	ug/L	ND	10.0	03/03/09 10:47	
Benzo(a)anthracene	ug/L	ND	10.0	03/03/09 10:47	
Benzo(a)pyrene	ug/L	ND	10.0	03/03/09 10:47	
Benzo(b)fluoranthene	ug/L	ND	10.0	03/03/09 10:47	
Benzo(g,h,i)perylene	ug/L	ND	10.0	03/03/09 10:47	
Benzo(k)fluoranthene	ug/L	ND	10.0	03/03/09 10:47	
Chrysene	ug/L	ND	10.0	03/03/09 10:47	
Dibenz(a,h)anthracene	ug/L	ND	10.0	03/03/09 10:47	
Fluoranthene	ug/L	ND	10.0	03/03/09 10:47	
Fluorene	ug/L	ND	10.0	03/03/09 10:47	
Indeno(1,2,3-cd)pyrene	ug/L	ND	10.0	03/03/09 10:47	
Naphthalene	ug/L	ND	10.0	03/03/09 10:47	
Phenanthrene	ug/L	ND	10.0	03/03/09 10:47	
Pyrene	ug/L	ND	10.0	03/03/09 10:47	
2-Fluorobiphenyl (S)	%	30	10-120	03/03/09 10:47	
Nitrobenzene-d5 (S)	%	42	10-120	03/03/09 10:47	
Terphenyl-d14 (S)	%	98	10-116	03/03/09 10:47	

LABORATORY CONTROL SAMPLE: 242937

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1-Methylnaphthalene	ug/L	50	30.7	61	29-108	
2-Methylnaphthalene	ug/L	50	34.1	68	30-104	
Acenaphthene	ug/L	50	28.1	56	39-109	
Acenaphthylene	ug/L	50	32.8	66	41-109	
Anthracene	ug/L	50	31.1	62	45-114	
Benzo(a)anthracene	ug/L	50	35.9	72	45-109	
Benzo(a)pyrene	ug/L	50	27.4	55	47-117	
Benzo(b)fluoranthene	ug/L	50	32.7	65	32-113	
Benzo(g,h,i)perylene	ug/L	50	18.7	37	10-149	
Benzo(k)fluoranthene	ug/L	50	26.8	54	41-104	
Chrysene	ug/L	50	24.3	49	35-116	
Dibenz(a,h)anthracene	ug/L	50	21.6	43	13-139	
Fluoranthene	ug/L	50	33.5	67	43-110	
Fluorene	ug/L	50	35.3	71	40-111	
Indeno(1,2,3-cd)pyrene	ug/L	50	19.9	40	17-135	
Naphthalene	ug/L	50	29.0	58	26-120	

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QUALITY CONTROL DATA

Project: VACANT LOT 09-2101
Pace Project No.: 9238783

LABORATORY CONTROL SAMPLE: 242937

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Phenanthrene	ug/L	50	29.4	59	45-110	
Pyrene	ug/L	50	25.8	52	38-114	
2-Fluorobiphenyl (S)	%			59	10-120	
Nitrobenzene-d5 (S)	%			70	10-120	
Terphenyl-d14 (S)	%			88	10-116	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 242938 242939

Parameter	Units	9238782004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1-Methylnaphthalene	ug/L	ND	116	116	54.5	78.2	42	62	29-108	36	30	
2-Methylnaphthalene	ug/L	ND	116	116	64.5	90.1	55	77	30-104	33	30	
Acenaphthene	ug/L	ND	116	116	51.8	74.5	45	64	17-104	36	30	
Acenaphthylene	ug/L	ND	116	116	60.1	86.2	52	74	10-200	36	30	
Anthracene	ug/L	ND	116	116	55.2	82.9	47	71	10-150	40	30	
Benzo(a)anthracene	ug/L	ND	116	116	64.7	97.6	56	84	10-172	41	30	
Benzo(a)pyrene	ug/L	ND	116	116	46.4	69.8	40	60	10-173	40	30	
Benzo(b)fluoranthene	ug/L	ND	116	116	57.9	91.9	50	79	10-200	45	30	
Benzo(g,h,i)perylene	ug/L	ND	116	116	30.4	41.9	26	36	10-120	32	30	
Benzo(k)fluoranthene	ug/L	ND	116	116	44.8	66.5	39	57	10-145	39	30	
Chrysene	ug/L	ND	116	116	43.9	65.9	38	57	10-146	40	30	
Dibenz(a,h)anthracene	ug/L	ND	116	116	34.9	50.7	30	44	10-120	37	30	
Fluoranthene	ug/L	ND	116	116	59.2	88.0	51	76	20-120	39	30	
Fluorene	ug/L	ND	116	116	61.8	94.0	53	81	10-109	41	30	
Indeno(1,2,3-cd)pyrene	ug/L	ND	116	116	32.6	46.0	28	40	11-120	34	30	
Naphthalene	ug/L	6.1J	116	116	49.5	74.9	37	59	10-120	41	30	
Phenanthrene	ug/L	ND	116	116	51.6	76.8	44	66	10-145	39	30	
Pyrene	ug/L	ND	116	116	47.8	69.6	41	60	13-114	37	30	
2-Fluorobiphenyl (S)	%						44	65	10-120			
Nitrobenzene-d5 (S)	%						56	87	10-120			
Terphenyl-d14 (S)	%						74	113	10-116			

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QUALITY CONTROL DATA

Project: VACANT LOT 09-2101
Pace Project No.: 9238783

QC Batch: MPRP/3898
QC Batch Method: EPA 3010
Analysis Method: EPA 6010
Analysis Description: 6010 MET Filtered
Associated Lab Samples: 9238783001

METHOD BLANK: 243153 Matrix: Water
Associated Lab Samples: 9238783001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Lead, Dissolved	ug/L	ND	5.0	03/02/09 16:41	

LABORATORY CONTROL SAMPLE: 243154

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lead, Dissolved	ug/L	500	500	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 243155 243156

Parameter	Units	9238782003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Lead, Dissolved	ug/L	ND	500	500	405	395	81	79	75-125	2	20	

SAMPLE DUPLICATE: 243157

Parameter	Units	9238782004 Result	Dup Result	RPD	Max RPD	Qualifiers
Lead, Dissolved	ug/L	ND	ND		20	

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ACCREDITED IN ACCORDANCE WITH nelac

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
2225 Riverside Dr.
Asheville, NC 28804
(828)254-7176

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: VACANT LOT 09-2101
Pace Project No.: 9238783

QC Batch: OEXT/6021
QC Batch Method: EPA 8011
Analysis Method: EPA 8011
Analysis Description: GCS 8011 EDB DBCP
Associated Lab Samples: 9238783001

METHOD BLANK: 243747 Matrix: Water
Associated Lab Samples: 9238783001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2-Dibromoethane (EDB)	ug/L	ND	0.020	03/02/09 20:26	
1-Chloro-2-bromopropane (S)	%	120	60-140	03/02/09 20:26	

LABORATORY CONTROL SAMPLE & LCSD: 243748 243749

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,2-Dibromoethane (EDB)	ug/L	.28	0.37	0.38	130	134	60-140	3	20	
1-Chloro-2-bromopropane (S)	%				112	121	60-140			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 243750 243751

Parameter	Units	9238406033 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	.28	.28	0.35	0.35	126	124	60-140	2	20	
1-Chloro-2-bromopropane (S)	%						113	112	60-140			

SAMPLE DUPLICATE: 243752

Parameter	Units	9238774001 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2-Dibromoethane (EDB)	ug/L	2.3	2.5	6	20	
1-Chloro-2-bromopropane (S)	%		0	0		S4

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Pace Analytical Services, Inc.
2225 Riverside Dr.
Asheville, NC 28804
(828)254-7176

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALIFIERS

Project: VACANT LOT 09-2101
Pace Project No.: 9238783

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

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.

Pace Analytical is NELAP accredited. Contact your Pace PM for the current list of accredited analytes.

U - Indicates the compound was analyzed for, but not detected.

ANALYTE QUALIFIERS

D3	Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
S4	Surrogate recovery not evaluated against control limits due to sample dilution.

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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

1162286

Section A — **Required** Client Information:

Company:	MECI
Address:	235 B DOOLEY RD. LEXINGTON, SC 29073
Email To:	
Phone: 803-808-2043	Fax: 803-808-2048
Requested Due Date/TAT:	

Section B — **Required** Project Information:

Report To:	BRYAN SHANE
Copy To:	
Purchase Order No.:	
Project Name:	~~CHARLES GOLF~~ VACANT LOT
Project Number:	09-2101

Section C — Invoice Information:

Attention:	
Company Name:	
Address:	
Pace Quote Reference:	
Pace Project Manager:	Renee Spencer
Pace Profile #:	

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☒ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: SC

Section D — **Required** Client Information

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Matrix Codes (MATRIX / CODE)

Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Tissue	TS
Other	OT

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED: COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	BTEX, NAPHTHALENE	1,2 DCA 8260 B	EDB 8011	PAH	Total / Filtered Pb	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	MW-1	WT	G			2/24	1400		10	3		1	6					X	X		X	X	X		
2																									
3																									
4																									
5																									
6																									
7																									
8																									
9																									
10																									
11																									
12																									

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	W. W.	2/24	11:20	George Moody - Pace	2-25-09	11:20	

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: CLAY BAER

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 2/24/09

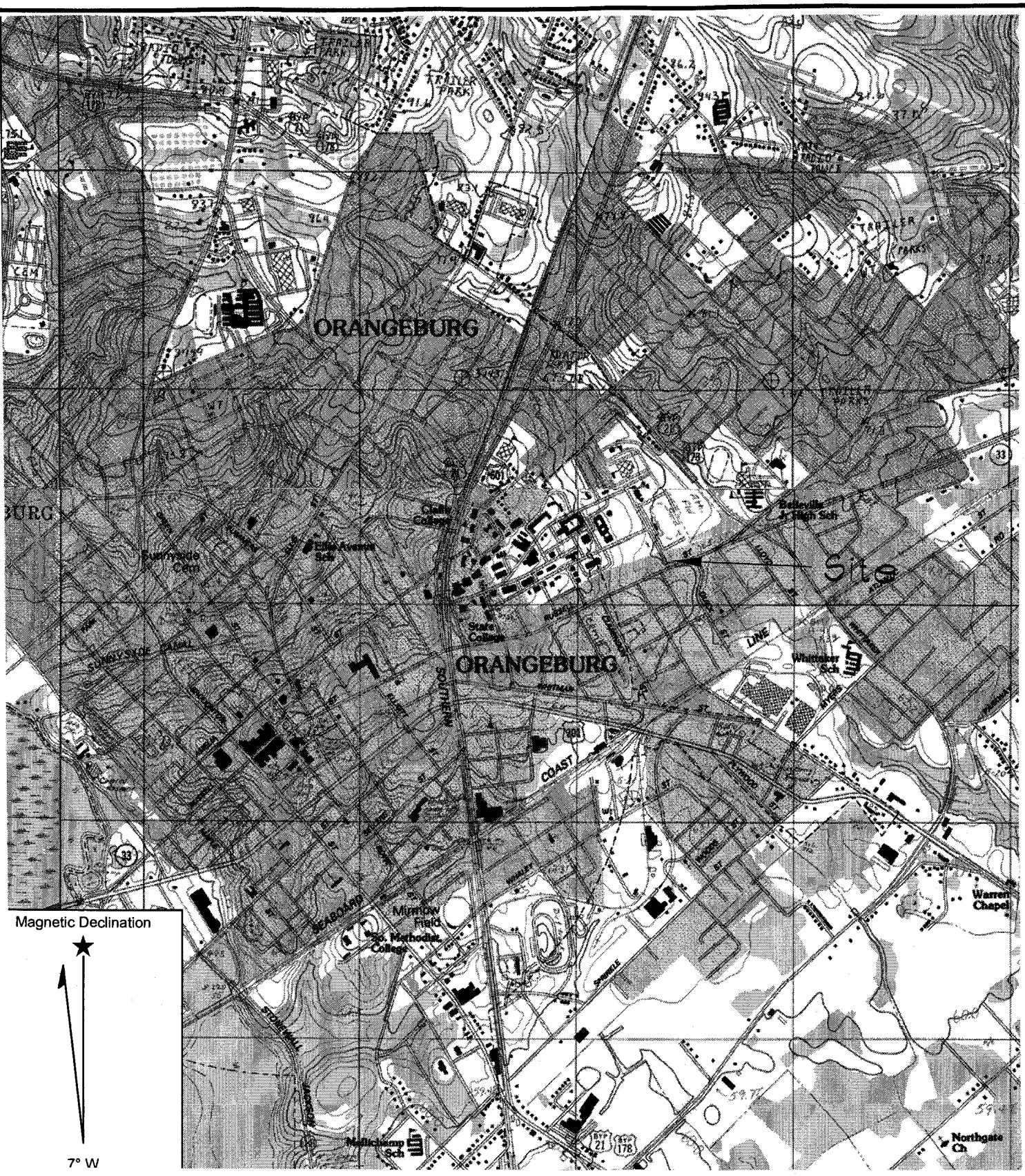
Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

2

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-May-2007

APPENDIX C
MAPS (Topographic & Site Base)



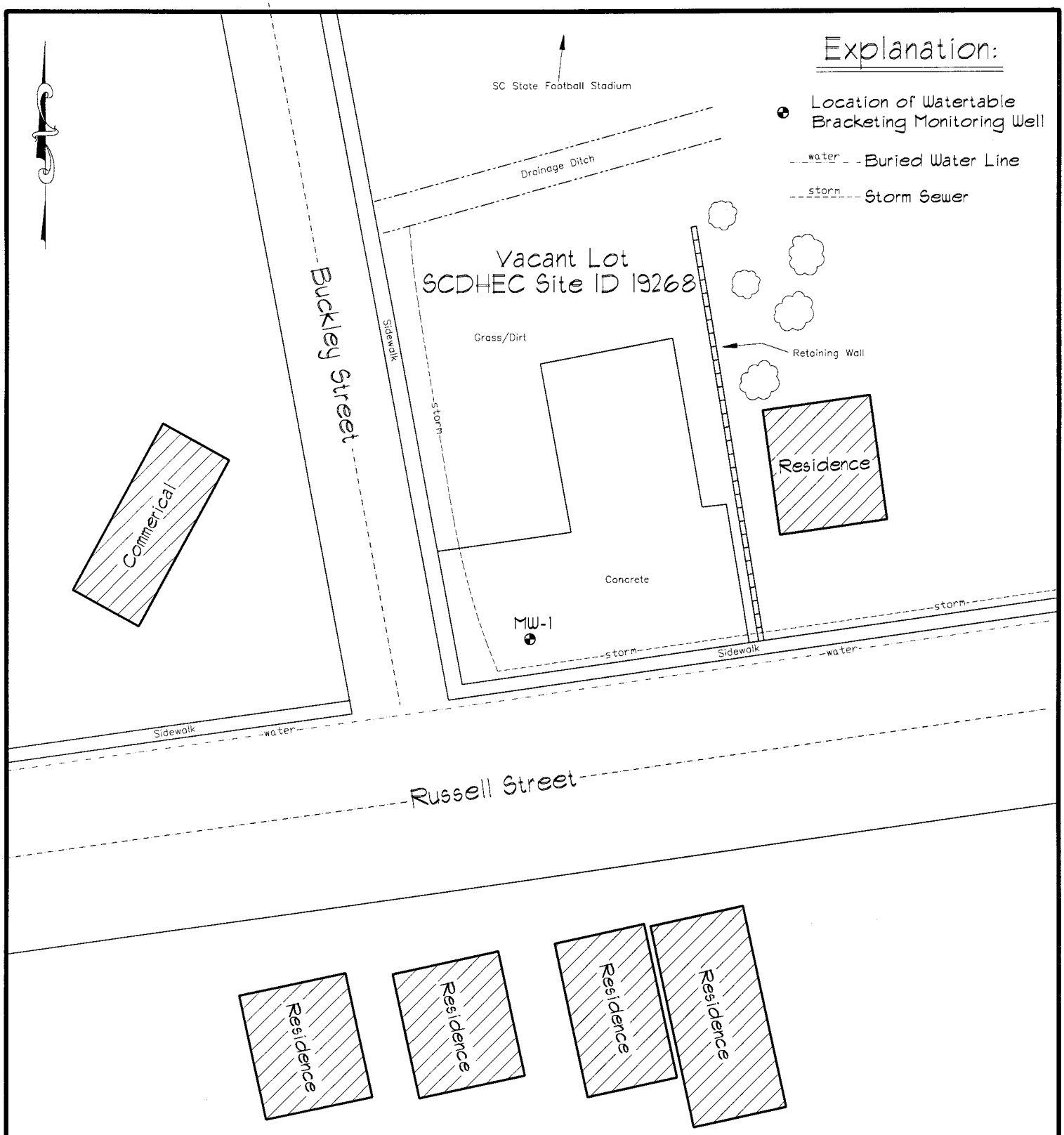
GRAPHIC SCALE

0 1000 2000 4000

1IN = 2000FT

Reference: Orangeburg South, South Carolina
USGS 7.5 Min. Quad
Contour Interval = 1.50 Meters

Midlands Environmental Consultants, Inc.	Site Location
Vacant Lot 2309 Russell St., Orangeburg, SC SCDHEC Site ID# 19268	
Figure 1	MECI 09-2101



GRAPHIC SCALE

0 25 50 75 100

1IN = 50FT

Reference: SCDHEC Files and MECI Field notes.

Midlands Environmental Consultants, Inc.	Site Features
Vacant Lot 2309 Russell Street, Orangeburg, SC SCDHEC Site ID# 19268	
Figure 2	MECI 09-2101

APPENDIX D
DISPOSAL MANIFEST

WASTE MANAGEMENT

Richland County LF
1047 Highway Church Road
Elgin, SC, 29045
Ph: (803) 788-3054

Original
Ticket# 946000

Customer Name MIDLANDSENVIRON MIDLANDS ENVI
Ticket Date 02/23/2009
Payment Type Credit Account
Manual Ticket#
Hauling Ticket#
Route
State Waste Code
Manifest 0
Destination
PO
Profile VA2718 (SOIL FROM UST ASSESSMENT)
Generator 126-MIDLANDSENVIRONMENTAL MIDLANDS ENVIRONMENTAL

Carrier MIDLANDSENVIRON MIDLANDS ENVIRONMENT
Vehicle# 2
Container
Driver
Check#
Billing # 0000469
Gen EPA ID

Volume

	Time	Scale	ScaleMaster		
In	02/23/2009 09:08:01	Scale2	kenny1	Gross	13840 lb
Out	02/23/2009 10:30:33	Scale1	joyce	Tare	8700 lb
				Net	5140 lb
				Tons	2.57

Comments

	Product	LD%	Qty	UOM	Rate	Fee	Amount	Origin
1	SOIL-Cont. Soil -	100	2.57	Tons				32-LEXINGT
2	FUEL-Fuel Surcharg	100		%				32-LEXINGT
3	Pcenv-Env Fee - Cu	100		%				32-LEXINGT

Total Fees
Total Ticket

SIGNATURE

03WM

WASTE MANAGEMENT

SPECIAL WASTE MANIFEST

WASTE ID # VA2718

EXPIRATION DATE: November 14, 2009

RICHLAND LANDI
1047 Hwy Church Rd
Elgin, SC 29045
(803)788-3054
(803)736-0935-Fax

PREPARED BY CAROL WELDON (205)-652-8186

GENERATOR OF WASTE: M.E.I.C. (Midlands Environmental Consultants, Inc)

CUSTOMER ACCOUNT: MIDLANDS ENV/ 8220-469

LOCATION OF WASTE: 1144 Old Two Notch Road

PHONE # 803-808-2043 CONTACT: Bryan Shade

FAX # 803-808-2048

GENERATOR'S SIGNATURE _____ DATE: _____

TRANSPORTER OF WASTE Bryan Longtine

DATE: 2-23-09 TRUCK NO. 2

DRIVER'S SIGNATURE Bryan Longtine

**** TO BE COMPLETED BY RICHLAND LANDFILL ****

DISPOSAL SITE: RICHLAND LANDFILL ELGIN, SC

DESCRIPTION OF WASTE SOIL from UST Assessment Soil

TICKET NO.# 946000 TONNAGE 2.57

RECEIVED BY _____

- Sporty Joes
- Sunshine Food
- Sugar Shack
- vacant lot

Midlands
Environmental
Consultants, Inc.

March 9, 2009

Re: Treatment of Purge Water
Vacant Lot
Orangeburg, South Carolina
SCDHEC Site ID Number 19268
MECI Project Number 09-2101

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.

Post Office Box 854, Lexington SC 29071 • 235-B Dooley Road, Lexington, SC 29073
Telephone: (803) 808-2043 • fax: (803) 808-2048

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.

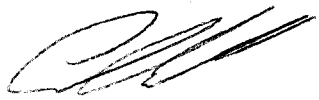
One 55-gallon drum was treated on February 24, 2009 at the referenced site.

A total of one (1) 55-gallon drum was treated 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.



Clark S. Baer
Staff Biologist

D H E C
PROMOTE PROTECT PROSPER

C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment.

MR BERNIE WRIGHT
PO BOX 275
ORANGEBURG SC 29116-0275

MAR 13 2009

Re: Letter Explaining Assessment Activities
Vacant Lot, 2309 Russell St., Orangeburg, SC
UST Permit # 19268
Release Reported October 18, 2006
Initial Groundwater Assessment Report received March 11, 2009
Orangeburg County

Dear Mr. Wright:

As you are aware, the Underground Storage Tank (UST) Program directed Midlands Environmental Consultants Inc. to conduct an Initial Groundwater Assessment (IGWA). As part of the IGWA, one monitoring well was installed, and a sample was collected from it. The results of the report document that petroleum chemicals of concern exist in the soil and may exist in the groundwater too. Based on these results, there may exist a risk to human health and the environment. A copy of the IGWA report is enclosed for your information.

The UST Program plans in the near future, collecting another water sample to confirm the results of the IGWA. The costs for this scope of work will be paid from the State Underground Petroleum Environmental Response Bank (SUPERB) Account. Your continued cooperation is appreciated.

On all correspondence regarding this site, please reference UST permit number 19268. Please feel free to contact me at (803) 896-6629, fax me at (803) 896-6245 or e-mail me at mccormat@dhec.sc.gov if you have questions or need additional information.

Sincerely,

Andrew McCormick, Hydrogeologist
Assessment Section
Assessment and Corrective Action Division
Underground Storage Tank Program
Bureau of Land and Waste Management

enc: IGWA Report by Midlands Environmental Consultants Inc. dated March 11, 2009

cc: Technical File (without enc.)

UST DOCKET 5ech

D H E C

PROMOTE PROTECT PROSPER

C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment.

RENEE SPENCER
PACE ANALYTICAL SERVICES
9800 KINCEY AVE STE 100
HUNTERSVILLE NC 28078

DEC 22 2009

Re: Laboratory Analyses Approval
Bid # IFB-33871-05/29/08-EMW, PO # 729210

Dear Ms. Spencer:

Under the terms and conditions of the referenced bid package, analytical sampling has been approved for the referenced facilities. The facilities have been assigned individual Cost Agreement (CA) numbers as listed below. Please reference the CA number and Purchase Order #729210 on the appropriate invoice submitted for payment against the facility. SCDHEC personnel will perform the sampling.

UST Permit #	Facility	Analyses-Groundwater	CA #	Bottles (Y/N)	Date Needed
14321	Spring Street Station	1-BTEXMN, DCA, EDB, & total lead	36083	N	-----
19268	Vacant Lot	1-BTEXMN, DCA, EDB, Oxygenates, PAHs, & Total Lead	35635	N	-----

If you have any questions or need further assistance, please contact me at (803) 896-6397 or thomadl@dhec.sc.gov.

Sincerely,

Debra L. Thoma

Debra L. Thoma, Hydrogeologist
Corrective Action Section
UST Management Division
Bureau of Land & Waste Management

Enc: Approved Cost Agreements

cc: Technical Files (w/o enc.)

6 tech
UST
DOCKET

D H E C
PROMOTE PROTECT PROSPER

C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment.

FEB 0 1 2010

BRYAN SHANE
MIDLANDS ENVIRONMENTAL CONSULTANTS INC
P O BOX 854
LEXINGTON SC 29071

Tech
UST
DOCKET

Re: Bid # IFB-34007-6/3/08-EMW; PO# 732429
Notice to Proceed

Dear Mr. Shane:

Based on the award of the referenced bid package, enclosed are the information packets to conduct assessments at several facilities. The packets contain the necessary approval for work to begin. The facilities have been assigned Cost Agreement (CA) numbers as listed below. Please reference the CA numbers and Purchase Order # 732429 on the appropriate invoices submitted for payment against the facilities. 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).**

UST Permit#	Facility	County	Release #	Work Scope	Due Date*	CA #	Approved Amt
03051	Arnold Stewart	Dorchester	1	Tier I Assessment	60 Days	37988	$3,000.00
03051	Arnold Stewart	Dorchester	2	Tier I Assessment	60 Days	37058	$3,712.00
09141	Abe's Garage	Williamsburg	1	Tier I Assessment	60 Days	37105	$3,000.00
14404	Carroll's Service Station	Georgetown	1	Tier I Assessment	60 Days	37119	$3,000.00
18933	Fujik Magic Market	Dorchester	1	Tier I Assessment	60 Days	37121	$3,000.00
19268	Vacant Lot	Orangeburg	1	Tier I Assessment	60 Days	37074	$3,091.00

UST Permit#	Facility	County	Release #	Work Scope	Due Date*	CA #	Approved Amt
19386	Former Phillips 66 Station	Sumter	1	Tier I Assessment	60 Days	37127	$3,000.00

*From receipt of letter

Midland's Environmental Consultants, Inc. will perform services at the sites on behalf of the site's UST owners. 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, the Department is required to obligate at least 35 percent of the awarded LUST Recovery funds and to expend at least 15 percent of the awarded funds within nine months of the award. The deadline to satisfy this requirement is April 9, 2010. Failure to satisfy this requirement may result in forfeiture of the funds. While the Department can control the obligation of the funds, it is incumbent upon you, the contractor, to expeditiously complete this LUST Recovery work and submit the invoices in order to achieve this goal.

The Bureau grants pre-approval for transportation of drums of virgin petroleum contaminated soil and drums of groundwater from the referenced site to a permitted treatment facility. The contaminated soil and/or groundwater must be properly stored in labeled 55-gallon drums or equivalent containers.

The contaminated soil and/or 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 final report. Please note, transportation of waste oil contaminated soil must receive pre-approval from the Division of Waste Assessment & Emergency Response.

Please provide this office with a schedule of drilling dates and coordinate all work with me before commencing work at the facility. If you have any questions or need further assistance, please contact me at (803) 896-6633.

Sincerely,

Cathleen Ridgley

Cathleen Ridgley, Hydrogeologist
Assessment Section
Underground Storage Tank Management Division
Bureau of Land and Waste Management

enc.: Monitoring Well Approvals (MWA)
Approved Cost Agreements (ACA)
Information Packets

cc: Cathleen Ridgley, UST Program (w/out enc)
Technical Files (w/ copy of MWA, ACA, & Site Map)

Approved Cost Agreement 37074

Facility: 19268 VACANT LOT
SMITHA2
PO Number:

Task / Description	Categories	Item Description	Qty / Pct	Unit Price	Amount
10 SAMPLE COLLECTION					
		A GROUND WATER	1.0000	25.00	25.00
11 ANALYSES					
	GW GROUNDWATER	A BTEX+NAPTH+MTBE	1.0000	28.00	28.00
		E LEAD	1.0000	10.00	10.00
		F EDB	1.0000	28.00	28.00
20 TIER I					
		TIER I	1.0000	3,000.00	3,000.00
			Total Amount		3,091.00

D H E C

PROMOTE PROTECT PROSPER

C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment.

Monitoring Well Installation Approval Form

Approval is hereby granted to: Midlands Environmental Consultants, Incorporated
Facility: Vacant Lot, 2309 Russell Street, Orangeburg, SC
UST Permit Number: 19268
County: Orangeburg

This approval is for the installation of up to three shallow monitoring wells. The monitoring wells are to be installed in the approved locations. Monitoring wells are to be installed following 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 Department shall be completed and submitted to the Department within 30 days after well completion or abandonment unless another schedule has been approved by the Department. 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 Department within 30 days of receipt of laboratory results unless another schedule has been approved by the Department as required by R.61-71.H.1.d.

5. If any of the information provided to the Department changes, notification to Alex Smith (tel: (803) 896-6218) shall be provided a minimum of twenty-four (24) hours prior to well construction as required by R.61-71.H.1.a.

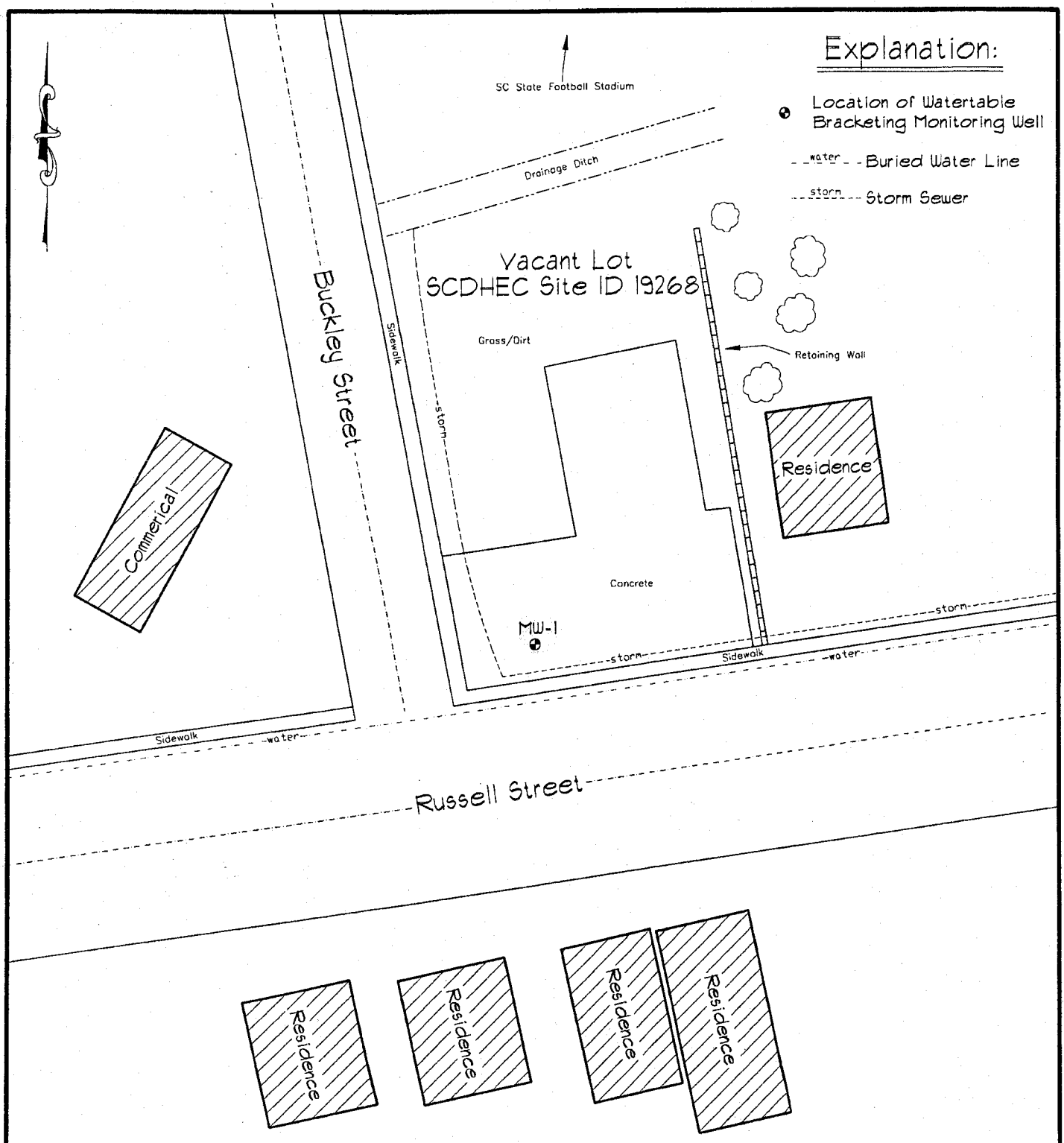
6. All temporary monitoring wells shall be abandoned within 5 days of borehole completion using appropriate methods as required by R.61-71.H.4.c. All other wells shall be properly developed per R.61-71.H.2.d.

7. Departmental 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 Issuance: **September 10, 2009** **Approval #:** **UMW-23120**

Alexander Smith, Hydrogeologist
Assessment Section
Underground Storage Tank Management Division
Bureau of Land and Waste Management



GRAPHIC SCALE

0 25 50 75 100

1IN = 50FT

Reference: SCDHEC Files and MECI Field notes.

Midlands Environmental Consultants, Inc.	Site Features
Vacant Lot 2309 Russell Street, Orangeburg, SC SCDHEC Site ID# 19268	
Figure 2	MECI 09-2101

Site 19268

Midlands
Environmental
Consultants, Inc.

UST
MAR 0 2 2010
PROGRAM

TIER I ASSESSMENT REPORT

Site Name/Address

Vacant Lot
Orangeburg, South Carolina
Site ID# 19268, CA# 37074
MECI Project No. 10-2703

Submitted to:
Underground Storage Tank Program
South Carolina Department of Health and Environmental Control
2600 Bull Street
Columbia, South Carolina 29201

This report has been reviewed by:

Name	Bryan T. Shane, P.G.	SC1102	3/2/10
	Registered Professional	Registration #	Date

Signature BT Shane 3-3-10
Date

REGISTERED
PROFESSIONAL SEAL

SCDHEC Certificate # 9

UST
DOCKET

Post Office Box 854, Lexington SC 29071 • 235-B Dooley Road, Lexington, SC 29073
Telephone: (803) 808-2043 • fax: (803) 808-2048

TIER I ASSESSMENT REPORT OF FINDINGS

I INTRODUCTION

A. Owner/Operator Information

Facility name Vacant Lot UST Permit # 19268
Name Orphan - Sultan
Address P.O. Box 275, Orangeburg, SC 29116
Telephone Number (include area code) (803) 378-7071

B. Property Owner Information

Name (if different from above) Bernie L. Wright
Address P.O. Box 275, Orangeburg, SC 29115
Telephone Number (include area code) (803) 378-7071

C. Contractor Information

Name Midlands Environmental Consultants Inc. SCDHEC Certification # 9
Address P. O. Box 854, Lexington, SC 29071
Telephone Number (include area code) (803) 808-2043

D. Facility Information

Address 2309 Russell Street, Orangeburg, SC 29115
Description of Adjacent Land Use (Commercial, residential, rural, etc.) Include documentation (e.g. zoning regulations) as appropriate.

The site is located within the city limits of Orangeburg, Orangeburg County, South Carolina. The site is currently a vacant lot. The surrounding properties are primarily residential and commercial. South of the site is bordered by Russell Street (SC Hwy 33), beyond which are residential properties. West of the site is bordered by Buckley Street, beyond which are commercial and residential properties. North of the site is the South Carolina State University football stadium, beyond which is the SC State campus. East of the site are residential properties.

Predicted Future Land Use (site and adjacent area)

The site is located next to the campus of South Carolina State University in Orangeburg, SC. The property owner asked that we work with him to determine well locations wherever possible due to potential property development in the future.

E. Facility History

Date Release Reported to SCDHEC 10/18/2006
Estimated Quantity of Product Released Unknown
Cause of Release UST system

UST #	Product	Date Installed	Currently in use (Yes or No)	If not in use, Date Removed
1	Unknown Size Unknown Product	Unknown	No	Unknown
2	Unknown Size Unknown Product	Unknown	No	Unknown
3	Unknown Size Unknown Product	Unknown	No	Unknown
4	Unknown Size Unknown Product	Unknown	No	Unknown
5	Unknown Size Unknown Product	Unknown	No	Unknown
6	Unknown Size Unknown Product	Unknown	No	Unknown
7	Unknown Size Unknown Product	Unknown	No	Unknown
8	Unknown Size Unknown Product	Unknown	No	Unknown
9	Unknown Size Unknown Product	Unknown	No	Unknown

All tanks Pre-1974.

Other Releases at this site? Yes _____ No X

If yes, Date Release Reported to SCDHEC N/A
Status of Release N/A
No Further Action Date N/A

II. SITE CHARACTERISTICS

A. Site Geography

Describe the topography of the site and surrounding area (slope, vegetation, bodies of water, major land features, etc.)

The site is located in a residential area near the campus of South Carolina State University in Orangeburg, SC. Site drainage and topography gently slope to the north. The site is covered with concrete in the southern portion of the property. The northern portion of the property is covered with grass and gravel. Russell Street (SC Hwy 33) acts as the southern property boundry and Buckley Street forms the western border. The former tank basin is located on the southern portion of the property along Russell Street.

Mean Elevation of Site 60 Meters

Additional Comments

B. Exposure Analysis

Describe all potential receptors and preferential pathways within a 1000-foot radius of the site.

Description of Receptor	Distance/Direction from Site
Drainage Ditch	Along northern border of the site

Provide any additional comments necessary to complete the exposure analysis

A drainage ditch is located along the northern border of the subject site.

C. Utilities Survey

List the utilities on site, and adjacent to the site within a 250-foot radius, that could serve as exposure points or as preferential pathways.

Utility	On-site or Distance/Direction from site	Depth to Utility
Buried Storm Sewer	On-site, along Russell St. and Buckley St.	3-6 ft.
Buried Water	Along Russell St. and Buckly St.	3-6 ft.

Additional Comments

Groundwater was encountered at the site at a depth of 3.39 to 5.74 feet. Given the proximity between the depth to groundwater and the depth of utilities, it is likely that underground utilities could serve as receptors or preferential pathways.

D. Site Geology

Provide a brief description of the regional geology and hydrogeology

The project site is located in the Atlantic Coastal Plain Physiographic Province. The soils in this province are generally interbedded silts, sands, and clays that have been deposited during successive advances and retreats of the ocean over the past several million years. This interbedding can cause perched water and makes hydrogeological interpretation difficult.

Provide a brief description of the site specific geology and stratigraphy

Coastal Plain sediments were encountered during drilling activities conducted at the site. The soils encountered included fine to medium-grained sands, silts, and clays. Test Boring Records which depict the soils encountered in each boring advanced are located in Appendix A.

E. Soil Boring Data

Drilling Dates 2/9/2010

Provide a brief justification for the location of the soil borings

GPS-1	Delineation of horizontal extent of contamination
GPS-2	Delineation of horizontal extent of contamination
GPS-3	Delineation of horizontal extent of contamination
GPS-4	Delineation of horizontal extent of contamination
GPS-5	Delineation of horizontal extent of contamination
GPS-6	Delineation of horizontal extent of contamination
GPS-7	Delineation of horizontal extent of contamination
GPS-8	Background Boring

Complete the table below for each soil boring.

UST Area Borings -

Borehole GPS-1 **Sampling Date- 2/9/10** **Sample Depth: 0-4 Ft.**

Interval (ft.)	Field Screening Results	Lithology (soil type, color, rocks/ minerals present	Soil Conditions (dry, moist, etc; petroleum odor)
0-4 Ft.	31.8	Grey, Silty Fine to Medium SAND	Dry, Slight Petroleum Odor

Borehole GPS-2 **Sampling Date- 2/9/10** **Sample Depth: 0-4 Ft.**

Interval (ft.)	Field Screening Results	Lithology (soil type, color, rocks/ minerals present	Soil Conditions (dry, moist, etc; petroleum odor)
0-4 Ft.	55.7	Brown, Silty Fine to Medium SAND	Dry, Slight Petroleum Odor

Borehole GPS-3 **Sampling Date- 2/9/10** **Sample Depth: 0-2 Ft.**

Interval (ft.)	Field Screening Results	Lithology (soil type, color, rocks/ minerals present	Soil Conditions (dry, moist, etc; petroleum odor)
0-2 Ft.	48.0	Brown, Silty Fine to Medium SAND	Dry, Slight Petroleum Odor
2-4 Ft.		No Recovery	

Borehole GPS-4 **Sampling Date- 2/9/10** **Sample Depth: 0-2 Ft.**

Interval (ft.)	Field Screening Results	Lithology (soil type, color, rocks/ minerals present	Soil Conditions (dry, moist, etc; petroleum odor)
0-2 Ft.	3.4	Red, Silty CLAY	Dry, No Petroleum Odor
2-4 Ft.		No Recovery	

Borehole GPS-5 **Sampling Date- 2/9/10** **Sample Depth: 0-2 Ft.**

Interval (ft.)	Field Screening Results	Lithology (soil type, color, rocks/ minerals present	Soil Conditions (dry, moist, etc; petroleum odor)
0-2 Ft.	1.3	Red and Brown, Silty Fine to Medium SAND	Dry, No Petroleum Odor
2-4 Ft.	1.2	SAA	Dry, No Petroleum Odor

Borehole GPS-6 **Sampling Date- 2/9/10** **Sample Depth: 0-2 Ft.**

Interval (ft.)	Field Screening Results	Lithology (soil type, color, rocks/ minerals present	Soil Conditions (dry, moist, etc; petroleum odor)
0-2 Ft.	21.0	Grey, Silty Fine to Medium SAND	Dry, Slight Petroleum Odor
2-4 Ft.		No Recovery	

Complete the table below for each soil boring.

UST Area Borings -

Borehole GPS-7 **Sampling Date- 2/9/10** **Sample Depth: 0-2 Ft.**

Interval (ft.)	Field Screening Results	Lithology (soil type, color, rocks/ minerals present	Soil Conditions (dry, moist, etc; petroleum odor)
0-2 Ft.	1.5	Grey, Silty Fine to Medium SAND	Dry, No Petroleum Odor
2-4 Ft.		No Recovery	

Background Boring-

Borehole GPS-8 **Sampling Date- 2/9/10** **Sample Depth: 2-4 Ft.**

Interval (ft.)	Field Screening Results	Lithology (soil type, color, rocks/ minerals present	Soil Conditions (dry, moist, etc; petroleum odor)
0-2 Ft.	3.4	Brown, Silty Fine to Medium SAND	Dry, No Petroleum Odor
2-4 Ft.	7.4	SAA	Dry, No Petroleum Odor

Enter the soil analytical data for each soil boring for all COC in the table below and on the following page. Enter the appropriate RBSL for the soil type from Tables 4 through 8 in SCDHEC Risk-Based Corrective Action (RBCA) for Petroleum Releases Guidance Document.

CoC	RBSL	Units	GPS-1	GPS-2	GPS-3	GPS-4	GPS-5	GPS-6	GPS-7	GPS-8
Benzene	7	ug/Kg	<179	<3.8	<232	<4.0	<4.5	<4.4	**2.8J**	NT
Toluene	1450	ug/Kg	**109J**	**19.8**	<232	**2.4J**	<4.5	<4.4	**1.5J**	NT
Ethylbenzene	1150	ug/Kg	**74.6J**	**2.0J**	<232	<4.0	<4.5	<4.4	<4.3	NT
Total Xylenes	14500	ug/Kg	<357	**6.6J**	<465	<7.9	<9.0	<8.8	<8.6	NT
Total BTEX	n/a	ug/Kg	**183.6J**	**28.4J**	BDL	**2.4J**	BDL	BDL	**4.3J**	NT
Naphthalene	36	ug/Kg	**131J**	<3.8	<232	<4.0	<4.5	<4.4	<4.3	NT
Benzo(a)anthracene	66	ug/Kg	<380	<390	<380	<380	<390	<390	<380	NT
Benzo(b)flouranthene	66	ug/Kg	<380	<390	<380	<380	<390	<390	<380	NT
Benzo(k)flouranthene	66	ug/Kg	<380	<390	<380	<380	<390	<390	<380	NT
Chrysene	66	ug/Kg	<380	<390	<380	<380	<390	<390	<380	NT
Dibenz(a,h)anthracene	66	ug/Kg	<380	<390	<380	<380	<390	<390	<380	NT
TPH (EPA 3550)	n/a	ug/Kg	NT	**9.3**	NT	NT	NT	NT	NT	NT
TOC (Background boring)	n/a	mg/Kg	NT	NT	NT	NT	NT	NT	NT	**4,760**

Discuss the horizontal and vertical extent of COC in the soil

Soil sample analytical data for borings associated with this assesment indicate CoC concentrations above RBSL's in soil boring GPS-1.

Additional Comments

Chemicals of Concern - Groundwater

Provide well installation information in the table below

MW#	Installation Date	Development Date	Sampling Date
MW-1	2/17/2009	2/24/2009	2/12/2010
MW-2	2/9/2010	2/12/2010	2/12/2010
MW-3	2/9/2010	2/12/2010	2/12/2010
MW-4	2/9/2010	2/12/2010	2/12/2010

Enter the soil analytical data for each monitoring well for all CoC in the table below.

CoC	MW-2(GPS-2)	MW-3	MW-4(GPS-8)
Depth of sample	0-4 Feet	0-4 Feet	2-4 Feet
Benzene (ug/kg)	<3.8	**3.1J**	NT
Toluene (ug/kg)	**19.8**	**16.1**	NT
Ethylbenzene (ug/kg)	**2.0J**	**77.5**	NT
Total Xylenes (ug/kg)	**6.6J**	**7.6J**	NT
Total BTEX (ug/kg)	**28.4J**	**104.3J**	NT
Naphthalene (ug/kg)	<3.8	**123**	NT
Benzo(a)anthracene (ug/l)	<390	<390	NT
Benzo(b)flouranthene (ug/l)	<390	<390	NT
Benzo(k)flouranthene (ug/l)	<390	<390	NT
Chrysene (ug/l)	<390	<390	NT
Dibenz(a,h)anthracene (ug/l)	<390	<390	NT
TPH 3550 (mg/kg)	**9.3**	NT	NT
TOC (mg/kg)	NT	NT	**4,760**

Summarize the monitoring well and groundwater data in the table below.

MW #	TOC Elevation (ft)	Screened Interval (ft)	Depth to Product (ft)	Depth to Water (ft)	Water Table Elevation (ft)
MW-1	100.24	2-12	NA	3.98	96.26
MW-2	99.90	2-12	NA	3.95	95.95
MW-3	99.10	2-12	NA	3.39	95.71
MW-4	101.26	2-12	NA	5.74	95.52

Enter field data measurements (temperature, pH, conductivity) taken during well purging on the form provided. Complete for each well.

Monitoring Well #	MW-1	MW-2	MW-3	MW-4
PH (final)	Sheen	Sheen	Sheen	7.36
Conductivity (final)	Sheen	Sheen	Sheen	444.1
Temperature (final)	Sheen	Sheen	Sheen	14.8

Enter dissolved oxygen measurements for each well in the table below.

Monitoring Well #	MW-1	MW-2	MW-3	MW-4
Dissolved Oxygen (mg/l)	Sheen	Sheen	Sheen	3.27

Enter the groundwater analytical data for each monitoring well for all CoC in the table below. If free product is percent, indicate the measured thickness to the nearest 0.01 feet.

CoC	RBSL (ug/l)	MW-1	MW-2	MW-3	MW-4
Free Product Thickness	N/A	N/A	N/A	N/A	N/A
Benzene (ug/l)	5	<5.0	<5.0	**43.1J**	<5.0
Toluene (ug/l)	1,000	<5.0	**1.8J**	<100	<5.0
Ethylbenzene (ug/l)	700	**2.7J**	**1.1J**	**1,900**	<5.0
Total Xylenes (ug/l)	10,000	<10.0	<10.0	**359**	<10.0
Total BTEX (ug/l)	N/A	**2.7J**	**2.9J**	**2,302.1J**	BDL
MTBE (ug/l)	40	**19.5**	**13.4**	<100	**7.8**
Naphthalene (ug/l)	25	**16.2**	**13.0**	**1,990**	<5.0
Benzo(a)anthracene (ug/l)	10	NT	<10	<10	<10
Benzo(b)flouranthene (ug/l)	10	NT	<10	<10	<10
Benzo(k)flouranthene (ug/l)	10	NT	<10	<10	<10
Chrysene (ug/l)	10	NT	<10	<10	<10
Dibenz(a,h)anthracene (ug/l)	10	NT	<10	<10	<10
Ferrous Iron (mg/l)	N/A	**6.0**	**3.0**	**4.6**	**6.4**
EDB (ug/l)	0.05	<0.020	<0.019	<0.021	<0.020
Methane (ug/l)	N/A	NT	**345**	**6,760**	**74.8**
Total Lead (ug/l)	15	**6.2**	**160**	**16.7**	<5.0
Filtered Lead (ug/l)		NT	<5.0	<5.0	<5.0
Nitrates (mg/l)	N/A	NT	**0.15**	<0.10	**1.2**
Sulfates (mg/l)	N/A	NT	**4.8**	**1.1**	**170**

Additional Comments: Analytical data indicates CoC Concentrations are above RBSL's in monitoring well MW-3.

Aquifer Characteristics

Hydraulic Conductivity 9.80 E-03 ft/day

Hydraulic Gradient 7.92 E-03 ft./ft.

Porosity 45 percent for Sandy CLAY

Estimated Seepage Velocity 3.59 feet per year

Complete the slug test form and include in Appendix D of the report. Include all data, graphs, and equations used to derive the aquifer characteristics and hydrologic parameters (hydraulic conductivity, seepage velocity, hydraulic gradient, etc.) in Appendix D.

III. Tier I Evaluation

A. CURRENT LAND USE - Identify any potential receptors or human exposure pathways (e.g. basements, contaminated soils from UST closures, etc.) within a 1000-foot radius for current land use. Complete the table below. Additional sheets may be attached if necessary.

Media (for exposure)	Exposure Route	Pathway Selected for Evaluation? (Yes or No)	Exposure point or Reason for Non-Selection	Data Requirements (IF pathway selected)
Air	Inhalation	Yes	Buried Structures identified in search radius	Tier II Evaluation to determine horizontal and vertical extent of contamination
	Explosion Hazard	Yes		
Groundwater	Ingestion	No	Water supply wells not identified within our search radius	
	Dermal Contact	No		
	Volatile Inhalation	No		
Surface Water	Ingestion	Yes	A drainage ditch with flowing surface water islocated along the northern border of the subject site.	Tier II Evaluation to determine horizontal and vertical extent of contamination.
	Dermal contact	Yes		
	Volatile Inhalation	Yes		
Surficial Soil	Ingestion	No	Analytical data indicate CoC concrentrations below RBSL's in soil boring associtated with this assessment.	
	Dermal Contact	No		
	Volatile Inhalation	No		
	Leaching to Groundwater	No		
Subsurface Soil	Ingestion	No	Analytical data indicate CoC concrentrations below RBSL's in soil boring associtated with this assessment.	
	Dermal Contact	No		
	Volatile Inhalation	No		
	Leaching to Groundwater	No		

B. FUTURE LAND USE - Identify any potential receptors or human exposure pathways (e.g. basements, contaminated soils from UST closures, etc.) within a 1000-foot radius for projected future land use. Complete the table below. Additional sheets may be attached if necessary.

Media (for exposure)	Exposure Route	Pathway Selected for Evaluation? (Yes or No)	Exposure point or Reason for Non-Selection	Data Requirements (IF pathway selected)
Air	Inhalation	Yes	Buried Structures identified in search radius	Tier II Evaluation to determine horizontal and vertical extent of contamination
	Explosion Hazard	Yes		
Groundwater	Ingestion	No	Water supply wells not identified within our search radius	
	Dermal Contact	No		
	Volatile Inhalation	No		
Surface Water	Ingestion	Yes	A drainage ditch with flowing surface water islocated along the northern border of the subject site.	Tier II Evaluation to determine horizontal and vertical extent of contamination.
	Dermal contact	Yes		
	Volatile Inhalation	Yes		
Surficial Soil	Ingestion	No	Analytical data indicate CoC concrentrations below RBSL's in soil boring associated with this assessment.	
	Dermal Contact	No		
	Volatile Inhalation	No		
	Leaching to Groundwater	No		
Subsurface Soil	Ingestion	No	Analytical data indicate CoC concrentrations below RBSL's in soil boring associated with this assessment.	
	Dermal Contact	No		
	Volatile Inhalation	No		
	Leaching to Groundwater	No		

Recommendations for further action: Tier II Assessment to determine the vertical and horizontal extent of contamination.

IV. Maps and Figures

Complete and attach all maps and appendices as outlined below.

A. Figures

All maps must include the following :

- the facility name,
- address,
- site id number,
- date
- bar scale
- north arrow.

1 Figure 1 - Topographic Map

Prepare a copy of the relevant portion of the appropriate United States Geological Survey 7.5 minute topographic map. Indicate the location of the site and location of any receptors (e.g., marsh, groundwater well, city water well, etc.).

2 Figure 2- Scaled Site Location Map

Prepare a site location map identifying the site and any pertinent property boundaries (residential and commercial), streets, receptors, etc. within a 500 foot radius.

3 Figure 3- Surveyed Site Map

Prepare a site base map to scale and plot all the utilities. This map will include:

a. Location of property lines.
b. Streets and highways (indicate names).
c. Location of buildings.
d. Paved areas on or adjacent to site.
e. Location of all present and former above ground and underground storage tanks and associated lines, pumps, and dispensers.
f. Underground utilities on or adjacent to site (sewer, water, telephone, gas, electric, etc.).
g. Location of any other potential receptors.
h. Eight soil boring locations.
j. Survey datum location.

4 Figure 4- Soil COC Site Map

Prepare a COC site map from a copy of Figure 3. Add all accompanying soil data. The soil analytical data will be plotted adjacent to each soil boring (SB) using the following format:

SB#	
Sample Depth (ft)	
Benzene (mg/kg)	
Toluene (mg/kg)	
Ethylbenzene (mg/kg)	
Xylenes (mg/kg)	
PAHs (mg/kg)	

5 Figure 5- Groundwater COC Site Map
Prepare a COC site map from a copy of Figure 3. Add potentiometric surface (elevation) data, an arrow indicating groundwater flow direction, and accompanying groundwater data. The groundwater data should be plotted adjacent to the monitoring wells (MW) using the following format:

MW #	
Groundwater	
elevation	
Benzene (ug/l)	
Toluene (ug/l)	
Ethylbenzene (ug/l)	
Xylenes (ug/l)	
PAHs (ug/l)	

B. Appendices

1 Appendix A - Soil Boring Logs
The soil boring logs should indicate lithology, water level (if encountered), split-spoon sample intervals and field screening results. Also, the presence of hydrocarbon odors and qualitative indication of soil conditions (dry, moist, wet, saturated, etc.) should be noted on the logs.

2 Appendix B - Monitoring Well Construction Logs
The monitoring well construction logs must include all information as outlined in the S.C. Well Standards and Regulations R.61-71.11E(2). Additionally, a copy of DHEC Form 1903 (Water Well Record) should be included for each monitoring well installed.

3 Appendix C - Laboratory Data
A copy of the completed chain of custody, certificates of analysis and field sampling logs should be attached. The sampling logs should note the location and type of each sample submitted for analysis. The laboratory certificates of analysis should include the analytical results, the reporting limit, the analytical method utilized, and the laboratory certification number.

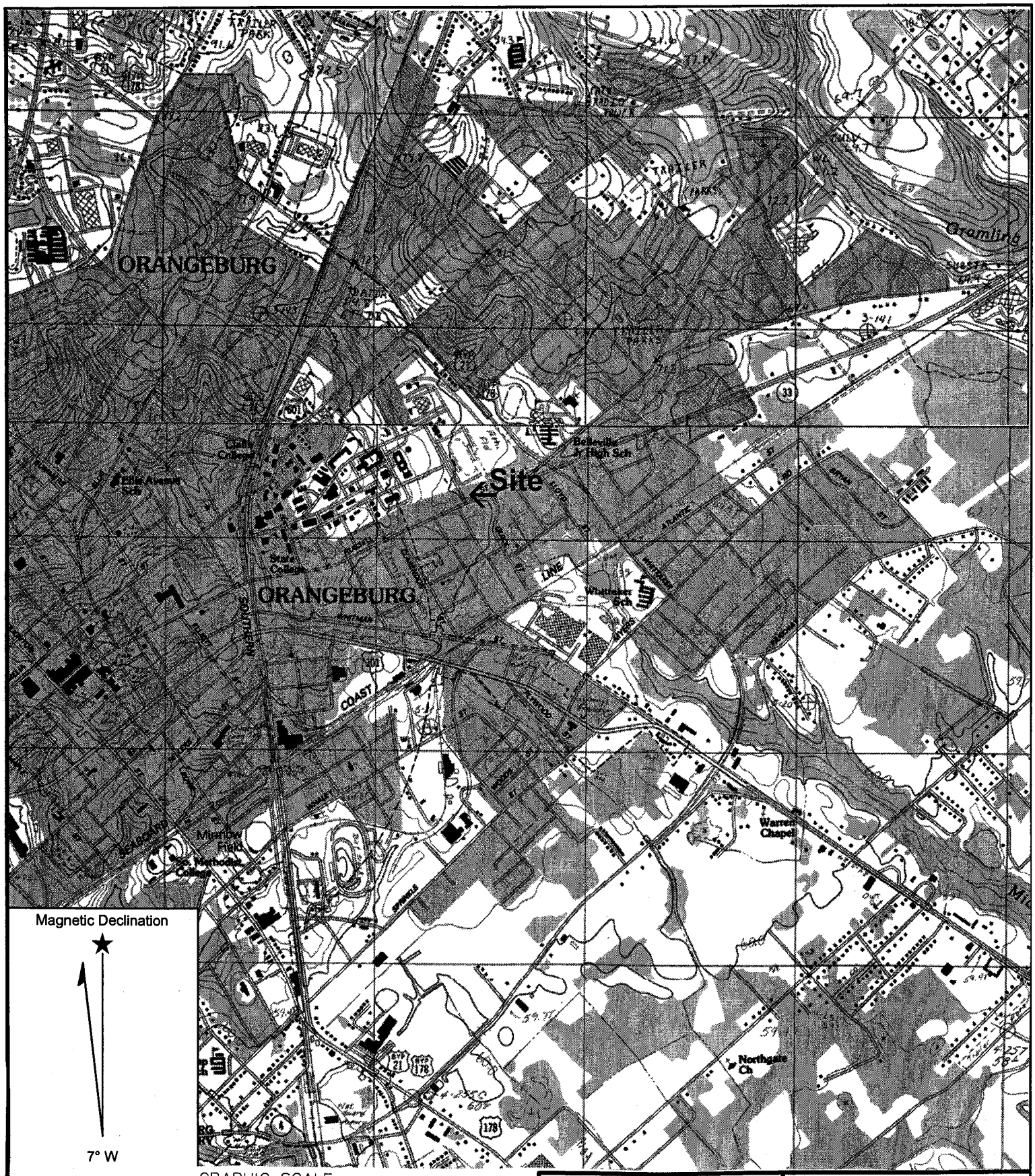
4 Appendix D - Slug Test Data Form
The slug test summary forms, and all data, graphs, and equations that were used to derive the aquifer characteristics and hydrologic parameters should be included.

5 Appendix E - Soil and water disposal manifests.

6 Appendix F - Copy of Zoning Regulations.

7 Appendix G - Copy of Tax Map
The tax map should be accompanied by the list of names and addresses of adjacent property owners.

FIGURES



Reference: Orangeburg South, South Carolina
Orangeburg North, South Carolina
USGS 7.5 Min. Quad
Contour Interval – 1.5 Meters

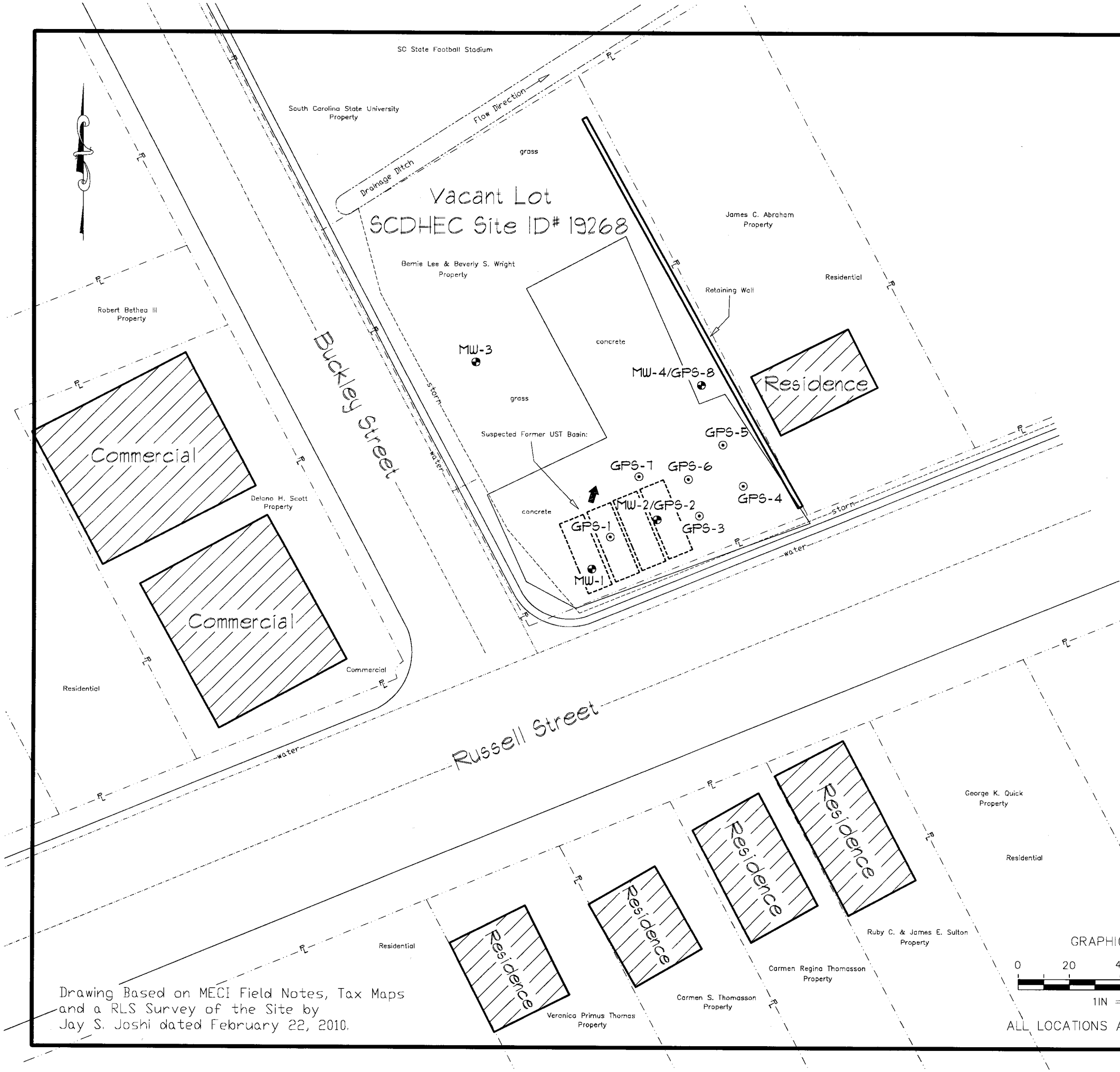
Midlands Environmental Consultants, Inc.

Site Location

Vacant Lot
2309 Russell Street, Orangeburg, SC
SCDHEC Site ID# 19268

Figure 1

MECI 10-2703



Drawing Based on MECI Field Notes, Tax Maps and a RLS Survey of the Site by Jay S. Joshi dated February 22, 2010.

Explanation:

- Location of Soil Test Boring
- Location of Watertable Bracketing Monitoring Well
- Estimated Groundwater Flow Direction
- Estimated Location of Removed Underground Storage Tanks
- P/L — Property Line
- water — Buried Water Line
- storm — Storm Sewer

Groundwater Elevation Data

Well #	Depth to Water (feet)	Well Head Elevation	Groundwater Elevation
MW-1	3.98	100.24	96.26
MW-2	3.95	99.90	95.95
MW-3	3.39	99.10	95.71
MW-4	5.74	101.26	95.52

Notes:

Depth to groundwater measured on February 12, 2010.

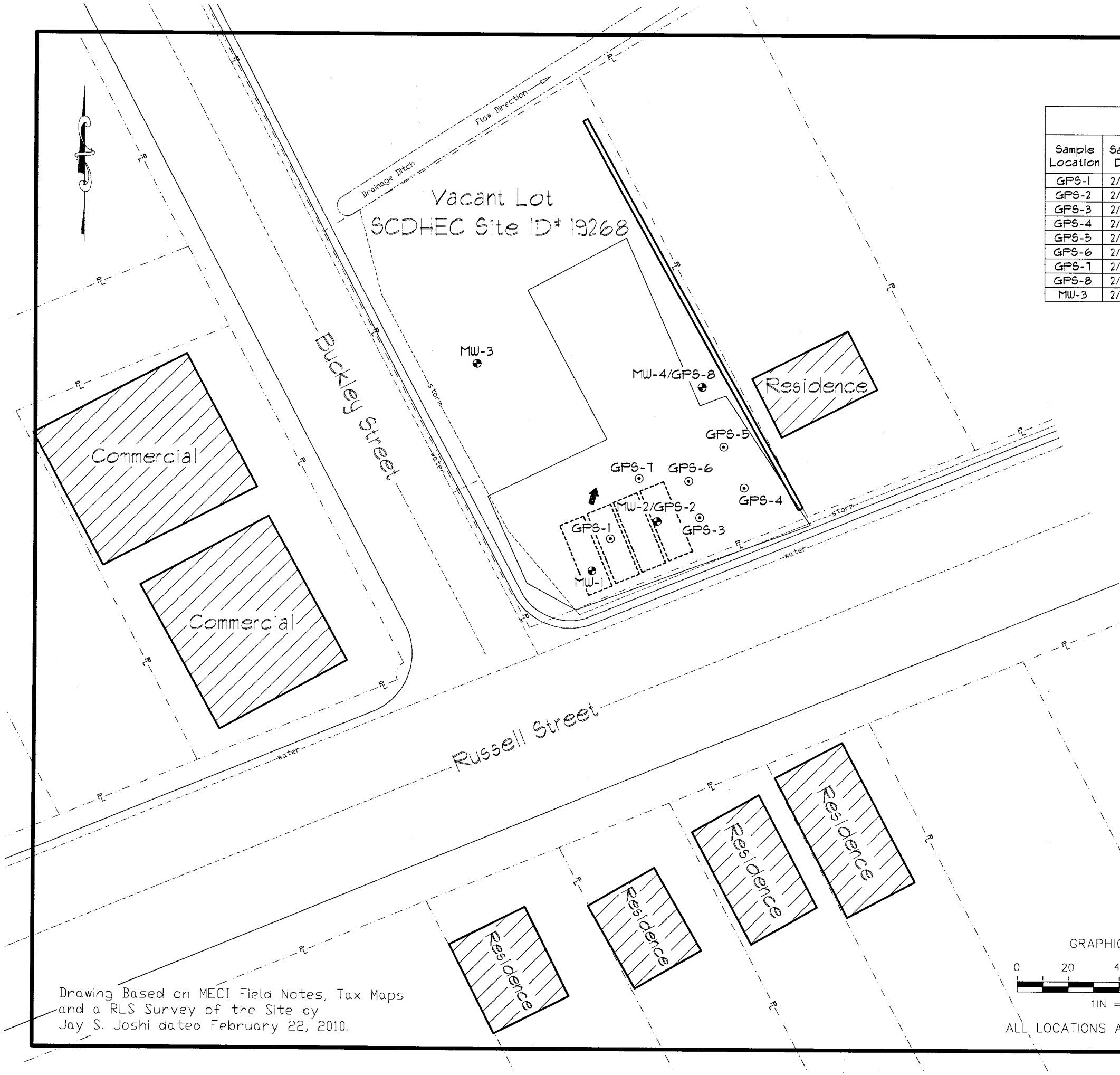
Site datum based on assumed Spot Elevation

Site Features

Vacant Lot
Orangeburg, South Carolina
SCDHEC Site ID 19268

Midlands Environmental Consultants, Inc.

JOB NO. 10-2703
DATE March 2, 2010
FIGURE 2



Soil Analytical Data •

Sample Location	Sample Date	Depth (feet)	Benzene (ug/kg)	Toluene (ug/kg)	Ethylbenzene (ug/kg)	Total Xylenes (ug/kg)	Naphthalene (ug/kg)	TOC (mg/kg)	TPH 3550 (mg/kg)
GPS-1	2/12/10	0–4	<179	109J	74.6J	<357	131J	NT	NT
GPS-2	2/12/10	0–4	<3.8	19.8	2.0J	6.6J	<3.8	NT	9.3
GPS-3	2/12/10	0–2	<232	<232	<232	<465	<232	NT	NT
GPS-4	2/12/10	0–2	<4.0	2.4J	<4.0	<7.9	<4.0	NT	NT
GPS-5	2/12/10	0–2	<4.5	<4.5	<4.5	<9.0	<4.5	NT	NT
GPS-6	2/12/10	0–2	<4.4	<4.4	<4.4	<8.8	<4.4	NT	NT
GPS-7	2/12/10	0–2	2.8J	1.5J	<4.3	<8.6	<4.3	NT	NT
GPS-8	2/12/10	2–4	NT	NT	NT	NT	NT	4,760	NT
MW-3	2/12/10	0–4	3.1J	16.1	77.5	7.6J	123	NT	NT

Notes: BDL = Below Detection Limits
NT = Not Tested
See Appendix for Detection Limits

Explanation:

- Location of Soil Test Boring
- Location of Watertable Bracketing Monitoring Well
- Estimated Groundwater Flow Direction
- Estimated Location of Removed Underground Storage Tanks

GRAPHIC SCALE
0 20 40 60 80
1IN = 40FT

ALL LOCATIONS ARE APPROXIMATE

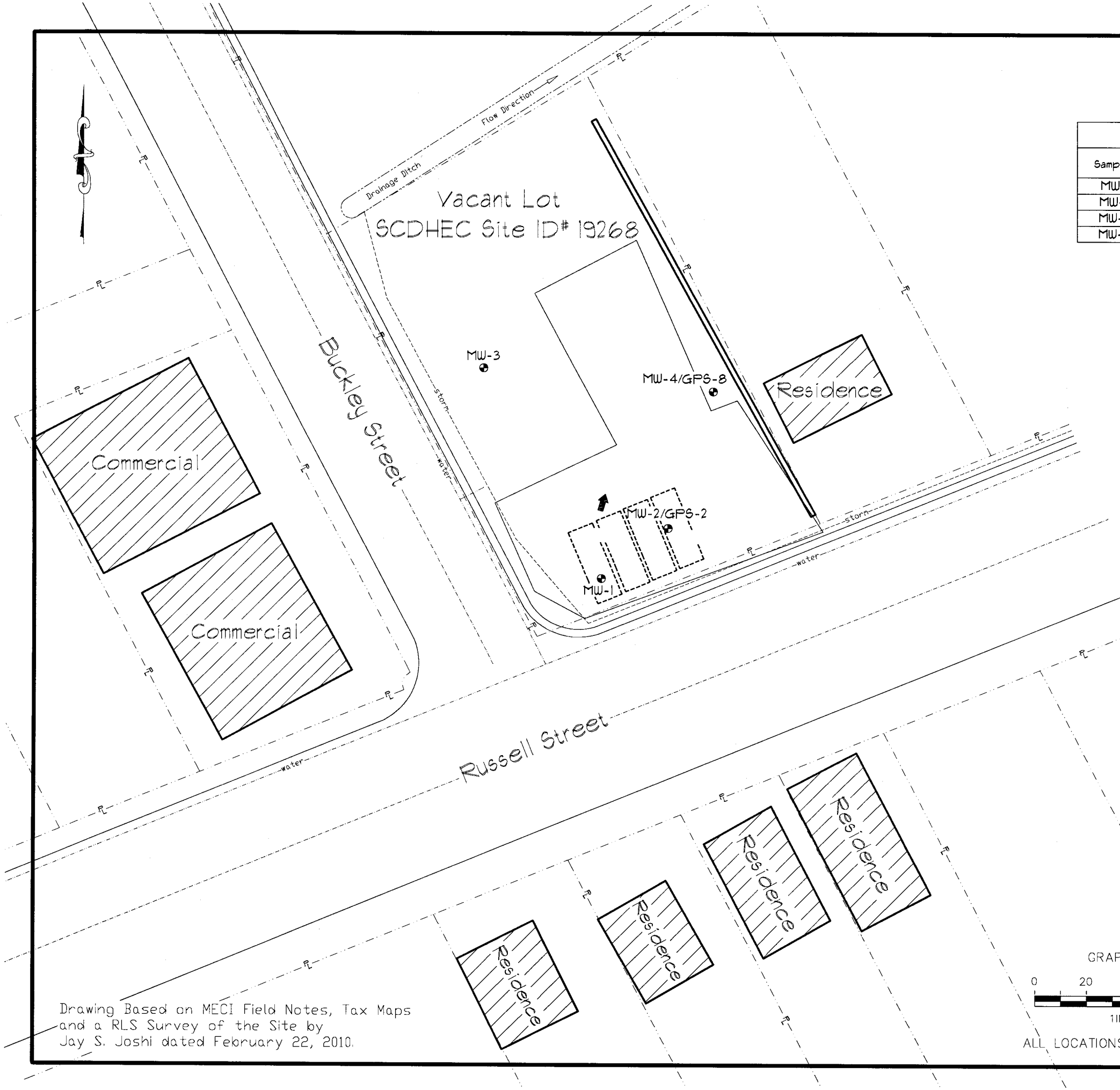
Drawing Based on MECI Field Notes, Tax Maps and a RLS Survey of the Site by Jay S. Joshi dated February 22, 2010.

Soil COC Site Map

Vacant Lot
Orangeburg, South Carolina
SCDHEC Site ID 19268

Midlands Environmental Consultants, Inc.

JOB NO. 10-2703
DATE March 2, 2010
FIGURE 3



COC Concentration Data

Sample #	Benzene (ug/l)	Toluene (ug/l)	Ethylbenzene (ug/l)	Total Xylenes (ug/l)	Total BTEX (ug/l)	MTBE (ug/l)	EDB (ug/l)	Naphthalene (ug/l)
MW-1	<5.0	<5.0	2.7J	<10.0	2.7J	19.5	<0.020	16.2
MW-2	<5.0	1.8J	1.1J	<10.0	2.9J	13.4	<0.019	13.0
MW-3	43.1J	<100	1,900	359	2,302.1J	<100	<0.021	1,990
MW-4	<5.0	<5.0	<5.0	<10.0	BDL	7.8	<0.020	<5.0

Notes: Groundwater samples collected on February 12, 2010.

BDL = Below Detection Limits

"J" Values used in Total BTEX Calculation

Explanation:

- Location of Watertable Bracketing Monitoring Well
- Estimated Groundwater Flow Direction
- Estimated Location of Removed Underground Storage Tanks

Drawing Based on MECI Field Notes, Tax Maps and a RLS Survey of the Site by Jay S. Joshi dated February 22, 2010.

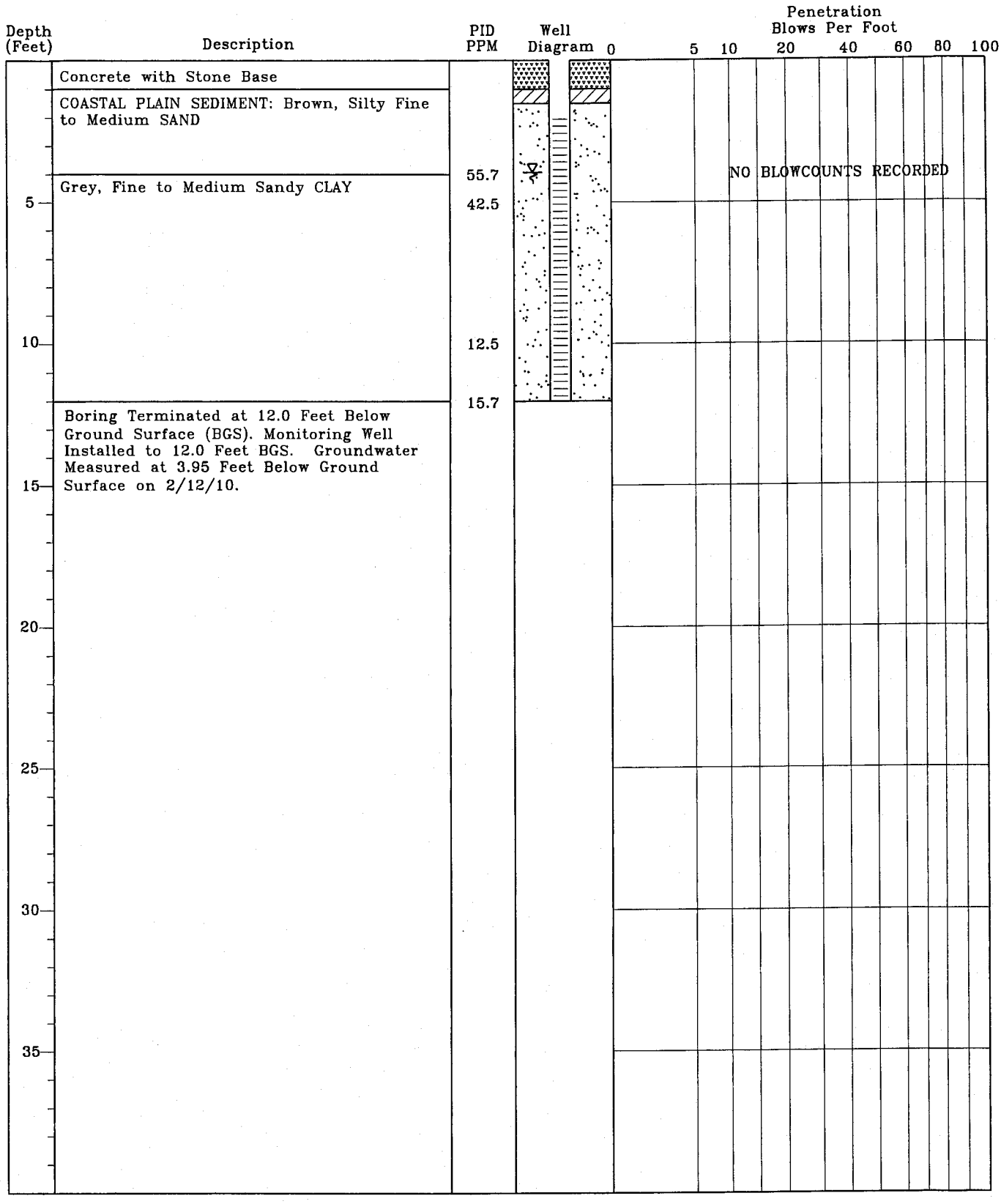
Groundwater COC Site Map

Vacant Lot
Orangeburg, South Carolina
SCDHEC Site ID 19268

Midlands Environmental Consultants, Inc.

JOB NO. 10-2703
DATE March 2, 2010
FIGURE 4

APPENDIX A
BORING LOGS



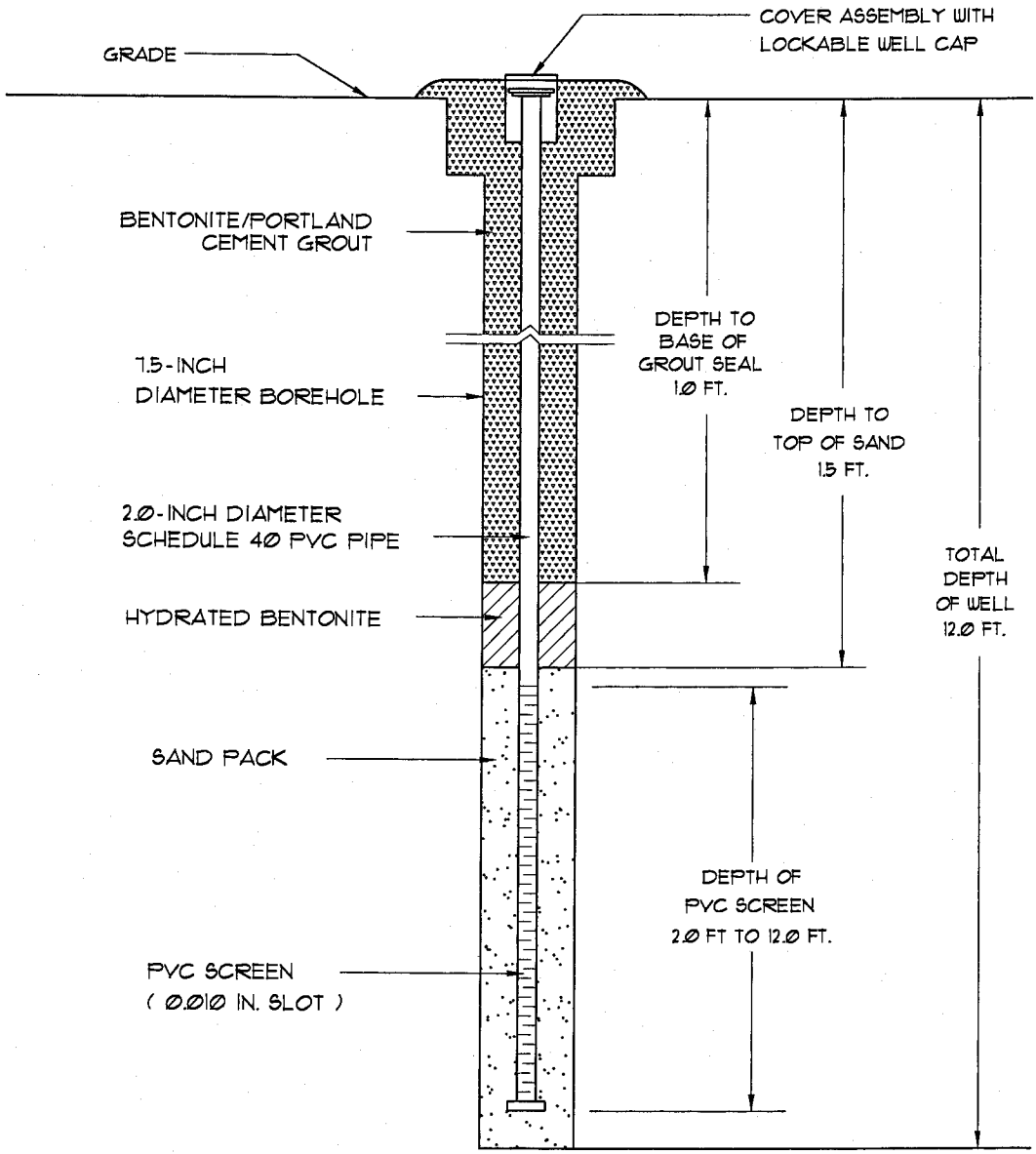
TEST BORING RECORD
Vacant Lot
Orangeburg, South Carolina
SCDHEC Site ID# 19268
MECI Project Number 10-2703

Boring Number:	MW-2
Date Drilled:	2/9/10
Drilled By:	Geologic Exploration Inc.
Logged By:	J. Womack

Prepared By:
Midlands Environmental Consultants, Inc.
235-B Dooley Road
Lexington, South Carolina 29073
(803) 808-2043 fax: 808-2048

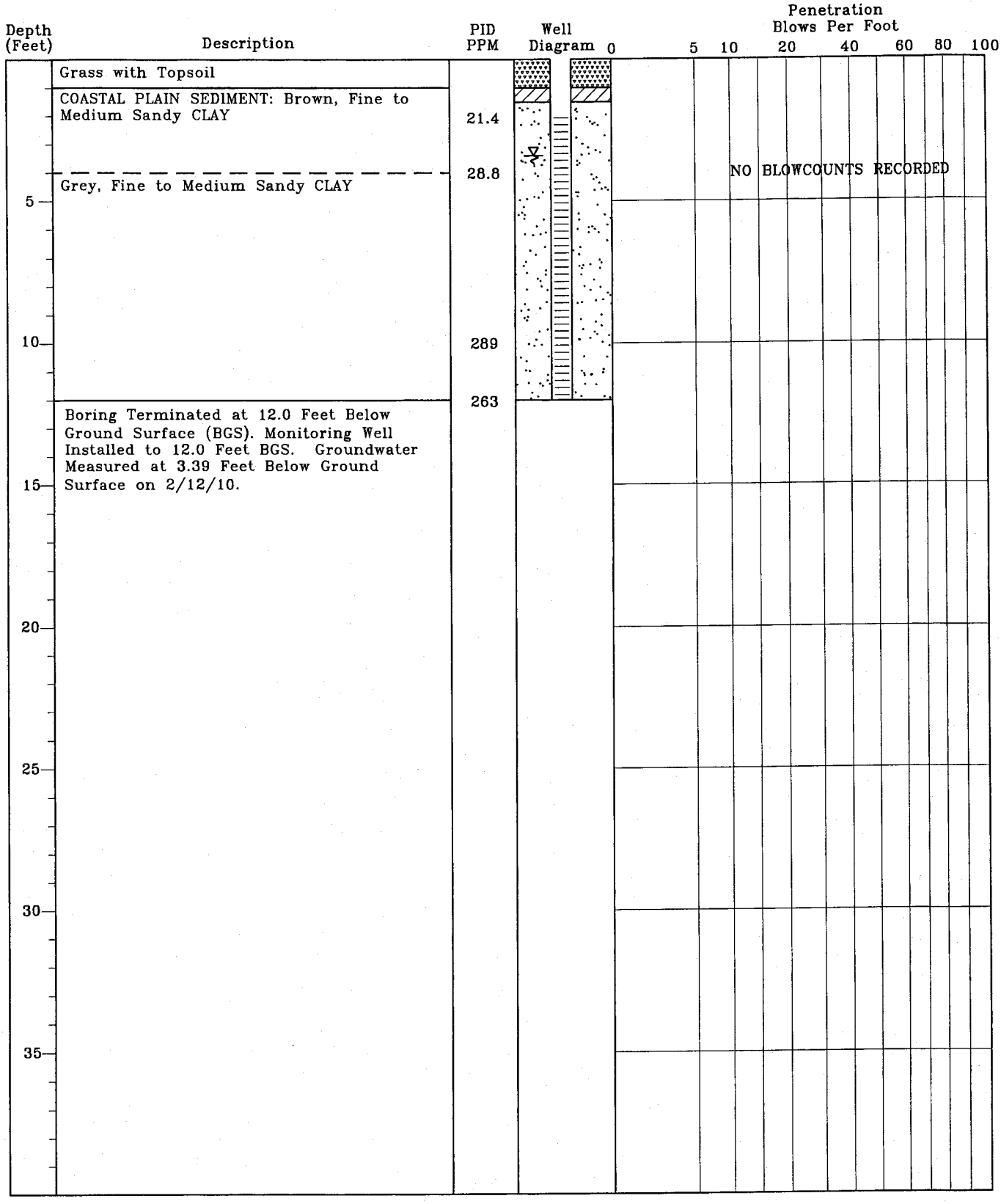
MONITORING WELL INSTALLATION RECORD

Vacant Lot
Orangeburg, South Carolina
SCDHEC Site ID# 19268
MECI Project Number 10-2703



Well Number:	MW-2
Date Drilled:	2/9/10
Drilled By:	Geologic Exploration Inc.
Driller: V. Federle S.C. I.D. #: D 01930	
Logged By:	J. Womack

Prepared By:
Midlands Environmental Consultants, Inc.
235-B Dooley Road
Lexington, South Carolina 29073
(803) 808-2043 fax: 808-2048



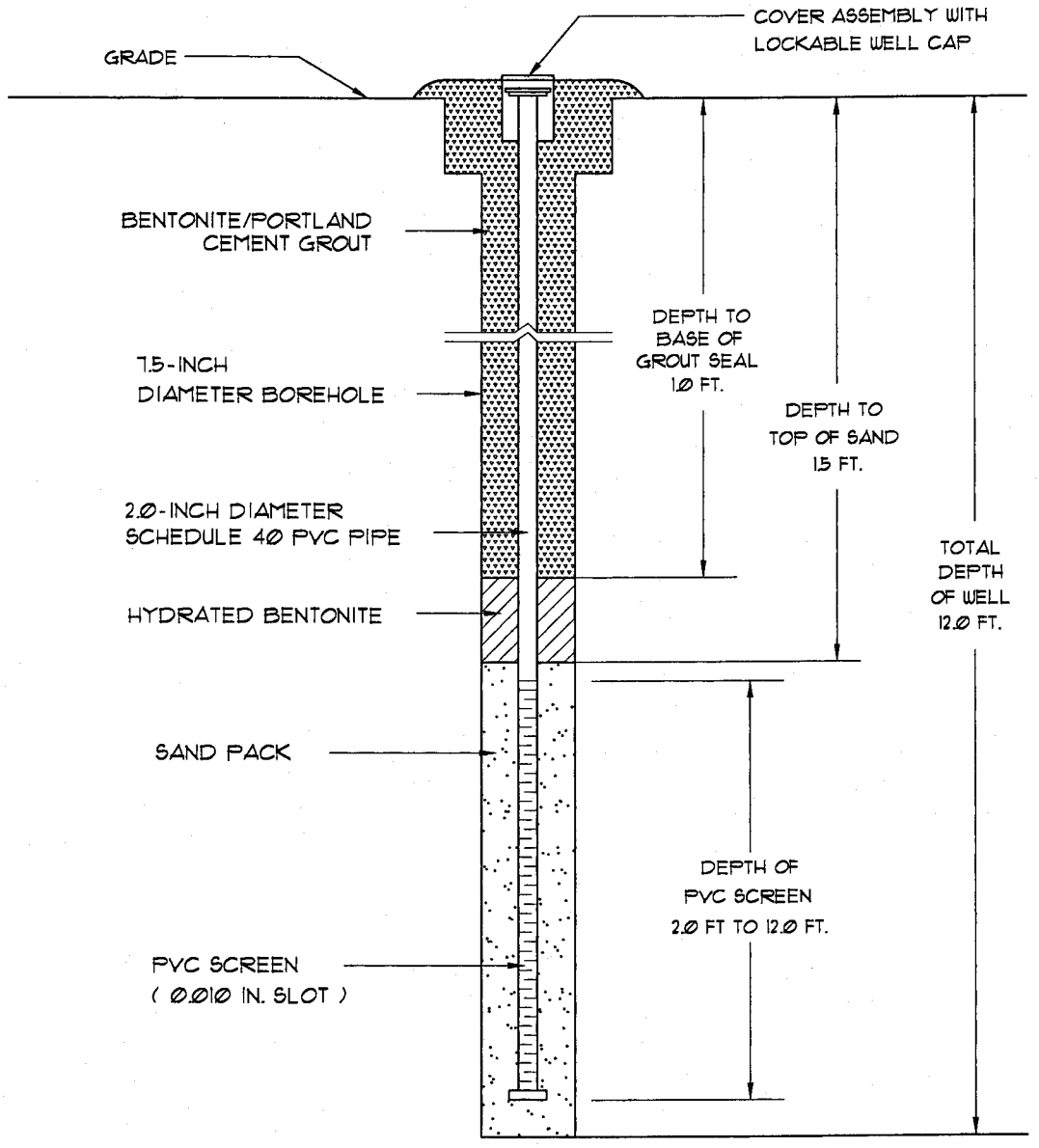
TEST BORING RECORD
Vacant Lot
Orangeburg, South Carolina
SCDHEC Site ID# 19268
MECI Project Number 10-2703

Boring Number:	MW-3
Date Drilled:	2/9/10
Drilled By:	Geologic Exploration Inc.
Logged By:	J. Womack

Prepared By:
Midlands Environmental Consultants, Inc.
235-B Dooley Road
Lexington, South Carolina 29073
(803) 808-2043 fax: 808-2048

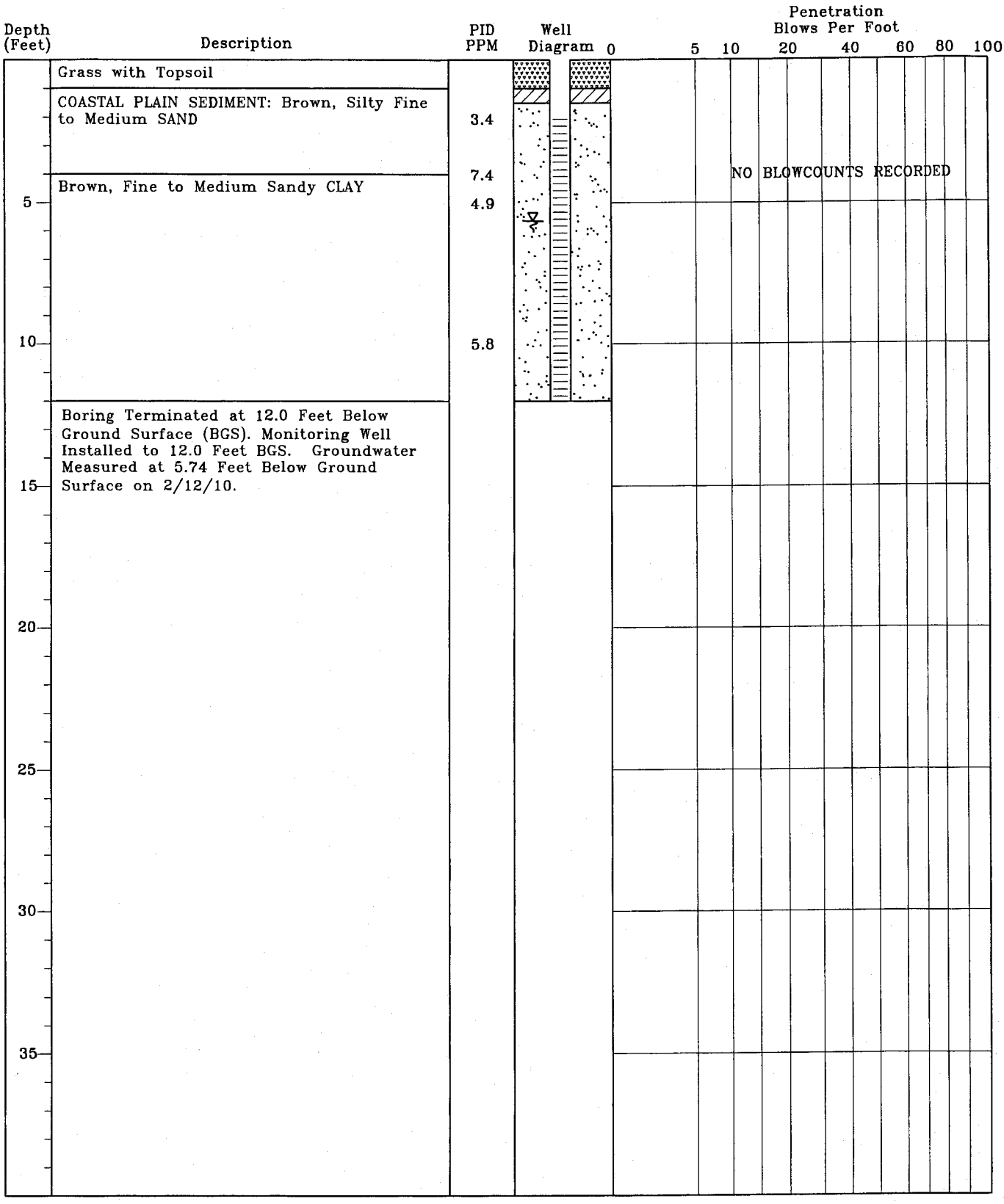
MONITORING WELL INSTALLATION RECORD

Vacant Lot
Orangeburg, South Carolina
SCDHEC Site ID# 19268
MECI Project Number 10-2703



Well Number:	MW-3
Date Drilled:	2/9/10
Drilled By:	Geologic Exploration Inc.
Driller: V. Federle S.C. I.D. #: D 01930	
Logged By:	J. Womack

Prepared By:
Midlands Environmental Consultants, Inc.
235-B Dooley Road
Lexington, South Carolina 29073
(803) 808-2043 fax: 808-2048



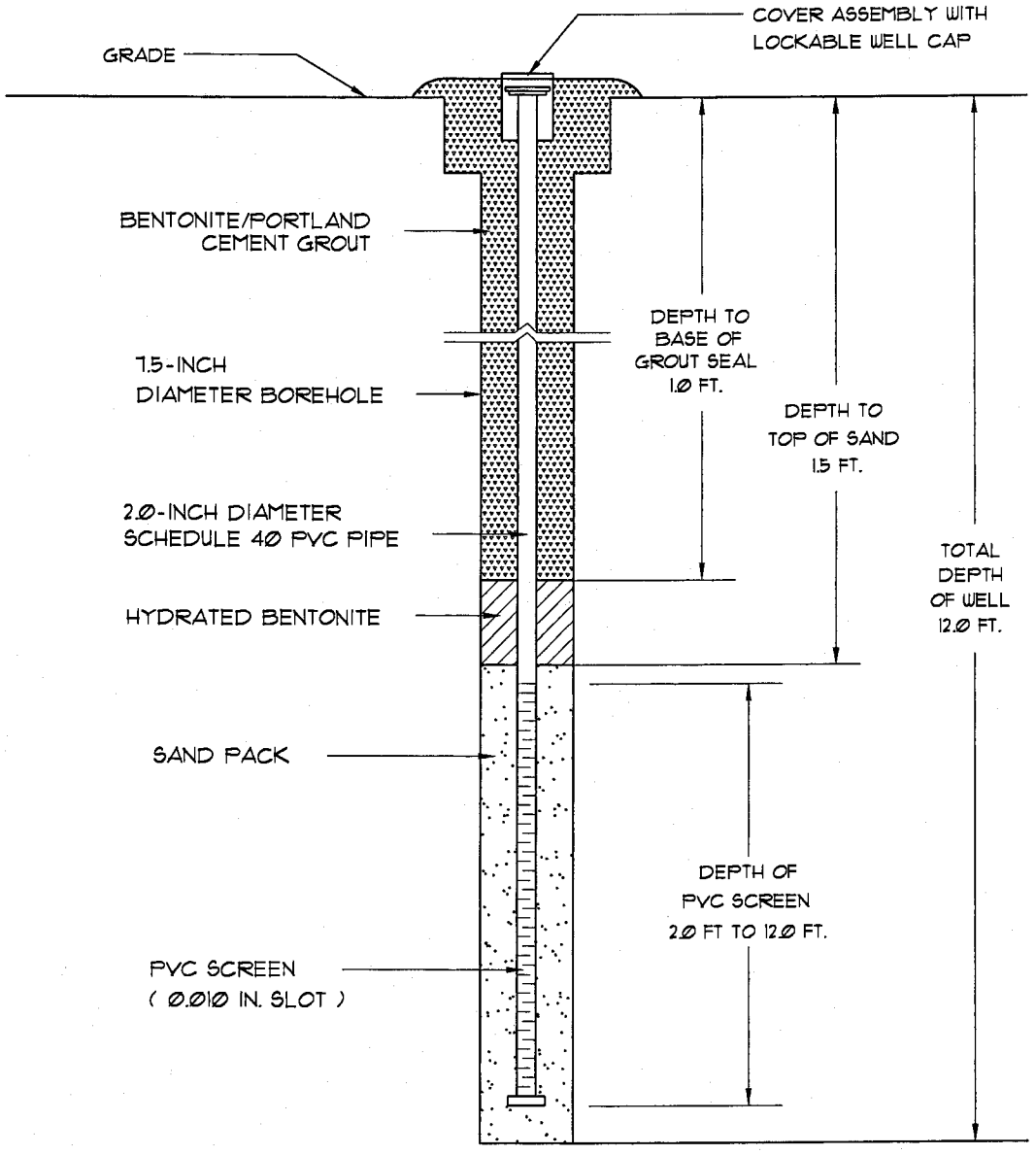
TEST BORING RECORD
Vacant Lot
Orangeburg, South Carolina
SCDHEC Site ID# 19268
MECI Project Number 10-2703

Boring Number:	MW-4
Date Drilled:	2/9/10
Drilled By:	Geologic Exploration Inc.
Logged By:	J. Womack

Prepared By:
Midlands Environmental Consultants, Inc.
235-B Dooley Road
Lexington, South Carolina 29073
(803) 808-2043 fax: 808-2048

MONITORING WELL INSTALLATION RECORD

Vacant Lot
Orangeburg, South Carolina
SCDHEC Site ID# 19268
MECI Project Number 10-2703



Well Number:	MW-4
Date Drilled:	2/9/10
Drilled By:	Geologic Exploration Inc.
Driller: V. Federle S.C. I.D. #: D 01930	
Logged By:	J. Womack

Prepared By:
Midlands Environmental Consultants, Inc.
235-B Dooley Road
Lexington, 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

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: WRIGHT, BERNIE LEE (last) (first)
Address: PO BOX 275
City: ORANGEBURG State: SC Zip: 29115
Telephone: Work: Home:

2. LOCATION OF WELL: SC **COUNTY:** ORANGEBURG
Name: VACANT LOT
Street Address: 2309 RUSSELL STREET
City: ORANGEBURG Zip: 29115
Latitude: Longitude:

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
CONCRETE/GRAVEL	1.0	1.0
DARK GRAY CLAYEY SAND	11.0	12.0
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-2 BENTONITE SEAL FROM 1.0 TO 1.5 FT.

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other AUGER

7. PERMIT NUMBER:

8. USE:
☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 02/09/10
12.0 ft. Date Completed: 02/09/10

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2 INCH
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 2.0 ft. depth
_____ in. to _____ ft. depth
Height: Above ☐ Below ☐
Surface 0.0 ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☐ No

11. SCREEN:
Type: SCH 40 PVC Diam.: 2 INCH
Slot/Gauge: .010 Length: 10.0 FEET
Set Between: 2.0 ft. and 12.0 ft. NOTE: MULTIPLE SCREENS
_____ ft. and _____ ft. USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 3.0 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 1.5 ft. to 12.0 ft.
Effective size 1.43 Uniformity Coefficient 1.30

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 0.0 ft. to 1.0 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: VINCE FEDERLE **CERT. NO.:** 01930
Address: (Print) 176 COMMERCE BLVD
STATESVILLE, NC 28625
Level: A ☐ B ☐ C ☐ D ☑ (circle one)
Telephone No.: 704-872-7686 Fax No.: 704-872-0248

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: Vincent R. Federle Well Driller Date: 02/17/10

If D Level Driller, provide supervising driller's name:
MARK GETTYS

DHEC 1903 (07/2003) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

D H E C — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: WRIGHT, BERNIE LEE (last) (first)
Address: PO BOX 275
City: ORANGEBURG State: SC Zip: 29115
Telephone: Work: Home:

2. LOCATION OF WELL: SC **COUNTY:** ORANGEBURG
Name: VACANT LOT
Street Address: 2309 RUSSELL STREET
City: ORANGEBURG Zip: 29115
Latitude: Longitude:

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
GRAVEL	1.0	1.0
DARK GRAY CLAYEY SAND	11.0	12.0
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-3 BENTONITE SEAL FROM 1.0 TO 1.5 FT.

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other AUGER

7. PERMIT NUMBER:

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 02/09/10
12.0 ft. Date Completed: 02/09/10

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2 INCH
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 2.0 ft. depth
_____ in. to _____ ft. depth
Height: Above ☐ Below ☐
Surface 0.0 ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☐ No

11. SCREEN:
Type: SCH 40 PVC Diam.: 2 INCH
Slot/Gauge: .010 Length: 10.0 FEET
Set Between: 2.0 ft. and 12.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 3.0 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 1.5 ft. to 12.0 ft.
Effective size 1.43 Uniformity Coefficient 1.30

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 0.0 ft. to 1.0 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: VINCE FEDERLE **CERT. NO.:** 01930
Address: (Print) 176 COMMERCE BLVD
STATESVILLE, NC 28625
Level: A ☐ B ☐ C ☐ D ☑ (circle one)
Telephone No.: 704-872-7686 Fax No.: 704-872-0248

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: Vincent R Federle Well Driller Date: 02/17/10

If D Level Driller, provide supervising driller's name:
MARK GETTYS

DHEC 1903 (07/2003) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: WRIGHT, BERNIE LEE (last) (first)
Address: PO BOX 275
City: ORANGEBURG State: SC Zip: 29115
Telephone: Work: Home:

2. LOCATION OF WELL: SC **COUNTY:** ORANGEBURG
Name: VACANT LOT
Street Address: 2309 RUSSELL STREET
City: ORANGEBURG Zip: 29115
Latitude: Longitude:

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
TOPSOIL	1.0	1.0
DARK GRAY CLAYEY SAND	11.0	12.0
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-4 BENTONITE SEAL FROM 1.0 TO 1.5 FT.

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other AUGER

7. PERMIT NUMBER:

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 12.0 ft. Date Started: 02/09/10 Date Completed: 02/09/10

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2 INCH
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 2.0 ft. depth
_____ in. to _____ ft. depth
Height: Above ☐ Below ☐
Surface 0.0 ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☐ No

11. SCREEN:
Type: SCH 40 PVC Diam.: 2 INCH
Slot/Gauge: .010 Length: 10.0 FEET
Set Between: 2.0 ft. and 12.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 3.0 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 1.5 ft. to 12.0 ft.
Effective size 1.43 Uniformity Coefficient 1.30

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 0.0 ft. to 1.0 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: VINCE FEDERLE CERT. NO.: 01930
Address: (Print) 176 COMMERCE BLVD
STATESVILLE, NC 28625
Level: A ☐ B ☐ C ☐ D ☑ (circle one)
Telephone No.: 704-872-7686 Fax No.: 704-872-0248

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: Vincent R. Federle (Well Driller) Date: 02/17/10

If D Level Driller, provide supervising driller's name:
MARK GETTYS

DHEC 1903 (07/2003) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

APPENDIX B
ANALYTICAL DATA

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
2225 Riverside Dr.
Asheville, NC 28804
(828)254-7176

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

February 19, 2010

Mr. Bryan Shane
Midlands Environmental
PO Box 854
Lexington, SC 29071

RE: Project: VACANT LOT 10-2703
Pace Project No.: 9263047

Dear Mr. Shane:
Enclosed are the analytical results for sample(s) received by the laboratory on February 10, 2010. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

Inorganic Wet Chemistry and Metals analyses were performed at our Pace Asheville laboratory and Organic testing was performed at our Pace Huntersville laboratory unless otherwise footnoted. All Microbiological analyses were performed at the laboratory where the samples were received.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Renee Spencer

Renee Spencer

renee.spencer@pacelabs.com
Project Manager

Enclosures

REPORT OF LABORATORY ANALYSIS

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www.pacelabs.com

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Asheville, NC 28804
(828)254-7176

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

CERTIFICATIONS

Project: VACANT LOT 10-2703
Pace Project No.: 9263047

Charlotte Certification IDs
9800 Kincey Ave. - Ste 100 Huntersville, NC 28078
Connecticut Certification #: PH-0104
Virginia Certification #: 00213
Tennessee Certification #: 04010
South Carolina Drinking Water Cert. #: 990060003
South Carolina Certification #: 990060001
Pennsylvania Certification #: 68-00784
North Carolina Wastewater Certification #: 12
North Carolina Field Services Certification #: 5342
North Carolina Drinking Water Certification #: 37706
New Jersey Certification #: NC012
Louisiana/LELAP Certification #: 04034
Kentucky UST Certification #: 84
Florida/NELAP Certification #: E87627
West Virginia Certification #: 357

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Asheville, NC 28804
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Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

SAMPLE SUMMARY

Project: VACANT LOT 10-2703
Pace Project No.: 9263047

Lab ID	Sample ID	Matrix	Date Collected	Date Received
9263047001	**GPS-1 0-4'**	Solid	02/09/10 11:00	02/10/10 17:25
9263047002	**GPS-3 0-2'**	Solid	02/09/10 11:00	02/10/10 17:25
9263047003	**GPS-4 0-2'**	Solid	02/09/10 11:00	02/10/10 17:25
9263047004	**GPS-5 0-2'**	Solid	02/09/10 11:00	02/10/10 17:25
9263047005	**GPS-6 0-2'**	Solid	02/09/10 11:00	02/10/10 17:25
9263047006	**GPS-7 0-2'**	Solid	02/09/10 11:00	02/10/10 17:25
9263047007	**MW-3 0-4'**	Solid	02/09/10 11:00	02/10/10 17:25
9263047008	**GPS-2 0-4'**	Solid	02/09/10 11:00	02/10/10 17:25
9263047009	**GPS-8/MW-4 2-4'**	Solid	02/09/10 11:00	02/10/10 17:25

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(828)254-7176

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

SAMPLE ANALYTE COUNT

Project: VACANT LOT 10-2703
Pace Project No.: 9263047

Lab ID	Sample ID	Method	Analysts	Analytes Reported
9263047001	**GPS-1 0-4'**	EPA 8260	DLK	11
		ASTM D2974-87	TNM	1
9263047002	**GPS-3 0-2'**	EPA 8260	DLK	11
		ASTM D2974-87	TNM	1
9263047003	**GPS-4 0-2'**	EPA 8260	DLK	11
		ASTM D2974-87	TNM	1
9263047004	**GPS-5 0-2'**	EPA 8260	DLK	11
		ASTM D2974-87	TNM	1
9263047005	**GPS-6 0-2'**	EPA 8260	DLK	11
		ASTM D2974-87	TNM	1
9263047006	**GPS-7 0-2'**	EPA 8260	DLK	11
		ASTM D2974-87	TNM	1
9263047007	**MW-3 0-4'**	EPA 8260	DLK	11
		ASTM D2974-87	TNM	1
9263047008	**GPS-2 0-4'**	EPA 8260	DLK	11
		ASTM D2974-87	TNM	1

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(828)254-7176

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Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: VACANT LOT 10-2703
Pace Project No.: 9263047

Sample: GPS-1 0-4' **Lab ID: 9263047001** Collected: 02/09/10 11:00 Received: 02/10/10 17:25 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260/5035A SC Volatile Org	Analytical Method: EPA 8260								
Benzene	ND	ug/kg	179	57.2	50		02/13/10 20:15	71-43-2	D3
Ethylbenzene	**74.6J**	ug/kg	179	64.3	50		02/13/10 20:15	100-41-4	
Naphthalene	**131J**	ug/kg	179	42.9	50		02/13/10 20:15	91-20-3	
Toluene	**109J**	ug/kg	179	64.3	50		02/13/10 20:15	108-88-3	
Xylene (Total)	ND	ug/kg	357	129	50		02/13/10 20:15	1330-20-7	
m&p-Xylene	ND	ug/kg	357	129	50		02/13/10 20:15	1330-20-7	
o-Xylene	ND	ug/kg	179	67.9	50		02/13/10 20:15	95-47-6	
Dibromofluoromethane (S)	99	%	70-130		50		02/13/10 20:15	1868-53-7	
Toluene-d8 (S)	102	%	70-130		50		02/13/10 20:15	2037-26-5	
4-Bromofluorobenzene (S)	95	%	70-130		50		02/13/10 20:15	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	70-130		50		02/13/10 20:15	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**12.6**	%	0.10	0.10	1		02/11/10 12:50		

Sample: GPS-3 0-2' **Lab ID: 9263047002** Collected: 02/09/10 11:00 Received: 02/10/10 17:25 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260/5035A SC Volatile Org	Analytical Method: EPA 8260								
Benzene	ND	ug/kg	232	74.4	50		02/13/10 19:57	71-43-2	D3
Ethylbenzene	ND	ug/kg	232	83.7	50		02/13/10 19:57	100-41-4	
Naphthalene	ND	ug/kg	232	55.8	50		02/13/10 19:57	91-20-3	
Toluene	ND	ug/kg	232	83.7	50		02/13/10 19:57	108-88-3	
Xylene (Total)	ND	ug/kg	465	167	50		02/13/10 19:57	1330-20-7	
m&p-Xylene	ND	ug/kg	465	167	50		02/13/10 19:57	1330-20-7	
o-Xylene	ND	ug/kg	232	88.3	50		02/13/10 19:57	95-47-6	
Dibromofluoromethane (S)	95	%	70-130		50		02/13/10 19:57	1868-53-7	
Toluene-d8 (S)	103	%	70-130		50		02/13/10 19:57	2037-26-5	
4-Bromofluorobenzene (S)	97	%	70-130		50		02/13/10 19:57	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	70-130		50		02/13/10 19:57	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**14.6**	%	0.10	0.10	1		02/11/10 12:50		

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ANALYTICAL RESULTS

Project: VACANT LOT 10-2703
Pace Project No.: 9263047

Sample: GPS-4 0-2' **Lab ID: 9263047003** Collected: 02/09/10 11:00 Received: 02/10/10 17:25 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260/5035A SC Volatile Org	Analytical Method: EPA 8260								
Benzene	ND	ug/kg	4.0	1.3	1		02/13/10 12:04	71-43-2	
Ethylbenzene	ND	ug/kg	4.0	1.4	1		02/13/10 12:04	100-41-4	
Naphthalene	ND	ug/kg	4.0	0.95	1		02/13/10 12:04	91-20-3	
Toluene	**2.4J**	ug/kg	4.0	1.4	1		02/13/10 12:04	108-88-3	
Xylene (Total)	ND	ug/kg	7.9	2.9	1		02/13/10 12:04	1330-20-7	
m&p-Xylene	ND	ug/kg	7.9	2.9	1		02/13/10 12:04	1330-20-7	
o-Xylene	ND	ug/kg	4.0	1.5	1		02/13/10 12:04	95-47-6	
Dibromofluoromethane (S)	97	%	70-130		1		02/13/10 12:04	1868-53-7	
Toluene-d8 (S)	101	%	70-130		1		02/13/10 12:04	2037-26-5	
4-Bromofluorobenzene (S)	96	%	70-130		1		02/13/10 12:04	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	70-130		1		02/13/10 12:04	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**14.5**	%	0.10	0.10	1		02/11/10 12:51		

Sample: GPS-5 0-2' **Lab ID: 9263047004** Collected: 02/09/10 11:00 Received: 02/10/10 17:25 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260/5035A SC Volatile Org	Analytical Method: EPA 8260								
Benzene	ND	ug/kg	4.5	1.4	1		02/13/10 12:21	71-43-2	
Ethylbenzene	ND	ug/kg	4.5	1.6	1		02/13/10 12:21	100-41-4	
Naphthalene	ND	ug/kg	4.5	1.1	1		02/13/10 12:21	91-20-3	
Toluene	ND	ug/kg	4.5	1.6	1		02/13/10 12:21	108-88-3	
Xylene (Total)	ND	ug/kg	9.0	3.2	1		02/13/10 12:21	1330-20-7	
m&p-Xylene	ND	ug/kg	9.0	3.2	1		02/13/10 12:21	1330-20-7	
o-Xylene	ND	ug/kg	4.5	1.7	1		02/13/10 12:21	95-47-6	
Dibromofluoromethane (S)	96	%	70-130		1		02/13/10 12:21	1868-53-7	
Toluene-d8 (S)	102	%	70-130		1		02/13/10 12:21	2037-26-5	
4-Bromofluorobenzene (S)	92	%	70-130		1		02/13/10 12:21	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	70-130		1		02/13/10 12:21	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**12.3**	%	0.10	0.10	1		02/11/10 12:51		

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ANALYTICAL RESULTS

Project: VACANT LOT 10-2703
Pace Project No.: 9263047

Sample: GPS-6 0-2' **Lab ID: 9263047005** Collected: 02/09/10 11:00 Received: 02/10/10 17:25 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260/5035A SC Volatile Org	Analytical Method: EPA 8260								
Benzene	ND	ug/kg	4.4	1.4	1		02/13/10 13:14	71-43-2	
Ethylbenzene	ND	ug/kg	4.4	1.6	1		02/13/10 13:14	100-41-4	
Naphthalene	ND	ug/kg	4.4	1.1	1		02/13/10 13:14	91-20-3	
Toluene	ND	ug/kg	4.4	1.6	1		02/13/10 13:14	108-88-3	
Xylene (Total)	ND	ug/kg	8.8	3.2	1		02/13/10 13:14	1330-20-7	
m&p-Xylene	ND	ug/kg	8.8	3.2	1		02/13/10 13:14	1330-20-7	
o-Xylene	ND	ug/kg	4.4	1.7	1		02/13/10 13:14	95-47-6	
Dibromofluoromethane (S)	96	%	70-130		1		02/13/10 13:14	1868-53-7	
Toluene-d8 (S)	104	%	70-130		1		02/13/10 13:14	2037-26-5	
4-Bromofluorobenzene (S)	92	%	70-130		1		02/13/10 13:14	460-00-4	
1,2-Dichloroethane-d4 (S)	105	%	70-130		1		02/13/10 13:14	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**12.4**	%	0.10	0.10	1		02/11/10 12:51		

Sample: GPS-7 0-2' **Lab ID: 9263047006** Collected: 02/09/10 11:00 Received: 02/10/10 17:25 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260/5035A SC Volatile Org	Analytical Method: EPA 8260								
Benzene	**2.8J**	ug/kg	4.3	1.4	1		02/13/10 12:39	71-43-2	
Ethylbenzene	ND	ug/kg	4.3	1.5	1		02/13/10 12:39	100-41-4	
Naphthalene	ND	ug/kg	4.3	1.0	1		02/13/10 12:39	91-20-3	
Toluene	**1.5J**	ug/kg	4.3	1.5	1		02/13/10 12:39	108-88-3	
Xylene (Total)	ND	ug/kg	8.6	3.1	1		02/13/10 12:39	1330-20-7	
m&p-Xylene	ND	ug/kg	8.6	3.1	1		02/13/10 12:39	1330-20-7	
o-Xylene	ND	ug/kg	4.3	1.6	1		02/13/10 12:39	95-47-6	
Dibromofluoromethane (S)	98	%	70-130		1		02/13/10 12:39	1868-53-7	
Toluene-d8 (S)	100	%	70-130		1		02/13/10 12:39	2037-26-5	
4-Bromofluorobenzene (S)	97	%	70-130		1		02/13/10 12:39	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	70-130		1		02/13/10 12:39	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**14.5**	%	0.10	0.10	1		02/11/10 12:52		

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ANALYTICAL RESULTS

Project: VACANT LOT 10-2703
Pace Project No.: 9263047

Sample: MW-3 0-4' **Lab ID: 9263047007** Collected: 02/09/10 11:00 Received: 02/10/10 17:25 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260/5035A SC Volatile Org	Analytical Method: EPA 8260								
Benzene	**3.1J**	ug/kg	4.3	1.4	1		02/13/10 13:31	71-43-2	
Ethylbenzene	**77.5**	ug/kg	4.3	1.6	1		02/13/10 13:31	100-41-4	
Naphthalene	**123**	ug/kg	4.3	1.0	1		02/13/10 13:31	91-20-3	
Toluene	**16.1**	ug/kg	4.3	1.6	1		02/13/10 13:31	108-88-3	
Xylene (Total)	**7.6J**	ug/kg	8.7	3.1	1		02/13/10 13:31	1330-20-7	
m&p-Xylene	**6.3J**	ug/kg	8.7	3.1	1		02/13/10 13:31	1330-20-7	
o-Xylene	ND	ug/kg	4.3	1.6	1		02/13/10 13:31	95-47-6	
Dibromofluoromethane (S)	95	%	70-130		1		02/13/10 13:31	1868-53-7	
Toluene-d8 (S)	102	%	70-130		1		02/13/10 13:31	2037-26-5	
4-Bromofluorobenzene (S)	94	%	70-130		1		02/13/10 13:31	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	70-130		1		02/13/10 13:31	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**14.6**	%	0.10	0.10	1		02/11/10 12:53		

Sample: GPS-2 0-4' **Lab ID: 9263047008** Collected: 02/09/10 11:00 Received: 02/10/10 17:25 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260/5035A SC Volatile Org	Analytical Method: EPA 8260								
Benzene	ND	ug/kg	3.8	1.2	1		02/13/10 12:56	71-43-2	
Ethylbenzene	**2.0J**	ug/kg	3.8	1.4	1		02/13/10 12:56	100-41-4	
Naphthalene	ND	ug/kg	3.8	0.91	1		02/13/10 12:56	91-20-3	
Toluene	**19.8**	ug/kg	3.8	1.4	1		02/13/10 12:56	108-88-3	
Xylene (Total)	**6.6J**	ug/kg	7.6	2.7	1		02/13/10 12:56	1330-20-7	
m&p-Xylene	**5.0J**	ug/kg	7.6	2.7	1		02/13/10 12:56	1330-20-7	
o-Xylene	**1.6J**	ug/kg	3.8	1.4	1		02/13/10 12:56	95-47-6	
Dibromofluoromethane (S)	99	%	70-130		1		02/13/10 12:56	1868-53-7	
Toluene-d8 (S)	103	%	70-130		1		02/13/10 12:56	2037-26-5	
4-Bromofluorobenzene (S)	95	%	70-130		1		02/13/10 12:56	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	70-130		1		02/13/10 12:56	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**12.0**	%	0.10	0.10	1		02/12/10 08:50		

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QUALITY CONTROL DATA

Project: VACANT LOT 10-2703
Pace Project No.: 9263047

QC Batch: MSV/9942 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV 5035A Volatile Organics
Associated Lab Samples: 9263047003, 9263047004, 9263047005, 9263047006, 9263047007, 9263047008

METHOD BLANK: 402416 Matrix: Solid
Associated Lab Samples: 9263047003, 9263047004, 9263047005, 9263047006, 9263047007, 9263047008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/kg	ND	5.0	02/13/10 10:36	
Ethylbenzene	ug/kg	ND	5.0	02/13/10 10:36	
m&p-Xylene	ug/kg	ND	10.0	02/13/10 10:36	
Naphthalene	ug/kg	ND	5.0	02/13/10 10:36	
o-Xylene	ug/kg	ND	5.0	02/13/10 10:36	
Toluene	ug/kg	ND	5.0	02/13/10 10:36	
Xylene (Total)	ug/kg	ND	10.0	02/13/10 10:36	
1,2-Dichloroethane-d4 (S)	%	104	70-130	02/13/10 10:36	
4-Bromofluorobenzene (S)	%	96	70-130	02/13/10 10:36	
Dibromofluoromethane (S)	%	99	70-130	02/13/10 10:36	
Toluene-d8 (S)	%	101	70-130	02/13/10 10:36	

LABORATORY CONTROL SAMPLE: 402417

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/kg	50	48.2	96	70-130	
Ethylbenzene	ug/kg	50	51.7	103	70-130	
m&p-Xylene	ug/kg	100	106	106	70-130	
Naphthalene	ug/kg	50	53.3	107	70-130	
o-Xylene	ug/kg	50	53.0	106	70-130	
Toluene	ug/kg	50	49.6	99	70-130	
Xylene (Total)	ug/kg	150	160	106	70-130	
1,2-Dichloroethane-d4 (S)	%			97	70-130	
4-Bromofluorobenzene (S)	%			101	70-130	
Dibromofluoromethane (S)	%			96	70-130	
Toluene-d8 (S)	%			101	70-130	

MATRIX SPIKE SAMPLE: 402444

Parameter	Units	9263047003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Benzene	ug/kg	ND	43	50.5	117	70-130	
Ethylbenzene	ug/kg	ND	43	46.7	108	70-130	
m&p-Xylene	ug/kg	ND	86.1	92.2	106	70-130	
Naphthalene	ug/kg	ND	43	25.7	59	70-130	M0
o-Xylene	ug/kg	ND	43	47.7	110	70-130	
Toluene	ug/kg	2.4J	43	50.8	112	70-130	
1,2-Dichloroethane-d4 (S)	%				100	70-130	
4-Bromofluorobenzene (S)	%				100	70-130	
Dibromofluoromethane (S)	%				99	70-130	
Toluene-d8 (S)	%				100	70-130	

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QUALITY CONTROL DATA

Project: VACANT LOT 10-2703
Pace Project No.: 9263047

SAMPLE DUPLICATE: 402445

Parameter	Units	9263226004 Result	Dup Result	RPD	Max RPD	Qualifiers
Benzene	ug/kg	ND	ND			
Ethylbenzene	ug/kg	ND	ND			
m&p-Xylene	ug/kg	ND	ND			
Naphthalene	ug/kg	ND	3.0J			
o-Xylene	ug/kg	ND	ND			
Toluene	ug/kg	ND	ND			
Xylene (Total)	ug/kg	ND	ND			
1,2-Dichloroethane-d4 (S)	%	106	106	3		
4-Bromofluorobenzene (S)	%	97	95	1		
Dibromofluoromethane (S)	%	101	103	5		
Toluene-d8 (S)	%	101	102	4		

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QUALITY CONTROL DATA

Project: VACANT LOT 10-2703
Pace Project No.: 9263047

QC Batch: MSV/9943 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV 5035A Volatile Organics
Associated Lab Samples: 9263047001, 9263047002

METHOD BLANK: 402418 Matrix: Solid
Associated Lab Samples: 9263047001, 9263047002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/kg	ND	5.0	02/13/10 10:19	
Ethylbenzene	ug/kg	ND	5.0	02/13/10 10:19	
m&p-Xylene	ug/kg	ND	10.0	02/13/10 10:19	
Naphthalene	ug/kg	1.2J	5.0	02/13/10 10:19	
o-Xylene	ug/kg	ND	5.0	02/13/10 10:19	
Toluene	ug/kg	ND	5.0	02/13/10 10:19	
Xylene (Total)	ug/kg	ND	10.0	02/13/10 10:19	
1,2-Dichloroethane-d4 (S)	%	102	70-130	02/13/10 10:19	
4-Bromofluorobenzene (S)	%	96	70-130	02/13/10 10:19	
Dibromofluoromethane (S)	%	96	70-130	02/13/10 10:19	
Toluene-d8 (S)	%	102	70-130	02/13/10 10:19	

LABORATORY CONTROL SAMPLE: 402419

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/kg	50	48.6	97	70-130	
Ethylbenzene	ug/kg	50	52.5	105	70-130	
m&p-Xylene	ug/kg	100	108	108	70-130	
Naphthalene	ug/kg	50	53.4	107	70-130	
o-Xylene	ug/kg	50	53.5	107	70-130	
Toluene	ug/kg	50	50.9	102	70-130	
Xylene (Total)	ug/kg	150	161	107	70-130	
1,2-Dichloroethane-d4 (S)	%			98	70-130	
4-Bromofluorobenzene (S)	%			100	70-130	
Dibromofluoromethane (S)	%			96	70-130	
Toluene-d8 (S)	%			102	70-130	

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QUALITY CONTROL DATA

Project: VACANT LOT 10-2703
Pace Project No.: 9263047

QC Batch: PMST/3014 Analysis Method: ASTM D2974-87
QC Batch Method: ASTM D2974-87 Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 9263047001, 9263047002, 9263047003, 9263047004, 9263047005, 9263047006, 9263047007

SAMPLE DUPLICATE: 401090

Parameter	Units	9262587001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	24.4	24.6	1	25	

SAMPLE DUPLICATE: 401092

Parameter	Units	9263047007 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	14.6	11.5	24	25	

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QUALITY CONTROL DATA

Project: VACANT LOT 10-2703
Pace Project No.: 9263047

QC Batch: PMST/3015
QC Batch Method: ASTM D2974-87
Analysis Method: ASTM D2974-87
Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 9263047008

SAMPLE DUPLICATE: 401636

Parameter	Units	9263067001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	7.0	12.3	55	25	R1

SAMPLE DUPLICATE: 401637

Parameter	Units	9263154007 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	23.5	24.3	3	25	

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QUALIFIERS

Project: VACANT LOT 10-2703
Pace Project No.: 9263047

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

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.

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U - Indicates the compound was analyzed for, but not detected.

ANALYTE QUALIFIERS

D3	Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
M0	Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
R1	RPD value was outside control limits.

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ACCREDITED IN ACCORDANCE WITH nelac

Analytical Environmental Services, Inc.

Date: *19-Feb-10*

CLIENT: Pace Analytical Services, Inc.
Project: 9263047
Lab ID: 1002A66-001

Client Sample ID: GPS-2 0-4'
Collection Date: 2/9/2010 11:00:00 AM
Matrix: SOLID

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS SW8015C				(SW3550C)			Analyst: **TC**
TPH (Diesel Range Organics)	9.3	7.9		mg/Kg-dry	125268	1	2/17/2010 9:43 PM
Surr: Dioctylphthalate	89.2	51.4-148		%REC	125268	1	2/17/2010 9:43 PM
PERCENT MOISTURE D2216							Analyst: **AZS**
Percent Moisture	15.5	0		wt%		1	2/17/2010 4:00 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	E	Estimated (Value above quantitation range)
BRL	Below Reporting Limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See Case Narrative
N	Analyte not NELAC certified	NC	Not Confirmed
B	Analyte detected in the associated Method Blank	<	Less than Result value
>	Greater than Result value		

Analytical Environmental Services, Inc.

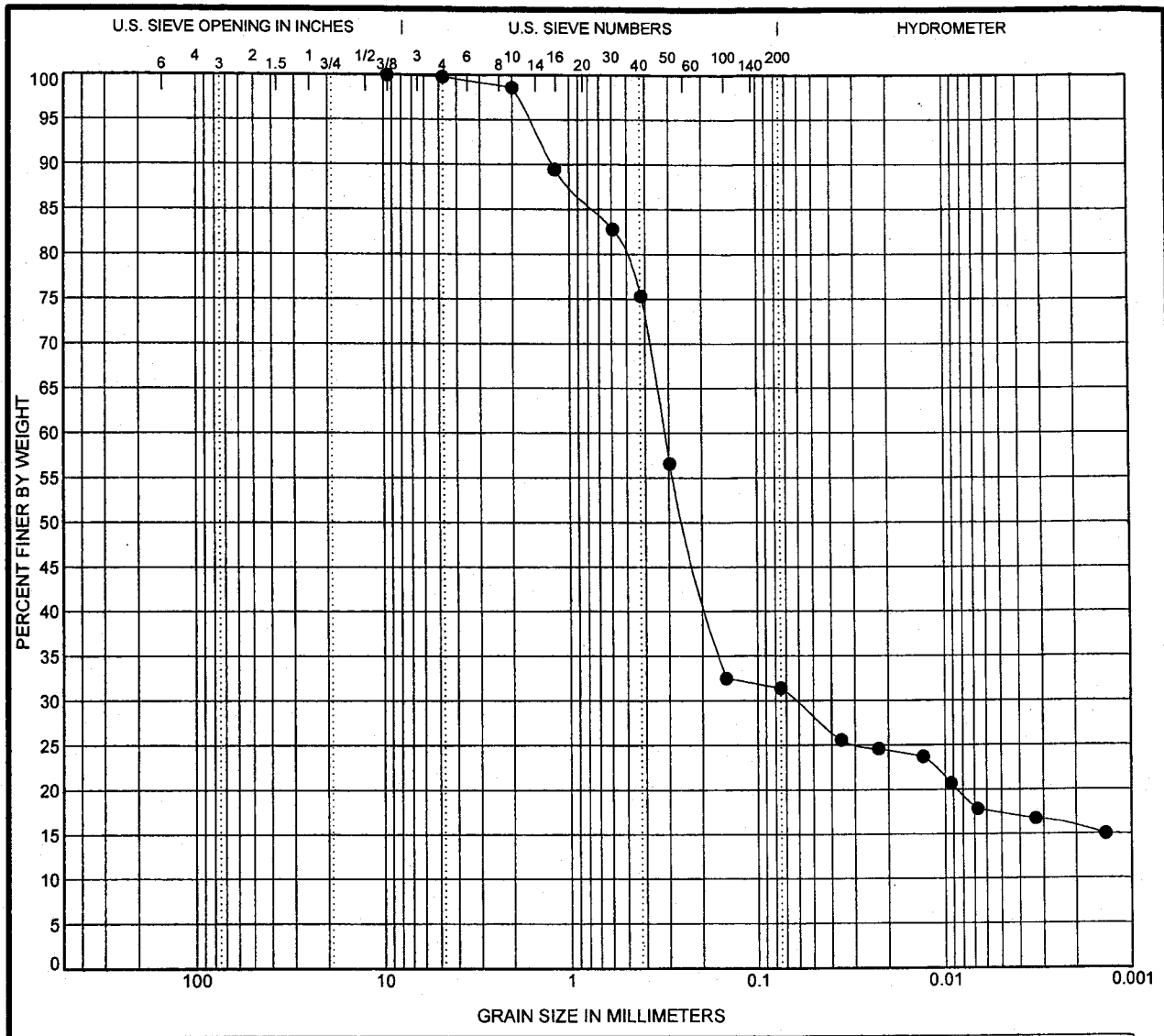
Date: *19-Feb-10*

CLIENT:	Pace Analytical Services, Inc.	**Client Sample ID:**	GPS-8/MW-4 2-4
Project:	9263047	**Collection Date:**	2/9/2010 11:00:00 AM
Lab ID:	1002A66-002	**Matrix:**	SOLID

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed
TOTAL ORGANIC CARBON SW9060A MODIFIED					**(SW9060 MODIFIED**		Analyst: **GAR**
Total Organic Carbon (TOC)	4760	500		mg/Kg-dry	125311	1	2/17/2010 2:13 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	E	Estimated (Value above quantitation range)
BRL	Below Reporting Limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See Case Narrative
N	Analyte not NELAC certified	NC	Not Confirmed
B	Analyte detected in the associated Method Blank	<	Less than Result value
>	Greater than Result value		



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Specimen Identification		Classification	LL	PL	PI	Cc	Cu
●	26	0.0	**Brown Clayey SAND**					

	Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	**26**	**0.0**	**9.52**	**0.316**	**0.063**		**0.2**	**68.4**	**14.1**	**17.3**

GRAIN SIZE DISTRIBUTION

Client: Pace Analytical
Project: Vacant lot 10-2703
Location: GPS-2 0-4' W.O. #9263047-008
Number: 451-00001-26

US_GRAIN_SIZE_PACE 2010.GPJ_PSI_CORP.GDT 2/18/10

ASI

ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis
110 Technology Parkway, Norcross, GA 30092
(770) 734-4200 FAX (770) 734-4201

Laboratory Report

Prepared For:

Pace Analytical Services Inc. - Huntersville
9800 Kincey Avenue
Huntersville, NC 28078

Attention: Ms. Renee Spencer

Report Number: ATB0454
February 17, 2010
Project: Vacant Lot 10-2703
Project #:9263047

We appreciate the opportunity to provide the analytical support for your project. The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Approved:

Elizabeth Bryant
Project Manager

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Analytical Services, Inc. certifies that the following analytical results meet all requirements of the National Environmental Laboratory Accreditation Conference(NELAC).
All test results relate only to the samples analyzed.

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Pace Analytical Services Inc. - Huntersv
9800 Kincey Avenue
Huntersville NC, 28078
Attention: Ms. Renee Spencer

February 17, 2010

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
GPS-1 0-4'/9263047001	ATB0454-01	Soil	02/09/10 11:00	02/12/10 09:40
GPS-3 0-2'/9263047002	ATB0454-02	Soil	02/09/10 11:00	02/12/10 09:40
GPS-4 0-2'/9263047003	ATB0454-03	Soil	02/09/10 11:00	02/12/10 09:40
GPS-5 0-2'/9263047004	ATB0454-04	Soil	02/09/10 11:00	02/12/10 09:40
GPS-6 0-2'/9263047005	ATB0454-05	Soil	02/09/10 11:00	02/12/10 09:40
GPS-7 0-2'/9263047006	ATB0454-06	Soil	02/09/10 11:00	02/12/10 09:40
MW-3 0-4'/9263047007	ATB0454-07	Soil	02/09/10 11:00	02/12/10 09:40
GPS-2 0-4'/9263047008	ATB0454-08	Soil	02/09/10 11:00	02/12/10 09:40

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Attention: Ms. Renee Spencer

February 17, 2010

Case Narrative

Semivolatile Organic Compound Analysis by Method 8270 (QI-02 qualifier):

Internal standard recovery for the qualified analytes was outside control limits biased low due to matrix interference.

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Pace Analytical Services Inc. - Huntersv
9800 Kincey Avenue
Huntersville NC, 28078
Attention: Ms. Renee Spencer

February 17, 2010

Report No.: ATB0454
Client ID: GPS-1 0-4'/9263047001
Date/Time Sampled: 2/9/2010 11:00:00AM
Matrix: Soil

Project: Vacant Lot 10-2703
Lab Number ID: ATB0454-01
Date/Time Received: 2/12/2010 9:40:00AM

Analyte	Result	RL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry										
% Solids	86.1	0.04	% by Weight	SOP Moisture		1	2/12/10 11:45	2/12/10 11:45	0020371	GOV
Polynuclear Aromatic Compounds by EPA 8270										
Acenaphthene	ND	380	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 21:45	0020454	RAC
Acenaphthylene	ND	380	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 21:45	0020454	RAC
Anthracene	ND	380	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 21:45	0020454	RAC
Benzo(a)anthracene	ND	380	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 21:45	0020454	RAC
Benzo(a)pyrene	ND	380	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 21:45	0020454	RAC
Benzo(b)fluoranthene	ND	380	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 21:45	0020454	RAC
Benzo(ghi)perylene	ND	380	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 21:45	0020454	RAC
Benzo(k)fluoranthene	ND	380	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 21:45	0020454	RAC
Chrysene	ND	380	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 21:45	0020454	RAC
Dibenzo(a,h)anthracene	ND	380	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 21:45	0020454	RAC
Fluoranthene	ND	380	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 21:45	0020454	RAC
Fluorene	ND	380	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 21:45	0020454	RAC
Indeno(1,2,3-cd)pyrene	ND	380	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 21:45	0020454	RAC
1-Methylnaphthalene *	ND	380	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 21:45	0020454	RAC
2-Methylnaphthalene	ND	380	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 21:45	0020454	RAC
Naphthalene	ND	380	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 21:45	0020454	RAC
Phenanthrene	ND	380	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 21:45	0020454	RAC
Pyrene	ND	380	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 21:45	0020454	RAC
Surrogate: Nitrobenzene-d5	*71 %*	*10-100*		*EPA 8270D*			*2/16/10 10:00*	*2/16/10 21:45*	*0020454*	
Surrogate: 2-Fluorobiphenyl	*78 %*	*10-102*		*EPA 8270D*			*2/16/10 10:00*	*2/16/10 21:45*	*0020454*	
Surrogate: p-Terphenyl-dl4	*74 %*	*10-114*		*EPA 8270D*			*2/16/10 10:00*	*2/16/10 21:45*	*0020454*	

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Environmental Monitoring & Laboratory Analysis
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Pace Analytical Services Inc. - Huntersv
9800 Kincey Avenue
Huntersville NC, 28078
Attention: Ms. Renee Spencer

February 17, 2010

Report No.: ATB0454
Client ID: GPS-3 0-2'/9263047002
Date/Time Sampled: 2/9/2010 11:00:00AM
Matrix: Soil

Project: Vacant Lot 10-2703
Lab Number ID: ATB0454-02
Date/Time Received: 2/12/2010 9:40:00AM

Analyte	Result	RL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry										
% Solids	85.7	0.04	% by Weight	SOP Moisture		1	2/12/10 11:45	2/12/10 11:45	0020371	GOV
Polynuclear Aromatic Compounds by EPA 8270										
Acenaphthene	ND	380	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 17:36	0020454	RAC
Acenaphthylene	ND	380	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 17:36	0020454	RAC
Anthracene	ND	380	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 17:36	0020454	RAC
Benzo(a)anthracene	ND	380	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 17:36	0020454	RAC
Benzo(a)pyrene	ND	380	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 17:36	0020454	RAC
Benzo(b)fluoranthene	ND	380	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 17:36	0020454	RAC
Benzo(ghi)perylene	ND	380	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 17:36	0020454	RAC
Benzo(k)fluoranthene	ND	380	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 17:36	0020454	RAC
Chrysene	ND	380	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 17:36	0020454	RAC
Dibenzo(a,h)anthracene	ND	380	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 17:36	0020454	RAC
Fluoranthene	ND	380	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 17:36	0020454	RAC
Fluorene	ND	380	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 17:36	0020454	RAC
Indeno(1,2,3-cd)pyrene	ND	380	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 17:36	0020454	RAC
1-Methylnaphthalene *	ND	380	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 17:36	0020454	RAC
2-Methylnaphthalene	ND	380	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 17:36	0020454	RAC
Naphthalene	ND	380	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 17:36	0020454	RAC
Phenanthrene	ND	380	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 17:36	0020454	RAC
Pyrene	ND	380	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 17:36	0020454	RAC
Surrogate: Nitrobenzene-d5	*73 %*	*10-100*		*EPA 8270D*			*2/16/10 10:00*	*2/16/10 17:36*	*0020454*	
Surrogate: 2-Fluorobiphenyl	*80 %*	*10-102*		*EPA 8270D*			*2/16/10 10:00*	*2/16/10 17:36*	*0020454*	
Surrogate: p-Terphenyl-d14	*71 %*	*10-114*		*EPA 8270D*			*2/16/10 10:00*	*2/16/10 17:36*	*0020454*	

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Pace Analytical Services Inc. - Huntersv
9800 Kincey Avenue
Huntersville NC, 28078
Attention: Ms. Renee Spencer

February 17, 2010

Report No.: ATB0454
Client ID: GPS-4 0-2'/9263047003
Date/Time Sampled: 2/9/2010 11:00:00AM
Matrix: Soil

Project: Vacant Lot 10-2703
Lab Number ID: ATB0454-03
Date/Time Received: 2/12/2010 9:40:00AM

Analyte	Result	RL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry										
% Solids	86.3	0.04	% by Weight	SOP Moisture		1	2/12/10 11:45	2/12/10 11:45	0020371	GOV
Polynuclear Aromatic Compounds by EPA 8270										
Acenaphthene	ND	380	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 17:59	0020454	RAC
Acenaphthylene	ND	380	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 17:59	0020454	RAC
Anthracene	ND	380	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 17:59	0020454	RAC
Benzo(a)anthracene	ND	380	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 17:59	0020454	RAC
Benzo(a)pyrene	ND	380	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 17:59	0020454	RAC
Benzo(b)fluoranthene	ND	380	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 17:59	0020454	RAC
Benzo(ghi)perylene	ND	380	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 17:59	0020454	RAC
Benzo(k)fluoranthene	ND	380	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 17:59	0020454	RAC
Chrysene	ND	380	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 17:59	0020454	RAC
Dibenzo(a,h)anthracene	ND	380	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 17:59	0020454	RAC
Fluoranthene	ND	380	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 17:59	0020454	RAC
Fluorene	ND	380	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 17:59	0020454	RAC
Indeno(1,2,3-cd)pyrene	ND	380	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 17:59	0020454	RAC
1-Methylnaphthalene *	ND	380	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 17:59	0020454	RAC
2-Methylnaphthalene	ND	380	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 17:59	0020454	RAC
Naphthalene	ND	380	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 17:59	0020454	RAC
Phenanthrene	ND	380	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 17:59	0020454	RAC
Pyrene	ND	380	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 17:59	0020454	RAC
Surrogate: Nitrobenzene-d5	*64 %*	*10-100*		*EPA 8270D*			*2/16/10 10:00*	*2/16/10 17:59*	*0020454*	
Surrogate: 2-Fluorobiphenyl	*68 %*	*10-102*		*EPA 8270D*			*2/16/10 10:00*	*2/16/10 17:59*	*0020454*	
Surrogate: p-Terphenyl-dl4	*70 %*	*10-114*		*EPA 8270D*			*2/16/10 10:00*	*2/16/10 17:59*	*0020454*	

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Pace Analytical Services Inc. - Huntersv
9800 Kincey Avenue
Huntersville NC, 28078
Attention: Ms. Renee Spencer

February 17, 2010

Report No.: ATB0454
Client ID: GPS-5 0-2'/9263047004
Date/Time Sampled: 2/9/2010 11:00:00AM
Matrix: Soil

Project: Vacant Lot 10-2703
Lab Number ID: ATB0454-04
Date/Time Received: 2/12/2010 9:40:00AM

Analyte	Result	RL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry										
% Solids	83.9	0.04	% by Weight	SOP Moisture		1	2/12/10 11:45	2/12/10 11:45	0020371	GOV
Polynuclear Aromatic Compounds by EPA 8270										
Acenaphthene	ND	390	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 18:21	0020454	RAC
Acenaphthylene	ND	390	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 18:21	0020454	RAC
Anthracene	ND	390	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 18:21	0020454	RAC
Benzo(a)anthracene	ND	390	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 18:21	0020454	RAC
Benzo(a)pyrene	ND	390	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 18:21	0020454	RAC
Benzo(b)fluoranthene	ND	390	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 18:21	0020454	RAC
Benzo(ghi)perylene	ND	390	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 18:21	0020454	RAC
Benzo(k)fluoranthene	ND	390	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 18:21	0020454	RAC
Chrysene	ND	390	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 18:21	0020454	RAC
Dibenzo(a,h)anthracene	ND	390	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 18:21	0020454	RAC
Fluoranthene	ND	390	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 18:21	0020454	RAC
Fluorene	ND	390	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 18:21	0020454	RAC
Indeno(1,2,3-cd)pyrene	ND	390	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 18:21	0020454	RAC
1-Methylnaphthalene *	ND	390	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 18:21	0020454	RAC
2-Methylnaphthalene	ND	390	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 18:21	0020454	RAC
Naphthalene	ND	390	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 18:21	0020454	RAC
Phenanthrene	ND	390	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 18:21	0020454	RAC
Pyrene	ND	390	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 18:21	0020454	RAC
Surrogate: Nitrobenzene-d5	*63 %*	*10-100*		*EPA 8270D*			*2/16/10 10:00*	*2/16/10 18:21*	*0020454*	
Surrogate: 2-Fluorobiphenyl	*59 %*	*10-102*		*EPA 8270D*			*2/16/10 10:00*	*2/16/10 18:21*	*0020454*	
Surrogate: p-Terphenyl-dl4	*66 %*	*10-114*		*EPA 8270D*			*2/16/10 10:00*	*2/16/10 18:21*	*0020454*	

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Pace Analytical Services Inc. - Huntersv
9800 Kincey Avenue
Huntersville NC, 28078
Attention: Ms. Renee Spencer

February 17, 2010

Report No.: ATB0454
Client ID: GPS-6 0-2'/9263047005
Date/Time Sampled: 2/9/2010 11:00:00AM
Matrix: Soil

Project: Vacant Lot 10-2703
Lab Number ID: ATB0454-05
Date/Time Received: 2/12/2010 9:40:00AM

Analyte	Result	RL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry										
% Solids	84.3	0.04	% by Weight	SOP Moisture		1	2/12/10 11:45	2/12/10 11:45	0020371	GOV
Polynuclear Aromatic Compounds by EPA 8270										
Acenaphthene	ND	390	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 18:44	0020454	RAC
Acenaphthylene	ND	390	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 18:44	0020454	RAC
Anthracene	ND	390	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 18:44	0020454	RAC
Benzo(a)anthracene	ND	390	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 18:44	0020454	RAC
Benzo(a)pyrene	ND	390	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 18:44	0020454	RAC
Benzo(b)fluoranthene	ND	390	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 18:44	0020454	RAC
Benzo(ghi)perylene	ND	390	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 18:44	0020454	RAC
Benzo(k)fluoranthene	ND	390	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 18:44	0020454	RAC
Chrysene	ND	390	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 18:44	0020454	RAC
Dibenzo(a,h)anthracene	ND	390	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 18:44	0020454	RAC
Fluoranthene	ND	390	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 18:44	0020454	RAC
Fluorene	ND	390	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 18:44	0020454	RAC
Indeno(1,2,3-cd)pyrene	ND	390	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 18:44	0020454	RAC
1-Methylnaphthalene *	ND	390	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 18:44	0020454	RAC
2-Methylnaphthalene	ND	390	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 18:44	0020454	RAC
Naphthalene	ND	390	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 18:44	0020454	RAC
Phenanthrene	ND	390	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 18:44	0020454	RAC
Pyrene	ND	390	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 18:44	0020454	RAC
Surrogate: Nitrobenzene-d5	*74 %*	*10-100*		*EPA 8270D*			*2/16/10 10:00*	*2/16/10 18:44*	*0020454*	
Surrogate: 2-Fluorobiphenyl	*81 %*	*10-102*		*EPA 8270D*			*2/16/10 10:00*	*2/16/10 18:44*	*0020454*	
Surrogate: p-Terphenyl-dl4	*64 %*	*10-114*		*EPA 8270D*			*2/16/10 10:00*	*2/16/10 18:44*	*0020454*	

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Environmental Monitoring & Laboratory Analysis
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(770) 734-4200 FAX (770) 734-4201

Pace Analytical Services Inc. - Huntersv
9800 Kincey Avenue
Huntersville NC, 28078
Attention: Ms. Renee Spencer

February 17, 2010

Report No.: ATB0454
Client ID: GPS-7 0-2'/9263047006
Date/Time Sampled: 2/9/2010 11:00:00AM
Matrix: Soil

Project: Vacant Lot 10-2703
Lab Number ID: ATB0454-06
Date/Time Received: 2/12/2010 9:40:00AM

Analyte	Result	RL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry										
% Solids	86.3	0.04	% by Weight	SOP Moisture		1	2/12/10 11:45	2/12/10 11:45	0020371	GOV
Polynuclear Aromatic Compounds by EPA 8270										
Acenaphthene	ND	380	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 22:07	0020454	RAC
Acenaphthylene	ND	380	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 22:07	0020454	RAC
Anthracene	ND	380	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 22:07	0020454	RAC
Benzo(a)anthracene	ND	380	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 22:07	0020454	RAC
Benzo(a)pyrene	ND	380	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 22:07	0020454	RAC
Benzo(b)fluoranthene	ND	380	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 22:07	0020454	RAC
Benzo(ghi)perylene	ND	380	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 22:07	0020454	RAC
Benzo(k)fluoranthene	ND	380	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 22:07	0020454	RAC
Chrysene	ND	380	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 22:07	0020454	RAC
Dibenzo(a,h)anthracene	ND	380	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 22:07	0020454	RAC
Fluoranthene	ND	380	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 22:07	0020454	RAC
Fluorene	ND	380	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 22:07	0020454	RAC
Indeno(1,2,3-cd)pyrene	ND	380	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 22:07	0020454	RAC
1-Methylnaphthalene *	ND	380	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 22:07	0020454	RAC
2-Methylnaphthalene	ND	380	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 22:07	0020454	RAC
Naphthalene	ND	380	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 22:07	0020454	RAC
Phenanthrene	ND	380	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 22:07	0020454	RAC
Pyrene	ND	380	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 22:07	0020454	RAC
Surrogate: Nitrobenzene-d5	*51 %*	*10-100*		*EPA 8270D*			*2/16/10 10:00*	*2/16/10 22:07*	*0020454*	
Surrogate: 2-Fluorobiphenyl	*52 %*	*10-102*		*EPA 8270D*			*2/16/10 10:00*	*2/16/10 22:07*	*0020454*	
Surrogate: p-Terphenyl-dl4	*44 %*	*10-114*		*EPA 8270D*			*2/16/10 10:00*	*2/16/10 22:07*	*0020454*	

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9800 Kincey Avenue
Huntersville NC, 28078
Attention: Ms. Renee Spencer

February 17, 2010

Report No.: ATB0454
Client ID: MW-3 0-4'/9263047007
Date/Time Sampled: 2/9/2010 11:00:00AM
Matrix: Soil

Project: Vacant Lot 10-2703
Lab Number ID: ATB0454-07
Date/Time Received: 2/12/2010 9:40:00AM

Analyte	Result	RL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry										
% Solids	85.1	0.04	% by Weight	SOP Moisture		1	2/12/10 11:45	2/12/10 11:45	0020371	GOV
Polynuclear Aromatic Compounds by EPA 8270										
Acenaphthene	ND	390	ug/kg dry	EPA 8270D	QI-02	1	2/16/10 10:00	2/16/10 22:30	0020454	RAC
Acenaphthylene	ND	390	ug/kg dry	EPA 8270D	QI-02	1	2/16/10 10:00	2/16/10 22:30	0020454	RAC
Anthracene	ND	390	ug/kg dry	EPA 8270D	QI-02	1	2/16/10 10:00	2/16/10 22:30	0020454	RAC
Benzo(a)anthracene	ND	390	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 22:30	0020454	RAC
Benzo(a)pyrene	ND	390	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 22:30	0020454	RAC
Benzo(b)fluoranthene	ND	390	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 22:30	0020454	RAC
Benzo(ghi)perylene	ND	390	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 22:30	0020454	RAC
Benzo(k)fluoranthene	ND	390	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 22:30	0020454	RAC
Chrysene	ND	390	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 22:30	0020454	RAC
Dibenzo(a,h)anthracene	ND	390	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 22:30	0020454	RAC
Fluoranthene	480	390	ug/kg dry	EPA 8270D	QI-02	1	2/16/10 10:00	2/16/10 22:30	0020454	RAC
Fluorene	ND	390	ug/kg dry	EPA 8270D	QI-02	1	2/16/10 10:00	2/16/10 22:30	0020454	RAC
Indeno(1,2,3-cd)pyrene	ND	390	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 22:30	0020454	RAC
1-Methylnaphthalene *	ND	390	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 22:30	0020454	RAC
2-Methylnaphthalene	ND	390	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 22:30	0020454	RAC
Naphthalene	ND	390	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 22:30	0020454	RAC
Phenanthrene	ND	390	ug/kg dry	EPA 8270D	QI-02	1	2/16/10 10:00	2/16/10 22:30	0020454	RAC
Pyrene	ND	390	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 22:30	0020454	RAC
Surrogate: Nitrobenzene-d5	*68 %*	*10-100*		*EPA 8270D*			*2/16/10 10:00*	*2/16/10 22:30*	*0020454*	
Surrogate: 2-Fluorobiphenyl	*77 %*	*10-102*		*EPA 8270D*			*2/16/10 10:00*	*2/16/10 22:30*	*0020454*	
Surrogate: p-Terphenyl-dl4	*76 %*	*10-114*		*EPA 8270D*			*2/16/10 10:00*	*2/16/10 22:30*	*0020454*	

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9800 Kincey Avenue
Huntersville NC, 28078
Attention: Ms. Renee Spencer

February 17, 2010

Report No.: ATB0454
Client ID: GPS-2 0-4'/9263047008
Date/Time Sampled: 2/9/2010 11:00:00AM
Matrix: Soil

Project: Vacant Lot 10-2703
Lab Number ID: ATB0454-08
Date/Time Received: 2/12/2010 9:40:00AM

Analyte	Result	RL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry										
% Solids	83.9	0.04	% by Weight	SOP Moisture		1	2/12/10 11:45	2/12/10 11:45	0020371	GOV
Polynuclear Aromatic Compounds by EPA 8270										
Acenaphthene	ND	390	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 19:07	0020454	RAC
Acenaphthylene	ND	390	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 19:07	0020454	RAC
Anthracene	ND	390	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 19:07	0020454	RAC
Benzo(a)anthracene	ND	390	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 19:07	0020454	RAC
Benzo(a)pyrene	ND	390	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 19:07	0020454	RAC
Benzo(b)fluoranthene	ND	390	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 19:07	0020454	RAC
Benzo(ghi)perylene	ND	390	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 19:07	0020454	RAC
Benzo(k)fluoranthene	ND	390	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 19:07	0020454	RAC
Chrysene	ND	390	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 19:07	0020454	RAC
Dibenzo(a,h)anthracene	ND	390	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 19:07	0020454	RAC
Fluoranthene	ND	390	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 19:07	0020454	RAC
Fluorene	ND	390	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 19:07	0020454	RAC
Indeno(1,2,3-cd)pyrene	ND	390	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 19:07	0020454	RAC
1-Methylnaphthalene *	ND	390	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 19:07	0020454	RAC
2-Methylnaphthalene	ND	390	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 19:07	0020454	RAC
Naphthalene	ND	390	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 19:07	0020454	RAC
Phenanthrene	ND	390	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 19:07	0020454	RAC
Pyrene	ND	390	ug/kg dry	EPA 8270D		1	2/16/10 10:00	2/16/10 19:07	0020454	RAC
Surrogate: Nitrobenzene-d5	*65 %*	*10-100*		*EPA 8270D*			*2/16/10 10:00*	*2/16/10 19:07*	*0020454*	
Surrogate: 2-Fluorobiphenyl	*67 %*	*10-102*		*EPA 8270D*			*2/16/10 10:00*	*2/16/10 19:07*	*0020454*	
Surrogate: p-Terphenyl-dl4	*78 %*	*10-114*		*EPA 8270D*			*2/16/10 10:00*	*2/16/10 19:07*	*0020454*	

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9800 Kincey Avenue
Huntersville NC, 28078
Attention: Ms. Renee Spencer

February 17, 2010

Report No.: ATB0454

General Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 0020371 - % Solids										
Duplicate (0020371-DUP1)		**Source: ATB0454-08**			Prepared & Analyzed: 02/12/10					
% Solids	84.2	0.04	% by Weight		83.9			0.4	12	

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Attention: Ms. Renee Spencer

February 17, 2010

Report No.: ATB0454

Polynuclear Aromatic Compounds by EPA 8270 - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 0020454 - EPA 3550B										
Blank (0020454-BLK1)						Prepared & Analyzed: 02/16/10				
Acenaphthene	ND	330	ug/kg wet							
Acenaphthylene	ND	330	ug/kg wet							
Anthracene	ND	330	ug/kg wet							
Benzo(a)anthracene	ND	330	ug/kg wet							
Benzo(a)pyrene	ND	330	ug/kg wet							
Benzo(b)fluoranthene	ND	330	ug/kg wet							
Benzo(ghi)perylene	ND	330	ug/kg wet							
Benzo(k)fluoranthene	ND	330	ug/kg wet							
Chrysene	ND	330	ug/kg wet							
Dibenzo(a,h)anthracene	ND	330	ug/kg wet							
Fluoranthene	ND	330	ug/kg wet							
Fluorene	ND	330	ug/kg wet							
Indeno(1,2,3-cd)pyrene	ND	330	ug/kg wet							
1-Methylnaphthalene	ND	330	ug/kg wet							
2-Methylnaphthalene	ND	330	ug/kg wet							
Naphthalene	ND	330	ug/kg wet							
Phenanthrene	ND	330	ug/kg wet							
Pyrene	ND	330	ug/kg wet							
Surrogate: Nitrobenzene-d5	*1100*		*ug/kg wet*	*1666.1*		*66*	*10-100*			
Surrogate: 2-Fluorobiphenyl	*1219*		*ug/kg wet*	*1666.1*		*73*	*10-102*			
Surrogate: p-Terphenyl-dl4	*1343*		*ug/kg wet*	*1666.1*		*81*	*10-114*			
LCS (0020454-BS1)						Prepared & Analyzed: 02/16/10				
Acenaphthene	1500	330	ug/kg wet	1664.4		92	29-105			
1,4-Dichlorobenzene	1200	330	ug/kg wet	1664.4		72	24-89			
2,4-Dinitrotoluene	1700	660	ug/kg wet	1664.4		100	34-103			
N-Nitrosodi-n-propylamine	1500	330	ug/kg wet	1664.4		93	23-97			
Pyrene	1900	330	ug/kg wet	1664.4		113	34-134			
1,2,4-Trichlorobenzene	1200	330	ug/kg wet	1664.4		73	22-97			
Surrogate: Nitrobenzene-d5	*1073*		*ug/kg wet*	*1664.4*		*64*	*10-100*			
Surrogate: 2-Fluorobiphenyl	*1190*		*ug/kg wet*	*1664.4*		*71*	*10-102*			
Surrogate: p-Terphenyl-dl4	*1452*		*ug/kg wet*	*1664.4*		*87*	*10-114*			

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Attention: Ms. Renee Spencer

February 17, 2010

Report No.: ATB0454

Polynuclear Aromatic Compounds by EPA 8270 - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 0020454 - EPA 3550B										
Matrix Spike (0020454-MS1)	**Source: ATB0454-01**				Prepared & Analyzed: 02/16/10					
Acenaphthene	1800	380	ug/kg dry	1935.2	ND	93	31-105			
1,4-Dichlorobenzene	1300	380	ug/kg dry	1935.2	ND	69	24-85			
2,4-Dinitrotoluene	1700	770	ug/kg dry	1935.2	ND	89	23-111			
N-Nitrosodi-n-propylamine	1700	380	ug/kg dry	1935.2	ND	89	26-92			
Pyrene	2000	380	ug/kg dry	1935.2	ND	104	43-120			
1,2,4-Trichlorobenzene	1400	380	ug/kg dry	1935.2	ND	73	24-93			
Surrogate: Nitrobenzene-d5	*1318*		*ug/kg dry*	*1935.2*		*68*	*10-100*			
Surrogate: 2-Fluorobiphenyl	*1502*		*ug/kg dry*	*1935.2*		*78*	*10-102*			
Surrogate: p-Terphenyl-dl4	*1360*		*ug/kg dry*	*1935.2*		*70*	*10-114*			
Matrix Spike Dup (0020454-MSD1)	**Source: ATB0454-01**				Prepared & Analyzed: 02/16/10					
Acenaphthene	1700	380	ug/kg dry	1935.8	ND	88	31-105	5	45	
1,4-Dichlorobenzene	1200	380	ug/kg dry	1935.8	ND	62	24-85	11	46	
2,4-Dinitrotoluene	1900	770	ug/kg dry	1935.8	ND	96	23-111	8	53	
N-Nitrosodi-n-propylamine	1400	380	ug/kg dry	1935.8	ND	74	26-92	19	69	
Pyrene	2000	380	ug/kg dry	1935.8	ND	101	43-120	3	45	
1,2,4-Trichlorobenzene	1300	380	ug/kg dry	1935.8	ND	65	24-93	11	51	
Surrogate: Nitrobenzene-d5	*769.7*		*ug/kg dry*	*1935.8*		*40*	*10-100*			
Surrogate: 2-Fluorobiphenyl	*1040*		*ug/kg dry*	*1935.8*		*54*	*10-102*			
Surrogate: p-Terphenyl-dl4	*1470*		*ug/kg dry*	*1935.8*		*76*	*10-114*			

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Attention: Ms. Renee Spencer

February 17, 2010

Laboratory Certifications

Code	Description	Number	Expires
NELAC	NELAC (Drinking Water, Non-Potable Water, Solids)	E87315	06/30/2010
SC	South Carolina	98011001	06/30/2010

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February 17, 2010

Legend

Definition of Laboratory Terms

ND - None Detected at the Reporting Limit
TIC - Tentatively Identified Compound
CFU - Colony Forming Units
SOP - Method run per ASI Standard Operating Procedure
RL - Reporting Limit
DF - Dilution Factor
***** - Analyte not included in the NELAC list of certified analytes.

Sample Information

N-Nitrosodiphenylamine breaks down to diphenylamine in the GCMS; both analytes are reported as N-Nitrososdiphenylamine. ASI is not NELAC certified for diphenylamine.

Phthalic acid and phthalic anhydride are reported as dimethyl phthalate

Maleic acid and maleic anhydride are reported as dimethyl malate

1,2-Diphenylhydrazine breaks down to azobenzene in the GCMS; both analytes are reported as azobenzene

Definition of Qualifiers

QI-02 Internal standards for this sample were out of control due to suspected matrix interference. See Case Narrative.

Note: Unless otherwise noted, all results are reported on an as received basis.

ANALYTICAL SERVICES, INC.

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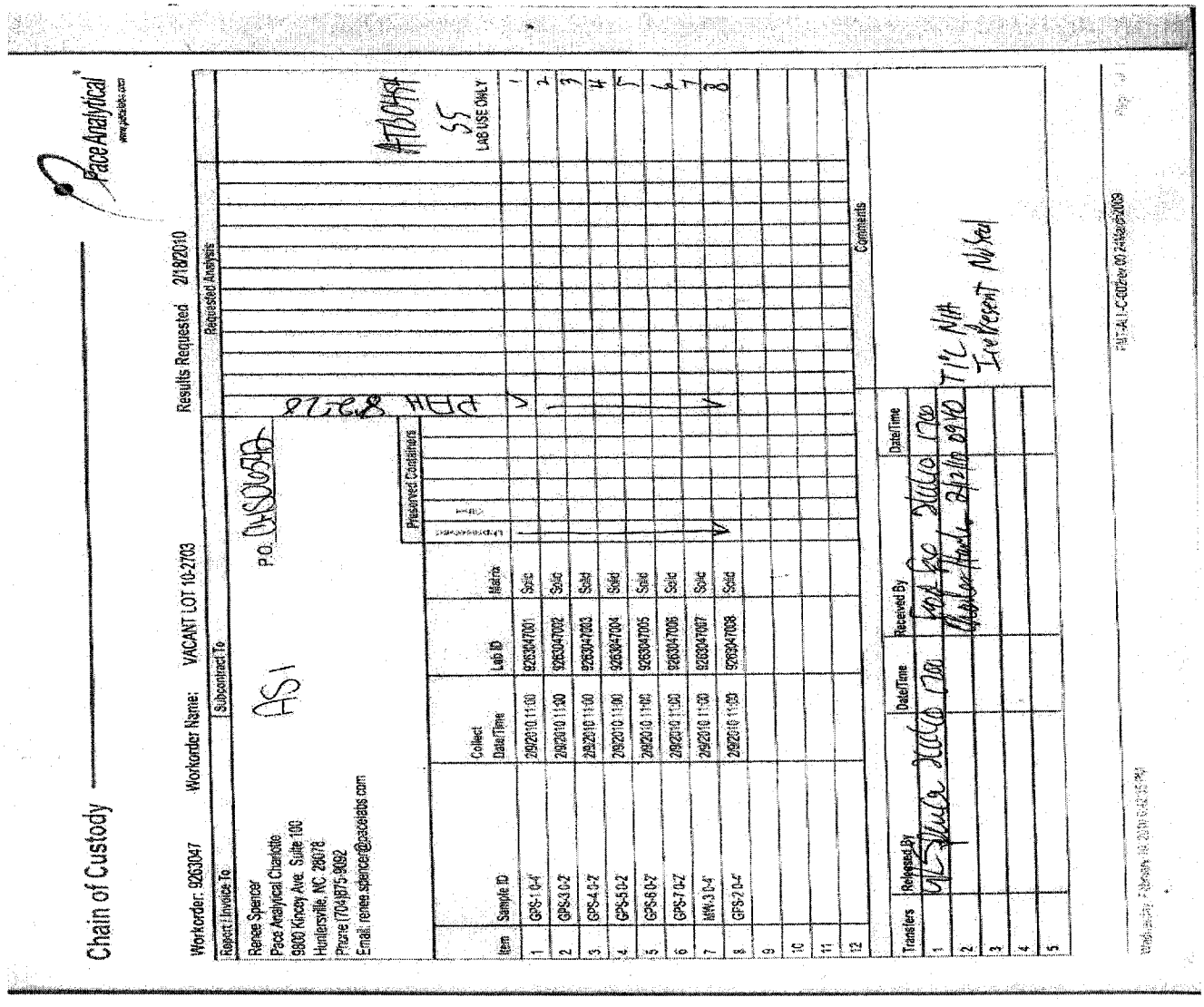
February 17, 2010



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ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis
110 Technology Parkway, Norcross, GA 30092
(770) 734-4200 FAX (770) 734-4201

LOG-IN CHECKLIST

Printed: 2/17/2010 3:36:55PM

Attn: Ms. Renee Spencer

Client: Pace Analytical Services Inc. - Huntersville
Project: Vacant Lot 10-2703
Date Received: 02/12/10 09:40

Work Order: ATB0454
Logged In By: Charles Hawks

OBSERVATIONS

#Samples: 8 **#Containers:** 8

Minimum Temp(C): 1.0 **Maximum Temp(C):** 1.0 **Custody Seal(s) Used:** No

CHECKLIST ITEMS

COC included with Samples	YES
Sample Container(s) Intact	YES
Chain of Custody Complete	YES
Sample Container(s) Match COC	YES
Custody seal Intact	NO
Temperature in Compliance	YES
Sufficient Sample Volume for Analysis	YES
Zero Headspace Maintained for VOA Analyses	YES
Samples labeled preserved (If Applicable)	YES
Samples received within Allowable Hold Times	YES
Samples Received on Ice	YES
Preservation Confirmed	YES

Comments:

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: | of | 1353366

Section A Required Client Information:

Company: MECI
Address: 235 B Dooley Rd Lexington, SC 29073
Email To:
Phone: 808-2043 Fax:
Requested Due Date/TAT:

Section B Required Project Information:

Report To: B Shane
Copy To:
Purchase Order No.:
Project Name: Vacant Lot
Project Number: 10-2703

Section C Invoice Information:

Attention:
Company Name:
Address:
Pace Quote Reference:
Pace Project Manager: B Spencer
Pace Profile #: 836-2

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☒ UST ☐ RCRA ☐ OTHER

Site Location STATE: SC Orangeburg

Requested Analysis Filtered (Y/N)

ITEM #	Section D Required Client Information — SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED: COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	Hex, napth	BTEX	TPH	TOC	Grain Size / Hydro	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D. 9263047
1	GPS-1 0-4'	SL	G			2/9	1100												X	X						001
2	GPS-2 0-4'																				X	X				008
3	GPS-3 0-2'																									002
4	GPS-4 0-2'																									003
5	GPS-5 0-2'																									004
6	GPS-6 0-2'																									005
7	GPS-7 0-2'																		X	X						006
8	GPS-8/MW-4 2-4'																						X			009
9	MW-3 0-4'	SL	G			2/9	1100												X	X						007
10																										
11																										
12																										

Matrix Codes (MATRIX / CODE): Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Tissue TS; Other OT

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
Report J values	[signature] MECI	2/9/10	1430	B Moody - Pace	2-10-10	10:50				
Grain Size in plastic bag	B Moody	2-10-10	17:25	Kendall Cook Pace	2/10/10	1725	1.9	Y	N	Y

ORIGINAL

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: John Womack
SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 2/9/10

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

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Huntersville, NC 28078
(704)875-9092

February 23, 2010

Mr. Bryan Shane
Midlands Environmental
PO Box 854
Lexington, SC 29071

RE: Project: Vacant Lot 10-2703
Pace Project No.: 9263244

Dear Mr. Shane:
Enclosed are the analytical results for sample(s) received by the laboratory on February 13, 2010. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

Inorganic Wet Chemistry and Metals analyses were performed at our Pace Asheville laboratory and Organic testing was performed at our Pace Huntersville laboratory unless otherwise footnoted. All Microbiological analyses were performed at the laboratory where the samples were received.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Renee Spencer

Renee Spencer

renee.spencer@pacelabs.com
Project Manager

Enclosures

REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Vacant Lot 10-2703
Pace Project No.: 9263244

Minnesota Certification IDs
Washington Certification #: C754
Alaska Certification #: UST-078
1700 Elm Street SE, Suite 200 Minneapolis, MN 55414
Tennessee Certification #: 02818
Pennsylvania Certification #: 68-00563
Oregon Certification #: MN200001
North Dakota Certification #: R-036
North Carolina Certification #: 530
New York Certification #: 11647
New Jersey Certification #: MN-002
Montana Certification #: MT CERT0092
Minnesota Certification #: 027-053-137
Michigan DEQ Certification #: 9909
Maine Certification #: 2007029
Louisiana Certification #: 03086
Louisiana Certification #: LA080009
Kansas Certification #: E-10167
Iowa Certification #: 368
Illinois Certification #: 200011
Florida/NELAP Certification #: E87605
California Certification #: 01155CA
Arizona Certification #: AZ-0014
Wisconsin Certification #: 999407970

Charlotte Certification IDs
Virginia Certification #: 00213
West Virginia Certification #: 357
9800 Kincey Ave. - Ste 100 Huntersville, NC 28078
Tennessee Certification #: 04010
Connecticut Certification #: PH-0104
Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
Louisiana/LELAP Certification #: 04034
New Jersey Certification #: NC012
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12
Pennsylvania Certification #: 68-00784
South Carolina Certification #: 990060001
South Carolina Drinking Water Cert. #: 990060003

Asheville Certification IDs
Florida/NELAP Certification #: E87648
Louisiana/LELAP Certification #: 03095
2225 Riverside Dr. Asheville, NC 28804
Massachusetts Certification #: M-NC030
New Jersey Certification #: NC011
North Carolina Bioassay Certification #: 9
North Carolina Drinking Water Certification #: 37712
North Carolina Wastewater Certification #: 40
Pennsylvania Certification #: 68-03578
South Carolina Bioassay Certification #: 99030002
South Carolina Certification #: 99030001
Tennessee Certification #: 2980
Virginia Certification #: 00072
West Virginia Certification #: 356
Connecticut Certification #: PH-0106

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SAMPLE SUMMARY

Project: Vacant Lot 10-2703
Pace Project No.: 9263244

Lab ID	Sample ID	Matrix	Date Collected	Date Received
9263244001	**MW-1**	Water	02/12/10 09:30	02/13/10 09:00
9263244002	**MW-2**	Water	02/12/10 09:50	02/13/10 09:00
9263244003	**MW-3**	Water	02/12/10 10:45	02/13/10 09:00
9263244004	**MW-4**	Water	02/12/10 10:15	02/13/10 09:00

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SAMPLE ANALYTE COUNT

Project: Vacant Lot 10-2703
Pace Project No.: 9263244

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
9263244001	**MW-1**	EPA 8011	RES	2	PASI-C
		EPA 6010	EWS	1	PASI-A
		EPA 8260	MCK	12	PASI-C
9263244002	**MW-2**	RSK 175	CR1	1	PASI-M
		EPA 8011	RES	2	PASI-C
		EPA 6010	EWS	1	PASI-A
		EPA 6010	EWS	1	PASI-A
		EPA 8260	MCK	21	PASI-C
		EPA 353.2	JDA	1	PASI-A
9263244003	**MW-3**	RSK 175	CR1	1	PASI-M
		EPA 8011	RES	2	PASI-C
		EPA 6010	EWS	1	PASI-A
		EPA 6010	EWS	1	PASI-A
		EPA 8260	MCK	21	PASI-C
		EPA 353.2	JDA	1	PASI-A
9263244004	**MW-4**	RSK 175	CR1	1	PASI-M
		EPA 8011	CAH	2	PASI-C
		EPA 6010	EWS	1	PASI-A
		EPA 6010	EWS	1	PASI-A
		EPA 8260	MCK	21	PASI-C
		EPA 353.2	JDA	1	PASI-A

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ANALYTICAL RESULTS

Project: Vacant Lot 10-2703
Pace Project No.: 9263244

Sample: MW-1 **Lab ID: 9263244001** Collected: 02/12/10 09:30 Received: 02/13/10 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	02/15/10 00:00	02/16/10 00:42	106-93-4	
1-Chloro-2-bromopropane (S)	99	%	60-140		1	02/15/10 00:00	02/16/10 00:42	301-79-56	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Lead	**6.2**	ug/L	5.0	4.0	1	02/16/10 16:26	02/18/10 16:26	7439-92-1	
8260 MSV	Analytical Method: EPA 8260								
Benzene	ND	ug/L	5.0	1.2	1		02/16/10 11:00	71-43-2	
Ethylbenzene	**2.7J**	ug/L	5.0	1.1	1		02/16/10 11:00	100-41-4	
Methyl-tert-butyl ether	**19.5**	ug/L	5.0	2.0	1		02/16/10 11:00	1634-04-4	
Naphthalene	**16.2**	ug/L	5.0	2.9	1		02/16/10 11:00	91-20-3	
Toluene	ND	ug/L	5.0	1.8	1		02/16/10 11:00	108-88-3	
Xylene (Total)	ND	ug/L	10.0	2.7	1		02/16/10 11:00	1330-20-7	
m&p-Xylene	ND	ug/L	10.0	2.7	1		02/16/10 11:00	1330-20-7	
o-Xylene	ND	ug/L	5.0	1.7	1		02/16/10 11:00	95-47-6	
4-Bromofluorobenzene (S)	103	%	70-130		1		02/16/10 11:00	460-00-4	
Dibromofluoromethane (S)	100	%	70-130		1		02/16/10 11:00	1868-53-7	
1,2-Dichloroethane-d4 (S)	102	%	70-130		1		02/16/10 11:00	17060-07-0	
Toluene-d8 (S)	102	%	70-130		1		02/16/10 11:00	2037-26-5	

Sample: MW-2 **Lab ID: 9263244002** Collected: 02/12/10 09:50 Received: 02/13/10 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Methane	**345**	ug/L	10.0	5.0	1		02/17/10 15:40	74-82-8	
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.019	0.019	1	02/15/10 00:00	02/16/10 01:02	106-93-4	
1-Chloro-2-bromopropane (S)	95	%	60-140		1	02/15/10 00:00	02/16/10 01:02	301-79-56	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Lead	**160**	ug/L	5.0	4.0	1	02/16/10 16:26	02/18/10 16:30	7439-92-1	
6010 MET ICP, Lab Filtered	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Lead, Dissolved	ND	ug/L	5.0	4.0	1	02/18/10 10:59	02/19/10 16:47	7439-92-1	
8260 MSV Oxygenates	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	100	62.0	1		02/17/10 12:06	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	4.5	1		02/17/10 12:06	994-05-8	
Benzene	ND	ug/L	5.0	1.2	1		02/17/10 12:06	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	48.0	1		02/17/10 12:06	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	27.0	1		02/17/10 12:06	75-65-0	

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ANALYTICAL RESULTS

Project: Vacant Lot 10-2703
Pace Project No.: 9263244

Sample: MW-2 **Lab ID: 9263244002** Collected: 02/12/10 09:50 Received: 02/13/10 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Oxygenates	Analytical Method: EPA 8260								
tert-Butyl Formate	ND	ug/L	50.0	9.0	1		02/17/10 12:06	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.3	1		02/17/10 12:06	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	2.7	1		02/17/10 12:06	108-20-3	
Ethanol	ND	ug/L	200	170	1		02/17/10 12:06	64-17-5	
Ethylbenzene	**1.1J**	ug/L	5.0	1.1	1		02/17/10 12:06	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	4.6	1		02/17/10 12:06	637-92-3	
Methyl-tert-butyl ether	**13.4**	ug/L	5.0	2.0	1		02/17/10 12:06	1634-04-4	
Naphthalene	**13.0**	ug/L	5.0	2.9	1		02/17/10 12:06	91-20-3	
Toluene	**1.8J**	ug/L	5.0	1.8	1		02/17/10 12:06	108-88-3	
Xylene (Total)	ND	ug/L	10.0	2.7	1		02/17/10 12:06	1330-20-7	
m&p-Xylene	ND	ug/L	10.0	2.7	1		02/17/10 12:06	1330-20-7	
o-Xylene	ND	ug/L	5.0	1.7	1		02/17/10 12:06	95-47-6	
Dibromofluoromethane (S)	101	%	70-130		1		02/17/10 12:06	1868-53-7	
Toluene-d8 (S)	103	%	70-130		1		02/17/10 12:06	2037-26-5	
4-Bromofluorobenzene (S)	106	%	70-130		1		02/17/10 12:06	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	70-130		1		02/17/10 12:06	17060-07-0	
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
Nitrogen, Nitrate	**0.15**	mg/L	0.10	0.10	1		02/14/10 09:46		

Sample: MW-3 **Lab ID: 9263244003** Collected: 02/12/10 10:45 Received: 02/13/10 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Methane	**6760**	ug/L	10.0	5.0	1		02/17/10 15:54	74-82-8	
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.021	0.021	1	02/15/10 14:36	02/16/10 02:40	106-93-4	
1-Chloro-2-bromopropane (S)	106	%	60-140		1	02/15/10 14:36	02/16/10 02:40	301-79-56	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Lead	**16.7**	ug/L	5.0	4.0	1	02/16/10 16:26	02/18/10 16:44	7439-92-1	
6010 MET ICP, Lab Filtered	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Lead, Dissolved	ND	ug/L	5.0	4.0	1	02/18/10 10:59	02/19/10 17:04	7439-92-1	
8260 MSV Oxygenates	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	2000	1240	20		02/17/10 14:44	75-85-4	
tert-Amylmethyl ether	ND	ug/L	200	90.0	20		02/17/10 14:44	994-05-8	
Benzene	**43.1J**	ug/L	100	24.0	20		02/17/10 14:44	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	2000	960	20		02/17/10 14:44	624-95-3	
tert-Butyl Alcohol	ND	ug/L	2000	540	20		02/17/10 14:44	75-65-0	

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ANALYTICAL RESULTS

Project: Vacant Lot 10-2703
Pace Project No.: 9263244

Sample: MW-3 **Lab ID: 9263244003** Collected: 02/12/10 10:45 Received: 02/13/10 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Oxygenates	Analytical Method: EPA 8260								
tert-Butyl Formate	ND	ug/L	1000	180	20		02/17/10 14:44	762-75-4	
1,2-Dichloroethane	ND	ug/L	100	26.0	20		02/17/10 14:44	107-06-2	
Diisopropyl ether	ND	ug/L	100	54.0	20		02/17/10 14:44	108-20-3	
Ethanol	ND	ug/L	4000	3400	20		02/17/10 14:44	64-17-5	
Ethylbenzene	**1900**	ug/L	100	22.0	20		02/17/10 14:44	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	200	92.0	20		02/17/10 14:44	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	100	40.0	20		02/17/10 14:44	1634-04-4	
Naphthalene	**1990**	ug/L	100	58.0	20		02/17/10 14:44	91-20-3	
Toluene	ND	ug/L	100	36.0	20		02/17/10 14:44	108-88-3	
Xylene (Total)	**359**	ug/L	200	54.0	20		02/17/10 14:44	1330-20-7	
m&p-Xylene	**342**	ug/L	200	54.0	20		02/17/10 14:44	1330-20-7	
o-Xylene	ND	ug/L	100	34.0	20		02/17/10 14:44	95-47-6	
Dibromofluoromethane (S)	100	%	70-130		20		02/17/10 14:44	1868-53-7	
Toluene-d8 (S)	103	%	70-130		20		02/17/10 14:44	2037-26-5	
4-Bromofluorobenzene (S)	106	%	70-130		20		02/17/10 14:44	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	70-130		20		02/17/10 14:44	17060-07-0	
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
Nitrogen, Nitrate	ND	mg/L	0.10	0.10	1		02/14/10 09:51		

Sample: MW-4 **Lab ID: 9263244004** Collected: 02/12/10 10:15 Received: 02/13/10 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Methane	**74.8**	ug/L	10.0	5.0	1		02/17/10 16:09	74-82-8	
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	02/18/10 10:03	02/18/10 18:07	106-93-4	
1-Chloro-2-bromopropane (S)	105	%	60-140		1	02/18/10 10:03	02/18/10 18:07	301-79-56	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Lead	ND	ug/L	5.0	4.0	1	02/16/10 16:26	02/18/10 16:48	7439-92-1	
6010 MET ICP, Lab Filtered	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Lead, Dissolved	ND	ug/L	5.0	4.0	1	02/18/10 10:59	02/19/10 17:11	7439-92-1	
8260 MSV Oxygenates	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	100	62.0	1		02/16/10 18:00	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	4.5	1		02/16/10 18:00	994-05-8	
Benzene	ND	ug/L	5.0	1.2	1		02/16/10 18:00	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	48.0	1		02/16/10 18:00	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	27.0	1		02/16/10 18:00	75-65-0	

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ANALYTICAL RESULTS

Project: Vacant Lot 10-2703
Pace Project No.: 9263244

Sample: MW-4 **Lab ID: 9263244004** Collected: 02/12/10 10:15 Received: 02/13/10 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Oxygenates	Analytical Method: EPA 8260								
tert-Butyl Formate	ND	ug/L	50.0	9.0	1		02/16/10 18:00	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.3	1		02/16/10 18:00	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	2.7	1		02/16/10 18:00	108-20-3	
Ethanol	ND	ug/L	200	170	1		02/16/10 18:00	64-17-5	
Ethylbenzene	ND	ug/L	5.0	1.1	1		02/16/10 18:00	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	4.6	1		02/16/10 18:00	637-92-3	
Methyl-tert-butyl ether	**7.8**	ug/L	5.0	2.0	1		02/16/10 18:00	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.9	1		02/16/10 18:00	91-20-3	
Toluene	ND	ug/L	5.0	1.8	1		02/16/10 18:00	108-88-3	
Xylene (Total)	ND	ug/L	10.0	2.7	1		02/16/10 18:00	1330-20-7	
m&p-Xylene	ND	ug/L	10.0	2.7	1		02/16/10 18:00	1330-20-7	
o-Xylene	ND	ug/L	5.0	1.7	1		02/16/10 18:00	95-47-6	
Dibromofluoromethane (S)	102	%	70-130		1		02/16/10 18:00	1868-53-7	
Toluene-d8 (S)	103	%	70-130		1		02/16/10 18:00	2037-26-5	
4-Bromofluorobenzene (S)	104	%	70-130		1		02/16/10 18:00	460-00-4	
1,2-Dichloroethane-d4 (S)	106	%	70-130		1		02/16/10 18:00	17060-07-0	
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
Nitrogen, Nitrate	**1.2**	mg/L	0.10	0.10	1		02/14/10 09:49		

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QUALITY CONTROL DATA

Project: Vacant Lot 10-2703
Pace Project No.: 9263244

QC Batch: AIR/9798 Analysis Method: RSK 175
QC Batch Method: RSK 175 Analysis Description: RSK 175 AIR HEADSPACE
Associated Lab Samples: 9263244002, 9263244003, 9263244004

METHOD BLANK: 749148 Matrix: Water
Associated Lab Samples: 9263244002, 9263244003, 9263244004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Methane	ug/L	ND	10.0	02/17/10 15:26	

LABORATORY CONTROL SAMPLE & LCSD: 749149 749150

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Methane	ug/L	60.7	51.1	50.4	84	83	70-130	1	30	

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QUALITY CONTROL DATA

Project: Vacant Lot 10-2703
Pace Project No.: 9263244

QC Batch: OEXT/9256 Analysis Method: EPA 8011
QC Batch Method: EPA 8011 Analysis Description: GCS 8011 EDB DBCP
Associated Lab Samples: 9263244001, 9263244002

METHOD BLANK: 402521 Matrix: Water
Associated Lab Samples: 9263244001, 9263244002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2-Dibromoethane (EDB)	ug/L	ND	0.020	02/15/10 16:48	
1-Chloro-2-bromopropane (S)	%	97	60-140	02/15/10 16:48	

LABORATORY CONTROL SAMPLE & LCSD: 402522 402523

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,2-Dibromoethane (EDB)	ug/L	.28	0.26	0.29	94	102	60-140	11	20	
1-Chloro-2-bromopropane (S)	%				97	101	60-140			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 402550 402551

Parameter	Units	9263229012 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	.28	.28	0.33	0.32	118	116	60-140	2	20	
1-Chloro-2-bromopropane (S)	%						110	105	60-140			

SAMPLE DUPLICATE: 402526

Parameter	Units	9263229015 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2-Dibromoethane (EDB)	ug/L	ND	ND		20	
1-Chloro-2-bromopropane (S)	%	100	97	2		

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QUALITY CONTROL DATA

Project: Vacant Lot 10-2703
Pace Project No.: 9263244

QC Batch: OEXT/9257
QC Batch Method: EPA 8011
Analysis Method: EPA 8011
Analysis Description: GCS 8011 EDB DBCP
Associated Lab Samples: 9263244003

METHOD BLANK: 402527 Matrix: Water
Associated Lab Samples: 9263244003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2-Dibromoethane (EDB)	ug/L	ND	0.020	02/16/10 01:41	
1-Chloro-2-bromopropane (S)	%	92	60-140	02/16/10 01:41	

LABORATORY CONTROL SAMPLE & LCSD: 402528 402529

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,2-Dibromoethane (EDB)	ug/L	.28	0.29	0.29	104	102	60-140	1	20	
1-Chloro-2-bromopropane (S)	%				97	94	60-140			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 402530 402531

Parameter	Units	9263238001 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	1.1	.28	.28	1.4	1.4	118	108	60-140	2	20	
1-Chloro-2-bromopropane (S)	%						99	96	60-140			

SAMPLE DUPLICATE: 402532

Parameter	Units	9263238003 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2-Dibromoethane (EDB)	ug/L	ND	ND		20	
1-Chloro-2-bromopropane (S)	%	93	66	34		

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QUALITY CONTROL DATA

Project: Vacant Lot 10-2703
Pace Project No.: 9263244

QC Batch: OEXT/9288
QC Batch Method: EPA 8011
Analysis Method: EPA 8011
Analysis Description: GCS 8011 EDB DBCP
Associated Lab Samples: 9263244004

METHOD BLANK: 403971
Matrix: Water
Associated Lab Samples: 9263244004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2-Dibromoethane (EDB)	ug/L	ND	0.019	02/18/10 17:07	
1-Chloro-2-bromopropane (S)	%	102	60-140	02/18/10 17:07	

LABORATORY CONTROL SAMPLE & LCSD: 403972 403973

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,2-Dibromoethane (EDB)	ug/L	.27	0.32	0.31	116	110	60-140	2	20	
1-Chloro-2-bromopropane (S)	%				112	107	60-140			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 403974 403975

Parameter	Units	9263244004 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	.28	.28	0.31	0.31	108	108	60-140	0	20	
1-Chloro-2-bromopropane (S)	%						106	105	60-140			

SAMPLE DUPLICATE: 403976

Parameter	Units	9263512003 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2-Dibromoethane (EDB)	ug/L	ND	ND		20	
1-Chloro-2-bromopropane (S)	%	107	103	5		

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QUALITY CONTROL DATA

Project: Vacant Lot 10-2703
Pace Project No.: 9263244

QC Batch: MPRP/5834 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET
Associated Lab Samples: 9263244001, 9263244002, 9263244003, 9263244004

METHOD BLANK: 403015 Matrix: Water
Associated Lab Samples: 9263244001, 9263244002, 9263244003, 9263244004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Lead	ug/L	ND	5.0	02/18/10 15:59	

LABORATORY CONTROL SAMPLE: 403016

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lead	ug/L	500	448	90	80-120	

MATRIX SPIKE SAMPLE: 403017

Parameter	Units	9263223003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Lead	ug/L	ND	500	448	89	75-125	

SAMPLE DUPLICATE: 403018

Parameter	Units	9263223004 Result	Dup Result	RPD	Max RPD	Qualifiers
Lead	ug/L	ND	ND		20	

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QUALITY CONTROL DATA

Project: Vacant Lot 10-2703
Pace Project No.: 9263244

QC Batch: MPRP/5840 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET Filtered
Associated Lab Samples: 9263244002, 9263244003, 9263244004

METHOD BLANK: 403508 Matrix: Water
Associated Lab Samples: 9263244002, 9263244003, 9263244004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Lead, Dissolved	ug/L	ND	5.0	02/19/10 16:41	

LABORATORY CONTROL SAMPLE: 403509

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lead, Dissolved	ug/L	500	447	89	80-120	

MATRIX SPIKE SAMPLE: 403510

Parameter	Units	9263244002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Lead, Dissolved	ug/L	ND	500	399	79	75-125	

SAMPLE DUPLICATE: 403511

Parameter	Units	9263244003 Result	Dup Result	RPD	Max RPD	Qualifiers
Lead, Dissolved	ug/L	ND	ND		20	

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QUALITY CONTROL DATA

Project: Vacant Lot 10-2703
Pace Project No.: 9263244

QC Batch: MSV/9956
QC Batch Method: EPA 8260
Analysis Method: EPA 8260
Analysis Description: 8260 MSV SC
Associated Lab Samples: 9263244001

METHOD BLANK: 402575
Matrix: Water
Associated Lab Samples: 9263244001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	5.0	02/16/10 10:24	
Ethylbenzene	ug/L	ND	5.0	02/16/10 10:24	
m&p-Xylene	ug/L	ND	10.0	02/16/10 10:24	
Methyl-tert-butyl ether	ug/L	ND	5.0	02/16/10 10:24	
Naphthalene	ug/L	ND	5.0	02/16/10 10:24	
o-Xylene	ug/L	ND	5.0	02/16/10 10:24	
Toluene	ug/L	ND	5.0	02/16/10 10:24	
Xylene (Total)	ug/L	ND	10.0	02/16/10 10:24	
1,2-Dichloroethane-d4 (S)	%	103	70-130	02/16/10 10:24	
4-Bromofluorobenzene (S)	%	103	70-130	02/16/10 10:24	
Dibromofluoromethane (S)	%	99	70-130	02/16/10 10:24	
Toluene-d8 (S)	%	102	70-130	02/16/10 10:24	

LABORATORY CONTROL SAMPLE: 402576

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	50	55.7	111	70-130	
Ethylbenzene	ug/L	50	54.7	109	70-130	
m&p-Xylene	ug/L	100	110	110	70-130	
Methyl-tert-butyl ether	ug/L	50	57.8	116	70-130	
Naphthalene	ug/L	50	59.0	118	70-130	
o-Xylene	ug/L	50	55.5	111	70-130	
Toluene	ug/L	50	57.2	114	70-130	
Xylene (Total)	ug/L	150	165	110	70-130	
1,2-Dichloroethane-d4 (S)	%			103	70-130	
4-Bromofluorobenzene (S)	%			102	70-130	
Dibromofluoromethane (S)	%			101	70-130	
Toluene-d8 (S)	%			102	70-130	

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QUALITY CONTROL DATA

Project: Vacant Lot 10-2703
Pace Project No.: 9263244

QC Batch: MSV/9965
QC Batch Method: EPA 8260
Analysis Method: EPA 8260
Analysis Description: 8260 MSV Oxygenates SC
Associated Lab Samples: 9263244004

METHOD BLANK: 402813
Matrix: Water
Associated Lab Samples: 9263244004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2-Dichloroethane	ug/L	ND	5.0	02/16/10 10:24	
3,3-Dimethyl-1-Butanol	ug/L	ND	100	02/16/10 10:24	
Benzene	ug/L	ND	5.0	02/16/10 10:24	
Diisopropyl ether	ug/L	ND	5.0	02/16/10 10:24	
Ethanol	ug/L	ND	200	02/16/10 10:24	
Ethyl-tert-butyl ether	ug/L	ND	10.0	02/16/10 10:24	
Ethylbenzene	ug/L	ND	5.0	02/16/10 10:24	
m&p-Xylene	ug/L	ND	10.0	02/16/10 10:24	
Methyl-tert-butyl ether	ug/L	ND	5.0	02/16/10 10:24	
Naphthalene	ug/L	ND	5.0	02/16/10 10:24	
o-Xylene	ug/L	ND	5.0	02/16/10 10:24	
tert-Amyl Alcohol	ug/L	ND	100	02/16/10 10:24	
tert-Amylmethyl ether	ug/L	ND	10.0	02/16/10 10:24	
tert-Butyl Alcohol	ug/L	ND	100	02/16/10 10:24	
tert-Butyl Formate	ug/L	ND	50.0	02/16/10 10:24	
Toluene	ug/L	ND	5.0	02/16/10 10:24	
Xylene (Total)	ug/L	ND	10.0	02/16/10 10:24	
1,2-Dichloroethane-d4 (S)	%	103	70-130	02/16/10 10:24	
4-Bromofluorobenzene (S)	%	103	70-130	02/16/10 10:24	
Dibromofluoromethane (S)	%	99	70-130	02/16/10 10:24	
Toluene-d8 (S)	%	102	70-130	02/16/10 10:24	

LABORATORY CONTROL SAMPLE: 402814

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2-Dichloroethane	ug/L	50	50.8	102	70-130	
3,3-Dimethyl-1-Butanol	ug/L	1000	1020	102	70-130	
Benzene	ug/L	50	55.7	111	70-130	
Diisopropyl ether	ug/L	50	58.7	117	70-130	
Ethanol	ug/L	2000	2430	121	70-130	
Ethyl-tert-butyl ether	ug/L	100	118	118	70-130	
Ethylbenzene	ug/L	50	54.7	109	70-130	
m&p-Xylene	ug/L	100	110	110	70-130	
Methyl-tert-butyl ether	ug/L	50	57.8	116	70-130	
Naphthalene	ug/L	50	59.0	118	70-130	
o-Xylene	ug/L	50	55.5	111	70-130	
tert-Amyl Alcohol	ug/L	1000	1030	103	70-130	
tert-Amylmethyl ether	ug/L	100	113	113	70-130	
tert-Butyl Alcohol	ug/L	500	575	115	70-130	
tert-Butyl Formate	ug/L	400	433	108	70-130	
Toluene	ug/L	50	57.2	114	70-130	

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QUALITY CONTROL DATA

Project: Vacant Lot 10-2703
Pace Project No.: 9263244

LABORATORY CONTROL SAMPLE: 402814

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Xylene (Total)	ug/L	150	165	110	70-130	
1,2-Dichloroethane-d4 (S)	%			103	70-130	
4-Bromofluorobenzene (S)	%			102	70-130	
Dibromofluoromethane (S)	%			101	70-130	
Toluene-d8 (S)	%			102	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 402815 402816

Parameter	Units	9263238013 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,2-Dichloroethane	ug/L	ND	50	50	55.1	53.2	110	106	70-130	4		
3,3-Dimethyl-1-Butanol	ug/L	ND	1000	1000	1070	1030	107	103	70-130	4		
Benzene	ug/L	ND	50	50	62.6	60.8	125	122	70-130	3		
Diisopropyl ether	ug/L	ND	50	50	64.6	63.5	129	127	70-130	2		
Ethanol	ug/L	ND	2000	2000	2750	3260	137	163	70-130	17		M0
Ethyl-tert-butyl ether	ug/L	ND	100	100	127	124	127	124	70-130	3		
Ethylbenzene	ug/L	ND	50	50	58.9	57.2	118	114	70-130	3		
m&p-Xylene	ug/L	ND	100	100	117	113	116	112	70-130	4		
Methyl-tert-butyl ether	ug/L	ND	50	50	63.6	60.9	126	120	70-130	4		
Naphthalene	ug/L	ND	50	50	61.0	56.7	119	111	70-130	7		
o-Xylene	ug/L	ND	50	50	59.7	58.2	119	116	70-130	3		
tert-Amyl Alcohol	ug/L	ND	1000	1000	1100	1040	110	104	70-130	6		
tert-Amylmethyl ether	ug/L	ND	100	100	122	117	122	117	70-130	4		
tert-Butyl Alcohol	ug/L	ND	500	500	703	667	141	133	70-130	5		M0
tert-Butyl Formate	ug/L	ND	400	400	ND	ND	0	0	70-130			P5
Toluene	ug/L	ND	50	50	64.6	61.9	129	124	70-130	4		
1,2-Dichloroethane-d4 (S)	%						104	102	70-130			
4-Bromofluorobenzene (S)	%						103	104	70-130			
Dibromofluoromethane (S)	%						101	101	70-130			
Toluene-d8 (S)	%						103	102	70-130			

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QUALITY CONTROL DATA

Project: Vacant Lot 10-2703
Pace Project No.: 9263244

QC Batch: MSV/9968
QC Batch Method: EPA 8260
Analysis Method: EPA 8260
Analysis Description: 8260 MSV Oxygenates SC
Associated Lab Samples: 9263244002, 9263244003

METHOD BLANK: 402833
Matrix: Water
Associated Lab Samples: 9263244002, 9263244003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2-Dichloroethane	ug/L	ND	5.0	02/16/10 22:33	
3,3-Dimethyl-1-Butanol	ug/L	ND	100	02/16/10 22:33	
Benzene	ug/L	ND	5.0	02/16/10 22:33	
Diisopropyl ether	ug/L	ND	5.0	02/16/10 22:33	
Ethanol	ug/L	ND	200	02/16/10 22:33	
Ethyl-tert-butyl ether	ug/L	ND	10.0	02/16/10 22:33	
Ethylbenzene	ug/L	ND	5.0	02/16/10 22:33	
m&p-Xylene	ug/L	ND	10.0	02/16/10 22:33	
Methyl-tert-butyl ether	ug/L	ND	5.0	02/16/10 22:33	
Naphthalene	ug/L	ND	5.0	02/16/10 22:33	
o-Xylene	ug/L	ND	5.0	02/16/10 22:33	
tert-Amyl Alcohol	ug/L	ND	100	02/16/10 22:33	
tert-Amylmethyl ether	ug/L	ND	10.0	02/16/10 22:33	
tert-Butyl Alcohol	ug/L	ND	100	02/16/10 22:33	
tert-Butyl Formate	ug/L	ND	50.0	02/16/10 22:33	
Toluene	ug/L	ND	5.0	02/16/10 22:33	
Xylene (Total)	ug/L	ND	10.0	02/16/10 22:33	
1,2-Dichloroethane-d4 (S)	%	103	70-130	02/16/10 22:33	
4-Bromofluorobenzene (S)	%	106	70-130	02/16/10 22:33	
Dibromofluoromethane (S)	%	99	70-130	02/16/10 22:33	
Toluene-d8 (S)	%	101	70-130	02/16/10 22:33	

LABORATORY CONTROL SAMPLE: 402834

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2-Dichloroethane	ug/L	50	51.4	103	70-130	
3,3-Dimethyl-1-Butanol	ug/L	1000	1060	106	70-130	
Benzene	ug/L	50	57.8	116	70-130	
Diisopropyl ether	ug/L	50	59.6	119	70-130	
Ethanol	ug/L	2000	3010	151	70-130	L3
Ethyl-tert-butyl ether	ug/L	100	118	118	70-130	
Ethylbenzene	ug/L	50	53.9	108	70-130	
m&p-Xylene	ug/L	100	108	108	70-130	
Methyl-tert-butyl ether	ug/L	50	58.3	117	70-130	
Naphthalene	ug/L	50	60.1	120	70-130	
o-Xylene	ug/L	50	55.2	110	70-130	
tert-Amyl Alcohol	ug/L	1000	1080	108	70-130	
tert-Amylmethyl ether	ug/L	100	116	116	70-130	
tert-Butyl Alcohol	ug/L	500	599	120	70-130	
tert-Butyl Formate	ug/L	400	394	99	70-130	
Toluene	ug/L	50	59.9	120	70-130	

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(704)875-9092

QUALITY CONTROL DATA

Project: Vacant Lot 10-2703
Pace Project No.: 9263244

LABORATORY CONTROL SAMPLE: 402834

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Xylene (Total)	ug/L	150	163	109	70-130	
1,2-Dichloroethane-d4 (S)	%			104	70-130	
4-Bromofluorobenzene (S)	%			101	70-130	
Dibromofluoromethane (S)	%			99	70-130	
Toluene-d8 (S)	%			103	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 402835 402836

Parameter	Units	9263238014 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,2-Dichloroethane	ug/L	ND	50	50	56.2	54.5	112	109	70-130	3		
3,3-Dimethyl-1-Butanol	ug/L	ND	1000	1000	959	1050	96	105	70-130	9		
Benzene	ug/L	ND	50	50	65.3	61.6	131	123	70-130	6		M0
Diisopropyl ether	ug/L	ND	50	50	66.0	64.1	132	128	70-130	3		M0
Ethanol	ug/L	ND	2000	2000	1880	2730	94	137	70-130	37		M0,R1
Ethyl-tert-butyl ether	ug/L	ND	100	100	128	125	128	125	70-130	2		
Ethylbenzene	ug/L	ND	50	50	60.2	56.3	120	113	70-130	7		
m&p-Xylene	ug/L	ND	100	100	106	101	106	101	70-130	5		
Methyl-tert-butyl ether	ug/L	ND	50	50	63.0	62.4	126	125	70-130	1		
Naphthalene	ug/L	ND	50	50	59.5	58.0	119	116	70-130	2		
o-Xylene	ug/L	ND	50	50	59.9	56.3	120	113	70-130	6		
tert-Amyl Alcohol	ug/L	ND	1000	1000	979	1080	98	108	70-130	10		
tert-Amylmethyl ether	ug/L	ND	100	100	123	120	123	120	70-130	3		
tert-Butyl Alcohol	ug/L	ND	500	500	618	676	124	135	70-130	9		M0
tert-Butyl Formate	ug/L	ND	400	400	ND	ND	0	0	70-130			P5
Toluene	ug/L	ND	50	50	66.3	62.7	133	125	70-130	6		M0
1,2-Dichloroethane-d4 (S)	%						104	103	70-130			
4-Bromofluorobenzene (S)	%						104	104	70-130			
Dibromofluoromethane (S)	%						100	100	70-130			
Toluene-d8 (S)	%						103	102	70-130			

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QUALITY CONTROL DATA

Project: Vacant Lot 10-2703
Pace Project No.: 9263244

QC Batch: WETA/6759 Analysis Method: EPA 353.2
QC Batch Method: EPA 353.2 Analysis Description: 353.2 Nitrate + Nitrite, Unpres.
Associated Lab Samples: 9263244002, 9263244003, 9263244004

METHOD BLANK: 402380 Matrix: Water
Associated Lab Samples: 9263244002, 9263244003, 9263244004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Nitrate	mg/L	ND	0.10	02/14/10 09:55	

LABORATORY CONTROL SAMPLE: 402381

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Nitrate	mg/L	5	5.2	104	90-110	

MATRIX SPIKE SAMPLE: 402382

Parameter	Units	9263244002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Nitrate	mg/L	0.15	5	4.8	93	90-110	

SAMPLE DUPLICATE: 402383

Parameter	Units	9263244004 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Nitrate	mg/L	1.2	1.2	0	20	

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QUALIFIERS

Project: Vacant Lot 10-2703
Pace Project No.: 9263244

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

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.

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U - Indicates the compound was analyzed for, but not detected.

LABORATORIES

PASI-A	Pace Analytical Services - Asheville
PASI-C	Pace Analytical Services - Charlotte
PASI-M	Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

L3	Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias.
M0	Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
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.

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Environmental Monitoring & Laboratory Analysis
110 Technology Parkway, Norcross, GA 30092
(770) 734-4200 FAX (770) 734-4201

Laboratory Report

Prepared For:

Pace Analytical Services Inc. - Huntersville
9800 Kincey Avenue
Huntersville, NC 28078

Attention: Ms. Renee Spencer

Report Number: ATB0514
February 22, 2010
Project: Vacant Lot 10-2703
Project #:9263244

We appreciate the opportunity to provide the analytical support for your project. The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Approved:

Elizabeth Bryant
Project Manager

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Analytical Services, Inc. certifies that the following analytical results meet all requirements of the National Environmental Laboratory Accreditation Conference(NELAC).
All test results relate only to the samples analyzed.

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Pace Analytical Services Inc. - Huntersv
9800 Kincey Avenue
Huntersville NC, 28078
Attention: Ms. Renee Spencer

February 22, 2010

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-2/ 9263244002	ATB0514-01	Water	02/12/10 09:50	02/16/10 10:00
MW-3/ 9263244003	ATB0514-02	Water	02/12/10 10:45	02/16/10 10:00
MW-4/ 9263244004	ATB0514-03	Water	02/12/10 10:15	02/16/10 10:00

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Attention: Ms. Renee Spencer

February 22, 2010

Report No.: ATB0514
Client ID: MW-2/ 9263244002
Date/Time Sampled: 2/12/2010 9:50:00AM
Matrix: Water

Project: Vacant Lot 10-2703
Lab Number ID: ATB0514-01
Date/Time Received: 2/16/2010 10:00:00AM

Analyte	Result	RL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
Inorganic Anions										
Sulfate	4.8	1.0	mg/L	EPA 300.0		1	2/16/10 14:19	2/16/10 14:19	0020476	EMR
Polynuclear Aromatic Compounds by EPA 8270										
Acenaphthene	ND	10	ug/L	EPA 8270D		1	2/17/10 11:45	2/17/10 19:41	0020492	JS/
Acenaphthylene	ND	10	ug/L	EPA 8270D		1	2/17/10 11:45	2/17/10 19:41	0020492	JS/
Anthracene	ND	10	ug/L	EPA 8270D		1	2/17/10 11:45	2/17/10 19:41	0020492	JS/
Benzo(a)anthracene	ND	10	ug/L	EPA 8270D		1	2/17/10 11:45	2/17/10 19:41	0020492	JS/
Benzo(a)pyrene	ND	10	ug/L	EPA 8270D		1	2/17/10 11:45	2/17/10 19:41	0020492	JS/
Benzo(b)fluoranthene	ND	10	ug/L	EPA 8270D		1	2/17/10 11:45	2/17/10 19:41	0020492	JS/
Benzo(ghi)perylene	ND	10	ug/L	EPA 8270D		1	2/17/10 11:45	2/17/10 19:41	0020492	JS/
Benzo(k)fluoranthene	ND	10	ug/L	EPA 8270D		1	2/17/10 11:45	2/17/10 19:41	0020492	JS/
Chrysene	ND	10	ug/L	EPA 8270D		1	2/17/10 11:45	2/17/10 19:41	0020492	JS/
Dibenzo(a,h)anthracene	ND	10	ug/L	EPA 8270D		1	2/17/10 11:45	2/17/10 19:41	0020492	JS/
Fluoranthene	ND	10	ug/L	EPA 8270D		1	2/17/10 11:45	2/17/10 19:41	0020492	JS/
Fluorene	ND	10	ug/L	EPA 8270D		1	2/17/10 11:45	2/17/10 19:41	0020492	JS/
Indeno(1,2,3-cd)pyrene	ND	10	ug/L	EPA 8270D		1	2/17/10 11:45	2/17/10 19:41	0020492	JS/
1-Methylnaphthalene *	75	10	ug/L	EPA 8270D		1	2/17/10 11:45	2/17/10 19:41	0020492	JS/
2-Methylnaphthalene	31	10	ug/L	EPA 8270D		1	2/17/10 11:45	2/17/10 19:41	0020492	JS/
Naphthalene	ND	10	ug/L	EPA 8270D		1	2/17/10 11:45	2/17/10 19:41	0020492	JS/
Phenanthrene	ND	10	ug/L	EPA 8270D		1	2/17/10 11:45	2/17/10 19:41	0020492	JS/
Pyrene	ND	10	ug/L	EPA 8270D		1	2/17/10 11:45	2/17/10 19:41	0020492	JS/
Surrogate: Nitrobenzene-d5	*31 %*	*28-109*		*EPA 8270D*			*2/17/10 11:45*	*2/17/10 19:41*	*0020492*	
Surrogate: 2-Fluorobiphenyl	*55 %*	*38-112*		*EPA 8270D*			*2/17/10 11:45*	*2/17/10 19:41*	*0020492*	
Surrogate: p-Terphenyl-dl4	*46 %*	*10-142*		*EPA 8270D*			*2/17/10 11:45*	*2/17/10 19:41*	*0020492*	

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Attention: Ms. Renee Spencer

February 22, 2010

Report No.: ATB0514
Client ID: MW-3/ 9263244003
Date/Time Sampled: 2/12/2010 10:45:00AM
Matrix: Water

Project: Vacant Lot 10-2703
Lab Number ID: ATB0514-02
Date/Time Received: 2/16/2010 10:00:00AM

Analyte	Result	RL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
Inorganic Anions										
Sulfate	1.1	1.0	mg/L	EPA 300.0		1	2/16/10 14:39	2/16/10 14:39	0020476	EMR
Polynuclear Aromatic Compounds by EPA 8270										
Acenaphthene	ND	10	ug/L	EPA 8270D		1	2/17/10 11:45	2/17/10 20:09	0020492	JS/
Acenaphthylene	ND	10	ug/L	EPA 8270D		1	2/17/10 11:45	2/17/10 20:09	0020492	JS/
Anthracene	ND	10	ug/L	EPA 8270D		1	2/17/10 11:45	2/17/10 20:09	0020492	JS/
Benzo(a)anthracene	ND	10	ug/L	EPA 8270D		1	2/17/10 11:45	2/17/10 20:09	0020492	JS/
Benzo(a)pyrene	ND	10	ug/L	EPA 8270D		1	2/17/10 11:45	2/17/10 20:09	0020492	JS/
Benzo(b)fluoranthene	ND	10	ug/L	EPA 8270D		1	2/17/10 11:45	2/17/10 20:09	0020492	JS/
Benzo(ghi)perylene	ND	10	ug/L	EPA 8270D		1	2/17/10 11:45	2/17/10 20:09	0020492	JS/
Benzo(k)fluoranthene	ND	10	ug/L	EPA 8270D		1	2/17/10 11:45	2/17/10 20:09	0020492	JS/
Chrysene	ND	10	ug/L	EPA 8270D		1	2/17/10 11:45	2/17/10 20:09	0020492	JS/
Dibenzo(a,h)anthracene	ND	10	ug/L	EPA 8270D		1	2/17/10 11:45	2/17/10 20:09	0020492	JS/
Fluoranthene	ND	10	ug/L	EPA 8270D		1	2/17/10 11:45	2/17/10 20:09	0020492	JS/
Fluorene	ND	10	ug/L	EPA 8270D		1	2/17/10 11:45	2/17/10 20:09	0020492	JS/
Indeno(1,2,3-cd)pyrene	ND	10	ug/L	EPA 8270D		1	2/17/10 11:45	2/17/10 20:09	0020492	JS/
1-Methylnaphthalene *	420	100	ug/L	EPA 8270D		10	2/17/10 11:45	2/18/10 16:25	0020492	JS/
2-Methylnaphthalene	970	100	ug/L	EPA 8270D		10	2/17/10 11:45	2/18/10 16:25	0020492	JS/
Naphthalene	1600	200	ug/L	EPA 8270D		20	2/17/10 11:45	2/18/10 16:48	0020492	JS/
Phenanthrene	ND	10	ug/L	EPA 8270D		1	2/17/10 11:45	2/17/10 20:09	0020492	JS/
Pyrene	ND	10	ug/L	EPA 8270D		1	2/17/10 11:45	2/17/10 20:09	0020492	JS/
Surrogate: Nitrobenzene-d5	*22 %*	*28-109*		*EPA 8270D*	*S-04*		*2/17/10 11:45*	*2/17/10 20:09*	*0020492*	
Surrogate: 2-Fluorobiphenyl	*89 %*	*38-112*		*EPA 8270D*			*2/17/10 11:45*	*2/17/10 20:09*	*0020492*	
Surrogate: p-Terphenyl-dl4	*42 %*	*10-142*		*EPA 8270D*			*2/17/10 11:45*	*2/17/10 20:09*	*0020492*	

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Attention: Ms. Renee Spencer

February 22, 2010

Report No.: ATB0514
Client ID: MW-4/ 9263244004
Date/Time Sampled: 2/12/2010 10:15:00AM
Matrix: Water

Project: Vacant Lot 10-2703
Lab Number ID: ATB0514-03
Date/Time Received: 2/16/2010 10:00:00AM

Analyte	Result	RL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
Inorganic Anions										
Sulfate	170	20	mg/L	EPA 300.0		20	2/16/10 16:21	2/16/10 16:21	0020476	EMR
Polynuclear Aromatic Compounds by EPA 8270										
Acenaphthene	ND	10	ug/L	EPA 8270D		1	2/17/10 11:45	2/17/10 20:38	0020492	JS/
Acenaphthylene	ND	10	ug/L	EPA 8270D		1	2/17/10 11:45	2/17/10 20:38	0020492	JS/
Anthracene	ND	10	ug/L	EPA 8270D		1	2/17/10 11:45	2/17/10 20:38	0020492	JS/
Benzo(a)anthracene	ND	10	ug/L	EPA 8270D		1	2/17/10 11:45	2/17/10 20:38	0020492	JS/
Benzo(a)pyrene	ND	10	ug/L	EPA 8270D		1	2/17/10 11:45	2/17/10 20:38	0020492	JS/
Benzo(b)fluoranthene	ND	10	ug/L	EPA 8270D		1	2/17/10 11:45	2/17/10 20:38	0020492	JS/
Benzo(ghi)perylene	ND	10	ug/L	EPA 8270D		1	2/17/10 11:45	2/17/10 20:38	0020492	JS/
Benzo(k)fluoranthene	ND	10	ug/L	EPA 8270D		1	2/17/10 11:45	2/17/10 20:38	0020492	JS/
Chrysene	ND	10	ug/L	EPA 8270D		1	2/17/10 11:45	2/17/10 20:38	0020492	JS/
Dibenzo(a,h)anthracene	ND	10	ug/L	EPA 8270D		1	2/17/10 11:45	2/17/10 20:38	0020492	JS/
Fluoranthene	ND	10	ug/L	EPA 8270D		1	2/17/10 11:45	2/17/10 20:38	0020492	JS/
Fluorene	ND	10	ug/L	EPA 8270D		1	2/17/10 11:45	2/17/10 20:38	0020492	JS/
Indeno(1,2,3-cd)pyrene	ND	10	ug/L	EPA 8270D		1	2/17/10 11:45	2/17/10 20:38	0020492	JS/
1-Methylnaphthalene *	ND	10	ug/L	EPA 8270D		1	2/17/10 11:45	2/17/10 20:38	0020492	JS/
2-Methylnaphthalene	ND	10	ug/L	EPA 8270D		1	2/17/10 11:45	2/17/10 20:38	0020492	JS/
Naphthalene	ND	10	ug/L	EPA 8270D		1	2/17/10 11:45	2/17/10 20:38	0020492	JS/
Phenanthrene	ND	10	ug/L	EPA 8270D		1	2/17/10 11:45	2/17/10 20:38	0020492	JS/
Pyrene	ND	10	ug/L	EPA 8270D		1	2/17/10 11:45	2/17/10 20:38	0020492	JS/
Surrogate: Nitrobenzene-d5	*63 %*	*28-109*		*EPA 8270D*			*2/17/10 11:45*	*2/17/10 20:38*	*0020492*	
Surrogate: 2-Fluorobiphenyl	*79 %*	*38-112*		*EPA 8270D*			*2/17/10 11:45*	*2/17/10 20:38*	*0020492*	
Surrogate: p-Terphenyl-dl4	*69 %*	*10-142*		*EPA 8270D*			*2/17/10 11:45*	*2/17/10 20:38*	*0020492*	

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Attention: Ms. Renee Spencer

February 22, 2010

Report No.: ATB0514

Inorganic Anions - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 0020476 - EPA 300.0										
Blank (0020476-BLK1)					Prepared & Analyzed: 02/16/10					
Sulfate	ND	1.0	mg/L							
LCS (0020476-BS1)					Prepared & Analyzed: 02/16/10					
Sulfate	10.0	1.0	mg/L	10.000		100	90-110			
Matrix Spike (0020476-MS1)	**Source: ATB0508-01**				Prepared & Analyzed: 02/16/10					
Sulfate	13.7	1.0	mg/L	10.000	4.42	93	90-110			
Matrix Spike (0020476-MS2)	**Source: ATB0499-06**				Prepared & Analyzed: 02/16/10					
Sulfate	11.6	1.0	mg/L	10.000	2.00	96	90-110			
Matrix Spike Dup (0020476-MSD1)	**Source: ATB0508-01**				Prepared & Analyzed: 02/16/10					
Sulfate	13.7	1.0	mg/L	10.000	4.42	93	90-110	0.09	15	

ASI

ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis
110 Technology Parkway, Norcross, GA 30092
(770) 734-4200 FAX (770) 734-4201

Pace Analytical Services Inc. - Huntersv
9800 Kincey Avenue
Huntersville NC, 28078
Attention: Ms. Renee Spencer

February 22, 2010

Report No.: ATB0514

Polynuclear Aromatic Compounds by EPA 8270 - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 0020492 - EPA 3510C										
Blank (0020492-BLK1)						Prepared & Analyzed: 02/17/10				
Acenaphthene	ND	10	ug/L							
Acenaphthylene	ND	10	ug/L							
Anthracene	ND	10	ug/L							
Benzo(a)anthracene	ND	10	ug/L							
Benzo(a)pyrene	ND	10	ug/L							
Benzo(b)fluoranthene	ND	10	ug/L							
Benzo(ghi)perylene	ND	10	ug/L							
Benzo(k)fluoranthene	ND	10	ug/L							
Chrysene	ND	10	ug/L							
Dibenzo(a,h)anthracene	ND	10	ug/L							
Fluoranthene	ND	10	ug/L							
Fluorene	ND	10	ug/L							
Indeno(1,2,3-cd)pyrene	ND	10	ug/L							
1-Methylnaphthalene	ND	10	ug/L							
2-Methylnaphthalene	ND	10	ug/L							
Naphthalene	ND	10	ug/L							
Phenanthrene	ND	10	ug/L							
Pyrene	ND	10	ug/L							
Surrogate: Nitrobenzene-d5	*25.60*		*ug/L*	*50.000*		*51*	*28-109*			
Surrogate: 2-Fluorobiphenyl	*29.70*		*ug/L*	*50.000*		*59*	*38-112*			
Surrogate: p-Terphenyl-dl4	*49.38*		*ug/L*	*50.000*		*99*	*10-142*			
LCS (0020492-BS1)						Prepared & Analyzed: 02/17/10				
Acenaphthene	44	10	ug/L	50.000		89	44-115			
1,4-Dichlorobenzene	32	10	ug/L	50.000		64	37-94			
2,4-Dinitrotoluene	39	20	ug/L	50.000		79	28-118			
N-Nitrosodi-n-propylamine	39	10	ug/L	50.000		79	40-110			
Pyrene	57	10	ug/L	50.000		113	48-136			
1,2,4-Trichlorobenzene	37	10	ug/L	50.000		74	37-103			
Surrogate: Nitrobenzene-d5	*34.67*		*ug/L*	*50.000*		*69*	*28-109*			
Surrogate: 2-Fluorobiphenyl	*40.29*		*ug/L*	*50.000*		*81*	*38-112*			
Surrogate: p-Terphenyl-dl4	*49.06*		*ug/L*	*50.000*		*98*	*10-142*			

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9800 Kincey Avenue
Huntersville NC, 28078
Attention: Ms. Renee Spencer

February 22, 2010

Report No.: ATB0514

Polynuclear Aromatic Compounds by EPA 8270 - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 0020492 - EPA 3510C										
Matrix Spike (0020492-MS1)	**Source: ATB0543-01**					Prepared: 02/17/10 Analyzed: 02/18/10				
Acenaphthene	32	10	ug/L	50.000	ND	65	48-108			
1,4-Dichlorobenzene	26	10	ug/L	50.000	ND	53	39-90			
2,4-Dinitrotoluene	37	20	ug/L	50.000	ND	73	29-119			
N-Nitrosodi-n-propylamine	35	10	ug/L	50.000	ND	69	41-106			
Pyrene	48	10	ug/L	50.000	ND	96	51-131			
1,2,4-Trichlorobenzene	27	10	ug/L	50.000	ND	55	40-99			
Surrogate: Nitrobenzene-d5	*26.35*		*ug/L*	*50.000*		*53*	*28-109*			
Surrogate: 2-Fluorobiphenyl	*28.60*		*ug/L*	*50.000*		*57*	*38-112*			
Surrogate: p-Terphenyl-dl4	*39.73*		*ug/L*	*50.000*		*79*	*10-142*			
Matrix Spike Dup (0020492-MSD1)	**Source: ATB0543-01**					Prepared: 02/17/10 Analyzed: 02/18/10				
Acenaphthene	32	10	ug/L	50.000	ND	63	48-108	2	35	
1,4-Dichlorobenzene	22	10	ug/L	50.000	ND	45	39-90	16	35	
2,4-Dinitrotoluene	42	20	ug/L	50.000	ND	84	29-119	14	39	
N-Nitrosodi-n-propylamine	33	10	ug/L	50.000	ND	66	41-106	4	36	
Pyrene	58	10	ug/L	50.000	ND	117	51-131	20	27	
1,2,4-Trichlorobenzene	24	10	ug/L	50.000	ND	47	40-99	15	35	
Surrogate: Nitrobenzene-d5	*23.44*		*ug/L*	*50.000*		*47*	*28-109*			
Surrogate: 2-Fluorobiphenyl	*26.96*		*ug/L*	*50.000*		*54*	*38-112*			
Surrogate: p-Terphenyl-dl4	*48.59*		*ug/L*	*50.000*		*97*	*10-142*			

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Pace Analytical Services Inc. - Huntersv
9800 Kincey Avenue
Huntersville NC, 28078
Attention: Ms. Renee Spencer

February 22, 2010

Laboratory Certifications

Code	Description	Number	Expires
NC	North Carolina	381	12/31/2009
NELAC	NELAC (Drinking Water, Non-Potable Water, Solids)	E87315	06/30/2010
SC	South Carolina	98011001	06/30/2010

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Attention: Ms. Renee Spencer

February 22, 2010

Legend

Definition of Laboratory Terms

ND - None Detected at the Reporting Limit
TIC - Tentatively Identified Compound
CFU - Colony Forming Units
SOP - Method run per ASI Standard Operating Procedure
RL - Reporting Limit
DF - Dilution Factor
***** - Analyte not included in the NELAC list of certified analytes.

Sample Information

N-Nitrosodiphenylamine breaks down to diphenylamine in the GCMS; both analytes are reported as N-Nitrososdiphenylamine. ASI is not NELAC certified for diphenylamine.

Phthalic acid and phthalic anhydride are reported as dimethyl phthalate

Maleic acid and maleic anhydride are reported as dimethyl malate

1,2-Diphenylhydrazine breaks down to azobenzene in the GCMS; both analytes are reported as azobenzene

Definition of Qualifiers

S-04 The surrogate recovery for this sample is outside of established control limits due to a suspected sample matrix effect.

Note: Unless otherwise noted, all results are reported on an as received basis.

ANALYTICAL SERVICES, INC.

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9800 Kincey Avenue
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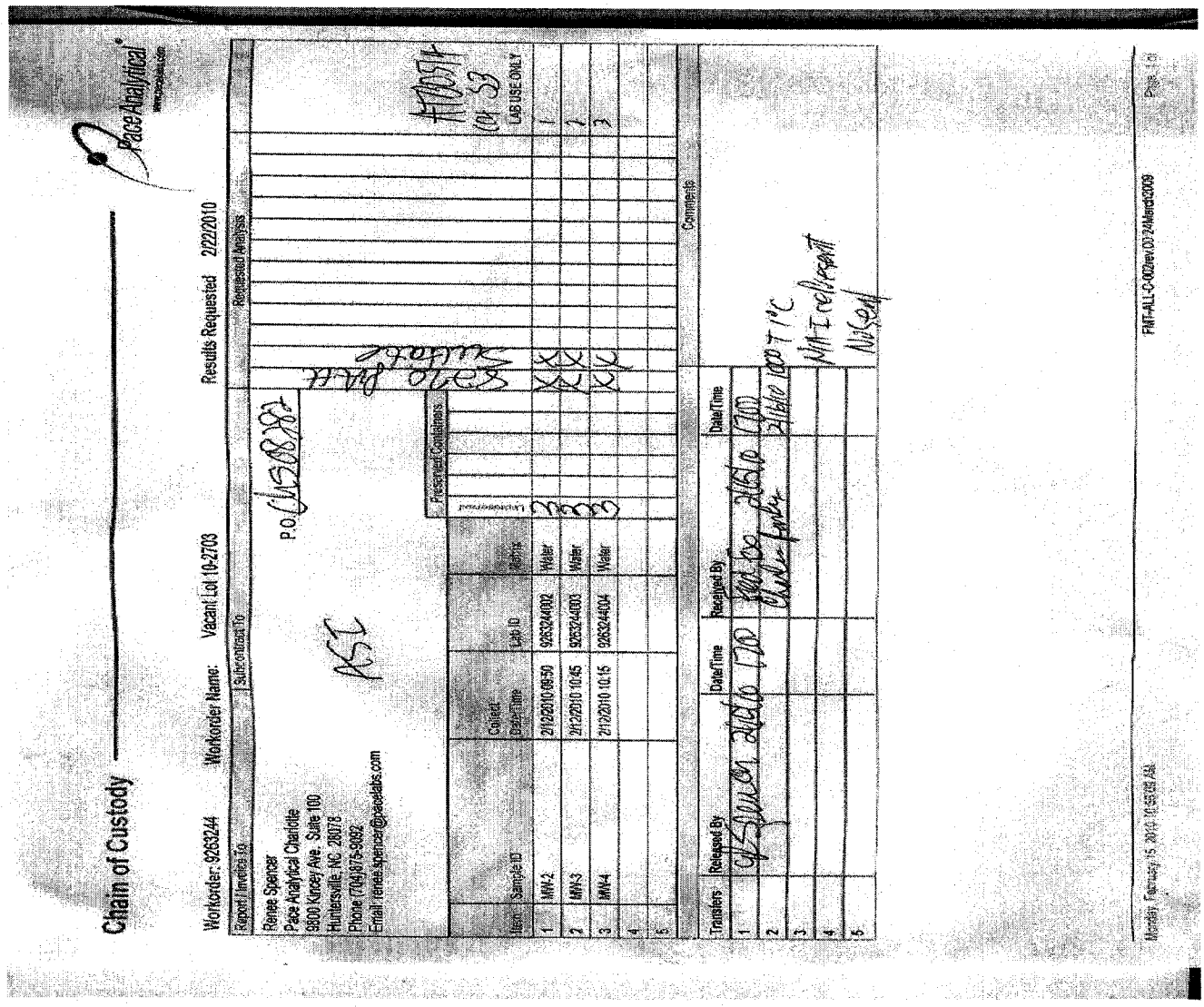
Attention: Ms. Renee Spencer

February 22, 2010



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ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis
110 Technology Parkway, Norcross, GA 30092
(770) 734-4200 FAX (770) 734-4201

LOG-IN CHECKLIST

Printed: 2/22/2010 12:44:15PM

Attn: Ms. Renee Spencer

Client: Pace Analytical Services Inc. - Huntersville
Project: Vacant Lot 10-2703
Date Received: 02/16/10 10:00

Work Order: ATB0514
Logged In By: Charles Hawks

OBSERVATIONS

#Samples: 3 **#Containers:** 9

Minimum Temp(C): 1.0 **Maximum Temp(C):** 1.0 **Custody Seal(s) Used:** No

CHECKLIST ITEMS

COC included with Samples	YES
Sample Container(s) Intact	YES
Chain of Custody Complete	YES
Sample Container(s) Match COC	YES
Custody seal Intact	NO
Temperature in Compliance	YES
Sufficient Sample Volume for Analysis	YES
Zero Headspace Maintained for VOA Analyses	YES
Samples labeled preserved (If Applicable)	YES
Samples received within Allowable Hold Times	YES
Samples Received on Ice	YES
Preservation Confirmed	YES

Comments:

Pace Analytical
www.pacelabs.com

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

1356699

Section A Required Client Information:

Company: MECI
Address: 235-B Dooley Rd.
Lexington, SC 29073
Email To: wcm@meci.net
Phone: 803-808-2043 Fax: 803-808-2048
Requested Due Date/TAT:

Section B Required Project Information:

Report To: B. Shane
Copy To:
Purchase Order No.:
Project Name: Vacant Lot
Project Number: 10-2703

Section C Invoice Information:

Attention:
Company Name:
Address:
Pace Quote Reference:
Pace Project Manager: R. Spencer
Pace Profile #:

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☒ UST ☐ RCRA ☐ OTHER

Site Location STATE: SC

Section D Required Client Information

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Matrix Codes (MATRIX / CODE): Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Tissue TS; Other OT

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	Requested Analysis Filtered (Y/N): BTEX, Naph, MTBE (8260)	1,2DCA, 5 oxygenates EDB 8011	Methane	Nitrate	Sulfate	Filtered Lead	Total Lead	PAH	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	MW-1	WT	G			2/12	9:30		7			1	6						X		X					X		92463244 001
2	MW-2	WT	G			2/12	9:50		15	5		1	9						X	X	X	X	X	X	X	X		002
3	MW-3	WT	G			2/12	10:45		15	5		1	9						X	X	X	X	X	X	X	X		003
4	MW-4	WT	G			2/12	10:15		15	5		1	9						X	X	X	X	X	X	X	X		004
5																												
6																												
7																												
8																												
9																												
10																												
11																												
12																												

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Report J Values	Kyle V. Pudy	2/12/10	7:00	[signature] PACE	02/13/10	0900	2.0	Y	N	Y

ORIGINAL

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: Kyle Pudvay
SIGNATURE of SAMPLER: Kyle V. Pudy
DATE Signed (MM/DD/YY): 2/12/2010

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

APPENDIX C
SLUG TEST DATA

SUMMARY of SLUG TEST (Page 1 of 2)

SOUTH CAROLINA
Department of Health and Environmental Control (DHEC)

Site Data

SITE ID # 19268 COUNTY Orangeburg

FACILITY NAME Vacant Lot

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

Slug Test Conducted in well(s) number	MW-2	MW-3		
Initial Rise/Drawdown in well (feet)	1.04	1.25		
Radius of well casing (feet)	0.083	0.083		
Effective Radius of Well (feet)	0.33	0.33		
Static Saturated Aquifer Thickness (feet)	8.05	8.50		
Length of Well Screen (feet)	10	10		
Static Height of Water Column in Well (ft)	8.05	8.50		

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	MW-2	MW-3			
Hydraulic Conductivity	1.03E-04	2.92E-04			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 3.59 feet per year based on a hydraulic conductivity of 1.98E-04 cm/sec, a hydraulic gradient of 7.92E-03 ft/ft, and a porosity of 45 percent for Sandy CLAY soil.

SUMMARY of SLUG TEST

Groundwater Seepage Velocity Calculations (Page 2 of 2)

SOUTH CAROLINA
Department of Health and Environmental Control (DHEC)

Site Data

SITE ID # 19268 COUNTY Orangeburg

FACILITY NAME Vacant Lot

Hydraulic Conductivity (average)

Hydraulic Conductivity Average = 1.98E-04 cm/sec
(MW-2 & MW-3)

5.60E-01 ft./day

3.89E-04 ft./min

Groundwater Seepage Velocity

V = (Ki)/(Ne)
(ft./day)

* Enter Values in Shaded Areas Only

where:

K = Hydraulic Conductivity (ft./day)
I = Hydraulic Gradient (ft./ft.)
Ne = Effective Permeability

K = 5.60E-01 ft./day
I = 7.92E-03 ft./ft.
Ne = 0.45

V = **9.8E-03** ft./day **3.59** ft./year

Groundwater Seepage Velocity Calculations

Inflow Permeability Calculation

Vacant Lot

Test Performed: 2/12/2010

MW-2

Type II (Uncased Well)

Static: 3.95 ft

*Enter Values in Shaded Areas Only

Time (min)	Depth	delta H	Ht/Ho
0.25	4.99	1.04	1.00
0.50	4.81	0.86	0.83
0.75	4.75	0.80	0.77
1.00	4.66	0.71	0.68
1.25	4.59	0.64	0.62
1.50	4.53	0.58	0.56
1.75	4.48	0.53	0.51
2.00	4.44	0.49	0.47
2.25	4.39	0.44	0.42
2.50	4.35	0.40	0.38
2.75	4.32	0.37	0.36
3.00	4.30	0.35	0.34
3.50	4.25	0.30	0.29
4.00	4.22	0.27	0.26
5.00	4.18	0.23	0.22
6.00	4.15	0.20	0.19
8.00	4.11	0.16	0.15

Information from data and plot of Ht/Ho vs time

Bore Hole Diameter:	7.5	in
Total Depth of Well:	12	ft
Stand Pipe Area:	44.18	in^2
	0.31	ft^2

Coordinates from Graph for Slope Calc:

H1/Ho:	0.29	
t1:	3.50	min
H2/Ho:	0.19	
t2:	6.00	min

H1:	0.30	H2:		0.20
t1:	3.50	t2:		6.00
Radius	R:	3.75	in	
Radius	R:	0.31	ft	
Depth	D:	8.05	ft	
	R/D:	0.039		
	D/R:	25.76		

Shape Factor Determination Value: 0.968994 *

*This value is used in conjunction with

Figure 13 of Reference [1] to obtain the shape factor.

Shape Factor S: 0.5

Coeff. of Permeability (K):

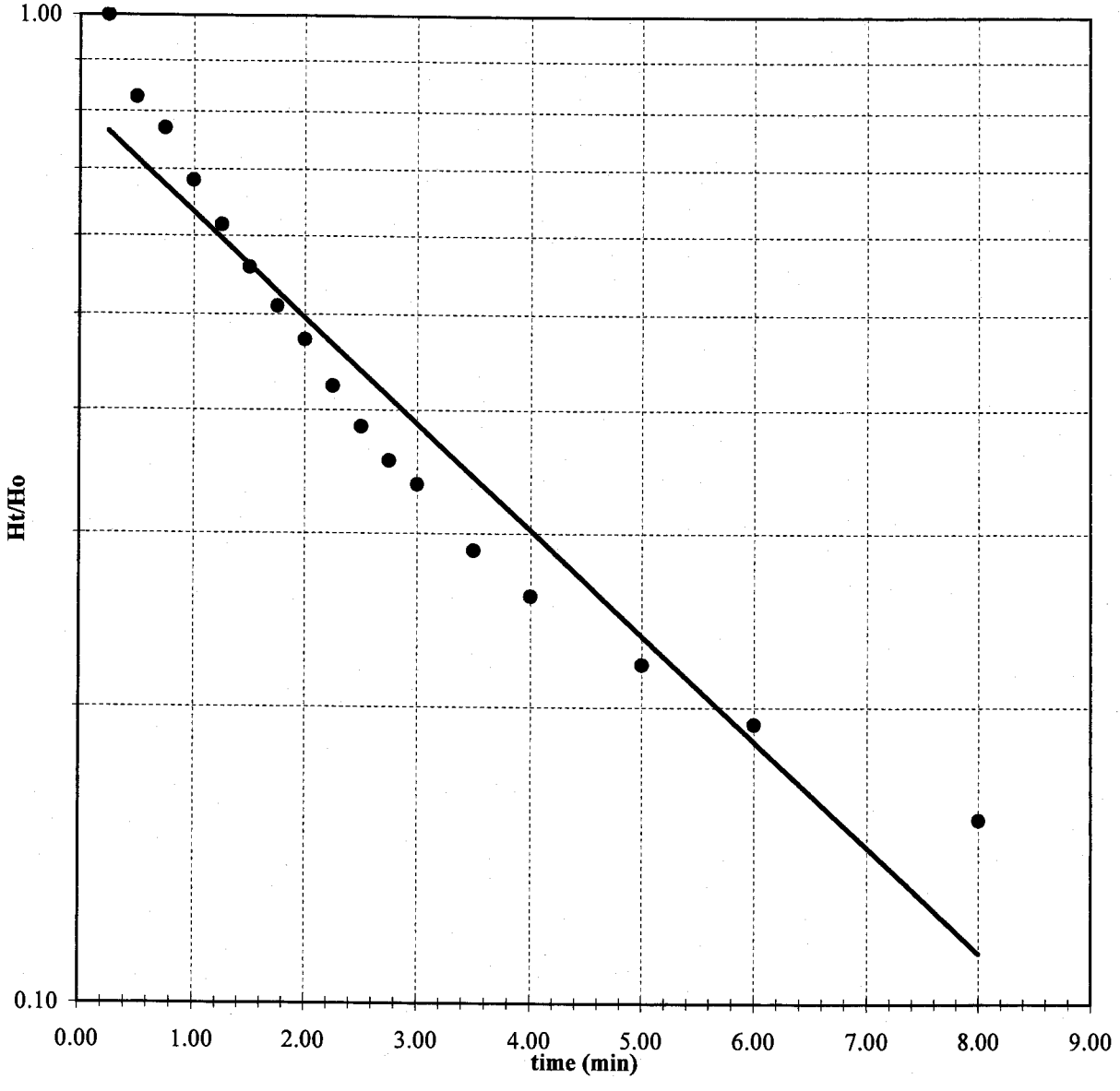
2.02E-04 ft/min

2.91E-01 ft/day

1.03E-04 cm/sec

Ref [1]: Naval Fac. Engr. Command, Design Manual 7.01, soil Mechanics, Condition A.

Inflow for Condition A Well MW-2.xls



Midlands
Environmental
Consultants, Inc.
235-B Dooley Road, Lexington, SC 29073
(803) 808-2043 fax: 808-2048

Inflow Permeability Calculation

Vacant Lot

Test Performed: 2/12/2010

MW-3

Type II (Uncased Well)

Static: 3.50 ft

*Enter Values in Shaded Areas Only

Time (min)	Depth	delta H	Ht/Ho
0.25	4.75	1.25	1.00
0.50	4.55	1.05	0.84
0.75	4.22	0.72	0.58
1.00	4.05	0.55	0.44
1.25	3.93	0.43	0.34
1.50	3.84	0.34	0.27
1.75	3.80	0.30	0.24
2.00	3.75	0.25	0.20
2.25	3.72	0.22	0.18
2.50	3.69	0.19	0.15
2.75	3.67	0.17	0.14
3.00	3.65	0.15	0.12

Information from data and plot of Ht/Ho vs time

Bore Hole Diameter:	7.5	in
Total Depth of Well:	12	ft
Stand Pipe Area:	44.18	in^2
	0.31	ft^2

Coordinates from Graph for Slope Calc:

H1/Ho:	0.20	
t1:	2.00	min
H2/Ho:	0.14	
t2:	2.75	min

H1:	0.25	H2:		0.18
t1:	2.00	t2:		2.75
Radius	R:	3.75	in	
Radius	R:	0.31	ft	
Depth	D:	8.50	ft	
	R/D:	0.037		
	D/R:	27.20		

Shape Factor Determination Value: 0.975000 *

*This value is used in conjunction with

Figure 13 of Reference [1] to obtain the shape factor.

Shape Factor S: 0.4

Coeff. of Permeability (K):

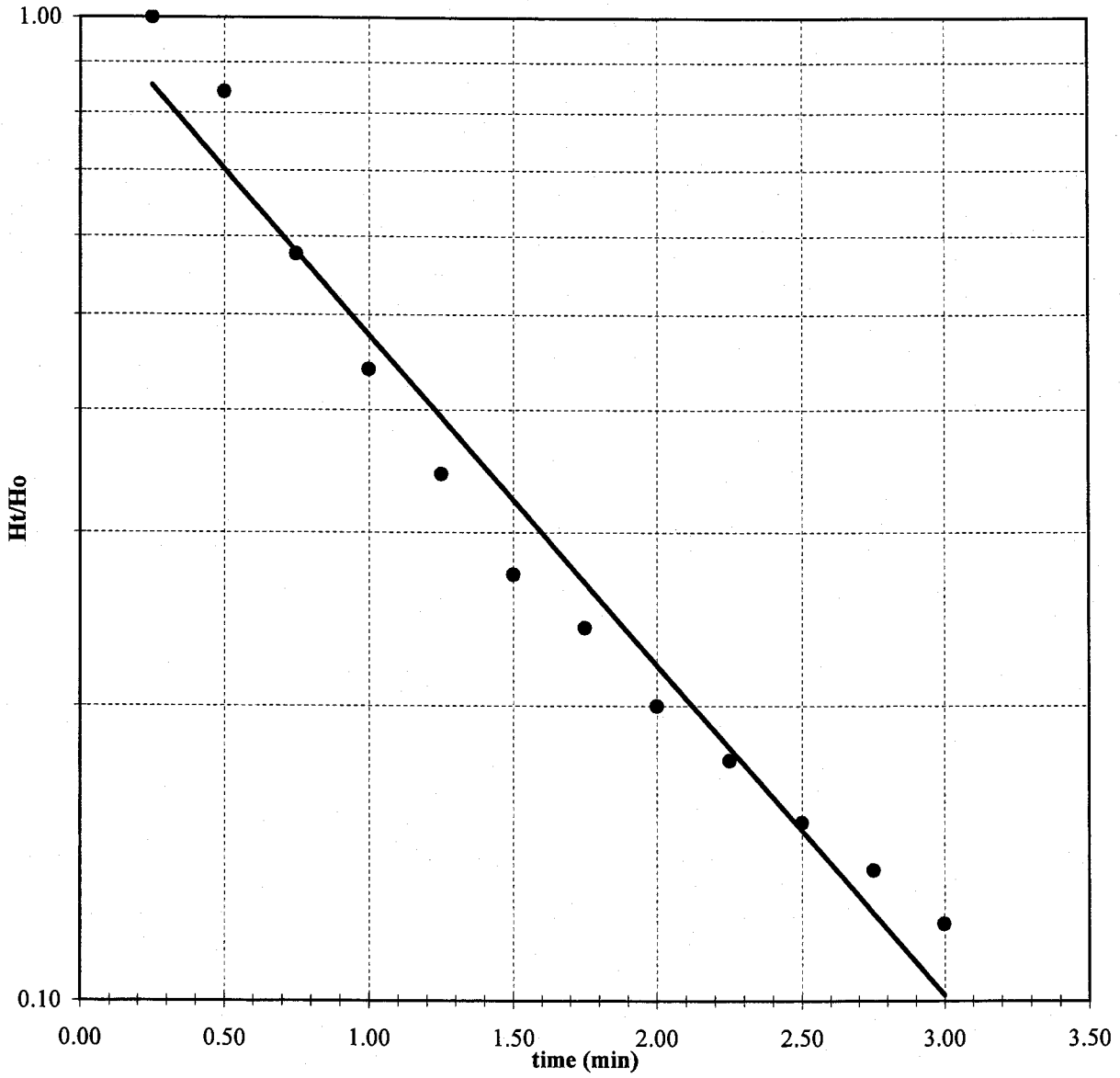
5.74E-04 ft/min

8.27E-01 ft/day

2.92E-04 cm/sec

Ref [1]: Naval Fac. Engr. Command, Design Manual 7.01, soil Mechanics, Condition A.

Inflow for Condition A Well MW-3.xls



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Consultants, Inc.
235-B Dooley Road, Lexington, SC 29073
(803) 808-2043 fax: 808-2048

APPENDIX D
WASTE DISPOSAL MANIFEST

Midlands
Environmental
Consultants, Inc.

March 2, 2010

Re: Treatment of Purge Water
Vacant Lot
Orangeburg, South Carolina
SCDHEC Site ID Number 19268
MECI Project Number 10-2703

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 worst-case well analysis was obtained before usage of the Activated Carbon Unit. The worst-case well analysis shows only petroleum hydrocarbon constituents in the purge/bail water with minimal, background concentrations of lead. The purge/bail water was containerized on site before treatment for less than 30 days prior to treatment.

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.

Post Office Box 854, Lexington SC 29071 • 235-B Dooley Road, Lexington, SC 29073
Telephone: (803) 808-2043 • fax: (803) 808-2048

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.

One 55 gallon drum was treated on February 12, 2010 at the referenced site.

A total of one (1) 55-gallon drum was treated 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.

Jeff L. Coleman
Project Scientist

WASTE MANAGEMENT

Richland County LF
1047 Highway Church Road
Elgin, SC, 29045
Ph: (803) 788-3054

Original
Ticket# 1009935

Customer Name MIDLANDSENVIRON MIDLANDS ENVI
Ticket Date 02/09/2010
Payment Type Credit Account
Manual Ticket#
Hauling Ticket#
Route
State Waste Code
Manifest 0
Destination
PO
Profile VA2718 (SOIL FROM UST ASSESSMENT)
Generator 126-MIDLANDSENVIRONMENTAL MIDLANDS ENVIRONMENTAL

Carrier MIDLANDSENVIRON MIDLANDS ENVIRONMENT
Vehicle# 2
Container
Driver
Check#
Billing # 0000469
Gen EPA ID

Volume

	Time	Scale	ScaleMaster
In	02/09/2010 13:35:51	Scale1	Dwayne
Out	02/09/2010 14:02:21	Scale2	Dwayne

Gross	13140 lb
Tare	9440 lb
Net	3700 lb
Tons	1.85

Comments

	Product	LD%	Qty	UOM	Rate	Fee	Amount	Origin
1	SOIL-Cont. Soil -	100	1.85	Tons				32-LEXINGT
2	FUEL-Fuel Surcharg	100		%				32-LEXINGT
3	P6ENV-Environmenta	100		%				32-LEXINGT

SIGNATURE _____

Copelands 3/4
[redacted] 1/4
Vacant Lot

Total Fees
Total Ticket

403WM

SPECIAL WASTE MANIFEST

WASTE ID NUMBER VA2718	*Richland Landfill* 1047 Highway Church Road Elgin, SC 29045
EXPIRATION DATE December 7, 2010	Special Waste Phone: 803-744-3346 Fax: 866-904-7194
Prepared by:	Karen Truett/Carol Weldon

GENERATOR OF WASTE: Midlands Env. Consultants, Inc. - Various

CUSTOMER Midlands Env. Consultants — ACCOUNT NUMBER: 820-469

LOCATION OF WASTE: Site Address:

CITY: COUNTY:

PHONE NUM 803-808-2043 — CONTACT: Bryan Shane

FAX NUMBER: 803-808-2043

GENERATOR'S SIGNATURE — DATE: 2/9/10

TRANSPORTER OF WASTE: Brandon Kelly

DATE: 2/9/10 — TRUCK NUMBER: 2

DRIVER'S SIGNATURE

**** TO BE COMPLETED BY RICHLAND LANDFILL******

DISPOSAL SITE: RICHLAND LANDFILL ELGIN, SC

Waste Class: Soil

DESCRIPTION OF WASTE: Soil from UST Assessment

TICKET NUMBER: 1009935 — 1.85

RECEIVED BY: am

Copelands 3/4

~~[illegible]~~ 1/4

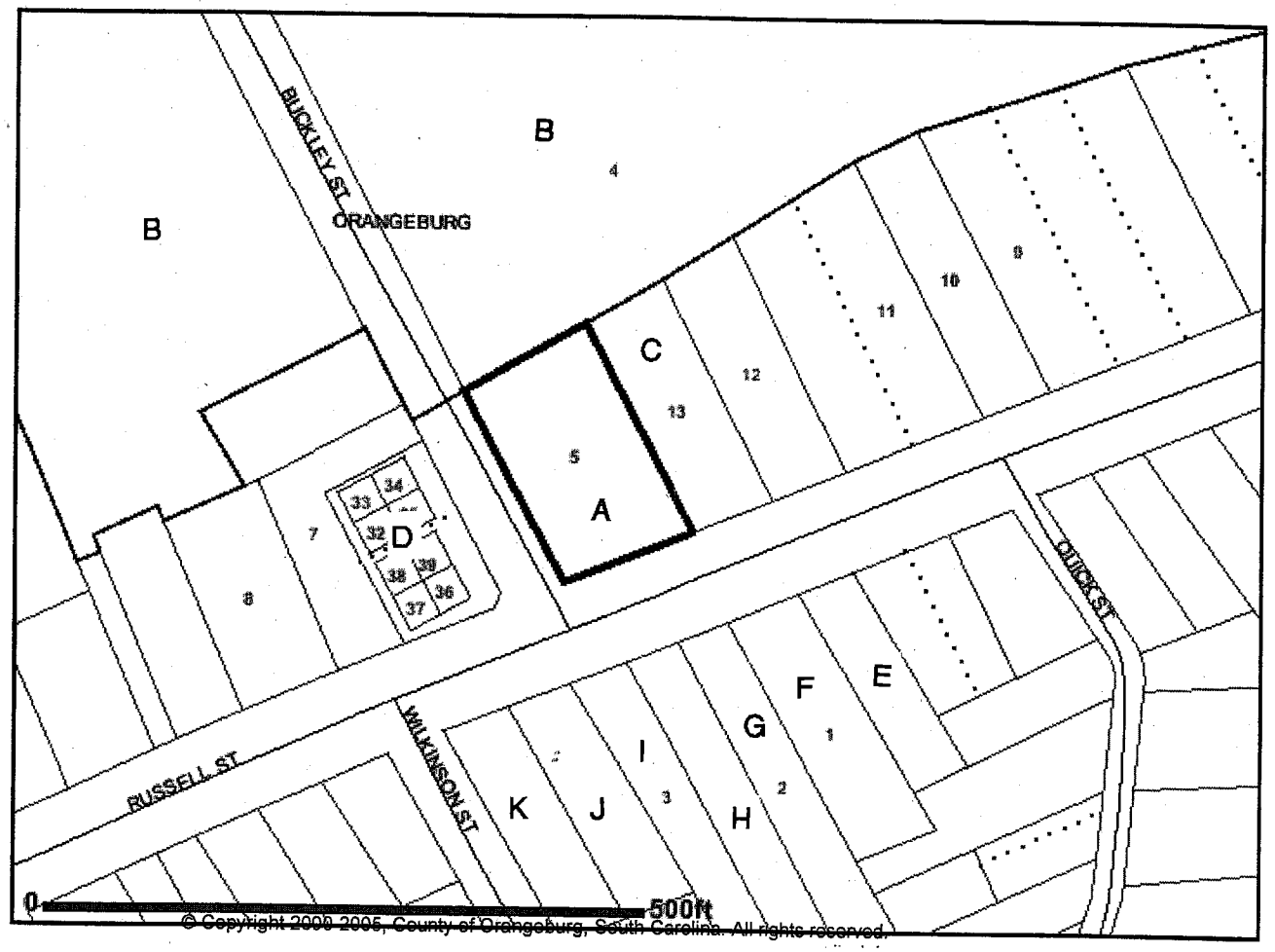
Vacant Lot

APPENDIX E
ZONING REGULATIONS

MECI Personnel contacted the Orangeburg County to discuss zoning regulations associated with the subject site. According to the Zoning office for Orangeburg County there are no zoning regulations associated with the installation of water supply wells.

APPENDIX F
TAX MAP

ID	Tax Map #	Owner
A	0173-11-04-005.000 SITE	Bernie Lee & Beverly S. Wright P.O. Box 275 Orangeburg, SC 29115
B	0173-11-10-004.000	South Carolina State University 300 College Avenue Orangeburg, SC 29115
C	0173-12-18-013.000	John C. Abraham 2721 Russell Street Orangeburg, SC 29115
D	0173-11-10-006.000	Delano H. Scott 717 Partridge Road Orangeburg, SC 29115
E	0173-12-17-002.000	Edward T. Jones, Jr. 2312 Russell Street Orangeburg, SC 29115
F	0173-12-17-001.000	George K. Quick 1326 Elmira Drive Durham, NC 27707
G	0173-16-02-002.000	Ruby C. & James E. Sulton 114 Stone Brook Drive Gray, GA 31082
H	0173-11-08-004.000	Carmen & Regina Thomasson 2300 Russell Street Orangeburg, SC 29115
I	0173-11-08-003.000	Carmen S. Thomasson 2280 Russell Street SE Orangeburg, SC 29115
J	0173-11-08-002.000	Veronice & Primus Thoma 2300 Russell Street Orangeburg, SC 29115
K	0173-11-08-001.000	Frost B. Wilkinson Life Estate 2272 Russell Street Orangeburg, SC 29115



Tax Map Data

Vacant Lot
Orangeburg, South Carolina
SCDHEC Site ID # 19268

Midlands Environmental Consultants, Inc.

JOB NO. 10-2703
DATE March 2, 2010
Appendix F

Information Obtained from Orangeburg County GIS Department.

D H E C

PROMOTE PROTECT PROSPER

C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment.

BERNIE L WRIGHT
PO BOX 275
ORANGEBURG SC 29115-0275

MAR 08 2010

UST DOCKET 9tech

Re: Letter Explaining Assessment Activities
Vacant Lot, 2309 Russell St., Orangeburg, SC
UST Permit #19268
Release Reported October 18, 2006
Tier I Assessment Report received March 2, 2010
Orangeburg County

Dear Mr. Wright:

As you are aware, the Underground Storage Tank (UST) Management Division directed Midlands Environmental Consultants Incorporated to install three monitoring wells plus sample the existing groundwater monitoring wells associated with the release at this address. The assessment report documents groundwater has been impacted from the USTs at the referenced facility. A copy of the assessment report is enclosed for your information.

The UST Division in the near future plans on installing additional groundwater monitoring wells to define the horizontal and vertical extent of the problem. If these results from future sampling support an overall decrease in petroleum chemicals of concern, the release will be closed. Costs for this future work and this assessment report will be paid from the Federal American Recovery and Reinvestment Act (ARRA). Your continued cooperation is appreciated.

On all correspondence regarding this site, please reference UST permit number 19268. Please feel free to contact me at (803) 896-6218, fax me at (803) 896-6245 or e-mail me at smitha2@dhec.sc.gov if you have questions or need additional information.

Sincerely,

Alexander Smith, Hydrogeologist
Assessment Section
Underground Storage Tank Management Division
Bureau of Land and Waste Management

enc: Tier I Assessment Report by Midlands Environmental Consultants dated March 2, 2010

cc: Technical File (without enc.)

D H E C

PROMOTE PROTECT PROSPER

C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment.

JUL 01 2011

10tech UST DOCKET

DEE OBRIEN PG
DIVISION MANAGER
CRAWFORD ENVIRONMENTAL SERVICES INC
104 CORPORATE BLVD STE 412
WEST COLUMBIA SC 29169-4600

Re: Tier II Plan Directive
Contract IFB-5400002721-3/10/11-EMW, Purchase Order # 4600089989
Notice to Proceed

Dear Mr. O'Brien:

In accordance with the referenced contract, the Underground Storage Tank (UST) Management Division requests a Tier II Assessment Plan for the following three UST facilities plus an associated Cost Agreement.

Site name	ID #	County	Priority	Project Manager	ARRA
Vacant Lot	19268	Orangeburg	3B	Alex Smith	Yes
Red Diamond 633 38	07608	Richland	4A	Alex Smith	Yes
Former Price Service Center	19411	Florence	4B	Alex Smith	Yes

As outlined in the referenced contract, please submit the Site-specific Quality Assurance Project Plan (QAPP) Contractor Addendum, Tier II Assessment Plan, and Assessment Component Cost Agreement to my attention within thirty (30) days from the date of this correspondence. Plan implementation shall not commence prior to receipt of written technical and financial approval from the Department. The reports for these three will be due 60 days from the Tier II Directive and cost agreement approval. 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, 2011.

Tier II Assessment Plan, Implementation and Report submittal shall be performed in accordance with the referenced contract. Per Section 3.4.3., a late fee of $100.00/day may be levied for each report submitted after the deadline established in the Notice to Proceed. On all correspondence, please reference the pertinent UST Permit number.

Sincerely,

Arthur Shrader, Hydrogeologist
Assessment Section
Underground Storage Tank Management Division
Bureau of Land and Waste Management

enc: Three Notice to Proceed Package (UST Permits 19268, 07608, and 19411)

cc: Technical File (without enc.)

CRAWFORD
ENVIRONMENTAL SERVICES

August 1, 2011

Art Shrader, Hydrogeologist
Assessment Section
UST Management Division
Bureau of Land and Waste Management
SCDHEC
2600 Bull Street
Columbia, SC 29201

Re: QAPP Contractor Addendum
Vacant Lot, 2309 Russell Street Orangeburg, SC 29116
UST Permit: 19268
Cost Agreement: Pending
Orangeburg County

Dear Mr. Shrader

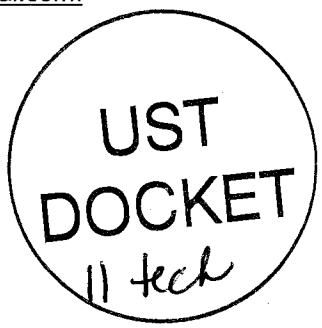
Crawford Environmental Services, Inc. (CES) has completed the site check (July 22, 2011), the assessment plan and contractors addendum to the Master QAPP for the Tier II Assessment for the Vacant Lot facility (UST Permit #: 19268).

If you have any questions or comments regarding site 19268, Vacant Lot please feel free to contact me at 803-708-0079, or by email at jreynolds@crawfordenvironmental.com.

Sincerely,

8/1/2011

Justin Reynolds.
Project Manager
SC Rehabilitation Contractor Number: 0388



Attachments:
Appendix A: Quality Assurance Program Plan (Contractor's Addendum) 15 pages
Appendix B: Tier II Assessment Plan 2 pages
Appendix C: Proposed Cost Agreement 2 pages
Appendix D: Figures 2 pages

MID-ATLANTIC REGION
15 CHURCH AVENUE, SW
ROANOKE, VIRGINIA 24011
OFFICE 540 343.6256
FAX 540 343.6259
ccrawford@crawfordenvironmental.com

SOUTHEAST REGION
104 CORPORATE BLVD, SUITE 412
WEST COLUMBIA, SOUTH CAROLINA 29169
OFFICE 803 708.0079
FAX 803 708.8137
dobrien@crawfordenvironmental.com

APPENDIX A
Quality Assurance Program Plan

CRAWFORD
ENVIRONMENTAL
SERVICES

CRAWFORD ENVIRONMENTAL SERVICES

Section A: Project Management

A1 Title and Approval Page

Quality Assurance Project Plan
Addendum to the SC DHEC UST Programmatic QAPP
For
Vacant Lot Site UST Permit #: 19268

2309 Russell Street Orangeburg, SC 29116

Prepared by:

Justin Reynolds
Crawford Environmental Services
104 Corporate Blvd. Suite 412
West Columbia, SC 29196
SCDHEC Site Rehabilitation Contractor Certification Number: UCC-0388

Approvals

Alex Smith SC DHEC Project Manager	_____ Signature	Date_____
Dee O'Brien Site Rehabilitation Contractor	D. O'Brien Signature	Date 8/1/11
Charles Crawford Project Verifier	Chas. C. Signature	Date 8/1/11
Ashley Amick Laboratory Director	Ashley B. Amick Mon Aug 1 2011 12:42:02 Signature	Date_____
Allison Cantrell Laboratory Director	Allison A. Cantrell Digitally signed by Allison Cantrell DN: cn=Allison Cantrell, c=US, o=aes, ou=aes Date: 2011.08.01 11:33:52 -04'00' Signature	Date_____

A2 Table of Contents

A3 Distribution 3
A4 Project Organization 4
A5 Problem Definition/Background 5
A6 Project/Task Description 5
A7 Data Quality Objectives (DQOs) and Data Quality Indicators (DQIs) 5
A8 Training and Certificates 6
A9 Documents and Records 7

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B4 Analytical Methods 10
B5 Quality Control Requirements 11
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CRAWFORD ENVIRONMENTAL SERVICES

A3 Distribution List

Name	Title	Organization/Address	Telephone Number	Fax Number	Email Address
Alex Smith	SC DHEC Technical Project Manager	SCDHEC, UST Management Division, 2600 Bull St., Columbia, SC, 29201	803-896-6218	803-896-6245	Smitha2@dhec.sc.gov
Dee O'Brien	Site Rehabilitation Contractor	Crawford Environmental Services 104 Corporate Blvd. Suite 412 West Columbia, SC 29169	803-708-0079	803-708-8137	dobrien@crawfordenvironmental.com
Charles Crawford	Project QA/QC Manager and Project Verifier	Crawford Environmental Services 15 Church Street Roanoke, VA 24011	540-343-6256	540-343-6259	ccrawford@crawfordenvironmental.com
Justin Reynolds	Project Manager	Crawford Environmental Services 104 Corporate Blvd. Suite 412 West Columbia, SC 29169	803-708-0079	803-708-8137	jreynolds@crawfordenvironmental.com
Todd Allred	Field Manager/ Certified Well Driller	Crawford Environmental Services 104 Corporate Blvd. Suite 412 West Columbia, SC 29169	803-708-0079	803-708-8137	tallred@crawfordenvironmental.com
Ashley Amick	Laboratory Director	Access Analytical, Inc. (AA) 7478 Carlisle Street Irmo, SC 29063	803-781-4243	803-781-4303	aamick@axs-inc.com
Allison Cantrell	Laboratory Director	Analytical Environmental (AES) Services Inc. 3785 Presidential Pkwy Atlanta, GA 30340	770-457-8177	770-457-8188	acantrell@aesatlanta.com

Table 1A Addendum Distribution List

CRAWFORD ENVIRONMENTAL SERVICES

A4 Project Organization

Role from the UST Master QAPP	Name of person in this Role for this Project	Organization/Address	Telephone Number	Fax Number	Email Address
Project Manager	Alex Smith	SCDHEC, UST Management Division, 2600 Bull St., Columbia, SC, 29201	803-896-6218	803-896-6245	Smitha2@dhec.sc.gov
Site Rehabilitation Contractor	Dee O'Brien	Crawford Environmental Services 104 Corporate Blvd. Suite 412 West Columbia, SC 29169	803-708-0079	803-708-8137	dobrien@crawfordenvironmental.com
Project Manger	Justin Reynolds	Crawford Environmental Services 104 Corporate Blvd. Suite 412 West Columbia, SC 29169	803-708-0079	803-708-8137	jreynolds@crawfordenvironmental.com
Analytical Laboratory Director	Ashley Amick	Access Analytical, Inc. 7478 Carlisle Street Irmo, SC 29063	803-781-4243	803-781-4303	aamick@axs-inc.com
Analytical Laboratory Director	Allison Cantrell	Analytical Environmental Services Inc. 3785 Presidential Pkwy Atlanta, GA 30340	770-457-8177	770-457-8188	acantrell@aesatlanta.com
Field Manager/ Certified Well Driller	Todd Allred	Crawford Environmental Services 104 Corporate Blvd. Suite 412 West Columbia, SC 29169	803-708-0079	803-708-8137	tallred@crawfordenvironmental.com
Project QA/QC Manager and Project Verifier	Charles Crawford	Crawford Environmental Services 15 Church Street Roanoke VA, 24011	540-343-6256	540-343-6259	ccrawford@crawfordenvironmental.com

Table 2A Addendum Role Identification and Contact Information

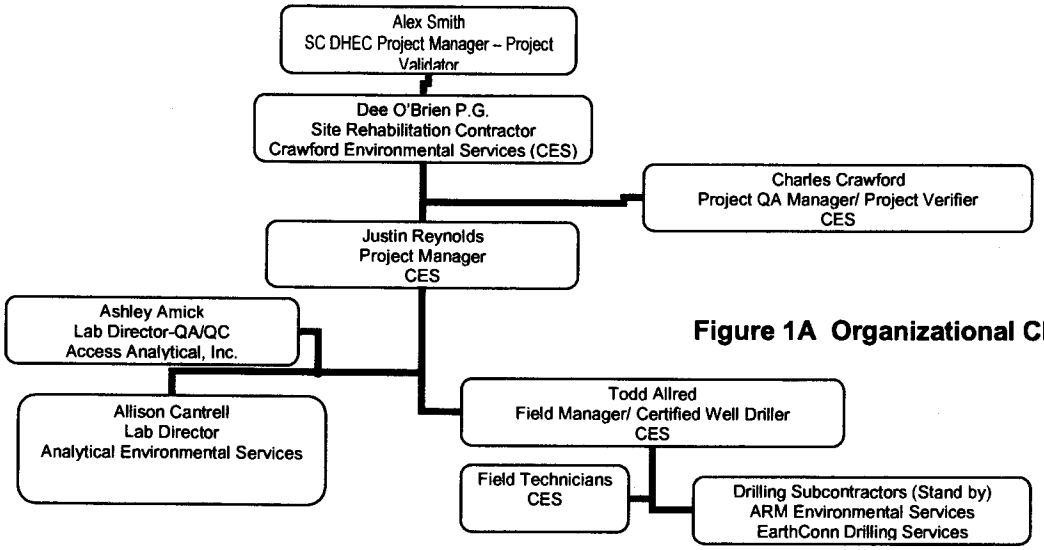


Figure 1A Organizational Chart

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. According to SCDHEC and contractor records, a Tier I Assessment, was previously completed at this facility. During the Tier I Assessment, several groundwater monitoring wells yielded dissolved-phase concentrations of Chemicals of Concern (CoCs) in exceedance of the risk based screening limits and maximum contaminant limits (RBSLs/MCLs).

Please answer the following: Does this project fall under UST or Brownfields area?
UST Area.

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).*** Install up to 20 field screening points, 20 shallow monitoring wells and 5 deep monitoring wells for the purpose of defining the horizontal and vertical extent of impact at the site. Gauge and sample all existing and newly installed wells at the site. Submit collected samples to the laboratory for analysis. Prepare and submit a report of findings to SCDHEC UST project manager.

2. ***The work will begin within:*** two weeks of cost approval. Field screening will take approximately one week, shallow well installation approximately one week and deep well installation will take approximately one week. Well installation will immediately be followed by groundwater sampling (within 5 days of deep well installation) the lab will require 7-9 days for sample analysis. Report development will take an additional week. If more samples are required to achieve 90% valid samples, the project may be extended. The SCDHEC project manger will be contacted via email or telephone if project requires an extension.

3. ***Are there are time or resource constraints? Include those factors that may interfere with the tentative schedule.*** Drilling, field equipment, laboratory equipment failures may cause up to a two week delay. Property access may cause up to a one week delay. No resource constraints are anticipated.

A7 Data Quality Objectives (DQOs) and Data Quality Indicators (DQIs)

Please refer to Appendix D for proposed shallow and deep monitoring well installation locations. The assessment boundaries are bound to properties in which consent from the property owner has been received. SCDHEC will be notified on any accessibility issues.

A8 Training and Certificates

Required training and licenses:

Title/Job	Name	Training Required	Date training received	Type of License	License Number
Site Rehabilitation Contractor	Dee O'Brien	BS/MS Geology	-	S.C.P.G.	873
Project Manager	Justin Reynolds	-	-	-	-
Field Manager	Todd Allred	N/A	N/A	SCLLR Class B	1446
Field Technicians	-	-	-	N/A	N/A
Lab Director (AA)	Ashley Amick	BS Biology		SC Certified Lab	32575001
Lab Director (AES)	Allison Cantrell	N/A	N/A	SC Certified Lab	98016003

Table 3A Required Training and Licenses

Justin Reynolds of CES is responsible to ensuring that personnel participating in this project receive the proper training. All training records will be stored in the following location: 15 Church Street Roanoke, VA 24011

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 Contractor performing Field Analyses: Crawford Environmental Services, Inc.
Name of Lab Director: Justin Reynolds
SCDHEC Certification Number: N/A
Parameters this Lab/Contractor will analyze for this project:
pH
Dissolved Oxygen
Temperature
Specific Conductance

Full Name of the Contractor performing Lab Analyses: Analytical Environmental Services Inc.
Name of Lab Director: Allison Cantrell (QA/QC Ashley Amick- Access Analytical inc.)
SCDHEC Certification Number: SC Cert #: 98016003
Parameters this Lab/Contractor will analyze for this project:
BTEX, naphthalene, MTBE , 1,2 DCA, 8 Oxygenates by EPA method 8260B
EDB by EPA method 8011
Unfiltered Lead by EPA method 6010C

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)

__X__ US Mail ____ Courier __X__ Hand delivered

Personnel will receive the QAPP via, US Mail, Email, or by downloading from CES internal network. Notification of updates to the Master QAPP will be through email from the contractor. CES personnel can access the QAPP by downloading through the internal network.

Record	Produced By	Hardcopy/ Electronic	Storage Location For how long?	Archival
Field Data Sheets	Environmental Contractor	Hard Copy	At Contractor Office Hard Copy for 5 Years	Included in Report
Laboratory Data	Laboratory Contractor	Electronic	At Laboratory Electronic for 25 Years	See Lab Archive plan
Weekly Update	Environmental Contractor	Electronic	At Contractors Office Electronic copy for 5 years	Included in Report
Monitoring Report	Environmental Contractor	Electronic/ Hard Copy	At Contractors Office Electronic copy for 5 years	Electronic Copy

Table 4A Record Identification, Storage, and Disposal

Section B Measurement/Data Acquisition

B1 Sampling Process/Experimental Design

Item	Start Date	End Date	Comments
Gauge Wells	D +7 days	D +7 days	
Sample Wells	D+7 days	D+7 days	
Samples Delivered to Lab	D+7 days	D+7 days	Samples delivered to Access Analytical by CES.
Samples are analyzed	D+8 days	D +21 days	
Report recived by contractor	D+35 days	N/A	
Project Data verified and report constructed	D + 35 days	D +49 days	
SCDHEC Project manger receives report	D +50 days	N/A	
Project Validation	D +50 days	D + 80 days	

Table 5A Sampling Activities
D= Drilling

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 (Shallow Wells Only)	***20***
Ground Water from field screening ***(20 Proposed Locations)***	*20*
Ground Water from monitoring wells ***(4 Existing Monitoring Wells, 20 Proposed Shallow Wells, 5 Proposed Deep Wells)***	*29*
From Drinking/Irrigation water wells	*0*
From surface water features	*2*
Field Blanks/ Trip Blanks/ Duplicates	*9*
Total number of Water samples	*60*

If any of the above are circled please indicate how will it be done and the equipment needed. Refer to CES SOP 2.10.1

Will Sampling Equipment have to be cleaned and decontaminated or is everything disposable? Refer to CES SOP Section 2.10

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. Refer to CES SOP Section 2.10.1

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. Access Analytical will be the laboratory and is responsible for shipment of all samples via Fedex, to the subcontractor laboratory of AES. A CME 55 with solid stem augers and hollow stem augers operated by CES will be utilized for field screening, shallow and deep monitoring well installation. Refer to CES SOP Section 2.9 for methodology.

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
Equipment Failure	Contact CES project manager	Identify failure. Log date, time and equipment.	Field Technicians
Loss or delay of lab samples	Resample	Notice by Access of lost or delayed samples	Access Analytical
Lost samples in the lab	Resample	Email from lab to CES project manager and QA/ project verifier	Lab Sample Custodian
Sample failure (hold time limit exceeded/temperature limit exceeded	Contact CES project manager	Email from lab to CES project manager and QA/ project verifier	Laboratory

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?*** Samples will be delivered to Access Analytical by CES personnel. Access Analytical will then ship the samples via Fedex to AES. Temperature and condition of the samples will be checked upon arrival at Access Analytical and arrival to AES.

2. ***How will the contactors cool the samples and keep the samples cool?***
   Refer to CES SOP section 2.11

3. ***How will the lab determine the temperature of the samples upon receipt? Will they be using a temperature blank?***
   Refer to CES SOP section 2.11

4. ***Where will the samples be stored in the Lab once they are received?***
   Refer to CES SOP section 2.11

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.***
   Refer to CES SOP section 2.11

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
pH	Section 2.10	SM 4500 H+B	HACH	Refer section 2.10 CES SOP
Specific Conductance	Section 2.10	SM2510B	HACH	Refer section 2.10 CES SOP
Temperature	Section 2.10	SM2550B	HACH	Refer section 2.10 CES SOP
Dissolved Oxygen	Section 2.10	SM4500-O-G	HACH	Refer section 2.10 CES SOP
BTEX, naphthalene, MTBE, 1,2 DCA, 8 Oxygenates	Section 8	EPA Method 8260B	Appendix III	
EDB	Section 8	EPA Method 8011	Appendix III	
Unfiltered Lead	Section 8	EPA Method 6010C	Appendix III	

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.**

2. **Identify procedures to follow when failures occur, identify the individual responsible for corrective action and appropriate documentation:**

Failure	Response	Documented Where?	Individual Responsible
Equipment Failure	Contact CES Project Manager	Record problem, reschedule field activities	Field Technicians
QC Failure	Contact CES Project Manager	Notification/Documentation via email, noted in laboratory report	Laboratory
Sample accident in transit	Contact CES Project Manager	Notification/Documentation via email, noted in laboratory report	Transit Company
Sample accident in lab	Contact CES Project Manager	Notification/Documentation via email, noted in laboratory report	Laboratory
Insufficient sample for analysis or repeat analysis	Contact CES Project Manager	Notification/Documentation via email, noted in laboratory report	Laboratory

Table 9A Corrective Action Procedures

3. **Identify sample disposal procedures.**

Analysis	Matrix	Schedule for disposal	Method for disposal	Comments
DO	Groundwater	As Generated	55 gallon drum on site	May be intermixed with soil
Specific Conductance	Groundwater	As Generated	55 gallon drum on site	May be intermixed with soil
pH	Groundwater	As Generated	55 gallon drum on site	May be intermixed with soil
Lab	All	See Lab SOP		

Table 10A Sample Disposal

4. **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).**
N/A

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

1. Identify all field and laboratory equipment needing periodic maintenance, the schedule for this, and the person responsible. Not the availability and location of spare parts.

Instrument	Serial Number	Type of Maintenance	Frequency	Parts needed/Location	Person responsible
HACH	8228266	Check Batteries Check Buffer Solutions Calibration Factory Check Change/clean probe (s)	Monthly, Change out daily as needed	Columbia Office, Supply Cabinet	Justin Reynolds
KECK	-	Check Batteries Clean Probe	Weekly	Columbia Office, Supply Cabinet	Justin Reynolds

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
HACH	Calibration	See CES SOP Section 2.10	Justin Reynolds	Use another meter
Interface Probe	Preparatory Check	See CES SOP Section 2.10	Justin Reynolds	Use another meter

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*
HACH	See CES SOP Section 2.10	See CES SOP Section 2.10, pg 11, Daily Before Use	See CES SOP Section 2.10	See CES SOP Section 2.10	Justin Reynolds	See CES SOP Section 2.10

Instrument	Calibration Procedure	Frequency of Calibration	Acceptance Criteria	Corrective Action (CA)	Person Responsible for CA	SOP Reference*
Interface Probe	See CES SOP Section 2.10	See CES SOP Section 2.10, pg 11, Daily Before Use	See CES SOP Section 2.10	See CES SOP Section 2.10	Justin Reynolds	See CES SOP Section 2.10

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.
pH Buffer Solution	Fisher	Within expiration date	Cool. Dry cabinet	Justin Reynolds
Specfic Conductivity Standard	Fisher	Within expiration date	Cool, dry cabinet	Justin Reynolds
Nitrile Gloves	Clearwater	Sealed	Cool, dry room	Justin Reynolds
Batteries	Any	Sealed	Cool, dry cabinet	Todd Allred
Bailers	Clearwater	Sealed (individually)	Cool, dry room	Todd Allred
Snap Collectors/PDB	EON	Sealed (individually)	Cool,dry room	Todd Allred
Bottles	Access Analytical	Sealed	Cool, dry room	Todd Allred
Coolers	Access Analytical	Sealed	Cool,dry room	Tood Allred

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
Tier 1 and other assessment documents	Historic groundwater depth and chemical impact.	Establish the depth to water, materials needed.	

Table 15A Non-Direct Measurements

4. Identify key resources/support facilities needed. Not applicable.

B10 Data Management

1. Describe the data management scheme from field to final use and storage.

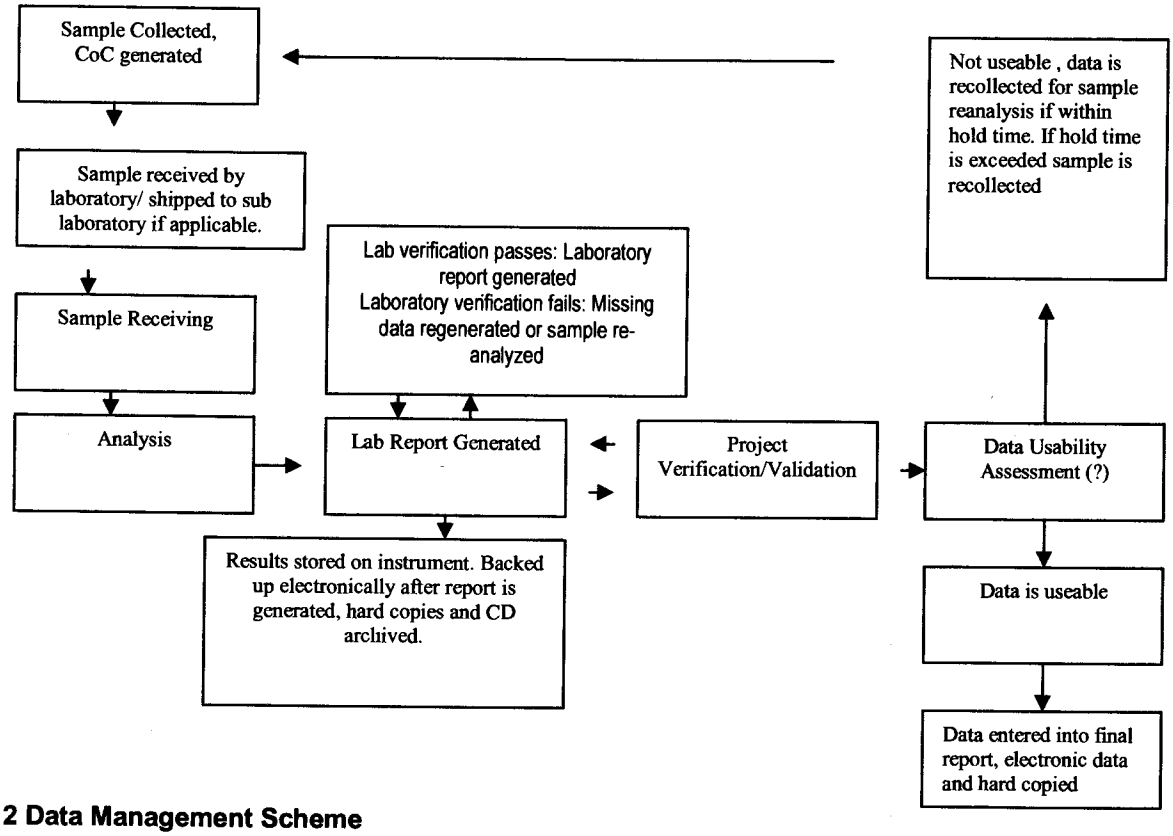


Figure 2 Data Management Scheme

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?** Field data is kept in a dedicated notebook with no pages removed. All data (reports from the lab, field notes, drafts and final reports) are saved on the company server. Original field data hard copies are filed into relevant project folders and archived in filing cabinets. Report data, to include tables and figures, are double checked from the original source by the CES project manager before the report is signed.

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.** Lab internal QA/QC checks and check sheets for all received coolers will determine if laboratory data is credible, or if the groundwater samples are suspect and new samples must be collected and reanalyzed. Laboratory supervisor will check all data before it leaves the laboratory. Laboratory data will be sent electronically to the environmental contractors of the USA for storage on their server.

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).** Hard copies will be maintained at the West Columbia office for five years. The electronic copies will be maintained for 25 years.

Section C Assessment and Oversight

C1 Assessment and Response Actions

1. **Field Oversight:** The Field Manager is responsible for ensuring SOPs to include equipment decontamination and calibration are properly conducted by the field staff. The Field Manager will be present and monitor the field staff every day that field activities occur. The Field Manager is also responsible for ensuring that field personnel adhere to the QAPP. If problems occur the Field Manager will immediately contact the CES Project Manager to determine the corrective action. If the situation cannot be resolved on site, another visit will be scheduled to resample the wells. The Field Manager can stop work at any time: The Project Manager can decide if the sampling party will return to the office without completing sampling of all the monitoring wells. The Field Manager's observations will be submitted to the project manager on a daily basis.

2. **Commercial Lab Offsite Technical Assessment:** The supervisors for each section will review the procedures for another section of the laboratory on a monthly basis to check quality procedures. The Project QA Manager will conduct specific assessments for the methods addressed by this QAPP. Anyone my suspend work if a situation arises, but only the supervisor can stop work. The laboratory QA manager will report all observations to the Laboratory Director. SCDHEC has the right to inspect work at any time. This will be documents and kept as part of project records.

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).

APPENDIX B
Tier II Assessment Plan

CRAWFORD
ENVIRONMENTAL
SERVICES

D H E C
PROMOTE PROTECT PROSPER

Tier II Assessment Plan
Underground Storage Tank Program

UST Permit #: 19268 County: Orangeburg Facility Name: Vacant Lot

Facility Address: 2309 Russell Street City: Orangeburg State: South Carolina Zipcode: 29116

Responsible Party: Orphan, Sultan Address: P.O. Box 275

City: Orangeburg State: South Carolina Zipcode: 29116

No. USTs: 9 Removed? (date: MM/DD/YYYY) Replaced? (date: MM/DD/YYYY)

Current use of facility/property:

Vacant Lot

Current property owner name: Orphan Sultan Address: P.O. Box 275

City: Orangeburg State: South Carolina Zipcode: 29116

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.

Approximately 240 feet of field screening (20 field screening locations){14 proposed locations on included diagram) is requested to determine the horizontal extent of impact on and off site.

(23)(20 Groundwater Field Screening Samples, 1 field blanks, 1 trip blanks, 1 duplicates)Field Screening Groundwater Laboratory Samples
Not included in Analyses Section

Permanent Monitoring Wells (estimate number and total completed depth)

# of shallow wells: 20 Total depth: 240

# of deep wells: 5 Total depth: 200

Comments, if warranted:

20 Shallow wells to a depth of 12 feet below land surface are proposed for installation {14 proposed locations are shown on included diagram}
5 deep wells {3 proposed locations)to a depth 40 feet below land surface are proposed for installation.

Analyses

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

(37)(4 Existing Monitoring Wells, 25 proposed monitoring wells, 0 water supply wells, 2 surface water samples, 2 field blanks, 2 trip blanks, 2 duplicates) BTEX, Naph, MTBE, 7 Oxygenates, Ethanol, 1,2 DCA
(37)(4 Existing Monitoring Wells, 25 proposed monitoring wells, 0 water supply wells, 2 surface water samples, 2 field blanks, 2 trip blanks, 2 duplicates) EDB
(35)(4 Existing Monitoring Wells, 25 proposed monitoring wells, 2 field blanks, 2 trip blanks, 2 duplicates) (Lead)
(20)(20 proposed shallow monitoring wells)BTEX, Naph (Soil)

Implementation Schedule ***(Use MM/DD/YYYY format - Example 01/23/2004)***

Start up date: 08/05/2011 *(MM/DD/YYYY)* Completion date: 09/30/2011 *(MM/DD/YYYY)*

Report submittal date: 09/30/2011 *(MM/DD/YYYY)*

UST Permit #: 19268 Facility Name: Vacant Lot

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

Pump test: ☐ Slug tests: ☑ (check one and provide explanation for choice)

2 Slug tests for shallow and deep saturation zone characterization.
2 hydrometer sieve analysis samples for shallow and deep saturation zone characterization.

Small Volume Disposal Type and Method

Soil:

Approximately 15 tons of soil for disposal

Purge water:

Approximately 200 gallons of groundwater for disposal
Approximately 100 gallons of drilling fluids for disposal

Additional comments:

20 Shallow wells to a depth of 12 feet below land surface are proposed for installation {14 proposed locations are shown on included diagram}
5 deep wells {3 proposed locations)to a depth 40 feet below land surface are proposed for installation.

1 {Item 16} Subsequent survey has been added to add the horizontal locations and vertical elevation of the shallow and deep wells to the current survey.
2 equipment mobilizations are requested for items; 6A, 9B&9C
4 personnel mobilizations are requested for items;10A 10C and 10D, 12B, 16 and 17

Proposed field screening locations as indicated on the included diagrams are preliminary locations only, actual locations may vary.

APPENDIX C
Proposed Cost Agreement

CRAWFORD
ENVIRONMENTAL
SERVICES

ASSESSMENT COMPONENT COST AGREEMENT

Crawford Environmental Services, Inc. Solocitation IFB-5400002721

Facility: Former Price Service Center

Permit #: 19411 Cost Agreement # Pending

ITEM	QUANTITY	UNIT	UNIT PRICE	TOTAL
1. A. Plan Preparation	1	x	$300.00	$300.00
B. Tax Map		x	$150.00	$0.00
2. Receptor Survey *		x	$300.00	$0.00
3. Comprehensive Survey				
A. Registered Land Survey		x	$880.00	$0.00
B. Subsurface Geophysical Survey				
Less than 10 meters below ground surface		x	$1,035.00	$0.00
More than 10 meters below ground surface		x	$1,150.00	$0.00
C. Subsurface Geophysical UST or drum survey		x	$575.00	$0.00
4. Mob/Demob				
A. Equipment	2	x	$500.00	$1,000.00
B. Personnel	4	x	$200.00	$800.00
C. Adverse Train Vehicle		x	$250.00	$0.00
5. Soil Borings (hand auger)*		feet x	$4.59	$0.00
6. Field Screening (includes lab analyses and abandonment)				
standard	240	feet x	$3.12	$748.80
fractured rock		feet x	$10.00	$0.00
7. Soil Leachability Model		each x	$27.50	$0.00
8. Abandonment- **NOT Part of Screening ***				
Abandonment 2 inch well or smaller		feet x	$3.00	$0.00
Abandonment 4 inch well or smaller		feet x	$7.00	$0.00
Dug Well Up to 6' diameter		feet x	$15.00	$0.00
9. Well Installation*				
A. Water Table (hand auger)		feet x	$16.32	$0.00
B. Water Table (drilled)	240	feet x	$9.80	$2,352.00
C. Telescoping	200	feet x	$18.07	$3,614.00
D. Rock Drilling		feet x	$20.00	$0.00
E. Core Drilling		feet x	$20.00	$0.00
F. Multi sampling ports/screen intervals		feet x	$16.32	$0.00
G. Recovery well (4" ID well)		feet x	$14.89	$0.00
H. Prepacked screen monitoring well		feet x	$15.00	$0.00
I. Rhotosonic well		feet x	$5.00	$0.00
10. Groundwater Sample Collection (per well or sample)				
A.Groundwater	25	samples x	$13.01	$325.25
B. Air Vapor		samples x	$5.00	$0.00
C. Water Supply		samples x	$7.51	$0.00
D. Groundwater No Purge, Surface Waters, Field Blanks	12	samples x	$8.89	$106.68
E. Gauge Well Only		samples x	$2.75	$0.00
F. Sample below product		samples x	$13.01	$0.00
E. Passive Diffusion Bag		each x	$31.90	$0.00
11. Analyses-Groundwater (See Analytical Methodology for analyses)				
A. BTEX+Napth.+ 7 oxygenates + ethanol + 1,2 DCA	37	samples x	$73.70	$2,726.90
B. Rush BTEX+Napth.+ 7 oxygenates + ethanol + DCA		samples x	$184.25	$0.00
C. Trimethyl, butyl, & isopropyl benzene		samples x	$42.90	$0.00
D. PAH's other than Napth.		samples x	$63.80	$0.00
E. Total Lead	35	samples x	$10.45	$365.75
F. EDB	37	samples x	$29.70	$1,098.90
FF. EDB Rush Analysis. Not for Screening		samples x	$77.00	$0.00
G. 8 RCRA Metals		samples x	$63.80	$0.00
H.TPH (9070)		samples x	$35.20	$0.00
I. pH		samples x	$5.50	$0.00
J. BOD		samples x	$10.50	$0.00
K. Filtered Lead		samples x	$13.75	$0.00
L. Ethanol		samples x	$11.00	$0.00

ASSESSMENT COMPONENT COST AGREEMENT

Crawford Environmental Services, Inc. Solocitation IFB-5400002721

Facility: Former Price Service Center

Permit # 19411 Cost Agreement # Pending

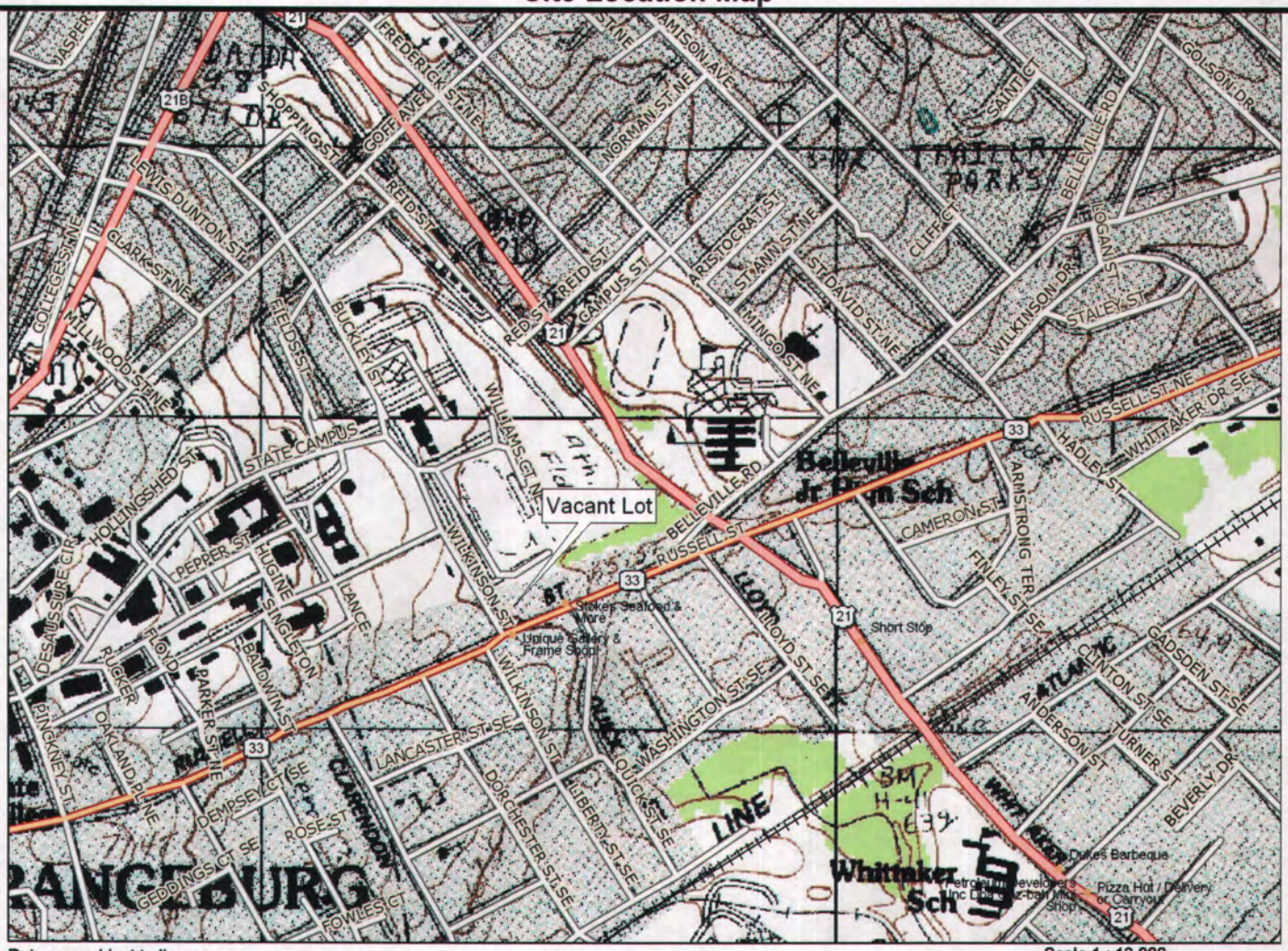
11. Analyses-Soil				
Q. BTEX + Napth.	20	samples x	$36.30	$726.00
R. PAH's other than Napth.		samples x	$63.80	$0.00
S. 8 RCRA Metals		samples x	$55.00	$0.00
U. TPH (3550B/8015B)		samples x	$32.45	$0.00
V. TPH (5030B/8015B)		samples x	$32.45	$0.00
W. Grain size/hydrometer	2	samples x	$99.00	$198.00
X. Total Organic Carbon		samples x	$27.50	$0.00
11. Analyses-Air				
Y. BTEX + Napth.		samples x	$55.00	$0.00
11. Z. Hydrocarbon Fuel Identification		samples x	$55.00	$0.00
12. A. Pumping Test*		hours x	$27.90	$0.00
B. Slug Test*	2	tests x	$27.90	$55.80
C. Fractured Rock*		tests x	$38.50	$0.00
13. Free Product Recovery Rate Test*		tests x	$27.50	$0.00
14. A. Mathematical Model		each x	$27.50	$0.00
B. Computer Model		each x	$27.50	$0.00
15. Tier II Risk Evaluation		x	$27.50	$0.00
16. Subsequent Survey*	1	x	$300.00	$300.00
17. Disposal*				
A. Wastewater per gallon	200	gallons x	$0.55	$110.00
B. Free Product per gallon		gallons x	$0.55	$0.00
C. Soil (Treatment/Disposal) per ton	15	tons x	$49.50	$742.50
D. Drilling Fluids per gallon	100	gallons x	$0.55	$55.00
18. Miscellaneous				
Additional Copies of Report	6	each x	$11.00	$66.00
Repair 2x2 monitoring well pad		each x	$100.00	$0.00
Repair 4x4 monitoring well pad		each x	$250.00	$0.00
Replace well vault & up to 4x4 pad		each x	$150.00	$0.00
Replace/Repair Stick-up well		each x	$150.00	$0.00
Convert flush mounted well to Stickup		each x	$250.00	$0.00
Convert stickup well to flush mounted well		each x	$100.00	$0.00
Replace Missing or Illedgable Well ID Plate		each x	$25.00	$0.00
Replace Missing Bolts in the Well Cover		each x	$10.00	$0.00
23. EFR				
A. 8-hour Event*		each x		
B. Additional Hour		per hour x		
C. Off-gas treatment		per hour x		
24. Granulated Activated Carbon (GAC) filter system installation & service:				
A. New GAC System Installation*		each x		
B. Refurbished GAC Sys. Install*		each x		
C. Filter replacement/removal*		each x		
F. In-line particulate filter		each x		
G. Additional piping & fittings		feet x		
19. Report/Project Management and Coordination	0%	x	None	$0.00
25. **TOTAL**				$15,691.58

*The appropriate mobilization cost can be added to complete these tasks, as necessary

APPENDIX D
Figures

CRAWFORD
ENVIRONMENTAL
SERVICES

FIGURE D1
Site Location Map



Data use subject to license.

© DeLorme. DeLorme Topo USA® 7.0.

www.delorme.com

TN

MN (7.0°W)

Scale 1 : 12,000

1" = 1,000.0 ft Data Zoom 14-0

CRAWFORD ENVIRONMENTAL SERVICES

Division of C.F. Crawford, Inc.

104 Corporate Blvd..
West Columbia, SC 29169

803-708-0079 (office) 803-708-8137 (fax)

ORANGEBURG SOUTH, SOUTH CAROLINA

Source: Delorme Topo USA 7.0
Scale: 1:12,000 Contour Interval: 10 Feet

Vacant Lot
2309 Russell Street
Orangeburg, SC 29115

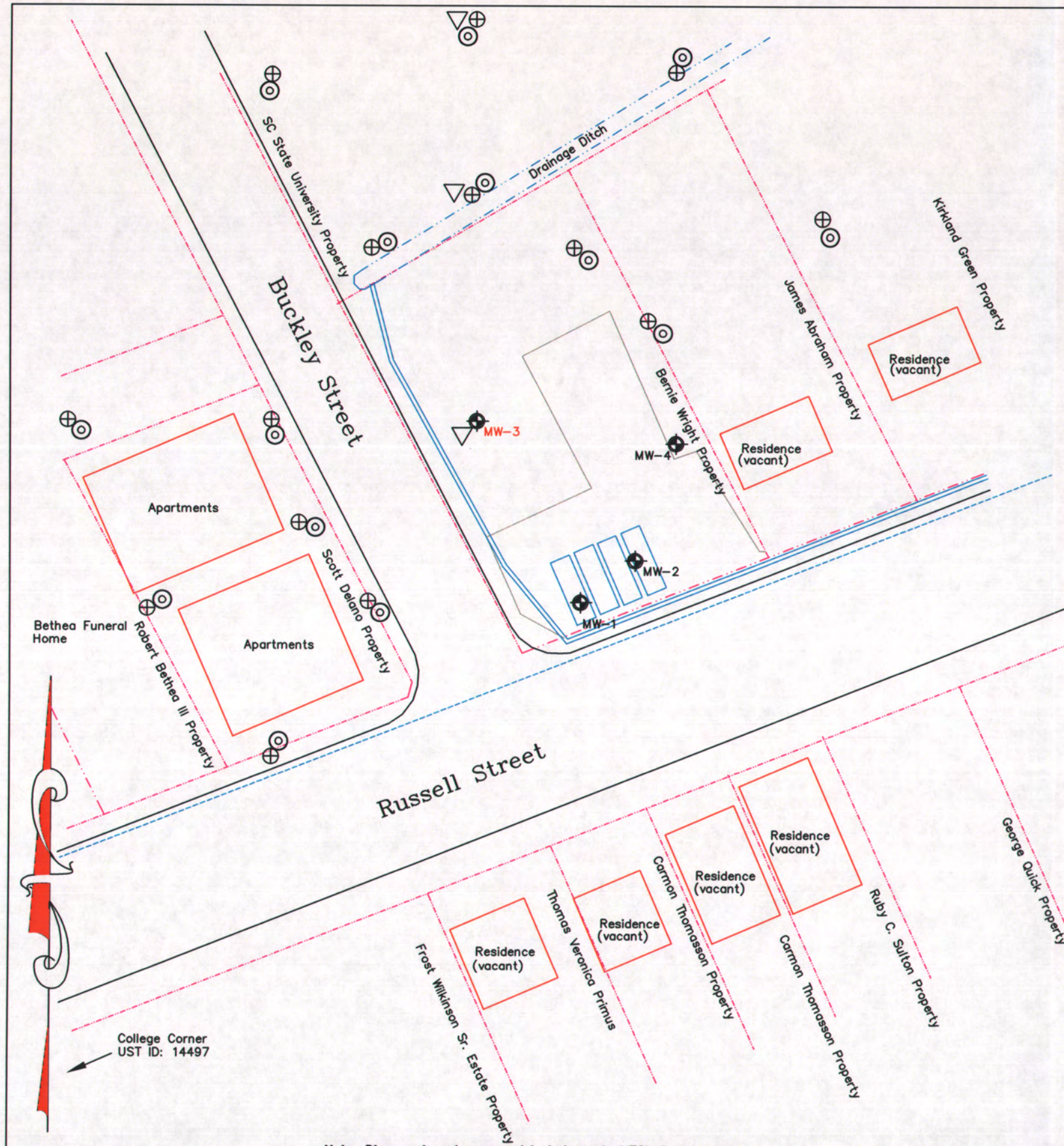
Project: Tier II

Client: SCDHEC

CES Job #: Pending

Date: July 2011

N



GRAPHIC SCALE
(Estimated)

0 50 100

(In Feet)
As Shown

Note: Diagram based upon aerial photograph, MECI diagram and field notes.

Utilities:

Dashed Line indicates underground

- *Electric Power Lines*
- *Gas Lines*
- *Communication Lines*
- *Water Lines*
- *Drainage System*
- *Sewer Lines*
- *Septic Tank*

LEGEND

	Former UST Basin		Property Line
W	Water Supply Well	⊕	Shallow Wells (Proposed)
	Monitoring Well	◎	Field Screening Location (Proposed)
⊙	Soil Boring	▽	Deep Well (Proposed)

REV	BY	DATE

DR: JSR
CK: HDO
SCALE: AS SHOWN
CES PROJ. NO. Pending

Tier II Environmental Assessment

CRAWFORD ENVIRONMENTAL SERVICES
104 Corporate Blvd.
Suite 412
West Columbia, SC 29210
803-708-0079 (ph)
803-708-8137 (Fax)

FIGURE TITLE

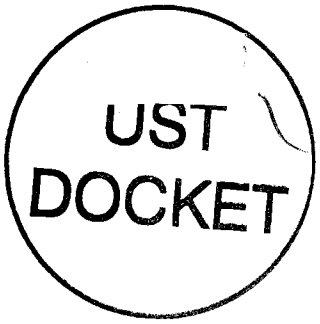
Site Facility Base Map
Vacant Lot
2309 Russell Street
Orangeburg, SC 29116

DRAWING NUMBER	REV
Figure D2	0

CRAWFORD
ENVIRONMENTAL
SERVICES

August 3, 2011

Alex Smith, Hydrogeologist
Assessment Section
UST Management Division
Bureau of Land and Waste Management
SCDHEC
2600 Bull Street
Columbia, SC 29201



Re: QAPP Contractor Addendum Revisions
Vacant Lot, 2309 Russell Street Orangeburg, SC 29116
Red Diamond ~~633 38, 1601~~ Huger Street Columbia, SC29201-2231
UST Permit: 19268, 07608
Cost Agreement: Pending
Orangeburg County & Richland County

Dear Mr. Smith

Included with this letter are the requested revisions to the proposed cost agreements (PCA) and Tier 2 plans associated with UST Permits: 19268 and 07608.

If you have any questions or comments regarding site 19268, Vacant Lot please feel free to contact me at 803-708-0079, or by email at jreynolds@crawfordenvironmental.com.

Sincerely,

8/3/2011

Justin Reynolds.
Project Manager
SC Rehabilitation Contractor Number: 0388

Attachments:
Vacant Lot Tier II Assessment Plan (Revision 1)
Vacant Lot PCA (Revision 1)
Red Diamond PCA (Revision 1)

MID-ATLANTIC REGION
15 CHURCH AVENUE, SW
ROANOKE, VIRGINIA 24011
OFFICE 540 343.6256
FAX 540 343.6259
ccrawford@crawfordenvironmental.com

SOUTHEAST REGION
104 CORPORATE BLVD, SUITE 412
WEST COLUMBIA, SOUTH CAROLINA 29169
OFFICE 803 708.0079
FAX 803 708.8137
dobrien@crawfordenvironmental.com

D H E C
PROMOTE PROTECT PROSPER

Tier II Assessment Plan
Underground Storage Tank Program

UST Permit #: 19268 County: Orangeburg Facility Name: Vacant Lot

Facility Address: 2309 Russell Street City: Orangeburg State: South Carolina Zipcode: 29116

Responsible Party: Orphan, Sultan Address: N/A

City: N/A State: N/A Zipcode: N/A

No. USTs: 9 Removed? (date: MM/DD/YYYY) Replaced? (date: MM/DD/YYYY)

Current use of facility/property:

Vacant Lot

Current property owner name: Bernie Wright Address: P.O. Box 275

City: Orangeburg State: South Carolina Zipcode: 29116

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.

Approximately 240 feet of field screening (20 field screening locations){14 proposed locations on included diagram) is requested to determine the horizontal extent of impact on and off site.

(23)(20 Groundwater Field Screening Samples, 1 field blanks, 1 trip blanks, 1 duplicates)Field Screening Groundwater Laboratory Samples
Not included in Analyses Section

Permanent Monitoring Wells (estimate number and total completed depth)

of shallow wells: 20 Total depth: 240

# of deep wells: 5 Total depth: 200

Comments, if warranted:

20 Shallow wells to a depth of 12 feet below land surface are proposed for installation {14 proposed locations are shown on included diagram}
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Analyses

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

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(37)(4 Existing Monitoring Wells, 25 proposed monitoring wells, 0 water supply wells, 2 surface water samples, 2 field blanks, 2 trip blanks, 2 duplicates) EDB
(35)(4 Existing Monitoring Wells, 25 proposed monitoring wells, 2 field blanks, 2 trip blanks, 2 duplicates) (Lead)
(20)(20 proposed shallow monitoring wells)BTEX, Naph (Soil)

Implementation Schedule *(Use MM/DD/YYYY format - Example 01/23/2004)*

Start up date: 08/05/2011 *(MM/DD/YYYY)* Completion date: 09/30/2011 *(MM/DD/YYYY)*

Report submittal date: 09/30/2011 *(MM/DD/YYYY)*

UST Permit #: 19268 Facility Name: Vacant Lot

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
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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

Pump test: ☐ Slug tests: ☑ (check one and provide explanation for choice)

2 Slug tests for shallow and deep saturation zone characterization.
2 hydrometer sieve analysis samples for shallow and deep saturation zone characterization.

Small Volume Disposal Type and Method

Soil:

Approximately 15 tons of soil for disposal

Purge water:

Approximately 200 gallons of groundwater for disposal
Approximately 100 gallons of drilling fluids for disposal

Additional comments:

20 Shallow wells to a depth of 12 feet below land surface are proposed for installation {14 proposed locations are shown on included diagram}
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1 {Item 16} Subsequent survey has been added to add the horizontal locations and vertical elevation of the shallow and deep wells to the current survey.
2 equipment mobilizations are requested for items; 6A, 9B&9C
4 personnel mobilizations are requested for items;10A 10C and 10D, 12B, 16 and 17

Proposed field screening locations as indicated on the included diagrams are preliminary locations only, actual locations may vary.

ASSESSMENT COMPONENT COST AGREEMENT

Crawford Environmental Services, Inc. Solocitation IFB-5400002721

Facility Vacant Lot

Permit # 19268 Cost Agreement # Pending

ITEM	QUANTITY	UNIT	UNIT PRICE	TOTAL
1. A. Plan Preparation	1	x	$300.00	$300.00
B. Tax Map		x	$150.00	$0.00
2. Receptor Survey *		x	$300.00	$0.00
3. Comprehensive Survey				
A. Registered Land Survey		x	$880.00	$0.00
B. Subsurface Geophysical Survey				
Less than 10 meters below ground surface		x	$1,035.00	$0.00
More than 10 meters below ground surface		x	$1,150.00	$0.00
C. Subsurface Geophysical UST or drum survey		x	$575.00	$0.00
4. Mob/Demob				
A. Equipment	2	x	$500.00	$1,000.00
B. Personnel	4	x	$200.00	$800.00
C. Adverse Train Vehicle		x	$250.00	$0.00
5. Soil Borings (hand auger)*		feet x	$4.59	$0.00
6. Field Screening (includes lab analyses and abandonment)				
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7. Soil Leachability Model		each x	$27.50	$0.00
8. Abandonment- **NOT Part of Screening** *				
Abandonment 2 inch well or smaller		feet x	$3.00	$0.00
Abandonment 4 inch well or smaller		feet x	$7.00	$0.00
Dug Well Up to 6' diameter		feet x	$15.00	$0.00
9. Well Installation*				
A. Water Table (hand auger)		feet x	$16.32	$0.00
B. Water Table (drilled)	240	feet x	$9.80	$2,352.00
C. Telescoping	200	feet x	$18.07	$3,614.00
D. Rock Drilling		feet x	$20.00	$0.00
E. Core Drilling		feet x	$20.00	$0.00
F. Multi sampling ports/screen intervals		feet x	$16.32	$0.00
G. Recovery well (4" ID well)		feet x	$14.89	$0.00
H. Prepacked screen monitoring well		feet x	$15.00	$0.00
I. Rhotosonic well		feet x	$5.00	$0.00
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C. Water Supply		samples x	$7.51	$0.00
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FF. EDB Rush Analysis. Not for Screening		samples x	$77.00	$0.00
G. 8 RCRA Metals		samples x	$63.80	$0.00
H.TPH (9070)		samples x	$35.20	$0.00
I. pH		samples x	$5.50	$0.00
J. BOD		samples x	$10.50	$0.00
K. Filtered Lead		samples x	$13.75	$0.00
L. Ethanol		samples x	$11.00	$0.00

ASSESSMENT COMPONENT COST AGREEMENT

Crawford Environmental Services, Inc. Solocitation IFB-5400002721

Facility Vacant Lot

Permit # 19268 Cost Agreement # Pending

11. Analyses-Soil				
Q. BTEX + Napth.	20	samples x	$36.30	$726.00
R. PAH's other than Napth.		samples x	$63.80	$0.00
S. 8 RCRA Metals		samples x	$55.00	$0.00
U. TPH (3550B/8015B)		samples x	$32.45	$0.00
V. TPH (5030B/8015B)		samples x	$32.45	$0.00
W. Grain size/hydrometer	2	samples x	$99.00	$198.00
X. Total Organic Carbon		samples x	$27.50	$0.00
11. Analyses-Air				
Y. BTEX + Napth.		samples x	$55.00	$0.00
11. Z. Hydrocarbon Fuel Identification		samples x	$55.00	$0.00
12. A. Pumping Test*		hours x	$27.90	$0.00
B. Slug Test*	2	tests x	$27.90	$55.80
C. Fractured Rock*		tests x	$38.50	$0.00
13. Free Product Recovery Rate Test*		tests x	$27.50	$0.00
14. A. Mathematical Model		each x	$27.50	$0.00
B. Computer Model		each x	$27.50	$0.00
15. Tier II Risk Evaluation		x	$27.50	$0.00
16. Subsequent Survey*	1	x	$300.00	$300.00
17. Disposal*				
A. Wastewater per gallon	200	gallons x	$0.55	$110.00
B. Free Product per gallon		gallons x	$0.55	$0.00
C. Soil (Treatment/Disposal) per ton	15	tons x	$49.50	$742.50
D. Drilling Fluids per gallon	100	gallons x	$0.55	$55.00
18. Miscellaneous				
Additional Copies of Report	6	each x	$11.00	$66.00
Repair 2x2 monitoring well pad		each x	$100.00	$0.00
Repair 4x4 monitoring well pad		each x	$250.00	$0.00
Replace well vault & up to 4x4 pad		each x	$150.00	$0.00
Replace/Repair Stick-up well		each x	$150.00	$0.00
Convert flush mounted well to Stickup		each x	$250.00	$0.00
Convert stickup well to flush mounted well		each x	$100.00	$0.00
Replace Missing or Illedgable Well ID Plate		each x	$25.00	$0.00
Replace Missing Bolts in the Well Cover		each x	$10.00	$0.00
23. EFR				
A. 8-hour Event*		each x		
B. Additional Hour		per hour x		
C. Off-gas treatment		per hour x		
24. Granulated Activated Carbon (GAC) filter system installation & service:				
A. New GAC System Installation*		each x		
B. Refurbished GAC Sys. Install*		each x		
C. Filter replacement/removal*		each x		
F. In-line particulate filter		each x		
G. Additional piping & fittings		feet x		
19. Report/Project Management and Coordination	0%	x	None	$0.00
25. **TOTAL**				$15,691.58

*The appropriate mobilization cost can be added to complete these tasks, as necessary

ASSESSMENT COMPONENT COST AGREEMENT

Crawford Environmental Services, Inc. Solocitation IFB-5400002721

Facility Red Diamond 633 38

Permit # 7608 Cost Agreement # Pending

ITEM	QUANTITY	UNIT	UNIT PRICE	TOTAL
1. A. Plan Preparation	1	x	$300.00	$300.00
B. Tax Map		x	$150.00	$0.00
2. Receptor Survey *		x	$300.00	$0.00
3. Comprehensive Survey				
A. Registered Land Survey		x	$880.00	$0.00
B. Subsurface Geophysical Survey				
Less than 10 meters below ground surface		x	$1,035.00	$0.00
More than 10 meters below ground surface		x	$1,150.00	$0.00
C. Subsurface Geophysical UST or drum survey		x	$575.00	$0.00
4. Mob/Demob				
A. Equipment	2	x	$500.00	$1,000.00
B. Personnel	4	x	$200.00	$800.00
C. Adverse Train Vehicle		x	$250.00	$0.00
5. Soil Borings (hand auger)*		feet x	$4.59	$0.00
6. Field Screening (includes lab analyses and abandonment)				
standard	600	feet x	$3.12	$1,872.00
fractured rock		feet x	$10.00	$0.00
7. Soil Leachability Model		each x	$27.50	$0.00
8. Abandonment- **NOT Part of Screening** *				
Abandonment 2 inch well or smaller		feet x	$3.00	$0.00
Abandonment 4 inch well or smaller		feet x	$7.00	$0.00
Dug Well Up to 6' diameter		feet x	$15.00	$0.00
9. Well Installation*				
A. Water Table (hand auger)		feet x	$16.32	$0.00
B. Water Table (drilled)	600	feet x	$9.80	$5,880.00
C. Telescoping	300	feet x	$18.07	$5,421.00
D. Rock Drilling		feet x	$20.00	$0.00
E. Core Drilling		feet x	$20.00	$0.00
F. Multi sampling ports/screen intervals		feet x	$16.32	$0.00
G. Recovery well (4" ID well)		feet x	$14.89	$0.00
H. Prepacked screen monitoring well		feet x	$15.00	$0.00
I. Rhotosonic well		feet x	$5.00	$0.00
10. Groundwater Sample Collection (per well or sample)				
A.Groundwater	25	samples x	$13.01	$325.25
B. Air Vapor		samples x	$5.00	$0.00
C. Water Supply		samples x	$7.51	$0.00
D. Groundwater No Purge, Surface Waters, Field Blanks	6	samples x	$8.89	$53.34
E. Gauge Well Only		samples x	$2.75	$0.00
F. Sample below product		samples x	$13.01	$0.00
E. Passive Diffusion Bag		each x	$31.90	$0.00
11. Analyses-Groundwater (See Analytical Methodology for analyses)				
A. BTEX+Napth.+ 7 oxygenates + ethanol + 1,2 DCA	31	samples x	$73.70	$2,284.70
B. Rush BTEX+Napth.+ 7 oxygenates + ethanol + DCA		samples x	$184.25	$0.00
C. Trimethyl, butyl, & isopropyl benzene		samples x	$42.90	$0.00
D. PAH's other than Napth.		samples x	$63.80	$0.00
E. Total Lead	31	samples x	$10.45	$323.95
F. EDB	31	samples x	$29.70	$920.70
FF. EDB Rush Analysis. Not for Screening		samples x	$77.00	$0.00
G. 8 RCRA Metals		samples x	$63.80	$0.00
H.TPH (9070)		samples x	$35.20	$0.00
I. pH		samples x	$5.50	$0.00
J. BOD		samples x	$10.50	$0.00
K. Filtered Lead		samples x	$13.75	$0.00
L. Ethanol		samples x	$11.00	$0.00

ASSESSMENT COMPONENT COST AGREEMENT

Crawford Environmental Services, Inc. Solocitation IFB-5400002721

Facility Red Diamond 633 38

Permit # 7608 Cost Agreement # Pending

11. Analyses-Soil				
Q. BTEX + Napth.	20	samples x	$36.30	$726.00
R. PAH's other than Napth.		samples x	$63.80	$0.00
S. 8 RCRA Metals		samples x	$55.00	$0.00
U. TPH (3550B/8015B)		samples x	$32.45	$0.00
V. TPH (5030B/8015B)		samples x	$32.45	$0.00
W. Grain size/hydrometer	2	samples x	$99.00	$198.00
X. Total Organic Carbon		samples x	$27.50	$0.00
11. Analyses-Air				
Y. BTEX + Napth.		samples x	$55.00	$0.00
11. Z. Hydrocarbon Fuel Identification		samples x	$55.00	$0.00
12. A. Pumping Test*		hours x	$27.90	$0.00
B. Slug Test*	2	tests x	$27.90	$55.80
C. Fractured Rock*		tests x	$38.50	$0.00
13. Free Product Recovery Rate Test*		tests x	$27.50	$0.00
14. A. Mathematical Model		each x	$27.50	$0.00
B. Computer Model		each x	$27.50	$0.00
15. Tier II Risk Evaluation		x	$27.50	$0.00
16. Subsequent Survey*	1	x	$300.00	$300.00
17. Disposal*				
A. Wastewater per gallon	200	gallons x	$0.55	$110.00
B. Free Product per gallon		gallons x	$0.55	$0.00
C. Soil (Treatment/Disposal) per ton	20	tons x	$49.50	$990.00
D. Drilling Fluids per gallon	100	gallons x	$0.55	$55.00
18. Miscellaneous				
Additional Copies of Report	9	each x	$11.00	$99.00
Repair 2x2 monitoring well pad		each x	$100.00	$0.00
Repair 4x4 monitoring well pad		each x	$250.00	$0.00
Replace well vault & up to 4x4 pad		each x	$150.00	$0.00
Replace/Repair Stick-up well		each x	$150.00	$0.00
Convert flush mounted well to Stickup		each x	$250.00	$0.00
Convert stickup well to flush mounted well		each x	$100.00	$0.00
Replace Missing or Illedgable Well ID Plate		each x	$25.00	$0.00
Replace Missing Bolts in the Well Cover		each x	$10.00	$0.00
23. EFR				
A. 8-hour Event*		each x		
B. Additional Hour		per hour x		
C. Off-gas treatment		per hour x		
24. Granulated Activated Carbon (GAC) filter system installation & service:				
A. New GAC System Installation*		each x		
B. Refurbished GAC Sys. Install*		each x		
C. Filter replacement/removal*		each x		
F. In-line particulate filter		each x		
G. Additional piping & fittings		feet x		
19. Report/Project Management and Coordination	0%	x	None	$0.00
25. **TOTAL**				$21,714.74

*The appropriate mobilization cost can be added to complete these tasks, as necessary

D H E C

PROMOTE PROTECT PROSPER

C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment.

DEE OBRIEN PG
DIVISION MANAGER
CRAWFORD ENVIRONMENTAL SERVICES INC
104 CORPORATE BLVD STE 412
WEST COLUMBIA SC 29169-4600

AUG 10 2011

UST DOCKET 13 ker

Re: Tier II Directive
Vacant Lot, 2309 Russell Street, Orangburg, SC
UST Permit #19268; Cost Agreement #42108; Monitoring Well Approval # UMW-24317
Solicitation Number IFB-5400002721-3/3/2011-EMW, Purchase Order # 4600089989
Tier II Plan and Site Specific QAPP received August 1, 2011
Revised Tier II Plan received August 4, 2011
Orangeburg County

Dear Mr. O'Brien:

The Underground Storage Tank (UST) Management Division of the South Carolina Department of Health and Environmental Control (SCDHEC) has reviewed the Site-specific Quality Assurance Project Plan (QAPP), Tier II Assessment Plan and associated Cost Agreement for the referenced site. Assessment activities should begin immediately upon receipt of this letter.

Cost agreement number 42108 has been approved in the amount shown on the enclosed cost agreement spreadsheet and will be kept on file so that compensation can begin. **The SCDHEC reserves the authority to pay only for work properly performed and/or technically justified and will only pay rates in accordance with the referenced Invitation for Bid (IFB).** Further, SCDHEC reserves the right to question and/or reject costs if deemed unreasonable. The SCDHEC reserves the right to audit project records at any time during the project or after completion of the work. **The Tier II Assessment Report (1 hardcopies, 1 electronic copy, 1 copy to each property owner who has a well on their property), QAPP checklist, and invoice should be submitted on or before September 30, 2011.**

A copy of the signed site specific QAPP Contractor Addendum and approved assessment component cost agreement is enclosed for your information. Crawford Environmental Services, Incorporated can submit an invoice for direct billing from the State Underground Petroleum Environmental Response Bank (SUPERB) Account. Future invoices and/or other criteria included therein must comply with current SUPERB criteria per Section 44-2-20(2). Please reference cost agreement number 42108 on all pertinent invoices and correspondence. 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 Department is obtained. If for any reason there is a change in this cost agreement, any associated changes must be pre-approved in writing by this Department in order for Crawford Environmental Services, Incorporated to seek future cost compensation.

Any item(s) not clearly or completely addressed in the report (SC certified driller's number, disposal manifest for soil cuttings, disposal manifests for generated ground water, etc.) WILL NOT be compensated by the SUPERB Account. As agreed to in the referenced contract, the owner/operator and property owner of the referenced facility will not be responsible for any costs associated with this assessment.

Monitoring well approval for 20 temporary, 20 shallow, and 5 deep monitoring wells is enclosed for your records. Please note that all applicable South Carolina certification requirements regarding laboratory analyses, well installation, and report preparation must be met. All shallow wells are to be installed with screen intervals that bracket the water table.

The Department grants pre-approval for transportation of virgin petroleum impacted soil and groundwater from the referenced site to a permitted treatment facility. The Division suggests a roll off container will be used for disposal. There can be no spillage or leakage in transport. All investigation-derived waste (IDW) must be properly contained and labeled prior to disposal. IDW should not be stored on-site longer than ninety (90) days. A copy of the disposal manifest and/or acceptance letter from the receiving facility that clearly designates the quantity received must be included as an appendix to the report. As required by the referenced bid, reimbursement for disposal will be based on a per ton and a per gallon rate. If the CoC concentrations, based on laboratory analysis, are below Risk Based Screening Levels (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 the UST Permit # 19268 and Cost Agreement #42108. If you have questions concerning this correspondence, or would like to submit additional information, please contact me at (803) 896-6218, fax me at (803) 896-6245, or e-mail me at smitha2@.dhec.sc.gov.

Sincerely,

Alex Smith, Hydrogeologist
Assessment Section
Underground Storage Tank Management Division
Bureau of Land & Waste Management

enc: Signed Site Specific QAPP Addendum
Approved Cost Agreement
Monitoring Well Approval

Cc: Bernie Wright, P.O. Box 275, Orangeburg, SC 29116-0275 (w/o enc.)
Technical File (w/ enc.)

D H E C

PROMOTE PROTECT PROSPER

C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment.

Monitoring Well Installation Approval Form

Approval is hereby granted to:	Crawford Environmental Services, Incorporated
Facility:	Vacant Lot, 2309 Russell St., Orangeburg, SC
UST Permit Number:	19268
County:	Orangeburg

This approval is for the installation of 20 temporary, 20 shallow, and 5 deep monitoring wells. The monitoring wells are to be installed in the approved locations. Monitoring wells are to be installed following 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 Department shall be completed and submitted to the Department within 30 days after well completion or abandonment unless another schedule has been approved by the Department. 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 Department within 30 days of receipt of laboratory results unless another schedule has been approved by the Department as required by R.61-71.H.1.d.
5. If any of the information provided to the Department changes, notification to Alex Smith (tel: (803) 896-6218 or e-mail: smitha2@dhec.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. Monitoring wells shall have Department approval prior to abandonment as required by R.61-71.H.1.a. A copy of this approval should be on the site during well installation.

Date of Issuance: **August 8, 2011** **Approval #:** **UMW-24317**

Alex Smith, Hydrogeologist
Assessment Section
Underground Storage Tank Management Division
Bureau of Land and Waste Management

CRAWFORD ENVIRONMENTAL SERVICES

Section A: Project Management

A1 Title and Approval Page

Quality Assurance Project Plan
Addendum to the SC DHEC UST Programmatic QAPP
For
Vacant Lot Site UST Permit #: 19268

2309 Russell Street Orangeburg, SC 29116

Prepared by:

Justin Reynolds
Crawford Environmental Services
104 Corporate Blvd. Suite 412
West Columbia, SC 29196
SCDHEC Site Rehabilitation Contractor Certification Number: UCC-0388

Approvals

Alex Smith
SC DHEC Project Manager
Signature Date 8/3/11

Dee O'Brien
Site Rehabilitation Contractor
Signature Date 8/1/11

Charles Crawford
Project Verifier
Signature Date 8/1/11

Ashley Amick
Laboratory Director
Ashley B. Amick
Mon Aug 1 2011 12:42:02
Signature Date

Allison Cantrell
Laboratory Director
Allison A. Cantrell Digitally signed by Allison Cantrell DN: cn=Allison Cantrell, c=US, o=aes, ou=aes Date: 2011.08.01 11:33:52 -04'00'
Signature Date

Approved Cost Agreement 42108

Facility: 19268 VACANT LOT

SMITHA2

PO Number:

Task / Description	Categories	Item Description	Qty / Pct	Unit Price	Amount
01 PLAN					
		C TIER II/COMP. PLAN/QAPP APP B	1.0000	300.00	300.00
04 MOB/DEMOB					
		A EQUIPMENT	2.0000	500.00	1,000.00
		B PERSONNEL	4.0000	200.00	800.00
06 SOIL BORINGS (DRILLED)					
		A SOIL BORINGS & FLD SCREENING	240.0000	3.12	748.80
09 WELL INSTALLATION					
		B WATER TABLE (DRILLED)	240.0000	9.80	2,352.00
		C TELESCOPING	200.0000	18.07	3,614.00
10 SAMPLE COLLECTION					
		A GROUND WATER	25.0000	13.01	325.25
		D GROUNDWATER NO-PURGE	12.0000	8.89	106.68
11 ANALYSES					
	GW GROUNDWATER	A1 BTEXNM+OXYGS+1,2-DCA+ETH-8260B	37.0000	73.70	2,726.90
		E LEAD	35.0000	10.45	365.75
		F EDB	37.0000	29.70	1,098.90
	SOIL SOIL	Q BTEX+NAPTH	20.0000	36.30	726.00
		W GRAIN SIZE/HYDROMETER	2.0000	99.00	198.00
12 AQUIFER CHARACTERIZATION					
		B SLUG TEST	2.0000	27.90	55.80
16 SUBSEQUENT SURVEY					
		SUBSEQUENT SURVEY	1.0000	300.00	300.00
17 DISPOSAL					
		A WASTEWATER	200.0000	0.55	110.00
		C SOIL (TREATMENT/DISPOSAL)	15.0000	49.50	742.50
		D DRILLING FLUIDS	100.0000	0.55	55.00
25 WELL REPAIR					
		A ADDITIONAL COPIES OF REPORT	6.0000	11.00	66.00
			Total Amount		15,691.58

CRAWFORD
ENVIRONMENTAL
SERVICES

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Tier II Assessment

Vacant Lot
2309 Russell Street
Orangeburg, South Carolina 29115
Orangeburg County
UST Permit #: 19268
CA #: 42108
CES #: 15.070
September 28, 2011

Tier II Assessment Report

Vacant Lot
2309 Russell Street
Orangeburg, SC 29115
Orangeburg County
UST Permit #:19268
CES Project: 15.070

September 28, 2011

Submitted To:

South Carolina Department of Health and Environmental Control
Underground Storage Tank Program
Bureau of Land and Waste Management
2600 Bull Street
Columbia, South Carolina 29201-1708

Submitted By:

Crawford Environmental Services
104 Corporate Blvd. Suite 412
West Columbia, SC 29196
SCDHEC Site Rehabilitation Contractor Certification #: UCC-0388

Justin Reynolds
Project Manager

H. Dee O'Brien, P.G.
Division Manager
SC Registration No: 873

CRAWFORD
ENVIRONMENTAL
SERVICES

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CRAWFORD ENVIRONMENTAL SERVICES

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CRAWFORD ENVIRONMENTAL SERVICES

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Appendix F Aquifer Calculations and Characteristics
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Appendix J Access Agreements and Property Owner Cover Letters
Appendix K Data Verification Checklist
Appendix L Quality Assurance Program Plan

1.0 Project Information

1.1 Introduction

As part of the ongoing assessment of the Vacant Lot facility, Crawford Environmental Services (CES) has completed a Tier II Assessment for the purpose of determining if the petroleum hydrocarbon release, reported for the Vacant Lot facility, poses a potential risk to human health or to the environment. This assessment specifically provides information outlined in the scope of work as defined in the CES quality assurance program plan (QAPP), the Vacant Lot Tier II directive – dated August 10, 2011, cost agreement 42108 and SCDHEC Bid Specification IDB-5400002721-3/3/2011-EMW. Please reference the CES Standard Operating Procedure (SOP) document, dated April 27, 2011. This report was written by Justin Reynolds reviewed by Dee O'Brien (P.G. Registration 873) and verified by Charles F. Crawford.

1.2 Facility Information:

1.2.1 Site Address

Vacant Lot
2309 Russell Street
Orangeburg, SC 29116
UST Permit: 19268

1.2.2 Owner Operator Information

Orphan-Sultan
P.O. Box 275
Orangeburg, SC 29116

1.2.3 Current Land Owner

Bernie Wright
P.O. Box 275
Orangeburg, SC 29116
1-803-378-7071

1.2.4 Contractor Information

Crawford Environmental Services
104 Corporate Blvd. Suite 412
West Columbia, SC 29169
1 (803) 708-0079
Contractor Number: UCC-0388

1.2.5 Drilling Information

Todd Allred {Field Manager}
Crawford Environmental Services
104 Corporate Blvd. Suite 412
West Columbia, SC 29169
1 (803) 708-0079
Certification Number: 1446
MWA: UMW 24317

1.2.5.1 Drilling Subcontractor

Billy Ewing
ARM Environmental Services
1210 First Street South Extension
Columbia, SC 29209
1 (803) 783-3314
Certification Number: 1505

1.2.6 Laboratory Information

Access Analytical, Inc. (AA)
7478 Carlisle Street
Irmo, SC 29063
1 (803) 781-4243
SC Certification: 32575001

Analytical Environmental Services Inc. (AES)
3785 Presidential Pkwy.
Atlanta, GA 30340
1 (770) 457-8177
SC Certification: 98016003

Schnabel Engineering
104 Corporate Blvd. Suite 420
West Columbia, SC 29169
1 (803) 796-6240

1.3 Site Description

The site is currently owned by Bernie Wright and is located on the north side of Russell Street in Orangeburg, Orangeburg County, South Carolina. The site is currently unoccupied and is a vacant lot. The surrounding area consists of mixed residential and commercial properties. The site is bordered by Russell Street to the south and Buckley Street to the west. Beyond Russell Street to the south, are several residences. Beyond Buckley Street is an apartment complex. The east is bordered by residential properties. The north is bordered by a drainage ditch, beyond which is South Carolina State College property, specifically the Oliver C. Dawson Football Stadium. The site location

is indicated on a USGS topographic map of the Kingstree Quadrangle, South Carolina and is included as Figure 1.

1.4 Site History

Vacant Lot has one reported release. The release was reported on October 18, 2006 and was confirmed on October 10, 2007. Nine underground storage tanks (USTs), are recorded for the site, with their current status unknown, but are listed as pre-1974 and empty. Observations during this investigation suggest that the USTs remain in-place at the site. The tank basin is located on the southern section of the facility. The site was last sampled December 12, 2010 (Groundwater Assessment).

1.4.1 Initial Groundwater Assessment (IGWA)

Midlands Environmental Consulting Inc., (MECI) completed an Initial Ground-Water Assessment at the Vacant Lot facility in March of 2009. MW-1 was installed during this assessment.

1.4.2 Tier 1 Assessment

Midlands Environmental Consulting Inc., (MECI) completed a Tier 1 Assessment at the Vacant Lot facility in December of 2010. MW-2, MW-3, and MW-4, was installed during this assessment.

1.4.3 QAPP and Site Visit

SCDHEC requested a site specific QAPP in a notice to proceed (NtP) issued on July 1, 2011. A site check was performed by CES personnel on July 22, 2011. The QAPP was submitted on August 1, 2011, and was approved on August 10, 2011.

1.5 Scope of Work

Work performed under Cost Agreement 42108 was approved by the South Carolina Department of Health and Environmental Control (SCDHEC) in correspondence dated August 10, 2011 and was completed with the intent of defining the horizontal and vertical extent of dissolved chemicals of concern (CoCs).

Field Screening (Shallow)

(1) Eight temporary groundwater monitoring wells (GW-10 through GW-17) were installed and sampled during this assessment. The temporary monitoring wells were installed in an effort to delineate the horizontal extent of the contaminant plume identified at the Vacant Lot facility. Locations are depicted on Figure 2. Temporary wells GW-10 through GW-17- were converted into MW-5 through MW-12 after field screening analysis.

Field Screening (Deep)
(2) Two temporary deep soil borings (GW-18 and GW-19) were installed and sampled during this assessment. The temporary soil borings were installed in an effort to delineate the vertical extent of the contaminant plume at the Vacant Lot facility. Locations are depicted on Figure 2. Temporary wells GW-18 through GW-19 were converted to DW-1 and DW-2 after field screening analysis.

Perimeter Wells
(3) Eight temporary wells (GW-10 through GW-17,) were converted to shallow monitoring wells (MW-5, MW-6, MW-7, MW-8, MW-9, MW-10, MW-11, and MW-12) and four additional shallow wells (MW-13, MW-14, MW-15, and MW-16) were installed for the purpose of defining the areal extent of petroleum impacts at the Vacant Lot facility. Monitoring wells were installed under approval UMW-24317. Locations are depicted on Figure 2. Monitoring well locations were approved by SCDHEC on September 9, 2011 via email.

Deep Wells
(4) Two temporary telescoping monitoring wells (GW-18 and GW-19) were converted to deep wells (DW-1 and DW-2) and one additional (non-pit cased) deep well (DW-3) was installed for the purpose of defining the vertical extent of dissolved-phase petroleum impacts at the Vacant Lot facility. Monitoring wells were installed under approval UMW-24317. Locations are depicted on Figure 2.

Groundwater Elevations
(5) Equilibrated static water levels and free-product thicknesses were recorded for monitoring wells MW-1, MW-2, MW-3, MW-4, MW-5, MW-6, MW-7, MW-8, MW-9, MW-10, MW-11, MW-12, MW-13, MW-14, MW-15, MW-16 DW-1, DW-2, and DW-3 by CES personnel on September 10, 2011.

Groundwater Sampling
(6) Groundwater chemical samples (BTEX, Naphthalene, MTBE, 1,2 DCA, EDB 8 Oxygenates and Lead) were collected from monitoring wells MW-1, MW-2, MW-3, MW-4, MW-5, MW-6, MW-7, MW-8, MW-9, MW-10, MW-11, MW-12, MW-13, MW-14, MW-15, MW-16 DW-1, DW-2, and DW-3 by CES personnel on September 10, 2011.

Comprehensive Survey
(7) A comprehensive survey, recording structures, underground utilities, potential receptors, USTs and associated piping and dispensers, and locations of all sampling points and monitoring wells associated with this assessment, was completed by Robert Lackey Surveying (Registered Land Surveyor 14799) on September 14, 2011.

Slug Test
(8) Two slug tests, for the purpose of defining hydraulic conductivity of the shallow and deep saturation zone was performed on MW-3 and DW-1 on September 10, 2011 by CES personnel.

Diagram Construction
(9) A potentiometric surface map and associated isoconcentration maps were constructed utilizing the September 14, 2011 surveying data, relative groundwater elevations, and results of the chemical analyses established from the sampling event performed on September 10, 2011.

Cross-sections
(10) Two hydrogeologic cross-sections were constructed utilizing the September 14, 2011 surveying data and the lithologic characterizations recorded during monitoring well and soil boring installations.

2.0 Site Characteristics

2.1 Regional Geology and Hydrogeology

The subject facility is located within the Atlantic Coastal Plain Physigraphic Province. The soils in this province are typically composed of interbedded silts, sands and clays that have been deposited during successive advances and retreats of the ocean over the past several million years. Recent sedimentary deposits comprise the shallow subsurface of the study area and are underlain by the Williamsburg, Rhems, Black Creek, and the Middendorf formations. The Black Creek and Middendorf Aquifer Systems are major sources of groundwater supplies in the study area. Sedimentary deposits of the Coastal Plain comprise a total approximate thickness of 1000 feet in this area and underlain by crystalline bedrock.

2.2 Site Specific Geology and Hydrogeology

Based upon lithologic descriptions of subsurface soils encountered during drilling, the shallow subsurface of the site was generally composed of a grey to tan fine grained silty sand intermixed with clays and silts which was encountered at the surface to an

approximate depth of four feet below land surface (bls). The silty sand extended to a depth ranging from one to 12 feet bls and was underlain by a fine grained brown to orange sandy clay to the investigated depth of approximately 40 feet bls. Lithologic descriptions are included in the boring logs provided in Appendix D. Grain size (sieve/hydrometer) analyses were conducted on representative soil samples collected from the shallow and deep saturated zones. Soils in the shallow saturated zone {7-12 feet} consisted of 47.2% Sand, 23.9% silt and 28.9% clay. Soils in the deep saturated zone {15-20 feet} consisted of 30.8% Sand, 38.0% Silt, and 31.2% clay.

Groundwater was generally encountered during field screening installation at a depth of eight - ten feet bls. Groundwater flow was observed during the groundwater sampling event as moving to the northeast in the shallow saturated zone and in the deep saturated zone.

2.3 Receptor Survey

A receptor survey was completed by Midlands Environmental Consultants Inc., (MECI) during the Tier I assessment for this facility. No water supply wells were identified during the Tier 1 Assessment.

2.4 Utility Survey

A utility survey was completed by Midlands Environmental Consultants Inc., (MECI) during the Tier I assessment for this facility. A water line was identified on the southern section of the facility property. Locations are identified on Figure 2.

3.0 Assessment Activities

3.1 Field Screening

Field screening activities were completed by ARM Environmental Services under the supervision of CES personnel on August 26 - 29 2011. The field screening activities consisted of the installation of eight temporary monitoring wells and groundwater sample collection. Groundwater samples were collected utilizing disposable polyethylene bailers. OVA results were recorded utilizing a MiniRAE lite parts per million (PPM) photoionization detector (PID). The PID was calibrated on a daily basis before use on assessment activities. Temporary well locations (GW-10 through GW-17) are depicted on Figure 3.

The installation of two deep temporary monitoring wells was completed by ARM Environmental Services under the supervision of CES personnel on August 26 - 29, 2011 for the purpose of determining extent of vertical impact. Lithologic characterizations are provided on the soil boring logs which are included as Appendix

D. Field screening results are included as Table 1B. Installation of the temporary monitoring wells was completed following the methodology outlined in the CES standard operating procedure (SOP) section 2.6.

Groundwater samples were placed in coolers, maintaining 4°C, and delivered to AA. AA then transferred the samples to AES via FEDEX for laboratory analysis.

3.2 Well Installation

Based on field screening results and SCDHEC direction, CES converted eight temporary shallow monitoring wells (GW-10 through GW-17) and two deep temporary monitoring wells (GW-18 and GW-19) into permanent monitoring wells and redesignated them as MW-5 through MW-12 and DW-1 and DW-2. Four additional shallow wells (MW-13 through MW-16) and one additional non-pitcased deep well (DW-3) were installed beyond the temporary well conversion for further horizontal and vertical definition. Installation of the monitoring wells was completed following the methodology outlined in the CES standard operating procedure (SOP) section 2.9.

Monitoring wells were properly developed utilizing the bail/surge method after construction (August 29, 2011 and September 9, 2011). Locations of the new monitoring wells are depicted on Figure 2. Boring logs and SCDHEC forms 1903 are included in Appendices D & E.

3.2.1 Soil Samples

Eight soil samples, for the analysis of BTEX and naphthalene, were collected from the newly installed monitoring wells. Soil samples were collected utilizing a hand auger advanced to a depth just above the water table. CES personnel, while wearing nitrile gloves transferred the soil from the auger bucket to proper sample containers. Samples were then placed in coolers, maintaining 4°C, and delivered to AA. AA then transferred the samples to AES via FEDEX for laboratory analysis. Derived concentrations for the samples were compared to RBSLs for sandy rich soils presented in the SCDHEC UST QAPP guidance document.

Concentrations of chemicals of concern were not detected in the submitted soil samples. A summary of laboratory analytical results for soil is included as Table 1.

3.3 Water Sample Collection

A comprehensive groundwater sampling event, including; recording equilibrated static water levels, product thicknesses, and the collection of chemical samples was completed by CES personnel on September 10, 2011. Samples for the shallow wells were collected utilizing disposable polyethylene bailers. Bailers were lowered slowly to the top of the water column (after purging in some cases) allowed to fill one volume, then removed.

Samples for the deep wells were collected utilizing hydrosleeve™ groundwater sample collectors. The hydrosleeve™ collectors were lowered into the deep wells and placed at one foot above the bottom of the screen. Collectors were left in the wells for 24 hours before retrieval to allow the wells to stabilize after installation. The collectors were then removed from the well, collecting water only from one foot from the bottom of the screen to the top of the screen then sealing off for the remainder of the removal.

In both cases, groundwater was then transferred to the appropriate sampling containers and was then placed in coolers, maintaining 4°C, and delivered to AA. AA then transferred the samples to AES via FEDEX for laboratory analysis. Temperature, pH, specific conductance and dissolved oxygen readings were recorded during sampling. Groundwater chemical samples were submitted to Access Analytical, Inc., (AA) {SC Certification: 98016} for analysis. Groundwater sampling was completed following the methodology outlined in the CES standard operating procedure (SOP) section 2.10.

3.3.1 Groundwater Sampling

Equilibrated static water levels and free-product thicknesses were recorded for monitoring wells MW-1, MW-2, MW-3, MW-4, MW-5, MW-6, MW-7, MW-8, MW-9, MW-10, MW-11, MW-12, MW-13, MW-14, MW-15, and MW-16 DW-1, DW-2, and DW-3 by CES personnel on September 10, 2011.. Ambient air temperature during the time of sampling was recorded at 31°C-32°C. Samples were collected by CES personnel (J. Reynolds & D. O'Brien).

Prior to sample collection, three well volumes were purged from MW-5, MW-6, MW-7, MW-8, MW-9, MW-10, MW-11 MW-12, MW-13, MW-14, MW-15, MW-16 and DW-1.

MW-2 was dry during the September 10, 2011 sampling event.

MW-1, MW-4 and MW-12 did not exhibit enough water for lead sample collection during the September 10, 2011 sampling event.

Free phase petroleum product was not observed in wells MW-1, MW-2, MW-3, MW-4, MW-5, MW-6, MW-7, MW-8, MW-9, MW-10, MW-11, MW-12, MW-13, MW-14, MW-15, and MW-16 DW-1, DW-2, and DW-3 during the September 10, 2011 sampling event.

3.3.2 Surface water samples

Three surface water samples were collected from the drainage ditch, located on on the north side of the subject facility property. Samples were collected utilizing disposable polyethylene bailers. The bailers were lowered into the ditch and allowed to submerge before removal. Surface water was then transferred to the appropriate sample containers and was then placed in coolers, maintaining 4°C, and delivered to AA. AA then transferred the samples to AES via FEDEX for laboratory analysis.

Table 3 presents the laboratory data for the submitted groundwater samples collected as part of this assessment. The groundwater isoconcentration maps are included as Figure 4. The potentiometric surface map is included as Figure 5.

CES recorded groundwater levels from 19 monitoring wells and sampled 19 monitoring wells as part of the September 10, 2011 sampling event for the following chemical analyses: BTEX, naphthalene, MTBE, 1,2 DCA, lead, and 8 Oxygenates .

3.4 Comprehensive Survey

A comprehensive survey recording; structures, underground utilities, potential receptors, USTs and associated piping and dispensers, and locations of all sampling points and monitoring wells associated with this assessment, was completed by Robert Lackey Surveying (Registered Land Surveyor 14799) on September 14, 2011.

3.5 Disposal Manifests

The non-hazardous waste manifests for the transportation and disposal of residual soil/water generated during monitoring well installations and groundwater sampling are included as Appendix G. Groundwater was intermixed with the soil in 55 gallon drums and was then disposed of at a SC certified disposal facility. The soil groundwater mixture was listed as a soil on the included disposal manifest.

4.0 Aquifer Characteristics/Calculations

4.1 Hydraulic Conductivity

As part of this assessment, hydraulic conductivity for the shallow and deep saturation zone was determined by a slug test completed on MW-3 (screened 2 ft-12 ft bgs) and DW-1 (screened 35 ft – 40 ft bgs). Slug tests were completed by CES personnel September 10, 2011. The slug was placed into the above mentioned wells and was then removed. Change in groundwater depth was measured every 10 seconds for 2 minutes, then 15 seconds, for 1 minute, then 30 seconds, for 1 minute, then 1 minute, for two minutes etc. (see slug test for timing) for one hour. Slug test data and aquifer characteristics were then entered into the Starpoint Super Slug computer analysis program. The computed hydraulic conductivity (K) for the shallow saturation zone horizon is 2.5 ft/yr and for the deep saturation zone is 32.7 ft/yr. Slug Test data, summary form and graphs are included in Appendix F.

4.2 Hydraulic Gradient

The hydraulic gradient was calculated using surveyed top of casing (ToC) elevations and equilibrated static water levels obtained the September 10, 2011 sampling event. As evidenced by the potentiometric surface diagram (Figure 5), the average calculated hydraulic gradient of the shallow saturation zone across the site is calculated to be 0.01 ft/ft toward the northeast. The highest groundwater elevation at the site, during the sampling event, was exhibited by MW-12 and the lowest was exhibited by MW-14 (northeast).The average calculated hydraulic gradient of the deep saturation zone across the site (DW-1 to DW-3) is calculated to be 0.03 ft/ft toward the northeast. Details of these calculations are included in Appendix F.

4.3 Porosity

Grain size (sieve/hydrometer) analyses were conducted on soil samples collected from MW-9 at 12.0 ft bgs and DW-1 at 40.0 ft bgs during the Tier II Assessment. Laboratory results are included in Appendix F. Results indicate that the aquifer fabric for MW-9 {shallow saturation zone} contains 47.2% Sand, and 28.9% Clay. Based on figure G1 of the UST QAPP, a grain size distribution of 47.2% sand and 28.9% clay [Sandy Clay Loam] yields a tabled total porosity value of 0.45.
Results indicate that the aquifer fabric for DW-1 {deep saturation zone} contains 30.8% Sand, and 31.2% Clay. Based on figure G1 of the UST QAPP, a grain size distribution of 30.8% sand and 31.2% clay [Clay Loam] yields a tabled total porosity value of 0.50.

4.4 Estimated Seepage Velocity

Using the previously calculated parameters (hydraulic gradient, hydraulic conductivity, assumed porosity), an estimated seepage velocity was determined for the area. A value of 0.05 ft/yr and 1.9 ft/yr was calculated for the estimated seepage velocities for the shallow saturation zone and deep saturation zone, respectively. Details of these calculations also are included in Appendix F.

5.0 Summary

During the assessment activities performed at the subject property, CES installed twelve shallow monitoring wells, three deep monitoring wells, conducted a comprehensive groundwater monitoring event, preformed aquifer characterization studies and completed a comprehensive survey in an effort to define the horizontal and vertical extent of petroleum impacts. The qualitative and quantitative data collected from recent assessment activities indicates the following regarding current site conditions;

1. Shallow groundwater flow at the Vacant Lot facility was mapped with a primarily northeastern component towards the Abraham property as inferred from the relative groundwater elevations and calculated gradients on September 10, 2011.

2. Free-phase petroleum was not detected, in the monitoring wells, during the sampling event.

3. Groundwater from newly installed monitoring wells, with the exception of MW-6 and MW-10, did not exhibit chemicals of concern above the RBSLs/MCLs.

4. Groundwater from monitoring wells MW-3 and MW-6 exhibited lead concentrations above the RBSL/MCL. These results are probably due to the turbidity of the groundwater samples submitted for analysis.

5. Groundwater from monitoring wells MW-3, MW-6 and MW-10 exhibited hydrocarbon constituent concentrations above the RBSLs/MCLs for the chemicals of concern.

6.0 Conclusion

Based upon the data collected during the September 10, 2011 sampling event and previous assessment activities, the horizontal extent of the dissolved-phase hydrocarbon plume extends from the western section of the site in an eastern direction to MW-6.east. The limits of the dissolved-phase compounds are adequately defined by the shallow monitoring wells MW-1, MW-4, MW-7, MW-8, MW-9, MW-11, MW-12, MW-13, MW-14, and MW-16.

The vertical extent of the plume is adequately defined as DW-1 through DW-3 do not exhibit chemical concentrations above the RBSL/MCL.

7.0 Recommendations

Based on the presence of dissolved-phase compounds in MW-3, MW-6 and MW-10 CES recommends that the Vacant Lot project proceed to corrective action for site rehabilitation activities.

8.0 Limitations

This report is based upon a specific scope of work requested by SCDHEC. This report is intended only for the use of CES's client and anyone else specifically listed on this report. Some data contained within this report was previously collected by other consultants and is assumed to be correct. CES will not and cannot be liable for the unauthorized release by any third party. Other than as contained in this paragraph, CES makes no expressed or implied warranty as to the contents of this report.

Tables

Table 1: Soil Laboratory Analytical Results
Table 1B: Groundwater Field Screening Analytical Summary
Table 2: Well Construction and Historical Groundwater Elevation Summary
Table 3: Groundwater Laboratory Analytical Result Summary

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Table 1

Facility Name: Vacant Lot
Address: 2309 Russell Street Orangeburg, SC 29115

UST Permit ID: 19268
CES Project #: 15.07

Soil Laboratory Analytical Results Summary

Location		Date	Depth	Benzene	Toluene	Ethylbenzene	Xylenes (total)	Naphthalene	Comments
RBSL/MCLs (ug/kg){Clay Rich Soil}				3	627	1551	13010	47	
GW	10	8/26/2011	5.0	<0.91	<0.91	<0.91	<2.7	<4.5	
GW	11	8/26/2011	5.0	<1.1	<1.1	<1.1	<3.3	<5.5	
GW	12	8/26/2011	5.0	<0.93	<0.93	<0.93	<2.8	<4.6	
GW	13	8/26/2011	5.0	<0.73	<0.73	<0.73	<2.2	<3.7	
GW	14	8/26/2011	5.0	<0.97	<0.97	<0.97	<2.9	<4.8	
GW	15	8/26/2011	5.0	<1.0	<1.0	<1.0	<3.1	<5.1	
GW	16	8/26/2011	5.0	<0.92	<0.92	<0.92	<2.8	<4.6	
GW	17	8/26/2011	5.0	<1.1	<1.1	<1.1	<3.3	<5.5	
Trip Blank		8/25/2011	n/a	<1.0	**0.90J**	<1.0	**1.0J**	**1.3J**	

all values are in ug/kg

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RBSLs/MCLs taken from UST QAPP Table C3 for Clay Rich Soil <10 ft

Table 1B

Facility Name: Vacant Lot
Address: 2309 Russell Street Orangeburg, SC 29115
UST Permit ID: 19268
CES Project Number: 15.07

Groundwater Screening Analytical Summary

Sample ID:		Sample date	Total Depth	Benzene	Toluene	Ethylbenzene	Xylenes (Total)	MTBE	Naphthalene	1,2 DCA	EDB
RBSL/MCL		ug/L	(ft)	5	1000	700	10000	25	40	5	0.01
GW	10	8/29/2011	12	***30***	<1.0	<1.0	<3.0	**12**	**2.3J**	NS	NS
GW	11	8/29/2011	12	<1.0	<1.0	<1.0	<3.0	***72***	<5.0	NS	NS
GW	11DUP	8/29/2011	12	<1.0	<1.0	<1.0	<3.0	***74***	<5.0	NS	NS
GW	12	8/29/2011	12	<1.0	<1.0	<1.0	<3.0	<1.0	<5.0	NS	NS
GW	13	8/29/2011	12	<1.0	<1.0	<1.0	<3.0	<1.0	<5.0	NS	NS
GW	14	8/29/2011	12	<1.0	<1.0	<1.0	<3.0	<1.0	<5.0	NS	NS
GW	15	8/29/2011	12	<1.0	<1.0	**0.48J**	<3.0	**0.30J**	<5.0	NS	NS
GW	16	8/29/2011	12	<1.0	<1.0	<1.0	<3.0	***130***	<5.0	NS	NS
GW	17	8/29/2011	12	<1.0	<1.0	<1.0	<3.0	<1.0	<5.0	NS	NS
GW	18	8/29/2011	40	<1.0	<1.0	<1.0	<3.0	**4.8**	**1.3J**	NS	NS
GW	19	8/29/2011	35	<1.0	<1.0	<1.0	<3.0	<1.0	<5.0	NS	NS
SW	1	8/29/2011	3	<1.0	<1.0	<1.0	<3.0	<1.0	<5.0	NS	NS
SW	1DUP	8/29/2011	3	<1.0	<1.0	<1.0	<3.0	<1.0	<5.0	NS	NS
SW	2	8/29/2011	3	<1.0	<1.0	<1.0	<3.0	<1.0	<5.0	NS	NS
SW	3	8/29/2011	3	<1.0	<1.0	<1.0	<3.0	<1.0	<5.0	NS	NS
Trip Blank		8/29/2011	N/A	<1.0	<1.0	<1.0	<3.0	<1.0	<5.0	NS	NS
Field Blank		8/29/2011	N/A	<1.0	<1.0	<1.0	<3.0	<1.0	<5.0	NS	NS

All Values are in ug/L

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Table 2

Facility Name: Vacant Lot — UST Permit ID: 19268

Address: 2309 Russell Street Orangeburg, SC 29115 — CES Project Number: 15.07

Well Construction and Historical Groundwater Elevation Summary

Monitor Well	Well Depth (ft)	Screened Interval		Top of Casing (ft)	Date Measured	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)	Product Elevation (ft)	Groundwater Elevation (ft)
MW-1	12	2	12	99.44	9/10/2011	0	10.73	0	0	88.71
						0		0	0	99.44
MW-2	12	2	12	99.13	9/10/2011	0		0	0	99.13
						0		0	0	99.13
MW-3	12	2	12	98.29	9/10/2011	0	8.58	0	0	89.71
						0		0	0	98.29
MW-4	12	2	12	100.43	9/10/2011	0	11.80	0	0	88.63
						0		0	0	100.43
MW-5	12	2	12	96.26	9/10/2011	0	8.10	0	0	88.16
MW-6	12	2	12	95.97	9/10/2011	0	7.76	0	0	88.21
MW-7	12	2	12	98.91	9/10/2011	0	9.70	0	0	89.21
MW-8	12	2	12	98.82	9/10/2011	0	10.41	0	0	88.41
MW-9	12	2	12	98.43	9/10/2011	0	10.09	0	0	88.34
MW-10	12	2	12	99.49*	9/10/2011	0	8.91	0	0	90.58*
MW-11	12	2	12	99.76	9/10/2011	0	10.04	0	0	89.72
MW-12	12	2	12	102.18	9/10/2011	0	9.36	0	0	92.82
MW-13	12	2	12	95.68	9/10/2011	0	8.14	0	0	87.54
MW-14	12	2	12	98.46	9/10/2011	0	11.68	0	0	86.78
MW-15	12	2	12	99.51	9/10/2011	0	10.68	0	0	88.83
MW-16	12	2	12	99.51	9/10/2011	0	9.97	0	0	89.54
DW-1	40	35	40	98.35	9/10/2011	0	11.61	0	0	86.74
DW-2	35	30	35	97.99	9/10/2011	0	13.45	0	0	84.54
DW-3	29	24	29	95.67	9/10/2011	0	13.21	0	0	82.46

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* Estimated Groundwater Elevation Estimate: ToC elevation not taken due to obstruction: Rim used instead

n/a = not applicable

Table 3

Facility Name: Vacant Lot — UST Permit ID: 19268
Address: 2309 Russell Street Orangeburg, SC 29115 — CES Project Number: 15.07

Groundwater Laboratory Analytical Result Summary

Well ID:	Date:	Benzene	Toluene	Ethylbenzene	Xylenes (Total)	Naphthalene	MTBE	1,2 DCA	EDB	Pb	NO3	FE+	SO4	ETBA	Ethanol	ETBE	DIPE	TAA	TAME	TBA	TBF	Date:	Well ID:
RBSL		5	1000	700	10000	25	40	5	0.01	15	10000	NE	NE	NE	10000	47	150	240	128	1400	NE		RBSL
MW-1	9/10/2011	<1.0	**0.78J**	<1.0	<3.0	<1.0	<1.0	<1.0	<0.020	NS	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-1
	12/12/2010	<5.0	<5.0	**2.7J**	<10.0	**16.2**	**19.5**	NS	<0.020	**6.2**	NS	**6000**	NS	NS	NS	NS	NS	NS	NS	NS	NS	12/12/2010	
	3/9/2009	<25	<25	<25	<50.0	<25	**27.2**	NS	<0.021	<5.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	3/9/2009	
MW-2	9/10/2011	DRY																				9/10/2011	MW-2
	12/12/2010	<5.0	**1.8J**	**1.1J**	<10.0	13	**13.4**	NS	<0.019	160	150	3000	4800	NS	NS	NS	NS	NS	NS	NS	NS	12/12/2010	
MW-3	9/10/2011	***12***	**0.99J**	**37**	**2.1J**	***460***	**3.1**	<1.0	<0.021	***137***	NS	NS	NS	<100	<100	<100	<10	<100	<10	**7.8J**	<100	9/10/2011	MW-3
	12/12/2010	***43.1J***	<100	***1900***	**359**	***1990***	<100	NS	<0.019	***16.7***	<100	**4600**	**1100**	NS	NS	NS	NS	NS	NS	NS	NS	12/12/2010	
MW-4	9/10/2011	<1.0	**0.54J**	<1.0	<3.0	<5.0	**0.56J**	<1.0	<0.020	NS	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-4
	12/12/2010	<5.0	<5.0	<5.0	<10.0	<5.0	**7.8**	NS	<0.020	<5.0	**1200**	**6400**	**17000**	NS	NS	NS	NS	NS	NS	NS	NS	12/12/2010	
MW-5	9/10/2011	<1.0	**0.54J**	<1.0	<3.0	**0.72J**	**7.9**	<1.0	<0.020	**14.6**	NS	NS	NS	<100	<100	<100	**7.6J**	<100	<10	<100	<100	9/10/2011	MW-5
MW-6	9/10/2011	<1.0	<1.0	<1.0	<3.0	**6**	***53***	<1.0	<0.020	**3.53**	NS	NS	NS	<100	200	<100	<10	<100	<10	**13J**	<100	9/10/2011	MW-6
MW-7	9/10/2011	<1.0	<1.0	<1.0	**0.92J**	<5.0	<1.0	<1.0	<0.020	***139***	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-7
MW-8	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-8
MW-9	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	**6.43**	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-9
MW-10	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	***43***	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-10
MW-11	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	**0.38J**	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-11
MW-12	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	NS	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-12
MW-13	9/10/2011	<1.0	**0.78J**	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-13
MW-14	9/10/2011	<1.0	**0.47J**	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	**6.29**	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-14
MW-14DUP	9/10/2011	<1.0	**0.54J**	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	NS	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-14DUP
MW-15	9/10/2011	<1.0	<1.0	**0.49J**	<3.0	**7.4**	**2.3**	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-15
MW-16	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-16
DW-1	9/10/2011	<1.0	**0.77J**	<1.0	**0.41J**	**1.3J**	**0.72J**	<1.0	<0.020	**1.83**	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	DW-1
DW-2	9/10/2011	<1.0	**0.75J**	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	DW-2
DW-3	9/10/2011	<1.0	**0.73J**	<1.0	<3.0	<5.0	**0.46J**	<1.0	<0.020	**11.6**	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	DW-3
Field Blank	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	NS	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	Field Blank
Trip Blank	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	NS	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	Trip Blank

BDL= Below Detectable Limit
RBSL= Risk Based Screening Levels
NE= Not Established
EDB= 1,2 Dibromoethane

CRAWFORD ENVIRONMENTAL SERVICES

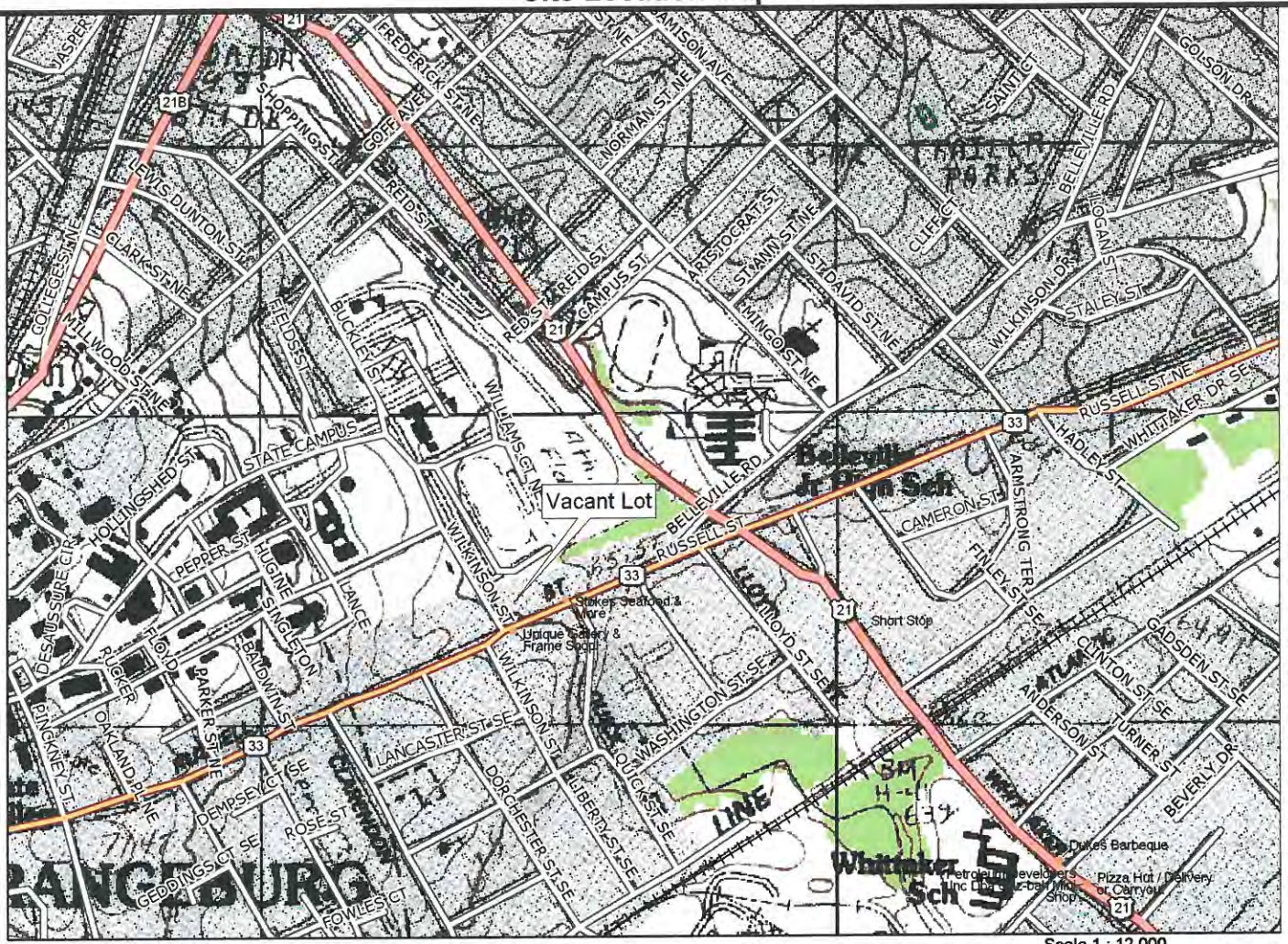
1,2 DCA = 1,2 Dichloroethane
Shaded values are above the detection limit
Italized values are above the RBSL

Figures

Figure 1: Topographic Map
Figure 2: Site Facility Base Map
Figure 3: Field Screening / Soil Chemicals of Concern Map
Figure 4 (A-D) Chemicals of Concern (Plume Diagrams)
Figure 5 (A-B) Potentiometric Diagrams
Figure 6 (A-B) Cross-sections

CRAWFORD
ENVIRONMENTAL
SERVICES

FIGURE 1
Site Location Map



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www.delorme.com

TN

MN (7.0°W)

Scale 1 : 12,000

0 200 400 600 800 1000 ft

0 100 200 300 400 500 m

1" = 1,000.0 ft Data Zoom 14-0

CRAWFORD ENVIRONMENTAL SERVICES

Division of C.F. Crawford, Inc.

104 Corporate Blvd..
West Columbia, SC 29169

803-708-0079 (office) 803-708-8137 (fax)

ORANGEBURG SOUTH, SOUTH CAROLINA

Source: Delorme Topo USA 7.0
Scale: 1:12,000 Contour Interval: 10 Feet

Vacant Lot
2309 Russell Street
Orangeburg, SC 29115

Project: Tier II

Client: SCDHEC

CES Job #: 15.070

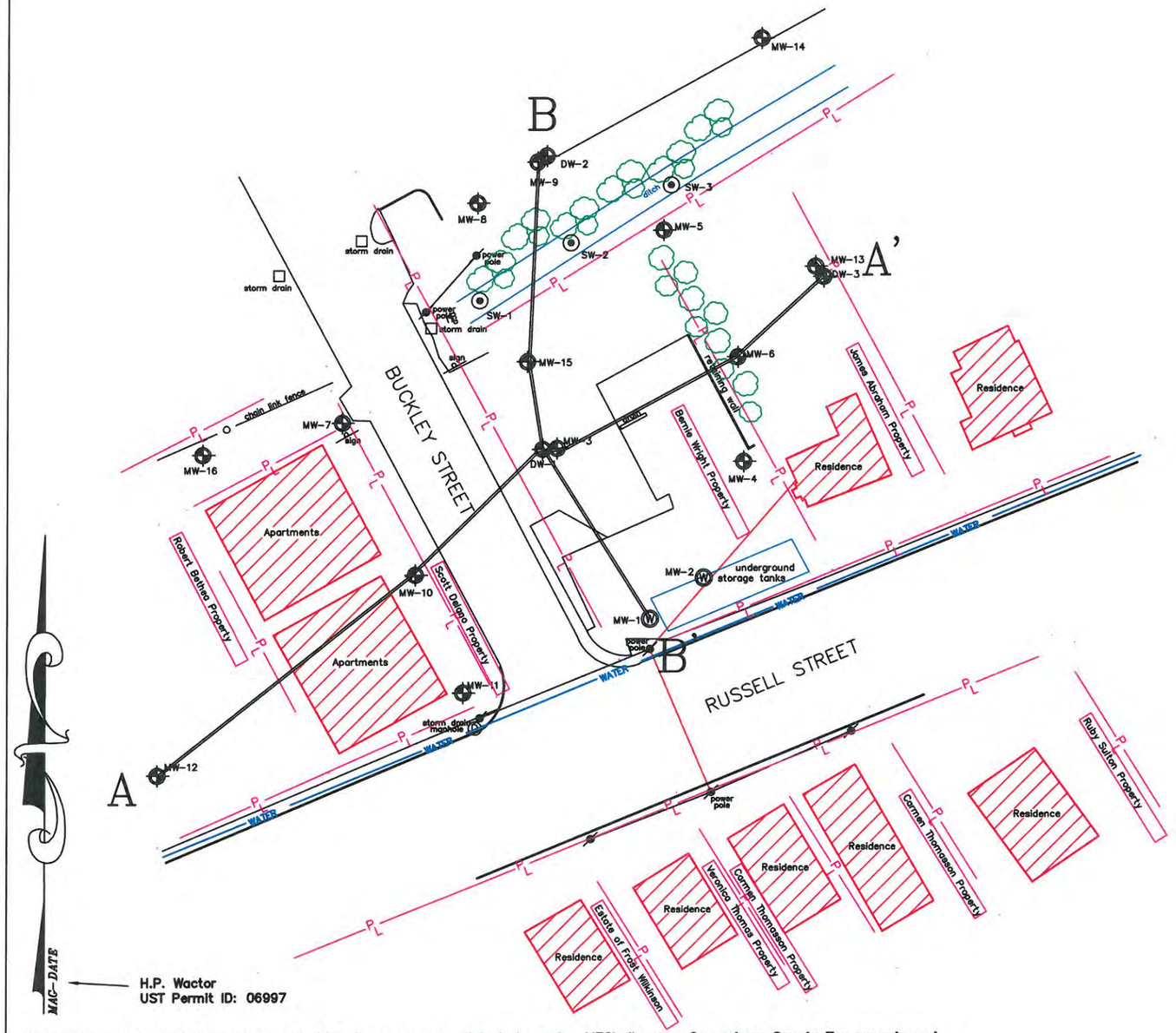
Date: September 2011

N

GRAPHIC SCALE

0 25 50 100

(In Feet)
As Shown



Note: Diagram based RLS September 14, 2011 Survey, upon aerial photographs, MECI diagram, Orangeburg County Tax records and CES Field Notes

LEGEND			
	UST Basin		Property Line
	Monitoring Well		
	Soil Boring/ Field Screening /Surface Sample		

REV	BY	DATE

DR: JSR
CK: HDO
SCALE: AS SHOWN
CES PROJ. NO. 15.070

Tier II Environmental Assessment

CRAWFORD ENVIRONMENTAL SERVICES
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West Columbia, SC 29210
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803-708-8137 (Fax)

FIGURE TITLE

Site Facility Base and Cross-section Reference Map

Vacant Lot
2309 Russell Street
Orangeburg, SC 29115
Site ID: 19268

DRAWING NUMBER: Figure 2

REV: 0 9.23.2011

GRAPHIC SCALE
0 25 50 100
(In Feet)
As Shown

Note: Diagram based RLS September 14, 2011 Survey, upon aerial photographs, MECI diagram, Orangeburg County Tax records and CES Field Notes

Soil Laboratory Analytical Results Summary

Location		Date	Depth	Benzene	Toluene	Ethylbenzene	Xylenes (total)	Naphthalene	Comments
RBSL/MCLs (ug/kg){Clay		Rich Soil}		3	627	1551	13010	47	
GW	10	8/26/2011	5.0	<0.91	<0.91	<0.91	<2.7	<4.5	
GW	11	8/26/2011	5.0	<1.1	<1.1	<1.1	<3.3	<5.5	
GW	12	8/26/2011	5.0	<0.93	<0.93	<0.93	<2.8	<4.6	
GW	13	8/26/2011	5.0	<0.73	<0.73	<0.73	<2.2	<3.7	
GW	14	8/26/2011	5.0	<0.97	<0.97	<0.97	<2.9	<4.8	
GW	15	8/26/2011	5.0	<1.0	<1.0	<1.0	<3.1	<5.1	
GW	16	8/26/2011	5.0	<0.92	<0.92	<0.92	<2.8	<4.6	
GW	17	8/26/2011	5.0	<1.1	<1.1	<1.1	<3.3	<5.5	
Trip Blank		8/25/2011	n/a	<1.0	**0.90J**	<1.0	**1.0J**	**1.3J**	

Groundwater Screening Analytical Summary

Sample ID:		Sample date	Total Depth	Benzene	Toluene	Ethylbenzene	Xylenes (Total)	MTBE	Naphthalene	1,2 DCA	EDB
RBSL/MCL		ug/L	(ft)	5	1000	700	10000	25	40	5	0.01
GW	10	8/29/2011	12	***30***	<1.0	<1.0	<3.0	**12**	**2.3J**	NS	NS
GW	11	8/29/2011	12	<1.0	<1.0	<1.0	<3.0	***72***	<5.0	NS	NS
GW	11DUP	8/29/2011	12	<1.0	<1.0	<1.0	<3.0	***74***	<5.0	NS	NS
GW	12	8/29/2011	12	<1.0	<1.0	<1.0	<3.0	<1.0	<5.0	NS	NS
GW	13	8/29/2011	12	<1.0	<1.0	<1.0	<3.0	<1.0	<5.0	NS	NS
GW	14	8/29/2011	12	<1.0	<1.0	<1.0	<3.0	<1.0	<5.0	NS	NS
GW	15	8/29/2011	12	<1.0	<1.0	**0.48J**	<3.0	**0.30J**	<5.0	NS	NS
GW	16	8/29/2011	12	<1.0	<1.0	<1.0	<3.0	***130***	<5.0	NS	NS
GW	17	8/29/2011	12	<1.0	<1.0	<1.0	<3.0	<1.0	<5.0	NS	NS
GW	18	8/29/2011	40	<1.0	<1.0	<1.0	<3.0	**4.8**	**1.3J**	NS	NS
GW	19	8/29/2011	35	<1.0	<1.0	<1.0	<3.0	<1.0	<5.0	NS	NS
SW	1	8/29/2011	3	<1.0	<1.0	<1.0	<3.0	<1.0	<5.0	NS	NS
SW	1DUP	8/29/2011	3	<1.0	<1.0	<1.0	<3.0	<1.0	<5.0	NS	NS
SW	2	8/29/2011	3	<1.0	<1.0	<1.0	<3.0	<1.0	<5.0	NS	NS
SW	3	8/29/2011	3	<1.0	<1.0	<1.0	<3.0	<1.0	<5.0	NS	NS
Trip Blank		8/29/2011	N/A	<1.0	<1.0	<1.0	<3.0	<1.0	<5.0	NS	NS
Field Blank		8/29/2011	N/A	<1.0	<1.0	<1.0	<3.0	<1.0	<5.0	NS	NS

LEGEND

	UST Basin		Property Line
	Monitoring Well		
	Soil Boring / Field Screening/ Surface Sample		

REV	BY	DATE

DR: JSR
CK: HDO
SCALE: AS SHOWN
CES PROJ. NO. 15.070

Tier II Environmental Assessment

CRAWFORD ENVIRONMENTAL SERVICES
104 Corporate Blvd.
Suite 412
West Columbia, SC 29210
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FIGURE TITLE
Field Screening / Soil Chemicals of Concern Map
Vacant Lot
2309 Russell Street
Orangeburg, SC 29115
Site ID: 19268

DRAWING NUMBER: Figure 3
REV: 0
9.23.2011

GRAPHIC SCALE

0 25 50 100

(In Feet)

As Shown

MAC-DATE

Note: Deep wells DW-1, DW-2, and DW-3 are not used in the creation of this map.

Groundwater Laboratory Analytical Result Summary

Well ID:	Date:	Benzene	Toluene	Ethylbenzene	Xylenes (Total)	Naphthalene	MTBE	1,2 DCA	EDB	Pb	NO3	FE+	SO4	ETBA	Ethanol	ETBE	DIPE	TAA	TAME	TBA	TBF	Date:	Well ID:
RBSL	ug/L	5	1000	700	10000	25	40	5	0.01	15	10000	NE	NE	NE	10000	47	150	240	128	1400	NE		RBSL
MW-1	9/10/2011	<1.0	**0.78J**	<1.0	<3.0	<1.0	<1.0	<1.0	<0.020	NS	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-1
MW-2	9/10/2011	DRY																				9/10/2011	MW-2
MW-3	9/10/2011	12	**0.99J**	37	**2.1J**	460	**3.1**	<1.0	<0.021	137	NS	NS	NS	<100	<100	<100	<10	<100	<10	**7.8J**	<100	9/10/2011	MW-3
MW-4	9/10/2011	<1.0	**0.54J**	<1.0	<3.0	<5.0	**0.56J**	<1.0	<0.020	NS	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-4
MW-5	9/10/2011	<1.0	**0.54J**	<1.0	<3.0	**0.72J**	**7.9**	<1.0	<0.020	**14.6**	NS	NS	NS	<100	<100	<100	**7.6J**	<100	<10	<100	<100	9/10/2011	MW-5
MW-6	9/10/2011	<1.0	<1.0	<1.0	<3.0	**6**	**53**	<1.0	<0.020	**3.53**	NS	NS	NS	<100	200	<100	<10	<100	<10	**13J**	<100	9/10/2011	MW-6
MW-7	9/10/2011	<1.0	<1.0	<1.0	**0.92J**	<5.0	<1.0	<1.0	<0.020	139	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-7
MW-8	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-8
MW-9	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	**6.43**	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-9
MW-10	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	43	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-10
MW-11	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	**0.38J**	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-11
MW-12	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	NS	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-12
MW-13	9/10/2011	<1.0	**0.78J**	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-13
MW-14	9/10/2011	<1.0	**0.47J**	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	**6.29**	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-14
MW-15	9/10/2011	<1.0	<1.0	**0.49J**	<3.0	**7.4**	**2.3**	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-15
MW-16	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-16
DW-1	9/10/2011	<1.0	**0.77J**	<1.0	**0.41J**	**1.3J**	**0.72J**	<1.0	<0.020	**1.83**	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	DW-1
DW-2	9/10/2011	<1.0	**0.75J**	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	DW-2
DW-3	9/10/2011	<1.0	**0.73J**	<1.0	<3.0	<5.0	**0.46J**	<1.0	<0.020	**11.6**	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	DW-3

LEGEND

	UST Basin		
⊕	Monitoring Well		

REV	BY	DATE

DR: JSR

CK: HDO

SCALE: AS SHOWN

CES PROJ. NO. 15.070

Tier II Environmental Assessment

CRAWFORD ENVIRONMENTAL SERVICES

104 Corporate Blvd.
Suite 412
West Columbia, SC 29210

803-708-0079 (ph)
803-708-8137 (Fax)

FIGURE TITLE

Chemicals of Concern: Benzene

Vacant Lot
2309 Russell Street
Orangeburg, SC 29115
Site ID: 19268

DRAWING NUMBER: Figure 4A

REV: 0 — 9.23.2011

GRAPHIC SCALE

0 25 50 100

(In Feet)
As Shown

MAC-DATE

Note: Deep wells DW-1, DW-2, and DW-3 are not used in the creation of this map.

Groundwater Laboratory Analytical Result Summary

Well ID:	Date:	Benzene	Toluene	Ethylbenzene	Xylenes (Total)	Naphthalene	MTBE	1,2 DCA	EDB	Pb	NO3	FE+	SO4	ETBA	Ethanol	ETBE	DIPE	TAA	TAME	TBA	TBF	Date:	Well ID:
RBSL	ug/L	5	1000	700	10000	25	40	5	0.01	15	10000	NE	NE	NE	10000	47	150	240	128	1400	NE		RBSL
MW-1	9/10/2011	<1.0	**0.78J**	<1.0	<3.0	<1.0	<1.0	<1.0	<0.020	NS	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-1
MW-2	9/10/2011	DRY																				9/10/2011	MW-2
MW-3	9/10/2011	*12*	**0.99J**	**37**	**2.1J**	*460*	**3.1**	<1.0	<0.021	*137*	NS	NS	NS	<100	<100	<100	<10	<100	<10	**7.8J**	<100	9/10/2011	MW-3
MW-4	9/10/2011	<1.0	**0.54J**	<1.0	<3.0	<5.0	**0.56J**	<1.0	<0.020	NS	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-4
MW-5	9/10/2011	<1.0	**0.54J**	<1.0	<3.0	**0.72J**	**7.9**	<1.0	<0.020	**14.6**	NS	NS	NS	<100	<100	<100	**7.6J**	<100	<10	<100	<100	9/10/2011	MW-5
MW-6	9/10/2011	<1.0	<1.0	<1.0	<3.0	**6**	**53**	<1.0	<0.020	**3.53**	NS	NS	NS	<100	200	<100	<10	<100	<10	**13J**	<100	9/10/2011	MW-6
MW-7	9/10/2011	<1.0	<1.0	<1.0	**0.92J**	<5.0	<1.0	<1.0	<0.020	*139*	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-7
MW-8	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-8
MW-9	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	**6.43**	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-9
MW-10	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	*43*	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-10
MW-11	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	**0.38J**	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-11
MW-12	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	NS	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-12
MW-13	9/10/2011	<1.0	**0.78J**	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-13
MW-14	9/10/2011	<1.0	**0.47J**	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	**6.29**	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-14
MW-15	9/10/2011	<1.0	<1.0	**0.49J**	<3.0	**7.4**	**2.3**	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-15
MW-16	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-16
DW-1	9/10/2011	<1.0	**0.77J**	<1.0	**0.41J**	**1.3J**	**0.72J**	<1.0	<0.020	**1.83**	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	DW-1
DW-2	9/10/2011	<1.0	**0.75J**	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	DW-2
DW-3	9/10/2011	<1.0	**0.73J**	<1.0	<3.0	<5.0	**0.46J**	<1.0	<0.020	**11.6**	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	DW-3

LEGEND

	UST Basin		
⊕	Monitoring Well		

REV	BY	DATE

DR: JSR
CK: HDO
SCALE: AS SHOWN
CES PROJ. NO. 15.070

Tier II Environmental Assessment

CRAWFORD ENVIRONMENTAL SERVICES

104 Corporate Blvd.
Suite 412
West Columbia, SC 29210

803-708-0079 (ph)
803-708-8137 (Fax)

FIGURE TITLE

Chemicals of Concern: Ethylbenzene

Vacant Lot
2309 Russell Street
Orangeburg, SC 29115
Site ID: 19268

DRAWING NUMBER: Figure 4B

REV: 0 9.23.2011

GRAPHIC SCALE

0 25 50 100

(In Feet)

As Shown

Groundwater Laboratory Analytical Result Summary

Well ID:	Date:	Benzene	Toluene	Ethylbenzene	Xylenes (Total)	Naphthalene	MTBE	1,2 DCA	EDB	Pb	NO3	FE+	SO4	ETBA	Ethanol	ETBE	DIPE	TAA	TAME	TBA	TBF	Date:	Well ID:
RBSL	ug/L	5	1000	700	10000	25	40	5	0.01	15	10000	NE	NE	NE	10000	47	150	240	128	1400	NE		RBSL
MW-1	9/10/2011	<1.0	**0.78J**	<1.0	<3.0	<1.0	<1.0	<1.0	<0.020	NS	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-1
MW-2	9/10/2011	DRY																				9/10/2011	MW-2
MW-3	9/10/2011	*12*	**0.99J**	**37**	**2.1J**	*460*	**3.1**	<1.0	<0.021	*127*	NS	NS	NS	<100	<100	<100	<10	<100	<10	**7.8J**	<100	9/10/2011	MW-3
MW-4	9/10/2011	<1.0	**0.54J**	<1.0	<3.0	<5.0	**0.56J**	<1.0	<0.020	NS	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-4
MW-5	9/10/2011	<1.0	**0.54J**	<1.0	<3.0	**0.72J**	**7.9**	<1.0	<0.020	**14.6**	NS	NS	NS	<100	<100	<100	**7.6J**	<100	<10	<100	<100	9/10/2011	MW-5
MW-6	9/10/2011	<1.0	<1.0	<1.0	<3.0	**6**	**53**	<1.0	<0.020	**3.53**	NS	NS	NS	<100	200	<100	<10	<100	<10	**13J**	<100	9/10/2011	MW-6
MW-7	9/10/2011	<1.0	<1.0	<1.0	**0.92J**	<5.0	<1.0	<1.0	<0.020	*139*	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-7
MW-8	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-8
MW-9	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	**6.43**	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-9
MW-10	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	*43*	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-10
MW-11	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	**0.38J**	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-11
MW-12	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	NS	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-12
MW-13	9/10/2011	<1.0	**0.78J**	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-13
MW-14	9/10/2011	<1.0	**0.47J**	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	**6.29**	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-14
MW-15	9/10/2011	<1.0	<1.0	**0.49J**	<3.0	**7.4**	**2.3**	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-15
MW-16	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-16
DW-1	9/10/2011	<1.0	**0.77J**	<1.0	**0.41J**	**1.3J**	**0.72J**	<1.0	<0.020	**1.83**	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	DW-1
DW-2	9/10/2011	<1.0	**0.75J**	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	DW-2
DW-3	9/10/2011	<1.0	**0.73J**	<1.0	<3.0	<5.0	**0.46J**	<1.0	<0.020	**11.6**	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	DW-3

Note: Deep wells DW-1, DW-2, and DW-3 are not used in the creation of this map.

LEGEND			
	UST Basin		
	Monitoring Well		

REV	BY	DATE

DR: JSR

CK: HDO

SCALE: AS SHOWN

CES PROJ. NO. 15.070

Tier II Environmental Assessment

CRAWFORD ENVIRONMENTAL SERVICES

104 Corporate Blvd.
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West Columbia, SC 29210

803-708-0079 (ph)
803-708-8137 (Fax)

FIGURE TITLE

Chemicals of Concern: Naphthalene

Vacant Lot
2309 Russell Street
Orangeburg, SC 29115
Site ID: 19268

DRAWING NUMBER: Figure 4C

REV: 0 9.23.2011

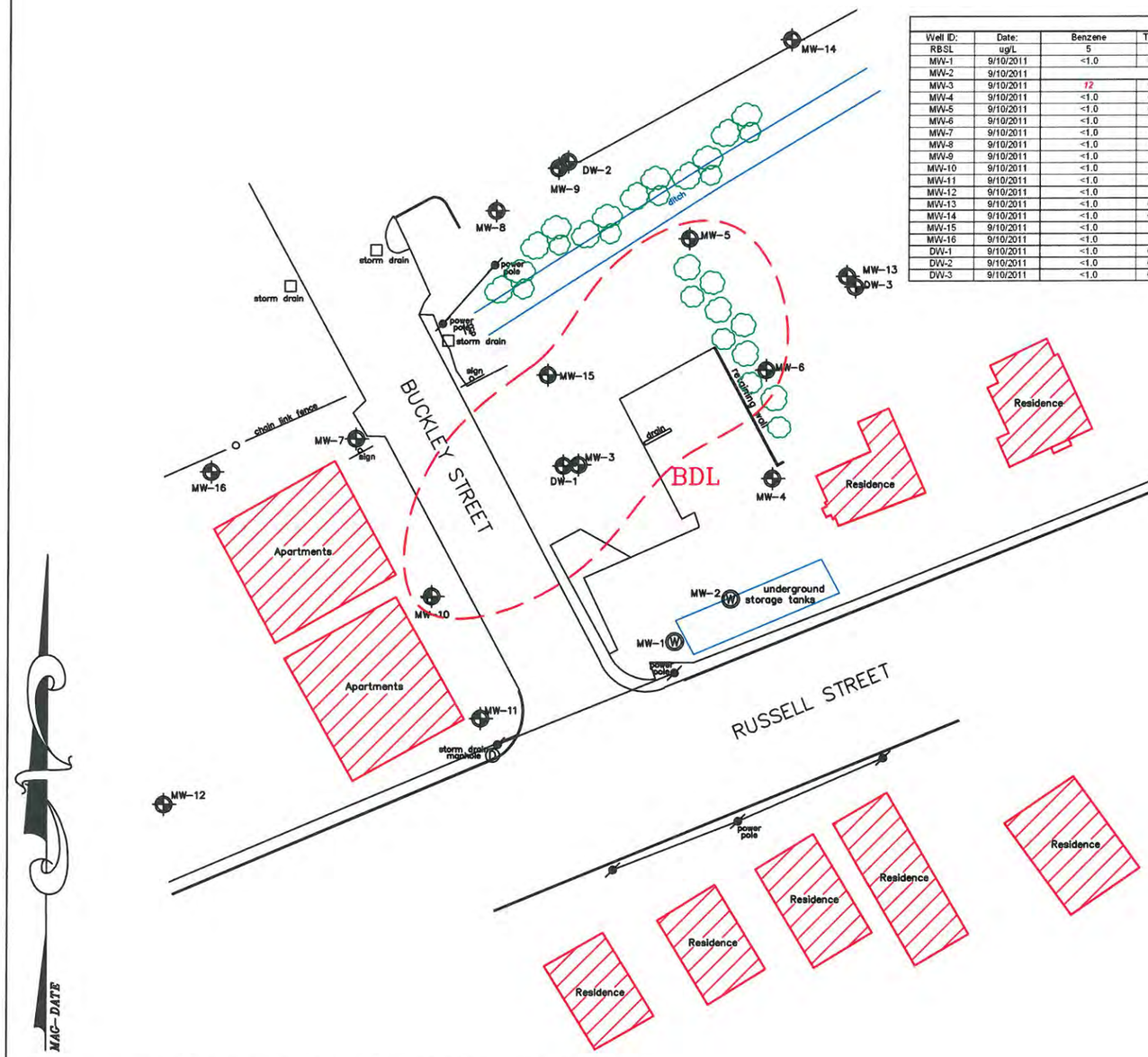
GRAPHIC SCALE

0 25 50 100

(In Feet)
As Shown

Groundwater Laboratory Analytical Result Summary

Well ID:	Date:	Benzene	Toluene	Ethylbenzene	Xylenes (Total)	Naphthalene	MTBE	1,2 DCA	EDB	Pb	NO3	FE+	SO4	ETBA	Ethanol	ETBE	DIPE	TAA	TAME	TBA	TBF	Date:	Well ID:
RBSL	ug/L	5	1000	700	10000	25	40	5	0.01	15	10000	NE	NE	NE	10000	47	150	240	128	1400	NE		RBSL
MW-1	9/10/2011	<1.0	**0.78J**	<1.0	<3.0	<1.0	<1.0	<1.0	<0.020	NS	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-1
MW-2	9/10/2011									DRY												9/10/2011	MW-2
MW-3	9/10/2011	*12*	**0.99J**	37	**2.1J**	*480*	**3.1**	<1.0	<0.021	*137*	NS	NS	NS	<100	<100	<100	<10	<100	<10	**7.8J**	<100	9/10/2011	MW-3
MW-4	9/10/2011	<1.0	**0.54J**	<1.0	<3.0	<5.0	**0.56J**	<1.0	<0.020	NS	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-4
MW-5	9/10/2011	<1.0	**0.56J**	<1.0	<3.0	**0.72J**	**7.9**	<1.0	<0.020	**14.6**	NS	NS	NS	<100	<100	<100	**7.6J**	<100	<10	<100	<100	9/10/2011	MW-5
MW-6	9/10/2011	<1.0	<1.0	<1.0	<3.0	**6**	**53**	<1.0	<0.020	**3.53**	NS	NS	NS	<100	200	<100	<10	<100	<10	**13J**	<100	9/10/2011	MW-6
MW-7	9/10/2011	<1.0	<1.0	<1.0	**0.92J**	<5.0	<1.0	<1.0	<0.020	*139*	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-7
MW-8	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-8
MW-9	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	**6.43**	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-9
MW-10	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	*43*	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-10
MW-11	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	**0.38J**	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-11
MW-12	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	NS	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-12
MW-13	9/10/2011	<1.0	**0.78J**	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-13
MW-14	9/10/2011	<1.0	**0.47J**	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	**6.29**	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-14
MW-15	9/10/2011	<1.0	<1.0	**0.49J**	<3.0	**7.4**	**2.3**	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-15
MW-16	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-16
DW-1	9/10/2011	<1.0	**0.77J**	<1.0	**0.41J**	**1.3J**	**0.72J**	<1.0	<0.020	**1.83**	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	DW-1
DW-2	9/10/2011	<1.0	**0.75J**	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	DW-2
DW-3	9/10/2011	<1.0	**0.73J**	<1.0	<3.0	<5.0	**0.46J**	<1.0	<0.020	**11.6**	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	DW-3



Note: Deep wells DW-1, DW-2, and DW-3 are not used in the creation of this map.

LEGEND	
	UST Basin
	Monitoring Well

REV	BY	DATE

DR: JSR
CK: HDO
SCALE: AS SHOWN
CES PROJ. NO. 15.070

Tier II Environmental Assessment

CRAWFORD ENVIRONMENTAL SERVICES

104 Corporate Blvd.
Suite 412
West Columbia, SC 29210

803-708-0079 (ph)
803-708-8137 (Fax)

FIGURE TITLE

Chemicals of Concern: MtBE

Vacant Lot
2309 Russell Street
Orangeburg, SC 29115
Site ID: 19268

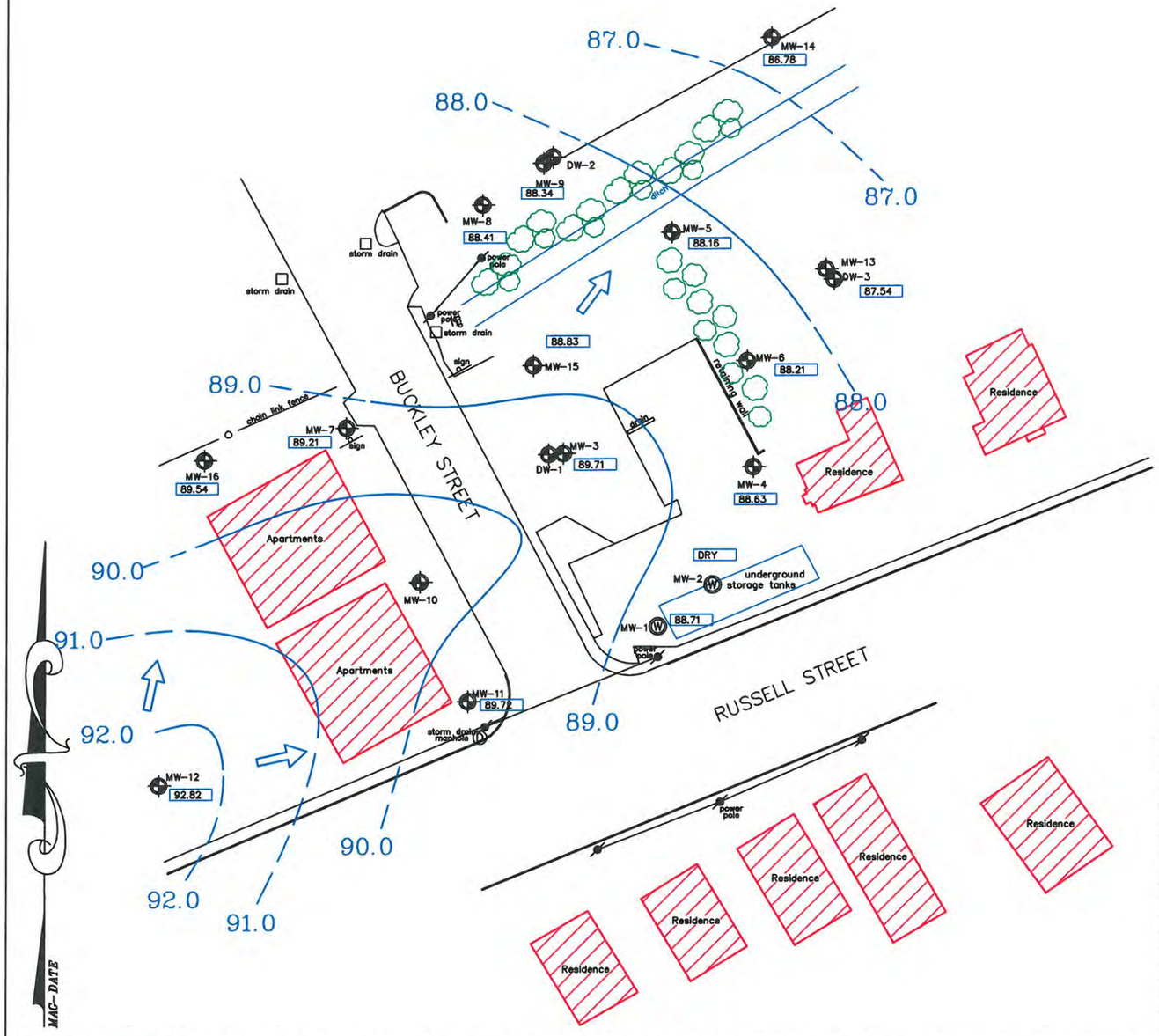
DRAWING NUMBER: Figure 4D

REV: 0 9.23.2011

GRAPHIC SCALE

0 25 50 100

(In Feet)
As Shown



Note: Deep Wells DW-1, DW-2 and DW-3 were not used in the creation of this diagram. Shallow well MW-10 was not used in the creation of this diagram.

Groundwater Summary

Monitor Well	Well Depth (ft)	Screened Interval		Top of Casing (ft)	Date Measured	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)	Product Elevation (ft)	Groundwater Elevation (ft)
MW-1	12	2	12	99.44	9/10/2011	0	10.73	0	0	88.71
MW-2	12	2	12	99.13	9/10/2011	0			DRY	
MW-3	12	2	12	98.29	9/10/2011	0	8.58	0	0	89.71
MW-4	12	2	12	100.43	9/10/2011	0	11.80	0	0	88.63
MW-5	12	2	12	96.26	9/10/2011	0	8.10	0	0	88.16
MW-6	12	2	12	95.97	9/10/2011	0	7.76	0	0	88.21
MW-7	12	2	12	98.91	9/10/2011	0	9.70	0	0	89.21
MW-8	12	2	12	98.82	9/10/2011	0	10.41	0	0	88.41
MW-9	12	2	12	98.43	9/10/2011	0	10.09	0	0	88.34
MW-10	12	2	12	99.49*	9/10/2011	0	8.91	0	0	90.58*
MW-11	12	2	12	99.76	9/10/2011	0	10.04	0	0	89.72
MW-12	12	2	12	102.18	9/10/2011	0	9.36	0	0	92.82
MW-13	12	2	12	95.68	9/10/2011	0	8.14	0	0	87.54
MW-14	12	2	12	98.46	9/10/2011	0	11.68	0	0	86.78
MW-15	12	2	12	99.51	9/10/2011	0	10.68	0	0	88.83
MW-16	12	2	12	99.51	9/10/2011	0	9.97	0	0	89.54
DW-1	40	35	40	98.35	9/10/2011	0	11.61	0	0	86.74
DW-2	35	30	35	97.99	9/10/2011	0	13.45	0	0	84.54
DW-3	29	24	29	95.67	9/10/2011	0	13.21	0	0	82.46

LEGEND

	UST Basin	⇨	Groundwater Flow Direction
⊕	Monitoring Well	———	Potentiometric Surface
		- - -	Potentiometric Surface {Estimated}

REV	BY	DATE	
			DR: JSR
			CK: HDO
			SCALE: AS SHOWN
			CES PROJ. NO. 15.070

Tier II Environmental Assessment

CRAWFORD ENVIRONMENTAL SERVICES

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FIGURE TITLE

Potentiometric Map (Shallow)

Vacant Lot
2309 Russell Street
Orangeburg, SC 29115
Site ID: 19268

DRAWING NUMBER: Figure 5A

REV: 0 9.23.2011

GRAPHIC SCALE

0 25 50 100

(In Feet)
As Shown

Note: Shallow wells (MW-1 through MW-16) were not used in the creation of this diagram.

Groundwater Summary

Monitor Well	Well Depth (ft)	Screened Interval		Top of Casing (ft)	Date Measured	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)	Product Elevation (ft)	Groundwater Elevation (ft)
MW-1	12	2	12	99.44	9/10/2011	0	10.73	0	0	88.71
MW-2	12	2	12	99.13	9/10/2011	0			DRY	
MW-3	12	2	12	98.29	9/10/2011	0	8.58	0	0	89.71
MW-4	12	2	12	100.43	9/10/2011	0	11.80	0	0	88.63
MW-5	12	2	12	96.26	9/10/2011	0	8.10	0	0	88.16
MW-6	12	2	12	95.97	9/10/2011	0	7.76	0	0	88.21
MW-7	12	2	12	98.91	9/10/2011	0	9.70	0	0	89.21
MW-8	12	2	12	98.82	9/10/2011	0	10.41	0	0	88.41
MW-9	12	2	12	98.43	9/10/2011	0	10.09	0	0	88.34
MW-10	12	2	12	99.49*	9/10/2011	0	8.91	0	0	90.58*
MW-11	12	2	12	99.76	9/10/2011	0	10.04	0	0	89.72
MW-12	12	2	12	102.18	9/10/2011	0	9.36	0	0	92.82
MW-13	12	2	12	95.68	9/10/2011	0	8.14	0	0	87.54
MW-14	12	2	12	98.46	9/10/2011	0	11.68	0	0	86.78
MW-15	12	2	12	99.51	9/10/2011	0	10.68	0	0	88.83
MW-16	12	2	12	99.51	9/10/2011	0	9.97	0	0	89.54
DW-1	40	35	40	98.35	9/10/2011	0	11.61	0	0	86.74
DW-2	35	30	35	97.99	9/10/2011	0	13.45	0	0	84.54
DW-3	29	24	29	95.67	9/10/2011	0	13.21	0	0	82.46

LEGEND

	UST Basin	⇨	Groundwater Flow Direction
⊕	Monitoring Well	———	Potentiometric Surface
		— — —	Potentiometric Surface {Estimated}

REV	BY	DATE	
			DR: JSR
			CK: HDO
			SCALE: AS SHOWN
			CES PROJ. NO. 15.070

Tier II Environmental Assessment

CRAWFORD ENVIRONMENTAL SERVICES

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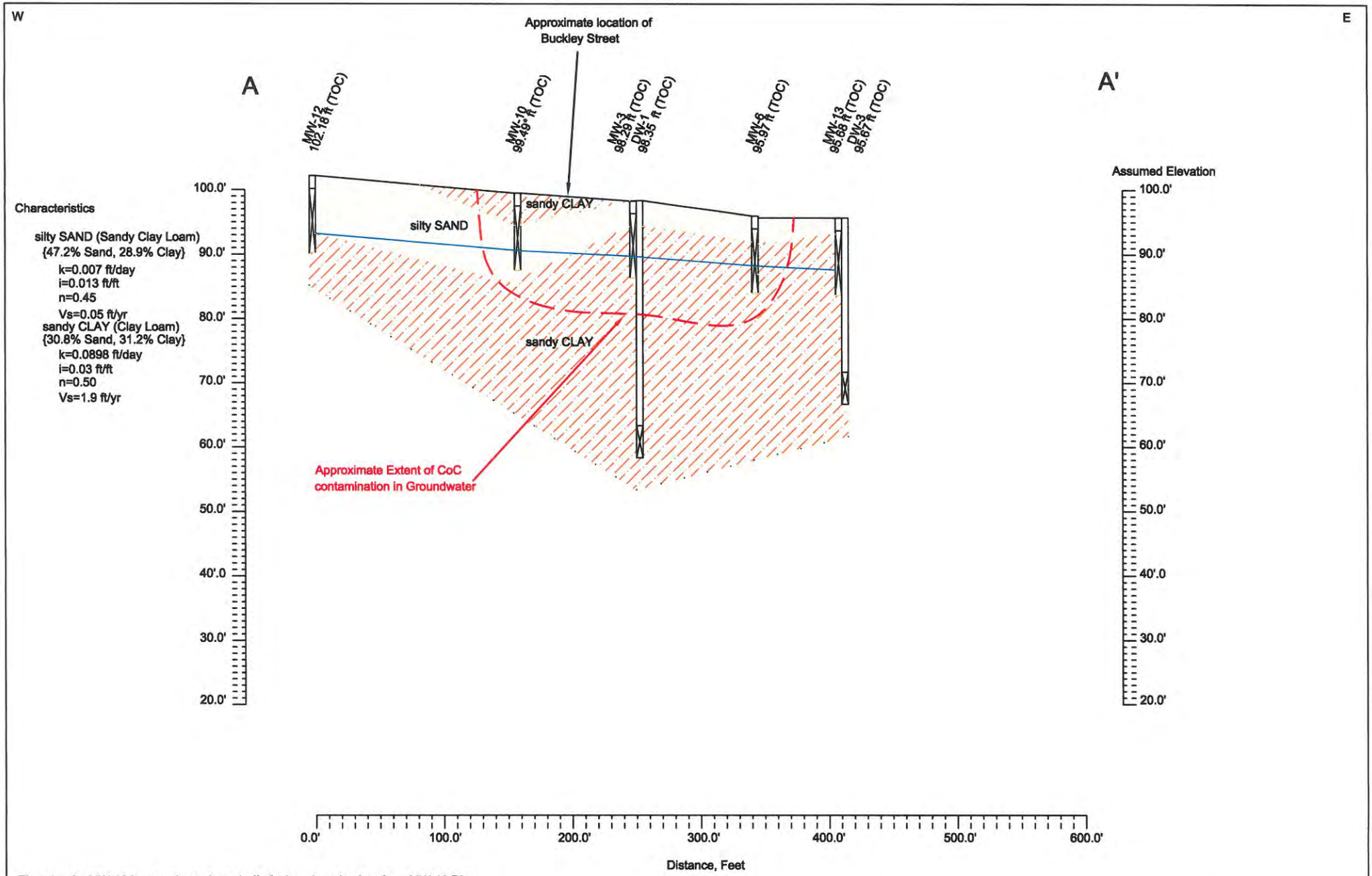
FIGURE TITLE

Potentiometric Map (Deep)

Vacant Lot
2309 Russell Street
Orangeburg, SC 29115
Site ID: 19268

DRAWING NUMBER: Figure 5B

REV: 0 9.23.2011



Elevation for MW-10 is an estimate based off of a benchmark taken from MW-10 Rim.

EXPLANATION							
—	Groundwater Elevation				DR: JSR	Tier II Assessment Report	CRAWFORD ENVIRONMENTAL SERVICES
					CK: HDO		
					SCALE: AS SHOWN		
					CES PROJ. NO. 15.070		
		REV	BY	DATE			

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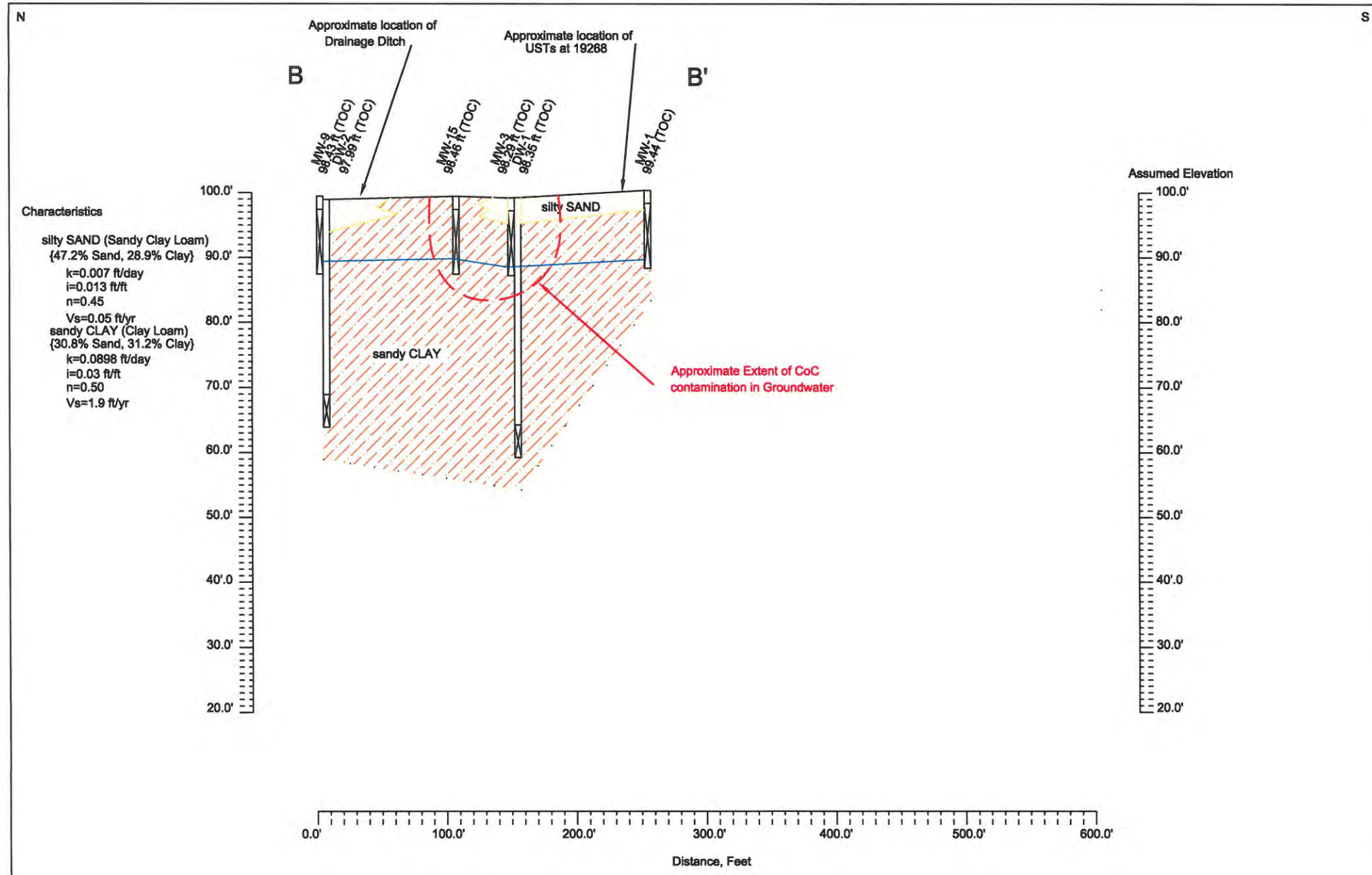
FIGURE TITLE
Cross-Section A - A'
Vacant Lot
2309 Russell Street
Orangeburg, SC 29115
Site ID: 19268

DRAWING NUMBER: Figure 6A
REV: 0
9/23/2011



EXPLANATION						
Groundwater Elevation				DR: JSR		
				CK: HDO		
				SCALE: AS SHOWN		
				CES PROJ. NO. 15.070		
	REV	BY	DATE			

Tier II Assessment Report

CRAWFORD ENVIRONMENTAL SERVICES
104 Corporate Blvd.
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West Columbia, SC 29210
803-708-0079 (ph)
803-708-8137 (Fax)

FIGURE TITLE
Cross-Section B- B'
Vacant Lot
2309 Russell Street
Orangeburg, SC 29115
Site ID: 19268

DRAWING NUMBER: Figure 6B
REV: 0
9/23/2011

APPENDIX A
Site Facility Base Map

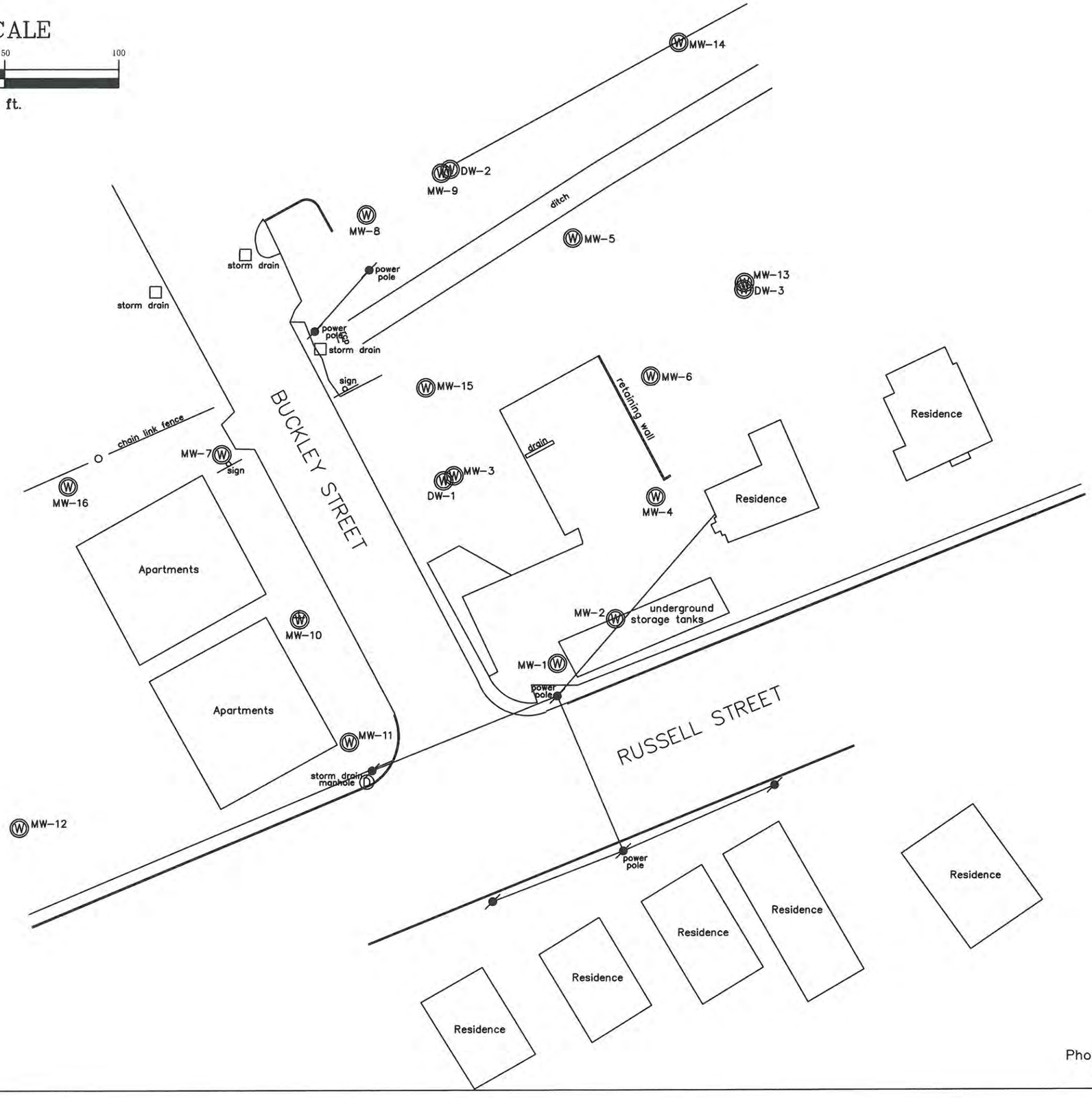
CRAWFORD
ENVIRONMENTAL
SERVICES

GRAPHIC SCALE

50 0 25 50 100

1 inch = 50 ft.

MAC- DATE



SITE MAP

Prepared for:

CRAWFORD ENVIRONMENTAL SERVICES

September 14, 2011

2309 RUSSELL STREET
ORANGEBURG, SC

MONITOR WELL	TOP PVC 2" CASING
MW-1	99.44
MW-2	99.13
MW-3	98.29
MW-4	100.43
MW-5	96.26
MW-6	95.97
MW-7	98.91
MW-8	98.82
MW-9	98.43
MW-10	99.49*
MW-11	99.76
MW-12	102.18
MW-13	95.68
MW-14	97.98
MW-15	98.46
MW-16	99.51
DW-1	98.35
DW-2	97.99
DW-3	95.67

*Benchmark measurement due to obstruction. Equal to rim measurement.

SOUTH CAROLINA
ROBERT H. LACKEY
SURVEYING, INC
No. C00753
CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA
REGISTERED LAND SURVEYOR
14799
ROBERT H. LACKEY

Robert H. Lackey Surveying, Inc.
P.O. Box 713 Camden, SC 29020
Phone: 803-432-0968 Fax: 803-425-4439

CE-ORANGEBURG.DWG R2000-2011

APPENDIX B

Laboratory Data Reports, Chain of Custodies and Field Data Information Sheets

CRAWFORD
ENVIRONMENTAL
SERVICES

DHEC
PROMOTE PROTECT PROSPER

Field Data Information Sheet for Ground-Water Sampling
Division of Underground Storage Tank Management

Date (mm/dd/yy): September 10, 2011
Field Personnel: J. Reynolds D. O'Brien
General Weather Conditions: Clear & Sunny

Ambient Air Temperature: 31 °C

Facility Name: VACANT LOT
UST Permit #: 19268 Monitoring Well #: MW-1
Water Supply Well Public: _____ Private: _____

Monitoring Well Diameter (D): 2 1/6 feet

Conversion factor (C): 3.14 X (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) 10.73 feet
Total Well Depth (TWD) 12.00 feet
Length of Water Column (LWC = TWD- DGW) _____ feet

1 Casing Volume (CV = LWC X C) = _____ X 2 1/6 = _____ 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.

Quality Assurance

pH Meter
serial no. Sensorion 156 8328-226
pH=4.0 4.1
pH=7.0 7.0
pH=10.0 _____

Conductivity Meter
serial no. Sensorion 156 8332-561
standard 500-503
standard _____
standard _____

Chain of Custody

9/10/2011 @ 6:30 _____ _____ _____

	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Cumulative Volume Purged (gallons)								
Time (military)	1021							
pH (s.u.)								
Specific Cond. (µmhos/cm)								
Water Temperature (°C)								
Turbidity (subjective: clear, slightly cloudy, cloudy)								
PID Readings (if required)								

Remarks: NP Not enough water for parameters 2 vials collected

DHEC 3529 (07/1999)

DHEC
PROMOTE PROTECT PROSPER

Field Data Information Sheet for Ground-Water Sampling
Division of Underground Storage Tank Management

Date (mm/dd/yy): September 10, 2011
Field Personnel: J. Reynolds D. O'Brien
General Weather Conditions: Clear and Sunny

Ambient Air Temperature: 31 °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.	Sensorion 156 B328-226	serial no.	Sensorion 156 B332-561
pH=4.0	4.1	standard	500-503
pH=7.0	7.0	standard	
pH=10.0		standard	

Chain of Custody

9/10/2011 @ 6:30

Facility Name: VACANT LOT
UST Permit #: 19268 Monitoring Well #: MW-2
Water Supply Well Public: Private:

Monitoring Well Diameter (D): ø16 feet

Conversion factor (C): 3.14 X (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) DRY feet
Total Well Depth (TWD) 12.00 feet
Length of Water Column (LWC = TWD- DGW) feet

1 Casing Volume (CV = LWC X C) = X ø16 = 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	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Cumulative Volume Purged (gallons)								
Time (military)								
pH (s.u.)								
Specific Cond. (µmhos/cm)								
Water Temperature (°C)								
Turbidity (subjective: clear, slightly cloudy, cloudy)								
PID Readings (if required)								

Remarks: DRY

DHEC
PROMOTE PROTECT PROSPER

Field Data Information Sheet for Ground-Water Sampling
Division of Underground Storage Tank Management

Date (mm/dd/yy): September 10, 2011
Field Personnel: J. Reynolds D. O'Brien
General Weather Conditions: Clear & Sunny

Ambient Air Temperature: 31 °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.	Sensi ION 156 8328-226	serial no.	Sensi ION 156 8332-561
pH=4.0	4.1	standard	500-503
pH=7.0	7.0	standard	
pH=10.0		standard	

Chain of Custody

9/10/2011 @ 6:30

Facility Name: VACANT LOT
UST Permit #: 19268 **Monitoring Well #:** MW-3
Water Supply Well **Public:** _____ **Private:** _____

Monitoring Well Diameter (D): .16 feet

Conversion factor (C): 3.14 X (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) 8.58 feet
Total Well Depth (TWD) 12.00 feet
Length of Water Column (LWC = TWD- DGW) 3.42 feet

1 Casing Volume (CV = LWC X C) = _____ X .16 = .54 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	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Cumulative Volume Purged (gallons)	1308							
Time (military)	↓							
pH (s.u.)	6.97							
Specific Cond. (µmhos/cm)	1143							
Water Temperature (°C)	29.6							
Turbidity (subjective: clear, slightly cloudy, cloudy)	clear							
PID Readings (if required)	-							

Remarks: NP

DHEC
PROMOTE PROTECT PROSPER

Field Data Information Sheet for Ground-Water Sampling
Division of Underground Storage Tank Management

Page _____ of _____

Date (mm/dd/yy): September 10, 2011
Field Personnel: J. Reynolds D. O'Brien
General Weather Conditions: Clear & Sunny

Ambient Air Temperature: 31 °C

Quality Assurance

pH Meter
serial no. SensIon 156 B328.226
pH=4.0 4.1
pH=7.0 7.0
pH=10.0 _____

Conductivity Meter
serial no. SensIon 156 B332-561
standard 500=503
standard _____
standard _____

Chain of Custody

9/10/2011 @ 6:30 _____ _____ _____

Facility Name: VACANT LOT
UST Permit #: 19268 **Monitoring Well #:** MW-4
Water Supply Well **Public:** _____ **Private:** _____

Monitoring Well Diameter (D): 2" 16 feet

Conversion factor (C): 3.14 X $(D/2)^2$ 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) 11.80 feet
Total Well Depth (TWD) 12.00 feet
Length of Water Column (LWC = TWD- DGW) - feet

1 Casing Volume (CV = LWC X C) = _____ X 2" 16 = _____ 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	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Cumulative Volume Purged (gallons)								
Time (military)	1117							
pH (s.u.)								
Specific Cond. (µmhos/cm)								
Water Temperature (°C)								
Turbidity (subjective: clear, slightly cloudy, cloudy)								
PID Readings (if required)								

Remarks: NP o No Parameters due to low water

DHEC 3529 (07/1999)

DHEC
PROMOTE PROTECT PROSPER

Field Data Information Sheet for Ground-Water Sampling
Division of Underground Storage Tank Management

Date (mm/dd/yy): September 10, 2011
Field Personnel: J. Reynolds D. O'Brien
General Weather Conditions: Clear & Sunny

Ambient Air Temperature: 31 °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.	Sensafon 156 8328-226	serial no.	Sensafon 156 8332-561
pH=4.0	4.1	standard	500-503
pH=7.0	7.0	standard	
pH=10.0		standard	

Chain of Custody

9/10/2011 @ 6:30

Facility Name: VACANT LOT
UST Permit #: 19268 Monitoring Well #: MW-5
Water Supply Well Public: _____ Private: _____

Monitoring Well Diameter (D): .16 feet

Conversion factor (C): 3.14 X (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) 8.10 feet
Total Well Depth (TWD) 12.00 feet
Length of Water Column (LWC = TWD- DGW) 3.19 feet

1 Casing Volume (CV = LWC X C) = 3.19 X .16 = .624 gals
3 Casing Volume 3 X CV = 1.8 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.

	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Cumulative Volume Purged (gallons)		.9	.9					
Time (military)	1054	1056	11:01					
pH (s.u.)	6.84	6.92	6.96					
Specific Cond. (µmhos/cm)	0.073	0.064	0.055					
Water Temperature (°C)	25.1	25.3	25.4					
Turbidity (subjective: clear, slightly cloudy, cloudy)	cloudy	cloudy	cloudy					
PID Readings (if required)	-	-	-					

Remarks: _____

DHEC 3529 (07/1999)

DHEC
PROMOTE PROTECT PROSPER

Field Data Information Sheet for Ground-Water Sampling
Division of Underground Storage Tank Management

Date (mm/dd/yy): September 10, 2011
Field Personnel: J. Reynolds D. O'Brien
General Weather Conditions: Clear & Sunny

Ambient Air Temperature: 31 °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.	SenseTON 156 8328-226	serial no.	SenseTON 156 8332-561
pH=4.0	4.1	standard	500-503
pH=7.0	7.0	standard	
pH=10.0		standard	

Chain of Custody

9/10/2011 @ 6:30

Facility Name: VACANT LOT
UST Permit #: 19268 Monitoring Well #: MW-6
Water Supply Well Public: _____ Private: _____

Monitoring Well Diameter (D): .16 feet

Conversion factor (C): 3.14 X $(D/2)^2$ 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) 7.76 feet
Total Well Depth (TWD) 12.00 feet
Length of Water Column (LWC = TWD- DGW) 4.24 feet

1 Casing Volume (CV = LWC X C) = 4.24 X .16 = .67 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.

	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Cumulative Volume Purged (gallons)		1	1					
Time (military)	1105	1107	1110					
pH (s.u.)	6.29	6.43	6.31					
Specific Cond. (µmhos/cm)	0.319	0.426	0.411					
Water Temperature (°C)	26.8	27.1	27.3					
Turbidity (subjective: clear, slightly cloudy, cloudy)	cloudy	clear	clear					
PID Readings (if required)	-	-	-					

Remarks: _____

DHEC
PROMOTE PROTECT PROSPER

Field Data Information Sheet for Ground-Water Sampling
Division of Underground Storage Tank Management

Date (mm/dd/yy): September 10, 2011
Field Personnel: J. Reynolds D. O'Brien
General Weather Conditions: Clear & Sunny

Ambient Air Temperature: 31 °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.	Sense ION 156 8328-226	serial no.	Sense ION 156 8332-561
pH=4.0	4.1	standard	500-503
pH=7.0	7.0	standard	
pH=10.0		standard	

Chain of Custody

9/10/2011 @ 6:30

Facility Name: Vacant Lot
UST Permit #: 19268 Monitoring Well #: MW-7
Water Supply Well Public: _____ Private: _____

Monitoring Well Diameter (D): .16 feet

Conversion factor (C): 3.14 X $(D/2)^2$ 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) 6.55 feet
Total Well Depth (TWD) 12.00 feet
Length of Water Column (LWC = TWD- DGW) 5.45 feet

1 Casing Volume (CV = LWC X C) = 5.45 X .16 = .872 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.

	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Cumulative Volume Purged (gallons)		1	1					
Time (military)	1104	1106	1110					
pH (s.u.)	6.06	5.73	5.56					
Specific Cond. (µmhos/cm)	.132	.431	.556					
Water Temperature (°C)	28.2	27.6	27.4					
Turbidity (subjective: clear, slightly cloudy, cloudy)	clear	clear	clear					
PID Readings (if required)	–	–	–					

Remarks: _____

DHEC 3529 (07/1999)

DHEC
PROMOTE PROTECT PROSPER

Field Data Information Sheet for Ground-Water Sampling
Division of Underground Storage Tank Management

Date (mm/dd/yy): September 10, 2011
Field Personnel: J. Reynolds D. O'Brien
General Weather Conditions: Clear & Sunny

Ambient Air Temperature: 31 °C

Facility Name: VACANT LOT
UST Permit #: 19268 Monitoring Well #: MW-8
Water Supply Well Public: _____ Private: _____

Monitoring Well Diameter (D): .16 feet

Conversion factor (C): 3.14 X (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) 10.41 feet
Total Well Depth (TWD) 12.00 feet
Length of Water Column (LWC = TWD- DGW) 1.59 feet

1 Casing Volume (CV = LWC X C) = 1.59 X .16 = .25 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.

Quality Assurance

pH Meter
serial no. Sensorion 156 8328-226
pH=4.0 4.1
pH=7.0 7.0
pH=10.0 _____

Conductivity Meter
serial no. Sensorion 156 8332-561
standard 500-503
standard _____
standard _____

Chain of Custody

9/10/2011 @ 6:30 _____ _____ _____

	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Cumulative Volume Purged (gallons)		.4	.4					
Time (military)	1050	1053	1055					
pH (s.u.)	7.26	7.19	7.09					
Specific Cond. (µmhos/cm)	0.064	0.090	.078					
Water Temperature (°C)	28.6	28.5	28.5					
Turbidity (subjective: clear, slightly cloudy, cloudy)	↓	↓	↓					
PID Readings (if required)	clear	clear	clear					

Remarks: _____

DHEC 3529 (07/1999)

DHEC
PROMOTE PROTECT PROSPER

Field Data Information Sheet for Ground-Water Sampling
Division of Underground Storage Tank Management

Date (mm/dd/yy): September 10, 2011
Field Personnel: J. Reynolds D. O'Brien
General Weather Conditions: Clear & Sunny

Ambient Air Temperature: 31 °C

Facility Name: VACANT LOT
UST Permit #: 19268 Monitoring Well #: MW-9
Water Supply Well Public: _____ Private: _____

Monitoring Well Diameter (D): .16 feet

Conversion factor (C): 3.14 X (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) 10.09 feet
Total Well Depth (TWD) 12.00 feet
Length of Water Column (LWC = TWD- DGW) 1.91 feet

1 Casing Volume (CV = LWC X C) = 1.91 X .16 = .30 gals
3 Casing Volume 3 X CV = .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.

Quality Assurance

pH Meter
serial no. Sensorion 156 8328-226
pH=4.0 4.1
pH=7.0 7.0
pH=10.0 _____

Conductivity Meter
serial no. Sensorion 156 8332-561
standard 500=503
standard _____
standard _____

Chain of Custody

9/10/2011 @ 6:30 _____ _____ _____

	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Cumulative Volume Purged (gallons)		.4	.4					
Time (military)	1115	1125						
pH (s.u.)	6.13	5.96						
Specific Cond. (µmhos/cm)	0.084	0.070						
Water Temperature (°C)	28.9	25.6						
Turbidity (subjective: clear, slightly cloudy, cloudy)	clear	clear						
PID Readings (if required)	-	-						

Remarks: Bailed at 2nd Set

DHEC 3529 (07/1999)

DHEC

PROMOTE PROTECT PROSPER

Field Data Information Sheet for Ground-Water Sampling
Division of Underground Storage Tank Management

Date (mm/dd/yy): September 10, 2011
Field Personnel: J. Reynolds D. O'Brien
General Weather Conditions: Clear & Sunny

Ambient Air Temperature: 31 °C

Quality Assurance

pH Meter
serial no. Sensorion 156 8328-226
pH=4.0 4.1
pH=7.0 7.0
pH=10.0 _____

Conductivity Meter
serial no. Sensorion 156 8332-561
standard 500-503
standard _____
standard _____

Chain of Custody

9/10/2011 @ 6:30 _____ _____ _____

Facility Name: Vacant Lot
UST Permit #: 19268 Monitoring Well #: MW-10
Water Supply Well Public: _____ Private: _____

Monitoring Well Diameter (D): 2" 16 feet

Conversion factor (C): 3.14 X (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) 8.91 feet
Total Well Depth (TWD) 12.00 feet
Length of Water Column (LWC = TWD- DGW) 3.09 feet

1 Casing Volume (CV = LWC X C) = 3.09 X .16 = .49 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	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Cumulative Volume Purged (gallons)		.7	~~.7~~					
Time (military)	1206	1208						
pH (s.u.)	5.31	5.47						
Specific Cond. (µmhos/cm)	0.060	0.060						
Water Temperature (°C)	26.0	26.0						
Turbidity (subjective: clear, slightly cloudy, cloudy)	clear	clear						
PID Readings (if required)	-	-						

Remarks: Baled out 2nd Set

DHEC 3529 (07/1999)

DHEC
PROMOTE PROTECT PROSPER

Field Data Information Sheet for Ground-Water Sampling
Division of Underground Storage Tank Management

Date (mm/dd/yy): September 10, 2011
Field Personnel: J. Reynolds D. O'Brien
General Weather Conditions: Clear & Sunny

Ambient Air Temperature: 31 °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.	SenseIon 156 8328-226	serial no.	SenseIon 156 8332-561
pH=4.0	4.1	standard	500=503
pH=7.0	7.0	standard	
pH=10.0		standard	

Chain of Custody

9/10/2011 @ 6:30

Facility Name: Vacant Lot
UST Permit #: 19268 Monitoring Well #: MW-11
Water Supply Well Public: _____ Private: _____

Monitoring Well Diameter (D): .16 feet

Conversion factor (C): 3.14 X $(D/2)^2$ 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) 10.04 feet
Total Well Depth (TWD) 12.00 feet
Length of Water Column (LWC = TWD- DGW) 1.96 feet

1 Casing Volume (CV = LWC X C) = 1.96 X .16 = .31 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	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Cumulative Volume Purged (gallons)		.4	~~.4~~					
Time (military)	1156	1159						
pH (s.u.)	5.12	5.16						
Specific Cond. (µmhos/cm)	.146	.143						
Water Temperature (°C)	22.4	22.4						
Turbidity (subjective: clear, slightly cloudy, cloudy)	clear	clear						
PID Readings (if required)	–	–						

Remarks: Bailed out 2nd Set

DHEC 3529 (07/1999)

D H E C
PROMOTE PROTECT PROSPER

Field Data Information Sheet for Ground-Water Sampling
Division of Underground Storage Tank Management

Date (mm/dd/yy): September 10, 2011
Field Personnel: J. Reynolds D. O'Brien
General Weather Conditions: Clear, Sunny

Ambient Air Temperature: 31 °C

Facility Name: VACANT LOT
UST Permit #: 19268 Monitoring Well #: MW-17
Water Supply Well Public: _____ Private: _____

Monitoring Well Diameter (D): .16 feet

Conversion factor (C): 3.14 X (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) 9.36 feet
Total Well Depth (TWD) 12.00 feet
Length of Water Column (LWC = TWD- DGW) 2.64 feet

1 Casing Volume (CV = LWC X C) = 2.64 X .16 = .42 gals
3 Casing Volume 3 X CV = 1.26 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.

Quality Assurance

pH Meter
serial no. SENSORION 156 8328-226
pH=4.0 4.1
pH=7.0 7.0
pH=10.0 _____

Conductivity Meter
serial no. SENSORION 156 8332-561
standard 500=503
standard _____
standard _____

Chain of Custody

9/10/2011 @ 6:30 _____ _____ _____

	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Cumulative Volume Purged (gallons)		.6	.6					
Time (military)	1201	1203	1205					
pH (s.u.)	6.21	6.34	6.43					
Specific Cond. (µmhos/cm)	0.016	0.039	0.052					
Water Temperature (°C)	25.3	25.6	25.7					
Turbidity (subjective: clear, slightly cloudy, cloudy)	cloudy	cloudy	cloudy					
PID Readings (if required)	—	—	—					

Remarks: _____

DHEC 3529 (07/1999)

D H E C
PROMOTE PROTECT PROSPER

Field Data Information Sheet for Ground-Water Sampling
Division of Underground Storage Tank Management

Date (mm/dd/yy): September 10, 2011
Field Personnel: J. Reynolds D. O'Brien
General Weather Conditions: Clear, Sunny

Ambient Air Temperature: 31 °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.	Sension 156 8328.226	serial no.	Sension 156 8332-561
pH=4.0	4.1	standard	500=503
pH=7.0	7.0	standard	
pH=10.0		standard	

Chain of Custody

9/10/2011 @ 6:30

Facility Name: VACANT LOT
UST Permit #: 19268 Monitoring Well #: MW-13
Water Supply Well Public: _____ Private: _____

Monitoring Well Diameter (D): .16 feet

Conversion factor (C): 3.14 X (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) 8.14 feet
Total Well Depth (TWD) 12.00 feet
Length of Water Column (LWC = TWD- DGW) 3.86 feet

1 Casing Volume (CV = LWC X C) = 3.86 X .16 = .6176 gals
3 Casing Volume 3 X CV = 1.8 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.

	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Cumulative Volume Purged (gallons)		.09	.9					
Time (military)	1146	1149						
pH (s.u.)	6.29	6.41						
Specific Cond. (µmhos/cm)	0.121	0.098						
Water Temperature (°C)	26.4	26.7						
Turbidity (subjective: clear, slightly cloudy, cloudy)	clear	clear						
PID Readings (if required)	-	-						

Remarks: Bailed dry 2nd Set

DHEC 3529 (07/1999)

DHEC

PROMOTE PROTECT PROSPER

Field Data Information Sheet for Ground-Water Sampling
Division of Underground Storage Tank Management

Date (mm/dd/yy): September 10, 2011
Field Personnel: J. Reynolds D. O'Brien
General Weather Conditions: Clear & Sunny

Ambient Air Temperature: 31 °C

Facility Name: VACANT LOT
UST Permit #: 19268 Monitoring Well #: MW-14
Water Supply Well Public: _____ Private: _____

Monitoring Well Diameter (D): ø16 feet

Conversion factor (C): 3.14 X (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) 11.68 feet
Total Well Depth (TWD) 12.00 feet
Length of Water Column (LWC = TWD- DGW) _____ feet

1 Casing Volume (CV = LWC X C) = _____ X ø16 = _____ 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.

Quality Assurance

pH Meter
serial no. SPECTRON 156 8328-226
pH=4.0 4.1
pH=7.0 7.0
pH=10.0 _____

Conductivity Meter
serial no. SPECTRON 156 8332-561
standard 500-503
standard _____
standard _____

Chain of Custody

9/10/2011 @ 6:30 _____ _____ _____

	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Cumulative Volume Purged (gallons)								
Time (military)	1144							
pH (s.u.)	5.23							
Specific Cond. (µmhos/cm)	0.113							
Water Temperature (°C)	26.7							
Turbidity (subjective: clear, slightly cloudy, cloudy)	clear							
PID Readings (if required)	-							

Remarks: Low water (NP)

DHEC 3529 (07/1999)

DHEC
PROMOTE PROTECT PROSPER

Field Data Information Sheet for Ground-Water Sampling
Division of Underground Storage Tank Management

Date (mm/dd/yy): September 10, 2011
Field Personnel: J. Reynolds D. O'Brien
General Weather Conditions: Clear & Sunny

Ambient Air Temperature: 31 °C

Facility Name: VACANT LOT
UST Permit #: 19268 Monitoring Well #: MW-15
Water Supply Well Public: _____ Private: _____

Monitoring Well Diameter (D): 2 inch feet

Conversion factor (C): 3.14 X (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) 9.63 feet
Total Well Depth (TWD) 12.00 feet
Length of Water Column (LWC = TWD- DGW) 2.37 feet

1 Casing Volume (CV = LWC X C) = 2.37 X .16 = .41 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.

Quality Assurance

pH Meter		Conductivity Meter	
serial no.	Sensafion 156 B328:226	serial no.	Sensafion 156 B332-561
pH=4.0	4.1	standard	500-503
pH=7.0	7.0	standard	
pH=10.0		standard	

Chain of Custody

9/10/2011 @ 6:30

	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Cumulative Volume Purged (gallons)		.4	~~.4~~					
Time (military)	1136	1139						
pH (s.u.)	5.43	5.49						
Specific Cond. (µmhos/cm)	.139	.166						
Water Temperature (°C)	27.3	26.8						
Turbidity (subjective: clear, slightly cloudy, cloudy)	clear	clear						
PID Readings (if required)	-	-						

Remarks: Backed out 2nd Set

DHEC 3529 (07/1999)

DHEC
PROMOTE PROTECT PROSPER

Field Data Information Sheet for Ground-Water Sampling
Division of Underground Storage Tank Management

Date (mm/dd/yy): September 10, 2011
Field Personnel: J. Reynolds D. O'Brien
General Weather Conditions: Clear & Sunny

Ambient Air Temperature: 31 °C

Facility Name: VACANT LOT
UST Permit #: 19268 Monitoring Well #: DW-2
Water Supply Well Public: _____ Private: _____

Monitoring Well Diameter (D): ø16 feet

Conversion factor (C): 3.14 X (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) 13.45 feet
Total Well Depth (TWD) 35.00 feet
Length of Water Column (LWC = TWD- DGW) _____ feet

1 Casing Volume (CV = LWC X C) = _____ X ø16 = _____ 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.

Quality Assurance

pH Meter		Conductivity Meter	
serial no.	Sensorion 156 8328-226	serial no.	Sensorion 156 8332-561
pH=4.0	4.1	standard	500-503
pH=7.0	7.0	standard	
pH=10.0		standard	

Chain of Custody

9/10/2011 @ 6:30

	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Cumulative Volume Purged (gallons)								
Time (military)	1048							
pH (s.u.)	7.51							
Specific Cond. (µmhos/cm)	.142							
Water Temperature (°C)	25.8							
Turbidity (subjective: clear, slightly cloudy, cloudy)	clear							
PID Readings (if required)	-							

Remarks: Sampled by snap collector deployed on 9/9/2011

DHEC 3529 (07/1999)

DHEC
PROMOTE PROTECT PROSPER

Field Data Information Sheet for Ground-Water Sampling
Division of Underground Storage Tank Management

Date (mm/dd/yy): September 10, 2011
Field Personnel: J. Reynolds D. O'Brien
General Weather Conditions: Clear & Sunny

Ambient Air Temperature: 31 °C

Facility Name: VACANT LOT
UST Permit #: 19268 Monitoring Well #: MW-16
Water Supply Well Public: _____ Private: _____

Monitoring Well Diameter (D): ø16 feet

Conversion factor (C): 3.14 X (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) 9.57 feet
Total Well Depth (TWD) 12.00 feet
Length of Water Column (LWC = TWD- DGW) 2.03 feet

1 Casing Volume (CV = LWC X C) = 2.03 X ø16 = 1.32 gals
3 Casing Volume 3 X CV = 1 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.

Quality Assurance

pH Meter
serial no. SENSIDYNE 156 8328-226
pH=4.0 4.1
pH=7.0 7.0
pH=10.0 _____

Conductivity Meter
serial no. SENSIDYNE 156 8332-561
standard 500-503
standard _____
standard _____

Chain of Custody

9/10/2011 @ 6:30

	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Cumulative Volume Purged (gallons)		.5	5					
Time (military)	1036	1040	1044					
pH (s.u.)	6.53	6.57	6.55					
Specific Cond. (µmhos/cm)	.394	.414	.318					
Water Temperature (°C)	26.4	26.8	76.6					
Turbidity (subjective: clear, slightly cloudy, cloudy)	clear	clear	clear					
PID Readings (if required)	-	-	-					

Remarks: _____

DHEC 3529 (07/1999)

DHEC
PROMOTE PROTECT PROSPER

Field Data Information Sheet for Ground-Water Sampling
Division of Underground Storage Tank Management

Date (mm/dd/yy): September 10, 2011
Field Personnel: J. Reynolds D. O'Brien
General Weather Conditions: Clear & Sunny

Ambient Air Temperature: 31 °C

Facility Name: VACANT LOT
UST Permit #: 19268 Monitoring Well #: DW-1
Water Supply Well Public: _____ Private: _____

Monitoring Well Diameter (D): 0.16 feet

Conversion factor (C): 3.14 X (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) 11.61 feet
Total Well Depth (TWD) 40.00 feet
Length of Water Column (LWC = TWD- DGW) 28.39 feet

1 Casing Volume (CV = LWC X C) = 28.39 X 0.16 = 4.1 gals
3 Casing Volume 3 X CV = 12 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.

Quality Assurance

pH Meter
serial no. SensIon 156 8328.226
pH=4.0 4.1
pH=7.0 7.0
pH=10.0 _____

Conductivity Meter
serial no. SensIon 156 8332-561
standard 500=503
standard _____
standard _____

Chain of Custody

9/10/2011 @ 6:30 _____ _____ _____

	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Cumulative Volume Purged (gallons)		6	6					
Time (military)	1306	1309	1311					
pH (s.u.)	4.02	4.16	4.14					
Specific Cond. (µmhos/cm)	0.094	0.020	0.018					
Water Temperature (°C)	20.8	25.5	23.1					
Turbidity (subjective: clear, slightly cloudy, cloudy)	clear	clear	clear					
PID Readings (if required)	–	–	–					

Remarks: _____

DHEC
PROMOTE PROTECT PROSPER

Field Data Information Sheet for Ground-Water Sampling
Division of Underground Storage Tank Management

Date (mm/dd/yy): September 10, 2011
Field Personnel: J. Reynolds D. O'Brien
General Weather Conditions: Clear & Sunny

Ambient Air Temperature: 31 °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.	SenseION 156 8328-226	serial no.	SenseION 156 8332-561
pH=4.0	4.1	standard	500-503
pH=7.0	7.0	standard	
pH=10.0		standard	

Chain of Custody

9/10/2011 @ 6:30

Facility Name: VACANT LOT
UST Permit #: 19268 Monitoring Well #: DW-3
Water Supply Well Public: _____ Private: _____

Monitoring Well Diameter (D): .16 feet

Conversion factor (C): 3.14 X $(D/2)^2$ 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) 13.21 feet
Total Well Depth (TWD) 29.00 feet
Length of Water Column (LWC = TWD- DGW) _____ feet

1 Casing Volume (CV = LWC X C) = _____ X .16 = _____ 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	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Cumulative Volume Purged (gallons)								
Time (military)	1032							
pH (s.u.)	699							
Specific Cond. (µmhos/cm)	.108							
Water Temperature (°C)	24.1							
Turbidity (subjective: clear, slightly cloudy, cloudy)	clear							
PID Readings (if required)	—							

Remarks: Sampled via snap collector deployed on 9/9/2011

DHEC 3529 (07/1999)

ACCESS
ANALYTICAL, INC.

ANALYTICAL REPORT

CLIENT

Crawford Environmental Services
101 Corporate Blvd. Suite 412
West Columbia SC 29196

ATTENTION
Justin Reynolds

PROJECT ID
Vacant Lot (FS)

LABORATORY REPORT NUMBER
1108O55

DATE
September 08, 2011

Primary Data Review By

Kathryn E. Waters

Kathryn Waters
Project Manager, AES

Secondary Data Review By

Ashley Amick

Project Manager, Access Analytical
aamick@axs-inc.com

PLEASE NOTE:

- **Unless otherwise noted, all analysis on this report performed at Analytical Environmental Services Inc. (AES Inc), 3785 Presidential Parkway, Atlanta, GA 30340.**
- **AES is SCDHEC certified laboratory # 98016, NCDENR certified lab # 562, GA certified lab # FL-E87582, NELAP certified laboratory # E87582**
- Local support services for this project are provided by Access Analytical, Inc. Access Analytical is a representative of AES serving client in the SC/NC/GA areas. All questions regarding this report should be directed to your local Access Analytical representative at 803.781.4243 or toll fee at 883.315.4243

LAB USE ONLY

Access Analytical - Chain of Custody Record

Project Work Order # 11Ø8055

Order # _____ PO # _____ Access Quote # _____ Laboratory ID: aES

Company Name: Crawford

Report To: J. Reynolds

Address:

City: State: Zip:

Phone: Fax:

Email:

Project ID: Vacant Lot (PS)

Sampled By: D. O'Brien

Preservative: (*see codes) — 1

Container Type: (*see codes) G 1

REQUESTED LAB ANALYSIS: ↓ BTEX, NAPH, MTBE

ACCESS ANALYTICAL, INC.

7478 Carlisle Street
Irmo, SC 29063

Phone: (803) 781-4243
Fax: 781-4303

www.axs-inc.com

*Preservative Codes (place corresponding # in block above analysis field): 0 = None, 1 = HCL, 2 = HNO_3, 3 = H_2SO_4, 4 = NaOH, 5 = $Na_2S_2O_3$, 6 = Method 5035 set w/ $NaHSO_4$ & CH_3OH, 7 = NaOH/ZnOAC, 8 = H_3PO_4

*Matrix Codes (place corresponding code in matrix column): GW = ground water, WW = waste water, DW = drinking water, S = soil, SL = sludge, A = air, IW = industrial waste, WO = waste oil, OT = other (specify in comments section)

*Program Area Codes: CWA = Clean Water Act (for wastewaters), SDWA = Safe Drinking Water Act (for drinking waters), SHW = Solid and Hazardous Wastes (for soils, ground waters and waste samples)

*Container Type: G = Glass, P = Plastic

Sample ID/Description	Date Collected:	Time Collected:	Type: (grab or composite)	Matrix: (see codes)	Program Area (see codes)	TOTAL # of containers	# of containers collected ↓ per analysis	BTEX, NAPH, MTBE		NOTES / COMMENTS (if sample is a composite please use space below to note start/finish times & dates)
SW-1	8/29/11	805	G	GW	SHW	4		2	2	~~SW~~ OUSR
Dup-1		805	G							SW-1 DUP
SW-2		812								
SW-3		815								
GW-10		825								
GW-11		1320								
GW-12		905								
GW-13		840								
GW-14		850								
GW-15		1201								

Turnaround Time:

✓ Standard
___ RUSH*
*Date Required: _____
(For rush work, results emailed/faxed by end of business day on date required)

Project Location:
X SC
___ NC
___ Other
(specify) _____

Relinquished By:	Received By:	Date (mm-dd-yy)	Time (24HR)	Sample Temp. Upon Receipt (°C):	
D O'Brien	A Mat	8/30/11	1247	2.8 (°C)	___ (N/A)
A Martin	Fedex	8/30/11	1700	___ (°C)	X (N/A)
	Pbs	8/31/11	10:15	___ (°C)	___ (N/A)
				___ (°C)	___ (N/A)

See Reverse for Terms and Conditions

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Yellow Copy - Access File Copy
Pink Copy - Client Copy

Pg 1 of 2

Access Analytical - Chain of Custody Record

LAB USE ONLY

Project Work Order # 1108055

Sales Order # _____ PO # _____ Access Quote # _____ Laboratory ID: ACS

Company Name: Crawford

Report To: J. Reynolds

Address:

City: State: Zip:

Phone: Fax:

Email:

Project ID: Vacant Lot (FS)

Sampled By: D. O'Brien

Access Analytical, Inc.
7478 Carlisle Street
Irmo, SC 29063
Phone: (803) 781-4243
Fax: 781-4303
www.axs-inc.com

*Preservative Codes (place corresponding # in block above analysis field): 0 = None, 1 = HCL, 2 = HNO_3, 3 = H_2SO_4, 4 = NaOH, 5 = $Na_2S_2O_3$, 6 = Method 5035 set w/ $NaHSO_4$ & CH_3OH, 7 = NaOH/ZnOAC, 8 = H_3PO_4

*Matrix Codes (place corresponding code in matrix column): GW = ground water, WW = waste water, DW = drinking water, S = soil, SL = sludge, A = air, IW = industrial waste, WO = waste oil, OT = other (specify in comments section)

*Program Area Codes: CWA = Clean Water Act (for wastewaters), SDWA = Safe Drinking Water Act (for drinking waters), SHW = Solid and Hazardous Wastes (for soils, ground waters and waste samples)

*Container Type: G = Glass, P = Plastic

Sample ID/Description	Date Collected:	Time Collected:	Type: (grab or composite)	Matrix: (see codes)	Program Area (see codes)	TOTAL # of containers	Preservative: (*see codes)	Container Type: (*see codes)	REQUESTED LAB ANALYSIS: BTEX, MAPH, MTBE	NOTES / COMMENTS (if sample is a composite please see space below to note start/finish times & Dates)
Dup-2	8/29/11	1320	G	GW	SHW	4			4	GW-11 DUP
GW-16		920				4			4	
GW-17		935				4			4	
FB-1		~~1557~~ 1550		OT		1			1	
GW-18		1615		GW		4			4	
GW-19		1506		GW		4			4	
	DC									

Turnaround Time:

✓ Standard
___ RUSH*
*Date Required: _____
(For rush work, results emailed/faxed by end of business day on date required)

Project Location:
✓ SC
___ NC
___ Other
(specify) _____

Relinquished By:	Received By:	Date (mm-dd-yy)	Time (24HR)	Sample Temp. Upon Receipt (°C):	
D O'Brien	Amat	8/30/11	1247	2.8 (°C)	___ (N/A)
A Martin	Fedex	8/30/11	1700	___ (°C)	X (N/A)
	Plus	8/31/11	10:15	___ (°C)	___ (N/A)
			F	___ (°C)	___ (N/A)

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Pink Copy - Client Copy

Pg 2 of 2

Analytical Environmental Services, Inc

Date: 8-Sep-11

Client: Crawford Environmental Services
Project: Vacant Lot (FS)
Lab ID: 1108O55

Case Narrative

Sample Receiving Nonconformance:

A Trip Blank was provided but not listed on the Chain of Custody. Trip blank was analyzed at no cost to the client.

Two sets of vials labeled with sample ID "GW-19" were received. No vials labeled with sample ID "GW-18" were received. Per Angela Martin via email on 8/31/11, the vials that have "GW-19" handwritten should be logged in as "GW-18."

Analytical Environmental Services, Inc **Date:** 8-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	SW-1
Project Name:	Vacant Lot (FS)	**Collection Date:**	8/29/2011 8:05:00 AM
Lab ID:	1108O55-001	**Matrix:**	Groundwater

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS	**SW8260B**				**(SW5030B)**				
Benzene	BRL		0.38	1.0	ug/L	151021	1	09/06/2011 18:49	GK
Toluene	BRL		0.39	1.0	ug/L	151021	1	09/06/2011 18:49	GK
Ethylbenzene	BRL		0.48	1.0	ug/L	151021	1	09/06/2011 18:49	GK
Xylenes, Total	BRL		0.38	3.0	ug/L	151021	1	09/06/2011 18:49	GK
Methyl tert-butyl ether	BRL		0.24	1.0	ug/L	151021	1	09/06/2011 18:49	GK
Naphthalene	BRL		0.25	5.0	ug/L	151021	1	09/06/2011 18:49	GK
Surr: 4-Bromofluorobenzene	96.2		0	64.7-130	%REC	151021	1	09/06/2011 18:49	GK
Surr: Dibromofluoromethane	99		0	80.7-129	%REC	151021	1	09/06/2011 18:49	GK
Surr: Toluene-d8	95.9		0	71.1-120	%REC	151021	1	09/06/2011 18:49	GK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Not detected at MDL
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- NC Not confirmed
- E Estimated value above quantitation range
- S Spike Recovery outside limits due to matrix
- J Estimated value detected below Reporting Limit
- > Greater than Result value
- < Less than Result value
- Narr See case narrative

Analytical Environmental Services, Inc **Date:** 8-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	DUP-1
Project Name:	Vacant Lot (FS)	**Collection Date:**	8/29/2011 8:05:00 AM
Lab ID:	1108O55-002	**Matrix:**	Groundwater

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS	**SW8260B**				**(SW5030B)**				
Benzene	BRL		0.38	1.0	ug/L	151021	1	09/06/2011 19:19	GK
Toluene	BRL		0.39	1.0	ug/L	151021	1	09/06/2011 19:19	GK
Ethylbenzene	BRL		0.48	1.0	ug/L	151021	1	09/06/2011 19:19	GK
Xylenes, Total	BRL		0.38	3.0	ug/L	151021	1	09/06/2011 19:19	GK
Methyl tert-butyl ether	BRL		0.24	1.0	ug/L	151021	1	09/06/2011 19:19	GK
Naphthalene	BRL		0.25	5.0	ug/L	151021	1	09/06/2011 19:19	GK
Surr: 4-Bromofluorobenzene	98.4		0	64.7-130	%REC	151021	1	09/06/2011 19:19	GK
Surr: Dibromofluoromethane	100		0	80.7-129	%REC	151021	1	09/06/2011 19:19	GK
Surr: Toluene-d8	98.2		0	71.1-120	%REC	151021	1	09/06/2011 19:19	GK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Not detected at MDL
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- NC Not confirmed
- E Estimated value above quantitation range
- S Spike Recovery outside limits due to matrix
- J Estimated value detected below Reporting Limit
- > Greater than Result value
- < Less than Result value
- Narr See case narrative

Analytical Environmental Services, Inc **Date:** 8-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	SW-2
Project Name:	Vacant Lot (FS)	**Collection Date:**	8/29/2011 8:12:00 AM
Lab ID:	1108O55-003	**Matrix:**	Groundwater

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS	**SW8260B**				**(SW5030B)**				
Benzene	BRL		0.38	1.0	ug/L	151021	1	09/06/2011 19:49	GK
Toluene	BRL		0.39	1.0	ug/L	151021	1	09/06/2011 19:49	GK
Ethylbenzene	BRL		0.48	1.0	ug/L	151021	1	09/06/2011 19:49	GK
Xylenes, Total	BRL		0.38	3.0	ug/L	151021	1	09/06/2011 19:49	GK
Methyl tert-butyl ether	BRL		0.24	1.0	ug/L	151021	1	09/06/2011 19:49	GK
Naphthalene	BRL		0.25	5.0	ug/L	151021	1	09/06/2011 19:49	GK
Surr: 4-Bromofluorobenzene	98.8		0	64.7-130	%REC	151021	1	09/06/2011 19:49	GK
Surr: Dibromofluoromethane	98.1		0	80.7-129	%REC	151021	1	09/06/2011 19:49	GK
Surr: Toluene-d8	96.3		0	71.1-120	%REC	151021	1	09/06/2011 19:49	GK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Not detected at MDL
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- NC Not confirmed
- E Estimated value above quantitation range
- S Spike Recovery outside limits due to matrix
- J Estimated value detected below Reporting Limit
- > Greater than Result value
- < Less than Result value
- Narr See case narrative

Analytical Environmental Services, Inc **Date:** 8-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	SW-3
Project Name:	Vacant Lot (FS)	**Collection Date:**	8/29/2011 8:15:00 AM
Lab ID:	1108O55-004	**Matrix:**	Groundwater

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS	**SW8260B**			**(SW5030B)**					
Benzene	BRL		0.38	1.0	ug/L	151021	1	09/06/2011 20:18	GK
Toluene	BRL		0.39	1.0	ug/L	151021	1	09/06/2011 20:18	GK
Ethylbenzene	BRL		0.48	1.0	ug/L	151021	1	09/06/2011 20:18	GK
Xylenes, Total	BRL		0.38	3.0	ug/L	151021	1	09/06/2011 20:18	GK
Methyl tert-butyl ether	BRL		0.24	1.0	ug/L	151021	1	09/06/2011 20:18	GK
Naphthalene	BRL		0.25	5.0	ug/L	151021	1	09/06/2011 20:18	GK
Surr: 4-Bromofluorobenzene	97.6		0	64.7-130	%REC	151021	1	09/06/2011 20:18	GK
Surr: Dibromofluoromethane	99.8		0	80.7-129	%REC	151021	1	09/06/2011 20:18	GK
Surr: Toluene-d8	95.8		0	71.1-120	%REC	151021	1	09/06/2011 20:18	GK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Not detected at MDL
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- NC Not confirmed
- E Estimated value above quantitation range
- S Spike Recovery outside limits due to matrix
- J Estimated value detected below Reporting Limit
- > Greater than Result value
- < Less than Result value
- Narr See case narrative

Analytical Environmental Services, Inc **Date:** 8-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	GW-10
Project Name:	Vacant Lot (FS)	**Collection Date:**	8/29/2011 8:25:00 AM
Lab ID:	1108O55-005	**Matrix:**	Groundwater

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS	**SW8260B**				**(SW5030B)**				
Benzene	30		0.38	1.0	ug/L	151021	1	09/06/2011 20:48	GK
Toluene	BRL		0.39	1.0	ug/L	151021	1	09/06/2011 20:48	GK
Ethylbenzene	BRL		0.48	1.0	ug/L	151021	1	09/06/2011 20:48	GK
Xylenes, Total	BRL		0.38	3.0	ug/L	151021	1	09/06/2011 20:48	GK
Methyl tert-butyl ether	12		0.24	1.0	ug/L	151021	1	09/06/2011 20:48	GK
Naphthalene	2.3	J	0.25	5.0	ug/L	151021	1	09/06/2011 20:48	GK
Surr: 4-Bromofluorobenzene	96.8		0	64.7-130	%REC	151021	1	09/06/2011 20:48	GK
Surr: Dibromofluoromethane	99.7		0	80.7-129	%REC	151021	1	09/06/2011 20:48	GK
Surr: Toluene-d8	96.1		0	71.1-120	%REC	151021	1	09/06/2011 20:48	GK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Not detected at MDL
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- NC Not confirmed
- E Estimated value above quantitation range
- S Spike Recovery outside limits due to matrix
- J Estimated value detected below Reporting Limit
- > Greater than Result value
- < Less than Result value
- Narr See case narrative

Analytical Environmental Services, Inc **Date:** 8-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	GW-11
Project Name:	Vacant Lot (FS)	**Collection Date:**	8/29/2011 1:20:00 PM
Lab ID:	1108O55-006	**Matrix:**	Groundwater

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS	**SW8260B**				**(SW5030B)**				
Benzene	BRL		0.38	1.0	ug/L	151021	1	09/06/2011 21:18	GK
Toluene	BRL		0.39	1.0	ug/L	151021	1	09/06/2011 21:18	GK
Ethylbenzene	BRL		0.48	1.0	ug/L	151021	1	09/06/2011 21:18	GK
Xylenes, Total	BRL		0.38	3.0	ug/L	151021	1	09/06/2011 21:18	GK
Methyl tert-butyl ether	72		0.24	1.0	ug/L	151021	1	09/06/2011 21:18	GK
Naphthalene	BRL		0.25	5.0	ug/L	151021	1	09/06/2011 21:18	GK
Surr: 4-Bromofluorobenzene	96.6		0	64.7-130	%REC	151021	1	09/06/2011 21:18	GK
Surr: Dibromofluoromethane	99.3		0	80.7-129	%REC	151021	1	09/06/2011 21:18	GK
Surr: Toluene-d8	95.5		0	71.1-120	%REC	151021	1	09/06/2011 21:18	GK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Not detected at MDL
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- NC Not confirmed
- E Estimated value above quantitation range
- S Spike Recovery outside limits due to matrix
- J Estimated value detected below Reporting Limit
- > Greater than Result value
- < Less than Result value
- Narr See case narrative

Analytical Environmental Services, Inc **Date:** 8-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	GW-12
Project Name:	Vacant Lot (FS)	**Collection Date:**	8/29/2011 9:05:00 AM
Lab ID:	1108O55-007	**Matrix:**	Groundwater

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS	**SW8260B**				**(SW5030B)**				
Benzene	BRL		0.38	1.0	ug/L	151021	1	09/06/2011 18:18	GK
Toluene	BRL		0.39	1.0	ug/L	151021	1	09/06/2011 18:18	GK
Ethylbenzene	BRL		0.48	1.0	ug/L	151021	1	09/06/2011 18:18	GK
Xylenes, Total	BRL		0.38	3.0	ug/L	151021	1	09/06/2011 18:18	GK
Methyl tert-butyl ether	BRL		0.24	1.0	ug/L	151021	1	09/06/2011 18:18	GK
Naphthalene	0.37	J	0.25	5.0	ug/L	151021	1	09/06/2011 18:18	GK
Surr: 4-Bromofluorobenzene	91.6		0	64.7-130	%REC	151021	1	09/06/2011 18:18	GK
Surr: Dibromofluoromethane	101		0	80.7-129	%REC	151021	1	09/06/2011 18:18	GK
Surr: Toluene-d8	102		0	71.1-120	%REC	151021	1	09/06/2011 18:18	GK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Not detected at MDL
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- NC Not confirmed
- E Estimated value above quantitation range
- S Spike Recovery outside limits due to matrix
- J Estimated value detected below Reporting Limit
- > Greater than Result value
- < Less than Result value
- Narr See case narrative

Analytical Environmental Services, Inc **Date:** 8-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	GW-13
Project Name:	Vacant Lot (FS)	**Collection Date:**	8/29/2011 8:40:00 AM
Lab ID:	1108O55-008	**Matrix:**	Groundwater

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS	**SW8260B**				**(SW5030B)**				
Benzene	BRL		0.38	1.0	ug/L	151021	1	09/06/2011 18:47	GK
Toluene	BRL		0.39	1.0	ug/L	151021	1	09/06/2011 18:47	GK
Ethylbenzene	BRL		0.48	1.0	ug/L	151021	1	09/06/2011 18:47	GK
Xylenes, Total	BRL		0.38	3.0	ug/L	151021	1	09/06/2011 18:47	GK
Methyl tert-butyl ether	BRL		0.24	1.0	ug/L	151021	1	09/06/2011 18:47	GK
Naphthalene	BRL		0.25	5.0	ug/L	151021	1	09/06/2011 18:47	GK
Surr: 4-Bromofluorobenzene	92.7		0	64.7-130	%REC	151021	1	09/06/2011 18:47	GK
Surr: Dibromofluoromethane	101		0	80.7-129	%REC	151021	1	09/06/2011 18:47	GK
Surr: Toluene-d8	102		0	71.1-120	%REC	151021	1	09/06/2011 18:47	GK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Not detected at MDL
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- NC Not confirmed
- E Estimated value above quantitation range
- S Spike Recovery outside limits due to matrix
- J Estimated value detected below Reporting Limit
- > Greater than Result value
- < Less than Result value
- Narr See case narrative

Analytical Environmental Services, Inc **Date:** 8-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	GW-14
Project Name:	Vacant Lot (FS)	**Collection Date:**	8/29/2011 8:50:00 AM
Lab ID:	1108O55-009	**Matrix:**	Groundwater

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS	**SW8260B**				**(SW5030B)**				
Benzene	BRL		0.38	1.0	ug/L	151021	1	09/06/2011 19:16	GK
Toluene	BRL		0.39	1.0	ug/L	151021	1	09/06/2011 19:16	GK
Ethylbenzene	BRL		0.48	1.0	ug/L	151021	1	09/06/2011 19:16	GK
Xylenes, Total	BRL		0.38	3.0	ug/L	151021	1	09/06/2011 19:16	GK
Methyl tert-butyl ether	BRL		0.24	1.0	ug/L	151021	1	09/06/2011 19:16	GK
Naphthalene	BRL		0.25	5.0	ug/L	151021	1	09/06/2011 19:16	GK
Surr: 4-Bromofluorobenzene	93.2		0	64.7-130	%REC	151021	1	09/06/2011 19:16	GK
Surr: Dibromofluoromethane	98.5		0	80.7-129	%REC	151021	1	09/06/2011 19:16	GK
Surr: Toluene-d8	101		0	71.1-120	%REC	151021	1	09/06/2011 19:16	GK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Not detected at MDL
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- NC Not confirmed
- E Estimated value above quantitation range
- S Spike Recovery outside limits due to matrix
- J Estimated value detected below Reporting Limit
- > Greater than Result value
- < Less than Result value
- Narr See case narrative

Analytical Environmental Services, Inc **Date:** 8-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	GW-15
Project Name:	Vacant Lot (FS)	**Collection Date:**	8/29/2011 12:01:00 PM
Lab ID:	1108O55-010	**Matrix:**	Groundwater

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B (SW5030B)									
Benzene	BRL		0.38	1.0	ug/L	151021	1	09/06/2011 19:45	GK
Toluene	BRL		0.39	1.0	ug/L	151021	1	09/06/2011 19:45	GK
Ethylbenzene	0.48	J	0.48	1.0	ug/L	151021	1	09/06/2011 19:45	GK
Xylenes, Total	BRL		0.38	3.0	ug/L	151021	1	09/06/2011 19:45	GK
Methyl tert-butyl ether	0.30	J	0.24	1.0	ug/L	151021	1	09/06/2011 19:45	GK
Naphthalene	BRL		0.25	5.0	ug/L	151021	1	09/06/2011 19:45	GK
Surr: 4-Bromofluorobenzene	92.9		0	64.7-130	%REC	151021	1	09/06/2011 19:45	GK
Surr: Dibromofluoromethane	98.7		0	80.7-129	%REC	151021	1	09/06/2011 19:45	GK
Surr: Toluene-d8	103		0	71.1-120	%REC	151021	1	09/06/2011 19:45	GK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Not detected at MDL
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- NC Not confirmed
- E Estimated value above quantitation range
- S Spike Recovery outside limits due to matrix
- J Estimated value detected below Reporting Limit
- > Greater than Result value
- < Less than Result value
- Narr See case narrative

Analytical Environmental Services, Inc **Date:** 8-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	DUP-2
Project Name:	Vacant Lot (FS)	**Collection Date:**	8/29/2011 1:20:00 PM
Lab ID:	1108O55-011	**Matrix:**	Groundwater

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS	**SW8260B**				**(SW5030B)**				
Benzene	BRL		0.38	1.0	ug/L	151021	1	09/07/2011 13:07	GK
Toluene	BRL		0.39	1.0	ug/L	151021	1	09/07/2011 13:07	GK
Ethylbenzene	BRL		0.48	1.0	ug/L	151021	1	09/07/2011 13:07	GK
Xylenes, Total	BRL		0.38	3.0	ug/L	151021	1	09/07/2011 13:07	GK
Methyl tert-butyl ether	74		0.24	1.0	ug/L	151021	1	09/07/2011 13:07	GK
Naphthalene	BRL		0.25	5.0	ug/L	151021	1	09/07/2011 13:07	GK
Surr: 4-Bromofluorobenzene	94.8		0	64.7-130	%REC	151021	1	09/07/2011 13:07	GK
Surr: Dibromofluoromethane	103		0	80.7-129	%REC	151021	1	09/07/2011 13:07	GK
Surr: Toluene-d8	97.9		0	71.1-120	%REC	151021	1	09/07/2011 13:07	GK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Not detected at MDL
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- NC Not confirmed
- E Estimated value above quantitation range
- S Spike Recovery outside limits due to matrix
- J Estimated value detected below Reporting Limit
- > Greater than Result value
- < Less than Result value
- Narr See case narrative

Analytical Environmental Services, Inc **Date:** 8-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	GW-16
Project Name:	Vacant Lot (FS)	**Collection Date:**	8/29/2011 9:20:00 AM
Lab ID:	1108O55-012	**Matrix:**	Groundwater

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS	**SW8260B**				**(SW5030B)**				
Benzene	BRL		0.38	1.0	ug/L	151021	1	09/07/2011 05:12	GK
Toluene	BRL		0.39	1.0	ug/L	151021	1	09/07/2011 05:12	GK
Ethylbenzene	BRL		0.48	1.0	ug/L	151021	1	09/07/2011 05:12	GK
Xylenes, Total	BRL		0.38	3.0	ug/L	151021	1	09/07/2011 05:12	GK
Methyl tert-butyl ether	130		0.24	1.0	ug/L	151021	1	09/07/2011 05:12	GK
Naphthalene	BRL		0.25	5.0	ug/L	151021	1	09/07/2011 05:12	GK
Surr: 4-Bromofluorobenzene	95.6		0	64.7-130	%REC	151021	1	09/07/2011 05:12	GK
Surr: Dibromofluoromethane	101		0	80.7-129	%REC	151021	1	09/07/2011 05:12	GK
Surr: Toluene-d8	96.2		0	71.1-120	%REC	151021	1	09/07/2011 05:12	GK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Not detected at MDL
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- NC Not confirmed
- E Estimated value above quantitation range
- S Spike Recovery outside limits due to matrix
- J Estimated value detected below Reporting Limit
- > Greater than Result value
- < Less than Result value
- Narr See case narrative

Analytical Environmental Services, Inc **Date:** 8-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	GW-17
Project Name:	Vacant Lot (FS)	**Collection Date:**	8/29/2011 9:35:00 AM
Lab ID:	1108O55-013	**Matrix:**	Groundwater

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS	**SW8260B**				**(SW5030B)**				
Benzene	BRL		0.38	1.0	ug/L	151021	1	09/07/2011 05:42	GK
Toluene	BRL		0.39	1.0	ug/L	151021	1	09/07/2011 05:42	GK
Ethylbenzene	BRL		0.48	1.0	ug/L	151021	1	09/07/2011 05:42	GK
Xylenes, Total	BRL		0.38	3.0	ug/L	151021	1	09/07/2011 05:42	GK
Methyl tert-butyl ether	BRL		0.24	1.0	ug/L	151021	1	09/07/2011 05:42	GK
Naphthalene	BRL		0.25	5.0	ug/L	151021	1	09/07/2011 05:42	GK
Surr: 4-Bromofluorobenzene	96.8		0	64.7-130	%REC	151021	1	09/07/2011 05:42	GK
Surr: Dibromofluoromethane	99.3		0	80.7-129	%REC	151021	1	09/07/2011 05:42	GK
Surr: Toluene-d8	97.6		0	71.1-120	%REC	151021	1	09/07/2011 05:42	GK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Not detected at MDL
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- NC Not confirmed
- E Estimated value above quantitation range
- S Spike Recovery outside limits due to matrix
- J Estimated value detected below Reporting Limit
- > Greater than Result value
- < Less than Result value
- Narr See case narrative

Analytical Environmental Services, Inc **Date:** 8-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	FB-1
Project Name:	Vacant Lot (FS)	**Collection Date:**	8/29/2011 5:57:00 PM
Lab ID:	1108O55-014	**Matrix:**	Aqueous

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS	**SW8260B**				**(SW5030B)**				
Benzene	BRL		0.38	1.0	ug/L	151021	1	09/07/2011 07:40	GK
Toluene	BRL		0.39	1.0	ug/L	151021	1	09/07/2011 07:40	GK
Ethylbenzene	BRL		0.48	1.0	ug/L	151021	1	09/07/2011 07:40	GK
Xylenes, Total	BRL		0.38	3.0	ug/L	151021	1	09/07/2011 07:40	GK
Methyl tert-butyl ether	BRL		0.24	1.0	ug/L	151021	1	09/07/2011 07:40	GK
Naphthalene	BRL		0.25	5.0	ug/L	151021	1	09/07/2011 07:40	GK
Surr: 4-Bromofluorobenzene	94.5		0	64.7-130	%REC	151021	1	09/07/2011 07:40	GK
Surr: Dibromofluoromethane	102		0	80.7-129	%REC	151021	1	09/07/2011 07:40	GK
Surr: Toluene-d8	97.2		0	71.1-120	%REC	151021	1	09/07/2011 07:40	GK

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated value above quantitation range
BRL	Not detected at MDL	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	J	Estimated value detected below Reporting Limit
N	Analyte not NELAC certified	>	Greater than Result value
B	Analyte detected in the associated method blank	<	Less than Result value
NC	Not confirmed	Narr	See case narrative

Analytical Environmental Services, Inc **Date:** 8-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	GW-18
Project Name:	Vacant Lot (FS)	**Collection Date:**	8/29/2011 4:15:00 PM
Lab ID:	1108O55-015	**Matrix:**	Groundwater

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS	**SW8260B**				**(SW5030B)**				
Benzene	BRL		0.38	1.0	ug/L	151021	1	09/07/2011 06:12	GK
Toluene	BRL		0.39	1.0	ug/L	151021	1	09/07/2011 06:12	GK
Ethylbenzene	BRL		0.48	1.0	ug/L	151021	1	09/07/2011 06:12	GK
Xylenes, Total	BRL		0.38	3.0	ug/L	151021	1	09/07/2011 06:12	GK
Methyl tert-butyl ether	4.8		0.24	1.0	ug/L	151021	1	09/07/2011 06:12	GK
Naphthalene	1.3	J	0.25	5.0	ug/L	151021	1	09/07/2011 06:12	GK
Surr: 4-Bromofluorobenzene	98		0	64.7-130	%REC	151021	1	09/07/2011 06:12	GK
Surr: Dibromofluoromethane	101		0	80.7-129	%REC	151021	1	09/07/2011 06:12	GK
Surr: Toluene-d8	97.1		0	71.1-120	%REC	151021	1	09/07/2011 06:12	GK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Not detected at MDL
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- NC Not confirmed
- E Estimated value above quantitation range
- S Spike Recovery outside limits due to matrix
- J Estimated value detected below Reporting Limit
- > Greater than Result value
- < Less than Result value
- Narr See case narrative

Analytical Environmental Services, Inc **Date:** 8-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	GW-19
Project Name:	Vacant Lot (FS)	**Collection Date:**	8/29/2011 3:06:00 PM
Lab ID:	1108O55-016	**Matrix:**	Groundwater

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS	**SW8260B**				**(SW5030B)**				
Benzene	BRL		0.38	1.0	ug/L	151021	1	09/07/2011 06:41	GK
Toluene	BRL		0.39	1.0	ug/L	151021	1	09/07/2011 06:41	GK
Ethylbenzene	BRL		0.48	1.0	ug/L	151021	1	09/07/2011 06:41	GK
Xylenes, Total	BRL		0.38	3.0	ug/L	151021	1	09/07/2011 06:41	GK
Methyl tert-butyl ether	BRL		0.24	1.0	ug/L	151021	1	09/07/2011 06:41	GK
Naphthalene	BRL		0.25	5.0	ug/L	151021	1	09/07/2011 06:41	GK
Surr: 4-Bromofluorobenzene	98.4		0	64.7-130	%REC	151021	1	09/07/2011 06:41	GK
Surr: Dibromofluoromethane	104		0	80.7-129	%REC	151021	1	09/07/2011 06:41	GK
Surr: Toluene-d8	98.5		0	71.1-120	%REC	151021	1	09/07/2011 06:41	GK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Not detected at MDL
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- NC Not confirmed
- E Estimated value above quantitation range
- S Spike Recovery outside limits due to matrix
- J Estimated value detected below Reporting Limit
- > Greater than Result value
- < Less than Result value
- Narr See case narrative

Analytical Environmental Services, Inc **Date:** 8-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	TRIP BLANK
Project Name:	Vacant Lot (FS)	**Collection Date:**	8/31/2011
Lab ID:	1108O55-017	**Matrix:**	Aqueous

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS	**SW8260B**				**(SW5030B)**				
Benzene	BRL		0.38	1.0	ug/L	151021	1	09/07/2011 07:11	GK
Toluene	BRL		0.39	1.0	ug/L	151021	1	09/07/2011 07:11	GK
Ethylbenzene	BRL		0.48	1.0	ug/L	151021	1	09/07/2011 07:11	GK
Xylenes, Total	BRL		0.38	3.0	ug/L	151021	1	09/07/2011 07:11	GK
Methyl tert-butyl ether	BRL		0.24	1.0	ug/L	151021	1	09/07/2011 07:11	GK
Naphthalene	BRL		0.25	5.0	ug/L	151021	1	09/07/2011 07:11	GK
Surr: 4-Bromofluorobenzene	93.8		0	64.7-130	%REC	151021	1	09/07/2011 07:11	GK
Surr: Dibromofluoromethane	102		0	80.7-129	%REC	151021	1	09/07/2011 07:11	GK
Surr: Toluene-d8	97.3		0	71.1-120	%REC	151021	1	09/07/2011 07:11	GK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Not detected at MDL
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- NC Not confirmed
- E Estimated value above quantitation range
- S Spike Recovery outside limits due to matrix
- J Estimated value detected below Reporting Limit
- > Greater than Result value
- < Less than Result value
- Narr See case narrative

Analytical Environmental Services, Inc.

Sample/Cooler Receipt Checklist

Client Access Work Order Number 1108055

Checklist completed by Phs 8/31/11
Signature Date

Carrier name: FedEx ✓ UPS __ Courier __ Client __ US Mail __ Other _____

Shipping container/cooler in good condition? Yes ✓ No __ Not Present __

Custody seals intact on shipping container/cooler? Yes __ No __ Not Present ✓

Custody seals intact on sample bottles? Yes __ No __ Not Present ✓

Container/Temp Blank temperature in compliance? (4°C±2)* Yes ✓ No __

Cooler #1 3.8°C Cooler #2 _____ Cooler #3 _____ Cooler #4 _____ Cooler#5 _____ Cooler #6 _____

Chain of custody present? Yes ✓ No __

Chain of custody signed when relinquished and received? Yes ✓ No __

Chain of custody agrees with sample labels? Yes __ No ✓

Samples in proper container/bottle? Yes ✓ No __

Sample containers intact? Yes ✓ No __

Sufficient sample volume for indicated test? Yes ✓ No __

All samples received within holding time? Yes ✓ No __

Was TAT marked on the COC? Yes ✓ No __

Proceed with Standard TAT as per project history? Yes __ No __ Not Applicable ✓

Water - VOA vials have zero headspace? No VOA vials submitted __ Yes ✓ No __

Water - pH acceptable upon receipt? Yes ✓ No __ Not Applicable __

Adjusted? _____ Checked by _____

Sample Condition: Good ✓ Other(Explain) _____

(For diffusive samples or AIHA lead) Is a known blank included? Yes __ No ✓

See Case Narrative for resolution of the Non-Conformance.

* Samples do not have to comply with the given range for certain parameters.

\\L\Quality Assurance\Checklists Procedures Sign-Off Templates\Checklists\Sample Receipt Checklists\Sample_Cooler_Receipt_Checklist

Client: Crawford Environmental Services
Project Name: Vacant Lot (FS)
Workorder: 1108O55

ANALYTICAL QC SUMMARY REPORT

BatchID: 151021

Sample ID: **MB-151021** Client ID:
SampleType: **MBLK** TestCode: **Volatile Organic Compounds by GC/MS SW8260B**
Units: **ug/L** Prep Date: **09/03/2011** Run No: **204517**
BatchID: **151021** Analysis Date: **09/03/2011** Seq No: **4276638**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Benzene	BRL	1.0	0	0	0	0	0	0	0	0	
Ethylbenzene	BRL	1.0	0	0	0	0	0	0	0	0	
Methyl tert-butyl ether	BRL	1.0	0	0	0	0	0	0	0	0	
Naphthalene	0.6800	5.0	0	0	0	0	0	0	0	0	J
Toluene	BRL	1.0	0	0	0	0	0	0	0	0	
Xylenes, Total	BRL	1.0	0	0	0	0	0	0	0	0	
Surr: 4-Bromofluorobenzene	46.27	0	50	0	92.5	64.7	130	0	0	0	
Surr: Dibromofluoromethane	47.35	0	50	0	94.7	80.7	129	0	0	0	
Surr: Toluene-d8	47.88	0	50	0	95.8	71.1	120	0	0	0	

Sample ID: **LCS-151021** Client ID:
SampleType: **LCS** TestCode: **Volatile Organic Compounds by GC/MS SW8260B**
Units: **ug/L** Prep Date: **09/03/2011** Run No: **204517**
BatchID: **151021** Analysis Date: **09/03/2011** Seq No: **4276634**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Benzene	49.62	1.0	50	0	99.2	70	130	0	0	0	
Toluene	49.59	1.0	50	0	99.2	70	130	0	0	0	
Surr: 4-Bromofluorobenzene	49.94	0	50	0	99.9	64.7	130	0	0	0	
Surr: Dibromofluoromethane	50.08	0	50	0	100	80.7	129	0	0	0	
Surr: Toluene-d8	50.87	0	50	0	102	71.1	120	0	0	0	

Sample ID: **1109143-001AMS** Client ID:
SampleType: **MS** TestCode: **Volatile Organic Compounds by GC/MS SW8260B**
Units: **ug/L** Prep Date: **09/03/2011** Run No: **204517**
BatchID: **151021** Analysis Date: **09/03/2011** Seq No: **4276645**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Benzene	51.14	1.0	50	0	102	62.2	143	0	0	0	
Toluene	50.76	1.0	50	0	102	57.8	149	0	0	0	
Surr: 4-Bromofluorobenzene	48.48	0	50	0	97	64.7	130	0	0	0	
Surr: Dibromofluoromethane	48.29	0	50	0	96.6	80.7	129	0	0	0	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Crawford Environmental Services
Project Name: Vacant Lot (FS)
Workorder: 1108O55

ANALYTICAL QC SUMMARY REPORT

BatchID: 151021

Sample ID: **1109143-001AMS**	Client ID:				Units: **ug/L**		Prep Date: **09/03/2011**		Run No: **204517**	
SampleType: **MS**	TestCode: **Volatile Organic Compounds by GC/MS SW8260B**				BatchID: **151021**		Analysis Date: **09/03/2011**		Seq No: **4276645**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit Qual
Surr: Toluene-d8	47.66	0	50	0	95.3	71.1	120	0	0	0

Sample ID: **1109143-001AMSD**	Client ID:				Units: **ug/L**		Prep Date: **09/03/2011**		Run No: **204517**	
SampleType: **MSD**	TestCode: **Volatile Organic Compounds by GC/MS SW8260B**				BatchID: **151021**		Analysis Date: **09/03/2011**		Seq No: **4276649**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit Qual
Benzene	50.59	1.0	50	0	101	62.2	143	51.14	1.08	20
Toluene	49.67	1.0	50	0	99.3	57.8	149	50.76	2.17	20
Surr: 4-Bromofluorobenzene	46.66	0	50	0	93.3	64.7	130	48.48	0	0
Surr: Dibromofluoromethane	47.17	0	50	0	94.3	80.7	129	48.29	0	0
Surr: Toluene-d8	48.54	0	50	0	97.1	71.1	120	47.66	0	0

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

ACCESS
ANALYTICAL, INC.

ANALYTICAL REPORT

CLIENT

Crawford Environmental Services
101 Corporate Blvd. Suite 412
West Columbia SC 29196

ATTENTION
Justin Reynolds

PROJECT ID
Vacant Lot (Soil)

LABORATORY REPORT NUMBER
1108O54

DATE
September 09, 2011

Primary Data Review By

Kathryn E. Waters

Kathryn Waters
Project Manager, AES

Secondary Data Review By

Ashley Amick

Project Manager, Access Analytical
aamick@axs-inc.com

PLEASE NOTE:

- **Unless otherwise noted, all analysis on this report performed at Analytical Environmental Services Inc. (AES Inc), 3785 Presidential Parkway, Atlanta, GA 30340.**
- **AES is SCDHEC certified laboratory # 98016, NCDENR certified lab # 562, GA certified lab # FL-E87582, NELAP certified laboratory # E87582**
- Local support services for this project are provided by Access Analytical, Inc. Access Analytical is a representative of AES serving client in the SC/NC/GA areas. All questions regarding this report should be directed to your local Access Analytical representative at 803.781.4243 or toll fee at 883.315.4243

LAB USE ONLY

Access Analytical - Chain of Custody Record

Project Work Order # 1108054

Sales Order # _____ **PO #** _____ **Access Quote #** _____ **Laboratory ID:** AES

Company Name: CES

Report To: J. Reynolds

Address:

City: State: Zip:

Phone: Fax:

Email:

Project ID: VACANT LOT (Soil)

Sampled By: D. O'Brien

Preservative: (*see codes) 0

Container Type: (*see codes) G

REQUESTED LAB ANALYSIS: ↓

Sample ID/Description	Date Collected:	Time Collected:	Type: (grab or composite)	Matrix: (see codes)	Program Area (see codes)	TOTAL # of containers	# of containers collected per analysis	Bzx, NAPH
GW-10	8/25/11	9:21	G	Soil	SHW	4		4
GW-11		10:17						
GW-12		11:24						
GW-13		11:55						
GW-14		12:32						
GW-15		12:59						
GW-16		13:31						
GW-17		14:07						
Trip Blank	8/25/11			GW	SHW	1		

ACCESS ANALYTICAL, INC.

7478 Carlisle Street
Irmo, SC 29063

Phone: (803) 781-4243
Fax: 781-4303

www.axs-inc.com

*Preservative Codes (place corresponding # in block above analysis field): 0 = None, 1 = HCL, 2 = HNO_3, 3 = H_2SO_4, 4 = NaOH, 5 = $Na_2S_2O_3$, 6 = Method 5035 set w/ $NaHSO_4$ & CH_3OH, 7 = NaOH/ZnOAC, 8 = H_3PO_4

*Matrix Codes (place corresponding code in matrix column): GW = ground water, WW = waste water, DW = drinking water, S = soil, SL = sludge, A = air, IW = industrial waste, WO = waste oil, OT = other (specify in comments section)

*Program Area Codes: CWA = Clean Water Act (for wastewaters), SDWA = Safe Drinking Water Act (for drinking waters), SHW = Solid and Hazardous Wastes (for soils, ground waters and waste samples)

*Container Type: G = Glass, P = Plastic

NOTES / COMMENTS
(if sample is a composite please use space below to note start/finish times & dates)

Turnaround Time:

X Standard
__ RUSH*
*Date Required: _____
(For rush work, results emailed/faxed by end of business day on date required)

Project Location:
X SC
__ NC
__ Other
(specify) _____

Relinquished By:	Received By:	Date (mm-dd-yy)	Time (24HR)	Sample Temp. Upon Receipt (°C):	
D O'Brien	AMCT	8/30/11	1247	2.7 (°C)	___ (N/A)
A Martin	Fedex	8/30/11	1700	___ (°C)	X (N/A)
	PLT	8/31/11	10:15	___ (°C)	___ (N/A)
			F	___ (°C)	___ (N/A)

See Reverse for Terms and Conditions

Pg 1 of 1

Original Copy - Returned w/Report
Yellow Copy - Access File Copy
Pink Copy - Client Copy

Analytical Environmental Services, Inc

Date: 8-Sep-11

Client: Crawford Environmental Services
Project: Vacant Lot (Soil)
Lab ID: 1108O54

Case Narrative

Sample Receiving Nonconformance:

Sample IDs were not provided on the sample vials. Samples came in sets with sample IDs labeled on the bags containing the samples. Samples were identified according to the Chain of Custody.

Analytical Environmental Services, Inc **Date:** 8-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	GW-10
Project Name:	Vacant Lot (Soil)	**Collection Date:**	8/26/2011 9:21:00 AM
Lab ID:	1108O54-001	**Matrix:**	Soil

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B (SW5035)									
Benzene	BRL		0.62	0.91	ug/Kg-dry	151282	1	09/07/2011 07:34	JE
Toluene	BRL		0.73	0.91	ug/Kg-dry	151282	1	09/07/2011 07:34	JE
Ethylbenzene	BRL		0.60	0.91	ug/Kg-dry	151282	1	09/07/2011 07:34	JE
Xylenes, Total	BRL		2.1	2.7	ug/Kg-dry	151282	1	09/07/2011 07:34	JE
Naphthalene	BRL		0.49	4.5	ug/Kg-dry	151282	1	09/07/2011 07:34	JE
Surr: 4-Bromofluorobenzene	87.4		0	56-137	%REC	151282	1	09/07/2011 07:34	JE
Surr: Dibromofluoromethane	129		0	73.7-137	%REC	151282	1	09/07/2011 07:34	JE
Surr: Toluene-d8	101		0	69.2-126	%REC	151282	1	09/07/2011 07:34	JE
PERCENT MOISTURE D2216									
Percent Moisture	16.6		0	0	wt%	R204696	1	09/07/2011 11:00	AS

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Not detected at MDL
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- NC Not confirmed
- E Estimated value above quantitation range
- S Spike Recovery outside limits due to matrix
- J Estimated value detected below Reporting Limit
- > Greater than Result value
- < Less than Result value
- Narr See case narrative

Analytical Environmental Services, Inc **Date:** 8-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	GW-11
Project Name:	Vacant Lot (Soil)	**Collection Date:**	8/26/2011 10:17:00 AM
Lab ID:	1108O54-002	**Matrix:**	Soil

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B (SW5035)									
Benzene	BRL		0.76	1.1	ug/Kg-dry	151282	1	09/07/2011 07:59	JE
Toluene	BRL		0.89	1.1	ug/Kg-dry	151282	1	09/07/2011 07:59	JE
Ethylbenzene	BRL		0.73	1.1	ug/Kg-dry	151282	1	09/07/2011 07:59	JE
Xylenes, Total	BRL		2.5	3.3	ug/Kg-dry	151282	1	09/07/2011 07:59	JE
Naphthalene	BRL		0.60	5.5	ug/Kg-dry	151282	1	09/07/2011 07:59	JE
Surr: 4-Bromofluorobenzene	88.8		0	56-137	%REC	151282	1	09/07/2011 07:59	JE
Surr: Dibromofluoromethane	131		0	73.7-137	%REC	151282	1	09/07/2011 07:59	JE
Surr: Toluene-d8	102		0	69.2-126	%REC	151282	1	09/07/2011 07:59	JE
PERCENT MOISTURE D2216									
Percent Moisture	14.5		0	0	wt%	R204696	1	09/07/2011 11:00	AS

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Not detected at MDL
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- NC Not confirmed
- E Estimated value above quantitation range
- S Spike Recovery outside limits due to matrix
- J Estimated value detected below Reporting Limit
- > Greater than Result value
- < Less than Result value
- Narr See case narrative

Analytical Environmental Services, Inc **Date:** 8-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	GW-12
Project Name:	Vacant Lot (Soil)	**Collection Date:**	8/26/2011 11:24:00 AM
Lab ID:	1108O54-003	**Matrix:**	Soil

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B (SW5035)									
Benzene	BRL		0.64	0.93	ug/Kg-dry	151282	1	09/07/2011 21:48	JE
Toluene	BRL		0.75	0.93	ug/Kg-dry	151282	1	09/07/2011 21:48	JE
Ethylbenzene	BRL		0.62	0.93	ug/Kg-dry	151282	1	09/07/2011 21:48	JE
Xylenes, Total	BRL		2.1	2.8	ug/Kg-dry	151282	1	09/07/2011 21:48	JE
Naphthalene	BRL		0.50	4.6	ug/Kg-dry	151282	1	09/07/2011 21:48	JE
Surr: 4-Bromofluorobenzene	112		0	56-137	%REC	151282	1	09/07/2011 21:48	JE
Surr: Dibromofluoromethane	136		0	73.7-137	%REC	151282	1	09/07/2011 21:48	JE
Surr: Toluene-d8	97.1		0	69.2-126	%REC	151282	1	09/07/2011 21:48	JE
PERCENT MOISTURE D2216									
Percent Moisture	24.6		0	0	wt%	R204696	1	09/07/2011 11:00	AS

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Not detected at MDL
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- NC Not confirmed
- E Estimated value above quantitation range
- S Spike Recovery outside limits due to matrix
- J Estimated value detected below Reporting Limit
- > Greater than Result value
- < Less than Result value
- Narr See case narrative

Analytical Environmental Services, Inc **Date:** 8-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	GW-13
Project Name:	Vacant Lot (Soil)	**Collection Date:**	8/26/2011 11:55:00 AM
Lab ID:	1108O54-004	**Matrix:**	Soil

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B (SW5035)									
Benzene	BRL		0.50	0.73	ug/Kg-dry	151282	1	09/07/2011 22:14	JE
Toluene	BRL		0.59	0.73	ug/Kg-dry	151282	1	09/07/2011 22:14	JE
Ethylbenzene	BRL		0.48	0.73	ug/Kg-dry	151282	1	09/07/2011 22:14	JE
Xylenes, Total	BRL		1.7	2.2	ug/Kg-dry	151282	1	09/07/2011 22:14	JE
Naphthalene	BRL		0.40	3.7	ug/Kg-dry	151282	1	09/07/2011 22:14	JE
Surr: 4-Bromofluorobenzene	106		0	56-137	%REC	151282	1	09/07/2011 22:14	JE
Surr: Dibromofluoromethane	121		0	73.7-137	%REC	151282	1	09/07/2011 22:14	JE
Surr: Toluene-d8	70.1		0	69.2-126	%REC	151282	1	09/07/2011 22:14	JE
PERCENT MOISTURE D2216									
Percent Moisture	6.48		0	0	wt%	R204696	1	09/07/2011 11:00	AS

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Not detected at MDL
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- NC Not confirmed
- E Estimated value above quantitation range
- S Spike Recovery outside limits due to matrix
- J Estimated value detected below Reporting Limit
- > Greater than Result value
- < Less than Result value
- Narr See case narrative

Analytical Environmental Services, Inc **Date:** 8-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	GW-14
Project Name:	Vacant Lot (Soil)	**Collection Date:**	8/26/2011 12:32:00 PM
Lab ID:	1108O54-005	**Matrix:**	Soil

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B (SW5035)									
Benzene	BRL		0.66	0.97	ug/Kg-dry	151282	1	09/07/2011 22:39	JE
Toluene	BRL		0.78	0.97	ug/Kg-dry	151282	1	09/07/2011 22:39	JE
Ethylbenzene	BRL		0.64	0.97	ug/Kg-dry	151282	1	09/07/2011 22:39	JE
Xylenes, Total	BRL		2.2	2.9	ug/Kg-dry	151282	1	09/07/2011 22:39	JE
Naphthalene	BRL		0.52	4.8	ug/Kg-dry	151282	1	09/07/2011 22:39	JE
Surr: 4-Bromofluorobenzene	114		0	56-137	%REC	151282	1	09/07/2011 22:39	JE
Surr: Dibromofluoromethane	141	S	0	73.7-137	%REC	151282	1	09/07/2011 22:39	JE
Surr: Toluene-d8	102		0	69.2-126	%REC	151282	1	09/07/2011 22:39	JE
PERCENT MOISTURE D2216									
Percent Moisture	9.34		0	0	wt%	R204696	1	09/07/2011 11:00	AS

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Not detected at MDL
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- NC Not confirmed
- E Estimated value above quantitation range
- S Spike Recovery outside limits due to matrix
- J Estimated value detected below Reporting Limit
- > Greater than Result value
- < Less than Result value
- Narr See case narrative

Analytical Environmental Services, Inc **Date:** 8-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	GW-15
Project Name:	Vacant Lot (Soil)	**Collection Date:**	8/26/2011 12:59:00 PM
Lab ID:	1108O54-006	**Matrix:**	Soil

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B (SW5035)									
Benzene	BRL		0.70	1.0	ug/Kg-dry	151261	1	09/07/2011 23:05	JE
Toluene	BRL		0.82	1.0	ug/Kg-dry	151261	1	09/07/2011 23:05	JE
Ethylbenzene	BRL		0.68	1.0	ug/Kg-dry	151261	1	09/07/2011 23:05	JE
Xylenes, Total	BRL		2.3	3.1	ug/Kg-dry	151261	1	09/07/2011 23:05	JE
Naphthalene	BRL		0.56	5.1	ug/Kg-dry	151261	1	09/07/2011 23:05	JE
Surr: 4-Bromofluorobenzene	118		0	56-137	%REC	151261	1	09/07/2011 23:05	JE
Surr: Dibromofluoromethane	169	S	0	73.7-137	%REC	151261	1	09/07/2011 23:05	JE
Surr: Toluene-d8	96.6		0	69.2-126	%REC	151261	1	09/07/2011 23:05	JE
PERCENT MOISTURE D2216									
Percent Moisture	18.2		0	0	wt%	R204696	1	09/07/2011 11:00	AS

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Not detected at MDL
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- NC Not confirmed
- E Estimated value above quantitation range
- S Spike Recovery outside limits due to matrix
- J Estimated value detected below Reporting Limit
- > Greater than Result value
- < Less than Result value
- Narr See case narrative

Analytical Environmental Services, Inc **Date:** 8-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	GW-16
Project Name:	Vacant Lot (Soil)	**Collection Date:**	8/26/2011 1:31:00 PM
Lab ID:	1108O54-007	**Matrix:**	Soil

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B (SW5035)									
Benzene	BRL		0.63	0.92	ug/Kg-dry	151261	1	09/07/2011 23:30	JE
Toluene	BRL		0.74	0.92	ug/Kg-dry	151261	1	09/07/2011 23:30	JE
Ethylbenzene	BRL		0.61	0.92	ug/Kg-dry	151261	1	09/07/2011 23:30	JE
Xylenes, Total	BRL		2.1	2.8	ug/Kg-dry	151261	1	09/07/2011 23:30	JE
Naphthalene	BRL		0.50	4.6	ug/Kg-dry	151261	1	09/07/2011 23:30	JE
Surr: 4-Bromofluorobenzene	107		0	56-137	%REC	151261	1	09/07/2011 23:30	JE
Surr: Dibromofluoromethane	143	S	0	73.7-137	%REC	151261	1	09/07/2011 23:30	JE
Surr: Toluene-d8	100		0	69.2-126	%REC	151261	1	09/07/2011 23:30	JE
PERCENT MOISTURE D2216									
Percent Moisture	13.4		0	0	wt%	R204696	1	09/07/2011 11:00	AS

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Not detected at MDL
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- NC Not confirmed
- E Estimated value above quantitation range
- S Spike Recovery outside limits due to matrix
- J Estimated value detected below Reporting Limit
- > Greater than Result value
- < Less than Result value
- Narr See case narrative

Analytical Environmental Services, Inc **Date:** 8-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	GW-17
Project Name:	Vacant Lot (Soil)	**Collection Date:**	8/26/2011 2:07:00 PM
Lab ID:	1108O54-008	**Matrix:**	Soil

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B (SW5035)									
Benzene	BRL		0.75	1.1	ug/Kg-dry	151261	1	09/07/2011 23:56	JE
Toluene	BRL		0.88	1.1	ug/Kg-dry	151261	1	09/07/2011 23:56	JE
Ethylbenzene	BRL		0.73	1.1	ug/Kg-dry	151261	1	09/07/2011 23:56	JE
Xylenes, Total	BRL		2.5	3.3	ug/Kg-dry	151261	1	09/07/2011 23:56	JE
Naphthalene	BRL		0.59	5.5	ug/Kg-dry	151261	1	09/07/2011 23:56	JE
Surr: 4-Bromofluorobenzene	102		0	56-137	%REC	151261	1	09/07/2011 23:56	JE
Surr: Dibromofluoromethane	139	S	0	73.7-137	%REC	151261	1	09/07/2011 23:56	JE
Surr: Toluene-d8	95.6		0	69.2-126	%REC	151261	1	09/07/2011 23:56	JE
PERCENT MOISTURE D2216									
Percent Moisture	12.8		0	0	wt%	R204696	1	09/07/2011 11:00	AS

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Not detected at MDL
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- NC Not confirmed
- E Estimated value above quantitation range
- S Spike Recovery outside limits due to matrix
- J Estimated value detected below Reporting Limit
- > Greater than Result value
- < Less than Result value
- Narr See case narrative

Analytical Environmental Services, Inc **Date:** 8-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	TRIP BLANK
Project Name:	Vacant Lot (Soil)	**Collection Date:**	8/25/2011
Lab ID:	1108O54-009	**Matrix:**	Groundwater

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS	**SW8260B**				**(SW5030B)**				
Benzene	BRL		0.38	1.0	ug/L	151210	1	09/06/2011 13:47	GK
Toluene	0.90	J	0.39	1.0	ug/L	151210	1	09/06/2011 13:47	GK
Ethylbenzene	BRL		0.48	1.0	ug/L	151210	1	09/06/2011 13:47	GK
Xylenes, Total	1.0	J	0.38	3.0	ug/L	151210	1	09/06/2011 13:47	GK
Naphthalene	1.3	J	0.25	5.0	ug/L	151210	1	09/06/2011 13:47	GK
Surr: 4-Bromofluorobenzene	89.4		0	64.7-130	%REC	151210	1	09/06/2011 13:47	GK
Surr: Dibromofluoromethane	98		0	80.7-129	%REC	151210	1	09/06/2011 13:47	GK
Surr: Toluene-d8	98.7		0	71.1-120	%REC	151210	1	09/06/2011 13:47	GK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Not detected at MDL
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- NC Not confirmed
- E Estimated value above quantitation range
- S Spike Recovery outside limits due to matrix
- J Estimated value detected below Reporting Limit
- > Greater than Result value
- < Less than Result value
- Narr See case narrative

Analytical Environmental Services, Inc.

Sample/Cooler Receipt Checklist

Client Access Work Order Number 1108054

Checklist completed by Phil 8/31/11
Signature Date

Carrier name: FedEx ✓ UPS __ Courier __ Client __ US Mail __ Other _____

Shipping container/cooler in good condition? Yes ✓ No __ Not Present __

Custody seals intact on shipping container/cooler? Yes __ No __ Not Present ✓

Custody seals intact on sample bottles? Yes __ No __ Not Present ✓

Container/Temp Blank temperature in compliance? (4°C±2)* Yes ✓ No __

Cooler #1 3.8°C Cooler #2 _____ Cooler #3 _____ Cooler #4 _____ Cooler#5 _____ Cooler #6 _____

Chain of custody present? Yes ✓ No __

Chain of custody signed when relinquished and received? Yes ✓ No __

Chain of custody agrees with sample labels? Yes __ No ✓

Samples in proper container/bottle? Yes ✓ No __

Sample containers intact? Yes ✓ No __

Sufficient sample volume for indicated test? Yes ✓ No __

All samples received within holding time? Yes ✓ No __

Was TAT marked on the COC? Yes ✓ No __

Proceed with Standard TAT as per project history? Yes __ No __ Not Applicable ✓

Water - VOA vials have zero headspace? No VOA vials submitted __ Yes ✓ No __

Water - pH acceptable upon receipt? Yes ✓ No __ Not Applicable __

Adjusted? _____ Checked by _____

Sample Condition: Good ✓ Other(Explain) _____

(For diffusive samples or AIHA lead) Is a known blank included? Yes __ No ✓

See Case Narrative for resolution of the Non-Conformance.

* Samples do not have to comply with the given range for certain parameters.

Client: Crawford Environmental Services
Project: Vacant Lot (Soil)
Lab Order: 1108O54

Dates Report

Lab Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
1108O54-001A	GW-10	8/26/2011 9:21:00AM	Soil	Volatile Organic Compounds by GC/MS		09/06/2011	09/07/2011
1108O54-001B	GW-10	8/26/2011 9:21:00AM	Soil	PERCENT MOISTURE			09/07/2011
1108O54-002A	GW-11	8/26/2011 10:17:00AM	Soil	Volatile Organic Compounds by GC/MS		09/06/2011	09/07/2011
1108O54-002B	GW-11	8/26/2011 10:17:00AM	Soil	PERCENT MOISTURE			09/07/2011
1108O54-003A	GW-12	8/26/2011 11:24:00AM	Soil	Volatile Organic Compounds by GC/MS		09/06/2011	09/07/2011
1108O54-003B	GW-12	8/26/2011 11:24:00AM	Soil	PERCENT MOISTURE			09/07/2011
1108O54-004A	GW-13	8/26/2011 11:55:00AM	Soil	Volatile Organic Compounds by GC/MS		09/06/2011	09/07/2011
1108O54-004B	GW-13	8/26/2011 11:55:00AM	Soil	PERCENT MOISTURE			09/07/2011
1108O54-005A	GW-14	8/26/2011 12:32:00PM	Soil	Volatile Organic Compounds by GC/MS		09/06/2011	09/07/2011
1108O54-005B	GW-14	8/26/2011 12:32:00PM	Soil	PERCENT MOISTURE			09/07/2011
1108O54-006A	GW-15	8/26/2011 12:59:00PM	Soil	Volatile Organic Compounds by GC/MS		09/06/2011	09/07/2011
1108O54-006B	GW-15	8/26/2011 12:59:00PM	Soil	PERCENT MOISTURE			09/07/2011
1108O54-007A	GW-16	8/26/2011 1:31:00PM	Soil	Volatile Organic Compounds by GC/MS		09/06/2011	09/07/2011
1108O54-007B	GW-16	8/26/2011 1:31:00PM	Soil	PERCENT MOISTURE			09/07/2011
1108O54-008A	GW-17	8/26/2011 2:07:00PM	Soil	Volatile Organic Compounds by GC/MS		09/06/2011	09/07/2011
1108O54-008B	GW-17	8/26/2011 2:07:00PM	Soil	PERCENT MOISTURE			09/07/2011
1108O54-009A	TRIP BLANK	8/25/2011 12:00:00AM	Groundwater	Volatile Organic Compounds by GC/MS		09/02/2011	09/06/2011

Client: Crawford Environmental Services
Project Name: Vacant Lot (Soil)
Workorder: 1108O54

ANALYTICAL QC SUMMARY REPORT

BatchID: 151210

Sample ID: **MB-151210** Client ID:
SampleType: **MBLK** TestCode: **Volatile Organic Compounds by GC/MS** **SW8260B**
Units: **ug/L** Prep Date: **09/02/2011** Run No: **204553**
BatchID: **151210** Analysis Date: **09/02/2011** Seq No: **4275580**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Benzene	BRL	1.0	0	0	0	0	0	0	0	0	
Ethylbenzene	BRL	1.0	0	0	0	0	0	0	0	0	
Naphthalene	BRL	5.0	0	0	0	0	0	0	0	0	
Toluene	BRL	1.0	0	0	0	0	0	0	0	0	
Xylenes, Total	BRL	1.0	0	0	0	0	0	0	0	0	
Surr: 4-Bromofluorobenzene	47.57	0	50	0	95.1	64.7	130	0	0	0	
Surr: Dibromofluoromethane	49.72	0	50	0	99.4	80.7	129	0	0	0	
Surr: Toluene-d8	50.02	0	50	0	100	71.1	120	0	0	0	

Sample ID: **LCS-151210** Client ID:
SampleType: **LCS** TestCode: **Volatile Organic Compounds by GC/MS** **SW8260B**
Units: **ug/L** Prep Date: **09/02/2011** Run No: **204553**
BatchID: **151210** Analysis Date: **09/02/2011** Seq No: **4275579**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Benzene	49.21	1.0	50	0	98.4	70	130	0	0	0	
Toluene	49.70	1.0	50	0	99.4	70	130	0	0	0	
Surr: 4-Bromofluorobenzene	46.69	0	50	0	93.4	64.7	130	0	0	0	
Surr: Dibromofluoromethane	55.59	0	50	0	111	80.7	129	0	0	0	
Surr: Toluene-d8	49.25	0	50	0	98.5	71.1	120	0	0	0	

Sample ID: **1108N09-021AMS** Client ID:
SampleType: **MS** TestCode: **Volatile Organic Compounds by GC/MS** **SW8260B**
Units: **ug/L** Prep Date: **09/02/2011** Run No: **204553**
BatchID: **151210** Analysis Date: **09/03/2011** Seq No: **4275560**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Benzene	42.78	1.0	50	0	85.6	62.2	143	0	0	0	
Toluene	44.39	1.0	50	0	88.8	57.8	149	0	0	0	
Surr: 4-Bromofluorobenzene	49.32	0	50	0	98.6	64.7	130	0	0	0	
Surr: Dibromofluoromethane	48.85	0	50	0	97.7	80.7	129	0	0	0	
Surr: Toluene-d8	50.08	0	50	0	100	71.1	120	0	0	0	

Qualifiers:

- `>` Greater than Result value
- `<` Less than Result value
- B Analyte detected in the associated method blank
- BRL Below reporting limit
- E Estimated (value above quantitation range)
- H Holding times for preparation or analysis exceeded
- J Estimated value detected below Reporting Limit
- N Analyte not NELAC certified
- R RPD outside limits due to matrix
- Rpt Lim Reporting Limit
- S Spike Recovery outside limits due to matrix

Client: Crawford Environmental Services
Project Name: Vacant Lot (Soil)
Workorder: 1108O54

ANALYTICAL QC SUMMARY REPORT

BatchID: 151210

Sample ID: **1108N09-021AMSD** Client ID:
SampleType: **MSD** TestCode: **Volatile Organic Compounds by GC/MS SW8260B**
Units: **ug/L** Prep Date: **09/02/2011** Run No: **204553**
BatchID: **151210** Analysis Date: **09/03/2011** Seq No: **4275561**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Benzene	41.91	1.0	50	0	83.8	62.2	143	42.78	2.05	20	
Toluene	43.15	1.0	50	0	86.3	57.8	149	44.39	2.83	20	
Surr: 4-Bromofluorobenzene	48.98	0	50	0	98	64.7	130	49.32	0	0	
Surr: Dibromofluoromethane	48.08	0	50	0	96.2	80.7	129	48.85	0	0	
Surr: Toluene-d8	49.49	0	50	0	99	71.1	120	50.08	0	0	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Crawford Environmental Services
Project Name: Vacant Lot (Soil)
Workorder: 1108O54

ANALYTICAL QC SUMMARY REPORT

BatchID: 151261

Sample ID: **MB-151261** Client ID:
SampleType: **MBLK** TestCode: **Volatile Organic Compounds by GC/MS SW8260B**
Units: **ug/Kg** Prep Date: **09/06/2011** Run No: **204576**
BatchID: **151261** Analysis Date: **09/06/2011** Seq No: **4279568**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Benzene	BRL	5.0	0	0	0	0	0	0	0	0	
Ethylbenzene	BRL	5.0	0	0	0	0	0	0	0	0	
Naphthalene	BRL	5.0	0	0	0	0	0	0	0	0	
Toluene	BRL	5.0	0	0	0	0	0	0	0	0	
Xylenes, Total	BRL	5.0	0	0	0	0	0	0	0	0	
Surr: 4-Bromofluorobenzene	46.76	0	50	0	93.5	56	137	0	0	0	
Surr: Dibromofluoromethane	53.89	0	50	0	108	73.7	137	0	0	0	
Surr: Toluene-d8	49.14	0	50	0	98.3	69.2	126	0	0	0	

Sample ID: **LCS-151261** Client ID:
SampleType: **LCS** TestCode: **Volatile Organic Compounds by GC/MS SW8260B**
Units: **ug/Kg** Prep Date: **09/06/2011** Run No: **204737**
BatchID: **151261** Analysis Date: **09/07/2011** Seq No: **4279658**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Benzene	61.32	5.0	50	0	123	70	130	0	0	0	
Toluene	61.70	5.0	50	0	123	70	130	0	0	0	
Surr: 4-Bromofluorobenzene	57.71	0	50	0	115	56	137	0	0	0	
Surr: Dibromofluoromethane	55.48	0	50	0	111	73.7	137	0	0	0	
Surr: Toluene-d8	59.17	0	50	0	118	69.2	126	0	0	0	

Sample ID: **1108O42-003AMS** Client ID:
SampleType: **MS** TestCode: **Volatile Organic Compounds by GC/MS SW8260B**
Units: **ug/Kg-dry** Prep Date: **09/06/2011** Run No: **204576**
BatchID: **151261** Analysis Date: **09/06/2011** Seq No: **4279571**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Benzene	85.25	8.8	87.9	0	97	67.4	144	0	0	0	
Toluene	83.95	8.8	87.9	0	95.5	64.6	145	0	0	0	
Surr: 4-Bromofluorobenzene	83.01	0	87.9	0	94.4	56	137	0	0	0	
Surr: Dibromofluoromethane	92.26	0	87.9	0	105	73.7	137	0	0	0	
Surr: Toluene-d8	84.82	0	87.9	0	96.5	69.2	126	0	0	0	

Qualifiers:

- `>` Greater than Result value
- `<` Less than Result value
- B Analyte detected in the associated method blank
- BRL Below reporting limit
- E Estimated (value above quantitation range)
- H Holding times for preparation or analysis exceeded
- J Estimated value detected below Reporting Limit
- N Analyte not NELAC certified
- R RPD outside limits due to matrix
- Rpt Lim Reporting Limit
- S Spike Recovery outside limits due to matrix

Client: Crawford Environmental Services
Project Name: Vacant Lot (Soil)
Workorder: 1108O54

ANALYTICAL QC SUMMARY REPORT

BatchID: 151261

Sample ID: **1108O42-003AMSD** Client ID:
SampleType: **MSD** TestCode: **Volatile Organic Compounds by GC/MS SW8260B**
Units: **ug/Kg-dry** Prep Date: **09/06/2011** Run No: **204576**
BatchID: **151261** Analysis Date: **09/06/2011** Seq No: **4279572**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Benzene	89.38	8.8	87.9	0	102	67.4	144	85.25	4.73	27.2	
Toluene	89.96	8.8	87.9	0	102	64.6	145	83.95	6.91	26.8	
Surr: 4-Bromofluorobenzene	75.56	0	87.9	0	86	56	137	83.01	0	0	
Surr: Dibromofluoromethane	93.12	0	87.9	0	106	73.7	137	92.26	0	0	
Surr: Toluene-d8	84.44	0	87.9	0	96.1	69.2	126	84.82	0	0	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Crawford Environmental Services
Project Name: Vacant Lot (Soil)
Workorder: 1108O54

ANALYTICAL QC SUMMARY REPORT

BatchID: 151282

Sample ID: **MB-151282** Client ID:
SampleType: **MBLK** TestCode: **Volatile Organic Compounds by GC/MS SW8260B**
Units: **ug/Kg** Prep Date: **09/06/2011** Run No: **204676**
BatchID: **151282** Analysis Date: **09/07/2011** Seq No: **4277976**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Benzene	BRL	5.0	0	0	0	0	0	0	0	0	
Ethylbenzene	BRL	5.0	0	0	0	0	0	0	0	0	
Naphthalene	BRL	5.0	0	0	0	0	0	0	0	0	
Toluene	BRL	5.0	0	0	0	0	0	0	0	0	
Xylenes, Total	BRL	5.0	0	0	0	0	0	0	0	0	
Surr: 4-Bromofluorobenzene	43.83	0	50	0	87.7	56	137	0	0	0	
Surr: Dibromofluoromethane	57.07	0	50	0	114	73.7	137	0	0	0	
Surr: Toluene-d8	49.30	0	50	0	98.6	69.2	126	0	0	0	

Sample ID: **LCS-151282** Client ID:
SampleType: **LCS** TestCode: **Volatile Organic Compounds by GC/MS SW8260B**
Units: **ug/Kg** Prep Date: **09/06/2011** Run No: **204676**
BatchID: **151282** Analysis Date: **09/06/2011** Seq No: **4277969**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Benzene	51.09	5.0	50	0	102	70	130	0	0	0	
Toluene	50.08	5.0	50	0	100	70	130	0	0	0	
Surr: 4-Bromofluorobenzene	44.86	0	50	0	89.7	56	137	0	0	0	
Surr: Dibromofluoromethane	51.10	0	50	0	102	73.7	137	0	0	0	
Surr: Toluene-d8	48.25	0	50	0	96.5	69.2	126	0	0	0	

Sample ID: **1108O79-005AMS** Client ID:
SampleType: **MS** TestCode: **Volatile Organic Compounds by GC/MS SW8260B**
Units: **ug/Kg-dry** Prep Date: **09/06/2011** Run No: **204676**
BatchID: **151282** Analysis Date: **09/06/2011** Seq No: **4277971**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Benzene	60.59	5.8	57.69	0	105	67.4	144	0	0	0	
Toluene	58.99	5.8	57.69	0	102	64.6	145	0	0	0	
Surr: 4-Bromofluorobenzene	52.20	0	57.69	0	90.5	56	137	0	0	0	
Surr: Dibromofluoromethane	59.24	0	57.69	0	103	73.7	137	0	0	0	
Surr: Toluene-d8	54.87	0	57.69	0	95.1	69.2	126	0	0	0	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Crawford Environmental Services
Project Name: Vacant Lot (Soil)
Workorder: 1108O54

ANALYTICAL QC SUMMARY REPORT

BatchID: 151282

Sample ID: **1108O79-005AMSD** Client ID:
SampleType: **MSD** TestCode: **Volatile Organic Compounds by GC/MS SW8260B**
Units: **ug/Kg-dry** Prep Date: **09/06/2011** Run No: **204676**
BatchID: **151282** Analysis Date: **09/07/2011** Seq No: **4277973**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Benzene	63.29	5.8	57.69	0	110	67.4	144	60.59	4.36	27.2	
Toluene	60.66	5.8	57.69	0	105	64.6	145	58.99	2.8	26.8	
Surr: 4-Bromofluorobenzene	50.40	0	57.69	0	87.4	56	137	52.20	0	0	
Surr: Dibromofluoromethane	61.70	0	57.69	0	107	73.7	137	59.24	0	0	
Surr: Toluene-d8	55.50	0	57.69	0	96.2	69.2	126	54.87	0	0	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

ACCESS
ANALYTICAL, INC.

ANALYTICAL REPORT

CLIENT

Crawford Environmental Services
101 Corporate Blvd. Suite 412
West Columbia SC 29196

ATTENTION
Justin Reynolds

PROJECT ID
Vacant Lot (GWS)

LABORATORY REPORT NUMBER
1109903

DATE
September 26, 2011

Primary Data Review By

Kathryn Waters
Project Manager, AES

Secondary Data Review By

Ashley Amick

Project Manager, Access Analytical
aamick@axs-inc.com

PLEASE NOTE:

- **Unless otherwise noted, all analysis on this report performed at Analytical Environmental Services Inc. (AES Inc), 3785 Presidential Parkway, Atlanta, GA 30340.**
- **AES is SCDHEC certified laboratory # 98016, NCDENR certified lab # 562, GA certified lab # FL-E87582, NELAP certified laboratory # E87582**
- Local support services for this project are provided by Access Analytical, Inc. Access Analytical is a representative of AES serving client in the SC/NC/GA areas. All questions regarding this report should be directed to your local Access Analytical representative at 803.781.4243 or toll fee at 883.315.4243

LAB USE ONLY

Access Analytical - Chain of Custody Record

PO #_____ Access Quote #_____

ACCESS ANALYTICAL, INC.
7478 Carlisle Street
Irmo, SC 29063
Phone: (803) 781-4243
Fax: 781-4303
www.axs-inc.com

Company Name: CES
Report To: J. Reynolds
Address:
City: State: Zip:
Phone: Fax:
Email:
Project ID: Vacant Lot (GUS)
Sampled By: J. Reynolds

							BTEX, NAPH, MTBE 1,2 EDA	8 OXYGENATES	EDB	Pb	NOTES / COMMENTS (if sample is a composite please use space below to note start/finish times & dates)
							1		1	2	
							G		1	P	
MW-1	9/10/11	10:21	G	SW	GW	2	2	1	2	F	no lead *
MW-3		1308				5					
MW-4		1117				2					* no lead
MW-5		1101				5					
MW-6		1110									
MW-7		10:10									
MW-8		10:55									
MW-9		1125									
MW-10		1208									
MW-11		1159									

Turnaround Time:
☒ Standard
___ RUSH*
*Date Required:_____
(For rush work, results emailed/faxed by end of business day on date required)

Project Location:
☒ SC
___ NC
___ Other
(specify) _____

		time	date		
[signature]	[signature]	1600	9-12-11	4.0 (°C)	___ (N/A)
[signature]	FedEx	9-12-11	1700	___ (°C)	6 (N/A)
	[signature]	9/13/11	11:40	___ (°C)	___ (N/A)
				___ (°C)	___ (N/A)

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Yellow Copy - Access File Copy
Pink Copy - Client Copy

Pg____of____

LAB USE ONLY

Access Analytical - Chain of Custody Record

PO # _____ Access Quote # _____

9/22/11

ACCESS ANALYTICAL, INC.
7478 Carlisle Street
Irmo, SC 29063
Phone: (803) 781-4243
Fax: 781-4303
www.axs-inc.com

Company Name: CEJ
Report To: J. Reynolds
Address:
City: State: Zip:
Phone: Fax:
Email:
Project ID: Vacant Lot (GWS)
Sampled By: J. Reynolds

							Btex, Naph, Mtbe 1,2 DCA	8 Oxygenates	EPB	PB	NOTES / COMMENTS (if sample is a composite please use space below to note start/finish times & dates)
MW-12	9/10/11	1200	G	GW	SHW	2	1	1	1		
MW-13		1149				6	2	1	2	1	
MW-14		1144									
MW-15		1139									
MW-16		10:44									
DW-1		13:11									
DW-2		1037									
DW-3		10:48				4	2	1	1	1	
MW-14 DUP		1144				4	2	1	2		
Field Blank	9/10/11	13:21				1	1	1			

Turnaround Time:
X Standard
___ RUSH*
*Date Required: _____
(For rush work, results emailed/faxed by end of business day on date required)

Project Location:
X SC
___ NC
___ Other
(specify) _____

[signature]	[signature]	9-12-11	1600	4.0 (°C)	___ (N/A)
[signature]	[signature]	9-12-11	1700	___ (°C)	X (N/A)
	[signature]	9/13/11	11:30	___ (°C)	___ (N/A)
				___ (°C)	___ (N/A)

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PO # ____________ Access Quote # ____________

ACCESS ANALYTICAL, INC. 1109905 KCP 9/22/11

7478 Carlisle Street
Irmo, SC 29063
www.axs-inc.com
Phone: (803) 781-4243
Fax: 781-4303

Company Name: CSD
Report To: J. Reynolds
Address:
City: State: Zip:
Phone: Fax:
Email:
Project ID: Vacant Lot (GWS)
Sampled By: J. Reynolds

							1	1	
							0	1	
							BTEX, Naph, MTBE, 1,2DCA	8 Oxygenates	
Trip Blank	9/9/11	7:17	G	GW	SH	1	1	1	

NOTES / COMMENTS
(if sample is a composite please use space below to note start/finish times & dates)

Turnaround Time:
X Standard
___ RUSH*
*Date Required:________
(For rush work, results emailed/faxed by end of business day on date required)

Project Location:
X SC
___NC
___Other
(specify) ________

Relinquished	Received	Date	Time	Temp	
[signature]	[signature]	9-12-11	1600	4.0 (°C)	___(N/A)
Canat	FedEx	9.12.11	1700	___(°C)	IC (N/A)
	[signature]	9/13/11	11:40	___(°C)	___(N/A)
				___(°C)	___(N/A)

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Analytical Environmental Services, Inc

Date: 26-Sep-11

Client: Crawford Environmental Services
Project: Vacant Lot (GWS)
Lab ID: 1109903

Case Narrative

Sample Receiving Nonconformance:

An extra HNO3 container was received for sample MW-3 (1109903-002C) which was not indicated on the COC. Per email instructions from Angela Martin on 9/14/11 at 9:11am the laboratory should analyze and report lead for this sample.

Workerorder 1109899 was added to workorder 1109903 per phone instructions from Angela Martin on 9/22/11 at 9:30am.

Analytical Environmental Services, Inc **Date:** 26-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	MW-1
Project Name:	Vacant Lot (GWS)	**Collection Date:**	9/10/2011 10:21:00 AM
Lab ID:	1109903-001	**Matrix:**	Groundwater

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B					**(SW5030B)**				
Benzene	BRL		0.38	1.0	ug/L	151655	1	09/15/2011 18:28	JT
Toluene	0.78	J	0.39	1.0	ug/L	151655	1	09/15/2011 18:28	JT
Ethylbenzene	BRL		0.48	1.0	ug/L	151655	1	09/15/2011 18:28	JT
Xylenes, Total	BRL		0.38	3.0	ug/L	151655	1	09/15/2011 18:28	JT
Methyl tert-butyl ether	BRL		0.24	1.0	ug/L	151655	1	09/15/2011 18:28	JT
Naphthalene	BRL		0.25	5.0	ug/L	151655	1	09/15/2011 18:28	JT
1,2-Dichloroethane	BRL		0.23	1.0	ug/L	151655	1	09/15/2011 18:28	JT
Surr: 4-Bromofluorobenzene	87.6		0	64.7-130	%REC	151655	1	09/15/2011 18:28	JT
Surr: Dibromofluoromethane	96		0	80.7-129	%REC	151655	1	09/15/2011 18:28	JT
Surr: Toluene-d8	96		0	71.1-120	%REC	151655	1	09/15/2011 18:28	JT
Oxygenates (AES SOP OA-11010) SW8260B					**(SW5030B)**				
3,3-Dimethyl-1-butanol	BRL		3.9	100	ug/L	151655	1	09/15/2011 18:28	JT
Ethanol	BRL		16	100	ug/L	151655	1	09/15/2011 18:28	JT
Ethyl tert-butyl ether	BRL		1.1	100	ug/L	151655	1	09/15/2011 18:28	JT
Isopropyl ether	BRL		0.90	10	ug/L	151655	1	09/15/2011 18:28	JT
tert-Amyl alcohol	BRL		7.2	100	ug/L	151655	1	09/15/2011 18:28	JT
tert-Amyl methyl ether	BRL		1.0	10	ug/L	151655	1	09/15/2011 18:28	JT
tert-Butyl Alcohol	BRL		7.5	100	ug/L	151655	1	09/15/2011 18:28	JT
tert-Butyl formate	BRL		5.6	100	ug/L	151655	1	09/15/2011 18:28	JT
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011					**(SW8011)**				
1,2-Dibromoethane	BRL		0.004	0.020	ug/L	151617	1	09/15/2011 20:20	AK
Surr: 4-Bromofluorobenzene	109		0	66.9-137	%REC	151617	1	09/15/2011 20:20	AK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Not detected at MDL
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- NC Not confirmed
- E Estimated value above quantitation range
- S Spike Recovery outside limits due to matrix
- J Estimated value detected below Reporting Limit
- > Greater than Result value
- < Less than Result value
- Narr See case narrative

Analytical Environmental Services, Inc **Date:** 26-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	MW-3
Project Name:	Vacant Lot (GWS)	**Collection Date:**	9/10/2011 1:08:00 PM
Lab ID:	1109903-002	**Matrix:**	Groundwater

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B					**(SW5030B)**				
Benzene	12		0.38	1.0	ug/L	151655	1	09/15/2011 19:26	JT
Toluene	0.99	J	0.39	1.0	ug/L	151655	1	09/15/2011 19:26	JT
Ethylbenzene	37		0.48	1.0	ug/L	151655	1	09/15/2011 19:26	JT
Xylenes, Total	2.1	J	0.38	3.0	ug/L	151655	1	09/15/2011 19:26	JT
Methyl tert-butyl ether	3.1		0.24	1.0	ug/L	151655	1	09/15/2011 19:26	JT
Naphthalene	460		2.5	50	ug/L	151655	10	09/19/2011 13:47	JT
1,2-Dichloroethane	BRL		0.23	1.0	ug/L	151655	1	09/15/2011 19:26	JT
Surr: 4-Bromofluorobenzene	92.4		0	64.7-130	%REC	151655	1	09/15/2011 19:26	JT
Surr: 4-Bromofluorobenzene	90.9		0	64.7-130	%REC	151655	10	09/19/2011 13:47	JT
Surr: Dibromofluoromethane	93.1		0	80.7-129	%REC	151655	1	09/15/2011 19:26	JT
Surr: Dibromofluoromethane	97		0	80.7-129	%REC	151655	10	09/19/2011 13:47	JT
Surr: Toluene-d8	92.4		0	71.1-120	%REC	151655	10	09/19/2011 13:47	JT
Surr: Toluene-d8	97.7		0	71.1-120	%REC	151655	1	09/15/2011 19:26	JT
Total Metals by ICP/MS SW6020A					**(SW3005A)**				
Lead	137		0.701	1.00	ug/L	151685	1	09/16/2011 20:53	JY
Oxygenates (AES SOP OA-11010) SW8260B					**(SW5030B)**				
3,3-Dimethyl-1-butanol	BRL		3.9	100	ug/L	151655	1	09/15/2011 19:26	JT
Ethanol	BRL		16	100	ug/L	151655	1	09/15/2011 19:26	JT
Ethyl tert-butyl ether	BRL		1.1	100	ug/L	151655	1	09/15/2011 19:26	JT
Isopropyl ether	BRL		0.90	10	ug/L	151655	1	09/15/2011 19:26	JT
tert-Amyl alcohol	BRL		7.2	100	ug/L	151655	1	09/15/2011 19:26	JT
tert-Amyl methyl ether	BRL		1.0	10	ug/L	151655	1	09/15/2011 19:26	JT
tert-Butyl Alcohol	7.8	J	7.5	100	ug/L	151655	1	09/15/2011 19:26	JT
tert-Butyl formate	BRL		5.6	100	ug/L	151655	1	09/15/2011 19:26	JT
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011					**(SW8011)**				
1,2-Dibromoethane	BRL		0.004	0.021	ug/L	151617	1	09/15/2011 20:57	AK
Surr: 4-Bromofluorobenzene	94.9		0	66.9-137	%REC	151617	1	09/15/2011 20:57	AK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Not detected at MDL
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- NC Not confirmed
- E Estimated value above quantitation range
- S Spike Recovery outside limits due to matrix
- J Estimated value detected below Reporting Limit
- > Greater than Result value
- < Less than Result value
- Narr See case narrative

Analytical Environmental Services, Inc **Date:** 26-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	MW-4
Project Name:	Vacant Lot (GWS)	**Collection Date:**	9/10/2011 11:17:00 AM
Lab ID:	1109903-003	**Matrix:**	Groundwater

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B					**(SW5030B)**				
Benzene	BRL		0.38	1.0	ug/L	151655	1	09/15/2011 18:57	JT
Toluene	0.54	J	0.39	1.0	ug/L	151655	1	09/15/2011 18:57	JT
Ethylbenzene	BRL		0.48	1.0	ug/L	151655	1	09/15/2011 18:57	JT
Xylenes, Total	BRL		0.38	3.0	ug/L	151655	1	09/15/2011 18:57	JT
Methyl tert-butyl ether	0.56	J	0.24	1.0	ug/L	151655	1	09/15/2011 18:57	JT
Naphthalene	BRL		0.25	5.0	ug/L	151655	1	09/15/2011 18:57	JT
1,2-Dichloroethane	BRL		0.23	1.0	ug/L	151655	1	09/15/2011 18:57	JT
Surr: 4-Bromofluorobenzene	87.2		0	64.7-130	%REC	151655	1	09/15/2011 18:57	JT
Surr: Dibromofluoromethane	95.3		0	80.7-129	%REC	151655	1	09/15/2011 18:57	JT
Surr: Toluene-d8	94.5		0	71.1-120	%REC	151655	1	09/15/2011 18:57	JT
Oxygenates (AES SOP OA-11010) SW8260B					**(SW5030B)**				
3,3-Dimethyl-1-butanol	BRL		3.9	100	ug/L	151655	1	09/15/2011 18:57	JT
Ethanol	BRL		16	100	ug/L	151655	1	09/15/2011 18:57	JT
Ethyl tert-butyl ether	BRL		1.1	100	ug/L	151655	1	09/15/2011 18:57	JT
Isopropyl ether	BRL		0.90	10	ug/L	151655	1	09/15/2011 18:57	JT
tert-Amyl alcohol	BRL		7.2	100	ug/L	151655	1	09/15/2011 18:57	JT
tert-Amyl methyl ether	BRL		1.0	10	ug/L	151655	1	09/15/2011 18:57	JT
tert-Butyl Alcohol	BRL		7.5	100	ug/L	151655	1	09/15/2011 18:57	JT
tert-Butyl formate	BRL		5.6	100	ug/L	151655	1	09/15/2011 18:57	JT
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011					**(SW8011)**				
1,2-Dibromoethane	BRL		0.003	0.018	ug/L	151617	1	09/15/2011 22:12	AK
Surr: 4-Bromofluorobenzene	64.5	S	0	66.9-137	%REC	151617	1	09/15/2011 22:12	AK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Not detected at MDL
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- NC Not confirmed
- E Estimated value above quantitation range
- S Spike Recovery outside limits due to matrix
- J Estimated value detected below Reporting Limit
- > Greater than Result value
- < Less than Result value
- Narr See case narrative

Analytical Environmental Services, Inc **Date:** 26-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	MW-5
Project Name:	Vacant Lot (GWS)	**Collection Date:**	9/10/2011 11:01:00 AM
Lab ID:	1109903-004	**Matrix:**	Groundwater

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B					**(SW5030B)**				
Benzene	BRL		0.38	1.0	ug/L	151655	1	09/15/2011 20:24	JT
Toluene	BRL		0.39	1.0	ug/L	151655	1	09/15/2011 20:24	JT
Ethylbenzene	BRL		0.48	1.0	ug/L	151655	1	09/15/2011 20:24	JT
Xylenes, Total	BRL		0.38	3.0	ug/L	151655	1	09/15/2011 20:24	JT
Methyl tert-butyl ether	7.9		0.24	1.0	ug/L	151655	1	09/15/2011 20:24	JT
Naphthalene	0.72	J	0.25	5.0	ug/L	151655	1	09/15/2011 20:24	JT
1,2-Dichloroethane	2.3		0.23	1.0	ug/L	151655	1	09/15/2011 20:24	JT
Surr: 4-Bromofluorobenzene	90.3		0	64.7-130	%REC	151655	1	09/15/2011 20:24	JT
Surr: Dibromofluoromethane	95.8		0	80.7-129	%REC	151655	1	09/15/2011 20:24	JT
Surr: Toluene-d8	93.2		0	71.1-120	%REC	151655	1	09/15/2011 20:24	JT
Total Metals by ICP/MS SW6020A					**(SW3005A)**				
Lead	14.6		0.701	1.00	ug/L	151685	1	09/16/2011 20:59	JY
Oxygenates (AES SOP OA-11010) SW8260B					**(SW5030B)**				
3,3-Dimethyl-1-butanol	BRL		3.9	100	ug/L	151655	1	09/15/2011 20:24	JT
Ethanol	BRL		16	100	ug/L	151655	1	09/15/2011 20:24	JT
Ethyl tert-butyl ether	BRL		1.1	100	ug/L	151655	1	09/15/2011 20:24	JT
Isopropyl ether	7.6	J	0.90	10	ug/L	151655	1	09/15/2011 20:24	JT
tert-Amyl alcohol	BRL		7.2	100	ug/L	151655	1	09/15/2011 20:24	JT
tert-Amyl methyl ether	BRL		1.0	10	ug/L	151655	1	09/15/2011 20:24	JT
tert-Butyl Alcohol	BRL		7.5	100	ug/L	151655	1	09/15/2011 20:24	JT
tert-Butyl formate	BRL		5.6	100	ug/L	151655	1	09/15/2011 20:24	JT
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011					**(SW8011)**				
1,2-Dibromoethane	BRL		0.004	0.021	ug/L	151617	1	09/15/2011 22:49	AK
Surr: 4-Bromofluorobenzene	103		0	66.9-137	%REC	151617	1	09/15/2011 22:49	AK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Not detected at MDL
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- NC Not confirmed
- E Estimated value above quantitation range
- S Spike Recovery outside limits due to matrix
- J Estimated value detected below Reporting Limit
- > Greater than Result value
- < Less than Result value
- Narr See case narrative

Analytical Environmental Services, Inc **Date:** 26-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	MW-6
Project Name:	Vacant Lot (GWS)	**Collection Date:**	9/10/2011 11:10:00 AM
Lab ID:	1109903-005	**Matrix:**	Groundwater

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B					**(SW5030B)**				
Benzene	BRL		0.38	1.0	ug/L	151655	1	09/15/2011 19:54	JT
Toluene	BRL		0.39	1.0	ug/L	151655	1	09/15/2011 19:54	JT
Ethylbenzene	BRL		0.48	1.0	ug/L	151655	1	09/15/2011 19:54	JT
Xylenes, Total	BRL		0.38	3.0	ug/L	151655	1	09/15/2011 19:54	JT
Methyl tert-butyl ether	53		0.24	1.0	ug/L	151655	1	09/15/2011 19:54	JT
Naphthalene	6.0		0.25	5.0	ug/L	151655	1	09/15/2011 19:54	JT
1,2-Dichloroethane	BRL		0.23	1.0	ug/L	151655	1	09/15/2011 19:54	JT
Surr: 4-Bromofluorobenzene	88.7		0	64.7-130	%REC	151655	1	09/15/2011 19:54	JT
Surr: Dibromofluoromethane	94.6		0	80.7-129	%REC	151655	1	09/15/2011 19:54	JT
Surr: Toluene-d8	91.7		0	71.1-120	%REC	151655	1	09/15/2011 19:54	JT
Total Metals by ICP/MS SW6020A					**(SW3005A)**				
Lead	3.53		0.701	1.00	ug/L	151685	1	09/16/2011 21:05	JY
Oxygenates (AES SOP OA-11010) SW8260B					**(SW5030B)**				
3,3-Dimethyl-1-butanol	BRL		3.9	100	ug/L	151655	1	09/15/2011 19:54	JT
Ethanol	200		16	100	ug/L	151655	1	09/15/2011 19:54	JT
Ethyl tert-butyl ether	BRL		1.1	100	ug/L	151655	1	09/15/2011 19:54	JT
Isopropyl ether	BRL		0.90	10	ug/L	151655	1	09/15/2011 19:54	JT
tert-Amyl alcohol	BRL		7.2	100	ug/L	151655	1	09/15/2011 19:54	JT
tert-Amyl methyl ether	BRL		1.0	10	ug/L	151655	1	09/15/2011 19:54	JT
tert-Butyl Alcohol	13	J	7.5	100	ug/L	151655	1	09/15/2011 19:54	JT
tert-Butyl formate	BRL		5.6	100	ug/L	151655	1	09/15/2011 19:54	JT
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011					**(SW8011)**				
1,2-Dibromoethane	BRL		0.004	0.021	ug/L	151617	1	09/15/2011 23:26	AK
Surr: 4-Bromofluorobenzene	106		0	66.9-137	%REC	151617	1	09/15/2011 23:26	AK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Not detected at MDL
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- NC Not confirmed
- E Estimated value above quantitation range
- S Spike Recovery outside limits due to matrix
- J Estimated value detected below Reporting Limit
- > Greater than Result value
- < Less than Result value
- Narr See case narrative

Analytical Environmental Services, Inc **Date:** 26-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	MW-7
Project Name:	Vacant Lot (GWS)	**Collection Date:**	9/10/2011 10:10:00 AM
Lab ID:	1109903-006	**Matrix:**	Groundwater

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B					**(SW5030B)**				
Benzene	BRL		0.38	1.0	ug/L	151655	1	09/15/2011 20:53	JT
Toluene	BRL		0.39	1.0	ug/L	151655	1	09/15/2011 20:53	JT
Ethylbenzene	BRL		0.48	1.0	ug/L	151655	1	09/15/2011 20:53	JT
Xylenes, Total	0.92	J	0.38	3.0	ug/L	151655	1	09/15/2011 20:53	JT
Methyl tert-butyl ether	BRL		0.24	1.0	ug/L	151655	1	09/15/2011 20:53	JT
Naphthalene	BRL		0.25	5.0	ug/L	151655	1	09/15/2011 20:53	JT
1,2-Dichloroethane	BRL		0.23	1.0	ug/L	151655	1	09/15/2011 20:53	JT
Surr: 4-Bromofluorobenzene	87.2		0	64.7-130	%REC	151655	1	09/15/2011 20:53	JT
Surr: Dibromofluoromethane	95.9		0	80.7-129	%REC	151655	1	09/15/2011 20:53	JT
Surr: Toluene-d8	94.1		0	71.1-120	%REC	151655	1	09/15/2011 20:53	JT
Total Metals by ICP/MS SW6020A					**(SW3005A)**				
Lead	139		0.701	1.00	ug/L	151685	1	09/16/2011 21:12	JY
Oxygenates (AES SOP OA-11010) SW8260B					**(SW5030B)**				
3,3-Dimethyl-1-butanol	BRL		3.9	100	ug/L	151655	1	09/15/2011 20:53	JT
Ethanol	BRL		16	100	ug/L	151655	1	09/15/2011 20:53	JT
Ethyl tert-butyl ether	BRL		1.1	100	ug/L	151655	1	09/15/2011 20:53	JT
Isopropyl ether	BRL		0.90	10	ug/L	151655	1	09/15/2011 20:53	JT
tert-Amyl alcohol	BRL		7.2	100	ug/L	151655	1	09/15/2011 20:53	JT
tert-Amyl methyl ether	BRL		1.0	10	ug/L	151655	1	09/15/2011 20:53	JT
tert-Butyl Alcohol	BRL		7.5	100	ug/L	151655	1	09/15/2011 20:53	JT
tert-Butyl formate	BRL		5.6	100	ug/L	151655	1	09/15/2011 20:53	JT
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011					**(SW8011)**				
1,2-Dibromoethane	BRL		0.004	0.021	ug/L	151617	1	09/16/2011 00:03	AK
Surr: 4-Bromofluorobenzene	103		0	66.9-137	%REC	151617	1	09/16/2011 00:03	AK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Not detected at MDL
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- NC Not confirmed
- E Estimated value above quantitation range
- S Spike Recovery outside limits due to matrix
- J Estimated value detected below Reporting Limit
- > Greater than Result value
- < Less than Result value
- Narr See case narrative

Analytical Environmental Services, Inc **Date:** 26-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	MW-8
Project Name:	Vacant Lot (GWS)	**Collection Date:**	9/10/2011 10:55:00 AM
Lab ID:	1109903-007	**Matrix:**	Groundwater

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B					**(SW5030B)**				
Benzene	BRL		0.38	1.0	ug/L	151655	1	09/15/2011 21:22	JT
Toluene	BRL		0.39	1.0	ug/L	151655	1	09/15/2011 21:22	JT
Ethylbenzene	BRL		0.48	1.0	ug/L	151655	1	09/15/2011 21:22	JT
Xylenes, Total	BRL		0.38	3.0	ug/L	151655	1	09/15/2011 21:22	JT
Methyl tert-butyl ether	BRL		0.24	1.0	ug/L	151655	1	09/15/2011 21:22	JT
Naphthalene	BRL		0.25	5.0	ug/L	151655	1	09/15/2011 21:22	JT
1,2-Dichloroethane	BRL		0.23	1.0	ug/L	151655	1	09/15/2011 21:22	JT
Surr: 4-Bromofluorobenzene	108		0	64.7-130	%REC	151655	1	09/15/2011 21:22	JT
Surr: Dibromofluoromethane	95.4		0	80.7-129	%REC	151655	1	09/15/2011 21:22	JT
Surr: Toluene-d8	94.4		0	71.1-120	%REC	151655	1	09/15/2011 21:22	JT
Total Metals by ICP/MS SW6020A					**(SW3005A)**				
Lead	BRL		0.701	1.00	ug/L	151685	1	09/16/2011 21:18	JY
Oxygenates (AES SOP OA-11010) SW8260B					**(SW5030B)**				
3,3-Dimethyl-1-butanol	BRL		3.9	100	ug/L	151655	1	09/15/2011 21:22	JT
Ethanol	BRL		16	100	ug/L	151655	1	09/15/2011 21:22	JT
Ethyl tert-butyl ether	BRL		1.1	100	ug/L	151655	1	09/15/2011 21:22	JT
Isopropyl ether	BRL		0.90	10	ug/L	151655	1	09/15/2011 21:22	JT
tert-Amyl alcohol	BRL		7.2	100	ug/L	151655	1	09/15/2011 21:22	JT
tert-Amyl methyl ether	BRL		1.0	10	ug/L	151655	1	09/15/2011 21:22	JT
tert-Butyl Alcohol	BRL		7.5	100	ug/L	151655	1	09/15/2011 21:22	JT
tert-Butyl formate	BRL		5.6	100	ug/L	151655	1	09/15/2011 21:22	JT
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011					**(SW8011)**				
1,2-Dibromoethane	BRL		0.004	0.021	ug/L	151617	1	09/16/2011 00:41	AK
Surr: 4-Bromofluorobenzene	112		0	66.9-137	%REC	151617	1	09/16/2011 00:41	AK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Not detected at MDL
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- NC Not confirmed
- E Estimated value above quantitation range
- S Spike Recovery outside limits due to matrix
- J Estimated value detected below Reporting Limit
- > Greater than Result value
- < Less than Result value
- Narr See case narrative

Analytical Environmental Services, Inc **Date:** 26-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	MW-9
Project Name:	Vacant Lot (GWS)	**Collection Date:**	9/10/2011 11:25:00 AM
Lab ID:	1109903-008	**Matrix:**	Groundwater

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B					**(SW5030B)**				
Benzene	BRL		0.38	1.0	ug/L	151655	1	09/15/2011 21:51	JT
Toluene	BRL		0.39	1.0	ug/L	151655	1	09/15/2011 21:51	JT
Ethylbenzene	BRL		0.48	1.0	ug/L	151655	1	09/15/2011 21:51	JT
Xylenes, Total	BRL		0.38	3.0	ug/L	151655	1	09/15/2011 21:51	JT
Methyl tert-butyl ether	BRL		0.24	1.0	ug/L	151655	1	09/15/2011 21:51	JT
Naphthalene	BRL		0.25	5.0	ug/L	151655	1	09/15/2011 21:51	JT
1,2-Dichloroethane	BRL		0.23	1.0	ug/L	151655	1	09/15/2011 21:51	JT
Surr: 4-Bromofluorobenzene	88.3		0	64.7-130	%REC	151655	1	09/15/2011 21:51	JT
Surr: Dibromofluoromethane	95.3		0	80.7-129	%REC	151655	1	09/15/2011 21:51	JT
Surr: Toluene-d8	94.1		0	71.1-120	%REC	151655	1	09/15/2011 21:51	JT
Total Metals by ICP/MS SW6020A					**(SW3005A)**				
Lead	6.43		0.701	1.00	ug/L	151685	1	09/16/2011 21:24	JY
Oxygenates (AES SOP OA-11010) SW8260B					**(SW5030B)**				
3,3-Dimethyl-1-butanol	BRL		3.9	100	ug/L	151655	1	09/15/2011 21:51	JT
Ethanol	BRL		16	100	ug/L	151655	1	09/15/2011 21:51	JT
Ethyl tert-butyl ether	BRL		1.1	100	ug/L	151655	1	09/15/2011 21:51	JT
Isopropyl ether	BRL		0.90	10	ug/L	151655	1	09/15/2011 21:51	JT
tert-Amyl alcohol	BRL		7.2	100	ug/L	151655	1	09/15/2011 21:51	JT
tert-Amyl methyl ether	BRL		1.0	10	ug/L	151655	1	09/15/2011 21:51	JT
tert-Butyl Alcohol	BRL		7.5	100	ug/L	151655	1	09/15/2011 21:51	JT
tert-Butyl formate	BRL		5.6	100	ug/L	151655	1	09/15/2011 21:51	JT
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011					**(SW8011)**				
1,2-Dibromoethane	BRL		0.004	0.021	ug/L	151617	1	09/16/2011 01:18	AK
Surr: 4-Bromofluorobenzene	109		0	66.9-137	%REC	151617	1	09/16/2011 01:18	AK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Not detected at MDL
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- NC Not confirmed
- E Estimated value above quantitation range
- S Spike Recovery outside limits due to matrix
- J Estimated value detected below Reporting Limit
- > Greater than Result value
- < Less than Result value
- Narr See case narrative

Analytical Environmental Services, Inc **Date:** 26-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	MW-10
Project Name:	Vacant Lot (GWS)	**Collection Date:**	9/10/2011 12:08:00 PM
Lab ID:	1109903-009	**Matrix:**	Groundwater

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B					**(SW5030B)**				
Benzene	BRL		0.38	1.0	ug/L	151655	1	09/15/2011 22:20	JT
Toluene	BRL		0.39	1.0	ug/L	151655	1	09/15/2011 22:20	JT
Ethylbenzene	BRL		0.48	1.0	ug/L	151655	1	09/15/2011 22:20	JT
Xylenes, Total	BRL		0.38	3.0	ug/L	151655	1	09/15/2011 22:20	JT
Methyl tert-butyl ether	43		0.24	1.0	ug/L	151655	1	09/15/2011 22:20	JT
Naphthalene	BRL		0.25	5.0	ug/L	151655	1	09/15/2011 22:20	JT
1,2-Dichloroethane	BRL		0.23	1.0	ug/L	151655	1	09/15/2011 22:20	JT
Surr: 4-Bromofluorobenzene	89.3		0	64.7-130	%REC	151655	1	09/15/2011 22:20	JT
Surr: Dibromofluoromethane	97		0	80.7-129	%REC	151655	1	09/15/2011 22:20	JT
Surr: Toluene-d8	94.5		0	71.1-120	%REC	151655	1	09/15/2011 22:20	JT
Total Metals by ICP/MS SW6020A					**(SW3005A)**				
Lead	BRL		0.701	1.00	ug/L	151685	1	09/16/2011 21:30	JY
Oxygenates (AES SOP OA-11010) SW8260B					**(SW5030B)**				
3,3-Dimethyl-1-butanol	BRL		3.9	100	ug/L	151655	1	09/15/2011 22:20	JT
Ethanol	BRL		16	100	ug/L	151655	1	09/15/2011 22:20	JT
Ethyl tert-butyl ether	BRL		1.1	100	ug/L	151655	1	09/15/2011 22:20	JT
Isopropyl ether	BRL		0.90	10	ug/L	151655	1	09/15/2011 22:20	JT
tert-Amyl alcohol	BRL		7.2	100	ug/L	151655	1	09/15/2011 22:20	JT
tert-Amyl methyl ether	BRL		1.0	10	ug/L	151655	1	09/15/2011 22:20	JT
tert-Butyl Alcohol	BRL		7.5	100	ug/L	151655	1	09/15/2011 22:20	JT
tert-Butyl formate	BRL		5.6	100	ug/L	151655	1	09/15/2011 22:20	JT
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011					**(SW8011)**				
1,2-Dibromoethane	BRL		0.004	0.020	ug/L	151617	1	09/16/2011 02:33	AK
Surr: 4-Bromofluorobenzene	110		0	66.9-137	%REC	151617	1	09/16/2011 02:33	AK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Not detected at MDL
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- NC Not confirmed
- E Estimated value above quantitation range
- S Spike Recovery outside limits due to matrix
- J Estimated value detected below Reporting Limit
- > Greater than Result value
- < Less than Result value
- Narr See case narrative

Analytical Environmental Services, Inc **Date:** 26-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	MW-11
Project Name:	Vacant Lot (GWS)	**Collection Date:**	9/10/2011 11:59:00 AM
Lab ID:	1109903-010	**Matrix:**	Groundwater

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B					**(SW5030B)**				
Benzene	BRL		0.38	1.0	ug/L	151655	1	09/15/2011 22:48	JT
Toluene	BRL		0.39	1.0	ug/L	151655	1	09/15/2011 22:48	JT
Ethylbenzene	BRL		0.48	1.0	ug/L	151655	1	09/15/2011 22:48	JT
Xylenes, Total	BRL		0.38	3.0	ug/L	151655	1	09/15/2011 22:48	JT
Methyl tert-butyl ether	0.38	J	0.24	1.0	ug/L	151655	1	09/15/2011 22:48	JT
Naphthalene	BRL		0.25	5.0	ug/L	151655	1	09/15/2011 22:48	JT
1,2-Dichloroethane	BRL		0.23	1.0	ug/L	151655	1	09/15/2011 22:48	JT
Surr: 4-Bromofluorobenzene	91.4		0	64.7-130	%REC	151655	1	09/15/2011 22:48	JT
Surr: Dibromofluoromethane	97.3		0	80.7-129	%REC	151655	1	09/15/2011 22:48	JT
Surr: Toluene-d8	95.5		0	71.1-120	%REC	151655	1	09/15/2011 22:48	JT
Total Metals by ICP/MS SW6020A					**(SW3005A)**				
Lead	BRL		0.701	1.00	ug/L	151685	1	09/16/2011 21:36	JY
Oxygenates (AES SOP OA-11010) SW8260B					**(SW5030B)**				
3,3-Dimethyl-1-butanol	BRL		3.9	100	ug/L	151655	1	09/15/2011 22:48	JT
Ethanol	BRL		16	100	ug/L	151655	1	09/15/2011 22:48	JT
Ethyl tert-butyl ether	BRL		1.1	100	ug/L	151655	1	09/15/2011 22:48	JT
Isopropyl ether	BRL		0.90	10	ug/L	151655	1	09/15/2011 22:48	JT
tert-Amyl alcohol	BRL		7.2	100	ug/L	151655	1	09/15/2011 22:48	JT
tert-Amyl methyl ether	BRL		1.0	10	ug/L	151655	1	09/15/2011 22:48	JT
tert-Butyl Alcohol	BRL		7.5	100	ug/L	151655	1	09/15/2011 22:48	JT
tert-Butyl formate	BRL		5.6	100	ug/L	151655	1	09/15/2011 22:48	JT
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011					**(SW8011)**				
1,2-Dibromoethane	BRL		0.004	0.021	ug/L	151617	1	09/16/2011 03:10	AK
Surr: 4-Bromofluorobenzene	111		0	66.9-137	%REC	151617	1	09/16/2011 03:10	AK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Not detected at MDL
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- NC Not confirmed
- E Estimated value above quantitation range
- S Spike Recovery outside limits due to matrix
- J Estimated value detected below Reporting Limit
- > Greater than Result value
- < Less than Result value
- Narr See case narrative

Analytical Environmental Services, Inc **Date:** 26-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	MW-12
Project Name:	Vacant Lot (GWS)	**Collection Date:**	9/10/2011 12:00:00 PM
Lab ID:	1109903-011	**Matrix:**	Groundwater

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B					**(SW5030B)**				
Benzene	BRL		0.38	1.0	ug/L	151705	1	09/16/2011 07:29	JT
Toluene	BRL		0.39	1.0	ug/L	151705	1	09/16/2011 07:29	JT
Ethylbenzene	BRL		0.48	1.0	ug/L	151705	1	09/16/2011 07:29	JT
Xylenes, Total	BRL		0.38	3.0	ug/L	151705	1	09/16/2011 07:29	JT
Methyl tert-butyl ether	BRL		0.24	1.0	ug/L	151705	1	09/16/2011 07:29	JT
Naphthalene	BRL		0.25	5.0	ug/L	151705	1	09/16/2011 07:29	JT
1,2-Dichloroethane	BRL		0.23	1.0	ug/L	151705	1	09/16/2011 07:29	JT
Surr: 4-Bromofluorobenzene	88.6		0	64.7-130	%REC	151705	1	09/16/2011 07:29	JT
Surr: Dibromofluoromethane	99.3		0	80.7-129	%REC	151705	1	09/16/2011 07:29	JT
Surr: Toluene-d8	96.3		0	71.1-120	%REC	151705	1	09/16/2011 07:29	JT
Oxygenates (AES SOP OA-11010) SW8260B					**(SW5030B)**				
3,3-Dimethyl-1-butanol	BRL		3.9	100	ug/L	151705	1	09/16/2011 07:29	JT
Ethanol	BRL		16	100	ug/L	151705	1	09/16/2011 07:29	JT
Ethyl tert-butyl ether	BRL		1.1	100	ug/L	151705	1	09/16/2011 07:29	JT
Isopropyl ether	BRL		0.90	10	ug/L	151705	1	09/16/2011 07:29	JT
tert-Amyl alcohol	BRL		7.2	100	ug/L	151705	1	09/16/2011 07:29	JT
tert-Amyl methyl ether	BRL		1.0	10	ug/L	151705	1	09/16/2011 07:29	JT
tert-Butyl Alcohol	BRL		7.5	100	ug/L	151705	1	09/16/2011 07:29	JT
tert-Butyl formate	BRL		5.6	100	ug/L	151705	1	09/16/2011 07:29	JT
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011					**(SW8011)**				
1,2-Dibromoethane	BRL		0.004	0.021	ug/L	151606	1	09/15/2011 10:22	AK
Surr: 4-Bromofluorobenzene	112		0	66.9-137	%REC	151606	1	09/15/2011 10:22	AK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Not detected at MDL
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- NC Not confirmed
- E Estimated value above quantitation range
- S Spike Recovery outside limits due to matrix
- J Estimated value detected below Reporting Limit
- > Greater than Result value
- < Less than Result value
- Narr See case narrative

Analytical Environmental Services, Inc **Date:** 26-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	MW-13
Project Name:	Vacant Lot (GWS)	**Collection Date:**	9/10/2011 11:49:00 AM
Lab ID:	1109903-012	**Matrix:**	Groundwater

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B					**(SW5030B)**				
Benzene	BRL		0.38	1.0	ug/L	151705	1	09/16/2011 07:58	JT
Toluene	0.78	J	0.39	1.0	ug/L	151705	1	09/16/2011 07:58	JT
Ethylbenzene	BRL		0.48	1.0	ug/L	151705	1	09/16/2011 07:58	JT
Xylenes, Total	BRL		0.38	3.0	ug/L	151705	1	09/16/2011 07:58	JT
Methyl tert-butyl ether	BRL		0.24	1.0	ug/L	151705	1	09/16/2011 07:58	JT
Naphthalene	BRL		0.25	5.0	ug/L	151705	1	09/16/2011 07:58	JT
1,2-Dichloroethane	BRL		0.23	1.0	ug/L	151705	1	09/16/2011 07:58	JT
Surr: 4-Bromofluorobenzene	87.1		0	64.7-130	%REC	151705	1	09/16/2011 07:58	JT
Surr: Dibromofluoromethane	96.1		0	80.7-129	%REC	151705	1	09/16/2011 07:58	JT
Surr: Toluene-d8	95.3		0	71.1-120	%REC	151705	1	09/16/2011 07:58	JT
Total Metals by ICP/MS SW6020A					**(SW3005A)**				
Lead	BRL		0.701	1.00	ug/L	151608	1	09/15/2011 22:29	JY
Oxygenates (AES SOP OA-11010) SW8260B					**(SW5030B)**				
3,3-Dimethyl-1-butanol	BRL		3.9	100	ug/L	151705	1	09/16/2011 07:58	JT
Ethanol	BRL		16	100	ug/L	151705	1	09/16/2011 07:58	JT
Ethyl tert-butyl ether	BRL		1.1	100	ug/L	151705	1	09/16/2011 07:58	JT
Isopropyl ether	BRL		0.90	10	ug/L	151705	1	09/16/2011 07:58	JT
tert-Amyl alcohol	BRL		7.2	100	ug/L	151705	1	09/16/2011 07:58	JT
tert-Amyl methyl ether	BRL		1.0	10	ug/L	151705	1	09/16/2011 07:58	JT
tert-Butyl Alcohol	BRL		7.5	100	ug/L	151705	1	09/16/2011 07:58	JT
tert-Butyl formate	BRL		5.6	100	ug/L	151705	1	09/16/2011 07:58	JT
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011					**(SW8011)**				
1,2-Dibromoethane	BRL		0.004	0.021	ug/L	151606	1	09/15/2011 10:59	AK
Surr: 4-Bromofluorobenzene	110		0	66.9-137	%REC	151606	1	09/15/2011 10:59	AK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Not detected at MDL
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- NC Not confirmed
- E Estimated value above quantitation range
- S Spike Recovery outside limits due to matrix
- J Estimated value detected below Reporting Limit
- > Greater than Result value
- < Less than Result value
- Narr See case narrative

Analytical Environmental Services, Inc **Date:** 26-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	MW-14
Project Name:	Vacant Lot (GWS)	**Collection Date:**	9/10/2011 11:44:00 AM
Lab ID:	1109903-013	**Matrix:**	Groundwater

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B					**(SW5030B)**				
Benzene	BRL		0.38	1.0	ug/L	151705	1	09/16/2011 08:27	JT
Toluene	0.47	J	0.39	1.0	ug/L	151705	1	09/16/2011 08:27	JT
Ethylbenzene	BRL		0.48	1.0	ug/L	151705	1	09/16/2011 08:27	JT
Xylenes, Total	BRL		0.38	3.0	ug/L	151705	1	09/16/2011 08:27	JT
Methyl tert-butyl ether	BRL		0.24	1.0	ug/L	151705	1	09/16/2011 08:27	JT
Naphthalene	BRL		0.25	5.0	ug/L	151705	1	09/16/2011 08:27	JT
1,2-Dichloroethane	BRL		0.23	1.0	ug/L	151705	1	09/16/2011 08:27	JT
Surr: 4-Bromofluorobenzene	86.1		0	64.7-130	%REC	151705	1	09/16/2011 08:27	JT
Surr: Dibromofluoromethane	98.5		0	80.7-129	%REC	151705	1	09/16/2011 08:27	JT
Surr: Toluene-d8	96		0	71.1-120	%REC	151705	1	09/16/2011 08:27	JT
Total Metals by ICP/MS SW6020A					**(SW3005A)**				
Lead	6.29		0.701	1.00	ug/L	151608	1	09/15/2011 22:35	JY
Oxygenates (AES SOP OA-11010) SW8260B					**(SW5030B)**				
3,3-Dimethyl-1-butanol	BRL		3.9	100	ug/L	151705	1	09/16/2011 08:27	JT
Ethanol	BRL		16	100	ug/L	151705	1	09/16/2011 08:27	JT
Ethyl tert-butyl ether	BRL		1.1	100	ug/L	151705	1	09/16/2011 08:27	JT
Isopropyl ether	BRL		0.90	10	ug/L	151705	1	09/16/2011 08:27	JT
tert-Amyl alcohol	BRL		7.2	100	ug/L	151705	1	09/16/2011 08:27	JT
tert-Amyl methyl ether	BRL		1.0	10	ug/L	151705	1	09/16/2011 08:27	JT
tert-Butyl Alcohol	BRL		7.5	100	ug/L	151705	1	09/16/2011 08:27	JT
tert-Butyl formate	BRL		5.6	100	ug/L	151705	1	09/16/2011 08:27	JT
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011					**(SW8011)**				
1,2-Dibromoethane	BRL		0.004	0.021	ug/L	151606	1	09/15/2011 11:36	AK
Surr: 4-Bromofluorobenzene	111		0	66.9-137	%REC	151606	1	09/15/2011 11:36	AK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Not detected at MDL
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- NC Not confirmed
- E Estimated, value above quantitation range
- S Spike Recovery outside limits due to matrix
- J Estimated value detected below Reporting Limit
- > Greater than Result value
- < Less than Result value
- Narr See case narrative

Analytical Environmental Services, Inc **Date:** 26-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	MW-15
Project Name:	Vacant Lot (GWS)	**Collection Date:**	9/10/2011 11:37:00 AM
Lab ID:	1109903-014	**Matrix:**	Groundwater

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B					**(SW5030B)**				
Benzene	BRL		0.38	1.0	ug/L	151705	1	09/16/2011 08:56	JT
Toluene	BRL		0.39	1.0	ug/L	151705	1	09/16/2011 08:56	JT
Ethylbenzene	0.49	J	0.48	1.0	ug/L	151705	1	09/16/2011 08:56	JT
Xylenes, Total	BRL		0.38	3.0	ug/L	151705	1	09/16/2011 08:56	JT
Methyl tert-butyl ether	2.3		0.24	1.0	ug/L	151705	1	09/16/2011 08:56	JT
Naphthalene	7.4		0.25	5.0	ug/L	151705	1	09/16/2011 08:56	JT
1,2-Dichloroethane	BRL		0.23	1.0	ug/L	151705	1	09/16/2011 08:56	JT
Surr: 4-Bromofluorobenzene	93		0	64.7-130	%REC	151705	1	09/16/2011 08:56	JT
Surr: Dibromofluoromethane	100		0	80.7-129	%REC	151705	1	09/16/2011 08:56	JT
Surr: Toluene-d8	97.3		0	71.1-120	%REC	151705	1	09/16/2011 08:56	JT
Total Metals by ICP/MS SW6020A					**(SW3005A)**				
Lead	BRL		0.701	1.00	ug/L	151608	1	09/15/2011 22:41	JY
Oxygenates (AES SOP OA-11010) SW8260B					**(SW5030B)**				
3,3-Dimethyl-1-butanol	BRL		3.9	100	ug/L	151705	1	09/16/2011 08:56	JT
Ethanol	BRL		16	100	ug/L	151705	1	09/16/2011 08:56	JT
Ethyl tert-butyl ether	BRL		1.1	100	ug/L	151705	1	09/16/2011 08:56	JT
Isopropyl ether	BRL		0.90	10	ug/L	151705	1	09/16/2011 08:56	JT
tert-Amyl alcohol	BRL		7.2	100	ug/L	151705	1	09/16/2011 08:56	JT
tert-Amyl methyl ether	BRL		1.0	10	ug/L	151705	1	09/16/2011 08:56	JT
tert-Butyl Alcohol	BRL		7.5	100	ug/L	151705	1	09/16/2011 08:56	JT
tert-Butyl formate	BRL		5.6	100	ug/L	151705	1	09/16/2011 08:56	JT
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011					**(SW8011)**				
1,2-Dibromoethane	BRL		0.004	0.021	ug/L	151606	1	09/15/2011 12:14	AK
Surr: 4-Bromofluorobenzene	99.5		0	66.9-137	%REC	151606	1	09/15/2011 12:14	AK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Not detected at MDL
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- NC Not confirmed
- E Estimated value above quantitation range
- S Spike Recovery outside limits due to matrix
- J Estimated value detected below Reporting Limit
- > Greater than Result value
- < Less than Result value
- Narr See case narrative

Analytical Environmental Services, Inc **Date:** 26-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	MW-16
Project Name:	Vacant Lot (GWS)	**Collection Date:**	9/10/2011 10:44:00 AM
Lab ID:	1109903-015	**Matrix:**	Groundwater

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B					**(SW5030B)**				
Benzene	BRL		0.38	1.0	ug/L	151705	1	09/16/2011 09:25	JT
Toluene	BRL		0.39	1.0	ug/L	151705	1	09/16/2011 09:25	JT
Ethylbenzene	BRL		0.48	1.0	ug/L	151705	1	09/16/2011 09:25	JT
Xylenes, Total	BRL		0.38	3.0	ug/L	151705	1	09/16/2011 09:25	JT
Methyl tert-butyl ether	BRL		0.24	1.0	ug/L	151705	1	09/16/2011 09:25	JT
Naphthalene	BRL		0.25	5.0	ug/L	151705	1	09/16/2011 09:25	JT
1,2-Dichloroethane	BRL		0.23	1.0	ug/L	151705	1	09/16/2011 09:25	JT
Surr: 4-Bromofluorobenzene	85.2		0	64.7-130	%REC	151705	1	09/16/2011 09:25	JT
Surr: Dibromofluoromethane	95.5		0	80.7-129	%REC	151705	1	09/16/2011 09:25	JT
Surr: Toluene-d8	93.2		0	71.1-120	%REC	151705	1	09/16/2011 09:25	JT
Total Metals by ICP/MS SW6020A					**(SW3005A)**				
Lead	BRL		0.701	1.00	ug/L	151608	1	09/15/2011 22:47	JY
Oxygenates (AES SOP OA-11010) SW8260B					**(SW5030B)**				
3,3-Dimethyl-1-butanol	BRL		3.9	100	ug/L	151705	1	09/16/2011 09:25	JT
Ethanol	BRL		16	100	ug/L	151705	1	09/16/2011 09:25	JT
Ethyl tert-butyl ether	BRL		1.1	100	ug/L	151705	1	09/16/2011 09:25	JT
Isopropyl ether	BRL		0.90	10	ug/L	151705	1	09/16/2011 09:25	JT
tert-Amyl alcohol	BRL		7.2	100	ug/L	151705	1	09/16/2011 09:25	JT
tert-Amyl methyl ether	BRL		1.0	10	ug/L	151705	1	09/16/2011 09:25	JT
tert-Butyl Alcohol	BRL		7.5	100	ug/L	151705	1	09/16/2011 09:25	JT
tert-Butyl formate	BRL		5.6	100	ug/L	151705	1	09/16/2011 09:25	JT
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011					**(SW8011)**				
1,2-Dibromoethane	BRL		0.004	0.021	ug/L	151606	1	09/15/2011 12:51	AK
Surr: 4-Bromofluorobenzene	103		0	66.9-137	%REC	151606	1	09/15/2011 12:51	AK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Not detected at MDL
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- NC Not confirmed
- E Estimated value above quantitation range
- S Spike Recovery outside limits due to matrix
- J Estimated value detected below Reporting Limit
- > Greater than Result value
- < Less than Result value
- Narr See case narrative

Analytical Environmental Services, Inc **Date:** 26-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	DW-1
Project Name:	Vacant Lot (GWS)	**Collection Date:**	9/10/2011 1:11:00 PM
Lab ID:	1109903-016	**Matrix:**	Groundwater

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B					(SW5030B)				
Benzene	BRL		0.38	1.0	ug/L	151705	1	09/16/2011 09:54	JT
Toluene	0.77	J	0.39	1.0	ug/L	151705	1	09/16/2011 09:54	JT
Ethylbenzene	BRL		0.48	1.0	ug/L	151705	1	09/16/2011 09:54	JT
Xylenes, Total	0.41	J	0.38	3.0	ug/L	151705	1	09/16/2011 09:54	JT
Methyl tert-butyl ether	0.72	J	0.24	1.0	ug/L	151705	1	09/16/2011 09:54	JT
Naphthalene	1.3	J	0.25	5.0	ug/L	151705	1	09/16/2011 09:54	JT
1,2-Dichloroethane	BRL		0.23	1.0	ug/L	151705	1	09/16/2011 09:54	JT
Surr: 4-Bromofluorobenzene	86.3		0	64.7-130	%REC	151705	1	09/16/2011 09:54	JT
Surr: Dibromofluoromethane	99.6		0	80.7-129	%REC	151705	1	09/16/2011 09:54	JT
Surr: Toluene-d8	96.7		0	71.1-120	%REC	151705	1	09/16/2011 09:54	JT
Total Metals by ICP/MS SW6020A					(SW3005A)				
Lead	1.83		0.701	1.00	ug/L	151608	1	09/15/2011 22:54	JY
Oxygenates (AES SOP OA-11010) SW8260B					(SW5030B)				
3,3-Dimethyl-1-butanol	BRL		3.9	100	ug/L	151705	1	09/16/2011 09:54	JT
Ethanol	BRL		16	100	ug/L	151705	1	09/16/2011 09:54	JT
Ethyl tert-butyl ether	BRL		1.1	100	ug/L	151705	1	09/16/2011 09:54	JT
Isopropyl ether	BRL		0.90	10	ug/L	151705	1	09/16/2011 09:54	JT
tert-Amyl alcohol	BRL		7.2	100	ug/L	151705	1	09/16/2011 09:54	JT
tert-Amyl methyl ether	BRL		1.0	10	ug/L	151705	1	09/16/2011 09:54	JT
tert-Butyl Alcohol	BRL		7.5	100	ug/L	151705	1	09/16/2011 09:54	JT
tert-Butyl formate	BRL		5.6	100	ug/L	151705	1	09/16/2011 09:54	JT
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011					(SW8011)				
1,2-Dibromoethane	BRL		0.004	0.021	ug/L	151606	1	09/15/2011 14:06	AK
Surr: 4-Bromofluorobenzene	104		0	66.9-137	%REC	151606	1	09/15/2011 14:06	AK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Not detected at MDL
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- NC Not confirmed
- E Estimated value above quantitation range
- S Spike Recovery outside limits due to matrix
- J Estimated value detected below Reporting Limit
- > Greater than Result value
- < Less than Result value
- Narr See case narrative

Analytical Environmental Services, Inc **Date:** 26-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	DW-2
Project Name:	Vacant Lot (GWS)	**Collection Date:**	9/10/2011 10:37:00 AM
Lab ID:	1109903-017	**Matrix:**	Groundwater

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B					(SW5030B)				
Benzene	BRL		0.38	1.0	ug/L	151705	1	09/16/2011 10:23	JT
Toluene	0.75	J	0.39	1.0	ug/L	151705	1	09/16/2011 10:23	JT
Ethylbenzene	BRL		0.48	1.0	ug/L	151705	1	09/16/2011 10:23	JT
Xylenes, Total	BRL		0.38	3.0	ug/L	151705	1	09/16/2011 10:23	JT
Methyl tert-butyl ether	BRL		0.24	1.0	ug/L	151705	1	09/16/2011 10:23	JT
Naphthalene	BRL		0.25	5.0	ug/L	151705	1	09/16/2011 10:23	JT
1,2-Dichloroethane	BRL		0.23	1.0	ug/L	151705	1	09/16/2011 10:23	JT
Surr: 4-Bromofluorobenzene	87.8		0	64.7-130	%REC	151705	1	09/16/2011 10:23	JT
Surr: Dibromofluoromethane	102		0	80.7-129	%REC	151705	1	09/16/2011 10:23	JT
Surr: Toluene-d8	97		0	71.1-120	%REC	151705	1	09/16/2011 10:23	JT
Total Metals by ICP/MS SW6020A					(SW3005A)				
Lead	BRL		0.701	1.00	ug/L	151608	1	09/15/2011 23:00	JY
Oxygenates (AES SOP OA-11010) SW8260B					(SW5030B)				
3,3-Dimethyl-1-butanol	BRL		3.9	100	ug/L	151705	1	09/16/2011 10:23	JT
Ethanol	BRL		16	100	ug/L	151705	1	09/16/2011 10:23	JT
Ethyl tert-butyl ether	BRL		1.1	100	ug/L	151705	1	09/16/2011 10:23	JT
Isopropyl ether	BRL		0.90	10	ug/L	151705	1	09/16/2011 10:23	JT
tert-Amyl alcohol	BRL		7.2	100	ug/L	151705	1	09/16/2011 10:23	JT
tert-Amyl methyl ether	BRL		1.0	10	ug/L	151705	1	09/16/2011 10:23	JT
tert-Butyl Alcohol	BRL		7.5	100	ug/L	151705	1	09/16/2011 10:23	JT
tert-Butyl formate	BRL		5.6	100	ug/L	151705	1	09/16/2011 10:23	JT
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011					(SW8011)				
1,2-Dibromoethane	BRL		0.004	0.021	ug/L	151606	1	09/15/2011 14:43	AK
Surr: 4-Bromofluorobenzene	106		0	66.9-137	%REC	151606	1	09/15/2011 14:43	AK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Not detected at MDL
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- NC Not confirmed
- E Estimated value above quantitation range
- S Spike Recovery outside limits due to matrix
- J Estimated value detected below Reporting Limit
- > Greater than Result value
- < Less than Result value
- Narr See case narrative

Analytical Environmental Services, Inc **Date:** 26-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	DW-3
Project Name:	Vacant Lot (GWS)	**Collection Date:**	9/10/2011 10:48:00 AM
Lab ID:	1109903-018	**Matrix:**	Groundwater

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B					(SW5030B)				
Benzene	BRL		0.38	1.0	ug/L	151705	1	09/16/2011 10:51	JT
Toluene	0.73	J	0.39	1.0	ug/L	151705	1	09/16/2011 10:51	JT
Ethylbenzene	BRL		0.48	1.0	ug/L	151705	1	09/16/2011 10:51	JT
Xylenes, Total	BRL		0.38	3.0	ug/L	151705	1	09/16/2011 10:51	JT
Methyl tert-butyl ether	0.46	J	0.24	1.0	ug/L	151705	1	09/16/2011 10:51	JT
Naphthalene	BRL		0.25	5.0	ug/L	151705	1	09/16/2011 10:51	JT
1,2-Dichloroethane	BRL		0.23	1.0	ug/L	151705	1	09/16/2011 10:51	JT
Surr: 4-Bromofluorobenzene	88.3		0	64.7-130	%REC	151705	1	09/16/2011 10:51	JT
Surr: Dibromofluoromethane	97.9		0	80.7-129	%REC	151705	1	09/16/2011 10:51	JT
Surr: Toluene-d8	94.2		0	71.1-120	%REC	151705	1	09/16/2011 10:51	JT
Total Metals by ICP/MS SW6020A					(SW3005A)				
Lead	11.6		0.701	1.00	ug/L	151608	1	09/15/2011 23:06	JY
Oxygenates (AES SOP OA-11010) SW8260B					(SW5030B)				
3,3-Dimethyl-1-butanol	BRL		3.9	100	ug/L	151705	1	09/16/2011 10:51	JT
Ethanol	BRL		16	100	ug/L	151705	1	09/16/2011 10:51	JT
Ethyl tert-butyl ether	BRL		1.1	100	ug/L	151705	1	09/16/2011 10:51	JT
Isopropyl ether	BRL		0.90	10	ug/L	151705	1	09/16/2011 10:51	JT
tert-Amyl alcohol	BRL		7.2	100	ug/L	151705	1	09/16/2011 10:51	JT
tert-Amyl methyl ether	BRL		1.0	10	ug/L	151705	1	09/16/2011 10:51	JT
tert-Butyl Alcohol	BRL		7.5	100	ug/L	151705	1	09/16/2011 10:51	JT
tert-Butyl formate	BRL		5.6	100	ug/L	151705	1	09/16/2011 10:51	JT
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011					(SW8011)				
1,2-Dibromoethane	BRL		0.004	0.021	ug/L	151617	1	09/15/2011 18:29	AK
Surr: 4-Bromofluorobenzene	115		0	66.9-137	%REC	151617	1	09/15/2011 18:29	AK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Not detected at MDL
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- NC Not confirmed
- E Estimated value above quantitation range
- S Spike Recovery outside limits due to matrix
- J Estimated value detected below Reporting Limit
- > Greater than Result value
- < Less than Result value
- Narr See case narrative

Analytical Environmental Services, Inc **Date:** 26-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	MW-14 DUP
Project Name:	Vacant Lot (GWS)	**Collection Date:**	9/10/2011 1:44:00 AM
Lab ID:	1109903-019	**Matrix:**	Groundwater

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B					**(SW5030B)**				
Benzene	BRL		0.38	1.0	ug/L	151705	1	09/16/2011 15:56	JT
Toluene	0.54	J	0.39	1.0	ug/L	151705	1	09/16/2011 15:56	JT
Ethylbenzene	BRL		0.48	1.0	ug/L	151705	1	09/16/2011 15:56	JT
Xylenes, Total	BRL		0.38	3.0	ug/L	151705	1	09/16/2011 15:56	JT
Methyl tert-butyl ether	BRL		0.24	1.0	ug/L	151705	1	09/16/2011 15:56	JT
Naphthalene	BRL		0.25	5.0	ug/L	151705	1	09/16/2011 15:56	JT
1,2-Dichloroethane	BRL		0.23	1.0	ug/L	151705	1	09/16/2011 15:56	JT
Surr: 4-Bromofluorobenzene	84.7		0	64.7-130	%REC	151705	1	09/16/2011 15:56	JT
Surr: Dibromofluoromethane	96.8		0	80.7-129	%REC	151705	1	09/16/2011 15:56	JT
Surr: Toluene-d8	94.6		0	71.1-120	%REC	151705	1	09/16/2011 15:56	JT
Oxygenates (AES SOP OA-11010) SW8260B					**(SW5030B)**				
3,3-Dimethyl-1-butanol	BRL		3.9	100	ug/L	151705	1	09/16/2011 15:56	JT
Ethanol	BRL		16	100	ug/L	151705	1	09/16/2011 15:56	JT
Ethyl tert-butyl ether	BRL		1.1	100	ug/L	151705	1	09/16/2011 15:56	JT
Isopropyl ether	BRL		0.90	10	ug/L	151705	1	09/16/2011 15:56	JT
tert-Amyl alcohol	BRL		7.2	100	ug/L	151705	1	09/16/2011 15:56	JT
tert-Amyl methyl ether	BRL		1.0	10	ug/L	151705	1	09/16/2011 15:56	JT
tert-Butyl Alcohol	BRL		7.5	100	ug/L	151705	1	09/16/2011 15:56	JT
tert-Butyl formate	BRL		5.6	100	ug/L	151705	1	09/16/2011 15:56	JT
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011					**(SW8011)**				
1,2-Dibromoethane	BRL		0.004	0.021	ug/L	151617	1	09/15/2011 19:06	AK
Surr: 4-Bromofluorobenzene	113		0	66.9-137	%REC	151617	1	09/15/2011 19:06	AK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Not detected at MDL
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- NC Not confirmed
- E Estimated value above quantitation range
- S Spike Recovery outside limits due to matrix
- J Estimated value detected below Reporting Limit
- > Greater than Result value
- < Less than Result value
- Narr See case narrative

Analytical Environmental Services, Inc **Date:** 26-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	FIELD BLANK
Project Name:	Vacant Lot (GWS)	**Collection Date:**	9/10/2011 12:21:00 PM
Lab ID:	1109903-020	**Matrix:**	Groundwater

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B (SW5030B)									
Benzene	BRL		0.38	1.0	ug/L	151705	1	09/16/2011 14:59	JT
Toluene	BRL		0.39	1.0	ug/L	151705	1	09/16/2011 14:59	JT
Ethylbenzene	BRL		0.48	1.0	ug/L	151705	1	09/16/2011 14:59	JT
Xylenes, Total	BRL		0.38	3.0	ug/L	151705	1	09/16/2011 14:59	JT
Methyl tert-butyl ether	BRL		0.24	1.0	ug/L	151705	1	09/16/2011 14:59	JT
Naphthalene	BRL		0.25	5.0	ug/L	151705	1	09/16/2011 14:59	JT
1,2-Dichloroethane	BRL		0.23	1.0	ug/L	151705	1	09/16/2011 14:59	JT
Surr: 4-Bromofluorobenzene	87.6		0	64.7-130	%REC	151705	1	09/16/2011 14:59	JT
Surr: Dibromofluoromethane	97.9		0	80.7-129	%REC	151705	1	09/16/2011 14:59	JT
Surr: Toluene-d8	93.5		0	71.1-120	%REC	151705	1	09/16/2011 14:59	JT
Oxygenates (AES SOP OA-11010) SW8260B (SW5030B)									
3,3-Dimethyl-1-butanol	BRL		3.9	100	ug/L	151705	1	09/16/2011 14:59	JT
Ethanol	BRL		16	100	ug/L	151705	1	09/16/2011 14:59	JT
Ethyl tert-butyl ether	BRL		1.1	100	ug/L	151705	1	09/16/2011 14:59	JT
Isopropyl ether	BRL		0.90	10	ug/L	151705	1	09/16/2011 14:59	JT
tert-Amyl alcohol	BRL		7.2	100	ug/L	151705	1	09/16/2011 14:59	JT
tert-Amyl methyl ether	BRL		1.0	10	ug/L	151705	1	09/16/2011 14:59	JT
tert-Butyl Alcohol	BRL		7.5	100	ug/L	151705	1	09/16/2011 14:59	JT
tert-Butyl formate	BRL		5.6	100	ug/L	151705	1	09/16/2011 14:59	JT

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Not detected at MDL
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- NC Not confirmed
- E Estimated value above quantitation range
- S Spike Recovery outside limits due to matrix
- J Estimated value detected below Reporting Limit
- > Greater than Result value
- < Less than Result value
- Narr See case narrative

Analytical Environmental Services, Inc **Date:** 26-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	TRIP BLANK
Project Name:	Vacant Lot (GWS)	**Collection Date:**	9/9/2011 7:17:00 AM
Lab ID:	1109903-021	**Matrix:**	Groundwater

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B (SW5030B)									
Benzene	BRL		0.38	1.0	ug/L	151591	1	09/16/2011 15:28	JT
Toluene	BRL		0.39	1.0	ug/L	151591	1	09/16/2011 15:28	JT
Ethylbenzene	BRL		0.48	1.0	ug/L	151591	1	09/16/2011 15:28	JT
Xylenes, Total	BRL		0.38	3.0	ug/L	151591	1	09/16/2011 15:28	JT
Methyl tert-butyl ether	BRL		0.24	1.0	ug/L	151591	1	09/16/2011 15:28	JT
Naphthalene	BRL		0.25	5.0	ug/L	151591	1	09/16/2011 15:28	JT
1,2-Dichloroethane	BRL		0.23	1.0	ug/L	151591	1	09/16/2011 15:28	JT
Surr: 4-Bromofluorobenzene	86.8		0	64.7-130	%REC	151591	1	09/16/2011 15:28	JT
Surr: Dibromofluoromethane	96.8		0	80.7-129	%REC	151591	1	09/16/2011 15:28	JT
Surr: Toluene-d8	96.1		0	71.1-120	%REC	151591	1	09/16/2011 15:28	JT
Oxygenates (AES SOP OA-11010) SW8260B (SW5030B)									
3,3-Dimethyl-1-butanol	BRL		3.9	100	ug/L	151591	1	09/16/2011 15:28	JT
Ethanol	BRL		16	100	ug/L	151591	1	09/16/2011 15:28	JT
Ethyl tert-butyl ether	BRL		1.1	100	ug/L	151591	1	09/16/2011 15:28	JT
Isopropyl ether	BRL		0.90	10	ug/L	151591	1	09/16/2011 15:28	JT
tert-Amyl alcohol	BRL		7.2	100	ug/L	151591	1	09/16/2011 15:28	JT
tert-Amyl methyl ether	BRL		1.0	10	ug/L	151591	1	09/16/2011 15:28	JT
tert-Butyl Alcohol	BRL		7.5	100	ug/L	151591	1	09/16/2011 15:28	JT
tert-Butyl formate	BRL		5.6	100	ug/L	151591	1	09/16/2011 15:28	JT

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Not detected at MDL
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- NC Not confirmed
- E Estimated value above quantitation range
- S Spike Recovery outside limits due to matrix
- J Estimated value detected below Reporting Limit
- > Greater than Result value
- < Less than Result value
- Narr See case narrative

Analytical Environmental Services, Inc.

Sample/Cooler Receipt Checklist

Client Access Work Order Number 1109903

Checklist completed by ZR 9-13-11
Signature Date

Carrier name: FedEx ✓ UPS __ Courier __ Client __ US Mail __ Other _____

Shipping container/cooler in good condition?	Yes ✓	No __	Not Present __
Custody seals intact on shipping container/cooler?	Yes __	No __	Not Present ✓
Custody seals intact on sample bottles?	Yes __	No __	Not Present ✓
Container/Temp Blank temperature in compliance? (4°C±2)*	Yes ✓	No __	

Cooler #1 3.4ᵃ Cooler #2 3.9ᵃ Cooler #3 3.2ᵃ Cooler #4 _____ Cooler#5 _____ Cooler #6 _____

Chain of custody present?	Yes ✓	No __
Chain of custody signed when relinquished and received?	Yes ✓	No __
Chain of custody agrees with sample labels?	Yes ✓	No __
Samples in proper container/bottle?	Yes ✓	No __
Sample containers intact?	Yes ✓	No __
Sufficient sample volume for indicated test?	Yes ✓	No __
All samples received within holding time?	Yes ✓	No __
Was TAT marked on the COC?	Yes ✓	No __
Proceed with Standard TAT as per project history?	Yes __	No __ Not Applicable ✓
Water - VOA vials have zero headspace?	No VOA vials submitted __	Yes ✓ No __
Water - pH acceptable upon receipt?	Yes ✓	No __ Not Applicable __

Adjusted? _____ Checked by ZR

Sample Condition: Good ✓ Other(Explain) _____

(For diffusive samples or AIHA lead) Is a known blank included? Yes __ No ✓

See Case Narrative for resolution of the Non-Conformance.

* Samples do not have to comply with the given range for certain parameters.

\L\Quality Assurance\Checklists Procedures Sign-Off Templates\Checklists\Sample Receipt Checklists\Sample_Cooler_Receipt_Checklist

Analytical Environmental Services, Inc.

Sample/Cooler Receipt Checklist

Client ACCESS Work Order Number 1109898

Checklist completed by ZD 9-13-11
Signature Date

Carrier name: FedEx ✓ UPS __ Courier __ Client __ US Mail __ Other _____

Shipping container/cooler in good condition?	Yes ✓	No __	Not Present __
Custody seals intact on shipping container/cooler?	Yes __	No __	Not Present ✓
Custody seals intact on sample bottles?	Yes __	No __	Not Present ✓
Container/Temp Blank temperature in compliance? (4°C±2)*	Yes ✓	No __	

Cooler #1 3.4° Cooler #2 3.9° Cooler #3 3.2° Cooler #4 _____ Cooler#5 _____ Cooler #6 _____

Chain of custody present?	Yes ✓	No __
Chain of custody signed when relinquished and received?	Yes ✓	No __
Chain of custody agrees with sample labels?	Yes ✓	No __
Samples in proper container/bottle?	Yes ✓	No __
Sample containers intact?	Yes ✓	No __
Sufficient sample volume for indicated test?	Yes ✓	No __
All samples received within holding time?	Yes ✓	No __
Was TAT marked on the COC?	Yes ✓	No __
Proceed with Standard TAT as per project history?	Yes __	No __ Not Applicable ✓
Water - VOA vials have zero headspace?	No VOA vials submitted __	Yes ✓ No __
Water - pH acceptable upon receipt?	Yes ✓	No __ Not Applicable __

Adjusted? _____ Checked by _____

Sample Condition: Good ✓ Other(Explain) _____

(For diffusive samples or AIHA lead) Is a known blank included? Yes __ No ✓

See Case Narrative for resolution of the Non-Conformance.

* Samples do not have to comply with the given range for certain parameters.

\L\Quality Assurance\Checklists Procedures Sign-Off Templates\Checklists\Sample Receipt Checklists\Sample_Cooler_Receipt_Checklist

Analytical Environmental Services, Inc.

Sample/Cooler Receipt Checklist

Client Access Work Order Number 1109899

Checklist completed by ZR 9-13-11
Signature Date

Carrier name: FedEx ✓ UPS __ Courier __ Client __ US Mail __ Other _____

Shipping container/cooler in good condition? Yes ✓ No __ Not Present __

Custody seals intact on shipping container/cooler? Yes __ No __ Not Present ✓

Custody seals intact on sample bottles? Yes __ No __ Not Present ✓

Container/Temp Blank temperature in compliance? (4°C±2)* Yes ✓ No __

Cooler #1 3.4° Cooler #2 3.9° Cooler #3 3.2° Cooler #4 _____ Cooler#5 _____ Cooler #6 _____

Chain of custody present? Yes ✓ No __

Chain of custody signed when relinquished and received? Yes ✓ No __

Chain of custody agrees with sample labels? Yes ✓ No __

Samples in proper container/bottle? Yes ✓ No __

Sample containers intact? Yes ✓ No __

Sufficient sample volume for indicated test? Yes ✓ No __

All samples received within holding time? Yes ✓ No __

Was TAT marked on the COC? Yes ✓ No __

Proceed with Standard TAT as per project history? Yes __ No __ Not Applicable ✓

Water - VOA vials have zero headspace? No VOA vials submitted __ Yes ✓ No __

Water - pH acceptable upon receipt? Yes __ ~~No~~ 9-13-11 3.4 No ✓ Not Applicable __

Adjusted? NP Checked by ZR

Sample Condition: Good ✓ Other(Explain) _____

(For diffusive samples or AIHA lead) Is a known blank included? Yes __ No ✓

See Case Narrative for resolution of the Non-Conformance.

* Samples do not have to comply with the given range for certain parameters.

\L\Quality Assurance\Checklists Procedures Sign-Off Templates\Checklists\Sample Receipt Checklists\Sample_Cooler_Receipt_Checklist

Analytical Environmental Services, Inc

Date: 20-Sep-11

Client: Crawford Environmental Services
Project: Vacant Lot (GWS)
Lab Order: 1109903

Dates Report

Lab Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
1109903-001A	MW-1	9/10/2011 10:21:00AM	Groundwater	Volatile Organic Compounds by GC/MS		09/15/2011	09/15/2011
1109903-001A	MW-1	9/10/2011 10:21:00AM	Groundwater	Oxygenates by GC/MS		09/15/2011	09/15/2011
1109903-001B	MW-1	9/10/2011 10:21:00AM	Groundwater	MICRO-EXTRACTABLE VOCs		09/14/2011	09/15/2011
1109903-002A	MW-3	9/10/2011 1:08:00PM	Groundwater	Volatile Organic Compounds by GC/MS		09/15/2011	09/15/2011
1109903-002A	MW-3	9/10/2011 1:08:00PM	Groundwater	Volatile Organic Compounds by GC/MS		09/15/2011	09/19/2011
1109903-002A	MW-3	9/10/2011 1:08:00PM	Groundwater	Oxygenates by GC/MS		09/15/2011	09/15/2011
1109903-002B	MW-3	9/10/2011 1:08:00PM	Groundwater	MICRO-EXTRACTABLE VOCs		09/14/2011	09/15/2011
1109903-002C	MW-3	9/10/2011 1:08:00PM	Groundwater	Total Metals by ICP/MS		09/16/2011	09/16/2011
1109903-003A	MW-4	9/10/2011 11:17:00AM	Groundwater	Volatile Organic Compounds by GC/MS		09/15/2011	09/15/2011
1109903-003A	MW-4	9/10/2011 11:17:00AM	Groundwater	Oxygenates by GC/MS		09/15/2011	09/15/2011
1109903-003B	MW-4	9/10/2011 11:17:00AM	Groundwater	MICRO-EXTRACTABLE VOCs		09/14/2011	09/15/2011
1109903-004A	MW-5	9/10/2011 11:01:00AM	Groundwater	Volatile Organic Compounds by GC/MS		09/15/2011	09/15/2011
1109903-004A	MW-5	9/10/2011 11:01:00AM	Groundwater	Oxygenates by GC/MS		09/15/2011	09/15/2011
1109903-004B	MW-5	9/10/2011 11:01:00AM	Groundwater	MICRO-EXTRACTABLE VOCs		09/14/2011	09/15/2011
1109903-004C	MW-5	9/10/2011 11:01:00AM	Groundwater	Total Metals by ICP/MS		09/16/2011	09/16/2011
1109903-005A	MW-6	9/10/2011 11:10:00AM	Groundwater	Volatile Organic Compounds by GC/MS		09/15/2011	09/15/2011
1109903-005A	MW-6	9/10/2011 11:10:00AM	Groundwater	Oxygenates by GC/MS		09/15/2011	09/15/2011
1109903-005B	MW-6	9/10/2011 11:10:00AM	Groundwater	MICRO-EXTRACTABLE VOCs		09/14/2011	09/15/2011
1109903-005C	MW-6	9/10/2011 11:10:00AM	Groundwater	Total Metals by ICP/MS		09/16/2011	09/16/2011
1109903-006A	MW-7	9/10/2011 10:10:00AM	Groundwater	Volatile Organic Compounds by GC/MS		09/15/2011	09/15/2011
1109903-006A	MW-7	9/10/2011 10:10:00AM	Groundwater	Oxygenates by GC/MS		09/15/2011	09/15/2011
1109903-006B	MW-7	9/10/2011 10:10:00AM	Groundwater	MICRO-EXTRACTABLE VOCs		09/14/2011	09/16/2011
1109903-006C	MW-7	9/10/2011 10:10:00AM	Groundwater	Total Metals by ICP/MS		09/16/2011	09/16/2011
1109903-007A	MW-8	9/10/2011 10:55:00AM	Groundwater	Volatile Organic Compounds by GC/MS		09/15/2011	09/15/2011
1109903-007A	MW-8	9/10/2011 10:55:00AM	Groundwater	Oxygenates by GC/MS		09/15/2011	09/15/2011
1109903-007B	MW-8	9/10/2011 10:55:00AM	Groundwater	MICRO-EXTRACTABLE VOCs		09/14/2011	09/16/2011
1109903-007C	MW-8	9/10/2011 10:55:00AM	Groundwater	Total Metals by ICP/MS		09/16/2011	09/16/2011
1109903-008A	MW-9	9/10/2011 11:25:00AM	Groundwater	Volatile Organic Compounds by GC/MS		09/15/2011	09/15/2011
1109903-008A	MW-9	9/10/2011 11:25:00AM	Groundwater	Oxygenates by GC/MS		09/15/2011	09/15/2011

Analytical Environmental Services, Inc

Date: 20-Sep-11

Client: Crawford Environmental Services
Project: Vacant Lot (GWS)
Lab Order: 1109903

Dates Report

Lab Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
1109903-008B	MW-9	9/10/2011 11:25:00AM	Groundwater	MICRO-EXTRACTABLE VOCs		09/14/2011	09/16/2011
1109903-008C	MW-9	9/10/2011 11:25:00AM	Groundwater	Total Metals by ICP/MS		09/16/2011	09/16/2011
1109903-009A	MW-10	9/10/2011 12:08:00PM	Groundwater	Volatile Organic Compounds by GC/MS		09/15/2011	09/15/2011
1109903-009A	MW-10	9/10/2011 12:08:00PM	Groundwater	Oxygenates by GC/MS		09/15/2011	09/15/2011
1109903-009B	MW-10	9/10/2011 12:08:00PM	Groundwater	MICRO-EXTRACTABLE VOCs		09/14/2011	09/16/2011
1109903-009C	MW-10	9/10/2011 12:08:00PM	Groundwater	Total Metals by ICP/MS		09/16/2011	09/16/2011
1109903-010A	MW-11	9/10/2011 11:59:00AM	Groundwater	Volatile Organic Compounds by GC/MS		09/15/2011	09/15/2011
1109903-010A	MW-11	9/10/2011 11:59:00AM	Groundwater	Oxygenates by GC/MS		09/15/2011	09/15/2011
1109903-010B	MW-11	9/10/2011 11:59:00AM	Groundwater	MICRO-EXTRACTABLE VOCs		09/14/2011	09/16/2011
1109903-010C	MW-11	9/10/2011 11:59:00AM	Groundwater	Total Metals by ICP/MS		09/16/2011	09/16/2011

AES, Inc.
3785 Presidential Pkwy
Atlanta GA 30340

pH Adjustment Sheet

AES Sample ID number	Test Requested	pH as Received	Required pH	Preservative Required	Lot # of Preservative	Amount Added mL or Pellets*	Final pH	Tech's Initials	Date	Time
~~1109899-005C~~	6020	5	1	HNO3	IN-1028-21	5 mL Pellets	1	ZR	9-13-11	6:01pm
1109903-015C	KEW 9/22-11					mL Pellets				
						mL Pellets				
						mL Pellets				
						mL Pellets				
						mL Pellets				
						mL Pellets				
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						mL Pellets				
						mL Pellets				
						mL Pellets				
						mL Pellets				

* Number of Pellets when adding NAOH

Client: Crawford Environmental Services
Project Name: Vacant Lot (GWS)
Workorder: 1109903

ANALYTICAL QC SUMMARY REPORT

BatchID: 151591

Sample ID: **MB-151591** Client ID:
SampleType: **MBLK** TestCode: **Volatile Organic Compounds by GC/MS SW8260B**
Units: **ug/L** Prep Date: **09/13/2011** Run No: **205073**
BatchID: **151591** Analysis Date: **09/13/2011** Seq No: **4286774**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,2-Dichloroethane	BRL	1.0	0	0	0	0	0	0	0	0	
Benzene	BRL	1.0	0	0	0	0	0	0	0	0	
Ethylbenzene	BRL	1.0	0	0	0	0	0	0	0	0	
Methyl tert-butyl ether	BRL	1.0	0	0	0	0	0	0	0	0	
Naphthalene	BRL	5.0	0	0	0	0	0	0	0	0	
Toluene	BRL	1.0	0	0	0	0	0	0	0	0	
Xylenes, Total	BRL	1.0	0	0	0	0	0	0	0	0	
Surr: 4-Bromofluorobenzene	44.81	0	50	0	89.6	64.7	130	0	0	0	
Surr: Dibromofluoromethane	46.66	0	50	0	93.3	80.7	129	0	0	0	
Surr: Toluene-d8	46.67	0	50	0	93.3	71.1	120	0	0	0	

Sample ID: **MB-151591** Client ID:
SampleType: **MBLK** TestCode: **Oxygenates (AES SOP OA-11010) SW8260B**
Units: **ug/L** Prep Date: **09/13/2011** Run No: **205073**
BatchID: **151591** Analysis Date: **09/13/2011** Seq No: **4286949**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
3,3-Dimethyl-1-butanol	BRL	100	0	0	0	0	0	0	0	0	
Ethanol	BRL	100	0	0	0	0	0	0	0	0	
Ethyl tert-butyl ether	BRL	100	0	0	0	0	0	0	0	0	
Isopropyl ether	BRL	10	0	0	0	0	0	0	0	0	
tert-Amyl alcohol	BRL	100	0	0	0	0	0	0	0	0	
tert-Amyl methyl ether	BRL	10	0	0	0	0	0	0	0	0	
tert-Butyl Alcohol	BRL	100	0	0	0	0	0	0	0	0	
tert-Butyl formate	BRL	100	0	0	0	0	0	0	0	0	

Sample ID: **LCS-151591** Client ID:
SampleType: **LCS** TestCode: **Volatile Organic Compounds by GC/MS SW8260B**
Units: **ug/L** Prep Date: **09/13/2011** Run No: **205073**
BatchID: **151591** Analysis Date: **09/13/2011** Seq No: **4286773**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Crawford Environmental Services
Project Name: Vacant Lot (GWS)
Workorder: 1109903

ANALYTICAL QC SUMMARY REPORT

BatchID: 151591

Sample ID: **LCS-151591** Client ID:
SampleType: **LCS** TestCode: **Volatile Organic Compounds by GC/MS SW8260B**
Units: **ug/L** Prep Date: **09/13/2011** Run No: **205073**
BatchID: **151591** Analysis Date: **09/13/2011** Seq No: **4286773**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Benzene	46.59	1.0	50	0	93.2	70	130	0	0	0	
Toluene	45.50	1.0	50	0	91	70	130	0	0	0	
Surr: 4-Bromofluorobenzene	46.82	0	50	0	93.6	64.7	130	0	0	0	
Surr: Dibromofluoromethane	54.03	0	50	0	108	80.7	129	0	0	0	
Surr: Toluene-d8	45.79	0	50	0	91.6	71.1	120	0	0	0	

Sample ID: **LCS-151591** Client ID:
SampleType: **LCS** TestCode: **Oxygenates (AES SOP OA-11010) SW8260B**
Units: **ug/L** Prep Date: **09/13/2011** Run No: **205073**
BatchID: **151591** Analysis Date: **09/13/2011** Seq No: **4286948**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
3,3-Dimethyl-1-butanol	2441	100	2000	0	122	70	130	0	0	0	
Ethanol	1741	100	2000	0	87	70	130	0	0	0	
Ethyl tert-butyl ether	377.8	100	400	0	94.4	70	130	0	0	0	
Isopropyl ether	357.6	10	400	0	89.4	70	130	0	0	0	
tert-Amyl alcohol	2127	100	2000	0	106	70	130	0	0	0	
tert-Amyl methyl ether	399.7	10	400	0	99.9	70	130	0	0	0	
tert-Butyl Alcohol	1463	100	2000	0	73.1	70	130	0	0	0	
tert-Butyl formate	1875	100	2000	0	93.7	70	130	0	0	0	

Sample ID: **1109352-006AMS** Client ID:
SampleType: **MS** TestCode: **Volatile Organic Compounds by GC/MS SW8260B**
Units: **ug/L** Prep Date: **09/13/2011** Run No: **205133**
BatchID: **151591** Analysis Date: **09/14/2011** Seq No: **4287364**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Benzene	44.92	1.0	50	0	89.8	62.2	143	0	0	0	
Toluene	44.06	1.0	50	0	88.1	57.8	149	0	0	0	
Surr: 4-Bromofluorobenzene	44.70	0	50	0	89.4	64.7	130	0	0	0	
Surr: Dibromofluoromethane	51.27	0	50	0	103	80.7	129	0	0	0	
Surr: Toluene-d8	45.49	0	50	0	91	71.1	120	0	0	0	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Crawford Environmental Services
Project Name: Vacant Lot (GWS)
Workorder: 1109903

ANALYTICAL QC SUMMARY REPORT

BatchID: 151591

Sample ID: **1109352-006AMS** Client ID:
SampleType: **MS** TestCode: **Oxygenates (AES SOP OA-11010) SW8260B**
Units: **ug/L** Prep Date: **09/13/2011** Run No: **205133**
BatchID: **151591** Analysis Date: **09/14/2011** Seq No: **4287442**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
3,3-Dimethyl-1-butanol	2521	100	2000	0	126	44.9	165	0	0	0	
Ethanol	2745	100	2000	0	137	43.4	147	0	0	0	
Ethyl tert-butyl ether	370.8	100	400	0	92.7	64.1	150	0	0	0	
Isopropyl ether	351.2	10	400	0	87.8	59.6	152	0	0	0	
tert-Amyl alcohol	2421	100	2000	0	121	44.6	163	0	0	0	
tert-Amyl methyl ether	395.4	10	400	0	98.9	68.2	144	0	0	0	
tert-Butyl Alcohol	1925	100	2000	0	96.3	42.4	188	0	0	0	
tert-Butyl formate	1381	100	2000	0	69.1	26.3	149	0	0	0	

Sample ID: **1109352-006AMSD** Client ID:
SampleType: **MSD** TestCode: **Volatile Organic Compounds by GC/MS SW8260B**
Units: **ug/L** Prep Date: **09/13/2011** Run No: **205133**
BatchID: **151591** Analysis Date: **09/14/2011** Seq No: **4287366**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Benzene	40.67	1.0	50	0	81.3	62.2	143	44.92	9.93	20	
Toluene	43.48	1.0	50	0	87	57.8	149	44.06	1.33	20	
Surr: 4-Bromofluorobenzene	45.85	0	50	0	91.7	64.7	130	44.70	0	0	
Surr: Dibromofluoromethane	50.23	0	50	0	100	80.7	129	51.27	0	0	
Surr: Toluene-d8	45.75	0	50	0	91.5	71.1	120	45.49	0	0	

Sample ID: **1109352-006AMSD** Client ID:
SampleType: **MSD** TestCode: **Oxygenates (AES SOP OA-11010) SW8260B**
Units: **ug/L** Prep Date: **09/13/2011** Run No: **205133**
BatchID: **151591** Analysis Date: **09/14/2011** Seq No: **4287443**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
3,3-Dimethyl-1-butanol	2600	100	2000	0	130	44.9	165	2521	3.09	19.5	
Ethanol	2835	100	2000	0	142	43.4	147	2745	3.22	35.6	
Ethyl tert-butyl ether	377.6	100	400	0	94.4	64.1	150	370.8	1.82	17.2	
Isopropyl ether	353.3	10	400	0	88.3	59.6	152	351.2	0.588	17.6	
tert-Amyl alcohol	2528	100	2000	0	126	44.6	163	2421	4.31	22.2	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Crawford Environmental Services
Project Name: Vacant Lot (GWS)
Workorder: 1109903

ANALYTICAL QC SUMMARY REPORT

BatchID: 151591

Sample ID: **1109352-006AMSD** Client ID:
SampleType: **MSD** TestCode: **Oxygenates (AES SOP OA-11010) SW8260B**
Units: **ug/L** Prep Date: **09/13/2011** Run No: **205133**
BatchID: **151591** Analysis Date: **09/14/2011** Seq No: **4287443**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
tert-Amyl methyl ether	399.0	10	400	0	99.8	68.2	144	395.4	0.914	16.6	
tert-Butyl Alcohol	2076	100	2000	0	104	42.4	188	1925	7.52	37.7	
tert-Butyl formate	1100	100	2000	0	55	26.3	149	1381	22.7	55.8	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Crawford Environmental Services
Project Name: Vacant Lot (GWS)
Workorder: 1109903

ANALYTICAL QC SUMMARY REPORT

BatchID: 151606

Sample ID: **MB-151606** Client ID:
SampleType: **MBLK** TestCode: **MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011** Units: **ug/L** Prep Date: **09/14/2011** Run No: **205281**
BatchID: **151606** Analysis Date: **09/14/2011** Seq No: **4290775**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,2-Dibromoethane	BRL	0.020	0	0	0	0	0	0	0	0	
Surr: 4-Bromofluorobenzene	5.625	0	5	0	112	66.9	137	0	0	0	

Sample ID: **LCS-151606** Client ID:
SampleType: **LCS** TestCode: **MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011** Units: **ug/L** Prep Date: **09/14/2011** Run No: **205281**
BatchID: **151606** Analysis Date: **09/14/2011** Seq No: **4290776**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,2-Dibromoethane	0.08900	0.020	0.1	0	89	60	140	0	0	0	
Surr: 4-Bromofluorobenzene	5.476	0	5	0	110	66.9	137	0	0	0	

Sample ID: **LCSD-151606** Client ID:
SampleType: **LCSD** TestCode: **MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011** Units: **ug/L** Prep Date: **09/14/2011** Run No: **205281**
BatchID: **151606** Analysis Date: **09/14/2011** Seq No: **4290777**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,2-Dibromoethane	0.09000	0.020	0.1	0	90	60	140	0.08900	1.12	30	
Surr: 4-Bromofluorobenzene	5.495	0	5	0	110	66.9	137	5.476	0	0	

Sample ID: **1109893-014BMS** Client ID:
SampleType: **MS** TestCode: **MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011** Units: **ug/L** Prep Date: **09/14/2011** Run No: **205281**
BatchID: **151606** Analysis Date: **09/15/2011** Seq No: **4290782**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,2-Dibromoethane	0.09299	0.021	0.1045	0	89	59.1	134	0	0	0	
Surr: 4-Bromofluorobenzene	5.120	0	5.224	0	98	66.9	137	0	0	0	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Crawford Environmental Services
Project Name: Vacant Lot (GWS)
Workorder: 1109903

ANALYTICAL QC SUMMARY REPORT

BatchID: 151608

Sample ID: **MB-151608**	Client ID:					Units: **ug/L**		Prep Date: **09/14/2011**		Run No: **205267**
SampleType: **MBLK**	TestCode: **Total Metals by ICP/MS** **SW6020A**					BatchID: **151608**		Analysis Date: **09/15/2011**		Seq No: **4290570**
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit Qual
Lead	BRL	1.00	0	0	0	0	0	0	0	0

Sample ID: **LCS-151608**	Client ID:					Units: **ug/L**		Prep Date: **09/14/2011**		Run No: **205267**
SampleType: **LCS**	TestCode: **Total Metals by ICP/MS** **SW6020A**					BatchID: **151608**		Analysis Date: **09/15/2011**		Seq No: **4290567**
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit Qual
Lead	106.9	1.00	100	0	107	80	120	0	0	0

Sample ID: **1109893-018CMS**	Client ID:					Units: **ug/L**		Prep Date: **09/14/2011**		Run No: **205267**
SampleType: **MS**	TestCode: **Total Metals by ICP/MS** **SW6020A**					BatchID: **151608**		Analysis Date: **09/15/2011**		Seq No: **4290576**
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit Qual
Lead	107.6	1.00	100	0	108	75	125	0	0	0

Sample ID: **1109893-018CMSD**	Client ID:					Units: **ug/L**		Prep Date: **09/14/2011**		Run No: **205267**
SampleType: **MSD**	TestCode: **Total Metals by ICP/MS** **SW6020A**					BatchID: **151608**		Analysis Date: **09/15/2011**		Seq No: **4290579**
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit Qual
Lead	108.4	1.00	100	0	108	75	125	107.6	0.741	20

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Crawford Environmental Services
Project Name: Vacant Lot (GWS)
Workorder: 1109903

ANALYTICAL QC SUMMARY REPORT

BatchID: 151617

Sample ID: **MB-151617** Client ID:
SampleType: **MBLK** TestCode: **MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011**
Units: **ug/L** Prep Date: **09/14/2011** Run No: **205281**
BatchID: **151617** Analysis Date: **09/15/2011** Seq No: **4290807**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,2-Dibromoethane	BRL	0.020	0	0	0	0	0	0	0	0	
Surr: 4-Bromofluorobenzene	5.670	0	5	0	113	66.9	137	0	0	0	

Sample ID: **LCS-151617** Client ID:
SampleType: **LCS** TestCode: **MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011**
Units: **ug/L** Prep Date: **09/14/2011** Run No: **205281**
BatchID: **151617** Analysis Date: **09/15/2011** Seq No: **4290808**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,2-Dibromoethane	0.09200	0.020	0.1	0	92	60	140	0	0	0	
Surr: 4-Bromofluorobenzene	5.544	0	5	0	111	66.9	137	0	0	0	

Sample ID: **LCSD-151617** Client ID:
SampleType: **LCSD** TestCode: **MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011**
Units: **ug/L** Prep Date: **09/14/2011** Run No: **205281**
BatchID: **151617** Analysis Date: **09/15/2011** Seq No: **4290810**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,2-Dibromoethane	0.09000	0.020	0.1	0	90	60	140	0.09200	2.2	30	
Surr: 4-Bromofluorobenzene	5.417	0	5	0	108	66.9	137	5.544	0	0	

Sample ID: **1109903-002BMS** Client ID: **MW-3**
SampleType: **MS** TestCode: **MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011**
Units: **ug/L** Prep Date: **09/14/2011** Run No: **205281**
BatchID: **151617** Analysis Date: **09/15/2011** Seq No: **4290826**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,2-Dibromoethane	0.05364	0.021	0.1032	0	52	59.1	134	0	0	0	S
Surr: 4-Bromofluorobenzene	4.802	0	5.158	0	93.1	66.9	137	0	0	0	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Crawford Environmental Services
Project Name: Vacant Lot (GWS)
Workorder: 1109903

ANALYTICAL QC SUMMARY REPORT

BatchID: 151655

Sample ID: **MB-151655** Client ID:
SampleType: **MBLK** TestCode: **Volatile Organic Compounds by GC/MS SW8260B**
Units: **ug/L** Prep Date: **09/15/2011** Run No: **205195**
BatchID: **151655** Analysis Date: **09/15/2011** Seq No: **4288788**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,2-Dichloroethane	BRL	1.0	0	0	0	0	0	0	0	0	
Benzene	BRL	1.0	0	0	0	0	0	0	0	0	
Ethylbenzene	BRL	1.0	0	0	0	0	0	0	0	0	
Methyl tert-butyl ether	BRL	1.0	0	0	0	0	0	0	0	0	
Naphthalene	BRL	5.0	0	0	0	0	0	0	0	0	
Toluene	BRL	1.0	0	0	0	0	0	0	0	0	
Xylenes, Total	BRL	1.0	0	0	0	0	0	0	0	0	
Surr: 4-Bromofluorobenzene	44.15	0	50	0	88.3	64.7	130	0	0	0	
Surr: Dibromofluoromethane	49.42	0	50	0	98.8	80.7	129	0	0	0	
Surr: Toluene-d8	48.52	0	50	0	97	71.1	120	0	0	0	

Sample ID: **MB-151655** Client ID:
SampleType: **MBLK** TestCode: **Oxygenates (AES SOP OA-11010) SW8260B**
Units: **ug/L** Prep Date: **09/15/2011** Run No: **205195**
BatchID: **151655** Analysis Date: **09/15/2011** Seq No: **4289038**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
3,3-Dimethyl-1-butanol	BRL	100	0	0	0	0	0	0	0	0	
Ethanol	BRL	100	0	0	0	0	0	0	0	0	
Ethyl tert-butyl ether	BRL	100	0	0	0	0	0	0	0	0	
Isopropyl ether	BRL	10	0	0	0	0	0	0	0	0	
tert-Amyl alcohol	BRL	100	0	0	0	0	0	0	0	0	
tert-Amyl methyl ether	BRL	10	0	0	0	0	0	0	0	0	
tert-Butyl Alcohol	BRL	100	0	0	0	0	0	0	0	0	
tert-Butyl formate	BRL	100	0	0	0	0	0	0	0	0	

Sample ID: **LCS-151655** Client ID:
SampleType: **LCS** TestCode: **Volatile Organic Compounds by GC/MS SW8260B**
Units: **ug/L** Prep Date: **09/15/2011** Run No: **205195**
BatchID: **151655** Analysis Date: **09/15/2011** Seq No: **4288783**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Crawford Environmental Services
Project Name: Vacant Lot (GWS)
Workorder: 1109903

ANALYTICAL QC SUMMARY REPORT

BatchID: 151655

Sample ID: **LCS-151655** Client ID:
SampleType: **LCS** TestCode: **Volatile Organic Compounds by GC/MS SW8260B**
Units: **ug/L** Prep Date: **09/15/2011** Run No: **205195**
BatchID: **151655** Analysis Date: **09/15/2011** Seq No: **4288783**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Benzene	45.15	1.0	50	0	90.3	70	130	0	0	0	
Toluene	44.71	1.0	50	0	89.4	70	130	0	0	0	
Surr: 4-Bromofluorobenzene	44.37	0	50	0	88.7	64.7	130	0	0	0	
Surr: Dibromofluoromethane	51.56	0	50	0	103	80.7	129	0	0	0	
Surr: Toluene-d8	46.37	0	50	0	92.7	71.1	120	0	0	0	

Sample ID: **LCS-151655** Client ID:
SampleType: **LCS** TestCode: **Oxygenates (AES SOP OA-11010) SW8260B**
Units: **ug/L** Prep Date: **09/15/2011** Run No: **205195**
BatchID: **151655** Analysis Date: **09/15/2011** Seq No: **4289036**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
3,3-Dimethyl-1-butanol	2316	100	2000	0	116	70	130	0	0	0	
Ethanol	2324	100	2000	0	116	70	130	0	0	0	
Ethyl tert-butyl ether	324.6	100	400	0	81.2	70	130	0	0	0	
Isopropyl ether	306.6	10	400	0	76.7	70	130	0	0	0	
tert-Amyl alcohol	2179	100	2000	0	109	70	130	0	0	0	
tert-Amyl methyl ether	342.0	10	400	0	85.5	70	130	0	0	0	
tert-Butyl Alcohol	1551	100	2000	0	77.5	70	130	0	0	0	
tert-Butyl formate	1618	100	2000	0	80.9	70	130	0	0	0	

Sample ID: **1109903-005AMS** Client ID: **MW-6**
SampleType: **MS** TestCode: **Volatile Organic Compounds by GC/MS SW8260B**
Units: **ug/L** Prep Date: **09/15/2011** Run No: **205195**
BatchID: **151655** Analysis Date: **09/15/2011** Seq No: **4288826**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Benzene	48020	1000	50000	0	96	62.2	143	0	0	0	
Toluene	47440	1000	50000	0	94.9	57.8	149	0	0	0	
Surr: 4-Bromofluorobenzene	45170	0	50000	0	90.3	64.7	130	0	0	0	
Surr: Dibromofluoromethane	53340	0	50000	0	107	80.7	129	0	0	0	
Surr: Toluene-d8	47560	0	50000	0	95.1	71.1	120	0	0	0	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Crawford Environmental Services
Project Name: Vacant Lot (GWS)
Workorder: 1109903

ANALYTICAL QC SUMMARY REPORT

BatchID: 151655

Sample ID: **1109903-005AMS** Client ID: **MW-6** Units: **ug/L** Prep Date: **09/15/2011** Run No: **205195**
SampleType: **MS** TestCode: **Oxygenates (AES SOP OA-11010) SW8260B** BatchID: **151655** Analysis Date: **09/15/2011** Seq No: **4289044**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
3,3-Dimethyl-1-butanol	1199000	100000	1000000	0	120	44.9	165	0	0	0	
Ethanol	948200	100000	1000000	0	94.8	43.4	147	0	0	0	
Ethyl tert-butyl ether	181200	100000	200000	0	90.6	64.1	150	0	0	0	
Isopropyl ether	180800	10000	200000	0	90.4	59.6	152	0	0	0	
tert-Amyl alcohol	1124000	100000	1000000	0	112	44.6	163	0	0	0	
tert-Amyl methyl ether	188500	10000	200000	0	94.3	68.2	144	0	0	0	
tert-Butyl Alcohol	833400	100000	1000000	0	83.3	42.4	188	0	0	0	
tert-Butyl formate	888400	100000	1000000	0	88.8	26.3	149	0	0	0	

Sample ID: **1109903-005AMSD** Client ID: **MW-6** Units: **ug/L** Prep Date: **09/15/2011** Run No: **205195**
SampleType: **MSD** TestCode: **Volatile Organic Compounds by GC/MS SW8260B** BatchID: **151655** Analysis Date: **09/15/2011** Seq No: **4288829**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Benzene	45920	1000	50000	0	91.8	62.2	143	48020	4.47	20	
Toluene	45140	1000	50000	0	90.3	57.8	149	47440	4.97	20	
Surr: 4-Bromofluorobenzene	46050	0	50000	0	92.1	64.7	130	45170	0	0	
Surr: Dibromofluoromethane	52510	0	50000	0	105	80.7	129	53340	0	0	
Surr: Toluene-d8	46400	0	50000	0	92.8	71.1	120	47560	0	0	

Sample ID: **1109903-005AMSD** Client ID: **MW-6** Units: **ug/L** Prep Date: **09/15/2011** Run No: **205195**
SampleType: **MSD** TestCode: **Oxygenates (AES SOP OA-11010) SW8260B** BatchID: **151655** Analysis Date: **09/15/2011** Seq No: **4289061**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
3,3-Dimethyl-1-butanol	1130000	100000	1000000	0	113	44.9	165	1199000	5.96	19.5	
Ethanol	975600	100000	1000000	0	97.6	43.4	147	948200	2.84	35.6	
Ethyl tert-butyl ether	167900	100000	200000	0	84	64.1	150	181200	7.61	17.2	
Isopropyl ether	166500	10000	200000	0	83.2	59.6	152	180800	8.25	17.6	
tert-Amyl alcohol	1046000	100000	1000000	0	105	44.6	163	1124000	7.21	22.2	

Qualifiers:

- `>` Greater than Result value
- `<` Less than Result value
- B Analyte detected in the associated method blank
- BRL Below reporting limit
- E Estimated (value above quantitation range)
- H Holding times for preparation or analysis exceeded
- J Estimated value detected below Reporting Limit
- N Analyte not NELAC certified
- R RPD outside limits due to matrix
- Rpt Lim Reporting Limit
- S Spike Recovery outside limits due to matrix

Client: Crawford Environmental Services
Project Name: Vacant Lot (GWS)
Workorder: 1109903

ANALYTICAL QC SUMMARY REPORT

BatchID: 151655

Sample ID: **1109903-005AMSD** Client ID: **MW-6** Units: **ug/L** Prep Date: **09/15/2011** Run No: **205195**
SampleType: **MSD** TestCode: **Oxygenates (AES SOP OA-11010) SW8260B** BatchID: **151655** Analysis Date: **09/15/2011** Seq No: **4289061**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
tert-Amyl methyl ether	174700	10000	200000	0	87.4	68.2	144	188500	7.6	16.6	
tert-Butyl Alcohol	808800	100000	1000000	0	80.9	42.4	188	833400	3	37.7	
tert-Butyl formate	789100	100000	1000000	0	78.9	26.3	149	888400	11.8	55.8	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Crawford Environmental Services
Project Name: Vacant Lot (GWS)
Workorder: 1109903

ANALYTICAL QC SUMMARY REPORT

BatchID: 151685

Sample ID: **MB-151685**	Client ID:					Units: **ug/L**		Prep Date: **09/16/2011**		Run No: **205354**	
SampleType: **MBLK**	TestCode: **Total Metals by ICP/MS SW6020A**					BatchID: **151685**		Analysis Date: **09/16/2011**		Seq No: **4292374**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Lead	BRL	1.00	0	0	0	0	0	0	0	0	

Sample ID: **LCS-151685**	Client ID:					Units: **ug/L**		Prep Date: **09/16/2011**		Run No: **205354**	
SampleType: **LCS**	TestCode: **Total Metals by ICP/MS SW6020A**					BatchID: **151685**		Analysis Date: **09/16/2011**		Seq No: **4292372**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Lead	103.3	1.00	100	0	103	80	120	0	0	0	

Sample ID: **1109922-001CMS**	Client ID:					Units: **ug/L**		Prep Date: **09/16/2011**		Run No: **205354**	
SampleType: **MS**	TestCode: **Total Metals by ICP/MS SW6020A**					BatchID: **151685**		Analysis Date: **09/16/2011**		Seq No: **4292377**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Lead	105.8	1.00	100	2.353	103	75	125	0	0	0	

Sample ID: **1109922-001CMSD**	Client ID:					Units: **ug/L**		Prep Date: **09/16/2011**		Run No: **205354**	
SampleType: **MSD**	TestCode: **Total Metals by ICP/MS SW6020A**					BatchID: **151685**		Analysis Date: **09/16/2011**		Seq No: **4292379**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Lead	105.2	1.00	100	2.353	103	75	125	105.8	0.569	20	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Crawford Environmental Services
Project Name: Vacant Lot (GWS)
Workorder: 1109903

ANALYTICAL QC SUMMARY REPORT

BatchID: 151705

Sample ID: **MB-151705** Client ID:
SampleType: **MBLK** TestCode: **Volatile Organic Compounds by GC/MS SW8260B**
Units: **ug/L** Prep Date: **09/16/2011** Run No: **205303**
BatchID: **151705** Analysis Date: **09/16/2011** Seq No: **4291208**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,2-Dichloroethane	BRL	1.0	0	0	0	0	0	0	0	0	
Benzene	BRL	1.0	0	0	0	0	0	0	0	0	
Ethylbenzene	BRL	1.0	0	0	0	0	0	0	0	0	
Methyl tert-butyl ether	BRL	1.0	0	0	0	0	0	0	0	0	
Naphthalene	BRL	5.0	0	0	0	0	0	0	0	0	
Toluene	BRL	1.0	0	0	0	0	0	0	0	0	
Xylenes, Total	BRL	1.0	0	0	0	0	0	0	0	0	
Surr: 4-Bromofluorobenzene	44.07	0	50	0	88.1	64.7	130	0	0	0	
Surr: Dibromofluoromethane	47.94	0	50	0	95.9	80.7	129	0	0	0	
Surr: Toluene-d8	46.90	0	50	0	93.8	71.1	120	0	0	0	

Sample ID: **MB-151705** Client ID:
SampleType: **MBLK** TestCode: **Oxygenates (AES SOP OA-11010) SW8260B**
Units: **ug/L** Prep Date: **09/16/2011** Run No: **205303**
BatchID: **151705** Analysis Date: **09/16/2011** Seq No: **4291361**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
3,3-Dimethyl-1-butanol	BRL	100	0	0	0	0	0	0	0	0	
Ethanol	BRL	100	0	0	0	0	0	0	0	0	
Ethyl tert-butyl ether	BRL	100	0	0	0	0	0	0	0	0	
Isopropyl ether	BRL	10	0	0	0	0	0	0	0	0	
tert-Amyl alcohol	BRL	100	0	0	0	0	0	0	0	0	
tert-Amyl methyl ether	BRL	10	0	0	0	0	0	0	0	0	
tert-Butyl Alcohol	BRL	100	0	0	0	0	0	0	0	0	
tert-Butyl formate	BRL	100	0	0	0	0	0	0	0	0	

Sample ID: **LCS-151705** Client ID:
SampleType: **LCS** TestCode: **Volatile Organic Compounds by GC/MS SW8260B**
Units: **ug/L** Prep Date: **09/16/2011** Run No: **205303**
BatchID: **151705** Analysis Date: **09/16/2011** Seq No: **4291207**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Crawford Environmental Services
Project Name: Vacant Lot (GWS)
Workorder: 1109903

ANALYTICAL QC SUMMARY REPORT

BatchID: 151705

Sample ID: **LCS-151705** Client ID:
SampleType: **LCS** TestCode: **Volatile Organic Compounds by GC/MS SW8260B**
Units: **ug/L** Prep Date: **09/16/2011** Run No: **205303**
BatchID: **151705** Analysis Date: **09/16/2011** Seq No: **4291207**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Benzene	44.09	1.0	50	0	88.2	70	130	0	0	0	
Toluene	44.30	1.0	50	0	88.6	70	130	0	0	0	
Surr: 4-Bromofluorobenzene	45.23	0	50	0	90.5	64.7	130	0	0	0	
Surr: Dibromofluoromethane	50.48	0	50	0	101	80.7	129	0	0	0	
Surr: Toluene-d8	45.66	0	50	0	91.3	71.1	120	0	0	0	

Sample ID: **LCS-151705** Client ID:
SampleType: **LCS** TestCode: **Oxygenates (AES SOP OA-11010) SW8260B**
Units: **ug/L** Prep Date: **09/16/2011** Run No: **205303**
BatchID: **151705** Analysis Date: **09/16/2011** Seq No: **4291359**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
3,3-Dimethyl-1-butanol	1279	100	1000	0	128	70	130	0	0	0	
Ethanol	802.9	100	1000	0	80.3	70	130	0	0	0	
Ethyl tert-butyl ether	189.8	100	200	0	94.9	70	130	0	0	0	
Isopropyl ether	181.8	10	200	0	90.9	70	130	0	0	0	
tert-Amyl alcohol	1185	100	1000	0	118	70	130	0	0	0	
tert-Amyl methyl ether	197.4	10	200	0	98.7	70	130	0	0	0	
tert-Butyl Alcohol	962.1	100	1000	0	96.2	70	130	0	0	0	
tert-Butyl formate	735.2	100	1000	0	73.5	70	130	0	0	0	

Sample ID: **1109899-008AMS** Client ID:
SampleType: **MS** TestCode: **Volatile Organic Compounds by GC/MS SW8260B**
Units: **ug/L** Prep Date: **09/16/2011** Run No: **205303**
BatchID: **151705** Analysis Date: **09/16/2011** Seq No: **4291268**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Benzene	43.63	1.0	50	0	87.3	62.2	143	0	0	0	
Toluene	44.28	1.0	50	0.7300	87.1	57.8	149	0	0	0	
Surr: 4-Bromofluorobenzene	45.05	0	50	0	90.1	64.7	130	0	0	0	
Surr: Dibromofluoromethane	50.23	0	50	0	100	80.7	129	0	0	0	
Surr: Toluene-d8	45.86	0	50	0	91.7	71.1	120	0	0	0	

Qualifiers:

- `>` Greater than Result value
- `<` Less than Result value
- B Analyte detected in the associated method blank
- BRL Below reporting limit
- E Estimated (value above quantitation range)
- H Holding times for preparation or analysis exceeded
- J Estimated value detected below Reporting Limit
- N Analyte not NELAC certified
- R RPD outside limits due to matrix
- Rpt Lim Reporting Limit
- S Spike Recovery outside limits due to matrix

Client: Crawford Environmental Services
Project Name: Vacant Lot (GWS)
Workorder: 1109903

ANALYTICAL QC SUMMARY REPORT

BatchID: 151705

Sample ID: **1109899-008AMS** Client ID:
SampleType: **MS** TestCode: **Oxygenates (AES SOP OA-11010) SW8260B**
Units: **ug/L** Prep Date: **09/16/2011** Run No: **205303**
BatchID: **151705** Analysis Date: **09/16/2011** Seq No: **4291393**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
3,3-Dimethyl-1-butanol	1336	100	1000	0	134	44.9	165	0	0	0	
Ethanol	1658	100	1000	0	166	43.4	147	0	0	0	S
Ethyl tert-butyl ether	178.4	100	200	0	89.2	64.1	150	0	0	0	
Isopropyl ether	179.9	10	200	0	89.9	59.6	152	0	0	0	
tert-Amyl alcohol	1141	100	1000	0	114	44.6	163	0	0	0	
tert-Amyl methyl ether	187.0	10	200	0	93.5	68.2	144	0	0	0	
tert-Butyl Alcohol	966.2	100	1000	0	96.6	42.4	188	0	0	0	
tert-Butyl formate	694.8	100	1000	0	69.5	26.3	149	0	0	0	

Sample ID: **1109903-018AMS** Client ID: **DW-3**
SampleType: **MS** TestCode: **Oxygenates (AES SOP OA-11010) SW8260B**
Units: **ug/L** Prep Date: **09/16/2011** Run No: **205303**
BatchID: **151705** Analysis Date: **09/16/2011** Seq No: **4300391**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
3,3-Dimethyl-1-butanol	1336	100	1000	0	134	44.9	165	0	0	0	
Ethanol	1658	100	1000	0	166	43.4	147	0	0	0	S
Ethyl tert-butyl ether	178.4	100	200	0	89.2	64.1	150	0	0	0	
Isopropyl ether	179.9	10	200	0	89.9	59.6	152	0	0	0	
tert-Amyl alcohol	1141	100	1000	0	114	44.6	163	0	0	0	
tert-Amyl methyl ether	187.0	10	200	0	93.5	68.2	144	0	0	0	
tert-Butyl Alcohol	966.2	100	1000	0	96.6	42.4	188	0	0	0	
tert-Butyl formate	694.8	100	1000	0	69.5	26.3	149	0	0	0	

Sample ID: **1109903-018AMS** Client ID: **DW-3**
SampleType: **MS** TestCode: **Volatile Organic Compounds by GC/MS SW8260B**
Units: **ug/L** Prep Date: **09/16/2011** Run No: **205303**
BatchID: **151705** Analysis Date: **09/16/2011** Seq No: **4300445**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Benzene	43.63	1.0	50	0	87.3	62.2	143	0	0	0	
Toluene	44.28	1.0	50	0.7300	87.1	57.8	149	0	0	0	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Crawford Environmental Services
Project Name: Vacant Lot (GWS)
Workorder: 1109903

ANALYTICAL QC SUMMARY REPORT

BatchID: 151705

Sample ID: **1109903-018AMS**	Client ID: **DW-3**				Units: **ug/L**		Prep Date: **09/16/2011**		Run No: **205303**	
SampleType: **MS**	TestCode: **Volatile Organic Compounds by GC/MS SW8260B**				BatchID: **151705**		Analysis Date: **09/16/2011**		Seq No: **4300445**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Surr: 4-Bromofluorobenzene	45.05	0	50	0	90.1	64.7	130	0	0	0	
Surr: Dibromofluoromethane	50.23	0	50	0	100	80.7	129	0	0	0	
Surr: Toluene-d8	45.86	0	50	0	91.7	71.1	120	0	0	0	

Sample ID: **1109899-008AMSD**	Client ID:				Units: **ug/L**		Prep Date: **09/16/2011**		Run No: **205303**	
SampleType: **MSD**	TestCode: **Volatile Organic Compounds by GC/MS SW8260B**				BatchID: **151705**		Analysis Date: **09/16/2011**		Seq No: **4291301**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Benzene	42.86	1.0	50	0	85.7	62.2	143	43.63	1.78	20	
Toluene	42.62	1.0	50	0.7300	83.8	57.8	149	44.28	3.82	20	
Surr: 4-Bromofluorobenzene	45.90	0	50	0	91.8	64.7	130	45.05	0	0	
Surr: Dibromofluoromethane	52.20	0	50	0	104	80.7	129	50.23	0	0	
Surr: Toluene-d8	45.98	0	50	0	92	71.1	120	45.86	0	0	

Sample ID: **1109899-008AMSD**	Client ID:				Units: **ug/L**		Prep Date: **09/16/2011**		Run No: **205303**	
SampleType: **MSD**	TestCode: **Oxygenates (AES SOP OA-11010) SW8260B**				BatchID: **151705**		Analysis Date: **09/16/2011**		Seq No: **4291394**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
3,3-Dimethyl-1-butanol	1326	100	1000	0	133	44.9	165	1336	0.716	19.5	
Ethanol	1853	100	1000	0	185	43.4	147	1658	11.1	35.6	S
Ethyl tert-butyl ether	179.8	100	200	0	89.9	64.1	150	178.4	0.731	17.2	
Isopropyl ether	178.1	10	200	0	89.1	59.6	152	179.9	0.994	17.6	
tert-Amyl alcohol	1174	100	1000	0	117	44.6	163	1141	2.8	22.2	
tert-Amyl methyl ether	185.7	10	200	0	92.8	68.2	144	187.0	0.735	16.6	
tert-Butyl Alcohol	991.1	100	1000	0	99.1	42.4	188	966.2	2.55	37.7	
tert-Butyl formate	687.3	100	1000	0	68.7	26.3	149	694.8	1.09	55.8	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Crawford Environmental Services
Project Name: Vacant Lot (GWS)
Workorder: 1109903

ANALYTICAL QC SUMMARY REPORT

BatchID: 151705

Sample ID: **1109903-018AMSD** Client ID: **DW-3** Units: **ug/L** Prep Date: **09/16/2011** Run No: **205303**
SampleType: **MSD** TestCode: **Oxygenates (AES SOP OA-11010) SW8260B** BatchID: **151705** Analysis Date: **09/16/2011** Seq No: **4300393**

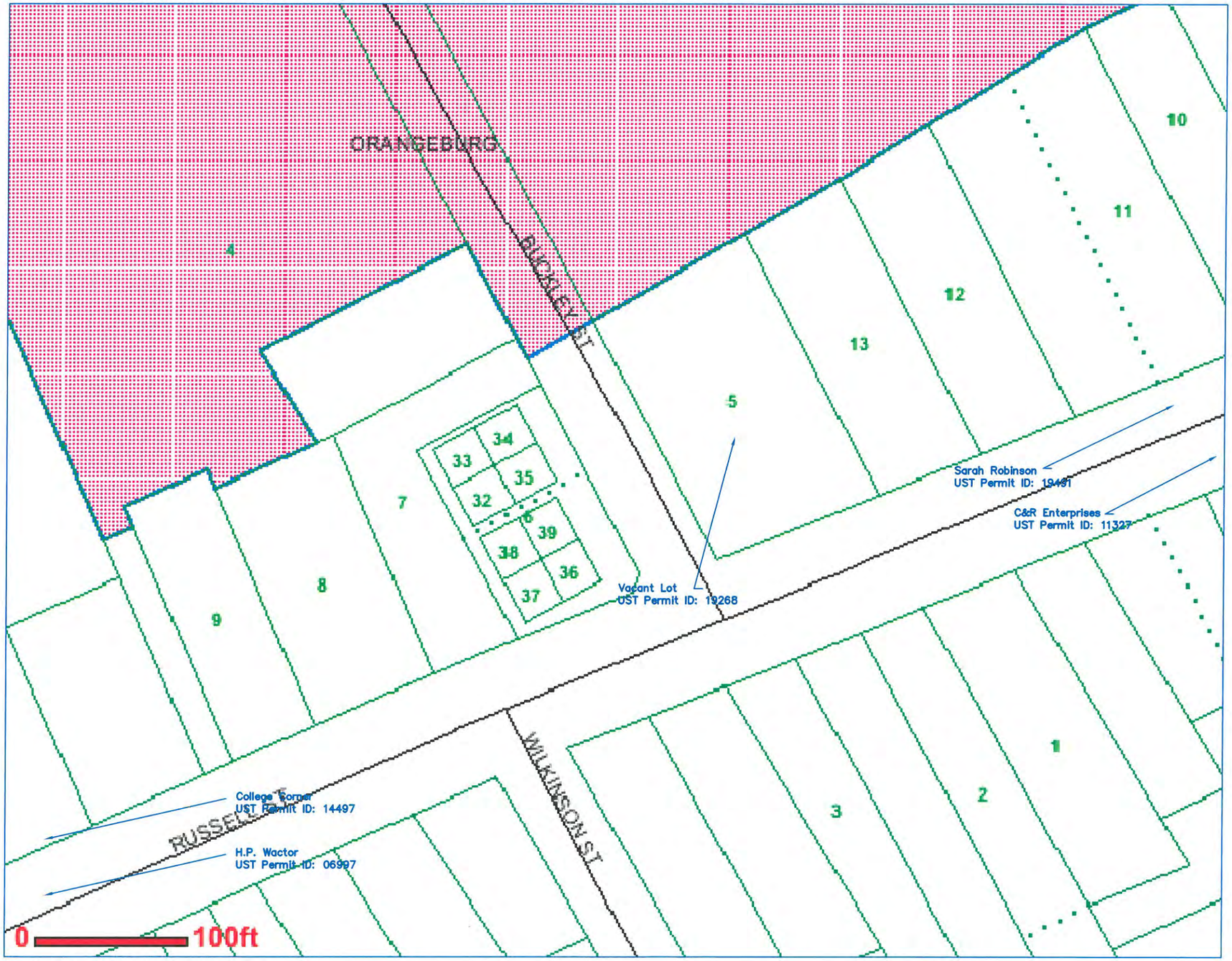
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
3,3-Dimethyl-1-butanol	1326	100	1000	0	133	44.9	165	1336	0.716	19.5	
Ethanol	1853	100	1000	0	185	43.4	147	1658	11.1	35.6	S
Ethyl tert-butyl ether	179.8	100	200	0	89.9	64.1	150	178.4	0.731	17.2	
Isopropyl ether	178.1	10	200	0	89.1	59.6	152	179.9	0.994	17.6	
tert-Amyl alcohol	1174	100	1000	0	117	44.6	163	1141	2.8	22.2	
tert-Amyl methyl ether	185.7	10	200	0	92.8	68.2	144	187.0	0.735	16.6	
tert-Butyl Alcohol	991.1	100	1000	0	99.1	42.4	188	966.2	2.55	37.7	
tert-Butyl formate	687.3	100	1000	0	68.7	26.3	149	694.8	1.09	55.8	

Sample ID: **1109903-018AMSD** Client ID: **DW-3** Units: **ug/L** Prep Date: **09/16/2011** Run No: **205303**
SampleType: **MSD** TestCode: **Volatile Organic Compounds by GC/MS SW8260B** BatchID: **151705** Analysis Date: **09/16/2011** Seq No: **4300447**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Benzene	42.86	1.0	50	0	85.7	62.2	143	43.63	1.78	20	
Toluene	42.62	1.0	50	0.7300	83.8	57.8	149	44.28	3.82	20	
Surr: 4-Bromofluorobenzene	45.90	0	50	0	91.8	64.7	130	45.05	0	0	
Surr: Dibromofluoromethane	52.20	0	50	0	104	80.7	129	50.23	0	0	
Surr: Toluene-d8	45.98	0	50	0	92	71.1	120	45.86	0	0	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		



GRAPHIC SCALE

0 25 50 100

(In Feet)
As Shown

MAG- DATE

Note: Diagram based Orangeburg County Tax records and CES Field Notes

LEGEND				REV	BY	DATE

DR: JSR
CK: HDO
SCALE: AS SHOWN
CES PROJ. NO. 15.070

Tier II Environmental Assessment

CRAWFORD ENVIRONMENTAL SERVICES
104 Corporate Blvd.
Suite 412
West Columbia, SC 29210
803-708-0079 (ph)
803-708-8137 (Fax)

FIGURE TITLE

Tax Map
Vacant Lot
2309 Russell Street
Orangeburg, SC 29115
Site ID: 19268

DRAWING NUMBER

REV 0
9.23.2011

Appendix C			
Facility Name:	Vacant Lot	UST Permit ID:	19268
Address:	2309 Russell Street Orangeburg, SC 29115	CES Project Number:	15.07

Local UST, AST, Dry Cleaning Facilities

Permit ID:	Name	Address	City	Owner	Notes
19491	Sarah Robinson	2437 Russell Street	Orangeburg	JJ&J Enterprises	No release
11327	C&R Enterprises	2387 Russell Street	Orangeburg	C&R Enterprises	Class 5B
14497	College Corner	1186 Magnolia Street	Orangeburg	Willie Jennings	Class 1C
6997	H.P. Wactor	Dorchester and Russell St.	Orangeburg	Wilkerson Fuel Co.	No release

Local information based on SCDHEC UST registry

CRAWFORD ENVIRONMENTAL SERVICES

Facility Name:	Vacant Lot	UST Permit ID:	19268
Address:	2309 Russell Street Orangeburg, SC 29115	CES Project Number:	15.07

Tax Map Reference

Tax Map Number	Owner	Mailing Address	City	State	Zip Code	Phone Number	Monitoring Well Permission	Notes
0173-11-04-005	Wright, Bernie Lee	P.O. Box 275	Orangeburg	SC	29115	803-378-7071	Yes	
	MW-1, MW-2 ,MW-3, MW-4, MW-15, DW-1							
0173-11-10-006	Delano, Scott H	717 Partridge Road	Orangeburg	SC	29118	803-347-7085	Yes	
	MW-10, MW-11, MW-12							
0173-11-10-007	Bethea, Robert	1219 Russell Street NE	Orangeburg	SC	29118	803-378-6347	Yes	
	MW-16, MW-7							
192-04-05-001	SC State University	300 College Ave	Orangeburg	SC	29115	803-536-7000	Yes	
	MW-8, MW-9, MW-14, DW-2							
0173-12-18-013	Abraham, James C	2721 Russell St	Orangeburg	SC	29115	803-534-5039	Yes	
	MW-5, MW-6, MW-13, DW-3							
0173-11-08-001	Estate of Frost Wilkinson	2272 Russell St	Orangeburg	SC	29115	n/a	No	
0173-11-08-002	Thomas, Veronica	P.O. Box 1099	Santee	SC	29142	n/a	No	
0173-11-08-003	Thomasson, Carmen	2280 Russell St SE	Orangeburg	SC	29115	n/a	No	
0173-11-08-004	Thomasson, Carmen	2280 Russell St SE	Orangeburg	SC	29115	n/a	No	
0173-16-02-002	Sulton, Ruby	P.O. Box 146	Linecroft	NJ	7738	n/a	No	

CRAWFORD ENVIRONMENTAL SERVICES

DDW= Drinking Water Well
NIU- Not in use
UNK= Unknown
P = Public
p = private

APPENDIX D

Soil Boring, Field Screening and Monitoring Well Geologist Logs

CRAWFORD
ENVIRONMENTAL
SERVICES

Boring ID: GW-10/MW-5	Vacant Lot	CRAWFORD ENVIRONMENTAL SERVICES	*Boring Log*
CES Project Number: 15.07			
Date Started 8/26/2011	2309 Russell Street, Orangeburg, SC		
Date Completed 8/26/2011			
Drilled by: B. Ewing	**PERMIT ID: 19268**		

Depth (feet)	Sample Depth (feet)	PID (ppm)	Water Table (shaded)	Geologic Description	Depth (feet)	Well Diagram
1				Brown silty fine SAND	1	2" PVC Casing / Grout / Seal
2					2	
3		0.0		Gray to tan clayey fine SAND	3	2" PVC Screen, 10 ft / Filter Pack
4					4	
5					5	
6					6	
7					7	
8		0.0	GW @ 8ft		8	
9					9	
10				Red to orange fine sandy CLAY	10	
11					11	
12				Total Drilled Depth @ 12 ft bls	12	
13					13	
14					14	
15					15	
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DRY, No Odor

Moist, No Odor

Boring ID:	GW-11/MW-6	Vacant Lot	CRAWFORD ENVIRONMENTAL SERVICES
CES Project Number:	15.07		
Date Started	8/26/2011	2309 Russell Street, Orangeburg, SC	*Boring Log*
Date Completed	8/26/2011		
Drilled by:	B. Ewing	PERMIT ID: 19268	

Depth (feet)	Sample Depth (feet)	PID (ppm)	Water Table (shaded)	Geologic Description	Depth (feet)
1				Black silty fine SAND	1
2					2
3		0.0		Gray clayey fine SAND	3
4					4
5				Gray to tan clayey fine SAND	5
6					6
7					7
8		0.5	GW @ 8ft	Red to orange fine sandy CLAY	8
9					9
10					10
11					11
12				Total Drilled Depth @ 12 ft bls	12
13					13
14					14
15					15
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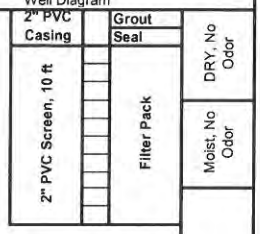
Well Diagram



DRY, No Odor

Moist, No Odor

Boring ID:	GW-12/MW-7	Vacant Lot	CRAWFORD ENVIRONMENTAL SERVICES
CES Project Number:	15.07		
Date Started	8/26/2011	2309 Russell Street, Orangeburg, SC	*Boring Log*
Date Completed	8/26/2011		
Drilled by:	B. Ewing	**PERMIT ID: 19268**	

Depth (feet)	Sample Depth (feet)	PID (ppm)	Water Table (shaded)	Geologic Description	Depth (feet)
1				Gray to tan silty fine SAND	1
2					2
3		0.0		Gray clayey fine SAND	3
4					4
5				Gray fine sandy CLAY	5
6			GW @ 6ft		6
7					7
8		0.0			8
9					9
10				Tan fine sandy CLAY	10
11					11
12				Total Drilled Depth @ 12 ft bls	12
13					13
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15					15
16					16
17					17
18					18
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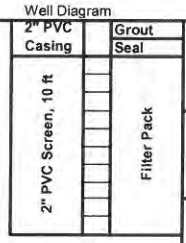
Well Diagram



Boring ID:	GW-13/MW-8	**Vacant Lot**	**CRAWFORD ENVIRONMENTAL SERVICES**
CES Project Number:	15.07		
Date Started	8/26/2011	**2309 Russell Street, Orangeburg, SC**	***Boring Log***
Date Completed	8/26/2011		
Drilled by:	B. Ewing	**PERMIT ID: 19268**	

Depth (feet)	Sample Depth (feet)	PID (ppm)	Water Table (shaded)	Geologic Description	Depth (feet)
1				Brown clayey fine SAND	1
2					2
3		0.0			3
4					4
5				Tan silty fine SAND	5
6					6
7					7
8		0.5	GW @ 8ft	Gray silty fine SAND	8
9					9
10				Gray clayey fine SAND	10
11					11
12				Total Drilled Depth @ 12 ft bls	12
13					13
14					14
15					15
16					16
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18					18
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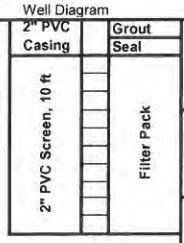
Well Diagram



DRY, No Odor

Moist, No Odor

Boring ID:	GW-14/MW-9	**Vacant Lot**	**CRAWFORD ENVIRONMENTAL SERVICES**
CES Project Number:	15.07		
Date Started	8/26/2011	**2309 Russell Street, Orangeburg, SC**	*Boring Log*
Date Completed	8/26/2011		
Drilled by:	B. Ewing	**PERMIT ID: 19268**	

Depth (feet)	Sample Depth (feet)	PID (ppm)	Water Table (shaded)	Geologic Description	Depth (feet)
1				Brown silty fine SAND	1
2					2
3		0.0			3
4					4
5				Tan silty fine SAND	5
6			GW @ 6ft		6
7					7
8		0.0			8
9					9
10				Gray to orange fine sandy CLAY	10
11					11
12				Total Drilled Depth @ 12 ft bls	12
13					13
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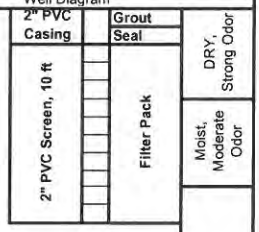
Well Diagram



DRY, Strong Odor

Moist, Moderate Odor

Boring ID:	GW-16/MW-10	Vacant Lot	CRAWFORD ENVIRONMENTAL SERVICES
CES Project Number:	15.07		
Date Started	8/26/2011	2309 Russell Street, Orangeburg, SC	*Boring Log*
Date Completed	8/26/2011		
Drilled by:	B. Ewing	PERMIT ID: 19268	

Depth (feet)	Sample Depth (feet)	PID (ppm)	Water Table (shaded)	Geologic Description	Depth (feet)
1				Tan to gray clayey fine SAND	1
2					2
3		9.7			3
4					4
5				Gray clayey fine SAND	5
6			GW @ 6ft		6
7					7
8		11.7		Orange fine sandy CLAY	8
9					9
10				Tan to orange fine sandy CLAY	10
11					11
12				Total Drilled Depth @ 12 ft bls	12
13					13
14					14
15					15
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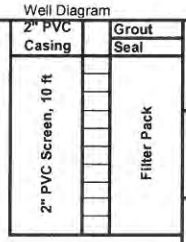
Well Diagram



DRY, Strong Odor

Moist, Moderate Odor

Boring ID: GW-15/MW-11	**Vacant Lot**	**CRAWFORD ENVIRONMENTAL SERVICES**	***Boring Log***
CES Project Number: 15.07			
Date Started 8/26/2011	**2309 Russell Street, Orangeburg, SC**		
Date Completed 8/26/2011			
Drilled by: B. Ewing	**PERMIT ID: 19268**		

Depth (feet)	Sample Depth (feet)	PID (ppm)	Water Table (shaded)	Geologic Description	Depth (feet)
1				Tan fine sandy CLAY	1
2					2
3		0.0			3
4					4
5				Gray fine sandy CLAY	5
6			GW @ 6ft		6
7					7
8		0.0		Tan to red clayey fine SAND	8
9					9
10				Red clayey fine SAND	10
11					11
12				Total Drilled Depth @ 12 ft bls	12
13					13
14					14
15					15
16					16
17					17
18					18
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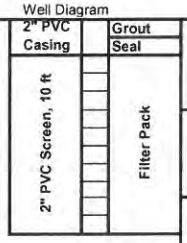
Well Diagram



DRY, No Odor

Moist, No Odor

Boring ID:	GW-17/MW-12	Vacant Lot	CRAWFORD ENVIRONMENTAL SERVICES
CES Project Number:	15.07		
Date Started	8/26/2011	2309 Russell Street, Orangeburg, SC	*Boring Log*
Date Completed	8/26/2011		
Drilled by:	B. Ewing	PERMIT ID: 19268	

Depth (feet)	Sample Depth (feet)	PID (ppm)	Water Table (shaded)	Geologic Description	Depth (feet)
1				Brown silty fine SAND	1
2					2
3		0.0		Tan to orange silty fine SAND	3
4					4
5				Gray to orange silty fine SAND	5
6			GW @ 6ft		6
7					7
8		0.0		Orange fine sandy CLAY	8
9					9
10				Red to orange fine sandy CLAY	10
11					11
12				Total Drilled Depth @ 12 ft bls	12
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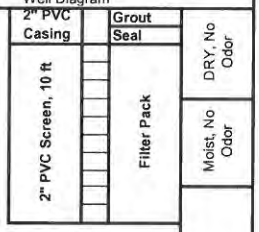
Well Diagram



Boring ID: MW-13	**Vacant Lot**	**CRAWFORD ENVIRONMENTAL SERVICES**	***Boring Log***
CES Project Number: 15.07			
Date Started 9/10/2011	**2309 Russell Street, Orangeburg, SC**		
Date Completed 9/10/2011			
Drilled by: T. Allred	**PERMIT ID: 19268**		

Depth (feet)	Sample Depth (feet)	PID (ppm)	Water Table (shaded)	Geologic Description	Depth (feet)
1				Gray silty fine SAND	1
2					2
3		0.3		Brown to orange clayey fine SAND	3
4					4
5					5
6					6
7		0.2			7
8			GW @ 8ft	Orange silty CLAY	8
9					9
10					10
11					11
12				Total Drilled Depth @ 12 ft bls	12
13					13
14					14
15					15
16					16
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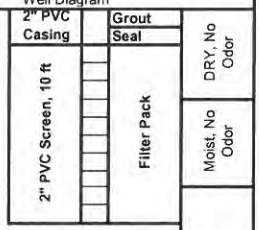
Well Diagram



Boring ID: MW-14	Vacant Lot	CRAWFORD ENVIRONMENTAL SERVICES	*Boring Log*
CES Project Number: 15.07			
Date Started 9/10/2011	2309 Russell Street, Orangeburg, SC		
Date Completed 9/10/2011			
Drilled by: T. Allred	**PERMIT ID: 19268**		

Depth (feet)	Sample Depth (feet)	PID (ppm)	Water Table (shaded)	Geologic Description	Depth (feet)
1				Brown clayey fine SAND	1
2					2
3		0.2			3
4					4
5				Orange to gray sandy CLAY	5
6					6
7					7
8		0.4	GW @ 8ft		8
9					9
10				Gray sandyClay to clayey SAND	10
11					11
12				Total Drilled Depth @ 12 ft bls	12
13					13
14					14
15					15
16					16
17					17
18					18
19					19
20					20
21					21
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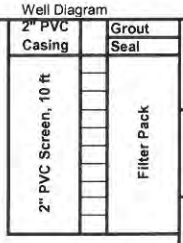
Well Diagram



DRY, No Odor

Moist, No Odor

Boring ID: MW-15	Vacant Lot	CRAWFORD ENVIRONMENTAL SERVICES	*Boring Log*
CES Project Number: 15.07			
Date Started 9/10/2011	2309 Russell Street, Orangeburg, SC		
Date Completed 9/10/2011			
Drilled by: T. Allred	PERMIT ID: 19268		

Depth (feet)	Sample Depth (feet)	PID (ppm)	Water Table (shaded)	Geologic Description	Depth (feet)
1				Brown silty fine SAND	1
2					2
3		2.4			3
4					4
5				Dark gray silty CLAY	5
6					6
7					7
8		3.6	GW @ 8ft		8
9					9
10				Dark gray fine sandy Clay	10
11					11
12				Total Drilled Depth @ 12 ft bls	12
13					13
14					14
15					15
16					16
17					17
18					18
19					19
20					20
21					21
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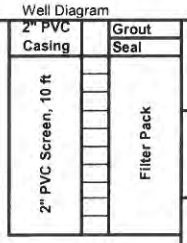
Well Diagram



DRY, Slight Odor

Moist, Moderate Odor

Boring ID: MW-16	Vacant Lot	CRAWFORD ENVIRONMENTAL SERVICES	*Boring Log*
CES Project Number: 15.07			
Date Started 9/10/2011	2309 Russell Street, Orangeburg, SC		
Date Completed 9/10/2011			
Drilled by: T. Allred	**PERMIT ID: 19268**		

Depth (feet)	Sample Depth (feet)	PID (ppm)	Water Table (shaded)	Geologic Description	Depth (feet)
1				Brown silty fine SAND	1
2					2
3		0.8			3
4					4
5				Gray sandy CLAY	5
6					6
7					7
8		0.4	GW @ 8 ft	Red sandy Clay	8
9					9
10				Orange fine sandy Clay	10
11					11
12				Total Drilled Depth @ 12 ft bls	12
13					13
14					14
15					15
16					16
17					17
18					18
19					19
20					20
21					21
22					22
23					23
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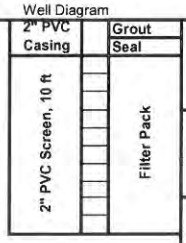
Well Diagram



DRY, Slight Odor

Moist, No Odor

Boring ID: DW-1	**Vacant Lot**	**CRAWFORD ENVIRONMENTAL SERVICES**	*Boring Log*
CES Project Number: 15.07			
Date Started 8/26/2011	**2309 Russell Street, Orangeburg, SC**		
Date Completed 8/29/2011			
Drilled by: J. Register/B. Ewing	**PERMIT ID: 19268**		

Depth (feet)	Sample Depth (feet)	PID (ppm)	Water Table (shaded)	Geologic Description	Depth (feet)
1				Brown silty fine SAND	1
2					2
3		183.0		Black silty fine SAND	3
4					4
5				Gray fine sandy CLAY	5
6					6
7					7
8		156.0	GW @ 8ft		8
9					9
10				Tan to gray fine sandy Clay	10
11					11
12					12
13		93.0			13
14					14
15				Light tan fine sandy CLAY	15
16					16
17					17
18		0.0			18
19					19
20				Tan to orange fine sandy CLAY	20
21					21
22					22
23		0.0			23
24					24
25					25
26					26
27					27
28		0.0			28
29					29
30					30
31					31
32					32
33		0.0			33
34					34
35					35
36					36
37					37
38		0.0			38
39					39
40				Total Drilled Depth @ 40 ft bls	40
41					41
42					42
43					43
44					44
45					45
46					46
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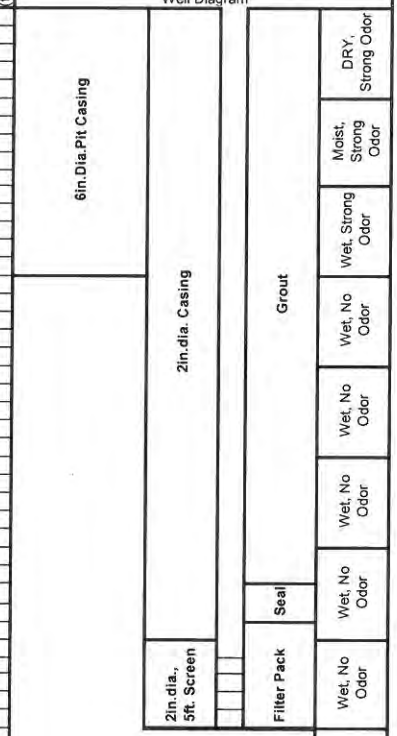
Well Diagram



Boring ID:	DW-2	Vacant Lot	CRAWFORD ENVIRONMENTAL SERVICES
CES Project Number:	15.07		
Date Started	8/26/2011	2309 Russell Street, Orangeburg, SC	*Boring Log*
Date Completed	8/29/2011		
Drilled by:	J. Register/B. Ewing	**PERMIT ID: 19268**	

Depth (feet)	Sample Depth (feet)	PID (ppm)	Water Table (shaded)	Geologic Description	Depth (feet)
1				Brown silty fine SAND	1
2		0.0			2
3					3
4					4
5				Gray to brown fine sandy CLAY	5
6					6
7		0.0			7
8			GW @ 8ft		8
9					9
10				Gray fine sandy Clay	10
11					11
12		0.0			12
13					13
14					14
15				Orange to tan fine sandy CLAY	15
16					16
17		0.0			17
18					18
19					19
20				Tan to orange fine sandy CLAY	20
21					21
22		0.0			22
23					23
24					24
25					25
26					26
27		0.0			27
28					28
29					29
30					30
31					31
32		0.0			32
33					33
34					34
35				Total Drilled Depth @ 35 ft bls	35
36					36
37					37
38					38
39					39
40					40
41					41
42					42
43					43
44					44
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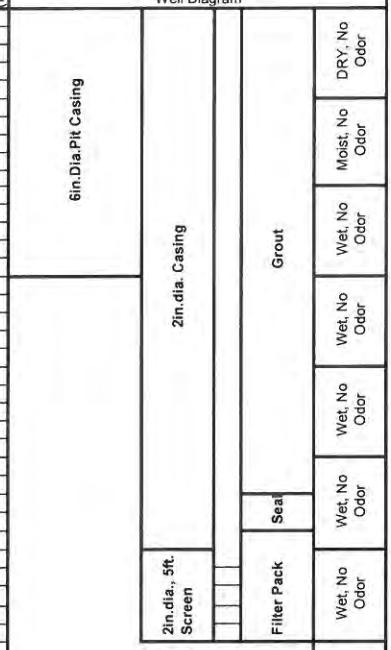
Well Diagram



Boring ID:	DW-3	Vacant Lot	CRAWFORD ENVIRONMENTAL SERVICES
CES Project Number:	15.07		
Date Started	9/10/2011	2309 Russell Street, Orangeburg, SC	*Boring Log*
Date Completed	9/10/2011		
Drilled by:	T. Allred	**PERMIT ID: 19268**	

Depth (feet)	Sample Depth (feet)	PID (ppm)	Water Table (shaded)	Geologic Description	Depth (feet)
1				Gray silty fine SAND	1
2					2
3		0.8		Brown to orange clayey fine SAND	3
4					4
5					5
6					6
7					7
8		0.4	GW @ 8ft		8
9					9
10				Orange silty CLAY	10
11					11
12					12
13		0.3			13
14					14
15					15
16					16
17					17
18		0.3			18
19					19
20					20
21					21
22					22
23		0.3			23
24					24
25					25
26					26
27					27
28		0.4			28
29				Total Drilled Depth @ 29 ft bls	29
30					30
31					31
32					32
33					33
34					34
35					35
36					36
37					37
38					38
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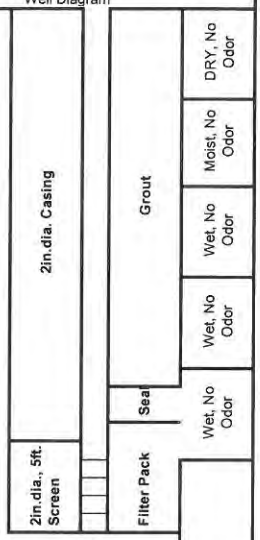
Well Diagram



APPENDIX E
SCDHEC 1903 Forms

CRAWFORD
ENVIRONMENTAL
SERVICES

Application ID: 2824

DHEC — PROMOTE. PROTECT. PROSPER.

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 st
City: Columbia State: SC Zip: 29201-0000
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Orangeburg
Name: Vacant Lot
Street Address: 2309 Russell Street
City: Orangeburg Zip: 29115
Latitude: 33.497741 Longitude: 80.844313

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:** N/A

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
SEE GEOLOGIST LOG		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-5 GW-6
Bentonite seal 1.5'-..5"

6. TYPE: ☐ Mud Rotary ☐ Jetted ☒ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☒ Other

7. PERMIT NUMBER: UMW-24317 UST-19268

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 12' ft. Date Started: 8/26/11 Date Completed: 8/29/11

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2" in. to 2' ft. depth
_____ in. to _____ ft. depth
Height: Above ☐ Below ☐
Surface N/A ft.
Weight N/A lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 2"
Slot/Gauge: .010 Length: 10'
Set Between: 2' ft. and 12' ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☐ No

12. STATIC WATER LEVEL N/A ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
N/A ft. after N/A hrs. Pumping N/A G.P.M.
Pumping Test: ☐ Yes (please enclose) ☑ No
Yield: N/A

14. WATER QUALITY
Chemical Analysis ☑ Yes ☐ No Bacterial Analysis ☐ Yes ☑ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☑ No
Installed from 12' ft. to 1.5' ft.
Effective size #2 Uniformity Coefficient N/A

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☑ Bentonite/Cement ☐ Other _____
Depth: From 1.5' ft. to 0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: N/A ft. N/A direction
Type N/A
Well Disinfected ☐ Yes ☑ No Type: N/A Amount: N/A

18. PUMP: Date Installed: N/A Not Installed ☑
Mfr. Name: N/A Model No.: N/A
H.P. N/A Volts N/A Length of drop pipe ___ ft. Capacity N/A gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: Billy Ewing CERT. NO.: 1505
Address: (Print) Level: A ☐ B ☑ C ☐ D ☐ (circle one)
ARM Environmental Services
1210First St.South Ext.Columbia SC
Telephone No.: 803-783-3314 Fax No.: 803- 783-2537

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: _____ (Well Driller) Date: 9/27/2011

If D Level Driller, provide supervising driller's name:

DHEC 1903 (07/2003) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

Application ID: 2824

DHEC — PROMOTE. PROTECT. PROSPER

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 st
City: Columbia State: SC Zip: 29201-0000
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Orangeburg
Name: Vacant Lot
Street Address: 2309 Russell Street
City: Orangeburg Zip: 29115
Latitude: 33.497163 Longitude: 80.8442

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:** N/A

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
SEE GEOLOGIST LOG		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-6 GW-11
Bentonite seal 1.5'-.5"

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other

7. PERMIT NUMBER: UMW-24317 UST-19268

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 12' ft. Date Started: 8/26/11 Date Completed: 8/29/11

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2" In. to 2' ft. depth
_____ In. to _____ ft. depth
Height: Above ☐ Below ☐
Surface N/A ft.
Weight N/A lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 2"
Slot/Gauge: .010 Length: 10'
Set Between: 2' ft. and 12' ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☐ No

12. STATIC WATER LEVEL N/A ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
N/A ft. after N/A hrs. Pumping N/A G.P.M.
Pumping Test: ☐ Yes (please enclose) ☑ No
Yield: N/A

14. WATER QUALITY
Chemical Analysis ☑ Yes ☐ No Bacterial Analysis ☐ Yes ☑ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☑ No
Installed from 12' ft. to 1.5' ft.
Effective size #2 Uniformity Coefficient N/A

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☑ Bentonite/Cement ☐ Other _____
Depth: From 1.5' ft. to 0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: N/A ft. N/A direction
Type N/A
Well Disinfected ☐ Yes ☑ No Type: N/A Amount: N/A

18. PUMP: Date Installed: N/A Not Installed ☑
Mfr. Name: N/A Model No.: N/A
H.P. N/A Volts N/A Length of drop pipe ___ ft. Capacity N/A gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: Address: (Print) Billy Ewing
ARM Environmental Services
1210 First St. South Ext. Columbia SC
Telephone No.: 803-783-3514 Fax No.: 803-783-2527
CERT. NO.: 1505 Level: A B C D (circle one)

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: _____ (Well Driller) Date: 9/27/2011

If D Level Driller, provide supervising driller's name:

DHEC 1903 (07/2003) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

Application ID: 2824

DHEC
PROMOTE PROTECT PROSPER

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 st
City: Columbia State: SC Zip: 29201-0000
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Orangeburg
Name: Vacant Lot
Street Address: 2309 Russell Street
City: Orangeburg Zip: 29115
Latitude: 33.497186 Longitude: 80.844951

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:** N/A

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
SEE GEOLOGIST LOG		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-7 GW-12
Bentonite seal 1.5'-.5"

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other

7. PERMIT NUMBER: UMW-24317 UST-19268

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 12' ft. Date Started: 8/26/11 Date Completed: 8/29/11

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2" in. to 2' ft. depth
_____ in. to _____ ft. depth
Height: Above ☐ Below ☐
Surface N/A ft.
Weight N/A lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 2"
Slot/Gauge: .010 Length: 10'
Set Between: 2' ft. and 12' ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☐ No

12. STATIC WATER LEVEL N/A ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
N/A ft. after N/A hrs. Pumping N/A G.P.M.
Pumping Test: ☐ Yes (please enclose) ☑ No
Yield: N/A

14. WATER QUALITY
Chemical Analysis ☑ Yes ☐ No Bacterial Analysis ☐ Yes ☑ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☑ No
Installed from 12' ft. to 1.5' ft.
Effective size #2 Uniformity Coefficient N/A

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☑ Bentonite/Cement ☐ Other _____
Depth: From 1.5' ft. to 0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: N/A ft. N/A direction
Type N/A
Well Disinfected ☐ Yes ☑ No Type: N/A Amount: N/A

18. PUMP: Date Installed: N/A Not Installed ☑
Mfr. Name: N/A Model No.: N/A
H.P. N/A Volts N/A Length of drop pipe ___ ft. Capacity N/A gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: Billy Ewing CERT. NO.:
Address: (Print) ARM Environmental Services
1210 First St. South Ext. Columbia SC
Level: A ☐ B ☑ C ☐ D ☐ (circle one)
Telephone No.: 803-785-5514 Fax No.: 803-783-2507

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: _____ (Well Driller) Date: 9/27/11

If D Level Driller, provide supervising driller's name:

DHEC 1903 (07/2003) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

Application ID: 2824

DHEC — PROMOTE PROTECT PROSPER

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 st
City: Columbia State: SC Zip: 29201-0000
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Orangeburg
Name: Vacant Lot
Street Address: 2309 Russell Street
City: Orangeburg Zip: 29115
Latitude: 33.49 7459 Longitude: 80.84 4586

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:** N/A

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
SEE GEOLOGIST LOG		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-8 GW-13
Bentonite seal 1.5'-.5"

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other

7. PERMIT NUMBER: UMW-24317 UST-19268

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 12' ft. Date Started: 8/26/11 Date Completed: 8/29/11

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2" in. to 2' ft. depth
_____ in. to _____ ft. depth
Height: Above ☐ Below ☐
Surface N/A ft.
Weight N/A lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 2"
Slot/Gauge: .010 Length: 10'
Set Between: 2' ft. and 12' ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☐ No

12. STATIC WATER LEVEL N/A ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
N/A ft. after N/A hrs. Pumping N/A G.P.M.
Pumping Test: ☐ Yes (please enclose) ☑ No
Yield: N/A

14. WATER QUALITY
Chemical Analysis ☑ Yes ☐ No Bacterial Analysis ☐ Yes ☑ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☑ No
Installed from 12' ft. to 1.5' ft.
Effective size #2 Uniformity Coefficient N/A

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☑ Bentonite/Cement ☐ Other _____
Depth: From 1.5' ft. to 0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: N/A ft. N/A direction
Type N/A
Well Disinfected ☐ Yes ☑ No Type: N/A Amount: N/A

18. PUMP: Date Installed: N/A Not Installed ☑
Mfr. Name: N/A Model No.: N/A
H.P. N/A Volts N/A Length of drop pipe ___ ft. Capacity N/A gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: Billy Emiry CERT. NO.: 1505
Address: (Print) ARM Environmental Services
1210First St.South Ext.Columbia SC
Level: A ☐ B ☐ C ☐ D ☐ (circle one)
Telephone No.: 803-785-3314 Fax No.: 803-783-2587

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: _____ BE Date 9/27/2011
Well Driller

If D Level Driller, provide supervising driller's name:

DHEC 1903 (07/2003) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

Application ID: 2824

DHEC — PROMOTE PROTECT PROSPER

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 st
City: Columbia State: SC Zip: 29201-0000
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Orangeburg
Name: Vacant Lot
Street Address: 2309 Russell Street
City: Orangeburg Zip: 29115
Latitude: 33.49757 Longitude: 80.844484

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:** N/A

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
SEE GEOLOGIST LOG		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-9 GW-14
Bentonite seal 1.5'-.5"

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other

7. PERMIT NUMBER: UMW-24317 UST-19268

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 12' ft. Date Started: 8/26/11 Date Completed: 8/29/11

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2" in. to 2' ft. depth
_____ in. to _____ ft. depth
Height: Above ☐ Below ☐
Surface N/A ft.
Weight N/A lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 2"
Slot/Gauge: .010 Length: 10'
Set Between: 2' ft. and 12' ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☐ No

12. STATIC WATER LEVEL N/A ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
N/A ft. after N/A hrs. Pumping N/A G.P.M.
Pumping Test: ☐ Yes (please enclose) ☑ No
Yield: N/A

14. WATER QUALITY
Chemical Analysis ☑ Yes ☐ No Bacterial Analysis ☐ Yes ☑ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☑ No
Installed from 12' ft. to 1.5' ft.
Effective size #2 Uniformity Coefficient N/A

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☑ Bentonite/Cement ☐ Other _____
Depth: From 1.5' ft. to 0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: N/A ft. N/A direction
Type N/A
Well Disinfected ☐ Yes ☑ No Type: N/A Amount: N/A

18. PUMP: Date Installed: N/A Not Installed ☑
Mfr. Name: N/A Model No.: N/A
H.P. N/A Volts N/A Length of drop pipe ___ ft. Capacity N/A gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: Billy Emby CERT. NO.: 1505
Address: (Print) ARM Environmental Services
1210 First St. South Ext. Columbia SC
Level: A ☐ B ☑ C ☐ D ☐ (circle one)
Telephone No.: 803-783-3514 Fax No.: 803-783-2567

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: _____ (Well Driller) Date: 9/27/2011

If D Level Driller, provide supervising driller's name:

DHEC 1903 (07/2003) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

Application ID: 2824

DHEC — PROMOTE PROTECT PROSPER

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 st
City: Columbia State: SC Zip: 29201-0000
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Orangeburg
Name: Vacant Lot
Street Address: 2309 Russell Street
City: Orangeburg Zip: 29115
Latitude: 33.496497 Longitude: 80.844785

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:** N/A

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
SEE GEOLOGIST LOG		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-10 GW-16
Bentonite seal 1.5'-.5"

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other

7. PERMIT NUMBER: UMW-24317 UST-19268

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 12' ft. Date Started: 8/26/11 Date Completed: 8/29/11

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2" in. to 2' ft. depth
_____ in. to _____ ft. depth
Height: Above ☐ Below ☐
Surface N/A ft.
Weight N/A lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 2"
Slot/Gauge: .010 Length: 10'
Set Between: 2' ft. and 12' ft. NOTE: MULTIPLE SCREENS
_____ ft. and _____ ft. USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☐ No

12. STATIC WATER LEVEL N/A ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
N/A ft. after N/A hrs. Pumping N/A G.P.M.
Pumping Test: ☐ Yes (please enclose) ☑ No
Yield: N/A

14. WATER QUALITY
Chemical Analysis ☑ Yes ☐ No Bacterial Analysis ☐ Yes ☑ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☑ No
Installed from 12' ft. to 1.5' ft.
Effective size #2 Uniformity Coefficient N/A

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☑ Bentonite/Cement ☐ Other _____
Depth: From 1.5' ft. to 0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: N/A ft. N/A direction
Type N/A
Well Disinfected ☐ Yes ☑ No Type: N/A Amount: N/A

18. PUMP: Date Installed: N/A Not Installed ☑
Mfr. Name: N/A Model No.: N/A
H.P. N/A Volts N/A Length of drop pipe ___ ft. Capacity N/A gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: CERT. NO.: 1505
Address: (Print) Billy Ewing
ARM Environmental Services
1210First St.South Ext.Columbia SC
Telephone No.: 803-783-3314 Fax No.: 803-783-2587
Level: A B C D (circle one) ☐ ☑ ☐ ☐

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: _____ Well Driller Date: 9/27/2011

If D Level Driller, provide supervising driller's name:

DHEC 1903 (07/2003) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

Application ID: 2824

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 st
City: Columbia State: SC Zip: 29201-0000
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Orangeburg
Name: Vacant Lot
Street Address: 2309 Russell Street
City: Orangeburg Zip: 29115
Latitude: 33.496671 Longitude: 80.845155

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:** N/A

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
SEE GEOLOGIST LOG		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW- 11 GW- 17
Bentonite seal 1.5'-..5"

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other

7. PERMIT NUMBER: UMW-24317 UST-19268

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 12' ft. Date Started: 8/26/11 Date Completed: 8/29/11

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2" In. to 2' ft. depth
_____ In. to _____ ft. depth
Height: Above ☐ Below ☐
Surface N/A ft.
Weight N/A lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 2"
Slot/Gauge: .010 Length: 10'
Set Between: 2' ft. and 12' ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☐ No

12. STATIC WATER LEVEL N/A ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
N/A ft. after N/A hrs. Pumping N/A G.P.M.
Pumping Test: ☐ Yes (please enclose) ☑ No
Yield: N/A

14. WATER QUALITY
Chemical Analysis ☑ Yes ☐ No Bacterial Analysis ☐ Yes ☑ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☑ No
Installed from 12' ft. to 1.5' ft.
Effective size #2 Uniformity Coefficient N/A

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☑ Bentonite/Cement ☐ Other _____
Depth: From 1.5' ft. to 0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: N/A ft. N/A direction
Type N/A
Well Disinfected ☐ Yes ☑ No Type: N/A Amount: N/A

18. PUMP: Date Installed: N/A Not Installed ☑
Mfr. Name: N/A Model No.: N/A
H.P. N/A Volts N/A Length of drop pipe ___ ft. Capacity N/A gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: CERT. NO.: 1505
Address: (Print) Billy Ewing
ARM Environmental Services
1210First St.South Ext.Columbia SC
Telephone No.: 803-783-3314 Fax No.: 803-
Level: A ☐ B ☑ C ☐ D ☐ (circle one)

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: _____ (Well Driller) Date: 9/27/2011
If D Level Driller, provide supervising driller's name:

DHEC 1903 (07/2003) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

Application ID: 2824

DHEC — PROMOTE PROTECT PROSPER

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 st
City: Columbia State: SC Zip: 29201-0000
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Orangeburg
Name: Vacant Lot
Street Address: 2309 Russell Street
City: Orangeburg Zip: 29115
Latitude: 33.496 783 Longitude: 80.84 693

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:** N/A

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
SEE GEOLOGIST LOG		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-12 GW-15
Bentonite seal 1.5'-..5"

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other

7. PERMIT NUMBER: UMW-24317 UST-19268

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 12' ft. Date Started: 8/26/11 Date Completed: 8/29/11

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2" in. to 2' ft. depth
_____ in. to _____ ft. depth
Height: Above ☐ Below ☐
Surface N/A ft.
Weight N/A lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 2"
Slot/Gauge: .010 Length: 10'
Set Between: 2' ft. and 12' ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☐ No

12. STATIC WATER LEVEL N/A ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
N/A ft. after N/A hrs. Pumping N/A G.P.M.
Pumping Test: ☐ Yes (please enclose) ☑ No
Yield: N/A

14. WATER QUALITY
Chemical Analysis ☑ Yes ☐ No Bacterial Analysis ☐ Yes ☑ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☑ No
Installed from 12' ft. to 1.5' ft.
Effective size #2 Uniformity Coefficient N/A

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☑ Bentonite/Cement ☐ Other _____
Depth: From 1.5' ft. to 0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: N/A ft. N/A direction
Type N/A
Well Disinfected ☐ Yes ☑ No Type: N/A Amount: N/A

18. PUMP: Date Installed: N/A Not Installed ☑
Mfr. Name: N/A Model No.: N/A
H.P. N/A Volts N/A Length of drop pipe ___ ft. Capacity N/A gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: CERT. NO.: 1505
Address: (Print) Billy Ewing
ARM Environmental Services
1210First St.South Ext.Columbia SC
Level: A ☐ B ☑ C ☐ D ☐ (circle one)
Telephone No.: 803-783-3514 Fax No.: 803-783-2587

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: _____ (Well Driller) Date: 9/27/2011

If D Level Driller, provide supervising driller's name:

DHEC 1903 (07/2003) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

Application ID: 2824

DHEC — PROMOTE PROTECT PROSPER

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 st
City: Columbia State: SC Zip: 29201-0000
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Orangeburg
Name: Vacant Lot
Street Address: 2309 Russell Street
City: Orangeburg Zip: 29115
Latitude: 33.49 7087 Longitude: 80.84 45 75

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:** N/A

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
SEE GEOLOGIST LOG		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
DW- 1 GW- 18
Bentonite seal 33'-.31'

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other

7. PERMIT NUMBER: UMW-24317 UST-19268

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 40' ft. Date Started: 8/26/11 Date Completed: 8/29/11

10. CASING: ☑ Threaded ☐ Welded
Diam.: 6"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
6" in. to 15' ft. depth
2" in. to 35' ft. depth
Height: Above ☐ Below ☐
Surface N/A ft.
Weight N/A lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 2"
Slot/Gauge: .010 Length: 5'
Set Between: 35' ft. and 40' ft. NOTE: MULTIPLE SCREENS
_____ ft. and _____ ft. USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☐ No

12. STATIC WATER LEVEL N/A ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
N/A ft. after N/A hrs. Pumping N/A G.P.M.
Pumping Test: ☐ Yes (please enclose) ☑ No
Yield: N/A

14. WATER QUALITY
Chemical Analysis ☑ Yes ☐ No Bacterial Analysis ☐ Yes ☑ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☑ No
Installed from 40' ft. to 33' ft.
Effective size #2 Uniformity Coefficient N/A

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☑ Bentonite/Cement ☐ Other _____
Depth: From 33' ft. to 0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: N/A ft. N/A direction
Type N/A
Well Disinfected ☐ Yes ☑ No Type: N/A Amount: N/A

18. PUMP: Date Installed: N/A Not Installed ☑
Mfr. Name: N/A Model No.: N/A
H.P. N/A Volts N/A Length of drop pipe ___ ft. Capacity N/A gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: Josh Register CERT. NO.: 1921
Address: (Print) Level: A B C D (circle one)
ARM Environmental Services
1210First St.South Ext.Columbia SC
Telephone No.: 803-783-3514 Fax No.: 803-783-2587

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: _____ (Well Driller) Date: 9/27/2011

If D Level Driller, provide supervising driller's name:
Andrew Wilson

DHEC 1903 (07/2003) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

Application ID: 2824

D H E C
PROMOTE PROTECT PROSPER

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 st
City: Columbia State: SC Zip: 29201-0000
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Orangeburg
Name: Vacant Lot
Street Address: 2309 Russell Street
City: Orangeburg Zip: 29115
Latitude: 33.49 7459 Longitude: 80.84 4586

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:** N/A

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
SEE GEOLOGIST LOG		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
DW-2 GW-19
Bentonite seal 28'-.26'

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other

7. PERMIT NUMBER: UMW-24317 UST-19268

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 35' ft. Date Started: 8/26/11 Date Completed: 8/29/11

10. CASING: ☑ Threaded ☐ Welded
Diam.: 6"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
6" In. to 15' ft. depth
2" In. to 30' ft. depth
Height: Above ☐ Below ☐
Surface N/A ft.
Weight N/A lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 2"
Slot/Gauge: .010 Length: 5'
Set Between: 35' ft. and 30' ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☐ No

12. STATIC WATER LEVEL N/A ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
N/A ft. after N/A hrs. Pumping N/A G.P.M.
Pumping Test: ☐ Yes (please enclose) ☑ No
Yield: N/A

14. WATER QUALITY
Chemical Analysis ☑ Yes ☐ No Bacterial Analysis ☐ Yes ☑ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☑ No
Installed from 35' ft. to 28' ft.
Effective size #2 Uniformity Coefficient N/A

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☑ Bentonite/Cement ☐ Other _____
Depth: From 28' ft. to 0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: N/A ft. N/A direction
Type N/A
Well Disinfected ☐ Yes ☑ No Type: N/A Amount: N/A

18. PUMP: Date Installed: N/A Not Installed ☑
Mfr. Name: N/A Model No.: N/A
H.P. N/A Volts N/A Length of drop pipe ___ ft. Capacity N/A gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: Josh Register CERT. NO.: 1921
Address: (Print) ARM Environmental Services
1210First St.South Ext.Columbia SC
Telephone No.: 803-783-3514 Fax No.: 803-783-2587
Level: A B C D (circle one)

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: JR (Well Driller) Date: 9/27/2011
If D Level Driller, provide supervising driller's name: Andrew Wilson

DHEC 1903 (07/2003) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

Application ID: 2824

D H E C
PROMOTE PROTECT PROSPER

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 st
City: Columbia State: SC Zip: 29201-0000
Telephone: Work: Home:

2. LOCATION OF WELL: **COUNTY:** Orangeburg
Name: Vacant Lot
Street Address: 2309 Russell Street
City: Orangeburg Zip: 29115
Latitude: 33.49 7342 Longitude: 80.84 3937

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:** N/A

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
SEE GEOLOGIST LOG		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-13 GW-
Bentonite seal 1.5-.5

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24317 UST-19268

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 12' ft. Date Started: 9/10/11 Date Completed: 9/10/11

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2" in. to 2' ft. depth
_____ in. to _____ ft. depth
Height: Above ☐ Below ☐
Surface N/A ft.
Weight N/A lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: _____
Slot/Gauge: ..010 Length: 10'
Set Between: 2' ft. and 12' ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☐ No

12. STATIC WATER LEVEL N/A ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
N/A ft. after N/A hrs. Pumping N/A G.P.M.
Pumping Test: ☐ Yes (please enclose) ☑ No
Yield: N/A

14. WATER QUALITY
Chemical Analysis ☑ Yes ☐ No Bacterial Analysis ☐ Yes ☑ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☑ No
Installed from 12' ft. to 1.5 ft.
Effective size #2 Uniformity Coefficient N/A

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☑ Bentonite/Cement ☐ Other _____
Depth: From 1.5' ft. to 0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: N/A ft. N/A direction
Type N/A
Well Disinfected ☐ Yes ☑ No Type: N/A Amount: N/A

18. PUMP: Date installed: N/A Not installed ☑
Mfr. Name: N/A Model No.: N/A
H.P. N/A Volts N/A Length of drop pipe ___ ft. Capacity N/A gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: Todd Allred **CERT. NO.:** 1446
Address: (Print) 104 Corporate Blvd.Suite 412 West Columbia SC 29169
Level: A ☐ B ☑ C ☐ D ☐ (circle one)
Telephone No.: 803-708-0079 Fax No.: 803-708-8137

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: Todd Allred (Well Driller) Date: 9-24-11

If D Level Driller, provide supervising driller's name:

DHEC 1903 (07/2003) **COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)**

Application ID: 2824

D H E C
PROMOTE PROTECT PROSPER

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 st
City: Columbia State: SC Zip: 29201-0000
Telephone: Work: Home:

2. LOCATION OF WELL: **COUNTY:** Orangeburg
Name: Vacant Lot
Street Address: .2309 Russell Street
City: Orangeburg Zip: 29115
Latitude: 33.497664 Longitude: 80.844168

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:** N/A

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
SEE GEOLOGIST LOG		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-14 GW-
Bentonite seal 1.5-.5

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24317, UST 19263

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 12' ft. Date Started: 9/10/11 Date Completed: 9/10/11

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2" in. to 2' ft. depth
_____ in. to _____ ft. depth
Height: Above ☐ Below ☐
Surface N/A ft.
Weight N/A lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: _____
Slot/Gauge: ..010 Length: 10'
Set Between: 2' ft. and 12' ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☐ No

12. STATIC WATER LEVEL N/A ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
N/A ft. after N/A hrs. Pumping N/A G.P.M.
Pumping Test: ☐ Yes (please enclose) ☑ No
Yield: N/A

14. WATER QUALITY
Chemical Analysis ☑ Yes ☐ No Bacterial Analysis ☐ Yes ☑ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☑ No
Installed from 12' ft. to 1.5 ft.
Effective size #2 Uniformity Coefficient N/A

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☑ Bentonite/Cement ☐ Other _____
Depth: From 1.5' ft. to 0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: N/A ft. N/A direction
Type N/A
Well Disinfected ☐ Yes ☑ No Type: N/A Amount: N/A

18. PUMP: Date installed: N/A Not installed ☑
Mfr. Name: N/A Model No.: N/A
H.P. N/A Volts N/A Length of drop pipe ___ ft. Capacity N/A gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: Todd Allred **CERT. NO.:** 1446
Address: (Print) 104 Corporate Blvd.Suite 412 West
Columbia SC 29169
Level: A ☐ B ☑ C ☐ D ☐ (circle one)
Telephone No.: 803-708-8079 Fax No.: 803-708-8137

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: Todd Allred (Well Driller) Date: 9-24-11

If D Level Driller, provide supervising driller's name:

DHEC 1903 (07/2003) **COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)**

Application ID: 2824

D H E C
PROMOTE PROTECT PROSPER

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 st
City: Columbia State: SC Zip: 29201-0000
Telephone: Work: Home:

2. LOCATION OF WELL: **COUNTY:** Orangeburg
Name: Vacant Lot
Street Address: .2309 Russell Street
City: Orangeburg Zip: 29115
Latitude: 33.497213 Longitude: 80.844575

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:** N/A

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
SEE GEOLOGIST LOG		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-15 GW-
Bentonite seal 1.5-.5

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-2481 UST-19268

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 12' ft. Date Started: 9/10/11 Date Completed: 9/10/11

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2" in. to 2' ft. depth
_____ in. to _____ ft. depth
Height: Above ☐ Below ☐
Surface N/A ft.
Weight N/A lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: _____
Slot/Gauge: ..010 Length: 10'
Set Between: 2' ft. and 12' ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☐ No

12. STATIC WATER LEVEL N/A ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
N/A ft. after N/A hrs. Pumping N/A G.P.M.
Pumping Test: ☐ Yes (please enclose) ☑ No
Yield: N/A

14. WATER QUALITY
Chemical Analysis ☑ Yes ☐ No Bacterial Analysis ☐ Yes ☑ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☑ No
Installed from 12' ft. to 1.5 ft.
Effective size #2 Uniformity Coefficient N/A

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☑ Bentonite/Cement ☐ Other _____
Depth: From 1.5' ft. to 0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: N/A ft. N/A direction
Type N/A
Well Disinfected ☐ Yes ☑ No Type: N/A Amount: N/A

18. PUMP: Date installed: N/A Not installed ☑
Mfr. Name: N/A Model No.: N/A
H.P. N/A Volts N/A Length of drop pipe ___ ft. Capacity N/A gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: Todd Allred **CERT. NO.:** 1446
Address: (Print) 104 Corporate Blvd.Suite 412 West
Columbia SC 29169
Telephone No.: 803-708-8079
Level: A ☐ B ☑ C ☐ D ☐ (circle one)
Fax No.: 803-708-8137

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: Todd Allred (Well Driller) Date: 9-24-11

If D Level Driller, provide supervising driller's name:

DHEC 1903 (07/2003)

COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

Application ID: 2824

DHEC — PROMOTE PROTECT PROSPER

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 st
City: Columbia State: SC Zip: 29201-0000
Telephone: Work: Home:

2. LOCATION OF WELL: **COUNTY:** Orangeburg
Name: Vacant Lot
Street Address: 2309 Russell Street
City: Orangeburg Zip: 29115
Latitude: 33.49 7087 Longitude: 80.84 5112

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:** N/A

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
SEE GEOLOGIST LOG		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-16 GW-
Bentonite seal 1.5-.5

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW- 24317 UST- 12268

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 12' ft. Date Started: 9/10/11 Date Completed: 9/10/11

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2" in. to 2' ft. depth
_____ in. to _____ ft. depth
Height: Above ☐ Below ☐
Surface N/A ft.
Weight N/A lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: _____
Slot/Gauge: ..010 Length: 10'
Set Between: 2' ft. and 12' ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☐ No

12. STATIC WATER LEVEL N/A ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
N/A ft. after N/A hrs. Pumping N/A G.P.M.
Pumping Test: ☐ Yes (please enclose) ☑ No
Yield: N/A

14. WATER QUALITY
Chemical Analysis ☑ Yes ☐ No Bacterial Analysis ☐ Yes ☑ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☑ No
Installed from 12' ft. to 1.5 ft.
Effective size #2 Uniformity Coefficient N/A

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☑ Bentonite/Cement ☐ Other _____
Depth: From 1.5' ft. to 0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: N/A ft. N/A direction
Type N/A
Well Disinfected ☐ Yes ☑ No Type: N/A Amount: N/A

18. PUMP: Date installed: N/A Not installed ☑
Mfr. Name: N/A Model No.: N/A
H.P. N/A Volts N/A Length of drop pipe ___ ft. Capacity N/A gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: Todd Allred **CERT. NO.:** 1446
Address: (Print) 104 Corporate Blvd.Suite 412 West
Columbia SC 29169
Level: A ☐ B ☑ C ☐ D ☐ (circle one)
Telephone No.: 803-708-8079 Fax No.: 803-708-8137

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: Todd Allred (Well Driller) Date: 9-24-11

If D Level Driller, provide supervising driller's name:

DHEC 1903 (07/2003) **COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)**

Application ID: 2824

D H E C
PROMOTE PROTECT PROSPER

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 st
City: Columbia State: SC Zip: 29201-0000
Telephone: Work: Home:

2. LOCATION OF WELL: **COUNTY:** Orangeburg
Name: Vacant Lot
Street Address: 2309 Russell Street
City: Orangeburg Zip: 29115
Latitude: 33.497342 Longitude: 80.843937

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:** N/A

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
SEE GEOLOGIST LOG		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
DMW-3 GW-
Bentonite seal 22'-.20'

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24317 UST-19268

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 29' ft. Date Started: 9/10/11 Date Completed: 9/10/11

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2" in. to 24' ft. depth
_____ in. to _____ ft. depth
Height: Above ☐ Below ☐
Surface N/A ft.
Weight N/A lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 2"
Slot/Gauge: .010 Length: 5'
Set Between: 24' ft. and 29' ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☐ No

12. STATIC WATER LEVEL N/A ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
N/A ft. after N/A hrs. Pumping N/A G.P.M.
Pumping Test: ☐ Yes (please enclose) ☑ No
Yield: N/A

14. WATER QUALITY
Chemical Analysis ☑ Yes ☐ No Bacterial Analysis ☐ Yes ☑ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☑ No
Installed from 29' ft. to 22' ft.
Effective size #2 Uniformity Coefficient N/A

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☑ Bentonite/Cement ☐ Other _____
Depth: From 22' ft. to 0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: N/A ft. N/A direction
Type N/A
Well Disinfected ☐ Yes ☑ No Type: N/A Amount: N/A

18. PUMP: Date installed: N/A Not installed ☑
Mfr. Name: N/A Model No.: N/A
H.P. N/A Volts N/A Length of drop pipe ___ ft. Capacity N/A gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: Todd Allred **CERT. NO.:** 1446
Address: (Print) 104 Corporate Blvd.Suite 412 West Columbia SC 29169
Level: A ☐ B ☑ C ☐ D ☐ (circle one)
Telephone No.: 803-708-0079 Fax No.: 803-708-8137

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: Todd Allred (Well Driller) Date: 9-24-11

If D Level Driller, provide supervising driller's name:

DHEC 1903 (07/2003) **COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)**

APPENDIX F
Aquifer Calculations and Characteristics

CRAWFORD
ENVIRONMENTAL
SERVICES

D H E C
PROMOTE PROTECT PROSPER
South Carolina Department of Health and Environmental Control

SOUTH CAROLINA
Department of Health and Evnironmental Control
Summary of Slug Test Form

Site Data

UST Permit # 19768 County: Orangeburg

Facility Name VACANT LOT

Slug Data

See Appendix F Table_____ Figure_____ for a list of all data measurements.
(water level logs, etc.) (Complete as appropriate).

Water Level Recovery Data was measured by manually w/ water level .
(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

Slug Test Conducted in well(s) number	DW-1	MW-3		
Initial Rise/Drawdown in well (feet)	1.36	1.33		
Radius of Well Casing (feet)	0.0833	0.0833		
Effective Radius of Well (feet)	0.20833	0.20833		
Static Saturated Aquifer Thickness (feet)				
Length of Well Screen (feet)	5	10		
Static Height of Water Column in Well (ft)				

Calculations

See Appendix F Table_____ Figure_____ for calculations. (Complete as appropriate).

The method for aquifer calculations was Bouwer Rice

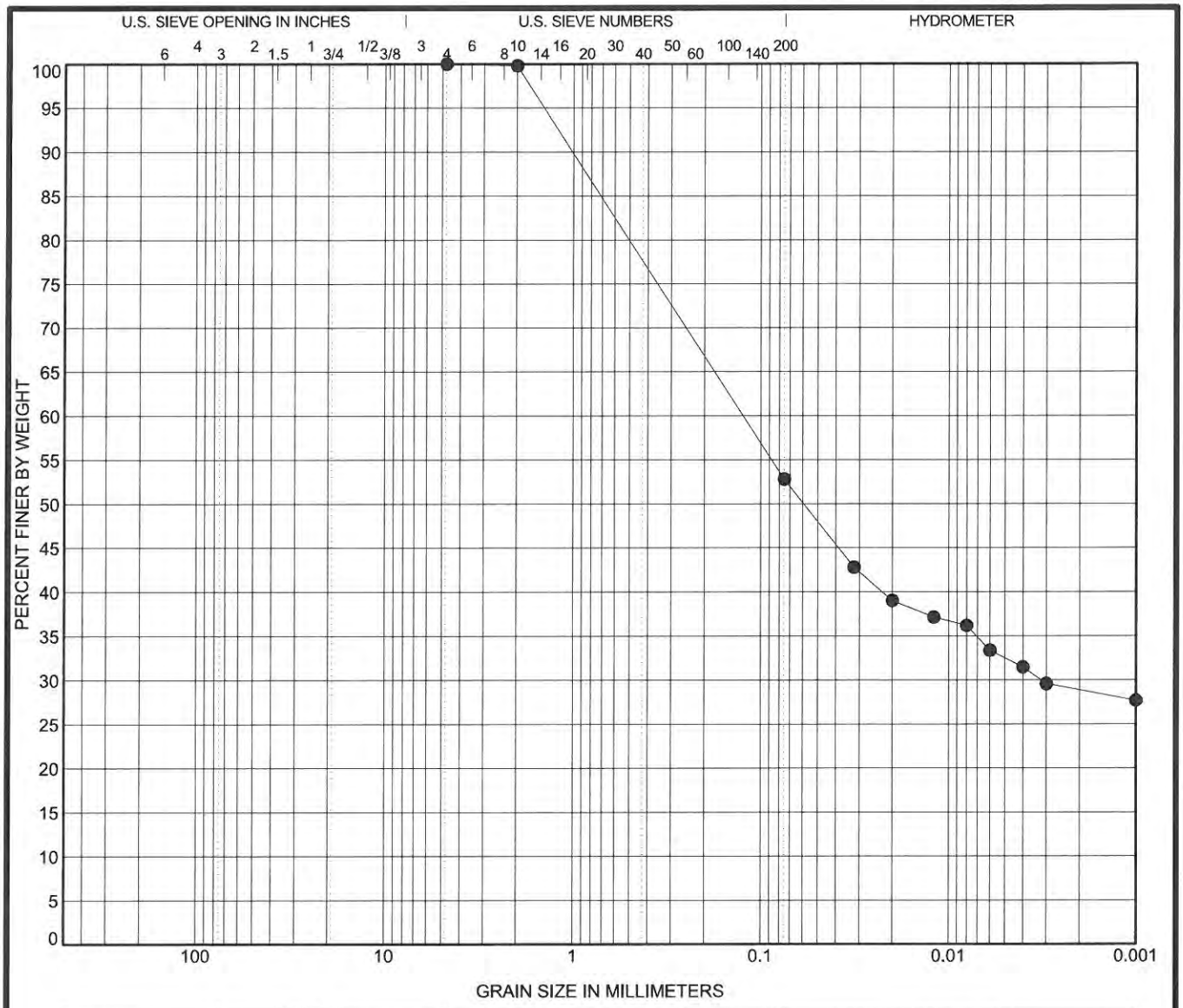
Calculated values by well were as follows:

Slug Test Conducted in well(s) number	DW-1	MW-3		
Hydraulic Conductivity ft/day	0.08	0.007		

Thickness of the aquifer used to calculate hydraulic conductivity was _____ feet.

The aquifer is _____ confined _____ semi-confined ✓ water table (Check as appropriate).

The estimated seepage velocity is 0.05 ft/yr feet per year based on a hydraulic conductivity of 2.5 ft/yr, a hydraulic gradient of 0.01 ft/ft, and a porosity of .45 per cent for sandy clay loam soil (list type i.e., silty sand ,clay, etc).



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen	Sample Description	LL	PL	PI
● GW-14VL(MW-9) 12/11 JSR		--	--	--

Test Method	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
ASTM D422	**4.75**	**0.124**	**0.003**		**0.0**	**47.2**	**23.9**	**28.9**

Percent Finer

Sieve Size	200	10	4
% Finer	52.8	99.8	100.0

Tested By	Tested Date	Reviewed By	Calc By
CAB	9/8/11		MDE

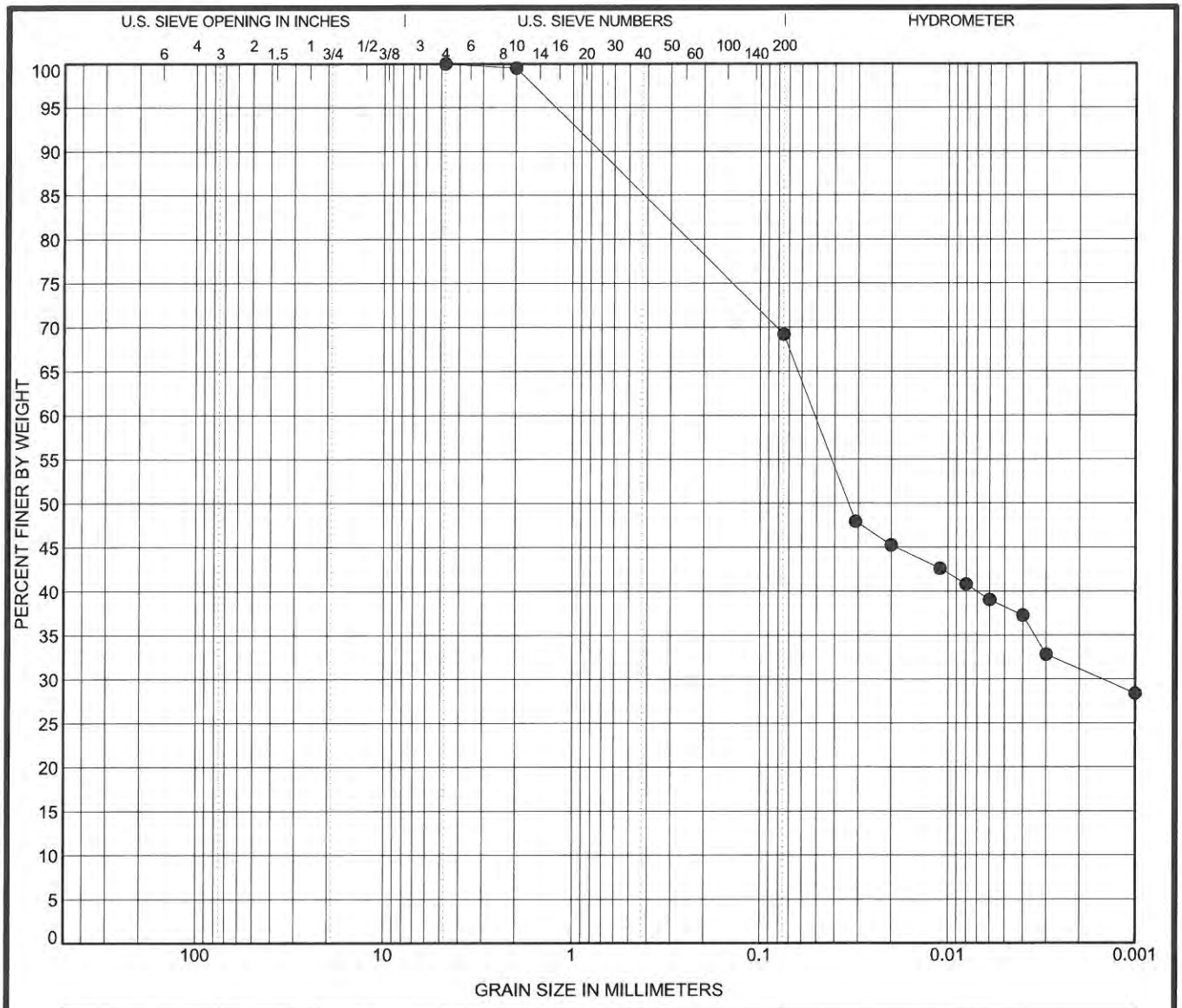
Schnabel ENGINEERING

GRADATION CURVE

Project: Crawford Environmental
Vacant Lot

Contract: 11619029.00.09

SIEVE 1/SHEET LAB TESTING.GPJ SCHNABEL DATA TEMPLATE 2008 04 22.GDT 9/12/11



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen	Sample Description	LL	PL	PI		
● DW-5/ 35 10 ft		--	--	--		

Test Method	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
ASTM D422	**4.75**	**0.051**	**0.001**		**0.0**	**30.8**	**38.0**	**31.2**

Percent Finer

Sieve Size	200	10	4
% Finer	69.2	99.5	100.0

Tested By	Tested Date	Reviewed By	Calc By
CAB	9/8/11	SRH	MDE

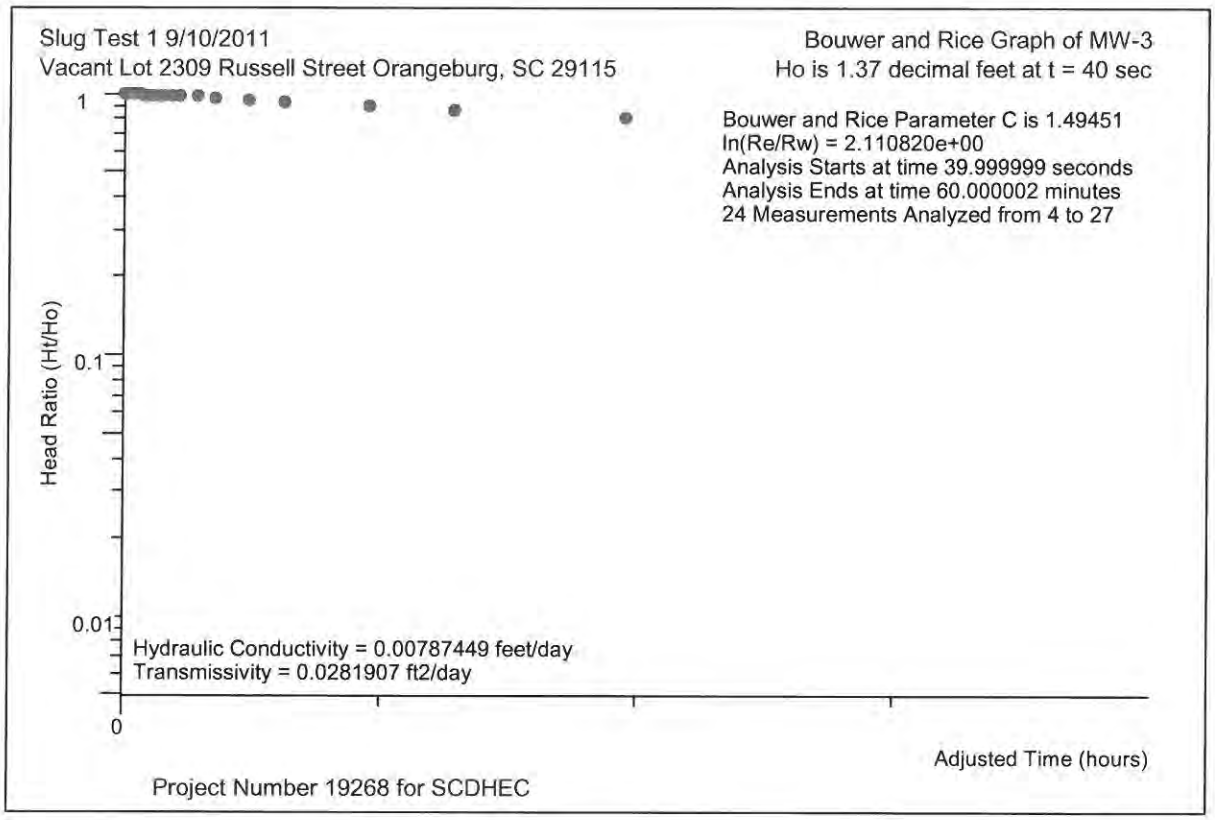
Schnabel ENGINEERING

GRADATION CURVE

Project: Crawford Environmental
Vacant Lot

Contract: 11619029.00.10

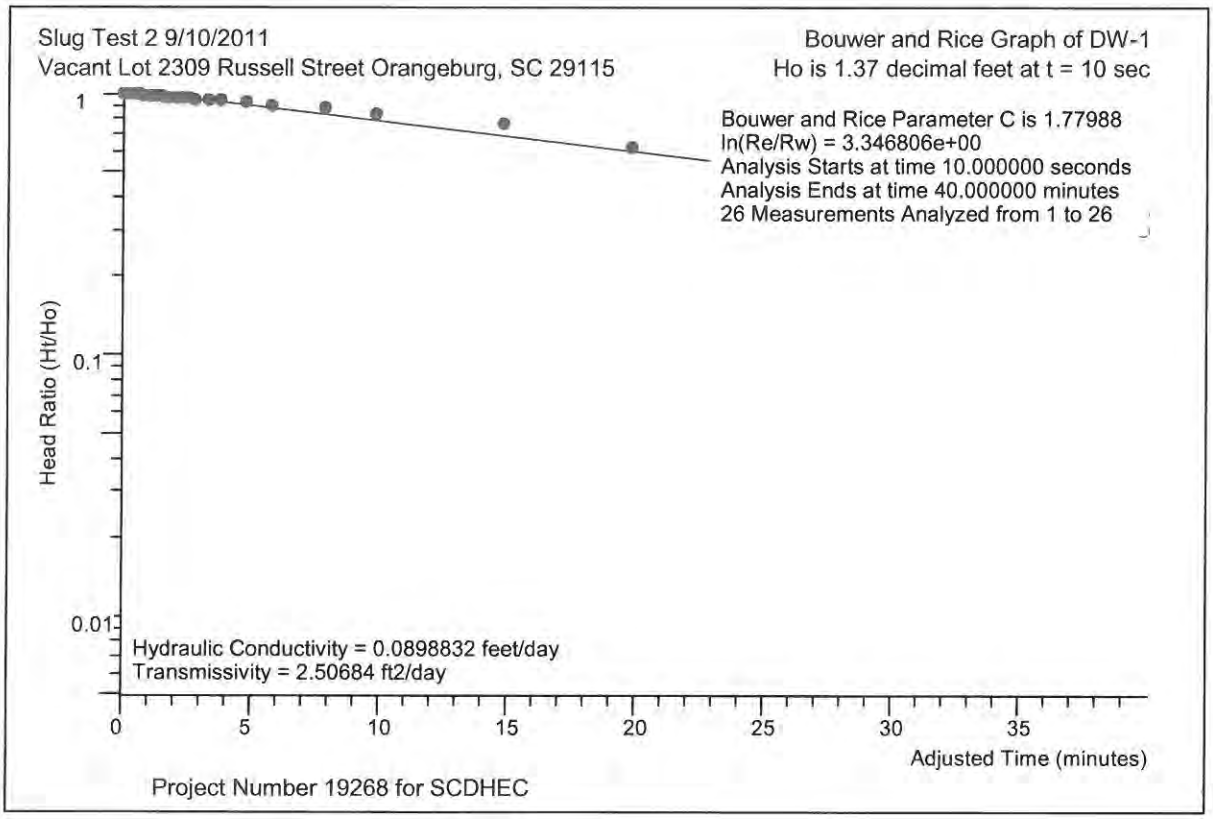
SIEVE 1/SHEET LAB TESTING.GPJ SCHNABEL DATA TEMPLATE 2008 04 22.GDT 9/12/11


Slug Test 1 9/10/2011
Vacant Lot 2309 Russell Street Orangeburg, SC 29115
Bouwer and Rice Graph of MW-3
Ho is 1.37 decimal feet at t = 40 sec
Bouwer and Rice Parameter C is 1.49451
ln(Re/Rw) = 2.110820e+00
Analysis Starts at time 39.999999 seconds
Analysis Ends at time 60.000002 minutes
24 Measurements Analyzed from 4 to 27
Head Ratio (Ht/Ho)
1
0.1
0.01
0
Hydraulic Conductivity = 0.00787449 feet/day
Transmissivity = 0.0281907 ft2/day
Adjusted Time (hours)
Project Number 19268 for SCDHEC

Data from file:	C:\19268MW3.SLG
Title:	Slug Test 1
Site Name:	Vacant Lot
Location:	2309 Russell Street Orangeburg, SC 29115
Client:	SCDHEC
Project Number:	19268
Test Date:	9/10/2011
Well Number:	MW-3
Casing Radius:	0.0833 feet
Effective Well Radius:	0.20833 feet
Aquifer Thickness:	3.58 feet
Water Table to Screen Bottom:	3.58 feet
Screen Length:	10 feet
Static Water Level:	8.42 decimal feet

K ratio is not entered
There are 27 time and drawdown measurements
Tests starts with trial 4
Time values will be adjusted by 0.000462963 days (39.999999 seconds)

Trial	Time (seconds)	Adjusted Time (seconds)	Drawdown (decimal feet)	Head (decimal feet)	Head Ratio
1	10	-30	9.78	1.36	0.992701
2	20	-20	9.78	1.36	0.992701
3	30	-10	9.78	1.36	0.992701
4	40	0	9.79	1.37	1
5	50	10	9.77	1.35	0.985402
6	60	20	9.77	1.35	0.985402
7	70	30	9.77	1.35	0.985402
8	80	40	9.77	1.35	0.985402
9	90	50	9.77	1.35	0.985402
10	100	60	9.77	1.35	0.985402
11	110	70	9.76	1.34	0.978102
12	120	80	9.76	1.34	0.978102
13	135	95	9.76	1.34	0.978102
14	150	110	9.76	1.34	0.978102
15	165	125	9.76	1.34	0.978102
16	180	140	9.75	1.33	0.970803
17	210	170	9.75	1.33	0.970803
18	240	200	9.75	1.33	0.970803
19	300	260	9.75	1.33	0.970803
20	360	320	9.73	1.31	0.956205
21	480	440	9.71	1.29	0.941606
22	600	560	9.69	1.27	0.927007
23	900	860	9.65	1.23	0.897811
24	1200	1160	9.61	1.19	0.868613
25	1800	1760	9.53	1.11	0.810219
26	2400	2360	9.44	1.02	0.744526
27	3600	3560	9.28	0.86	0.627737


Slug Test 2 9/10/2011
Vacant Lot 2309 Russell Street Orangeburg, SC 29115
Bouwer and Rice Graph of DW-1
Ho is 1.37 decimal feet at t = 10 sec
Bouwer and Rice Parameter C is 1.77988
ln(Re/Rw) = 3.346806e+00
Analysis Starts at time 10.000000 seconds
Analysis Ends at time 40.000000 minutes
26 Measurements Analyzed from 1 to 26
Head Ratio (Ht/Ho)
1
0.1
0.01
Hydraulic Conductivity = 0.0898832 feet/day
Transmissivity = 2.50684 ft2/day
0
5
10
15
20
25
30
35
Adjusted Time (minutes)
Project Number 19268 for SCDHEC

Data from file:	C:\19268DW1.SLG
Title:	Slug Test 2
Site Name:	Vacant Lot
Location:	2309 Russell Street Orangeburg, SC 29115
Client:	SCDHEC
Project Number:	19268
Test Date:	9/10/2011
Well Number:	DW-1
Casing Radius:	0.0833 feet
Effective Well Radius:	0.20833 feet
Aquifer Thickness:	27.89 feet
Water Table to Screen Bottom:	27.89 feet
Screen Length:	5 feet
Static Water Level:	12.11 decimal feet

K ratio is not entered
There are 26 time and drawdown measurements
Tests starts with trial 1
Time values will be adjusted by 0.000115741 days (10.000000 seconds)

Trial	Time (seconds)	Adjusted Time (seconds)	Drawdown (decimal feet)	Head (decimal feet)	Head Ratio
1	10	0	13.48	1.37	1
2	20	10	13.46	1.35	0.985402
3	30	20	13.46	1.35	0.985402
4	40	30	13.46	1.35	0.985402
5	50	40	13.46	1.35	0.985402
6	60	50	13.45	1.34	0.978103
7	70	60	13.45	1.34	0.978103
8	80	70	13.45	1.34	0.978103
9	90	80	13.45	1.34	0.978103
10	100	90	13.44	1.33	0.970804
11	110	100	13.43	1.32	0.963504
12	120	110	13.43	1.32	0.963504
13	135	125	13.43	1.32	0.963504
14	150	140	13.43	1.32	0.963504
15	165	155	13.42	1.31	0.956205
16	180	170	13.4	1.29	0.941606
17	210	200	13.4	1.29	0.941606
18	240	230	13.39	1.28	0.934307
19	300	290	13.38	1.27	0.927007
20	360	350	13.34	1.23	0.897811
21	480	470	13.31	1.2	0.875913
22	600	590	13.25	1.14	0.832117
23	900	890	13.15	1.04	0.759125
24	1200	1190	12.96	0.85	0.620438
25	1800	1790	12.8	0.69	0.50365
26	2400	2390	12.52	0.41	0.29927

APPENDIX G
Disposal Manifests

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NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number

GENERATOR

5. Generator's Name and Mailing Address

Generator's Site Address (if different than mailing address)

Generator's Phone:

6. Transporter 1 Company Name — U.S. EPA ID Number

7. Transporter 2 Company Name — U.S. EPA ID Number

8. Designated Facility Name and Site Address — U.S. EPA ID Number

Facility's Phone:

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
	1.					
	2.					
	3.					
	4.					

13. Special Handling Instructions and Additional Information

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 governmental regulations.

Generator's/Offeror's Printed/Typed Name — Signature — Month Day Year

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:

Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name — Signature — Month Day Year

Transporter 2 Printed/Typed Name — Signature — Month Day Year

DESIGNATED FACILITY

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

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

APPENDIX J

Access Agreements and Property Owner Cover Letters

CRAWFORD
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CRAWFORD
ENVIRONMENTAL
SERVICES

September 28, 2011

Bernie Lee Wright
P.O. Box 275
Orangeburg, SC 29115

Re: Tier II Assessment Report
Vacant Lot, 2309 Russell Street Orangeburg , SC 29115
UST Permit: 19268
Cost Agreement: 42108
CES Project #: 15.070
Orangeburg County

Dear Mr. Wright,

Crawford Environmental Services, Inc. (CES) is pleased to submit the attached Tier II Assessment Report for the above mentioned facility. The included report describes assessment activities conducted at the above mentioned facility and on surrounding properties in general accordance with the South Carolina Department of Health and Environmental Control (SCDHEC). The assessment activities described in the included report, may have included work that was completed on your property. Please see attached report for further details.

If you have any questions or comments regarding site 19268, Vacant Lot please feel free to contact me at 803-708-0079, or by email at jreynolds@crawfordenvironmental.com.

Sincerely,

Justin Reynolds
Project Manager
Crawford Environmental Services
SC Rehabilitation Contractor Number: 0388

Attachments:
Tier II Assessment

MID-ATLANTIC REGION
15 CHURCH AVENUE, SW
ROANOKE, VIRGINIA 24011
OFFICE 540 343.6256
FAX 540 343.6259
ccrawford@crawfordenvironmental.com

SOUTHEAST REGION
104 CORPORATE BLVD, SUITE 412
WEST COLUMBIA, SOUTH CAROLINA 29169
OFFICE 803 708.0079
FAX 803 708.8137
dobrien@crawfordenvironmental.com

CRAWFORD
ENVIRONMENTAL
SERVICES

September 28, 2011

Scott Delano
717 Partridge Road
Orangeburg, SC 29118

Re: Tier II Assessment Report
Vacant Lot, 2309 Russell Street Orangeburg , SC 29115
UST Permit: 19268
Cost Agreement: 42108
CES Project #: 15.070
Orangeburg County

Dear Mr. Delano,

Crawford Environmental Services, Inc. (CES) is pleased to submit the attached Tier II Assessment Report for the above mentioned facility. The included report describes assessment activities conducted at the above mentioned facility and on surrounding properties in general accordance with the South Carolina Department of Health and Environmental Control (SCDHEC). The assessment activities described in the included report, may have included work that was completed on your property. Please see attached report for further details.

If you have any questions or comments regarding site 19268, Vacant Lot please feel free to contact me at 803-708-0079, or by email at jreynolds@crawfordenvironmental.com.

Sincerely,

Justin Reynolds
Project Manager
Crawford Environmental Services
SC Rehabilitation Contractor Number: 0388

Attachments:
Tier II Assessment

MID-ATLANTIC REGION
15 CHURCH AVENUE, SW
ROANOKE, VIRGINIA 24011
OFFICE 540 343.6256
FAX 540 343.6259
ccrawford@crawfordenvironmental.com

SOUTHEAST REGION
104 CORPORATE BLVD, SUITE 412
WEST COLUMBIA, SOUTH CAROLINA 29169
OFFICE 803 708.0079
FAX 803 708.8137
dobrien@crawfordenvironmental.com

CRAWFORD
ENVIRONMENTAL
SERVICES

September 28, 2011

Robert Bethea
1219 Russell Street NE
Orangeburg, SC 29118

Re: Tier II Assessment Report
Vacant Lot, 2309 Russell Street Orangeburg , SC 29115
UST Permit: 19268
Cost Agreement: 42108
CES Project #: 15.070
Orangeburg County

Dear Mr. Bethea,

Crawford Environmental Services, Inc. (CES) is pleased to submit the attached Tier II Assessment Report for the above mentioned facility. The included report describes assessment activities conducted at the above mentioned facility and on surrounding properties in general accordance with the South Carolina Department of Health and Environmental Control (SCDHEC). The assessment activities described in the included report, may have included work that was completed on your property. Please see attached report for further details.

If you have any questions or comments regarding site 19268, Vacant Lot please feel free to contact me at 803-708-0079, or by email at jreynolds@crawfordenvironmental.com.

Sincerely,

Justin Reynolds
Project Manager
Crawford Environmental Services
SC Rehabilitation Contractor Number: 0388

Attachments:
Tier II Assessment

MID-ATLANTIC REGION
15 CHURCH AVENUE, SW
ROANOKE, VIRGINIA 24011
OFFICE 540 343.6256
FAX 540 343.6259
ccrawford@crawfordenvironmental.com

SOUTHEAST REGION
104 CORPORATE BLVD, SUITE 412
WEST COLUMBIA, SOUTH CAROLINA 29169
OFFICE 803 708.0079
FAX 803 708.8137
dobrien@crawfordenvironmental.com

CRAWFORD
ENVIRONMENTAL
SERVICES

September 28, 2011

James Abraham
2721 Russell Street
Orangeburg, SC 29115

Re: Tier II Assessment Report
Vacant Lot, 2309 Russell Street Orangeburg , SC 29115
UST Permit: 19268
Cost Agreement: 42108
CES Project #: 15.070
Orangeburg County

Dear Mr. Abraham,

Crawford Environmental Services, Inc. (CES) is pleased to submit the attached Tier II Assessment Report for the above mentioned facility. The included report describes assessment activities conducted at the above mentioned facility and on surrounding properties in general accordance with the South Carolina Department of Health and Environmental Control (SCDHEC). The assessment activities described in the included report, may have included work that was completed on your property. Please see attached report for further details.

If you have any questions or comments regarding site 19268, Vacant Lot please feel free to contact me at 803-708-0079, or by email at jreynolds@crawfordenvironmental.com.

Sincerely,

Justin Reynolds
Project Manager
Crawford Environmental Services
SC Rehabilitation Contractor Number: 0388

Attachments:
Tier II Assessment

MID-ATLANTIC REGION
15 CHURCH AVENUE, SW
ROANOKE, VIRGINIA 24011
OFFICE 540 343.6256
FAX 540 343.6259
ccrawford@crawfordenvironmental.com

SOUTHEAST REGION
104 CORPORATE BLVD, SUITE 412
WEST COLUMBIA, SOUTH CAROLINA 29169
OFFICE 803 708.0079
FAX 803 708.8137
dobrien@crawfordenvironmental.com

CRAWFORD
ENVIRONMENTAL
SERVICES

September 28, 2011

Ken Davis
S.C. State University
Facilities Management
300 College Street NE
Orangeburg, SC 29117

Re: Tier II Assessment Report
Vacant Lot, 2309 Russell Street Orangeburg , SC 29115
UST Permit: 19268
Cost Agreement: 42108
CES Project #: 15.070
Orangeburg County

Dear Mr. Davis,

Crawford Environmental Services, Inc. (CES) is pleased to submit the attached Tier II Assessment Report for the above mentioned facility. The included report describes assessment activities conducted at the above mentioned facility and on surrounding properties in general accordance with the South Carolina Department of Health and Environmental Control (SCDHEC). The assessment activities described in the included report, may have included work that was completed on your property. Please see attached report for further details.

If you have any questions or comments regarding site 19268, Vacant Lot please feel free to contact me at 803-708-0079, or by email at jreynolds@crawfordenvironmental.com.

Sincerely,

Justin Reynolds
Project Manager
Crawford Environmental Services
SC Rehabilitation Contractor Number: 0388

Attachments:
Tier II Assessment

MID-ATLANTIC REGION
15 CHURCH AVENUE, SW
ROANOKE, VIRGINIA 24011
OFFICE 540 343.6256
FAX 540 343.6259
ccrawford@crawfordenvironmental.com

SOUTHEAST REGION
104 CORPORATE BLVD, SUITE 412
WEST COLUMBIA, SOUTH CAROLINA 29169
OFFICE 803 708.0079
FAX 803 708.8137
dobrien@crawfordenvironmental.com

Please Return to Andrew McCormick,
Assessment Section UST Program,
2600 Bull Street,
Columbia, SC 29201

DEC 16 2008

UNDERGROUND STORAGE TANK PROGRAM

RIGHT OF ENTRY

I, Bernie L Wright certify that I am the legal owner or the authorized representative for Same (owner) of the property described below. I have witnessed the planned locations / have been provided a sketch map indicating the location(s) of the work to be performed. Permission is hereby granted to the South Carolina Department of Health and Environmental Control (SCDHEC) and its agents to enter the referenced property for the following purposes:

Name of Facility (if appropriate) : Vacant Lot 2309 Russell Street
Street Address : 2309 Russell Street
City, State, ZIP : Orangeburg, SC 29115

1) Drilling of screening points. The work will be properly abandoned upon completion, and no permanent effects shall remain on site.
2) Installation of monitoring/ recovery wells. I understand that these wells will remain on the property until cleanup is complete. Additionally, SCDHEC or its agents will access the property at reasonable times for measurement and/or collection of samples.
3) The monitoring wells will be properly abandoned upon completion of remediation activities.

NAME (Please print) : Bernie L Wright
SIGNATURE : Bernie L Wright
WITNESS : Beverly A Wright
DATE: December Mo 08 Day 08 Year

Reference UST Permit # 19268

UST DOCKET
2 tech

CRAWFORD
ENVIRONMENTAL
SERVICES

Access Agreement

I, James Abraham, hereby certify that I am the owner of record or otherwise have legal right to grant entry and access to the property for the purpose described below ("owner") and do hereby grant the South Carolina Department of Health and Environmental Control (SCDHEC), its consulting firm Crawford Environmental Services (CES) and its agents, employees, subcontractors, and assigns the right to enter upon the property located at or described as:

Address: 2721 Russell St Orangeburg S.C. 29115

Tax Map ID: _____

For the purpose of performing a Tier II Environmental Site Assessment, as requested by SCDHEC, which will include the following categories of work, if necessary;

- **Drilling and installation of field screening test borings**
- **Drilling and installation of groundwater monitoring wells**
- **Periodically measuring groundwater, about once every three months**
- **Collection of groundwater samples, about once every three months**
- **Maintenance of monitoring wells**

Access to the monitoring well(s) will be needed for a period not likely to exceed five years after monitoring well installation has been completed. The property owner will be notified at least 48 hours in advance of any planned activities on the property. At the time, the property owner may contact SCDHEC or CES if there are any questions or concerns about the work on the property. This permission to enter the property is effective upon execution of this document. This permission to Enter Property is granted with consideration of CES making reasonable restoration to the property resulting from CES activities on site.

Consented to Giving Access:

James Abraham
Property Owners Signature

JAMES ABRAHAM
Printed Name

803-534-5039
Telephone Number

Access Denied:

_____
Property Owners Signature

_____
Printed Name

Reference UST Permit #: _____

Check Any That Apply:

- ☐ **Please provide a copy of the report**
- ☐ **Electronic Copy**
- ☐ **Paper Copy**

Please return to:
Crawford Environmental Services
104 Corporate Blvd. Suite 412
West Columbia, SC 29196

MID-ATLANTIC REGION
15 CHURCH AVENUE, SW
ROANOKE, VIRGINIA 24011
OFFICE 540 343.6256
FAX 540 343.6259
ccrawford@crawfordenvironmental.com

SOUTHEAST REGION
104 CORPORATE BLVD, SUITE 412
WEST COLUMBIA, SOUTH CAROLINA 29169
OFFICE 803 708.0079
FAX 803 708.8137
dobrien@crawfordenvironmental.com

CRAWFORD
ENVIRONMENTAL
SERVICES

Access Agreement

-> I, Delano Scott, hereby certify that I am the owner of record or otherwise have legal right to grant entry and access to the property for the purpose described below ("owner") and do hereby grant the South Carolina Department of Health and Environmental Control (SCDHEC), its consulting firm Crawford Environmental Services (CES) and its agents, employees, subcontractors, and assigns the right to enter upon the property located at or described as:

Address: 101-A Buckley (apartments)

Tax Map ID: _____

For the purpose of performing a Tier II Environmental Site Assessment, as requested by SCDHEC, which will include the following categories of work, if necessary;

- **Drilling and installation of field screening test borings**
- **Drilling and installation of groundwater monitoring wells**
- **Periodically measuring groundwater, about once every three months**
- **Collection of groundwater samples, about once every three months**
- **Maintenance of monitoring wells**

Access to the monitoring well(s) will be needed for a period not likely to exceed five years after monitoring well installation has been completed. The property owner will be notified at least 48 hours in advance of any planned activities on the property. At the time, the property owner may contact SCDHEC or CES if there are any questions or concerns about the work on the property. This permission to enter the property is effective upon execution of this document. This permission to Enter Property is granted with consideration of CES making reasonable restoration to the property resulting from CES activities on site.

Consented to Giving Access:

Delano Scott
Property Owners Signature

Delano Scott
Printed Name

803 347-7085
Telephone Number

Access Denied:

_____
Property Owners Signature

_____
Printed Name

Reference UST Permit #: _____

Check Any That Apply:

☐ **Please provide a copy of the report**

☐ **Electronic Copy**

☐ **Paper Copy**

Please return to:
Crawford Environmental Services
104 Corporate Blvd. Suite 412
West Columbia, SC 29196

MID-ATLANTIC REGION
15 CHURCH AVENUE, SW
ROANOKE, VIRGINIA 24011
OFFICE 540 343.6256
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ccrawford@crawfordenvironmental.com

SOUTHEAST REGION
104 CORPORATE BLVD, SUITE 412
WEST COLUMBIA, SOUTH CAROLINA 29169
OFFICE 803 708.0079
FAX 803 708.8137
dobrien@crawfordenvironmental.com

SC State

CRAWFORD
ENVIRONMENTAL
SERVICES

Access Agreement

I, John E. Smalls, hereby certify that I am the owner of record or otherwise have legal right to grant entry and access to the property for the purpose described below ("owner") and do hereby grant the South Carolina Department of Health and Environmental Control (SCDHEC), its consulting firm Crawford Environmental Services (CES) and its agents, employees, subcontractors, and assigns the right to enter upon the property located at or described as:

Address: Buckley St, Orangeburg SC 29117

Tax Map ID: _____

For the purpose of performing a Tier II Environmental Site Assessment, as requested by SCDHEC, which will include the following categories of work, if necessary;

- **Drilling and installation of field screening test borings**
- **Drilling and installation of groundwater monitoring wells**
- **Periodically measuring groundwater, about once every three months**
- **Collection of groundwater samples, about once every three months**
- **Maintenance of monitoring wells**

Access to the monitoring well(s) will be needed for a period not likely to exceed five years after monitoring well installation has been completed. The property owner will be notified at least 48 hours in advance of any planned activities on the property. At the time, the property owner may contact SCDHEC or CES if there are any questions or concerns about the work on the property. This permission to enter the property is effective upon execution of this document. This permission to Enter Property is granted with consideration of CES making reasonable restoration to the property resulting from CES activities on site.

Consented to Giving Access:

John E Smalls

Property Owners Signature

Printed Name

803-378-5113

Telephone Number

Access Denied:

Property Owners Signature

Printed Name

Reference UST Permit #:

_____

Check Any That Apply:

☐ **Please provide a copy of the report**

☐ **Electronic Copy**

☐ **Paper Copy**

Please return to:
Crawford Environmental Services
104 Corporate Blvd. Suite 412
West Columbia, SC 29196

MID-ATLANTIC REGION
15 CHURCH AVENUE, SW
ROANOKE, VIRGINIA 24011
OFFICE 540 343.6256
FAX 540 343.6259
ccrawford@crawfordenvironmental.com

SOUTHEAST REGION
104 CORPORATE BLVD, SUITE 412
WEST COLUMBIA, SOUTH CAROLINA 29169
OFFICE 803 708.0079
FAX 803 708.8137
dobrien@crawfordenvironmental.com

CRAWFORD ENVIRONMENTAL SERVICES

Access Agreement

I, Robert Bethea, III, hereby certify that I am the owner of record or otherwise have legal right to grant entry and access to the property for the purpose described below ("owner") and do hereby grant the South Carolina Department of Health and Environmental Control (SCDHEC), its consulting firm Crawford Environmental Services (CES) and its agents, employees, subcontractors, and assigns the right to enter upon the property located at or described as:

Address: 2267 Russell Street, N.E., Orangeburg, South Carolina 29115

Tax Map ID:

For the purpose of performing a Tier II Environmental Site Assessment, as requested by SCDHEC, which will include the following categories of work, if necessary;

- **Drilling and installation of field screening test borings**
- **Drilling and installation of groundwater monitoring wells**
- **Periodically measuring groundwater, about once every three months**
- **Collection of groundwater samples, about once every three months**
- **Maintenance of monitoring wells**

Access to the monitoring well(s) will be needed for a period not likely to exceed five years after monitoring well installation has been completed. The property owner will be notified at least 48 hours in advance of any planned activities on the property. At the time, the property owner may contact SCDHEC or CES if there are any questions or concerns about the work on the property. This permission to enter the property is effective upon execution of this document. This permission to Enter Property is granted with consideration of CES making reasonable restoration to the property resulting from CES activities on site.

Consented to Giving Access:

Property Owners Signature

Robert Bethea, III
Printed Name

803-378-6347
Telephone Number

Access Denied:

Property Owners Signature

Printed Name

Reference UST Permit #:

Check Any That Apply:

- [X] **Please provide a copy of the report**
- [ ] **Electronic Copy**
- [ ] **Paper Copy**

Please return to:
Crawford Environmental Services
104 Corporate Blvd. Suite 412
West Columbia, SC 29196

Correct address

MID-ATLANTIC REGION
15 CHURCH AVENUE, SW
ROANOKE, VIRGINIA 24011
OFFICE 540 343.6256
FAX 540 343.6259
ccrawford@crawfordenvironmental.com

SOUTHEAST REGION
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OFFICE 803 708.0079
FAX 803 708.8137
dobrien@crawfordenvironmental.com

APPENDIX K
Data Verification Checklist

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UST Programmatic QAPP Contractor Checklist

Item #:	Item	Yes	No	N/A	Location
1	Is Facility Name, Permit #, and address provided?	Yes			1.2.1
2	Is UST Owner/Operator name, address, provided?	Yes			1.2.2
3	Is name, address, & phone number of current property owner provided?	Yes			1.2.3
4	Is the SCDHEC Certified UST Site Rehabilitation Contractor's name, address, phone number, and certification number provided?	Yes			1.2.4
5	Is the name, address ,telephone number, and certification number of the well driller that installed the boring/monitoring wells provided?	Yes			1.2.5
6	Is the name, address, telephone number, and certification number of the certified laboratories performing analytical analyses provided	Yes			1.2.6
7	Has the facility history be summarized?	Yes			1.4
8	Has the regional geology and hydrogeology been summarized?	Yes			2.1
9	Are the receptor survey results provided as required?	Yes			2.3
10	Has the current use of the site and adjacent land been described?	Yes			1.3
11	Has the site specific geology been described?	Yes			2.2
12	Has the primary soil type been described?	Yes			2.2
13	Have the field screening results been described?	Yes			Table 1B
14	Has a description of the soil sample collection and preservation been detailed?	Yes			3.1
15	Has the field screening methodology been detailed?	Yes			3.1
16	Has the monitoring well installation and development dates been provided?	Yes			3.2
17	Has the method of well development been detailed?	Yes			3.2
18	Has the justification been provided for the locations of the monitoring wells?	Yes			1.5 (3)
19	Have the monitoring wells been labeled in accordance with the UST QAPP guidelines?	Yes			1.5(3)
20	Has the groundwater sampling methodology been detailed?	Yes			3.3
21	Have the groundwater sampling dates and groundwater measurements been provided?	Yes			3.3
22	Has the purging methodology been detailed?	Yes			3.3
23	Has the volume of water purged from each well been provided along with the measurements to verify purging is complete?	Yes			Apx B
24	If free-product is present, has the thickness been provided?			N/A	
25	Does the report include a brief discussion of the assessment done and the results?	Yes			5.0
26	Does the report include a brief discussion of the aquifer evaluation and the results?	Yes			4.0
27	Does the report include a brief discussion of the fate & transport models used?			N/A	
28	Are the site-conceptual tables included (Tier 1 risk evaluation)			N/A	
29	Have the exposure pathways been analyzed (Tier 2 risk evauluation)			N/A	
30	Have the SSTLs for each compound and pathway been calculated? (Tier 2 risk evaluation)			N/A	
31	Have recommendations for further action been provided and explained?				7.0
32	Has the soil analytical data for the site been provided in tabular format? (Table 1)	Yes			Table 1
33	Has the potentiometric data for the site been provided in tabular format?	Yes			Table 2
34	Has the current and historical laboratory data been provided in tabular format	Yes			Table 3
35	Have the aquifer characteristics been provided and summarized on the appropriate form?	Yes			Apx F
36	Have the Site conceptual model tables been included (Tier 1 risk evaluation)			N/A	
37	Has the topographic map been provided with all the required elements?	Yes			Figure 1
38	Has the site base map been provided with all the required elements?	Yes			Figure 2
39	Have the CoC maps been provided?	Yes			Figure 4
40	Have the potentiometric maps been provided?	Yes			Figure 5
41	Have the geologic cross-sections been provided	Yes			Figure 6
42	Have maps showing the predicted migration of the CoCs through time been provided?			N/A	
43	Has the site survey been provided and include all necessary elements?	Yes			Apx A
44	Have the sampling logs, chain of custody forms and analytical data package been included with all elements?	Yes			Apx B
45	Is the laboratory performing the analyses properly certified?	Yes			Apx B
46	Has the tax map been included with all necessary elements?	Yes			Apx C
47	Have the soil/boring field screening logs been provided?	Yes			Apx D
48	Have the well completion logs been provided?	Yes			Apx D
49	Have the aquifer evaluation forms,data, graphs, equations,etc. been provided?	Yes			Apx F
50	Have the disposal manifests been provided?		*No*		
51	Has a copy of the local zoning regulations been provided?			N/A	
52	Has all fate and transport modeling been provided?			N/A	
53	Have copies of all access agreements obtained by the contractor been provided?	Yes			Apx J
54	Has a copy of this form been attached to the final report and are explainations for any missing or incomplete data been provided?	Yes			

Comments:

Item 50 Disposal manifest will be provided at a later date. Material, both soil and groundwater has been stockpiled and mixed with material from UST Permits: 17761,00892,09141,12613,14404,12264,19266,07608,and 19411.

APPENDIX L
Quality Assurance Program Plan

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Section A: Project Management

A1 Title and Approval Page

Quality Assurance Project Plan
Addendum to the SC DHEC UST Programmatic QAPP
For
Vacant Lot Site UST Permit #: 19268

2309 Russell Street Orangeburg, SC 29116

Prepared by:

Justin Reynolds
Crawford Environmental Services
104 Corporate Blvd. Suite 412
West Columbia, SC 29196
SCDHEC Site Rehabilitation Contractor Certification Number: UCC-0388

Approvals

Alex Smith
SC DHEC Project Manager
Signature Date 8/8/11

Dee O'Brien
Site Rehabilitation Contractor
Signature Date 8/1/11

Charles Crawford
Project Verifier
Signature Date 8/1/11

Ashley Amick
Laboratory Director
Ashley B. Amick
Mon Aug 1 2011 12:42:02
Signature Date

Allison Cantrell
Laboratory Director
Allison A. Cantrell Digitally signed by Allison Cantrell
DN: cn=Allison Cantrell, c=US, o=aes, ou=aes
Date: 2011.08.01 11:33:52 -04'00'
Signature Date

A2 Table of Contents

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CRAWFORD ENVIRONMENTAL SERVICES

A3 Distribution List

Name	Title	Organization/Address	Telephone Number	Fax Number	Email Address
Alex Smith	SC DHEC Technical Project Manager	SCDHEC, UST Management Division, 2600 Bull St., Columbia, SC, 29201	803-896-6218	803-896-6245	Smitha2@dhec.sc.gov
Dee O'Brien	Site Rehabilitation Contractor	Crawford Environmental Services 104 Corporate Blvd. Suite 412 West Columbia, SC 29169	803-708-0079	803-708-8137	dobrien@crawfordenvironmental.com
Charles Crawford	Project QA/QC Manager and Project Verifier	Crawford Environmental Services 15 Church Street Roanoke, VA 24011	540-343-6256	540-343-6259	ccrawford@crawfordenvironmental.com
Justin Reynolds	Project Manager	Crawford Environmental Services 104 Corporate Blvd. Suite 412 West Columbia, SC 29169	803-708-0079	803-708-8137	jreynolds@crawfordenvironmental.com
Todd Allred	Field Manager/ Certified Well Driller	Crawford Environmental Services 104 Corporate Blvd. Suite 412 West Columbia, SC 29169	803-708-0079	803-708-8137	tallred@crawfordenvironmental.com
Ashley Amick	Laboratory Director	Access Analytical, Inc. (AA) 7478 Carlisle Street Irmo, SC 29063	803-781-4243	803-781-4303	aamick@axs-inc.com
Allison Cantrell	Laboratory Director	Analytical Environmental (AES) Services Inc. 3785 Presidential Pkwy Atlanta, GA 30340	770-457-8177	770-457-8188	acantrell@aesatlanta.com

Table 1A Addendum Distribution List

A4 Project Organization

Role from the UST Master QAPP	Name of person in this Role for this Project	Organization/Address	Telephone Number	Fax Number	Email Address
Project Manager	Alex Smith	SCDHEC, UST Management Division, 2600 Bull St., Columbia, SC, 29201	803-896-6218	803-896-6245	Smitha2@dhec.sc.gov
Site Rehabilitation Contractor	Dee O'Brien	Crawford Environmental Services 104 Corporate Blvd. Suite 412 West Columbia, SC 29169	803-708-0079	803-708-8137	dobrien@crawfordenvironmental.com
Project Manger	Justin Reynolds	Crawford Environmental Services 104 Corporate Blvd. Suite 412 West Columbia, SC 29169	803-708-0079	803-708-8137	jreynolds@crawfordenvironmental.com
Analytical Laboratory Director	Ashley Amick	Access Analytical, Inc. 7478 Carlisle Street Irmo, SC 29063	803-781-4243	803-781-4303	aamick@axs-inc.com
Analytical Laboratory Director	Allison Cantrell	Analytical Environmental Services Inc. 3785 Presidential Pkwy Atlanta, GA 30340	770-457-8177	770-457-8188	acantrell@aesatlanta.com
Field Manager/ Certified Well Driller	Todd Allred	Crawford Environmental Services 104 Corporate Blvd. Suite 412 West Columbia, SC 29169	803-708-0079	803-708-8137	tallred@crawfordenvironmental.com
Project QA/QC Manager and Project Verifier	Charles Crawford	Crawford Environmental Services 15 Church Street Roanoke VA, 24011	540-343-6256	540-343-6259	ccrawford@crawfordenvironmental.com

Table 2A Addendum Role Identification and Contact Information

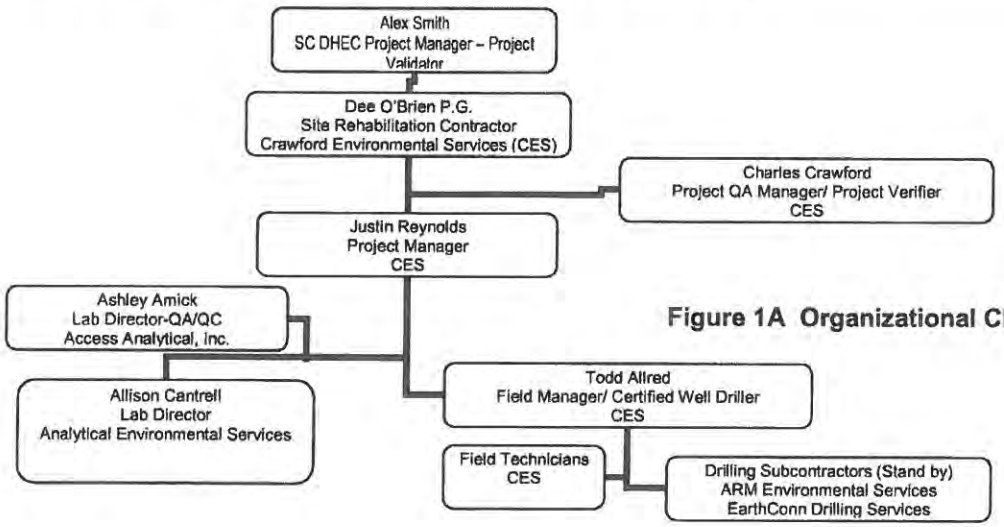


Figure 1A Organizational Chart

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. According to SCDHEC and contractor records, a Tier I Assessment, was previously completed at this facility. During the Tier I Assessment, several groundwater monitoring wells yielded dissolved-phase concentrations of Chemicals of Concern (CoCs) in exceedance of the risk based screening limits and maximum contaminant limits (RBSLs/MCLs).

Please answer the following: Does this project fall under UST or Brownfields area?
UST Area.

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).*** Install up to 20 field screening points, 20 shallow monitoring wells and 5 deep monitoring wells for the purpose of defining the horizontal and vertical extent of impact at the site. Gauge and sample all existing and newly installed wells at the site. Submit collected samples to the laboratory for analysis. Prepare and submit a report of findings to SCDHEC UST project manager.

2. ***The work will begin within:*** two weeks of cost approval. Field screening will take approximately one week, shallow well installation approximately one week and deep well installation will take approximately one week. Well installation will immediately be followed by groundwater sampling (within 5 days of deep well installation) the lab will require 7-9 days for sample analysis. Report development will take an additional week. If more samples are required to achieve 90% valid samples, the project may be extended. The SCDHEC project manger will be contacted via email or telephone if project requires an extension.

3. ***Are there are time or resource constraints? Include those factors that may interfere with the tentative schedule.*** Drilling, field equipment, laboratory equipment failures may cause up to a two week delay. Property access may cause up to a one week delay. No resource constraints are anticipated.

A7 Data Quality Objectives (DQOs) and Data Quality Indicators (DQIs)

Please refer to Appendix D for proposed shallow and deep monitoring well installation locations. The assessment boundaries are bound to properties in which consent from the property owner has been received. SCDHEC will be notified on any accessibility issues.

A8 Training and Certificates

Required training and licenses:

Title/Job	Name	Training Required	Date training received	Type of License	License Number
Site Rehabilitation Contractor	Dee O'Brien	BS/MS Geology	-	S.C.P.G.	873
Project Manager	Justin Reynolds	-	-	-	-
Field Manager	Todd Allred	N/A	N/A	SCLLR Class B	1446
Field Technicians	-	-	-	N/A	N/A
Lab Director (AA)	Ashley Amick	BS Biology		SC Certified Lab	32575001
Lab Director (AES)	Allison Cantrell	N/A	N/A	SC Certified Lab	98016003

Table 3A Required Training and Licenses

Justin Reynolds of CES is responsible to ensuring that personnel participating in this project receive the proper training. All training records will be stored in the following location: 15 Church Street Roanoke, VA 24011

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 Contractor performing Field Analyses: Crawford Environmental Services, Inc.
Name of Lab Director: Justin Reynolds
SCDHEC Certification Number: N/A
Parameters this Lab/Contractor will analyze for this project:
pH
Dissolved Oxygen
Temperature
Specific Conductance

Full Name of the Contractor performing Lab Analyses: Analytical Environmental Services Inc.
Name of Lab Director: Allison Cantrell (QA/QC Ashley Amick- Access Analytical inc.)
SCDHEC Certification Number: SC Cert #: 98016003
Parameters this Lab/Contractor will analyze for this project:
BTEX, naphthalene, MTBE , 1,2 DCA, 8 Oxygenates by EPA method 8260B
EDB by EPA method 8011
Unfiltered Lead by EPA method 6010C

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)

__X__ US Mail ____ Courier __X__ Hand delivered

Personnel will receive the QAPP via, US Mail, Email, or by downloading from CES internal network. Notification of updates to the Master QAPP will be through email from the contractor. CES personnel can access the QAPP by downloading through the internal network.

Record	Produced By	Hardcopy/ Electronic	Storage Location For how long?	Archival
Field Data Sheets	Environmental Contractor	Hard Copy	At Contractor Office Hard Copy for 5 Years	Included in Report
Laboratory Data	Laboratory Contractor	Electronic	At Laboratory Electronic for 25 Years	See Lab Archive plan
Weekly Update	Environmental Contractor	Electronic	At Contractors Office Electronic copy for 5 years	Included in Report
Monitoring Report	Environmental Contractor	Electronic/ Hard Copy	At Contractors Office Electronic copy for 5 years	Electronic Copy

Table 4A Record Identification, Storage, and Disposal

Section B Measurement/Data Acquisition

B1 Sampling Process/Experimental Design

Item	Start Date	End Date	Comments
Gauge Wells	D +7 days	D +7 days	
Sample Wells	D+7 days	D+7 days	
Samples Delivered to Lab	D+7 days	D+7 days	Samples delivered to Access Analytical by CES.
Samples are analyzed	D+8 days	D +21 days	
Report recived by contractor	D+35 days	N/A	
Project Data verified and report constructed	D + 35 days	D +49 days	
SCDHEC Project manger receives report	D +50 days	N/A	
Project Validation	D +50 days	D + 80 days	

Table 5A Sampling Activities
D= Drilling

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 (Shallow Wells Only)	***20***
Ground Water from field screening ***(20 Proposed Locations)***	*20*
Ground Water from monitoring wells ***(4 Existing Monitoring Wells, 20 Proposed Shallow Wells, 5 Proposed Deep Wells)***	*29*
From Drinking/Irrigation water wells	*0*
From surface water features	*0*
Field Blanks/ Trip Blanks/ Duplicates	*9*
Total number of Water samples	*58*

If any of the above are circled please indicate how will it be done and the equipment needed. Refer to CES SOP 2.10.1

Will Sampling Equipment have to be cleaned and decontaminated or is everything disposable? Refer to CES SOP Section 2.10

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. Refer to CES SOP Section 2.10.1

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. Access Analytical will be the laboratory and is responsible for shipment of all samples via Fedex, to the subcontractor laboratory of AES. A CME 55 with solid stem augers and hollow stem augers operated by CES will be utilized for field screening, shallow and deep monitoring well installation. Refer to CES SOP Section 2.9 for methodology.

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
Equipment Failure	Contact CES project manager	Identify failure. Log date, time and equipment.	Field Technicians
Loss or delay of lab samples	Resample	Notice by Access of lost or delayed samples	Access Analytical
Lost samples in the lab	Resample	Email from lab to CES project manager and QA/ project verifier	Lab Sample Custodian
Sample failure (hold time limit exceeded/temperature limit exceeded	Contact CES project manager	Email from lab to CES project manager and QA/ project verifier	Laboratory

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?*** Samples will be delivered to Access Analytical by CES personnel. Access Analytical will then ship the samples via Fedex to AES. Temperature and condition of the samples will be checked upon arrival at Access Analytical and arrival to AES.

2. ***How will the contactors cool the samples and keep the samples cool?***
   Refer to CES SOP section 2.11

3. ***How will the lab determine the temperature of the samples upon receipt? Will they be using a temperature blank?***
   Refer to CES SOP section 2.11

4. ***Where will the samples be stored in the Lab once they are received?***
   Refer to CES SOP section 2.11

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.***
   Refer to CES SOP section 2.11

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
pH	Section 2.10	SM 4500 H+B	HACH	Refer section 2.10 CES SOP
Specific Conductance	Section 2.10	SM2510B	HACH	Refer section 2.10 CES SOP
Temperature	Section 2.10	SM2550B	HACH	Refer section 2.10 CES SOP
Dissolved Oxygen	Section 2.10	SM4500-O-G	HACH	Refer section 2.10 CES SOP
BTEX, naphthalene, MTBE, 1,2 DCA, 8 Oxygenates	Section 8	EPA Method 8260B	Appendix III	
EDB	Section 8	EPA Method 8011	Appendix III	
Unfiltered Lead	Section 8	EPA Method 6010C	Appendix III	

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.**

2. **Identify procedures to follow when failures occur, identify the individual responsible for corrective action and appropriate documentation:**

Failure	Response	Documented Where?	Individual Responsible
Equipment Failure	Contact CES Project Manager	Record problem, reschedule field activities	Field Technicians
QC Failure	Contact CES Project Manager	Notification/Documentation via email, noted in laboratory report	Laboratory
Sample accident in transit	Contact CES Project Manager	Notification/Documentation via email, noted in laboratory report	Transit Company
Sample accident in lab	Contact CES Project Manager	Notification/Documentation via email, noted in laboratory report	Laboratory
Insufficient sample for analysis or repeat analysis	Contact CES Project Manager	Notification/Documentation via email, noted in laboratory report	Laboratory

Table 9A Corrective Action Procedures

3. **Identify sample disposal procedures.**

Analysis	Matrix	Schedule for disposal	Method for disposal	Comments
DO	Groundwater	As Generated	55 gallon drum on site	May be intermixed with soil
Specific Conductance	Groundwater	As Generated	55 gallon drum on site	May be intermixed with soil
pH	Groundwater	As Generated	55 gallon drum on site	May be intermixed with soil
Lab	All	See Lab SOP		

Table 10A Sample Disposal

4. **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).**
   N/A

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

1. Identify all field and laboratory equipment needing periodic maintenance, the schedule for this, and the person responsible. Not the availability and location of spare parts.

Instrument	Serial Number	Type of Maintenance	Frequency	Parts needed/Location	Person responsible
HACH	8228266	Check Batteries Check Buffer Solutions Calibration Factory Check Change/clean probe (s)	Monthly, Change out daily as needed	Columbia Office, Supply Cabinet	Justin Reynolds
KECK	-	Check Batteries Clean Probe	Weekly	Columbia Office, Supply Cabinet	Justin Reynolds

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
HACH	Calibration	See CES SOP Section 2.10	Justin Reynolds	Use another meter
Interface Probe	Preparatory Check	See CES SOP Section 2.10	Justin Reynolds	Use another meter

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*
HACH	See CES SOP Section 2.10	See CES SOP Section 2.10, pg 11, Daily Before Use	See CES SOP Section 2.10	See CES SOP Section 2.10	Justin Reynolds	See CES SOP Section 2.10

Instrument	Calibration Procedure	Frequency of Calibration	Acceptance Criteria	Corrective Action (CA)	Person Responsible for CA	SOP Reference*
Interface Probe	See CES SOP Section 2.10	See CES SOP Section 2.10, pg 11, Daily Before Use	See CES SOP Section 2.10	See CES SOP Section 2.10	Justin Reynolds	See CES SOP Section 2.10

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.
pH Buffer Solution	Fisher	Within expiration date	Cool. Dry cabinet	Justin Reynolds
Specfic Conductivity Standard	Fisher	Within expiration date	Cool, dry cabinet	Justin Reynolds
Nitrile Gloves	Clearwater	Sealed	Cool, dry room	Justin Reynolds
Batteries	Any	Sealed	Cool, dry cabinet	Todd Allred
Ballers	Clearwater	Sealed (individually)	Cool, dry room	Todd Allred
Snap Collectors/PDB	EON	Sealed (individually)	Cool,dry room	Todd Allred
Bottles	Access Analytical	Sealed	Cool, dry room	Todd Allred
Coolers	Access Analytical	Sealed	Cool,dry room	Tood Allred

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
Tier 1 and other assessment documents	Historic groundwater depth and chemical impact.	Establish the depth to water, materials needed.	

Table 15A Non-Direct Measurements

4. Identify key resources/support facilities needed. Not applicable.

B10 Data Management

1. Describe the data management scheme from field to final use and storage.

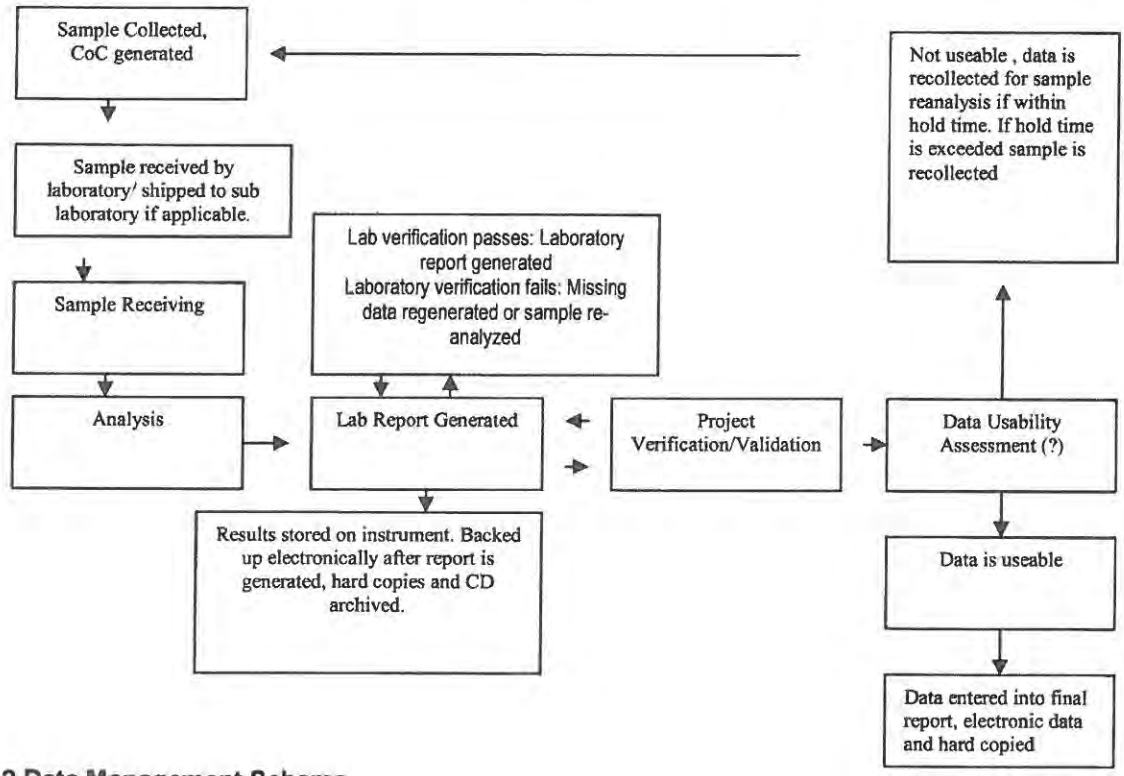


Figure 2 Data Management Scheme

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?** Field data is kept in a dedicated notebook with no pages removed. All data (reports from the lab, field notes, drafts and final reports) are saved on the company server. Original field data hard copies are filed into relevant project folders and archived in filing cabinets. Report data, to include tables and figures, are double checked from the original source by the CES project manager before the report is signed.

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.** Lab internal QA/QC checks and check sheets for all received coolers will determine if laboratory data is credible, or if the groundwater samples are suspect and new samples must be collected and reanalyzed. Laboratory supervisor will check all data before it leaves the laboratory. Laboratory data will be sent electronically to the environmental contractors of the USA for storage on their server.

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).** Hard copies will be maintained at the West Columbia office for five years. The electronic copies will be maintained for 25 years.

Section C Assessment and Oversight

C1 Assessment and Response Actions

1. **Field Oversight:** The Field Manager is responsible for ensuring SOPs to include equipment decontamination and calibration are properly conducted by the field staff. The Field Manager will be present and monitor the field staff every day that field activities occur. The Field Manager is also responsible for ensuring that field personnel adhere to the QAPP. If problems occur the Field Manager will immediately contact the CES Project Manager to determine the corrective action. If the situation cannot be resolved on site, another visit will be scheduled to resample the wells. The Field Manager can stop work at any time: The Project Manager can decide if the sampling party will return to the office without completing sampling of all the monitoring wells. The Field Manager's observations will be submitted to the project manager on a daily basis.

2. **Commercial Lab Offsite Technical Assessment:** The supervisors for each section will review the procedures for another section of the laboratory on a monthly basis to check quality procedures. The Project QA Manager will conduct specific assessments for the methods addressed by this QAPP. Anyone my suspend work if a situation arises, but only the supervisor can stop work. The laboratory QA manager will report all observations to the Laboratory Director. SCDHEC has the right to inspect work at any time. This will be documents and kept as part of project records.

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).

D H E C
PROMOTE PROTECT PROSPER

C. Earl Hunter, Commissioner
Promoting and protecting the health of the public and the environment.

DEE OBRIEN PG
DIVISION MANAGER
CRAWFORD ENVIRONMENTAL SERVICES INC
104 CORPORATE BLVD STE 412
WEST COLUMBIA SC 29169-4600

AUG 19 2011

Re: Tier II Directive
Vacant Lot, 2309 Russell Street, Orangburg, SC
UST Permit #19268; Cost Agreement #42108; Monitoring Well Approval # UMW-24317
Solicitation Number IFB-5400002721-3/3/2011-EMW, Purchase Order # 4600089989
Tier II Plan and Site Specific QAPP received August 1, 2011
Revised Tier II Plan received August 4, 2011
Orangeburg County

Dear Mr. O'Brien:

The Underground Storage Tank (UST) Management Division of the South Carolina Department of Health and Environmental Control (SCDHEC) has reviewed the Site-specific Quality Assurance Project Plan (QAPP), Tier II Assessment Plan and associated Cost Agreement for the referenced site. Assessment activities should begin immediately upon receipt of this letter.

Cost agreement number 42108 has been approved in the amount shown on the enclosed cost agreement spreadsheet and will be kept on file so that compensation can begin. **The SCDHEC reserves the authority to pay only for work properly performed and/or technically justified and will only pay rates in accordance with the referenced Invitation for Bid (IFB).** Further, SCDHEC reserves the right to question and/or reject costs if deemed unreasonable. The SCDHEC reserves the right to audit project records at any time during the project or after completion of the work. **The Tier II Assessment Report (1 hardcopies, 1 electronic copy, 1 copy to each property owner who has a well on their property), QAPP checklist, and invoice should be submitted on or before September 30, 2011**.

A copy of the signed site specific QAPP Contractor Addendum and approved assessment component cost agreement is enclosed for your information. Crawford Environmental Services, Incorporated can submit an invoice for direct billing from the State Underground Petroleum Environmental Response Bank (SUPERB) Account. Future invoices and/or other criteria included therein must comply with current SUPERB criteria per Section 44-2-20(2). Please reference cost agreement number 42108 on all pertinent invoices and correspondence. 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 Department is obtained. If for any reason there is a change in this cost agreement, any associated changes must be pre-approved in writing by this Department in order for Crawford Environmental Services, Incorporated to seek future cost compensation.

Any item(s) not clearly or completely addressed in the report (SC certified driller's number, disposal manifest for soil cuttings, disposal manifests for generated ground water, etc.) WILL NOT be compensated by the SUPERB Account. As agreed to in the referenced contract, the owner/operator and property owner of the referenced facility will not be responsible for any costs associated with this assessment.

Monitoring well approval for 20 temporary, 20 shallow, and 5 deep monitoring wells is enclosed for your records. Please note that all applicable South Carolina certification requirements regarding laboratory analyses, well installation, and report preparation must be met. All shallow wells are to be installed with screen intervals that bracket the water table.

The Department grants pre-approval for transportation of virgin petroleum impacted soil and groundwater from the referenced site to a permitted treatment facility. The Division suggests a roll off container will be used for disposal. There can be no spillage or leakage in transport. All investigation-derived waste (IDW) must be properly contained and labeled prior to disposal. IDW should not be stored on-site longer than ninety (90) days. A copy of the disposal manifest and/or acceptance letter from the receiving facility that clearly designates the quantity received must be included as an appendix to the report. As required by the referenced bid, reimbursement for disposal will be based on a per ton and a per gallon rate. If the CoC concentrations, based on laboratory analysis, are below Risk Based Screening Levels (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 the UST Permit # 19268 and Cost Agreement #42108. If you have questions concerning this correspondence, or would like to submit additional information, please contact me at (803) 896-6218, fax me at (803) 896-6245, or e-mail me at smitha2@.dhec.sc.gov.

Sincerely,

Alex Smith, Hydrogeologist
Assessment Section
Underground Storage Tank Management Division
Bureau of Land & Waste Management

enc: Signed Site Specific QAPP Addendum
Approved Cost Agreement
Monitoring Well Approval

Cc: Bernie Wright, P.O. Box 275, Orangeburg, SC 29116-0275 (w/o enc.)
Technical File (w/ enc.)

D H E C

PROMOTE PROTECT PROSPER

C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment.

Monitoring Well Installation Approval Form

Approval is hereby granted to:	Crawford Environmental Services, Incorporated
Facility:	Vacant Lot, 2309 Russell St., Orangeburg, SC
UST Permit Number:	19268
County:	Orangeburg

This approval is for the installation of 20 temporary, 20 shallow, and 5 deep monitoring wells. The monitoring wells are to be installed in the approved locations. Monitoring wells are to be installed following the South Carolina Well Standards, R.61-71, and the applicable guidance documents.

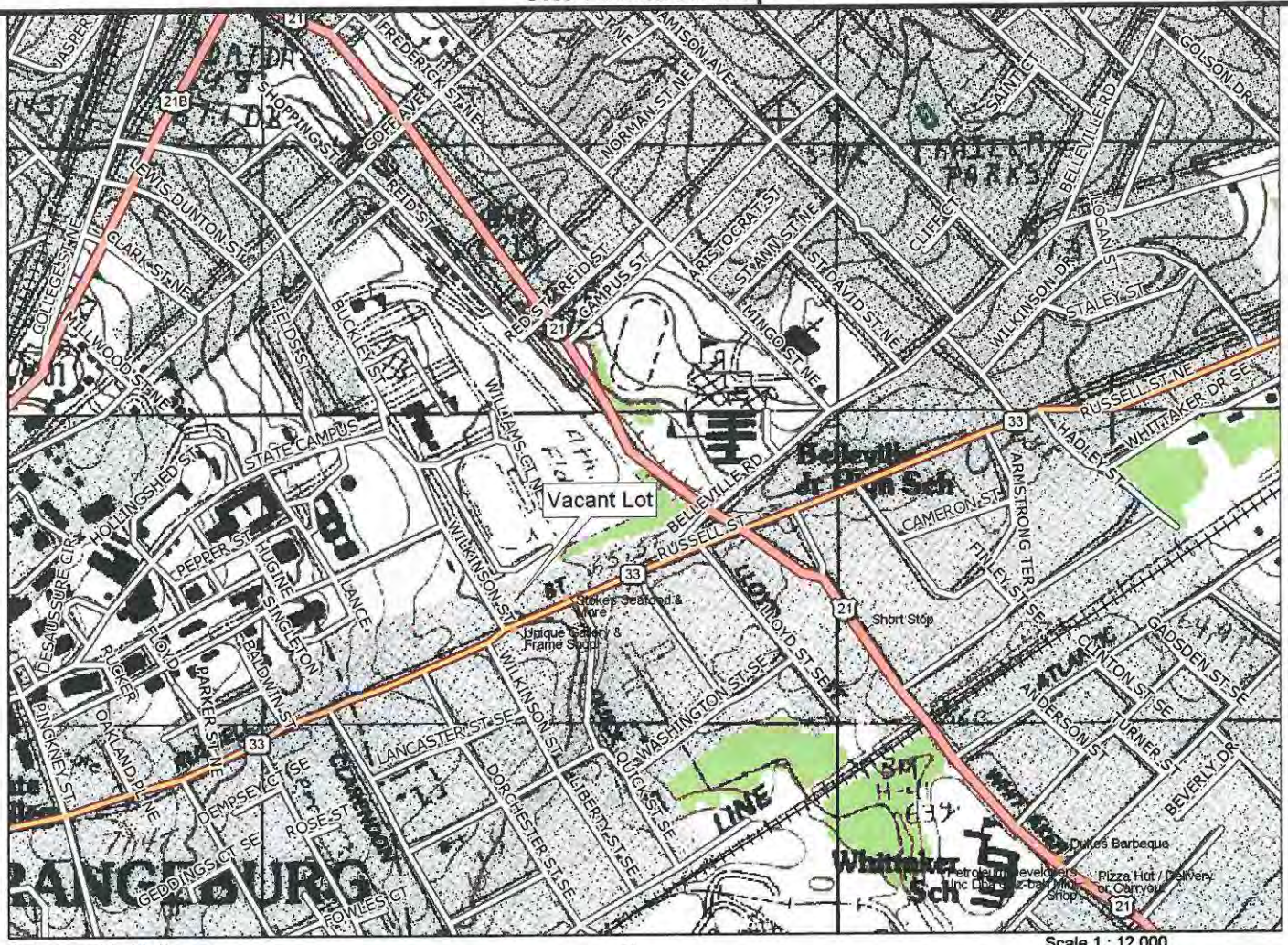
Please note that R.61-71 requires the following:

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 Department shall be completed and submitted to the Department within 30 days after well completion or abandonment unless another schedule has been approved by the Department. 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 Department within 30 days of receipt of laboratory results unless another schedule has been approved by the Department as required by R.61-71.H.1.d.
5. If any of the information provided to the Department changes, notification to Alex Smith (tel: (803) 896-6218 or e-mail: smitha2@dhec.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. Monitoring wells shall have Department approval prior to abandonment as required by R.61-71.H.1.a. A copy of this approval should be on the site during well installation.

Date of Issuance: **August 8, 2011** **Approval #:** **UMW-24317**

Alex Smith, Hydrogeologist
Assessment Section
Underground Storage Tank Management Division
Bureau of Land and Waste Management

FIGURE 1
Site Location Map



Data use subject to license.

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www.delorme.com

TN

MN (7.0°W)

Scale 1 : 12,000

0 200 400 800 1000 ft

0 100 200 300 400 500 m

1" = 1,000.0 ft Data Zoom 14-0

CRAWFORD ENVIRONMENTAL SERVICES

Division of C.F. Crawford, Inc.

104 Corporate Blvd..
West Columbia, SC 29169

803-708-0079 (office) 803-708-8137 (fax)

ORANGEBURG SOUTH, SOUTH CAROLINA

Source: Delorme Topo USA 7.0
Scale: 1:12,000 Contour Interval: 10 Feet

Vacant Lot
2309 Russell Street
Orangeburg, SC 29115

Project: Tier II

Client: SCDHEC

CES Job #: 15.070

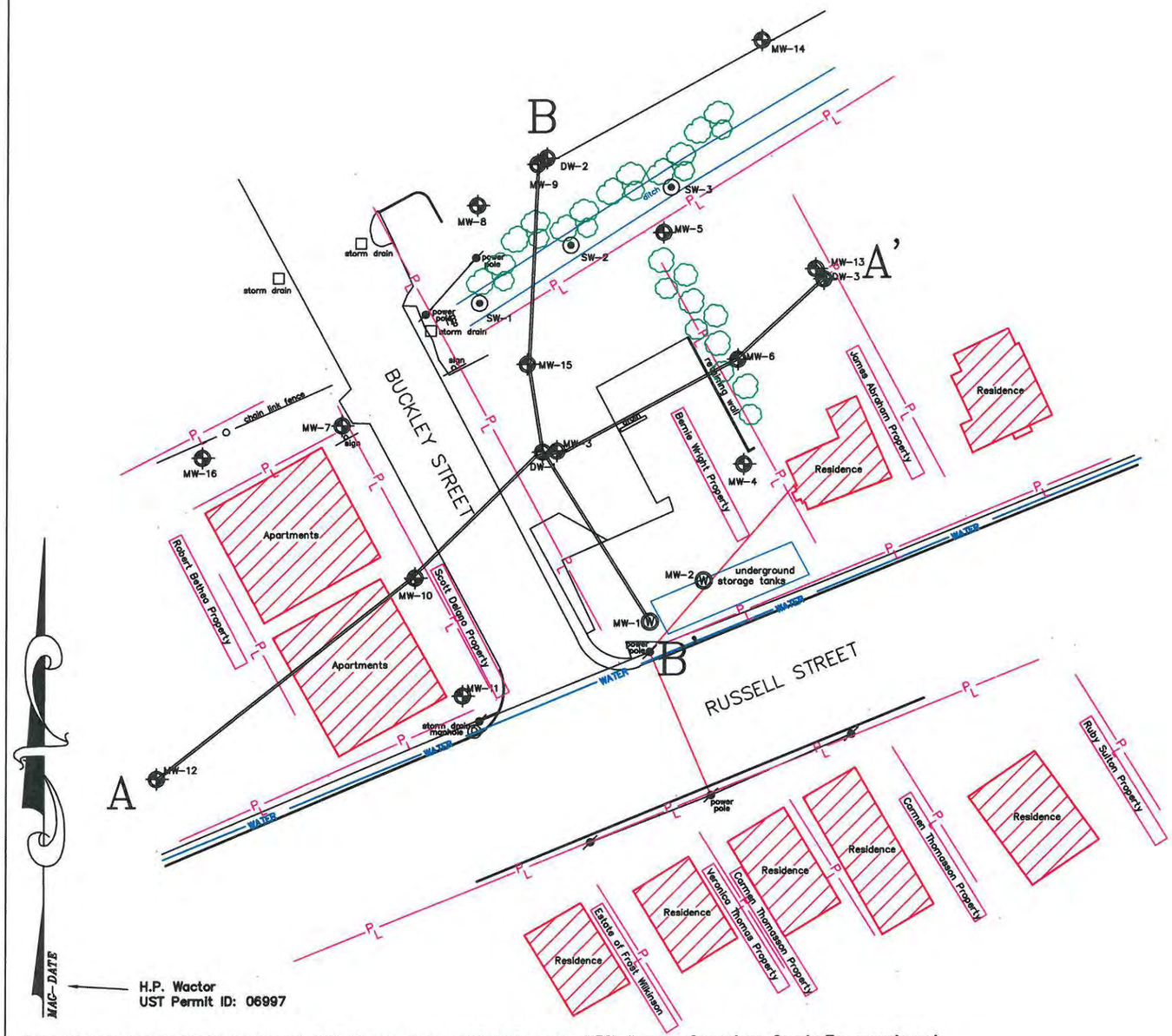
Date: September 2011

N

GRAPHIC SCALE

0 25 50 100

(In Feet)
As Shown



Sarah Robinson
UST Permit ID: 19491

C&R Enterprises
UST Permit ID: 11327

H.P. Wactor
UST Permit ID: 06997

MAC- DATE

Note: Diagram based RLS September 14, 2011 Survey, upon aerial photographs, MECI diagram, Orangeburg County Tax records and CES Field Notes

LEGEND			
	UST Basin		Property Line
	Monitoring Well		
	Soil Boring/ Field Screening /Surface Sample		

REV	BY	DATE

DR: JSR
CK: HDO
SCALE: AS SHOWN
CES PROJ. NO. 15.070

Tier II Environmental Assessment

CRAWFORD ENVIRONMENTAL SERVICES

104 Corporate Blvd.
Suite 412
West Columbia, SC 29210
803-708-0079 (ph)
803-708-8137 (Fax)

FIGURE TITLE

Site Facility Base and Cross-section Reference Map

Vacant Lot
2309 Russell Street
Orangeburg, SC 29115
Site ID: 19268

DRAWING NUMBER: Figure 2

REV: 0
9.23.2011

GRAPHIC SCALE

0 25 50 100

(In Feet)
As Shown

Note: Diagram based RLS September 14, 2011 Survey, upon aerial photographs, MECI diagram, Orangeburg County Tax records and CES Field Notes

Soil Laboratory Analytical Results Summary

Location		Date	Depth	Benzene	Toluene	Ethylbenzene	Xylenes (total)	Naphthalene	Comments
RBSL/MCLs (ug/kg){Clay		Rich Soil}		3	627	1551	13010	47	
GW	10	8/26/2011	5.0	<0.91	<0.91	<0.91	<2.7	<4.5	
GW	11	8/26/2011	5.0	<1.1	<1.1	<1.1	<3.3	<5.5	
GW	12	8/26/2011	5.0	<0.93	<0.93	<0.93	<2.8	<4.6	
GW	13	8/26/2011	5.0	<0.73	<0.73	<0.73	<2.2	<3.7	
GW	14	8/26/2011	5.0	<0.97	<0.97	<0.97	<2.9	<4.8	
GW	15	8/26/2011	5.0	<1.0	<1.0	<1.0	<3.1	<5.1	
GW	16	8/26/2011	5.0	<0.92	<0.92	<0.92	<2.8	<4.6	
GW	17	8/26/2011	5.0	<1.1	<1.1	<1.1	<3.3	<5.5	
Trip Blank		8/25/2011	n/a	<1.0	**0.90J**	<1.0	**1.0J**	**1.3J**	

Groundwater Screening Analytical Summary

Sample ID:		Sample date	Total Depth	Benzene	Toluene	Ethylbenzene	Xylenes (Total)	MTBE	Naphthalene	1,2 DCA	EDB
RBSL/MCL		ug/L	(ft)	5	1000	700	10000	25	40	5	0.01
GW	10	8/29/2011	12	*30*	<1.0	<1.0	<3.0	**12**	**2.3J**	NS	NS
GW	11	8/29/2011	12	<1.0	<1.0	<1.0	<3.0	*72*	<5.0	NS	NS
GW	11DUP	8/29/2011	12	<1.0	<1.0	<1.0	<3.0	*74*	<5.0	NS	NS
GW	12	8/29/2011	12	<1.0	<1.0	<1.0	<3.0	<1.0	<5.0	NS	NS
GW	13	8/29/2011	12	<1.0	<1.0	<1.0	<3.0	<1.0	<5.0	NS	NS
GW	14	8/29/2011	12	<1.0	<1.0	<1.0	<3.0	<1.0	<5.0	NS	NS
GW	15	8/29/2011	12	<1.0	<1.0	**0.48J**	<3.0	**0.30J**	<5.0	NS	NS
GW	16	8/29/2011	12	<1.0	<1.0	<1.0	<3.0	*130*	<5.0	NS	NS
GW	17	8/29/2011	12	<1.0	<1.0	<1.0	<3.0	<1.0	<5.0	NS	NS
GW	18	8/29/2011	40	<1.0	<1.0	<1.0	<3.0	**4.8**	**1.3J**	NS	NS
GW	19	8/29/2011	35	<1.0	<1.0	<1.0	<3.0	<1.0	<5.0	NS	NS
SW	1	8/29/2011	3	<1.0	<1.0	<1.0	<3.0	<1.0	<5.0	NS	NS
SW	1DUP	8/29/2011	3	<1.0	<1.0	<1.0	<3.0	<1.0	<5.0	NS	NS
SW	2	8/29/2011	3	<1.0	<1.0	<1.0	<3.0	<1.0	<5.0	NS	NS
SW	3	8/29/2011	3	<1.0	<1.0	<1.0	<3.0	<1.0	<5.0	NS	NS
Trip Blank		8/29/2011	N/A	<1.0	<1.0	<1.0	<3.0	<1.0	<5.0	NS	NS
Field Blank		8/29/2011	N/A	<1.0	<1.0	<1.0	<3.0	<1.0	<5.0	NS	NS

LEGEND

	UST Basin		Property Line
⊕	Monitoring Well		
⊙	Soil Boring / Field Screening/ Surface Sample		

REV	BY	DATE

DR: JSR
CK: HDO
SCALE: AS SHOWN
CES PROJ. NO. 15.070

Tier II Environmental Assessment

CRAWFORD ENVIRONMENTAL SERVICES
104 Corporate Blvd.
Suite 412
West Columbia, SC 29210
803-708-0079 (ph)
803-708-8137 (Fax)

FIGURE TITLE

Field Screening / Soil Chemicals of Concern Map

Vacant Lot
2309 Russell Street
Orangeburg, SC 29115
Site ID: 19268

DRAWING NUMBER: Figure 3

REV: 0
9.23.2011

GRAPHIC SCALE

0 25 50 100

(In Feet)

As Shown

Groundwater Laboratory Analytical Result Summary

Well ID:	Date:	Benzene	Toluene	Ethylbenzene	Xylenes (Total)	Naphthalene	MTBE	1,2 DCA	EDB	Pb	NO3	FE+	SO4	ETBA	Ethanol	ETBE	DIPE	TAA	TAME	TBA	TBF	Date:	Well ID:
RBSL	ug/L	5	1000	700	10000	25	40	5	0.01	15	10000	NE	NE	NE	10000	47	150	240	128	1400	NE		RBSL
MW-1	9/10/2011	<1.0	**0.78J**	<1.0	<3.0	<1.0	<1.0	<1.0	<0.020	NS	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-1
MW-2	9/10/2011	DRY																				9/10/2011	MW-2
MW-3	9/10/2011	*12*	**0.99J**	**37**	**2.1J**	*460*	**3.1**	<1.0	<0.021	*137*	NS	NS	NS	<100	<100	<100	<10	<100	<10	**7.8J**	<100	9/10/2011	MW-3
MW-4	9/10/2011	<1.0	**0.54J**	<1.0	<3.0	<5.0	**0.56J**	<1.0	<0.020	NS	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-4
MW-5	9/10/2011	<1.0	**0.54J**	<1.0	<3.0	**0.72J**	**7.9**	<1.0	<0.020	**14.6**	NS	NS	NS	<100	<100	<100	**7.6J**	<100	<10	<100	<100	9/10/2011	MW-5
MW-6	9/10/2011	<1.0	<1.0	<1.0	<3.0	**6**	**53**	<1.0	<0.020	**3.53**	NS	NS	NS	<100	200	<100	<10	<100	<10	**13J**	<100	9/10/2011	MW-6
MW-7	9/10/2011	<1.0	<1.0	<1.0	**0.92J**	<5.0	<1.0	<1.0	<0.020	*139*	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-7
MW-8	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-8
MW-9	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	**6.43**	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-9
MW-10	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	*43*	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-10
MW-11	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	**0.38J**	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-11
MW-12	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	NS	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-12
MW-13	9/10/2011	<1.0	**0.78J**	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-13
MW-14	9/10/2011	<1.0	**0.47J**	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	**6.29**	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-14
MW-15	9/10/2011	<1.0	<1.0	**0.49J**	<3.0	**7.4**	**2.3**	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-15
MW-16	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-16
DW-1	9/10/2011	<1.0	**0.77J**	<1.0	**0.41J**	**1.3J**	**0.72J**	<1.0	<0.020	**1.83**	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	DW-1
DW-2	9/10/2011	<1.0	**0.75J**	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	DW-2
DW-3	9/10/2011	<1.0	**0.73J**	<1.0	<3.0	<5.0	**0.46J**	<1.0	<0.020	**11.6**	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	DW-3

Note: Deep wells DW-1, DW-2, and DW-3 are not used in the creation of this map.

LEGEND			
	UST Basin		
	Monitoring Well		

REV	BY	DATE

DR: JSR

CK: HDO

SCALE: AS SHOWN

CES PROJ. NO. 15.070

Tier II Environmental Assessment

CRAWFORD ENVIRONMENTAL SERVICES

104 Corporate Blvd.
Suite 412
West Columbia, SC 29210

803-708-0079 (ph)
803-708-8137 (Fax)

FIGURE TITLE

Chemicals of Concern: Benzene

Vacant Lot
2309 Russell Street
Orangeburg, SC 29115
Site ID: 19268

DRAWING NUMBER: Figure 4A

REV: 0 9.23.2011

GRAPHIC SCALE

0 25 50 100

(In Feet)
As Shown

MAC- DATE

Groundwater Laboratory Analytical Result Summary

Well ID:	Date:	Benzene	Toluene	Ethylbenzene	Xylenes (Total)	Naphthalene	MTBE	1,2 DCA	EDB	Pb	NO3	FE+	SO4	ETBA	Ethanol	ETBE	DIPE	TAA	TAME	TBA	TBF	Date:	Well ID:
RBSL	ug/L	5	1000	700	10000	25	40	5	0.01	15	10000	NE	NE	NE	10000	47	150	240	128	1400	NE		RBSL
MW-1	9/10/2011	<1.0	**0.78J**	<1.0	<3.0	<1.0	<1.0	<1.0	<0.020	NS	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-1
MW-2	9/10/2011	DRY																				9/10/2011	MW-2
MW-3	9/10/2011	*12*	**0.99J**	**37**	**2.1J**	*460*	**3.1**	<1.0	<0.021	*137*	NS	NS	NS	<100	<100	<100	<10	<100	<10	**7.8J**	<100	9/10/2011	MW-3
MW-4	9/10/2011	<1.0	**0.54J**	<1.0	<3.0	<5.0	**0.56J**	<1.0	<0.020	NS	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-4
MW-5	9/10/2011	<1.0	**0.54J**	<1.0	<3.0	**0.72J**	**7.9**	<1.0	<0.020	**14.6**	NS	NS	NS	<100	<100	<100	**7.6J**	<100	<10	<100	<100	9/10/2011	MW-5
MW-6	9/10/2011	<1.0	<1.0	<1.0	<3.0	**6**	**53**	<1.0	<0.020	**3.53**	NS	NS	NS	<100	200	<100	<10	<100	<10	**13J**	<100	9/10/2011	MW-6
MW-7	9/10/2011	<1.0	<1.0	<1.0	**0.92J**	<5.0	<1.0	<1.0	<0.020	*139*	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-7
MW-8	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-8
MW-9	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	**6.43**	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-9
MW-10	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	*43*	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-10
MW-11	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	**0.38J**	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-11
MW-12	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	NS	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-12
MW-13	9/10/2011	<1.0	**0.78J**	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-13
MW-14	9/10/2011	<1.0	**0.47J**	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	**6.29**	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-14
MW-15	9/10/2011	<1.0	<1.0	**0.49J**	<3.0	**7.4**	**2.3**	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-15
MW-16	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-16
DW-1	9/10/2011	<1.0	**0.77J**	<1.0	**0.41J**	**1.3J**	**0.72J**	<1.0	<0.020	**1.83**	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	DW-1
DW-2	9/10/2011	<1.0	**0.75J**	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	DW-2
DW-3	9/10/2011	<1.0	**0.73J**	<1.0	<3.0	<5.0	**0.46J**	<1.0	<0.020	**11.6**	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	DW-3

Note: Deep wells DW-1, DW-2, and DW-3 are not used in the creation of this map.

LEGEND			
	UST Basin		
	Monitoring Well		

REV	BY	DATE

DR: JSR
CK: HDO
SCALE: AS SHOWN
CES PROJ. NO. 15.070

Tier II Environmental Assessment

CRAWFORD ENVIRONMENTAL SERVICES

104 Corporate Blvd.
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803-708-0079 (ph)
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FIGURE TITLE

Chemicals of Concern: Ethylbenzene

Vacant Lot
2309 Russell Street
Orangeburg, SC 29115
Site ID: 19268

DRAWING NUMBER: Figure 4B

REV: 0
9.23.2011

GRAPHIC SCALE

0 25 50 100

(In Feet)

As Shown

MAC-DATE

Groundwater Laboratory Analytical Result Summary

Well ID:	Date:	Benzene	Toluene	Ethylbenzene	Xylenes (Total)	Naphthalene	MTBE	1,2 DCA	EDB	Pb	NO3	FE+	SO4	ETBA	Ethanol	ETBE	DIPE	TAA	TAME	TBA	TBF	Date:	Well ID:
RBSL	ug/L	5	1000	700	10000	25	40	5	0.01	15	10000	NE	NE	NE	10000	47	150	240	128	1400	NE		RBSL
MW-1	9/10/2011	<1.0	**0.78J**	<1.0	<3.0	<1.0	<1.0	<1.0	<0.020	NS	NS	NS	NS	<100	<100	<100	<100	<100	<10	<100	<100	9/10/2011	MW-1
MW-2	9/10/2011	DRY																				9/10/2011	MW-2
MW-3	9/10/2011	*12*	**0.99J**	37	**2.1J**	*466*	**3.1**	<1.0	<0.021	*127*	NS	NS	NS	<100	<100	<100	<10	<100	<10	**7.8J**	<100	9/10/2011	MW-3
MW-4	9/10/2011	<1.0	**0.54J**	<1.0	<3.0	<5.0	**0.56J**	<1.0	<0.020	NS	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-4
MW-5	9/10/2011	<1.0	**0.54J**	<1.0	<3.0	**0.72J**	**7.9**	<1.0	<0.020	**14.6**	NS	NS	NS	<100	<100	<100	**7.6J**	<100	<10	<100	<100	9/10/2011	MW-5
MW-6	9/10/2011	<1.0	<1.0	<1.0	<3.0	**6**	**53**	<1.0	<0.020	**3.53**	NS	NS	NS	<100	200	<100	<10	<100	<10	**13J**	<100	9/10/2011	MW-6
MW-7	9/10/2011	<1.0	<1.0	<1.0	**0.92J**	<5.0	<1.0	<1.0	<0.020	*139*	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-7
MW-8	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-8
MW-9	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	**6.43**	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-9
MW-10	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	*43*	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-10
MW-11	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	**0.38J**	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-11
MW-12	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	NS	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-12
MW-13	9/10/2011	<1.0	**0.78J**	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-13
MW-14	9/10/2011	<1.0	**0.47J**	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	**6.29**	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-14
MW-15	9/10/2011	<1.0	<1.0	**0.49J**	<3.0	**7.4**	**2.3**	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-15
MW-16	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-16
DW-1	9/10/2011	<1.0	**0.77J**	<1.0	**0.41J**	**1.3J**	**0.72J**	<1.0	<0.020	**1.83**	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	DW-1
DW-2	9/10/2011	<1.0	**0.75J**	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	DW-2
DW-3	9/10/2011	<1.0	**0.73J**	<1.0	<3.0	<5.0	**0.46J**	<1.0	<0.020	**11.6**	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	DW-3

Note: Deep wells DW-1, DW-2, and DW-3 are not used in the creation of this map.

LEGEND	
	UST Basin
	Monitoring Well

REV	BY	DATE

DR: JSR

CK: HDO

SCALE: AS SHOWN

CES PROJ. NO. 15.070

Tier II Environmental Assessment

CRAWFORD ENVIRONMENTAL SERVICES

104 Corporate Blvd.
Suite 412
West Columbia, SC 29210

803-708-0079 (ph)
803-708-8137 (Fax)

FIGURE TITLE

Chemicals of Concern: Naphthalene

Vacant Lot
2309 Russell Street
Orangeburg, SC 29115
Site ID: 19268

DRAWING NUMBER: Figure 4C

REV: 0 9.23.2011

GRAPHIC SCALE

0 25 50 100

(In Feet)

As Shown

Groundwater Laboratory Analytical Result Summary																								
Well ID:	Date:	Benzene	Toluene	Ethylbenzene	Xylenes (Total)	Naphthalene	MTBE	1,2 DCA	EDB	Pb	NO3	FE+	SO4	ETBA	Ethanol	ETBE	DIPE	TAA	TAME	TBA	TBF	Date:	Well ID:
RBSL	ug/L	5	1000	700	10000	25	40	5	0.01	15	10000	NE	NE	NE	10000	47	150	240	128	1400	NE		RBSL
MW-1	9/10/2011	<1.0	**0.78J**	<1.0	<3.0	<1.0	<1.0	<1.0	<0.020	NS	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-1
MW-2	9/10/2011									DRY												9/10/2011	MW-2
MW-3	9/10/2011	*12*	**0.99J**	**37**	**2.1J**	*460*	**3.1**	<1.0	<0.021	*127*	NS	NS	NS	<100	<100	<100	<10	<100	<10	**7.8J**	<100	9/10/2011	MW-3
MW-4	9/10/2011	<1.0	**0.54J**	<1.0	<3.0	<5.0	**0.56J**	<1.0	<0.020	NS	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-4
MW-5	9/10/2011	<1.0	**0.54J**	<1.0	<3.0	**0.72J**	**7.9**	<1.0	<0.020	**14.6**	NS	NS	NS	<100	<100	<100	**7.6J**	<100	<10	<100	<100	9/10/2011	MW-5
MW-6	9/10/2011	<1.0	<1.0	<1.0	<3.0	**6**	**53**	<1.0	<0.020	**3.53**	NS	NS	NS	<100	200	<100	<10	<100	<10	**13J**	<100	9/10/2011	MW-6
MW-7	9/10/2011	<1.0	<1.0	<1.0	**0.92J**	<5.0	<1.0	<1.0	<0.020	*139*	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-7
MW-8	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-8
MW-9	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	**6.43**	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-9
MW-10	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	*43*	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-10
MW-11	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	**0.38J**	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-11
MW-12	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	NS	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-12
MW-13	9/10/2011	<1.0	**0.78J**	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-13
MW-14	9/10/2011	<1.0	**0.47J**	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	**6.29**	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-14
MW-15	9/10/2011	<1.0	<1.0	**0.49J**	<3.0	**7.4**	**2.3**	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-15
MW-16	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-16
DW-1	9/10/2011	<1.0	**0.77J**	<1.0	**0.41J**	**1.3J**	**0.72J**	<1.0	<0.020	**1.83**	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	DW-1
DW-2	9/10/2011	<1.0	**0.75J**	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	DW-2
DW-3	9/10/2011	<1.0	**0.73J**	<1.0	<3.0	<5.0	**0.46J**	<1.0	<0.020	**11.6**	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	DW-3

MAC-DATE

Note: Deep wells DW-1, DW-2, and DW-3 are not used in the creation of this map.

LEGEND	
	UST Basin
⊕	Monitoring Well

REV	BY	DATE

DR: JSR

CK: HDO

SCALE: AS SHOWN

CES PROJ. NO. 15.070

Tier II Environmental Assessment

CRAWFORD ENVIRONMENTAL SERVICES

104 Corporate Blvd.
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West Columbia, SC 29210

803-708-0079 (ph)
803-708-8137 (Fax)

FIGURE TITLE

Chemicals of Concern: MtBE

Vacant Lot
2309 Russell Street
Orangeburg, SC 29115
Site ID: 19268

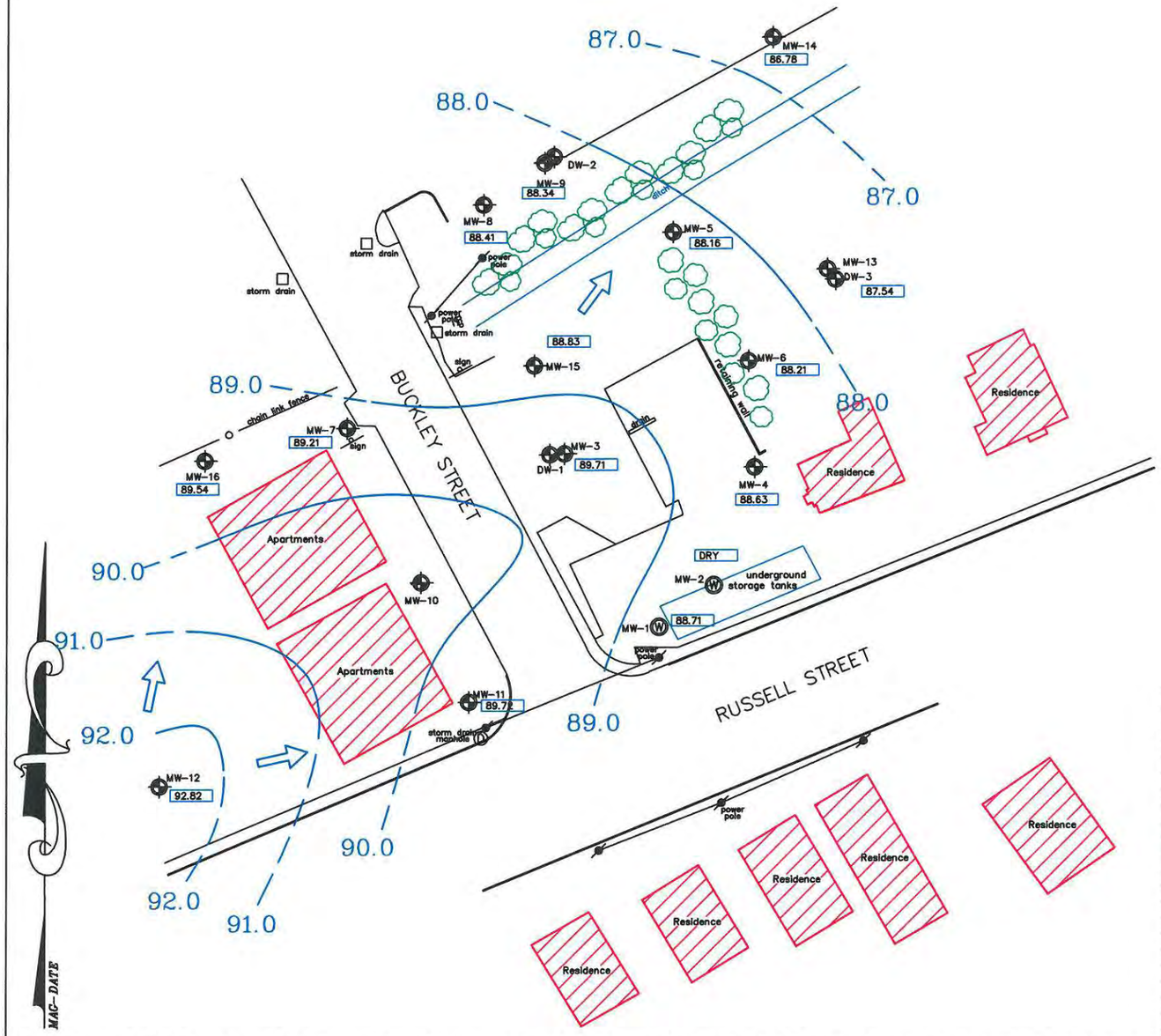
DRAWING NUMBER: Figure 4D

REV: 0 9.23.2011

GRAPHIC SCALE

0 25 50 100

(In Feet)
As Shown



Note: Deep Wells DW-1, DW-2 and DW-3 were not used in the creation of this diagram. Shallow well MW-10 was not used in the creation of this diagram.

Groundwater Summary

Monitor Well	Well Depth (ft)	Screened Interval		Top of Casing (ft)	Date Measured	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)	Product Elevation (ft)	Groundwater Elevation (ft)
MW-1	12	2	12	99.44	9/10/2011	0	10.73	0	0	88.71
MW-2	12	2	12	99.13	9/10/2011	0			DRY	
MW-3	12	2	12	98.29	9/10/2011	0	8.58	0	0	89.71
MW-4	12	2	12	100.43	9/10/2011	0	11.80	0	0	88.63
MW-5	12	2	12	96.26	9/10/2011	0	8.10	0	0	88.16
MW-6	12	2	12	95.97	9/10/2011	0	7.76	0	0	88.21
MW-7	12	2	12	98.91	9/10/2011	0	9.70	0	0	89.21
MW-8	12	2	12	98.82	9/10/2011	0	10.41	0	0	88.41
MW-9	12	2	12	98.43	9/10/2011	0	10.09	0	0	88.34
MW-10	12	2	12	99.49*	9/10/2011	0	8.91	0	0	90.58*
MW-11	12	2	12	99.76	9/10/2011	0	10.04	0	0	89.72
MW-12	12	2	12	102.18	9/10/2011	0	9.36	0	0	92.82
MW-13	12	2	12	95.68	9/10/2011	0	8.14	0	0	87.54
MW-14	12	2	12	98.46	9/10/2011	0	11.68	0	0	86.78
MW-15	12	2	12	99.51	9/10/2011	0	10.68	0	0	88.83
MW-16	12	2	12	99.51	9/10/2011	0	9.97	0	0	89.54
DW-1	40	35	40	98.35	9/10/2011	0	11.61	0	0	86.74
DW-2	35	30	35	97.99	9/10/2011	0	13.45	0	0	84.54
DW-3	29	24	29	95.67	9/10/2011	0	13.21	0	0	82.46

LEGEND

	UST Basin		Groundwater Flow Direction
	Monitoring Well		Potentiometric Surface
			Potentiometric Surface {Estimated}

REV	BY	DATE

DR: JSR

CK: HDO

SCALE: AS SHOWN

CES PROJ. NO. 15.070

Tier II Environmental Assessment

CRAWFORD ENVIRONMENTAL SERVICES

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FIGURE TITLE

Potentiometric Map (Shallow)

Vacant Lot
2309 Russell Street
Orangeburg, SC 29115
Site ID: 19268

DRAWING NUMBER: Figure 5A

REV: 0 9.23.2011

GRAPHIC SCALE

0 25 50 100

(In Feet)
As Shown

Note: Shallow wells (MW-1 through MW-16) were not used in the creation of this diagram.

Groundwater Summary

Monitor Well	Well Depth (ft)	Screened Interval		Top of Casing (ft)	Date Measured	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)	Product Elevation (ft)	Groundwater Elevation (ft)
MW-1	12	2	12	99.44	9/10/2011	0	10.73	0	0	88.71
MW-2	12	2	12	99.13	9/10/2011	0			DRY	
MW-3	12	2	12	98.29	9/10/2011	0	8.58	0	0	89.71
MW-4	12	2	12	100.43	9/10/2011	0	11.80	0	0	88.63
MW-5	12	2	12	96.26	9/10/2011	0	8.10	0	0	88.16
MW-6	12	2	12	95.97	9/10/2011	0	7.76	0	0	88.21
MW-7	12	2	12	98.91	9/10/2011	0	9.70	0	0	89.21
MW-8	12	2	12	98.82	9/10/2011	0	10.41	0	0	88.41
MW-9	12	2	12	98.43	9/10/2011	0	10.09	0	0	88.34
MW-10	12	2	12	99.49*	9/10/2011	0	8.91	0	0	90.58*
MW-11	12	2	12	99.76	9/10/2011	0	10.04	0	0	89.72
MW-12	12	2	12	102.18	9/10/2011	0	9.36	0	0	92.82
MW-13	12	2	12	95.68	9/10/2011	0	8.14	0	0	87.54
MW-14	12	2	12	98.46	9/10/2011	0	11.68	0	0	86.78
MW-15	12	2	12	99.51	9/10/2011	0	10.68	0	0	88.83
MW-16	12	2	12	99.51	9/10/2011	0	9.97	0	0	89.54
DW-1	40	35	40	98.35	9/10/2011	0	11.61	0	0	86.74
DW-2	35	30	35	97.99	9/10/2011	0	13.45	0	0	84.54
DW-3	29	24	29	95.67	9/10/2011	0	13.21	0	0	82.46

LEGEND

	UST Basin	⇨	Groundwater Flow Direction
⊕	Monitoring Well	———	Potentiometric Surface
		— — —	Potentiometric Surface {Estimated}

REV	BY	DATE

DR: JSR

CK: HDO

SCALE: AS SHOWN

CES PROJ. NO. 15.070

Tier II Environmental Assessment

CRAWFORD ENVIRONMENTAL SERVICES

104 Corporate Blvd.
Suite 412
West Columbia, SC 29210
803-708-0079 (ph)
803-708-8137 (Fax)

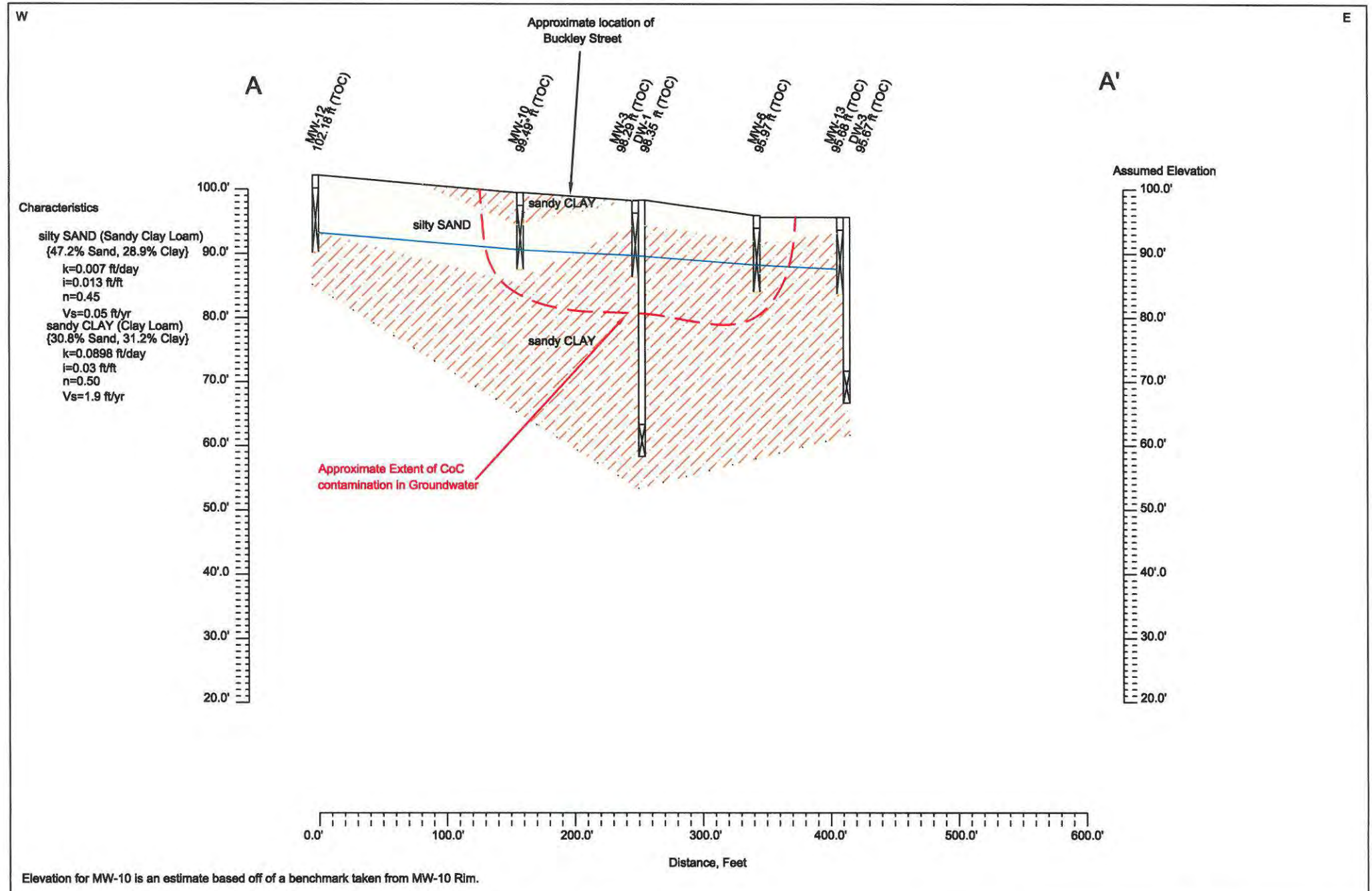
FIGURE TITLE

Potentiometric Map (Deep)

Vacant Lot
2309 Russell Street
Orangeburg, SC 29115
Site ID: 19268

DRAWING NUMBER: Figure 5B

REV: 0 9.23.2011



Elevation for MW-10 is an estimate based off of a benchmark taken from MW-10 Rim.

EXPLANATION	REV	BY	DATE
Groundwater Elevation			

DR: JSR
CK: HDO
SCALE: AS SHOWN
CES PROJ. NO. 15.070

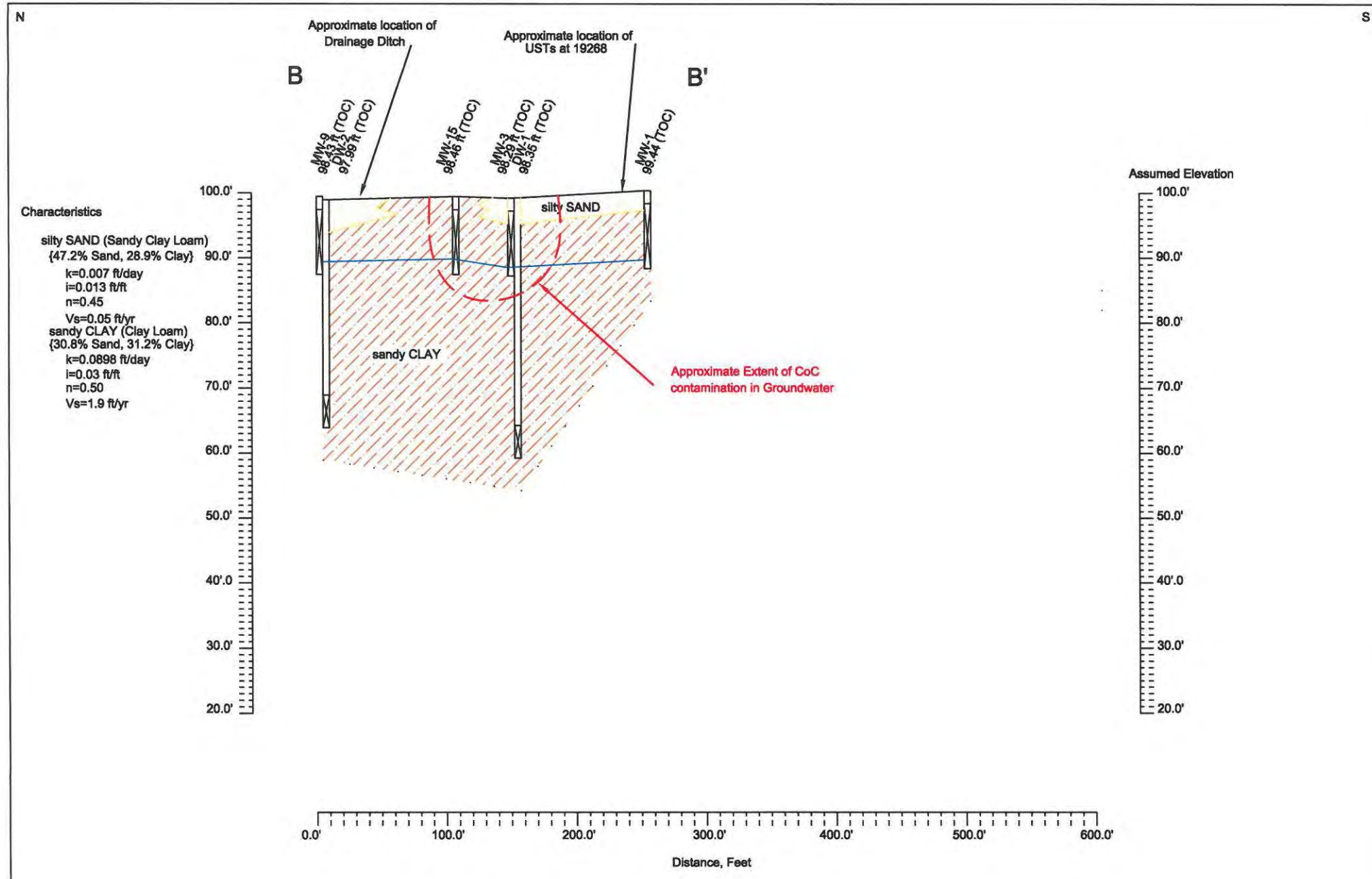
Tier II Assessment Report

CRAWFORD ENVIRONMENTAL SERVICES
104 Corporate Blvd.
Suite 412
West Columbia, SC 29210
803-708-0079 (ph)
803-708-8137 (Fax)

FIGURE TITLE
Cross-Section A - A'
Vacant Lot
2309 Russell Street
Orangeburg, SC 29115
Site ID: 19268

DRAWING NUMBER
Figure 6A

REV
0
9/23/2011



EXPLANATION						
Groundwater Elevation				DR: JSR		Tier II Assessment Report
				CK: HDO		
				SCALE: AS SHOWN		
				CES PROJ. NO. 15.070		
	REV	BY	DATE			

CRAWFORD ENVIRONMENTAL SERVICES
104 Corporate Blvd.
Suite 412
West Columbia, SC 29210
803-708-0079 (ph)
803-708-8137 (Fax)

FIGURE TITLE
Cross-Section B- B'
Vacant Lot
2309 Russell Street
Orangeburg, SC 29115
Site ID: 19268

DRAWING NUMBER: Figure 6B
REV: 0
9/23/2011

APPENDIX A
Site Facility Base Map

CRAWFORD
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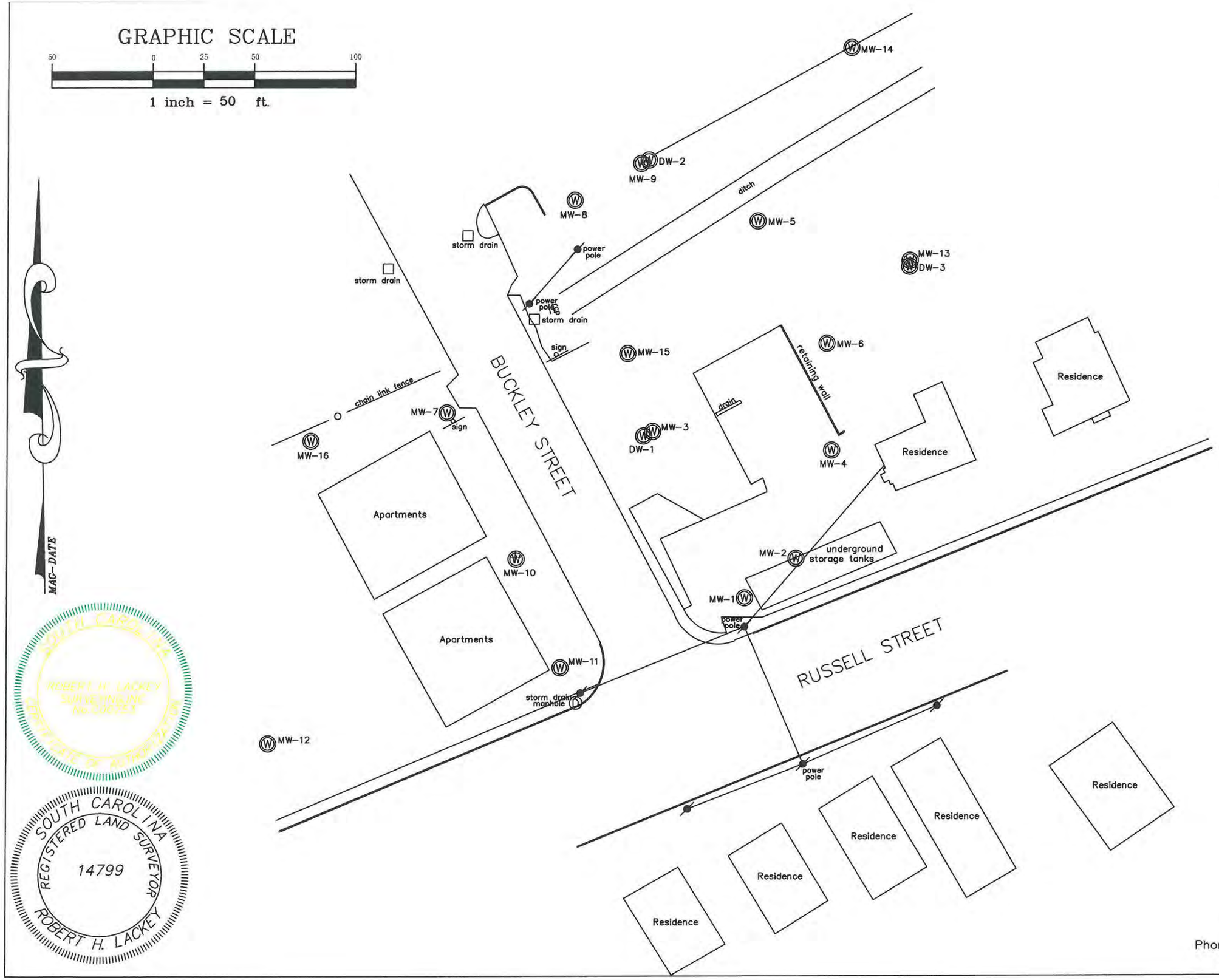
SERVICES



SITE MAP

Prepared for:

CRAWFORD ENVIRONMENTAL SERVICES

September 14, 2011

2309 RUSSELL STREET ORANGEBURG, SC

MONITOR WELL	TOP PVC 2" CASING
MW-1	99.44
MW-2	99.13
MW-3	98.29
MW-4	100.43
MW-5	96.26
MW-6	95.97
MW-7	98.91
MW-8	98.82
MW-9	98.43
MW-10	99.49*
MW-11	99.76
MW-12	102.18
MW-13	95.68
MW-14	97.98
MW-15	98.46
MW-16	99.51
DW-1	98.35
DW-2	97.99
DW-3	95.67

*Benchmark measurement due to obstruction. Equal to rim measurement.

Robert H. Lackey Surveying, Inc.
P.O. Box 713 Camden, SC 29020
Phone: 803-432-0968 Fax: 803-425-4439

CE-ORANGEBURG.DWG R2000-2011

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number

GENERATOR

5. Generator's Name and Mailing Address

Generator's Site Address (if different than mailing address)

19268

Generator's Phone:

6. Transporter 1 Company Name — U.S. EPA ID Number

7. Transporter 2 Company Name — U.S. EPA ID Number

8. Designated Facility Name and Site Address — U.S. EPA ID Number

Facility's Phone:

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1.		2	DM	110	G	
2.						
3.						
4.						

UST
OCT 03 2011
PROGRAM

13. Special Handling Instructions and Additional Information

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 governmental regulations.

Generator's/Offeror's Printed/Typed Name — Signature — Month Day Year

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:

Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name — Signature — Month Day Year

Transporter 2 Printed/Typed Name — Signature — Month Day Year

DESIGNATED FACILITY

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

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

UST
15 tech
DOCKETING

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

CRAWFORD
ENVIRONMENTAL SERVICES

October 1, 2011

Alex Smith, Hydrogeologist
Assessment Section
UST Management Division
Bureau of Land and Waste Management
SCDHEC
2600 Bull Street
Columbia, SC 29201

Re: ARRA (State Lead) – Disposal Manifests

Dear Mr. Smith

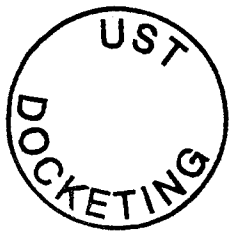
Included with this letter are enhanced copies of the transportation manifests for UST Permit IDs: 17761, 19550, 09141,00892,12264,12613,14404,19268,07608, and 19411.

If you have any questions or comments regarding these items please feel free to contact me at 803-708-0079, or by email at jreynolds@crawfordenvironmental.com.

Sincerely,

Justin Reynolds
Project Manager
SC Rehabilitation Contractor Number: 0388

Attachments:
Disposal Manifests



MID-ATLANTIC REGION
15 CHURCH AVENUE, SW
ROANOKE, VIRGINIA 24011
OFFICE 540 343.6256
FAX 540 343.6259
ccrawford@crawfordenvironmental.com

SOUTHEAST REGION
104 CORPORATE BLVD, SUITE 412
WEST COLUMBIA, SOUTH CAROLINA 29169
OFFICE 803 708.0079
FAX 803 708.8137
dobrien@crawfordenvironmental.com

D H E C

PROMOTE PROTECT PROSPER

C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment.

DEE OBRIEN PG
DIVISION MANAGER
CRAWFORD ENVIRONMENTAL SERVICES INC
104 CORPORATE BLVD STE 412
WEST COLUMBIA SC 29169-4600

OCT 11 2011

UST 16 tech DOCKETING

Re: Additional Tier II Directive
Vacant Lot, 2309 Russell Street, Orangeburg, SC
UST Permit #19268; Cost Agreement #42108; Monitoring Well Approval # UMW-24317
Solicitation Number IFB-5400002721-3/3/2011-EMW, Purchase Order # 4600089989
Notice to Submit QAPP Contractor Addendum dated July 1, 2011
Tier II Plan and Revision 0 Site Specific QAPP received August 1, 2011
Required revisions to Tier II Plan received August 4, 2011
Tier II Report Directive dated August 10, 2011
Tier II Report received September 30, 2011
Orangeburg County

Dear Mr. O'Brien:

The Underground Storage Tank (UST) Management Division of the South Carolina Department of Health and Environmental Control (SCDHEC) has reviewed the Tier II Assessment Report and Quality Assurance Program Plan (QAPP) checklist for the referenced site. The report documented that MW-13, MW-14, MW-15, MW-16, and DW-3 were sampled on the same day as well development and completion. Since sampling is to occur no less than 48 hours after well completion, the referenced wells must be purged and resampled. Assessment activities should begin immediately upon receipt of this letter.

The SCDHEC reserves the authority to pay only for work properly performed and/or technically justified and will only pay rates in accordance with contract IFB-5400002721. Further, SCDHEC reserves the right to question and/or reject costs, if deemed unreasonable. The SCDHEC reserves the right to audit project records at any time during the project or after completion of the work. **A Revised Tier II Assessment Report (1 paper copy, 1 electronic copy, and an abbreviated Tier II Report to each property owner who has a monitoring well on their property), Site-specific QAPP checklist, and invoice should be submitted within 90 days or sooner from the date of this correspondence.**

Cost agreement number 42108 and Monitoring Well Approval number UMW-24317 may be amended as necessary. Crawford Environmental Services, Incorporated (Crawford) can submit an invoice for direct billing from the State Underground Petroleum Environmental Response Bank (SUPERB) Account once the plume is defined. Future invoices and/or other criteria included therein must comply with current SUPERB criteria per Section 44-2-20(2). Please reference cost agreement number 42108 on all pertinent invoices and correspondence. 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 Department is obtained. If for any reason there is a change in this cost agreement, any associated changes must be pre-approved by this Department in order for Crawford to seek future cost compensation. The UST Division cannot reimburse Crawford for incomplete or unnecessary work.

Please provide clarification for the following items in the final report:

- Receptor survey only discusses results of Tier I receptor survey. It does not discuss the ditch to the north side of the property as a potential receptor.
- Item #14 should reference section 3.2.1, not section 3.1

- Please reference table 2 for item #21. The report documents the snap collector used to collect sample from DW-3 was deployed prior to well completion.
- Field activity data sheets are incomplete.
- Please make sure that a soil sample from each new well, not just field screening locations, is collected and submitted for analysis.
- Table 2 is incomplete. Groundwater elevations from previous assessments were not included.
- Please fill out one slug test summary form for each aquifer.
- The base map (figure 2) is missing the soil boring locations from the Tier I Assessment.
- The registered land survey is missing property lines, the survey datum location, and the UST permit number.
- Item #48 should reference Appendix E, not Appendix D.
- Appendix H was omitted.
- Shallow monitoring wells MW-7, MW-8, MW-9, MW-12, MW-14 and MW-15 were installed with less than three feet of water in the wells. The depth to groundwater in the existing wells should always be gauged during the initial site visit and again before screening is initiated to verify the depth to and direction of groundwater.
- In the future where the initial monitoring wells are dry, the QAPP should recommend installing wells with 15-foot screens.

Please note that all applicable South Carolina certification requirements regarding laboratory analyses, well installation, and report preparation must be met.

The Department 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. IDW should not be stored on-site longer than ninety (90) days. A copy of the disposal manifest and/or acceptance letter from the receiving facility that clearly designates the quantity received must be included as an appendix to the report. If the COC concentrations, based on laboratory analysis, are below Risk Based Screening Levels (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 the UST Permit # 19268 and Cost Agreement # 42108. If you have questions concerning this correspondence, or would like to submit additional information, please contact me at (803) 896-6218, fax me at (803) 896-6245, or e-mail me at smitha2@dhec.sc.gov.

Sincerely,

Alex Smith, Hydrogeologist
Assessment Section
Underground Storage Tank Management Division
Bureau of Land & Waste Management

enc: Annotated UST Programmatic QAPP Contractor Checklist

cc: Crawford Environmental Contractor Certification File (with enc.)
Technical File (with enc.)

UST Programmatic QAPP Contractor Checklist

Item #:	Item	Yes	No	N/A	Location
1	Is Facility Name, Permit #, and address provided?	Yes			1.2.1
2	Is UST Owner/Operator name, address, provided?	Yes			1.2.2
3	Is name, address, & phone number of current property owner provided?	Yes			1.2.3
4	Is the SCDHEC Certified UST Site Rehabilitation Contractor's name, address, phone number, and certification number provided?	Yes			1.2.4
5	Is the name, address ,telephone number, and certification number of the well driller that installed the boring/monitoring wells provided?	Yes			1.2.5
6	Is the name, address, telephone number, and certification number of the certified laboratories performing analytical analyses provided	Yes			1.2.6
7	Has the facility history be summarized?	Yes			1.4
8	Has the regional geology and hydrogeology been summarized?	Yes			2.1
9	Are the receptor survey results provided as required?	Yes			2.3
10	Has the current use of the site and adjacent land been described?	Yes			1.3
11	Has the site specific geology been described?	Yes			2.2
12	Has the primary soil type been described?	Yes			2.2
13	Have the field screening results been described?	Yes			Table 1B
14	Has a description of the soil sample collection and preservation been detailed?	Yes			~~3.1~~ 3.2.1
15	Has the field screening methodology been detailed?	Yes			3.1
16	Has the monitoring well installation and development dates been provided?	Yes			3.2
17	Has the method of well development been detailed?	Yes			3.2
18	Has the justification been provided for the locations of the monitoring wells?	Yes			1.5 (3)
19	Have the monitoring wells been labeled in accordance with the UST QAPP guidelines?	Yes			1.5(3)
20	Has the groundwater sampling methodology been detailed?	Yes			3.3
21	Have the groundwater sampling dates and groundwater measurements been provided?	Yes			3.3
22	Has the purging methodology been detailed?	Yes			3.3
23	Has the volume of water purged from each well been provided along with the measurements to verify purging is complete?	Yes			Apx B
24	If free-product is present, has the thickness been provided?			N/A	
25	Does the report include a brief discussion of the assessment done and the results?	Yes			5.0
26	Does the report include a brief discussion of the aquifer evaluation and the results?	Yes			4.0
27	Does the report include a brief discussion of the fate & transport models used?			N/A	
28	Are the site-conceptual tables included (Tier 1 risk evaluation)			N/A	
29	Have the exposure pathways been analyzed (Tier 2 risk evauluation)			N/A	
30	Have the SSTLs for each compound and pathway been calculated? (Tier 2 risk evaluation)			N/A	
31	Have recommendations for further action been provided and explained?				7.0
32	Has the soil analytical data for the site been provided in tabular format? (Table 1)	Yes			Table 1
33	Has the potentiometric data for the site been provided in tabular format?	Yes			Table 2
34	Has the current and historical laboratory data been provided in tabular format	Yes			Table 3
35	Have the aquifer characteristics been provided and summarized on the appropriate form?	Yes			Apx F
36	Have the Site conceptual model tables been included (Tier 1 risk evaluation)			N/A	
37	Has the topographic map been provided with all the required elements?	Yes			Figure 1
38	Has the site base map been provided with all the required elements?	Yes			Figure 2
39	Have the CoC maps been provided?	Yes			Figure 4
40	Have the potentiometric maps been provided?	Yes			Figure 5
41	Have the geologic cross-sections been provided	Yes			Figure 6
42	Have maps showing the predicted migration of the CoCs through time been provided?			N/A	
43	Has the site survey been provided and include all necessary elements?	Yes			Apx A
44	Have the sampling logs, chain of custody forms and analytical data package been included with all elements?	Yes			Apx B
45	Is the laboratory performing the analyses properly certified?	Yes			Apx B
46	Has the tax map been included with all necessary elements?	Yes			Apx C
47	Have the soil/boring field screening logs been provided?	Yes			Apx D
48	Have the well completion logs been provided?	Yes			Apx D
49	Have the aquifer evaluation forms,data, graphs, equations,etc. been provided?	Yes			Apx F
50	Have the disposal manifests been provided?		*No*		
51	Has a copy of the local zoning regulations been provided?			N/A	
52	Has all fate and transport modeling been provided?			N/A	
53	Have copies of all access agreements obtained by the contractor been provided?	Yes			Apx J
54	Has a copy of this form been attached to the final report and are explainations for any missing or incomplete data been provided?	Yes			

Comments:

Item 50 Disposal manifest will be provided at a later date. Material, both soil and groundwater has been stockpiled and mixed with material from UST Permits: 17761,00892,09141,12613,14404,12264,19266,07608,and 19411.

7- Release was confirmed on October 12, 2007

9- No discussion of ditch on site as possible receptor. Only discusses Midlands Tier 1 and mention of no water supply wells.

14- Soil sample collection is detailed in section 3.2.1, not 3.1.

21. Please reference table 2 for groundwater elevations. Snap collected on wells deployed in DW-3 prior to well completion.

23 - Field data activity sheets incomplete

32 - Soil samples from Field screening points only, not all new wells.

33 - Table 2 is incomplete, missing GW elevations from previous assessments

35 - Need separate slug test summary forms for each aquifer.

38 - Need to include soil boring locations from Tier 1

43 - No property lines displayed, survey datum location not displayed, UST permit # not displayed.

48 - Appendix E, not D. Several wells installed ≤2' of water.

51 - Why no Appendix H?

* MW's 13, 14, 15, 16, and DW-3 sampled same day as wells were completed.

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Tier II Assessment

Vacant Lot
2309 Russell Street
Orangeburg, South Carolina 29115
Orangeburg County
UST Permit #: 19268
CA #: 42108
CES #: 15.070
October 21, 2011
Revision 1

CRAWFORD
ENVIRONMENTAL
SERVICES

D H E C
PROMOTE PROTECT PROSPER

Tier II Assessment

Vacant Lot
2309 Russell Street
Orangeburg, South Carolina 29115
Orangeburg County
UST Permit #: 19268
CA #: 42108
CES #: 15.070
October 21, 2011
Revision 1

Tier II Assessment Report

Vacant Lot
2309 Russell Street
Orangeburg, SC 29115
Orangeburg County
UST Permit #:19268
CES Project: 15.070
Revision 1
October 21, 2011

Submitted To:

South Carolina Department of Health and Environmental Control
Underground Storage Tank Program
Bureau of Land and Waste Management
2600 Bull Street
Columbia, South Carolina 29201-1708

Submitted By:

Crawford Environmental Services
104 Corporate Blvd. Suite 412
West Columbia, SC 29196
SCDHEC Site Rehabilitation Contractor Certification #: UCC-0388

Justin Reynolds
Project Manager

H. Dee O'Brien, P.G.
Division Manager
SC Registration No: 873

CRAWFORD
ENVIRONMENTAL
SERVICES

1.0 Project Information

1.1 Introduction

As part of the ongoing assessment of the Vacant Lot facility, Crawford Environmental Services (CES) has completed a Tier II Assessment for the purpose of determining if the petroleum hydrocarbon release, reported for the Vacant Lot facility, poses a potential risk to human health or to the environment. This assessment specifically provides information outlined in the scope of work as defined in the CES quality assurance program plan (QAPP), the Vacant Lot Tier II directive – dated August 10, 2011, cost agreement 42108 and SCDHEC Bid Specification IDB-5400002721-3/3/2011-EMW. Please reference the CES Standard Operating Procedure (SOP) document, dated April 27, 2011. This report was written by Justin Reynolds reviewed by Dee O'Brien (P.G. Registration 873) and verified by Charles F. Crawford.

1.2 Facility Information:

1.2.1 Site Address

Vacant Lot
2309 Russell Street
Orangeburg, SC 29116
UST Permit: 19268

1.2.2 Owner Operator Information

Orphan-Sultan
P.O. Box 275
Orangeburg, SC 29116

1.2.3 Current Land Owner

Bernie Wright
P.O. Box 275
Orangeburg, SC 29116
1-803-378-7071

1.2.4 Contractor Information

Crawford Environmental Services
104 Corporate Blvd. Suite 412
West Columbia, SC 29169
1 (803) 708-0079
Contractor Number: UCC-0388

1.2.5 Drilling Information

Todd Allred {Field Manager}
Crawford Environmental Services
104 Corporate Blvd. Suite 412
West Columbia, SC 29169
1 (803) 708-0079
Certification Number: 1446
MWA: UMW 24317

1.2.5.1 Drilling Subcontractor

Billy Ewing
ARM Environmental Services
1210 First Street South Extension
Columbia, SC 29209
1 (803) 783-3314
Certification Number: 1505

1.2.6 Laboratory Information

Access Analytical, Inc. (AA)
7478 Carlisle Street
Irmo, SC 29063
1 (803) 781-4243
SC Certification: 32575001

Analytical Environmental Services Inc. (AES)
3785 Presidential Pkwy.
Atlanta, GA 30340
1 (770) 457-8177
SC Certification: 98016003

Schnabel Engineering
104 Corporate Blvd. Suite 420
West Columbia, SC 29169
1 (803) 796-6240

1.3 Site Description

The site is currently owned by Bernie Wright and is located on the north side of Russell Street in Orangeburg, Orangeburg County, South Carolina. The site is currently unoccupied and is a vacant lot. The surrounding area consists of mixed residential and commercial properties. The site is bordered by Russell Street to the south and Buckley Street to the west. Beyond Russell Street to the south, are several residences. Beyond Buckley Street is an apartment complex. The east is bordered by residential properties. The north is bordered by a drainage ditch, beyond which is South Carolina State College property, specifically the Oliver C. Dawson Football Stadium. The site location is indicated on a USGS topographic map of the Kingstree Quadrangle, South Carolina and is included as Figure 1.

1.4 Site History

Vacant Lot has one reported release. The release was reported on October 18, 2006 and was confirmed on October 10, 2007. Nine underground storage tanks (USTs), are recorded for the site, with their current status unknown, but are listed as pre-1974 and empty. Observations during this investigation suggest that the USTs remain in-place at the site. The tank basin is located on the southern section of the facility. The site was last sampled December 12, 2010 (Groundwater Assessment).

1.4.1 Initial Groundwater Assessment (IGWA)

Midlands Environmental Consulting Inc., (MECI) completed an Initial Ground-Water Assessment at the Vacant Lot facility in March of 2009. MW-1 was installed during this assessment.

1.4.2 Tier 1 Assessment

Midlands Environmental Consulting Inc., (MECI) completed a Tier 1 Assessment at the Vacant Lot facility in December of 2010. MW-2, MW-3, and MW-4, was installed during this assessment. Soil samples for GPS-1 through GPS-8 were collected during the Tier I Assessment.

1.4.3 QAPP and Site Visit

SCDHEC requested a site specific QAPP in a notice to proceed (NtP) issued on July 1, 2011. A site check was performed by CES personnel on July 22, 2011. The QAPP was submitted on August 1, 2011, and was approved on August 10, 2011.

1.5 Scope of Work

Work performed under Cost Agreement 42108 was approved by the South Carolina Department of Health and Environmental Control (SCDHEC) in correspondence dated August 10, 2011 and was completed with the intent of defining the horizontal and vertical extent of dissolved chemicals of concern (CoCs).

Field Screening (Shallow)

(1) Eight temporary groundwater monitoring wells (GW-10 through GW-17) were installed and sampled during this assessment. The temporary monitoring wells were installed in an effort to delineate the horizontal extent of the contaminant plume identified at the Vacant Lot facility. Locations are depicted on Figure 2. Temporary wells GW-10 through GW-17- were converted into MW-5 through MW-12 after field screening analysis.

Field Screening (Deep)
(2) Two temporary deep soil borings (GW-18 and GW-19) were installed and sampled during this assessment. The temporary soil borings were installed in an effort to delineate the vertical extent of the contaminant plume at the Vacant Lot facility. Locations are depicted on Figure 2. Temporary wells GW-18 through GW-19 were converted to DW-1 and DW-2 after field screening analysis.

Perimeter Wells
(3) Eight temporary wells (GW-10 through GW-17,) were converted to shallow monitoring wells (MW-5, MW-6, MW-7, MW-8, MW-9, MW-10, MW-11, and MW-12) and four additional shallow wells (MW-13, MW-14, MW-15, and MW-16) were installed for the purpose of defining the areal extent of petroleum impacts at the Vacant Lot facility. Monitoring wells were installed under approval UMW-24317. Locations are depicted on Figure 2. Monitoring well locations were approved by SCDHEC on September 9, 2011 via email.

Deep Wells
(4) Two temporary telescoping monitoring wells (GW-18 and GW-19) were converted to deep wells (DW-1 and DW-2) and one additional (non-pit cased) deep well (DW-3) was installed for the purpose of defining the vertical extent of dissolved-phase petroleum impacts at the Vacant Lot facility. Monitoring wells were installed under approval UMW-24317. Locations are depicted on Figure 2.

Groundwater Elevations
(5) Equilibrated static water levels and free-product thicknesses were recorded for monitoring wells MW-1, MW-2, MW-3, MW-4, MW-5, MW-6, MW-7, MW-8, MW-9, MW-10, MW-11, MW-12, MW-13, MW-14, MW-15, MW-16 DW-1, DW-2, and DW-3 by CES personnel on September 10, 2011.

Groundwater Sampling
(6) Groundwater chemical samples (BTEX, Naphthalene, MTBE, 1,2 DCA, EDB 8 Oxygenates and Lead) were collected from monitoring wells MW-1, MW-2, MW-3, MW-4, MW-5, MW-6, MW-7, MW-8, MW-9, MW-10, MW-11, MW-12, MW-13, MW-14, MW-15, MW-16 DW-1, DW-2, and DW-3 by CES personnel on September 10, 2011.

Comprehensive Survey
(7) A comprehensive survey, recording structures, underground utilities, potential receptors, USTs and associated piping and dispensers, and locations of all sampling points and monitoring wells associated with this assessment, was completed by Robert Lackey Surveying (Registered Land Surveyor 14799) on September 14, 2011.

Slug Test
(8) Two slug tests, for the purpose of defining hydraulic conductivity of the shallow and deep saturation zone was performed on MW-3 and DW-1 on September 10, 2011 by CES personnel.

Diagram Construction
(9) A potentiometric surface map and associated isoconcentration maps were constructed utilizing the September 14, 2011 surveying data, relative groundwater elevations, and results of the chemical analyses established from the sampling event performed on September 10, 2011.

Cross-sections
(10) Two hydrogeologic cross-sections were constructed utilizing the September 14, 2011 surveying data and the lithologic characterizations recorded during monitoring well and soil boring installations.

2.0 Site Characteristics

2.1 Regional Geology and Hydrogeology

The subject facility is located within the Atlantic Coastal Plain Physigraphic Province. The soils in this province are typically composed of interbedded silts, sands and clays that have been deposited during successive advances and retreats of the ocean over the past several million years. Recent sedimentary deposits comprise the shallow subsurface of the study area and are underlain by the Williamsburg, Rhems, Black Creek, and the Middendorf formations. The Black Creek and Middendorf Aquifer Systems are major sources of groundwater supplies in the study area. Sedimentary deposits of the Coastal Plain comprise a total approximate thickness of 1000 feet in this area and underlain by crystalline bedrock.

2.2 Site Specific Geology and Hydrogeology

Based upon lithologic descriptions of subsurface soils encountered during drilling, the shallow subsurface of the site was generally composed of a grey to tan fine grained silty sand intermixed with clays and silts which was encountered at the surface to an

approximate depth of four feet below land surface (bls). The silty sand extended to a depth ranging from one to 12 feet bls and was underlain by a fine grained brown to orange sandy clay to the investigated depth of approximately 40 feet bls. Lithologic descriptions are included in the boring logs provided in Appendix D. Grain size (sieve/hydrometer) analyses were conducted on representative soil samples collected from the shallow and deep saturated zones. Soils in the shallow saturated zone {7-12 feet} consisted of 47.2% Sand, 23.9% silt and 28.9% clay. Soils in the deep saturated zone {15-20 feet} consisted of 30.8% Sand, 38.0% Silt, and 31.2% clay.

Groundwater was generally encountered during field screening installation at a depth of eight - ten feet bls. Groundwater flow was observed during the groundwater sampling event as moving to the northeast in the shallow saturated zone and in the deep saturated zone.

2.3 Receptor Survey

A receptor survey was completed by Midlands Environmental Consultants Inc., (MECI) during the Tier I assessment for this facility. No water supply wells were identified during the Tier 1 Assessment. Beyond the items identified in the Tier 1 Assessment, CES identified a drainage ditch on the northern section of the subject facility property. Three surface water samples were collected by CES from the drainage ditch for laboratory analysis.

2.4 Utility Survey

A utility survey was completed by Midlands Environmental Consultants Inc., (MECI) during the Tier I assessment for this facility. A water line was identified on the southern section of the facility property during the Tier 1 Assessment and by CES personnel during this assessment. Locations are identified on Figure 2.

3.0 Assessment Activities

3.1 Field Screening

Field screening activities were completed by ARM Environmental Services under the supervision of CES personnel on August 26 - 29 2011. The field screening activities consisted of the installation of eight temporary monitoring wells and groundwater sample collection. Groundwater samples were collected utilizing disposable polyethylene bailers. OVA results were recorded utilizing a MiniRAE lite parts per million (PPM) photoionization detector (PID). The PID was calibrated on a daily basis before

use on assessment activities. Temporary well locations (GW-10 through GW-17) are depicted on Figure 3.

The installation of two deep temporary monitoring wells was completed by ARM Environmental Services under the supervision of CES personnel on August 26 - 29, 2011 for the purpose of determining extent of vertical impact. Lithologic characterizations are provided on the soil boring logs which are included as Appendix D. Field screening results are included as Table 1B. Installation of the temporary monitoring wells was completed following the methodology outlined in the CES standard operating procedure (SOP) section 2.6.

Groundwater samples were placed in coolers, maintaining 4°C, and delivered to AA. AA then transferred the samples to AES via FEDEX for laboratory analysis.

3.2 Well Installation

Based on field screening results and SCDHEC direction, CES converted eight temporary shallow monitoring wells (GW-10 through GW-17) and two deep temporary monitoring wells (GW-18 and GW-19) into permanent monitoring wells and redesignated them as MW-5 through MW-12 and DW-1 and DW-2. Four additional shallow wells (MW-13 through MW-16) and one additional non-pit cased deep well (DW-3) were installed beyond the temporary well conversion for further horizontal and vertical definition. Installation of the monitoring wells was completed following the methodology outlined in the CES standard operating procedure (SOP) section 2.9.

Monitoring wells were properly developed utilizing the bail/surge method after construction (August 29, 2011 and September 8, 2011). Locations of the new monitoring wells are depicted on Figure 2. Boring logs and SCDHEC forms 1903 are included in Appendices D & E.

3.2.1 Soil Samples

Eight soil samples, for the analysis of BTEX and naphthalene, were collected from the newly installed monitoring wells. Soil samples were collected utilizing a hand auger advanced to a depth just above the water table. CES personnel, while wearing nitrile gloves transferred the soil from the auger bucket to proper sample containers. Samples were then placed in coolers, maintaining 4°C, and delivered to AA. AA then transferred the samples to AES via FEDEX for laboratory analysis. Derived concentrations for the samples were compared to RBSLs for sandy rich soils presented in the SCDHEC UST QAPP guidance document.

Concentrations of chemicals of concern were not detected in the submitted soil samples. A summary of laboratory analytical results for soil is included as Table 1.

3.3 Water Sample Collection

A comprehensive groundwater sampling event, including; recording equilibrated static water levels, product thicknesses, and the collection of chemical samples was completed by CES personnel on September 10, 2011. Samples for the shallow wells were collected utilizing disposable polyethylene bailers. Shallow wells that exhibited groundwater above the screened bracket or that were installed during this assessment were purged of at least three well volumes via bailer before sample collection. Bailers were lowered slowly to the top of the water column (after purging in some cases) allowed to fill one volume, then removed.

Samples for the deep wells were collected utilizing hydrosleeve™ groundwater sample collectors. The hydrosleeve™ collectors were lowered into the deep wells and placed at one foot above the bottom of the screen. Collectors were left in the wells for 24 hours before retrieval to allow the wells to stabilize after installation. The collectors were then removed from the well, collecting water only from one foot from the bottom of the screen to the top of the screen then sealing off for the remainder of the removal.

In both cases, groundwater was then transferred to the appropriate sampling containers and was then placed in coolers, maintaining 4°C, and delivered to AA. AA then transferred the samples to AES via FEDEX for laboratory analysis. Temperature, pH, specific conductance and dissolved oxygen readings were recorded during sampling. Groundwater chemical samples were submitted to Access Analytical, Inc., (AA) {SC Certification: 98016} for analysis. Groundwater sampling was completed following the methodology outlined in the CES standard operating procedure (SOP) section 2.10.

3.3.1 Groundwater Sampling

Equilibrated static water levels and free-product thicknesses were recorded for monitoring wells MW-1, MW-2, MW-3, MW-4, MW-5, MW-6, MW-7, MW-8, MW-9, MW-10, MW-11, MW-12, MW-13, MW-14, MW-15, and MW-16 DW-1, DW-2, and DW-3 by CES personnel on September 10, 2011.. Ambient air temperature during the time of sampling was recorded at 31°C-32°C. Samples were collected by CES personnel (J. Reynolds & D. O'Brien).

Prior to sample collection, three well volumes were purged from MW-5, MW-6, MW-7, MW-8, MW-9, MW-10, MW-11 MW-12, MW-13, MW-14, MW-15, MW-16 and DW-1.

MW-2 was dry during the September 10, 2011 sampling event.

MW-1, MW-4 and MW-12 did not exhibit enough water for lead sample collection during the September 10, 2011 sampling event.

Free phase petroleum product was not observed in wells MW-1, MW-2, MW-3, MW-4, MW-5, MW-6, MW-7, MW-8, MW-9, MW-10, MW-11, MW-12, MW-13, MW-14, MW-15, and MW-16 DW-1, DW-2, and DW-3 during the September 10, 2011 sampling event.

3.3.2 Surface water samples

Three surface water samples were collected from the drainage ditch, located on on the north side of the subject facility property. Samples were collected utilizing disposable polyethylene bailers. The bailers were lowered into the ditch and allowed to submerge before removal. Surface water was then transferred to the appropriate sample containers and was then placed in coolers, maintaining 4°C, and delivered to AA. AA then transferred the samples to AES via FEDEX for laboratory analysis.

Table 3 presents the laboratory data for the submitted groundwater samples collected as part of this assessment. The groundwater isoconcentration maps are included as Figure 4. The potentiometric surface map is included as Figure 5.

CES recorded groundwater levels from 19 monitoring wells and sampled 19 monitoring wells as part of the September 10, 2011 sampling event for the following chemical analyses: BTEX, naphthalene, MTBE, 1,2 DCA, lead, and 8 Oxygenates .

3.4 Comprehensive Survey

A comprehensive survey recording; structures, underground utilities, potential receptors, USTs and associated piping and dispensers, and locations of all sampling points and monitoring wells associated with this assessment, was completed by Robert Lackey Surveying (Registered Land Surveyor 14799) on September 14, 2011.

3.5 Disposal Manifests

The non-hazardous waste manifests for the transportation and disposal of residual soil/water generated during monitoring well installations and groundwater sampling are included as Appendix G. Groundwater was intermixed with the soil in 55 gallon drums and was then disposed of at a SC certified disposal facility. The soil groundwater mixture was listed as a soil on the included disposal manifest.

4.0 Aquifer Characteristics/Calculations

4.1 Hydraulic Conductivity

As part of this assessment, hydraulic conductivity for the shallow and deep saturation zone was determined by a slug test completed on MW-3 (screened 2 ft-12 ft bgs) and DW-1 (screened 35 ft – 40 ft bgs). Slug tests were completed by CES personnel September 10, 2011. The slug was placed into the above mentioned wells and was then removed. Change in groundwater depth was measured every 10 seconds for 2 minutes, then 15 seconds, for 1 minute, then 30 seconds, for 1 minute, then 1 minute, for two minutes etc. (see slug test for timing) for one hour. Slug test data and aquifer characteristics were then entered into the Starpoint Super Slug computer analysis program. The computed hydraulic conductivity (K) for the shallow saturation zone horizon is 2.5 ft/yr and for the deep saturation zone is 32.7 ft/yr. Slug Test data, summary form and graphs are included in Appendix F.

4.2 Hydraulic Gradient

The hydraulic gradient was calculated using surveyed top of casing (ToC) elevations and equilibrated static water levels obtained the September 10, 2011 sampling event. As evidenced by the potentiometric surface diagram (Figure 5), the average calculated hydraulic gradient of the shallow saturation zone across the site is calculated to be 0.01 ft/ft toward the northeast. The highest groundwater elevation at the site, during the sampling event, was exhibited by MW-12 and the lowest was exhibited by MW-14 (northeast).The average calculated hydraulic gradient of the deep saturation zone across the site (DW-1 to DW-3) is calculated to be 0.03 ft/ft toward the northeast. Details of these calculations are included in Appendix F.

4.3 Porosity

Grain size (sieve/hydrometer) analyses were conducted on soil samples collected from MW-9 at 12.0 ft bgs and DW-1 at 40.0 ft bgs during the Tier II Assessment. Laboratory results are included in Appendix F. Results indicate that the aquifer fabric for MW-9 {shallow saturation zone} contains 47.2% Sand, and 28.9% Clay. Based on figure G1 of

the UST QAPP, a grain size distribution of 47.2% sand and 28.9% clay [Sandy Clay Loam] yields a tabled total porosity value of 0.45.
Results indicate that the aquifer fabric for DW-1 {deep saturation zone} contains 30.8% Sand, and 31.2% Clay. Based on figure G1 of the UST QAPP, a grain size distribution of 30.8% sand and 31.2% clay [Clay Loam] yields a tabled total porosity value of 0.50.

4.4 Estimated Seepage Velocity

Using the previously calculated parameters (hydraulic gradient, hydraulic conductivity, assumed porosity), an estimated seepage velocity was determined for the area. A value of 0.05 ft/yr and 1.9 ft/yr was calculated for the estimated seepage velocities for the shallow saturation zone and deep saturation zone, respectively. Details of these calculations also are included in Appendix F.

5.0 Summary

During the assessment activities performed at the subject property, CES installed twelve shallow monitoring wells, three deep monitoring wells, conducted a comprehensive groundwater monitoring event, preformed aquifer characterization studies and completed a comprehensive survey in an effort to define the horizontal and vertical extent of petroleum impacts. The qualitative and quantitative data collected from recent assessment activities indicates the following regarding current site conditions;

1. Shallow groundwater flow at the Vacant Lot facility was mapped with a primarily northeastern component towards the Abraham property as inferred from the relative groundwater elevations and calculated gradients on September 10, 2011.

2. Free-phase petroleum was not detected, in the monitoring wells, during the sampling event.

3. Groundwater from newly installed monitoring wells, with the exception of MW-6 and MW-10, did not exhibit chemicals of concern above the RBSLs/MCLs.

4. Groundwater from monitoring wells MW-3 and MW-6 exhibited lead concentrations above the RBSL/MCL. These results are probably due to the turbidity of the groundwater samples submitted for analysis.

5. Groundwater from monitoring wells MW-3, MW-6 and MW-10 exhibited hydrocarbon constituent concentrations above the RBSLs/MCLs for the chemicals of concern.

6.0 Conclusion

Based upon the data collected during the September 10, 2011 sampling event and previous assessment activities, the horizontal extent of the dissolved-phase hydrocarbon plume extends from the western section of the site in an eastern direction to MW-6.east. The limits of the dissolved-phase compounds are adequately defined by the shallow monitoring wells MW-1, MW-4, MW-7, MW-8, MW-9, MW-11, MW-12, MW-13, MW-14, and MW-16.

The vertical extent of the plume is adequately defined as DW-1 through DW-3 do not exhibit chemical concentrations above the RBSL/MCL.

7.0 Recommendations

Based on the presence of dissolved-phase compounds in MW-3, MW-6 and MW-10 CES recommends that the Vacant Lot project proceed to corrective action for site rehabilitation activities.

8.0 Limitations

This report is based upon a specific scope of work requested by SCDHEC. This report is intended only for the use of CES's client and anyone else specifically listed on this report. Some data contained within this report was previously collected by other consultants and is assumed to be correct. CES will not and cannot be liable for the unauthorized release by any third party. Other than as contained in this paragraph, CES makes no expressed or implied warranty as to the contents of this report.

Tables

Table 1: Soil Laboratory Analytical Results
Table 1B: Groundwater Field Screening Analytical Summary
Table 2: Well Construction and Historical Groundwater Elevation Summary
Table 3: Groundwater Laboratory Analytical Result Summary

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Table 1

Facility Name: Vacant Lot
Address: 2309 Russell Street Orangeburg, SC 29115
UST Permit ID: 19268
CES Project #: 15.07

Soil Laboratory Analytical Results Summary

Location		Date	Depth	Benzene	Toluene	Ethylbenzene	Xylenes (total)	Naphthalene	TPH (EPA 3550)	TOC	Comments
RBSL/MCLs (ug/kg){Clay Rich Soil}				3	627	1551	13010	47	n/a	n/a	
GPS*	1	2/9/2010	0 to 4	<179	**109J**	**74.6J**	<357	***131J***	NS	NS	
GPS*	2	2/9/2010	0 to 4	<3.8	**19.8**	**2.0J**	**6.6J**	<3.8	**9.3**	NS	
GPS*	3	2/9/2010	0 to 2	<232	<232	<232	<465	<232	NS	NS	
GPS*	4	2/9/2010	0 to 2	<4.0	**2.4J**	<4.0	<7.9	<4.0	NS	NS	
GPS*	5	2/9/2010	0 to 2	<4.5	<4.5	<4.5	<9.0	<4.5	NS	NS	
GPS*	6	2/9/2010	0 to 2	<4.4	<4.4	<4.4	<8.8	<4.4	NS	NS	
GPS*	7	2/9/2010	0 to 2	**2.8J**	1.5J	<4.3	<8.6	<4.3	NS	NS	
GPS*	8	2/9/2010	2 to 4	NS	NS	NS	NS	NS	NS	**4760000**	
GW	10	8/26/2011	5.0	<0.91	<0.91	<0.91	<2.7	<4.5	NS	NS	
GW	11	8/26/2011	5.0	<1.1	<1.1	<1.1	<3.3	<5.5	NS	NS	
GW	12	8/26/2011	5.0	<0.93	<0.93	<0.93	<2.8	<4.6	NS	NS	
GW	13	8/26/2011	5.0	<0.73	<0.73	<0.73	<2.2	<3.7	NS	NS	
GW	14	8/26/2011	5.0	<0.97	<0.97	<0.97	<2.9	<4.8	NS	NS	
GW	15	8/26/2011	5.0	<1.0	<1.0	<1.0	<3.1	<5.1	NS	NS	
GW	16	8/26/2011	5.0	<0.92	<0.92	<0.92	<2.8	<4.6	NS	NS	
GW	17	8/26/2011	5.0	<1.1	<1.1	<1.1	<3.3	<5.5	NS	NS	
Trip Blank		8/25/2011	n/a	<1.0	**0.90J**	<1.0	**1.0J**	**1.3J**	NS	NS	

all values are in ug/kg
TOC= Total Organic Carbon

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RBSLs/MCLs taken from UST QAPP Table C3
for Clay Rich Soil <10 ft

*=Taken during Tier 1. Original results were compaired to sandy soil as per UST QAPP Table C2

Table 2

Facility Name: Vacant Lot — UST Permit ID: 19268

Address: 2309 Russell Street Orangeburg, SC 29115 — CES Project Number: 15.07

Well Construction and Historical Groundwater Elevation Summary

Monitor Well	Well Depth (ft)	Screened Interval		Top of Casing (ft)	Date Measured	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)	Product Elevation (ft)	Groundwater Elevation (ft)
MW-1	12	2	12	99.44	9/10/2011	0	10.73	0	0	88.71
					2/12/2010	0	3.98	0	0	95.46
					3/9/2009	0	4.31	0	0	95.13
MW-2	12	2	12	99.13	9/10/2011	0	DRY			
					2/12/2010	0	3.95	0	0	95.18
MW-3	12	2	12	98.29	9/10/2011	0	8.58	0	0	89.71
					2/12/2010	0	3.39	0	0	94.90
MW-4	12	2	12	100.43	9/10/2011	0	11.80	0	0	88.63
					2/12/2010	0	5.74	0	0	94.69
MW-5	12	2	12	96.26	9/10/2011	0	8.10	0	0	88.16
MW-6	12	2	12	95.97	9/10/2011	0	7.76	0	0	88.21
MW-7	12	2	12	98.91	9/10/2011	0	9.70	0	0	89.21
MW-8	12	2	12	98.82	9/10/2011	0	10.41	0	0	88.41
MW-9	12	2	12	98.43	9/10/2011	0	10.09	0	0	88.34
MW-10	12	2	12	99.49*	9/10/2011	0	8.91	0	0	90.58*
MW-11	12	2	12	99.76	9/10/2011	0	10.04	0	0	89.72
MW-12	12	2	12	102.18	9/10/2011	0	9.36	0	0	92.82
MW-13	12	2	12	95.68	9/10/2011	0	8.14	0	0	87.54
MW-14	12	2	12	98.46	9/10/2011	0	11.68	0	0	86.78
MW-15	12	2	12	98.46	9/10/2011	0	9.63	0	0	88.83
MW-16	12	2	12	99.51	9/10/2011	0	9.97	0	0	89.54
DW-1	40	35	40	98.35	9/10/2011	0	11.61	0	0	86.74
DW-2	35	30	35	97.99	9/10/2011	0	13.45	0	0	84.54
DW-3	29	24	29	95.67	9/10/2011	0	13.21	0	0	82.46

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* Estimated Groundwater Elevation Estimate: ToC elevation not taken due to obstruction: Rim used instead

n/a = not applicable

Table 3

Facility Name: Vacant Lot — UST Permit ID: 19268
Address: 2309 Russell Street Orangeburg, SC 29115 — CES Project Number: 15.07

Groundwater Laboratory Analytical Result Summary

Well ID:	Date:	Benzene	Toluene	Ethylbenzene	Xylenes (Total)	Naphthalene	MTBE	1,2 DCA	EDB	Pb	NO3	FE+	SO4	ETBA	Ethanol	ETBE	DIPE	TAA	TAME	TBA	TBF	Date:	Well ID:
RBSL		5	1000	700	10000	25	40	5	0.01	15	10000	NE	NE	NE	10000	47	150	240	128	1400	NE		RBSL
MW-1	9/10/2011	<1.0	**0.78J**	<1.0	<3.0	<1.0	<1.0	<1.0	<0.020	NS	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-1
	12/12/2010	<5.0	<5.0	**2.7J**	<10.0	**16.2**	**19.5**	NS	<0.020	**6.2**	NS	**6000**	NS	NS	NS	NS	NS	NS	NS	NS	NS	12/12/2010	
	3/9/2009	<25	<25	<25	<50.0	<25	**27.2**	NS	<0.021	<5.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	3/9/2009	
MW-2	9/10/2011	DRY																				9/10/2011	MW-2
	12/12/2010	<5.0	**1.8J**	**1.1J**	<10.0	13	**13.4**	NS	<0.019	160	150	3000	4800	NS	NS	NS	NS	NS	NS	NS	NS	12/12/2010	
MW-3	9/10/2011	***12***	**0.99J**	**37**	**2.1J**	***460***	**3.1**	<1.0	<0.021	***137***	NS	NS	NS	<100	<100	<100	<10	<100	<10	**7.8J**	<100	9/10/2011	MW-3
	12/12/2010	***43.1J***	<100	***1900***	**359**	***1990***	<100	NS	<0.019	***16.7***	<100	**4600**	**1100**	NS	NS	NS	NS	NS	NS	NS	NS	12/12/2010	
MW-4	9/10/2011	<1.0	**0.54J**	<1.0	<3.0	<5.0	**0.56J**	<1.0	<0.020	NS	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-4
	12/12/2010	<5.0	<5.0	<5.0	<10.0	<5.0	**7.8**	NS	<0.020	<5.0	**1200**	**6400**	**17000**	NS	NS	NS	NS	NS	NS	NS	NS	12/12/2010	
MW-5	9/10/2011	<1.0	**0.54J**	<1.0	<3.0	**0.72J**	**7.9**	<1.0	<0.020	**14.6**	NS	NS	NS	<100	<100	<100	**7.6J**	<100	<10	<100	<100	9/10/2011	MW-5
MW-6	9/10/2011	<1.0	<1.0	<1.0	<3.0	**6**	***53***	<1.0	<0.020	**3.53**	NS	NS	NS	<100	200	<100	<10	<100	<10	**13J**	<100	9/10/2011	MW-6
MW-7	9/10/2011	<1.0	<1.0	<1.0	**0.92J**	<5.0	<1.0	<1.0	<0.020	***139***	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-7
MW-8	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-8
MW-9	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	**6.43**	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-9
MW-10	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	***43***	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-10
MW-11	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	**0.38J**	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-11
MW-12	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	NS	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-12
MW-13	9/10/2011	<1.0	**0.78J**	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-13
MW-14	9/10/2011	<1.0	**0.47J**	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	**6.29**	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-14
MW-14DUP	9/10/2011	<1.0	**0.54J**	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	NS	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-14DUP
MW-15	9/10/2011	<1.0	<1.0	**0.49J**	<3.0	**7.4**	**2.3**	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-15
MW-16	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-16
DW-1	9/10/2011	<1.0	**0.77J**	<1.0	**0.41J**	**1.3J**	**0.72J**	<1.0	<0.020	**1.83**	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	DW-1
DW-2	9/10/2011	<1.0	**0.75J**	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	DW-2
DW-3	9/10/2011	<1.0	**0.73J**	<1.0	<3.0	<5.0	**0.46J**	<1.0	<0.020	**11.6**	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	DW-3
Field Blank	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	NS	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	Field Blank
Trip Blank	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	NS	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	Trip Blank

BDL= Below Detectable Limit
RBSL= Risk Based Screening Levels
NE= Not Established
EDB= 1,2 Dibromoethane

CRAWFORD ENVIRONMENTAL SERVICES

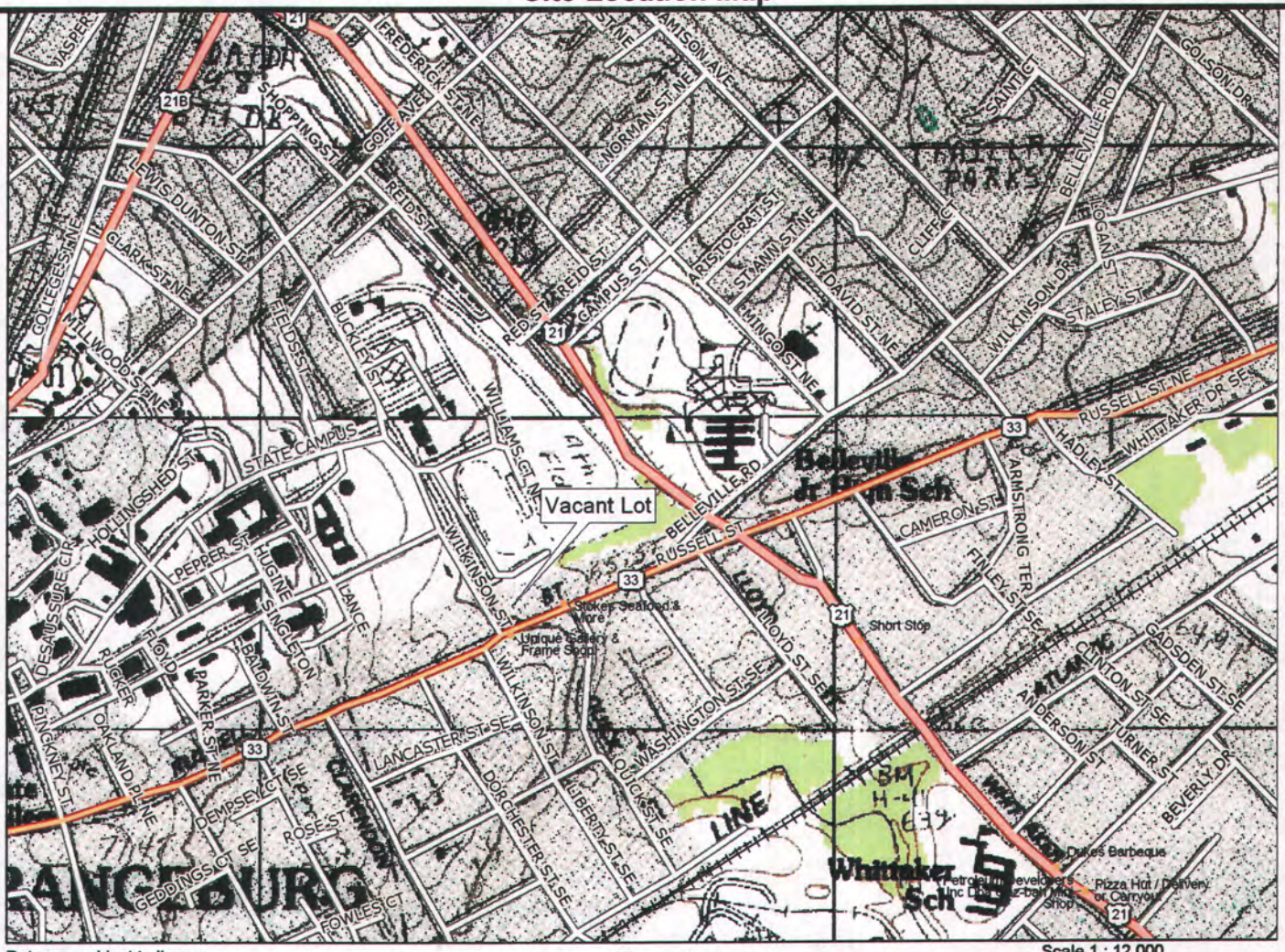
1,2 DCA = 1,2 Dichloroethane
Shaded values are above the detection limit
Italized values are above the RBSL

Figures

Figure 1: Topographic Map
Figure 2: Site Facility Base Map
Figure 3: Field Screening / Soil Chemicals of Concern Map
Figure 4 (A-D) Chemicals of Concern (Plume Diagrams)
Figure 5 (A-B) Potentiometric Diagrams
Figure 6 (A-B) Cross-sections

CRAWFORD
ENVIRONMENTAL
SERVICES

FIGURE 1
Site Location Map



Data use subject to license.

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www.delorme.com

TN

MN (7.0°W)

Scale 1 : 12,000

0 200 400 600 800 1000 ft

0 100 200 300 400 500 m

1" = 1,000.0 ft Data Zoom 14-0

CRAWFORD ENVIRONMENTAL SERVICES

Division of C.F. Crawford, Inc.

104 Corporate Blvd..
West Columbia, SC 29169

803-708-0079 (office) 803-708-8137 (fax)

ORANGEBURG SOUTH, SOUTH CAROLINA

Source: Delorme Topo USA 7.0
Scale: 1:12,000 Contour Interval: 10 Feet

Vacant Lot
2309 Russell Street
Orangeburg, SC 29115

Project: Tier II

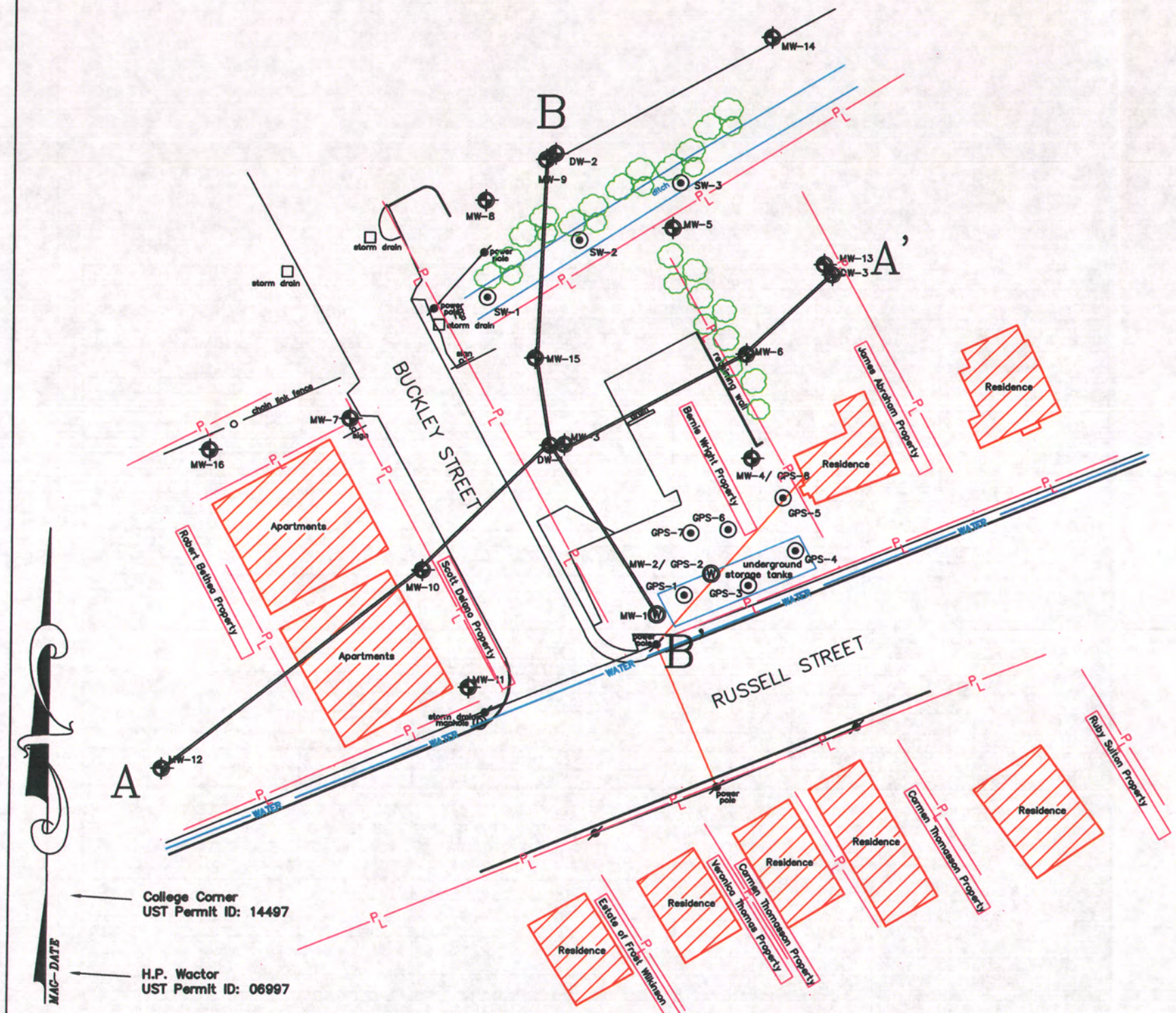
Client: SCDHEC

CES Job #: 15.070

Date: September 2011

N

GRAPHIC SCALE
0 25 50 100
(In Feet)
As Shown



Sarah Robinson
UST Permit ID: 19491

C&R Enterprises
UST Permit ID: 11327

College Corner
UST Permit ID: 14497

H.P. Wactor
UST Permit ID: 06997

MAC-DATE

Note: Diagram based RLS September 14, 2011 Survey, upon aerial photographs, MECI diagram, Orangeburg County Tax records and CES Field Notes

LEGEND			
	UST Basin		Property Line
	Monitoring Well		
	Soil Boring/ Field Screening /Surface Sample		

REV	BY	DATE

DR: JSR
CK: HDO
SCALE: AS SHOWN
CES PROJ. NO. 15.070

Tier II Environmental Assessment

CRAWFORD ENVIRONMENTAL SERVICES
104 Corporate Blvd.
Suite 412
West Columbia, SC 29210
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803-708-8137 (Fax)

FIGURE TITLE
Site Facility Base and Cross-section Reference Map
Vacant Lot
2309 Russell Street
Orangeburg, SC 29115
Site ID: 19268

DRAWING NUMBER: Figure 2
REV: 0
9.23.2011

GRAPHIC SCALE
0 25 50 100
(In Feet)
As Shown

Soil Laboratory Analytical Results Summary

Location		Date	Depth	Benzene	Toluene	Ethylbenzene	Xylenes (total)	Naphthalene	TPH (EPA 3550)	TOC	Comments
RBSL/MCLs (ug/kg)(Clay Rich Soil)				3	627	1551	13010	47	n/a	n/a	
GPS	1	2/9/2010	0 to 4	<179	**109J**	**74.6J**	<357	**131J**	NS	NS	
GPS	2	2/9/2010	0 to 4	<3.8	**19.8**	**2.0J**	**6.6J**	<3.8	**9.3**	NS	
GPS	3	2/9/2010	0 to 2	<232	<232	<232	<465	<232	NS	NS	
GPS	4	2/9/2010	0 to 2	<4.0	**2.4J**	<4.0	<7.9	<4.0	NS	NS	
GPS	5	2/9/2010	0 to 2	<4.5	<4.5	<4.5	<9.0	<4.5	NS	NS	
GPS	6	2/9/2010	0 to 2	<4.4	<4.4	<4.4	<8.8	<4.4	NS	NS	
GPS	7	2/9/2010	0 to 2	**2.8J**	1.5J	<4.3	<8.6	<4.3	NS	NS	
GPS	8	2/9/2010	2 to 4	NS	NS	NS	NS	NS	NS	**4760000**	
GW	10	8/26/2011	5.0	<0.91	<0.91	<0.91	<2.7	<4.5	NS	NS	
GW	11	8/26/2011	5.0	<1.1	<1.1	<1.1	<3.3	<5.5	NS	NS	
GW	12	8/26/2011	5.0	<0.93	<0.93	<0.93	<2.8	<4.6	NS	NS	
GW	13	8/26/2011	5.0	<0.73	<0.73	<0.73	<2.2	<3.7	NS	NS	
GW	14	8/26/2011	5.0	<0.97	<0.97	<0.97	<2.9	<4.8	NS	NS	
GW	15	8/26/2011	5.0	<1.0	<1.0	<1.0	<3.1	<5.1	NS	NS	
GW	16	8/26/2011	5.0	<0.92	<0.92	<0.92	<2.8	<4.6	NS	NS	
GW	17	8/26/2011	5.0	<1.1	<1.1	<1.1	<3.3	<5.5	NS	NS	
Trip Blank		8/25/2011	n/a	<1.0	**0.90J**	<1.0	**1.0J**	**1.3J**	NS	NS	

Groundwater Screening Analytical Summary

Sample ID:	Sample date	Total Depth	Benzene	Toluene	Ethylbenzene	Xylenes (Total)	MTBE	Naphthalene	1,2 DCA	EDB
RBSL/MCL	ug/L	(ft)	5	1000	700	10000	25	40	5	0.01
GW 10	8/29/2011	12	***30***	<1.0	<1.0	<3.0	**12**	**2.3J**	NS	NS
GW 11	8/29/2011	12	<1.0	<1.0	<1.0	<3.0	***72***	<5.0	NS	NS
GW 11DUP	8/29/2011	12	<1.0	<1.0	<1.0	<3.0	***74***	<5.0	NS	NS
GW 12	8/29/2011	12	<1.0	<1.0	<1.0	<3.0	<1.0	<5.0	NS	NS
GW 13	8/29/2011	12	<1.0	<1.0	<1.0	<3.0	<1.0	<5.0	NS	NS
GW 14	8/29/2011	12	<1.0	<1.0	<1.0	<3.0	<1.0	<5.0	NS	NS
GW 15	8/29/2011	12	<1.0	<1.0	**0.48J**	<3.0	**0.30J**	<5.0	NS	NS
GW 16	8/29/2011	12	<1.0	<1.0	<1.0	<3.0	***130***	<5.0	NS	NS
GW 17	8/29/2011	12	<1.0	<1.0	<1.0	<3.0	<1.0	<5.0	NS	NS
GW 18	8/29/2011	40	<1.0	<1.0	<1.0	<3.0	**4.8**	**1.3J**	NS	NS
GW 19	8/29/2011	35	<1.0	<1.0	<1.0	<3.0	<1.0	<5.0	NS	NS
SW 1	8/29/2011	3	<1.0	<1.0	<1.0	<3.0	<1.0	<5.0	NS	NS
SW 1DUP	8/29/2011	3	<1.0	<1.0	<1.0	<3.0	<1.0	<5.0	NS	NS
SW 2	8/29/2011	3	<1.0	<1.0	<1.0	<3.0	<1.0	<5.0	NS	NS
SW 3	8/29/2011	3	<1.0	<1.0	<1.0	<3.0	<1.0	<5.0	NS	NS
Trip Blank	8/29/2011	N/A	<1.0	<1.0	<1.0	<3.0	<1.0	<5.0	NS	NS
Field Blank	8/29/2011	N/A	<1.0	<1.0	<1.0	<3.0	<1.0	<5.0	NS	NS

Note: Diagram based RLS September 14, 2011 Survey, upon aerial photographs, MECI diagram, Orangeburg County Tax records and CES Field Notes

MAC- DATE

LEGEND

	UST Basin		Property Line
	Monitoring Well		
	Soil Boring / Field Screening/ Surface Sample		

REV	BY	DATE

DR: JSR
CK: HDO
SCALE: AS SHOWN
CES PROJ. NO. 15.070

Tier II Environmental Assessment

CRAWFORD ENVIRONMENTAL SERVICES
104 Corporate Blvd.
Suite 412
West Columbia, SC 29210
803-708-0079 (ph)
803-708-8137 (Fax)

FIGURE TITLE
Field Screening / Soil Chemicals of Concern Map
Vacant Lot
2309 Russell Street
Orangeburg, SC 29115
Site ID: 19268

DRAWING NUMBER
Figure 3

REV
0
9.23.2011

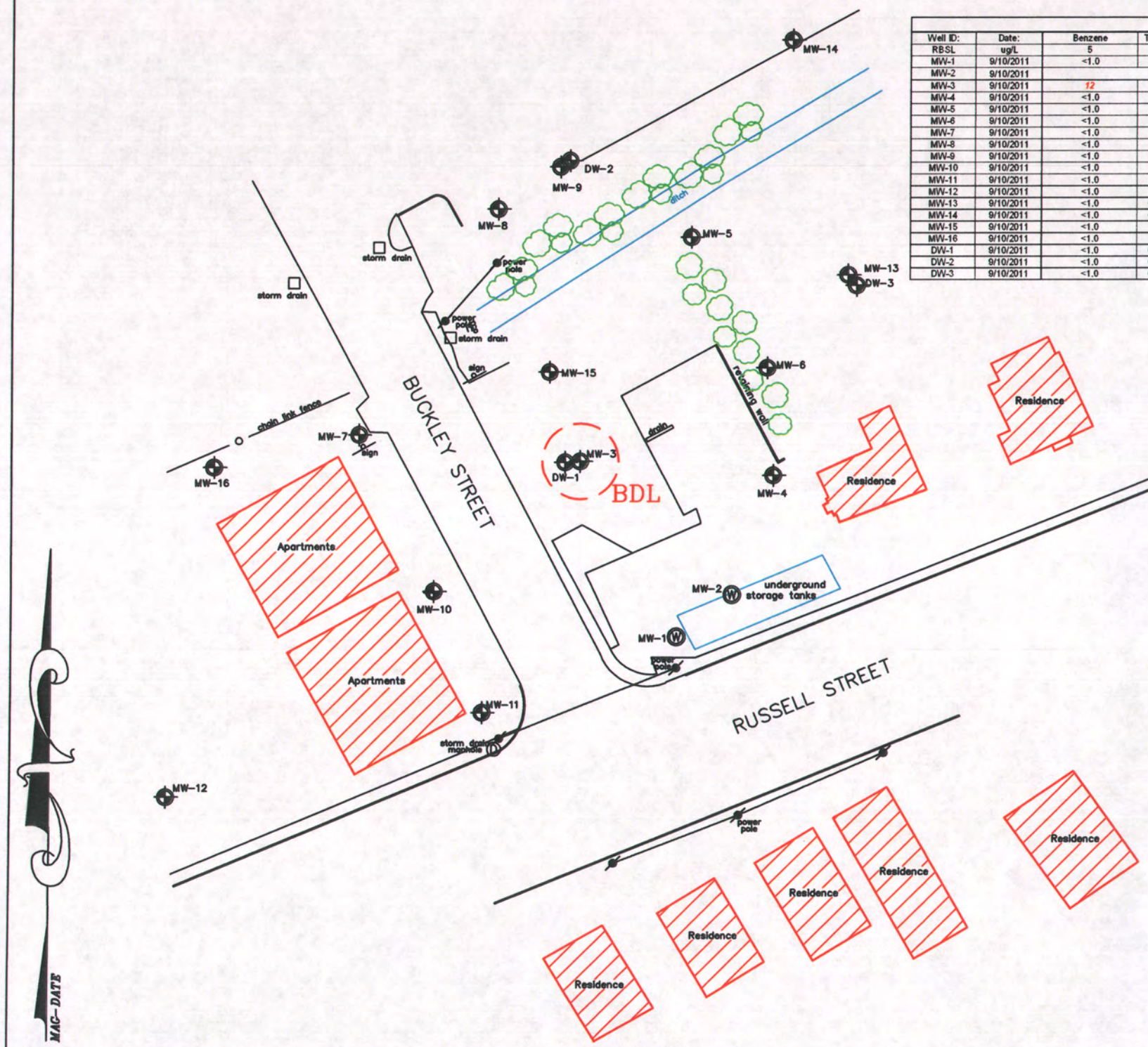
GRAPHIC SCALE

0 25 50 100

(In Feet)
As Shown

Groundwater Laboratory Analytical Result Summary

Well ID:	Date:	Benzene	Toluene	Ethylbenzene	Xylenes (Total)	Naphthalene	MTBE	1,2 DCA	EDB	Pb	NO3	FE+	SO4	ETBA	Ethanol	ETBE	DIPE	TAA	TAME	TBA	TBF	Date:	Well ID:
RBSL	ug/L	5	1000	700	10000	25	40	5	0.01	15	10000	NE	NE	NE	10000	47	150	240	128	1400	NE		RBSL
MW-1	9/10/2011	<1.0	0.78J	<1.0	<3.0	<1.0	<1.0	<1.0	<0.020	NS	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-1
MW-2	9/10/2011	DRY																				9/10/2011	MW-2
MW-3	9/10/2011	12	0.99J	37	2.1J	460	3.1	<1.0	<0.021	137	NS	NS	NS	<100	<100	<100	<10	<100	<10	7.8J	<100	9/10/2011	MW-3
MW-4	9/10/2011	<1.0	0.54J	<1.0	<3.0	<5.0	0.56J	<1.0	<0.020	NS	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-4
MW-5	9/10/2011	<1.0	0.54J	<1.0	<3.0	0.72J	7.9	<1.0	<0.020	14.6	NS	NS	NS	<100	<100	<100	<10	7.6J	<100	<10	<100	9/10/2011	MW-5
MW-6	9/10/2011	<1.0	<1.0	<1.0	<3.0	6	53	<1.0	<0.020	3.53	NS	NS	NS	<100	200	<100	<10	<100	<10	13J	<100	9/10/2011	MW-6
MW-7	9/10/2011	<1.0	<1.0	<1.0	0.92J	<5.0	<1.0	<1.0	<0.020	139	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-7
MW-8	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-8
MW-9	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	6.43	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-9
MW-10	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	43	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-10
MW-11	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	0.38J	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-11
MW-12	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	NS	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-12
MW-13	9/10/2011	<1.0	0.76J	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-13
MW-14	9/10/2011	<1.0	0.47J	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	6.29	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-14
MW-15	9/10/2011	<1.0	0.49J	<3.0	7.4	2.3	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-15
MW-16	9/10/2011	<1.0	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-16
DW-1	9/10/2011	<1.0	0.77J	<1.0	0.41J	1.3J	0.72J	<1.0	<0.020	1.83	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	DW-1
DW-2	9/10/2011	<1.0	0.75J	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	DW-2
DW-3	9/10/2011	<1.0	0.73J	<1.0	<3.0	<5.0	0.46J	<1.0	<0.020	11.6	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	DW-3



Note: Deep wells DW-1, DW-2, and DW-3 are not used in the creation of this map.

LEGEND			
	UST Basin		
	Monitoring Well		

REV	BY	DATE

DR: JSR
CK: HDO
SCALE: AS SHOWN
CES PROJ. NO. 15.070

Tier II Environmental Assessment

CRAWFORD ENVIRONMENTAL SERVICES
104 Corporate Blvd.
Suite 412
West Columbia, SC 29210
803-708-0079 (ph)
803-708-8137 (Fax)

FIGURE TITLE

Chemicals of Concern: Benzene

Vacant Lot
2309 Russell Street
Orangeburg, SC 29115
Site ID: 19268

DRAWING NUMBER: Figure 4A

REV: 0
9.23.2011

GRAPHIC SCALE

0 25 50 100

(In Feet)

As Shown

Groundwater Laboratory Analytical Result Summary

Well ID:	Date:	Benzene	Toluene	Ethylbenzene	Xylenes (Total)	Naphthalene	MTBE	1,2 DCA	EDB	Pb	NO3	FE+	SO4	ETBA	Ethanol	ETBE	DIPE	TAA	TAME	TBA	TBF	Date:	Well ID:
RBSL	ug/L	5	1000	700	10000	25	40	5	0.01	15	10000	NE	NE	NE	10000	47	150	240	128	1400	NE		RBSL
MW-1	9/10/2011	<1.0	**0.78J**	<1.0	<3.0	<1.0	<1.0	<1.0	<0.020	NS	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-1
MW-2	9/10/2011									DRY												9/10/2011	MW-2
MW-3	9/10/2011	**12**	**0.99J**	**37**	**2.1J**	**460**	**3.1**	<1.0	<0.021	**137**	NS	NS	NS	<100	<100	<100	<10	<100	<10	**7.8J**	<100	9/10/2011	MW-3
MW-4	9/10/2011	<1.0	**0.56J**	<1.0	<3.0	<5.0	**0.56J**	<1.0	<0.020	NS	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-4
MW-5	9/10/2011	<1.0	**0.56J**	<1.0	<3.0	**0.72J**	**7.9**	<1.0	<0.020	**14.6**	NS	NS	NS	<100	<100	<100	**7.6J**	<100	<10	<100	<100	9/10/2011	MW-5
MW-6	9/10/2011	<1.0	<1.0	<1.0	<3.0	**6**	**53**	<1.0	<0.020	**3.53**	NS	NS	NS	<100	200	<100	<10	<100	<10	**13J**	<100	9/10/2011	MW-6
MW-7	9/10/2011	<1.0	<1.0	<1.0	**0.92J**	<5.0	<1.0	<1.0	<0.020	**139**	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-7
MW-8	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-8
MW-9	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	**6.43**	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-9
MW-10	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	**43**	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-10
MW-11	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	**0.38J**	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-11
MW-12	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	NS	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-12
MW-13	9/10/2011	<1.0	**0.78J**	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-13
MW-14	9/10/2011	<1.0	**0.47J**	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	**6.29**	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-14
MW-15	9/10/2011	<1.0	<1.0	**0.49J**	<3.0	**7.4**	**2.3**	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-15
MW-16	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-16
DW-1	9/10/2011	<1.0	**0.77J**	<1.0	**0.41J**	**1.3J**	**0.72J**	<1.0	<0.020	**1.83**	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	DW-1
DW-2	9/10/2011	<1.0	**0.75J**	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	DW-2
DW-3	9/10/2011	<1.0	**0.73J**	<1.0	<3.0	<5.0	**0.46J**	<1.0	<0.020	**11.6**	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	DW-3

Note: Deep wells DW-1, DW-2, and DW-3 are not used in the creation of this map.

LEGEND

	UST Basin		
⊕	Monitoring Well		

REV	BY	DATE

DR: JSR

CK: HDO

SCALE: AS SHOWN

CES PROJ. NO. 15.070

Tier II Environmental Assessment

CRAWFORD ENVIRONMENTAL SERVICES

104 Corporate Blvd.
Suite 412
West Columbia, SC 29210

803-708-0079 (ph)
803-708-8137 (Fax)

FIGURE TITLE

Chemicals of Concern: Ethylbenzene

Vacant Lot
2309 Russell Street
Orangeburg, SC 29115
Site ID: 19268

DRAWING NUMBER: Figure 4B

REV: 0 9.23.2011

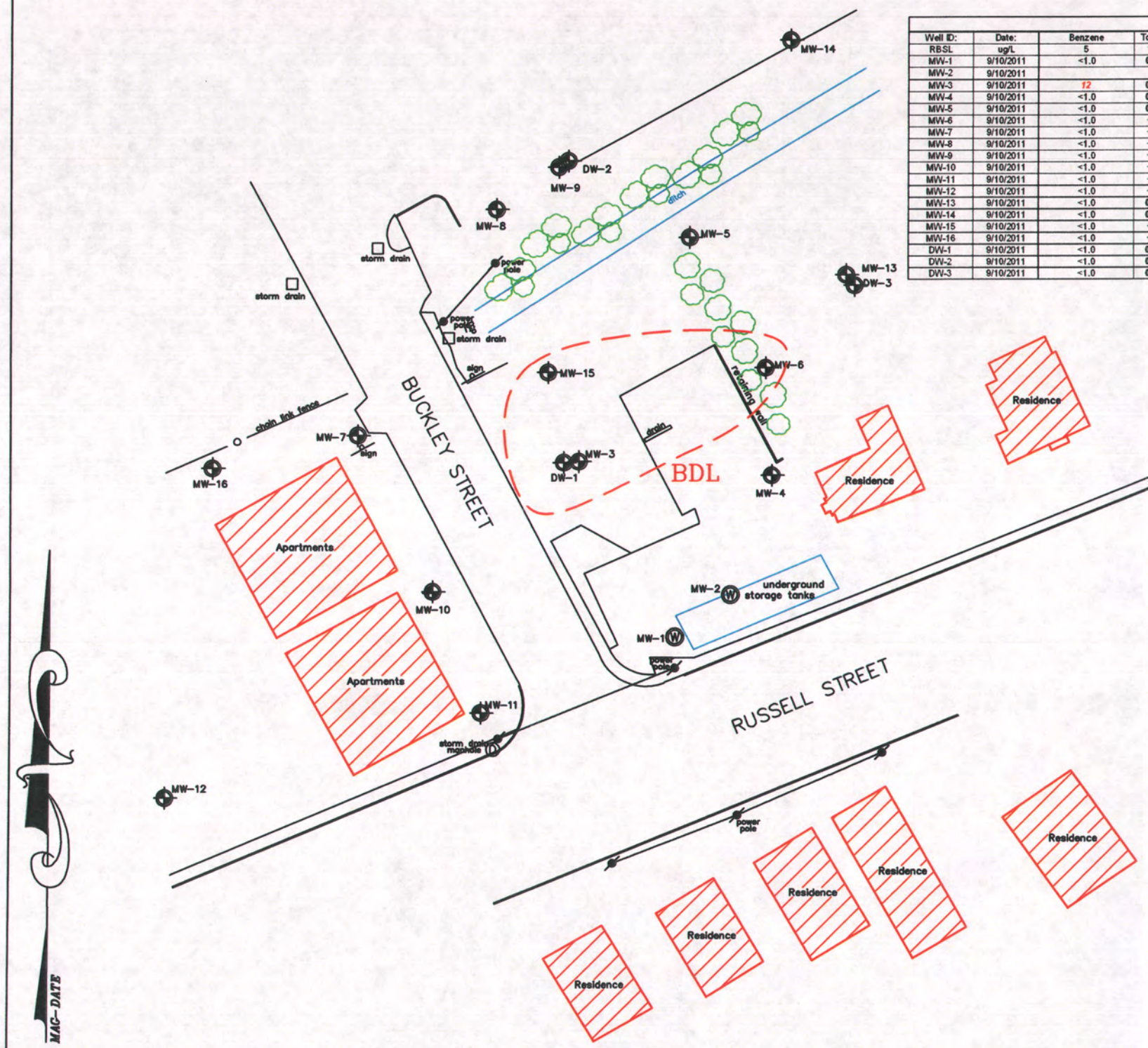
GRAPHIC SCALE

0 25 50 100

(In Feet)
As Shown

Groundwater Laboratory Analytical Result Summary

Well ID:	Date:	Benzene	Toluene	Ethylbenzene	Xylenes (Total)	Naphthalene	MTBE	1,2 DCA	EDB	Pb	NO3	FE+	SO4	ETBA	Ethanol	ETBE	DIPE	TAA	TAME	TBA	TBF	Date:	Well ID:
RBSL	ug/L	5	1000	700	10000	25	40	5	0.01	15	10000	NE	NE	NE	10000	47	150	240	128	1400	NE		RBSL
MW-1	9/10/2011	<1.0	0.78J	<1.0	<3.0	<1.0	<1.0	<1.0	<0.020	NS	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-1
MW-2	9/10/2011	DRY																				9/10/2011	MW-2
MW-3	9/10/2011	12	0.99J	37	2.1J	460	3.1	<1.0	<0.021	137	NS	NS	NS	<100	<100	<100	<10	<100	<10	7.8J	<100	9/10/2011	MW-3
MW-4	9/10/2011	<1.0	0.54J	<1.0	<3.0	<5.0	0.56J	<1.0	<0.020	NS	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-4
MW-5	9/10/2011	<1.0	0.54J	<1.0	<3.0	0.72J	7.9	<1.0	<0.020	14.6	NS	NS	NS	<100	<100	<100	7.6J	<100	<10	<100	<100	9/10/2011	MW-5
MW-6	9/10/2011	<1.0	<1.0	<1.0	<3.0	6	53	<1.0	<0.020	3.53	NS	NS	NS	<100	200	<100	<10	<100	<10	13J	<100	9/10/2011	MW-6
MW-7	9/10/2011	<1.0	<1.0	<1.0	0.92J	<5.0	<1.0	<1.0	<0.020	1.39	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-7
MW-8	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-8
MW-9	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	6.43	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-9
MW-10	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	43	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-10
MW-11	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	0.38J	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-11
MW-12	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	NS	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-12
MW-13	9/10/2011	<1.0	0.78J	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-13
MW-14	9/10/2011	<1.0	0.47J	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	6.29	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-14
MW-15	9/10/2011	<1.0	<1.0	0.49J	<3.0	7.4	2.3	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-15
MW-16	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-16
DW-1	9/10/2011	<1.0	0.77J	<1.0	0.41J	1.3J	0.72J	<1.0	<0.020	1.83	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	DW-1
DW-2	9/10/2011	<1.0	0.75J	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	DW-2
DW-3	9/10/2011	<1.0	0.73J	<1.0	<3.0	<5.0	0.46J	<1.0	<0.020	11.6	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	DW-3



Note: Deep wells DW-1, DW-2, and DW-3 are not used in the creation of this map.

LEGEND			
	UST Basin		
	Monitoring Well		

REV	BY	DATE

DR: JSR
CK: HDO
SCALE: AS SHOWN
CES PROJ. NO. 15.070

Tier II Environmental Assessment

CRAWFORD ENVIRONMENTAL SERVICES
104 Corporate Blvd.
Suite 412
West Columbia, SC 29210
803-708-0079 (ph)
803-708-8137 (Fax)

FIGURE TITLE

Chemicals of Concern: Naphthalene

Vacant Lot
2309 Russell Street
Orangeburg, SC 29115
Site ID: 19268

DRAWING NUMBER: Figure 4C

REV: 0
9.23.2011

MAC-DATE

GRAPHIC SCALE

0 25 50 100

(In Feet)

As Shown

Groundwater Laboratory Analytical Result Summary

Well ID:	Date:	Benzene	Toluene	Ethylbenzene	Xylenes (Total)	Naphthalene	MTBE	1,2 DCA	EDB	Pb	NO3	FE+	SO4	ETBA	Ethanol	ETBE	DIPE	TAA	TAME	TBA	TBF	Date:	Well ID:
RBSL	ug/L	5	1000	700	10000	25	40	5	0.01	15	10000	NE	NE	NE	10000	47	150	240	128	1400	NE		RBSL
MW-1	9/10/2011	<1.0	**0.78J**	<1.0	<3.0	<1.0	<1.0	<1.0	<0.020	NS	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-1
MW-2	9/10/2011									DRY												9/10/2011	MW-2
MW-3	9/10/2011	*12*	**0.99J**	**37**	**2.1J**	*460*	**3.1**	<1.0	<0.021	*137*	NS	NS	NS	<100	<100	<100	<10	<100	<10	**7.8J**	<100	9/10/2011	MW-3
MW-4	9/10/2011	<1.0	**0.54J**	<1.0	<3.0	<5.0	**0.56J**	<1.0	<0.020	NS	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-4
MW-5	9/10/2011	<1.0	**0.54J**	<1.0	<3.0	**0.72J**	**7.9**	<1.0	<0.020	**14.6**	NS	NS	NS	<100	<100	<100	**7.6J**	<100	<10	<100	<100	9/10/2011	MW-5
MW-6	9/10/2011	<1.0	<1.0	<1.0	<3.0	**6**	**53**	<1.0	<0.020	**3.53**	NS	NS	NS	<100	200	<100	<10	<100	<10	**13J**	<100	9/10/2011	MW-6
MW-7	9/10/2011	<1.0	<1.0	<1.0	**0.92J**	<5.0	<1.0	<1.0	<0.020	*139*	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-7
MW-8	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-8
MW-9	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	**6.43**	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-9
MW-10	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	*43*	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-10
MW-11	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	**0.38J**	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-11
MW-12	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	NS	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-12
MW-13	9/10/2011	<1.0	**0.78J**	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-13
MW-14	9/10/2011	<1.0	**0.47J**	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	**6.29**	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-14
MW-15	9/10/2011	<1.0	<1.0	**0.49J**	<3.0	**7.4**	**2.3**	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-15
MW-16	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-16
DW-1	9/10/2011	<1.0	**0.77J**	<1.0	**0.41J**	**1.3J**	**0.72J**	<1.0	<0.020	**1.83**	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	DW-1
DW-2	9/10/2011	<1.0	**0.75J**	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	DW-2
DW-3	9/10/2011	<1.0	**0.73J**	<1.0	<3.0	<5.0	**0.46J**	<1.0	<0.020	**11.6**	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	DW-3

Note: Deep wells DW-1, DW-2, and DW-3 are not used in the creation of this map.

LEGEND

	UST Basin		
⊕	Monitoring Well		

REV	BY	DATE

DR: JSR

CK: HDO

SCALE: AS SHOWN

CES PROJ. NO. 15.070

Tier II Environmental Assessment

CRAWFORD ENVIRONMENTAL SERVICES

104 Corporate Blvd.
Suite 412
West Columbia, SC 29210

803-708-0079 (ph)
803-708-8137 (Fax)

FIGURE TITLE

Chemicals of Concern: MtBE

Vacant Lot
2309 Russell Street
Orangeburg, SC 29115
Site ID: 19268

DRAWING NUMBER: Figure 4D

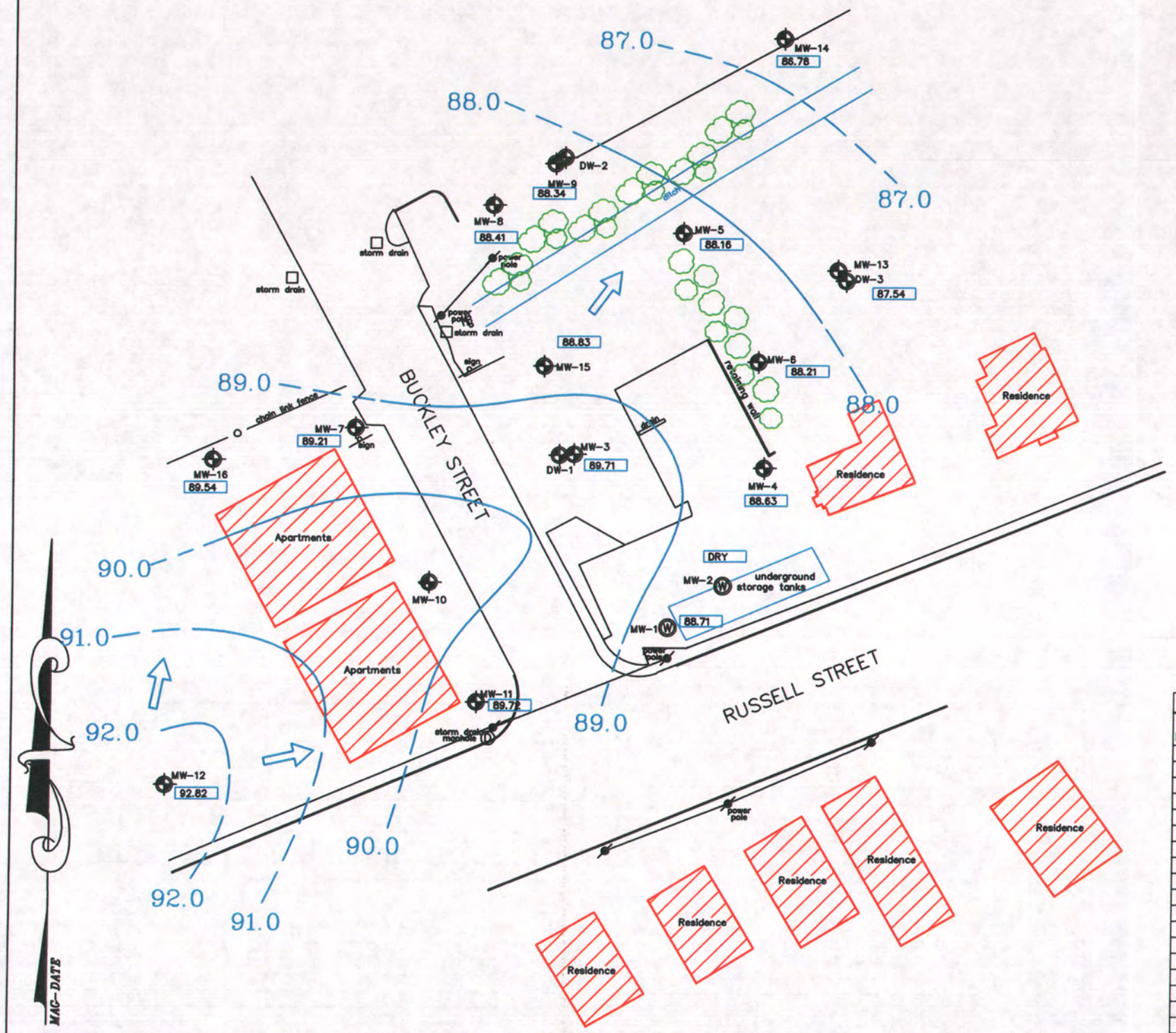
REV: 0 9.23.2011

MAC-DATE

GRAPHIC SCALE

0 25 50 100

(In Feet)
As Shown



Note: Deep Wells DW-1, DW-2 and DW-3 were not used in the creation of this diagram. Shallow well MW-10 was not used in the creation of this diagram.

Groundwater Summary

Monitor Well	Well Depth (ft)	Screened Interval		Top of Casing (ft)	Date Measured	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)	Product Elevation (ft)	Groundwater Elevation (ft)
MW-1	12	2	12	99.44	9/10/2011	0	10.73	0	0	88.71
MW-2	12	2	12	99.13	9/10/2011	0			DRY	
MW-3	12	2	12	98.29	9/10/2011	0	8.58	0	0	89.71
MW-4	12	2	12	100.43	9/10/2011	0	11.80	0	0	88.63
MW-5	12	2	12	96.26	9/10/2011	0	8.10	0	0	88.16
MW-6	12	2	12	95.97	9/10/2011	0	7.76	0	0	88.21
MW-7	12	2	12	98.91	9/10/2011	0	9.70	0	0	89.21
MW-8	12	2	12	98.82	9/10/2011	0	10.41	0	0	88.41
MW-9	12	2	12	98.43	9/10/2011	0	10.09	0	0	88.34
MW-10	12	2	12	99.49*	9/10/2011	0	8.91	0	0	90.58*
MW-11	12	2	12	99.76	9/10/2011	0	10.04	0	0	89.72
MW-12	12	2	12	102.18	9/10/2011	0	9.36	0	0	92.82
MW-13	12	2	12	95.68	9/10/2011	0	8.14	0	0	87.54
MW-14	12	2	12	98.46	9/10/2011	0	11.68	0	0	86.78
MW-15	12	2	12	99.51	9/10/2011	0	10.68	0	0	88.83
MW-16	12	2	12	99.51	9/10/2011	0	9.97	0	0	89.54
DW-1	40	35	40	98.35	9/10/2011	0	11.61	0	0	86.74
DW-2	35	30	35	97.99	9/10/2011	0	13.45	0	0	84.54
DW-3	29	24	29	95.67	9/10/2011	0	13.21	0	0	82.46

LEGEND

UST Basin		Groundwater Flow Direction	
Monitoring Well		Potentiometric Surface	
		Potentiometric Surface {Estimated}	

REV	BY	DATE

DR: JSR
CK: HDO
SCALE: AS SHOWN
CES PROJ. NO. 15.070

Tier II Environmental Assessment

CRAWFORD ENVIRONMENTAL SERVICES

104 Corporate Blvd.
Suite 412
West Columbia, SC 29210

803-708-0079 (ph)
803-708-8137 (Fax)

FIGURE TITLE

Potentiometric Map (Shallow)

Vacant Lot
2309 Russell Street
Orangeburg, SC 29115
Site ID: 19268

DRAWING NUMBER

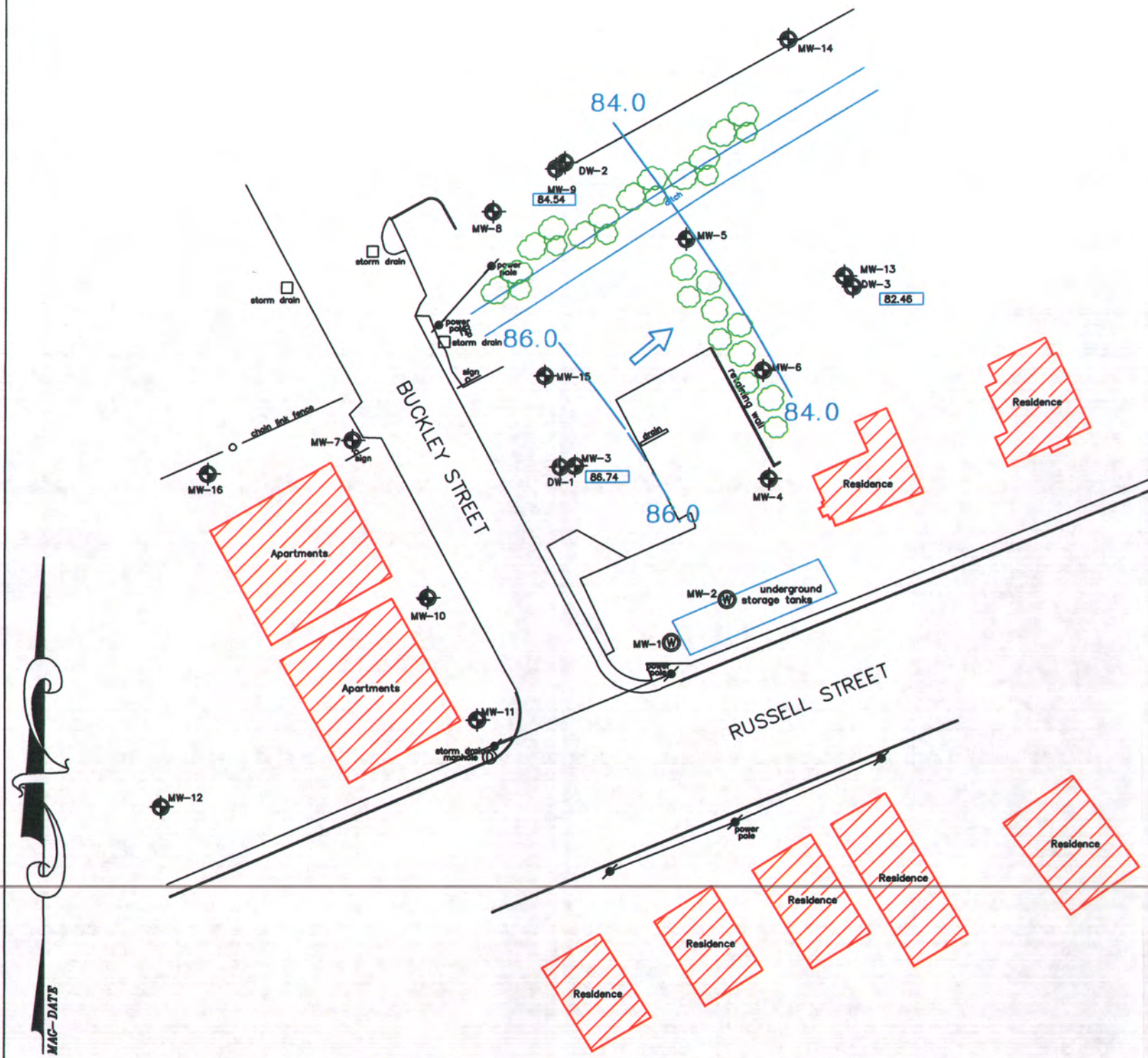
Figure 5A

REV 0
9.23.2011

GRAPHIC SCALE

0 25 50 100

(In Feet)
As Shown



Note: Shallow wells (MW-1 through MW-16) were not used in the creation of this diagram.

Groundwater Summary

Monitor Well	Well Depth (ft)	Screened Interval		Top of Casing (ft)	Date Measured	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)	Product Elevation (ft)	Groundwater Elevation (ft)
MW-1	12	2	12	99.44	9/10/2011	0	10.73	0	0	88.71
MW-2	12	2	12	99.13	9/10/2011	0			DRY	
MW-3	12	2	12	98.29	9/10/2011	0	8.58	0	0	89.71
MW-4	12	2	12	100.43	9/10/2011	0	11.80	0	0	88.63
MW-5	12	2	12	96.26	9/10/2011	0	8.10	0	0	88.16
MW-6	12	2	12	95.97	9/10/2011	0	7.76	0	0	88.21
MW-7	12	2	12	98.91	9/10/2011	0	9.70	0	0	89.21
MW-8	12	2	12	98.82	9/10/2011	0	10.41	0	0	88.41
MW-9	12	2	12	98.43	9/10/2011	0	10.09	0	0	88.34
MW-10	12	2	12	99.49*	9/10/2011	0	8.91	0	0	90.58*
MW-11	12	2	12	99.76	9/10/2011	0	10.04	0	0	89.72
MW-12	12	2	12	102.18	9/10/2011	0	9.36	0	0	92.82
MW-13	12	2	12	95.68	9/10/2011	0	8.14	0	0	87.54
MW-14	12	2	12	98.46	9/10/2011	0	11.68	0	0	86.78
MW-15	12	2	12	99.51	9/10/2011	0	10.68	0	0	88.83
MW-16	12	2	12	99.51	9/10/2011	0	9.97	0	0	89.54
DW-1	40	35	40	98.35	9/10/2011	0	11.61	0	0	86.74
DW-2	35	30	35	97.99	9/10/2011	0	13.45	0	0	84.54
DW-3	29	24	29	95.67	9/10/2011	0	13.21	0	0	82.46

LEGEND

	UST Basin		Groundwater Flow Direction
	Monitoring Well		Potentiometric Surface
			Potentiometric Surface (Estimated)

REV	BY	DATE

DR: JSR
CK: HDO
SCALE: AS SHOWN
CES PROJ. NO. 15.070

Tier II Environmental Assessment

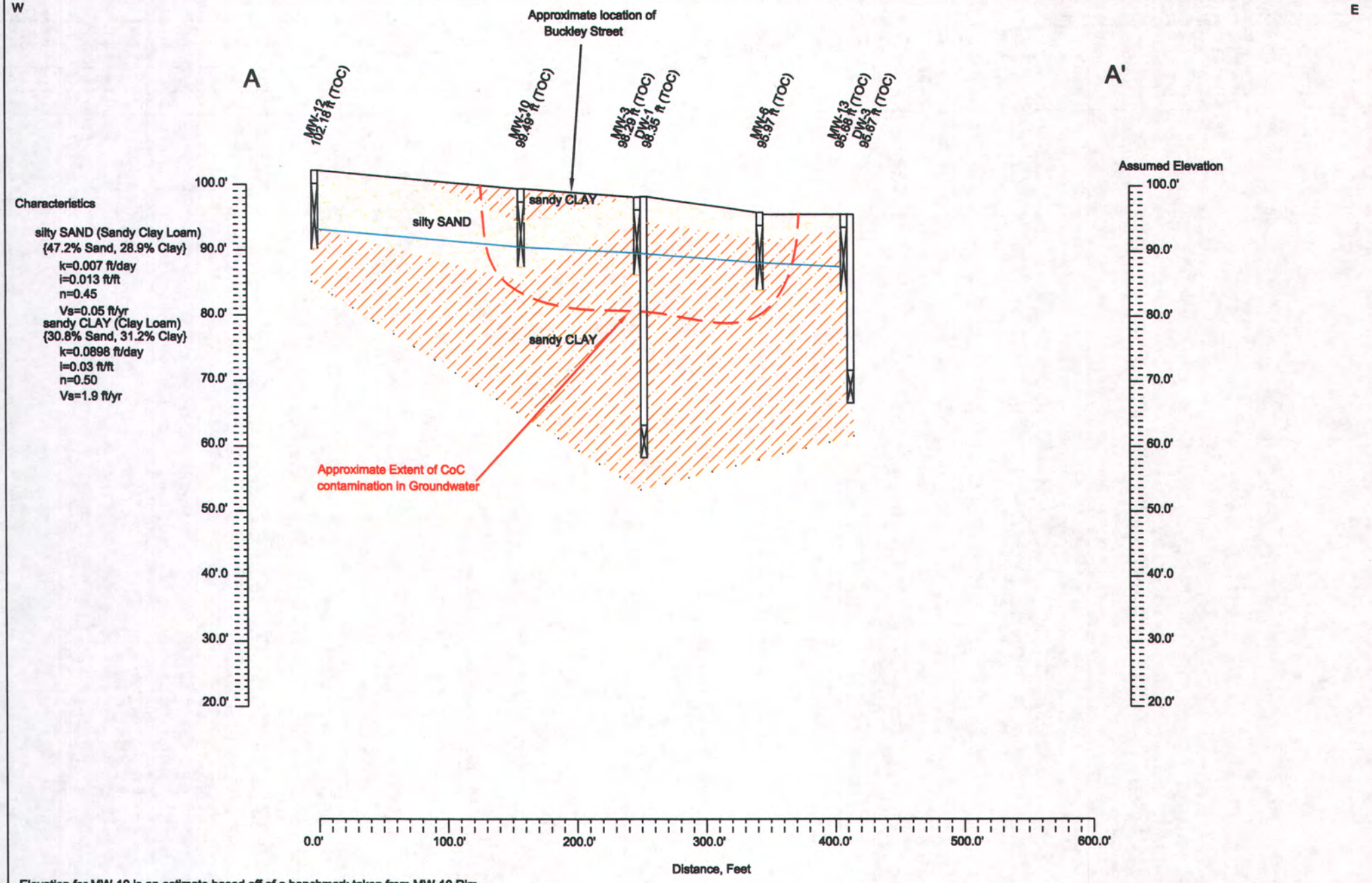
CRAWFORD ENVIRONMENTAL SERVICES
104 Corporate Blvd.
Suite 412
West Columbia, SC 29210
803-708-0079 (ph)
803-708-8137 (Fax)

FIGURE TITLE

Potentiometric Map (Deep)
Vacant Lot
2309 Russell Street
Orangeburg, SC 29115
Site ID: 19268

DRAWING NUMBER: Figure 5B

REV: 0
9.23.2011



Elevation for MW-10 is an estimate based off of a benchmark taken from MW-10 Rim.

EXPLANATION		REV	BY	DATE
Groundwater Elevation				

DR: JSR
CK: HDO
SCALE: AS SHOWN
CES PROJ. NO. 15.070

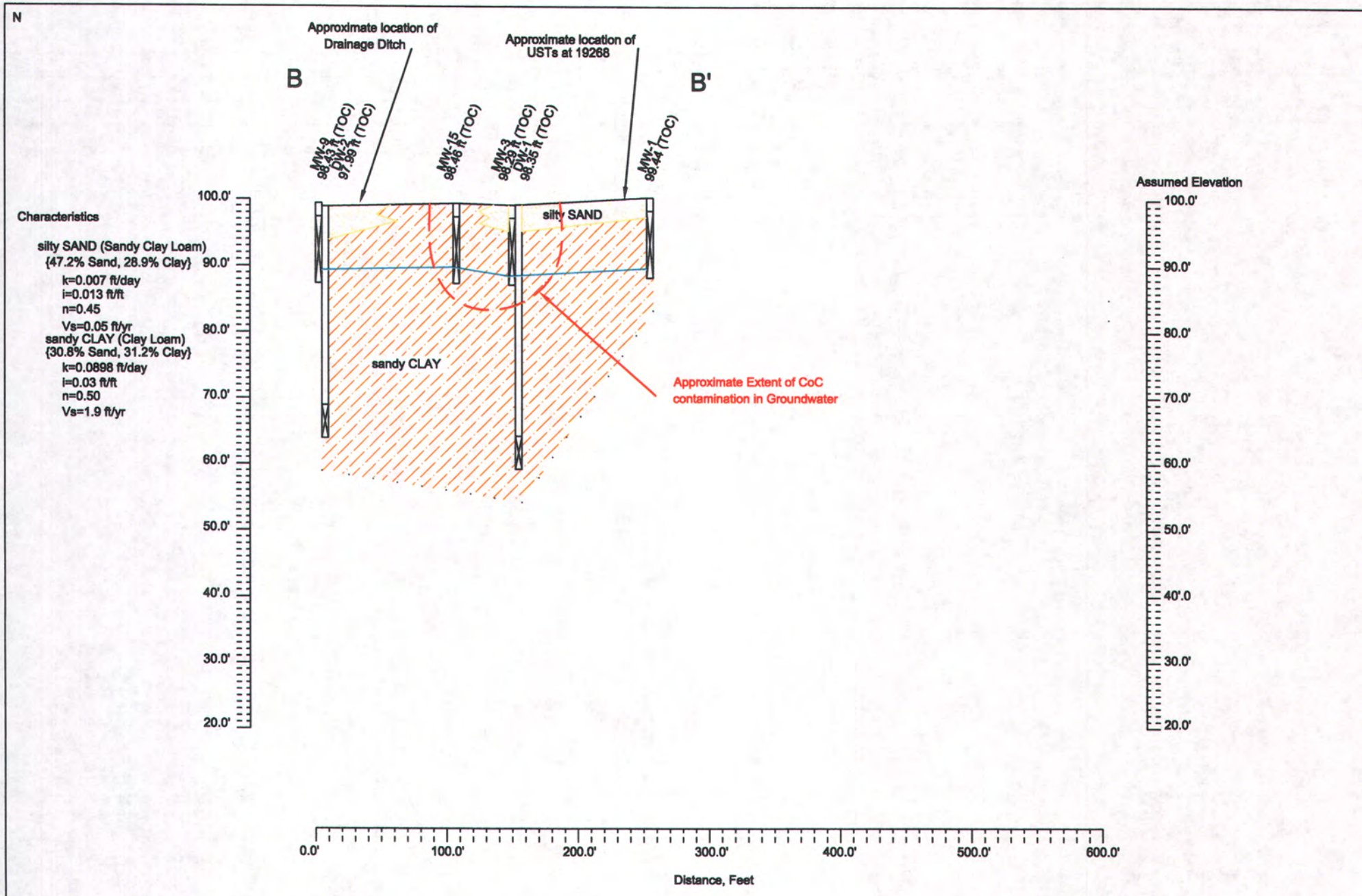
Tier II Assessment Report

CRAWFORD ENVIRONMENTAL SERVICES
104 Corporate Blvd.
Suite 412
West Columbia, SC 29210
803-708-0079 (ph)
803-708-8137 (Fax)

FIGURE TITLE
Cross-Section A - A'
Vacant Lot
2309 Russell Street
Orangeburg, SC 29115
Site ID: 19268

DRAWING NUMBER
Figure 6A

REV
0
9/28/2011



EXPLANATION							
—	Groundwater Elevation				DR: JSR	Tier II Assessment Report	CRAWFORD ENVIRONMENTAL SERVICES
					CK: HDO		
					SCALE: AS SHOWN		
					CES PROJ. NO. 15.070		
		REV	BY	DATE			

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Suite 412
West Columbia, SC 29210
803-708-0079 (ph)
803-708-8137 (Fax)

FIGURE TITLE
Cross-Section B- B'
Vacant Lot
2309 Russell Street
Orangeburg, SC 29115
Site ID: 19268

DRAWING NUMBER
Figure 6B

REV
0
9/23/2011

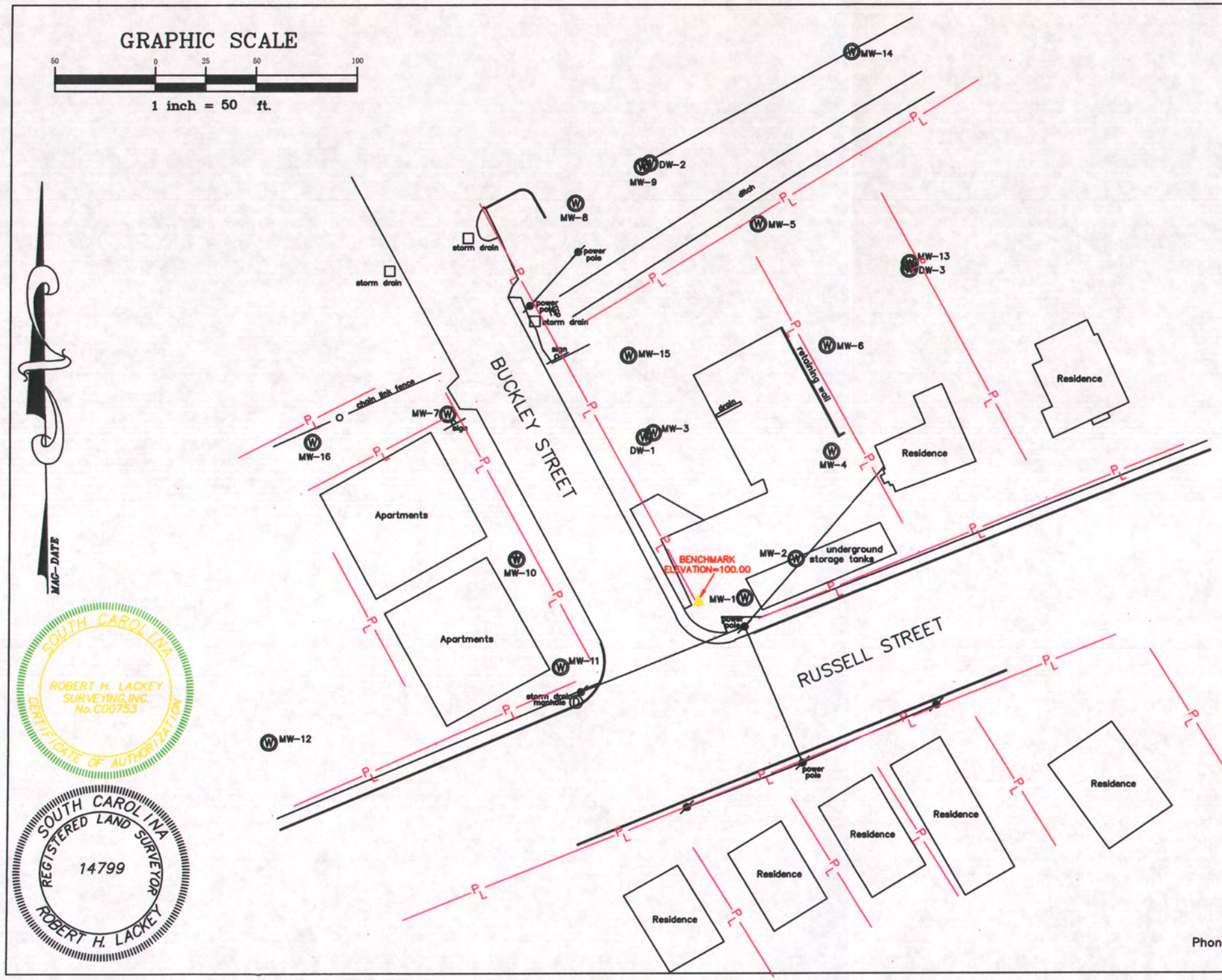
APPENDIX A
Site Facility Base Map

CRAWFORD
ENVIRONMENTAL
SERVICES

GRAPHIC SCALE

50 0 25 50 100

1 inch = 50 ft.



SITE MAP

Prepared for:

CRAWFORD ENVIRONMENTAL SERVICES

September 14, 2011

2309 RUSSELL STREET
ORANGEBURG, SC

MONITOR WELL	TOP PVC 2" CASING
MW-1	99.44
MW-2	99.13
MW-3	98.29
MW-4	100.43
MW-5	96.26
MW-6	95.97
MW-7	98.91
MW-8	98.82
MW-9	98.43
MW-10	99.49*
MW-11	99.76
MW-12	102.18
MW-13	95.68
MW-14	97.98
MW-15	98.46
MW-16	99.51
DW-1	98.35
DW-2	97.99
DW-3	95.67

*Benchmark measurement due to obstruction. Equal to rim measurement.

SOUTH CAROLINA
ROBERT H. LACKEY SURVEYING, INC.
No. C00753
CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA
REGISTERED LAND SURVEYOR
14799
ROBERT H. LACKEY

Robert H. Lackey Surveying, Inc.
P.O. Box 713 Camden, SC 29020
Phone: 803-432-0968 Fax: 803-425-4439

CE-ORANGEBURG.DWG R2000-2011

MAC-DATE

MAC-DATE

LEGEND

Property Line

REV	BY	DATE

DR: JSR

CK: HDO

SCALE: AS SHOWN

CES PROJ. NO. 15.070

Tier II Environmental Assessment

CRAWFORD ENVIRONMENTAL SERVICES

104 Corporate Blvd.
Suite 412
West Columbia, SC 29210
803-708-0079 (ph)
803-708-8137 (Fax)

FIGURE TITLE

Comprehensive Survey
Vacant Lot
2309 Russell Street
Orangeburg, SC 29115
Site ID: 19268

DRAWING NUMBER: Figure A

REV: 1 10.18.11

APPENDIX B

Laboratory Data Reports, Chain of Custodies and Field Data Information Sheets

CRAWFORD
ENVIRONMENTAL
SERVICES

DHEC
PROMOTE PROTECT PROSPER

Field Data Information Sheet for Ground-Water Sampling
Division of Underground Storage Tank Management

Date (mm/dd/yy): September 10, 2011
Field Personnel: J. Reynolds D. O'Brien
General Weather Conditions: Clear & Sunny

Ambient Air Temperature: 31 °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.	SenseION 156 8328-226	serial no.	SenseION 156 8332-561
pH=4.0	4.1	standard	500-503
pH=7.0	7.0	standard	
pH=10.0		standard	

Chain of Custody

9/10/2011 @ 6:30

Facility Name: VACANT LOT
UST Permit #: 19268 **Monitoring Well #:** MW-1
Water Supply Well **Public:** _____ **Private:** _____

Monitoring Well Diameter (D): .16 feet

Conversion factor (C): 3.14 X $(D/2)^2$ 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) 10.73 feet
Total Well Depth (TWD) 12.00 feet
Length of Water Column (LWC = TWD- DGW) _____ feet

~~1 Casing Volume (CV = LWC X C) = _____ X .16 = _____ gals~~
~~3 Casing Volume 3 X CV = _____ gals (standard purge volume)~~ NP

~~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	Post Sampling	
Cumulative Volume Purged (gallons)								
Time (military)	1021							
pH (s.u.)								
Specific Cond. (µmhos/cm)								
Water Temperature (°C)								
Turbidity (subjective: clear, slightly cloudy, cloudy)								
PID Readings (if required)								

Remarks: NP Not enough water for parameters 2 vials collected

DHEC 3529 (07/1999)

DHEC
PROMOTE PROTECT PROSPER

Field Data Information Sheet for Ground-Water Sampling
Division of Underground Storage Tank Management

Date (mm/dd/yy): September 10, 2011
Field Personnel: J. Reynolds D. O'Brien
General Weather Conditions: Clear & Sunny

Ambient Air Temperature: 31 °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.	SenseION 156 8328-226	serial no.	SenseION 156 8332-561
pH=4.0	4.1	standard	500-503
pH=7.0	7.0	standard	
pH=10.0		standard	

Chain of Custody

9/10/2011 @ 6:30

Facility Name: Vacant Lot
UST Permit #: 19268 **Monitoring Well #:** MW-2
Water Supply Well **Public:** _____ **Private:** _____

Monitoring Well Diameter (D): .16 feet

Conversion factor (C): 3.14 X $(D/2)^2$ 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) DRY feet
Total Well Depth (TWD) 12.00 feet
Length of Water Column (LWC = TWD- DGW) _____ feet

1 Casing Volume (CV = LWC X C) = _____ X .16 = _____ 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	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Cumulative Volume Purged (gallons)								
Time (military)								
pH (s.u.)								
Specific Cond. (µmhos/cm)								
Water Temperature (°C)								
Turbidity (subjective: clear, slightly cloudy, cloudy)								
PID Readings (if required)								

Remarks: DRY

D H E C
PROMOTE PROTECT PROSPER

Field Data Information Sheet for Ground-Water Sampling
Division of Underground Storage Tank Management

Date (mm/dd/yy): September 10, 2011
Field Personnel: J. Reynolds D. O'Brien
General Weather Conditions: Clear + Sunny

Ambient Air Temperature: 31 °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.	Sension 156 8328.226	serial no.	Sension 156 8332-561
pH=4.0	4.1	standard	500=503
pH=7.0	7.0	standard	
pH=10.0		standard	

Chain of Custody

9/10/2011 @ 6:30

Facility Name: VACANT LOT
UST Permit #: 19268 **Monitoring Well #:** MW-3
Water Supply Well **Public:** _____ **Private:** _____

Monitoring Well Diameter (D): 2 inch feet

Conversion factor (C): 3.14 X (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) 8.53 feet
Total Well Depth (TWD) 12.00 feet
Length of Water Column (LWC = TWD- DGW) 3.47 feet

~~1 Casing Volume (CV = LWC X C) = _____ X .16 = .54 gals~~
~~3 Casing Volume 3 X CV = _____ gals (standard purge volume)~~ NP

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	Post Sampling	
Cumulative Volume Purged (gallons)	1308							
Time (military)	↓							
pH (s.u.)	6.97							
Specific Cond. (µmhos/cm)	1143							
Water Temperature (°C)	29.6							
Turbidity (subjective: clear, slightly cloudy, cloudy)	clear							
PID Readings (if required)	-							

Remarks: NP

D H E C
PROMOTE PROTECT PROSPER

Field Data Information Sheet for Ground-Water Sampling
Division of Underground Storage Tank Management

Date (mm/dd/yy): September 10, 2011
Field Personnel: J. Reynolds D. O'Brien
General Weather Conditions: Clear & Sunny

Ambient Air Temperature: 31 °C

Facility Name: VACANT LOT
UST Permit #: 19268 **Monitoring Well #:** MW-4
Water Supply Well **Public:** _____ **Private:** _____

Monitoring Well Diameter (D): 2 16 feet

Conversion factor (C): 3.14 X (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) 11.80 feet
Total Well Depth (TWD) 12.00 feet
Length of Water Column (LWC = TWD- DGW) - feet

~~1 Casing Volume (CV = LWC X C) = _____ X 2 16 = _____ gals~~
~~3 Casing Volume 3 X CV = _____ gals (standard purge volume)~~ NP

Total Volume of Water Purged Before Sampling _____ gals.
* If free product is present over 1/8 inch, sampling will not be required.

Quality Assurance

pH Meter		Conductivity Meter	
serial no.	Sensafon 156 8328-226	serial no.	Sensafon 156 8332-561
pH=4.0	4.1	standard	500=503
pH=7.0	7.0	standard	
pH=10.0		standard	

Chain of Custody

9/10/2011 @ 6:30

	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Cumulative Volume Purged (gallons)								
Time (military)	1117							
pH (s.u.)								
Specific Cond. (µmhos/cm)								
Water Temperature (°C)								
Turbidity (subjective: clear, slightly cloudy, cloudy)								
PID Readings (if required)								

Remarks: NP a No Parameters due to low water

DHEC 3529 (07/1999)

D H E C
PROMOTE PROTECT PROSPER

Field Data Information Sheet for Ground-Water Sampling
Division of Underground Storage Tank Management

Date (mm/dd/yy): September 10, 2011
Field Personnel: J. Reynolds D. O'Brien
General Weather Conditions: Clear & Sunny

Ambient Air Temperature: 31 °C

Quality Assurance

pH Meter
serial no. Sensafon 156 8328-226
pH=4.0 4.1
pH=7.0 7.0
pH=10.0 _____

Conductivity Meter
serial no. Sensafon 156 8332-561
standard 500-503
standard _____
standard _____

Chain of Custody

9/10/2011 @ 6:30 _____ _____ _____

Facility Name: Vacant Lot
UST Permit #: 19268 **Monitoring Well #:** MW-5
Water Supply Well **Public:** _____ **Private:** _____

Monitoring Well Diameter (D): .16 feet

Conversion factor (C): 3.14 X (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) 8.10 feet
Total Well Depth (TWD) 12.00 feet
Length of Water Column (LWC = TWD- DGW) 3.19 feet

1 Casing Volume (CV = LWC X C) = 3.19 X .16 = .624 gals
3 Casing Volume 3 X CV = 1.8 gals (standard purge volume)

Total Volume of Water Purged Before Sampling 2.00 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	Post Sampling	
Cumulative Volume Purged (gallons)	.26	.78	1.04					
Time (military)	1054	1056	11:01					
pH (s.u.)	6.84	6.62	6.96					
Specific Cond. (µmhos/cm)	0.073	0.064	0.055					
Water Temperature (°C)	25.1	25.3	25.4					
Turbidity (subjective: clear, slightly cloudy, cloudy)	cloudy	cloudy	cloudy					
PID Readings (if required)	-	-	-					

Remarks: _____

DHEC
PROMOTE PROTECT PROSPER

Field Data Information Sheet for Ground-Water Sampling
Division of Underground Storage Tank Management

Date (mm/dd/yy): September 10, 2011
Field Personnel: J. Reynolds D. O'Brien
General Weather Conditions: Clear, Sunny

Ambient Air Temperature: 31 °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.	SenseION 156 8328-226	serial no.	SenseION 156 8332-561
pH=4.0	4.1	standard	500-503
pH=7.0	7.0	standard	
pH=10.0		standard	

Chain of Custody

9/10/2011 @ 6:30

Facility Name: Vacant Lot
UST Permit #: 19268 **Monitoring Well #:** MW-6
Water Supply Well **Public:** _____ **Private:** _____

Monitoring Well Diameter (D): .16 feet

Conversion factor (C): 3.14 X $(D/2)^2$ 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) 7.76 feet
Total Well Depth (TWD) 12.00 feet
Length of Water Column (LWC = TWD- DGW) 4.24 feet

1 Casing Volume (CV = LWC X C) = 4.24 X .16 = .67 gals
3 Casing Volume 3 X CV = 2 gals (standard purge volume)

Total Volume of Water Purged Before Sampling 2.6 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	Post Sampling	
Cumulative Volume Purged (gallons)	.26	1.04	1.30					
Time (military)	1105	1107	1110					
pH (s.u.)	6.29	6.43	6.31					
Specific Cond. (µmhos/cm)	0.319	0.426	0.411					
Water Temperature (°C)	26.8	27.1	27.3					
Turbidity (subjective: clear, slightly cloudy, cloudy)	cloudy	clear	clear					
PID Readings (if required)	-	-	-					

Remarks: _____

DHEC 3529 (07/1999)

DHEC

PROMOTE PROTECT PROSPER

Field Data Information Sheet for Ground-Water Sampling
Division of Underground Storage Tank Management

Date (mm/dd/yy): September 10, 2011
Field Personnel: J. Reynolds D. O'Brien
General Weather Conditions: Clear & Sunny

Ambient Air Temperature: 31 °C

Facility Name: VACANT LOT
UST Permit #: 19268 **Monitoring Well #:** MW-7
Water Supply Well **Public:** _____ **Private:** _____

Monitoring Well Diameter (D): .16 feet

Conversion factor (C): 3.14 X (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) 6.55 feet
Total Well Depth (TWD) 12.00 feet
Length of Water Column (LWC = TWD- DGW) 5.45 feet

1 Casing Volume (CV = LWC X C) = 5.45 X .16 = .872 gals
3 Casing Volume 3 X CV = 2 gals (standard purge volume)

Total Volume of Water Purged Before Sampling 2.86 gals.
* If free product is present over 1/8 inch, sampling will not be required.

Quality Assurance

pH Meter
serial no. SENSORION 156 8328-226
pH=4.0 4.1
pH=7.0 7.0
pH=10.0 _____

Conductivity Meter
serial no. SENSORION 156 8332-561
standard 500-503
standard _____
standard _____

Chain of Custody

9/10/2011 @ 6:30 _____ _____ _____

	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Cumulative Volume Purged (gallons)	.26	1.3	1.3					
Time (military)	1104	1106	1110					
pH (s.u.)	6.06	5.73	5.56					
Specific Cond. (µmhos/cm)	.132	.231	.556					
Water Temperature (°C)	25.2	27.6	27.4					
Turbidity (subjective: clear, slightly cloudy, cloudy)	clear	clear	clear					
PID Readings (if required)	-	-	-					

Remarks: _____

DHEC 3529 (07/1999)

Field Data Information Sheet for Ground-Water Sampling
Division of Underground Storage Tank Management

Date (mm/dd/yy): September 10, 2011
Field Personnel: J. Reynolds D. O'Brien
General Weather Conditions: Clear & Sunny

Ambient Air Temperature: 31 °C

Facility Name: Vacant Lot
UST Permit #: 19268 **Monitoring Well #:** MW-8
Water Supply Well **Public:** _____ **Private:** _____

Monitoring Well Diameter (D): 2 inch .16 feet

Conversion factor (C): 3.14 X (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) 10.41 feet
Total Well Depth (TWD) 12.00 feet
Length of Water Column (LWC = TWD- DGW) 1.59 feet

1 Casing Volume (CV = LWC X C) = 1.59 X .16 = .25 gals
3 Casing Volume 3 X CV = .75 gals (standard purge volume)

Total Volume of Water Purged Before Sampling 1.3 gals.
* If free product is present over 1/8 inch, sampling will not be required.

Quality Assurance

pH Meter
serial no. Sensorion 156 8328-226
pH=4.0 4.1
pH=7.0 7.0
pH=10.0 _____

Conductivity Meter
serial no. Sensorion 156 8332-561
standard 500-503
standard _____
standard _____

Chain of Custody

9/10/2011 @ 6:30

	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Cumulative Volume Purged (gallons)	.26	.52	.52					
Time (military)	1050	1053	1055					
pH (s.u.)	7.26	7.19	7.09					
Specific Cond. (µmhos/cm)	0.086	0.090	.078					
Water Temperature (°C)	28.6	28.5	28.5					
Turbidity (subjective: clear, slightly cloudy, cloudy)	cl	cl	cl					
PID Readings (if required)	clear	clear	clear					

Remarks: _____

DHEC 3529 (07/1999)

DHEC
PROMOTE PROTECT PROSPER

Field Data Information Sheet for Ground-Water Sampling
Division of Underground Storage Tank Management

Date (mm/dd/yy): September 10, 2011
Field Personnel: J. Reynolds D'O'Brien
General Weather Conditions: Clear & Sunny

Ambient Air Temperature: 31 °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.	Sense ION 156 8328-226	serial no.	Sense ION 156 8332-561
pH=4.0	4.1	standard	500=503
pH=7.0	7.0	standard	
pH=10.0		standard	

Chain of Custody

9/10/2011 @ 6:30

Facility Name: Vacant Lot
UST Permit #: 19268 **Monitoring Well #:** MW-9
Water Supply Well **Public:** _____ **Private:** _____

Monitoring Well Diameter (D): .16 feet

Conversion factor (C): 3.14 X $(D/2)^2$ 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) 10.09 feet
Total Well Depth (TWD) 12.00 feet
Length of Water Column (LWC = TWD- DGW) 1.91 feet

1 Casing Volume (CV = LWC X C) = 1.91 X .16 = .30 gals
3 Casing Volume 3 X CV = .9 gals (standard purge volume)

Total Volume of Water Purged Before Sampling .78 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	Post Sampling	
Cumulative Volume Purged (gallons)	.26	.52	~~.70~~					
Time (military)	1116	1125						
pH (s.u.)	6.13	5.99						
Specific Cond. (µmhos/cm)	0.084	0.070						
Water Temperature (°C)	~~2.4~~ 28.9	28.6						
Turbidity (subjective: clear, slightly cloudy, cloudy)	clear	clear						
PID Readings (if required)	–	–						

Remarks: Based on 2nd Set

DHEC
PROMOTE PROTECT PROSPER

Field Data Information Sheet for Ground-Water Sampling
Division of Underground Storage Tank Management

Date (mm/dd/yy): September 10, 2011
Field Personnel: J. Reynolds D. O'Brien
General Weather Conditions: Clear & Sunny

Ambient Air Temperature: 31 °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.	Sensorion 156 8328-226	serial no.	Sensorion 156 8332-561
pH=4.0	4.1	standard	500-503
pH=7.0	7.0	standard	
pH=10.0		standard	

Chain of Custody

9/10/2011 @ 6:30

Facility Name: Vacant Lot
UST Permit #: 19268 **Monitoring Well #:** MW-10
Water Supply Well **Public:** _____ **Private:** _____

Monitoring Well Diameter (D): 2 inch feet

Conversion factor (C): 3.14 X (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) 8.91 feet
Total Well Depth (TWD) 12.00 feet
Length of Water Column (LWC = TWD- DGW) 3.09 feet

1 Casing Volume (CV = LWC X C) = 3.09 X .16 = .49 gals
3 Casing Volume 3 X CV = 1.4 gals (standard purge volume)

Total Volume of Water Purged Before Sampling 1.04 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	Post Sampling	
Cumulative Volume Purged (gallons)	.26	.78	~~1.04~~					
Time (military)	1206	1208						
pH (s.u.)	5.31	5.42						
Specific Cond. (µmhos/cm)	0.060	0.060						
Water Temperature (°C)	25.0	26.0						
Turbidity (subjective: clear, slightly cloudy, cloudy)	clear	clear						
PID Readings (if required)	–	–						

Remarks: Baled at 2nd Set

DHEC
PROMOTE PROTECT PROSPER

Field Data Information Sheet for Ground-Water Sampling
Division of Underground Storage Tank Management

Date (mm/dd/yy): September 10, 2011
Field Personnel: J. Reynolds D. O'Brien
General Weather Conditions: Clear & Sunny

Ambient Air Temperature: 31 °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.	Sense ION 156 8328-226	serial no.	Sense ION 156 8332-561
pH=4.0	4.1	standard	500-503
pH=7.0	7.0	standard	
pH=10.0		standard	

Chain of Custody

9/10/2011 @ 6:30

Facility Name: Vacant Lot
UST Permit #: 19268 **Monitoring Well #:** MW-11
Water Supply Well **Public:** _____ **Private:** _____

Monitoring Well Diameter (D): .16 feet

Conversion factor (C): 3.14 X $(D/2)^2$ 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) 10.04 feet
Total Well Depth (TWD) 12.00 feet
Length of Water Column (LWC = TWD- DGW) 1.96 feet

1 Casing Volume (CV = LWC X C) = 1.96 X .16 = .31 gals
3 Casing Volume 3 X CV = .93 gals (standard purge volume)

Total Volume of Water Purged Before Sampling .78 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	Post Sampling	
Cumulative Volume Purged (gallons)	.26	.52	~~.78~~					
Time (military)	1156	1159						
pH (s.u.)	5.12	5.16						
Specific Cond. (µmhos/cm)	.146	.143						
Water Temperature (°C)	22.4	22.4						
Turbidity (subjective: clear, slightly cloudy, cloudy)	clear	clear						
PID Readings (if required)	–	–						

Remarks: Bailed out 2nd Set

DHEC 3529 (07/1999)

DHEC
PROMOTE PROTECT PROSPER

Field Data Information Sheet for Ground-Water Sampling
Division of Underground Storage Tank Management

Date (mm/dd/yy): September 10, 2011
Field Personnel: J. Reynolds D. O'Brien
General Weather Conditions: Clear & Sunny

Ambient Air Temperature: 31 °C

Quality Assurance

pH Meter
serial no. SenseION 156 8328-226
pH=4.0 4.1
pH=7.0 7.0
pH=10.0

Conductivity Meter
serial no. SenseION 156 8332-561
standard 500-503
standard
standard

Chain of Custody

9/10/2011 @ 6:30

Facility Name: Vacant Lot
UST Permit #: 19268 **Monitoring Well #:** MW-17
Water Supply Well **Public:** **Private:**

Monitoring Well Diameter (D): .16 feet

Conversion factor (C): 3.14 X $(D/2)^2$ 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) 9.36 feet
Total Well Depth (TWD) 12.00 feet
Length of Water Column (LWC = TWD- DGW) 2.64 feet

1 Casing Volume (CV = LWC X C) = 2.64 X .16 = .42 gals
3 Casing Volume 3 X CV = 1.26 gals (standard purge volume)

Total Volume of Water Purged Before Sampling 2.08 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	Post Sampling	
Cumulative Volume Purged (gallons)	.26	.78	1.04					
Time (military)	1201	1203	1205					
pH (s.u.)	6.21	6.34	6.43					
Specific Cond. (µmhos/cm)	0.016	0.039	0.052					
Water Temperature (°C)	25.3	25.6	25.7					
Turbidity (subjective: clear, slightly cloudy, cloudy)	cloudy	cloudy	cloudy					
PID Readings (if required)	—	—	—					

Remarks:

DHEC
PROMOTE PROTECT PROSPER

Field Data Information Sheet for Ground-Water Sampling
Division of Underground Storage Tank Management

Date (mm/dd/yy): September 10, 2011
Field Personnel: J. Reynolds D. O'Brien
General Weather Conditions: Clear & Sunny

Ambient Air Temperature: 31 °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.	Sense ION 156 8328-226	serial no.	Sense ION 156 8332-561
pH=4.0	4.1	standard	500=503
pH=7.0	7.0	standard	
pH=10.0		standard	

Chain of Custody

9/10/2011 @ 6:30

Facility Name: Vacant Lot
UST Permit #: 19268 **Monitoring Well #:** MW-13
Water Supply Well **Public:** _____ **Private:** _____

Monitoring Well Diameter (D): .16 feet

Conversion factor (C): 3.14 X $(D/2)^2$ 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) 8.14 feet
Total Well Depth (TWD) 12.00 feet
Length of Water Column (LWC = TWD- DGW) 3.86 feet

1 Casing Volume (CV = LWC X C) = 3.86 X .16 = .6176 gals
3 Casing Volume 3 X CV = 1.8 gals (standard purge volume)

Total Volume of Water Purged Before Sampling 1.3 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	Post Sampling	
Cumulative Volume Purged (gallons)	.26	1.04	~~1.3~~					
Time (military)	1146	1149						
pH (s.u.)	6.29	6.41						
Specific Cond. (µmhos/cm)	0.121	0.098						
Water Temperature (°C)	26.4	26.7						
Turbidity (subjective: clear, slightly cloudy, cloudy)	clear	clear						
PID Readings (if required)	-	-						

Remarks: Bailed off 2nd Set

DHEC 3529 (07/1999)

DHEC
PROMOTE PROTECT PROSPER

Field Data Information Sheet for Ground-Water Sampling
Division of Underground Storage Tank Management

Date (mm/dd/yy): September 10, 2011
Field Personnel: J. Reynolds D. O'Brien
General Weather Conditions: Clear & Sunny

Ambient Air Temperature: 31 °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.	SenseION 156 8328-226	serial no.	SenseION 156 8332-561
pH=4.0	4.1	standard	500=503
pH=7.0	7.0	standard	
pH=10.0		standard	

Chain of Custody

9/10/2011 @ 6:30

Facility Name: Vacant Lot
UST Permit #: 19268 **Monitoring Well #:** MW-14
Water Supply Well **Public:** _____ **Private:** _____

Monitoring Well Diameter (D): .16 feet

Conversion factor (C): 3.14 X $(D/2)^2$ 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) 11.68 feet
Total Well Depth (TWD) 12.00 feet
Length of Water Column (LWC = TWD- DGW) .32 feet

1 Casing Volume (CV = LWC X C) = .32 X .16 = .05 gals LLWC
3 Casing Volume 3 X CV = .15 gals (standard purge volume) NP

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	Post Sampling	
Cumulative Volume Purged (gallons)								
Time (military)	1144							
pH (s.u.)	5.23							
Specific Cond. (µmhos/cm)	0.113							
Water Temperature (°C)	26.7							
Turbidity (subjective: clear, slightly cloudy, cloudy)	clear							
PID Readings (if required)	-							

Remarks: Low water NP

DHEC 3529 (07/1999)

DHEC
PROMOTE PROTECT PROSPER

Field Data Information Sheet for Ground-Water Sampling
Division of Underground Storage Tank Management

Date (mm/dd/yy): September 10, 2011
Field Personnel: J. Reynolds D. O'Brien
General Weather Conditions: Clear & Sunny

Ambient Air Temperature: 31 °C

Quality Assurance

pH Meter
serial no. Sensafon 156 8328-226
pH=4.0 4.1
pH=7.0 7.0
pH=10.0 _____

Conductivity Meter
serial no. Sensafon 156 8332-561
standard 500-503
standard _____
standard _____

Chain of Custody

9/10/2011 @ 6:30 _____ _____ _____

Facility Name: Vacant Lot
UST Permit #: 19268 **Monitoring Well #:** MW-15
Water Supply Well **Public:** _____ **Private:** _____

Monitoring Well Diameter (D): ø16 feet

Conversion factor (C): 3.14 X (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) 9.63 feet
Total Well Depth (TWD) 12.00 feet
Length of Water Column (LWC = TWD- DGW) 2.37 feet

1 Casing Volume (CV = LWC X C) = 2.37 X ø16 = .91 gals
3 Casing Volume 3 X CV = 1.1 gals (standard purge volume)

Total Volume of Water Purged Before Sampling .78 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	Post Sampling	
Cumulative Volume Purged (gallons)	.26	.52	~~.78~~					
Time (military)	1136	1139						
pH (s.u.)	5.43	5.49						
Specific Cond. (µmhos/cm)	.139	.166						
Water Temperature (°C)	27.3	26.8						
Turbidity (subjective: clear, slightly cloudy, cloudy)	clear	clear						
PID Readings (if required)	-	-						

Remarks: Based on 2nd Set

DHEC
PROMOTE PROTECT PROSPER

Field Data Information Sheet for Ground-Water Sampling
Division of Underground Storage Tank Management

Date (mm/dd/yy): September 10, 2011
Field Personnel: J. Reynolds D. O'Brien
General Weather Conditions: Clear & Sunny

Ambient Air Temperature: 31 °C

Facility Name: VACANT LOT
UST Permit #: 19268 **Monitoring Well #:** DU-2
Water Supply Well **Public:** _____ **Private:** _____

Monitoring Well Diameter (D): 2 inch feet

Conversion factor (C): 3.14 X (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) 13.45 feet
Total Well Depth (TWD) 35.00 feet
Length of Water Column (LWC = TWD- DGW) 21.55 feet

1 Casing Volume (CV = LWC X C) = _____ X 2 inch = _____ gals
3 Casing Volume 3 X CV = _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling .26 gals.
* If free product is present over 1/8 inch, sampling will not be required.

Quality Assurance

pH Meter
serial no. SENSORION 156 B328-226
pH=4.0 4.1
pH=7.0 7.0
pH=10.0 _____

Conductivity Meter
serial no. SENSORION 156 B332-561
standard 500-503
standard _____
standard _____

Chain of Custody

9/10/2011 @ 6:30 _____ _____ _____

	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Cumulative Volume Purged (gallons)	.26							
Time (military)	1048							
pH (s.u.)	7.51							
Specific Cond. (µmhos/cm)	1142							
Water Temperature (°C)	25.8							
Turbidity (subjective: clear, slightly cloudy, cloudy)	clear							
PID Readings (if required)	-							

Remarks: Sampled by snap collector deployed on 9/9/2011

DHEC
PROMOTE PROTECT PROSPER

Field Data Information Sheet for Ground-Water Sampling
Division of Underground Storage Tank Management

Date (mm/dd/yy): September 10, 2011
Field Personnel: J. Reynolds D. O'Brien
General Weather Conditions: Clear, Sunny

Ambient Air Temperature: 31 °C

Facility Name: VACANT LOT
UST Permit #: 19268 **Monitoring Well #:** MW-16
Water Supply Well **Public:** _____ **Private:** _____

Monitoring Well Diameter (D): ø16 feet

Conversion factor (C): 3.14 X (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) 9.57 feet
Total Well Depth (TWD) 12.00 feet
Length of Water Column (LWC = TWD- DGW) 2.03 feet

1 Casing Volume (CV = LWC X C) = 2.03 X ø16 = .32 gals
3 Casing Volume 3 X CV = 1 gals (standard purge volume)

Total Volume of Water Purged Before Sampling 1.56 gals.
* If free product is present over 1/8 inch, sampling will not be required.

Quality Assurance

pH Meter		Conductivity Meter	
serial no.	SENSIDYNE 156 8328-226	serial no.	SENSIDYNE 156 8332-561
pH=4.0	4.1	standard	500=503
pH=7.0	7.0	standard	
pH=10.0		standard	

Chain of Custody

9/10/2011 @ 6:30

	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Cumulative Volume Purged (gallons)	.26	.52	.78					
Time (military)	1036	1040	1044					
pH (s.u.)	6.53	6.57	6.55					
Specific Cond. (µmhos/cm)	.394	.414	.318					
Water Temperature (°C)	26.4	26.8	26.6					
Turbidity (subjective: clear, slightly cloudy, cloudy)	clear	clear	clear					
PID Readings (if required)	-	-	-					

Remarks: _____

DHEC 3529 (07/1999)

D H E C
PROMOTE PROTECT PROSPER

Field Data Information Sheet for Ground-Water Sampling
Division of Underground Storage Tank Management

Date (mm/dd/yy): September 10, 2011
Field Personnel: J. Reynolds D. O'Brien
General Weather Conditions: Clear & Sunny

Ambient Air Temperature: 31 °C

Facility Name: VACANT LOT
UST Permit #: 19268 **Monitoring Well #:** DW-1
Water Supply Well **Public:** _____ **Private:** _____

Monitoring Well Diameter (D): ø16 feet

Conversion factor (C): 3.14 X (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) 11.61 feet
Total Well Depth (TWD) 40.00 feet
Length of Water Column (LWC = TWD- DGW) 28.39 feet

1 Casing Volume (CV = LWC X C) = 28.39 X ø16 = 4.1 gals
3 Casing Volume 3 X CV = 12 gals (standard purge volume)

Total Volume of Water Purged Before Sampling 14.04 gals.
* If free product is present over 1/8 inch, sampling will not be required.

Quality Assurance

pH Meter
serial no. SENSORION 156 8328-226
pH=4.0 4.1
pH=7.0 7.0
pH=10.0 _____

Conductivity Meter
serial no. SENSORION 156 8332-561
standard 500=503
standard _____
standard _____

Chain of Custody

9/10/2011 @ 6:30 _____ _____ _____

	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Cumulative Volume Purged (gallons)	.26	6.76	7.02					
Time (military)	1306	1309	1311					
pH (s.u.)	4.02	4.16	4.14					
Specific Cond. (µmhos/cm)	0.094	0.020	0.018					
Water Temperature (°C)	20.8	25.5	23.1					
Turbidity (subjective: clear, slightly cloudy, cloudy)	clear	clear	clear					
PID Readings (if required)	–	–	–					

Remarks: _____

DHEC 3529 (07/1999)

DHEC
PROMOTE PROTECT PROSPER

Field Data Information Sheet for Ground-Water Sampling
Division of Underground Storage Tank Management

Date (mm/dd/yy): September 10, 2011
Field Personnel: J. Reynolds D. O'Brien
General Weather Conditions: Clear & Sunny

Ambient Air Temperature: 31 °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.	Sense ION 156 8328-226	serial no.	Sense ION 156 8332-561
pH=4.0	4.1	standard	500=503
pH=7.0	7.0	standard	
pH=10.0		standard	

Chain of Custody

9/10/2011 @ 6:30

Facility Name: Vacant Lot
UST Permit #: 19268 **Monitoring Well #:** DG1-3
Water Supply Well **Public:** _____ **Private:** _____

Monitoring Well Diameter (D): .16 feet

Conversion factor (C): 3.14 X $(D/2)^2$ 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) 13.21 feet
Total Well Depth (TWD) 29.00 feet
Length of Water Column (LWC = TWD- DGW) 15.79 feet

1 Casing Volume (CV = LWC X C) = 15.79 X .16 = 2.52 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	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Cumulative Volume Purged (gallons)	.26							
Time (military)	1032							
pH (s.u.)	699							
Specific Cond. (µmhos/cm)	.108							
Water Temperature (°C)	24.1							
Turbidity (subjective: clear, slightly cloudy, cloudy)	Clear							
PID Readings (if required)	–							

Remarks: Sampled via snap collector deployed on 9/9/2011

ACCESS
ANALYTICAL, INC.

ANALYTICAL REPORT

CLIENT

Crawford Environmental Services
101 Corporate Blvd. Suite 412
West Columbia SC 29196

ATTENTION
Justin Reynolds

PROJECT ID
Vacant Lot (FS)

LABORATORY REPORT NUMBER
1108O55

DATE
September 08, 2011

Primary Data Review By

Kathryn Waters
Project Manager, AES

Secondary Data Review By

Ashley Amick

Project Manager, Access Analytical
aamick@axs-inc.com

PLEASE NOTE:

- **Unless otherwise noted, all analysis on this report performed at Analytical Environmental Services Inc. (AES Inc), 3785 Presidential Parkway, Atlanta, GA 30340.**
- **AES is SCDHEC certified laboratory # 98016, NCDENR certified lab # 562, GA certified lab # FL-E87582, NELAP certified laboratory # E87582**
- Local support services for this project are provided by Access Analytical, Inc. Access Analytical is a representative of AES serving client in the SC/NC/GA areas. All questions regarding this report should be directed to your local Access Analytical representative at 803.781.4243 or toll fee at 883.315.4243

Access Analytical - Chain of Custody Record

LAB USE ONLY

Order # _____ PO # _____ Access Quote # _____

Project Work Order # 11Ø8055

Laboratory ID: AES

Company Name: Crawford

Report To: J. Reynolds

Address:

City: State: Zip:

Phone: Fax:

Email:

Project ID: Vacant Lot (FS)

Sampled By: D. O'Brien

ACCESS ANALYTICAL, INC.

7478 Carlisle Street
Irmo, SC 29063

Phone: (803) 781-4243
Fax: 781-4303

www.axs-inc.com

Sample ID/Description	Date Collected:	Time Collected:	Type: (grab or composite)	Matrix: (see codes)	Program Area (see codes)	Total # of containers	REQUESTED LAB ANALYSIS	BTEX, NAPH, MTBE		NOTES / COMMENTS (if sample is a composite please use space below to note start/finish times & dates)
SW-1	8/29/11	805	G	GW	SHW	4		2	2	8/29 OK
Dup-1		805	G							SW-1 DUP
SW-2		812								
SW-3		815								
GW-10		825								
GW-11		1320								
GW-12		905								
GW-13		840								
GW-14		850								
GW-15		1201						1		

Turnaround Time:

✓ Standard
___ RUSH*
*Date Required: _____
(For rush work, results emailed/faxed by end of business day on date required)

Project Location:
X SC
___ NC
___ Other
(specify) _____

Relinquished By:	Received By:	Date (mm-dd-yy)	Time (24HR)	Sample Temp. Upon Receipt (°C):	
D O'Brien	A Mat	8/30/11	1247	2.8 (°C)	___ (N/A)
A Martin	Fedex	8/30/11	1700	___ (°C)	X (N/A)
	[illegible]	8/31/11	10:15	___ (°C)	___ (N/A)
				___ (°C)	___ (N/A)

See Reverse for Terms and Conditions

Original Copy - Returned w/Report
Yellow Copy - Access File Copy
Pink Copy - Client Copy

Pg 1 of 2

Access Analytical - Chain of Custody Record

LAB USE ONLY

Sales Order #: _____ PO #: _____ Access Quote #: _____

Project Work Order #: 1108055

Laboratory ID: ALS

Company Name: Crawford

Report To: J. Reynolds

Address:

City: State: Zip:

Phone: Fax:

Email:

Project ID: Vacant Lot (FD)

Sampled By: D. O'Brien

Sample ID/Description	Date Collected:	Time Collected:	Type: (grab or composite)	Matrix: (see codes)	Program: Area (see codes)	TOTAL # of containers	Preservative (*see codes)	Container Type (*see codes)	REQUESTED ANALYSIS *	
Dup-2	8/29/11	1320	G	GW	SHW	4			BTEX, MAPH, MTBE	4
GW-16		920				4				4
GW-17		935		↓		4				4
FB-1		1957 55DO		DI		1				1
GW-18		1615		GW		4				4
GW-19	↓	1506	↓	GW	↓	4				4
	DO									

ACCESS ANALYTICAL, INC.

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Irmo, SC 29063

Phone: (803) 781-4243
Fax: 781-4303

www.axs-inc.com

*Preservative: (Codes: 1 = None, 2 = HCl, 3 = HNO3, 4 = H2SO4, 5 = NaOH, 6 = Ascorbic Acid, 7 = NaOH/ZnAc, 8 = MeOH, 9 = NaHSO4, 10 = Sodium Thiosulfate, 11 = DI H2O, 12 = H3PO4, 13 = Other)

*Container Type: (P = Plastic, G = Glass, B = Bacteria, O = Other)

*Program Area: (DW = Drinking Water, GW = Groundwater, SHW = State Haz Waste, WW = Waste Water, SW = Surface Water, SO = Soil, SL = Sludge, OT = Other Specify in comments section)

*Requested Analysis: (Codes: VOA = Volatiles, SVOA = Semivolatiles, TPH-G = Gasoline Range Hydrocarbons, TPH-D = Diesel Range Hydrocarbons, TPH-MO = Motor Oil Range Hydrocarbons, TRPH = Total Recoverable Petroleum Hydrocarbons, CAM17 = California Metals, LUFT5 = LUFT 5 Metals, RCRA8 = RCRA 8 Metals, TTLC = Total Threshold Limit Concentration, STLC = Soluble Threshold Limit Concentration, TCLP = Toxicity Characteristic Leaching Procedure, PEST = Pesticides, PCB = PCBs, HERB = Herbicides, 8260 = 8260 list, 8270 = 8270 list, 8081 = 8081 list, 8082 = 8082 list, 8141 = 8141 list, 8151 = 8151 list, 6010 = 6010 list, 7000 = 7000 list, 7471 = 7471 list, 1664 = 1664 list, 6020 = 6020 list, 9056 = 9056 list, 300.0 = 300.0 list, 9012 = 9012 list, 9045 = 9045 list, 9095 = 9095 list, 9040 = 9040 list, 9050 = 9050 list, 9060 = 9060 list, 1631 = 1631 list, 1666 = 1666 list, 1668 = 1668 list, 1613 = 1613 list, 1699 = 1699 list, 1698 = 1698 list, 1694 = 1694 list, 1625 = 1625 list, 1627 = 1627 list, 1660 = 1660 list, 1657 = 1657 list, 1656 = 1656 list, 1655 = 1655 list, 1654 = 1654 list, 1653 = 1653 list, 1652 = 1652 list, 1651 = 1651 list, 1650 = 1650 list, 1649 = 1649 list, 1648 = 1648 list,

Analytical Environmental Services, Inc

Date: 8-Sep-11

Client: Crawford Environmental Services
Project: Vacant Lot (FS)
Lab ID: 1108O55

Case Narrative

Sample Receiving Nonconformance:

A Trip Blank was provided but not listed on the Chain of Custody. Trip blank was analyzed at no cost to the client.

Two sets of vials labeled with sample ID "GW-19" were received. No vials labeled with sample ID "GW-18" were received. Per Angela Martin via email on 8/31/11, the vials that have "GW-19" handwritten should be logged in as "GW-18."

Analytical Environmental Services, Inc **Date:** 8-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	SW-1
Project Name:	Vacant Lot (FS)	**Collection Date:**	8/29/2011 8:05:00 AM
Lab ID:	1108O55-001	**Matrix:**	Groundwater

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B (SW5030B)									
Benzene	BRL		0.38	1.0	ug/L	151021	1	09/06/2011 18:49	GK
Toluene	BRL		0.39	1.0	ug/L	151021	1	09/06/2011 18:49	GK
Ethylbenzene	BRL		0.48	1.0	ug/L	151021	1	09/06/2011 18:49	GK
Xylenes, Total	BRL		0.38	3.0	ug/L	151021	1	09/06/2011 18:49	GK
Methyl tert-butyl ether	BRL		0.24	1.0	ug/L	151021	1	09/06/2011 18:49	GK
Naphthalene	BRL		0.25	5.0	ug/L	151021	1	09/06/2011 18:49	GK
Surr: 4-Bromofluorobenzene	96.2		0	64.7-130	%REC	151021	1	09/06/2011 18:49	GK
Surr: Dibromofluoromethane	99		0	80.7-129	%REC	151021	1	09/06/2011 18:49	GK
Surr: Toluene-d8	95.9		0	71.1-120	%REC	151021	1	09/06/2011 18:49	GK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Not detected at MDL
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- NC Not confirmed
- E Estimated value above quantitation range
- S Spike Recovery outside limits due to matrix
- J Estimated value detected below Reporting Limit
- > Greater than Result value
- < Less than Result value
- Narr See case narrative

Analytical Environmental Services, Inc **Date:** 8-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	DUP-1
Project Name:	Vacant Lot (FS)	**Collection Date:**	8/29/2011 8:05:00 AM
Lab ID:	1108O55-002	**Matrix:**	Groundwater

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS	**SW8260B**				**(SW5030B)**				
Benzene	BRL		0.38	1.0	ug/L	151021	1	09/06/2011 19:19	GK
Toluene	BRL		0.39	1.0	ug/L	151021	1	09/06/2011 19:19	GK
Ethylbenzene	BRL		0.48	1.0	ug/L	151021	1	09/06/2011 19:19	GK
Xylenes, Total	BRL		0.38	3.0	ug/L	151021	1	09/06/2011 19:19	GK
Methyl tert-butyl ether	BRL		0.24	1.0	ug/L	151021	1	09/06/2011 19:19	GK
Naphthalene	BRL		0.25	5.0	ug/L	151021	1	09/06/2011 19:19	GK
Surr: 4-Bromofluorobenzene	98.4		0	64.7-130	%REC	151021	1	09/06/2011 19:19	GK
Surr: Dibromofluoromethane	100		0	80.7-129	%REC	151021	1	09/06/2011 19:19	GK
Surr: Toluene-d8	98.2		0	71.1-120	%REC	151021	1	09/06/2011 19:19	GK

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated value above quantitation range
BRL	Not detected at MDL	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	J	Estimated value detected below Reporting Limit
N	Analyte not NELAC certified	>	Greater than Result value
B	Analyte detected in the associated method blank	<	Less than Result value
NC	Not confirmed	Narr	See case narrative

Analytical Environmental Services, Inc **Date:** 8-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	SW-2
Project Name:	Vacant Lot (FS)	**Collection Date:**	8/29/2011 8:12:00 AM
Lab ID:	1108O55-003	**Matrix:**	Groundwater

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS	**SW8260B**				**(SW5030B)**				
Benzene	BRL		0.38	1.0	ug/L	151021	1	09/06/2011 19:49	GK
Toluene	BRL		0.39	1.0	ug/L	151021	1	09/06/2011 19:49	GK
Ethylbenzene	BRL		0.48	1.0	ug/L	151021	1	09/06/2011 19:49	GK
Xylenes, Total	BRL		0.38	3.0	ug/L	151021	1	09/06/2011 19:49	GK
Methyl tert-butyl ether	BRL		0.24	1.0	ug/L	151021	1	09/06/2011 19:49	GK
Naphthalene	BRL		0.25	5.0	ug/L	151021	1	09/06/2011 19:49	GK
Surr: 4-Bromofluorobenzene	98.8		0	64.7-130	%REC	151021	1	09/06/2011 19:49	GK
Surr: Dibromofluoromethane	98.1		0	80.7-129	%REC	151021	1	09/06/2011 19:49	GK
Surr: Toluene-d8	96.3		0	71.1-120	%REC	151021	1	09/06/2011 19:49	GK

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated value above quantitation range
BRL	Not detected at MDL	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	J	Estimated value detected below Reporting Limit
N	Analyte not NELAC certified	>	Greater than Result value
B	Analyte detected in the associated method blank	<	Less than Result value
NC	Not confirmed	Narr	See case narrative

Analytical Environmental Services, Inc **Date:** 8-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	SW-3
Project Name:	Vacant Lot (FS)	**Collection Date:**	8/29/2011 8:15:00 AM
Lab ID:	1108O55-004	**Matrix:**	Groundwater

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS	**SW8260B**				**(SW5030B)**				
Benzene	BRL		0.38	1.0	ug/L	151021	1	09/06/2011 20:18	GK
Toluene	BRL		0.39	1.0	ug/L	151021	1	09/06/2011 20:18	GK
Ethylbenzene	BRL		0.48	1.0	ug/L	151021	1	09/06/2011 20:18	GK
Xylenes, Total	BRL		0.38	3.0	ug/L	151021	1	09/06/2011 20:18	GK
Methyl tert-butyl ether	BRL		0.24	1.0	ug/L	151021	1	09/06/2011 20:18	GK
Naphthalene	BRL		0.25	5.0	ug/L	151021	1	09/06/2011 20:18	GK
Surr: 4-Bromofluorobenzene	97.6		0	64.7-130	%REC	151021	1	09/06/2011 20:18	GK
Surr: Dibromofluoromethane	99.8		0	80.7-129	%REC	151021	1	09/06/2011 20:18	GK
Surr: Toluene-d8	95.8		0	71.1-120	%REC	151021	1	09/06/2011 20:18	GK

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated value above quantitation range
BRL	Not detected at MDL	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	J	Estimated value detected below Reporting Limit
N	Analyte not NELAC certified	>	Greater than Result value
B	Analyte detected in the associated method blank	<	Less than Result value
NC	Not confirmed	Narr	See case narrative

Analytical Environmental Services, Inc **Date:** 8-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	GW-10
Project Name:	Vacant Lot (FS)	**Collection Date:**	8/29/2011 8:25:00 AM
Lab ID:	1108O55-005	**Matrix:**	Groundwater

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B (SW5030B)									
Benzene	30		0.38	1.0	ug/L	151021	1	09/06/2011 20:48	GK
Toluene	BRL		0.39	1.0	ug/L	151021	1	09/06/2011 20:48	GK
Ethylbenzene	BRL		0.48	1.0	ug/L	151021	1	09/06/2011 20:48	GK
Xylenes, Total	BRL		0.38	3.0	ug/L	151021	1	09/06/2011 20:48	GK
Methyl tert-butyl ether	12		0.24	1.0	ug/L	151021	1	09/06/2011 20:48	GK
Naphthalene	2.3	J	0.25	5.0	ug/L	151021	1	09/06/2011 20:48	GK
Surr: 4-Bromofluorobenzene	96.8		0	64.7-130	%REC	151021	1	09/06/2011 20:48	GK
Surr: Dibromofluoromethane	99.7		0	80.7-129	%REC	151021	1	09/06/2011 20:48	GK
Surr: Toluene-d8	96.1		0	71.1-120	%REC	151021	1	09/06/2011 20:48	GK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Not detected at MDL
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- NC Not confirmed
- E Estimated value above quantitation range
- S Spike Recovery outside limits due to matrix
- J Estimated value detected below Reporting Limit
- > Greater than Result value
- < Less than Result value
- Narr See case narrative

Analytical Environmental Services, Inc **Date:** 8-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	GW-11
Project Name:	Vacant Lot (FS)	**Collection Date:**	8/29/2011 1:20:00 PM
Lab ID:	1108O55-006	**Matrix:**	Groundwater

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS	**SW8260B**				**(SW5030B)**				
Benzene	BRL		0.38	1.0	ug/L	151021	1	09/06/2011 21:18	GK
Toluene	BRL		0.39	1.0	ug/L	151021	1	09/06/2011 21:18	GK
Ethylbenzene	BRL		0.48	1.0	ug/L	151021	1	09/06/2011 21:18	GK
Xylenes, Total	BRL		0.38	3.0	ug/L	151021	1	09/06/2011 21:18	GK
Methyl tert-butyl ether	72		0.24	1.0	ug/L	151021	1	09/06/2011 21:18	GK
Naphthalene	BRL		0.25	5.0	ug/L	151021	1	09/06/2011 21:18	GK
Surr: 4-Bromofluorobenzene	96.6		0	64.7-130	%REC	151021	1	09/06/2011 21:18	GK
Surr: Dibromofluoromethane	99.3		0	80.7-129	%REC	151021	1	09/06/2011 21:18	GK
Surr: Toluene-d8	95.5		0	71.1-120	%REC	151021	1	09/06/2011 21:18	GK

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated value above quantitation range
BRL	Not detected at MDL	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	J	Estimated value detected below Reporting Limit
N	Analyte not NELAC certified	>	Greater than Result value
B	Analyte detected in the associated method blank	<	Less than Result value
NC	Not confirmed	Narr	See case narrative

Analytical Environmental Services, Inc **Date:** 8-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	GW-12
Project Name:	Vacant Lot (FS)	**Collection Date:**	8/29/2011 9:05:00 AM
Lab ID:	1108O55-007	**Matrix:**	Groundwater

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS	**SW8260B**				**(SW5030B)**				
Benzene	BRL		0.38	1.0	ug/L	151021	1	09/06/2011 18:18	GK
Toluene	BRL		0.39	1.0	ug/L	151021	1	09/06/2011 18:18	GK
Ethylbenzene	BRL		0.48	1.0	ug/L	151021	1	09/06/2011 18:18	GK
Xylenes, Total	BRL		0.38	3.0	ug/L	151021	1	09/06/2011 18:18	GK
Methyl tert-butyl ether	BRL		0.24	1.0	ug/L	151021	1	09/06/2011 18:18	GK
Naphthalene	0.37	J	0.25	5.0	ug/L	151021	1	09/06/2011 18:18	GK
Surr: 4-Bromofluorobenzene	91.6		0	64.7-130	%REC	151021	1	09/06/2011 18:18	GK
Surr: Dibromofluoromethane	101		0	80.7-129	%REC	151021	1	09/06/2011 18:18	GK
Surr: Toluene-d8	102		0	71.1-120	%REC	151021	1	09/06/2011 18:18	GK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Not detected at MDL
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- NC Not confirmed
- E Estimated value above quantitation range
- S Spike Recovery outside limits due to matrix
- J Estimated value detected below Reporting Limit
- > Greater than Result value
- < Less than Result value
- Narr See case narrative

Analytical Environmental Services, Inc **Date:** 8-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	GW-13
Project Name:	Vacant Lot (FS)	**Collection Date:**	8/29/2011 8:40:00 AM
Lab ID:	1108O55-008	**Matrix:**	Groundwater

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS	**SW8260B**				**(SW5030B)**				
Benzene	BRL		0.38	1.0	ug/L	151021	1	09/06/2011 18:47	GK
Toluene	BRL		0.39	1.0	ug/L	151021	1	09/06/2011 18:47	GK
Ethylbenzene	BRL		0.48	1.0	ug/L	151021	1	09/06/2011 18:47	GK
Xylenes, Total	BRL		0.38	3.0	ug/L	151021	1	09/06/2011 18:47	GK
Methyl tert-butyl ether	BRL		0.24	1.0	ug/L	151021	1	09/06/2011 18:47	GK
Naphthalene	BRL		0.25	5.0	ug/L	151021	1	09/06/2011 18:47	GK
Surr: 4-Bromofluorobenzene	92.7		0	64.7-130	%REC	151021	1	09/06/2011 18:47	GK
Surr: Dibromofluoromethane	101		0	80.7-129	%REC	151021	1	09/06/2011 18:47	GK
Surr: Toluene-d8	102		0	71.1-120	%REC	151021	1	09/06/2011 18:47	GK

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated value above quantitation range
BRL	Not detected at MDL	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	J	Estimated value detected below Reporting Limit
N	Analyte not NELAC certified	>	Greater than Result value
B	Analyte detected in the associated method blank	<	Less than Result value
NC	Not confirmed	Narr	See case narrative

Analytical Environmental Services, Inc **Date:** 8-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	GW-14
Project Name:	Vacant Lot (FS)	**Collection Date:**	8/29/2011 8:50:00 AM
Lab ID:	1108O55-009	**Matrix:**	Groundwater

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS	**SW8260B**				**(SW5030B)**				
Benzene	BRL		0.38	1.0	ug/L	151021	1	09/06/2011 19:16	GK
Toluene	BRL		0.39	1.0	ug/L	151021	1	09/06/2011 19:16	GK
Ethylbenzene	BRL		0.48	1.0	ug/L	151021	1	09/06/2011 19:16	GK
Xylenes, Total	BRL		0.38	3.0	ug/L	151021	1	09/06/2011 19:16	GK
Methyl tert-butyl ether	BRL		0.24	1.0	ug/L	151021	1	09/06/2011 19:16	GK
Naphthalene	BRL		0.25	5.0	ug/L	151021	1	09/06/2011 19:16	GK
Surr: 4-Bromofluorobenzene	93.2		0	64.7-130	%REC	151021	1	09/06/2011 19:16	GK
Surr: Dibromofluoromethane	98.5		0	80.7-129	%REC	151021	1	09/06/2011 19:16	GK
Surr: Toluene-d8	101		0	71.1-120	%REC	151021	1	09/06/2011 19:16	GK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Not detected at MDL
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- NC Not confirmed
- E Estimated value above quantitation range
- S Spike Recovery outside limits due to matrix
- J Estimated value detected below Reporting Limit
- > Greater than Result value
- < Less than Result value
- Narr See case narrative

Analytical Environmental Services, Inc **Date:** 8-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	GW-15
Project Name:	Vacant Lot (FS)	**Collection Date:**	8/29/2011 12:01:00 PM
Lab ID:	1108O55-010	**Matrix:**	Groundwater

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS	**SW8260B**				**(SW5030B)**				
Benzene	BRL		0.38	1.0	ug/L	151021	1	09/06/2011 19:45	GK
Toluene	BRL		0.39	1.0	ug/L	151021	1	09/06/2011 19:45	GK
Ethylbenzene	0.48	J	0.48	1.0	ug/L	151021	1	09/06/2011 19:45	GK
Xylenes, Total	BRL		0.38	3.0	ug/L	151021	1	09/06/2011 19:45	GK
Methyl tert-butyl ether	0.30	J	0.24	1.0	ug/L	151021	1	09/06/2011 19:45	GK
Naphthalene	BRL		0.25	5.0	ug/L	151021	1	09/06/2011 19:45	GK
Surr: 4-Bromofluorobenzene	92.9		0	64.7-130	%REC	151021	1	09/06/2011 19:45	GK
Surr: Dibromofluoromethane	98.7		0	80.7-129	%REC	151021	1	09/06/2011 19:45	GK
Surr: Toluene-d8	103		0	71.1-120	%REC	151021	1	09/06/2011 19:45	GK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Not detected at MDL
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- NC Not confirmed
- E Estimated value above quantitation range
- S Spike Recovery outside limits due to matrix
- J Estimated value detected below Reporting Limit
- > Greater than Result value
- < Less than Result value
- Narr See case narrative

Analytical Environmental Services, Inc **Date:** 8-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	DUP-2
Project Name:	Vacant Lot (FS)	**Collection Date:**	8/29/2011 1:20:00 PM
Lab ID:	1108O55-011	**Matrix:**	Groundwater

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS	**SW8260B**				**(SW5030B)**				
Benzene	BRL		0.38	1.0	ug/L	151021	1	09/07/2011 13:07	GK
Toluene	BRL		0.39	1.0	ug/L	151021	1	09/07/2011 13:07	GK
Ethylbenzene	BRL		0.48	1.0	ug/L	151021	1	09/07/2011 13:07	GK
Xylenes, Total	BRL		0.38	3.0	ug/L	151021	1	09/07/2011 13:07	GK
Methyl tert-butyl ether	74		0.24	1.0	ug/L	151021	1	09/07/2011 13:07	GK
Naphthalene	BRL		0.25	5.0	ug/L	151021	1	09/07/2011 13:07	GK
Surr: 4-Bromofluorobenzene	94.8		0	64.7-130	%REC	151021	1	09/07/2011 13:07	GK
Surr: Dibromofluoromethane	103		0	80.7-129	%REC	151021	1	09/07/2011 13:07	GK
Surr: Toluene-d8	97.9		0	71.1-120	%REC	151021	1	09/07/2011 13:07	GK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Not detected at MDL
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- NC Not confirmed
- E Estimated value above quantitation range
- S Spike Recovery outside limits due to matrix
- J Estimated value detected below Reporting Limit
- > Greater than Result value
- < Less than Result value
- Narr See case narrative

Analytical Environmental Services, Inc **Date:** 8-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	GW-16
Project Name:	Vacant Lot (FS)	**Collection Date:**	8/29/2011 9:20:00 AM
Lab ID:	1108O55-012	**Matrix:**	Groundwater

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS	**SW8260B**				**(SW5030B)**				
Benzene	BRL		0.38	1.0	ug/L	151021	1	09/07/2011 05:12	GK
Toluene	BRL		0.39	1.0	ug/L	151021	1	09/07/2011 05:12	GK
Ethylbenzene	BRL		0.48	1.0	ug/L	151021	1	09/07/2011 05:12	GK
Xylenes, Total	BRL		0.38	3.0	ug/L	151021	1	09/07/2011 05:12	GK
Methyl tert-butyl ether	130		0.24	1.0	ug/L	151021	1	09/07/2011 05:12	GK
Naphthalene	BRL		0.25	5.0	ug/L	151021	1	09/07/2011 05:12	GK
Surr: 4-Bromofluorobenzene	95.6		0	64.7-130	%REC	151021	1	09/07/2011 05:12	GK
Surr: Dibromofluoromethane	101		0	80.7-129	%REC	151021	1	09/07/2011 05:12	GK
Surr: Toluene-d8	96.2		0	71.1-120	%REC	151021	1	09/07/2011 05:12	GK

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated value above quantitation range
BRL	Not detected at MDL	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	J	Estimated value detected below Reporting Limit
N	Analyte not NELAC certified	>	Greater than Result value
B	Analyte detected in the associated method blank	<	Less than Result value
NC	Not confirmed	Narr	See case narrative

Analytical Environmental Services, Inc **Date:** 8-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	GW-17
Project Name:	Vacant Lot (FS)	**Collection Date:**	8/29/2011 9:35:00 AM
Lab ID:	1108O55-013	**Matrix:**	Groundwater

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS	**SW8260B**				**(SW5030B)**				
Benzene	BRL		0.38	1.0	ug/L	151021	1	09/07/2011 05:42	GK
Toluene	BRL		0.39	1.0	ug/L	151021	1	09/07/2011 05:42	GK
Ethylbenzene	BRL		0.48	1.0	ug/L	151021	1	09/07/2011 05:42	GK
Xylenes, Total	BRL		0.38	3.0	ug/L	151021	1	09/07/2011 05:42	GK
Methyl tert-butyl ether	BRL		0.24	1.0	ug/L	151021	1	09/07/2011 05:42	GK
Naphthalene	BRL		0.25	5.0	ug/L	151021	1	09/07/2011 05:42	GK
Surr: 4-Bromofluorobenzene	96.8		0	64.7-130	%REC	151021	1	09/07/2011 05:42	GK
Surr: Dibromofluoromethane	99.3		0	80.7-129	%REC	151021	1	09/07/2011 05:42	GK
Surr: Toluene-d8	97.6		0	71.1-120	%REC	151021	1	09/07/2011 05:42	GK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Not detected at MDL
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- NC Not confirmed
- E Estimated value above quantitation range
- S Spike Recovery outside limits due to matrix
- J Estimated value detected below Reporting Limit
- > Greater than Result value
- < Less than Result value
- Narr See case narrative

Analytical Environmental Services, Inc **Date:** 8-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	FB-1
Project Name:	Vacant Lot (FS)	**Collection Date:**	8/29/2011 5:57:00 PM
Lab ID:	1108O55-014	**Matrix:**	Aqueous

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS	**SW8260B**				**(SW5030B)**				
Benzene	BRL		0.38	1.0	ug/L	151021	1	09/07/2011 07:40	GK
Toluene	BRL		0.39	1.0	ug/L	151021	1	09/07/2011 07:40	GK
Ethylbenzene	BRL		0.48	1.0	ug/L	151021	1	09/07/2011 07:40	GK
Xylenes, Total	BRL		0.38	3.0	ug/L	151021	1	09/07/2011 07:40	GK
Methyl tert-butyl ether	BRL		0.24	1.0	ug/L	151021	1	09/07/2011 07:40	GK
Naphthalene	BRL		0.25	5.0	ug/L	151021	1	09/07/2011 07:40	GK
Surr: 4-Bromofluorobenzene	94.5		0	64.7-130	%REC	151021	1	09/07/2011 07:40	GK
Surr: Dibromofluoromethane	102		0	80.7-129	%REC	151021	1	09/07/2011 07:40	GK
Surr: Toluene-d8	97.2		0	71.1-120	%REC	151021	1	09/07/2011 07:40	GK

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated value above quantitation range
BRL	Not detected at MDL	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	J	Estimated value detected below Reporting Limit
N	Analyte not NELAC certified	>	Greater than Result value
B	Analyte detected in the associated method blank	<	Less than Result value
NC	Not confirmed	Narr	See case narrative

Analytical Environmental Services, Inc **Date:** 8-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	GW-18
Project Name:	Vacant Lot (FS)	**Collection Date:**	8/29/2011 4:15:00 PM
Lab ID:	1108O55-015	**Matrix:**	Groundwater

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS	**SW8260B**				**(SW5030B)**				
Benzene	BRL		0.38	1.0	ug/L	151021	1	09/07/2011 06:12	GK
Toluene	BRL		0.39	1.0	ug/L	151021	1	09/07/2011 06:12	GK
Ethylbenzene	BRL		0.48	1.0	ug/L	151021	1	09/07/2011 06:12	GK
Xylenes, Total	BRL		0.38	3.0	ug/L	151021	1	09/07/2011 06:12	GK
Methyl tert-butyl ether	4.8		0.24	1.0	ug/L	151021	1	09/07/2011 06:12	GK
Naphthalene	1.3	J	0.25	5.0	ug/L	151021	1	09/07/2011 06:12	GK
Surr: 4-Bromofluorobenzene	98		0	64.7-130	%REC	151021	1	09/07/2011 06:12	GK
Surr: Dibromofluoromethane	101		0	80.7-129	%REC	151021	1	09/07/2011 06:12	GK
Surr: Toluene-d8	97.1		0	71.1-120	%REC	151021	1	09/07/2011 06:12	GK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Not detected at MDL
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- NC Not confirmed
- E Estimated value above quantitation range
- S Spike Recovery outside limits due to matrix
- J Estimated value detected below Reporting Limit
- > Greater than Result value
- < Less than Result value
- Narr See case narrative

Analytical Environmental Services, Inc **Date:** 8-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	GW-19
Project Name:	Vacant Lot (FS)	**Collection Date:**	8/29/2011 3:06:00 PM
Lab ID:	1108O55-016	**Matrix:**	Groundwater

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS	**SW8260B**				**(SW5030B)**				
Benzene	BRL		0.38	1.0	ug/L	151021	1	09/07/2011 06:41	GK
Toluene	BRL		0.39	1.0	ug/L	151021	1	09/07/2011 06:41	GK
Ethylbenzene	BRL		0.48	1.0	ug/L	151021	1	09/07/2011 06:41	GK
Xylenes, Total	BRL		0.38	3.0	ug/L	151021	1	09/07/2011 06:41	GK
Methyl tert-butyl ether	BRL		0.24	1.0	ug/L	151021	1	09/07/2011 06:41	GK
Naphthalene	BRL		0.25	5.0	ug/L	151021	1	09/07/2011 06:41	GK
Surr: 4-Bromofluorobenzene	98.4		0	64.7-130	%REC	151021	1	09/07/2011 06:41	GK
Surr: Dibromofluoromethane	104		0	80.7-129	%REC	151021	1	09/07/2011 06:41	GK
Surr: Toluene-d8	98.5		0	71.1-120	%REC	151021	1	09/07/2011 06:41	GK

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated value above quantitation range
BRL	Not detected at MDL	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	J	Estimated value detected below Reporting Limit
N	Analyte not NELAC certified	>	Greater than Result value
B	Analyte detected in the associated method blank	<	Less than Result value
NC	Not confirmed	Narr	See case narrative

Analytical Environmental Services, Inc **Date:** 8-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	TRIP BLANK
Project Name:	Vacant Lot (FS)	**Collection Date:**	8/31/2011
Lab ID:	1108O55-017	**Matrix:**	Aqueous

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS	**SW8260B**				**(SW5030B)**				
Benzene	BRL		0.38	1.0	ug/L	151021	1	09/07/2011 07:11	GK
Toluene	BRL		0.39	1.0	ug/L	151021	1	09/07/2011 07:11	GK
Ethylbenzene	BRL		0.48	1.0	ug/L	151021	1	09/07/2011 07:11	GK
Xylenes, Total	BRL		0.38	3.0	ug/L	151021	1	09/07/2011 07:11	GK
Methyl tert-butyl ether	BRL		0.24	1.0	ug/L	151021	1	09/07/2011 07:11	GK
Naphthalene	BRL		0.25	5.0	ug/L	151021	1	09/07/2011 07:11	GK
Surr: 4-Bromofluorobenzene	93.8		0	64.7-130	%REC	151021	1	09/07/2011 07:11	GK
Surr: Dibromofluoromethane	102		0	80.7-129	%REC	151021	1	09/07/2011 07:11	GK
Surr: Toluene-d8	97.3		0	71.1-120	%REC	151021	1	09/07/2011 07:11	GK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Not detected at MDL
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- NC Not confirmed
- E Estimated value above quantitation range
- S Spike Recovery outside limits due to matrix
- J Estimated value detected below Reporting Limit
- > Greater than Result value
- < Less than Result value
- Narr See case narrative

Analytical Environmental Services, Inc.

Sample/Cooler Receipt Checklist

Client Access Work Order Number 1108055

Checklist completed by Phs 8/31/11
Signature Date

Carrier name: FedEx ✓ UPS __ Courier __ Client __ US Mail __ Other _____

Shipping container/cooler in good condition? Yes ✓ No __ Not Present __

Custody seals intact on shipping container/cooler? Yes __ No __ Not Present ✓

Custody seals intact on sample bottles? Yes __ No __ Not Present ✓

Container/Temp Blank temperature in compliance? (4°C±2)* Yes ✓ No __

Cooler #1 3.8°C Cooler #2 _____ Cooler #3 _____ Cooler #4 _____ Cooler#5 _____ Cooler #6 _____

Chain of custody present? Yes ✓ No __

Chain of custody signed when relinquished and received? Yes ✓ No __

Chain of custody agrees with sample labels? Yes __ No ✓

Samples in proper container/bottle? Yes ✓ No __

Sample containers intact? Yes ✓ No __

Sufficient sample volume for indicated test? Yes ✓ No __

All samples received within holding time? Yes ✓ No __

Was TAT marked on the COC? Yes ✓ No __

Proceed with Standard TAT as per project history? Yes __ No __ Not Applicable ✓

Water - VOA vials have zero headspace? No VOA vials submitted __ Yes ✓ No __

Water - pH acceptable upon receipt? Yes ✓ No __ Not Applicable __

Adjusted? _____ Checked by _____

Sample Condition: Good ✓ Other(Explain) _____

(For diffusive samples or AIHA lead) Is a known blank included? Yes __ No ✓

See Case Narrative for resolution of the Non-Conformance.

* Samples do not have to comply with the given range for certain parameters.

\\L\Quality Assurance\Checklists Procedures Sign-Off Templates\Checklists\Sample Receipt Checklists\Sample_Cooler_Receipt_Checklist

Analytical Environmental Services, Inc

Date: 8-Sep-11

Client: Crawford Environmental Services
Project Name: Vacant Lot (FS)
Workorder: 1108O55

ANALYTICAL QC SUMMARY REPORT

BatchID: 151021

Sample ID: **MB-151021** Client ID:
SampleType: **MBLK** TestCode: **Volatile Organic Compounds by GC/MS SW8260B**
Units: **ug/L** Prep Date: **09/03/2011** Run No: **204517**
BatchID: **151021** Analysis Date: **09/03/2011** Seq No: **4276638**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Benzene	BRL	1.0	0	0	0	0	0	0	0	0	
Ethylbenzene	BRL	1.0	0	0	0	0	0	0	0	0	
Methyl tert-butyl ether	BRL	1.0	0	0	0	0	0	0	0	0	
Naphthalene	0.6800	5.0	0	0	0	0	0	0	0	0	J
Toluene	BRL	1.0	0	0	0	0	0	0	0	0	
Xylenes, Total	BRL	1.0	0	0	0	0	0	0	0	0	
Surr: 4-Bromofluorobenzene	46.27	0	50	0	92.5	64.7	130	0	0	0	
Surr: Dibromofluoromethane	47.35	0	50	0	94.7	80.7	129	0	0	0	
Surr: Toluene-d8	47.88	0	50	0	95.8	71.1	120	0	0	0	

Sample ID: **LCS-151021** Client ID:
SampleType: **LCS** TestCode: **Volatile Organic Compounds by GC/MS SW8260B**
Units: **ug/L** Prep Date: **09/03/2011** Run No: **204517**
BatchID: **151021** Analysis Date: **09/03/2011** Seq No: **4276634**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Benzene	49.62	1.0	50	0	99.2	70	130	0	0	0	
Toluene	49.59	1.0	50	0	99.2	70	130	0	0	0	
Surr: 4-Bromofluorobenzene	49.94	0	50	0	99.9	64.7	130	0	0	0	
Surr: Dibromofluoromethane	50.08	0	50	0	100	80.7	129	0	0	0	
Surr: Toluene-d8	50.87	0	50	0	102	71.1	120	0	0	0	

Sample ID: **1109143-001AMS** Client ID:
SampleType: **MS** TestCode: **Volatile Organic Compounds by GC/MS SW8260B**
Units: **ug/L** Prep Date: **09/03/2011** Run No: **204517**
BatchID: **151021** Analysis Date: **09/03/2011** Seq No: **4276645**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Benzene	51.14	1.0	50	0	102	62.2	143	0	0	0	
Toluene	50.76	1.0	50	0	102	57.8	149	0	0	0	
Surr: 4-Bromofluorobenzene	48.48	0	50	0	97	64.7	130	0	0	0	
Surr: Dibromofluoromethane	48.29	0	50	0	96.6	80.7	129	0	0	0	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Crawford Environmental Services
Project Name: Vacant Lot (FS)
Workorder: 1108O55

ANALYTICAL QC SUMMARY REPORT

BatchID: 151021

Sample ID: **1109143-001AMS**	Client ID:					Units: **ug/L**		Prep Date: **09/03/2011**		Run No: **204517**	
SampleType: **MS**	TestCode: **Volatile Organic Compounds by GC/MS** **SW8260B**					BatchID: **151021**		Analysis Date: **09/03/2011**		Seq No: **4276645**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Surr: Toluene-d8	47.66	0	50	0	95.3	71.1	120	0	0	0	

Sample ID: **1109143-001AMSD**	Client ID:					Units: **ug/L**		Prep Date: **09/03/2011**		Run No: **204517**	
SampleType: **MSD**	TestCode: **Volatile Organic Compounds by GC/MS** **SW8260B**					BatchID: **151021**		Analysis Date: **09/03/2011**		Seq No: **4276649**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Benzene	50.59	1.0	50	0	101	62.2	143	51.14	1.08	20	
Toluene	49.67	1.0	50	0	99.3	57.8	149	50.76	2.17	20	
Surr: 4-Bromofluorobenzene	46.66	0	50	0	93.3	64.7	130	48.48	0	0	
Surr: Dibromofluoromethane	47.17	0	50	0	94.3	80.7	129	48.29	0	0	
Surr: Toluene-d8	48.54	0	50	0	97.1	71.1	120	47.66	0	0	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

ACCESS
ANALYTICAL, INC.

ANALYTICAL REPORT

CLIENT

Crawford Environmental Services
101 Corporate Blvd. Suite 412
West Columbia SC 29196

ATTENTION
Justin Reynolds

PROJECT ID
Vacant Lot (Soil)

LABORATORY REPORT NUMBER
1108O54

DATE
September 09, 2011

Primary Data Review By

Kathryn Waters
Project Manager, AES

Secondary Data Review By

Ashley Amick

Project Manager, Access Analytical
aamick@axs-inc.com

PLEASE NOTE:

- **Unless otherwise noted, all analysis on this report performed at Analytical Environmental Services Inc. (AES Inc), 3785 Presidential Parkway, Atlanta, GA 30340.**
- **AES is SCDHEC certified laboratory # 98016, NCDENR certified lab # 562, GA certified lab # FL-E87582, NELAP certified laboratory # E87582**
- Local support services for this project are provided by Access Analytical, Inc. Access Analytical is a representative of AES serving client in the SC/NC/GA areas. All questions regarding this report should be directed to your local Access Analytical representative at 803.781.4243 or toll fee at 883.315.4243

Access Analytical - Chain of Custody Record

LAB USE ONLY

Sales Order # _____ **PO #** _____ **Access Quote #** _____

Project Work Order # 1108054

Laboratory ID: AES

Company Name: CES

Report To: J. Reynolds

Address:

City: State: Zip:

Phone: Fax:

Email:

Project ID: VACANT LOT (Soil)

Sampled By: D. O'Brien

Preservative: (*see codes) 0

Container Type: (*see codes) 0

REQUESTED LAB ANALYSIS

Sample ID/Description	Date Collected:	Time Collected:	Type: (grab or composite)	Matrix: (see codes)	Program Area (see codes)	TOTAL # of containers	Brx, NAPH
GW-10	8/26/11	9:21	G	Soil	SHW	4	4
GW-11		10:17					
GW-12		11:24					
GW-13		11:55					
GW-14		12:32					
GW-15		12:59					
GW-16		13:31					
GW-17		14:07					
Trip Blank	8/25/11			GW	SHW	1	

ACCESS ANALYTICAL, INC.

7478 Carlisle Street
Irmo, SC 29063

Phone: (803) 781-4243
Fax: 781-4303

www.axs-inc.com

*Preservative Codes (place corresponding # in block above analysis field): 0 = None, 1 = HCl, 2 = HNO3, 3 = H2SO4, 4 = NaOH, 5 = NaSO4, 6 = Methanol 5035 (set w/ NaHSO4 & CHOH), 7 = NaOH/ZnOAC, 8 = H2PO4

*Matrix Codes (place corresponding code in matrix section): GW = ground water, WW = waste water, DW = drinking water, S = soil, SL = sludge, A = air, RW = industrial waste, WO = waste oil, OT = other (specify in comments section)

*Program Area Codes: CWA = Clean Water Act (for wastewaters), SDWA = Safe Drinking Water Act (for drinking waters), SHW = Solid and Hazardous Wastes (for soils, ground waters and waste samples)

*Container Type: G = Glass, P = Plastic

NOTES / COMMENTS

(if sample is a composite please use space below to note start/finish times & dates)

Turnaround Time:

X Standard
___ RUSH*
*Date Required: _____
(For rush work, results emailed/faxed by end of business day on date required)

Project Location:
X SC
___ NC
___ Other
(specify) _____

Relinquished By:	Received By:	Date (mm-dd-yy)	Time (24HR)	Sample Temp. Upon Receipt (°C):	
D O'Brien	AMCT	8/30/11	1247	2.7 (°C)	___ (N/A)
A Martin	Fedex	8/30/11	1700	___ (°C)	X (N/A)
	PLT	8/31/11	10:15	___ (°C)	___ (N/A)
			F	___ (°C)	___ (N/A)

See Reverse for Terms and Conditions

Original Copy - Returned w/Report
Yellow Copy - Access File Copy
Pink Copy - Client Copy

Pg 1 of 1

Analytical Environmental Services, Inc

Date: 8-Sep-11

Client: Crawford Environmental Services
Project: Vacant Lot (Soil)
Lab ID: 1108O54

Case Narrative

Sample Receiving Nonconformance:

Sample IDs were not provided on the sample vials. Samples came in sets with sample IDs labeled on the bags containing the samples. Samples were identified according to the Chain of Custody.

Analytical Environmental Services, Inc **Date:** 8-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	GW-10
Project Name:	Vacant Lot (Soil)	**Collection Date:**	8/26/2011 9:21:00 AM
Lab ID:	1108O54-001	**Matrix:**	Soil

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B					(SW5035)				
Benzene	BRL		0.62	0.91	ug/Kg-dry	151282	1	09/07/2011 07:34	JE
Toluene	BRL		0.73	0.91	ug/Kg-dry	151282	1	09/07/2011 07:34	JE
Ethylbenzene	BRL		0.60	0.91	ug/Kg-dry	151282	1	09/07/2011 07:34	JE
Xylenes, Total	BRL		2.1	2.7	ug/Kg-dry	151282	1	09/07/2011 07:34	JE
Naphthalene	BRL		0.49	4.5	ug/Kg-dry	151282	1	09/07/2011 07:34	JE
Surr: 4-Bromofluorobenzene	87.4		0	56-137	%REC	151282	1	09/07/2011 07:34	JE
Surr: Dibromofluoromethane	129		0	73.7-137	%REC	151282	1	09/07/2011 07:34	JE
Surr: Toluene-d8	101		0	69.2-126	%REC	151282	1	09/07/2011 07:34	JE
PERCENT MOISTURE D2216									
Percent Moisture	16.6		0	0	wt%	R204696	1	09/07/2011 11:00	AS

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated value above quantitation range
BRL	Not detected at MDL	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	J	Estimated value detected below Reporting Limit
N	Analyte not NELAC certified	>	Greater than Result value
B	Analyte detected in the associated method blank	<	Less than Result value
NC	Not confirmed	Narr	See case narrative

Analytical Environmental Services, Inc **Date:** 8-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	GW-11
Project Name:	Vacant Lot (Soil)	**Collection Date:**	8/26/2011 10:17:00 AM
Lab ID:	1108O54-002	**Matrix:**	Soil

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B					**(SW5035)**				
Benzene	BRL		0.76	1.1	ug/Kg-dry	151282	1	09/07/2011 07:59	JE
Toluene	BRL		0.89	1.1	ug/Kg-dry	151282	1	09/07/2011 07:59	JE
Ethylbenzene	BRL		0.73	1.1	ug/Kg-dry	151282	1	09/07/2011 07:59	JE
Xylenes, Total	BRL		2.5	3.3	ug/Kg-dry	151282	1	09/07/2011 07:59	JE
Naphthalene	BRL		0.60	5.5	ug/Kg-dry	151282	1	09/07/2011 07:59	JE
Surr: 4-Bromofluorobenzene	88.8		0	56-137	%REC	151282	1	09/07/2011 07:59	JE
Surr: Dibromofluoromethane	131		0	73.7-137	%REC	151282	1	09/07/2011 07:59	JE
Surr: Toluene-d8	102		0	69.2-126	%REC	151282	1	09/07/2011 07:59	JE
PERCENT MOISTURE D2216									
Percent Moisture	14.5		0	0	wt%	R204696	1	09/07/2011 11:00	AS

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated value above quantitation range
BRL	Not detected at MDL	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	J	Estimated value detected below Reporting Limit
N	Analyte not NELAC certified	>	Greater than Result value
B	Analyte detected in the associated method blank	<	Less than Result value
NC	Not confirmed	Narr	See case narrative

Analytical Environmental Services, Inc **Date:** 8-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	GW-12
Project Name:	Vacant Lot (Soil)	**Collection Date:**	8/26/2011 11:24:00 AM
Lab ID:	1108O54-003	**Matrix:**	Soil

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B					(SW5035)				
Benzene	BRL		0.64	0.93	ug/Kg-dry	151282	1	09/07/2011 21:48	JE
Toluene	BRL		0.75	0.93	ug/Kg-dry	151282	1	09/07/2011 21:48	JE
Ethylbenzene	BRL		0.62	0.93	ug/Kg-dry	151282	1	09/07/2011 21:48	JE
Xylenes, Total	BRL		2.1	2.8	ug/Kg-dry	151282	1	09/07/2011 21:48	JE
Naphthalene	BRL		0.50	4.6	ug/Kg-dry	151282	1	09/07/2011 21:48	JE
Surr: 4-Bromofluorobenzene	112		0	56-137	%REC	151282	1	09/07/2011 21:48	JE
Surr: Dibromofluoromethane	136		0	73.7-137	%REC	151282	1	09/07/2011 21:48	JE
Surr: Toluene-d8	97.1		0	69.2-126	%REC	151282	1	09/07/2011 21:48	JE
PERCENT MOISTURE D2216									
Percent Moisture	24.6		0	0	wt%	R204696	1	09/07/2011 11:00	AS

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated value above quantitation range
BRL	Not detected at MDL	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	J	Estimated value detected below Reporting Limit
N	Analyte not NELAC certified	>	Greater than Result value
B	Analyte detected in the associated method blank	<	Less than Result value
NC	Not confirmed	Narr	See case narrative

Analytical Environmental Services, Inc **Date:** 8-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	GW-13
Project Name:	Vacant Lot (Soil)	**Collection Date:**	8/26/2011 11:55:00 AM
Lab ID:	1108O54-004	**Matrix:**	Soil

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B					(SW5035)				
Benzene	BRL		0.50	0.73	ug/Kg-dry	151282	1	09/07/2011 22:14	JE
Toluene	BRL		0.59	0.73	ug/Kg-dry	151282	1	09/07/2011 22:14	JE
Ethylbenzene	BRL		0.48	0.73	ug/Kg-dry	151282	1	09/07/2011 22:14	JE
Xylenes, Total	BRL		1.7	2.2	ug/Kg-dry	151282	1	09/07/2011 22:14	JE
Naphthalene	BRL		0.40	3.7	ug/Kg-dry	151282	1	09/07/2011 22:14	JE
Surr: 4-Bromofluorobenzene	106		0	56-137	%REC	151282	1	09/07/2011 22:14	JE
Surr: Dibromofluoromethane	121		0	73.7-137	%REC	151282	1	09/07/2011 22:14	JE
Surr: Toluene-d8	70.1		0	69.2-126	%REC	151282	1	09/07/2011 22:14	JE
PERCENT MOISTURE D2216									
Percent Moisture	6.48		0	0	wt%	R204696	1	09/07/2011 11:00	AS

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Not detected at MDL
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- NC Not confirmed
- E Estimated value above quantitation range
- S Spike Recovery outside limits due to matrix
- J Estimated value detected below Reporting Limit
- > Greater than Result value
- < Less than Result value
- Narr See case narrative

Analytical Environmental Services, Inc **Date:** 8-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	GW-14
Project Name:	Vacant Lot (Soil)	**Collection Date:**	8/26/2011 12:32:00 PM
Lab ID:	1108O54-005	**Matrix:**	Soil

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B (SW5035)									
Benzene	BRL		0.66	0.97	ug/Kg-dry	151282	1	09/07/2011 22:39	JE
Toluene	BRL		0.78	0.97	ug/Kg-dry	151282	1	09/07/2011 22:39	JE
Ethylbenzene	BRL		0.64	0.97	ug/Kg-dry	151282	1	09/07/2011 22:39	JE
Xylenes, Total	BRL		2.2	2.9	ug/Kg-dry	151282	1	09/07/2011 22:39	JE
Naphthalene	BRL		0.52	4.8	ug/Kg-dry	151282	1	09/07/2011 22:39	JE
Surr: 4-Bromofluorobenzene	114		0	56-137	%REC	151282	1	09/07/2011 22:39	JE
Surr: Dibromofluoromethane	141	S	0	73.7-137	%REC	151282	1	09/07/2011 22:39	JE
Surr: Toluene-d8	102		0	69.2-126	%REC	151282	1	09/07/2011 22:39	JE
PERCENT MOISTURE D2216									
Percent Moisture	9.34		0	0	wt%	R204696	1	09/07/2011 11:00	AS

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated value above quantitation range
BRL	Not detected at MDL	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	J	Estimated value detected below Reporting Limit
N	Analyte not NELAC certified	>	Greater than Result value
B	Analyte detected in the associated method blank	<	Less than Result value
NC	Not confirmed	Narr	See case narrative

Analytical Environmental Services, Inc **Date:** 8-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	GW-15
Project Name:	Vacant Lot (Soil)	**Collection Date:**	8/26/2011 12:59:00 PM
Lab ID:	1108O54-006	**Matrix:**	Soil

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B					(SW5035)				
Benzene	BRL		0.70	1.0	ug/Kg-dry	151261	1	09/07/2011 23:05	JE
Toluene	BRL		0.82	1.0	ug/Kg-dry	151261	1	09/07/2011 23:05	JE
Ethylbenzene	BRL		0.68	1.0	ug/Kg-dry	151261	1	09/07/2011 23:05	JE
Xylenes, Total	BRL		2.3	3.1	ug/Kg-dry	151261	1	09/07/2011 23:05	JE
Naphthalene	BRL		0.56	5.1	ug/Kg-dry	151261	1	09/07/2011 23:05	JE
Surr: 4-Bromofluorobenzene	118		0	56-137	%REC	151261	1	09/07/2011 23:05	JE
Surr: Dibromofluoromethane	169	S	0	73.7-137	%REC	151261	1	09/07/2011 23:05	JE
Surr: Toluene-d8	96.6		0	69.2-126	%REC	151261	1	09/07/2011 23:05	JE
PERCENT MOISTURE D2216									
Percent Moisture	18.2		0	0	wt%	R204696	1	09/07/2011 11:00	AS

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Not detected at MDL
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- NC Not confirmed
- E Estimated value above quantitation range
- S Spike Recovery outside limits due to matrix
- J Estimated value detected below Reporting Limit
- > Greater than Result value
- < Less than Result value
- Narr See case narrative

Analytical Environmental Services, Inc **Date:** 8-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	GW-16
Project Name:	Vacant Lot (Soil)	**Collection Date:**	8/26/2011 1:31:00 PM
Lab ID:	1108O54-007	**Matrix:**	Soil

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B					(SW5035)				
Benzene	BRL		0.63	0.92	ug/Kg-dry	151261	1	09/07/2011 23:30	JE
Toluene	BRL		0.74	0.92	ug/Kg-dry	151261	1	09/07/2011 23:30	JE
Ethylbenzene	BRL		0.61	0.92	ug/Kg-dry	151261	1	09/07/2011 23:30	JE
Xylenes, Total	BRL		2.1	2.8	ug/Kg-dry	151261	1	09/07/2011 23:30	JE
Naphthalene	BRL		0.50	4.6	ug/Kg-dry	151261	1	09/07/2011 23:30	JE
Surr: 4-Bromofluorobenzene	107		0	56-137	%REC	151261	1	09/07/2011 23:30	JE
Surr: Dibromofluoromethane	143	S	0	73.7-137	%REC	151261	1	09/07/2011 23:30	JE
Surr: Toluene-d8	100		0	69.2-126	%REC	151261	1	09/07/2011 23:30	JE
PERCENT MOISTURE D2216									
Percent Moisture	13.4		0	0	wt%	R204696	1	09/07/2011 11:00	AS

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated value above quantitation range
BRL	Not detected at MDL	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	J	Estimated value detected below Reporting Limit
N	Analyte not NELAC certified	>	Greater than Result value
B	Analyte detected in the associated method blank	<	Less than Result value
NC	Not confirmed	Narr	See case narrative

Analytical Environmental Services, Inc **Date:** 8-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	GW-17
Project Name:	Vacant Lot (Soil)	**Collection Date:**	8/26/2011 2:07:00 PM
Lab ID:	1108O54-008	**Matrix:**	Soil

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B (SW5035)									
Benzene	BRL		0.75	1.1	ug/Kg-dry	151261	1	09/07/2011 23:56	JE
Toluene	BRL		0.88	1.1	ug/Kg-dry	151261	1	09/07/2011 23:56	JE
Ethylbenzene	BRL		0.73	1.1	ug/Kg-dry	151261	1	09/07/2011 23:56	JE
Xylenes, Total	BRL		2.5	3.3	ug/Kg-dry	151261	1	09/07/2011 23:56	JE
Naphthalene	BRL		0.59	5.5	ug/Kg-dry	151261	1	09/07/2011 23:56	JE
Surr: 4-Bromofluorobenzene	102		0	56-137	%REC	151261	1	09/07/2011 23:56	JE
Surr: Dibromofluoromethane	139	S	0	73.7-137	%REC	151261	1	09/07/2011 23:56	JE
Surr: Toluene-d8	95.6		0	69.2-126	%REC	151261	1	09/07/2011 23:56	JE
PERCENT MOISTURE D2216									
Percent Moisture	12.8		0	0	wt%	R204696	1	09/07/2011 11:00	AS

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated value above quantitation range
BRL	Not detected at MDL	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	J	Estimated value detected below Reporting Limit
N	Analyte not NELAC certified	>	Greater than Result value
B	Analyte detected in the associated method blank	<	Less than Result value
NC	Not confirmed	Narr	See case narrative

Analytical Environmental Services, Inc **Date:** 8-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	TRIP BLANK
Project Name:	Vacant Lot (Soil)	**Collection Date:**	8/25/2011
Lab ID:	1108O54-009	**Matrix:**	Groundwater

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS	**SW8260B**				**(SW5030B)**				
Benzene	BRL		0.38	1.0	ug/L	151210	1	09/06/2011 13:47	GK
Toluene	0.90	J	0.39	1.0	ug/L	151210	1	09/06/2011 13:47	GK
Ethylbenzene	BRL		0.48	1.0	ug/L	151210	1	09/06/2011 13:47	GK
Xylenes, Total	1.0	J	0.38	3.0	ug/L	151210	1	09/06/2011 13:47	GK
Naphthalene	1.3	J	0.25	5.0	ug/L	151210	1	09/06/2011 13:47	GK
Surr: 4-Bromofluorobenzene	89.4		0	64.7-130	%REC	151210	1	09/06/2011 13:47	GK
Surr: Dibromofluoromethane	98		0	80.7-129	%REC	151210	1	09/06/2011 13:47	GK
Surr: Toluene-d8	98.7		0	71.1-120	%REC	151210	1	09/06/2011 13:47	GK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Not detected at MDL
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- NC Not confirmed
- E Estimated value above quantitation range
- S Spike Recovery outside limits due to matrix
- J Estimated value detected below Reporting Limit
- > Greater than Result value
- < Less than Result value
- Narr See case narrative

Analytical Environmental Services, Inc.

Sample/Cooler Receipt Checklist

Client Access Work Order Number 1108054

Checklist completed by [signature] 8/31/11
Signature Date

Carrier name: FedEx ✓ UPS __ Courier __ Client __ US Mail __ Other _____

Shipping container/cooler in good condition? Yes ✓ No __ Not Present __

Custody seals intact on shipping container/cooler? Yes __ No __ Not Present ✓

Custody seals intact on sample bottles? Yes __ No __ Not Present ✓

Container/Temp Blank temperature in compliance? (4°C±2)* Yes ✓ No __

Cooler #1 3.8°C Cooler #2 _____ Cooler #3 _____ Cooler #4 _____ Cooler#5 _____ Cooler #6 _____

Chain of custody present? Yes ✓ No __

Chain of custody signed when relinquished and received? Yes ✓ No __

Chain of custody agrees with sample labels? Yes __ No ✓

Samples in proper container/bottle? Yes ✓ No __

Sample containers intact? Yes ✓ No __

Sufficient sample volume for indicated test? Yes ✓ No __

All samples received within holding time? Yes ✓ No __

Was TAT marked on the COC? Yes ✓ No __

Proceed with Standard TAT as per project history? Yes __ No __ Not Applicable ✓

Water - VOA vials have zero headspace? No VOA vials submitted __ Yes ✓ No __

Water - pH acceptable upon receipt? Yes ✓ No __ Not Applicable __

Adjusted? _____ Checked by _____

Sample Condition: Good ✓ Other(Explain) _____

(For diffusive samples or AIHA lead) Is a known blank included? Yes __ No ✓

See Case Narrative for resolution of the Non-Conformance.

* Samples do not have to comply with the given range for certain parameters.

Analytical Environmental Services, Inc

Date: 8-Sep-11

Client: Crawford Environmental Services
Project: Vacant Lot (Soil)
Lab Order: 1108O54

Dates Report

Lab Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
1108O54-001A	GW-10	8/26/2011 9:21:00AM	Soil	Volatile Organic Compounds by GC/MS		09/06/2011	09/07/2011
1108O54-001B	GW-10	8/26/2011 9:21:00AM	Soil	PERCENT MOISTURE			09/07/2011
1108O54-002A	GW-11	8/26/2011 10:17:00AM	Soil	Volatile Organic Compounds by GC/MS		09/06/2011	09/07/2011
1108O54-002B	GW-11	8/26/2011 10:17:00AM	Soil	PERCENT MOISTURE			09/07/2011
1108O54-003A	GW-12	8/26/2011 11:24:00AM	Soil	Volatile Organic Compounds by GC/MS		09/06/2011	09/07/2011
1108O54-003B	GW-12	8/26/2011 11:24:00AM	Soil	PERCENT MOISTURE			09/07/2011
1108O54-004A	GW-13	8/26/2011 11:55:00AM	Soil	Volatile Organic Compounds by GC/MS		09/06/2011	09/07/2011
1108O54-004B	GW-13	8/26/2011 11:55:00AM	Soil	PERCENT MOISTURE			09/07/2011
1108O54-005A	GW-14	8/26/2011 12:32:00PM	Soil	Volatile Organic Compounds by GC/MS		09/06/2011	09/07/2011
1108O54-005B	GW-14	8/26/2011 12:32:00PM	Soil	PERCENT MOISTURE			09/07/2011
1108O54-006A	GW-15	8/26/2011 12:59:00PM	Soil	Volatile Organic Compounds by GC/MS		09/06/2011	09/07/2011
1108O54-006B	GW-15	8/26/2011 12:59:00PM	Soil	PERCENT MOISTURE			09/07/2011
1108O54-007A	GW-16	8/26/2011 1:31:00PM	Soil	Volatile Organic Compounds by GC/MS		09/06/2011	09/07/2011
1108O54-007B	GW-16	8/26/2011 1:31:00PM	Soil	PERCENT MOISTURE			09/07/2011
1108O54-008A	GW-17	8/26/2011 2:07:00PM	Soil	Volatile Organic Compounds by GC/MS		09/06/2011	09/07/2011
1108O54-008B	GW-17	8/26/2011 2:07:00PM	Soil	PERCENT MOISTURE			09/07/2011
1108O54-009A	TRIP BLANK	8/25/2011 12:00:00AM	Groundwater	Volatile Organic Compounds by GC/MS		09/02/2011	09/06/2011

Client: Crawford Environmental Services
Project Name: Vacant Lot (Soil)
Workorder: 1108O54

ANALYTICAL QC SUMMARY REPORT

BatchID: 151210

Sample ID: **MB-151210** Client ID:
SampleType: **MBLK** TestCode: **Volatile Organic Compounds by GC/MS SW8260B**
Units: **ug/L** Prep Date: **09/02/2011** Run No: **204553**
BatchID: **151210** Analysis Date: **09/02/2011** Seq No: **4275580**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Benzene	BRL	1.0	0	0	0	0	0	0	0	0	
Ethylbenzene	BRL	1.0	0	0	0	0	0	0	0	0	
Naphthalene	BRL	5.0	0	0	0	0	0	0	0	0	
Toluene	BRL	1.0	0	0	0	0	0	0	0	0	
Xylenes, Total	BRL	1.0	0	0	0	0	0	0	0	0	
Surr: 4-Bromofluorobenzene	47.57	0	50	0	95.1	64.7	130	0	0	0	
Surr: Dibromofluoromethane	49.72	0	50	0	99.4	80.7	129	0	0	0	
Surr: Toluene-d8	50.02	0	50	0	100	71.1	120	0	0	0	

Sample ID: **LCS-151210** Client ID:
SampleType: **LCS** TestCode: **Volatile Organic Compounds by GC/MS SW8260B**
Units: **ug/L** Prep Date: **09/02/2011** Run No: **204553**
BatchID: **151210** Analysis Date: **09/02/2011** Seq No: **4275579**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Benzene	49.21	1.0	50	0	98.4	70	130	0	0	0	
Toluene	49.70	1.0	50	0	99.4	70	130	0	0	0	
Surr: 4-Bromofluorobenzene	46.69	0	50	0	93.4	64.7	130	0	0	0	
Surr: Dibromofluoromethane	55.59	0	50	0	111	80.7	129	0	0	0	
Surr: Toluene-d8	49.25	0	50	0	98.5	71.1	120	0	0	0	

Sample ID: **1108N09-021AMS** Client ID:
SampleType: **MS** TestCode: **Volatile Organic Compounds by GC/MS SW8260B**
Units: **ug/L** Prep Date: **09/02/2011** Run No: **204553**
BatchID: **151210** Analysis Date: **09/03/2011** Seq No: **4275560**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Benzene	42.78	1.0	50	0	85.6	62.2	143	0	0	0	
Toluene	44.39	1.0	50	0	88.8	57.8	149	0	0	0	
Surr: 4-Bromofluorobenzene	49.32	0	50	0	98.6	64.7	130	0	0	0	
Surr: Dibromofluoromethane	48.85	0	50	0	97.7	80.7	129	0	0	0	
Surr: Toluene-d8	50.08	0	50	0	100	71.1	120	0	0	0	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Crawford Environmental Services
Project Name: Vacant Lot (Soil)
Workorder: 1108O54

ANALYTICAL QC SUMMARY REPORT

BatchID: 151210

Sample ID: **1108N09-021AMSD** Client ID: Units: **ug/L** Prep Date: **09/02/2011** Run No: **204553**
SampleType: **MSD** TestCode: **Volatile Organic Compounds by GC/MS SW8260B** BatchID: **151210** Analysis Date: **09/03/2011** Seq No: **4275561**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Benzene	41.91	1.0	50	0	83.8	62.2	143	42.78	2.05	20	
Toluene	43.15	1.0	50	0	86.3	57.8	149	44.39	2.83	20	
Surr: 4-Bromofluorobenzene	48.98	0	50	0	98	64.7	130	49.32	0	0	
Surr: Dibromofluoromethane	48.08	0	50	0	96.2	80.7	129	48.85	0	0	
Surr: Toluene-d8	49.49	0	50	0	99	71.1	120	50.08	0	0	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Crawford Environmental Services
Project Name: Vacant Lot (Soil)
Workorder: 1108O54

ANALYTICAL QC SUMMARY REPORT

BatchID: 151261

Sample ID: **MB-151261** Client ID:
SampleType: **MBLK** TestCode: **Volatile Organic Compounds by GC/MS SW8260B**
Units: **ug/Kg** Prep Date: **09/06/2011** Run No: **204576**
BatchID: **151261** Analysis Date: **09/06/2011** Seq No: **4279568**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Benzene	BRL	5.0	0	0	0	0	0	0	0	0	
Ethylbenzene	BRL	5.0	0	0	0	0	0	0	0	0	
Naphthalene	BRL	5.0	0	0	0	0	0	0	0	0	
Toluene	BRL	5.0	0	0	0	0	0	0	0	0	
Xylenes, Total	BRL	5.0	0	0	0	0	0	0	0	0	
Surr: 4-Bromofluorobenzene	46.76	0	50	0	93.5	56	137	0	0	0	
Surr: Dibromofluoromethane	53.89	0	50	0	108	73.7	137	0	0	0	
Surr: Toluene-d8	49.14	0	50	0	98.3	69.2	126	0	0	0	

Sample ID: **LCS-151261** Client ID:
SampleType: **LCS** TestCode: **Volatile Organic Compounds by GC/MS SW8260B**
Units: **ug/Kg** Prep Date: **09/06/2011** Run No: **204737**
BatchID: **151261** Analysis Date: **09/07/2011** Seq No: **4279658**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Benzene	61.32	5.0	50	0	123	70	130	0	0	0	
Toluene	61.70	5.0	50	0	123	70	130	0	0	0	
Surr: 4-Bromofluorobenzene	57.71	0	50	0	115	56	137	0	0	0	
Surr: Dibromofluoromethane	55.48	0	50	0	111	73.7	137	0	0	0	
Surr: Toluene-d8	59.17	0	50	0	118	69.2	126	0	0	0	

Sample ID: **1108O42-003AMS** Client ID:
SampleType: **MS** TestCode: **Volatile Organic Compounds by GC/MS SW8260B**
Units: **ug/Kg-dry** Prep Date: **09/06/2011** Run No: **204576**
BatchID: **151261** Analysis Date: **09/06/2011** Seq No: **4279571**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Benzene	85.25	8.8	87.9	0	97	67.4	144	0	0	0	
Toluene	83.95	8.8	87.9	0	95.5	64.6	145	0	0	0	
Surr: 4-Bromofluorobenzene	83.01	0	87.9	0	94.4	56	137	0	0	0	
Surr: Dibromofluoromethane	92.26	0	87.9	0	105	73.7	137	0	0	0	
Surr: Toluene-d8	84.82	0	87.9	0	96.5	69.2	126	0	0	0	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Crawford Environmental Services
Project Name: Vacant Lot (Soil)
Workorder: 1108O54

ANALYTICAL QC SUMMARY REPORT

BatchID: 151261

Sample ID: **1108O42-003AMSD** Client ID:
SampleType: **MSD** TestCode: **Volatile Organic Compounds by GC/MS SW8260B**
Units: **ug/Kg-dry** Prep Date: **09/06/2011** Run No: **204576**
BatchID: **151261** Analysis Date: **09/06/2011** Seq No: **4279572**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Benzene	89.38	8.8	87.9	0	102	67.4	144	85.25	4.73	27.2	
Toluene	89.96	8.8	87.9	0	102	64.6	145	83.95	6.91	26.8	
Surr: 4-Bromofluorobenzene	75.56	0	87.9	0	86	56	137	83.01	0	0	
Surr: Dibromofluoromethane	93.12	0	87.9	0	106	73.7	137	92.26	0	0	
Surr: Toluene-d8	84.44	0	87.9	0	96.1	69.2	126	84.82	0	0	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Crawford Environmental Services
Project Name: Vacant Lot (Soil)
Workorder: 1108O54

ANALYTICAL QC SUMMARY REPORT

BatchID: 151282

Sample ID: **MB-151282** Client ID:
SampleType: **MBLK** TestCode: **Volatile Organic Compounds by GC/MS SW8260B**
Units: **ug/Kg** Prep Date: **09/06/2011** Run No: **204676**
BatchID: **151282** Analysis Date: **09/07/2011** Seq No: **4277976**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Benzene	BRL	5.0	0	0	0	0	0	0	0	0	
Ethylbenzene	BRL	5.0	0	0	0	0	0	0	0	0	
Naphthalene	BRL	5.0	0	0	0	0	0	0	0	0	
Toluene	BRL	5.0	0	0	0	0	0	0	0	0	
Xylenes, Total	BRL	5.0	0	0	0	0	0	0	0	0	
Surr: 4-Bromofluorobenzene	43.83	0	50	0	87.7	56	137	0	0	0	
Surr: Dibromofluoromethane	57.07	0	50	0	114	73.7	137	0	0	0	
Surr: Toluene-d8	49.30	0	50	0	98.6	69.2	126	0	0	0	

Sample ID: **LCS-151282** Client ID:
SampleType: **LCS** TestCode: **Volatile Organic Compounds by GC/MS SW8260B**
Units: **ug/Kg** Prep Date: **09/06/2011** Run No: **204676**
BatchID: **151282** Analysis Date: **09/06/2011** Seq No: **4277969**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Benzene	51.09	5.0	50	0	102	70	130	0	0	0	
Toluene	50.08	5.0	50	0	100	70	130	0	0	0	
Surr: 4-Bromofluorobenzene	44.86	0	50	0	89.7	56	137	0	0	0	
Surr: Dibromofluoromethane	51.10	0	50	0	102	73.7	137	0	0	0	
Surr: Toluene-d8	48.25	0	50	0	96.5	69.2	126	0	0	0	

Sample ID: **1108O79-005AMS** Client ID:
SampleType: **MS** TestCode: **Volatile Organic Compounds by GC/MS SW8260B**
Units: **ug/Kg-dry** Prep Date: **09/06/2011** Run No: **204676**
BatchID: **151282** Analysis Date: **09/06/2011** Seq No: **4277971**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Benzene	60.59	5.8	57.69	0	105	67.4	144	0	0	0	
Toluene	58.99	5.8	57.69	0	102	64.6	145	0	0	0	
Surr: 4-Bromofluorobenzene	52.20	0	57.69	0	90.5	56	137	0	0	0	
Surr: Dibromofluoromethane	59.24	0	57.69	0	103	73.7	137	0	0	0	
Surr: Toluene-d8	54.87	0	57.69	0	95.1	69.2	126	0	0	0	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Crawford Environmental Services
Project Name: Vacant Lot (Soil)
Workorder: 1108O54

ANALYTICAL QC SUMMARY REPORT

BatchID: 151282

Sample ID: **1108O79-005AMSD** Client ID:
SampleType: **MSD** TestCode: **Volatile Organic Compounds by GC/MS SW8260B**
Units: **ug/Kg-dry** Prep Date: **09/06/2011** Run No: **204676**
BatchID: **151282** Analysis Date: **09/07/2011** Seq No: **4277973**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Benzene	63.29	5.8	57.69	0	110	67.4	144	60.59	4.36	27.2	
Toluene	60.66	5.8	57.69	0	105	64.6	145	58.99	2.8	26.8	
Surr: 4-Bromofluorobenzene	50.40	0	57.69	0	87.4	56	137	52.20	0	0	
Surr: Dibromofluoromethane	61.70	0	57.69	0	107	73.7	137	59.24	0	0	
Surr: Toluene-d8	55.50	0	57.69	0	96.2	69.2	126	54.87	0	0	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

ACCESS
ANALYTICAL, INC.

ANALYTICAL REPORT

CLIENT

Crawford Environmental Services
101 Corporate Blvd. Suite 412
West Columbia SC 29196

ATTENTION
Justin Reynolds

PROJECT ID
Vacant Lot (GWS)

LABORATORY REPORT NUMBER
1109903

DATE
September 26, 2011

Primary Data Review By	Secondary Data Review By
Kathryn F. Waters	Ashley Amick
Kathryn Waters Project Manager, AES	Project Manager, Access Analytical aamick@axs-inc.com

PLEASE NOTE:

- **Unless otherwise noted, all analysis on this report performed at Analytical Environmental Services Inc. (AES Inc), 3785 Presidential Parkway, Atlanta, GA 30340.**
- **AES is SCDHEC certified laboratory # 98016, NCDENR certified lab # 562, GA certified lab # FL-E87582, NELAP certified laboratory # E87582**
- Local support services for this project are provided by Access Analytical, Inc. Access Analytical is a representative of AES serving client in the SC/NC/GA areas. All questions regarding this report should be directed to your local Access Analytical representative at 803.781.4243 or toll fee at 883.315.4243

LAB USE ONLY

Access Analytical - Chain of Custody Record

PO # ______ Access Quote # ______

ACCESS ANALYTICAL, INC.
7478 Carlisle Street
Irmo, SC 29063
Phone: (803) 781-4243
Fax: 781-4303
www.axs-inc.com

Company Name: CES
Report To: J. Reynolds
Address:
City: State: Zip:
Phone: Fax:
Email:
Project ID: Vacant Lot (GW)
Sampled By: J. Reynolds

							BTEX, Naphthalene, 1,2 DCA	Oxygenates	EDB	Pb	NOTES / COMMENTS (if sample is a composite please use space below to note start/finish times & dates)
							1	—	1	2	
							G	—	1	P	
MW-1	9/10/11	10:21	G	SW	GW	2	2	—	2	F	no lead *
MW-3	↓	1308	↓	↓	↓	5	↓	↓	↓		
MW-4		1117				2					* no lead
MW-5		1101				5					
MW-6		1110				↓					
MW-7		10:10									
MW-8		10:55									
MW-9		1125									
MW-10		1208									
MW-11	↓	1159	↓	↓	↓	↓	↓	↓	↓	↓	time date

Turnaround Time:
X Standard
___ RUSH*
*Date Required:______
(For rush work, results emailed/faxed by end of business day on date required)

Project Location:
X SC
___ NC
___ Other
(specify) ______

J. Reynolds	A Martin	1600	9-12-11	4.0 (°C)	___ (N/A)
A Martin	FedEx	9-12-11	1700	___ (°C)	✓ (N/A)
	[signature]	9/13/11	11:40	___ (°C)	___ (N/A)
				___ (°C)	___ (N/A)

See Reverse for Terms and Conditions

Pg ___ of ___

Original Copy - Returned w/Report
Yellow Copy - Access File Copy
Pink Copy - Client Copy

LAB USE ONLY

Access Analytical - Chain of Custody Record

PO # _____ Access Quote # _____

ACCESS ANALYTICAL, INC.
7478 Carlisle Street
Irmo, SC 29063
Phone: (803) 781-4243
Fax: 781-4303
www.axs-inc.com

Company Name: CEJ
Report To: J. Reynolds
Address:
City: State: Zip:
Phone: Fax:
Email:
Project ID: Vacant Lot (GWS)
Sampled By: J. Reynolds

							Btex, naph, mtbl 1,2 DCA	8 oxygenates	EPB	PB	NOTES / COMMENTS (if sample is a composite please use space below to note start/finish times & dates)
MW-12	9/10/11	1200	G	GW	SHW	2	1	1	1		
MW-13		1149				6	2	1	2	1	
MW-14		1144									
MW-15		1137									
MW-16		10:44									
QW-1		13:11									
DW-2		1037									
DW-3		10:48				4	2	1	1	1	
MW-14 DUP		1144				4	2	1	2		
Field Blank	9/10/11	13:21				1	1	1			

Turnaround Time:
X Standard
___ RUSH*
*Date Required: _____
(For rush work, results emailed/faxed by end of business day on date required)

Project Location:
X SC
___ NC
___ Other
(specify) _____

[signature]	[signature]	9-12-11	1600	4.0 (°C)	___ (N/A)
[signature]	[signature]	9-12-11	1700	___ (°C)	X (N/A)
	[signature]	9/13/11	11:30	___ (°C)	___ (N/A)
				___ (°C)	___ (N/A)

Pg 1 of 1

See Reverse for Terms and Conditions

Original Copy - Returned w/Report
Yellow Copy - Access File Copy
Pink Copy - Client Copy

Access Analytical - Chain of Custody Record

LAB USE ONLY

[redacted]

PO #________ Access Quote # ________

[redacted]

Company Name: CWD

Report To: J. Reynolds

Address:

City: State: Zip:

Phone: Fax:

Email:

Project ID: Vacant Lot (CWD)

Sampled By: J. Reynolds

ACCESS ANALYTICAL, INC.

7478 Carlisle Street
Irmo, SC 29063

Phone: (803) 781-4243
Fax: 781-4303

www.axs-inc.com

1109905 KCN 9/22/11

[redacted]

[redacted]								BTEX/Naph/MTBE/1,2DCA	8 Oxygenates								
								–	1								
								0	1								
Trip Blank	9/9/11	7:17	G	GW	SHD	1		–	1								

NOTES / COMMENTS
(if sample is a composite please use space below to note start/finish times & dates)

Turnaround Time:

X Standard
___ RUSH*
*Date Required:________
(For rush work, results emailed/faxed by end of business day on date required)

Project Location:

X SC
___NC
___Other
(specify) ________

[redacted]

[signature]	[signature]	9-12-11	16[illegible]	4.0 (°C)	___(N/A)
[signature]	FedEx	9.12.11	1700	___(°C)	✓(N/A)
	[signature]	9/13/11	11:40	___(°C)	___(N/A)
				___(°C)	___(N/A)

See Reverse for Terms and Conditions

Pg 1 of 1

Original Copy - Returned w/Report
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Client: Crawford Environmental Services
Project: Vacant Lot (GWS)
Lab ID: 1109903

Case Narrative

Sample Receiving Nonconformance:

An extra HNO3 container was received for sample MW-3 (1109903-002C) which was not indicated on the COC. Per email instructions from Angela Martin on 9/14/11 at 9:11am the laboratory should analyze and report lead for this sample.

Workerorder 1109899 was added to workorder 1109903 per phone instructions from Angela Martin on 9/22/11 at 9:30am.

Analytical Environmental Services, Inc **Date:** 26-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	MW-1
Project Name:	Vacant Lot (GWS)	**Collection Date:**	9/10/2011 10:21:00 AM
Lab ID:	1109903-001	**Matrix:**	Groundwater

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B					(SW5030B)				
Benzene	BRL		0.38	1.0	ug/L	151655	1	09/15/2011 18:28	JT
Toluene	0.78	J	0.39	1.0	ug/L	151655	1	09/15/2011 18:28	JT
Ethylbenzene	BRL		0.48	1.0	ug/L	151655	1	09/15/2011 18:28	JT
Xylenes, Total	BRL		0.38	3.0	ug/L	151655	1	09/15/2011 18:28	JT
Methyl tert-butyl ether	BRL		0.24	1.0	ug/L	151655	1	09/15/2011 18:28	JT
Naphthalene	BRL		0.25	5.0	ug/L	151655	1	09/15/2011 18:28	JT
1,2-Dichloroethane	BRL		0.23	1.0	ug/L	151655	1	09/15/2011 18:28	JT
Surr: 4-Bromofluorobenzene	87.6		0	64.7-130	%REC	151655	1	09/15/2011 18:28	JT
Surr: Dibromofluoromethane	96		0	80.7-129	%REC	151655	1	09/15/2011 18:28	JT
Surr: Toluene-d8	96		0	71.1-120	%REC	151655	1	09/15/2011 18:28	JT
Oxygenates (AES SOP OA-11010) SW8260B					(SW5030B)				
3,3-Dimethyl-1-butanol	BRL		3.9	100	ug/L	151655	1	09/15/2011 18:28	JT
Ethanol	BRL		16	100	ug/L	151655	1	09/15/2011 18:28	JT
Ethyl tert-butyl ether	BRL		1.1	100	ug/L	151655	1	09/15/2011 18:28	JT
Isopropyl ether	BRL		0.90	10	ug/L	151655	1	09/15/2011 18:28	JT
tert-Amyl alcohol	BRL		7.2	100	ug/L	151655	1	09/15/2011 18:28	JT
tert-Amyl methyl ether	BRL		1.0	10	ug/L	151655	1	09/15/2011 18:28	JT
tert-Butyl Alcohol	BRL		7.5	100	ug/L	151655	1	09/15/2011 18:28	JT
tert-Butyl formate	BRL		5.6	100	ug/L	151655	1	09/15/2011 18:28	JT
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011					(SW8011)				
1,2-Dibromoethane	BRL		0.004	0.020	ug/L	151617	1	09/15/2011 20:20	AK
Surr: 4-Bromofluorobenzene	109		0	66.9-137	%REC	151617	1	09/15/2011 20:20	AK

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated value above quantitation range
BRL	Not detected at MDL	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	J	Estimated value detected below Reporting Limit
N	Analyte not NELAC certified	>	Greater than Result value
B	Analyte detected in the associated method blank	<	Less than Result value
NC	Not confirmed	Narr	See case narrative

Analytical Environmental Services, Inc **Date:** 26-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	MW-3
Project Name:	Vacant Lot (GWS)	**Collection Date:**	9/10/2011 1:08:00 PM
Lab ID:	1109903-002	**Matrix:**	Groundwater

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B					(SW5030B)				
Benzene	12		0.38	1.0	ug/L	151655	1	09/15/2011 19:26	JT
Toluene	0.99	J	0.39	1.0	ug/L	151655	1	09/15/2011 19:26	JT
Ethylbenzene	37		0.48	1.0	ug/L	151655	1	09/15/2011 19:26	JT
Xylenes, Total	2.1	J	0.38	3.0	ug/L	151655	1	09/15/2011 19:26	JT
Methyl tert-butyl ether	3.1		0.24	1.0	ug/L	151655	1	09/15/2011 19:26	JT
Naphthalene	460		2.5	50	ug/L	151655	10	09/19/2011 13:47	JT
1,2-Dichloroethane	BRL		0.23	1.0	ug/L	151655	1	09/15/2011 19:26	JT
Surr: 4-Bromofluorobenzene	92.4		0	64.7-130	%REC	151655	1	09/15/2011 19:26	JT
Surr: 4-Bromofluorobenzene	90.9		0	64.7-130	%REC	151655	10	09/19/2011 13:47	JT
Surr: Dibromofluoromethane	93.1		0	80.7-129	%REC	151655	1	09/15/2011 19:26	JT
Surr: Dibromofluoromethane	97		0	80.7-129	%REC	151655	10	09/19/2011 13:47	JT
Surr: Toluene-d8	92.4		0	71.1-120	%REC	151655	10	09/19/2011 13:47	JT
Surr: Toluene-d8	97.7		0	71.1-120	%REC	151655	1	09/15/2011 19:26	JT
Total Metals by ICP/MS SW6020A					(SW3005A)				
Lead	137		0.701	1.00	ug/L	151685	1	09/16/2011 20:53	JY
Oxygenates (AES SOP OA-11010) SW8260B					(SW5030B)				
3,3-Dimethyl-1-butanol	BRL		3.9	100	ug/L	151655	1	09/15/2011 19:26	JT
Ethanol	BRL		16	100	ug/L	151655	1	09/15/2011 19:26	JT
Ethyl tert-butyl ether	BRL		1.1	100	ug/L	151655	1	09/15/2011 19:26	JT
Isopropyl ether	BRL		0.90	10	ug/L	151655	1	09/15/2011 19:26	JT
tert-Amyl alcohol	BRL		7.2	100	ug/L	151655	1	09/15/2011 19:26	JT
tert-Amyl methyl ether	BRL		1.0	10	ug/L	151655	1	09/15/2011 19:26	JT
tert-Butyl Alcohol	7.8	J	7.5	100	ug/L	151655	1	09/15/2011 19:26	JT
tert-Butyl formate	BRL		5.6	100	ug/L	151655	1	09/15/2011 19:26	JT
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011					(SW8011)				
1,2-Dibromoethane	BRL		0.004	0.021	ug/L	151617	1	09/15/2011 20:57	AK
Surr: 4-Bromofluorobenzene	94.9		0	66.9-137	%REC	151617	1	09/15/2011 20:57	AK

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated value above quantitation range
BRL	Not detected at MDL	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	J	Estimated value detected below Reporting Limit
N	Analyte not NELAC certified	>	Greater than Result value
B	Analyte detected in the associated method blank	<	Less than Result value
NC	Not confirmed	Narr	See case narrative

Analytical Environmental Services, Inc **Date:** 26-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	MW-4
Project Name:	Vacant Lot (GWS)	**Collection Date:**	9/10/2011 11:17:00 AM
Lab ID:	1109903-003	**Matrix:**	Groundwater

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B					(SW5030B)				
Benzene	BRL		0.38	1.0	ug/L	151655	1	09/15/2011 18:57	JT
Toluene	0.54	J	0.39	1.0	ug/L	151655	1	09/15/2011 18:57	JT
Ethylbenzene	BRL		0.48	1.0	ug/L	151655	1	09/15/2011 18:57	JT
Xylenes, Total	BRL		0.38	3.0	ug/L	151655	1	09/15/2011 18:57	JT
Methyl tert-butyl ether	0.56	J	0.24	1.0	ug/L	151655	1	09/15/2011 18:57	JT
Naphthalene	BRL		0.25	5.0	ug/L	151655	1	09/15/2011 18:57	JT
1,2-Dichloroethane	BRL		0.23	1.0	ug/L	151655	1	09/15/2011 18:57	JT
Surr: 4-Bromofluorobenzene	87.2		0	64.7-130	%REC	151655	1	09/15/2011 18:57	JT
Surr: Dibromofluoromethane	95.3		0	80.7-129	%REC	151655	1	09/15/2011 18:57	JT
Surr: Toluene-d8	94.5		0	71.1-120	%REC	151655	1	09/15/2011 18:57	JT
Oxygenates (AES SOP OA-11010) SW8260B					(SW5030B)				
3,3-Dimethyl-1-butanol	BRL		3.9	100	ug/L	151655	1	09/15/2011 18:57	JT
Ethanol	BRL		16	100	ug/L	151655	1	09/15/2011 18:57	JT
Ethyl tert-butyl ether	BRL		1.1	100	ug/L	151655	1	09/15/2011 18:57	JT
Isopropyl ether	BRL		0.90	10	ug/L	151655	1	09/15/2011 18:57	JT
tert-Amyl alcohol	BRL		7.2	100	ug/L	151655	1	09/15/2011 18:57	JT
tert-Amyl methyl ether	BRL		1.0	10	ug/L	151655	1	09/15/2011 18:57	JT
tert-Butyl Alcohol	BRL		7.5	100	ug/L	151655	1	09/15/2011 18:57	JT
tert-Butyl formate	BRL		5.6	100	ug/L	151655	1	09/15/2011 18:57	JT
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011					(SW8011)				
1,2-Dibromoethane	BRL		0.003	0.018	ug/L	151617	1	09/15/2011 22:12	AK
Surr: 4-Bromofluorobenzene	64.5	S	0	66.9-137	%REC	151617	1	09/15/2011 22:12	AK

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated value above quantitation range
BRL	Not detected at MDL	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	J	Estimated value detected below Reporting Limit
N	Analyte not NELAC certified	>	Greater than Result value
B	Analyte detected in the associated method blank	<	Less than Result value
NC	Not confirmed	Narr	See case narrative

Analytical Environmental Services, Inc **Date:** 26-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	MW-5
Project Name:	Vacant Lot (GWS)	**Collection Date:**	9/10/2011 11:01:00 AM
Lab ID:	1109903-004	**Matrix:**	Groundwater

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B					(SW5030B)				
Benzene	BRL		0.38	1.0	ug/L	151655	1	09/15/2011 20:24	JT
Toluene	BRL		0.39	1.0	ug/L	151655	1	09/15/2011 20:24	JT
Ethylbenzene	BRL		0.48	1.0	ug/L	151655	1	09/15/2011 20:24	JT
Xylenes, Total	BRL		0.38	3.0	ug/L	151655	1	09/15/2011 20:24	JT
Methyl tert-butyl ether	7.9		0.24	1.0	ug/L	151655	1	09/15/2011 20:24	JT
Naphthalene	0.72	J	0.25	5.0	ug/L	151655	1	09/15/2011 20:24	JT
1,2-Dichloroethane	2.3		0.23	1.0	ug/L	151655	1	09/15/2011 20:24	JT
Surr: 4-Bromofluorobenzene	90.3		0	64.7-130	%REC	151655	1	09/15/2011 20:24	JT
Surr: Dibromofluoromethane	95.8		0	80.7-129	%REC	151655	1	09/15/2011 20:24	JT
Surr: Toluene-d8	93.2		0	71.1-120	%REC	151655	1	09/15/2011 20:24	JT
Total Metals by ICP/MS SW6020A					(SW3005A)				
Lead	14.6		0.701	1.00	ug/L	151685	1	09/16/2011 20:59	JY
Oxygenates (AES SOP OA-11010) SW8260B					(SW5030B)				
3,3-Dimethyl-1-butanol	BRL		3.9	100	ug/L	151655	1	09/15/2011 20:24	JT
Ethanol	BRL		16	100	ug/L	151655	1	09/15/2011 20:24	JT
Ethyl tert-butyl ether	BRL		1.1	100	ug/L	151655	1	09/15/2011 20:24	JT
Isopropyl ether	7.6	J	0.90	10	ug/L	151655	1	09/15/2011 20:24	JT
tert-Amyl alcohol	BRL		7.2	100	ug/L	151655	1	09/15/2011 20:24	JT
tert-Amyl methyl ether	BRL		1.0	10	ug/L	151655	1	09/15/2011 20:24	JT
tert-Butyl Alcohol	BRL		7.5	100	ug/L	151655	1	09/15/2011 20:24	JT
tert-Butyl formate	BRL		5.6	100	ug/L	151655	1	09/15/2011 20:24	JT
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011					(SW8011)				
1,2-Dibromoethane	BRL		0.004	0.021	ug/L	151617	1	09/15/2011 22:49	AK
Surr: 4-Bromofluorobenzene	103		0	66.9-137	%REC	151617	1	09/15/2011 22:49	AK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Not detected at MDL
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- NC Not confirmed
- E Estimated value above quantitation range
- S Spike Recovery outside limits due to matrix
- J Estimated value detected below Reporting Limit
- > Greater than Result value
- < Less than Result value
- Narr See case narrative

Analytical Environmental Services, Inc **Date:** 26-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	MW-6
Project Name:	Vacant Lot (GWS)	**Collection Date:**	9/10/2011 11:10:00 AM
Lab ID:	1109903-005	**Matrix:**	Groundwater

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B					(SW5030B)				
Benzene	BRL		0.38	1.0	ug/L	151655	1	09/15/2011 19:54	JT
Toluene	BRL		0.39	1.0	ug/L	151655	1	09/15/2011 19:54	JT
Ethylbenzene	BRL		0.48	1.0	ug/L	151655	1	09/15/2011 19:54	JT
Xylenes, Total	BRL		0.38	3.0	ug/L	151655	1	09/15/2011 19:54	JT
Methyl tert-butyl ether	53		0.24	1.0	ug/L	151655	1	09/15/2011 19:54	JT
Naphthalene	6.0		0.25	5.0	ug/L	151655	1	09/15/2011 19:54	JT
1,2-Dichloroethane	BRL		0.23	1.0	ug/L	151655	1	09/15/2011 19:54	JT
Surr: 4-Bromofluorobenzene	88.7		0	64.7-130	%REC	151655	1	09/15/2011 19:54	JT
Surr: Dibromofluoromethane	94.6		0	80.7-129	%REC	151655	1	09/15/2011 19:54	JT
Surr: Toluene-d8	91.7		0	71.1-120	%REC	151655	1	09/15/2011 19:54	JT
Total Metals by ICP/MS SW6020A					(SW3005A)				
Lead	3.53		0.701	1.00	ug/L	151685	1	09/16/2011 21:05	JY
Oxygenates (AES SOP OA-11010) SW8260B					(SW5030B)				
3,3-Dimethyl-1-butanol	BRL		3.9	100	ug/L	151655	1	09/15/2011 19:54	JT
Ethanol	200		16	100	ug/L	151655	1	09/15/2011 19:54	JT
Ethyl tert-butyl ether	BRL		1.1	100	ug/L	151655	1	09/15/2011 19:54	JT
Isopropyl ether	BRL		0.90	10	ug/L	151655	1	09/15/2011 19:54	JT
tert-Amyl alcohol	BRL		7.2	100	ug/L	151655	1	09/15/2011 19:54	JT
tert-Amyl methyl ether	BRL		1.0	10	ug/L	151655	1	09/15/2011 19:54	JT
tert-Butyl Alcohol	13	J	7.5	100	ug/L	151655	1	09/15/2011 19:54	JT
tert-Butyl formate	BRL		5.6	100	ug/L	151655	1	09/15/2011 19:54	JT
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011					(SW8011)				
1,2-Dibromoethane	BRL		0.004	0.021	ug/L	151617	1	09/15/2011 23:26	AK
Surr: 4-Bromofluorobenzene	106		0	66.9-137	%REC	151617	1	09/15/2011 23:26	AK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Not detected at MDL
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- NC Not confirmed
- E Estimated value above quantitation range
- S Spike Recovery outside limits due to matrix
- J Estimated value detected below Reporting Limit
- > Greater than Result value
- < Less than Result value
- Narr See case narrative

Analytical Environmental Services, Inc **Date:** 26-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	MW-7
Project Name:	Vacant Lot (GWS)	**Collection Date:**	9/10/2011 10:10:00 AM
Lab ID:	1109903-006	**Matrix:**	Groundwater

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B					(SW5030B)				
Benzene	BRL		0.38	1.0	ug/L	151655	1	09/15/2011 20:53	JT
Toluene	BRL		0.39	1.0	ug/L	151655	1	09/15/2011 20:53	JT
Ethylbenzene	BRL		0.48	1.0	ug/L	151655	1	09/15/2011 20:53	JT
Xylenes, Total	0.92	J	0.38	3.0	ug/L	151655	1	09/15/2011 20:53	JT
Methyl tert-butyl ether	BRL		0.24	1.0	ug/L	151655	1	09/15/2011 20:53	JT
Naphthalene	BRL		0.25	5.0	ug/L	151655	1	09/15/2011 20:53	JT
1,2-Dichloroethane	BRL		0.23	1.0	ug/L	151655	1	09/15/2011 20:53	JT
Surr: 4-Bromofluorobenzene	87.2		0	64.7-130	%REC	151655	1	09/15/2011 20:53	JT
Surr: Dibromofluoromethane	95.9		0	80.7-129	%REC	151655	1	09/15/2011 20:53	JT
Surr: Toluene-d8	94.1		0	71.1-120	%REC	151655	1	09/15/2011 20:53	JT
Total Metals by ICP/MS SW6020A					(SW3005A)				
Lead	139		0.701	1.00	ug/L	151685	1	09/16/2011 21:12	JY
Oxygenates (AES SOP OA-11010) SW8260B					(SW5030B)				
3,3-Dimethyl-1-butanol	BRL		3.9	100	ug/L	151655	1	09/15/2011 20:53	JT
Ethanol	BRL		16	100	ug/L	151655	1	09/15/2011 20:53	JT
Ethyl tert-butyl ether	BRL		1.1	100	ug/L	151655	1	09/15/2011 20:53	JT
Isopropyl ether	BRL		0.90	10	ug/L	151655	1	09/15/2011 20:53	JT
tert-Amyl alcohol	BRL		7.2	100	ug/L	151655	1	09/15/2011 20:53	JT
tert-Amyl methyl ether	BRL		1.0	10	ug/L	151655	1	09/15/2011 20:53	JT
tert-Butyl Alcohol	BRL		7.5	100	ug/L	151655	1	09/15/2011 20:53	JT
tert-Butyl formate	BRL		5.6	100	ug/L	151655	1	09/15/2011 20:53	JT
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011					(SW8011)				
1,2-Dibromoethane	BRL		0.004	0.021	ug/L	151617	1	09/16/2011 00:03	AK
Surr: 4-Bromofluorobenzene	103		0	66.9-137	%REC	151617	1	09/16/2011 00:03	AK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Not detected at MDL
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- NC Not confirmed
- E Estimated value above quantitation range
- S Spike Recovery outside limits due to matrix
- J Estimated value detected below Reporting Limit
- > Greater than Result value
- < Less than Result value
- Narr See case narrative

Analytical Environmental Services, Inc **Date:** 26-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	MW-8
Project Name:	Vacant Lot (GWS)	**Collection Date:**	9/10/2011 10:55:00 AM
Lab ID:	1109903-007	**Matrix:**	Groundwater

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B					**(SW5030B)**				
Benzene	BRL		0.38	1.0	ug/L	151655	1	09/15/2011 21:22	JT
Toluene	BRL		0.39	1.0	ug/L	151655	1	09/15/2011 21:22	JT
Ethylbenzene	BRL		0.48	1.0	ug/L	151655	1	09/15/2011 21:22	JT
Xylenes, Total	BRL		0.38	3.0	ug/L	151655	1	09/15/2011 21:22	JT
Methyl tert-butyl ether	BRL		0.24	1.0	ug/L	151655	1	09/15/2011 21:22	JT
Naphthalene	BRL		0.25	5.0	ug/L	151655	1	09/15/2011 21:22	JT
1,2-Dichloroethane	BRL		0.23	1.0	ug/L	151655	1	09/15/2011 21:22	JT
Surr: 4-Bromofluorobenzene	108		0	64.7-130	%REC	151655	1	09/15/2011 21:22	JT
Surr: Dibromofluoromethane	95.4		0	80.7-129	%REC	151655	1	09/15/2011 21:22	JT
Surr: Toluene-d8	94.4		0	71.1-120	%REC	151655	1	09/15/2011 21:22	JT
Total Metals by ICP/MS SW6020A					**(SW3005A)**				
Lead	BRL		0.701	1.00	ug/L	151685	1	09/16/2011 21:18	JY
Oxygenates (AES SOP OA-11010) SW8260B					**(SW5030B)**				
3,3-Dimethyl-1-butanol	BRL		3.9	100	ug/L	151655	1	09/15/2011 21:22	JT
Ethanol	BRL		16	100	ug/L	151655	1	09/15/2011 21:22	JT
Ethyl tert-butyl ether	BRL		1.1	100	ug/L	151655	1	09/15/2011 21:22	JT
Isopropyl ether	BRL		0.90	10	ug/L	151655	1	09/15/2011 21:22	JT
tert-Amyl alcohol	BRL		7.2	100	ug/L	151655	1	09/15/2011 21:22	JT
tert-Amyl methyl ether	BRL		1.0	10	ug/L	151655	1	09/15/2011 21:22	JT
tert-Butyl Alcohol	BRL		7.5	100	ug/L	151655	1	09/15/2011 21:22	JT
tert-Butyl formate	BRL		5.6	100	ug/L	151655	1	09/15/2011 21:22	JT
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011					**(SW8011)**				
1,2-Dibromoethane	BRL		0.004	0.021	ug/L	151617	1	09/16/2011 00:41	AK
Surr: 4-Bromofluorobenzene	112		0	66.9-137	%REC	151617	1	09/16/2011 00:41	AK

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated value above quantitation range
BRL	Not detected at MDL	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	J	Estimated value detected below Reporting Limit
N	Analyte not NELAC certified	>	Greater than Result value
B	Analyte detected in the associated method blank	<	Less than Result value
NC	Not confirmed	Narr	See case narrative

Analytical Environmental Services, Inc **Date:** 26-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	MW-9
Project Name:	Vacant Lot (GWS)	**Collection Date:**	9/10/2011 11:25:00 AM
Lab ID:	1109903-008	**Matrix:**	Groundwater

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B					**(SW5030B)**				
Benzene	BRL		0.38	1.0	ug/L	151655	1	09/15/2011 21:51	JT
Toluene	BRL		0.39	1.0	ug/L	151655	1	09/15/2011 21:51	JT
Ethylbenzene	BRL		0.48	1.0	ug/L	151655	1	09/15/2011 21:51	JT
Xylenes, Total	BRL		0.38	3.0	ug/L	151655	1	09/15/2011 21:51	JT
Methyl tert-butyl ether	BRL		0.24	1.0	ug/L	151655	1	09/15/2011 21:51	JT
Naphthalene	BRL		0.25	5.0	ug/L	151655	1	09/15/2011 21:51	JT
1,2-Dichloroethane	BRL		0.23	1.0	ug/L	151655	1	09/15/2011 21:51	JT
Surr: 4-Bromofluorobenzene	88.3		0	64.7-130	%REC	151655	1	09/15/2011 21:51	JT
Surr: Dibromofluoromethane	95.3		0	80.7-129	%REC	151655	1	09/15/2011 21:51	JT
Surr: Toluene-d8	94.1		0	71.1-120	%REC	151655	1	09/15/2011 21:51	JT
Total Metals by ICP/MS SW6020A					**(SW3005A)**				
Lead	6.43		0.701	1.00	ug/L	151685	1	09/16/2011 21:24	JY
Oxygenates (AES SOP OA-11010) SW8260B					**(SW5030B)**				
3,3-Dimethyl-1-butanol	BRL		3.9	100	ug/L	151655	1	09/15/2011 21:51	JT
Ethanol	BRL		16	100	ug/L	151655	1	09/15/2011 21:51	JT
Ethyl tert-butyl ether	BRL		1.1	100	ug/L	151655	1	09/15/2011 21:51	JT
Isopropyl ether	BRL		0.90	10	ug/L	151655	1	09/15/2011 21:51	JT
tert-Amyl alcohol	BRL		7.2	100	ug/L	151655	1	09/15/2011 21:51	JT
tert-Amyl methyl ether	BRL		1.0	10	ug/L	151655	1	09/15/2011 21:51	JT
tert-Butyl Alcohol	BRL		7.5	100	ug/L	151655	1	09/15/2011 21:51	JT
tert-Butyl formate	BRL		5.6	100	ug/L	151655	1	09/15/2011 21:51	JT
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011					**(SW8011)**				
1,2-Dibromoethane	BRL		0.004	0.021	ug/L	151617	1	09/16/2011 01:18	AK
Surr: 4-Bromofluorobenzene	109		0	66.9-137	%REC	151617	1	09/16/2011 01:18	AK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Not detected at MDL
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- NC Not confirmed
- E Estimated value above quantitation range
- S Spike Recovery outside limits due to matrix
- J Estimated value detected below Reporting Limit
- > Greater than Result value
- < Less than Result value
- Narr See case narrative

Analytical Environmental Services, Inc **Date:** 26-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	MW-10
Project Name:	Vacant Lot (GWS)	**Collection Date:**	9/10/2011 12:08:00 PM
Lab ID:	1109903-009	**Matrix:**	Groundwater

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B					(SW5030B)				
Benzene	BRL		0.38	1.0	ug/L	151655	1	09/15/2011 22:20	JT
Toluene	BRL		0.39	1.0	ug/L	151655	1	09/15/2011 22:20	JT
Ethylbenzene	BRL		0.48	1.0	ug/L	151655	1	09/15/2011 22:20	JT
Xylenes, Total	BRL		0.38	3.0	ug/L	151655	1	09/15/2011 22:20	JT
Methyl tert-butyl ether	43		0.24	1.0	ug/L	151655	1	09/15/2011 22:20	JT
Naphthalene	BRL		0.25	5.0	ug/L	151655	1	09/15/2011 22:20	JT
1,2-Dichloroethane	BRL		0.23	1.0	ug/L	151655	1	09/15/2011 22:20	JT
Surr: 4-Bromofluorobenzene	89.3		0	64.7-130	%REC	151655	1	09/15/2011 22:20	JT
Surr: Dibromofluoromethane	97		0	80.7-129	%REC	151655	1	09/15/2011 22:20	JT
Surr: Toluene-d8	94.5		0	71.1-120	%REC	151655	1	09/15/2011 22:20	JT
Total Metals by ICP/MS SW6020A					(SW3005A)				
Lead	BRL		0.701	1.00	ug/L	151685	1	09/16/2011 21:30	JY
Oxygenates (AES SOP OA-11010) SW8260B					(SW5030B)				
3,3-Dimethyl-1-butanol	BRL		3.9	100	ug/L	151655	1	09/15/2011 22:20	JT
Ethanol	BRL		16	100	ug/L	151655	1	09/15/2011 22:20	JT
Ethyl tert-butyl ether	BRL		1.1	100	ug/L	151655	1	09/15/2011 22:20	JT
Isopropyl ether	BRL		0.90	10	ug/L	151655	1	09/15/2011 22:20	JT
tert-Amyl alcohol	BRL		7.2	100	ug/L	151655	1	09/15/2011 22:20	JT
tert-Amyl methyl ether	BRL		1.0	10	ug/L	151655	1	09/15/2011 22:20	JT
tert-Butyl Alcohol	BRL		7.5	100	ug/L	151655	1	09/15/2011 22:20	JT
tert-Butyl formate	BRL		5.6	100	ug/L	151655	1	09/15/2011 22:20	JT
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011					(SW8011)				
1,2-Dibromoethane	BRL		0.004	0.020	ug/L	151617	1	09/16/2011 02:33	AK
Surr: 4-Bromofluorobenzene	110		0	66.9-137	%REC	151617	1	09/16/2011 02:33	AK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Not detected at MDL
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- NC Not confirmed
- E Estimated value above quantitation range
- S Spike Recovery outside limits due to matrix
- J Estimated value detected below Reporting Limit
- > Greater than Result value
- < Less than Result value
- Narr See case narrative

Analytical Environmental Services, Inc **Date:** 26-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	MW-11
Project Name:	Vacant Lot (GWS)	**Collection Date:**	9/10/2011 11:59:00 AM
Lab ID:	1109903-010	**Matrix:**	Groundwater

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B					(SW5030B)				
Benzene	BRL		0.38	1.0	ug/L	151655	1	09/15/2011 22:48	JT
Toluene	BRL		0.39	1.0	ug/L	151655	1	09/15/2011 22:48	JT
Ethylbenzene	BRL		0.48	1.0	ug/L	151655	1	09/15/2011 22:48	JT
Xylenes, Total	BRL		0.38	3.0	ug/L	151655	1	09/15/2011 22:48	JT
Methyl tert-butyl ether	0.38	J	0.24	1.0	ug/L	151655	1	09/15/2011 22:48	JT
Naphthalene	BRL		0.25	5.0	ug/L	151655	1	09/15/2011 22:48	JT
1,2-Dichloroethane	BRL		0.23	1.0	ug/L	151655	1	09/15/2011 22:48	JT
Surr: 4-Bromofluorobenzene	91.4		0	64.7-130	%REC	151655	1	09/15/2011 22:48	JT
Surr: Dibromofluoromethane	97.3		0	80.7-129	%REC	151655	1	09/15/2011 22:48	JT
Surr: Toluene-d8	95.5		0	71.1-120	%REC	151655	1	09/15/2011 22:48	JT
Total Metals by ICP/MS SW6020A					(SW3005A)				
Lead	BRL		0.701	1.00	ug/L	151685	1	09/16/2011 21:36	JY
Oxygenates (AES SOP OA-11010) SW8260B					(SW5030B)				
3,3-Dimethyl-1-butanol	BRL		3.9	100	ug/L	151655	1	09/15/2011 22:48	JT
Ethanol	BRL		16	100	ug/L	151655	1	09/15/2011 22:48	JT
Ethyl tert-butyl ether	BRL		1.1	100	ug/L	151655	1	09/15/2011 22:48	JT
Isopropyl ether	BRL		0.90	10	ug/L	151655	1	09/15/2011 22:48	JT
tert-Amyl alcohol	BRL		7.2	100	ug/L	151655	1	09/15/2011 22:48	JT
tert-Amyl methyl ether	BRL		1.0	10	ug/L	151655	1	09/15/2011 22:48	JT
tert-Butyl Alcohol	BRL		7.5	100	ug/L	151655	1	09/15/2011 22:48	JT
tert-Butyl formate	BRL		5.6	100	ug/L	151655	1	09/15/2011 22:48	JT
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011					(SW8011)				
1,2-Dibromoethane	BRL		0.004	0.021	ug/L	151617	1	09/16/2011 03:10	AK
Surr: 4-Bromofluorobenzene	111		0	66.9-137	%REC	151617	1	09/16/2011 03:10	AK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Not detected at MDL
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- NC Not confirmed
- E Estimated value above quantitation range
- S Spike Recovery outside limits due to matrix
- J Estimated value detected below Reporting Limit
- > Greater than Result value
- < Less than Result value
- Narr See case narrative

Analytical Environmental Services, Inc **Date:** 26-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	MW-12
Project Name:	Vacant Lot (GWS)	**Collection Date:**	9/10/2011 12:00:00 PM
Lab ID:	1109903-011	**Matrix:**	Groundwater

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B					**(SW5030B)**				
Benzene	BRL		0.38	1.0	ug/L	151705	1	09/16/2011 07:29	JT
Toluene	BRL		0.39	1.0	ug/L	151705	1	09/16/2011 07:29	JT
Ethylbenzene	BRL		0.48	1.0	ug/L	151705	1	09/16/2011 07:29	JT
Xylenes, Total	BRL		0.38	3.0	ug/L	151705	1	09/16/2011 07:29	JT
Methyl tert-butyl ether	BRL		0.24	1.0	ug/L	151705	1	09/16/2011 07:29	JT
Naphthalene	BRL		0.25	5.0	ug/L	151705	1	09/16/2011 07:29	JT
1,2-Dichloroethane	BRL		0.23	1.0	ug/L	151705	1	09/16/2011 07:29	JT
Surr: 4-Bromofluorobenzene	88.6		0	64.7-130	%REC	151705	1	09/16/2011 07:29	JT
Surr: Dibromofluoromethane	99.3		0	80.7-129	%REC	151705	1	09/16/2011 07:29	JT
Surr: Toluene-d8	96.3		0	71.1-120	%REC	151705	1	09/16/2011 07:29	JT
Oxygenates (AES SOP OA-11010) SW8260B					**(SW5030B)**				
3,3-Dimethyl-1-butanol	BRL		3.9	100	ug/L	151705	1	09/16/2011 07:29	JT
Ethanol	BRL		16	100	ug/L	151705	1	09/16/2011 07:29	JT
Ethyl tert-butyl ether	BRL		1.1	100	ug/L	151705	1	09/16/2011 07:29	JT
Isopropyl ether	BRL		0.90	10	ug/L	151705	1	09/16/2011 07:29	JT
tert-Amyl alcohol	BRL		7.2	100	ug/L	151705	1	09/16/2011 07:29	JT
tert-Amyl methyl ether	BRL		1.0	10	ug/L	151705	1	09/16/2011 07:29	JT
tert-Butyl Alcohol	BRL		7.5	100	ug/L	151705	1	09/16/2011 07:29	JT
tert-Butyl formate	BRL		5.6	100	ug/L	151705	1	09/16/2011 07:29	JT
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011					**(SW8011)**				
1,2-Dibromoethane	BRL		0.004	0.021	ug/L	151606	1	09/15/2011 10:22	AK
Surr: 4-Bromofluorobenzene	112		0	66.9-137	%REC	151606	1	09/15/2011 10:22	AK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Not detected at MDL
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- NC Not confirmed
- E Estimated value above quantitation range
- S Spike Recovery outside limits due to matrix
- J Estimated value detected below Reporting Limit
- > Greater than Result value
- < Less than Result value
- Narr See case narrative

Analytical Environmental Services, Inc **Date:** 26-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	MW-13
Project Name:	Vacant Lot (GWS)	**Collection Date:**	9/10/2011 11:49:00 AM
Lab ID:	1109903-012	**Matrix:**	Groundwater

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B					(SW5030B)				
Benzene	BRL		0.38	1.0	ug/L	151705	1	09/16/2011 07:58	JT
Toluene	0.78	J	0.39	1.0	ug/L	151705	1	09/16/2011 07:58	JT
Ethylbenzene	BRL		0.48	1.0	ug/L	151705	1	09/16/2011 07:58	JT
Xylenes, Total	BRL		0.38	3.0	ug/L	151705	1	09/16/2011 07:58	JT
Methyl tert-butyl ether	BRL		0.24	1.0	ug/L	151705	1	09/16/2011 07:58	JT
Naphthalene	BRL		0.25	5.0	ug/L	151705	1	09/16/2011 07:58	JT
1,2-Dichloroethane	BRL		0.23	1.0	ug/L	151705	1	09/16/2011 07:58	JT
Surr: 4-Bromofluorobenzene	87.1		0	64.7-130	%REC	151705	1	09/16/2011 07:58	JT
Surr: Dibromofluoromethane	96.1		0	80.7-129	%REC	151705	1	09/16/2011 07:58	JT
Surr: Toluene-d8	95.3		0	71.1-120	%REC	151705	1	09/16/2011 07:58	JT
Total Metals by ICP/MS SW6020A					(SW3005A)				
Lead	BRL		0.701	1.00	ug/L	151608	1	09/15/2011 22:29	JY
Oxygenates (AES SOP OA-11010) SW8260B					(SW5030B)				
3,3-Dimethyl-1-butanol	BRL		3.9	100	ug/L	151705	1	09/16/2011 07:58	JT
Ethanol	BRL		16	100	ug/L	151705	1	09/16/2011 07:58	JT
Ethyl tert-butyl ether	BRL		1.1	100	ug/L	151705	1	09/16/2011 07:58	JT
Isopropyl ether	BRL		0.90	10	ug/L	151705	1	09/16/2011 07:58	JT
tert-Amyl alcohol	BRL		7.2	100	ug/L	151705	1	09/16/2011 07:58	JT
tert-Amyl methyl ether	BRL		1.0	10	ug/L	151705	1	09/16/2011 07:58	JT
tert-Butyl Alcohol	BRL		7.5	100	ug/L	151705	1	09/16/2011 07:58	JT
tert-Butyl formate	BRL		5.6	100	ug/L	151705	1	09/16/2011 07:58	JT
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011					(SW8011)				
1,2-Dibromoethane	BRL		0.004	0.021	ug/L	151606	1	09/15/2011 10:59	AK
Surr: 4-Bromofluorobenzene	110		0	66.9-137	%REC	151606	1	09/15/2011 10:59	AK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Not detected at MDL
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- NC Not confirmed
- E Estimated value above quantitation range
- S Spike Recovery outside limits due to matrix
- J Estimated value detected below Reporting Limit
- > Greater than Result value
- < Less than Result value
- Narr See case narrative

Analytical Environmental Services, Inc **Date:** 26-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	MW-14
Project Name:	Vacant Lot (GWS)	**Collection Date:**	9/10/2011 11:44:00 AM
Lab ID:	1109903-013	**Matrix:**	Groundwater

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B					(SW5030B)				
Benzene	BRL		0.38	1.0	ug/L	151705	1	09/16/2011 08:27	JT
Toluene	0.47	J	0.39	1.0	ug/L	151705	1	09/16/2011 08:27	JT
Ethylbenzene	BRL		0.48	1.0	ug/L	151705	1	09/16/2011 08:27	JT
Xylenes, Total	BRL		0.38	3.0	ug/L	151705	1	09/16/2011 08:27	JT
Methyl tert-butyl ether	BRL		0.24	1.0	ug/L	151705	1	09/16/2011 08:27	JT
Naphthalene	BRL		0.25	5.0	ug/L	151705	1	09/16/2011 08:27	JT
1,2-Dichloroethane	BRL		0.23	1.0	ug/L	151705	1	09/16/2011 08:27	JT
Surr: 4-Bromofluorobenzene	86.1		0	64.7-130	%REC	151705	1	09/16/2011 08:27	JT
Surr: Dibromofluoromethane	98.5		0	80.7-129	%REC	151705	1	09/16/2011 08:27	JT
Surr: Toluene-d8	96		0	71.1-120	%REC	151705	1	09/16/2011 08:27	JT
Total Metals by ICP/MS SW6020A					(SW3005A)				
Lead	6.29		0.701	1.00	ug/L	151608	1	09/15/2011 22:35	JY
Oxygenates (AES SOP OA-11010) SW8260B					(SW5030B)				
3,3-Dimethyl-1-butanol	BRL		3.9	100	ug/L	151705	1	09/16/2011 08:27	JT
Ethanol	BRL		16	100	ug/L	151705	1	09/16/2011 08:27	JT
Ethyl tert-butyl ether	BRL		1.1	100	ug/L	151705	1	09/16/2011 08:27	JT
Isopropyl ether	BRL		0.90	10	ug/L	151705	1	09/16/2011 08:27	JT
tert-Amyl alcohol	BRL		7.2	100	ug/L	151705	1	09/16/2011 08:27	JT
tert-Amyl methyl ether	BRL		1.0	10	ug/L	151705	1	09/16/2011 08:27	JT
tert-Butyl Alcohol	BRL		7.5	100	ug/L	151705	1	09/16/2011 08:27	JT
tert-Butyl formate	BRL		5.6	100	ug/L	151705	1	09/16/2011 08:27	JT
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011					(SW8011)				
1,2-Dibromoethane	BRL		0.004	0.021	ug/L	151606	1	09/15/2011 11:36	AK
Surr: 4-Bromofluorobenzene	111		0	66.9-137	%REC	151606	1	09/15/2011 11:36	AK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Not detected at MDL
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- NC Not confirmed
- E Estimated value above quantitation range
- S Spike Recovery outside limits due to matrix
- J Estimated value detected below Reporting Limit
- > Greater than Result value
- < Less than Result value
- Narr See case narrative

Analytical Environmental Services, Inc **Date:** 26-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	MW-15
Project Name:	Vacant Lot (GWS)	**Collection Date:**	9/10/2011 11:37:00 AM
Lab ID:	1109903-014	**Matrix:**	Groundwater

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B					(SW5030B)				
Benzene	BRL		0.38	1.0	ug/L	151705	1	09/16/2011 08:56	JT
Toluene	BRL		0.39	1.0	ug/L	151705	1	09/16/2011 08:56	JT
Ethylbenzene	0.49	J	0.48	1.0	ug/L	151705	1	09/16/2011 08:56	JT
Xylenes, Total	BRL		0.38	3.0	ug/L	151705	1	09/16/2011 08:56	JT
Methyl tert-butyl ether	2.3		0.24	1.0	ug/L	151705	1	09/16/2011 08:56	JT
Naphthalene	7.4		0.25	5.0	ug/L	151705	1	09/16/2011 08:56	JT
1,2-Dichloroethane	BRL		0.23	1.0	ug/L	151705	1	09/16/2011 08:56	JT
Surr: 4-Bromofluorobenzene	93		0	64.7-130	%REC	151705	1	09/16/2011 08:56	JT
Surr: Dibromofluoromethane	100		0	80.7-129	%REC	151705	1	09/16/2011 08:56	JT
Surr: Toluene-d8	97.3		0	71.1-120	%REC	151705	1	09/16/2011 08:56	JT
Total Metals by ICP/MS SW6020A					(SW3005A)				
Lead	BRL		0.701	1.00	ug/L	151608	1	09/15/2011 22:41	JY
Oxygenates (AES SOP OA-11010) SW8260B					(SW5030B)				
3,3-Dimethyl-1-butanol	BRL		3.9	100	ug/L	151705	1	09/16/2011 08:56	JT
Ethanol	BRL		16	100	ug/L	151705	1	09/16/2011 08:56	JT
Ethyl tert-butyl ether	BRL		1.1	100	ug/L	151705	1	09/16/2011 08:56	JT
Isopropyl ether	BRL		0.90	10	ug/L	151705	1	09/16/2011 08:56	JT
tert-Amyl alcohol	BRL		7.2	100	ug/L	151705	1	09/16/2011 08:56	JT
tert-Amyl methyl ether	BRL		1.0	10	ug/L	151705	1	09/16/2011 08:56	JT
tert-Butyl Alcohol	BRL		7.5	100	ug/L	151705	1	09/16/2011 08:56	JT
tert-Butyl formate	BRL		5.6	100	ug/L	151705	1	09/16/2011 08:56	JT
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011					(SW8011)				
1,2-Dibromoethane	BRL		0.004	0.021	ug/L	151606	1	09/15/2011 12:14	AK
Surr: 4-Bromofluorobenzene	99.5		0	66.9-137	%REC	151606	1	09/15/2011 12:14	AK

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated value above quantitation range
BRL	Not detected at MDL	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	J	Estimated value detected below Reporting Limit
N	Analyte not NELAC certified	>	Greater than Result value
B	Analyte detected in the associated method blank	<	Less than Result value
NC	Not confirmed	Narr	See case narrative

Analytical Environmental Services, Inc **Date:** 26-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	MW-16
Project Name:	Vacant Lot (GWS)	**Collection Date:**	9/10/2011 10:44:00 AM
Lab ID:	1109903-015	**Matrix:**	Groundwater

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B					(SW5030B)				
Benzene	BRL		0.38	1.0	ug/L	151705	1	09/16/2011 09:25	JT
Toluene	BRL		0.39	1.0	ug/L	151705	1	09/16/2011 09:25	JT
Ethylbenzene	BRL		0.48	1.0	ug/L	151705	1	09/16/2011 09:25	JT
Xylenes, Total	BRL		0.38	3.0	ug/L	151705	1	09/16/2011 09:25	JT
Methyl tert-butyl ether	BRL		0.24	1.0	ug/L	151705	1	09/16/2011 09:25	JT
Naphthalene	BRL		0.25	5.0	ug/L	151705	1	09/16/2011 09:25	JT
1,2-Dichloroethane	BRL		0.23	1.0	ug/L	151705	1	09/16/2011 09:25	JT
Surr: 4-Bromofluorobenzene	85.2		0	64.7-130	%REC	151705	1	09/16/2011 09:25	JT
Surr: Dibromofluoromethane	95.5		0	80.7-129	%REC	151705	1	09/16/2011 09:25	JT
Surr: Toluene-d8	93.2		0	71.1-120	%REC	151705	1	09/16/2011 09:25	JT
Total Metals by ICP/MS SW6020A					(SW3005A)				
Lead	BRL		0.701	1.00	ug/L	151608	1	09/15/2011 22:47	JY
Oxygenates (AES SOP OA-11010) SW8260B					(SW5030B)				
3,3-Dimethyl-1-butanol	BRL		3.9	100	ug/L	151705	1	09/16/2011 09:25	JT
Ethanol	BRL		16	100	ug/L	151705	1	09/16/2011 09:25	JT
Ethyl tert-butyl ether	BRL		1.1	100	ug/L	151705	1	09/16/2011 09:25	JT
Isopropyl ether	BRL		0.90	10	ug/L	151705	1	09/16/2011 09:25	JT
tert-Amyl alcohol	BRL		7.2	100	ug/L	151705	1	09/16/2011 09:25	JT
tert-Amyl methyl ether	BRL		1.0	10	ug/L	151705	1	09/16/2011 09:25	JT
tert-Butyl Alcohol	BRL		7.5	100	ug/L	151705	1	09/16/2011 09:25	JT
tert-Butyl formate	BRL		5.6	100	ug/L	151705	1	09/16/2011 09:25	JT
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011					(SW8011)				
1,2-Dibromoethane	BRL		0.004	0.021	ug/L	151606	1	09/15/2011 12:51	AK
Surr: 4-Bromofluorobenzene	103		0	66.9-137	%REC	151606	1	09/15/2011 12:51	AK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Not detected at MDL
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- NC Not confirmed
- E Estimated value above quantitation range
- S Spike Recovery outside limits due to matrix
- J Estimated value detected below Reporting Limit
- > Greater than Result value
- < Less than Result value
- Narr See case narrative

Analytical Environmental Services, Inc **Date:** 26-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	DW-1
Project Name:	Vacant Lot (GWS)	**Collection Date:**	9/10/2011 1:11:00 PM
Lab ID:	1109903-016	**Matrix:**	Groundwater

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B					(SW5030B)				
Benzene	BRL		0.38	1.0	ug/L	151705	1	09/16/2011 09:54	JT
Toluene	0.77	J	0.39	1.0	ug/L	151705	1	09/16/2011 09:54	JT
Ethylbenzene	BRL		0.48	1.0	ug/L	151705	1	09/16/2011 09:54	JT
Xylenes, Total	0.41	J	0.38	3.0	ug/L	151705	1	09/16/2011 09:54	JT
Methyl tert-butyl ether	0.72	J	0.24	1.0	ug/L	151705	1	09/16/2011 09:54	JT
Naphthalene	1.3	J	0.25	5.0	ug/L	151705	1	09/16/2011 09:54	JT
1,2-Dichloroethane	BRL		0.23	1.0	ug/L	151705	1	09/16/2011 09:54	JT
Surr: 4-Bromofluorobenzene	86.3		0	64.7-130	%REC	151705	1	09/16/2011 09:54	JT
Surr: Dibromofluoromethane	99.6		0	80.7-129	%REC	151705	1	09/16/2011 09:54	JT
Surr: Toluene-d8	96.7		0	71.1-120	%REC	151705	1	09/16/2011 09:54	JT
Total Metals by ICP/MS SW6020A					(SW3005A)				
Lead	1.83		0.701	1.00	ug/L	151608	1	09/15/2011 22:54	JY
Oxygenates (AES SOP OA-11010) SW8260B					(SW5030B)				
3,3-Dimethyl-1-butanol	BRL		3.9	100	ug/L	151705	1	09/16/2011 09:54	JT
Ethanol	BRL		16	100	ug/L	151705	1	09/16/2011 09:54	JT
Ethyl tert-butyl ether	BRL		1.1	100	ug/L	151705	1	09/16/2011 09:54	JT
Isopropyl ether	BRL		0.90	10	ug/L	151705	1	09/16/2011 09:54	JT
tert-Amyl alcohol	BRL		7.2	100	ug/L	151705	1	09/16/2011 09:54	JT
tert-Amyl methyl ether	BRL		1.0	10	ug/L	151705	1	09/16/2011 09:54	JT
tert-Butyl Alcohol	BRL		7.5	100	ug/L	151705	1	09/16/2011 09:54	JT
tert-Butyl formate	BRL		5.6	100	ug/L	151705	1	09/16/2011 09:54	JT
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011					(SW8011)				
1,2-Dibromoethane	BRL		0.004	0.021	ug/L	151606	1	09/15/2011 14:06	AK
Surr: 4-Bromofluorobenzene	104		0	66.9-137	%REC	151606	1	09/15/2011 14:06	AK

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated value above quantitation range
BRL	Not detected at MDL	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	J	Estimated value detected below Reporting Limit
N	Analyte not NELAC certified	>	Greater than Result value
B	Analyte detected in the associated method blank	<	Less than Result value
NC	Not confirmed	Narr	See case narrative

Analytical Environmental Services, Inc **Date:** 26-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	DW-2
Project Name:	Vacant Lot (GWS)	**Collection Date:**	9/10/2011 10:37:00 AM
Lab ID:	1109903-017	**Matrix:**	Groundwater

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B					**(SW5030B)**				
Benzene	BRL		0.38	1.0	ug/L	151705	1	09/16/2011 10:23	JT
Toluene	0.75	J	0.39	1.0	ug/L	151705	1	09/16/2011 10:23	JT
Ethylbenzene	BRL		0.48	1.0	ug/L	151705	1	09/16/2011 10:23	JT
Xylenes, Total	BRL		0.38	3.0	ug/L	151705	1	09/16/2011 10:23	JT
Methyl tert-butyl ether	BRL		0.24	1.0	ug/L	151705	1	09/16/2011 10:23	JT
Naphthalene	BRL		0.25	5.0	ug/L	151705	1	09/16/2011 10:23	JT
1,2-Dichloroethane	BRL		0.23	1.0	ug/L	151705	1	09/16/2011 10:23	JT
Surr: 4-Bromofluorobenzene	87.8		0	64.7-130	%REC	151705	1	09/16/2011 10:23	JT
Surr: Dibromofluoromethane	102		0	80.7-129	%REC	151705	1	09/16/2011 10:23	JT
Surr: Toluene-d8	97		0	71.1-120	%REC	151705	1	09/16/2011 10:23	JT
Total Metals by ICP/MS SW6020A					**(SW3005A)**				
Lead	BRL		0.701	1.00	ug/L	151608	1	09/15/2011 23:00	JY
Oxygenates (AES SOP OA-11010) SW8260B					**(SW5030B)**				
3,3-Dimethyl-1-butanol	BRL		3.9	100	ug/L	151705	1	09/16/2011 10:23	JT
Ethanol	BRL		16	100	ug/L	151705	1	09/16/2011 10:23	JT
Ethyl tert-butyl ether	BRL		1.1	100	ug/L	151705	1	09/16/2011 10:23	JT
Isopropyl ether	BRL		0.90	10	ug/L	151705	1	09/16/2011 10:23	JT
tert-Amyl alcohol	BRL		7.2	100	ug/L	151705	1	09/16/2011 10:23	JT
tert-Amyl methyl ether	BRL		1.0	10	ug/L	151705	1	09/16/2011 10:23	JT
tert-Butyl Alcohol	BRL		7.5	100	ug/L	151705	1	09/16/2011 10:23	JT
tert-Butyl formate	BRL		5.6	100	ug/L	151705	1	09/16/2011 10:23	JT
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011					**(SW8011)**				
1,2-Dibromoethane	BRL		0.004	0.021	ug/L	151606	1	09/15/2011 14:43	AK
Surr: 4-Bromofluorobenzene	106		0	66.9-137	%REC	151606	1	09/15/2011 14:43	AK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Not detected at MDL
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- NC Not confirmed
- E Estimated value above quantitation range
- S Spike Recovery outside limits due to matrix
- J Estimated value detected below Reporting Limit
- > Greater than Result value
- < Less than Result value
- Narr See case narrative

Analytical Environmental Services, Inc **Date:** 26-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	DW-3
Project Name:	Vacant Lot (GWS)	**Collection Date:**	9/10/2011 10:48:00 AM
Lab ID:	1109903-018	**Matrix:**	Groundwater

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B					(SW5030B)				
Benzene	BRL		0.38	1.0	ug/L	151705	1	09/16/2011 10:51	JT
Toluene	0.73	J	0.39	1.0	ug/L	151705	1	09/16/2011 10:51	JT
Ethylbenzene	BRL		0.48	1.0	ug/L	151705	1	09/16/2011 10:51	JT
Xylenes, Total	BRL		0.38	3.0	ug/L	151705	1	09/16/2011 10:51	JT
Methyl tert-butyl ether	0.46	J	0.24	1.0	ug/L	151705	1	09/16/2011 10:51	JT
Naphthalene	BRL		0.25	5.0	ug/L	151705	1	09/16/2011 10:51	JT
1,2-Dichloroethane	BRL		0.23	1.0	ug/L	151705	1	09/16/2011 10:51	JT
Surr: 4-Bromofluorobenzene	88.3		0	64.7-130	%REC	151705	1	09/16/2011 10:51	JT
Surr: Dibromofluoromethane	97.9		0	80.7-129	%REC	151705	1	09/16/2011 10:51	JT
Surr: Toluene-d8	94.2		0	71.1-120	%REC	151705	1	09/16/2011 10:51	JT
Total Metals by ICP/MS SW6020A					(SW3005A)				
Lead	11.6		0.701	1.00	ug/L	151608	1	09/15/2011 23:06	JY
Oxygenates (AES SOP OA-11010) SW8260B					(SW5030B)				
3,3-Dimethyl-1-butanol	BRL		3.9	100	ug/L	151705	1	09/16/2011 10:51	JT
Ethanol	BRL		16	100	ug/L	151705	1	09/16/2011 10:51	JT
Ethyl tert-butyl ether	BRL		1.1	100	ug/L	151705	1	09/16/2011 10:51	JT
Isopropyl ether	BRL		0.90	10	ug/L	151705	1	09/16/2011 10:51	JT
tert-Amyl alcohol	BRL		7.2	100	ug/L	151705	1	09/16/2011 10:51	JT
tert-Amyl methyl ether	BRL		1.0	10	ug/L	151705	1	09/16/2011 10:51	JT
tert-Butyl Alcohol	BRL		7.5	100	ug/L	151705	1	09/16/2011 10:51	JT
tert-Butyl formate	BRL		5.6	100	ug/L	151705	1	09/16/2011 10:51	JT
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011					(SW8011)				
1,2-Dibromoethane	BRL		0.004	0.021	ug/L	151617	1	09/15/2011 18:29	AK
Surr: 4-Bromofluorobenzene	115		0	66.9-137	%REC	151617	1	09/15/2011 18:29	AK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Not detected at MDL
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- NC Not confirmed
- E Estimated value above quantitation range
- S Spike Recovery outside limits due to matrix
- J Estimated value detected below Reporting Limit
- > Greater than Result value
- < Less than Result value
- Narr See case narrative

Analytical Environmental Services, Inc **Date:** 26-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	MW-14 DUP
Project Name:	Vacant Lot (GWS)	**Collection Date:**	9/10/2011 1:44:00 AM
Lab ID:	1109903-019	**Matrix:**	Groundwater

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B					(SW5030B)				
Benzene	BRL		0.38	1.0	ug/L	151705	1	09/16/2011 15:56	JT
Toluene	0.54	J	0.39	1.0	ug/L	151705	1	09/16/2011 15:56	JT
Ethylbenzene	BRL		0.48	1.0	ug/L	151705	1	09/16/2011 15:56	JT
Xylenes, Total	BRL		0.38	3.0	ug/L	151705	1	09/16/2011 15:56	JT
Methyl tert-butyl ether	BRL		0.24	1.0	ug/L	151705	1	09/16/2011 15:56	JT
Naphthalene	BRL		0.25	5.0	ug/L	151705	1	09/16/2011 15:56	JT
1,2-Dichloroethane	BRL		0.23	1.0	ug/L	151705	1	09/16/2011 15:56	JT
Surr: 4-Bromofluorobenzene	84.7		0	64.7-130	%REC	151705	1	09/16/2011 15:56	JT
Surr: Dibromofluoromethane	96.8		0	80.7-129	%REC	151705	1	09/16/2011 15:56	JT
Surr: Toluene-d8	94.6		0	71.1-120	%REC	151705	1	09/16/2011 15:56	JT
Oxygenates (AES SOP OA-11010) SW8260B					(SW5030B)				
3,3-Dimethyl-1-butanol	BRL		3.9	100	ug/L	151705	1	09/16/2011 15:56	JT
Ethanol	BRL		16	100	ug/L	151705	1	09/16/2011 15:56	JT
Ethyl tert-butyl ether	BRL		1.1	100	ug/L	151705	1	09/16/2011 15:56	JT
Isopropyl ether	BRL		0.90	10	ug/L	151705	1	09/16/2011 15:56	JT
tert-Amyl alcohol	BRL		7.2	100	ug/L	151705	1	09/16/2011 15:56	JT
tert-Amyl methyl ether	BRL		1.0	10	ug/L	151705	1	09/16/2011 15:56	JT
tert-Butyl Alcohol	BRL		7.5	100	ug/L	151705	1	09/16/2011 15:56	JT
tert-Butyl formate	BRL		5.6	100	ug/L	151705	1	09/16/2011 15:56	JT
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011					(SW8011)				
1,2-Dibromoethane	BRL		0.004	0.021	ug/L	151617	1	09/15/2011 19:06	AK
Surr: 4-Bromofluorobenzene	113		0	66.9-137	%REC	151617	1	09/15/2011 19:06	AK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Not detected at MDL
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- NC Not confirmed
- E Estimated value above quantitation range
- S Spike Recovery outside limits due to matrix
- J Estimated value detected below Reporting Limit
- > Greater than Result value
- < Less than Result value
- Narr See case narrative

Analytical Environmental Services, Inc **Date:** 26-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	FIELD BLANK
Project Name:	Vacant Lot (GWS)	**Collection Date:**	9/10/2011 12:21:00 PM
Lab ID:	1109903-020	**Matrix:**	Groundwater

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B					(SW5030B)				
Benzene	BRL		0.38	1.0	ug/L	151705	1	09/16/2011 14:59	JT
Toluene	BRL		0.39	1.0	ug/L	151705	1	09/16/2011 14:59	JT
Ethylbenzene	BRL		0.48	1.0	ug/L	151705	1	09/16/2011 14:59	JT
Xylenes, Total	BRL		0.38	3.0	ug/L	151705	1	09/16/2011 14:59	JT
Methyl tert-butyl ether	BRL		0.24	1.0	ug/L	151705	1	09/16/2011 14:59	JT
Naphthalene	BRL		0.25	5.0	ug/L	151705	1	09/16/2011 14:59	JT
1,2-Dichloroethane	BRL		0.23	1.0	ug/L	151705	1	09/16/2011 14:59	JT
Surr: 4-Bromofluorobenzene	87.6		0	64.7-130	%REC	151705	1	09/16/2011 14:59	JT
Surr: Dibromofluoromethane	97.9		0	80.7-129	%REC	151705	1	09/16/2011 14:59	JT
Surr: Toluene-d8	93.5		0	71.1-120	%REC	151705	1	09/16/2011 14:59	JT
Oxygenates (AES SOP OA-11010) SW8260B					(SW5030B)				
3,3-Dimethyl-1-butanol	BRL		3.9	100	ug/L	151705	1	09/16/2011 14:59	JT
Ethanol	BRL		16	100	ug/L	151705	1	09/16/2011 14:59	JT
Ethyl tert-butyl ether	BRL		1.1	100	ug/L	151705	1	09/16/2011 14:59	JT
Isopropyl ether	BRL		0.90	10	ug/L	151705	1	09/16/2011 14:59	JT
tert-Amyl alcohol	BRL		7.2	100	ug/L	151705	1	09/16/2011 14:59	JT
tert-Amyl methyl ether	BRL		1.0	10	ug/L	151705	1	09/16/2011 14:59	JT
tert-Butyl Alcohol	BRL		7.5	100	ug/L	151705	1	09/16/2011 14:59	JT
tert-Butyl formate	BRL		5.6	100	ug/L	151705	1	09/16/2011 14:59	JT

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Not detected at MDL
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- NC Not confirmed
- E Estimated value above quantitation range
- S Spike Recovery outside limits due to matrix
- J Estimated value detected below Reporting Limit
- > Greater than Result value
- < Less than Result value
- Narr See case narrative

Analytical Environmental Services, Inc **Date:** 26-Sep-11

Client:	Crawford Environmental Services	**Client Sample ID:**	TRIP BLANK
Project Name:	Vacant Lot (GWS)	**Collection Date:**	9/9/2011 7:17:00 AM
Lab ID:	1109903-021	**Matrix:**	Groundwater

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	DF	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B					(SW5030B)				
Benzene	BRL		0.38	1.0	ug/L	151591	1	09/16/2011 15:28	JT
Toluene	BRL		0.39	1.0	ug/L	151591	1	09/16/2011 15:28	JT
Ethylbenzene	BRL		0.48	1.0	ug/L	151591	1	09/16/2011 15:28	JT
Xylenes, Total	BRL		0.38	3.0	ug/L	151591	1	09/16/2011 15:28	JT
Methyl tert-butyl ether	BRL		0.24	1.0	ug/L	151591	1	09/16/2011 15:28	JT
Naphthalene	BRL		0.25	5.0	ug/L	151591	1	09/16/2011 15:28	JT
1,2-Dichloroethane	BRL		0.23	1.0	ug/L	151591	1	09/16/2011 15:28	JT
Surr: 4-Bromofluorobenzene	86.8		0	64.7-130	%REC	151591	1	09/16/2011 15:28	JT
Surr: Dibromofluoromethane	96.8		0	80.7-129	%REC	151591	1	09/16/2011 15:28	JT
Surr: Toluene-d8	96.1		0	71.1-120	%REC	151591	1	09/16/2011 15:28	JT
Oxygenates (AES SOP OA-11010) SW8260B					(SW5030B)				
3,3-Dimethyl-1-butanol	BRL		3.9	100	ug/L	151591	1	09/16/2011 15:28	JT
Ethanol	BRL		16	100	ug/L	151591	1	09/16/2011 15:28	JT
Ethyl tert-butyl ether	BRL		1.1	100	ug/L	151591	1	09/16/2011 15:28	JT
Isopropyl ether	BRL		0.90	10	ug/L	151591	1	09/16/2011 15:28	JT
tert-Amyl alcohol	BRL		7.2	100	ug/L	151591	1	09/16/2011 15:28	JT
tert-Amyl methyl ether	BRL		1.0	10	ug/L	151591	1	09/16/2011 15:28	JT
tert-Butyl Alcohol	BRL		7.5	100	ug/L	151591	1	09/16/2011 15:28	JT
tert-Butyl formate	BRL		5.6	100	ug/L	151591	1	09/16/2011 15:28	JT

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Not detected at MDL
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- NC Not confirmed
- E Estimated value above quantitation range
- S Spike Recovery outside limits due to matrix
- J Estimated value detected below Reporting Limit
- > Greater than Result value
- < Less than Result value
- Narr See case narrative

Analytical Environmental Services, Inc.

Sample/Cooler Receipt Checklist

Client Access Work Order Number 1109903

Checklist completed by [signature] 9-13-11
Signature Date

Carrier name: FedEx ✓ UPS __ Courier __ Client __ US Mail __ Other _____

Shipping container/cooler in good condition? Yes ✓ No __ Not Present __

Custody seals intact on shipping container/cooler? Yes __ No __ Not Present ✓

Custody seals intact on sample bottles? Yes __ No __ Not Present ✓

Container/Temp Blank temperature in compliance? (4°C±2)* Yes ✓ No __

Cooler #1 3.4° Cooler #2 3.9° Cooler #3 3.2° Cooler #4 _____ Cooler#5 _____ Cooler #6 _____

Chain of custody present? Yes ✓ No __

Chain of custody signed when relinquished and received? Yes ✓ No __

Chain of custody agrees with sample labels? Yes ✓ No __

Samples in proper container/bottle? Yes ✓ No __

Sample containers intact? Yes ✓ No __

Sufficient sample volume for indicated test? Yes ✓ No __

All samples received within holding time? Yes ✓ No __

Was TAT marked on the COC? Yes ✓ No __

Proceed with Standard TAT as per project history? Yes __ No __ Not Applicable ✓

Water - VOA vials have zero headspace? No VOA vials submitted __ Yes ✓ No __

Water - pH acceptable upon receipt? Yes ✓ No __ Not Applicable __

Adjusted? _____ Checked by [signature]

Sample Condition: Good ✓ Other(Explain) _____

(For diffusive samples or AIHA lead) Is a known blank included? Yes __ No ✓

See Case Narrative for resolution of the Non-Conformance.

* Samples do not have to comply with the given range for certain parameters.

\L\Quality Assurance\Checklists Procedures Sign-Off Templates\Checklists\Sample Receipt Checklists\Sample_Cooler_Receipt_Checklist

Analytical Environmental Services, Inc.

Sample/Cooler Receipt Checklist

Client ACCESS Work Order Number 1109898

Checklist completed by ZD 9-13-11
Signature Date

Carrier name: FedEx ✓ UPS __ Courier __ Client __ US Mail __ Other _____

Shipping container/cooler in good condition?	Yes ✓	No __	Not Present __
Custody seals intact on shipping container/cooler?	Yes __	No __	Not Present ✓
Custody seals intact on sample bottles?	Yes __	No __	Not Present ✓
Container/Temp Blank temperature in compliance? (4°C±2)*	Yes ✓	No __	

Cooler #1 3.4° Cooler #2 3.9° Cooler #3 3.2° Cooler #4 _____ Cooler#5 _____ Cooler #6 _____

Chain of custody present?	Yes ✓	No __
Chain of custody signed when relinquished and received?	Yes ✓	No __
Chain of custody agrees with sample labels?	Yes ✓	No __
Samples in proper container/bottle?	Yes ✓	No __
Sample containers intact?	Yes ✓	No __
Sufficient sample volume for indicated test?	Yes ✓	No __
All samples received within holding time?	Yes ✓	No __
Was TAT marked on the COC?	Yes ✓	No __
Proceed with Standard TAT as per project history?	Yes __	No __ Not Applicable ✓
Water - VOA vials have zero headspace?	No VOA vials submitted __	Yes ✓ No __
Water - pH acceptable upon receipt?	Yes ✓	No __ Not Applicable __

Adjusted? _____ Checked by _____

Sample Condition: Good ✓ Other(Explain) _____

(For diffusive samples or AIHA lead) Is a known blank included? Yes __ No ✓

See Case Narrative for resolution of the Non-Conformance.

* Samples do not have to comply with the given range for certain parameters.

\L\Quality Assurance\Checklists Procedures Sign-Off Templates\Checklists\Sample Receipt Checklists\Sample_Cooler_Receipt_Checklist

Analytical Environmental Services, Inc.

Sample/Cooler Receipt Checklist

Client Access Work Order Number 1109899

Checklist completed by ZR 9-13-11
Signature Date

Carrier name: FedEx ✓ UPS __ Courier __ Client __ US Mail __ Other _____

Shipping container/cooler in good condition? Yes ✓ No __ Not Present __

Custody seals intact on shipping container/cooler? Yes __ No __ Not Present ✓

Custody seals intact on sample bottles? Yes __ No __ Not Present ✓

Container/Temp Blank temperature in compliance? (4°C±2)* Yes ✓ No __

Cooler #1 3.4° Cooler #2 3.9° Cooler #3 3.2° Cooler #4 _____ Cooler#5 _____ Cooler #6 _____

Chain of custody present? Yes ✓ No __

Chain of custody signed when relinquished and received? Yes ✓ No __

Chain of custody agrees with sample labels? Yes ✓ No __

Samples in proper container/bottle? Yes ✓ No __

Sample containers intact? Yes ✓ No __

Sufficient sample volume for indicated test? Yes ✓ No __

All samples received within holding time? Yes ✓ No __

Was TAT marked on the COC? Yes ✓ No __

Proceed with Standard TAT as per project history? Yes __ No __ Not Applicable ✓

Water - VOA vials have zero headspace? No VOA vials submitted __ Yes ✓ No __

Water - pH acceptable upon receipt? Yes ✓ 9-13-11 No ✓ Not Applicable __

Adjusted? ZR Checked by ZR

Sample Condition: Good ✓ Other(Explain) _____

(For diffusive samples or AIHA lead) Is a known blank included? Yes __ No ✓

See Case Narrative for resolution of the Non-Conformance.

* Samples do not have to comply with the given range for certain parameters.

\L\Quality Assurance\Checklists Procedures Sign-Off Templates\Checklists\Sample Receipt Checklists\Sample_Cooler_Receipt_Checklist

Client: Crawford Environmental Services
Project: Vacant Lot (GWS)
Lab Order: 1109903

Dates Report

Lab Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
1109903-001A	MW-1	9/10/2011 10:21:00AM	Groundwater	Volatile Organic Compounds by GC/MS		09/15/2011	09/15/2011
1109903-001A	MW-1	9/10/2011 10:21:00AM	Groundwater	Oxygenates by GC/MS		09/15/2011	09/15/2011
1109903-001B	MW-1	9/10/2011 10:21:00AM	Groundwater	MICRO-EXTRACTABLE VOCs		09/14/2011	09/15/2011
1109903-002A	MW-3	9/10/2011 1:08:00PM	Groundwater	Volatile Organic Compounds by GC/MS		09/15/2011	09/15/2011
1109903-002A	MW-3	9/10/2011 1:08:00PM	Groundwater	Volatile Organic Compounds by GC/MS		09/15/2011	09/19/2011
1109903-002A	MW-3	9/10/2011 1:08:00PM	Groundwater	Oxygenates by GC/MS		09/15/2011	09/15/2011
1109903-002B	MW-3	9/10/2011 1:08:00PM	Groundwater	MICRO-EXTRACTABLE VOCs		09/14/2011	09/15/2011
1109903-002C	MW-3	9/10/2011 1:08:00PM	Groundwater	Total Metals by ICP/MS		09/16/2011	09/16/2011
1109903-003A	MW-4	9/10/2011 11:17:00AM	Groundwater	Volatile Organic Compounds by GC/MS		09/15/2011	09/15/2011
1109903-003A	MW-4	9/10/2011 11:17:00AM	Groundwater	Oxygenates by GC/MS		09/15/2011	09/15/2011
1109903-003B	MW-4	9/10/2011 11:17:00AM	Groundwater	MICRO-EXTRACTABLE VOCs		09/14/2011	09/15/2011
1109903-004A	MW-5	9/10/2011 11:01:00AM	Groundwater	Volatile Organic Compounds by GC/MS		09/15/2011	09/15/2011
1109903-004A	MW-5	9/10/2011 11:01:00AM	Groundwater	Oxygenates by GC/MS		09/15/2011	09/15/2011
1109903-004B	MW-5	9/10/2011 11:01:00AM	Groundwater	MICRO-EXTRACTABLE VOCs		09/14/2011	09/15/2011
1109903-004C	MW-5	9/10/2011 11:01:00AM	Groundwater	Total Metals by ICP/MS		09/16/2011	09/16/2011
1109903-005A	MW-6	9/10/2011 11:10:00AM	Groundwater	Volatile Organic Compounds by GC/MS		09/15/2011	09/15/2011
1109903-005A	MW-6	9/10/2011 11:10:00AM	Groundwater	Oxygenates by GC/MS		09/15/2011	09/15/2011
1109903-005B	MW-6	9/10/2011 11:10:00AM	Groundwater	MICRO-EXTRACTABLE VOCs		09/14/2011	09/15/2011
1109903-005C	MW-6	9/10/2011 11:10:00AM	Groundwater	Total Metals by ICP/MS		09/16/2011	09/16/2011
1109903-006A	MW-7	9/10/2011 10:10:00AM	Groundwater	Volatile Organic Compounds by GC/MS		09/15/2011	09/15/2011
1109903-006A	MW-7	9/10/2011 10:10:00AM	Groundwater	Oxygenates by GC/MS		09/15/2011	09/15/2011
1109903-006B	MW-7	9/10/2011 10:10:00AM	Groundwater	MICRO-EXTRACTABLE VOCs		09/14/2011	09/16/2011
1109903-006C	MW-7	9/10/2011 10:10:00AM	Groundwater	Total Metals by ICP/MS		09/16/2011	09/16/2011
1109903-007A	MW-8	9/10/2011 10:55:00AM	Groundwater	Volatile Organic Compounds by GC/MS		09/15/2011	09/15/2011
1109903-007A	MW-8	9/10/2011 10:55:00AM	Groundwater	Oxygenates by GC/MS		09/15/2011	09/15/2011
1109903-007B	MW-8	9/10/2011 10:55:00AM	Groundwater	MICRO-EXTRACTABLE VOCs		09/14/2011	09/16/2011
1109903-007C	MW-8	9/10/2011 10:55:00AM	Groundwater	Total Metals by ICP/MS		09/16/2011	09/16/2011
1109903-008A	MW-9	9/10/2011 11:25:00AM	Groundwater	Volatile Organic Compounds by GC/MS		09/15/2011	09/15/2011
1109903-008A	MW-9	9/10/2011 11:25:00AM	Groundwater	Oxygenates by GC/MS		09/15/2011	09/15/2011

Analytical Environmental Services, Inc

Date: 20-Sep-11

Client: Crawford Environmental Services
Project: Vacant Lot (GWS)
Lab Order: 1109903

Dates Report

Lab Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
1109903-008B	MW-9	9/10/2011 11:25:00AM	Groundwater	MICRO-EXTRACTABLE VOCs		09/14/2011	09/16/2011
1109903-008C	MW-9	9/10/2011 11:25:00AM	Groundwater	Total Metals by ICP/MS		09/16/2011	09/16/2011
1109903-009A	MW-10	9/10/2011 12:08:00PM	Groundwater	Volatile Organic Compounds by GC/MS		09/15/2011	09/15/2011
1109903-009A	MW-10	9/10/2011 12:08:00PM	Groundwater	Oxygenates by GC/MS		09/15/2011	09/15/2011
1109903-009B	MW-10	9/10/2011 12:08:00PM	Groundwater	MICRO-EXTRACTABLE VOCs		09/14/2011	09/16/2011
1109903-009C	MW-10	9/10/2011 12:08:00PM	Groundwater	Total Metals by ICP/MS		09/16/2011	09/16/2011
1109903-010A	MW-11	9/10/2011 11:59:00AM	Groundwater	Volatile Organic Compounds by GC/MS		09/15/2011	09/15/2011
1109903-010A	MW-11	9/10/2011 11:59:00AM	Groundwater	Oxygenates by GC/MS		09/15/2011	09/15/2011
1109903-010B	MW-11	9/10/2011 11:59:00AM	Groundwater	MICRO-EXTRACTABLE VOCs		09/14/2011	09/16/2011
1109903-010C	MW-11	9/10/2011 11:59:00AM	Groundwater	Total Metals by ICP/MS		09/16/2011	09/16/2011

AES, Inc.
3785 Presidential Pkwy
Atlanta GA 30340

pH Adjustment Sheet

AES Sample ID number	Test Requested	pH as Received	Required pH	Preservative Required	Lot # of Preservative	Amount Added mL or Pellets*		Final pH	Tech's Initials	Date	Time
~~1109899-005C~~	6020	5	1	HNO3	IN-1028-21	5 mL	Pellets	1	JR	9/23/11	6:01pm
1109903-015C	KEW 9/22/11					mL	Pellets				
						mL	Pellets				
						mL	Pellets				
						mL	Pellets				
						mL	Pellets				
						mL	Pellets				
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						mL	Pellets				
						mL	Pellets				
						mL	Pellets				
						mL	Pellets				

* Number of Pellets when adding NAOH

Client: Crawford Environmental Services
Project Name: Vacant Lot (GWS)
Workorder: 1109903

ANALYTICAL QC SUMMARY REPORT

BatchID: 151591

Sample ID: **MB-151591** Client ID: Units: **ug/L** Prep Date: **09/13/2011** Run No: **205073**
SampleType: **MBLK** TestCode: **Volatile Organic Compounds by GC/MS SW8260B** BatchID: **151591** Analysis Date: **09/13/2011** Seq No: **4286774**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,2-Dichloroethane	BRL	1.0	0	0	0	0	0	0	0	0	
Benzene	BRL	1.0	0	0	0	0	0	0	0	0	
Ethylbenzene	BRL	1.0	0	0	0	0	0	0	0	0	
Methyl tert-butyl ether	BRL	1.0	0	0	0	0	0	0	0	0	
Naphthalene	BRL	5.0	0	0	0	0	0	0	0	0	
Toluene	BRL	1.0	0	0	0	0	0	0	0	0	
Xylenes, Total	BRL	1.0	0	0	0	0	0	0	0	0	
Surr: 4-Bromofluorobenzene	44.81	0	50	0	89.6	64.7	130	0	0	0	
Surr: Dibromofluoromethane	46.66	0	50	0	93.3	80.7	129	0	0	0	
Surr: Toluene-d8	46.67	0	50	0	93.3	71.1	120	0	0	0	

Sample ID: **MB-151591** Client ID: Units: **ug/L** Prep Date: **09/13/2011** Run No: **205073**
SampleType: **MBLK** TestCode: **Oxygenates (AES SOP OA-11010) SW8260B** BatchID: **151591** Analysis Date: **09/13/2011** Seq No: **4286949**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
3,3-Dimethyl-1-butanol	BRL	100	0	0	0	0	0	0	0	0	
Ethanol	BRL	100	0	0	0	0	0	0	0	0	
Ethyl tert-butyl ether	BRL	100	0	0	0	0	0	0	0	0	
Isopropyl ether	BRL	10	0	0	0	0	0	0	0	0	
tert-Amyl alcohol	BRL	100	0	0	0	0	0	0	0	0	
tert-Amyl methyl ether	BRL	10	0	0	0	0	0	0	0	0	
tert-Butyl Alcohol	BRL	100	0	0	0	0	0	0	0	0	
tert-Butyl formate	BRL	100	0	0	0	0	0	0	0	0	

Sample ID: **LCS-151591** Client ID: Units: **ug/L** Prep Date: **09/13/2011** Run No: **205073**
SampleType: **LCS** TestCode: **Volatile Organic Compounds by GC/MS SW8260B** BatchID: **151591** Analysis Date: **09/13/2011** Seq No: **4286773**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Crawford Environmental Services
Project Name: Vacant Lot (GWS)
Workorder: 1109903

ANALYTICAL QC SUMMARY REPORT

BatchID: 151591

Sample ID: **LCS-151591**	Client ID:		Units: **ug/L**	Prep Date: **09/13/2011**	Run No: **205073**
SampleType: **LCS**	TestCode: **Volatile Organic Compounds by GC/MS SW8260B**		BatchID: **151591**	Analysis Date: **09/13/2011**	Seq No: **4286773**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Benzene	46.59	1.0	50	0	93.2	70	130	0	0	0	
Toluene	45.50	1.0	50	0	91	70	130	0	0	0	
Surr: 4-Bromofluorobenzene	46.82	0	50	0	93.6	64.7	130	0	0	0	
Surr: Dibromofluoromethane	54.03	0	50	0	108	80.7	129	0	0	0	
Surr: Toluene-d8	45.79	0	50	0	91.6	71.1	120	0	0	0	

Sample ID: **LCS-151591**	Client ID:		Units: **ug/L**	Prep Date: **09/13/2011**	Run No: **205073**
SampleType: **LCS**	TestCode: **Oxygenates (AES SOP OA-11010) SW8260B**		BatchID: **151591**	Analysis Date: **09/13/2011**	Seq No: **4286948**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
3,3-Dimethyl-1-butanol	2441	100	2000	0	122	70	130	0	0	0	
Ethanol	1741	100	2000	0	87	70	130	0	0	0	
Ethyl tert-butyl ether	377.8	100	400	0	94.4	70	130	0	0	0	
Isopropyl ether	357.6	10	400	0	89.4	70	130	0	0	0	
tert-Amyl alcohol	2127	100	2000	0	106	70	130	0	0	0	
tert-Amyl methyl ether	399.7	10	400	0	99.9	70	130	0	0	0	
tert-Butyl Alcohol	1463	100	2000	0	73.1	70	130	0	0	0	
tert-Butyl formate	1875	100	2000	0	93.7	70	130	0	0	0	

Sample ID: **1109352-006AMS**	Client ID:		Units: **ug/L**	Prep Date: **09/13/2011**	Run No: **205133**
SampleType: **MS**	TestCode: **Volatile Organic Compounds by GC/MS SW8260B**		BatchID: **151591**	Analysis Date: **09/14/2011**	Seq No: **4287364**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Benzene	44.92	1.0	50	0	89.8	62.2	143	0	0	0	
Toluene	44.06	1.0	50	0	88.1	57.8	149	0	0	0	
Surr: 4-Bromofluorobenzene	44.70	0	50	0	89.4	64.7	130	0	0	0	
Surr: Dibromofluoromethane	51.27	0	50	0	103	80.7	129	0	0	0	
Surr: Toluene-d8	45.49	0	50	0	91	71.1	120	0	0	0	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Crawford Environmental Services
Project Name: Vacant Lot (GWS)
Workorder: 1109903

ANALYTICAL QC SUMMARY REPORT

BatchID: 151591

Sample ID: **1109352-006AMS** Client ID:
SampleType: **MS** TestCode: **Oxygenates (AES SOP OA-11010) SW8260B**
Units: **ug/L** Prep Date: **09/13/2011** Run No: **205133**
BatchID: **151591** Analysis Date: **09/14/2011** Seq No: **4287442**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
3,3-Dimethyl-1-butanol	2521	100	2000	0	126	44.9	165	0	0	0	
Ethanol	2745	100	2000	0	137	43.4	147	0	0	0	
Ethyl tert-butyl ether	370.8	100	400	0	92.7	64.1	150	0	0	0	
Isopropyl ether	351.2	10	400	0	87.8	59.6	152	0	0	0	
tert-Amyl alcohol	2421	100	2000	0	121	44.6	163	0	0	0	
tert-Amyl methyl ether	395.4	10	400	0	98.9	68.2	144	0	0	0	
tert-Butyl Alcohol	1925	100	2000	0	96.3	42.4	188	0	0	0	
tert-Butyl formate	1381	100	2000	0	69.1	26.3	149	0	0	0	

Sample ID: **1109352-006AMSD** Client ID:
SampleType: **MSD** TestCode: **Volatile Organic Compounds by GC/MS SW8260B**
Units: **ug/L** Prep Date: **09/13/2011** Run No: **205133**
BatchID: **151591** Analysis Date: **09/14/2011** Seq No: **4287366**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Benzene	40.67	1.0	50	0	81.3	62.2	143	44.92	9.93	20	
Toluene	43.48	1.0	50	0	87	57.8	149	44.06	1.33	20	
Surr: 4-Bromofluorobenzene	45.85	0	50	0	91.7	64.7	130	44.70	0	0	
Surr: Dibromofluoromethane	50.23	0	50	0	100	80.7	129	51.27	0	0	
Surr: Toluene-d8	45.75	0	50	0	91.5	71.1	120	45.49	0	0	

Sample ID: **1109352-006AMSD** Client ID:
SampleType: **MSD** TestCode: **Oxygenates (AES SOP OA-11010) SW8260B**
Units: **ug/L** Prep Date: **09/13/2011** Run No: **205133**
BatchID: **151591** Analysis Date: **09/14/2011** Seq No: **4287443**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
3,3-Dimethyl-1-butanol	2600	100	2000	0	130	44.9	165	2521	3.09	19.5	
Ethanol	2835	100	2000	0	142	43.4	147	2745	3.22	35.6	
Ethyl tert-butyl ether	377.6	100	400	0	94.4	64.1	150	370.8	1.82	17.2	
Isopropyl ether	353.3	10	400	0	88.3	59.6	152	351.2	0.588	17.6	
tert-Amyl alcohol	2528	100	2000	0	126	44.6	163	2421	4.31	22.2	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Crawford Environmental Services
Project Name: Vacant Lot (GWS)
Workorder: 1109903

ANALYTICAL QC SUMMARY REPORT

BatchID: 151591

Sample ID: **1109352-006AMSD** Client ID: Units: **ug/L** Prep Date: **09/13/2011** Run No: **205133**
SampleType: **MSD** TestCode: **Oxygenates (AES SOP OA-11010) SW8260B** BatchID: **151591** Analysis Date: **09/14/2011** Seq No: **4287443**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
tert-Amyl methyl ether	399.0	10	400	0	99.8	68.2	144	395.4	0.914	16.6	
tert-Butyl Alcohol	2076	100	2000	0	104	42.4	188	1925	7.52	37.7	
tert-Butyl formate	1100	100	2000	0	55	26.3	149	1381	22.7	55.8	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Crawford Environmental Services
Project Name: Vacant Lot (GWS)
Workorder: 1109903

ANALYTICAL QC SUMMARY REPORT

BatchID: 151606

Sample ID: **MB-151606**	Client ID:			Units: **ug/L**		Prep Date: **09/14/2011**		Run No: **205281**	
SampleType: **MBLK**	TestCode: **MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011**			BatchID: **151606**		Analysis Date: **09/14/2011**		Seq No: **4290775**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,2-Dibromoethane	BRL	0.020	0	0	0	0	0	0	0	0	
Surr: 4-Bromofluorobenzene	5.625	0	5	0	112	66.9	137	0	0	0	

Sample ID: **LCS-151606**	Client ID:			Units: **ug/L**		Prep Date: **09/14/2011**		Run No: **205281**	
SampleType: **LCS**	TestCode: **MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011**			BatchID: **151606**		Analysis Date: **09/14/2011**		Seq No: **4290776**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,2-Dibromoethane	0.08900	0.020	0.1	0	89	60	140	0	0	0	
Surr: 4-Bromofluorobenzene	5.476	0	5	0	110	66.9	137	0	0	0	

Sample ID: **LCSD-151606**	Client ID:			Units: **ug/L**		Prep Date: **09/14/2011**		Run No: **205281**	
SampleType: **LCSD**	TestCode: **MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011**			BatchID: **151606**		Analysis Date: **09/14/2011**		Seq No: **4290777**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,2-Dibromoethane	0.09000	0.020	0.1	0	90	60	140	0.08900	1.12	30	
Surr: 4-Bromofluorobenzene	5.495	0	5	0	110	66.9	137	5.476	0	0	

Sample ID: **1109893-014BMS**	Client ID:			Units: **ug/L**		Prep Date: **09/14/2011**		Run No: **205281**	
SampleType: **MS**	TestCode: **MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011**			BatchID: **151606**		Analysis Date: **09/15/2011**		Seq No: **4290782**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,2-Dibromoethane	0.09299	0.021	0.1045	0	89	59.1	134	0	0	0	
Surr: 4-Bromofluorobenzene	5.120	0	5.224	0	98	66.9	137	0	0	0	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Crawford Environmental Services
Project Name: Vacant Lot (GWS)
Workorder: 1109903

ANALYTICAL QC SUMMARY REPORT

BatchID: 151608

Sample ID: **MB-151608**	Client ID:				Units: **ug/L**		Prep Date: **09/14/2011**		Run No: **205267**
SampleType: **MBLK**	TestCode: **Total Metals by ICP/MS SW6020A**				BatchID: **151608**		Analysis Date: **09/15/2011**		Seq No: **4290570**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Lead	BRL	1.00	0	0	0	0	0	0	0	0	

Sample ID: **LCS-151608**	Client ID:				Units: **ug/L**		Prep Date: **09/14/2011**		Run No: **205267**
SampleType: **LCS**	TestCode: **Total Metals by ICP/MS SW6020A**				BatchID: **151608**		Analysis Date: **09/15/2011**		Seq No: **4290567**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Lead	106.9	1.00	100	0	107	80	120	0	0	0	

Sample ID: **1109893-018CMS**	Client ID:				Units: **ug/L**		Prep Date: **09/14/2011**		Run No: **205267**
SampleType: **MS**	TestCode: **Total Metals by ICP/MS SW6020A**				BatchID: **151608**		Analysis Date: **09/15/2011**		Seq No: **4290576**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Lead	107.6	1.00	100	0	108	75	125	0	0	0	

Sample ID: **1109893-018CMSD**	Client ID:				Units: **ug/L**		Prep Date: **09/14/2011**		Run No: **205267**
SampleType: **MSD**	TestCode: **Total Metals by ICP/MS SW6020A**				BatchID: **151608**		Analysis Date: **09/15/2011**		Seq No: **4290579**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Lead	108.4	1.00	100	0	108	75	125	107.6	0.741	20	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Crawford Environmental Services
Project Name: Vacant Lot (GWS)
Workorder: 1109903

ANALYTICAL QC SUMMARY REPORT

BatchID: 151617

Sample ID: **MB-151617**	Client ID:				Units: **ug/L**		Prep Date: **09/14/2011**		Run No: **205281**	
SampleType: **MBLK**	TestCode: **MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011**				BatchID: **151617**		Analysis Date: **09/15/2011**		Seq No: **4290807**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,2-Dibromoethane	BRL	0.020	0	0	0	0	0	0	0	0	
Surr: 4-Bromofluorobenzene	5.670	0	5	0	113	66.9	137	0	0	0	

Sample ID: **LCS-151617**	Client ID:				Units: **ug/L**		Prep Date: **09/14/2011**		Run No: **205281**	
SampleType: **LCS**	TestCode: **MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011**				BatchID: **151617**		Analysis Date: **09/15/2011**		Seq No: **4290808**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,2-Dibromoethane	0.09200	0.020	0.1	0	92	60	140	0	0	0	
Surr: 4-Bromofluorobenzene	5.544	0	5	0	111	66.9	137	0	0	0	

Sample ID: **LCSD-151617**	Client ID:				Units: **ug/L**		Prep Date: **09/14/2011**		Run No: **205281**	
SampleType: **LCSD**	TestCode: **MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011**				BatchID: **151617**		Analysis Date: **09/15/2011**		Seq No: **4290810**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,2-Dibromoethane	0.09000	0.020	0.1	0	90	60	140	0.09200	2.2	30	
Surr: 4-Bromofluorobenzene	5.417	0	5	0	108	66.9	137	5.544	0	0	

Sample ID: **1109903-002BMS**	Client ID: **MW-3**				Units: **ug/L**		Prep Date: **09/14/2011**		Run No: **205281**	
SampleType: **MS**	TestCode: **MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011**				BatchID: **151617**		Analysis Date: **09/15/2011**		Seq No: **4290826**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,2-Dibromoethane	0.05364	0.021	0.1032	0	52	59.1	134	0	0	0	S
Surr: 4-Bromofluorobenzene	4.802	0	5.158	0	93.1	66.9	137	0	0	0	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Crawford Environmental Services
Project Name: Vacant Lot (GWS)
Workorder: 1109903

ANALYTICAL QC SUMMARY REPORT

BatchID: 151655

Sample ID: **MB-151655**	Client ID:				Units: **ug/L**		Prep Date: **09/15/2011**		Run No: **205195**	
SampleType: **MBLK**	TestCode: **Volatile Organic Compounds by GC/MS SW8260B**				BatchID: **151655**		Analysis Date: **09/15/2011**		Seq No: **4288788**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit Qual
1,2-Dichloroethane	BRL	1.0	0	0	0	0	0	0	0	0
Benzene	BRL	1.0	0	0	0	0	0	0	0	0
Ethylbenzene	BRL	1.0	0	0	0	0	0	0	0	0
Methyl tert-butyl ether	BRL	1.0	0	0	0	0	0	0	0	0
Naphthalene	BRL	5.0	0	0	0	0	0	0	0	0
Toluene	BRL	1.0	0	0	0	0	0	0	0	0
Xylenes, Total	BRL	1.0	0	0	0	0	0	0	0	0
Surr: 4-Bromofluorobenzene	44.15	0	50	0	88.3	64.7	130	0	0	0
Surr: Dibromofluoromethane	49.42	0	50	0	98.8	80.7	129	0	0	0
Surr: Toluene-d8	48.52	0	50	0	97	71.1	120	0	0	0

Sample ID: **MB-151655**	Client ID:				Units: **ug/L**		Prep Date: **09/15/2011**		Run No: **205195**	
SampleType: **MBLK**	TestCode: **Oxygenates (AES SOP OA-11010) SW8260B**				BatchID: **151655**		Analysis Date: **09/15/2011**		Seq No: **4289038**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit Qual
3,3-Dimethyl-1-butanol	BRL	100	0	0	0	0	0	0	0	0
Ethanol	BRL	100	0	0	0	0	0	0	0	0
Ethyl tert-butyl ether	BRL	100	0	0	0	0	0	0	0	0
Isopropyl ether	BRL	10	0	0	0	0	0	0	0	0
tert-Amyl alcohol	BRL	100	0	0	0	0	0	0	0	0
tert-Amyl methyl ether	BRL	10	0	0	0	0	0	0	0	0
tert-Butyl Alcohol	BRL	100	0	0	0	0	0	0	0	0
tert-Butyl formate	BRL	100	0	0	0	0	0	0	0	0

Sample ID: **LCS-151655**	Client ID:				Units: **ug/L**		Prep Date: **09/15/2011**		Run No: **205195**	
SampleType: **LCS**	TestCode: **Volatile Organic Compounds by GC/MS SW8260B**				BatchID: **151655**		Analysis Date: **09/15/2011**		Seq No: **4288783**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit Qual

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Crawford Environmental Services
Project Name: Vacant Lot (GWS)
Workorder: 1109903

ANALYTICAL QC SUMMARY REPORT

BatchID: 151655

Sample ID: **LCS-151655** Client ID:
SampleType: **LCS** TestCode: **Volatile Organic Compounds by GC/MS SW8260B**
Units: **ug/L** Prep Date: **09/15/2011** Run No: **205195**
BatchID: **151655** Analysis Date: **09/15/2011** Seq No: **4288783**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Benzene	45.15	1.0	50	0	90.3	70	130	0	0	0	
Toluene	44.71	1.0	50	0	89.4	70	130	0	0	0	
Surr: 4-Bromofluorobenzene	44.37	0	50	0	88.7	64.7	130	0	0	0	
Surr: Dibromofluoromethane	51.56	0	50	0	103	80.7	129	0	0	0	
Surr: Toluene-d8	46.37	0	50	0	92.7	71.1	120	0	0	0	

Sample ID: **LCS-151655** Client ID:
SampleType: **LCS** TestCode: **Oxygenates (AES SOP OA-11010) SW8260B**
Units: **ug/L** Prep Date: **09/15/2011** Run No: **205195**
BatchID: **151655** Analysis Date: **09/15/2011** Seq No: **4289036**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
3,3-Dimethyl-1-butanol	2316	100	2000	0	116	70	130	0	0	0	
Ethanol	2324	100	2000	0	116	70	130	0	0	0	
Ethyl tert-butyl ether	324.6	100	400	0	81.2	70	130	0	0	0	
Isopropyl ether	306.6	10	400	0	76.7	70	130	0	0	0	
tert-Amyl alcohol	2179	100	2000	0	109	70	130	0	0	0	
tert-Amyl methyl ether	342.0	10	400	0	85.5	70	130	0	0	0	
tert-Butyl Alcohol	1551	100	2000	0	77.5	70	130	0	0	0	
tert-Butyl formate	1618	100	2000	0	80.9	70	130	0	0	0	

Sample ID: **1109903-005AMS** Client ID: **MW-6**
SampleType: **MS** TestCode: **Volatile Organic Compounds by GC/MS SW8260B**
Units: **ug/L** Prep Date: **09/15/2011** Run No: **205195**
BatchID: **151655** Analysis Date: **09/15/2011** Seq No: **4288826**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Benzene	48020	1000	50000	0	96	62.2	143	0	0	0	
Toluene	47440	1000	50000	0	94.9	57.8	149	0	0	0	
Surr: 4-Bromofluorobenzene	45170	0	50000	0	90.3	64.7	130	0	0	0	
Surr: Dibromofluoromethane	53340	0	50000	0	107	80.7	129	0	0	0	
Surr: Toluene-d8	47560	0	50000	0	95.1	71.1	120	0	0	0	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Crawford Environmental Services
Project Name: Vacant Lot (GWS)
Workorder: 1109903

ANALYTICAL QC SUMMARY REPORT

BatchID: 151655

Sample ID: **1109903-005AMS** Client ID: **MW-6** Units: **ug/L** Prep Date: **09/15/2011** Run No: **205195**
SampleType: **MS** TestCode: **Oxygenates (AES SOP OA-11010) SW8260B** BatchID: **151655** Analysis Date: **09/15/2011** Seq No: **4289044**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
3,3-Dimethyl-1-butanol	1199000	100000	1000000	0	120	44.9	165	0	0	0	
Ethanol	948200	100000	1000000	0	94.8	43.4	147	0	0	0	
Ethyl tert-butyl ether	181200	100000	200000	0	90.6	64.1	150	0	0	0	
Isopropyl ether	180800	10000	200000	0	90.4	59.6	152	0	0	0	
tert-Amyl alcohol	1124000	100000	1000000	0	112	44.6	163	0	0	0	
tert-Amyl methyl ether	188500	10000	200000	0	94.3	68.2	144	0	0	0	
tert-Butyl Alcohol	833400	100000	1000000	0	83.3	42.4	188	0	0	0	
tert-Butyl formate	888400	100000	1000000	0	88.8	26.3	149	0	0	0	

Sample ID: **1109903-005AMSD** Client ID: **MW-6** Units: **ug/L** Prep Date: **09/15/2011** Run No: **205195**
SampleType: **MSD** TestCode: **Volatile Organic Compounds by GC/MS SW8260B** BatchID: **151655** Analysis Date: **09/15/2011** Seq No: **4288829**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Benzene	45920	1000	50000	0	91.8	62.2	143	48020	4.47	20	
Toluene	45140	1000	50000	0	90.3	57.8	149	47440	4.97	20	
Surr: 4-Bromofluorobenzene	46050	0	50000	0	92.1	64.7	130	45170	0	0	
Surr: Dibromofluoromethane	52510	0	50000	0	105	80.7	129	53340	0	0	
Surr: Toluene-d8	46400	0	50000	0	92.8	71.1	120	47560	0	0	

Sample ID: **1109903-005AMSD** Client ID: **MW-6** Units: **ug/L** Prep Date: **09/15/2011** Run No: **205195**
SampleType: **MSD** TestCode: **Oxygenates (AES SOP OA-11010) SW8260B** BatchID: **151655** Analysis Date: **09/15/2011** Seq No: **4289061**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
3,3-Dimethyl-1-butanol	1130000	100000	1000000	0	113	44.9	165	1199000	5.96	19.5	
Ethanol	975600	100000	1000000	0	97.6	43.4	147	948200	2.84	35.6	
Ethyl tert-butyl ether	167900	100000	200000	0	84	64.1	150	181200	7.61	17.2	
Isopropyl ether	166500	10000	200000	0	83.2	59.6	152	180800	8.25	17.6	
tert-Amyl alcohol	1046000	100000	1000000	0	105	44.6	163	1124000	7.21	22.2	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Crawford Environmental Services
Project Name: Vacant Lot (GWS)
Workorder: 1109903

ANALYTICAL QC SUMMARY REPORT

BatchID: 151655

Sample ID: **1109903-005AMSD** Client ID: **MW-6** Units: **ug/L** Prep Date: **09/15/2011** Run No: **205195**
SampleType: **MSD** TestCode: **Oxygenates (AES SOP OA-11010) SW8260B** BatchID: **151655** Analysis Date: **09/15/2011** Seq No: **4289061**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
tert-Amyl methyl ether	174700	10000	200000	0	87.4	68.2	144	188500	7.6	16.6	
tert-Butyl Alcohol	808800	100000	1000000	0	80.9	42.4	188	833400	3	37.7	
tert-Butyl formate	789100	100000	1000000	0	78.9	26.3	149	888400	11.8	55.8	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Crawford Environmental Services
Project Name: Vacant Lot (GWS)
Workorder: 1109903

ANALYTICAL QC SUMMARY REPORT

BatchID: 151685

Sample ID: **MB-151685**	Client ID:					Units: **ug/L**		Prep Date: **09/16/2011**		Run No: **205354**
SampleType: **MBLK**	TestCode: **Total Metals by ICP/MS**	**SW6020A**				BatchID: **151685**		Analysis Date: **09/16/2011**		Seq No: **4292374**
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit Qual
Lead	BRL	1.00	0	0	0	0	0	0	0	0

Sample ID: **LCS-151685**	Client ID:					Units: **ug/L**		Prep Date: **09/16/2011**		Run No: **205354**
SampleType: **LCS**	TestCode: **Total Metals by ICP/MS**	**SW6020A**				BatchID: **151685**		Analysis Date: **09/16/2011**		Seq No: **4292372**
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit Qual
Lead	103.3	1.00	100	0	103	80	120	0	0	0

Sample ID: **1109922-001CMS**	Client ID:					Units: **ug/L**		Prep Date: **09/16/2011**		Run No: **205354**
SampleType: **MS**	TestCode: **Total Metals by ICP/MS**	**SW6020A**				BatchID: **151685**		Analysis Date: **09/16/2011**		Seq No: **4292377**
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit Qual
Lead	105.8	1.00	100	2.353	103	75	125	0	0	0

Sample ID: **1109922-001CMSD**	Client ID:					Units: **ug/L**		Prep Date: **09/16/2011**		Run No: **205354**
SampleType: **MSD**	TestCode: **Total Metals by ICP/MS**	**SW6020A**				BatchID: **151685**		Analysis Date: **09/16/2011**		Seq No: **4292379**
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit Qual
Lead	105.2	1.00	100	2.353	103	75	125	105.8	0.569	20

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Crawford Environmental Services
Project Name: Vacant Lot (GWS)
Workorder: 1109903

ANALYTICAL QC SUMMARY REPORT

BatchID: 151705

Sample ID: **MB-151705** Client ID:
SampleType: **MBLK** TestCode: **Volatile Organic Compounds by GC/MS SW8260B**
Units: **ug/L** Prep Date: **09/16/2011** Run No: **205303**
BatchID: **151705** Analysis Date: **09/16/2011** Seq No: **4291208**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,2-Dichloroethane	BRL	1.0	0	0	0	0	0	0	0	0	
Benzene	BRL	1.0	0	0	0	0	0	0	0	0	
Ethylbenzene	BRL	1.0	0	0	0	0	0	0	0	0	
Methyl tert-butyl ether	BRL	1.0	0	0	0	0	0	0	0	0	
Naphthalene	BRL	5.0	0	0	0	0	0	0	0	0	
Toluene	BRL	1.0	0	0	0	0	0	0	0	0	
Xylenes, Total	BRL	1.0	0	0	0	0	0	0	0	0	
Surr: 4-Bromofluorobenzene	44.07	0	50	0	88.1	64.7	130	0	0	0	
Surr: Dibromofluoromethane	47.94	0	50	0	95.9	80.7	129	0	0	0	
Surr: Toluene-d8	46.90	0	50	0	93.8	71.1	120	0	0	0	

Sample ID: **MB-151705** Client ID:
SampleType: **MBLK** TestCode: **Oxygenates (AES SOP OA-11010) SW8260B**
Units: **ug/L** Prep Date: **09/16/2011** Run No: **205303**
BatchID: **151705** Analysis Date: **09/16/2011** Seq No: **4291361**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
3,3-Dimethyl-1-butanol	BRL	100	0	0	0	0	0	0	0	0	
Ethanol	BRL	100	0	0	0	0	0	0	0	0	
Ethyl tert-butyl ether	BRL	100	0	0	0	0	0	0	0	0	
Isopropyl ether	BRL	10	0	0	0	0	0	0	0	0	
tert-Amyl alcohol	BRL	100	0	0	0	0	0	0	0	0	
tert-Amyl methyl ether	BRL	10	0	0	0	0	0	0	0	0	
tert-Butyl Alcohol	BRL	100	0	0	0	0	0	0	0	0	
tert-Butyl formate	BRL	100	0	0	0	0	0	0	0	0	

Sample ID: **LCS-151705** Client ID:
SampleType: **LCS** TestCode: **Volatile Organic Compounds by GC/MS SW8260B**
Units: **ug/L** Prep Date: **09/16/2011** Run No: **205303**
BatchID: **151705** Analysis Date: **09/16/2011** Seq No: **4291207**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Analytical Environmental Services, Inc

Date: 26-Sep-11

Client: Crawford Environmental Services
Project Name: Vacant Lot (GWS)
Workorder: 1109903

ANALYTICAL QC SUMMARY REPORT

BatchID: 151705

Sample ID: **LCS-151705** Client ID:
SampleType: **LCS** TestCode: **Volatile Organic Compounds by GC/MS SW8260B**
Units: **ug/L** Prep Date: **09/16/2011** Run No: **205303**
BatchID: **151705** Analysis Date: **09/16/2011** Seq No: **4291207**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Benzene	44.09	1.0	50	0	88.2	70	130	0	0	0	
Toluene	44.30	1.0	50	0	88.6	70	130	0	0	0	
Surr: 4-Bromofluorobenzene	45.23	0	50	0	90.5	64.7	130	0	0	0	
Surr: Dibromofluoromethane	50.48	0	50	0	101	80.7	129	0	0	0	
Surr: Toluene-d8	45.66	0	50	0	91.3	71.1	120	0	0	0	

Sample ID: **LCS-151705** Client ID:
SampleType: **LCS** TestCode: **Oxygenates (AES SOP OA-11010) SW8260B**
Units: **ug/L** Prep Date: **09/16/2011** Run No: **205303**
BatchID: **151705** Analysis Date: **09/16/2011** Seq No: **4291359**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
3,3-Dimethyl-1-butanol	1279	100	1000	0	128	70	130	0	0	0	
Ethanol	802.9	100	1000	0	80.3	70	130	0	0	0	
Ethyl tert-butyl ether	189.8	100	200	0	94.9	70	130	0	0	0	
Isopropyl ether	181.8	10	200	0	90.9	70	130	0	0	0	
tert-Amyl alcohol	1185	100	1000	0	118	70	130	0	0	0	
tert-Amyl methyl ether	197.4	10	200	0	98.7	70	130	0	0	0	
tert-Butyl Alcohol	962.1	100	1000	0	96.2	70	130	0	0	0	
tert-Butyl formate	735.2	100	1000	0	73.5	70	130	0	0	0	

Sample ID: **1109899-008AMS** Client ID:
SampleType: **MS** TestCode: **Volatile Organic Compounds by GC/MS SW8260B**
Units: **ug/L** Prep Date: **09/16/2011** Run No: **205303**
BatchID: **151705** Analysis Date: **09/16/2011** Seq No: **4291268**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Benzene	43.63	1.0	50	0	87.3	62.2	143	0	0	0	
Toluene	44.28	1.0	50	0.7300	87.1	57.8	149	0	0	0	
Surr: 4-Bromofluorobenzene	45.05	0	50	0	90.1	64.7	130	0	0	0	
Surr: Dibromofluoromethane	50.23	0	50	0	100	80.7	129	0	0	0	
Surr: Toluene-d8	45.86	0	50	0	91.7	71.1	120	0	0	0	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Crawford Environmental Services
Project Name: Vacant Lot (GWS)
Workorder: 1109903

ANALYTICAL QC SUMMARY REPORT

BatchID: 151705

Sample ID: **1109899-008AMS** Client ID:
SampleType: **MS** TestCode: **Oxygenates (AES SOP OA-11010) SW8260B**
Units: **ug/L** Prep Date: **09/16/2011** Run No: **205303**
BatchID: **151705** Analysis Date: **09/16/2011** Seq No: **4291393**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
3,3-Dimethyl-1-butanol	1336	100	1000	0	134	44.9	165	0	0	0	
Ethanol	1658	100	1000	0	166	43.4	147	0	0	0	S
Ethyl tert-butyl ether	178.4	100	200	0	89.2	64.1	150	0	0	0	
Isopropyl ether	179.9	10	200	0	89.9	59.6	152	0	0	0	
tert-Amyl alcohol	1141	100	1000	0	114	44.6	163	0	0	0	
tert-Amyl methyl ether	187.0	10	200	0	93.5	68.2	144	0	0	0	
tert-Butyl Alcohol	966.2	100	1000	0	96.6	42.4	188	0	0	0	
tert-Butyl formate	694.8	100	1000	0	69.5	26.3	149	0	0	0	

Sample ID: **1109903-018AMS** Client ID: **DW-3**
SampleType: **MS** TestCode: **Oxygenates (AES SOP OA-11010) SW8260B**
Units: **ug/L** Prep Date: **09/16/2011** Run No: **205303**
BatchID: **151705** Analysis Date: **09/16/2011** Seq No: **4300391**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
3,3-Dimethyl-1-butanol	1336	100	1000	0	134	44.9	165	0	0	0	
Ethanol	1658	100	1000	0	166	43.4	147	0	0	0	S
Ethyl tert-butyl ether	178.4	100	200	0	89.2	64.1	150	0	0	0	
Isopropyl ether	179.9	10	200	0	89.9	59.6	152	0	0	0	
tert-Amyl alcohol	1141	100	1000	0	114	44.6	163	0	0	0	
tert-Amyl methyl ether	187.0	10	200	0	93.5	68.2	144	0	0	0	
tert-Butyl Alcohol	966.2	100	1000	0	96.6	42.4	188	0	0	0	
tert-Butyl formate	694.8	100	1000	0	69.5	26.3	149	0	0	0	

Sample ID: **1109903-018AMS** Client ID: **DW-3**
SampleType: **MS** TestCode: **Volatile Organic Compounds by GC/MS SW8260B**
Units: **ug/L** Prep Date: **09/16/2011** Run No: **205303**
BatchID: **151705** Analysis Date: **09/16/2011** Seq No: **4300445**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Benzene	43.63	1.0	50	0	87.3	62.2	143	0	0	0	
Toluene	44.28	1.0	50	0.7300	87.1	57.8	149	0	0	0	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Crawford Environmental Services
Project Name: Vacant Lot (GWS)
Workorder: 1109903

ANALYTICAL QC SUMMARY REPORT

BatchID: 151705

Sample ID: **1109903-018AMS**	Client ID: **DW-3**				Units: **ug/L**		Prep Date: **09/16/2011**		Run No: **205303**	
SampleType: **MS**	TestCode: **Volatile Organic Compounds by GC/MS SW8260B**				BatchID: **151705**		Analysis Date: **09/16/2011**		Seq No: **4300445**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Surr: 4-Bromofluorobenzene	45.05	0	50	0	90.1	64.7	130	0	0	0	
Surr: Dibromofluoromethane	50.23	0	50	0	100	80.7	129	0	0	0	
Surr: Toluene-d8	45.86	0	50	0	91.7	71.1	120	0	0	0	

Sample ID: **1109899-008AMSD**	Client ID:				Units: **ug/L**		Prep Date: **09/16/2011**		Run No: **205303**	
SampleType: **MSD**	TestCode: **Volatile Organic Compounds by GC/MS SW8260B**				BatchID: **151705**		Analysis Date: **09/16/2011**		Seq No: **4291301**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Benzene	42.86	1.0	50	0	85.7	62.2	143	43.63	1.78	20	
Toluene	42.62	1.0	50	0.7300	83.8	57.8	149	44.28	3.82	20	
Surr: 4-Bromofluorobenzene	45.90	0	50	0	91.8	64.7	130	45.05	0	0	
Surr: Dibromofluoromethane	52.20	0	50	0	104	80.7	129	50.23	0	0	
Surr: Toluene-d8	45.98	0	50	0	92	71.1	120	45.86	0	0	

Sample ID: **1109899-008AMSD**	Client ID:				Units: **ug/L**		Prep Date: **09/16/2011**		Run No: **205303**	
SampleType: **MSD**	TestCode: **Oxygenates (AES SOP OA-11010) SW8260B**				BatchID: **151705**		Analysis Date: **09/16/2011**		Seq No: **4291394**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
3,3-Dimethyl-1-butanol	1326	100	1000	0	133	44.9	165	1336	0.716	19.5	
Ethanol	1853	100	1000	0	185	43.4	147	1658	11.1	35.6	S
Ethyl tert-butyl ether	179.8	100	200	0	89.9	64.1	150	178.4	0.731	17.2	
Isopropyl ether	178.1	10	200	0	89.1	59.6	152	179.9	0.994	17.6	
tert-Amyl alcohol	1174	100	1000	0	117	44.6	163	1141	2.8	22.2	
tert-Amyl methyl ether	185.7	10	200	0	92.8	68.2	144	187.0	0.735	16.6	
tert-Butyl Alcohol	991.1	100	1000	0	99.1	42.4	188	966.2	2.55	37.7	
tert-Butyl formate	687.3	100	1000	0	68.7	26.3	149	694.8	1.09	55.8	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Crawford Environmental Services
Project Name: Vacant Lot (GWS)
Workorder: 1109903

ANALYTICAL QC SUMMARY REPORT

BatchID: 151705

Sample ID: **1109903-018AMSD** Client ID: **DW-3** Units: **ug/L** Prep Date: **09/16/2011** Run No: **205303**
SampleType: **MSD** TestCode: **Oxygenates (AES SOP OA-11010) SW8260B** BatchID: **151705** Analysis Date: **09/16/2011** Seq No: **4300393**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
3,3-Dimethyl-1-butanol	1326	100	1000	0	133	44.9	165	1336	0.716	19.5	
Ethanol	1853	100	1000	0	185	43.4	147	1658	11.1	35.6	S
Ethyl tert-butyl ether	179.8	100	200	0	89.9	64.1	150	178.4	0.731	17.2	
Isopropyl ether	178.1	10	200	0	89.1	59.6	152	179.9	0.994	17.6	
tert-Amyl alcohol	1174	100	1000	0	117	44.6	163	1141	2.8	22.2	
tert-Amyl methyl ether	185.7	10	200	0	92.8	68.2	144	187.0	0.735	16.6	
tert-Butyl Alcohol	991.1	100	1000	0	99.1	42.4	188	966.2	2.55	37.7	
tert-Butyl formate	687.3	100	1000	0	68.7	26.3	149	694.8	1.09	55.8	

Sample ID: **1109903-018AMSD** Client ID: **DW-3** Units: **ug/L** Prep Date: **09/16/2011** Run No: **205303**
SampleType: **MSD** TestCode: **Volatile Organic Compounds by GC/MS SW8260B** BatchID: **151705** Analysis Date: **09/16/2011** Seq No: **4300447**

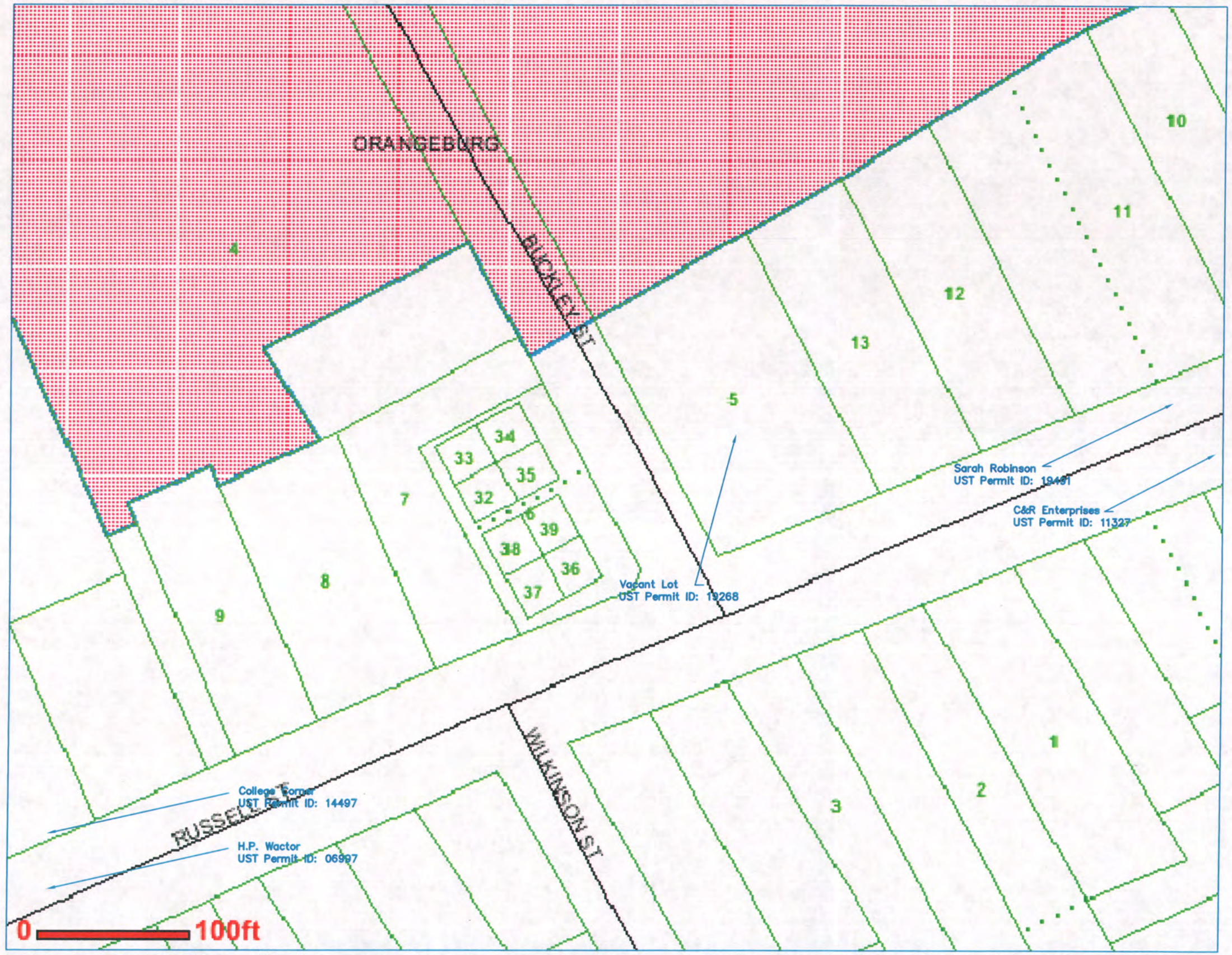
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Benzene	42.86	1.0	50	0	85.7	62.2	143	43.63	1.78	20	
Toluene	42.62	1.0	50	0.7300	83.8	57.8	149	44.28	3.82	20	
Surr: 4-Bromofluorobenzene	45.90	0	50	0	91.8	64.7	130	45.05	0	0	
Surr: Dibromofluoromethane	52.20	0	50	0	104	80.7	129	50.23	0	0	
Surr: Toluene-d8	45.98	0	50	0	92	71.1	120	45.86	0	0	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

APPENDIX C
Tax Map and Tax Map Information

CRAWFORD
ENVIRONMENTAL
SERVICES



GRAPHIC SCALE
0 25 50 100
(In Feet)
As Shown

MAC-DATE

Note: Diagram based Orangeburg County Tax records and CES Field Notes

LEGEND			

REV	BY	DATE

DR: JSR
CK: HDO
SCALE: AS SHOWN
CES PROJ. NO. 15.070

Tier II Environmental Assessment

CRAWFORD ENVIRONMENTAL SERVICES
104 Corporate Blvd.
Suite 412
West Columbia, SC 29210
803-708-0079 (ph)
803-708-8137 (Fax)

FIGURE TITLE
Tax Map
Vacant Lot
2309 Russell Street
Orangeburg, SC 29115
Site ID: 19268

DRAWING NUMBER
REV 0
9.23.2011

Appendix C			
Facility Name:	Vacant Lot	UST Permit ID:	19268
Address:	2309 Russell Street Orangeburg, SC 29115	CES Project Number:	15.07

Local UST, AST, Dry Cleaning Facilities

Permit ID:	Name	Address	City	Owner	Notes
19491	Sarah Robinson	2437 Russell Street	Orangeburg	JJ&J Enterprises	No release
11327	C&R Enterprises	2387 Russell Street	Orangeburg	C&R Enterprises	Class 5B
14497	College Corner	1186 Magnolia Street	Orangeburg	Willie Jennings	Class 1C
6997	H.P. Wactor	Dorchester and Russell St.	Orangeburg	Wilkerson Fuel Co.	No release

Local information based on SCDHEC UST registry

CRAWFORD ENVIRONMENTAL SERVICES

Facility Name:	Vacant Lot	UST Permit ID:	19268
Address:	2309 Russell Street Orangeburg, SC 29115	CES Project Number:	15.07

Tax Map Reference

Tax Map Number	Owner	Mailing Address	City	State	Zip Code	Phone Number	Monitoring Well Permission	Notes
0173-11-04-005	Wright, Bernie Lee	P.O. Box 275	Orangeburg	SC	29115	803-378-7071	Yes	
	MW-1, MW-2 ,MW-3, MW-4, MW-15, DW-1							
0173-11-10-006	Delano, Scott H	717 Partridge Road	Orangeburg	SC	29118	803-347-7085	Yes	
	MW-10, MW-11, MW-12							
0173-11-10-007	Bethea, Robert	1219 Russell Street NE	Orangeburg	SC	29118	803-378-6347	Yes	
	MW-16, MW-7							
192-04-05-001	SC State University	300 College Ave	Orangeburg	SC	29115	803-536-7000	Yes	
	MW-8, MW-9, MW-14, DW-2							
0173-12-18-013	Abraham, James C	2721 Russell St	Orangeburg	SC	29115	803-534-5039	Yes	
	MW-5, MW-6, MW-13, DW-3							
0173-11-08-001	Estate of Frost Wilkinson	2272 Russell St	Orangeburg	SC	29115	n/a	No	
0173-11-08-002	Thomas, Veronica	P.O. Box 1099	Santee	SC	29142	n/a	No	
0173-11-08-003	Thomasson, Carmen	2280 Russell St SE	Orangeburg	SC	29115	n/a	No	
0173-11-08-004	Thomasson, Carmen	2280 Russell St SE	Orangeburg	SC	29115	n/a	No	
0173-16-02-002	Sulton, Ruby	P.O. Box 146	Linecroft	NJ	7738	n/a	No	

CRAWFORD ENVIRONMENTAL SERVICES

DDW= Drinking Water Well
NIU- Not in use
UNK= Unknown
P = Public
p = private

APPENDIX D

Soil Boring, Field Screening and Monitoring Well Geologist Logs

CRAWFORD
ENVIRONMENTAL
SERVICES

Boring ID:	GW-10/MW-5	Vacant Lot	CRAWFORD ENVIRONMENTAL SERVICES
CES Project Number:	15.07	2309 Russell Street, Orangeburg, SC	*Boring Log*
Date Started	8/26/2011		
Date Completed	8/26/2011		
Drilled by:	B. Ewing	**PERMIT ID: 19268**	

Depth (feet)	Sample Depth (feet)	PID (ppm)	Water Table (shaded)	Geologic Description	Depth (feet)
1				Brown silty fine SAND	1
2					2
3		0.0		Gray to tan clayey fine SAND	3
4					4
5					5
6					6
7		0.0			7
8			GW @ 8ft		8
9					9
10				Red to orange fine sandy CLAY	10
11					11
12				Total Drilled Depth @ 12 ft bls	12
13					13
14					14
15					15
16					16
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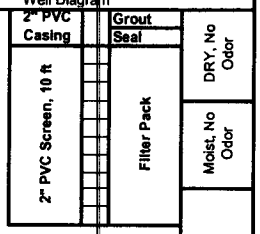
Well Diagram



Boring ID: GW-11/MW-6	Vacant Lot	CRAWFORD ENVIRONMENTAL SERVICES	*Boring Log*
CES Project Number: 15.07			
Date Started 8/26/2011	2309 Russell Street, Orangeburg, SC		
Date Completed 8/26/2011			
Drilled by: B. Ewing	**PERMIT ID: 19268**		

Depth (feet)	Sample Depth (feet)	PID (ppm)	Water Table (shaded)	Geologic Description	Depth (feet)
1				Black silty fine SAND	1
2					2
3		0.0		Gray clayey fine SAND	3
4					4
5				Gray to tan clayey fine SAND	5
6					6
7					7
8		0.5	GW @ 8ft	Red to orange fine sandy CLAY	8
9					9
10					10
11					11
12				Total Drilled Depth @ 12 ft bls	12
13					13
14					14
15					15
16					16
17					17
18					18
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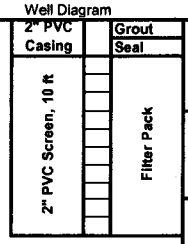
Well Diagram



Boring ID:	GW-12/MW-7	Vacant Lot	CRAWFORD ENVIRONMENTAL SERVICES
CES Project Number:	15.07	2309 Russell Street, Orangeburg, SC	*Boring Log*
Date Started	8/26/2011		
Date Completed	8/26/2011		
Drilled by:	B. Ewing	**PERMIT ID: 19268**	

Depth (feet)	Sample Depth (feet)	PID (ppm)	Water Table (shaded)	Geologic Description	Depth (feet)
1				Gray to tan silty fine SAND	1
2					2
3		0.0		Gray clayey fine SAND	3
4					4
5				Gray fine sandy CLAY	5
6			GW @ 6ft		6
7					7
8		0.0			8
9					9
10				Tan fine sandy CLAY	10
11					11
12				Total Drilled Depth @ 12 ft bls	12
13					13
14					14
15					15
16					16
17					17
18					18
19					19
20					20
21					21
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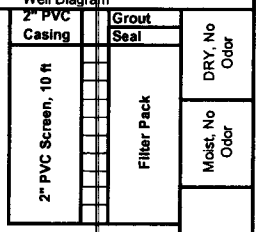
Well Diagram



Boring ID: GW-13/MW-8	Vacant Lot	CRAWFORD ENVIRONMENTAL SERVICES	*Boring Log*
CES Project Number: 15.07			
Date Started 8/26/2011	2309 Russell Street, Orangeburg, SC		
Date Completed 8/26/2011			
Drilled by: B. Ewing	**PERMIT ID: 19268**		

Depth (feet)	Sample Depth (feet)	PID (ppm)	Water Table (shaded)	Geologic Description	Depth (feet)
1				Brown clayey fine SAND	1
2					2
3		0.0			3
4					4
5				Tan silty fine SAND	5
6					6
7					7
8		0.5	GW @ 8ft	Gray silty fine SAND	8
9					9
10				Gray clayey fine SAND	10
11					11
12				Total Drilled Depth @ 12 ft bls	12
13					13
14					14
15					15
16					16
17					17
18					18
19					19
20					20
21					21
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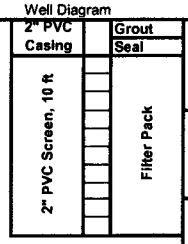
Well Diagram



DRY, No Odor

Moist, No Odor

Boring ID:	**GW-14/MW-9**	**Vacant Lot**	**CRAWFORD ENVIRONMENTAL SERVICES**
CES Project Number:	**15.07**		
Date Started	**8/26/2011**	**2309 Russell Street, Orangeburg, SC**	***Boring Log***
Date Completed	**8/26/2011**		
Drilled by:	**B. Ewing**	**PERMIT ID: 19268**	

Depth (feet)	Sample Depth (feet)	PID (ppm)	Water Table (shaded)	Geologic Description	Depth (feet)
1				Brown silty fine SAND	1
2					2
3		0.0			3
4					4
5				Tan silty fine SAND	5
6			GW @ 6ft		6
7					7
8		0.0			8
9					9
10				Gray to orange fine sandy CLAY	10
11					11
12				Total Drilled Depth @ 12 ft bls	12
13					13
14					14
15					15
16					16
17					17
18					18
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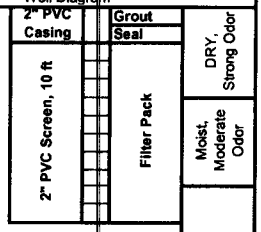
Well Diagram



Boring ID: GW-16/MW-10	**Vacant Lot**	**CRAWFORD ENVIRONMENTAL SERVICES**	***Boring Log***
CES Project Number: 15.07			
Date Started 8/26/2011	**2309 Russell Street, Orangeburg, SC**		
Date Completed 8/26/2011			
Drilled by: B. Ewing	**PERMIT ID: 19268**		

Depth (feet)	Sample Depth (feet)	PID (ppm)	Water Table (shaded)	Geologic Description	Depth (feet)
1				Tan to gray clayey fine SAND	1
2					2
3		9.7			3
4					4
5				Gray clayey fine SAND	5
6			GW @ 6ft		6
7					7
8		11.7		Orange fine sandy CLAY	8
9					9
10				Tan to orange fine sandy CLAY	10
11					11
12				Total Drilled Depth @ 12 ft bls	12
13					13
14					14
15					15
16					16
17					17
18					18
19					19
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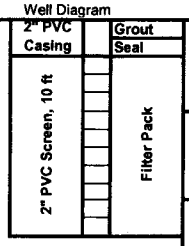
Well Diagram



Boring ID: GW-15/MW-11	**Vacant Lot**	**CRAWFORD ENVIRONMENTAL SERVICES**	***Boring Log***
CES Project Number: 15.07			
Date Started 8/26/2011	**2309 Russell Street, Orangeburg, SC**		
Date Completed 8/26/2011			
Drilled by: B. Ewing	**PERMIT ID: 19268**		

Depth (feet)	Sample Depth (feet)	PID (ppm)	Water Table (shaded)	Geologic Description	Depth (feet)
1				Tan fine sandy CLAY	1
2					2
3		0.0			3
4					4
5				Gray fine sandy CLAY	5
6			GW @ 6ft		6
7					7
8		0.0		Tan to red clayey fine SAND	8
9					9
10				Red clayey fine SAND	10
11					11
12				Total Drilled Depth @ 12 ft bls	12
13					13
14					14
15					15
16					16
17					17
18					18
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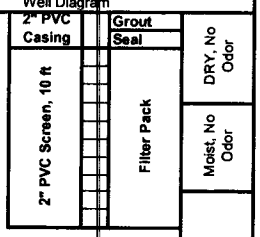
Well Diagram



Boring ID: GW-17/MW-12	Vacant Lot	CRAWFORD ENVIRONMENTAL SERVICES	*Boring Log*
CES Project Number: 15.07			
Date Started 8/26/2011	2309 Russell Street, Orangeburg, SC		
Date Completed 8/26/2011			
Drilled by: B. Ewing	**PERMIT ID: 19268**		

Depth (feet)	Sample Depth (feet)	PID (ppm)	Water Table (shaded)	Geologic Description	Depth (feet)
1				Brown silty fine SAND	1
2					2
3		0.0		Tan to orange silty fine SAND	3
4					4
5				Gray to orange silty fine SAND	5
6			GW @ 6ft		6
7					7
8		0.0		Orange fine sandy CLAY	8
9					9
10				Red to orange fine sandy CLAY	10
11					11
12				Total Drilled Depth @ 12 ft bls	12
13					13
14					14
15					15
16					16
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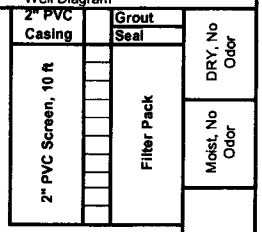
Well Diagram



Boring ID: MW-13 **CES Project Number:** 15.07 **Date Started** 9/7/2011 **Date Completed** 9/8/2011 **Drilled by:** T. Allred	**Vacant Lot** **2309 Russell Street, Orangeburg, SC** **PERMIT ID: 19268**	**CRAWFORD ENVIRONMENTAL SERVICES**	***Boring Log***

Depth (feet)	Sample Depth (feet)	PID (ppm)	Water Table (shaded)	Geologic Description	Depth (feet)
1				Gray silty fine SAND	1
2					2
3		0.3		Brown to orange clayey fine SAND	3
4					4
5					5
6					6
7		0.2			7
8			GW @ 8ft	Orange silty CLAY	8
9					9
10					10
11					11
12				Total Drilled Depth @ 12 ft bls	12
13					13
14					14
15					15
16					16
17					17
18					18
19					19
20					20
21					21
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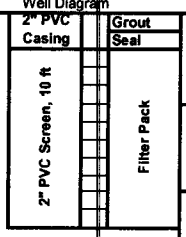
Well Diagram



Boring ID: MW-14 **CES Project Number:** 15.07 **Date Started** 9/7/2011 **Date Completed** 9/8/2011 **Drilled by:** T. Allred	**Vacant Lot** **2309 Russell Street, Orangeburg, SC** **PERMIT ID: 19268**	**CRAWFORD ENVIRONMENTAL SERVICES**	***Boring Log***

Depth (feet)	Sample Depth (feet)	PID (ppm)	Water Table (shaded)	Geologic Description	Depth (feet)
1				Brown clayey fine SAND	1
2					2
3		0.2			3
4					4
5				Orange to gray sandy CLAY	5
6					6
7		0.4			7
8			GW @ 8ft		8
9					9
10				Gray sandyClay to clayey SAND	10
11					11
12				Total Drilled Depth @ 12 ft bls	12
13					13
14					14
15					15
16					16
17					17
18					18
19					19
20					20
21					21
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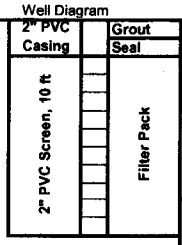
Well Diagram



DRY, No Odor

Moist, No Odor

Boring ID: MW-15 **CES Project Number:** 15.07 **Date Started** 9/8/2011 **Date Completed** 9/8/2011 **Drilled by:** T. Allred	**Vacant Lot** **2309 Russell Street, Orangeburg, SC** **PERMIT ID: 19268**	**CRAWFORD ENVIRONMENTAL SERVICES**	***Boring Log***

Depth (feet)	Sample Depth (feet)	PID (ppm)	Water Table (shaded)	Geologic Description	Depth (feet)
1				Brown silty fine SAND	1
2					2
3		2.4			3
4					4
5				Dark gray silty CLAY	5
6					6
7					7
8		3.6	GW @ 8ft		8
9					9
10				Dark gray fine sandy Clay	10
11					11
12				Total Drilled Depth @ 12 ft bls	12
13					13
14					14
15					15
16					16
17					17
18					18
19					19
20					20
21					21
22					22
23					23
24					24
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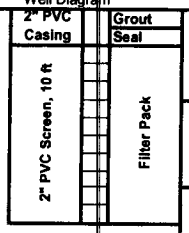
Well Diagram



DRY, Slight Odor

Moist, Moderate Odor

Boring ID:	**MW-16**	**Vacant Lot**	**CRAWFORD ENVIRONMENTAL SERVICES**
CES Project Number:	**15.07**		**Boring Log**
Date Started	**9/8/2011**	**2309 Russell Street, Orangeburg, SC**	
Date Completed	**9/8/2011**		
Drilled by:	**T. Allred**	**PERMIT ID: 19268**	

Depth (feet)	Sample Depth (feet)	PID (ppm)	Water Table (shaded)	Geologic Description	Depth (feet)
1				Brown silty fine SAND	1
2					2
3		0.8			3
4					4
5				Gray sandy CLAY	5
6					6
7					7
8		0.4	GW @ 8 ft	Red sandy Clay	8
9					9
10				Orange fine sandy Clay	10
11					11
12				Total Drilled Depth @ 12 ft bls	12
13					13
14					14
15					15
16					16
17					17
18					18
19					19
20					20
21					21
22					22
23					23
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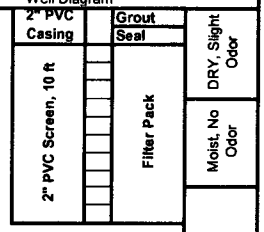
Well Diagram



DRY, Slight Odor

Moist, No Odor

Boring ID: DW-1	**Vacant Lot**	**CRAWFORD ENVIRONMENTAL SERVICES**	***Boring Log***
CES Project Number: 15.07			
Date Started 8/26/2011	**2309 Russell Street, Orangeburg, SC**		
Date Completed 8/29/2011			
Drilled by: J. Register/B. Ewing	**PERMIT ID: 19268**		

Depth (feet)	Sample Depth (feet)	PID (ppm)	Water Table (shaded)	Geologic Description	Depth (feet)
1				Brown silty fine SAND	1
2					2
3		183.0		Black silty fine SAND	3
4					4
5				Gray fine sandy CLAY	5
6					6
7					7
8		156.0	GW @ 8ft		8
9					9
10				Tan to gray fine sandy Clay	10
11					11
12					12
13		93.0			13
14					14
15				Light tan fine sandy CLAY	15
16					16
17					17
18		0.0			18
19					19
20				Tan to orange fine sandy CLAY	20
21					21
22					22
23		0.0			23
24					24
25					25
26					26
27					27
28		0.0			28
29					29
30					30
31					31
32					32
33		0.0			33
34					34
35					35
36					36
37					37
38		0.0			38
39					39
40				Total Drilled Depth @ 40 ft bls	40
41					41
42					42
43					43
44					44
45					45
46					46
47					47
48					48
49					49
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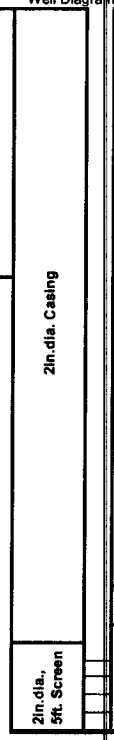
Well Diagram



DRY, Strong Odor

Moist, Strong Odor

Wet, Strong Odor

Wet, No Odor

Wet, No Odor

Wet, No Odor

Wet, No Odor

Wet, No Odor

Boring ID: DW-2	Vacant Lot	CRAWFORD ENVIRONMENTAL SERVICES	*Boring Log*
CES Project Number: 15.07			
Date Started 8/26/2011	2309 Russell Street, Orangeburg, SC		
Date Completed 8/29/2011			
Drilled by: J. Register/B. Ewing	**PERMIT ID: 19268**		

Depth (feet)	Sample Depth (feet)	PID (ppm)	Water Table (shaded)	Geologic Description	Depth (feet)
1				Brown silty fine SAND	1
2		0.0			2
3					3
4					4
5				Gray to brown fine sandy CLAY	5
6					6
7		0.0			7
8			GW @ 8ft		8
9					9
10				Gray fine sandy Clay	10
11					11
12		0.0			12
13					13
14					14
15				Orange to tan fine sandy CLAY	15
16					16
17		0.0			17
18					18
19					19
20				Tan to orange fine sandy CLAY	20
21					21
22		0.0			22
23					23
24					24
25					25
26					26
27		0.0			27
28					28
29					29
30					30
31					31
32		0.0			32
33					33
34					34
35				Total Drilled Depth @ 35 ft bls	35
36					36
37					37
38					38
39					39
40					40
41					41
42					42
43					43
44					44
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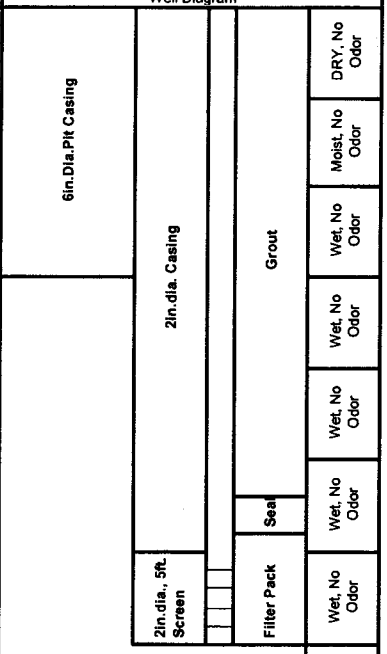
Well Diagram



Boring ID:	DW-3	Vacant Lot	CRAWFORD ENVIRONMENTAL SERVICES
CES Project Number:	15.07		
Date Started	9/7/2011	2309 Russell Street, Orangeburg, SC	*Boring Log*
Date Completed	9/8/2011		
Drilled by:	T. Allred	**PERMIT ID: 19268**	

Depth (feet)	Sample Depth (feet)	PID (ppm)	Water Table (shaded)	Geologic Description	Depth (feet)
1				Gray silty fine SAND	1
2		0.8			2
3				Brown to orange clayey fine SAND	3
4					4
5					5
6		0.4	GW @ 8ft		6
7					7
8					8
9					9
10				Orange silty CLAY	10
11		0.3			11
12					12
13					13
14					14
15					15
16		0.3			16
17					17
18					18
19					19
20					20
21		0.3			21
22					22
23					23
24					24
25					25
26		0.4			26
27					27
28					28
29				Total Drilled Depth @ 29 ft bls	29
30					30
31					31
32					32
33					33
34					34
35					35
36					36
37					37
38					38
39					39
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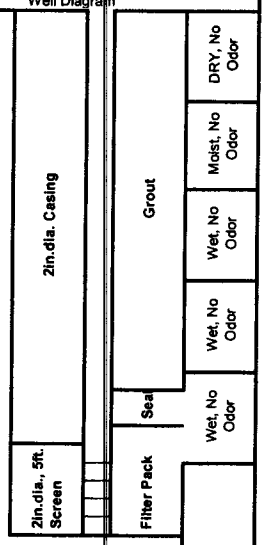


APPENDIX E
SCDHEC 1903 Forms

CRAWFORD
ENVIRONMENTAL
SERVICES

Application ID: 2824

D H E C
PROMOTE PROTECT PROSPER

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 st
City: Columbia State: SC Zip: 29201-0000
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Orangeburg
Name: Vacant Lot
Street Address: 2309 Russell Street
City: Orangeburg Zip: 29115
Latitude: 33.49741 Longitude: 80.844313

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:** N/A

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
SEE GEOLOGIST LOG		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		
5. REMARKS: MW-5 GW-6 Bentonite seal 1.5'-..5"		

6. TYPE: ☐ Mud Rotary ☐ Jetted ☒ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☒ Other

7. PERMIT NUMBER: UMW-24317 UST-19268

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 12' ft. Date Started: 8/26/11 Date Completed: 8/29/11

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2" Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2" in. to 2' ft. depth
_____ in. to _____ ft. depth
Height: Above ☐ Below ☐
Surface N/A ft.
Weight N/A lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 2"
Slot/Gauge: .010 Length: 10'
Set Between: 2' ft. and 12' ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☐ No

12. STATIC WATER LEVEL N/A ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
N/A ft. after N/A hrs. Pumping N/A G.P.M.
Pumping Test: ☐ Yes (please enclose) ☑ No
Yield: N/A

14. WATER QUALITY
Chemical Analysis ☑ Yes ☐ No Bacterial Analysis ☐ Yes ☑ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☑ No
Installed from 12' ft. to 1.5' ft.
Effective size #2 Uniformity Coefficient N/A

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☑ Bentonite/Cement ☐ Other _____
Depth: From 1.5' ft. to 0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: N/A ft. N/A direction
Type N/A
Well Disinfected ☐ Yes ☑ No Type: N/A Amount: N/A

18. PUMP: Date Installed: N/A Not Installed ☑
Mfr. Name: N/A Model No.: N/A
H.P. N/A Volts N/A Length of drop pipe ___ ft. Capacity N/A gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: Billy Ewing CERT. NO.: 1505
Address: (Print) Level: A ☐ B ☑ C ☐ D ☐ (circle one)
ARM Environmental Services
1210First St.South Ext.Columbia SC
Telephone No.: 803-783-3514 Fax No.: 803-783-2587

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: _____ Well Driller Date: 9/27/2011

If D Level Driller, provide supervising driller's name:

DHEC 1903 (07/2003) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

Application ID: 2824

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 st
City: Columbia State: SC Zip: 29201-0000
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Orangeburg
Name: Vacant Lot
Street Address: 2309 Russell Street
City: Orangeburg Zip: 29115
Latitude: 33.497163 Longitude: 80.8442

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:** N/A

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
SEE GEOLOGIST LOG		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-6 GW-11
Bentonite seal 1.5'-.5"

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other

7. PERMIT NUMBER: UMW-24317 UST-19268

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 12' ft. Date Started: 8/26/11 Date Completed: 8/29/11

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2" in. to 2' ft. depth
_____ in. to _____ ft. depth
Height: Above ☐ Below ☐
Surface N/A ft.
Weight N/A lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 2"
Slot/Gauge: .010 Length: 10'
Set Between: 2' ft. and 12' ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☐ No

12. STATIC WATER LEVEL N/A ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
N/A ft. after N/A hrs. Pumping N/A G.P.M.
Pumping Test: ☐ Yes (please enclose) ☑ No
Yield: N/A

14. WATER QUALITY
Chemical Analysis ☑ Yes ☐ No Bacterial Analysis ☐ Yes ☑ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☑ No
Installed from 12' ft. to 1.5' ft.
Effective size #2 Uniformity Coefficient N/A

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☑ Bentonite/Cement ☐ Other _____
Depth: From 1.5' ft. to 0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: N/A ft. N/A direction
Type N/A
Well Disinfected ☐ Yes ☑ No Type: N/A Amount: N/A

18. PUMP: Date Installed: N/A Not Installed ☑
Mfr. Name: N/A Model No.: N/A
H.P. N/A Volts N/A Length of drop pipe ___ ft. Capacity N/A gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: CERT. NO.: 1505
Address: (Print) Billy Ewing
ARM Environmental Services
1210 First St South Ext. Columbia SC
Level: A B C D (circle one)
Telephone No.: 803-783-3314 Fax No.: 803-783-2527

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: _____ (Well Driller) Date: 9/27/2011

If D Level Driller, provide supervising driller's name:

DHEC 1903 (07/2003) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

Application ID: 2824

DHEC
PROMOTE PROTECT PROSPER

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 st
City: Columbia State: SC Zip: 29201-0000
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Orangeburg
Name: Vacant Lot
Street Address: 2309 Russell Street
City: Orangeburg Zip: 29115
Latitude: 33.497186 Longitude: 80.844951

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:** N/A

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from ____ ft. to ____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
SEE GEOLOGIST LOG		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-7 GW-12
Bentonite seal 1.5'-.5"

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other

7. PERMIT NUMBER: UMW-24317 UST-19268

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed): 12' ft. Date Started: 8/26/11 Date Completed: 8/29/11

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2" in. to 2' ft. depth
____ in. to ____ ft. depth
Height: Above ☐ Below ☐
Surface N/A ft.
Weight N/A lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 2"
Slot/Gauge: .010 Length: 10'
Set Between: 2' ft. and 12' ft. NOTE: MULTIPLE SCREENS
____ ft. and ____ ft. USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☐ No

12. STATIC WATER LEVEL N/A ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
N/A ft. after N/A hrs. Pumping N/A G.P.M.
Pumping Test: ☐ Yes (please enclose) ☑ No
Yield: N/A

14. WATER QUALITY
Chemical Analysis ☑ Yes ☐ No Bacterial Analysis ☐ Yes ☑ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☑ No
Installed from 12' ft. to 1.5' ft.
Effective size #2 Uniformity Coefficient N/A

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☑ Bentonite/Cement ☐ Other ____
Depth: From 1.5' ft. to 0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: N/A ft. N/A direction
Type N/A
Well Disinfected ☐ Yes ☑ No Type: N/A Amount: N/A

18. PUMP: Date Installed: N/A Not Installed ☑
Mfr. Name: N/A Model No.: N/A
H.P. N/A Volts N/A Length of drop pipe ___ ft. Capacity N/A gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: Billy Ewing CERT. NO.:
Address: (Print) ARM Environmental Services
1210 First St. South Ext. Columbia SC
Level: A ☐ B ☑ C ☐ D ☐ (circle one)
Telephone No.: 803-783-3514 Fax No.: 803-783-2507

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] (Well Driller) Date: 9/27/2011

If D Level Driller, provide supervising driller's name:

DHEC 1903 (07/2003) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

Application ID: 2824

DHEC — PROMOTE PROTECT PROSPER

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 st
City: Columbia State: SC Zip: 29201-0000
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Orangeburg
Name: Vacant Lot
Street Address: 2309 Russell Street
City: Orangeburg Zip: 29115
Latitude: 33.49 7459 Longitude: 80.84 4586

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:** N/A

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
SEE GEOLOGIST LOG		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-8 GW-13
Bentonite seal 1.5'-.5"

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other

7. PERMIT NUMBER: UMW-24317 UST-19268

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 12' ft. Date Started: 8/26/11 Date Completed: 8/29/11

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2" in. to 2' ft. depth
_____ in. to _____ ft. depth
Height: Above ☐ Below ☐
Surface N/A ft.
Weight N/A lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 2"
Slot/Gauge: .010 Length: 10'
Set Between: 2' ft. and 12' ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☐ No

12. STATIC WATER LEVEL N/A ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
N/A ft. after N/A hrs. Pumping N/A G.P.M.
Pumping Test: ☐ Yes (please enclose) ☑ No
Yield: N/A

14. WATER QUALITY
Chemical Analysis ☑ Yes ☐ No Bacterial Analysis ☐ Yes ☑ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☑ No
Installed from 12' ft. to 1.5' ft.
Effective size #2 Uniformity Coefficient N/A

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☑ Bentonite/Cement ☐ Other _____
Depth: From 1.5' ft. to 0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: N/A ft. N/A direction
Type N/A
Well Disinfected ☐ Yes ☑ No Type: N/A Amount: N/A

18. PUMP: Date Installed: N/A Not Installed ☑
Mfr. Name: N/A Model No.: N/A
H.P. N/A Volts N/A Length of drop pipe ___ ft. Capacity N/A gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: Billy Enis CERT. NO.: 1585
Address: (Print) ARM Environmental Services
1210 First St South Ext. Columbia SC
Level: A B C D (circle one)
Telephone No.: 803-785-3314 Fax No.: 803-783-2587

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: _____ Well Driller Date 9/27/2011

If D Level Driller, provide supervising driller's name:

DHEC 1903 (07/2003) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

Application ID: 2824

DHEC — PROMOTE · PROTECT · PROSPER

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 st
City: Columbia State: SC Zip: 29201-0000
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Orangeburg
Name: Vacant Lot
Street Address: 2309 Russell Street
City: Orangeburg Zip: 29115
Latitude: 33.49757 Longitude: 80.844484

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:** N/A

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
SEE GEOLOGIST LOG		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-9 GW-14
Bentonite seal 1.5'-.5"

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other

7. PERMIT NUMBER: UMW-24317 UST-19268

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 12' ft. Date Started: 8/26/11 Date Completed: 8/29/11

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2" in. to 2' ft. depth
_____ in. to _____ ft. depth
Height: Above ☐ Below ☐
Surface N/A ft.
Weight N/A lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 2"
Slot/Gauge: .010 Length: 10'
Set Between: 2' ft. and 12' ft. NOTE: MULTIPLE SCREENS
_____ ft. and _____ ft. USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☐ No

12. STATIC WATER LEVEL N/A ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
N/A ft. after N/A hrs. Pumping N/A G.P.M.
Pumping Test: ☐ Yes (please enclose) ☑ No
Yield: N/A

14. WATER QUALITY
Chemical Analysis ☑ Yes ☐ No Bacterial Analysis ☐ Yes ☑ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☑ No
Installed from 12' ft. to 1.5' ft.
Effective size #2 Uniformity Coefficient N/A

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☑ Bentonite/Cement ☐ Other _____
Depth: From 1.5' ft. to 0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: N/A ft. N/A direction
Type N/A
Well Disinfected ☐ Yes ☑ No Type: N/A Amount: N/A

18. PUMP: Date Installed: N/A Not Installed ☑
Mfr. Name: N/A Model No.: N/A
H.P. N/A Volts N/A Length of drop pipe ___ ft. Capacity N/A gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: CERT. NO.: 1505
Address: (Print) Billy Emley
ARM Environmental Services
1210 First St South Ext. Columbia SC
Telephone No.: 803-783-3514 Fax No.: 803-783-2587
Level: A B C D (circle one)

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: _____ Well Driller Date: 9/27/2011

If D Level Driller, provide supervising driller's name:

DHEC 1903 (07/2003) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

Application ID: 2824

DHEC
PROMOTE PROTECT PROSPER

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 st
City: Columbia State: SC Zip: 29201-0000
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Orangeburg
Name: Vacant Lot
Street Address: 2309 Russell Street
City: Orangeburg Zip: 29115
Latitude: 33.496997 Longitude: 80.844785

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:** N/A

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from ____ ft. to ____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
SEE GEOLOGIST LOG		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-10 GW-16
Bentonite seal 1.5'-..5"

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other

7. PERMIT NUMBER: UMW-24317 UST-19268

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 12' ft. Date Started: 8/26/11 Date Completed: 8/29/11

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2" in. to 2' ft. depth
____ in. to ____ ft. depth
Height: Above ☐ Below ☐
Surface N/A ft.
Weight N/A lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 2"
Slot/Gauge: .010 Length: 10'
Set Between: 2' ft. and 12' ft. NOTE: MULTIPLE SCREENS
____ ft. and ____ ft. USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☐ No

12. STATIC WATER LEVEL N/A ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
N/A ft. after N/A hrs. Pumping N/A G.P.M.
Pumping Test: ☐ Yes (please enclose) ☑ No
Yield: N/A

14. WATER QUALITY
Chemical Analysis ☑ Yes ☐ No Bacterial Analysis ☐ Yes ☑ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☑ No
Installed from 12' ft. to 1.5' ft.
Effective size #2 Uniformity Coefficient N/A

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☑ Bentonite/Cement ☐ Other ____
Depth: From 1.5' ft. to 0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: N/A ft. N/A direction
Type N/A
Well Disinfected ☐ Yes ☑ No Type: N/A Amount: N/A

18. PUMP: Date Installed: N/A Not Installed ☑
Mfr. Name: N/A Model No.: N/A
H.P. N/A Volts N/A Length of drop pipe ____ ft. Capacity N/A gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: Billy Ewing CERT. NO.: 1505
Address: (Print) ARM Environmental Services
1210First St.South Ext.Columbia SC
Level: A ☐ B ☑ C ☐ D ☐ (circle one)
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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] for BE Date: 9/27/2011
Well Driller

If D Level Driller, provide supervising driller's name:

DHEC 1903 (07/2003) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

Application ID: 2824

DHEC — PROMOTE. PROTECT. PROSPER

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 st
City: Columbia State: SC Zip: 29201-0000
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Orangeburg
Name: Vacant Lot
Street Address: 2309 Russell Street
City: Orangeburg Zip: 29115
Latitude: 33.496671 Longitude: 80.845155

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:** N/A

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from ____ ft. to ____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
SEE GEOLOGIST LOG		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW- 11 GW- 17
Bentonite seal 1.5'-.5"

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other

7. PERMIT NUMBER: UMW-24317 UST-19268

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 12' ft. Date Started: 8/26/11 Date Completed: 8/29/11

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2" in. to 2' ft. depth
____ in. to ____ ft. depth
Height: Above ☐ Below ☐
Surface N/A ft.
Weight N/A lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 2"
Slot/Gauge: .010 Length: 10'
Set Between: 2' ft. and 12' ft.
____ ft. and ____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☐ No

12. STATIC WATER LEVEL N/A ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
N/A ft. after N/A hrs. Pumping N/A G.P.M.
Pumping Test: ☐ Yes (please enclose) ☑ No
Yield: N/A

14. WATER QUALITY
Chemical Analysis ☑ Yes ☐ No Bacterial Analysis ☐ Yes ☑ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☑ No
Installed from 12' ft. to 1.5' ft.
Effective size #2 Uniformity Coefficient N/A

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☑ Bentonite/Cement ☐ Other ____
Depth: From 1.5' ft. to 0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: N/A ft. N/A direction
Type N/A
Well Disinfected ☐ Yes ☑ No Type: N/A Amount: N/A

18. PUMP: Date Installed: N/A ☑ Not Installed
Mfr. Name: N/A Model No.: N/A
H.P. N/A Volts N/A Length of drop pipe ___ ft. Capacity N/A gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: CERT. NO.: 1505
Address: (Print) Billy Ewing
ARM Environmental Services
1210 First St South Ext. Columbia SC
Level: A ☐ B ☑ C ☐ D ☐ (circle one)
Telephone No.: 803-783-3314 Fax No.: 803-

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: For BE (Well Driller) Date: 9/27/2011
If D Level Driller, provide supervising driller's name:

DHEC 1903 (07/2003) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

Application ID: 2824

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 st
City: Columbia State: SC Zip: 29201-0000
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Orangeburg
Name: Vacant Lot
Street Address: 2309 Russell Street
City: Orangeburg Zip: 29115
Latitude: 33.496783 Longitude: 80.844693

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:** N/A

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
SEE GEOLOGIST LOG		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-12 GW-15
Bentonite seal 1.5'-..5"

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other

7. PERMIT NUMBER: UMW-24317 UST-19268

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 8/26/11
12' ft. Date Completed: 8/29/11

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2" in. to 2' ft. depth
_____ in. to _____ ft. depth
Height: Above ☐ Below ☐
Surface N/A ft.
Weight N/A lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 2"
Slot/Gauge: .010 Length: 10'
Set Between: 2' ft. and 12' ft. NOTE: MULTIPLE SCREENS
_____ ft. and _____ ft. USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☐ No

12. STATIC WATER LEVEL N/A ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
N/A ft. after N/A hrs. Pumping N/A G.P.M.
Pumping Test: ☐ Yes (please enclose) ☑ No
Yield: N/A

14. WATER QUALITY
Chemical Analysis ☑ Yes ☐ No Bacterial Analysis ☐ Yes ☑ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☑ No
Installed from 12' ft. to 1.5' ft.
Effective size #2 Uniformity Coefficient N/A

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☑ Bentonite/Cement ☐ Other _____
Depth: From 1.5' ft. to 0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: N/A ft. N/A direction
Type N/A
Well Disinfected ☐ Yes ☑ No Type: N/A Amount: N/A

18. PUMP: Date Installed: N/A Not Installed ☑
Mfr. Name: N/A Model No.: N/A
H.P. N/A Volts N/A Length of drop pipe ___ ft. Capacity N/A gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: CERT. NO.: 1505
Address: (Print) Billy Ewing
ARM Environmental Services
1210First St.South Ext.Columbia SC
Level: A ☐ B ☑ C ☐ D ☐ (circle one)
Telephone No.: 803-783-5514 Fax No.: 803-783-2687

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: _____ (Well Driller) Date: 9/27/2011

If D Level Driller, provide supervising driller's name:

DHEC 1903 (07/2003) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

Application ID: 2824

DHEC — PROMOTE PROTECT PROSPER

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 st
City: Columbia State: SC Zip: 29201-0000
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Orangeburg
Name: Vacant Lot
Street Address: 2309 Russell Street
City: Orangeburg Zip: 29115
Latitude: 33.49 708'7 Longitude: 80.8445 75

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:** N/A

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
SEE GEOLOGIST LOG		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
DW- 1 GW- 18
Bentonite seal 33'-.31'

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other

7. PERMIT NUMBER: UMW-24317 UST-19268

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 40' ft. Date Started: 8/26/11 Date Completed: 8/29/11

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
6" in. to 15' ft. depth
2" in. to 35' ft. depth
Height: Above ☐ Below ☐
Surface N/A ft.
Weight N/A lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 2"
Slot/Gauge: .010 Length: 5'
Set Between: 35' ft. and 40' ft.
_____ ft. and _____ ft. NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☐ No

12. STATIC WATER LEVEL N/A ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
N/A ft. after N/A hrs. Pumping N/A G.P.M.
Pumping Test: ☐ Yes (please enclose) ☑ No
Yield: N/A

14. WATER QUALITY
Chemical Analysis ☑ Yes ☐ No Bacterial Analysis ☐ Yes ☑ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☑ No
Installed from 40' ft. to 33' ft.
Effective size #2 Uniformity Coefficient N/A

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☑ Bentonite/Cement ☐ Other _____
Depth: From 33' ft. to 0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: N/A ft. N/A direction
Type N/A
Well Disinfected ☐ Yes ☑ No Type: N/A Amount: N/A

18. PUMP: Date Installed: N/A ☑ Not Installed
Mfr. Name: N/A Model No.: N/A
H.P. N/A Volts N/A Length of drop pipe ___ ft. Capacity N/A gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: Josh Register CERT. NO.: 1921
Address: (Print) Level: A ☐ B ☐ C ☑ D ☐ (circle one)
ARM Environmental Services
1210 First St South Ext. Columbia SC
Telephone No.: 803-783-3514 Fax No.: 803-783-2587

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: _____ (Well Driller) Date: 9/27/2011

If D Level Driller, provide supervising driller's name:
Andrew Wilson

DHEC 1903 (07/2003) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

Application ID: 2824

D H E C
PROMOTE PROTECT PROSPER

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 st
City: Columbia State: SC Zip: 29201-0000
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Orangeburg
Name: Vacant Lot
Street Address: 2309 Russell Street
City: Orangeburg Zip: 29115
Latitude: 33.49745°9 Longitude: 80.84 4586

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:** N/A

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
SEE GEOLOGIST LOG		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
DW-2 GW-19
Bentonite seal 28'-.26'

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other

7. PERMIT NUMBER: UMW-24317 UST-19268

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 35' ft. Date Started: 8/26/11 Date Completed: 8/29/11

10. CASING: ☑ Threaded ☐ Welded
Diam.: 6"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
6" in. to 15' ft. depth
2" in. to 30' ft. depth
Height: Above ☐ Below ☐
Surface N/A ft.
Weight N/A lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 2"
Slot/Gauge: .010 Length: 5'
Set Between: 35' ft. and 30' ft. NOTE: MULTIPLE SCREENS
_____ ft. and _____ ft. USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☐ No

12. STATIC WATER LEVEL N/A ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
N/A ft. after N/A hrs. Pumping N/A G.P.M.
Pumping Test: ☐ Yes (please enclose) ☑ No
Yield: N/A

14. WATER QUALITY
Chemical Analysis ☑ Yes ☐ No Bacterial Analysis ☐ Yes ☑ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☑ No
Installed from 35' ft. to 28' ft.
Effective size #2 Uniformity Coefficient N/A

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☑ Bentonite/Cement ☐ Other _____
Depth: From 28' ft. to 0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: N/A ft. N/A direction
Type N/A
Well Disinfected ☐ Yes ☑ No Type: N/A Amount: N/A

18. PUMP: Date Installed: N/A Not Installed ☑
Mfr. Name: N/A Model No.: N/A
H.P. N/A Volts N/A Length of drop pipe ___ ft. Capacity N/A gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: Josh Register CERT. NO.: 1921
Address: (Print) Level: A ☐ B ☐ C ☑ D ☐ (circle one)
ARM Environmental Services
1210 First St South Ext. Columbia SC
Telephone No.: 803-785-3514 Fax No.: 803-783-2587

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: JR (Well Driller) Date: 9/27/2011

If D Level Driller, provide supervising driller's name:
Andrew Wilson

DHEC 1903 (07/2003) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

Application ID: 2824

D H E C
PROMOTE PROTECT PROSPER

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 st
City: Columbia State: SC Zip: 29201-0000
Telephone: Work: Home:

2. LOCATION OF WELL: **COUNTY:** Orangeburg
Name: Vacant Lot
Street Address: 2309 Russell Street
City: Orangeburg Zip: 29115
Latitude: 33.49 73 42 Longitude: 80.84 39 37

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:** N/A

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
SEE GEOLOGIST LOG		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-13 GW-
Bentonite seal 1.5-.5

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24317 UST-19268

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 12' ft. Date Started: 9/7/2011 Date Completed: 9/8/2011 TR 10-19-11

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2" in. to 2' ft. depth
_____ in. to _____ ft. depth
Height: Above ☐ Below ☐
Surface N/A ft.
Weight N/A lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: _____
Slot/Gauge: .010 Length: 10'
Set Between: 2' ft. and 12' ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☐ No

12. STATIC WATER LEVEL N/A ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
N/A ft. after N/A hrs. Pumping N/A G.P.M.
Pumping Test: ☐ Yes (please enclose) ☑ No
Yield: N/A

14. WATER QUALITY
Chemical Analysis ☑ Yes ☐ No Bacterial Analysis ☐ Yes ☑ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☑ No
Installed from 12' ft. to 1.5 ft.
Effective size #2 Uniformity Coefficient N/A

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☑ Bentonite/Cement ☐ Other _____
Depth: From 1.5' ft. to 0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: N/A ft. N/A direction
Type N/A
Well Disinfected ☐ Yes ☑ No Type: N/A Amount: N/A

18. PUMP: Date installed: N/A Not installed ☑
Mfr. Name: N/A Model No.: N/A
H.P. N/A Volts N/A Length of drop pipe ___ ft. Capacity N/A gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: Todd Allred **CERT. NO.:** 1446
Address: (Print) Level: A ☐ B ☑ C ☐ D ☐ (circle one)
104 Corporate Blvd.Suite 412 West
Columbia SC 29169
Telephone No.: 803-708-8079 Fax No.: 803-708-8137

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: Todd Allred Date: 9-24-11
Well Driller

If D Level Driller, provide supervising driller's name:

DHEC 1903 (07/2003) **COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)**

Application ID: 2824

D H E C
PROMOTE PROTECT PROSPER

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 st
City: Columbia State: SC Zip: 29201-0000
Telephone: Work: Home:

2. LOCATION OF WELL: **COUNTY:** Orangeburg
Name: Vacant Lot
Street Address: .2309 Russell Street
City: Orangeburg Zip: 29115
Latitude: 33.497664 Longitude: 80.844168

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:** N/A

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
SEE GEOLOGIST LOG		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-14 GW-
Bentonite seal 1.5-.5

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24917, UST 13263

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 12' ft. Date Started: 9/7/2011 TA
Date Completed: 9/8/2011 10-19-11

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2" in. to 2' ft. depth
_____ in. to _____ ft. depth
Height: Above ☐ Below ☐
Surface N/A ft.
Weight N/A lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: _____
Slot/Gauge: ..010 Length: 10'
Set Between: 2' ft. and 12' ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☐ No

12. STATIC WATER LEVEL N/A ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
N/A ft. after N/A hrs. Pumping N/A G.P.M.
Pumping Test: ☐ Yes (please enclose) ☑ No
Yield: N/A

14. WATER QUALITY
Chemical Analysis ☑ Yes ☐ No Bacterial Analysis ☐ Yes ☑ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☑ No
Installed from 12' ft. to 1.5 ft.
Effective size #2 Uniformity Coefficient N/A

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☑ Bentonite/Cement ☐ Other _____
Depth: From 1.5' ft. to 0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: N/A ft. N/A direction
Type N/A
Well Disinfected ☐ Yes ☑ No Type: N/A Amount: N/A

18. PUMP: Date installed: N/A Not installed ☑
Mfr. Name: N/A Model No.: N/A
H.P. N/A Volts N/A Length of drop pipe ___ ft. Capacity N/A gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: Todd Allred **CERT. NO.:** 1446
Address: (Print) 104 Corporate Blvd.Suite 412 West
Columbia SC 29169
Level: A ☐ B ☑ C ☐ D ☐ (circle one)
Telephone No.: 803-708-8079 Fax No.: 803-708-8137

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: Todd Allred (Well Driller) Date: 9-24-11

If D Level Driller, provide supervising driller's name:

DHEC 1903 (07/2003) **COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)**

Application ID: 2824

D H E C
PROMOTE PROTECT PROSPER

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 st
City: Columbia State: SC Zip: 29201-0000
Telephone: Work: Home:

2. LOCATION OF WELL: **COUNTY:** Orangeburg
Name: Vacant Lot
Street Address: 2309 Russell Street
City: Orangeburg Zip: 29115
Latitude: 33.497213 Longitude: 80.845575

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:** N/A

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
SEE GEOLOGIST LOG		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		
5. REMARKS: MW-15 GW- Bentonite seal 1.5-.5		

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24811 UST-19268

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 12' ft. Date Started: 9/15/2011 TA Date Completed: 9/15/2011 10-14-11

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2" in. to 2' ft. depth
_____ in. to _____ ft. depth
Height: Above ☐ Below ☐
Surface N/A ft.
Weight N/A lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: _____
Slot/Gauge: ..010 Length: 10'
Set Between: 2' ft. and 12' ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☐ No

12. STATIC WATER LEVEL N/A ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
N/A ft. after N/A hrs. Pumping N/A G.P.M.
Pumping Test: ☐ Yes (please enclose) ☑ No
Yield: N/A

14. WATER QUALITY
Chemical Analysis ☑ Yes ☐ No Bacterial Analysis ☐ Yes ☑ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☑ No
Installed from 12' ft. to 1.5 ft.
Effective size #2 Uniformity Coefficient N/A

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☑ Bentonite/Cement ☐ Other _____
Depth: From 1.5' ft. to 0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: N/A ft. N/A direction
Type N/A
Well Disinfected ☐ Yes ☑ No Type: N/A Amount: N/A

18. PUMP: Date installed: N/A Not installed ☑
Mfr. Name: N/A Model No.: N/A
H.P. N/A Volts N/A Length of drop pipe ___ ft. Capacity N/A gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: Todd Allred **CERT. NO.:** 1446
Address: (Print) 104 Corporate Blvd.Suite 412 West Columbia SC 29169
Level: A B C D (circle one) ☐ ☑ ☐ ☐
Telephone No.: 803-708-8079 Fax No.: 803-708-8137

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: Todd Allred (Well Driller) Date: 9-24-11

If D Level Driller, provide supervising driller's name:

DHEC 1903 (07/2003) **COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)**

Application ID: 2824

DHEC
PROMOTE PROTECT PROSPER

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 st
City: Columbia State: SC Zip: 29201-0000
Telephone: Work: Home:

2. LOCATION OF WELL: **COUNTY:** Orangeburg
Name: Vacant Lot
Street Address: .2309 Russell Street
City: Orangeburg Zip: 29115
Latitude: 33.497087 Longitude: 80.845112

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:** N/A

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
SEE GEOLOGIST LOG		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-16 GW-
Bentonite seal 1.5-.5

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-16 24317 UST-9 19268

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 12' ft. Date Started: 9/15/2011 TA Date Completed: 9/15/2011 10-19-11

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2" in. to 2' ft. depth
_____ in. to _____ ft. depth
Height: Above ☐ Below ☐
Surface N/A ft.
Weight N/A lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: _____
Slot/Gauge: ..010 Length: 10'
Set Between: 2' ft. and 12' ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☐ No

12. STATIC WATER LEVEL N/A ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
N/A ft. after N/A hrs. Pumping N/A G.P.M.
Pumping Test: ☐ Yes (please enclose) ☑ No
Yield: N/A

14. WATER QUALITY
Chemical Analysis ☑ Yes ☐ No Bacterial Analysis ☐ Yes ☑ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☑ No
Installed from 12' ft. to 1.5 ft.
Effective size #2 Uniformity Coefficient N/A

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☑ Bentonite/Cement ☐ Other _____
Depth: From 1.5' ft. to 0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: N/A ft. N/A direction
Type N/A
Well Disinfected ☐ Yes ☑ No Type: N/A Amount: N/A

18. PUMP: Date installed: N/A Not installed ☑
Mfr. Name: N/A Model No.: N/A
H.P. N/A Volts N/A Length of drop pipe ___ ft. Capacity N/A gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: Todd Allred **CERT. NO.:** 1446
Address: (Print) 104 Corporate Blvd.Suite 412 West
Columbia SC 29169
Level: A ☐ B ☑ C ☐ D ☐ (circle one)
Telephone No.: 803-708-0079 Fax No.: 803-708-8137

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: Todd Allred Well Driller Date: 9-24-11

If D Level Driller, provide supervising driller's name:

DHEC 1903 (07/2003) **COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)**

Application ID: 2824

D H E C
PROMOTE PROTECT PROSPER

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 st
City: Columbia State: SC Zip: 29201-0000
Telephone: Work: Home:

2. LOCATION OF WELL: **COUNTY:** Orangeburg
Name: Vacant Lot
Street Address: 2309 Russell Street
City: Orangeburg Zip: 29115
Latitude: 33.497342 Longitude: 80.843737

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:** N/A

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
SEE GEOLOGIST LOG		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
DMW-3 GW-
Bentonite seal 22'-.20'

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24317 UST-19268

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 29' ft. Date Started: 9/12/2011 TA Date Completed: 9/12/2011 9-19-11

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2" in. to 24' ft. depth
_____ in. to _____ ft. depth
Height: Above ☐ Below ☐
Surface N/A ft.
Weight N/A lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 2"
Slot/Gauge: .010 Length: 5'
Set Between: 24' ft. and 29' ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☐ No

12. STATIC WATER LEVEL N/A ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
N/A ft. after N/A hrs. Pumping N/A G.P.M.
Pumping Test: ☐ Yes (please enclose) ☑ No
Yield: N/A

14. WATER QUALITY
Chemical Analysis ☑ Yes ☐ No Bacterial Analysis ☐ Yes ☑ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☑ No
Installed from 29' ft. to 22' ft.
Effective size #2 Uniformity Coefficient N/A

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☑ Bentonite/Cement ☐ Other _____
Depth: From 22' ft. to 0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: N/A ft. N/A direction
Type N/A
Well Disinfected ☐ Yes ☑ No Type: N/A Amount: N/A

18. PUMP: Date installed: N/A Not installed ☑
Mfr. Name: N/A Model No.: N/A
H.P. N/A Volts N/A Length of drop pipe ___ ft. Capacity N/A gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: Todd Allred **CERT. NO.:** 1446
Address: (Print) 104 Corporate Blvd.Suite 412 West Columbia SC 29169
Level: A ☐ B ☑ C ☐ D ☐ (circle one)
Telephone No.: 803-708-8079 Fax No.: 803-708-8137

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: Todd Allred (Well Driller) Date: 9-24-11

If D Level Driller, provide supervising driller's name:

DHEC 1903 (07/2003)

COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

APPENDIX F
Aquifer Calculations and Characteristics

CRAWFORD
ENVIRONMENTAL
SERVICES

SOUTH CAROLINA
Department of Health and Evnironmental Control
Summary of Slug Test Form

Site Data

UST Permit # 19268 County: Orangeburg

Facility Name Vacant Lot (Shallow)

Slug Data

See Appendix F Table_____ Figure_____ for a list of all data measurements.
(water level logs, etc.) (Complete as appropriate).

Water Level Recovery Data was measured by Manually w/ water level indicator.
(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

Slug Test Conducted in well(s) number	MW-3			
Initial Rise/Drawdown in well (feet)	1.33			
Radius of Well Casing (feet)	0.0833			
Effective Radius of Well (feet)	0.20833			
Static Saturated Aquifer Thickness (feet)	3.58			
Length of Well Screen (feet)	10			
Static Height of Water Column in Well (ft)	8.42			

Calculations

See Appendix F Table_____ Figure_____ for calculations. (Complete as appropriate).

The method for aquifer calculations was Bouwer-Rice

Calculated values by well were as follows:

Slug Test Conducted in well(s) number	MW-3			
Hydraulic Conductivity ft/day	0.007			

Thickness of the aquifer used to calculate hydraulic conductivity was _____ feet.

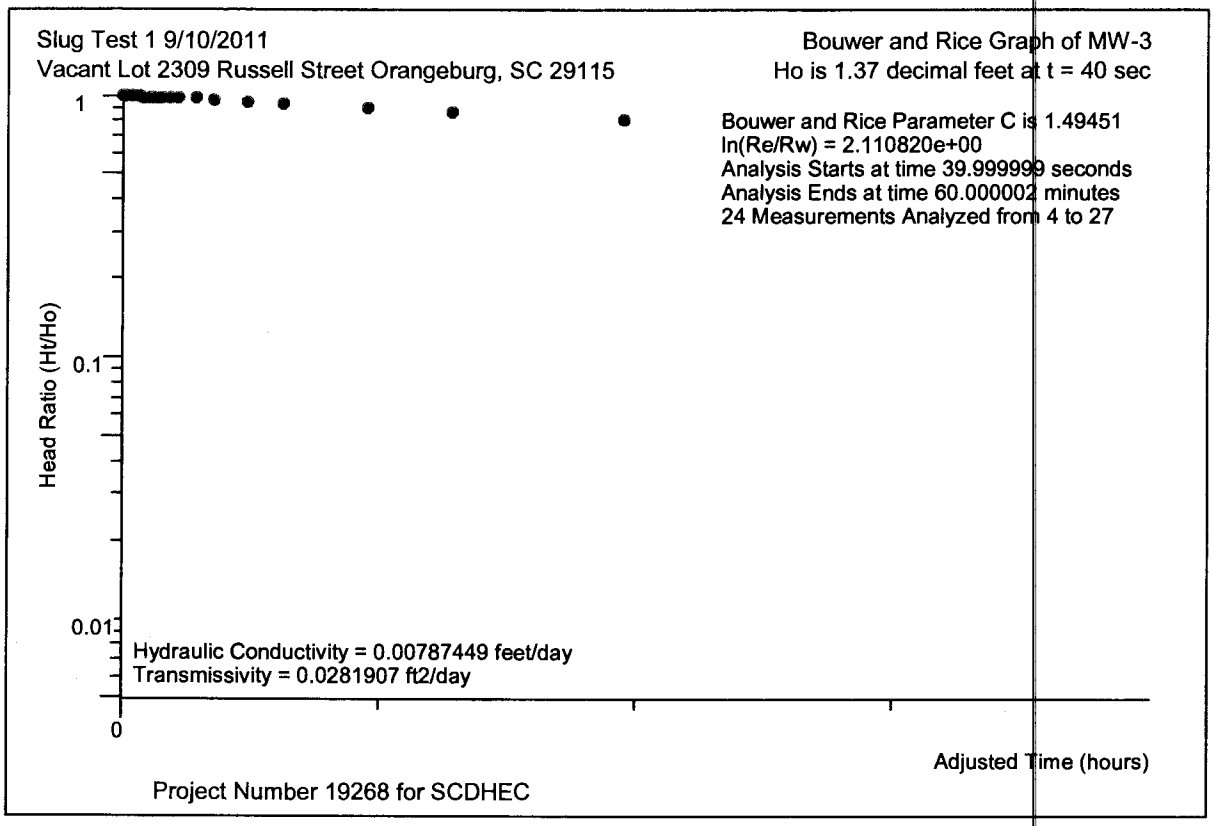
The aquifer is _____ confined _____ semi-confined ✓ water table (Check as appropriate).

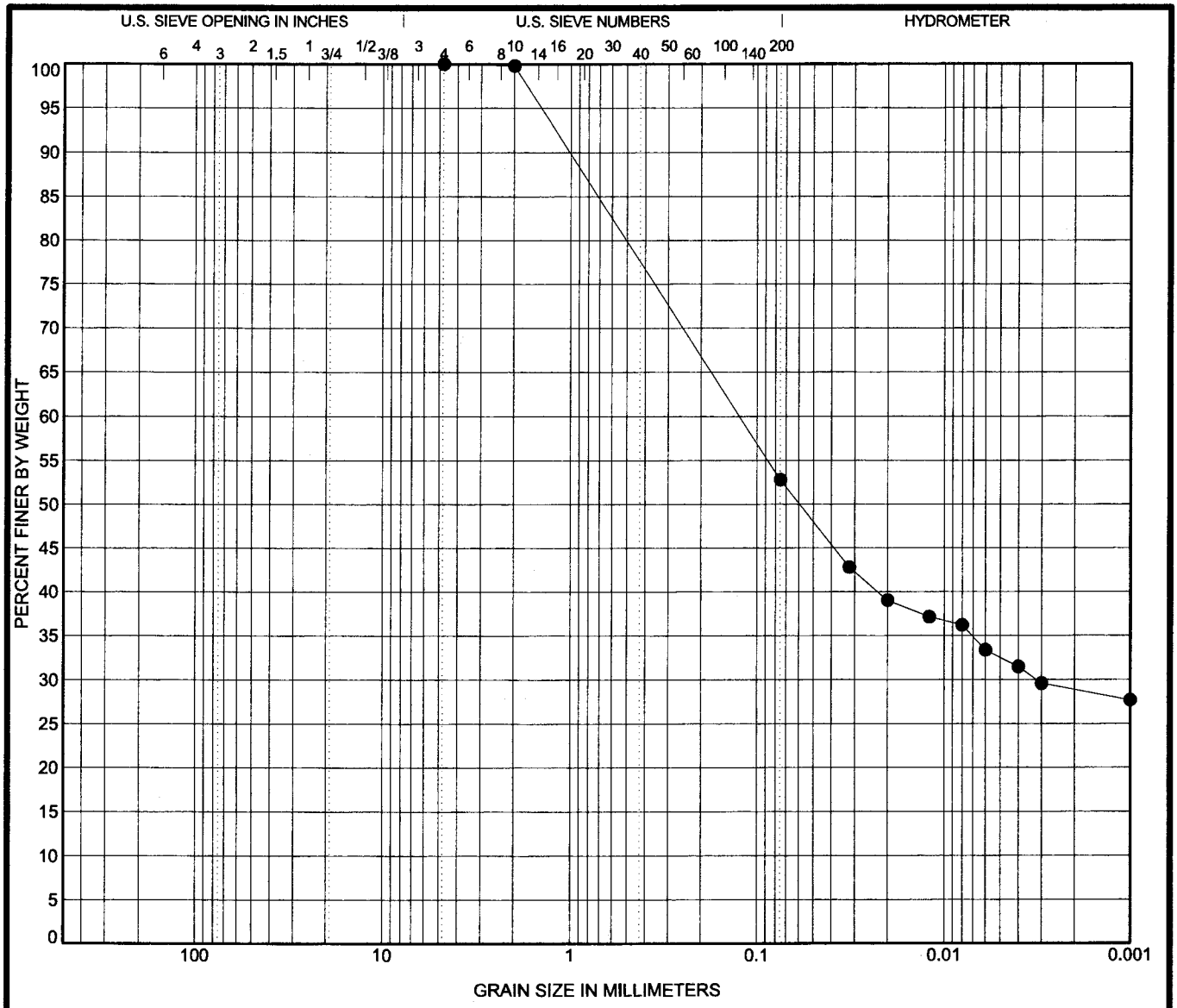
The estimated seepage velocity is 0.05 ft/yr feet per year based on a hydraulic conductivity of 2.5 ft/yr, a hydraulic gradient of 0.01 ft/ft, and a porosity of 45 per cent for sandy clay loam soil (list type i.e., silty sand ,clay, etc).

Data from file:	C:\19268MW3.SLG
Title:	Slug Test 1
Site Name:	Vacant Lot
Location:	2309 Russell Street Orangeburg, SC 29115
Client:	SCDHEC
Project Number:	19268
Test Date:	9/10/2011
Well Number:	MW-3
Casing Radius:	0.0833 feet
Effective Well Radius:	0.20833 feet
Aquifer Thickness:	3.58 feet
Water Table to Screen Bottom:	3.58 feet
Screen Length:	10 feet
Static Water Level:	8.42 decimal feet

K ratio is not entered
There are 27 time and drawdown measurements
Tests starts with trial 4
Time values will be adjusted by 0.000462963 days (39.999999 seconds)

Trial	Time (seconds)	Adjusted Time (seconds)	Drawdown (decimal feet)	Head (decimal feet)	Head Ratio
1	10	-30	9.78	1.36	0.992701
2	20	-20	9.78	1.36	0.992701
3	30	-10	9.78	1.36	0.992701
4	40	0	9.79	1.37	1
5	50	10	9.77	1.35	0.985402
6	60	20	9.77	1.35	0.985402
7	70	30	9.77	1.35	0.985402
8	80	40	9.77	1.35	0.985402
9	90	50	9.77	1.35	0.985402
10	100	60	9.77	1.35	0.985402
11	110	70	9.76	1.34	0.978102
12	120	80	9.76	1.34	0.978102
13	135	95	9.76	1.34	0.978102
14	150	110	9.76	1.34	0.978102
15	165	125	9.76	1.34	0.978102
16	180	140	9.75	1.33	0.970803
17	210	170	9.75	1.33	0.970803
18	240	200	9.75	1.33	0.970803
19	300	260	9.75	1.33	0.970803
20	360	320	9.73	1.31	0.956205
21	480	440	9.71	1.29	0.941606
22	600	560	9.69	1.27	0.927007
23	900	860	9.65	1.23	0.897811
24	1200	1160	9.61	1.19	0.868613
25	1800	1760	9.53	1.11	0.810219
26	2400	2360	9.44	1.02	0.744526
27	3600	3560	9.28	0.86	0.627737


Slug Test 1 9/10/2011
Vacant Lot 2309 Russell Street Orangeburg, SC 29115
Bouwer and Rice Graph of MW-3
Ho is 1.37 decimal feet at t = 40 sec
Bouwer and Rice Parameter C is 1.49451
ln(Re/Rw) = 2.110820e+00
Analysis Starts at time 39.999999 seconds
Analysis Ends at time 60.000002 minutes
24 Measurements Analyzed from 4 to 27
Head Ratio (Ht/Ho)
1
0.1
0.01
0
Hydraulic Conductivity = 0.00787449 feet/day
Transmissivity = 0.0281907 ft2/day
Adjusted Time (hours)
Project Number 19268 for SCDHEC



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen	Sample Description	LL	PL	PI
● GW-14VL(MW-9) JSR 12/04/11		--	--	--

Test Method	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
ASTM D422	**4.75**	**0.124**	**0.003**		**0.0**	**47.2**	**23.9**	**28.9**

Percent Finer

Sieve Size	200	10	4
% Finer	52.8	99.8	100.0

Tested By	Tested Date	Reviewed By	Calc By
CAB	9/8/11		MDE

Schnabel ENGINEERING

GRADATION CURVE

Project: Crawford Environmental
Vacant Lot

Contract: 11619029.00.09

SIEVE 1/SHEET LAB TESTING.GPJ SCHNABEL DATA TEMPLATE 2008 04 22.GDT 9/12/11

D H E C
PROMOTE PROTECT PROSPER
South Carolina Department of Health and Environmental Control

SOUTH CAROLINA
Department of Health and Evnironmental Control
Summary of Slug Test Form

Site Data

UST Permit # 19268 County: Orangeburg

Facility Name Vacant Lot (Deep)

Slug Data

See Appendix F Table_____ Figure_____ for a list of all data measurements.
(water level logs, etc.) (Complete as appropriate).

Water Level Recovery Data was measured by Manually w/ water level indicator.
(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

Slug Test Conducted in well(s) number	DW-1			
Initial Rise/Drawdown in well (feet)	1.36			
Radius of Well Casing (feet)	0.0833			
Effective Radius of Well (feet)	0.20833			
Static Saturated Aquifer Thickness (feet)	27.89			
Length of Well Screen (feet)	5			
Static Height of Water Column in Well (ft)	12.11			

Calculations

See Appendix F Table_____ Figure_____ for calculations. (Complete as appropriate).

The method for aquifer calculations was Bouwer-Rice

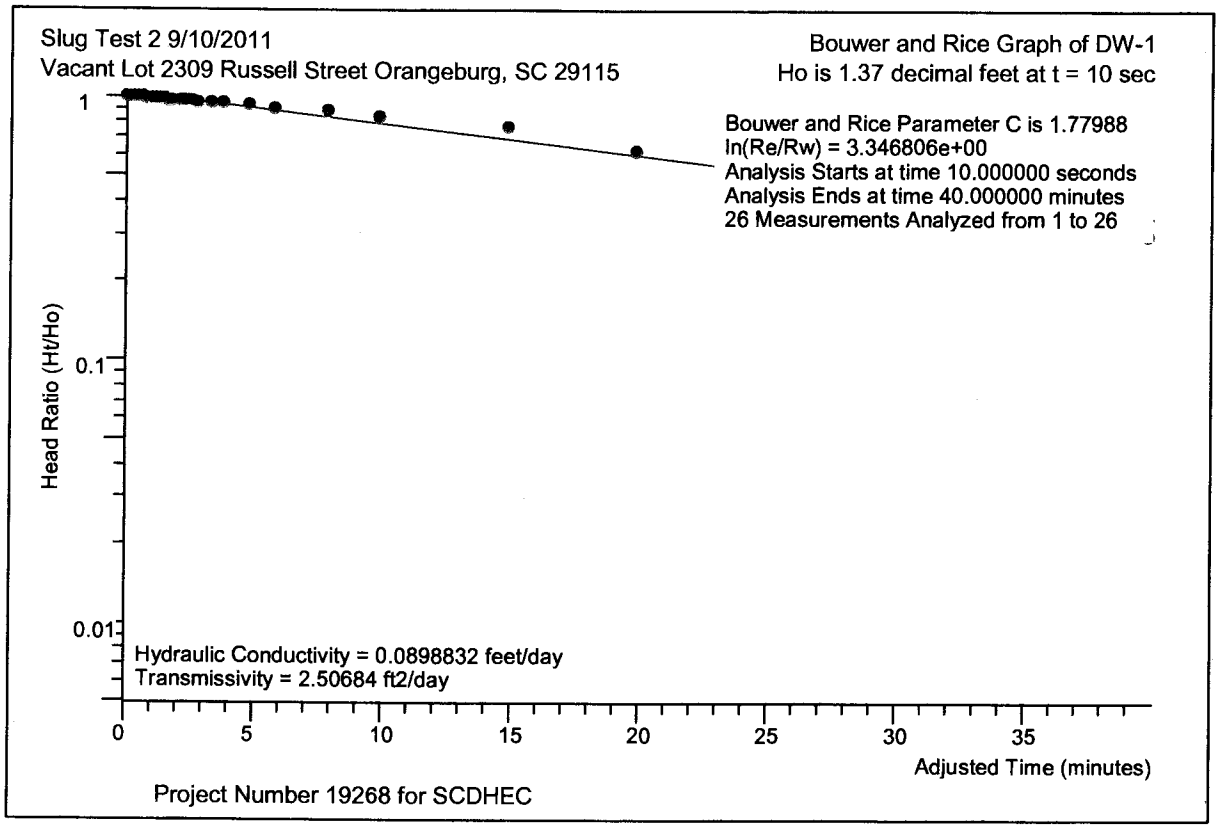
Calculated values by well were as follows:

Slug Test Conducted in well(s) number	DW-1			
Hydraulic Conductivity ft/day	0.089			

Thickness of the aquifer used to calculate hydraulic conductivity was _____ feet.

The aquifer is _____ confined _____ semi-confined ✓ water table (Check as appropriate).
(Deep)

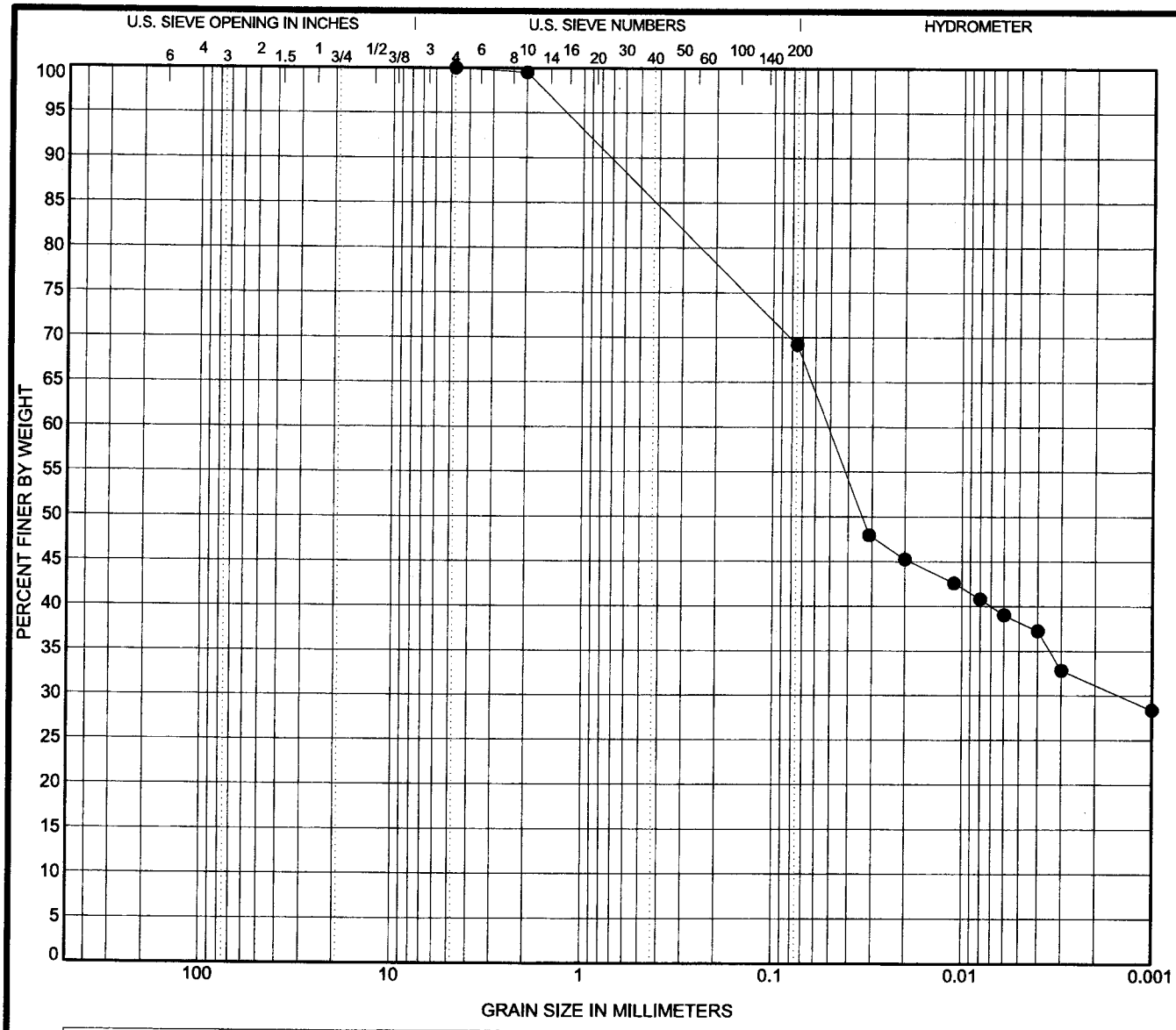
The estimated seepage velocity is 1.9 ft/yr feet per year based on a hydraulic conductivity of 32.4 ft/yr, a hydraulic gradient of 0.034 ft/ft, and a porosity of .50 per cent for clay loam soil (list type i.e., silty sand ,clay, etc).


Slug Test 2 9/10/2011
Vacant Lot 2309 Russell Street Orangeburg, SC 29115
Bouwer and Rice Graph of DW-1
Ho is 1.37 decimal feet at t = 10 sec
Bouwer and Rice Parameter C is 1.77988
ln(Re/Rw) = 3.346806e+00
Analysis Starts at time 10.000000 seconds
Analysis Ends at time 40.000000 minutes
26 Measurements Analyzed from 1 to 26
Head Ratio (Ht/Ho)
1
0.1
0.01
Hydraulic Conductivity = 0.0898832 feet/day
Transmissivity = 2.50684 ft2/day
0
5
10
15
20
25
30
35
Adjusted Time (minutes)
Project Number 19268 for SCDHEC

Data from file:	C:\19268DW1.SLG
Title:	Slug Test 2
Site Name:	Vacant Lot
Location:	2309 Russell Street Orangeburg, SC 29115
Client:	SCDHEC
Project Number:	19268
Test Date:	9/10/2011
Well Number:	DW-1
Casing Radius:	0.0833 feet
Effective Well Radius:	0.20833 feet
Aquifer Thickness:	27.89 feet
Water Table to Screen Bottom:	27.89 feet
Screen Length:	5 feet
Static Water Level:	12.11 decimal feet

K ratio is not entered
There are 26 time and drawdown measurements
Tests starts with trial 1
Time values will be adjusted by 0.000115741 days (10.000000 seconds)

Trial	Time (seconds)	Adjusted Time (seconds)	Drawdown (decimal feet)	Head (decimal feet)	Head Ratio
1	10	0	13.48	1.37	1
2	20	10	13.46	1.35	0.985402
3	30	20	13.46	1.35	0.985402
4	40	30	13.46	1.35	0.985402
5	50	40	13.46	1.35	0.985402
6	60	50	13.45	1.34	0.978103
7	70	60	13.45	1.34	0.978103
8	80	70	13.45	1.34	0.978103
9	90	80	13.45	1.34	0.978103
10	100	90	13.44	1.33	0.970804
11	110	100	13.43	1.32	0.963504
12	120	110	13.43	1.32	0.963504
13	135	125	13.43	1.32	0.963504
14	150	140	13.43	1.32	0.963504
15	165	155	13.42	1.31	0.956205
16	180	170	13.4	1.29	0.941606
17	210	200	13.4	1.29	0.941606
18	240	230	13.39	1.28	0.934307
19	300	290	13.38	1.27	0.927007
20	360	350	13.34	1.23	0.897811
21	480	470	13.31	1.2	0.875913
22	600	590	13.25	1.14	0.832117
23	900	890	13.15	1.04	0.759125
24	1200	1190	12.96	0.85	0.620438
25	1800	1790	12.8	0.69	0.50365
26	2400	2390	12.52	0.41	0.29927



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen	Sample Description	LL	PL	PI
● DW-5		--	--	--

Test Method	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
ASTM D422	**4.75**	**0.051**	**0.001**		**0.0**	**30.8**	**38.0**	**31.2**

Percent Finer

Sieve Size	200	10	4
% Finer	69.2	99.5	100.0

Tested By	Tested Date	Reviewed By	Calc By
CAB	9/8/11	SRH	MDE

Schnabel ENGINEERING

GRADATION CURVE

Project: Crawford Environmental
Vacant Lot

Contract: 11619029.00.10

SIEVE 1/SHEET LAB TESTING.GPJ SCHNABEL DATA TEMPLATE 2008 04 22.GDT 9/12/11

APPENDIX G
Disposal Manifests

CRAWFORD
ENVIRONMENTAL
SERVICES

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number

2. Page 1 of

3. Emergency Response Phone: 803-957-9175

4. Waste Tracking Number: 31798

5. Generator's Name and Mailing Address: ~~Crawford Environmental Services~~ 104 Corporate Blvd, Suite 412 Columbia, SC 29169

Generator's Site Address (if different than mailing address): Vacant Lot - Orangeburg

Generator's Phone: 803.708.0079

6. Transporter 1 Company Name: A&D Environmental Services (SC), LLC

U.S. EPA ID Number: SCD987598331

7. Transporter 2 Company Name

U.S. EPA ID Number

8. Designated Facility Name and Site Address: Greenleaf Treatment Services, 100 Waste Research Drive, Macon, GA 31026

U.S. EPA ID Number: GAR000007484

Facility's Phone: ~~336-434-7750~~

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1.	NON-HAZARDOUS NON-REGULATED MATERIAL Soil Cuttings Profile #	2	DM	110	G	2 x 1 (lbs) 10000
2.						
3.						
4.						

13. Special Handling Instructions and Additional Information

A&D (SC) Job #17504 Onsite Rep: Justin Reynolds (803) 708-0079

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 governmental regulations.

Generator's/Offeror's Printed/Typed Name: Todd Allred Signature: Todd Allred Month: 9 Day: 30 Year: 11

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:

Transporter Signature (for exports only): Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Chris Peter Signature: Chris Peter Month: 9 Day: 30 Year: 11

Transporter 2 Printed/Typed Name Signature Month Day Year

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

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

GENERATOR — INT'L — TRANSPORTER — DESIGNATED FACILITY

169-BLC-O 6 10498 (Rev. 9/09)

DESIGNATED FACILITY TO GENERATOR

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number

5. Generator's Name and Mailing Address

Generator's Site Address (if different than mailing address)

Generator's Phone:

6. Transporter 1 Company Name — U.S. EPA ID Number

7. Transporter 2 Company Name — U.S. EPA ID Number

8. Designated Facility Name and Site Address — U.S. EPA ID Number

Facility's Phone:

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
	1.					
	2.					
	3.					
	4.					

13. Special Handling Instructions and Additional Information

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 governmental regulations.

Generator's/Offeror's Printed/Typed Name — Signature — Month Day Year

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:

Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name — Signature — Month Day Year

Transporter 2 Printed/Typed Name — Signature — Month Day Year

DESIGNATED FACILITY

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

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

APPENDIX J

Access Agreements and Property Owner Cover Letters

CRAWFORD
ENVIRONMENTAL
SERVICES

CRAWFORD
ENVIRONMENTAL
SERVICES

September 28, 2011

Bernie Lee Wright
P.O. Box 275
Orangeburg, SC 29115

Re: Tier II Assessment Report
Vacant Lot, 2309 Russell Street Orangeburg , SC 29115
UST Permit: 19268
Cost Agreement: 42108
CES Project #: 15.070
Orangeburg County

Dear Mr. Wright,

Crawford Environmental Services, Inc. (CES) is pleased to submit the attached Tier II Assessment Report for the above mentioned facility. The included report describes assessment activities conducted at the above mentioned facility and on surrounding properties in general accordance with the South Carolina Department of Health and Environmental Control (SCDHEC). The assessment activities described in the included report, may have included work that was completed on your property. Please see attached report for further details.

If you have any questions or comments regarding site 19268, Vacant Lot please feel free to contact me at 803-708-0079, or by email at jreynolds@crawfordenvironmental.com.

Sincerely,

Justin Reynolds
Project Manager
Crawford Environmental Services
SC Rehabilitation Contractor Number: 0388

Attachments:
Tier II Assessment

MID-ATLANTIC REGION
15 CHURCH AVENUE, SW
ROANOKE, VIRGINIA 24011
OFFICE 540 343.6256
FAX 540 343.6259
ccrawford@crawfordenvironmental.com

SOUTHEAST REGION
104 CORPORATE BLVD, SUITE 412
WEST COLUMBIA, SOUTH CAROLINA 29169
OFFICE 803 708.0079
FAX 803 708.8137
dobrien@crawfordenvironmental.com

CRAWFORD
ENVIRONMENTAL
SERVICES

September 28, 2011

Scott Delano
717 Partridge Road
Orangeburg, SC 29118

Re: Tier II Assessment Report
Vacant Lot, 2309 Russell Street Orangeburg , SC 29115
UST Permit: 19268
Cost Agreement: 42108
CES Project #: 15.070
Orangeburg County

Dear Mr. Delano,

Crawford Environmental Services, Inc. (CES) is pleased to submit the attached Tier II Assessment Report for the above mentioned facility. The included report describes assessment activities conducted at the above mentioned facility and on surrounding properties in general accordance with the South Carolina Department of Health and Environmental Control (SCDHEC). The assessment activities described in the included report, may have included work that was completed on your property. Please see attached report for further details.

If you have any questions or comments regarding site 19268, Vacant Lot please feel free to contact me at 803-708-0079, or by email at jreynolds@crawfordenvironmental.com.

Sincerely,

Justin Reynolds
Project Manager
Crawford Environmental Services
SC Rehabilitation Contractor Number: 0388

Attachments:
Tier II Assessment

MID-ATLANTIC REGION
15 CHURCH AVENUE, SW
ROANOKE, VIRGINIA 24011
OFFICE 540 343.6256
FAX 540 343.6259
ccrawford@crawfordenvironmental.com

SOUTHEAST REGION
104 CORPORATE BLVD, SUITE 412
WEST COLUMBIA, SOUTH CAROLINA 29169
OFFICE 803 708.0079
FAX 803 708.8137
dobrien@crawfordenvironmental.com

CRAWFORD
ENVIRONMENTAL
SERVICES

September 28, 2011

Robert Bethea
1219 Russell Street NE
Orangeburg, SC 29118

Re: Tier II Assessment Report
Vacant Lot, 2309 Russell Street Orangeburg , SC 29115
UST Permit: 19268
Cost Agreement: 42108
CES Project #: 15.070
Orangeburg County

Dear Mr. Bethea,

Crawford Environmental Services, Inc. (CES) is pleased to submit the attached Tier II Assessment Report for the above mentioned facility. The included report describes assessment activities conducted at the above mentioned facility and on surrounding properties in general accordance with the South Carolina Department of Health and Environmental Control (SCDHEC). The assessment activities described in the included report, may have included work that was completed on your property. Please see attached report for further details.

If you have any questions or comments regarding site 19268, Vacant Lot please feel free to contact me at 803-708-0079, or by email at jreynolds@crawfordenvironmental.com.

Sincerely,

Justin Reynolds
Project Manager
Crawford Environmental Services
SC Rehabilitation Contractor Number: 0388

Attachments:
Tier II Assessment

MID-ATLANTIC REGION
15 CHURCH AVENUE, SW
ROANOKE, VIRGINIA 24011
OFFICE 540 343.6256
FAX 540 343.6259
ccrawford@crawfordenvironmental.com

SOUTHEAST REGION
104 CORPORATE BLVD, SUITE 412
WEST COLUMBIA, SOUTH CAROLINA 29169
OFFICE 803 708.0079
FAX 803 708.8137
dobrien@crawfordenvironmental.com

CRAWFORD
ENVIRONMENTAL SERVICES

September 28, 2011

James Abraham
2721 Russell Street
Orangeburg, SC 29115

Re: Tier II Assessment Report
Vacant Lot, 2309 Russell Street Orangeburg , SC 29115
UST Permit: 19268
Cost Agreement: 42108
CES Project #: 15.070
Orangeburg County

Dear Mr. Abraham,

Crawford Environmental Services, Inc. (CES) is pleased to submit the attached Tier II Assessment Report for the above mentioned facility. The included report describes assessment activities conducted at the above mentioned facility and on surrounding properties in general accordance with the South Carolina Department of Health and Environmental Control (SCDHEC). The assessment activities described in the included report, may have included work that was completed on your property. Please see attached report for further details.

If you have any questions or comments regarding site 19268, Vacant Lot please feel free to contact me at 803-708-0079, or by email at jreynolds@crawfordenvironmental.com.

Sincerely,

Justin Reynolds
Project Manager
Crawford Environmental Services
SC Rehabilitation Contractor Number: 0388

Attachments:
Tier II Assessment

MID-ATLANTIC REGION
15 CHURCH AVENUE, SW
ROANOKE, VIRGINIA 24011
OFFICE 540 343.6256
FAX 540 343.6259
ccrawford@crawfordenvironmental.com

SOUTHEAST REGION
104 CORPORATE BLVD, SUITE 412
WEST COLUMBIA, SOUTH CAROLINA 29169
OFFICE 803 708.0079
FAX 803 708.8137
dobrien@crawfordenvironmental.com

CRAWFORD
ENVIRONMENTAL
SERVICES

September 28, 2011

Ken Davis
S.C. State University
Facilities Management
300 College Street NE
Orangeburg, SC 29117

Re: Tier II Assessment Report
Vacant Lot, 2309 Russell Street Orangeburg , SC 29115
UST Permit: 19268
Cost Agreement: 42108
CES Project #: 15.070
Orangeburg County

Dear Mr. Davis,

Crawford Environmental Services, Inc. (CES) is pleased to submit the attached Tier II Assessment Report for the above mentioned facility. The included report describes assessment activities conducted at the above mentioned facility and on surrounding properties in general accordance with the South Carolina Department of Health and Environmental Control (SCDHEC). The assessment activities described in the included report, may have included work that was completed on your property. Please see attached report for further details.

If you have any questions or comments regarding site 19268, Vacant Lot please feel free to contact me at 803-708-0079, or by email at jreynolds@crawfordenvironmental.com.

Sincerely,

Justin Reynolds
Project Manager
Crawford Environmental Services
SC Rehabilitation Contractor Number: 0388

Attachments:
Tier II Assessment

MID-ATLANTIC REGION
15 CHURCH AVENUE, SW
ROANOKE, VIRGINIA 24011
OFFICE 540 343.6256
FAX 540 343.6259
ccrawford@crawfordenvironmental.com

SOUTHEAST REGION
104 CORPORATE BLVD, SUITE 412
WEST COLUMBIA, SOUTH CAROLINA 29169
OFFICE 803 708.0079
FAX 803 708.8137
dobrien@crawfordenvironmental.com

Please Return to Andrew McCormick,
Assessment Section UST Program,
2600 Bull Street,
Columbia, SC 29201

DEC 16 2008

UNDERGROUND STORAGE TANK PROGRAM

RIGHT OF ENTRY

I, Bernie L Wright certify that I am the legal owner or the authorized representative for Same (owner) of the property described below. I have witnessed the planned locations / have been provided a sketch map indicating the location(s) of the work to be performed. Permission is hereby granted to the South Carolina Department of Health and Environmental Control (SCDHEC) and its agents to enter the referenced property for the following purposes:

Name of Facility (if appropriate) : Vacant Lot 2309 Russell Street
Street Address : 2309 Russell Street
City, State, ZIP : Orangeburg, SC. 29115

1) Drilling of screening points. The work will be properly abandoned upon completion, and no permanent effects shall remain on site.
2) Installation of monitoring/ recovery wells. I understand that these wells will remain on the property until cleanup is complete. Additionally, SCDHEC or its agents will access the property at reasonable times for measurement and/or collection of samples.
3) The monitoring wells will be properly abandoned upon completion of remediation activities.

NAME (Please print) : Bernie L Wright
SIGNATURE : Bernie L Wright
WITNESS : Beverly A Wright
DATE: December Mo 08 Day 08 Year

Reference UST Permit # 19268

UST DOCKET
2 tech

CRAWFORD ENVIRONMENTAL SERVICES

Access Agreement

I, James Abraham, hereby certify that I am the owner of record or otherwise have legal right to grant entry and access to the property for the purpose described below ("owner") and do hereby grant the South Carolina Department of Health and Environmental Control (SCDHEC), its consulting firm Crawford Environmental Services (CES) and its agents, employees, subcontractors, and assigns the right to enter upon the property located at or described as:

Address: 2721 Russell St Orangeburg S.C. 29115

Tax Map ID: _____

For the purpose of performing a Tier II Environmental Site Assessment, as requested by SCDHEC, which will include the following categories of work, if necessary;

- **Drilling and installation of field screening test borings**
- **Drilling and installation of groundwater monitoring wells**
- **Periodically measuring groundwater, about once every three months**
- **Collection of groundwater samples, about once every three months**
- **Maintenance of monitoring wells**

Access to the monitoring well(s) will be needed for a period not likely to exceed five years after monitoring well installation has been completed. The property owner will be notified at least 48 hours in advance of any planned activities on the property. At the time, the property owner may contact SCDHEC or CES if there are any questions or concerns about the work on the property. This permission to enter the property is effective upon execution of this document. This permission to Enter Property is granted with consideration of CES making reasonable restoration to the property resulting from CES activities on site.

Consented to Giving Access:

James Abraham
Property Owners Signature

JAMES ABRAHAM
Printed Name

803-534-5039
Telephone Number

Access Denied:

_____
Property Owners Signature

_____
Printed Name

Reference UST Permit #: _____

Check Any That Apply:

- ☐ **Please provide a copy of the report**
- ☐ **Electronic Copy**
- ☐ **Paper Copy**

Please return to:
Crawford Environmental Services
104 Corporate Blvd. Suite 412
West Columbia, SC 29196

MID-ATLANTIC REGION
15 CHURCH AVENUE, SW
ROANOKE, VIRGINIA 24011
OFFICE 540 343.6256
FAX 540 343.6259
ccrawford@crawfordenvironmental.com

SOUTHEAST REGION
104 CORPORATE BLVD, SUITE 412
WEST COLUMBIA, SOUTH CAROLINA 29169
OFFICE 803 708.0079
FAX 803 708.8137
dobrien@crawfordenvironmental.com

CRAWFORD ENVIRONMENTAL SERVICES

Access Agreement

-> I, Delano Scott, hereby certify that I am the owner of record or otherwise have legal right to grant entry and access to the property for the purpose described below ("owner") and do hereby grant the South Carolina Department of Health and Environmental Control (SCDHEC), its consulting firm Crawford Environmental Services (CES) and its agents, employees, subcontractors, and assigns the right to enter upon the property located at or described as:

Address: 101A Buckley (apartments)

Tax Map ID: _____

For the purpose of performing a Tier II Environmental Site Assessment, as requested by SCDHEC, which will include the following categories of work, if necessary;

- **Drilling and installation of field screening test borings**
- **Drilling and installation of groundwater monitoring wells**
- **Periodically measuring groundwater, about once every three months**
- **Collection of groundwater samples, about once every three months**
- **Maintenance of monitoring wells**

Access to the monitoring well(s) will be needed for a period not likely to exceed five years after monitoring well installation has been completed. The property owner will be notified at least 48 hours in advance of any planned activities on the property. At the time, the property owner may contact SCDHEC or CES if there are any questions or concerns about the work on the property. This permission to enter the property is effective upon execution of this document. This permission to Enter Property is granted with consideration of CES making reasonable restoration to the property resulting from CES activities on site.

Consented to Giving Access:

Delano Scott

Property Owners Signature

Delano Scott

Printed Name

803 347-7085

Telephone Number

Access Denied:

_____

Property Owners Signature

_____

Printed Name

Reference UST Permit #: _____

Check Any That Apply:

- ☐ **Please provide a copy of the report**
- ☐ **Electronic Copy**
- ☐ **Paper Copy**

Please return to:
Crawford Environmental Services
104 Corporate Blvd. Suite 412
West Columbia, SC 29196

MID-ATLANTIC REGION
15 CHURCH AVENUE, SW
ROANOKE, VIRGINIA 24011
OFFICE 540 343.6256
FAX 540 343.6259
ccrawford@crawfordenvironmental.com

SOUTHEAST REGION
104 CORPORATE BLVD, SUITE 412
WEST COLUMBIA, SOUTH CAROLINA 29169
OFFICE 803 708.0079
FAX 803 708.8137
dobrien@crawfordenvironmental.com

SC State

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Access Agreement

I, John E. Smalls, hereby certify that I am the owner of record or otherwise have legal right to grant entry and access to the property for the purpose described below ("owner") and do hereby grant the South Carolina Department of Health and Environmental Control (SCDHEC), its consulting firm Crawford Environmental Services (CES) and its agents, employees, subcontractors, and assigns the right to enter upon the property located at or described as:

Address: Buckley St, Orangeburg SC 29117

Tax Map ID: _____

For the purpose of performing a Tier II Environmental Site Assessment, as requested by SCDHEC, which will include the following categories of work, if necessary;

- **Drilling and installation of field screening test borings**
- **Drilling and installation of groundwater monitoring wells**
- **Periodically measuring groundwater, about once every three months**
- **Collection of groundwater samples, about once every three months**
- **Maintenance of monitoring wells**

Access to the monitoring well(s) will be needed for a period not likely to exceed five years after monitoring well installation has been completed. The property owner will be notified at least 48 hours in advance of any planned activities on the property. At the time, the property owner may contact SCDHEC or CES if there are any questions or concerns about the work on the property. This permission to enter the property is effective upon execution of this document. This permission to Enter Property is granted with consideration of CES making reasonable restoration to the property resulting from CES activities on site.

Consented to Giving Access:

John E. Smalls
Property Owners Signature

Reference UST Permit #: _____

_____
Printed Name

Check Any That Apply:

803-378-5113
Telephone Number

☐ **Please provide a copy of the report**

☐ **Electronic Copy**

☐ **Paper Copy**

Access Denied:

_____
Property Owners Signature

_____
Printed Name

Please return to:
Crawford Environmental Services
104 Corporate Blvd. Suite 412
West Columbia, SC 29196

MID-ATLANTIC REGION
15 CHURCH AVENUE, SW
ROANOKE, VIRGINIA 24011
OFFICE 540 343.6256
FAX 540 343.6259
ccrawford@crawfordenvironmental.com

SOUTHEAST REGION
104 CORPORATE BLVD, SUITE 412
WEST COLUMBIA, SOUTH CAROLINA 29169
OFFICE 803 708.0079
FAX 803 708.8137
dobrien@crawfordenvironmental.com

CRAWFORD ENVIRONMENTAL SERVICES

Access Agreement

I, Robert Bethea, III, hereby certify that I am the owner of record or otherwise have legal right to grant entry and access to the property for the purpose described below ("owner") and do hereby grant the South Carolina Department of Health and Environmental Control (SCDHEC), its consulting firm Crawford Environmental Services (CES) and its agents, employees, subcontractors, and assigns the right to enter upon the property located at or described as:

Address: 2267 Russell Street, N.E., Orangeburg, South Carolina 29115

Tax Map ID:

For the purpose of performing a Tier II Environmental Site Assessment, as requested by SCDHEC, which will include the following categories of work, if necessary;

- **Drilling and installation of field screening test borings**
- **Drilling and installation of groundwater monitoring wells**
- **Periodically measuring groundwater, about once every three months**
- **Collection of groundwater samples, about once every three months**
- **Maintenance of monitoring wells**

Access to the monitoring well(s) will be needed for a period not likely to exceed five years after monitoring well installation has been completed. The property owner will be notified at least 48 hours in advance of any planned activities on the property. At the time, the property owner may contact SCDHEC or CES if there are any questions or concerns about the work on the property. This permission to enter the property is effective upon execution of this document. This permission to Enter Property is granted with consideration of CES making reasonable restoration to the property resulting from CES activities on site.

Consented to Giving Access:

Property Owners Signature

Reference UST Permit #:

Robert Bethea, III
Printed Name

803-378-6347
Telephone Number

Check Any That Apply:

- [X] **Please provide a copy of the report**
- [ ] **Electronic Copy**
- [ ] **Paper Copy**

Access Denied:

Property Owners Signature

Printed Name

Please return to:
Crawford Environmental Services
104 Corporate Blvd. Suite 412
West Columbia, SC 29196

Correct address

MID-ATLANTIC REGION
15 CHURCH AVENUE, SW
ROANOKE, VIRGINIA 24011
OFFICE 540 343.6256
FAX 540 343.6259
ccrawford@crawfordenvironmental.com

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WEST COLUMBIA, SOUTH CAROLINA 29169
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FAX 803 708.8137
dobrien@crawfordenvironmental.com

Aug 29 2011 6:20PM HP LASERJET FAX p.1

APPENDIX H
Local Zoning Regulations

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Zoning Regulations: Orangeburg County- MECI Tier I Assessment

Midlands Environmental Consulting Inc., (MECI) completed a Tier 1 on the subject site in December 2010. According to the Tier 1 Assessment, there are no zoning regulations associated with the installation of water supply wells in Orangeburg County other than what SCDHEC sets forth.

APPENDIX K
Data Verification Checklist

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UST Programmatic QAPP Contractor Checklist

Item #:	Item	Yes	No	N/A	Location
1	Is Facility Name, Permit #, and address provided?	Yes			1.2.1
2	Is UST Owner/Operator name, address, provided?	Yes			1.2.2
3	Is name, address, & phone number of current property owner provided?	Yes			1.2.3
4	Is the SCDHEC Certified UST Site Rehabilitation Contractor's name, address, phone number, and certification number provided?	Yes			1.2.4
5	Is the name, address ,telephone number, and certification number of the well driller that installed the boring/monitoring wells provided?	Yes			1.2.5
6	Is the name, address, telephone number, and certification number of the certified laboratories performing analytical analyses provided	Yes			1.2.6
7	Has the facility history be summarized?	Yes			1.4
8	Has the regional geology and hydrogeology been summarized?	Yes			2.1
9	Are the receptor survey results provided as required?	Yes			2.3
10	Has the current use of the site and adjacent land been described?	Yes			1.3
11	Has the site specific geology been described?	Yes			2.2
12	Has the primary soil type been described?	Yes			2.2
13	Have the field screening results been described?	Yes			Table 1B
14	Has a description of the soil sample collection and preservation been detailed?	Yes			3.2.1
15	Has the field screening methodology been detailed?	Yes			3.1
16	Has the monitoring well installation and development dates been provided?	Yes			3.2
17	Has the method of well development been detailed?	Yes			3.2
18	Has the justification been provided for the locations of the monitoring wells?	Yes			1.5 (3)
19	Have the monitoring wells been labeled in accordance with the UST QAPP guidelines?	Yes			1.5(3)
20	Has the groundwater sampling methodology been detailed?	Yes			3.3
21	Have the groundwater sampling dates and groundwater measurements been provided?	Yes			3.3
22	Has the purging methodology been detailed?	Yes			3.3
23	Has the volume of water purged from each well been provided along with the measurements to verify purging is complete?	Yes			Apx B
24	If free-product is present, has the thickness been provided?			N/A	
25	Does the report include a brief discussion of the assessment done and the results?	Yes			5.0
26	Does the report include a brief discussion of the aquifer evaluation and the results?	Yes			4.0
27	Does the report include a brief discussion of the fate & transport models used?			N/A	
28	Are the site-conceptual tables included (Tier 1 risk evaluation)			N/A	
29	Have the exposure pathways been analyzed (Tier 2 risk evauluation)			N/A	
30	Have the SSTLs for each compound and pathway been calculated? (Tier 2 risk evaluation)			N/A	
31	Have recommendations for further action been provided and explained?				7.0
32	Has the soil analytical data for the site been provided in tabular format? (Table 1)	Yes			Table 1
33	Has the potentiometric data for the site been provided in tabular format?	Yes			Table 2
34	Has the current and historical laboratory data been provided in tabular format	Yes			Table 3
35	Have the aquifer characteristics been provided and summarized on the appropriate form?	Yes			Apx F
36	Have the Site conceptual model tables been included (Tier 1 risk evaluation)			N/A	
37	Has the topographic map been provided with all the required elements?	Yes			Figure 1
38	Has the site base map been provided with all the required elements?	Yes			Figure 2
39	Have the CoC maps been provided?	Yes			Figure 4
40	Have the potentiometric maps been provided?	Yes			Figure 5
41	Have the geologic cross-sections been provided	Yes			Figure 6
42	Have maps showing the predicted migration of the CoCs through time been provided?			N/A	
43	Has the site survey been provided and include all necessary elements?	Yes			Apx A
44	Have the sampling logs, chain of custody forms and analytical data package been included with all elements?	Yes			Apx B
45	Is the laboratory performing the analyses properly certified?	Yes			Apx B
46	Has the tax map been included with all necessary elements?	Yes			Apx C
47	Have the soil/boring field screening logs been provided?	Yes			Apx D
48	Have the well completion logs been provided?	Yes			Apx D
49	Have the aquifer evaluation forms,data, graphs, equations,etc. been provided?	Yes			Apx E
50	Have the disposal manifests been provided?	Yes			Apx G
51	Has a copy of the local zoning regulations been provided?	Yes			Apx H
52	Has all fate and transport modeling been provided?			N/A	
53	Have copies of all access agreements obtained by the contractor been provided?	Yes			Apx J
54	Has a copy of this form been attached to the final report and are explainations for any missing or incomplete data been provided?	Yes			

Comments:

APPENDIX L
Quality Assurance Program Plan

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Section A: Project Management

A1 Title and Approval Page

Quality Assurance Project Plan
Addendum to the SC DHEC UST Programmatic QAPP
For
Vacant Lot Site UST Permit #: 19268

2309 Russell Street Orangeburg, SC 29116

Prepared by:

Justin Reynolds
Crawford Environmental Services
104 Corporate Blvd. Suite 412
West Columbia, SC 29196
SCDHEC Site Rehabilitation Contractor Certification Number: UCC-0388

Approvals

Alex Smith SC DHEC Project Manager	Signature	Date 8/8/11
Dee O'Brien Site Rehabilitation Contractor	Signature	Date 8/1/11
Charles Crawford Project Verifier	Signature	Date 8/1/11
Ashley Amick Laboratory Director	Ashley B. Amick Mon Aug 1 2011 12:42:02 Signature	Date
Allison Cantrell Laboratory Director	Allison A. Cantrell Digitally signed by Allison Cantrell DN: cn=Allison Cantrell, c=US, o=aes, ou=aes Date: 2011.08.01 11:33:52 -04'00' Signature	Date

CRAWFORD ENVIRONMENTAL SERVICES

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CRAWFORD ENVIRONMENTAL SERVICES

A3 Distribution List

Name	Title	Organization/Address	Telephone Number	Fax Number	Email Address
Alex Smith	SC DHEC Technical Project Manager	SCDHEC, UST Management Division, 2600 Bull St., Columbia, SC, 29201	803-896-6218	803-896-6245	Smitha2@dhec.sc.gov
Dee O'Brien	Site Rehabilitation Contractor	Crawford Environmental Services 104 Corporate Blvd. Suite 412 West Columbia, SC 29169	803-708-0079	803-708-8137	dobrien@crawfordenvironmental.com
Charles Crawford	Project QA/QC Manager and Project Verifier	Crawford Environmental Services 15 Church Street Roanoke, VA 24011	540-343-6256	540-343-6259	ccrawford@crawfordenvironmental.com
Justin Reynolds	Project Manager	Crawford Environmental Services 104 Corporate Blvd. Suite 412 West Columbia, SC 29169	803-708-0079	803-708-8137	jreynolds@crawfordenvironmental.com
Todd Allred	Field Manager/ Certified Well Driller	Crawford Environmental Services 104 Corporate Blvd. Suite 412 West Columbia, SC 29169	803-708-0079	803-708-8137	tallred@crawfordenvironmental.com
Ashley Amick	Laboratory Director	Access Analytical, Inc. (AA) 7478 Carlisle Street Irmo, SC 29063	803-781-4243	803-781-4303	aamick@axs-inc.com
Allison Cantrell	Laboratory Director	Analytical Environmental (AES) Services Inc. 3785 Presidential Pkwy Atlanta, GA 30340	770-457-8177	770-457-8188	acantrell@aesatlanta.com

Table 1A Addendum Distribution List

A4 Project Organization

Role from the UST Master QAPP	Name of person in this Role for this Project	Organization/Address	Telephone Number	Fax Number	Email Address
Project Manager	Alex Smith	SCDHEC, UST Management Division, 2600 Bull St., Columbia, SC, 29201	803-896-6218	803-896-6245	Smitha2@dhec.sc.gov
Site Rehabilitation Contractor	Dee O'Brien	Crawford Environmental Services 104 Corporate Blvd. Suite 412 West Columbia, SC 29169	803-708-0079	803-708-8137	dobrien@crawfordenvironmental.com
Project Manger	Justin Reynolds	Crawford Environmental Services 104 Corporate Blvd. Suite 412 West Columbia, SC 29169	803-708-0079	803-708-8137	jreynolds@crawfordenvironmental.com
Analytical Laboratory Director	Ashley Amick	Access Analytical, Inc. 7478 Carlisle Street Irmo, SC 29063	803-781-4243	803-781-4303	aamick@axs-inc.com
Analytical Laboratory Director	Allison Cantrell	Analytical Environmental Services Inc. 3785 Presidential Pkwy Atlanta, GA 30340	770-457-8177	770-457-8188	acantrell@aesatlanta.com
Field Manager/ Certified Well Driller	Todd Allred	Crawford Environmental Services 104 Corporate Blvd. Suite 412 West Columbia, SC 29169	803-708-0079	803-708-8137	tallred@crawfordenvironmental.com
Project QA/QC Manager and Project Verifier	Charles Crawford	Crawford Environmental Services 15 Church Street Roanoke VA, 24011	540-343-6256	540-343-6259	ccrawford@crawfordenvironmental.com

Table 2A Addendum Role Identification and Contact Information

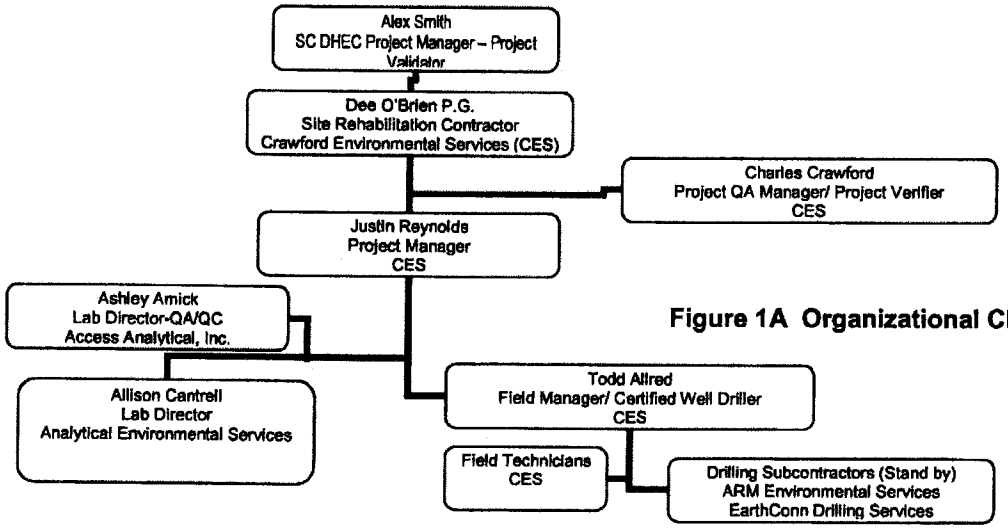

Figure 1A Organizational Chart

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. According to SCDHEC and contractor records, a Tier I Assessment, was previously completed at this facility. During the Tier I Assessment, several groundwater monitoring wells yielded dissolved-phase concentrations of Chemicals of Concern (CoCs) in exceedance of the risk based screening limits and maximum contaminant limits (RBSLs/MCLs).

Please answer the following: Does this project fall under UST or Brownfields area?
UST Area.

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).*** Install up to 20 field screening points, 20 shallow monitoring wells and 5 deep monitoring wells for the purpose of defining the horizontal and vertical extent of impact at the site. Gauge and sample all existing and newly installed wells at the site. Submit collected samples to the laboratory for analysis. Prepare and submit a report of findings to SCDHEC UST project manager.

2. ***The work will begin within:*** two weeks of cost approval. Field screening will take approximately one week, shallow well installation approximately one week and deep well installation will take approximately one week. Well installation will immediately be followed by groundwater sampling (within 5 days of deep well installation) the lab will require 7-9 days for sample analysis. Report development will take an additional week. If more samples are required to achieve 90% valid samples, the project may be extended. The SCDHEC project manger will be contacted via email or telephone if project requires an extension.

3. ***Are there are time or resource constraints? Include those factors that may interfere with the tentative schedule.*** Drilling, field equipment, laboratory equipment failures may cause up to a two week delay. Property access may cause up to a one week delay. No resource constraints are anticipated.

A7 Data Quality Objectives (DQOs) and Data Quality Indicators (DQIs)

Please refer to Appendix D for proposed shallow and deep monitoring well installation locations. The assessment boundaries are bound to properties in which consent from the property owner has been received. SCDHEC will be notified on any accessibility issues.

A8 Training and Certificates

Required training and licenses:

Title/Job	Name	Training Required	Date training received	Type of License	License Number
Site Rehabilitation Contractor	Dee O'Brien	BS/MS Geology	-	S.C.P.G.	873
Project Manager	Justin Reynolds	-	-	-	-
Field Manager	Todd Allred	N/A	N/A	SCLLR Class B	1446
Field Technicians	-	-	-	N/A	N/A
Lab Director (AA)	Ashley Amick	BS Biology		SC Certified Lab	32575001
Lab Director (AES)	Allison Cantrell	N/A	N/A	SC Certified Lab	98016003

Table 3A Required Training and Licenses

Justin Reynolds of CES is responsible to ensuring that personnel participating in this project receive the proper training. All training records will be stored in the following location: 15 Church Street Roanoke, VA 24011

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 Contractor performing Field Analyses: Crawford Environmental Services, Inc.
Name of Lab Director: Justin Reynolds
SCDHEC Certification Number: N/A
Parameters this Lab/Contractor will analyze for this project:
pH
Dissolved Oxygen
Temperature
Specific Conductance

Full Name of the Contractor performing Lab Analyses: Analytical Environmental Services Inc.
Name of Lab Director: Allison Cantrell (QA/QC Ashley Amick- Access Analytical inc.)
SCDHEC Certification Number: SC Cert #: 98016003
Parameters this Lab/Contractor will analyze for this project:
BTEX, naphthalene, MTBE , 1,2 DCA, 8 Oxygenates by EPA method 8260B
EDB by EPA method 8011
Unfiltered Lead by EPA method 6010C

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)

__X__US Mail ____Courier __X__Hand delivered

Personnel will receive the QAPP via, US Mail, Email, or by downloading from CES internal network. Notification of updates to the Master QAPP will be through email from the contractor. CES personnel can access the QAPP by downloading through the internal network.

Record	Produced By	Hardcopy/ Electronic	Storage Location For how long?	Archival
Field Data Sheets	Environmental Contractor	Hard Copy	At Contractor Office Hard Copy for 5 Years	Included in Report
Laboratory Data	Laboratory Contractor	Electronic	At Laboratory Electronic for 25 Years	See Lab Archive plan
Weekly Update	Environmental Contractor	Electronic	At Contractors Office Electronic copy for 5 years	Included in Report
Monitoring Report	Environmental Contractor	Electronic/ Hard Copy	At Contractors Office Electronic copy for 5 years	Electronic Copy

Table 4A Record Identification, Storage, and Disposal

Section B Measurement/Data Acquisition

B1 Sampling Process/Experimental Design

Item	Start Date	End Date	Comments
Gauge Wells	D +7 days	D +7 days	
Sample Wells	D+7 days	D+7 days	
Samples Delivered to Lab	D+7 days	D+7 days	Samples delivered to Access Analytical by CES.
Samples are analyzed	D+8 days	D +21 days	
Report recived by contractor	D+35 days	N/A	
Project Data verified and report constructed	D + 35 days	D +49 days	
SCDHEC Project manger receives report	D +50 days	N/A	
Project Validation	D +50 days	D + 80 days	

Table 5A Sampling Activities
D= Drilling

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 (Shallow Wells Only)	***20***
Ground Water from field screening ***(20 Proposed Locations)***	*20*
Ground Water from monitoring wells ***(4 Existing Monitoring Wells, 20 Proposed Shallow Wells, 5 Proposed Deep Wells)***	*29*
From Drinking/Irrigation water wells	*0*
From surface water features	*0*
Field Blanks/ Trip Blanks/ Duplicates	*9*
Total number of Water samples	*58*

If any of the above are circled please indicate how will it be done and the equipment needed. Refer to CES SOP 2.10.1

Will Sampling Equipment have to be cleaned and decontaminated or is everything disposable? Refer to CES SOP Section 2.10

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. Refer to CES SOP Section 2.10.1

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. Access Analytical will be the laboratory and is responsible for shipment of all samples via Fedex, to the subcontractor laboratory of AES. A CME 55 with solid stem augers and hollow stem augers operated by CES will be utilized for field screening, shallow and deep monitoring well installation. Refer to CES SOP Section 2.9 for methodology.

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
Equipment Failure	Contact CES project manager	Identify failure. Log date, time and equipment.	Field Technicians
Loss or delay of lab samples	Resample	Notice by Access of lost or delayed samples	Access Analytical
Lost samples in the lab	Resample	Email from lab to CES project manager and QA/ project verifier	Lab Sample Custodian
Sample failure (hold time limit exceeded/temperature limit exceeded	Contact CES project manager	Email from lab to CES project manager and QA/ project verifier	Laboratory

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?*** Samples will be delivered to Access Analytical by CES personnel. Access Analytical will then ship the samples via Fedex to AES. Temperature and condition of the samples will be checked upon arrival at Access Analytical and arrival to AES.

2. ***How will the contactors cool the samples and keep the samples cool?***
   Refer to CES SOP section 2.11

3. ***How will the lab determine the temperature of the samples upon receipt? Will they be using a temperature blank?***
   Refer to CES SOP section 2.11

4. ***Where will the samples be stored in the Lab once they are received?***
   Refer to CES SOP section 2.11

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.***
   Refer to CES SOP section 2.11

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
pH	Section 2.10	SM 4500 H+B	HACH	Refer section 2.10 CES SOP
Specific Conductance	Section 2.10	SM2510B	HACH	Refer section 2.10 CES SOP
Temperature	Section 2.10	SM2550B	HACH	Refer section 2.10 CES SOP
Dissolved Oxygen	Section 2.10	SM4500-O-G	HACH	Refer section 2.10 CES SOP
BTEX, naphthalene, MTBE, 1,2 DCA, 8 Oxygenates	Section 8	EPA Method 8260B	Appendix III	
EDB	Section 8	EPA Method 8011	Appendix III	
Unfiltered Lead	Section 8	EPA Method 6010C	Appendix III	

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.**

2. **Identify procedures to follow when failures occur, identify the individual responsible for corrective action and appropriate documentation:**

Failure	Response	Documented Where?	Individual Responsible
Equipment Failure	Contact CES Project Manager	Record problem, reschedule field activities	Field Technicians
QC Failure	Contact CES Project Manager	Notification/Documentation via email, noted in laboratory report	Laboratory
Sample accident in transit	Contact CES Project Manager	Notification/Documentation via email, noted in laboratory report	Transit Company
Sample accident in lab	Contact CES Project Manager	Notification/Documentation via email, noted in laboratory report	Laboratory
Insufficient sample for analysis or repeat analysis	Contact CES Project Manager	Notification/Documentation via email, noted in laboratory report	Laboratory

Table 9A Corrective Action Procedures

3. **Identify sample disposal procedures.**

Analysis	Matrix	Schedule for disposal	Method for disposal	Comments
DO	Groundwater	As Generated	55 gallon drum on site	May be intermixed with soil
Specific Conductance	Groundwater	As Generated	55 gallon drum on site	May be intermixed with soil
pH	Groundwater	As Generated	55 gallon drum on site	May be intermixed with soil
Lab	All	See Lab SOP		

Table 10A Sample Disposal

4. **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).**
   N/A

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

1. Identify all field and laboratory equipment needing periodic maintenance, the schedule for this, and the person responsible. Not the availability and location of spare parts.

Instrument	Serial Number	Type of Maintenance	Frequency	Parts needed/Location	Person responsible
HACH	8228266	Check Batteries Check Buffer Solutions Calibration Factory Check Change/clean probe (s)	Monthly, Change out daily as needed	Columbia Office, Supply Cabinet	Justin Reynolds
KECK	-	Check Batteries Clean Probe	Weekly	Columbia Office, Supply Cabinet	Justin Reynolds

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
HACH	Calibration	See CES SOP Section 2.10	Justin Reynolds	Use another meter
Interface Probe	Preparatory Check	See CES SOP Section 2.10	Justin Reynolds	Use another meter

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*
HACH	See CES SOP Section 2.10	See CES SOP Section 2.10, pg 11, Daily Before Use	See CES SOP Section 2.10	See CES SOP Section 2.10	Justin Reynolds	See CES SOP Section 2.10

Instrument	Calibration Procedure	Frequency of Calibration	Acceptance Criteria	Corrective Action (CA)	Person Responsible for CA	SOP Reference*
Interface Probe	See CES SOP Section 2.10	See CES SOP Section 2.10, pg 11, Daily Before Use	See CES SOP Section 2.10	See CES SOP Section 2.10	Justin Reynolds	See CES SOP Section 2.10

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.
pH Buffer Solution	Fisher	Within expiration date	Cool. Dry cabinet	Justin Reynolds
Specfic Conductivity Standard	Fisher	Within expiration date	Cool, dry cabinet	Justin Reynolds
Nitrile Gloves	Clearwater	Sealed	Cool, dry room	Justin Reynolds
Batteries	Any	Sealed	Cool, dry cabinet	Todd Allred
Ballers	Clearwater	Sealed (individually)	Cool, dry room	Todd Allred
Snap Collectors/PDB	EON	Sealed (individually)	Cool,dry room	Todd Allred
Bottles	Access Analytical	Sealed	Cool, dry room	Todd Allred
Coolers	Access Analytical	Sealed	Cool,dry room	Todd Allred

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
Tier 1 and other assessment documents	Historic groundwater depth and chemical impact.	Establish the depth to water, materials needed.	

Table 15A Non-Direct Measurements

4. Identify key resources/support facilities needed. Not applicable.

B10 Data Management

1. Describe the data management scheme from field to final use and storage.

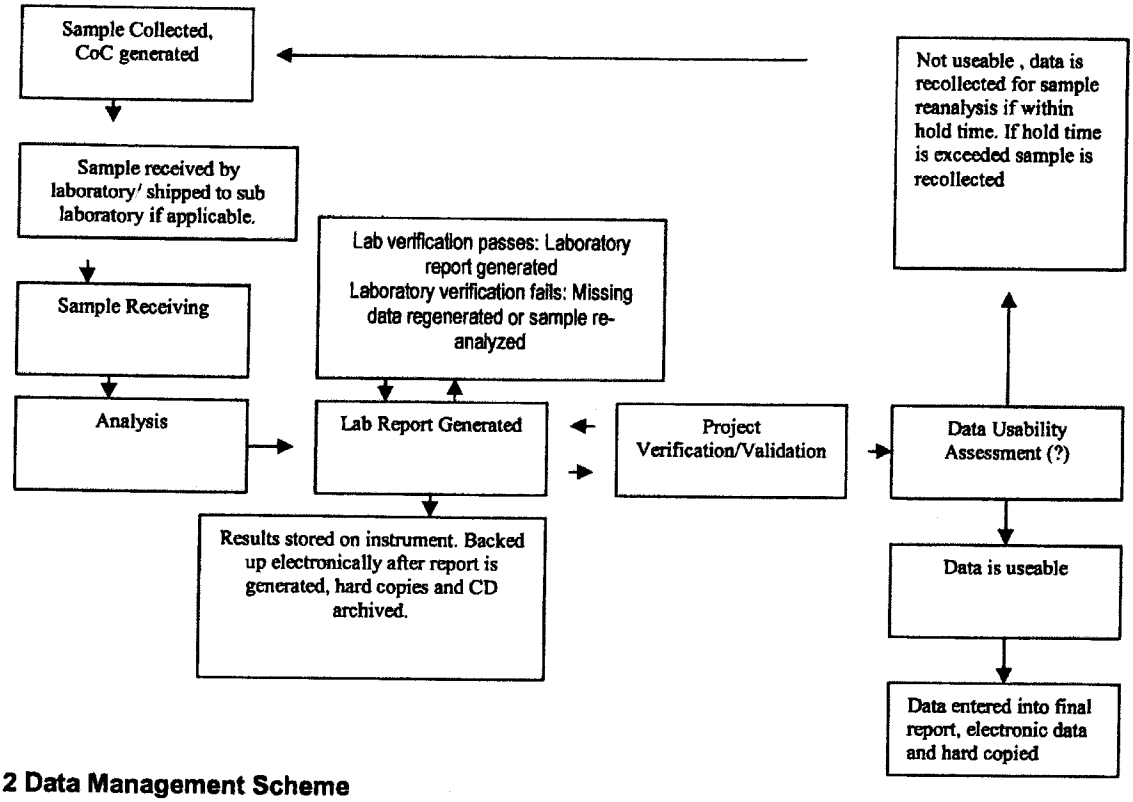

Figure 2 Data Management Scheme

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?** Field data is kept in a dedicated notebook with no pages removed. All data (reports from the lab, field notes, drafts and final reports) are saved on the company server. Original field data hard copies are filed into relevant project folders and archived in filing cabinets. Report data, to include tables and figures, are double checked from the original source by the CES project manager before the report is signed.

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.** Lab internal QA/QC checks and check sheets for all received coolers will determine if laboratory data is credible, or if the groundwater samples are suspect and new samples must be collected and reanalyzed. Laboratory supervisor will check all data before it leaves the laboratory. Laboratory data will be sent electronically to the environmental contractors of the USA for storage on their server.

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).** Hard copies will be maintained at the West Columbia office for five years. The electronic copies will be maintained for 25 years.

Section C Assessment and Oversight

C1 Assessment and Response Actions

1. **Field Oversight:** The Field Manager is responsible for ensuring SOPs to include equipment decontamination and calibration are properly conducted by the field staff. The Field Manager will be present and monitor the field staff every day that field activities occur. The Field Manager is also responsible for ensuring that field personnel adhere to the QAPP. If problems occur the Field Manager will immediately contact the CES Project Manager to determine the corrective action. If the situation cannot be resolved on site, another visit will be scheduled to resample the wells. The Field Manager can stop work at any time: The Project Manager can decide if the sampling party will return to the office without completing sampling of all the monitoring wells. The Field Manager's observations will be submitted to the project manager on a daily basis.

2. **Commercial Lab Offsite Technical Assessment:** The supervisors for each section will review the procedures for another section of the laboratory on a monthly basis to check quality procedures. The Project QA Manager will conduct specific assessments for the methods addressed by this QAPP. Anyone my suspend work if a situation arises, but only the supervisor can stop work. The laboratory QA manager will report all observations to the Laboratory Director. SCDHEC has the right to inspect work at any time. This will be documents and kept as part of project records.

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).

D H E C
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C. Earl Hunter, Commissioner
Promoting and protecting the health of the public and the environment.

DEE OBRIEN PG
DIVISION MANAGER
CRAWFORD ENVIRONMENTAL SERVICES INC
104 CORPORATE BLVD STE 412
WEST COLUMBIA SC 29169-4600

AUG 10 2011

Re: Tier II Directive
Vacant Lot, 2309 Russell Street, Orangburg, SC
UST Permit #19268; Cost Agreement #42108; Monitoring Well Approval # UMW-24317
Solicitation Number IFB-5400002721-3/3/2011-EMW, Purchase Order # 4600089989
Tier II Plan and Site Specific QAPP received August 1, 2011
Revised Tier II Plan received August 4, 2011
Orangeburg County

Dear Mr. O'Brien:

The Underground Storage Tank (UST) Management Division of the South Carolina Department of Health and Environmental Control (SCDHEC) has reviewed the Site-specific Quality Assurance Project Plan (QAPP), Tier II Assessment Plan and associated Cost Agreement for the referenced site. Assessment activities should begin immediately upon receipt of this letter.

Cost agreement number 42108 has been approved in the amount shown on the enclosed cost agreement spreadsheet and will be kept on file so that compensation can begin. **The SCDHEC reserves the authority to pay only for work properly performed and/or technically justified and will only pay rates in accordance with the referenced Invitation for Bid (IFB).** Further, SCDHEC reserves the right to question and/or reject costs if deemed unreasonable. The SCDHEC reserves the right to audit project records at any time during the project or after completion of the work. **The Tier II Assessment Report (1 hardcopies, 1 electronic copy, 1 copy to each property owner who has a well on their property), QAPP checklist, and invoice should be submitted on or before September 30, 2011.**

A copy of the signed site specific QAPP Contractor Addendum and approved assessment component cost agreement is enclosed for your information. Crawford Environmental Services, Incorporated can submit an invoice for direct billing from the State Underground Petroleum Environmental Response Bank (SUPERB) Account. Future invoices and/or other criteria included therein must comply with current SUPERB criteria per Section 44-2-20(2). Please reference cost agreement number 42108 on all pertinent invoices and correspondence. 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 Department is obtained. If for any reason there is a change in this cost agreement, any associated changes must be pre-approved in writing by this Department in order for Crawford Environmental Services, Incorporated to seek future cost compensation.

Any item(s) not clearly or completely addressed in the report (SC certified driller's number, disposal manifest for soil cuttings, disposal manifests for generated ground water, etc.) WILL NOT be compensated by the SUPERB Account. As agreed to in the referenced contract, the owner/operator and property owner of the referenced facility will not be responsible for any costs associated with this assessment.

Monitoring well approval for 20 temporary, 20 shallow, and 5 deep monitoring wells is enclosed for your records. Please note that all applicable South Carolina certification requirements regarding laboratory analyses, well installation, and report preparation must be met. All shallow wells are to be installed with screen intervals that bracket the water table.

The Department grants pre-approval for transportation of virgin petroleum impacted soil and groundwater from the referenced site to a permitted treatment facility. The Division suggests a roll off container will be used for disposal. There can be no spillage or leakage in transport. All investigation-derived waste (IDW) must be properly contained and labeled prior to disposal. IDW should not be stored on-site longer than ninety (90) days. A copy of the disposal manifest and/or acceptance letter from the receiving facility that clearly designates the quantity received must be included as an appendix to the report. As required by the referenced bid, reimbursement for disposal will be based on a per ton and a per gallon rate. If the CoC concentrations, based on laboratory analysis, are below Risk Based Screening Levels (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 the UST Permit # 19268 and Cost Agreement #42108. If you have questions concerning this correspondence, or would like to submit additional information, please contact me at (803) 896-6218, fax me at (803) 896-6245, or e-mail me at smitha2@.dhec.sc.gov.

Sincerely,

Alex Smith, Hydrogeologist
Assessment Section
Underground Storage Tank Management Division
Bureau of Land & Waste Management

enc: Signed Site Specific QAPP Addendum
Approved Cost Agreement
Monitoring Well Approval

Cc: Bernie Wright, P.O. Box 275, Orangeburg, SC 29116-0275 (w/o enc.)
Technical File (w/ enc.)

D H E C

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Monitoring Well Installation Approval Form

Approval is hereby granted to:	Crawford Environmental Services, Incorporated
Facility:	Vacant Lot, 2309 Russell St., Orangeburg, SC
UST Permit Number:	19268
County:	Orangeburg

This approval is for the installation of 20 temporary, 20 shallow, and 5 deep monitoring wells. The monitoring wells are to be installed in the approved locations. Monitoring wells are to be installed following 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 Department shall be completed and submitted to the Department within 30 days after well completion or abandonment unless another schedule has been approved by the Department. 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 Department within 30 days of receipt of laboratory results unless another schedule has been approved by the Department as required by R.61-71.H.1.d.
5. If any of the information provided to the Department changes, notification to Alex Smith (tel: (803) 896-6218 or e-mail: smitha2@dhec.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. Monitoring wells shall have Department approval prior to abandonment as required by R.61-71.H.1.a. A copy of this approval should be on the site during well installation.

Date of Issuance: **August 8, 2011** **Approval #:** **UMW-24317**

Alex Smith, Hydrogeologist
Assessment Section
Underground Storage Tank Management Division
Bureau of Land and Waste Management

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C. Earl Hunter, Commissioner

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DEE OBRIEN PG
DIVISION MANAGER
CRAWFORD ENVIRONMENTAL SERVICES INC
104 CORPORATE BLVD STE 412
WEST COLUMBIA SC 29169-4600

OCT 11 2011

Re: Additional Tier II Directive
Vacant Lot, 2309 Russell Street, Orangeburg, SC
UST Permit #19268; Cost Agreement #42108; Monitoring Well Approval # UMW-24317
Solicitation Number IFB-5400002721-3/3/2011-EMW, Purchase Order # 4600089989
Notice to Submit QAPP Contractor Addendum dated July 1, 2011
Tier II Plan and Revision 0 Site Specific QAPP received August 1, 2011
Required revisions to Tier II Plan received August 4, 2011
Tier II Report Directive dated August 10, 2011
Tier II Report received September 30, 2011
Orangeburg County

Dear Mr. O'Brien:

The Underground Storage Tank (UST) Management Division of the South Carolina Department of Health and Environmental Control (SCDHEC) has reviewed the Tier II Assessment Report and Quality Assurance Program Plan (QAPP) checklist for the referenced site. The report documented that MW-13, MW-14, MW-15, MW-16, and DW-3 were sampled on the same day as well development and completion. Since sampling is to occur no less than 48 hours after well completion, the referenced wells must be purged and resampled. Assessment activities should begin immediately upon receipt of this letter.

The SCDHEC reserves the authority to pay only for work properly performed and/or technically justified and will only pay rates in accordance with contract IFB-5400002721. Further, SCDHEC reserves the right to question and/or reject costs, if deemed unreasonable. The SCDHEC reserves the right to audit project records at any time during the project or after completion of the work. **A Revised Tier II Assessment Report (1 paper copy, 1 electronic copy, and an abbreviated Tier II Report to each property owner who has a monitoring well on their property), Site-specific QAPP checklist, and invoice should be submitted within 90 days or sooner from the date of this correspondence.**

Cost agreement number 42108 and Monitoring Well Approval number UMW-24317 may be amended as necessary. Crawford Environmental Services, Incorporated (Crawford) can submit an invoice for direct billing from the State Underground Petroleum Environmental Response Bank (SUPERB) Account once the plume is defined. Future invoices and/or other criteria included therein must comply with current SUPERB criteria per Section 44-2-20(2). Please reference cost agreement number 42108 on all pertinent invoices and correspondence. 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 Department is obtained. If for any reason there is a change in this cost agreement, any associated changes must be pre-approved by this Department in order for Crawford to seek future cost compensation. The UST Division cannot reimburse Crawford for incomplete or unnecessary work.

Please provide clarification for the following items in the final report:

- Receptor survey only discusses results of Tier I receptor survey. It does not discuss the ditch to the north side of the property as a potential receptor.
- Item #14 should reference section 3.2.1, not section 3.1

- Please reference table 2 for item #21. The report documents the snap collector used to collect sample from DW-3 was deployed prior to well completion.
- Field activity data sheets are incomplete.
- Please make sure that a soil sample from each new well, not just field screening locations, is collected and submitted for analysis.
- Table 2 is incomplete. Groundwater elevations from previous assessments were not included.
- Please fill out one slug test summary form for each aquifer.
- The base map (figure 2) is missing the soil boring locations from the Tier I Assessment.
- The registered land survey is missing property lines, the survey datum location, and the UST permit number.
- Item #48 should reference Appendix E, not Appendix D.
- Appendix H was omitted.
- Shallow monitoring wells MW-7, MW-8, MW-9, MW-12, MW-14 and MW-15 were installed with less than three feet of water in the wells. The depth to groundwater in the existing wells should always be gauged during the initial site visit and again before screening is initiated to verify the depth to and direction of groundwater.
- In the future where the initial monitoring wells are dry, the QAPP should recommend installing wells with 15-foot screens.

Please note that all applicable South Carolina certification requirements regarding laboratory analyses, well installation, and report preparation must be met.

The Department 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. IDW should not be stored on-site longer than ninety (90) days. A copy of the disposal manifest and/or acceptance letter from the receiving facility that clearly designates the quantity received must be included as an appendix to the report. If the COC concentrations, based on laboratory analysis, are below Risk Based Screening Levels (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 the UST Permit # 19268 and Cost Agreement # 42108. If you have questions concerning this correspondence, or would like to submit additional information, please contact me at (803) 896-6218, fax me at (803) 896-6245, or e-mail me at smitha2@dhec.sc.gov.

Sincerely,

Alex Smith, Hydrogeologist
Assessment Section
Underground Storage Tank Management Division
Bureau of Land & Waste Management

enc: Annotated UST Programmatic QAPP Contractor Checklist

cc: Crawford Environmental Contractor Certification File (with enc.)
Technical File (with enc.)

D H E C

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C. Earl Hunter, Commissioner

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BRYAN SHANE
MIDLANDS ENVIRONMENTAL CONSULTANTS
PO BOX 854
LEXINGTON SC 29071

MAR 0 1 2012

UST 18tch DOCKETING

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
09160	Rock Hill Maintenance	York	18-BTEXMN, DCA, & Oxygenates	D. Thoma
09152	York Detention Center	York	27-BTEXMN, DCA; 1-EDB; 11-Oxygenates	D. Thoma
06175	SCDOT Marion	Marion	39-BTEXMN	D. Thoma
13792	Sawyers Grocery	Marion	21-BTEXMN, DCA, & Oxygenates	D. Thoma
17195	HH Transfer & Storage	Orangeburg	15-BTEXMN, DCA, Oxygenates, & EDB	R. Miner
19268	Vacant Lot	Orangeburg	19-BTEXMN, DCA, & Oxygenates	R. Miner
14238	Frm Butler's Gulf	Charleston	20-BTEXMN, DCA, Oxygenates, & EDB	J. Padgett
18040	Youmans #3	Charleston	15-BTEXMN, DCA, Oxygenates, & EDB	J. Padgett
07982	Former Jr Food Mart	Saluda	12-BTEXMN, DCA, & Oxygenates	R. Miner
12614	Frank's Amoco	Lexington	28-BTEXMN, DCA, Oxygenates, & EDB	S. Briney
04224	Bowman's Transport	Greenville	9-BTEXMN, DCA, Oxygenates, EDB, & Lead	S. Briney
15857	Grants Grocery	Chester	26- BTEXMN, DCA, Oxygenates, & EDB	C. Ridgley
12898	Breakers #1	Florence	16-BTEXMN	M. Rivers
10598	Amoco 411	Greenville	22-BTEXMN, DCA, Oxygenates, EDB, & Lead	S. Briney
19435	Frm Dixie Truck Stop	Greenville	13-BTEXMN, DCA, Oxygenates, & EDB	R. Miner
09012	F&T Service Center	Greenville	19-BTEXMN, DCA, Oxygenates	S. Briney

* The number of samples does 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.

Sincerely,

Debra L. Thoma

Debra L. Thoma, Hydrogeologist
Corrective Action Section
UST Management Division
Bureau of Land & Waste Management

Enc: Site Information Packets

cc: Technical Files

Midlands Environmental Consultants, Inc.

March 12, 2012

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
Vacant Lot
Orangeburg, South Carolina
SCDHEC Site ID Number 19268
MECI Project Number 12-3858
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 12, 2012, 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

Brendon P. Kelly
Project Scientist

Post Office Box 854, Lexington SC 29071 • 235-B Dooley Road, Lexington, SC 29073
Telephone: (803) 808-2043 • fax: (803) 808-2048

Section A: Project Management

A1 Title and Approval Page

Quality Assurance Project Plan
Addendum to the SC DHEC UST Programmatic QAPP
For
Vacant Lot, SCDHEC Site ID# 19268

2309 Russell Street, Orangeburg, 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 12, 2012

Approvals

Read Miner, P.G. SC DHEC Project Manager	_____ Signature	Date_____
Brendon P. Kelly Contractor QA Manager	_____ Signature	Date 3/12/12
Jeff L. Coleman Site Rehabilitation Contractor	_____ Signature	Date 3/12/12
Michael Woodrum Laboratory Director	_____ Signature	Date 03-12-12

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A3 Distribution List

Name	Title	Organization/Address	Telephone Number	Fax Number	Email Address
Read Miner, P.G.	SC DHEC Technical Project Manager	SCDHEC, UST Management Division, 2600 Bull St., Columbia, SC, 29201	803-896-6584	803-896-6245	minerrs@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
Brendon P. Kelly	Field Manager	Midlands Environmental Consultants, Inc. 235-B Dooley Road Lexington, SC 29073	803-808-2043	803-808-2048	bpk@meci.net
Michael Woodrum	Laboratory Director	Shealy Environmental Services,Inc. 106 Vantage Point Dr. West Columbia, SC 29172	803-791-9700	803-791-9111	mwoodrum@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	Read Miner, P.G.	SCDHEC, UST Management Division, 2600 Bull St., Columbia, SC, 29201	803-896-6584	803-896-6245	minerrs@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	Brendon P. Kelly	Midlands Environmental Consultants, Inc. 235-B Dooley Road	803-808-2043	803-808-2048	bpk@meci.net

Role from the UST Master QAPP	Person in this Role for Project	Organization/Address	Telephone Number	Fax Number	Email Address
		Lexington, SC 29073			
Analytical Laboratory Director	Michael Woodrum	Shealy Environmental Services,Inc. 106 Vantage Point Dr. West Columbia, SC 29172	803-791-9700	803-791-9111	mwoodrum@shealylab.com
Project Verifier	Courtney M. Sanders or Brendon P. Kelly	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

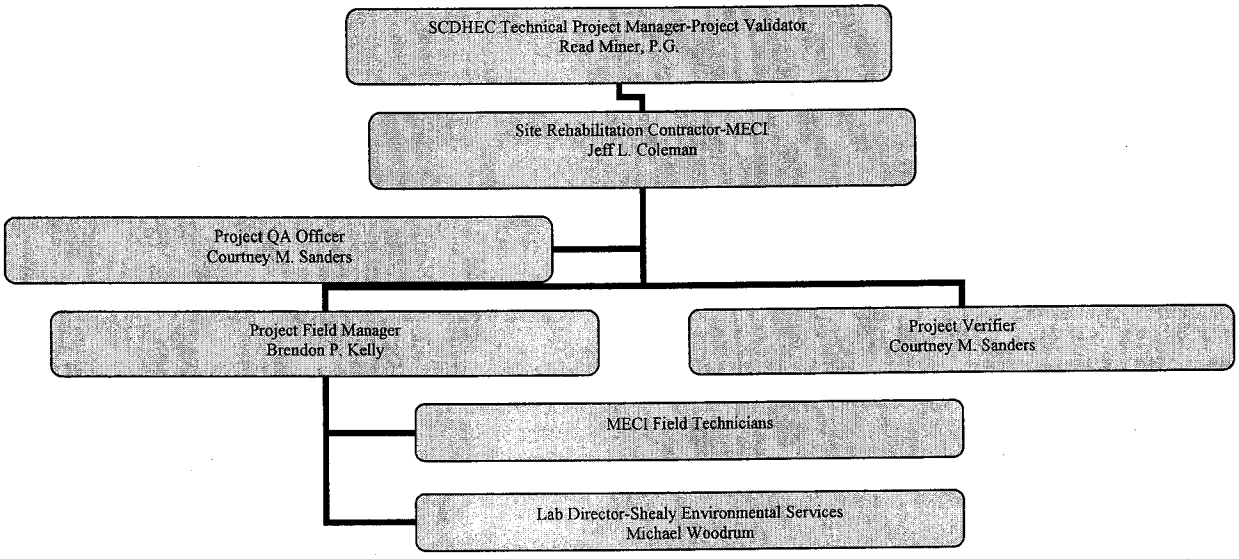


Figure 1A Organizational Chart

Project Manager (Read Miner, 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 (Brendon P. Kelly) –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 (Michael Woodrum)– 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 are 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 (Vacant Lot) is located at 2309 Russell Street, Orangeburg, Orangeburg County, South Carolina. The subject site formally maintained nine underground storage tanks (UST's) of unknown product and capacity. These UST's are pre-1974 and their current status is unknown. The South Carolina Department of Health and Environmental Control (SCDHEC) reported a release of petroleum product from the subject tanks in October of 2006 and confirmed the release in October of 2007. The site is currently rated a Class 3BF.

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 (Vacant Lot) 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 is located at 2309 Russell Street, Orangeburg, Orangeburg County, South Carolina. The site is currently an abandoned lot. There is potential for development of the lot, as a temporary fence has been erected around it.

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	7/27/2011	N/A	N/A
Project Scientist	Brendon Kelly	OSHA 40 hr HAZWOPER	8/21/2009	N/A	N/A
		OSHA 8 hr HAZWOPER refresher	12/15/11	N/A	N/A
Staff Geologist	John Bryant	OSHA 40 hr HAZWOPER	4/17/2009	N/A	N/A
		OSHA 8 hr	3/5/2012	N/A	N/A

Title/Job	Name	Training Required	Date training received	Type of License	License Number
		HAZWOPER refresher			
Field Technician	Brian Owen	OSHA 40 hr HAZWOPER	8/21/2009	N/A	N/A
		OSHA 8 hr HAZWOPER refresher	12/15/11	N/A	N/A
Staff Biologist	Courtney Sanders	OSHA 40 hr HAZWOPER	12/10/2010	N/A	N/A
		OSHA 8 hr HAZWOPER refresher	12/15/11	N/A	N/A
Staff Biologist	Kyle Pudney	OSHA 40 hr HAZWOPER	12/10/2010	N/A	N/A
		OSHA 8 hr HAZWOPER refresher	12/15/11	N/A	N/A
Staff Biologist	Chris Lashley	OSHA 40 hr HAZWOPER	12/10/2010	N/A	N/A
		OSHA 8 hr HAZWOPER refresher	12/15/11	N/A	N/A
Staff Biologist	Gavin Globensky	OSHA 40 hr HAZWOPER	7/29/2011	N/A	N/A
Staff Biologist	Ryan Ariail	OSHA 40 hr HAZWOPER	9/23/2011	N/A	N/A
Lab Manager	Michael Woodrum	***	***	Lab Certification	SC 32010

Table 3A Required Training and Licenses

Brendon P. Kelly 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_____Michael Woodrum_____
SC DHEC Certification Number_____32010_____
Parameters this Lab will analyze for this project:

BTEX, Napth, MTBE, 1,2 DCA, 8-Oxygenates (EPA Method 8260-B), 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 __X__ 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: 235B Dooley Road / Min. 5 years	Yes
Chain of Custody	Field Staff	Hardcopy	MECI office: 235B Dooley Road / Min. 5 years	Yes
QAPP Addendum	Brendon Kelly	Hardcopy & Electronic	MECI office: 235B Dooley Road / Min. 5 years	Yes
Internal QC record	Brendon Kelly	Hardcopy	MECI office: 235B Dooley Road / Min. 5 years	Yes
Sampling Report	Brendon Kelly	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	3/12/12	3/12/12	Already Completed
QAPP preparation	3/12/12	3/12/12	In progress
QAPP approval	3/13/12	4/3/12	Assuming three week turnaround
Monitoring well Sampling	4/4/12	4/18/12	Sampled within 2 weeks of QAPP approval
Report Preparation	4/19/12	5/10/12	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	_____19____
From Drinking/Irrigation water wells	_____
Field Duplicate Collection	_____1____
Field Blank Collection	_____1____
Trip Blank	_____1____
From surface water features	_____
Total number of Water samples	_____22____

Notes:
During the March 12, 2012, site visit, nineteen (19) monitoring wells were located.

During the site visit it was noted that the lid on monitoring well MW-8 has been destroyed and is in need of replacement.

Samples will be analyzed by Shealy Environmental Services, Inc. for BTEX, Napth, MTBE, 1,2 DCA, 8-Oxygenates (8260-B), EDB (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 form 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 kmaberry@shealylab.com

Analytical errors	Corrective Action Form (CAF)	CAF filled out by PM	Lab Director –Michael Woodrum mwoodrum@shealylab.com
QA/QC Failure	Corrective Action Form (CAF)	CAF filled out by PM	Lab Director –Michael Woodrum mwoodrum@shealylab.com QA/QC Officer – Jami Savje Jsavje@shealylab.com
On time delivery	Corrective Action Form (CAF)	CAF filled out by PM	Lab Director –Michael Woodrum mwoodrum@shealylab.com QA/QC Officer – Jami Savje Jsavje@shealylab.com

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

4. 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

1. 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 needed/Location	Person responsible

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	B. Kelly
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	B. Kelly
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, 08B 101407,	General inspection for wear and tear on	Daily	Major fixes will be done out of office	Field Staff

	04A 0912AI	equipment			
Turbidity Tube	#1, #2, #3	General inspection for wear and tear on equipment, clarity of Secchi Disk	Daily	Tubes will be cleaned/fixed 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, recalibrate	Field Staff	4.3.6

Instrument	Calibration Procedure	Frequency of Calibration	Acceptance Criteria	Corrective Action (CA)	Person Responsible for CA	SOP Reference*
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	B. Kelly, Field Staff
Nylon Rope	Preferred Pump	Covered with plastic	Stored in Vehicle Bay, Off of the ground	B. Kelly, Field Staff
Nitrile Gloves	Preferred Pump	Unopened box, no holes	Stored in Vehicle Bay, Off of the ground	B. Kelly, Field Staff
40 mL HCL preserved amber vials	Shealy Environmental Services	Custody seal intact	Stored in Vehicle Bay, Off of the ground	B. Kelly, Field Staff
250 mL HNO3 preserved metals vials	Shealy Environmental Services	Custody seal intact	Stored in Vehicle Bay, Off of the ground	B. Kelly, Field Staff
Coolers	Shealy Environmental	Intact	Stored in Vehicle Bay, Off of the	B. Kelly, Field Staff

	Services		ground	
pH Buffer	TRS Environmental, Enviroequipment	Within expiration date	Stored in calibration room	B. Kelly, Field Staff
Conductivity Standard	TRS Environmental, Enviroequipment	Within expiration date	Stored in calibration room	B. Kelly, Field Staff
DO Membranes	YSI, Enviroequipment	Clean, in box	Stored in calibration room	B. Kelly, Field Staff
Batteries	Any Store	Not previously used	Stored in calibration room	B. Kelly, 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

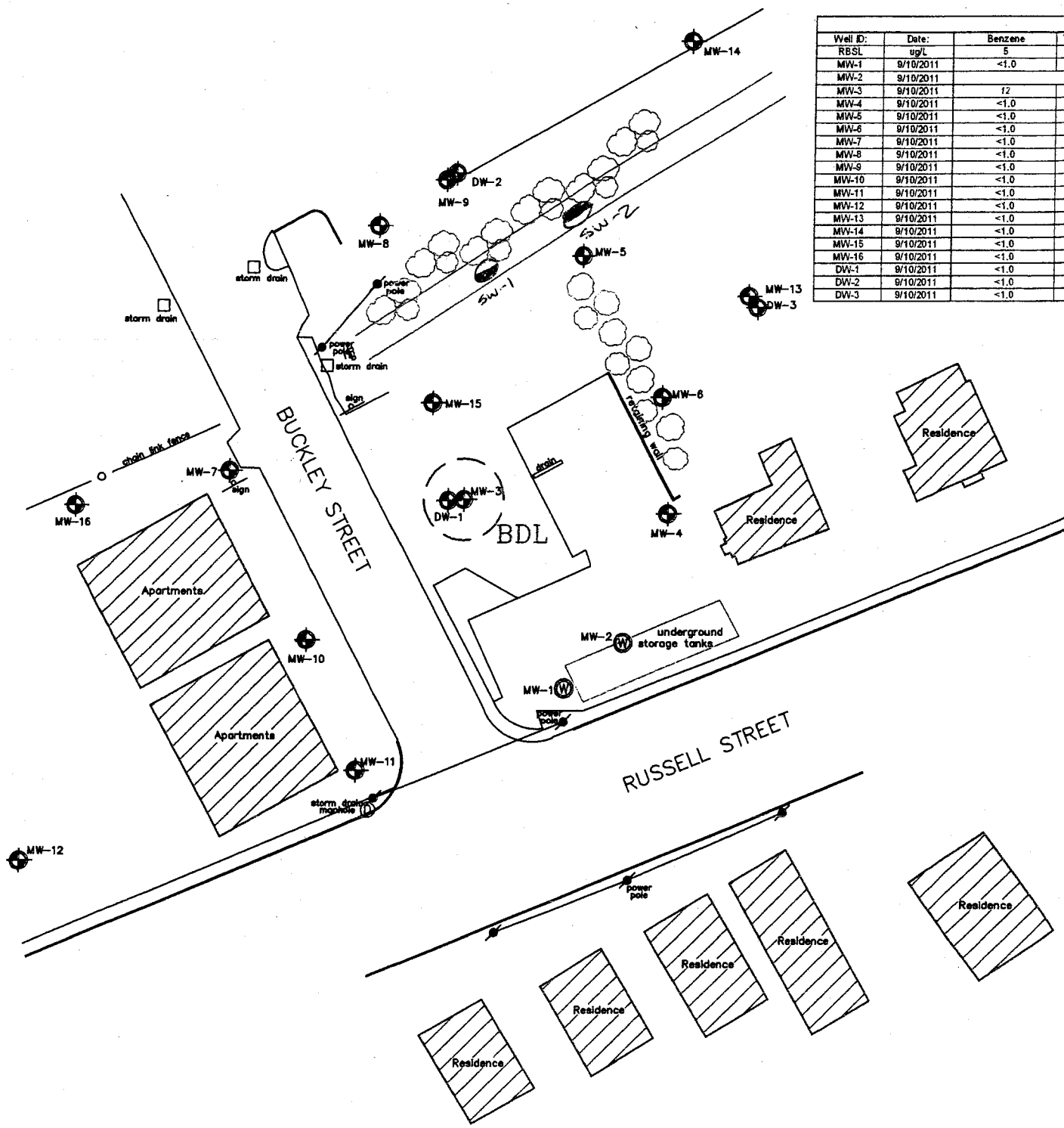
See the SC DHEC UST Programmatic QAPP (UST Master QAPP).

GRAPHIC SCALE

0 25 50 100

(In Feet)

As Shown



Groundwater Laboratory Analytical Result Summary

Well ID:	Date:	Benzene	Toluene	Ethylbenzene	Xylenes (Total)	Naphthalene	MTBE	1,2 DCA	EDB	Pb	NO3	FE+	SO4	ETBA	Ethanol	ETBE	DIPE	TAA	TAME	TBA	TBF	Date:	Well ID:
RBSL	ug/L	5	1000	700	10000	25	40	5	0.01	15	10000	NE	NE	NE	10000	47	150	240	128	1400	NE		RBSL
MW-1	9/10/2011	<1.0	0.78J	<1.0	<3.0	<1.0	<1.0	<1.0	<0.020	NS	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-1
MW-2	9/10/2011	DRY																				9/10/2011	MW-2
MW-3	9/10/2011	12	0.99J	37	2.1J	46	3.1	<1.0	<0.021	737	NS	NS	NS	<100	<100	<100	<10	<100	<10	7.8J	<100	9/10/2011	MW-3
MW-4	9/10/2011	<1.0	0.54J	<1.0	<3.0	<5.0	0.56J	<1.0	<0.020	NS	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-4
MW-5	9/10/2011	<1.0	0.54J	<1.0	<3.0	0.72J	7.9	<1.0	<0.020	14.6	NS	NS	NS	<100	<100	<100	7.6J	<100	<10	<100	<100	9/10/2011	MW-5
MW-6	9/10/2011	<1.0	<1.0	<1.0	<3.0	6	53	<1.0	<0.020	3.53	NS	NS	NS	<100	200	<100	<10	<100	<10	13J	<100	9/10/2011	MW-6
MW-7	9/10/2011	<1.0	<1.0	<1.0	0.92J	<5.0	<1.0	<1.0	<0.020	139	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-7
MW-8	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-8
MW-9	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	6.43	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-9
MW-10	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	43	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-10
MW-11	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	0.38J	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-11
MW-12	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	NS	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-12
MW-13	9/10/2011	<1.0	0.76J	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-13
MW-14	9/10/2011	<1.0	0.47J	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	6.29	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-14
MW-15	9/10/2011	<1.0	<1.0	0.49J	<3.0	7.4	2.3	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-15
MW-16	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-16
DW-1	9/10/2011	<1.0	0.77J	<1.0	0.41J	1.3J	0.72J	<1.0	<0.020	1.83	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	DW-1
DW-2	9/10/2011	<1.0	0.75J	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	DW-2
DW-3	9/10/2011	<1.0	0.73J	<1.0	<3.0	<5.0	0.46J	<1.0	<0.020	11.6	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	DW-3

Note: Deep wells DW-1, DW-2, and DW-3 are not used in the creation of this map.

LEGEND	
	UST Basin
	Monitoring Well

REV	BY	DATE

DR: JSR

CK: HDO

SCALE: AS SHOWN

CES PROJ. NO. 15.070

Tier II Environmental Assessment

CRAWFORD ENVIRONMENTAL SERVICES

104 Corporate Blvd.
Suite 412
West Columbia, SC 29210

803-708-0079 (ph)
803-708-8137 (Fax)

FIGURE TITLE

Chemicals of Concern: Benzene

Vacant Lot
2309 Russell Street
Orangeburg, SC 29115
Site ID: 19268

DRAWING NUMBER: Figure 4A

REV: 0 9.23.2011

MAC-DATE

SHEALY

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 12602

Client	Report to Contact	Sampler (Printed Name)	Quote No.
Address	Telephone No. / Fax No. / Email	Waybill No.	Page ___ of ___
City / State / Zip Code	Preservative: 1. Unpres. 4. HNO3 7. NaOH; 2. NaOH/ZnA 5. HCL; 3. H2SO4 6. Na Thio.		Number of Containers / Bottle (See Instructions on back) / Preservative / Lot No.
Project Name			
Project Number	P.O Number		

Sample ID / Description (Containers for each sample may be combined on one line)	Date	Time	G=Grab C=Composite	Matrix: GW	DW	WW	S	Other	Analysis	Remarks / Cooler ID

Turn Around Time Required (Prior lab approval required for expedited TAT)
☐ Standard ☐ Rush (Please Specify)

Sample Disposal
☐ Return to Client ☐ Disposal by Lab

QC Requirements (Specify)

Possible Hazard Identification
☐Non-Hazard ☐Flammable ☐Skin Irritant ☐Poison ☐Unknown

	Date	Time		Date	Time
1. Relinquished by / Sampler			1. Received by		
2. Relinquished by			2. Received by		
3. Relinquished by			3. Received by		
4. Relinquished by			4. Laboratory Received by		

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

D H E C

PROMOTE PROTECT PROSPER

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 2 0 2012

Re: **Notice to Proceed-Groundwater Sampling/QAPP Contractor Addendum Approval**
Groundwater Sampling Contract
Solicitation # IFB-5400002759, PO#4600088529
Vacant Lot, 2309 Russell St., Orangeburg, SC
UST Permit #19268; Shealy CA #43259; Midlands CA #43261
Orangeburg County

Dear Mr. Shane:

In accordance with bid solicitation # IFB-5400002759 and the UST Management Division Quality Assurance Program Plan (QAPP), the Site-Specific Contractor Addendum has been reviewed and approved. In accordance with the QAPP, a status report of the project 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.

MECI will perform services at the site on behalf of the site's responsible party (RP); however, payment will be made using American Recovery and Reinvestment Act (ARRA) funds. The site's RP has no obligation for payment for this scope of work. Please coordinate access to the facility with the property owner. The Department 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 ARRA 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. The final report should be submitted to Debra Thoma, the contract manager.

If you have any site-specific questions, please contact me at (803) 896-6584 or via e-mail at minerrs@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.

Sincerely,

Read S Miner

Read S. Miner, P.G., Hydrogeologist
Corrective Action Section
UST Management Division
Bureau of Land & Waste Management

enc: Approved QAPP Contractor Addendum Signature Page
Approved Cost Agreement

cc: Debra Thoma, Corrective Action Section, UST Management Division
Kelly Maberry, Shealy Environmental, 106 Vantage Point Dr., West Columbia, SC, 29172 (w/ approved CA)
Technical Files (w/ Finalized & Approved QAPP)

Section A: Project Management

A1 Title and Approval Page

Quality Assurance Project Plan
Addendum to the SC DHEC UST Programmatic QAPP
For
Vacant Lot, SCDHEC Site ID# 19268

2309 Russell Street, Orangeburg, 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 12, 2012

Approvals

Read Miner, P.G.
SC DHEC Project Manager
Signature Date 3-14-12

Brendon P. Kelly
Contractor QA Manager
Signature Date 3/12/12

Jeff L. Coleman
Site Rehabilitation Contractor
Signature Date 3/12/12

Michael Woodrum
Laboratory Director
Signature Date 03-12-12

Approved Cost Agreement 43259

Facility: 19268 VACANT LOT

SMITHA2

PO Number:

Task / Description	Categories	Item Description	Qty / Pct	Unit Price	Amount
11 ANALYSES					
	GW GROUNDWATER	A1 BTEXNM+OXYGS+1,2-DCA+ETH-8260B	22.0000	35.00	770.00
		F EDB	22.0000	20.00	440.00
			Total Amount		1,210.00

Approved Cost Agreement 43261

Facility: 19268 VACANT LOT

SMITHA2

PO Number:

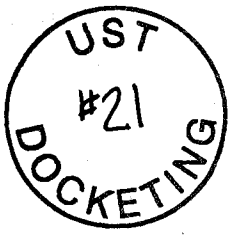
Task / Description	Categories	Item	Description	Qty / Pct	Unit Price	Amount
04 MOB/DEMOB						
		B	PERSONNEL	2.0000	100.00	200.00
10 SAMPLE COLLECTION						
		A	GROUND WATER	3.0000	4.50	13.50
		D	GROUNDWATER NO-PURGE	17.0000	4.50	76.50
		H	FIELD BLANK	1.0000	2.00	2.00
17 DISPOSAL						
		A	WASTEWATER	40.0000	0.10	4.00
18 MISCELLANEOUS						
			QAPP PREP	1.0000	0.00	0.00
25 WELL REPAIR						
		E	REPLACE WELL COVER & GASKET	1.0000	50.00	50.00
				Total Amount		346.00

Midlands Environmental Consultants, Inc.

April 12, 2012

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
Vacant Lot
2309 Russell Street
Orangeburg, South Carolina
SCDHEC Site ID Number 19268; CA # 43261
MECI Project Number 12-3858
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 (Vacant Lot) is located at 2309 Russell Street, Orangeburg, Orangeburg County, South Carolina. The subject site formally maintained nine underground storage tanks (UST's) of unknown product and capacity. These UST's are pre-1974 and their current status is unknown. The South Carolina Department of Health and Environmental Control (SCDHEC) reported a release of petroleum product from the subject tanks in October of 2006 and confirmed the release in October of 2007. The site is currently rated a Class 3BF.

The above information is based on reports and correspondence obtained from MECI field notes and SCDHEC files.

MONITORING WELL SAMPLING AND CHEMICAL ANALYSIS

On March 28, 2012, MECI personnel collected groundwater samples from nineteen (19) monitoring wells and two (2) surface waters 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. Based on a request by SCDHEC personnel, not of the wells

Post Office Box 854, Lexington SC 29071 • 235-B Dooley Road, Lexington, SC 29073
Telephone: (803) 808-2043 • fax: (803) 808-2048

were to be purged prior to sampling. Three (3) monitoring wells were purged prior to sampling. Purging was completed by bailing at least three 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 60 cm turbidity tube for turbidity readings. 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	Gauge Only	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			X	X	X	X						
MW-2		X			X	X	X	X						
MW-3		X			X	X	X	X						
MW-4		X			X	X	X	X						
MW-5		X			X	X	X	X						
MW-6		X			X	X	X	X						
MW-7		X			X	X	X	X						
MW-8		X			X	X	X	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			X	X	X	X						
MW-16		X			X	X	X	X						
DW-1	X				X	X	X	X						
DW-2	X				X	X	X	X						
DW-3	X				X	X	X	X						
SW-1					X	X	X	X						
SW-2					X	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

Monitoring Well	Purge	No Purge	Gauge Only	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 Duplicate					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 18.0 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.

Kyle V. Pudney
Staff Biologist

Brendon P. Kelly
Project Scientist

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 #: 19268
Facility Name: Vacant Lot
County: Orangeburg
Field Personnel: B. Owen

Midlands Environmental Consultants, Inc.
235-B Dooley Road, Lexington, SC 29073
(803) 808-2043 Fax: 808-2048

Sample ID	Sampled?	Date	Time	Screened Interval	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)	Initial Dissolved Oxygen (mg/l)	# Gals. Purged	Comments
MW-1	Y	3/28/12	13:28	2-12	***	5.10	***	2.10	***	Odor
MW-2	Y	3/28/12	13:36	2-12	***	5.02	***	1.41	***	Odor
MW-3	Y	3/28/12	14:00	2-12	***	4.04	***	1.42	***	Odor
MW-4	Y	3/28/12	13:44	2-12	***	6.90	***	1.32	***	No Odor
MW-5	Y	3/28/12	12:52	2-12	***	5.30	***	2.20	***	No Odor
MW-6	Y	3/28/12	12:56	2-12	***	4.94	***	1.64	***	No Odor
MW-7	Y	3/28/12	10:51	2-12	***	4.21	***	1.83	***	No Odor
MW-8	Y	3/28/12	10:00	2-12	***	6.00	***	1.84	***	No Odor / Well Lid Replaced
MW-9	Y	3/28/12	10:11	2-12	***	5.89	***	1.60	***	No Odor
MW-10	Y	3/28/12	11:28	2-12	***	4.09	***	1.79	***	No Odor
MW-11	Y	3/28/12	11:21	2-12	***	4.26	***	3.25	***	No Odor
MW-12	Y	3/28/12	11:08	2-12	***	4.31	***	4.24	***	No Odor
MW-13	Y	3/28/12	12:40	2-12	***	4.53	***	2.36	***	No Odor
MW-14	Y	3/28/12	10:40	2-12	***	7.58	***	2.89	***	No Odor
MW-15	Y	3/28/12	13:55	2-12	***	4.91	***	1.78	***	No Odor
									0.0	**TOTAL GALLONS PURGED**

Site Activity Summary

UST Permit #: 19268
Facility Name: Vacant Lot
County: Orangeburg
Field Personnel: B. Owen

Midlands Environmental Consultants, Inc.
235-B Dooley Road, Lexington, SC 29073
(803) 808-2043 fax: 808-2048

Sample ID	Sampled?	Date	Time	Screened Interval	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)	Initial Dissolved Oxygen (mg/l)	# Gals. Purged	Comments
MW-16	Y	3/28/12	10:56	2-12	***	3.63	***	1.78	***	No Odor
DW-1	Y	3/28/12	14:20	35-40	***	7.31	***	1.95	7.0	No Odor
DW-2	Y	3/28/12	10:20	30-35	***	5.77	***	4.13	5.0	No Odor
DW-3	Y	3/28/12	12:35	24-29	***	8.25	***	2.78	6.0	No Odor
SW-1	Y	3/28/12	11:40	***	***	***	***	***	***	No Odor
SW-2	Y	3/28/12	11:45	***	***	***	***	***	***	No Odor
MW-1 Duplicate	Y	3/28/12	13:30	***	***	***	***	***	***	MW-1 Duplicate Sample
Field Blank	Y	3/28/12	13:00	***	***	***	***	***	***	Field Blank
Trip Blank	Y	3/28/12	10:30	***	***	***	***	***	***	Trip Blank
									18.0	**TOTAL GALLONS PURGED**

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): 3/28/2012

Field Personnel: B. Owen

General Weather Conditions: Clear, Sunny

Ambient Air Temperature: 29.0 °C

Quality Assurance

pH/Conductivity Meter		**DO Meter**	
YSI 63		**YSI 550A**	
09C 101302	X	04L 2026AK	X
10K 101895		08B 101895	
07M 100905		04A 0912AI	
Calibration Buffer:	4, 7, & 10		

Chain of Custody

Relinquished by	Date/Time	Received by	Date/Time

Facility Name: Vacant Lot

Site ID#: 19268 **Monitoring Well #** DW-1

Water Supply Well **Public** _____ **Private** _____

Monitoring Well Diameter (D): 2 inches

Conversion Factor (C): 3.14 x $(D/2)^2$ 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)	7.31		feet
Total Well Depth (TWD)	40		feet
Length of the water column (LWC=TWD-DGW)		32.69	feet
1 casing volume (CV=LWC X C)= ____ X	0.163	5.33	gallons
3 casing volume (3 X CV)=	3	15.99	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)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)	14:13	14:20						
pH (s.u.)	5.80	5.75						
Specific Conductivity (µmhos/cm)	62.6	45.8						
Water Temperature (°C)	22.5	21.6						
Dissolved Oxygen	1.95	4.51						
Turbidity (NTU)	150	75						
PID readings, if required								

Remarks: Sample Time: 14:20 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): 3/28/2012

Field Personnel: B. Owen

General Weather Conditions: Clear, Sunny

Ambient Air Temperature: 29.0 °C

Quality Assurance

pH/Conductivity Meter		**DO Meter**	
YSI 63		**YSI 550A**	
09C 101302	X	04L 2026AK	X
10K 101895		08B 101895	
07M 100905		04A 0912AI	
Calibration Buffer:	4, 7, & 10		

Chain of Custody

Relinquished by	Date/Time	Received by	Date/Time

Facility Name: Vacant Lot

Site ID#: 19268 **Monitoring Well #** DW-2

Water Supply Well **Public** _____ **Private** _____

Monitoring Well Diameter (D): 2 inches

Conversion Factor (C): 3.14 x $(D/2)^2$ 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)	5.77		feet
Total Well Depth (TWD)	35		feet
Length of the water column (LWC=TWD-DGW)		29.23	feet
1 casing volume (CV=LWC X C)= ____ X	0.163	4.76	gallons
3 casing volume (3 X CV)=	3	14.29	gallons

Total Volume of Water Purged Before Sampling 5 gals.

*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)	10:15	10:20						
pH (s.u.)	5.40	5.90						
Specific Conductivity (µmhos/cm)	58.1	64.5						
Water Temperature (°C)	20.3	21.7						
Dissolved Oxygen	4.13	4.19						
Turbidity (NTU)	<5	>240						
PID readings, if required								

Remarks: Sample Time: 10:20 Dry @ 5.0 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): 3/28/2012

Field Personnel: B. Owen

General Weather Conditions: Clear, Sunny

Ambient Air Temperature: 29.0 °C

Quality Assurance

pH/Conductivity Meter		**DO Meter**	
YSI 63		**YSI 550A**	
09C 101302	X	04L 2026AK	X
10K 101895		08B 101895	
07M 100905		04A 0912AI	
Calibration Buffer:	4, 7, & 10		

Chain of Custody

Relinquished by	Date/Time	Received by	Date/Time

Facility Name: Vacant Lot

Site ID#: 19268 **Monitoring Well #** DW-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)	8.25			feet
Total Well Depth (TWD)	29			feet
Length of the water column (LWC=TWD-DGW)			20.75	feet
1 casing volume (CV=LWC X C)= ____ X		0.163	3.38	gallons
3 casing volume (3 X CV)=		3	10.15	gallons

Total Volume of Water Purged Before Sampling 6 gals.

*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)	12:27	12:35						
pH (s.u.)	5.06	4.34						
Specific Conductivity (µmhos/cm)	146.5	142.4						
Water Temperature (°C)	18.6	19.1						
Dissolved Oxygen	2.78	2.29						
Turbidity (NTU)	100	>240						
PID readings, if required								

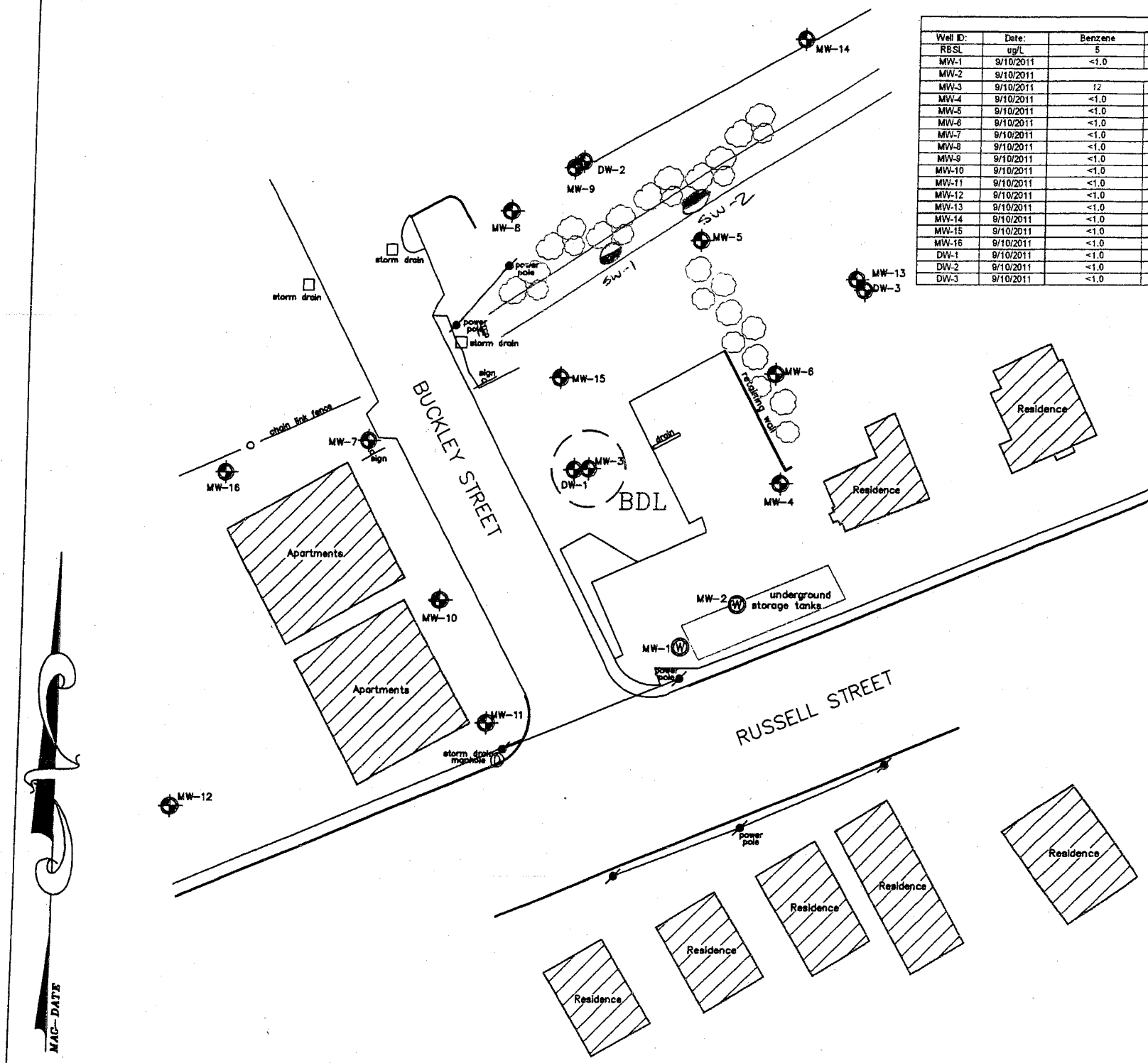
Remarks: Sample Time: 12:35 Dry @ 6.0 gallons

GRAPHIC SCALE

0 25 50 100

(In Feet)

As Shown



Groundwater Laboratory Analytical Result Summary

Well ID:	Date:	Benzene	Toluene	Ethylbenzene	Xylenes (Total)	Naphthalene	MTBE	1,2 DCA	EDB	Pb	NO3	FE+	SO4	ETBA	Ethanol	ETBE	DIPE	TAA	TAME	TBA	TBF	Date:	Well ID:
RBSL	ug/L	5	1000	700	10000	25	40	5	0.01	15	10000	NE	NE	NE	10000	47	150	240	128	1400	NE		RBSL
MW-1	9/10/2011	<1.0	**0.78J**	<1.0	<3.0	<1.0	<1.0	<1.0	<0.020	NS	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-1
MW-2	9/10/2011	DRY																				9/10/2011	MW-2
MW-3	9/10/2011	12	**0.99J**	37	**2.1J**	46	3.1	<1.0	<0.021	137	NS	NS	NS	<100	<100	<100	<10	<100	<10	**7.8J**	<100	9/10/2011	MW-3
MW-4	9/10/2011	<1.0	**0.54J**	<1.0	<3.0	<5.0	**0.56J**	<1.0	<0.020	NS	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-4
MW-5	9/10/2011	<1.0	**0.54J**	<1.0	<3.0	**0.72J**	7.9	<1.0	<0.020	**14.6**	NS	NS	NS	<100	<100	<100	**7.6J**	<100	<10	<100	<100	9/10/2011	MW-5
MW-6	9/10/2011	<1.0	<1.0	<1.0	<3.0	6	53	<1.0	<0.020	**3.53**	NS	NS	NS	<100	200	<100	<10	<100	<10	**13J**	<100	9/10/2011	MW-6
MW-7	9/10/2011	<1.0	<1.0	<1.0	**0.92J**	<5.0	<1.0	<1.0	<0.020	136	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-7
MW-8	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-8
MW-9	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	**6.43**	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-9
MW-10	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	43	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-10
MW-11	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	**0.38J**	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-11
MW-12	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	NS	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-12
MW-13	9/10/2011	<1.0	**0.78J**	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-13
MW-14	9/10/2011	<1.0	**0.47J**	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	**6.28**	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-14
MW-15	9/10/2011	<1.0	<1.0	**0.49J**	<3.0	**7.4**	**2.3**	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-15
MW-16	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-16
DW-1	9/10/2011	<1.0	**0.77J**	<1.0	**0.41J**	**1.3J**	**0.72J**	<1.0	<0.020	**1.83**	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	DW-1
DW-2	9/10/2011	<1.0	**0.75J**	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	DW-2
DW-3	9/10/2011	<1.0	**0.73J**	<1.0	<3.0	<5.0	**0.46J**	<1.0	<0.020	**11.6**	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	DW-3

Note: Deep wells DW-1, DW-2, and DW-3 are not used in the creation of this map.

LEGEND	
	UST Basin
	Monitoring Well

REV	BY	DATE

DR: JSR

CK: HDO

SCALE: AS SHOWN

CES PROJ. NO. 15.070

Tier II Environmental Assessment

CRAWFORD ENVIRONMENTAL SERVICES

104 Corporate Blvd.
Suite 412
West Columbia, SC 29210

803-708-0079 (ph)
803-708-8137 (Fax)

FIGURE TITLE

Chemicals of Concern: Benzene

Vacant Lot
2309 Russell Street
Orangeburg, SC 29115
Site ID: 19268

DRAWING NUMBER: Figure 4A

REV: 0 9.23.2011

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

SHEALY **Chain of Custody Record**

Number 09136

Client	Report to Contact	Sampler (Printed Name)	Quote No.
SCDHEC	D. THOMA	BRIAN OWEN	
Address	**Telephone No. / Fax No. / Email**	**Waybill No.**	**Page**
2000 Bull St.			1 of 3
City / **State** / **Zip Code**	**Preservative**		Number of Containers
Columbia / SC / 29201	1. Unpres. 4. HNO3 7. NaOH		Bottle (See Instructions on back)
Project Name	2. NaOH/ZnA 5. HCL		Preservative
VACANT LOT	3. H2SO4 6. Na Thio.		Lot No.

Project Number	P.O Number
19248/45259	4600088529

Sample ID / Description (Containers for each sample may be combined on one line)	Date	Time	G=Grab C=Composite	Matrix: GW	DW	WW	S	Other	Analysis: BTEX, NAPH, MTBE	12 DCA, Ethanol	EDB	Remarks / Cooler ID
MW-1	3-28	15:28	G						X	X	X	ODOR
MW-2		13:30										
MW-3		14:00										X
MW-4		13:44										No Odor
MW-5		12:52										
MW-6		12:56										
MW-7		10:51										
MW-8		10:00										
MW-9		10:11										
MW-10	X	11:28	X						X	X	X	X

Turn Around Time Required (Prior lab approval required for expedited TAT)
☐ Standard ☐ Rush (Please Specify)

Sample Disposal
☐ Return to Client ☐ Disposal by Lab

QC Requirements (Specify)

Possible Hazard Identification
☐Non-Hazard ☐Flammable ☐Skin Irritant ☐Poison ☐Unknown

	Date	Time		Date	Time
1. Relinquished by / Sampler	3-28-12	15:45	1. Received by	3/28	15:45
2. Relinquished by	3/30	6:22	2. Received by	3/30/12	6:22
3. Relinquished by			3. Received by		
4. Relinquished by			4. Laboratory Received by		

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

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

SHEALY **Chain of Custody Record** **Number** 09137

Client	Report to Contact	Sampler (Printed Name)	Quote No.
SCDHEC	D. Thomas	Brian O'Neill	
Address	**Telephone No. / Fax No. / Email**	**Waybill No.**	**Page**
2600 Bull St.			2 of 3
City / State / Zip Code	**Preservative**		**Number of Containers**
Columbia SC 29201	1. Unpres. 4. HNO3 7. NaOH		**Bottle (See Instructions on back)**
Project Name	2. NaOH/ZnA 5. HCL		**Preservative**
Vacant Lot	3. H2SO4 6. Na Thio.		**Lot No.**

Project Number	P.O Number
49208/43859	4600088529

Sample ID / Description (Containers for each sample may be combined on one line)	Date	Time	G=Grab C=Composite	Matrix: GW	DW	WW	S	Other	Analysis: Btex, Naph, MTBE	1,2 DCA, Ethanol	EDB	Remarks / Cooler ID
MW-11	3-28	1121	G						X	X	X	No Odor
MW-12		0908										
MW-13		1240										
MW-14		1040										
MW-15		1355										
MW-16		1050										
DW-17		1420										
DW-2		1020										
DW-3		1255										
SW-1	X	1140	X						X	X	X	X

Turn Around Time Required (Prior lab approval required for expedited TAT)
☐ Standard ☐ Rush (Please Specify)

Sample Disposal
☐ Return to Client ☐ Disposal by Lab

QC Requirements (Specify)

Possible Hazard Identification
☐Non-Hazard ☐Flammable ☐Skin Irritant ☐Poison ☐Unknown

	Date	Time		Date	Time
1. Relinquished by / Sampler	3-29-12	1545	1. Received by	3/29/12	15:45
2. Relinquished by	3/30	1022	2. Received by	3/30/12	1022
3. Relinquished by			3. Received by		
4. Relinquished by			4. Laboratory Received by		

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

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

SHEALY **Chain of Custody Record**

Number 09138

Client: SCDHEC	Report to Contact: D. Thomia	Sampler (Printed Name): Brian Owen
Address: 2600 Bull St.	Telephone No. / Fax No. / Email	Waybill No.
City: Columbia	State: SC	Zip Code: 29201
Project Name: Vacant Lot		
Project Number: 192168/43259	P.O Number: 4100088529	

Quote No.

Page 3 of 3

Number of Containers

Bottle (See Instructions on back)

Preservative

Lot No.

Preservative: 1. Unpres. 2. NaOH/ZnA 3. H2SO4 4. HNO3 5. HCL 6. Na Thio. 7. NaOH

Sample ID / Description (Containers for each sample may be combined on one line)	Date	Time	1 G=Grab C=Composite	Matrix: GW	DW	WW	S	Other	Analysis: Btx, Naph, MTBE	1,2 DCA / Ethanol	EDB	Remarks / Cooler ID
SW-2	3-28	1145	G						X	X	X	No Odor
MW-12 Duplicate		1330										
Field Blank		1300										
Trip Blank	X	1030	X						X	X	X	X
D.W-2												
D.W-3												
Spl-1									X	X	X	X

Turn Around Time Required (Prior lab approval required for expedited TAT)
☐ Standard ☐ Rush (Please Specify)

Sample Disposal
☐ Return to Client ☐ Disposal by Lab

QC Requirements (Specify)

Possible Hazard Identification
☐Non-Hazard ☐Flammable ☐Skin Irritant ☐Poison ☐Unknown

	Date	Time		Date	Time
1. Relinquished by / Sampler	3-28-12	1545	1. Received by	3/29	15:45
2. Relinquished by	3/30	1022	2. Received by	3/30/12	1022
3. Relinquished by			3. Received by		
4. Relinquished by			4. Laboratory Received by		

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

Midlands Environmental Consultants, Inc.

April 12, 2012

Re: Treatment of Purge Water
Vacant Lot
Orangeburg, South Carolina
SCDHEC Site ID Number 19268
MECI Project Number 12-3858

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.

Post Office Box 854, Lexington SC 29071 • 235-B Dooley Road, Lexington, SC 29073
Telephone: (803) 808-2043 • fax: (803) 808-2048

A total of 18.0 gallons were treated on March 28, 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

SHEALY ENVIRONMENTAL SERVICES, INC.

Report of Analysis

SC DHEC - UST Management
2600 Bull Street
Columbia, SC 29201
Attention: Debra Thoma

Project Name: **Vacant Lot**

Project Number: **UST Permit #19248/CA #43259**

Lot Number: **NC30023**

Date Completed: **04/10/2012**

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.

Case Narrative
SC DHEC - UST Management
Lot Number: NC30023

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.

Sample Receiving
Trip blank was not analyzed for EDB due to insufficient sample volume.

Sample -024 for volatiles analysis contained vials with air bubbles greater than ¼" or 6mm in diameter. The laboratory uses these vials for screening and the vials without bubbles for analysis whenever possible. Condition of samples is documented on the Sample Receipt Checklist (SRC).

GC/MS Volatiles
The LCS/LCSD associated with batch 81925 had tert-Amyl alcohol, 3,3-dimethyl-1-butanol, ethanol and tert-Butyl alcohol recovered above the acceptance limits. This demonstrates a high bias on analytical results. There were no detections for these compounds in the samples associated with this batch; therefore, data quality is not impacted.

EDB/DBCP
The MS/MSD associated with sample -001 had EDB recovered outside of the acceptance limits. The MS/MSD were re-analyzed and were recovered within the acceptance limits.

Sample Summary
SC DHEC - UST Management
Lot Number: NC30023

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	MW-1	Aqueous	03/28/2012 1328	03/30/2012
002	MW-2	Aqueous	03/28/2012 1336	03/30/2012
003	MW-3	Aqueous	03/28/2012 1400	03/30/2012
004	MW-4	Aqueous	03/28/2012 1344	03/30/2012
005	MW-5	Aqueous	03/28/2012 1232	03/30/2012
006	MW-6	Aqueous	03/28/2012 1256	03/30/2012
007	MW-7	Aqueous	03/28/2012 1051	03/30/2012
008	MW-8	Aqueous	03/28/2012 1000	03/30/2012
009	MW-9	Aqueous	03/28/2012 1011	03/30/2012
010	MW-10	Aqueous	03/28/2012 1128	03/30/2012
011	MW-11	Aqueous	03/28/2012 1121	03/30/2012
012	MW-12	Aqueous	03/28/2012 1108	03/30/2012
013	MW-13	Aqueous	03/28/2012 1240	03/30/2012
014	MW-14	Aqueous	03/28/2012 1040	03/30/2012
015	MW-15	Aqueous	03/28/2012 1355	03/30/2012
016	MW-16	Aqueous	03/28/2012 1056	03/30/2012
017	DW-1	Aqueous	03/28/2012 1420	03/30/2012
018	DW-2	Aqueous	03/28/2012 1020	03/30/2012
019	DW-3	Aqueous	03/28/2012 1235	03/30/2012
020	SW-1	Aqueous	03/28/2012 1140	03/30/2012
021	SW-2	Aqueous	03/28/2012 1145	03/30/2012
022	MW-1 DUPLICATE	Aqueous	03/28/2012 1330	03/30/2012
023	FIELD BLANK	Aqueous	03/28/2012 1300	03/30/2012
024	TRIP BLANK	Aqueous	03/28/2012 1030	03/30/2012

(24 samples)

Executive Summary
SC DHEC - UST Management
Lot Number: NC30023

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	MW-1	Aqueous	Methyl tertiary butyl ether (MTBE)	8260B	1.8	J	ug/L	6
002	MW-2	Aqueous	Benzene	8260B	0.87	J	ug/L	8
002	MW-2	Aqueous	Ethylbenzene	8260B	3.2	J	ug/L	8
002	MW-2	Aqueous	Methyl tertiary butyl ether (MTBE)	8260B	9.6		ug/L	8
002	MW-2	Aqueous	Naphthalene	8260B	13		ug/L	8
002	MW-2	Aqueous	Xylenes (total)	8260B	1.8	J	ug/L	8
002	MW-2	Aqueous	Diisopropyl ether (IPE)	8260B	0.52	J	ug/L	8
002	MW-2	Aqueous	tert-Amyl methyl ether (TAME)	8260B	0.22	J	ug/L	8
002	MW-2	Aqueous	tert-butyl alcohol (TBA)	8260B	7.6	J	ug/L	8
003	MW-3	Aqueous	Benzene	8260B	15		ug/L	10
003	MW-3	Aqueous	Ethylbenzene	8260B	95		ug/L	10
003	MW-3	Aqueous	Methyl tertiary butyl ether (MTBE)	8260B	5.4		ug/L	10
003	MW-3	Aqueous	Naphthalene	8260B	400		ug/L	10
003	MW-3	Aqueous	Xylenes (total)	8260B	110		ug/L	10
003	MW-3	Aqueous	Diisopropyl ether (IPE)	8260B	0.70	J	ug/L	10
003	MW-3	Aqueous	tert-Amyl methyl ether (TAME)	8260B	0.47	J	ug/L	10
003	MW-3	Aqueous	tert-butyl alcohol (TBA)	8260B	8.5	J	ug/L	10
004	MW-4	Aqueous	Methyl tertiary butyl ether (MTBE)	8260B	4.6	J	ug/L	12
005	MW-5	Aqueous	1,2-Dichloroethane	8260B	1.6	J	ug/L	14
005	MW-5	Aqueous	Methyl tertiary butyl ether (MTBE)	8260B	4.1	J	ug/L	14
005	MW-5	Aqueous	Diisopropyl ether (IPE)	8260B	4.6	J	ug/L	14
006	MW-6	Aqueous	Methyl tertiary butyl ether (MTBE)	8260B	53		ug/L	16
006	MW-6	Aqueous	Diisopropyl ether (IPE)	8260B	0.50	J	ug/L	16
006	MW-6	Aqueous	tert-Amyl methyl ether (TAME)	8260B	0.67	J	ug/L	16
006	MW-6	Aqueous	tert-butyl alcohol (TBA)	8260B	7.5	J	ug/L	16
007	MW-7	Aqueous	1,2-Dichloroethane	8260B	0.59	J	ug/L	18
010	MW-10	Aqueous	Methyl tertiary butyl ether (MTBE)	8260B	0.42	J	ug/L	24
011	MW-11	Aqueous	Methyl tertiary butyl ether (MTBE)	8260B	11		ug/L	26
011	MW-11	Aqueous	tert-Amyl methyl ether (TAME)	8260B	0.20	J	ug/L	26
013	MW-13	Aqueous	Methyl tertiary butyl ether (MTBE)	8260B	2.3	J	ug/L	30
015	MW-15	Aqueous	Benzene	8260B	1.3	J	ug/L	34
015	MW-15	Aqueous	Ethylbenzene	8260B	18		ug/L	34
015	MW-15	Aqueous	Methyl tertiary butyl ether (MTBE)	8260B	1.6	J	ug/L	34
015	MW-15	Aqueous	Naphthalene	8260B	6.1		ug/L	34
015	MW-15	Aqueous	Xylenes (total)	8260B	4.3	J	ug/L	34
017	DW-1	Aqueous	Benzene	8260B	13		ug/L	38
017	DW-1	Aqueous	1,2-Dichloroethane	8260B	2.3	J	ug/L	38
017	DW-1	Aqueous	Methyl tertiary butyl ether (MTBE)	8260B	110		ug/L	38
017	DW-1	Aqueous	Naphthalene	8260B	59		ug/L	38
017	DW-1	Aqueous	Diisopropyl ether (IPE)	8260B	0.66	J	ug/L	38
017	DW-1	Aqueous	tert-Amyl methyl ether (TAME)	8260B	1.6	J	ug/L	38
017	DW-1	Aqueous	tert-butyl alcohol (TBA)	8260B	40	J	ug/L	38
019	DW-3	Aqueous	Benzene	8260B	0.32	J	ug/L	42
019	DW-3	Aqueous	Methyl tertiary butyl ether (MTBE)	8260B	17		ug/L	42
019	DW-3	Aqueous	tert-butyl alcohol (TBA)	8260B	13	J	ug/L	42

Executive Summary (Continued)

Lot Number: NC30023

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
022	MW-1 DUPLICATE	Aqueous	Methyl tertiary butyl ether (MTBE)	8260B	2.6	J	ug/L	48

(46 detections)

Client: **SC DHEC - UST Management**
Description: **MW-1**
Date Sampled: **03/28/2012 1328**
Date Received: **03/30/2012**

Laboratory ID: **NC30023-001**
Matrix: **Aqueous**

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	04/04/2012 1441	AAC		81824

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	ND		5.0	0.20	ug/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		5.0	0.30	ug/L	1
Ethylbenzene	100-41-4	8260B	ND		5.0	1.7	ug/L	1
Methyl tertiary butyl ether (MTBE)	**1634-04-4**	**8260B**	**1.8**	**J**	**5.0**	**0.40**	**ug/L**	**1**
Naphthalene	91-20-3	8260B	ND		5.0	1.7	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		93	70-130
Bromofluorobenzene		93	70-130
Toluene-d8		92	70-130

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	04/04/2012 1441	AAC		81824

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Diisopropyl ether (IPE)	108-20-3	8260B	ND		10	0.40	ug/L	1
Ethanol	64-17-5	8260B	ND		1000	33	ug/L	1
3,3-Dimethyl-1-butanol	624-95-3	8260B	ND		100	1.0	ug/L	1
Ethyl-tert-butyl ether (ETBE)	637-92-3	8260B	ND		100	0.20	ug/L	1
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
tert-butyl alcohol (TBA)	75-65-0	8260B	ND		100	6.7	ug/L	1
tert-Butyl formate (TBF)	762-75-4	8260B	ND		100	1.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		93	70-130
1,2-Dichloroethane-d4		93	70-130
Toluene-d8		92	70-130

EDB & DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	8011	8011	1	04/05/2012 0543	MSM	04/02/2012 0845	81569

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
B = Detected in the method blank
J = Estimated result < PQL and ≥ MDL
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
H = Out of holding time
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
* = Reportable result (only when report all runs)

Client: **SC DHEC - UST Management**
Description: **MW-1**
Date Sampled: **03/28/2012 1328**
Date Received: **03/30/2012**

Laboratory ID: **NC30023-001**
Matrix: **Aqueous**

EDB & DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	8011	8011	1	04/05/2012 0543	MSM	04/02/2012 0845	81569

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
ND = Not detected at or above the MDL
B = Detected in the method blank
J = Estimated result < PQL and ≥ MDL
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
H = Out of holding time
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
* = Reportable result (only when report all runs)

Client: **SC DHEC - UST Management**
Description: **MW-2**
Date Sampled: **03/28/2012 1336**
Date Received: **03/30/2012**

Laboratory ID: **NC30023-002**
Matrix: **Aqueous**

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	04/04/2012 1502	AAC		81824

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	**71-43-2**	**8260B**	**0.87**	**J**	**5.0**	**0.20**	**ug/L**	**1**
1,2-Dichloroethane	107-06-2	8260B	ND		5.0	0.30	ug/L	1
Ethylbenzene	**100-41-4**	**8260B**	**3.2**	**J**	**5.0**	**1.7**	**ug/L**	**1**
Methyl tertiary butyl ether (MTBE)	**1634-04-4**	**8260B**	**9.6**		**5.0**	**0.40**	**ug/L**	**1**
Naphthalene	**91-20-3**	**8260B**	**13**		**5.0**	**1.7**	**ug/L**	**1**
Toluene	108-88-3	8260B	ND		5.0	1.7	ug/L	1
Xylenes (total)	**1330-20-7**	**8260B**	**1.8**	**J**	**5.0**	**1.7**	**ug/L**	**1**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		90	70-130
Bromofluorobenzene		96	70-130
Toluene-d8		94	70-130

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	04/04/2012 1502	AAC		81824

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Diisopropyl ether (IPE)	**108-20-3**	**8260B**	**0.52**	**J**	**10**	**0.40**	**ug/L**	**1**
Ethanol	64-17-5	8260B	ND		1000	33	ug/L	1
3,3-Dimethyl-1-butanol	624-95-3	8260B	ND		100	1.0	ug/L	1
Ethyl-tert-butyl ether (ETBE)	637-92-3	8260B	ND		100	0.20	ug/L	1
tert-Amyl alcohol (TAA)	75-85-4	8260B	ND		100	6.7	ug/L	1
tert-Amyl methyl ether (TAME)	**994-05-8**	**8260B**	**0.22**	**J**	**10**	**0.20**	**ug/L**	**1**
tert-butyl alcohol (TBA)	**75-65-0**	**8260B**	**7.6**	**J**	**100**	**6.7**	**ug/L**	**1**
tert-Butyl formate (TBF)	762-75-4	8260B	ND		100	1.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		96	70-130
1,2-Dichloroethane-d4		90	70-130
Toluene-d8		94	70-130

EDB & DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	8011	8011	1	04/05/2012 0647	MSM	04/02/2012 0845	81569

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
B = Detected in the method blank
J = Estimated result < PQL and ≥ MDL
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
H = Out of holding time
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
* = Reportable result (only when report all runs)

Client: **SC DHEC - UST Management**
Description: **MW-2**
Date Sampled: **03/28/2012 1336**
Date Received: **03/30/2012**

Laboratory ID: **NC30023-002**
Matrix: **Aqueous**

EDB & DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	8011	8011	1	04/05/2012 0647	MSM	04/02/2012 0845	81569

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		117	57-137

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

B = Detected in the method blank
J = Estimated result < PQL and ≥ MDL

E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
* = Reportable result (only when report all runs)

H = Out of holding time
N = Recovery is out of criteria

Client: **SC DHEC - UST Management** | Laboratory ID: **NC30023-003**
Description: **MW-3** | Matrix: **Aqueous**
Date Sampled: **03/28/2012 1400**
Date Received: **03/30/2012**

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	04/07/2012 0650	JJG		82082
2	5030B	8260B	5	04/09/2012 2013	JJG		82173

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	**71-43-2**	**8260B**	**15**		**5.0**	**0.20**	**ug/L**	**1**
1,2-Dichloroethane	107-06-2	8260B	ND		5.0	0.30	ug/L	1
Ethylbenzene	**100-41-4**	**8260B**	**95**		**25**	**8.5**	**ug/L**	**2**
Methyl tertiary butyl ether (MTBE)	**1634-04-4**	**8260B**	**5.4**		**5.0**	**0.40**	**ug/L**	**1**
Naphthalene	**91-20-3**	**8260B**	**400**		**25**	**8.5**	**ug/L**	**2**
Toluene	108-88-3	8260B	ND		5.0	1.7	ug/L	1
Xylenes (total)	**1330-20-7**	**8260B**	**110**		**5.0**	**1.7**	**ug/L**	**1**

Surrogate	Q	Run 1 % Recovery	Run 1 Acceptance Limits	Q	Run 2 % Recovery	Run 2 Acceptance Limits
1,2-Dichloroethane-d4		102	70-130		102	70-130
Bromofluorobenzene		107	70-130		102	70-130
Toluene-d8		102	70-130		98	70-130

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	04/07/2012 0650	JJG		82082

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Diisopropyl ether (IPE)	**108-20-3**	**8260B**	**0.70**	**J**	**10**	**0.40**	**ug/L**	**1**
Ethanol	64-17-5	8260B	ND		1000	33	ug/L	1
3,3-Dimethyl-1-butanol	624-95-3	8260B	ND		100	1.0	ug/L	1
Ethyl-tert-butyl ether (ETBE)	637-92-3	8260B	ND		100	0.20	ug/L	1
tert-Amyl alcohol (TAA)	75-85-4	8260B	ND		100	6.7	ug/L	1
tert-Amyl methyl ether (TAME)	**994-05-8**	**8260B**	**0.47**	**J**	**10**	**0.20**	**ug/L**	**1**
tert-butyl alcohol (TBA)	**75-65-0**	**8260B**	**8.5**	**J**	**100**	**6.7**	**ug/L**	**1**
tert-Butyl formate (TBF)	762-75-4	8260B	ND		100	1.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Run 1 Acceptance Limits
Bromofluorobenzene		107	70-130
1,2-Dichloroethane-d4		102	70-130
Toluene-d8		102	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
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
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W" | * = Reportable result (only when report all runs)

Client: **SC DHEC - UST Management**
Description: **MW-3**
Date Sampled: **03/28/2012 1400**
Date Received: **03/30/2012**

Laboratory ID: **NC30023-003**
Matrix: **Aqueous**

EDB & DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	8011	8011	1	04/05/2012 0708	MSM	04/02/2012 0845	81569

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		128	57-137

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
B = Detected in the method blank
J = Estimated result < PQL and ≥ MDL
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
* = Reportable result (only when report all runs)
H = Out of holding time
N = Recovery is out of criteria

Client: **SC DHEC - UST Management**
Description: **MW-4**
Date Sampled: **03/28/2012 1344**
Date Received: **03/30/2012**

Laboratory ID: **NC30023-004**
Matrix: **Aqueous**

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	04/04/2012 1524	AAC		81824

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	ND		5.0	0.20	ug/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		5.0	0.30	ug/L	1
Ethylbenzene	100-41-4	8260B	ND		5.0	1.7	ug/L	1
Methyl tertiary butyl ether (MTBE)	**1634-04-4**	**8260B**	**4.6**	**J**	**5.0**	**0.40**	**ug/L**	**1**
Naphthalene	91-20-3	8260B	ND		5.0	1.7	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		89	70-130
Bromofluorobenzene		92	70-130
Toluene-d8		91	70-130

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	04/04/2012 1524	AAC		81824

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Diisopropyl ether (IPE)	108-20-3	8260B	ND		10	0.40	ug/L	1
Ethanol	64-17-5	8260B	ND		1000	33	ug/L	1
3,3-Dimethyl-1-butanol	624-95-3	8260B	ND		100	1.0	ug/L	1
Ethyl-tert-butyl ether (ETBE)	637-92-3	8260B	ND		100	0.20	ug/L	1
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
tert-butyl alcohol (TBA)	75-65-0	8260B	ND		100	6.7	ug/L	1
tert-Butyl formate (TBF)	762-75-4	8260B	ND		100	1.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		92	70-130
1,2-Dichloroethane-d4		89	70-130
Toluene-d8		91	70-130

EDB & DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	8011	8011	1	04/05/2012 0730	MSM	04/02/2012 0845	81569

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
B = Detected in the method blank
J = Estimated result < PQL and ≥ MDL
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
H = Out of holding time
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
* = Reportable result (only when report all runs)

Client: **SC DHEC - UST Management**
Description: **MW-4**
Date Sampled: **03/28/2012 1344**
Date Received: **03/30/2012**

Laboratory ID: **NC30023-004**
Matrix: **Aqueous**

EDB & DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	8011	8011	1	04/05/2012 0730	MSM	04/02/2012 0845	81569

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
ND = Not detected at or above the MDL
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

B = Detected in the method blank
J = Estimated result < PQL and ≥ MDL

E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
* = Reportable result (only when report all runs)

H = Out of holding time
N = Recovery is out of criteria

Client: **SC DHEC - UST Management**
Description: **MW-5**
Date Sampled: **03/28/2012 1232**
Date Received: **03/30/2012**

Laboratory ID: **NC30023-005**
Matrix: **Aqueous**

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	04/04/2012 1546	AAC		81824

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	ND		5.0	0.20	ug/L	1
1,2-Dichloroethane	**107-06-2**	**8260B**	**1.6**	**J**	**5.0**	**0.30**	**ug/L**	**1**
Ethylbenzene	100-41-4	8260B	ND		5.0	1.7	ug/L	1
Methyl tertiary butyl ether (MTBE)	**1634-04-4**	**8260B**	**4.1**	**J**	**5.0**	**0.40**	**ug/L**	**1**
Naphthalene	91-20-3	8260B	ND		5.0	1.7	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		88	70-130
Bromofluorobenzene		91	70-130
Toluene-d8		92	70-130

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	04/04/2012 1546	AAC		81824

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Diisopropyl ether (IPE)	**108-20-3**	**8260B**	**4.6**	**J**	**10**	**0.40**	**ug/L**	**1**
Ethanol	64-17-5	8260B	ND		1000	33	ug/L	1
3,3-Dimethyl-1-butanol	624-95-3	8260B	ND		100	1.0	ug/L	1
Ethyl-tert-butyl ether (ETBE)	637-92-3	8260B	ND		100	0.20	ug/L	1
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
tert-butyl alcohol (TBA)	75-65-0	8260B	ND		100	6.7	ug/L	1
tert-Butyl formate (TBF)	762-75-4	8260B	ND		100	1.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		91	70-130
1,2-Dichloroethane-d4		88	70-130
Toluene-d8		92	70-130

EDB & DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	8011	8011	1	04/05/2012 0751	MSM	04/02/2012 0845	81569

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
B = Detected in the method blank
J = Estimated result < PQL and ≥ MDL
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
H = Out of holding time
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
* = Reportable result (only when report all runs)

Client: **SC DHEC - UST Management**
Description: **MW-5**
Date Sampled: **03/28/2012 1232**
Date Received: **03/30/2012**

Laboratory ID: **NC30023-005**
Matrix: **Aqueous**

EDB & DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	8011	8011	1	04/05/2012 0751	MSM	04/02/2012 0845	81569

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		114	57-137

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
B = Detected in the method blank
J = Estimated result < PQL and ≥ MDL
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
H = Out of holding time
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
* = Reportable result (only when report all runs)

Client: **SC DHEC - UST Management**
Description: **MW-6**
Date Sampled: **03/28/2012 1256**
Date Received: **03/30/2012**

Laboratory ID: **NC30023-006**
Matrix: **Aqueous**

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	04/04/2012 1607	AAC		81824

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	ND		5.0	0.20	ug/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		5.0	0.30	ug/L	1
Ethylbenzene	100-41-4	8260B	ND		5.0	1.7	ug/L	1
Methyl tertiary butyl ether (MTBE)	**1634-04-4**	**8260B**	**53**		**5.0**	**0.40**	**ug/L**	**1**
Naphthalene	91-20-3	8260B	ND		5.0	1.7	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		88	70-130
Bromofluorobenzene		92	70-130
Toluene-d8		91	70-130

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	04/04/2012 1607	AAC		81824

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Diisopropyl ether (IPE)	**108-20-3**	**8260B**	**0.50**	**J**	**10**	**0.40**	**ug/L**	**1**
Ethanol	64-17-5	8260B	ND		1000	33	ug/L	1
3,3-Dimethyl-1-butanol	624-95-3	8260B	ND		100	1.0	ug/L	1
Ethyl-tert-butyl ether (ETBE)	637-92-3	8260B	ND		100	0.20	ug/L	1
tert-Amyl alcohol (TAA)	75-85-4	8260B	ND		100	6.7	ug/L	1
tert-Amyl methyl ether (TAME)	**994-05-8**	**8260B**	**0.67**	**J**	**10**	**0.20**	**ug/L**	**1**
tert-butyl alcohol (TBA)	**75-65-0**	**8260B**	**7.5**	**J**	**100**	**6.7**	**ug/L**	**1**
tert-Butyl formate (TBF)	762-75-4	8260B	ND		100	1.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		92	70-130
1,2-Dichloroethane-d4		88	70-130
Toluene-d8		91	70-130

EDB & DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	8011	8011	1	04/05/2012 0812	MSM	04/02/2012 0845	81569

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
B = Detected in the method blank
J = Estimated result < PQL and ≥ MDL
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
H = Out of holding time
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
* = Reportable result (only when report all runs)

Client: **SC DHEC - UST Management**
Description: **MW-6**
Date Sampled: **03/28/2012 1256**
Date Received: **03/30/2012**

Laboratory ID: **NC30023-006**
Matrix: **Aqueous**

EDB & DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	8011	8011	1	04/05/2012 0812	MSM	04/02/2012 0845	81569

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		112	57-137

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
B = Detected in the method blank
J = Estimated result < PQL and ≥ MDL
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
H = Out of holding time
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
* = Reportable result (only when report all runs)

Client: **SC DHEC - UST Management**
Description: **MW-7**
Date Sampled: **03/28/2012 1051**
Date Received: **03/30/2012**

Laboratory ID: **NC30023-007**
Matrix: **Aqueous**

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	04/04/2012 1902	AAC		81824

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	ND		5.0	0.20	ug/L	1
1,2-Dichloroethane	**107-06-2**	**8260B**	**0.59**	**J**	**5.0**	**0.30**	**ug/L**	**1**
Ethylbenzene	100-41-4	8260B	ND		5.0	1.7	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
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		77	70-130
Bromofluorobenzene		88	70-130
Toluene-d8		90	70-130

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	04/04/2012 1902	AAC		81824

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Diisopropyl ether (IPE)	108-20-3	8260B	ND		10	0.40	ug/L	1
Ethanol	64-17-5	8260B	ND		1000	33	ug/L	1
3,3-Dimethyl-1-butanol	624-95-3	8260B	ND		100	1.0	ug/L	1
Ethyl-tert-butyl ether (ETBE)	637-92-3	8260B	ND		100	0.20	ug/L	1
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
tert-butyl alcohol (TBA)	75-65-0	8260B	ND		100	6.7	ug/L	1
tert-Butyl formate (TBF)	762-75-4	8260B	ND		100	1.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		88	70-130
1,2-Dichloroethane-d4		77	70-130
Toluene-d8		90	70-130

EDB & DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	8011	8011	1	04/05/2012 0834	MSM	04/02/2012 0845	81569

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
B = Detected in the method blank
J = Estimated result < PQL and ≥ MDL
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
H = Out of holding time
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
* = Reportable result (only when report all runs)

Client: **SC DHEC - UST Management**
Description: **MW-7**
Date Sampled: **03/28/2012 1051**
Date Received: **03/30/2012**

Laboratory ID: **NC30023-007**
Matrix: **Aqueous**

EDB & DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	8011	8011	1	04/05/2012 0834	MSM	04/02/2012 0845	81569

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		111	57-137

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
B = Detected in the method blank
J = Estimated result < PQL and ≥ MDL
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
H = Out of holding time
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
* = Reportable result (only when report all runs)

Client: **SC DHEC - UST Management**
Description: **MW-8**
Date Sampled: **03/28/2012 1000**
Date Received: **03/30/2012**

Laboratory ID: **NC30023-008**
Matrix: **Aqueous**

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	04/04/2012 1923	AAC		81824

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	ND		5.0	0.20	ug/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		5.0	0.30	ug/L	1
Ethylbenzene	100-41-4	8260B	ND		5.0	1.7	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
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		98	70-130
Bromofluorobenzene		93	70-130
Toluene-d8		90	70-130

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	04/04/2012 1923	AAC		81824

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Diisopropyl ether (IPE)	108-20-3	8260B	ND		10	0.40	ug/L	1
Ethanol	64-17-5	8260B	ND		1000	33	ug/L	1
3,3-Dimethyl-1-butanol	624-95-3	8260B	ND		100	1.0	ug/L	1
Ethyl-tert-butyl ether (ETBE)	637-92-3	8260B	ND		100	0.20	ug/L	1
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
tert-butyl alcohol (TBA)	75-65-0	8260B	ND		100	6.7	ug/L	1
tert-Butyl formate (TBF)	762-75-4	8260B	ND		100	1.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		93	70-130
1,2-Dichloroethane-d4		98	70-130
Toluene-d8		90	70-130

EDB & DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	8011	8011	1	04/05/2012 0855	MSM	04/02/2012 0845	81569

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
B = Detected in the method blank
J = Estimated result < PQL and ≥ MDL
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
H = Out of holding time
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
* = Reportable result (only when report all runs)

Client: **SC DHEC - UST Management**
Description: **MW-8**
Date Sampled: **03/28/2012 1000**
Date Received: **03/30/2012**

Laboratory ID: **NC30023-008**
Matrix: **Aqueous**

EDB & DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	8011	8011	1	04/05/2012 0855	MSM	04/02/2012 0845	81569

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		111	57-137

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
B = Detected in the method blank
J = Estimated result < PQL and ≥ MDL
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
H = Out of holding time
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
* = Reportable result (only when report all runs)

Client: **SC DHEC - UST Management**
Description: **MW-9**
Date Sampled: **03/28/2012 1011**
Date Received: **03/30/2012**

Laboratory ID: **NC30023-009**
Matrix: **Aqueous**

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	04/04/2012 1945	AAC		81824

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	ND		5.0	0.20	ug/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		5.0	0.30	ug/L	1
Ethylbenzene	100-41-4	8260B	ND		5.0	1.7	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
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		97	70-130
Bromofluorobenzene		94	70-130
Toluene-d8		92	70-130

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	04/04/2012 1945	AAC		81824

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Diisopropyl ether (IPE)	108-20-3	8260B	ND		10	0.40	ug/L	1
Ethanol	64-17-5	8260B	ND		1000	33	ug/L	1
3,3-Dimethyl-1-butanol	624-95-3	8260B	ND		100	1.0	ug/L	1
Ethyl-tert-butyl ether (ETBE)	637-92-3	8260B	ND		100	0.20	ug/L	1
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
tert-butyl alcohol (TBA)	75-65-0	8260B	ND		100	6.7	ug/L	1
tert-Butyl formate (TBF)	762-75-4	8260B	ND		100	1.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		94	70-130
1,2-Dichloroethane-d4		97	70-130
Toluene-d8		92	70-130

EDB & DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	8011	8011	1	04/05/2012 0916	MSM	04/02/2012 0845	81569

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
B = Detected in the method blank
J = Estimated result < PQL and ≥ MDL
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
H = Out of holding time
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
* = Reportable result (only when report all runs)

Client: **SC DHEC - UST Management**
Description: **MW-9**
Date Sampled: **03/28/2012 1011**
Date Received: **03/30/2012**

Laboratory ID: **NC30023-009**
Matrix: **Aqueous**

EDB & DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	8011	8011	1	04/05/2012 0916	MSM	04/02/2012 0845	81569

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
1,2-Dibromoethane (EDB)	106-93-4	8011	ND		0.021	0.021	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,1,1,2-Tetrachloroethane		113	57-137

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
B = Detected in the method blank
J = Estimated result < PQL and ≥ MDL
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
H = Out of holding time
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
* = Reportable result (only when report all runs)

Client: **SC DHEC - UST Management**
Description: **MW-10**
Date Sampled: **03/28/2012 1128**
Date Received: **03/30/2012**

Laboratory ID: **NC30023-010**
Matrix: **Aqueous**

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	04/05/2012 1413	AAC		81925

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	ND		5.0	0.20	ug/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		5.0	0.30	ug/L	1
Ethylbenzene	100-41-4	8260B	ND		5.0	1.7	ug/L	1
Methyl tertiary butyl ether (MTBE)	**1634-04-4**	**8260B**	**0.42**	**J**	**5.0**	**0.40**	**ug/L**	**1**
Naphthalene	91-20-3	8260B	ND		5.0	1.7	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		115	70-130
Bromofluorobenzene		105	70-130
Toluene-d8		94	70-130

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	04/05/2012 1413	AAC		81925

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Diisopropyl ether (IPE)	108-20-3	8260B	ND		10	0.40	ug/L	1
Ethanol	64-17-5	8260B	ND		1000	33	ug/L	1
3,3-Dimethyl-1-butanol	624-95-3	8260B	ND		100	1.0	ug/L	1
Ethyl-tert-butyl ether (ETBE)	637-92-3	8260B	ND		100	0.20	ug/L	1
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
tert-butyl alcohol (TBA)	75-65-0	8260B	ND		100	6.7	ug/L	1
tert-Butyl formate (TBF)	762-75-4	8260B	ND		100	1.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		105	70-130
1,2-Dichloroethane-d4		115	70-130
Toluene-d8		94	70-130

EDB & DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	8011	8011	1	04/05/2012 0938	MSM	04/02/2012 0845	81569

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
B = Detected in the method blank
J = Estimated result < PQL and ≥ MDL
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
H = Out of holding time
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
* = Reportable result (only when report all runs)

Client: **SC DHEC - UST Management**
Description: **MW-10**
Date Sampled: **03/28/2012 1128**
Date Received: **03/30/2012**

Laboratory ID: **NC30023-010**
Matrix: **Aqueous**

EDB & DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	8011	8011	1	04/05/2012 0938	MSM	04/02/2012 0845	81569

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		114	57-137

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
B = Detected in the method blank
J = Estimated result < PQL and ≥ MDL
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
H = Out of holding time
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
* = Reportable result (only when report all runs)

Client: **SC DHEC - UST Management**
Description: **MW-11**
Date Sampled: **03/28/2012 1121**
Date Received: **03/30/2012**

Laboratory ID: **NC30023-011**
Matrix: **Aqueous**

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	04/05/2012 1436	AAC		81925

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	ND		5.0	0.20	ug/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		5.0	0.30	ug/L	1
Ethylbenzene	100-41-4	8260B	ND		5.0	1.7	ug/L	1
Methyl tertiary butyl ether (MTBE)	**1634-04-4**	**8260B**	**11**		**5.0**	**0.40**	**ug/L**	**1**
Naphthalene	91-20-3	8260B	ND		5.0	1.7	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		99	70-130
Toluene-d8		91	70-130

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	04/05/2012 1436	AAC		81925

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Diisopropyl ether (IPE)	108-20-3	8260B	ND		10	0.40	ug/L	1
Ethanol	64-17-5	8260B	ND		1000	33	ug/L	1
3,3-Dimethyl-1-butanol	624-95-3	8260B	ND		100	1.0	ug/L	1
Ethyl-tert-butyl ether (ETBE)	637-92-3	8260B	ND		100	0.20	ug/L	1
tert-Amyl alcohol (TAA)	75-85-4	8260B	ND		100	6.7	ug/L	1
tert-Amyl methyl ether (TAME)	**994-05-8**	**8260B**	**0.20**	**J**	**10**	**0.20**	**ug/L**	**1**
tert-butyl alcohol (TBA)	75-65-0	8260B	ND		100	6.7	ug/L	1
tert-Butyl formate (TBF)	762-75-4	8260B	ND		100	1.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		99	70-130
1,2-Dichloroethane-d4		113	70-130
Toluene-d8		91	70-130

EDB & DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	8011	8011	1	04/05/2012 0959	MSM	04/02/2012 0845	81569

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
B = Detected in the method blank
J = Estimated result < PQL and ≥ MDL
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
H = Out of holding time
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
* = Reportable result (only when report all runs)

Client: **SC DHEC - UST Management**
Description: **MW-11**
Date Sampled: **03/28/2012 1121**
Date Received: **03/30/2012**

Laboratory ID: **NC30023-011**
Matrix: **Aqueous**

EDB & DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	8011	8011	1	04/05/2012 0959	MSM	04/02/2012 0845	81569

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		114	57-137

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

B = Detected in the method blank
J = Estimated result < PQL and ≥ MDL
* = Reportable result (only when report all runs)

E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

H = Out of holding time
N = Recovery is out of criteria

Client: **SC DHEC - UST Management**
Description: **MW-12**
Date Sampled: **03/28/2012 1108**
Date Received: **03/30/2012**

Laboratory ID: **NC30023-012**
Matrix: **Aqueous**

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	04/05/2012 1459	AAC		81925

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	ND		5.0	0.20	ug/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		5.0	0.30	ug/L	1
Ethylbenzene	100-41-4	8260B	ND		5.0	1.7	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
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		117	70-130
Bromofluorobenzene		104	70-130
Toluene-d8		94	70-130

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	04/05/2012 1459	AAC		81925

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Diisopropyl ether (IPE)	108-20-3	8260B	ND		10	0.40	ug/L	1
Ethanol	64-17-5	8260B	ND		1000	33	ug/L	1
3,3-Dimethyl-1-butanol	624-95-3	8260B	ND		100	1.0	ug/L	1
Ethyl-tert-butyl ether (ETBE)	637-92-3	8260B	ND		100	0.20	ug/L	1
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
tert-butyl alcohol (TBA)	75-65-0	8260B	ND		100	6.7	ug/L	1
tert-Butyl formate (TBF)	762-75-4	8260B	ND		100	1.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		104	70-130
1,2-Dichloroethane-d4		117	70-130
Toluene-d8		94	70-130

EDB & DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	8011	8011	1	04/05/2012 1021	MSM	04/02/2012 0845	81569

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
B = Detected in the method blank
J = Estimated result < PQL and ≥ MDL
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
H = Out of holding time
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
* = Reportable result (only when report all runs)

Client: **SC DHEC - UST Management**
Description: **MW-12**
Date Sampled: **03/28/2012 1108**
Date Received: **03/30/2012**

Laboratory ID: **NC30023-012**
Matrix: **Aqueous**

EDB & DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	8011	8011	1	04/05/2012 1021	MSM	04/02/2012 0845	81569

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		117	57-137

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
B = Detected in the method blank
J = Estimated result < PQL and ≥ MDL
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
H = Out of holding time
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
* = Reportable result (only when report all runs)

Client: **SC DHEC - UST Management**
Description: **MW-13**
Date Sampled: **03/28/2012 1240**
Date Received: **03/30/2012**

Laboratory ID: **NC30023-013**
Matrix: **Aqueous**

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2	5030B	8260B	1	04/07/2012 0401	JJG		82082

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	ND		5.0	0.20	ug/L	2
1,2-Dichloroethane	107-06-2	8260B	ND		5.0	0.30	ug/L	2
Ethylbenzene	100-41-4	8260B	ND		5.0	1.7	ug/L	2
Methyl tertiary butyl ether (MTBE)	**1634-04-4**	**8260B**	**2.3**	**J**	**5.0**	**0.40**	**ug/L**	**2**
Naphthalene	91-20-3	8260B	ND		5.0	1.7	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		101	70-130
Bromofluorobenzene		100	70-130
Toluene-d8		100	70-130

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2	5030B	8260B	1	04/07/2012 0401	JJG		82082

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Diisopropyl ether (IPE)	108-20-3	8260B	ND		10	0.40	ug/L	2
Ethanol	64-17-5	8260B	ND		1000	33	ug/L	2
3,3-Dimethyl-1-butanol	624-95-3	8260B	ND		100	1.0	ug/L	2
Ethyl-tert-butyl ether (ETBE)	637-92-3	8260B	ND		100	0.20	ug/L	2
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
tert-butyl alcohol (TBA)	75-65-0	8260B	ND		100	6.7	ug/L	2
tert-Butyl formate (TBF)	762-75-4	8260B	ND		100	1.0	ug/L	2

Surrogate	Q	Run 2 % Recovery	Acceptance Limits
Bromofluorobenzene		100	70-130
1,2-Dichloroethane-d4		101	70-130
Toluene-d8		100	70-130

EDB & DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	8011	8011	1	04/05/2012 1042	MSM	04/02/2012 0845	81569

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
B = Detected in the method blank
J = Estimated result < PQL and ≥ MDL
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
H = Out of holding time
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
* = Reportable result (only when report all runs)

Client: **SC DHEC - UST Management**
Description: **MW-13**
Date Sampled: **03/28/2012 1240**
Date Received: **03/30/2012**

Laboratory ID: **NC30023-013**
Matrix: **Aqueous**

EDB & DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	8011	8011	1	04/05/2012 1042	MSM	04/02/2012 0845	81569

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		114	57-137

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
B = Detected in the method blank
J = Estimated result < PQL and ≥ MDL
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
H = Out of holding time
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
* = Reportable result (only when report all runs)

Client: **SC DHEC - UST Management**
Description: **MW-14**
Date Sampled: **03/28/2012 1040**
Date Received: **03/30/2012**

Laboratory ID: **NC30023-014**
Matrix: **Aqueous**

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2	5030B	8260B	1	04/07/2012 0422	JJG		82082

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	ND		5.0	0.20	ug/L	2
1,2-Dichloroethane	107-06-2	8260B	ND		5.0	0.30	ug/L	2
Ethylbenzene	100-41-4	8260B	ND		5.0	1.7	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
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		102	70-130
Bromofluorobenzene		99	70-130
Toluene-d8		99	70-130

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2	5030B	8260B	1	04/07/2012 0422	JJG		82082

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Diisopropyl ether (IPE)	108-20-3	8260B	ND		10	0.40	ug/L	2
Ethanol	64-17-5	8260B	ND		1000	33	ug/L	2
3,3-Dimethyl-1-butanol	624-95-3	8260B	ND		100	1.0	ug/L	2
Ethyl-tert-butyl ether (ETBE)	637-92-3	8260B	ND		100	0.20	ug/L	2
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
tert-butyl alcohol (TBA)	75-65-0	8260B	ND		100	6.7	ug/L	2
tert-Butyl formate (TBF)	762-75-4	8260B	ND		100	1.0	ug/L	2

Surrogate	Q	Run 2 % Recovery	Acceptance Limits
Bromofluorobenzene		99	70-130
1,2-Dichloroethane-d4		102	70-130
Toluene-d8		99	70-130

EDB & DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	8011	8011	1	04/05/2012 1104	MSM	04/02/2012 0845	81569

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
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
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
* = Reportable result (only when report all runs)

Client: **SC DHEC - UST Management**
Description: **MW-14**
Date Sampled: **03/28/2012 1040**
Date Received: **03/30/2012**

Laboratory ID: **NC30023-014**
Matrix: **Aqueous**

EDB & DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	8011	8011	1	04/05/2012 1104	MSM	04/02/2012 0845	81569

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		117	57-137

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
B = Detected in the method blank
J = Estimated result < PQL and ≥ MDL
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
* = Reportable result (only when report all runs)
H = Out of holding time
N = Recovery is out of criteria

Client: **SC DHEC - UST Management**
Description: **MW-15**
Date Sampled: **03/28/2012 1355**
Date Received: **03/30/2012**

Laboratory ID: **NC30023-015**
Matrix: **Aqueous**

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2	5030B	8260B	1	04/07/2012 0443	JJG		82082

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	**71-43-2**	**8260B**	**1.3**	**J**	**5.0**	**0.20**	**ug/L**	**2**
1,2-Dichloroethane	107-06-2	8260B	ND		5.0	0.30	ug/L	2
Ethylbenzene	**100-41-4**	**8260B**	**18**		**5.0**	**1.7**	**ug/L**	**2**
Methyl tertiary butyl ether (MTBE)	**1634-04-4**	**8260B**	**1.6**	**J**	**5.0**	**0.40**	**ug/L**	**2**
Naphthalene	**91-20-3**	**8260B**	**6.1**		**5.0**	**1.7**	**ug/L**	**2**
Toluene	108-88-3	8260B	ND		5.0	1.7	ug/L	2
Xylenes (total)	**1330-20-7**	**8260B**	**4.3**	**J**	**5.0**	**1.7**	**ug/L**	**2**

Surrogate	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		101	70-130
Bromofluorobenzene		104	70-130
Toluene-d8		101	70-130

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2	5030B	8260B	1	04/07/2012 0443	JJG		82082

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Diisopropyl ether (IPE)	108-20-3	8260B	ND		10	0.40	ug/L	2
Ethanol	64-17-5	8260B	ND		1000	33	ug/L	2
3,3-Dimethyl-1-butanol	624-95-3	8260B	ND		100	1.0	ug/L	2
Ethyl-tert-butyl ether (ETBE)	637-92-3	8260B	ND		100	0.20	ug/L	2
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
tert-butyl alcohol (TBA)	75-65-0	8260B	ND		100	6.7	ug/L	2
tert-Butyl formate (TBF)	762-75-4	8260B	ND		100	1.0	ug/L	2

Surrogate	Q	Run 2 % Recovery	Acceptance Limits
Bromofluorobenzene		104	70-130
1,2-Dichloroethane-d4		101	70-130
Toluene-d8		101	70-130

EDB & DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	8011	8011	1	04/05/2012 1126	MSM	04/02/2012 0845	81569

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
B = Detected in the method blank
J = Estimated result < PQL and ≥ MDL
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
H = Out of holding time
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
* = Reportable result (only when report all runs)

Client: **SC DHEC - UST Management**
Description: **MW-15**
Date Sampled: **03/28/2012 1355**
Date Received: **03/30/2012**

Laboratory ID: **NC30023-015**
Matrix: **Aqueous**

EDB & DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	8011	8011	1	04/05/2012 1126	MSM	04/02/2012 0845	81569

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
ND = Not detected at or above the MDL
B = Detected in the method blank
J = Estimated result < PQL and ≥ MDL
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
H = Out of holding time
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
* = Reportable result (only when report all runs)

Client: **SC DHEC - UST Management**
Description: **MW-16**
Date Sampled: **03/28/2012 1056**
Date Received: **03/30/2012**

Laboratory ID: **NC30023-016**
Matrix: **Aqueous**

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	04/05/2012 1631	AAC		81925

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	ND		5.0	0.20	ug/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		5.0	0.30	ug/L	1
Ethylbenzene	100-41-4	8260B	ND		5.0	1.7	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
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		100	70-130
Toluene-d8		91	70-130

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	04/05/2012 1631	AAC		81925

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Diisopropyl ether (IPE)	108-20-3	8260B	ND		10	0.40	ug/L	1
Ethanol	64-17-5	8260B	ND		1000	33	ug/L	1
3,3-Dimethyl-1-butanol	624-95-3	8260B	ND		100	1.0	ug/L	1
Ethyl-tert-butyl ether (ETBE)	637-92-3	8260B	ND		100	0.20	ug/L	1
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
tert-butyl alcohol (TBA)	75-65-0	8260B	ND		100	6.7	ug/L	1
tert-Butyl formate (TBF)	762-75-4	8260B	ND		100	1.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		100	70-130
1,2-Dichloroethane-d4		108	70-130
Toluene-d8		91	70-130

EDB & DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	8011	8011	1	04/05/2012 1147	MSM	04/02/2012 0845	81569

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
B = Detected in the method blank
J = Estimated result < PQL and ≥ MDL
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
* = Reportable result (only when report all runs)
H = Out of holding time
N = Recovery is out of criteria

Client: **SC DHEC - UST Management**
Description: **MW-16**
Date Sampled: **03/28/2012 1056**
Date Received: **03/30/2012**

Laboratory ID: **NC30023-016**
Matrix: **Aqueous**

EDB & DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	8011	8011	1	04/05/2012 1147	MSM	04/02/2012 0845	81569

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		106	57-137

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
B = Detected in the method blank
J = Estimated result < PQL and ≥ MDL
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
* = Reportable result (only when report all runs)
H = Out of holding time
N = Recovery is out of criteria

Client: **SC DHEC - UST Management**
Description: **DW-1**
Date Sampled: **03/28/2012 1420**
Date Received: **03/30/2012**

Laboratory ID: **NC30023-017**
Matrix: **Aqueous**

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	04/05/2012 1654	AAC		81925

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	**71-43-2**	**8260B**	**13**		**5.0**	**0.20**	**ug/L**	**1**
1,2-Dichloroethane	**107-06-2**	**8260B**	**2.3**	**J**	**5.0**	**0.30**	**ug/L**	**1**
Ethylbenzene	100-41-4	8260B	ND		5.0	1.7	ug/L	1
Methyl tertiary butyl ether (MTBE)	**1634-04-4**	**8260B**	**110**		**5.0**	**0.40**	**ug/L**	**1**
Naphthalene	**91-20-3**	**8260B**	**59**		**5.0**	**1.7**	**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		111	70-130
Bromofluorobenzene		102	70-130
Toluene-d8		93	70-130

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	04/05/2012 1654	AAC		81925
2	5030B	8260B	1	04/07/2012 0547	JJG		82082

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Diisopropyl ether (IPE)	**108-20-3**	**8260B**	**0.66**	**J**	**10**	**0.40**	**ug/L**	**1**
Ethanol	64-17-5	8260B	ND		1000	33	ug/L	1
3,3-Dimethyl-1-butanol	624-95-3	8260B	ND		100	1.0	ug/L	1
Ethyl-tert-butyl ether (ETBE)	637-92-3	8260B	ND		100	0.20	ug/L	1
tert-Amyl alcohol (TAA)	75-85-4	8260B	ND		100	6.7	ug/L	1
tert-Amyl methyl ether (TAME)	**994-05-8**	**8260B**	**1.6**	**J**	**10**	**0.20**	**ug/L**	**1**
tert-butyl alcohol (TBA)	**75-65-0**	**8260B**	**40**	**J**	**100**	**6.7**	**ug/L**	**2**
tert-Butyl formate (TBF)	762-75-4	8260B	ND		100	1.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
Bromofluorobenzene		102	70-130		100	70-130
1,2-Dichloroethane-d4		111	70-130		101	70-130
Toluene-d8		93	70-130		100	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
B = Detected in the method blank
J = Estimated result < PQL and ≥ MDL
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
H = Out of holding time
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
* = Reportable result (only when report all runs)

Client: **SC DHEC - UST Management**
Description: **DW-1**
Date Sampled: **03/28/2012 1420**
Date Received: **03/30/2012**

Laboratory ID: **NC30023-017**
Matrix: **Aqueous**

EDB & DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	8011	8011	1	04/05/2012 1209	MSM	04/02/2012 0845	81569

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
ND = Not detected at or above the MDL
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
B = Detected in the method blank
J = Estimated result < PQL and ≥ MDL
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
* = Reportable result (only when report all runs)
H = Out of holding time
N = Recovery is out of criteria

Client: **SC DHEC - UST Management**
Description: **DW-2**
Date Sampled: **03/28/2012 1020**
Date Received: **03/30/2012**

Laboratory ID: **NC30023-018**
Matrix: **Aqueous**

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	04/05/2012 1717	AAC		81925

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	ND		5.0	0.20	ug/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		5.0	0.30	ug/L	1
Ethylbenzene	100-41-4	8260B	ND		5.0	1.7	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
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		93	70-130

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	04/05/2012 1717	AAC		81925

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Diisopropyl ether (IPE)	108-20-3	8260B	ND		10	0.40	ug/L	1
Ethanol	64-17-5	8260B	ND		1000	33	ug/L	1
3,3-Dimethyl-1-butanol	624-95-3	8260B	ND		100	1.0	ug/L	1
Ethyl-tert-butyl ether (ETBE)	637-92-3	8260B	ND		100	0.20	ug/L	1
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
tert-butyl alcohol (TBA)	75-65-0	8260B	ND		100	6.7	ug/L	1
tert-Butyl formate (TBF)	762-75-4	8260B	ND		100	1.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		99	70-130
1,2-Dichloroethane-d4		112	70-130
Toluene-d8		93	70-130

EDB & DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	8011	8011	1	04/05/2012 1231	MSM	04/02/2012 0845	81569

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
B = Detected in the method blank
J = Estimated result < PQL and ≥ MDL
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
H = Out of holding time
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
* = Reportable result (only when report all runs)

Client: **SC DHEC - UST Management**
Description: **DW-2**
Date Sampled: **03/28/2012 1020**
Date Received: **03/30/2012**

Laboratory ID: **NC30023-018**
Matrix: **Aqueous**

EDB & DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	8011	8011	1	04/05/2012 1231	MSM	04/02/2012 0845	81569

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
ND = Not detected at or above the MDL
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

B = Detected in the method blank
J = Estimated result < PQL and ≥ MDL

E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
* = Reportable result (only when report all runs)

H = Out of holding time
N = Recovery is out of criteria

Client: **SC DHEC - UST Management**
Description: **DW-3**
Date Sampled: **03/28/2012 1235**
Date Received: **03/30/2012**

Laboratory ID: **NC30023-019**
Matrix: **Aqueous**

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	04/05/2012 1740	AAC		81925

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	**71-43-2**	**8260B**	**0.32**	**J**	**5.0**	**0.20**	**ug/L**	**1**
1,2-Dichloroethane	107-06-2	8260B	ND		5.0	0.30	ug/L	1
Ethylbenzene	100-41-4	8260B	ND		5.0	1.7	ug/L	1
Methyl tertiary butyl ether (MTBE)	**1634-04-4**	**8260B**	**17**		**5.0**	**0.40**	**ug/L**	**1**
Naphthalene	91-20-3	8260B	ND		5.0	1.7	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		103	70-130
Toluene-d8		94	70-130

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	04/05/2012 1740	AAC		81925
2	5030B	8260B	1	04/07/2012 0608	JJG		82082

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Diisopropyl ether (IPE)	108-20-3	8260B	ND		10	0.40	ug/L	1
Ethanol	64-17-5	8260B	ND		1000	33	ug/L	1
3,3-Dimethyl-1-butanol	624-95-3	8260B	ND		100	1.0	ug/L	1
Ethyl-tert-butyl ether (ETBE)	637-92-3	8260B	ND		100	0.20	ug/L	1
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
tert-butyl alcohol (TBA)	**75-65-0**	**8260B**	**13**	**J**	**100**	**6.7**	**ug/L**	**2**
tert-Butyl formate (TBF)	762-75-4	8260B	ND		100	1.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
Bromofluorobenzene		103	70-130		101	70-130
1,2-Dichloroethane-d4		113	70-130		102	70-130
Toluene-d8		94	70-130		100	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
B = Detected in the method blank
J = Estimated result < PQL and ≥ MDL
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
H = Out of holding time
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
* = Reportable result (only when report all runs)

Client: **SC DHEC - UST Management**
Description: **DW-3**
Date Sampled: **03/28/2012 1235**
Date Received: **03/30/2012**

Laboratory ID: **NC30023-019**
Matrix: **Aqueous**

EDB & DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	8011	8011	1	04/05/2012 1253	MSM	04/02/2012 0845	81569

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
ND = Not detected at or above the MDL
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

B = Detected in the method blank
J = Estimated result < PQL and ≥ MDL

E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
* = Reportable result (only when report all runs)

H = Out of holding time
N = Recovery is out of criteria

Client: **SC DHEC - UST Management**
Description: **SW-1**
Date Sampled: **03/28/2012 1140**
Date Received: **03/30/2012**

Laboratory ID: **NC30023-020**
Matrix: **Aqueous**

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	04/05/2012 1803	AAC		81925

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	ND		5.0	0.20	ug/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		5.0	0.30	ug/L	1
Ethylbenzene	100-41-4	8260B	ND		5.0	1.7	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
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		117	70-130
Bromofluorobenzene		103	70-130
Toluene-d8		95	70-130

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	04/05/2012 1803	AAC		81925

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Diisopropyl ether (IPE)	108-20-3	8260B	ND		10	0.40	ug/L	1
Ethanol	64-17-5	8260B	ND		1000	33	ug/L	1
3,3-Dimethyl-1-butanol	624-95-3	8260B	ND		100	1.0	ug/L	1
Ethyl-tert-butyl ether (ETBE)	637-92-3	8260B	ND		100	0.20	ug/L	1
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
tert-butyl alcohol (TBA)	75-65-0	8260B	ND		100	6.7	ug/L	1
tert-Butyl formate (TBF)	762-75-4	8260B	ND		100	1.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		103	70-130
1,2-Dichloroethane-d4		117	70-130
Toluene-d8		95	70-130

EDB & DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	8011	8011	1	04/05/2012 1315	MSM	04/02/2012 0845	81569

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
B = Detected in the method blank
J = Estimated result < PQL and ≥ MDL
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
H = Out of holding time
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
* = Reportable result (only when report all runs)

Client: **SC DHEC - UST Management**
Description: **SW-1**
Date Sampled: **03/28/2012 1140**
Date Received: **03/30/2012**

Laboratory ID: **NC30023-020**
Matrix: **Aqueous**

EDB & DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	8011	8011	1	04/05/2012 1315	MSM	04/02/2012 0845	81569

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		116	57-137

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
B = Detected in the method blank
J = Estimated result < PQL and ≥ MDL
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
H = Out of holding time
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
* = Reportable result (only when report all runs)

Client: **SC DHEC - UST Management**
Description: **SW-2**
Date Sampled: **03/28/2012 1145**
Date Received: **03/30/2012**

Laboratory ID: **NC30023-021**
Matrix: **Aqueous**

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2	5030B	8260B	1	04/07/2012 0505	JJG		82082

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	ND		5.0	0.20	ug/L	2
1,2-Dichloroethane	107-06-2	8260B	ND		5.0	0.30	ug/L	2
Ethylbenzene	100-41-4	8260B	ND		5.0	1.7	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
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		102	70-130
Bromofluorobenzene		100	70-130
Toluene-d8		99	70-130

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2	5030B	8260B	1	04/07/2012 0505	JJG		82082

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Diisopropyl ether (IPE)	108-20-3	8260B	ND		10	0.40	ug/L	2
Ethanol	64-17-5	8260B	ND		1000	33	ug/L	2
3,3-Dimethyl-1-butanol	624-95-3	8260B	ND		100	1.0	ug/L	2
Ethyl-tert-butyl ether (ETBE)	637-92-3	8260B	ND		100	0.20	ug/L	2
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
tert-butyl alcohol (TBA)	75-65-0	8260B	ND		100	6.7	ug/L	2
tert-Butyl formate (TBF)	762-75-4	8260B	ND		100	1.0	ug/L	2

Surrogate	Q	Run 2 % Recovery	Acceptance Limits
Bromofluorobenzene		100	70-130
1,2-Dichloroethane-d4		102	70-130
Toluene-d8		99	70-130

EDB & DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	8011	8011	1	04/04/2012 1558	MSM	04/02/2012 1832	81655

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
B = Detected in the method blank
J = Estimated result < PQL and ≥ MDL
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
H = Out of holding time
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
* = Reportable result (only when report all runs)

Client: **SC DHEC - UST Management**
Description: **SW-2**
Date Sampled: **03/28/2012 1145**
Date Received: **03/30/2012**

Laboratory ID: **NC30023-021**
Matrix: **Aqueous**

EDB & DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	8011	8011	1	04/04/2012 1558	MSM	04/02/2012 1832	81655

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
ND = Not detected at or above the MDL
B = Detected in the method blank
J = Estimated result < PQL and ≥ MDL
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
H = Out of holding time
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
* = Reportable result (only when report all runs)

Client: **SC DHEC - UST Management**
Description: **MW-1 DUPLICATE**
Date Sampled: **03/28/2012 1330**
Date Received: **03/30/2012**

Laboratory ID: **NC30023-022**
Matrix: **Aqueous**

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2	5030B	8260B	1	04/07/2012 0526	JJG		82082

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	ND		5.0	0.20	ug/L	2
1,2-Dichloroethane	107-06-2	8260B	ND		5.0	0.30	ug/L	2
Ethylbenzene	100-41-4	8260B	ND		5.0	1.7	ug/L	2
Methyl tertiary butyl ether (MTBE)	**1634-04-4**	**8260B**	**2.6**	**J**	**5.0**	**0.40**	**ug/L**	**2**
Naphthalene	91-20-3	8260B	ND		5.0	1.7	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		101	70-130
Bromofluorobenzene		102	70-130
Toluene-d8		99	70-130

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2	5030B	8260B	1	04/07/2012 0526	JJG		82082

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Diisopropyl ether (IPE)	108-20-3	8260B	ND		10	0.40	ug/L	2
Ethanol	64-17-5	8260B	ND		1000	33	ug/L	2
3,3-Dimethyl-1-butanol	624-95-3	8260B	ND		100	1.0	ug/L	2
Ethyl-tert-butyl ether (ETBE)	637-92-3	8260B	ND		100	0.20	ug/L	2
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
tert-butyl alcohol (TBA)	75-65-0	8260B	ND		100	6.7	ug/L	2
tert-Butyl formate (TBF)	762-75-4	8260B	ND		100	1.0	ug/L	2

Surrogate	Q	Run 2 % Recovery	Acceptance Limits
Bromofluorobenzene		102	70-130
1,2-Dichloroethane-d4		101	70-130
Toluene-d8		99	70-130

EDB & DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	8011	8011	1	04/04/2012 1621	MSM	04/02/2012 1832	81655

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
B = Detected in the method blank
J = Estimated result < PQL and ≥ MDL
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
H = Out of holding time
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
* = Reportable result (only when report all runs)

Client: **SC DHEC - UST Management**
Description: **MW-1 DUPLICATE**
Date Sampled: **03/28/2012 1330**
Date Received: **03/30/2012**

Laboratory ID: **NC30023-022**
Matrix: **Aqueous**

EDB & DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	8011	8011	1	04/04/2012 1621	MSM	04/02/2012 1832	81655

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
ND = Not detected at or above the MDL
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
B = Detected in the method blank
J = Estimated result < PQL and ≥ MDL
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
* = Reportable result (only when report all runs)
H = Out of holding time
N = Recovery is out of criteria

Client: **SC DHEC - UST Management**
Description: **FIELD BLANK**
Date Sampled: **03/28/2012 1300**
Date Received: **03/30/2012**

Laboratory ID: **NC30023-023**
Matrix: **Aqueous**

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	04/04/2012 1358	AAC		81824

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	ND		5.0	0.20	ug/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		5.0	0.30	ug/L	1
Ethylbenzene	100-41-4	8260B	ND		5.0	1.7	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
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		94	70-130
Toluene-d8		92	70-130

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	04/04/2012 1358	AAC		81824

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Diisopropyl ether (IPE)	108-20-3	8260B	ND		10	0.40	ug/L	1
Ethanol	64-17-5	8260B	ND		1000	33	ug/L	1
3,3-Dimethyl-1-butanol	624-95-3	8260B	ND		100	1.0	ug/L	1
Ethyl-tert-butyl ether (ETBE)	637-92-3	8260B	ND		100	0.20	ug/L	1
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
tert-butyl alcohol (TBA)	75-65-0	8260B	ND		100	6.7	ug/L	1
tert-Butyl formate (TBF)	762-75-4	8260B	ND		100	1.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		94	70-130
1,2-Dichloroethane-d4		94	70-130
Toluene-d8		92	70-130

EDB & DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	8011	8011	1	04/04/2012 1643	MSM	04/02/2012 1832	81655

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
B = Detected in the method blank
J = Estimated result < PQL and ≥ MDL
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
H = Out of holding time
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
* = Reportable result (only when report all runs)

Client: **SC DHEC - UST Management**
Description: **FIELD BLANK**
Date Sampled: **03/28/2012 1300**
Date Received: **03/30/2012**

Laboratory ID: **NC30023-023**
Matrix: **Aqueous**

EDB & DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	8011	8011	1	04/04/2012 1643	MSM	04/02/2012 1832	81655

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
ND = Not detected at or above the MDL
B = Detected in the method blank
J = Estimated result < PQL and ≥ MDL
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
H = Out of holding time
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
* = Reportable result (only when report all runs)

Client: **SC DHEC - UST Management**
Description: **TRIP BLANK**
Date Sampled: **03/28/2012 1030**
Date Received: **03/30/2012**

Laboratory ID: **NC30023-024**
Matrix: **Aqueous**

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	04/04/2012 1420	AAC		81824

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	ND		5.0	0.20	ug/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		5.0	0.30	ug/L	1
Ethylbenzene	100-41-4	8260B	ND		5.0	1.7	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
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		92	70-130
Bromofluorobenzene		94	70-130
Toluene-d8		91	70-130

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	04/04/2012 1420	AAC		81824

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Diisopropyl ether (IPE)	108-20-3	8260B	ND		10	0.40	ug/L	1
Ethanol	64-17-5	8260B	ND		1000	33	ug/L	1
3,3-Dimethyl-1-butanol	624-95-3	8260B	ND		100	1.0	ug/L	1
Ethyl-tert-butyl ether (ETBE)	637-92-3	8260B	ND		100	0.20	ug/L	1
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
tert-butyl alcohol (TBA)	75-65-0	8260B	ND		100	6.7	ug/L	1
tert-Butyl formate (TBF)	762-75-4	8260B	ND		100	1.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		94	70-130
1,2-Dichloroethane-d4		92	70-130
Toluene-d8		91	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
B = Detected in the method blank
J = Estimated result < PQL and ≥ MDL
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
H = Out of holding time
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
* = Reportable result (only when report all runs)

QC Summary

Volatile Organic Compounds by GC/MS - MB

Sample ID: NQ81824-001
Batch: 81824
Analytical Method: 8260B
Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
tert-Amyl alcohol (TAA)	ND		1	100	6.7	ug/L	04/04/2012 1333
tert-Amyl methyl ether (TAME)	ND		1	10	0.20	ug/L	04/04/2012 1333
tert-Butyl formate (TBF)	ND		1	100	1.0	ug/L	04/04/2012 1333
Diisopropyl ether (IPE)	ND		1	10	0.40	ug/L	04/04/2012 1333
3,3-Dimethyl-1-butanol	ND		1	100	1.0	ug/L	04/04/2012 1333
Ethanol	ND		1	1000	33	ug/L	04/04/2012 1333
Ethyl-tert-butyl ether (ETBE)	ND		1	100	0.20	ug/L	04/04/2012 1333
tert-butyl alcohol (TBA)	ND		1	100	6.7	ug/L	04/04/2012 1333

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		93	70-130
1,2-Dichloroethane-d4		94	70-130
Toluene-d8		92	70-130

Volatile Organic Compounds by GC/MS - LCS

Sample ID: NQ81824-002
Batch: 81824
Analytical Method: 8260B
Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
tert-Amyl alcohol (TAA)	1000	1000		1	103	70-130	04/04/2012 1207
tert-Amyl methyl ether (TAME)	50	42		1	84	70-130	04/04/2012 1207
tert-Butyl formate (TBF)	250	230		1	93	70-130	04/04/2012 1207
Diisopropyl ether (IPE)	50	40		1	80	70-130	04/04/2012 1207
3,3-Dimethyl-1-butanol	1000	890		1	89	70-130	04/04/2012 1207
Ethanol	5000	5500		1	111	70-130	04/04/2012 1207
Ethyl-tert-butyl ether (ETBE)	50	42		1	83	70-130	04/04/2012 1207
tert-butyl alcohol (TBA)	1000	970		1	97	70-130	04/04/2012 1207

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		96	70-130
1,2-Dichloroethane-d4		93	70-130
Toluene-d8		94	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N - Recovery is out of criteria
+ - 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: NQ81824-003
Batch: 81824
Analytical Method: 8260B
Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
tert-Amyl alcohol (TAA)	1000	1000		1	100	2.5	70-130	20	04/04/2012 1229
tert-Amyl methyl ether (TAME)	50	42		1	85	1.2	70-130	20	04/04/2012 1229
tert-Butyl formate (TBF)	250	230		1	92	0.40	70-130	20	04/04/2012 1229
Diisopropyl ether (IPE)	50	40		1	80	0.34	70-130	20	04/04/2012 1229
3,3-Dimethyl-1-butanol	1000	880		1	88	1.5	70-130	20	04/04/2012 1229
Ethanol	5000	4700		1	94	17	70-130	20	04/04/2012 1229
Ethyl-tert-butyl ether (ETBE)	50	42		1	85	1.6	70-130	20	04/04/2012 1229
tert-butyl alcohol (TBA)	1000	1000		1	101	3.7	70-130	20	04/04/2012 1229

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		95	70-130
1,2-Dichloroethane-d4		92	70-130
Toluene-d8		94	70-130

Volatile Organic Compounds by GC/MS - MB

Sample ID: NQ81824-001
Batch: 81824
Analytical Method: 8260B
Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
Benzene	ND		1	5.0	0.20	ug/L	04/04/2012 1333
1,2-Dichloroethane	ND		1	5.0	0.30	ug/L	04/04/2012 1333
Ethylbenzene	ND		1	5.0	1.7	ug/L	04/04/2012 1333
Methyl tertiary butyl ether (MTBE)	ND		1	5.0	0.40	ug/L	04/04/2012 1333
Naphthalene	ND		1	5.0	1.7	ug/L	04/04/2012 1333
Toluene	ND		1	5.0	1.7	ug/L	04/04/2012 1333
Xylenes (total)	ND		1	5.0	1.7	ug/L	04/04/2012 1333

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		93	70-130
1,2-Dichloroethane-d4		94	70-130
Toluene-d8		92	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N - Recovery is out of criteria
+ - 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: NQ81824-002
Batch: 81824
Analytical Method: 8260B
Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Benzene	50	41		1	83	70-130	04/04/2012 1207
1,2-Dichloroethane	50	40		1	81	70-130	04/04/2012 1207
Ethylbenzene	50	46		1	92	70-130	04/04/2012 1207
Methyl tertiary butyl ether (MTBE)	50	40		1	81	70-130	04/04/2012 1207
Naphthalene	50	43		1	86	70-130	04/04/2012 1207
Toluene	50	42		1	83	70-130	04/04/2012 1207
Xylenes (total)	100	93		1	93	70-130	04/04/2012 1207

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		96	70-130
1,2-Dichloroethane-d4		93	70-130
Toluene-d8		94	70-130

Volatile Organic Compounds by GC/MS - LCSD

Sample ID: NQ81824-003
Batch: 81824
Analytical Method: 8260B
Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Benzene	50	42		1	84	1.4	70-130	20	04/04/2012 1229
1,2-Dichloroethane	50	41		1	81	0.59	70-130	20	04/04/2012 1229
Ethylbenzene	50	48		1	95	3.0	70-130	20	04/04/2012 1229
Methyl tertiary butyl ether (MTBE)	50	41		1	81	0.40	70-130	20	04/04/2012 1229
Naphthalene	50	44		1	89	2.7	70-130	20	04/04/2012 1229
Toluene	50	43		1	86	3.1	70-130	20	04/04/2012 1229
Xylenes (total)	100	94		1	94	1.1	70-130	20	04/04/2012 1229

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		95	70-130
1,2-Dichloroethane-d4		92	70-130
Toluene-d8		94	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N - Recovery is out of criteria
+ - 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: NQ81925-001
Batch: 81925
Analytical Method: 8260B
Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
tert-Amyl alcohol (TAA)	ND		1	100	6.7	ug/L	04/05/2012 1052
tert-Amyl methyl ether (TAME)	ND		1	10	0.20	ug/L	04/05/2012 1052
tert-Butyl formate (TBF)	ND		1	100	1.0	ug/L	04/05/2012 1052
Diisopropyl ether (IPE)	ND		1	10	0.40	ug/L	04/05/2012 1052
3,3-Dimethyl-1-butanol	ND		1	100	1.0	ug/L	04/05/2012 1052
Ethanol	ND		1	1000	33	ug/L	04/05/2012 1052
Ethyl-tert-butyl ether (ETBE)	ND		1	100	0.20	ug/L	04/05/2012 1052
tert-butyl alcohol (TBA)	ND		1	100	6.7	ug/L	04/05/2012 1052

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		95	70-130
1,2-Dichloroethane-d4		94	70-130
Toluene-d8		95	70-130

Volatile Organic Compounds by GC/MS - LCS

Sample ID: NQ81925-002
Batch: 81925
Analytical Method: 8260B
Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
tert-Amyl alcohol (TAA)	1000	1400	N	1	138	70-130	04/05/2012 0922
tert-Amyl methyl ether (TAME)	50	54		1	109	70-130	04/05/2012 0922
tert-Butyl formate (TBF)	250	260		1	103	70-130	04/05/2012 0922
Diisopropyl ether (IPE)	50	54		1	109	70-130	04/05/2012 0922
3,3-Dimethyl-1-butanol	1000	1300		1	126	70-130	04/05/2012 0922
Ethanol	5000	7400	N	1	148	70-130	04/05/2012 0922
Ethyl-tert-butyl ether (ETBE)	50	48		1	96	70-130	04/05/2012 0922
tert-butyl alcohol (TBA)	1000	1400	N	1	136	70-130	04/05/2012 0922

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		92	70-130
1,2-Dichloroethane-d4		90	70-130
Toluene-d8		97	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N - Recovery is out of criteria
+ - 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: NQ81925-003
Batch: 81925
Analytical Method: 8260B
Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
tert-Amyl alcohol (TAA)	1000	1400	N	1	144	4.6	70-130	20	04/05/2012 0944
tert-Amyl methyl ether (TAME)	50	54		1	109	0.083	70-130	20	04/05/2012 0944
tert-Butyl formate (TBF)	250	250		1	99	4.1	70-130	20	04/05/2012 0944
Diisopropyl ether (IPE)	50	53		1	105	3.3	70-130	20	04/05/2012 0944
3,3-Dimethyl-1-butanol	1000	1300	N	1	133	5.0	70-130	20	04/05/2012 0944
Ethanol	5000	7700	N	1	155	4.2	70-130	20	04/05/2012 0944
Ethyl-tert-butyl ether (ETBE)	50	47		1	95	1.0	70-130	20	04/05/2012 0944
tert-butyl alcohol (TBA)	1000	1400	N	1	143	5.6	70-130	20	04/05/2012 0944

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		96	70-130
1,2-Dichloroethane-d4		88	70-130
Toluene-d8		97	70-130

Volatile Organic Compounds by GC/MS - Duplicate

Sample ID: NC30023-011DU
Batch: 81925
Analytical Method: 8260B
Matrix: Aqueous
Prep Method: 5030B

Parameter	Sample Amount (ug/L)	Result (ug/L)	Q	Dil	% RPD	% RPD Limit	Analysis Date
tert-Amyl alcohol (TAA)	ND	ND		1	0.00	20	04/05/2012 1911
tert-Amyl methyl ether (TAME)	0.20	ND		1	0.00	20	04/05/2012 1911
tert-Butyl formate (TBF)	ND	ND		1	0.00	20	04/05/2012 1911
Diisopropyl ether (IPE)	ND	ND		1	0.00	20	04/05/2012 1911
3,3-Dimethyl-1-butanol	ND	ND		1	0.00	20	04/05/2012 1911
Ethanol	ND	ND		1	0.00	20	04/05/2012 1911
Ethyl-tert-butyl ether (ETBE)	ND	ND		1	0.00	20	04/05/2012 1911
tert-butyl alcohol (TBA)	ND	ND		1	0.00	20	04/05/2012 1911

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		102	70-130
1,2-Dichloroethane-d4		117	70-130
Toluene-d8		92	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N - Recovery is out of criteria
+ - 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: NQ81925-001
Batch: 81925
Analytical Method: 8260B
Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
Benzene	ND		1	5.0	0.20	ug/L	04/05/2012 1052
1,2-Dichloroethane	ND		1	5.0	0.30	ug/L	04/05/2012 1052
Ethylbenzene	ND		1	5.0	1.7	ug/L	04/05/2012 1052
Methyl tertiary butyl ether (MTBE)	ND		1	5.0	0.40	ug/L	04/05/2012 1052
Naphthalene	ND		1	5.0	1.7	ug/L	04/05/2012 1052
Toluene	ND		1	5.0	1.7	ug/L	04/05/2012 1052
Xylenes (total)	ND		1	5.0	1.7	ug/L	04/05/2012 1052

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		95	70-130
1,2-Dichloroethane-d4		94	70-130
Toluene-d8		95	70-130

Volatile Organic Compounds by GC/MS - LCS

Sample ID: NQ81925-002
Batch: 81925
Analytical Method: 8260B
Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Benzene	50	51		1	102	70-130	04/05/2012 0922
1,2-Dichloroethane	50	53		1	106	70-130	04/05/2012 0922
Ethylbenzene	50	51		1	101	70-130	04/05/2012 0922
Methyl tertiary butyl ether (MTBE)	50	51		1	102	70-130	04/05/2012 0922
Naphthalene	50	42		1	84	70-130	04/05/2012 0922
Toluene	50	55		1	110	70-130	04/05/2012 0922
Xylenes (total)	100	100		1	103	70-130	04/05/2012 0922

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		92	70-130
1,2-Dichloroethane-d4		90	70-130
Toluene-d8		97	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N - Recovery is out of criteria
+ - 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: NQ81925-003
Batch: 81925
Analytical Method: 8260B
Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Benzene	50	50		1	100	1.8	70-130	20	04/05/2012 0944
1,2-Dichloroethane	50	50		1	100	5.3	70-130	20	04/05/2012 0944
Ethylbenzene	50	52		1	104	3.0	70-130	20	04/05/2012 0944
Methyl tertiary butyl ether (MTBE)	50	50		1	101	1.2	70-130	20	04/05/2012 0944
Naphthalene	50	41		1	82	2.5	70-130	20	04/05/2012 0944
Toluene	50	55		1	109	0.76	70-130	20	04/05/2012 0944
Xylenes (total)	100	110		1	106	2.2	70-130	20	04/05/2012 0944

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		96	70-130
1,2-Dichloroethane-d4		88	70-130
Toluene-d8		97	70-130

Volatile Organic Compounds by GC/MS - MS

Sample ID: NC30023-010MS
Batch: 81925
Analytical Method: 8260B
Matrix: Aqueous
Prep Method: 5030B

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Benzene	ND	50	45		1	89	70-130	04/05/2012 1934
1,2-Dichloroethane	ND	50	52		1	104	70-130	04/05/2012 1934
Ethylbenzene	ND	50	43		1	86	70-130	04/05/2012 1934
Methyl tertiary butyl ether (MTBE)	0.42	50	44		1	87	70-130	04/05/2012 1934
Naphthalene	ND	50	36		1	72	70-130	04/05/2012 1934
Toluene	ND	50	48		1	96	70-130	04/05/2012 1934
Xylenes (total)	ND	100	89		1	89	70-130	04/05/2012 1934

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		104	70-130
1,2-Dichloroethane-d4		111	70-130
Toluene-d8		100	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N - Recovery is out of criteria
+ - 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: NQ82082-001
Batch: 82082
Analytical Method: 8260B
Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
tert-Amyl alcohol (TAA)	ND		1	100	6.7	ug/L	04/07/2012 0340
tert-Amyl methyl ether (TAME)	ND		1	10	0.20	ug/L	04/07/2012 0340
tert-Butyl formate (TBF)	ND		1	100	1.0	ug/L	04/07/2012 0340
Diisopropyl ether (IPE)	ND		1	10	0.40	ug/L	04/07/2012 0340
3,3-Dimethyl-1-butanol	ND		1	100	1.0	ug/L	04/07/2012 0340
Ethanol	ND		1	1000	33	ug/L	04/07/2012 0340
Ethyl-tert-butyl ether (ETBE)	ND		1	100	0.20	ug/L	04/07/2012 0340
tert-butyl alcohol (TBA)	ND		1	100	6.7	ug/L	04/07/2012 0340

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		100	70-130
1,2-Dichloroethane-d4		102	70-130
Toluene-d8		100	70-130

Volatile Organic Compounds by GC/MS - LCS

Sample ID: NQ82082-002
Batch: 82082
Analytical Method: 8260B
Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
tert-Amyl alcohol (TAA)	1000	970		1	97	70-130	04/07/2012 0236
tert-Amyl methyl ether (TAME)	50	51		1	102	70-130	04/07/2012 0236
tert-Butyl formate (TBF)	250	210		1	82	70-130	04/07/2012 0236
Diisopropyl ether (IPE)	50	49		1	99	70-130	04/07/2012 0236
3,3-Dimethyl-1-butanol	1000	940		1	94	70-130	04/07/2012 0236
Ethanol	5000	3900		1	78	70-130	04/07/2012 0236
Ethyl-tert-butyl ether (ETBE)	50	46		1	92	70-130	04/07/2012 0236
tert-butyl alcohol (TBA)	1000	960		1	96	70-130	04/07/2012 0236

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		99	70-130
1,2-Dichloroethane-d4		104	70-130
Toluene-d8		101	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N - Recovery is out of criteria
+ - 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: NQ82082-001
Batch: 82082
Analytical Method: 8260B
Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
Benzene	ND		1	5.0	0.20	ug/L	04/07/2012 0340
1,2-Dichloroethane	ND		1	5.0	0.30	ug/L	04/07/2012 0340
Ethylbenzene	ND		1	5.0	1.7	ug/L	04/07/2012 0340
Methyl tertiary butyl ether (MTBE)	ND		1	5.0	0.40	ug/L	04/07/2012 0340
Naphthalene	ND		1	5.0	1.7	ug/L	04/07/2012 0340
Toluene	ND		1	5.0	1.7	ug/L	04/07/2012 0340
Xylenes (total)	ND		1	5.0	1.7	ug/L	04/07/2012 0340

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		100	70-130
1,2-Dichloroethane-d4		102	70-130
Toluene-d8		100	70-130

Volatile Organic Compounds by GC/MS - LCS

Sample ID: NQ82082-002
Batch: 82082
Analytical Method: 8260B
Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Benzene	50	48		1	96	70-130	04/07/2012 0236
1,2-Dichloroethane	50	47		1	94	70-130	04/07/2012 0236
Ethylbenzene	50	48		1	97	70-130	04/07/2012 0236
Methyl tertiary butyl ether (MTBE)	50	49		1	99	70-130	04/07/2012 0236
Naphthalene	50	50		1	99	70-130	04/07/2012 0236
Toluene	50	48		1	95	70-130	04/07/2012 0236
Xylenes (total)	100	100		1	100	70-130	04/07/2012 0236

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		99	70-130
1,2-Dichloroethane-d4		104	70-130
Toluene-d8		101	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N - Recovery is out of criteria
+ - 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: NQ82173-001
Batch: 82173
Analytical Method: 8260B
Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
Ethylbenzene	ND		1	5.0	1.7	ug/L	04/09/2012 1907
Naphthalene	ND		1	5.0	1.7	ug/L	04/09/2012 1907

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		96	70-130
1,2-Dichloroethane-d4		99	70-130
Toluene-d8		95	70-130

Volatile Organic Compounds by GC/MS - LCS

Sample ID: NQ82173-002
Batch: 82173
Analytical Method: 8260B
Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Ethylbenzene	50	48		1	95	70-130	04/09/2012 1652
Naphthalene	50	54		1	107	70-130	04/09/2012 1652

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		95	70-130
1,2-Dichloroethane-d4		89	70-130
Toluene-d8		99	70-130

Volatile Organic Compounds by GC/MS - LCSD

Sample ID: NQ82173-003
Batch: 82173
Analytical Method: 8260B
Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Ethylbenzene	50	48		1	97	1.8	70-130	20	04/09/2012 1714
Naphthalene	50	59		1	117	9.0	70-130	20	04/09/2012 1714

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N - Recovery is out of criteria
+ - 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: NQ82173-003
Batch: 82173
Analytical Method: 8260B

Matrix: Aqueous
Prep Method: 5030B

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		97	70-130
1,2-Dichloroethane-d4		89	70-130
Toluene-d8		100	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N - Recovery is out of criteria
+ - 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: NQ81569-001
Batch: 81569
Analytical Method: 8011
Matrix: Aqueous
Prep Method: 8011
Prep Date: 04/02/2012 845

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
1,2-Dibromoethane (EDB)	ND		1	0.020	0.020	ug/L	04/05/2012 0440

Surrogate	Q	% Rec	Acceptance Limit
1,1,1,2-Tetrachloroethane		102	57-137

EDB & DBCP by Microextraction - LCS

Sample ID: NQ81569-002
Batch: 81569
Analytical Method: 8011
Matrix: Aqueous
Prep Method: 8011
Prep Date: 04/02/2012 845

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
1,2-Dibromoethane (EDB)	0.25	0.27		1	109	60-140	04/05/2012 0501

Surrogate	Q	% Rec	Acceptance Limit
1,1,1,2-Tetrachloroethane		118	57-137

EDB & DBCP by Microextraction - MS

Sample ID: NC30023-001MS
Batch: 81569
Analytical Method: 8011
Matrix: Aqueous
Prep Method: 8011
Prep Date: 04/02/2012 845

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
1,2-Dibromoethane (EDB)	ND	0.25	ND	N	1	0.00	60-140	04/05/2012 0000
1,2-Dibromoethane (EDB)	ND	0.25	0.27		1	110	60-140	04/05/2012 0605

Surrogate	Q	% Rec	Acceptance Limit
1,1,1,2-Tetrachloroethane	N	0.00	57-137
1,1,1,2-Tetrachloroethane		113	57-137

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N - Recovery is out of criteria
+ - 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: NC30023-001MD
Batch: 81569
Analytical Method: 8011
Matrix: Aqueous
Prep Method: 8011
Prep Date: 04/02/2012 845

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
1,2-Dibromoethane (EDB)	ND	0.25	ND	N	1	0.00	0.00	60-140	20	04/05/2012 0000
1,2-Dibromoethane (EDB)	ND	0.25	0.28		1	113	4.0	60-140	20	04/05/2012 0626

Surrogate	Q	% Rec	Acceptance Limit
1,1,1,2-Tetrachloroethane	N	0.00	57-137
1,1,1,2-Tetrachloroethane		118	57-137

EDB & DBCP by Microextraction - MB

Sample ID: NQ81655-001
Batch: 81655
Analytical Method: 8011
Matrix: Aqueous
Prep Method: 8011
Prep Date: 04/02/2012 1832

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
1,2-Dibromoethane (EDB)	ND		1	0.020	0.020	ug/L	04/04/2012 1514

Surrogate	Q	% Rec	Acceptance Limit
1,1,1,2-Tetrachloroethane		98	57-137

EDB & DBCP by Microextraction - LCS

Sample ID: NQ81655-002
Batch: 81655
Analytical Method: 8011
Matrix: Aqueous
Prep Method: 8011
Prep Date: 04/02/2012 1832

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
1,2-Dibromoethane (EDB)	0.25	0.25		1	101	60-140	04/04/2012 1536

Surrogate	Q	% Rec	Acceptance Limit
1,1,1,2-Tetrachloroethane		108	57-137

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N - Recovery is out of criteria
+ - 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: NC30023-023MS
Batch: 81655
Analytical Method: 8011
Matrix: Aqueous
Prep Method: 8011
Prep Date: 04/02/2012 1832

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
1,2-Dibromoethane (EDB)	ND	0.24	0.24		1	99	60-140	04/04/2012 1705

Surrogate	Q	% Rec	Acceptance Limit
1,1,1,2-Tetrachloroethane		102	57-137

EDB & DBCP by Microextraction - MSD

Sample ID: NC30023-023MD
Batch: 81655
Analytical Method: 8011
Matrix: Aqueous
Prep Method: 8011
Prep Date: 04/02/2012 1832

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
1,2-Dibromoethane (EDB)	ND	0.24	0.25		1	101	2.0	60-140	20	04/04/2012 1727

Surrogate	Q	% Rec	Acceptance Limit
1,1,1,2-Tetrachloroethane		104	57-137

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N - Recovery is out of criteria
+ - 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 09136

Client	Report to Contact	Sampler (Printed Name)	Quote No.
SCDHEC	D. THOMA	BRIAN OWEN	
Address	**Telephone No. / Fax No. / Email**	**Waybill No.**	**Page**
2600 Bull St.			1 of 3
City / State / Zip Code	**Preservative**		**Number of Containers**
Columbia / SC / 29201	1. Unpres. 4. HNO3 7. NaOH		**Bottle (See Instructions on back)**
Project Name	2. NaOH/ZnA 5. HCL		**Preservative**
VACANT LOT	3. H2SO4 6. Na Thio.		**Lot No.**
Project Number	**P.O Number**		NC3W023

Sample ID / Description (Containers for each sample may be combined on one line)	Date	Time	G=Grab C=Composite	Matrix: GW	DW	WW	S	Other	Analysis: BTEX/MTBE, Naph, MTBE	1,2 DCA, Ethanol	EDB	Remarks / Cooler ID
MW-1	3-28	1328	G						X	X	X	ODOR
MW-2		1330										
MW-3		1400										X
MW-4		1344										NO ODOR
MW-5		1232										
MW-6		1250										
MW-7		1051										
MW-8		1000										
MW-9		1011										
MW-10	X	1128	X						X	X	X	X

Turn Around Time Required (Prior lab approval required for expedited TAT)
☐ Standard ☐ Rush (Please Specify)

Sample Disposal
☐ Return to Client ☐ Disposal by Lab

QC Requirements (Specify)

Possible Hazard Identification
☐Non-Hazard ☐Flammable ☐Skin Irritant ☐Poison ☐Unknown

1. Relinquished by / Sample	Date 3-28-12	Time 1545	1. Received by	Date 3/28	Time 15:45
2. Relinquished by	Date 3/30	Time 1022	2. Received by	Date 3/30/12	Time 1022
3. Relinquished by	Date	Time	3. Received by	Date	Time
4. Relinquished by	Date 3/30/12	Time 1120	4. Laboratory Received by	Date 3/30/12	Time 1180

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. 1.0 °C
Temp. Blank ☐Y / ☐N

SHEALY

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 09137

Client	Report to Contact	Sampler (Printed Name)	Quote No.
SCDHEC	D. THOMA	BRIAN ONEN	
Address	**Telephone No. / Fax No. / Email**	**Waybill No.**	**Page**
2600 Bull St.			2 of 3
City / **State** / **Zip Code**	**Preservative**		Number of Containers
Columbia / SC / 29201	1. Unpres. 4. HNO3 7. NaOH		Bottle (See Instructions on back)
Project Name	2. NaOH/ZnA 5. HCL		Preservative
VACANT LOT	3. H2SO4 6. Na Thio.		Lot No.
Project Number	**P.O Number**		NC30023
192608/43259	4600088529		

Sample ID / Description (Containers for each sample may be combined on one line)	Date	Time	G=Grab C=Composite	Matrix: GW	DW	WW	S	Other	Analysis: BTEX, Naph, MTBE	1,2 DCA, Ethanol	EDB	Remarks / Cooler ID
MW-11	3-28	1121	G						X	X	X	NO ODOR
MW-12		1108										
MW-13		1240										
MW-14		1040										
MW-15		1355										
MW-16		1050										
DW-1		1420										
DW-2		1020										
DW-3		1255										
SW-1	X	1140	X						X	X	X	X

Turn Around Time Required (Prior lab approval required for expedited TAT)
☐ Standard ☐ Rush (Please Specify)

Sample Disposal
☐ Return to Client ☐ Disposal by Lab

QC Requirements (Specify)

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison ☐ Unknown

	Date	Time		Date	Time
1. Relinquished by / Sampler	3-29-12	1545	1. Received by	3/29/12	15:45
2. Relinquished by	3/30	1022	2. Received by	3/30/12	1022
3. Relinquished by			3. Received by		
4. Relinquished by	3/30/12	1120	4. Laboratory Received by	3/30/12	1120

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. 1.0 °C
Temp. Blank ☐ Y / ☐ N

SHEALY

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 09138

Client: SCDHEC	Report to Contact: D. Thoma	Sampler (Printed Name): Brian Owen	Quote No.
Address: 2600 Bull St.	Telephone No. / Fax No. / Email	Waybill No.	Page: 3 of 3
City: Columbia / State: SC / Zip Code: 29201	Preservative: 1. Unpres. 2. NaOH/ZnA 3. H_2SO_4 4. HNO_3 5. HCL 6. Na Thio. 7. NaOH		Number of Containers / Bottle (See Instructions on back) / Preservative
Project Name: Vacant Lot			Lot No.: NC30023
Project Number: 19208/43259	P.O Number: 4100088529		

Sample ID / Description (Containers for each sample may be combined on one line)	Date	Time	G=Grab C=Composite	Matrix: GW	DW	WW	S	Other	Analysis: Btex, Napth, MTBE	1,2 DCA, Ethanol	EDB	Remarks / Cooler ID
SW-2	3-28	1145	G						X	X	X	No Odor
MW-1 Duplicate		1330										
Field Blank		1320										
Trip Blank	X	1030	X						X	X	X	X

Turn Around Time Required (Prior lab approval required for expedited TAT)	Sample Disposal	QC Requirements (Specify)	Possible Hazard Identification
☐ Standard ☐ Rush (Please Specify)	☐ Return to Client ☐ Disposal by Lab		☐Non-Hazard ☐Flammable ☐Skin Irritant ☐Poison ☐Unknown

	Date	Time		Date	Time
1. Relinquished by / Sampler	3-28-12	1545	1. Received by	3/28	15:45
2. Relinquished by	3/30	1022	2. Received by	3/30/12	1022
3. Relinquished by			3. Received by		
4. Relinquished by	3/30/12	1120	4. Laboratory Received by	3/30/12	1120

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 1.0 °C
Temp. Blank ☑ Y / ☐ N

Sample Receipt Checklist (SRC)

Client: SC DHEC Cooler Inspected by/date: LW 3/30/12 Lot #: NC30023

Means of receipt: ☒ SESI ☐ Client ☐ UPS ☐ FedEx ☐ Airborne Exp ☐ Other			
Yes ☐	No ☒		1. Were custody seals present on the cooler?
Yes ☐	No ☒		2. If custody seals were present, were they intact and unbroken?
Cooler ID/temperature upon receipt (-0.2) °C ___/___ °C ___/___ °C ___/___ °C Method: ☒ Temperature Blank ☐ Against Bottles Method of coolant: ☒ Wet Ice ☐ Blue Ice ☐ Dry Ice ☐ None			
If response is No (or Yes for 14, 15, 16), an explanation/resolution must be provided.			
Yes ☐	No ☐	NA ☒	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 ☐	No ☐	NA ☒	4. Is the commercial courier's packing slip attached to this form?
Yes ☒	No ☐		5. Were proper custody procedures (relinquished/received) followed?
Yes ☐	No ☐	NA ☒	5a Were samples relinquished by client to commercial courier?
Yes ☒	No ☐		6. Were sample IDs listed?
Yes ☒	No ☐		7. Was collection date & time listed?
Yes ☒	No ☐		8. Were tests to be performed listed on the COC?
Yes ☒	No ☐		9. Did all samples arrive in the proper containers for each test?
Yes ☒	No ☐		10. Did all container label information (ID, date, time) agree with COC?
Yes ☒	No ☐		11. Did all containers arrive in good condition (unbroken, lids on, etc.)?
Yes ☒	No ☐		12. Was adequate sample volume available?
Yes ☐	No ☒		13. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
Yes ☐	No ☒		14. Were any samples containers missing?
Yes ☐	No ☒		15. Were there any excess samples not listed on COC?
LW 3/30/12 Yes ☒	No ☒	NA ☐	16. Were bubbles present >"pea-size" (¼"or 6mm in diameter) in any VOA vials?
Yes ☐	No ☐	NA ☒	17. Were all metals/O&G/HEM/nutrient samples received at a pH of <2?
Yes ☐	No ☐	NA ☒	18. Were all cyanide and/or sulfide samples received at a pH >12?
Yes ☐	No ☐	NA ☒	19. Were all applicable NH3/TKN/cyanide/phenol/BNA/pest/PCB/herb (<0.2mg/L) samples free of residual chlorine?
Yes ☐	No ☐	NA ☒	20. Were collection temperatures documented on the COC for NC samples?
Yes ☐	No ☐	NA ☒	21. Were client remarks/requests (i.e. requested dilutions, MS/MSD designations, etc…) correctly transcribed from the COC into the comment section in LIMS?

Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)

Sample(s)_____ were received incorrectly preserved and were adjusted accordingly in sample receiving with _____ (H_2SO_4,HNO_3,HCl,NaOH) with the SR # (number)

Sample(s) -0024(2) were received with bubbles >6 mm in diameter.

Sample(s)_____ were received with TRC >0.2 mg/L for NH3/ TKN/cyanide/BNA/pest/PCB/herb.

Corrective Action taken, if necessary:

Was client notified: Yes ☐ No ☐ Did client respond: Yes ☐ No ☐

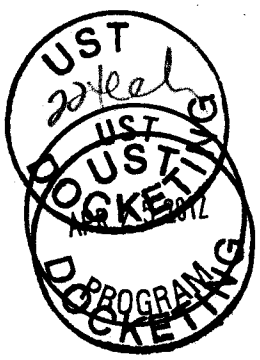
SESI employee: _____ Date of response: _____

Comments: _____

D H E C
PROMOTE PROTECT PROSPER

Catherine B. Templeton, Director
Promoting and protecting the health of the public and the environment

APR 2 5 2012



BERNIE WRIGHT
PO BOX 275
ORANGEBURG SC 29115-0275

Re: **Public Notice for Natural Attenuation Monitoring**
Vacant Lot, 2309 Russell St., Orangeburg, SC
UST Permit #19268
Release Reported October 18, 2006
Monitoring Report received April 17, 2012
Orangeburg County

Dear Mr. Wright:

The Underground Storage Tank (UST) Management Division of the South Carolina Department of Health and Environmental Control is sending this letter to notify you of the plan of action at the referenced facility. Section 280.67 of the South Carolina Underground Storage Tank Control Regulations requires notification to those members of the public that may be affected by a planned corrective action. A copy of the public notice is enclosed for your information.

As you may be aware, petroleum constituents have been identified in the soil and groundwater at the referenced facility. Based on an environmental assessment and receptors in the area, the UST Management Division has determined that the release does not pose a significant risk to human health or the environment. Data collected during assessment activities indicate that the release will naturally decay by physical and biological processes. Therefore, monitoring activities will be discontinued.

If you have any questions or concerns regarding the proposal, please contact me at (803) 896-6584 or by e-mail at minerrs@dhec.sc.gov or write to me at the above address on or before May 18, 2012. On all correspondence regarding this site, please reference the UST Permit # 19268.

Sincerely,

Read S. Miner, P.G., Hydrogeologist
Corrective Action Section
Underground Storage Tank Management Division
Bureau of Land and Waste Management

enc: Public Notice
Corrective Action Plan for Natural Attenuation

cc: Technical File (with enclosures)

D H E C

PROMOTE PROTECT PROSPER

South Carolina Department of Health and Environmental Control

PUBLIC NOTICE

Notice # 19268-01
April 26, 2012

This notice is to inform the public that the S. C. Department of Health and Environmental Control (DHEC) is taking public comments on a Corrective Action Plan (CAP). This CAP addresses the cleanup of soil and groundwater contamination at the facility listed below. The contamination was caused by gasoline products that were released from underground storage tank system at this facility. Based on current data, the release does not pose a threat to human health or the environment.

FACILITY: Vacant Lot, 2309 Russell St., Orangeburg, SC

APPLICANT: Orphan - Sultan

SUMMARY OF CAP: Petroleum and petroleum byproducts naturally break down over time through chemical, physical, and biological processes. These processes are called natural attenuation. Periodic monitoring will be conducted to ensure that the contamination continues to decrease and remains below levels of concern.

PUBLIC COMMENT PERIOD DEADLINE: The **deadline** for submitting written comments is **5 PM May 18, 2012.** Any interested person(s) may submit written comments concerning the cleanup to DHEC's Project Manager listed below. Please bring this notice to the attention of persons whom you know will be interested in this matter. Where there is a significant degree of public interest, DHEC will hold a public hearing.

Read S. Miner, P.G., Hydrogeologist
SCDHEC- UST Management Division
2600 Bull Street
Columbia SC 29201
803-896-6584

CONTACT INFORMATION: For additional information, please call Read Miner, DHEC's Project Manager, at (803) 896-6584. To view a copy of the CAP, contact DHEC's Freedom of Information Office at 803-898-3882.

Section 280.67 of the S.C. Underground Storage Tank Control Regulations (R.61-92) requires that any CAP prepared to meet the requirements of 280.66 be placed on notice for public comment.

CORRECTIVE ACTION PLAN FOR NATURAL ATTENUATION

UST Permit Name: Vacant Lot
UST Permit #: 19268
Date Release Reported: 10/18/06
Project Manager: Read Miner
Priority Class: 3BF

CoC Concentrations (ug/L)		SSTL Concentration (ug/L)	
Benzene:	15	Benzene:	385
Toluene:	<5	Toluene:	
Ethylbenzene:	95	Ethylbenzene:	
Xylenes:	110	Xylenes:	
MTBE:	5	MTBE:	
Naphthalene:	400	Naphthalene:	1,291

Date of Last Sampling: 3/28/12
Contractor: Midlands Environmental

Assessment Activities Completed: 10/21/11

# of Sampling Events Completed: 2

Groundwater Velocity (ft/yr): 4
Groundwater Flow Direction: N

Depth to Groundwater: 8.5
Soil Lithology: Sand

Distance to the Nearest Receptor? 85

Type of Receptor? ditch

Is the CoC Plume Defined (Yes/No)? yes

Is the CoC Plume Stable (Yes/No)? yes

Additional Comments:

Project Manager: Read S. Miner
Date: 4/23/12

D H E C

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Catherine B. Templeton, Director

Promoting and protecting the health of the public and the environment

JUN 14 2012

BERNIE WRIGHT
PO BOX 275
ORANGEBURG SC 29115-0275

UST 23tech DOCKETING

Re: **Conditional No Further Action**
Vacant Lot, 2309 Russell St., Orangeburg, SC
UST Permit #19268
Release reported October 18, 2006
Intrinsic Corrective Action Plan completed May 18, 2012
Public Notice completed May 18, 2012
Monitoring Report received April 17, 2012
Orangeburg County

Dear Mr. Wright:

The Underground Storage Tank (UST) Management Division has reviewed the referenced report and all information on-file for the referenced facility. Based upon data obtained from risk-based assessment and monitoring, the UST release reported on October 18, 2006 does not present a significant threat to human health or the environment. Therefore, no further action regarding the release will be required at this time and the Agency will arrange to have the monitoring wells properly abandoned. **This decision is based on the following conditions and assumptions:**

1) The facility on which the UST release occurred and adjacent properties are currently zoned commercial/residential and are anticipated to remain zoned commercial/residential in the future.

2) Groundwater is not being used and will not to be used in the future within the actual or predicted area of petroleum impact.

3) Petroleum-impacted soil is not exposed at the site.

4) All petroleum chemicals of concern (CoC) associated with the referenced UST release are at or below site-specific target levels (SSTLs) in soil and groundwater, and groundwater monitoring has verified that natural attenuation is occurring. Based on these conditions, the CoC will not exceed risk-based screening levels (RBSLs) at any potential receptors and/or exposure points.

Please notify the UST Management Division within thirty days of unforeseen changes to any of the aforementioned assumptions and conditions. This requirement will remain in effect until all petroleum CoC have attenuated by natural means to at or below RBSLs. If CoC from the referenced UST release are detected at levels that present a risk to human health or the environment, the Agency, under authority established by the South Carolina Underground Storage Tank Control Regulations (SCUSTCR) R.61-92 Part 280, may require additional site assessment and remediation. Please notify the Agency prior to any proposed changes to site conditions.

The referenced UST release has been placed on a registry of releases in the Freedom of Information Office. The release will remain on this registry until all petroleum CoC have attenuated by natural means to at or below RBSLs. To remove the release from the registry, it must be documented that each CoC is below the RBSL with laboratory analyses. Groundwater samples may be collected from temporary or permanent wells.

On all correspondence related to this facility, please reference the UST Permit #19268. If you have any questions, please contact me at (803) 896-6584 or by e-mail at minerrs@dhec.sc.gov.

Sincerely,

Read S. Miner, P.G., Hydrogeologist
Corrective Action Section
Underground Storage Tank Management Division
Bureau of Land and Waste Management

cc: Technical File

D H E C

PROMOTE PROTECT PROSPER

Catherine B. Templeton, Director

Promoting and protecting the health of the public and the environment

JUN 19 2012

MR BRYAN SHANE PG
MIDLANDS ENVIRONMENTAL CONSULTANTS INC
PO BOX 854
LEXINGTON SC 29071-0854

UST 24Tech DOCKETING

Re: **Monitoring well abandonment**
Bid #IFB-5400002626-2/24/11-EMW; PO #4600084773

Dear Mr. Shane:

Under the terms and conditions of the referenced bid package, monitoring well abandonment has been approved for the facilities listed below. Each facility has been assigned an individual cost agreement (CA) number and report due date as listed below. Please reference the appropriate CA numbers and Purchase Order #4600084773 on the invoice submitted for payment.

UST Permit	Facility	County	Wells	Total Footage	Cost Agreement	Due Date
19449	Wando Lounge	Berkeley	16	364	43999	08/13/12
19268	Vacant Lot	Orangeburg	19	296	43989	08/13/12
15979	Morris Grocery	Georgetown	19	281	43668	08/13/12

If you have any questions or need further assistance, please contact me by telephone at (803) 896-4078, by fax at (803) 896-6245, or by e-mail at RiversMS@dhec.sc.gov.

Sincerely,

Michael Rivers, Hydrogeologist
Corrective Action Section
Underground Storage Tank Management Division
Bureau of Land and Waste Management

enc: Abandonment package

cc: Technical file (w/out enc.)

MR/MWABAND06.13.12

Midlands Environmental Consultants, Inc.

July 25, 2012

Mr. Read Miner, P.G., 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: Monitoring Well Abandonment Report
Vacant Lot
2309 Russell Street
Orangeburg, South Carolina
SCDHEC Site ID# 19268, CA # 43989
MECI Project Number 12-4049
Certified Site Rehabilitation Contractor UCC-0009

Dear Mr. Miner,

Midlands Environmental Consultants, Inc. (MECI) is pleased to submit this letter report outlining the monitoring well abandonment activities performed at the subject site. This describes the abandonment conducted at the site in general accordance with South Carolina Department of Health and Environmental Control (SCDHEC) guidelines.

On June 25, 2012 an initial site visit was conducted at the subject site to locate monitoring wells and evaluate current site conditions. Photographs depicting the monitoring wells and their according surface conditions are on the attached CDROM.

Nineteen (19) monitoring wells were abandoned on June 26, 2012 at the subject site according to South Carolina Well Standards and Regulations R.61-71.H. The well abandonment was conducted under the direction of Mr. Jason Chiorazzi (SC Driller's License # B 01790) of Versatile Environmental Resource Company of Lexington, South Carolina. The following matrix presents the well identification numbers, surface coverings, well diameter, and total well depth:

Well Number	Surface Covering	Well Diameter (Inches)	Total Depth (Feet)
MW-1	Concrete	2"	12.0
MW-2	Concrete	2"	12.0
MW-3	Concrete	2"	12.0
MW-4	Grass	2"	12.0
MW-5	Grass	2"	12.0

Post Office Box 854, Lexington SC 29071 • 235-B Dooley Road, Lexington, SC 29073
Telephone: (803) 808-2043 • fax: (803) 808-2048

Well Number	Surface Covering	Well Diameter (Inches)	Total Depth (Feet)
MW-6	Grass	2"	12.0
MW-7	Grass	2"	12.0
MW-8	Grass	2"	12.0
MW-9	Grass	2"	12.0
MW-10	Concrete	2"	12.0
MW-11	Concrete	2"	12.0
MW-12	Grass	2"	12.0
MW-13	Grass	2"	12.0
MW-14	Grass	2"	12.0
MW-15	Grass	2"	12.0
MW-16	Grass/Gravel	2"	12.0
DW-1	Concrete	2"	40.0
DW-2	Grass	2"	35.0
DW-3	Grass	2"	29.0
Total Footage of Abandoned Wells			296.0

The monitoring wells were abandoned with portland bentonite slurry utilizing tremie pipe. A total of 296.0 feet of monitoring wells were abandoned by the methods described above. Following the abandonment, monitoring wells that were located in paved areas were finished with an aggregate-reinforced concrete cap to the level of the surrounding pavement. Additionally, the well pad, vault, and cover were removed from wells located in unpaved areas and the resulting space was filled with backfill to the level of the surrounding land surface. Please find the attached SCDHEC 1903 Water Well Records and site maps.

On July 11, 2012, a final site visit was conducted at the subject site to ensure well abandoned adhered to SCDHEC Well Standards. Photographs depicting abandoned monitoring wells and surface coverings are on the attached CDROM.

Midlands Environmental appreciates the opportunity to offer our professional environmental services on this project. If you have any questions concerning this project, please contact the undersigned at (803) 808-2043.

Sincerely,
MIDLANDS ENVIRONMENTAL CONSULTANTS, INC.

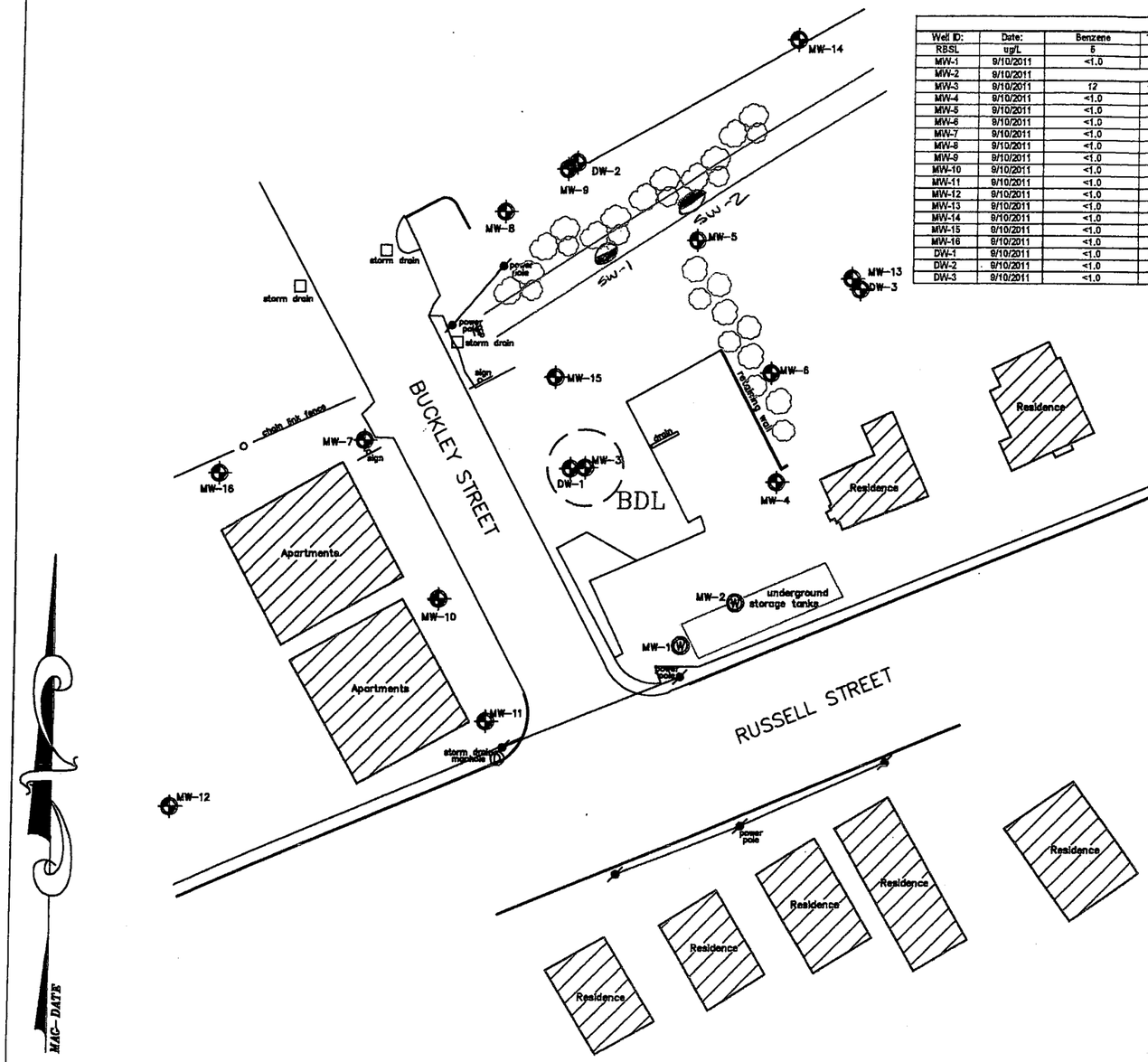
Courtney M. Sanders
Staff Biologist

Jeff L. Coleman
Senior Scientist

GRAPHIC SCALE

0 25 50 100

(In Feet)
As Shown



Groundwater Laboratory Analytical Result Summary

Well ID:	Date:	Benzene	Toluene	Ethylbenzene	Xylenes (Total)	Naphthalene	MTBE	1,2 DCA	EDB	Pb	NO3	FE+	SO4	ETBA	Ethanol	ETBE	DIPE	TAA	TAME	TBA	TBF	Date:	Well ID:
RBSL	ug/L	5	1000	700	10000	25	40	5	0.01	15	10000	NE	NE	NE	10000	47	150	240	128	1400	NE		RBSL
MW-1	9/10/2011	<1.0	0.78J	<1.0	<3.0	<1.0	<1.0	<1.0	<0.020	NS	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-1
MW-2	9/10/2011	DRY																				9/10/2011	MW-2
MW-3	9/10/2011	12	0.99J	37	2.1J	450	3.1	<1.0	<0.021	737	NS	NS	NS	<100	<100	<100	<10	<100	<10	7.8J	<100	9/10/2011	MW-3
MW-4	9/10/2011	<1.0	0.54J	<1.0	<3.0	<5.0	0.56J	<1.0	<0.020	NS	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-4
MW-5	9/10/2011	<1.0	0.54J	<1.0	<3.0	0.72J	7.9	<1.0	<0.020	14.6	NS	NS	NS	<100	<100	<100	7.6J	<100	<10	<100	<100	9/10/2011	MW-5
MW-6	9/10/2011	<1.0	<1.0	<1.0	<3.0	6	53	<1.0	<0.020	3.53	NS	NS	NS	<100	200	<100	<10	<100	<10	13J	<100	9/10/2011	MW-6
MW-7	9/10/2011	<1.0	<1.0	<1.0	0.82J	<5.0	<1.0	<1.0	<0.020	139	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-7
MW-8	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-8
MW-9	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	6.43	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-9
MW-10	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	43	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-10
MW-11	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	0.38J	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-11
MW-12	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	NS	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-12
MW-13	9/10/2011	<1.0	0.78J	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-13
MW-14	9/10/2011	<1.0	0.47J	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	6.29	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-14
MW-15	9/10/2011	<1.0	<1.0	0.49J	<3.0	7.6	2.3	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-15
MW-16	9/10/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	MW-16
DW-1	9/10/2011	<1.0	0.77J	<1.0	0.41J	1.3J	0.72J	<1.0	<0.020	1.83	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	DW-1
DW-2	9/10/2011	<1.0	0.75J	<1.0	<3.0	<5.0	<1.0	<1.0	<0.020	<1.00	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	DW-2
DW-3	9/10/2011	<1.0	0.73J	<1.0	<3.0	<5.0	0.46J	<1.0	<0.020	11.6	NS	NS	NS	<100	<100	<100	<10	<100	<10	<100	<100	9/10/2011	DW-3

Note: Deep wells DW-1, DW-2, and DW-3 are not used in the creation of this map.

LEGEND

	UST Basin
	Monitoring Well

REV	BY	DATE

DR: JSR
CK: HDO
SCALE: AS SHOWN
CES PROJ. NO. 15.070

Tier II Environmental Assessment

CRAWFORD ENVIRONMENTAL SERVICES

104 Corporate Blvd.
Suite 412
West Columbia, SC 29210

803-708-0079 (ph)
803-708-8137 (Fax)

FIGURE TITLE

Chemicals of Concern: Benzene
Vacant Lot
2309 Russell Street
Orangeburg, SC 29115
Site ID: 19268

DRAWING NUMBER: Figure 4A

REV: 0
9.23.2011

SCDHEC 1903 WATER WELL RECORDS

D H E C
PROMOTE PROTECT PROSPER

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: Orangeburg
Name: Vacant Lot
Street Address: 2309 Russell Street
City: Orangeburg Zip: 29115-5648
Latitude: Longitude:

3. PUBLIC SYSTEM NAME: 19268 **PUBLIC SYSTEM NUMBER:** MW-1

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 12.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
Well Abandoned by Versatile		
Environmental Resource		
Company via tremie pipe with		
approximately 2.00 Gallons of		
Portland-Bentonite Cement Slurry.		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-1

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other

7. PERMIT NUMBER: 19268

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 6/26/2012
12.0 ft. Date Completed: 6/26/2012

10. CASING: ☐ Threaded ☐ Welded
Diam.: ____
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
____ in. to ____ ft. depth
____ in. to ____ ft. depth
Height: Above /Below
Surface ____ ft.
Weight ____ lb./ft.
Drive Shoe? ☐ Yes ☐ No

11. SCREEN:
Type: ____ Diam.: ____
Slot/Gauge: ____ Length: ____
Set Between: ____ ft. and ____ ft.
____ ft. and ____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☐ No

12. STATIC WATER LEVEL ____ 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 ____ ft. to ____ ft.
Effective size ____ Uniformity Coefficient ____

16. WELL GROUTED? ☑ Yes ☐ No
☐ Neat Cement ☐ Bentonite ☑ Bentonite/Cement ☐ Other ____
Depth: From 0.0 ft. to 12.0 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: Jason Chiorazzi **CERT. NO.:** 01790
Address: (Print) Level: A B C D (circle one)
2047 Industrial Boulevard
Lexington, South Carolina 29072
Telephone No.: (803)-429-5001 Fax No.: (803)-996-0638

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: ____ Well Driller Date: 06/28/2012
If D Level Driller, provide supervising driller's name:

DHEC 1903 (07/2003)

COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

D · H E C
PROMOTE PROTECT PROSPER

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:** Orangeburg
Name: Vacant Lot
Street Address: 2309 Russell Street
City: Orangeburg Zip: 29115-5648
Latitude: Longitude:

3. PUBLIC SYSTEM NAME: 19268 **PUBLIC SYSTEM NUMBER:** MW-2

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 12.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
Well Abandoned by Versatile		
Environmental Resource		
Company via tremie pipe with		
approximately 2.00 Gallons of		
Portland-Bentonite Cement Slurry.		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-2

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other

7. PERMIT NUMBER: 19268

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 12.0 ft. Date Started: 6/26/2012 Date Completed: 6/26/2012

10. CASING: ☐ Threaded ☐ Welded
Diam.: ____
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
____ in. to ____ ft. depth
____ in. to ____ ft. depth
Height: Above /Below
Surface ____ ft.
Weight ____ lb./ft.
Drive Shoe? ☐ Yes ☐ No

11. SCREEN:
Type: ____ Diam.: ____
Slot/Gauge: ____ Length: ____
Set Between: ____ ft. and ____ ft. **NOTE: MULTIPLE SCREENS**
____ ft. and ____ ft. **USE SECOND SHEET**
Sieve Analysis ☐ Yes (please enclose) ☐ No

12. STATIC WATER LEVEL ____ 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 ____ ft. to ____ ft.
Effective size ____ Uniformity Coefficient ____

16. WELL GROUTED? ☑ Yes ☐ No
☐ Neat Cement ☐ Bentonite ☑ Bentonite/Cement ☐ Other ____
Depth: From 0.0 ft. to 12.0 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: Jason Chiorazzi **CERT. NO.:** 01790
Address: (Print) Level: A B C D (circle one)
2047 Industrial Boulevard
Lexington, South Carolina 29072
Telephone No.: (803)-429-5001 Fax No.: (803)-996-0638

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: ____ (Well Driller) Date: 06/28/2012

If D Level Driller, provide supervising driller's name:

DHEC 1903 (07/2003) **COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)**

D·H E C
PROMOTE PROTECT PROSPER

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:** Orangeburg
Name: Vacant Lot
Street Address: 2309 Russell Street
City: Orangeburg Zip: 29115-5648
Latitude: Longitude:

3. PUBLIC SYSTEM NAME: 19268 **PUBLIC SYSTEM NUMBER:** MW-3

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 12.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
Well Abandoned by Versatile		
Environmental Resource		
Company via tremie pipe with		
approximately 2.00 Gallons of		
Portland-Bentonite Cement Slurry.		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-3

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other

7. PERMIT NUMBER: 19268

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 6/26/2012
12.0 ft. Date Completed: 6/26/2012

10. CASING: ☐ Threaded ☐ Welded
Diam.: ____
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
____ in. to ____ ft. depth
____ in. to ____ ft. depth
Height: Above /Below
Surface ____ ft.
Weight ____ lb./ft.
Drive Shoe? ☐ Yes ☐ No

11. SCREEN:
Type: ____ Diam.: ____
Slot/Gauge: ____ Length: ____
Set Between: ____ ft. and ____ ft.
____ ft. and ____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☐ No

12. STATIC WATER LEVEL ____ 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 ____ ft. to ____ ft.
Effective size ____ Uniformity Coefficient ____

16. WELL GROUTED? ☑ Yes ☐ No
☐ Neat Cement ☐ Bentonite ☑ Bentonite/Cement ☐ Other ____
Depth: From 0.0 ft. to 12.0 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: Jason Chiorazzi **CERT. NO.:** 01790
Address: (Print) Level: A B C D (circle one)
2047 Industrial Boulevard
Lexington, South Carolina 29072
Telephone No.: (803)-429-5001 Fax No.: (803)-996-0638

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: ____ (Well Driller) Date: 06/28/2012

If D Level Driller, provide supervising driller's name:

DHEC 1903 (07/2003) **COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)**

D H E C
PROMOTE PROTECT PROSPER

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:** Orangeburg
Name: Vacant Lot
Street Address: 2309 Russell Street
City: Orangeburg Zip: 29115-5648
Latitude: Longitude:

3. PUBLIC SYSTEM NAME: 19268 **PUBLIC SYSTEM NUMBER:** MW-4

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 12.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
Well Abandoned by Versatile		
Environmental Resource		
Company via tremie pipe with		
approximately 2.00 Gallons of		
Portland-Bentonite Cement Slurry.		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS: MW-4

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other

7. PERMIT NUMBER: 19268

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 6/26/2012
12.0 ft. Date Completed: 6/26/2012

10. CASING: ☐ Threaded ☐ Welded
Diam.: ____
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
____ in. to ____ ft. depth
____ in. to ____ ft. depth
Height: Above /Below
Surface ____ ft.
Weight ____ lb./ft.
Drive Shoe? ☐ Yes ☐ No

11. SCREEN:
Type: ____ Diam.: ____
Slot/Gauge: ____ Length: ____
Set Between: ____ ft. and ____ ft.
____ ft. and ____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☐ No

12. STATIC WATER LEVEL ____ 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 ____ ft. to ____ ft.
Effective size ____ Uniformity Coefficient ____

16. WELL GROUTED? ☑ Yes ☐ No
☐ Neat Cement ☐ Bentonite ☑ Bentonite/Cement ☐ Other ____
Depth: From 0.0 ft. to 12.0 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: Jason Chiorazzi **CERT. NO.:** 01790
Address: (Print) Level: A B C D (circle one)
2047 Industrial Boulevard
Lexington, South Carolina 29072
Telephone No.: (803)-429-5001 Fax No.: (803)-996-0638

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: ____ Well Driller Date: 06/28/2012
If D Level Driller, provide supervising driller's name:

DHEC 1903 (07/2003) **COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)**

D·H E C
PROMOTE PROTECT PROSPER

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:** Orangeburg
Name: Vacant Lot
Street Address: 2309 Russell Street
City: Orangeburg Zip: 29115-5648
Latitude: Longitude:

3. PUBLIC SYSTEM NAME: 19268 **PUBLIC SYSTEM NUMBER:** MW-5

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 12.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
Well Abandoned by Versatile		
Environmental Resource		
Company via tremie pipe with		
approximately 2.00 Gallons of		
Portland-Bentonite Cement Slurry.		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		
5. REMARKS: MW-5		

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other

7. PERMIT NUMBER: 19268

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 12.0 ft. Date Started: 6/26/2012 Date Completed: 6/26/2012

10. CASING: ☐ Threaded ☐ Welded
Diam.: ____
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
____ in. to ____ ft. depth
____ in. to ____ ft. depth
Height: Above /Below
Surface ____ ft.
Weight ____ lb./ft.
Drive Shoe? ☐ Yes ☐ No

11. SCREEN:
Type: ____ Diam.: ____
Slot/Gauge: ____ Length: ____
Set Between: ____ ft. and ____ ft.
____ ft. and ____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☐ No

12. STATIC WATER LEVEL ____ 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 ____ ft. to ____ ft.
Effective size ____ Uniformity Coefficient ____

16. WELL GROUTED? ☑ Yes ☐ No
☐ Neat Cement ☐ Bentonite ☑ Bentonite/Cement ☐ Other ____
Depth: From 0.0 ft. to 12.0 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: Jason Chiorazzi **CERT. NO.:** 01790
Address: (Print) Level: A B C D (circle one)
2047 Industrial Boulevard
Lexington, South Carolina 29072
Telephone No.: (803)-429-5001 Fax No.: (803)-996-0638

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: ____ (Well Driller) Date: 06/28/2012

If D Level Driller, provide supervising driller's name:

DHEC 1903 (07/2003) **COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)**

D·H E C
PROMOTE PROTECT PROSPER

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:** Orangeburg
Name: Vacant Lot
Street Address: 2309 Russell Street
City: Orangeburg Zip: 29115-5648
Latitude: Longitude:

3. PUBLIC SYSTEM NAME: 19268 **PUBLIC SYSTEM NUMBER:** MW-6

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 12.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
Well Abandoned by Versatile		
Environmental Resource		
Company via tremie pipe with		
approximately 2.00 Gallons of		
Portland-Bentonite Cement Slurry.		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-6

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other

7. PERMIT NUMBER: 19268

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 6/26/2012
12.0 ft. Date Completed: 6/26/2012

10. CASING: ☐ Threaded ☐ Welded
Diam.: _____
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
_____ in. to _____ ft. depth
_____ in. to _____ ft. depth
Height: Above /Below
Surface _____ ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☐ No

11. SCREEN:
Type: _____ Diam.: _____
Slot/Gauge: _____ Length: _____
Set Between: _____ ft. and _____ ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☐ No

12. STATIC WATER LEVEL _____ 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 _____ ft. to _____ ft.
Effective size _____ Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☐ Neat Cement ☐ Bentonite ☑ Bentonite/Cement ☐ Other _____
Depth: From 0.0 ft. to 12.0 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: Jason Chiorazzi **CERT. NO.:** 01790
Address: (Print) Level: A B C D (circle one)
2047 Industrial Boulevard
Lexington, South Carolina 29072
Telephone No.: (803)-429-5001 Fax No.: (803)-996-0638

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: 06/28/2012
Well Driller
If D Level Driller, provide supervising driller's name:

DHEC 1903 (07/2003) **COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)**

D·H E C
PROMOTE PROTECT PROSPER

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:** Orangeburg
Name: Vacant Lot
Street Address: 2309 Russell Street
City: Orangeburg Zip: 29115-5648
Latitude: Longitude:

3. PUBLIC SYSTEM NAME: 19268 **PUBLIC SYSTEM NUMBER:** MW-7

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 12.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
Well Abandoned by Versatile		
Environmental Resource		
Company via tremie pipe with		
approximately 2.00 Gallons of		
Portland-Bentonite Cement Slurry.		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-7

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other

7. PERMIT NUMBER: 19268

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 6/26/2012
12.0 ft. Date Completed: 6/26/2012

10. CASING: ☐ Threaded ☐ Welded
Diam.: _____
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
_____ in. to _____ ft. depth
_____ in. to _____ ft. depth
Height: Above /Below
Surface _____ ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☐ No

11. SCREEN:
Type: _____ Diam.: _____
Slot/Gauge: _____ Length: _____
Set Between: _____ ft. and _____ ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☐ No

12. STATIC WATER LEVEL _____ 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 _____ ft. to _____ ft.
Effective size _____ Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☐ Neat Cement ☐ Bentonite ☑ Bentonite/Cement ☐ Other _____
Depth: From 0.0 ft. to 12.0 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: Jason Chiorazzi **CERT. NO.:** 01790
Address: (Print) Level: A B C D (circle one)
2047 Industrial Boulevard
Lexington, South Carolina 29072
Telephone No.: (803)-429-5001 Fax No.: (803)-996-0638

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: 06/28/2012
Well Driller

If D Level Driller, provide supervising driller's name:

DHEC 1903 (07/2003) **COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)**

D · H E C
PROMOTE PROTECT PROSPER

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:** Orangeburg
Name: Vacant Lot
Street Address: 2309 Russell Street
City: Orangeburg Zip: 29115-5648
Latitude: Longitude:

3. PUBLIC SYSTEM NAME: 19268 **PUBLIC SYSTEM NUMBER:** MW-8

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 12.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
Well Abandoned by Versatile		
Environmental Resource		
Company via tremie pipe with		
approximately 2.00 Gallons of		
Portland-Bentonite Cement Slurry.		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-8

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other

7. PERMIT NUMBER: 19268

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 6/26/2012
12.0 ft. Date Completed: 6/26/2012

10. CASING: ☐ Threaded ☐ Welded
Diam.: _____
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
_____ in. to _____ ft. depth
_____ in. to _____ ft. depth
Height: Above /Below
Surface _____ ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☐ No

11. SCREEN:
Type: _____ Diam.: _____
Slot/Gauge: _____ Length: _____
Set Between: _____ ft. and _____ ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☐ No

12. STATIC WATER LEVEL _____ 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 _____ ft. to _____ ft.
Effective size _____ Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☐ Neat Cement ☐ Bentonite ☑ Bentonite/Cement ☐ Other _____
Depth: From 0.0 ft. to 12.0 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: Jason Chiorazzi **CERT. NO.:** 01790
Address: (Print) Level: A B C D (circle one)
2047 Industrial Boulevard
Lexington, South Carolina 29072
Telephone No.: (803)-429-5001 Fax No.: (803)-996-0638

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: 06/28/2012
Well Driller
If D Level Driller, provide supervising driller's name:

DHEC 1903 (07/2003) **COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)**

D·H E C
PROMOTE PROTECT PROSPER

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:** Orangeburg
Name: Vacant Lot
Street Address: 2309 Russell Street
City: Orangeburg Zip: 29115-5648
Latitude: Longitude:

3. PUBLIC SYSTEM NAME: 19268 **PUBLIC SYSTEM NUMBER:** MW-9

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 12.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
Well Abandoned by Versatile		
Environmental Resource		
Company via tremie pipe with		
approximately 2.00 Gallons of		
Portland-Bentonite Cement Slurry.		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-9

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other

7. PERMIT NUMBER: 19268

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 6/26/2012
12.0 ft. Date Completed: 6/26/2012

10. CASING: ☐ Threaded ☐ Welded
Diam.: _____
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
_____ in. to _____ ft. depth
_____ in. to _____ ft. depth
Height: Above /Below
Surface _____ ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☐ No

11. SCREEN:
Type: _____ Diam.: _____
Slot/Gauge: _____ Length: _____
Set Between: _____ ft. and _____ ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☐ No

12. STATIC WATER LEVEL _____ 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 _____ ft. to _____ ft.
Effective size _____ Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☐ Neat Cement ☐ Bentonite ☑ Bentonite/Cement ☐ Other _____
Depth: From 0.0 ft. to 12.0 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: Jason Chiorazzi **CERT. NO.:** 01790
Address: (Print) Level: A B C D (circle one)
2047 Industrial Boulevard
Lexington, South Carolina 29072
Telephone No.: (803)-429-5001 Fax No.: (803)-996-0638

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: 06/28/2012
Well Driller

If D Level Driller, provide supervising driller's name:

DHEC 1903 (07/2003) **COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)**

D·H E C
PROMOTE PROTECT PROSPER

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:** Orangeburg
Name: Vacant Lot
Street Address: 2309 Russell Street
City: Orangeburg Zip: 29115-5648
Latitude: Longitude:

3. PUBLIC SYSTEM NAME: 19268 **PUBLIC SYSTEM NUMBER:** MW-10

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 12.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
Well Abandoned by Versatile		
Environmental Resource		
Company via tremie pipe with		
approximately 2.00 Gallons of		
Portland-Bentonite Cement Slurry.		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-10

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other

7. PERMIT NUMBER: 19268

8. USE:
☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 6/26/2012
12.0 ft. Date Completed: 6/26/2012

10. CASING: ☐ Threaded ☐ Welded
Diam.: ____
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
____ in. to ____ ft. depth
____ in. to ____ ft. depth
Height: Above /Below
Surface ____ ft.
Weight ____ lb./ft.
Drive Shoe? ☐ Yes ☐ No

11. SCREEN:
Type: ____ Diam.: ____
Slot/Gauge: ____ Length: ____
Set Between: ____ ft. and ____ ft.
____ ft. and ____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☐ No

12. STATIC WATER LEVEL ____ 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 ____ ft. to ____ ft.
Effective size ____ Uniformity Coefficient ____

16. WELL GROUTED? ☑ Yes ☐ No
☐ Neat Cement ☐ Bentonite ☑ Bentonite/Cement ☐ Other ____
Depth: From 0.0 ft. to 12.0 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: Jason Chiorazzi **CERT. NO.:** 01790
Address: (Print) Level: A B C D (circle one)
2047 Industrial Boulevard
Lexington, South Carolina 29072
Telephone No.: (803)-429-5001 Fax No.: (803)-996-0638

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: ____ (Well Driller) Date: 06/28/2012
If D Level Driller, provide supervising driller's name:

DHEC 1903 (07/2003) **COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)**

D H E C
PROMOTE PROTECT PROSPER

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:** Orangeburg
Name: Vacant Lot
Street Address: 2309 Russell Street
City: Orangeburg Zip: 29115-5648
Latitude: Longitude:

3. PUBLIC SYSTEM NAME: 19268 **PUBLIC SYSTEM NUMBER:** MW-11

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 12.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
Well Abandoned by Versatile		
Environmental Resource		
Company via tremie pipe with		
approximately 2.00 Gallons of		
Portland-Bentonite Cement Slurry.		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-11

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other

7. PERMIT NUMBER: 19268

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 6/26/2012
12.0 ft. Date Completed: 6/26/2012

10. CASING: ☐ Threaded ☐ Welded
Diam.: _____
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
_____ in. to _____ ft. depth
_____ in. to _____ ft. depth
Height: Above /Below
Surface _____ ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☐ No

11. SCREEN:
Type: _____ Diam.: _____
Slot/Gauge: _____ Length: _____
Set Between: _____ ft. and _____ ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☐ No

12. STATIC WATER LEVEL _____ 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 _____ ft. to _____ ft.
Effective size _____ Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☐ Neat Cement ☐ Bentonite ☑ Bentonite/Cement ☐ Other _____
Depth: From 0.0 ft. to 12.0 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: Jason Chiorazzi **CERT. NO.:** 01790
Address: (Print) Level: A B C D (circle one)
2047 Industrial Boulevard
Lexington, South Carolina 29072
Telephone No.: (803)-429-5001 Fax No.: (803)-996-0638

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: 06/28/2012
Well Driller
If D Level Driller, provide supervising driller's name:

DHEC 1903 (07/2003) **COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)**

D H E C
PROMOTE PROTECT PROSPER

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:** Orangeburg
Name: Vacant Lot
Street Address: 2309 Russell Street
City: Orangeburg Zip: 29115-5648
Latitude: Longitude:

3. PUBLIC SYSTEM NAME: 19268 **PUBLIC SYSTEM NUMBER:** MW-12

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 12.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
Well Abandoned by Versatile		
Environmental Resource		
Company via tremie pipe with		
approximately 2.00 Gallons of		
Portland-Bentonite Cement Slurry.		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-12

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other

7. PERMIT NUMBER: 19268

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 6/26/2012
12.0 ft. Date Completed: 6/26/2012

10. CASING: ☐ Threaded ☐ Welded
Diam.: ____
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
____ in. to ____ ft. depth
____ in. to ____ ft. depth
Height: Above /Below
Surface ____ ft.
Weight ____ lb./ft.
Drive Shoe? ☐ Yes ☐ No

11. SCREEN:
Type: ____ Diam.: ____
Slot/Gauge: ____ Length: ____
Set Between: ____ ft. and ____ ft.
____ ft. and ____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☐ No

12. STATIC WATER LEVEL ____ 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 ____ ft. to ____ ft.
Effective size ____ Uniformity Coefficient ____

16. WELL GROUTED? ☑ Yes ☐ No
☐ Neat Cement ☐ Bentonite ☑ Bentonite/Cement ☐ Other ____
Depth: From 0.0 ft. to 12.0 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: Jason Chiorazzi **CERT. NO.:** 01790
Address: (Print) Level: A B C D (circle one)
2047 Industrial Boulevard
Lexington, South Carolina 29072
Telephone No.: (803)-429-5001 Fax No.: (803)-996-0638

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: 06/28/2012
Well Driller
If D Level Driller, provide supervising driller's name:

DHEC 1903 (07/2003) **COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)**

D·H E C
PROMOTE PROTECT PROSPER

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:** Orangeburg
Name: Vacant Lot
Street Address: 2309 Russell Street
City: Orangeburg Zip: 29115-5648
Latitude: Longitude:

3. PUBLIC SYSTEM NAME: 19268 **PUBLIC SYSTEM NUMBER:** MW-13

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 12.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
Well Abandoned by Versatile		
Environmental Resource		
Company via tremie pipe with		
approximately 2.00 Gallons of		
Portland-Bentonite Cement Slurry.		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-13

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other

7. PERMIT NUMBER: 19268

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 6/26/2012
12.0 ft. Date Completed: 6/26/2012

10. CASING: ☐ Threaded ☐ Welded
Diam.: _____
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
_____ in. to _____ ft. depth
_____ in. to _____ ft. depth
Height: Above /Below
Surface _____ ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☐ No

11. SCREEN:
Type: _____ Diam.: _____
Slot/Gauge: _____ Length: _____
Set Between: _____ ft. and _____ ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☐ No

12. STATIC WATER LEVEL _____ 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 _____ ft. to _____ ft.
Effective size _____ Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☐ Neat Cement ☐ Bentonite ☑ Bentonite/Cement ☐ Other _____
Depth: From 0.0 ft. to 12.0 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: Jason Chiorazzi **CERT. NO.:** 01790
Address: (Print) Level: A B C D (circle one)
2047 Industrial Boulevard
Lexington, South Carolina 29072
Telephone No.: (803)-429-5001 Fax No.: (803)-996-0638

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: _____ Well Driller Date: 06/28/2012
If D Level Driller, provide supervising driller's name:

DHEC 1903 (07/2003) **COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)**

D • H E C
PROMOTE PROTECT PROSPER

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:** Orangeburg
Name: Vacant Lot
Street Address: 2309 Russell Street
City: Orangeburg Zip: 29115-5648
Latitude: Longitude:

3. PUBLIC SYSTEM NAME: 19268 **PUBLIC SYSTEM NUMBER:** MW-14

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 12.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
Well Abandoned by Versatile		
Environmental Resource		
Company via tremie pipe with		
approximately 2.00 Gallons of		
Portland-Bentonite Cement Slurry.		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-14

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other

7. PERMIT NUMBER: 19268

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 6/26/2012
12.0 ft. Date Completed: 6/26/2012

10. CASING: ☐ Threaded ☐ Welded
Diam.: ____
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
____ in. to ____ ft. depth
____ in. to ____ ft. depth
Height: Above /Below
Surface ____ ft.
Weight ____ lb./ft.
Drive Shoe? ☐ Yes ☐ No

11. SCREEN:
Type: ____ Diam.: ____
Slot/Gauge: ____ Length: ____
Set Between: ____ ft. and ____ ft.
____ ft. and ____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☐ No

12. STATIC WATER LEVEL ____ 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 ____ ft. to ____ ft.
Effective size ____ Uniformity Coefficient ____

16. WELL GROUTED? ☑ Yes ☐ No
☐ Neat Cement ☐ Bentonite ☑ Bentonite/Cement ☐ Other ____
Depth: From 0.0 ft. to 12.0 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: Jason Chiorazzi **CERT. NO.:** 01790
Address: (Print) Level: A B C D (circle one)
2047 Industrial Boulevard
Lexington, South Carolina 29072
Telephone No.: (803)-429-5001 Fax No.: (803)-996-0638

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: ____ Well Driller Date: 06/28/2012
If D Level Driller, provide supervising driller's name:

DHEC 1903 (07/2003) **COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)**

D • H E C
PROMOTE PROTECT PROSPER

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: Orangeburg
Name: Vacant Lot
Street Address: 2309 Russell Street
City: Orangeburg Zip: 29115-5648
Latitude: Longitude:

3. PUBLIC SYSTEM NAME: 19268 **PUBLIC SYSTEM NUMBER:** MW-15

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 12.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
Well Abandoned by Versatile		
Environmental Resource		
Company via tremie pipe with		
approximately 2.00 Gallons of		
Portland-Bentonite Cement Slurry.		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS: MW-15

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other

7. PERMIT NUMBER: 19268

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 6/26/2012
12.0 ft. Date Completed: 6/26/2012

10. CASING: ☐ Threaded ☐ Welded
Diam.: ____
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
____ in. to ____ ft. depth
____ in. to ____ ft. depth
Height: Above /Below
Surface ____ ft.
Weight ____ lb./ft.
Drive Shoe? ☐ Yes ☐ No

11. SCREEN:
Type: ____ Diam.: ____
Slot/Gauge: ____ Length: ____
Set Between: ____ ft. and ____ ft. NOTE: MULTIPLE SCREENS
____ ft. and ____ ft. USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☐ No

12. STATIC WATER LEVEL ____ 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 ____ ft. to ____ ft.
Effective size ____ Uniformity Coefficient ____

16. WELL GROUTED? ☑ Yes ☐ No
☐ Neat Cement ☐ Bentonite ☑ Bentonite/Cement ☐ Other ____
Depth: From 0.0 ft. to 12.0 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: Jason Chiorazzi **CERT. NO.:** 01790
Address: (Print) Level: A B C D (circle one)
2047 Industrial Boulevard
Lexington, South Carolina 29072
Telephone No.: (803)-429-5001 Fax No.: (803)-996-0638

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: 06/28/2012
Well Driller

If D Level Driller, provide supervising driller's name:

DHEC 1903 (07/2003) **COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)**

D H E C
PROMOTE PROTECT PROSPER

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:** Orangeburg
Name: Vacant Lot
Street Address: 2309 Russell Street
City: Orangeburg Zip: 29115-5648
Latitude: Longitude:

3. PUBLIC SYSTEM NAME: 19268 **PUBLIC SYSTEM NUMBER:** MW-16

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 12.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
Well Abandoned by Versatile		
Environmental Resource		
Company via tremie pipe with		
approximately 2.00 Gallons of		
Portland-Bentonite Cement Slurry.		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-16

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other

7. PERMIT NUMBER: 19268

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 6/26/2012
12.0 ft. Date Completed: 6/26/2012

10. CASING: ☐ Threaded ☐ Welded
Diam.: _____
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
_____ in. to _____ ft. depth
_____ in. to _____ ft. depth
Height: Above /Below
Surface _____ ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☐ No

11. SCREEN:
Type: _____ Diam.: _____
Slot/Gauge: _____ Length: _____
Set Between: _____ ft. and _____ ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☐ No

12. STATIC WATER LEVEL _____ 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 _____ ft. to _____ ft.
Effective size _____ Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☐ Neat Cement ☐ Bentonite ☑ Bentonite/Cement ☐ Other _____
Depth: From 0.0 ft. to 12.0 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: Jason Chiorazzi **CERT. NO.:** 01790
Address: (Print) Level: A B C D (circle one)
2047 Industrial Boulevard
Lexington, South Carolina 29072
Telephone No.: (803)-429-5001 Fax No.: (803)-996-0638

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: 06/28/2012
Well Driller
If D Level Driller, provide supervising driller's name:

DHEC 1903 (07/2003) **COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)**

D H E C
PROMOTE PROTECT PROSPER

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:** Orangeburg
Name: Vacant Lot
Street Address: 2309 Russell Street
City: Orangeburg Zip: 29115-5648
Latitude: Longitude:

3. PUBLIC SYSTEM NAME: 19268 **PUBLIC SYSTEM NUMBER:** DW-1

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 40.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
Well Abandoned by Versatile		
Environmental Resource		
Company via tremie pipe with		
approximately 6.66 Gallons of		
Portland-Bentonite Cement Slurry.		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
DW-1

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other

7. PERMIT NUMBER: 19268

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 6/26/2012
40.0 ft. Date Completed: 6/26/2012

10. CASING: ☐ Threaded ☐ Welded
Diam.: _____
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
_____ in. to _____ ft. depth
_____ in. to _____ ft. depth
Height: Above /Below
Surface _____ ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☐ No

11. SCREEN:
Type: _____ Diam.: _____
Slot/Gauge: _____ Length: _____
Set Between: _____ ft. and _____ ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☐ No

12. STATIC WATER LEVEL _____ 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 _____ ft. to _____ ft.
Effective size _____ Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☐ Neat Cement ☐ Bentonite ☑ Bentonite/Cement ☐ Other _____
Depth: From 0.0 ft. to 40.0 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: Jason Chiorazzi **CERT. NO.:** 01790
Address: (Print) Level: A B C D (circle one)
2047 Industrial Boulevard
Lexington, South Carolina 29072
Telephone No.: (803)-429-5001 Fax No.: (803)-996-0638

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: 06/28/2012
Well Driller

If D Level Driller, provide supervising driller's name:

DHEC 1903 (07/2003) **COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)**

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

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:** Orangeburg
Name: Vacant Lot
Street Address: 2309 Russell Street
City: Orangeburg Zip: 29115-5648
Latitude: Longitude:

3. PUBLIC SYSTEM NAME: 19268 **PUBLIC SYSTEM NUMBER:** DW-2

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 35.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
Well Abandoned by Versatile		
Environmental Resource		
Company via tremie pipe with		
approximately 5.83 Gallons of		
Portland-Bentonite Cement Slurry.		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS: DW-2

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other

7. PERMIT NUMBER: 19268

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 35.0 ft. Date Started: 6/26/2012 Date Completed: 6/26/2012

10. CASING: ☐ Threaded ☐ Welded
Diam.: ____
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
____ in. to ____ ft. depth
____ in. to ____ ft. depth
Height: Above /Below
Surface ____ ft.
Weight ____ lb./ft.
Drive Shoe? ☐ Yes ☐ No

11. SCREEN:
Type: ____ Diam.: ____
Slot/Gauge: ____ Length: ____
Set Between: ____ ft. and ____ ft.
____ ft. and ____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☐ No

12. STATIC WATER LEVEL ____ 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 ____ ft. to ____ ft.
Effective size ____ Uniformity Coefficient ____

16. WELL GROUTED? ☑ Yes ☐ No
☐ Neat Cement ☐ Bentonite ☑ Bentonite/Cement ☐ Other ____
Depth: From 0.0 ft. to 35.0 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: Jason Chiorazzi **CERT. NO.:** 01790
Address: (Print) Level: A B C D (circle one)
2047 Industrial Boulevard
Lexington, South Carolina 29072
Telephone No.: (803)-429-5001 Fax No.: (803)-996-0638

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: ____ (Well Driller) Date: 06/28/2012
If D Level Driller, provide supervising driller's name:

DHEC 1903 (07/2003) **COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)**

D-H-E-C
PROMOTE PROTECT PROSPER

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:** Orangeburg
Name: Vacant Lot
Street Address: 2309 Russell Street
City: Orangeburg Zip: 29115-5648
Latitude: Longitude:

3. PUBLIC SYSTEM NAME: 19268 **PUBLIC SYSTEM NUMBER:** DW-3

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 29.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
Well Abandoned by Versatile		
Environmental Resource		
Company via tremie pipe with		
approximately 4.83 Gallons of		
Portland-Bentonite Cement Slurry.		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
DW-3

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other

7. PERMIT NUMBER: 19268

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 6/26/2012
29.0 ft. Date Completed: 6/26/2012

10. CASING: ☐ Threaded ☐ Welded
Diam.: ____
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
____ in. to ____ ft. depth
____ in. to ____ ft. depth
Height: Above /Below
Surface ____ ft.
Weight ____ lb./ft.
Drive Shoe? ☐ Yes ☐ No

11. SCREEN:
Type: ____ Diam.: ____
Slot/Gauge: ____ Length: ____
Set Between: ____ ft. and ____ ft. **NOTE: MULTIPLE SCREENS**
____ ft. and ____ ft. **USE SECOND SHEET**
Sieve Analysis ☐ Yes (please enclose) ☐ No

12. STATIC WATER LEVEL ____ 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 ____ ft. to ____ ft.
Effective size ____ Uniformity Coefficient ____

16. WELL GROUTED? ☑ Yes ☐ No
☐ Neat Cement ☐ Bentonite ☑ Bentonite/Cement ☐ Other ____
Depth: From 0.0 ft. to 29.0 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

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If D Level Driller, provide supervising driller's name:

DHEC 1903 (07/2003) **COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)**

Vacant Lot
UST #19268
6/25/12
DW-1

Vacant Lot
UST #19268
6/25/12
DW-2
DO NOT FILL
WELL

Vacant Lot
UST #19268
6/25/12
DW-3

Vacant Lot
UST #19268
6/25/12
MW-1

Vacant Lot
UST #19268
6/25/12
MW-2

Vacant Lot
UST #19268
6/25/12
MW-3

Vacant Lot
UST #19268
6/25/12
MW-4

MONITORING
DO
NOT
FILL

Vacant Lot
UST #19268
6/25/12
MW-6

OBSERVATION
Vacant Lot
UST #19268
6/25/12
MW-1

Vacant Lot

UST #19268

6/25/12

MW-8

Vacant Lot
UST #19268
6/25/12
MW-9
MONITORING
DO NOT FILL

DO NOT FILL
Vacant Lot
UST #19268
6/25/12
MW-10

Vacant Lot
UST #19268
6/25/12
MW-11

Vacant Lot
UST #19268
6/25/12
MW-12

MONITORING

Vacant Lot
UST #19268
6/25/12
MW-13

Vacant Lot
UST #19268
6/25/12
MW-14

DO NOT FILL
MONITORING WELL

Vacant Lot
UST #19268
6/25/12
MW-15

DO NOT FILL
MONITORING
WELL
OBSERVATION
Vacant Lot
UST #19268
6/25/12
MW-16

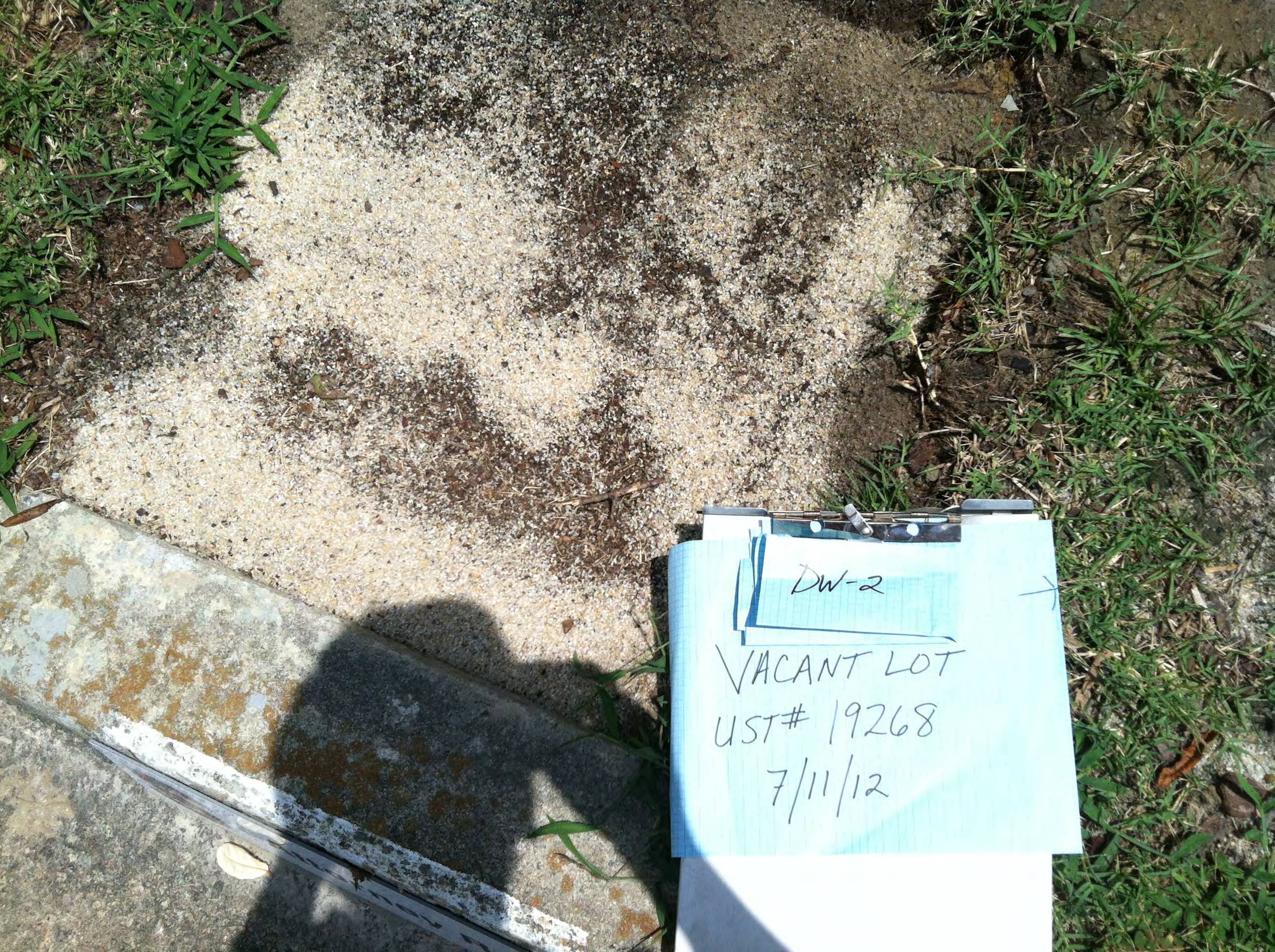
DW-1

VACANT LOT

UST# 19268

7/11/12

MW-16


DW-2
VACANT LOT
UST# 19268
7/11/12

DW-3
VACANT LOT
UST# 19268
7/11/12

MW-1
VACANT LOT
UST# 19268
7/11/12

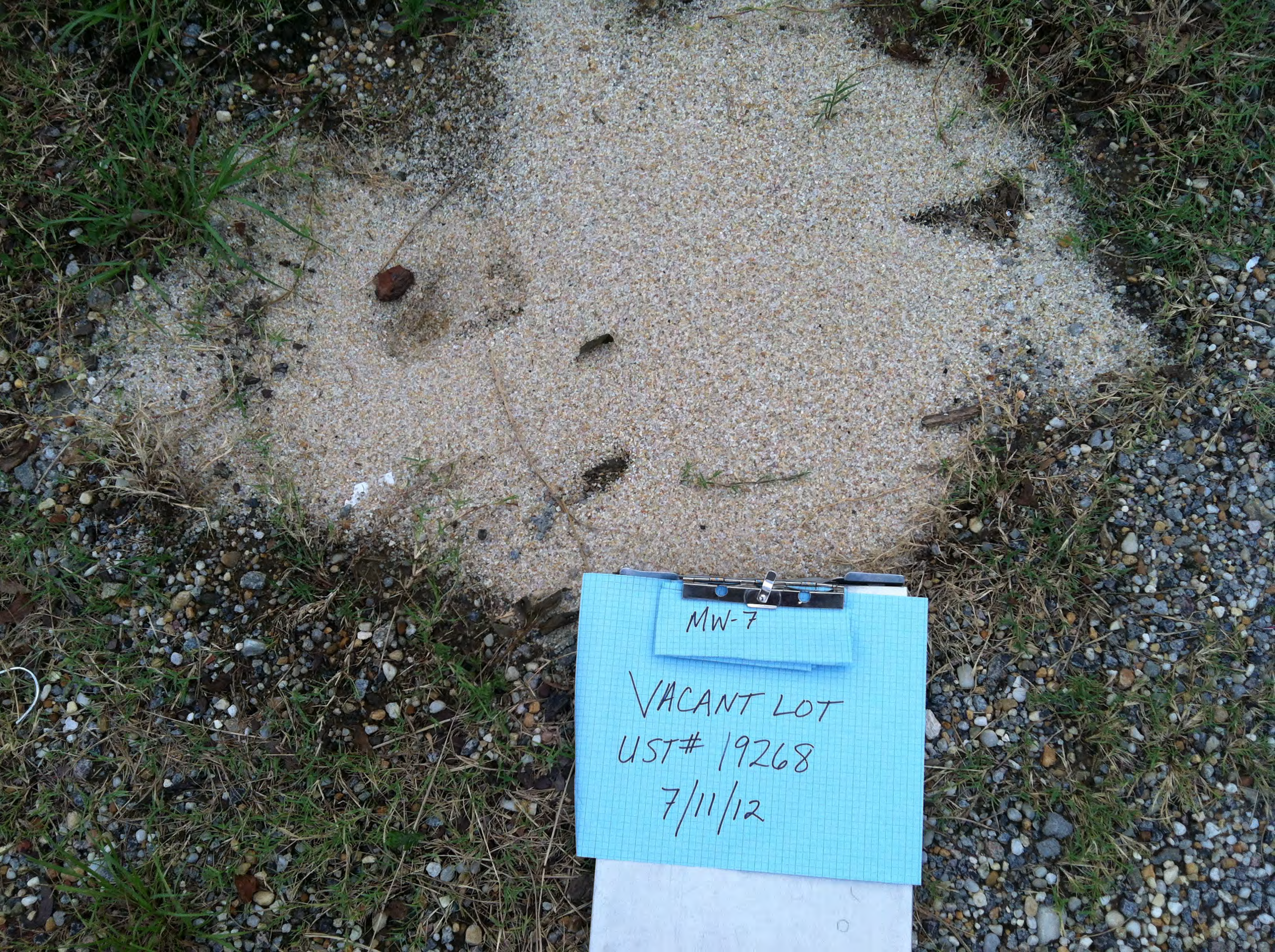
MW-2
VACANT LOT
UST# 19268
7/11/12

MW-3
VACANT LOT
UST# 19268
7/11/12

MW-4
VACANT LOT
UST# 19268
7/11/12

MW-5
VACANT LOT
UST# 19268
7/11/12

MW-6
VACANT LOT
UST# 19268
7/11/12


MW-7
VACANT LOT
UST# 19268
7/11/12

MW-8

VACANT LOT

UST# 19268

7/11/12

MW-9
VACANT LOT
UST# 19268
7/11/12

MW-10

VACANT LOT

MW-11
VACANT LOT
UST# 19268
7/11/12

MW-12
VACANT LOT
UST# 19268
7/11/12

MW-13
VACANT LOT
UST# 19268
7/11/12

MW-14
VACANT LOT
UST# 19268
7/11/12

MW-15
VACANT LOT
UST# 19268
7/11/12

MW-16
VACANT LOT
UST# 19268
7/11/12

D H E C

PROMOTE PROTECT PROSPER

Catherine B. Templeton, Director

Promoting and protecting the health of the public and the environment

AUG 0 6 2012

BERNIE WRIGHT
PO BOX 275
ORANGEBURG SC 29115-0275

Re: **Monitoring Well Abandonment Report**
Vacant Lot, 2309 Russell St., Orangeburg, SC
UST Permit #19268
Release reported October 18, 2006
Monitoring Well Abandonment Report received July 31, 2012
Orangeburg County

Dear Mr. Wright:

On June 26, 2012 the monitoring well network was abandoned by filling the wells with grout and removing the well pads in non-paved areas. A copy of the report is enclosed. The cooperation that you extended in allowing the investigation to take place on your property is appreciated.

On all correspondence related to this facility, please reference the UST Permit #19268. If you have any questions, please contact me at (803) 896-6584 or by e-mail at minerrs@dhec.sc.gov.

Sincerely,

Read S. Miner, P.G., Hydrogeologist
Corrective Action Section
Underground Storage Tank Management Division
Bureau of Land and Waste Management

cc: Technical File

RECEIVED
NOV 13 2024
UST DIVISION

RECEIVED
NOV 13 2024
UST DIVISION

State Lead Option
Property Access Agreement for Site Rehabilitation

Only complete this form if: You are the legal owner of the property **OR** are the designated authorized representative for the legal owner of the property.

I certify that I am the legal owner of the property identified below or serve as the authorized representative for the legal owner of the property. I authorize the South Carolina Department of Health and Environmental Control (DHEC), or a contractor selected by DHEC, to enter this property at reasonable times only to conduct assessment and corrective action activities, as required. The contractor will be designated as the contractor for the UST owner or operator for only the required environmental site rehabilitation activities. I understand that the Agency will notify me of all activities that are necessary prior to their initiation and will promptly provide to me a summary of the data upon request.

UST Permit #	19268	
Facility Name:	Vacant Lot	
Facility Address:	Corner of Buckley & Russell Street	
Facility Phone Number:	N/A	
Is facility within city limits? (check yes/no)	☐ Yes	☑ No
Name of nearest intersecting street/road/highway:	Buckley & Russell Streets	
Does public water/sewer utility service this facility?	☑ Yes	☐ No
*If no, please provide a contact name/number that can assist in the location of private water and septic tank lines:		
Name:	Bernie Wright / Brandi Wright	**Phone Number:** (803) 237-2258
Were USTs previously removed from the ground at this facility?	☐ Yes	☑ No
*If yes, please provide the name/contact number of a person that can assist in the location of the former UST(s):		
Name:		**Phone Number:**
Is the facility currently leased to someone?	☐ Yes	☑ No
*If yes, notify them of the pending work scope, and please provide their name/contact number:		
Name:		**Phone Number:**

***Please note that if vehicles or other mobile structures are parked over the location of the existing or former USTs, they should be moved prior to DHEC's contractor mobilizes to the facility.**

Name of Property Owner (Print):	Bernie L. Wright / Brandi L. Wright
Signature of Property Owner or authorized representative:	Brandi L. Wright — **Date** 11/13/2024
Affiliation (if applicable)	
Signature of Witness	Bernie L. Wright — **Date** 11/13/2024

Contact Info

Phone Numbers:	**Home:**	**Cell:** (803) 237-2258
Email Address:	drbrandiwright@gmail.com	

State Lead Option
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Facility Address:	Corner of Buckley + Russell Street	
Facility Phone Number:	N/A	
Is facility within city limits? (check yes/no)	☐ Yes	☑ No
Name of nearest intersecting street/road/highway:	Buckley + Russell Streets	
Does public water/sewer utility service this facility?	☑ Yes	☐ No
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Signature of Property Owner or authorized representative:	Brandi L. Wright — **Date** 11/13/2024
Affiliation (if applicable)	
Signature of Witness	Bernie L. Wright — **Date** 11/13/2024

Contact Info

Phone Numbers:	**Home:**	**Cell:** (803) 237-2258
Email Address:	drbrandilwright@gmail.com	