INL/EXT-11-24192

Permanent Closure of the TAN-664 Underground Storage Tank

December 2011

The INL is a U.S. Department of Energy National Laboratory
operated by Battelle Energy Alliance

INL/EXT-11-24192

Permanent Closure of the TAN-664 Underground Storage Tank

December 2011

Idaho National Laboratory
Idaho Falls, Idaho 83415

http://www.inl.gov

Prepared for the
U.S. Department of Energy
Office of Nuclear Energy
Under DOE Idaho Operations Office
Contract DE-AC07-05ID14517

CONTENTS

FIGURES

TABLES

Permanent Closure of the TAN-664 Underground Storage Tank

1. PURPOSE

This closure package documents the site assessment and permanent closure of the TAN-664 gasoline underground storage tank in accordance with the regulatory requirements established in 40 CFR 280.71, "Technical Standards and Corrective Action Requirements for Owners and Operators of Underground Storage Tanks: Out-of-Service UST Systems and Closure."

2. INTRODUCTION

The TAN-664 gasoline underground storage tank is a 15,000-gallon, double-walled, fiberglass-reinforced plastic tank, with pressurized double-walled fiberglass piping, and is located at the Idaho National Laboratory (INL) Test Area North (TAN) facility. The tank is owned by the Department of Energy and operated by Battelle Energy Alliance (BEA). The tank provided gasoline for motor vehicle use via the TAN-664 fuel dispenser. This tank is identified under Site ID 3560, #6-120044-17 in the Idaho Department of Environmental Quality (DEQ) underground storage tank database and is identified as tank 98TAN00491 in the INL tank database. The tank leak detection system was a Veeder-Root TLS-350 tank monitoring, automatic tank gauging system with continuous statistical leak detection. Mechanical line leak detector and line tightness tests were performed annually on the pressurized piping.

In 2010, it was determined that the TAN-664 fueling station would no longer be needed due to closure of many of the TAN facilities. The fuel station building (TAN-664) and the associated underground storage tank were included in the scope of work for an upcoming demolition project. Key personnel that were involved in this closure/demolition activity are listed in Table 1.

Table 1. Key personnel.

Title/Organization	Name	Responsibilities
Project Manager	Colvin Jergins*	Project execution and completion
Facility Manager	Don Blatter	Manage/approve facility activities
Environmental Compliance	Brad Griffith	Coordinate UST closure activity
Project Supervisor	Delbert Loosli	Project implementation

*The previous project manager (Roderick Nelson) retired during this closure activity and was replaced by Colvin Jergins.

In preparation for demolition and permanent tank closure, the remaining fuel in the line and tank was pumped out on June 8, 2011, and the tank was placed in temporary closure in accordance with 40 CFR 280.70.

3. PERMANENT CLOSURE

In accordance with 40 CFR 280.71(a), a 30-day closure notification was mailed on June 29, 2011, (Appendix A, CCN 224593) notifying Idaho DEQ of BEA's intent to permanently close (grout) the TAN-664 gasoline underground storage tank. A sampling and analysis plan was developed for sampling the soils under the underground storage tank system. The Idaho DEQ Regional Office in Idaho Falls (i.e., S. Short and S. Heaton) requested a copy of the sampling and analysis plan in preparation for the closure. The sampling and analysis plan was sent to both the Idaho DEQ State and Regional Offices on July 8, 2011 (Appendix B, CCN 224670). Idaho DEQ also requested they be notified of the sampling date so they could observe the sampling activities.

On July 18, 2011, INL's Environmental Monitoring personnel collected soil samples under both the underground storage tank and supply line in accordance with the sampling and analysis plan. Idaho DEQ personnel, Stacy Short and Steve Heaton, were present for the sampling activity. A trailer-mounted power probe was used to collect the samples. BEA's industrial hygienist used a MiniRae 2000 Photoionization Detector to scan the probe holes and soil samples; no hydrocarbons were detected. Soil samples were sent to Test America-St. Louis for analysis. Laboratory analysis was requested for benzene, toluene, xylenes, MTBE, and naphthalene because these are the chemicals of interest in Table 1 of IDAPA 58.01.24.800.01, "Chemicals of Interest for Various Petroleum Products," for unleaded gasoline.

Test America-St. Louis sent the final analytical report on July 28, 2011, to INL's Environmental Monitoring personnel. This analytical report was sent to Stacy Short of Idaho DEQ on September 22, 2011(Appendix C, CCN 225390). Sample results showed non-detection for the chemicals of interest for all samples that were taken. Concentrations were under the residential use screening levels identified in Table 2 of IDAPA 58.01.24.800.02, "Residential Use Screening Levels."

After the analytical results were received, facility craft personnel accessed the inside of the tank through the west manhole and removed all remaining liquids (i.e., a small amount at the slightly sloped end) with an air-peristaltic pump and mopped the tank out with absorbent pads. Waste that was generated during this process was disposed of through INL's Waste Generator Services personnel. All liquids and accumulated sludges were removed, meeting the requirement in 40 CFR 280.71(b), "Permanent Closure and Changes-In-Service" (Figure 1).

On September 21, 2011, Stacy Short of the Idaho DEQ Regional Office in Idaho Falls was notified (CCN 225378) of the date BEA intended to fill the TAN-664 underground storage tank with grout, closing it in place. This notification was given more than 48 hours prior to grouting the tank. Ms. Short indicated she and Steve Heaton would like to be present during the grouting activity and would like to complete compliance inspections for the Advanced Test Reactor Complex, Naval Reactors Facility, and TAN. On September 26, 2011, Ms. Short scheduled compliance inspections for the Advanced Test Reactor Complex, Naval Reactors Facility, and the TAN underground storage tanks on the same day as the tank grouting (September 27, 2011).

On September 27, 2011, Stacy Short and Steve Heaton finished the compliance inspections with the TAN diesel underground storage tank and were given the opportunity to witness the scheduled grouting activity. However, they elected to not observe the tank grouting due to schedule restraints. Cement trucks began arriving at approximately 1:00 p.m. and continued on throughout the afternoon. Approximately 72 y3 of grout were used to completely fill the underground storage tank (Figures 2 through 4). The grouted underground storage tank was later covered with soil and the site was leveled to the surrounding land surface and placed in a safe configuration.

4. SITE ASSESSMENT AND CONCLUSION

This site assessment was performed in accordance with IDAPA 58.01.24.200, "Risk Evaluation Process." A screening evaluation was performed according to the previously submitted sampling and analysis plan of the TAN-664 fuel tank (Appendix B). This included collection of media-specific (soil) samples and analysis for the chemicals of interest (benzene, toluene, xylenes, MTBE, and naphthalene) for unleaded gasoline (IDAPA 58.01.24.200.a and b. and IDAPA 58.01.24.800.01, Table 1.)

Sample results (Appendix C) were received on July 28, 2011, and were compared to the maximum media-specific (soil) petroleum contaminant concentrations identified in IDAPA 58.01.24.800.02, Table 2. Sample results showed non-detection for the chemicals of interest and were below the levels identified in Table 2.

According to IDAPA 58.01.24.200.c., if the concentrations of the chemicals of interest are below the Table 2 screening levels, the owner/operator can petition for site closure. This site assessment meets the requirements of IDAPA 58.01.24.200 and approval of the final closure of the TAN-664 gasoline underground storage tank is requested. A final updated copy of the 30-day closure notification has been included.

Figure 1. Empty underground storage tank.

Figure 2. Begin grouting.

Figure 3. Continued grouting.

Figure 4. TAN-664 gasoline underground storage tank filled with grout.

5. APPENDIXES

Appendix A, CCN 224593, Notification of Closure

Appendix B, CCN 224670, Sampling and Analysis Plan

Appendix C, CCN 225390, Sample Analytical Report

Appendix A
CCN 224593, Notification of Closure

Idaho National Laboratory INL

June 29, 2011 CCN 224593

Kristi Lowder
UST Coordinator
Idaho Department of Environmental Quality
1410 North Hilton
Boise, ID 83706

SUBJECT: Notification for Underground Storage Tank Closure at Idaho National Laboratory, Test Area North

Dear Ms. Lowder:

This letter provides 30-day notification of intent to close an underground storage tank located at the Idaho National Laboratory, Test Area North (Site 3560 -6-120044*17). This notice is submitted for Battelle Energy Alliance, LLC (BEA) as the operating contractor for this project.

The enclosed notification provides the necessary information and notification required by Title 40 CFR 280, Subpart G. Please note that a follow up notification will be submitted with the required site assessment and the information required in section XI. BEA has communicated with the Idaho DEQ Regional Office in Idaho Falls (S. Short and S. Heaton) regarding this closure and will provide them with a copy of this notification, a sample plan (to be submitted by July 8, 2011) and a 48-hour notification prior to closure.

If you have any questions, please contact Brad Griffith at (208) 533-4530.

Sincerely,

Jo Anna Stenzel, Director
Environmental Support & Services

BKG:AT

Enclosure

cc: J. Alvarez, INL, MS 3695
P. K. Bowers, DOE-ID, MS 1226
P. J. Breidenbach, INL, MS 6146
R. R. Chase, INL, MS 3695
S. D. Dossett, INL, MS 3405
R. A. Gallegos, DOE-ID, MS 1216
J. J. Grossenbacher, INL, MS 3695
S. Heaton, DEQ, Idaho Falls
S. M. Olson, DOE-ID, MS 1240
T. L. Perkins, DOE-ID, MS 1216
S. Short, DEQ, Idaho Falls
D. M. Storms, INL, MS 3898
J. R. Sturm, DOE-ID, MS 1216

P.O. Box 1625 • 2525 North Fremont Ave. • Idaho Falls, Idaho 83415 • 208-526-0111 • www.inl.gov
Battelle Energy Alliance, LLC

bcc: T. L. Carlson, MS 3405
J. F. Graham, MS 3428
B. K. Griffith, MS 7113
S. D. Lee, MS 3405
T. A. Miller, MS 3428
R. V. Nelson, MS 3406
N. E. Stanley, MS 4131
D. W. Wagoner, MS 3405
INL Correspondence Control, MS 3640, email: BEACC@inl.gov
Environmental Correspondence, MS 3405, email: ENVAFF@inl.gov
J. A. Stenzel Letter Log (JAS-53-11)

Uniform File Code: 5163
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Retention Schedule: Cut off annually. Destroy after 75 years

NOTE: Original disposition authority, retention schedule, and Uniform Filing Code applied by the sender may not be appropriate for all recipients. Make adjustments as needed.

DEQ Version of EPA 7530-1 (Revised 5/10)

NOTIFICATION FOR UNDERGROUND STORAGE TANK SYSTEMS	Facility ID
Idaho Department of Environmental Quality, 1410 N Hilton, Boise ID 83706	3560 -6-120044*17

TYPE OF NOTIFICATION

☒ Notice ☐ New Facility (site diagram & install testing docs required) ☐ Updates ☒ Closure

INSTRUCTIONS – See additional instructions on page 7

Please type or use ink. This form must be completed for each location containing underground storage tanks. If more than five (5) tanks are owned at this location , photocopy the following sheets, and staple continuation sheets to the form (pages 3, 4, 5, & 6)

GENERAL INFORMATION

Notification is required by law for all underground tanks that have been used to store regulated substances since January 1, 1974, that are in the ground as of May 8, 1986, or that are brought into use after May 8, 1986. The information requested is required by Section 9002 of the Resource Conservation and Recovery Act, (RCRA), as amended.

The primary purpose of this notification program is to locate and evaluate underground tanks that will store, do store, or have stored petroleum or hazardous substances. It is expected that the information you provide will be based on reasonably available records, or in the absence of such records, your knowledge, belief, or recollection.

Who must notify? Unless exempted, owners of underground tank systems that store or will store regulated substances must notify DEQ.

1. Owner means -

a) in the case of an underground storage tank in use on November 8, 1984, or brought into use after that date, any person who owns an underground storage tank used for the storage, use, or dispensing of regulated substances, and

b) in the case of any underground storage tank in use before November 8, 1984, but no longer in use on that date, any person who owned such tank immediately before the discontinuation of its use

c) in the case of a new installation on or after April 2, 2008, any person who will install an underground storage tank system

d) in the case of an underground storage tank closure, any person who will remove or close in place such tank

e) any facility that has undergone any changes to facility information or tank system status (only amended tank information needs to be included).

What tanks are included? Underground storage tank is defined as any one or combination of tanks that (1) is used to contain an accumulation of "regulated substances," and (2) whose volume (including connected underground piping) is 10% or more beneath the ground. Some examples are underground tanks storing gasoline, used oil, diesel fuel, industrial solvents, pesticides, herbicides, or fumigants.

What tanks are excluded? Tanks with a capacity of 110 gallons or less are not subject to notification. Other tanks excluded from notification are:

1. farm or residential tanks of 1,100 gallons or less capacity used for storing motor fuel for noncommercial purposes;
2. tanks used for storing heating oil for consumptive use on the premises where stored;
3. septic tanks;
4. pipeline facilities (including gathering lines) regulated under the Natural Gas Pipeline Safety Act of 1968, or the Hazardous Liquid Pipeline Safety Act of 1979, or which is an intrastate pipeline facility regulated under State laws;
5. surface impoundments, pits, ponds, or lagoons;
6. storm water or waste water collection systems;
7. flow-through process tanks;
8. liquid traps or associated gathering lines directly related to oil or gas production and gathering operations;
9. storage tanks situated in an underground area (such as a basement, cellar, mine working drift, shaft, or tunnel) if the storage tank is situated upon or above the surface of the floor.

What substances are covered? The notification requirements apply to underground storage tanks that contain regulated substances. This includes any substance defined as hazardous in section 101 (14) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), with the exception of those substances regulated as hazardous waste under Subtitle C of RCRA. It also includes petroleum, e.g., crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute).

Where to notify? Send completed forms to:

UST Coordinator
Idaho Department of Environmental Quality
1410 N. Hilton
Boise, ID 83706 Telephone: (208) 373-0502

When to notify? Owners of underground storage tank systems that are still in the ground must notify immediately. Owners who bring underground storage tanks into use after May 8, 1986, must notify within 30 days of bringing the tanks into use. Owners who will install an underground storage tank system must notify 30 days prior to the installation. Owners who will replace 100% of piping connected to a single underground storage tank must notify 24 hours prior to the replacement. Owners who will close an underground storage tank must notify 30 days prior to the closure. Owners who have closed an underground storage tank must notify and indicate the date of closure.

Penalties: Any owner who knowingly fails to notify or submits false information shall be subject to a civil penalty.

EPA estimates public reporting burden for this form to average 30 minutes per response including time for reviewing instructions, gathering and maintaining the data needed and completing and reviewing the form. Send comments regarding this burden estimate to Chief, Information Policy Brand PM-223, US Environmental Protection Agency, 401 M Street, Washington D.C. 20460, marked "Attention Desk Officer for EPA." This form amends the previous notification form as printed in 40 CFR Part 280, Appendix I.

I. OWNERSHIP OF TANK(S)	II. LOCATION OF TANK(S)
Name U.S. Department of Energy, Idaho Operations Office (DOE-ID) Mailing Address 1955 Fremont Avenue City Idaho Falls State Idaho ZIP Code 83415 County Bonneville Phone Number (With Area Code) (208)526-2493	**(If same as Section I, mark box here ☐)** Name Test Area North- Idaho National Laboratory Street Address (no PO Box) _____ City Scoville State Idaho ZIP Code 83415 County Butte

Email sturmjr@id.doe.gov	

III. TYPE OF OWNER

☐ Commercial ☐ Private ☐ State Government

☒ Federal Government ☐ Local Government

IV. TYPE OF FACILITY

Select the Appropriate Facility Description

☐ Gas Station	☐ Local Government	☐ Contractor
☐ Petroleum Distributor	☐ State Government	☐ Trucking/Transport
☐ Air Taxi (Airline)	☒ Federal – Non-Military	☐ Utilities
☐ Aircraft Owner	☐ Federal – Military	☐ Farm
☐ Auto Dealership	☐ Commercial	☐ Residential
☐ Railroad	☐ Industrial	☐ Marina
	☐ Hospital	☐ (Other)

V. CONTACT PERSON IN CHARGE OF TANKS

Name Roderick V. Nelson
Title Project Manager
Address 1955 Fremont Avenue, Idaho Falls, Idaho 83415

City Scoville
State ID
Zip Code 83415
Phone (208) 526-9863
Email roderick.nelson@inl.gov

VI. CERTIFICATION (Read and sign after completing all sections)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

Name and official title of owner or owner's authorized representative (Print)
Name Jo Anna Stenzel
Title Director, Environmental Support and Services

Signature [signature]
Date Signed 4/29/2011

VII. FINANCIAL RESPONSIBILITY

I have met the financial responsibility requirements in accordance with 40 CFR 280 Subpart H.

Check All That Apply

☐ State Insurance Fund (PSTF)	☐ Surety Bond
☐ Commercial Insurance	☐ Letter of Credit
☐ Risk Retention Group	☐ Self Insurance
☐ Guarantee	☐ Trust Fund

☒ Other Method Allowed, Specify Federal Facility

VIII. Notices

IDENTIFICATION NUMBER	Tank No. 6-120044*17	Tank No.	Tank No.	Tank No.	Tank No.
A. 30-day Tank and Piping Installation/24-hr Piping Replacement Notifications (see Page 8)					
When will tank be installed or replaced? (mo./day/year)	NA				
When will piping be installed or replaced? (mo./day/year)	NA				
B. 30-day Notice of Closures (see Page 8)					
When will tank be closed? (mo./day/year)	8/01/2011 (Estimated)				
Date tank was last used? (mo./day/year)	6/08/2011				

Closure to be performed by:

Company **Battelle Energy Alliance** Site Supervisor: **Delbert L. Loosli**

Phone: **(208)526-8149**

IX. Ground Water Protection Measures

(Check the applicable box)

The underground storage tank system IS within 1000' of a drinking water source or system. ☒

The underground storage tank system IS NOT within 1000' of a drinking water source or system. ☐

If the owner and installer certify that the underground storage tank system is not within 1000' of an existing public water system or potable drinking water well, the owner or operator must provide and maintain documentation showing that a reasonable investigation of water systems and drinking water wells was undertaken.

X. DESCRIPTION OF UNDERGROUND STORAGE TANKS (Complete for each tank at this location)

IDENTIFICATION NUMBER	Tank No. 6-120044*17	Tank No.	Tank No.	Tank No.	Tank No.
Compartmentalized/Manifolded Tanks?	Select	Select	Select	Select	Select
Emergency Generator Tank?	No	Select	Select	Select	Select
A. Status of Tank					
Currently In Use	No	Select	Select	Select	Select
Temporarily Out of Use (Complete Section XI, Estimated Date Last Used)	06/08/2011				
Permanently Out of Use (Complete Section XI, tanks removed or closed in place)	Select	Select	Select	Select	Select
Date of Installation (mo./day/year)	11/1991				
Total Capacity (gallons)	15000				
B. Material of Tank Construction (Mark all that apply)					
Fiberglass Reinforced Plastic	☒	☐	☐	☐	☐
Cathodically Protected Steel (STIP-3)	☐	☐	☐	☐	☐
Cathodically Protected Steel (Impressed Current)	☐	☐	☐	☐	☐
Epoxy Coated Steel	☐	☐	☐	☐	☐
Composite (Steel with Fiberglass)	☐	☐	☐	☐	☐

Asphalt Coated or Bare Steel	☐	☐	☐	☐	☐
Double Walled	☒	☐	☐	☐	☐
Lined Interior	☐	☐	☐	☐	☐
Polyethylene Tank Jacket	☐	☐	☐	☐	☐
Excavation Liner	☒	☐	☐	☐	☐
Unknown	☐	☐	☐	☐	☐
Other, Please Specify	☐	☐	☐	☐	☐
Has tank been repaired? (circle one)	No	Select	Select	Select	Select

C. Piping Material (Mark all that apply)

Plastic/Flexible	☐	☐	☐	☐	☐
Fiberglass Reinforced Plastic	☒	☐	☐	☐	☐
Galvanized Steel	☐	☐	☐	☐	☐
Bare Steel	☐	☐	☐	☐	☐
Cathodically Protected (Impressed Current)	☐	☐	☐	☐	☐
Cathodically Protected (Galvanic)	☐	☐	☐	☐	☐
Corrosion Protection (Soil Isolation)	☐	☐	☐	☐	☐
Double Walled	☒	☐	☐	☐	☐
Excavation Liner	☐	☐	☐	☐	☐
Other, Please Specify	☐	☐	☐	☐	☐

D. Piping Type (Mark all that Apply)

Pressure	☒	☐	☐	☐	☐
U.S. Suction: check valve at tank	☐	☐	☐	☐	☐
Safe Suction: check valve at dispenser	☐	☐	☐	☐	☐
Gravity Feed	☐	☐	☐	☐	☐
Has piping been repaired or replaced? (circle one)	Replace	Select	Select	Select	Select
Date of the repair or replacement	1994				

E. Under-Dispenser Spill Containment (required for new installations)

Is there under-dispenser spill containment for each new dispenser island?	No

F. Substance Currently or Last Stored

Gasoline	☒	☐	☐	☐	☐
Diesel	☐	☐	☐	☐	☐
Biodiesel	Select	Select	Select	Select	Select
Ethanol (circle one)	Select	Select	Select	Select	Select
Kerosene	☐	☐	☐	☐	☐
Heating Oil	☐	☐	☐	☐	☐
Used Oil	☐	☐	☐	☐	☐
Other Petroleum Product (please specify)	☐	☐	☐	☐	☐

If not a petroleum product:

Hazardous Substance (circle one)	Select	Select	Select	Select	Select

CERCLA name and/or,					
CAS Number (Chemical Abstract Service Registry #)					
If not listed above:					
Mixture of Substances (please specify)	Select	Select	Select	Select	Select

XI. TANKS OUT OF USE OR CHANGE IN SERVICE

TANK IDENTIFICATION NUMBER	Tank No. 6-120044*17	Tank No.	Tank No.	Tank No.	Tank No.
Closing of Tank					
Tank was removed from ground	☐	☐	☐	☐	☐
Tanks was closed in ground	☐	☐	☐	☐	☐
Estimated date last used (mo./day/year)	06/08/2011				
Date tank closed (mo./day/year)					
Tank Filled with inert material (indicate material)	tank will be filled with grout				
Change in Service (no longer holds a regulated substance)	☐	☐	☐	☐	☐
Site Assessment Completed and submitted to DEQ (circle one)	Select	Select	Select	Select	Select
Evidence of a leak detected (circle one)	Select	Select	Select	Select	Select
Release reported to DEQ	Select	Select	Select	Select	Select
Date release reported to DEQ					

XII. CERTIFICATION OF COMPLIANCE

(Complete for installation of all new tanks or for upgrading existing tanks at this location)

TANK IDENTIFICATION NUMBER	Tank No.	Tank No.	Tank No.	Tank No.	Tank No.
A. Installation (Mark all that apply)					
Installer certified by tank and piping manufacturers	☐	☐	☐	☐	☐
Installer certified or licensed by a State	☐	☐	☐	☐	☐
Installation is inspected by a registered engineer	☐	☐	☐	☐	☐
Installation inspected by DEQ	☐	☐	☐	☐	☐
Manufacturer's installation checklists have been completed	☐	☐	☐	☐	☐

B. Release Detection (Mark one)	Tank	Piping	Tank	Piping	Tank	Piping	Tank	Piping	Tank	Piping
Automatic Tank Gauging	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Interstitial Monitoring Double Walled Tank/Piping	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Inventory Control/Manual Tank Gauging with Tank Tightness Testing	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
SIR	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Manual Tank Gauging (1,000 gal or less)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Vapor Monitoring	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Groundwater Monitoring	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Mechanical Line Leak Detectors	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Electronic Line Leak Detectors	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Annual Line Tightness Testing	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3-year Line Tightness Testing	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Other Method Allowed by Implementing agency:	☐		☐		☐		☐		☐	

C. Spill and Overfill Protection

Overfill device installed	**Select**	**Select**	**Select**	**Select**	**Select**
Spill bucket installed	**Select**	**Select**	**Select**	**Select**	**Select**

Note: The installer must complete this section only if work on your underground storage tank system has taken place since December 22, 1988.

OATH: I certify the information concerning installation is true to the best of my belief and knowledge.

Installation Company _____

Address: _____

Installer Name _____

Phone _____

Signature _____

Date_____

Appendix B
CCN 224670, Sampling and Analysis Plan

Idaho National Laboratory INL

July 8, 2011

CCN 224670

Kristi Lowder
UST Coordinator
Idaho Department of Environmental Quality
1410 North Hilton
Boise, ID 83706

SUBJECT: Sampling and Analysis Plan for the Underground Storage Tank Closure at Idaho National Laboratory Test Area North

Dear Ms. Lowder:

This letter provides the Sampling and Analysis Plan (SAP) for permanent closure of an underground storage tank located at Idaho National Laboratory Test Area North (Site 3560 -6-120044-17). This plan is submitted for Battelle Energy Alliance, LLC (BEA) as the operating contractor for this project. The 30-day closure notification was submitted on June 29, 2011 (CCN 224593). The attached SAP was requested by the Idaho Department of Environmental Quality (DEQ) Regional Office in Idaho Falls (S. Short, S. Heaton) during a telephone conversation on June 20, 2011. The Idaho DEQ Regional Office also requested they be notified of the date the sampling will be performed so that they may be present. BEA will provide the Idaho DEQ Regional Office in Idaho Falls with a copy of this SAP and contact them by telephone to coordinate the sample date.

If you have any questions, please contact Brad Griffith at (208) 533-4530.

Sincerely,

for Bruce M. Anglea
Jo Anna Stenzel, Director
Environmental Support & Services

BKG:AT

Enclosure

P.O. Box 1625 • 2525 North Fremont Ave. • Idaho Falls, Idaho 83415 • 208-526-0111 • www.inl.gov
Battelle Energy Alliance, LLC

cc: J. Alvarez, INL, MS 3695
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R.A. Gallegos, DOE-ID, MS 1216
S. Heaton, DEQ, Idaho Falls
C. D. Melbihass, INL, MS 3406
S. M. Olson, DOE-ID, MS 1240
T. L. Perkins, DOE-ID, MS 1216
S. Short, DEQ, Idaho Falls
D. M. Storms, INL, MS 3888
J. R. Sturm, DOE-ID, MS 1216

bcc: T. L. Carlson, MS 3405
C. Barnhart, MS 0302
J. F. Graham, MS 3428
B. K. Griffith, MS 7113
S. D. Lee, MS 3405
T. A. Miller, MS 3428
R. V. Nelson, MS 3406
N. E. Stanley, MS 4131
D. W. Wagoner, MS 3405
INL Correspondence Control, MS 3640, email: BEACC@inl.gov
Environmental Correspondence, MS 3405, email: ENVAFF@inl.gov
J. A. Stenzel Letter Log (JAS-55-11))

Uniform File Code: 5163
Disposition Authority: ENV1-d-13
Retention Schedule: Cut off annually. Destroy after 75 years

NOTE: Original disposition authority, retention schedule, and Uniform Filing Code applied by the sender may not be appropriate for all recipients. Make adjustments as needed.

Effective Date: 07/08/2011

Sampling and Analysis Plan for the Closure of TAN-664 Fuel Tank

The INL is a U.S. Department of Energy National Laboratory operated by Battelle Energy Alliance.

CONTENTS

ACRONYMS

AA	Alternative Actions
CFR	Code of Federal Regulations
CI	Confidence Interval
COC	chain of custody
DEQ	Idaho Department of Environmental Quality
DI	Deionized Water
DOE-ID	Department Of Energy-Idaho
DQO	data quality objectives
DS	Decision Statement
EPA	Environmental Protection Agency
GDE	Guide
IH	industrial hygienist
INL	Idaho National Laboratory
LI	Laboratory Instructions
MCP	management control procedure
MQO	Measurement Quality Objective
MS/MSD	matrix spike/matrix spike duplicate
P/A	precision/accuracy
POD	Plan of the Day
PSQ	Principal Study Question
QA	quality assurance
QC	quality control
RCRA	Resource Conservation Recovery Act
RCT	radiological control technician
RDL	contract required detection limit
RWP	Radiation Work Permit
SAP	Sampling and Analysis Plan
SOW	statement of work
TAL	target analyte list
TAN	Test Area North
TAT	turn around time
TOS	task order work statement
UTS	Universal Treatment Standards (from RCRA land disposal regulations)
WGS	Waste Generator Services
WTS	Waste Technical Specialist

1. INTRODUCTION

TAN – 664 fuel tank is listed in the INL Tank Inventory as 98TAN00491, the operator is Battelle Energy Alliance, one of the current contractors at the INL. The tank is #6-120044-17 in the Idaho Dept. of Environmental Quality (DEQ) UST database (Site ID=3560). Map-1 in appendix A shows the tank location. The project completed the UST Notification Form on 06/29/2011 and submitted it to Kristi Lowder, UST Coordinator for IDEQ. The DEQ Idaho Falls office was given a copy on 6/30/2011. The DEQ Idaho Falls office (S. Heaton, S. Short) was also contacted by phone on 6/20/2011 at which time they indicated they would like to review the Sampling and Analysis Plan for the closure and be present during the sampling activity. The DEQ Idaho Falls office will be notified prior to sampling and 48 hours prior to actual closure. A revised signed UST Notification Form for the closure will be submitted after receiving the site assessment results.

This tank is a 15,000 gallon fiberglass reinforced plastic underground storage tank installed in 1991. The tank contained gasoline; on 2/17/11 Howard Pugmire confirmed via telecon that the tank was used for unleaded gasoline only. On 6/08/11, Leonard Petroleum contracted with Conrad and Bischoff to transfer the remaining fuel in the TAN Gasoline UST to other tanks at the INL. They drained all the fuel out of the line from the dispenser to the tank and pumped the remaining fuel out of the tank into a fuel truck. This fuel was taken to various other tanks around the INL. Leonard Petroleum personnel (Joe Browning) can confirm this activity and invoice #28051C provides documentation. The last passing CSLD result was on that day (6/08/11). The UST met all the requirements for temporary closure per 40 CFR 280.70 at that time. This SAP will outline the sampling to be performed before the tank is permanently closed. The roles and responsibilities are listed in Table 1 of the people who will be involved in this tank closure project.

Table-1 Roles and responsibilities.

Title/Organization	Name	Responsibilities
Project Manager	Roderick V. Nelson	Project execution and completion, budgets and schedules
Facility Supervisor	Jerry Pruett and Tom Haynes	Approves and schedules sampling activities in the TAN Facility
Environmental Compliance	Brad Griffith	Coordinate UST closure activity.
Sampling Team	Trained TSD staff	Practice behavior-based safety (BBS), collect samples, minimize exposure, and minimize waste generation.
Environmental Monitoring	Scott Lee, Peggy Scherbinske, Michael Towler	Write SAP, develop lab contract, package and ship samples.
Industrial Hygiene	To be Determined	Health and safety
Radiation Control	To be Determined	Radiation Control 752 Office
Waste Generator Services	Marshall Marlor	Ensure waste is handled properly
Packaging and Transportation	Robert Flores, Michael Towler	Ensure samples are properly packaged for shipment

Laboratory Analysis	State Certified Contract Laboratory (i.e., Test America Laboratories or equivalent)	Sample analyses, minimum detection limits achieved

2. PROJECT DESCRIPTION

2.1 Background

TAN- 664 fuel tank is scheduled to be permanently closed. The tank is a fiberglass reinforced plastic underground storage tank installed in 1991. The dimensions of the tank are 10'4" in diameter X 29'5" in length and have a capacity of 15,000 gallons. It will be closed in place and filled with grout instead of being removed from the ground. Because the tank was used for unleaded gasoline the analytes of interest are benzene, toluene, ethyl benzene, xylenes (BTEX), MTBE, and naphthalene (from Table 800.01 of IDAPA 58.01.24). An estimated four soil samples will be collected to verify that the content of the tank has not leaked out over time. Three samples will be collected below the bottom of the tank: one on each end and one on the South side the tank. One soil sample will be collected below the piping near the dispenser. All samples will represent the native material below the tank installation. The first 1 foot of the native material will be targeted for the sample collection.

2.2 Data Usage

The analytical results from the samples will be used to verify the integrity of tank and that the native material is free of petroleum contaminates. The overall goal is to provide substantial data to the Agencies involved to show that the site assessment requirements for UST closures have been met.

2.2.1.1 Data Quality Objectives (DQOs)

The objective of this sampling activity is to obtain analysis from representative samples of native soils for comparison with the State screening levels for petroleum products. The data quality objectives (DQO) process is used to specify, qualitatively and quantitatively, the objectives for the data collected. The DQO process is described in the Environmental Protection Agency (EPA) documents *Guidance for the Data Quality Objectives Process* (EPA-QA/G4) and in *Data Quality Objectives for Hazardous Waste Site Investigations* (EPA QA/G-4HW). The DQO process has several steps, each of which has specific outputs. Each of the following subsections corresponds to a step in the DQO process, and the output for each step is provided as appropriate.

2.2.1.2 Decision Statement

This step in the DQO process is used to identify the principal study questions (PSQs) and alternative actions (AAs) that could result from resolution of the PSQs, and to combine the PSQs and AAs into decision statements.

The objective of this waste characterization activity is to answer the following principal study question:

PSQ: Are the concentrations of the contaminants of concern in the native soil below the State screening levels?

The alternative actions to be taken based on resolution of the PSQ are:

AA: If the contaminant concentrations are below the State screening levels then the area will be considered to meet the State closure performance standards and the documentation will be maintained in the facility operating files to support future closure. If concentrations are above the State screening levels then the tank will need to be removed and cleanup activities will be needed. Sampling will be performed once the cleanup is done to show the State Screening Levels are being met and concentrations are below the EQLs.

Combing the PSQ and AA results in the following decision statement (DS):

DS: Determine whether the tank in question can be closed in place or if it needs to be removed for cleanup activities.

2.2.1.3 Decision Inputs

The purpose of this step is to identify informational inputs that will be required to resolve the decision statement and determine which inputs require measurements. The information needed to resolve the decision statement listed above is the identification and quantification of the State Screening Limits for the targeted analyte. During this step of the DQO process the basis for an action level is established. The action level is the threshold value that provides the criterion for choosing between alternative actions. Action levels may be based on regulatory thresholds or standards, or they may be derived from problem-specific considerations such as risk analysis.

2.2.1.4 Study Boundaries

This step in the DQO process defines the spatial and temporal boundaries of the study covered by the decision statement. Defining the spatial boundaries involves specification of characteristics that define the population of interest, defining the physical extent of the study area, and may include subdividing the population of interest into specific areas (or strata) of interest. The temporal boundaries define the duration of the study, or specific parts of the study. The appropriate outputs of this step are a detailed description of the spatial and temporal boundaries of the problem and a discussion of any practical constraints that may interfere with the study. The study boundary for this SAP is the area directly under and around the tank. Soil grab samples for benzene, toluene, ethyl benzene, and xylenes (BTEX), MTBE, and naphthalene will be collected from native soils under the tank to determine whether contaminants are present.

2.2.1.5 Decision Rule

The objective of this step is to define the parameters of interest that characterize the population, specify the action level, and integrate previous DQO outputs into a single statement that defines the conditions that would cause the decision maker to choose among alternative actions. The decision rule typically takes the form of an "*If...then*" statement describing the action to take if one or more conditions are met. If inorganic contaminant concentrations in the transfer line are above the State screening levels then additional decontamination will be performed until verification samples confirm that concentrations are below the State screening levels.

2.2.1.6 Measurement Quality Objectives

Measurement Quality Objectives (MQOs) are specifications for precision, accuracy, and completeness that measurements must meet to produce acceptable data.

The laboratory evaluates the accuracy of the analyses with an internal laboratory QA/QC program utilizing matrix spikes. The accuracy goals established by the laboratory will be considered acceptable for this project. The completeness goal for this project is 100% which means all samples will be collected and all analysis will be acceptable and contain no rejected data.

The laboratory will perform initial data reduction and data quality review. In addition, validation to Level B will be performed by an outside validator. Level B validation includes a check of the following, at a minimum:

- Chain of Custody
- Requested versus reported analyses
- Analysis holding times
- Method blank criteria (e.g. contamination)
- Matrix spike/matrix spike duplicate recoveries/precision (MS/MSD)
- Duplicate sample precision
- Surrogate spike recoveries

The required sample bottles, preservation, and holding times are in Table 2.

2.3 Sample Collection and Documentation

Collection of the samples will be conducted using the work control process. Specifically LI-328 AND LI-114 will be used to identify the hazards and mitigations, training, and PPE. In the case of finding something unexpected while sampling(RAD, Organic vapors,) "a stop work "will be instituted , the LI directs you to key personnel to assess the new hazards(IH,RCT). Collection of the samples, decontamination, shipment, labeling, and chain of custody, will follow MCP, LI, and/ or guides (GDEs) as identified below.

LWP-9101, "INL Procedure Usage"

GDE-9103 "Conduct of Operations Guidance for Communications"

MCP-8523, "Management of Hazardous and Nonhazardous Samples"

LI-359, "Cleaning of Environmental Monitoring Services Sampling Equipment"

LI-335, "Working in an Environmental Monitoring Sample Preparation Area"

LI-328, "Umbrella Sampling Plan"

LI-114, "Use of the PowerProbe"

Samples will be numbered using the prefix "BEA" followed by a unique six digit number. The sample numbers, labels and Chain of Custody (COC) forms will be generated in the SAP Application program by Environmental Site Services personnel. Field activities for this sampling event will be documented in the non-routine logbook INL-NR-006.

2.4 Sampling Design and Procedures

The two sampling methods that will be available for sample collection from below the tank are the use of a hand auger and/or the use of the PowerProbe direct push sampler. The hand auger will be the method of preference and will be tried first. LI-328 explains in detail the use of the hand auger for collecting soil samples and is the procedure that will be followed when the hand auger is being used. LI-114 explains in detail the use of the PowerProbe for sampling soil and is the procedure that will be followed when the PowerProbe is being used. Each of the LIs that will be used list the hazards associated with each sampling method, it also contains a list of the mitigations of the hazards. The tank is 10.5' in diameter, the top of the tank is 3' below ground surface, and there is a minimum of 12" bed of gravel below the tank. With both sampling methods we will auger down until we find native soil instead of the gravel tank bed and then collect the sample from the first 1' of soil. The depth to be sampled is approximately from 14.5' to 15.5' below ground surface. We are able to use a smaller diameter auger since the required volume of sample material is only 125 ml per sampling location. The sampling tools will be completely deconned prior to use at each separate sampling location. The required number of samples for this tank abandonment will be four, one at each end of the tank, one at the center line of the tank on the south side, and one under the piping near the dispenser. See Map-2 in Appendix A for tank orientation and sample location. The sample bottle requirements, analysis, preservation, and holding times are listed below in Table 2. Once the sample is collected it will be transferred to the correct bottle, the bottle will be labeled, sealed, and placed on ice for preservation. The samples will be taken to MFC-721 SPA for packaging for transport to the lab.

Table-2 Sample bottle requirements, analysis, preservation, and holding times.

Sample location	Type	Analyte	Method	Bottle Volume/type	Preservative	Holding time
1	Grab Sample	BTEX with MTBE and Naphthalene	SW-846 8260B	125 ml AG	Cool, 4 deg. C	14 Days
2	Grab Sample	BTEX with MTBE and Naphthalene	SW-846 8260B	125 ml AG	Cool, 4 deg. C	14 Days
3	Grab Sample	BTEX with MTBE and Naphthalene	SW-846 8260B	125 ml AG	Cool, 4 deg. C	14 Days
4	Grab Sample	BTEX with MTBE and Naphthalene	SW-846 8260B	125 ml AG	Cool, 4 deg. C	14 Days

2.5 Waste Handling

All sampling derived waste will be handled according to instructions from Marshall Marlor in Waste Generator Services (WGS).

3. DATA QUALITY REQUIREMENTS AND ASSESSMENTS

3.1 Data Completeness and Representativeness

All samples collected during this activity will be prepared and analyzed according to guidelines set forth in the laboratory contract. It is imperative that the designated laboratory performs the analysis using these techniques to ensure quality, precision, accuracy, and completeness of the data. All sample collecting, handling, and selecting of analytical protocols have been chosen so the results will be as representative as possible of the media and conditions being measured.

3.2 Quality Control Requirements

QC has been discussed in Section 2.

4. DOCUMENTATION

4.1 Sample Custody

Full chain of custody will be maintained at all times, as specified in MCP-8523.

4.2 Data Reporting

All analytical results, COC, and QC measurements for each sample analyzed will be required from the laboratory with an expedited seven day Turn Around Time (TAT). Data will be forwarded to:

Peggy Scherbinske, BEA, via E-mail.

5. WASTE DISPOSAL

Any waste generated during sampling is the responsibility of the WGS. It is anticipated that discarded sampling equipment (lexan liners, decon towels, PPE) will be treated as waste until the analytical results can be reviewed to determine the proper waste disposal.

6. CORRECTIVE ACTION

Corrective actions are required whenever established control limits for an analysis are exceeded. Documentation of such corrective action is required and will be addressed in the final report.

6.1 Field Corrective Action

The initial responsibility for monitoring the quality of field measurements lies with the field personnel. If a problem occurs that might jeopardize the integrity of the project, result in failure to meet QA objectives, or impact data quality, the project manager will immediately contact the project requester.

The project manager will document the situation, the field objectives affected, the corrective actions taken, and the results of that action. Copies of documentation will be provided to the project requester. Corrective action will be implemented when the project objectives are not met or when conditions adverse to quality have been identified. Conditions adverse to quality shall be promptly identified and corrected as soon as possible. The identification, cause and corrective action to prevent reoccurrence shall be determined and documented for significant conditions adverse to quality.

6.2 Laboratory Corrective Action

The laboratory corrective action plan will be detailed in the laboratory quality program plan. The need for corrective action may come from several sources: equipment malfunctions, failure of internal QC checks, blank contamination, failure of performance or system assessments, and noncompliance with QA requirements. Laboratory measurement equipment or analytical methods that fail to meet project QC requirements will be immediately brought to the attention of the laboratory QC manager. If failure is due to the equipment malfunctioning, the equipment will be repaired and re-calibrated and the analysis repeated. All attempts will be made to repeat all affected parts of the analysis so that the end product will not be affected by failure to meet QC requirements. Nonconforming data will be qualified with a note specifying any reasons for the qualification. All incidents of failure to meet QC requirements and all corrective actions will be documented.

Corrective action reports will be immediately implemented for deficiencies noted during checks of raw data. This action will vary depending upon problems noted, and can range from correcting miscalculated data to requiring reanalysis of samples. As soon as sufficient time has elapsed for corrective action to be implemented, evidence of corrective action will be presented. Documentation of corrective action measures will be forwarded to the project manager. Corrective action documentation will include the following: a discussion of the nature of the problem, date and time of discovery, parameters affected, sample lot affected, date, time, and description of the resulting corrective action and signature of the complying manager.

The laboratory QA officer will prepare a written report on corrective action for the project manager. The report will review the validity, quality, and completeness of the data in question and if necessary make recommendations for corrective action.

7.0 References

LWP-9101, "INL Procedure Usage"

GDE-9103, "Conduct of Operations Guidance for Communications"

MCP-8523, "Management of Hazardous and Nonhazardous Samples"

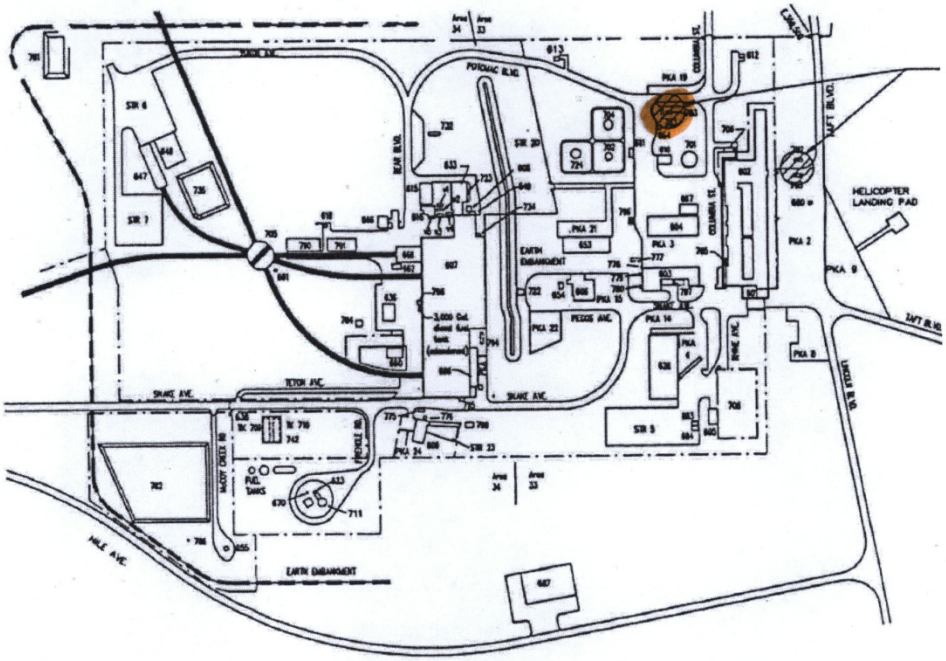
LI-359, "Cleaning of Environmental Monitoring Services Sampling Equipment"

LI-335, "Working in an Environmental Monitoring Sample Preparation Area"

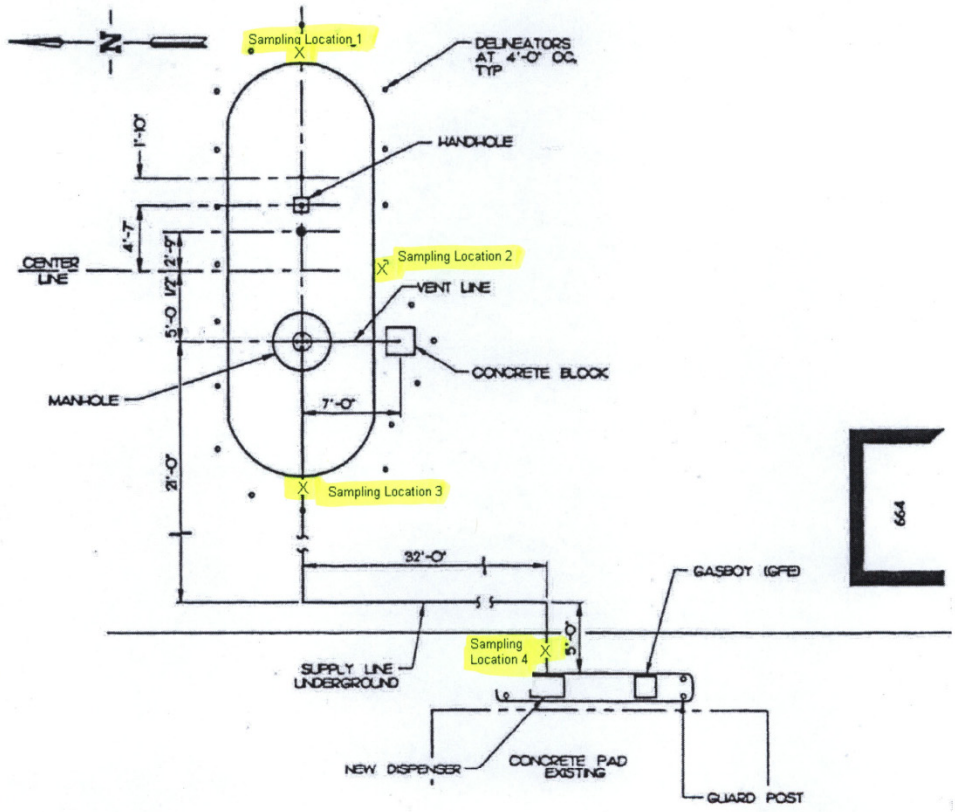
LI-328, "Umbrella Sampling Plan"

LI-114, "Use of the PowerProbe"

Appendix A



Map-1 Plan Map of TAN Area



Map-2 Plan Map Showing Sampling Locations

Appendix C
CCN 225390, Sample Analytical Report

Bradley K Griffith/GRIFBK/CC01/INEEL/US
09/22/2011 02:48 PM

To: stacy.short@deq.idaho.gov
cc: ENVIRONMENTAL CORRESPONDENCE/ENVAFF/CC01/INEEL/US@INEL, "Jason R Sturm" <STURMJR@ID.DOE.GOV>
bcc:
Subject: CCN 225390, Analytical Report TAN-664 gasoline UST

Stacy,
The analytical report for the TAN-664 UST soil sampling is attached. A final closure report will be submitted when permanent closure is complete. That report will have this analytical information in it as well. Thanks.

BEA025553_TBD_REV01 Lab Data.pdf

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Analytical Report

Battelle Energy Alliance

SDG: BEA025553_TBD
Laboratory Report Identification: F1G200464
(REVISED)

BEA-SOW-8500, Rev. 4

TOS-A1147 / TAN-664 Fuel Tank Soil Sampling

Laboratory Identification
TestAmerica - St. Louis
13715 Rider Trail North
Earth City, MO 63045
(314) 298-8566

I certify that this data package is in compliance with the terms and conditions of BEA-SOW-8500, Rev. 4 and any applicable TOSs for this project both technically and for completeness, for other than the conditions detailed in this case narrative. Release of the data contained in this data package and also in any associated computer-readable data submitted has been authorized by the laboratory manager or manager's designee.

Jim Kleszczewski
Project Manager

July 28, 2011

Case Narrative

SDG Number:	**BEA025553_TBD**
Statement of Work Number:	**BEA-SOW-8500, Rev. 4**
Project Name:	**TOS-A1147 / TAN-664 Fuel Tank Soil Sampling**

LOT NUMBER: **F1G200464 (REVISED)**

This report contains the analytical results for the four samples received under chain of custody by TestAmerica St. Louis on July 20, 2011 from Battelle Energy Alliance. These samples are associated with your TOS-A1147/ TAN-664 Fuel Tank Soil Sampling project.

This is a revised report. The reporting limits for the compounds analyzed by SW846 8260B have been corrected.

All applicable quality control procedures met method-specified acceptance criteria except as noted below..

The test results in this report meet all NELAP requirements for parameters for which accreditations are held by TestAmerica -St. Louis. Any exceptions to NELAP requirements are noted in the case narrative. The case narrative is an integral part of this report. This report shall not be reproduced except in full, without the written approval of the laboratory. This report is incomplete without the case narrative. All results are based upon sample as received, wet weight, unless noted otherwise.

Shipping and Receiving

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Observations/Nonconformances

Volatiles by SW846 8260B

Batch: 1206129
The CCV %Ds for Acrolein and Nonanal are outside the established QC limits. These analytes are not part of the analysis request and thus this excursion does not affect the data.
Affected Samples:
F1G200464 (1): BEA025553_TBD
F1G200464 (2): BEA025554_TBD
F1G200464 (3): BEA025556_TBD
F1G200464 (4): BEA025557_TBD

METHODS SUMMARY

F1G200464

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
Percent Moisture	MCAWW 160.3 MOD	MCAWW 160.3 MOD
Volatile Organics by GC/MS	SW846 8260B	SW846 5030B

References:

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

F1G200464

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
MK2L5	001	BEA025553_TBD	07/18/11	12:15
MK2L6	002	BEA025554_TBD	07/18/11	14:15
MK2L7	003	BEA025556_TBD	07/18/11	14:55
MK2L8	004	DEA025557_TBD	07/18/11	15:10

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

GC/MS SAMPLE AND QC DATA

Form I (s)

Volatile Organics

Battelle Energy Alliance

Lab Name:TestAmerica Laboratories, Inc. SDG Number:BEA025553_

Matrix: (soil/water) SOLID Lab Sample ID:F1G150469 001
Method: SW846 8260B
Volatile Organics, GC/MS (8260B)

Sample WT/Vol: 4.97 / g Date Received: 07/15/11
Work Order: MKX8L1CH Date Extracted:07/24/11
Dilution factor: 1 Date Analyzed: 07/24/11
Moisture %:10
QC Batch: 1206129
Client Sample Id: INTRA-LAB QC

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
71-43-2	Benzene	6.1	U
100-41-4	Ethylbenzene	6.1	U
91-20-3	Naphthalene	6.1	U
108-88-3	Toluene	6.1	U
95-47-6	o-Xylene	6.1	U
136777-61-2	m-Xylene & p-Xylene	6.1	U
74-87-3	Chloromethane	12	U
75-01-4	Vinyl chloride	6.1	U
74-83-9	Bromomethane	12	U
75-00-3	Chloroethane	12	U
67-64-1	Acetone	24	U
75-35-4	1,1-Dichloroethene	6.1	U
75-09-2	Methylene chloride	6.1	U
75-15-0	Carbon disulfide	6.1	U
75-34-3	1,1-Dichloroethane	6.1	U
78-93-3	2-Butanone	24	U
540-59-0	1,2-Dichloroethene (total)	12	U
67-66-3	Chloroform	6.1	U
71-55-6	1,1,1-Trichloroethane	6.1	U
56-23-5	Carbon tetrachloride	6.1	U
107-06-2	1,2-Dichloroethane	6.1	U
79-01-6	Trichloroethene	6.1	U
78-87-5	1,2-Dichloropropane	6.1	U
75-27-4	Bromodichloromethane	6.1	U
108-10-1	4-Methyl-2-pentanone	24	U
10061-01-5	cis-1,3-Dichloropropene	6.1	U
10061-02-6	trans-1,3-Dichloropropene	6.1	U
79-00-5	1,1,2-Trichloroethane	6.1	U

FORM I

Battelle Energy Alliance

Lab Name:TestAmerica Laboratories, Inc. SDG Number:BEA025553_

Matrix: (soil/water) SOLID Lab Sample ID:F1G150469 001
Method: SW846 8260B
Volatile Organics, GC/MS (8260B)

Sample WT/Vol: 4.97 / g Date Received: 07/15/11
Work Order: MKX8L1CH Date Extracted:07/24/11
Dilution factor: 1 Date Analyzed: 07/24/11
Moisture %:10
QC Batch: 1206129
Client Sample Id: INTRA-LAB QC

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
591-78-6	2-Hexanone	24	U
127-18-4	Tetrachloroethene	6.1	U
124-48-1	Dibromochloromethane	6.1	U
108-90-7	Chlorobenzene	6.1	U
100-42-5	Styrene	6.1	U
75-25-2	Bromoform	6.1	U
79-34-5	1,1,2,2-Tetrachloroethane	6.1	U
95-50-1	1,2-Dichlorobenzene	6.1	U
541-73-1	1,3-Dichlorobenzene	6.1	U
106-46-7	1,4-Dichlorobenzene	6.1	U
108-86-1	Bromobenzene	6.1	U
74-97-5	Bromochloromethane	6.1	U
104-51-8	n-Butylbenzene	6.1	U
135-98-8	sec-Butylbenzene	6.1	U
98-06-6	tert-Butylbenzene	6.1	U
107-05-1	Allyl chloride	12	U
95-49-8	2-Chlorotoluene	6.1	U
106-43-4	4-Chlorotoluene	6.1	U
108-94-1	Cyclohexanone	120	U
96-12-8	1,2-Dibromo-3-chloropropane	12	U
106-93-4	1,2-Dibromoethane (EDB)	6.1	U
110-57-6	trans-1,4-Dichloro-2-butene	12	U
75-71-8	Dichlorodifluoromethane (Fre	12	U
156-59-2	cis-1,2-Dichloroethene	6.1	U
156-60-5	trans-1,2-Dichloroethene	6.1	U
142-28-9	1,3-Dichloropropane	6.1	U
594-20-7	2,2-Dichloropropane	6.1	U
563-58-6	1,1-Dichloropropene	6.1	U

FORM I

Battelle Energy Alliance

Lab Name:TestAmerica Laboratories, Inc. SDG Number:BEA025553_

Matrix: (soil/water) SOLID Lab Sample ID:F1G150469 001
Method: SW846 8260B
Volatile Organics, GC/MS (8260B)

Sample WT/Vol: 4.97 / g Date Received: 07/15/11
Work Order: MKX8L1CH Date Extracted:07/24/11
Dilution factor: 1 Date Analyzed: 07/24/11
Moisture %:10
QC Batch: 1206129
Client Sample Id: INTRA-LAB QC

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
60-29-7	Ethyl ether	12	U
97-63-2	Ethyl methacrylate	6.1	U
76-13-1	Freon 113	6.1	U
87-68-3	Hexachlorobutadiene	6.1	U
110-54-3	n-Hexane	12	U
98-82-8	Isopropylbenzene	6.1	U
99-87-6	4-Isopropyltoluene	6.1	U
80-62-6	Methyl methacrylate	6.1	U
79-46-9	2-Nitropropane	12	U
103-65-1	n-Propylbenzene	6.1	U
630-20-6	1,1,1,2-Tetrachloroethane	6.1	U
109-99-9	Tetrahydrofuran	31	U
87-61-6	1,2,3-Trichlorobenzene	6.1	U
120-82-1	1,2,4-Trichlorobenzene	6.1	U
75-69-4	Trichlorofluoromethane	6.1	U
108-67-8	1,3,5-Trimethylbenzene	6.1	U
71-36-3	1-Butanol	120	U
75-05-8	Acetonitrile	61	U
141-78-6	Ethyl acetate	24	U
110-75-8	2-Chloroethyl vinyl ether	24	U
74-88-4	Iodomethane	6.1	U
108-05-4	Vinyl acetate	6.1	U
107-02-8	Acrolein	61	U
107-13-1	Acrylonitrile	61	U
110-82-7	Cyclohexane	12	U
78-83-1	Isobutanol	240	U
126-98-7	Methacrylonitrile	31	U
108-87-2	Methylcyclohexane	12	U

FORM I

Battelle Energy Alliance

Lab Name:TestAmerica Laboratories, Inc. SDG Number:BEA025553_

Matrix: (soil/water) SOLID Lab Sample ID:F1G150469 001
Method: SW846 8260B
Volatile Organics, GC/MS (8260B)

Sample WT/Vol: 4.97 / g Date Received: 07/15/11
Work Order: MKX8L1CH Date Extracted:07/24/11
Dilution factor: 1 Date Analyzed: 07/24/11
Moisture %:10
QC Batch: 1206129
Client Sample Id: INTRA-LAB QC

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
107-12-0	Propionitrile	31	U
123-91-1	1,4-Dioxane	490	U
79-20-9	Methyl acetate	6.1	U
126-99-8	2-Chloro-1,3-butadiene	6.1	U
76-14-2	1,2-Dichloro-1,1,2,2-tetrafl	6.1	U
96-18-4	1,2,3-Trichloropropane	6.1	U
95-63-6	1,2,4-Trimethylbenzene	6.1	U
74-95-3	Dibromomethane	6.1	U
1634-04-4	Methyl tert-butyl ether (MTB	6.1	U

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Toluene-d8	108	(81 - 129)
Dibromofluoromethane	100	(71 - 135)
1,2-Dichloroethane-d4	101	(81 - 136)
4-Bromofluorobenzene	114	(70 - 150)

FORM I

Battelle Energy Alliance

Lab Name:TestAmerica Laboratories, Inc. SDG Number:BEA025553_

Matrix: (soil/water) SOLID Lab Sample ID:F1G200464 001
Method: SW846 8260B
Volatile Organics, GC/MS (8260B)

Sample WT/Vol: 5 / g Date Received: 07/20/11
Work Order: MK2L51AA Date Extracted:07/24/11
Dilution factor: 1 Date Analyzed: 07/24/11
Moisture %:15
QC Batch: 1206129
Client Sample Id: BEA025553_TBD

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
71-43-2	Benzene	5.9	U
100-41-4	Ethylbenzene	5.9	U
91-20-3	Naphthalene	5.9	U
108-88-3	Toluene	5.9	U
95-47-6	o-Xylene	5.9	U
136777-61-2	m-Xylene & p-Xylene	12	U
1634-04-4	Methyl tert-butyl ether (MTB	5.9	U

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Toluene-d8	108	(62 - 150)
Dibromofluoromethane	96	(49 - 150)
1,2-Dichloroethane-d4	103	(69 - 142)
4-Bromofluorobenzene	112	(44 - 150)

FORM I

Battelle Energy Alliance

Lab Name:TestAmerica Laboratories, Inc. SDG Number:BEA025553_

Matrix: (soil/water) SOLID Lab Sample ID:F1G200464 002
Method: SW846 8260B
Volatile Organics, GC/MS (8260B)

Sample WT/Vol: 5.05 / g Date Received: 07/20/11
Work Order: MK2L61AA Date Extracted:07/24/11
Dilution factor: 1 Date Analyzed: 07/24/11
Moisture %:15
QC Batch: 1206129
Client Sample Id: BEA025554_TBD

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
71-43-2	Benzene	5.9	U
100-41-4	Ethylbenzene	5.9	U
91-20-3	Naphthalene	5.9	U
108-88-3	Toluene	5.9	U
95-47-6	o-Xylene	5.9	U
136777-61-2	m-Xylene & p-Xylene	12	U
1634-04-4	Methyl tert-butyl ether (MTB	5.9	U

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Toluene-d8	110	(62 - 150)
Dibromofluoromethane	92	(49 - 150)
1,2-Dichloroethane-d4	101	(69 - 142)
4-Bromofluorobenzene	116	(44 - 150)

FORM I

Battelle Energy Alliance

Lab Name:TestAmerica Laboratories, Inc. SDG Number:BEA025553_

Matrix: (soil/water) SOLID Lab Sample ID:F1G200464 003
Method: SW846 8260B
Volatile Organics, GC/MS (8260B)

Sample WT/Vol: 5.01 / g Date Received: 07/20/11
Work Order: MK2L71AA Date Extracted:07/24/11
Dilution factor: 1 Date Analyzed: 07/24/11
Moisture %:10
QC Batch: 1206129
Client Sample Id: BEA025556_TBD

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
71-43-2	Benzene	6.1	U
100-41-4	Ethylbenzene	6.1	U
91-20-3	Naphthalene	6.1	U
108-88-3	Toluene	6.1	U
95-47-6	o-Xylene	6.1	U
136777-61-2	m-Xylene & p-Xylene	12	U
1634-04-4	Methyl tert-butyl ether (MTB	6.1	U

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Toluene-d8	109	(62 - 150)
Dibromofluoromethane	94	(49 - 150)
1,2-Dichloroethane-d4	104	(69 - 142)
4-Bromofluorobenzene	113	(44 - 150)

FORM I

Battelle Energy Alliance

Lab Name:TestAmerica Laboratories, Inc. SDG Number:BEA025553_

Matrix: (soil/water) SOLID Lab Sample ID:F1G200464 004
Method: SW846 8260B
Volatile Organics, GC/MS (8260B)

Sample WT/Vol: 4.96 / g Date Received: 07/20/11
Work Order: MK2L81AA Date Extracted:07/24/11
Dilution factor: 1 Date Analyzed: 07/24/11
Moisture %:14
QC Batch: 1206129
Client Sample Id: BEA025557_TBD

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
71-43-2	Benzene	5.8	U
100-41-4	Ethylbenzene	5.8	U
91-20-3	Naphthalene	5.8	U
108-88-3	Toluene	5.8	U
95-47-6	o-Xylene	5.8	U
136777-61-2	m-Xylene & p-Xylene	12	U
1634-04-4	Methyl tert-butyl ether (MTB	5.8	U

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Toluene-d8	102	(62 - 150)
Dibromofluoromethane	97	(49 - 150)
1,2-Dichloroethane-d4	108	(69 - 142)
4-Bromofluorobenzene	116	(44 - 150)

FORM I

Battelle Energy Alliance
METHOD BLANK COMPOUNDS

Lab Name:TestAmerica Laboratories, Inc. SDG Number:BEA025553_

Matrix: (soil/water) SOLID Lab Sample ID:F1G250000 129
Method: SW846 8260B
Volatile Organics, GC/MS (8260B)

Sample WT/Vol: 5 / g Date Received: 07/15/11
Work Order: MK5K71AA Date Extracted:07/24/11
Dilution factor: 1 Date Analyzed: 07/24/11
Moisture %:NA
QC Batch: 1206129
Client Sample Id: INTRA-LAB BLANK

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
71-43-2	Benzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
91-20-3	Naphthalene	5.0	U
108-88-3	Toluene	5.0	U
95-47-6	o-Xylene	5.0	U
136777-61-2	m-Xylene & p-Xylene	10	U
1634-04-4	Methyl tert-butyl ether (MTB	5.0	U

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Toluene-d8	109	(62 - 150)
Dibromofluoromethane	98	(49 - 150)
1,2-Dichloroethane-d4	103	(69 - 142)
4-Bromofluorobenzene	106	(44 - 150)

FORM I

Battelle Energy Alliance
CHECK SAMPLE COMPOUNDS

Lab Name:TestAmerica Laboratories, Inc. SDG Number:BEA025553_

Matrix: (soil/water) SOLID Lab Sample ID:F1G250000 129
Method: SW846 8260B
Volatile Organics, GC/MS (8260B)

Sample WT/Vol: 5 / g Date Received: 07/15/11
Work Order: MK5K71AC Date Extracted:07/24/11
Dilution factor: 1 Date Analyzed: 07/24/11
Moisture %:NA
QC Batch: 1206129
Client Sample Id: CHECK SAMPLE

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
71-43-2	Benzene	48.5	
100-41-4	Ethylbenzene	46.5	
91-20-3	Naphthalene	50.1	
108-88-3	Toluene	46.3	
95-47-6	o-Xylene	50.9	
136777-61-2	m-Xylene & p-Xylene	99.5	
1634-04-4	Methyl tert-butyl ether (MTB	51.6	

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Toluene-d8	108	(85 - 119)
Dibromofluoromethane	101	(85 - 115)
1,2-Dichloroethane-d4	102	(81 - 117)
4-Bromofluorobenzene	109	(85 - 116)

FORM I

Battelle Energy Alliance
MATRIX SPIKE DUPLICATE COMPOUNDS

Lab Name:TestAmerica Laboratories, Inc. SDG Number:BEA025553_

Matrix: (soil/water) SOLID Lab Sample ID:F1G150469 001
Method: SW846 8260B
Volatile Organics, GC/MS (8260B)

Sample WT/Vol: 5.02 / g Date Received: 07/15/11
Work Order: MKX8L1EV Date Extracted:07/24/11
Dilution factor: 1 Date Analyzed: 07/24/11
Moisture %:10

QC Batch: 1206129

Client Sample Id: LAB MS/MSD

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
71-43-2	Benzene	57.7	
100-41-4	Ethylbenzene	56.6	
91-20-3	Naphthalene	52.3	
108-88-3	Toluene	58.1	
95-47-6	o-Xylene	60.3	
136777-61-2	m-Xylene & p-Xylene	119	
1634-04-4	Methyl tert-butyl ether (MTB	59.3	

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Toluene-d8	111	(62 - 150)
Dibromofluoromethane	100	(49 - 150)
1,2-Dichloroethane-d4	98	(69 - 142)
4-Bromofluorobenzene	113	(44 - 150)

FORM I

Battelle Energy Alliance
MATRIX SPIKE COMPOUNDS

Lab Name:TestAmerica Laboratories, Inc. SDG Number:BEA025553_

Matrix: (soil/water) SOLID Lab Sample ID:F1G150469 001
Method: SW846 8260B
Volatile Organics, GC/MS (8260B)

Sample WT/Vol: 5.01 / g Date Received: 07/15/11
Work Order: MKX8L1EU Date Extracted:07/24/11
Dilution factor: 1 Date Analyzed: 07/24/11
Moisture %:10

QC Batch: 1206129

Client Sample Id: LAB MS/MSD

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
71-43-2	Benzene	58.3	
100-41-4	Ethylbenzene	59.2	
91-20-3	Naphthalene	55.5	
108-88-3	Toluene	60.0	
95-47-6	o-Xylene	62.9	
136777-61-2	m-Xylene & p-Xylene	124	
1634-04-4	Methyl tert-butyl ether (MTB	60.2	

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Toluene-d8	114	(62 - 150)
Dibromofluoromethane	100	(49 - 150)
1,2-Dichloroethane-d4	99	(69 - 142)
4-Bromofluorobenzene	119	(44 - 150)

FORM I

GC/MS ADDITIONAL FORMS

SW846 8260B SURROGATE RECOVERY

Lab Name: TestAmerica Laboratories, Inc. Client: Battelle Energy Alliance

Lab Code: TALSTL SDG No: BEA025553_

Lot #: F1G200464

Extraction: XXA15QK01

	CLIENT ID.	SRG01	SRG02	SRG03	SRG04	TOT OUT
01	INTRA-LAB QC	100	100	101	114	00
02	BEA025553 TBD	108	96	103	112	00
03	BEA025554 TBD	110	92	101	116	00
04	BEA025556 TBD	109	94	104	113	00
05	BEA025557 TBD	102	97	108	116	00
06	METHOD BLK. MK5K71AA	109	98	103	106	00
07	LCS MK5K71AC	108	101	102	109	00
08	LAB MS/MSD D	111	100	98	113	00
09	LAB MS/MSD S	114	100	99	119	00

SURROGATES		QC LIMITS
SRG01	= Toluene-d8	(62-150)
SRG02	= Dibromofluoromethane	(49-150)
SRG03	= 1,2-Dichloroethane-d4	(69-142)
SRG04	= 4-Bromofluorobenzene	(44-150)

\# Column to be used to flag recovery values
* Values outside of required QC Limits
D System monitoring Compound diluted out

FORM II

SW846 8260B MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Laboratories, Inc. Client: Battelle Energy Alliance

Lab Code: TALSTL SDG No: BEA025553_

Matrix Spike ID: LAB MS/MSD Level:(low/med) LOW

Lot #: F1G150469 WO #: MKX8L1EU
BATCH: 1206129

COMPOUND	SPIKE ADDED (ug/kg)	SAMPLE CONCENT. (ug/kg)	MS CONCENT. (ug/kg)	MS % REC	LIMITS REC	QUAL
Ethylbenzene	61.1	ND	59.2	97	55- 141	
Methyl tert-butyl ether (	61.1	ND	60.2	99	46- 150	
Naphthalene	61.1	ND	55.5	91	24- 150	
Benzene	61.1	ND	58.3	95	81- 123	
Toluene	61.1	ND	60.0	98	62- 148	
m-Xylene & p-Xylene	122	ND	124	101	53- 140	
o-Xylene	61.1	ND	62.9	103	52- 143	

NOTES(S):

Results and reporting limits have been adjusted for dry weight.

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 7 outside limits

COMMENTS:

FORM III

SW846 8260B MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Laboratories, Inc. Client: Battelle Energy Alliance

Lab Code: TALSTL SDG No: BEA025553_

Matrix Spike ID: LAB MS/MSD Level:(low/med) LOW

Lot #: F1G150469 WO #: MKX8L1EV
BATCH: 1206129

COMPOUND	SPIKE ADDED (ug/kg)	MSD CONCENT. (ug/kg)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	QUAL
Benzene	61.0	57.7	95	1.0	30	81- 123	
Toluene	61.0	58.1	95	3.2	30	62- 148	
m-Xylene & p-Xylene	122	119	98	3.7	30	53- 140	
o-Xylene	61.0	60.3	99	4.1	30	52- 143	
Ethylbenzene	61.0	56.6	93	4.4	30	55- 141	
Methyl tert-butyl ether (	61.0	59.3	97	1.6	30	46- 150	
Naphthalene	61.0	52.3	86	5.9	30	24- 150	

NOTES(S):

Results and reporting limits have been adjusted for dry weight.

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 7 outside limits
Spike Recovery: 0 out of 7 outside limits

COMMENTS:

FORM III

SW846 8260B CHECK SAMPLE RECOVERY

Lab Name: TestAmerica Laboratories, Inc. Client: Battelle Energy Alliance

Lab Code: TALSTL SDG No: BEA025553_

Lot #: F1G250000 WO #: MK5K71AC
BATCH: 1206129

COMPOUND	SPIKE ADDED (ug/kg)	SAMPLE CONCENT. (ug/kg)	% REC	QC LIMITS REC	QUAL
Denzene	50.0	48.5	97	05- 115	
Toluene	50.0	46.3	93	85- 115	
m-Xylene & p-Xylene	100	99.5	99	85- 120	
o-Xylene	50.0	50.9	102	85- 121	
Ethylbenzene	50.0	46.5	93	85- 120	
Methyl tert-butyl ether (	50.0	51.6	103	82- 121	
Naphthalene	50.0	50.1	100	75- 129	

NOTES(S):

* Values outside of QC limits

Spike Recovery: 0 out of 7 outside limits

COMMENTS:

FORM III

SW846 8260B METHOD BLANK SUMMARY

BLANK WORKORDER NO.: MK5K71AA

Lab Name: TestAmerica Laboratories, Inc.

Lab Code: TALSTL

SDG Number:BEA025553_

Lab File ID: FBLK6176

Lot Number: F1G200464

Date Analyzed: 07/24/11

Time Analyzed: 19:37

Matrix: SOLID

Date Extracted:07/24/11

GC Column: RTX-502.2 ID: .25

Extraction Method: 5030B

Instrument ID: MSF

Level:(low/med) LOW

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, LCS, LCSD, MS , MSD:

	CLIENT ID.	SAMPLE WORK ORDER #	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	INTRA-LAB QC	MKX8L1CH	FSMP6181	07/24/11	21:39
02	LAB MS/MSD	MKX8L1EU S	FSMP6178	07/24/11	20:26
03	LAB MS/MSD	MKX8L1EV D	FSMP6179	07/24/11	20:50
04	BEA025553 TBD	MK2L51AA	FSMP6182	07/24/11	22:04
05	BEA025554 TBD	MK2L61AA	FSMP6183	07/24/11	22:28
06	BEA025556 TBD	MK2L71AA	FSMP6184	07/24/11	22:52
07	BEA025557 TBD	MK2L81AA	FSMP6185	07/24/11	23:17
08	CHECK SAMPLE	MK5K71AC C	FLCS6177	07/24/11	20:02
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COMMENTS:

FORM IV

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: TESTAMERICA ST. LOUIS Contract: 9661

Lab Code: Case No.: SAS No.: SDG No.: F1G200464

Lab File ID: FBFB5574 BFB Injection Date: 06/12/11

Instrument ID: MSF BFB Injection Time: 1654

GC Column: RTX-VMS ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	21.3
75	30.0 - 60.0% of mass 95	48.4
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.2
173	Less than 2.0% of mass 174	0.1 (0.2)1
174	Greater than 50.0% of mass 95	55.3
175	5.0 - 9.0% of mass 174	3.9 (7.0)1
176	95.0 - 101.0% of mass 174	52.7 (95.2)1
177	5.0 - 9.0% of mass 176	3.4 (6.5)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD001	VSTD001	FICL5576	06/12/11	1727
02	VSTD002.5	VSTD002.5	FICL5577	06/12/11	1752
03	VSTD005	VSTD005	FICL5578	06/12/11	1817
04	VSTD010	VSTD010	FICL5579	06/12/11	1841
05	VSTD020	VSTD020	FICL5580	06/12/11	1905
06	VSTD050	VSTD050	FICL5581	06/12/11	1929
07	VSTD100	VSTD100	FICL5582	06/12/11	1954
08	VSTD200	VSTD200	FICL5583	06/12/11	2018
09	ICV050	ICV050	FICV5585	06/12/11	2107
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FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: TESTAMERICA ST. LOUIS Contract: 9661

Lab Code: Case No.: SAS No.: SDG No.: F1G200464

Lab File ID: FBFB6159 BFB Injection Date: 07/24/11

Instrument ID: MSF BFB Injection Time: 1240

GC Column: RTX-VMS ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	21.2
75	30.0 - 60.0% of mass 95	47.7
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	5.7
173	Less than 2.0% of mass 174	0.2 (0.5)1
174	Greater than 50.0% of mass 95	51.5
175	5.0 - 9.0% of mass 174	4.4 (8.6)1
176	95.0 - 101.0% of mass 174	49.1 (95.3)1
177	5.0 - 9.0% of mass 176	3.4 (6.9)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD010	VSTD010	FCCV6160	07/24/11	1301
02	LAB BLANK	MK5K71AA	FBLK6176	07/24/11	1937
03	LAB CHECK	MK5K71AC	FLCS6177	07/24/11	2002
04	SF7-92 BACKF	MKX8L1EU	FSMP6178	07/24/11	2026
05	SF7-92 BACKF	MKX8L1EV	FSMP6179	07/24/11	2050
06	SF7-92 BACKF	MKX8L1CH	FSMP6181	07/24/11	2139
07	BEA025553_TB	MK2L51AA	FSMP6182	07/24/11	2204
08	BEA025554_TB	MK2L61AA	FSMP6183	07/24/11	2228
09	BEA025556_TB	MK2L71AA	FSMP6184	07/24/11	2252
10	BEA025557_TB	MK2L81AA	FSMP6185	07/24/11	2317
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page 1 of 1

FORM V VOA

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: TESTAMERICA ST. LOUIS Contract: 9661

Lab Code: Case No.: SAS No.: SDG No.: F1G200464

Instrument ID: MSF Calibration Date(s): 06/12/11 06/12/11

Column: RTX-VMS ID: 0.25 (mm) Calibration Time(s): 1727 2018

LAB FILE ID: RF1: FICL5576 RF2.5: FICL5577 RF5: FICL5578
RF10: FICL5579 RF20: FICL5580 RF50: FICL5581

COMPOUND	RF1	RF2.5	RF5	RF10	RF20	RF50
Dichlorodifluoromethane		0.456	0.501	0.508	0.466	0.472
Freon-114		0.166	0.195	0.183	0.183	0.185
Chloromethane		0.583	0.658	0.632	0.594	0.599
Vinyl Chloride	0.637	0.575	0.620	0.619	0.600	0.584
Bromomethane		0.179	0.186	0.172	0.152	0.138
Chloroethane		0.242	0.279	0.268	0.242	0.240
Trichlorofluoromethane		0.491	0.580	0.581	0.550	0.559
Diethyl ether		0.091	0.085	0.093	0.085	0.084
Ethanol						
Dimethyl Disulfide						
1,3,5-Trichlorobenzene						
Heptane						
3-Ethylpentane						
2,3-Dimethylpentane						
Acetone			11407	17887	25016	60647
2-Methylhexane						
3,3-Dimethylpentane						
3-Methylhexane						
2,2-Dimethylpentane						
2,4-Dimethypentane						
2,2,3-Trimethylbutane						
Acrylonitrile		0.034	0.040	0.045	0.044	0.044
4-Bromofluorobenzene			1.152	1.074	1.157	1.118
Toluene-d8			1.532	1.501	1.486	1.475
Acetonitrile		7178	11941	19941	38528	99379
MTBE		0.436	0.466	0.485	0.439	0.464
Vinyl acetate		0.248	0.207	0.201	0.203	0.203
cis-1,2-Dichloroethene		0.291	0.316	0.306	0.316	0.314
1,2-Dichloroethene (total)		0.309	0.337	0.333	0.332	0.334
2,2-Dichloropropane		0.455	0.510	0.506	0.455	0.485
Bromochloromethane		0.091	0.100	0.086	0.092	0.097
n-Hexane		0.076	0.079	0.078	0.073	0.080
Cyclohexane		0.504	0.549	0.600	0.563	0.573
Chloroform		0.480	0.531	0.521	0.479	0.492
Methyl Acetate			1544	4311	9700	28775
trans-1,2-Dichloroethene		0.326	0.357	0.360	0.348	0.354
Ethyl acetate		0.014	0.016	0.014	0.013	0.013
Carbon Tetrachloride		0.419	0.440	0.442	0.416	0.435
Methylene Chloride		0.286	0.336	0.315	0.282	0.281
Tetrahydrofuran		0.010	0.011	0.011	0.010	0.012
1,2,3-Trichlorobenzene		1.024	0.761	0.767	0.832	0.780
1,1,1-Trichloroethane		0.467	0.502	0.516	0.492	0.510
2-Butanone			0.044	0.039	0.032	0.038

FORM VI VOA

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: TESTAMERICA ST. LOUIS Contract: 9661

Lab Code: Case No.: SAS No.: SDG No.: F1G200464

Instrument ID: MSF Calibration Date(s): 06/12/11 06/12/11

Column: RTX-VMS ID: 0.25 (mm) Calibration Time(s): 1727 2018

LAB FILE ID: RF1: FICL5576 RF2.5: FICL5577 RF5: FICL5578
RF10: FICL5579 RF20: FICL5580 RF50: FICL5581

COMPOUND	RF1	RF2.5	RF5	RF10	RF20	RF50
2-Chloro-1,3-butadiene		0.582	0.583	0.588	0.581	0.608
1,1-Dichloropropene		0.462	0.471	0.486	0.462	0.465
Benzene	1.367	1.301	1.318	1.262	1.218	1.230
Propionitrile		0.012	0.016	0.015	0.015	0.015
Methacrylonitrile		0.066	0.059	0.063	0.058	0.060
Naphthalene			1.696	1.685	1.830	1.712
1,2-Dichloroethane		0.280	0.261	0.264	0.259	0.262
Acrolein		0.012	0.012	0.014	0.011	0.012
Isobutanol			0.005	0.004	0.005	0.004
Trichloroethene		0.328	0.316	0.305	0.297	0.308
Methylcyclohexane		0.506	0.528	0.529	0.504	0.510
Iodomethane		0.382	0.396	0.403	0.387	0.396
Dibromomethane		0.090	0.093	0.098	0.087	0.090
1,2-Dichloropropane		0.288	0.285	0.291	0.278	0.286
Bromodichloromethane		0.277	0.262	0.272	0.260	0.273
Methyl methacrylate		0.067	0.092	0.072	0.061	0.071
1,4-Dioxane			0.001	0.001	0.001	0.001
2-Chloroethylvinyl ether		0.042	0.036	0.038	0.034	0.038
cis-1,3-Dichloropropene		0.308	0.322	0.303	0.309	0.331
1,1,2-Trichlorofluoroethane		0.188	0.219	0.205	0.203	0.205
Allyl chloride		0.360	0.387	0.365	0.347	0.348
Toluene	1.227	1.159	1.428	1.190	1.156	1.115
2-Nitropropane		5271	9700	14345	25770	66730
4-Methyl-2-pentanone		0.184	0.166	0.141	0.143	0.138
Tetrachloroethene		0.343	0.314	0.295	0.292	0.295
trans-1,3-Dichloropropene		0.373	0.352	0.355	0.377	0.380
1,1,2-Trichloroethane		0.170	0.182	0.169	0.178	0.171
Ethyl methacrylate		0.308	0.243	0.242	0.254	0.249
Chlorodibromomethane		0.224	0.218	0.206	0.218	0.219
1,3-Dichloropropane		0.396	0.406	0.382	0.377	0.380
1,2-Dibromoethane		0.160	0.173	0.165	0.158	0.170
2-Hexanone			0.118	0.095	0.093	0.094
Carbon Disulfide		1.103	1.230	1.250	1.198	1.192
Chlorobenzene		1.171	1.149	1.078	1.102	1.060
Ethylbenzene	2.598	2.384	2.378	2.301	2.388	2.246
1,1,1,2-Tetrachloroethane		0.344	0.337	0.338	0.351	0.344
m,p-Xylenes	0.904	0.837	0.852	0.845	0.841	0.809
o-Xylene	0.757	0.770	0.737	0.770	0.755	0.773
Styrene		1.017	0.943	0.960	1.065	1.077
Bromoform		0.188	0.210	0.197	0.223	0.210
Isopropylbenzene		4.576	4.736	4.453	4.816	4.425
1,1-Dichloroethane		0.670	0.705	0.712	0.664	0.689
Bromobenzene		0.736	0.798	0.655	0.809	0.760
n-Propylbenzene		6.749	6.876	6.375	6.872	6.104

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: TESTAMERICA ST. LOUIS Contract: 9661

Lab Code: Case No.: SAS No.: SDG No.: F1G200464

Instrument ID: MSF Calibration Date(s): 06/12/11 06/12/11

Column: RTX-VMS ID: 0.25 (mm) Calibration Time(s): 1727 2018

LAB FILE ID: RF1: FICL5576 RF2.5: FICL5577 RF5: FICL5578
RF10: FICL5579 RF20: FICL5580 RF50: FICL5581

COMPOUND	RF1	RF2.5	RF5	RF10	RF20	RF50
1,1,2,2-Tetrachloroethane		0.656	0.570	0.570	0.645	0.550
2-Chlorotoluene		4.160	4.175	3.929	4.411	4.001
1,3,5-Trimethylbenzene		4.306	4.715	4.458	4.888	4.392
1,2,3-Trichloropropane		13106	24741	47843	105219	262109
trans-1,4-dichloro-2-butene		0.217	0.214	0.200	0.211	0.184
Cyclohexanone			11735	19725	31978	75062
4-Chlorotoluene		3.613	3.464	3.296	3.660	3.303
t-Butylbenzene		3.824	3.836	3.587	3.974	3.686
Pentachloroethane						
1,2,4-Trimethylbenzene		4.317	4.398	4.213	4.533	4.150
sec-Butylbenzene		6.606	6.744	6.220	6.761	5.924
4-Isopropyltoluene		4.738	4.963	4.623	5.071	4.602
1,3-Dichlorobenzene		1.815	1.700	1.737	1.899	1.708
1,1-Dichloroethene		0.304	0.318	0.326	0.307	0.320
1,4-Dichlorobenzene		1.928	1.761	1.682	1.812	1.616
2-Butoxyethanol						
n-Butylbenzene		5.511	5.602	5.266	5.677	5.026
1,2-Dichlorobenzene		1.560	1.533	1.412	1.606	1.469
Nonanal			0.613	0.505	0.495	0.417
4-Chlorophenyl methyl sulfid						
1,2-Dibromo-3-chloropropane			0.086	0.067	0.086	0.074
Hexachlorobutadiene		0.767	0.702	0.662	0.734	0.682
1,2,4-Trichlorobenzene		1.082	0.967	0.917	1.008	0.967
n-Butanol			5966	9212	19014	44753
Xylenes (total)		0.814	0.814	0.820	0.812	0.797
Dibromofluoromethane			0.199	0.200	0.197	0.200
1,2-Dichloroethane-d4			0.229	0.223	0.204	0.204

FORM VI VOA

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: TESTAMERICA ST. LOUIS Contract: 9661

Lab Code: Case No.: SAS No.: SDG No.: F1G200464

Instrument ID: MSF Calibration Date(s): 06/12/11 06/12/11

Column: RTX-VMS ID: 0.25 (mm) Calibration Time(s): 1727 2018

LAB FILE ID: RF100: FICL5582 RF200: FICL5583

				COEFFICENTS		%RSD	MAX %RSI
COMPOUND	RF100	RF200	CURVE	A0	A1	OR R^2	OR R^
Dichlorodifluoromethane	0.396	0.379	AVRG		0.45387607	10.894	20.
Freon-114	0.194	0.193	AVRG		0.18560148	5.488	20.
Chloromethane	0.541	0.478	AVRG		0.58383232	10.165	20.
Vinyl Chloride	0.500	0.446	AVRG		0.57275103	11.592	20.
Bromomethane	0.127		AVRG		0.15919815	14.822	20.
Chloroethane	0.210	0.183	AVRG		0.23786011	13.745	20.
Trichlorofluoromethane	0.489	0.455	AVRG		0.52927736	9.486	20.
Diethyl ether	0.076	0.070	AVRG		8.348e-002	9.561	20.
Ethanol			AVRG				0.
Dimethyl Disulfide			AVRG				0.
1,3,5-Trichlorobenzene			AVRG				0.
Heptane			AVRG				0.
3-Ethylpentane			AVRG				0.
2,3-Dimethylpentane			AVRG				0.
Acetone	137523	297245	WLINR	-9.79e-002	27.7618006	0.9966660	0.9900
2-Methylhexane			AVRG				0.
3,3-Dimethylpentane			AVRG				0.
3-Methylhexane			AVRG				0.
2,2-Dimethylpentane			AVRG				0.
2,4-Dimethypentane			AVRG				0.
2,2,3-Trimethylbutane			AVRG				0.
Acrylonitrile	0.042	0.040	AVRG		4.131e-002	9.414	20.
4-Bromofluorobenzene	1.080	1.069	AVRG		1.10852761	3.569	20.
Toluene-d8	1.406	1.207	AVRG		1.43466001	8.288	20.
Acetonitrile	208361	450853	WLINR	-3.77e-005	84.9009565	0.9955523	0.9900
MTBE	0.422	0.430	AVRG		0.44891141	5.088	20.
Vinyl acetate	0.200	0.208	AVRG		0.21012346	7.963	20.
cis-1,2-Dichloroethene	0.296	0.303	AVRG		0.30638444	3.289	20.
1,2-Dichloroethene (total)	0.312	0.319	AVRG		0.32516764	3.600	20.
2,2-Dichloropropane	0.448	0.418	AVRG		0.46839385	7.169	20.
Bromochloromethane	0.089	0.095	AVRG		9.297e-002	5.163	20.
n-Hexane	0.077	0.082	AVRG		7.787e-002	3.574	20.
Cyclohexane	0.542	0.548	AVRG		0.55423671	5.384	20.
Chloroform	0.465	0.454	AVRG		0.48895583	5.762	20.
Methyl Acetate	60905	141207	WLINR	3.667e-005	58.1334958	0.9919723	0.9900
trans-1,2-Dichloroethene	0.328	0.334	AVRG		0.34395084	4.145	20.
Ethyl acetate	0.012	0.012	AVRG		1.367e-002	10.594	20.
Carbon Tetrachloride	0.411	0.419	AVRG		0.42601082	2.958	20.
Methylene Chloride	0.252	0.258	AVRG		0.28711461	10.442	20.
Tetrahydrofuran	0.010	0.011	AVRG		1.07e-002	6.131	20.
1,2,3-Trichlorobenzene	0.725	0.679	AVRG		0.79552398	13.992	20.
1,1,1-Trichloroethane	0.471	0.471	AVRG		0.48974910	4.157	20.
2-Butanone	0.037	0.038	AVRG		3.807e-002	9.654	20.

FORM VI VOA

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: TESTAMERICA ST. LOUIS Contract: 9661

Lab Code: Case No.: SAS No.: SDG No.: F1G200464

Instrument ID: MSF Calibration Date(s): 06/12/11 06/12/11

Column: RTX-VMS ID: 0.25 (mm) Calibration Time(s): 1727 2018

LAB FILE ID: RF100: FICL5582 RF200: FICL5583

COMPOUND	RF100	RF200	CURVE	COEFFICENTS A0	COEFFICENTS A1	%RSD OR R^2	MAX %RSD OR R^2
2-Chloro-1,3-butadiene	0.594	0.608	AVRG		0.59206723	1.968	20.
1,1-Dichloropropene	0.452	0.449	AVRG		0.46395119	2.618	20.
Benzene	1.117	0.987	AVRG		1.22506458	9.963	20.
Propionitrile	0.014	0.014	AVRG		1.448e-002	8.593	20.
Methacrylonitrile	0.056	0.056	AVRG		5.971e-002	5.831	20.
Naphthalene	1.583	1.407	AVRG		1.65226777	8.689	20.
1,2-Dichloroethane	0.244	0.242	AVRG		0.25879030	4.901	20.
Acrolein	0.011	0.011	AVRG		1.18e-002	9.173	20.
Isobutanol	0.004	0.004	AVRG		4.299e-003	15.278	20.
Trichloroethene	0.292	0.298	AVRG		0.30623508	4.016	20.
Methylcyclohexane	0.474	0.470	AVRG		0.50292568	4.656	20.
Iodomethane	0.366	0.380	AVRG		0.38724972	3.193	20.
Dibromomethane	0.083	0.086	AVRG		8.969e-002	5.400	20.
1,2-Dichloropropane	0.259	0.266	AVRG		0.27900757	4.238	20.
Bromodichloromethane	0.249	0.263	AVRG		0.26524595	3.544	20.
Methyl methacrylate	0.063	0.072	AVRG		7.116e-002	14.072	20.
1,4-Dioxane	0.001	0.001	AVRG		9.51e-004	4.057	20.
2-Chloroethylvinyl ether	0.035	0.043	AVRG		3.817e-002	9.149	20.
cis-1,3-Dichloropropene	0.302	0.325	AVRG		0.31433952	3.665	20.
1,1,2-Trichlorofluoroethane	0.196	0.215	AVRG		0.20458856	5.232	20.
Allyl chloride	0.327	0.321	AVRG		0.35079487	6.478	20.
Toluene	1.036	0.934	AVRG		1.15575237	12.480	20.
2-Nitropropane	157502	370411	WLINR	-2.84e-002	14.7027690	0.9969035	0.9900
4-Methyl-2-pentanone	0.126	0.125	AVRG		0.14616060	14.856	20.
Tetrachloroethene	0.289	0.291	AVRG		0.30262534	6.533	20.
trans-1,3-Dichloropropene	0.360	0.361	AVRG		0.36551420	2.983	20.
1,1,2-Trichloroethane	0.156	0.158	AVRG		0.16904223	5.531	20.
Ethyl methacrylate	0.243	0.256	AVRG		0.25652628	9.180	20.
Chlorodibromomethane	0.209	0.213	AVRG		0.21533401	2.791	20.
1,3-Dichloropropane	0.347	0.352	AVRG		0.37717766	5.641	20.
1,2-Dibromoethane	0.159	0.168	AVRG		0.16465030	3.763	20.
2-Hexanone	0.086	0.085	AVRG		9.526e-002	12.660	20.
Carbon Disulfide	1.089	0.944	AVRG		1.14376015	9.342	20.
Chlorobenzene	0.994	0.899	AVRG		1.06484044	8.771	20.
Ethylbenzene	1.895		AVRG		2.31296625	9.263	20.
1,1,1,2-Tetrachloroethane	0.327	0.324	AVRG		0.33798789	2.914	20.
m,p-Xylenes	0.730	0.572	AVRG		0.79899533	12.996	20.
o-Xylene	0.748	0.673	AVRG		0.74786230	4.376	20.
Styrene	1.024	0.910	AVRG		0.99951679	6.322	20.
Bromoform	0.208	0.224	AVRG		0.20853485	6.245	20.
Isopropylbenzene	3.840		AVRG		4.47438389	7.741	20.
1,1-Dichloroethane	0.629	0.618	AVRG		0.66960691	5.333	20.
Bromobenzene	0.695	0.733	AVRG		0.74093107	7.356	20.
n-Propylbenzene	4.834		AVRG		6.30147843	12.403	20.

FORM VI VOA

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: TESTAMERICA ST. LOUIS Contract: 9661

Lab Code: Case No.: SAS No.: SDG No.: F1G200464

Instrument ID: MSF Calibration Date(s): 06/12/11 06/12/11

Column: RTX-VMS ID: 0.25 (mm) Calibration Time(s): 1727 2018

LAB FILE ID: RF100: FICL5582 RF200: FICL5583

COMPOUND	RF100	RF200	CURVE	COEFFICENTS A0	COEFFICENTS A1	%RSD OR R^2	MAX %RSD OR R^2
1,1,2,2-Tetrachloroethane	0.491	0.492	AVRG		0.56784225	11.557	20.
2-Chlorotoluene	3.547	2.940	AVRG		3.88045809	12.711	20.
1,3,5-Trimethylbenzene	3.706		AVRG		4.41065233	9.236	20.
1,2,3-Trichloropropane	446802	973557	LINR	-9.59e-002	2.34290616	0.9915708	0.9900
trans-1,4-dichloro-2-butene	0.168	0.168	AVRG		0.19443018	10.924	20.
Cyclohexanone	175268	400152	WLINR	-8.41e-005	56.0066851	0.9915181	0.9900
4-Chlorotoluene	2.967	2.424	AVRG		3.24689851	13.262	20.
t-Butylbenzene	3.328	2.600	AVRG		3.54775263	13.164	20.
Pentachloroethane			AVRG				0.
1,2,4-Trimethylbenzene	3.614		AVRG		4.20445479	7.591	20.
sec-Butylbenzene	4.770		AVRG		6.17082011	12.324	20.
4-Isopropyltoluene	3.794		AVRG		4.63176958	9.734	20.
1,3-Dichlorobenzene	1.621	1.530	AVRG		1.71574756	7.049	20.
1,1-Dichloroethene	0.298	0.309	AVRG		0.31166108	3.202	20.
1,4-Dichlorobenzene	1.564	1.455	AVRG		1.68816639	9.460	20.
2-Butoxyethanol			AVRG				0.
n-Butylbenzene	4.030		AVRG		5.18509549	11.852	20.
1,2-Dichlorobenzene	1.377	1.294	AVRG		1.46448447	7.551	20.
Nonanal	0.422	0.449	AVRG		0.48382417	15.086	20.
4-Chlorophenyl methyl sulfid			AVRG				0.
1,2-Dibromo-3-chloropropane	0.071	0.072	AVRG		7.58e-002	10.639	20.
Hexachlorobutadiene	0.632	0.598	AVRG		0.68255238	8.495	20.
1,2,4-Trichlorobenzene	0.927	0.874	AVRG		0.96340815	7.046	20.
n-Butanol	88016	200333	WLINR	-1.49e-004	382.997972	0.9917493	0.9900
Xylenes (total)	0.736	0.606	AVRG		0.77145661	10.181	20.
Dibromofluoromethane	0.198	0.201	AVRG		0.19905530	0.672	20.
1,2-Dichloroethane-d4	0.195	0.194	AVRG		0.20807750	7.046	20.

FORM VI VOA

Data File: FICV5585.D
Report Date: 16-Jun-2011 17:50

TestAmerica St. Louis

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: MSF.i Injection Date: 12-JUN-2011 21:07
Lab File ID: FICV5585.D Init. Cal. Date(s): 12-JUN-2011 12-JUN-2011
Analysis Type: WATER Init. Cal. Times: 17:27 20:18
Lab Sample ID: ICV050 Quant Type: ISTD
Method: \\Slsvr01\Chem\MSF.i\F110612B.b\ICAL_8260C_Low\8260C-F5mL.m

COMPOUND	RRF / AMOUNT	RF50	CCAL RRF50	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
1 Dichlorodifluoromethane	0.45388	0.42506	0.42506	0.000	6.34971	20.00000	Averaged
2 Freon-114	0.18560	0.18985	0.18985	0.000	-2.28944	20.00000	Averaged
3 Chloromethane	0.58383	0.56010	0.56010	0.100	4.06523	20.00000	Averaged
4 Vinyl Chloride	0.57275	0.50114	0.50114	0.000	12.50281	20.00000	Averaged
5 Bromomethane	0.15920	0.13011	0.13011	0.000	18.27129	20.00000	Averaged
6 Chloroethane	0.23786	0.20159	0.20159	0.000	15.25031	20.00000	Averaged
7 Trichlorofluoromethane	0.52928	0.46905	0.46905	0.000	11.37888	20.00000	Averaged
8 Diethyl ether	0.08348	0.06957	0.06957	0.000	16.66821	20.00000	Averaged
9 1,1-Dichloroethene	0.31166	0.30974	0.30974	0.000	0.61664	20.00000	Averaged
10 Carbon Disulfide	1.14376	1.15815	1.15815	0.000	-1.25835	20.00000	Averaged
11 1,1,2-Trichlorofluoroethane	0.20459	0.20966	0.20966	0.000	-2.48021	20.00000	Averaged
12 Iodomethane	0.38725	0.39588	0.39588	0.000	-2.22945	20.00000	Averaged
13 Acrolein	0.01180	0.01144	0.01144	0.000	3.02026	20.00000	Averaged
14 Allyl chloride	0.35079	0.31812	0.31812	0.000	9.31418	20.00000	Averaged
15 Methylene Chloride	0.28711	0.26364	0.26364	0.000	8.17464	20.00000	Averaged
16 Acetone	50.00000	49.51310	0.03920	0.000	0.97380	20.00000	Wt Linear
17 trans-1,2-Dichloroethene	0.34395	0.33371	0.33371	0.000	2.97622	20.00000	Averaged
18 Methyl Acetate	50.00000	49.73309	0.01711	0.000	0.53382	20.00000	Wt Linear
19 n-Hexane	0.07787	0.08022	0.08022	0.000	-3.02175	20.00000	Averaged
20 MTBE	0.44891	0.42078	0.42078	0.000	6.26644	20.00000	Averaged
21 Acetonitrile	250	231	0.01090	0.000	7.45128	60.00000	Wt Linear
22 2-Chloro-1,3-butadiene	0.59207	0.57007	0.57007	0.000	3.71569	20.00000	Averaged
23 1,1-Dichloroethane	0.66961	0.62741	0.62741	0.100	6.30151	20.00000	Averaged
24 Acrylonitrile	0.04131	0.04138	0.04138	0.000	-0.17849	20.00000	Averaged
25 Vinyl acetate	0.21012	0.18759	0.18759	0.000	10.72584	20.00000	Averaged
M 26 1,2-Dichloroethene (total)	0.32517	0.31641	0.31641	0.000	2.69250	20.00000	Averaged
27 cis-1,2-Dichloroethene	0.30638	0.29911	0.29911	0.000	2.37400	20.00000	Averaged
28 2,2-Dichloropropane	0.46839	0.44640	0.44640	0.000	4.69557	20.00000	Averaged
30 Bromochloromethane	0.09297	0.08966	0.08966	0.000	3.56738	20.00000	Averaged
29 Cyclohexane	0.55424	0.54645	0.54645	0.000	1.40506	20.00000	Averaged
31 Chloroform	0.48896	0.46350	0.46350	0.000	5.20717	20.00000	Averaged
33 Ethyl acetate	0.01367	0.01261	0.01261	0.000	7.74333	20.00000	Averaged
32 Carbon Tetrachloride	0.42601	0.41252	0.41252	0.000	3.16574	20.00000	Averaged
34 Tetrahydrofuran	0.01070	0.01043	0.01043	0.000	2.51466	20.00000	Averaged
$ 35 Dibromofluoromethane	0.19906	0.19319	0.19319	0.000	2.94511	20.00000	Averaged
36 1,1,1-Trichloroethane	0.48975	0.47822	0.47822	0.000	2.35320	20.00000	Averaged
37 2-Butanone	0.03807	0.03748	0.03748	0.000	1.53900	20.00000	Averaged
39 1,1-Dichloropropene	0.46395	0.44191	0.44191	0.000	4.74976	20.00000	Averaged
40 Benzene	1.22506	1.17022	1.17022	0.000	4.47693	20.00000	Averaged
41 Propionitrile	0.01448	0.01323	0.01323	0.000	8.67026	20.00000	Averaged
42 Methacrylonitrile	0.05971	0.05332	0.05332	0.000	10.71613	20.00000	Averaged
$ 43 1,2-Dichloroethane-d4	0.20808	0.18968	0.18968	0.000	8.84191	20.00000	Averaged
44 1,2-Dichloroethane	0.25879	0.23696	0.23696	0.000	8.43398	20.00000	Averaged

Data File: FICV5585.D
Report Date: 16-Jun-2011 17:50

TestAmerica St. Louis

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: MSF.i Injection Date: 12-JUN-2011 21:07
Lab File ID: FICV5585.D Init. Cal. Date(s): 12-JUN-2011 12-JUN-2011
Analysis Type: WATER Init. Cal. Times: 17:27 20:18
Lab Sample ID: ICV050 Quant Type: ISTD
Method: \\Slsvr01\Chem\MSF.i\F110612B.b\ICAL_8260C_Low\8260C-F5mL.m

COMPOUND	RRF / AMOUNT	RF50	CCAL RRF50	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
45 Isobutanol	0.00430	0.00367	0.00367	0.000	14.72458	20.00000	Averaged
47 Methylcyclohexane	0.50293	0.47431	0.47431	0.000	5.69063	20.00000	Averaged
48 Trichloroethene	0.30624	0.29224	0.29224	0.000	4.57007	20.00000	Averaged
49 n-Butanol	500	447	0.00233	0.000	10.61599	20.00000	Wt Linear
50 Dibromomethane	0.08969	0.08499	0.08499	0.000	5.24028	20.00000	Averaged
51 1,2-Dichloropropane	0.27901	0.26794	0.26794	0.000	3.96661	20.00000	Averaged
52 Bromodichloromethane	0.26525	0.25589	0.25589	0.000	3.52610	20.00000	Averaged
53 Methyl methacrylate	0.07116	0.06827	0.06827	0.000	4.05521	20.00000	Averaged
54 1,4-Dioxane	0.00095	0.00091	0.00091	0.000	3.83428	20.00000	Averaged
55 2-Chloroethylvinyl ether	0.03817	0.04085	0.04085	0.000	-7.03432	20.00000	Averaged
56 cis-1,3-Dichloropropene	0.31434	0.32619	0.32619	0.000	-3.77133	20.00000	Averaged
$ 57 Toluene-d8	1.43466	1.46164	1.46164	0.000	-1.88047	20.00000	Averaged
58 Toluene	1.15575	1.06743	1.06743	0.000	7.64239	20.00000	Averaged
59 2-Nitropropane	50.00000	43.07677	0.06053	0.000	13.84647	60.00000	Wt Linear
62 4-Methyl-2-pentanone	0.14616	0.12339	0.12339	0.000	15.57950	20.00000	Averaged
60 Tetrachloroethene	0.30263	0.29668	0.29668	0.000	1.96596	20.00000	Averaged
63 trans-1,3-Dichloropropene	0.36551	0.35215	0.35215	0.000	3.65516	20.00000	Averaged
64 1,1,2-Trichloroethane	0.16904	0.15658	0.15658	0.000	7.37209	20.00000	Averaged
65 Ethyl methacrylate	0.25653	0.24435	0.24435	0.000	4.74667	20.00000	Averaged
66 Chlorodibromomethane	0.21533	0.20476	0.20476	0.000	4.91135	20.00000	Averaged
67 1,3-Dichloropropane	0.37718	0.36573	0.36573	0.000	3.03500	20.00000	Averaged
68 1,2-Dibromoethane	0.16465	0.16797	0.16797	0.000	-2.01416	20.00000	Averaged
69 2-Hexanone	0.09526	0.08119	0.08119	0.000	14.77385	20.00000	Averaged
71 Chlorobenzene	1.06484	1.06879	1.06879	0.300	-0.37082	20.00000	Averaged
72 Ethylbenzene	2.31297	2.14574	2.14574	0.000	7.22976	20.00000	Averaged
73 1,1,1,2-Tetrachloroethane	0.33799	0.31462	0.31462	0.000	6.91492	20.00000	Averaged
74 m,p-Xylenes	0.79900	0.79090	0.79090	0.000	1.01295	20.00000	Averaged
75 o-Xylene	0.74786	0.74753	0.74753	0.000	0.04428	20.00000	Averaged
76 Styrene	0.99952	1.04364	1.04364	0.000	-4.41493	20.00000	Averaged
77 Bromoform	0.20853	0.21240	0.21240	0.100	-1.85119	20.00000	Averaged
78 Isopropylbenzene	4.47438	4.46343	4.46343	0.000	0.24478	20.00000	Averaged
$ 79 4-Bromofluorobenzene	1.10853	1.14355	1.14355	0.000	-3.15895	20.00000	Averaged
80 Bromobenzene	0.74093	0.74863	0.74863	0.000	-1.03895	20.00000	Averaged
81 n-Propylbenzene	6.30148	5.95710	5.95710	0.000	5.46501	20.00000	Averaged
82 1,1,2,2-Tetrachloroethane	0.56784	0.50707	0.50707	0.300	10.70250	20.00000	Averaged
83 2-Chlorotoluene	3.88046	3.94865	3.94865	0.000	-1.75737	20.00000	Averaged
84 1,3,5-Trimethylbenzene	4.41065	4.27011	4.27011	0.000	3.18640	20.00000	Averaged
85 1,2,3-Trichloropropane	50.00000	58.22782	0.53798	0.000	-16.45564	20.00000	Linear
86 trans-1,4-dichloro-2-butene	0.19443	0.17009	0.17009	0.000	12.51704	20.00000	Averaged
87 Cyclohexanone	500	440	0.01571	0.000	12.03139	20.00000	Wt Linear
88 4-Chlorotoluene	3.24690	3.26294	3.26294	0.000	-0.49413	20.00000	Averaged
89 t-Butylbenzene	3.54775	3.59498	3.59498	0.000	-1.33132	20.00000	Averaged
91 1,2,4-Trimethylbenzene	4.20445	4.01923	4.01923	0.000	4.40549	20.00000	Averaged

Data File: FICV5585.D
Report Date: 16-Jun-2011 17:50

TestAmerica St. Louis

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: MSF.i Injection Date: 12-JUN-2011 21:07
Lab File ID: FICV5585.D Init. Cal. Date(s): 12-JUN-2011 12-JUN-2011
Analysis Type: WATER Init. Cal. Times: 17:27 20:18
Lab Sample ID: ICV050 Quant Type: ISTD
Method: \\Slsvr01\Chem\MSF.i\F110612B.b\ICAL_8260C_Low\8260C-F5mL.m

COMPOUND	RRF / AMOUNT	RF50	CCAL RRF50	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE	
92 sec-Butylbenzene	6.17082	5.71447	5.71447	0.000	7.39533	20.00000	Averaged	
93 4-Isopropyltoluene	4.63177	4.42264	4.42264	0.000	4.51520	20.00000	Averaged	
94 1,3-Dichlorobenzene	1.71575	1.68946	1.68946	0.000	1.53241	20.00000	Averaged	
96 1,4-Dichlorobenzene	1.68817	1.63417	1.63417	0.000	3.19836	20.00000	Averaged	
98 n-Butylbenzene	5.18510	4.76397	4.76397	0.000	8.12186	20.00000	Averaged	
99 1,2-Dichlorobenzene	1.46448	1.42087	1.42087	0.000	2.97812	20.00000	Averaged	
145 Nonanal	0.48382	0.35261	0.35261	0.000	27.12002	20.00000	Averaged	<-
100 1,2-Dibromo-3-chloropropane	0.07580	0.06947	0.06947	0.000	8.35958	20.00000	Averaged	
101 Hexachlorobutadiene	0.68255	0.64676	0.64676	0.000	5.24324	20.00000	Averaged	
104 1,2,4-Trichlorobenzene	0.96341	0.92779	0.92779	0.000	3.69711	20.00000	Averaged	
105 Naphthalene	1.65227	1.58959	1.58959	0.000	3.79342	20.00000	Averaged	
106 1,2,3-Trichlorobenzene	0.79552	0.72893	0.72893	0.000	8.37046	20.00000	Averaged	
M 107 Xylenes (total)	0.77146	0.77645	0.77645	0.000	-0.64662	20.00000	Averaged	

Data File: \\Slsvr01\Chem\MSF.i\F110724A.b\FCCV6160.D
Report Date: 25-Jul-2011 14:24

TestAmerica St. Louis

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: MSF.i Injection Date: 24-JUL-2011 13:01
Lab File ID: FCCV6160.D Init. Cal. Date(s): 12-JUN-2011 12-JUN-2011
Analysis Type: WATER Init. Cal. Times: 17:27 20:18
Lab Sample ID: VSTD010 Quant Type: ISTD
Method: \\Slsvr01\Chem\MSF.i\F110724A.b\8260C-F5mL.m

COMPOUND	RRF / AMOUNT	RF50	CCAL RRF50	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE	
1 Dichlorodifluoromethane	0.45388	0.45029	0.45029	0.000	0.78998	20.00000	Averaged	
2 Freon-114	0.18560	0.17322	0.17322	0.000	6.66957	20.00000	Averaged	
3 Chloromethane	0.58383	0.61060	0.61060	0.100	-4.58397	20.00000	Averaged	
4 Vinyl Chloride	0.57275	0.56129	0.56129	0.000	2.00080	20.00000	Averaged	
5 Bromomethane	0.15920	0.14367	0.14367	0.000	9.75465	20.00000	Averaged	
6 Chloroethane	0.23786	0.22564	0.22564	0.000	5.13925	20.00000	Averaged	
7 Trichlorofluoromethane	0.52928	0.51520	0.51520	0.000	2.65952	20.00000	Averaged	
8 Diethyl ether	0.08348	0.08506	0.08506	0.000	-1.89316	20.00000	Averaged	
9 1,1-Dichloroethene	0.31166	0.30794	0.30794	0.000	1.19448	20.00000	Averaged	
10 Carbon Disulfide	1.14376	1.12190	1.12190	0.000	1.91137	20.00000	Averaged	
11 1,1,2-Trichlorofluoroethane	0.20459	0.19484	0.19484	0.000	4.76331	20.00000	Averaged	
12 Iodomethane	0.38725	0.37842	0.37842	0.000	2.28127	20.00000	Averaged	
13 Acrolein	0.01180	0.01589	0.01589	0.000	-34.63341	20.00000	Averaged	<-
14 Allyl chloride	0.35079	0.33445	0.33445	0.000	4.65865	20.00000	Averaged	
15 Methylene Chloride	0.28711	0.26783	0.26783	0.000	6.71790	20.00000	Averaged	
16 Acetone	50.00000	53.06019	0.04175	0.000	-6.12038	20.00000	Wt Linear	
17 trans-1,2-Dichloroethene	0.34395	0.33838	0.33838	0.000	1.61856	20.00000	Averaged	
18 Methyl Acetate	50.00000	53.53972	0.01842	0.000	-7.07943	20.00000	Wt Linear	
19 n-Hexane	0.07787	0.07663	0.07663	0.000	1.59166	20.00000	Averaged	
20 MTBE	0.44891	0.45726	0.45726	0.000	-1.86015	20.00000	Averaged	
21 Acetonitrile	250	272	0.01279	0.000	-8.62225	60.00000	Wt Linear	
22 2-Chloro-1,3-butadiene	0.59207	0.60285	0.60285	0.000	-1.82095	20.00000	Averaged	
23 1,1-Dichloroethane	0.66961	0.62028	0.62028	0.100	7.36696	20.00000	Averaged	
24 Acrylonitrile	0.04131	0.03943	0.03943	0.000	4.54844	20.00000	Averaged	
25 Vinyl acetate	0.21012	0.22515	0.22515	0.000	-7.15117	20.00000	Averaged	
M 26 1,2-Dichloroethene (total)	0.32517	0.31364	0.31364	0.000	3.54520	20.00000	Averaged	
27 cis-1,2-Dichloroethene	0.30638	0.28890	0.28890	0.000	5.70807	20.00000	Averaged	
28 2,2-Dichloropropane	0.46839	0.44986	0.44986	0.000	3.95707	20.00000	Averaged	
30 Bromochloromethane	0.09297	0.09153	0.09153	0.000	1.54867	20.00000	Averaged	
29 Cyclohexane	0.55424	0.53790	0.53790	0.000	2.94818	20.00000	Averaged	
31 Chloroform	0.48896	0.44384	0.44384	0.000	9.22662	20.00000	Averaged	
33 Ethyl acetate	0.01367	0.01318	0.01318	0.000	3.62704	20.00000	Averaged	
32 Carbon Tetrachloride	0.42601	0.37523	0.37523	0.000	11.92055	20.00000	Averaged	
34 Tetrahydrofuran	0.01070	0.01228	0.01228	0.000	-14.81686	20.00000	Averaged	
$ 35 Dibromofluoromethane	0.19906	0.20203	0.20203	0.000	-1.49551	20.00000	Averaged	
36 1,1,1-Trichloroethane	0.48975	0.45462	0.45462	0.000	7.17278	20.00000	Averaged	
37 2-Butanone	0.03807	0.03754	0.03754	0.000	1.38314	20.00000	Averaged	
39 1,1-Dichloropropene	0.46395	0.43618	0.43618	0.000	5.98615	20.00000	Averaged	
40 Benzene	1.22506	1.11733	1.11733	0.000	8.79453	20.00000	Averaged	
41 Propionitrile	0.01448	0.01529	0.01529	0.000	-5.60350	20.00000	Averaged	
42 Methacrylonitrile	0.05971	0.06124	0.06124	0.000	-2.55969	20.00000	Averaged	
$ 43 1,2-Dichloroethane-d4	0.20808	0.21129	0.21129	0.000	-1.54180	20.00000	Averaged	
44 1,2-Dichloroethane	0.25879	0.24910	0.24910	0.000	3.74445	20.00000	Averaged	

Data File: \\Slsvr01\Chem\MSF.i\F110724A.b\FCCV6160.D
Report Date: 25-Jul-2011 14:24

TestAmerica St. Louis

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: MSF.i Injection Date: 24-JUL-2011 13:01
Lab File ID: FCCV6160.D Init. Cal. Date(s): 12-JUN-2011 12-JUN-2011
Analysis Type: WATER Init. Cal. Times: 17:27 20:18
Lab Sample ID: VSTD010 Quant Type: ISTD
Method: \\Slsvr01\Chem\MSF.i\F110724A.b\8260C-F5mL.m

COMPOUND	RRF / AMOUNT	RF50	CCAL RRF50	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
45 Isobutanol	0.00430	0.00422	0.00422	0.000	1.85865	20.00000	Averaged
47 Methylcyclohexane	0.50293	0.45870	0.45870	0.000	8.79447	20.00000	Averaged
48 Trichloroethene	0.30624	0.27659	0.27659	0.000	9.68147	20.00000	Averaged
49 n-Butanol	500	546	0.00285	0.000	-9.10588	20.00000	Wt Linear
50 Dibromomethane	0.08969	0.08307	0.08307	0.000	7.37738	20.00000	Averaged
51 1,2-Dichloropropane	0.27901	0.25449	0.25449	0.000	8.78811	20.00000	Averaged
52 Bromodichloromethane	0.26525	0.24580	0.24580	0.000	7.33237	20.00000	Averaged
53 Methyl methacrylate	0.07116	0.06907	0.06907	0.000	2.92668	20.00000	Averaged
54 1,4-Dioxane	0.00095	0.00100	0.00100	0.000	-4.89260	20.00000	Averaged
55 2-Chloroethylvinyl ether	0.03817	0.03692	0.03692	0.000	3.28046	20.00000	Averaged
56 cis-1,3-Dichloropropene	0.31434	0.31416	0.31416	0.000	0.05857	20.00000	Averaged
$ 57 Toluene-d8	1.43466	1.49451	1.49451	0.000	-4.17189	20.00000	Averaged
58 Toluene	1.15575	1.01508	1.01508	0.000	12.17182	20.00000	Averaged
59 2-Nitropropane	50.00000	49.78412	0.06965	0.000	0.43177	60.00000	Wt Linear
62 4-Methyl-2-pentanone	0.14616	0.13219	0.13219	0.000	9.55563	20.00000	Averaged
60 Tetrachloroethene	0.30263	0.27973	0.27973	0.000	7.56628	20.00000	Averaged
63 trans-1,3-Dichloropropene	0.36551	0.37192	0.37192	0.000	-1.75210	20.00000	Averaged
64 1,1,2-Trichloroethane	0.16904	0.15747	0.15747	0.000	6.84511	20.00000	Averaged
65 Ethyl methacrylate	0.25653	0.25806	0.25806	0.000	-0.59776	20.00000	Averaged
66 Chlorodibromomethane	0.21533	0.20431	0.20431	0.000	5.12129	20.00000	Averaged
67 1,3-Dichloropropane	0.37718	0.37338	0.37338	0.000	1.00717	20.00000	Averaged
68 1,2-Dibromoethane	0.16465	0.16474	0.16474	0.000	-0.05161	20.00000	Averaged
69 2-Hexanone	0.09526	0.09457	0.09457	0.000	0.72136	20.00000	Averaged
71 Chlorobenzene	1.06484	0.98464	0.98464	0.300	7.53158	20.00000	Averaged
72 Ethylbenzene	2.31297	2.05295	2.05295	0.000	11.24170	20.00000	Averaged
73 1,1,1,2-Tetrachloroethane	0.33799	0.30400	0.30400	0.000	10.05462	20.00000	Averaged
74 m,p-Xylenes	0.79900	0.75693	0.75693	0.000	5.26463	20.00000	Averaged
75 o-Xylene	0.74786	0.70329	0.70329	0.000	5.95958	20.00000	Averaged
76 Styrene	0.99952	0.96142	0.96142	0.000	3.81139	20.00000	Averaged
77 Bromoform	0.20853	0.20827	0.20827	0.100	0.12927	20.00000	Averaged
78 Isopropylbenzene	4.47438	4.06872	4.06872	0.000	9.06627	20.00000	Averaged
$ 79 4-Bromofluorobenzene	1.10853	1.14477	1.14477	0.000	-3.26918	20.00000	Averaged
80 Bromobenzene	0.74093	0.70107	0.70107	0.000	5.37933	20.00000	Averaged
81 n-Propylbenzene	6.30148	5.62377	5.62377	0.000	10.75479	20.00000	Averaged
82 1,1,2,2-Tetrachloroethane	0.56784	0.52049	0.52049	0.300	8.33837	20.00000	Averaged
83 2-Chlorotoluene	3.88046	3.65937	3.65937	0.000	5.69744	20.00000	Averaged
84 1,3,5-Trimethylbenzene	4.41065	3.98880	3.98880	0.000	9.56434	20.00000	Averaged
85 1,2,3-Trichloropropane	50.00000	49.40954	0.46271	0.000	1.18092	20.00000	Linear
86 trans-1,4-dichloro-2-butene	0.19443	0.19448	0.19448	0.000	-0.02768	20.00000	Averaged
87 Cyclohexanone	500	569	0.02032	0.000	-13.82871	20.00000	Wt Linear
88 4-Chlorotoluene	3.24690	3.04565	3.04565	0.000	6.19822	20.00000	Averaged
89 t-Butylbenzene	3.54775	3.31250	3.31250	0.000	6.63104	20.00000	Averaged
91 1,2,4-Trimethylbenzene	4.20445	3.84290	3.84290	0.000	8.59936	20.00000	Averaged

Data File: \\Slsvr01\Chem\MSF.i\F110724A.b\FCCV6160.D
Report Date: 25-Jul-2011 14:24

TestAmerica St. Louis

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: MSF.i Injection Date: 24-JUL-2011 13:01
Lab File ID: FCCV6160.D Init. Cal. Date(s): 12-JUN-2011 12-JUN-2011
Analysis Type: WATER Init. Cal. Times: 17:27 20:18
Lab Sample ID: VSTD010 Quant Type: ISTD
Method: \\Slsvr01\Chem\MSF.i\F110724A.b\8260C-F5mL.m

COMPOUND	RRF / AMOUNT	RF50	CCAL RRF50	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE	
92 sec-Butylbenzene	6.17082	5.32976	5.32976	0.000	13.62958	20.00000	Averaged	
93 4-Isopropyltoluene	4.63177	4.15494	4.15494	0.000	10.29479	20.00000	Averaged	
94 1,3-Dichlorobenzene	1.71575	1.56484	1.56484	0.000	8.79565	20.00000	Averaged	
96 1,4-Dichlorobenzene	1.68817	1.52200	1.52200	0.000	9.84319	20.00000	Averaged	
98 n-Butylbenzene	5.18510	4.54151	4.54151	0.000	12.41217	20.00000	Averaged	
99 1,2-Dichlorobenzene	1.46448	1.34135	1.34135	0.000	8.40788	20.00000	Averaged	
145 Nonanal	0.48382	0.35984	0.35984	0.000	25.62549	20.00000	Averaged	<-
100 1,2-Dibromo-3-chloropropane	0.07580	0.07610	0.07610	0.000	-0.39772	20.00000	Averaged	
101 Hexachlorobutadiene	0.68255	0.59460	0.59460	0.000	12.88569	20.00000	Averaged	
104 1,2,4-Trichlorobenzene	0.96341	0.88947	0.88947	0.000	7.67440	20.00000	Averaged	
105 Naphthalene	1.65227	1.61311	1.61311	0.000	2.37020	20.00000	Averaged	
106 1,2,3-Trichlorobenzene	0.79552	0.71001	0.71001	0.000	10.74948	20.00000	Averaged	
M 107 Xylenes (total)	0.77146	0.73905	0.73905	0.000	4.20048	20.00000	Averaged	

FORM 8
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: TESTAMERICA ST. LOUIS Contract: 9661

Lab Code: Case No.: SAS No.: SDG No.: F1G200464

Lab File ID (Standard): FCCV6160 Date Analyzed: 07/24/11

Instrument ID: MSF Time Analyzed: 1301

GC Column: RTX-VMS ID: 0.25 (mm) Heated Purge: (Y/N) Y

	IS1		IS2(CBZ)		IS3	
	AREA #	RT #	AREA #	RT #	AREA #	RT #
12 HOUR STD	1898643	7.37	1206469	10.85	515482	12.73
UPPER LIMIT	3797286	7.87	2412938	11.35	1030964	13.23
LOWER LIMIT	949322	6.87	603235	10.35	257741	12.23
CLIENT SAMPLE NO.						
01 LAB BLANK	1755680	7.37	1076149	10.84	461529	12.74
02 LAB CHECK	1889545	7.37	1141416	10.84	483686	12.74
03 SF7-92 BACKF	1957501	7.37	1145090	10.84	436323	12.74
04 SF7-92 BACKF	2016584	7.37	1196803	10.85	453068	12.73
05 SF7-92 BACKF	1842753	7.37	1068946	10.84	401940	12.74
06 BEA025553_TB	1759338	7.37	1067326	10.84	438365	12.74
07 BEA025554_TB	1818899	7.37	1048151	10.85	402682	12.73
08 BEA025556_TB	1862002	7.37	1085630	10.85	438672	12.73
09 BEA025557_TB	1788945	7.37	1065208	10.84	410890	12.74
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						

IS1 = Fluorobenzene
IS2 (CBZ) = Chlorobenzene-d5
IS3 = 1,4 Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

page 1 of 1

FORM VIII VOA

GC/MS MISCELLANEOUS DATA

Assigned Surrogates/Internal Standards *

Compound	Assigned Surrogate	Assigned Internal Standard
Dichlorodifluoromethane	Dibromofluoromethane	Fluorobenzene
Freon-114	Dibromofluoromethane	Fluorobenzene
Chloromethane	Dibromofluoromethane	Fluorobenzene
Vinyl Chloride	Dibromofluoromethane	Fluorobenzene
Bromomethane	Dibromofluoromethane	Fluorobenzene
Chloroethane	Dibromofluoromethane	Fluorobenzene
Trichlorofluoromethane	Dibromofluoromethane	Fluorobenzene
Diethyl Ether	Dibromofluoromethane	Fluorobenzene
1,1-Dichloroethene	Dibromofluoromethane	Fluorobenzene
1,1,2-Trichlorofluoroethane	Dibromofluoromethane	Fluorobenzene
Carbon Disulfide	Dibromofluoromethane	Fluorobenzene
Iodomethane	Dibromofluoromethane	Fluorobenzene
Acrolein	Dibromofluoromethane	Fluorobenzene
Allyl chloride	Dibromofluoromethane	Fluorobenzene
Methylene Chloride	Dibromofluoromethane	Fluorobenzene
Acetone	Dibromofluoromethane	Fluorobenzene
Methyl Acetate	Dibromofluoromethane	Fluorobenzene
trans-1,2-Dichloroethene	Dibromofluoromethane	Fluorobenzene
n-Hexane	Dibromofluoromethane	Fluorobenzene
Acetonitrile	Dibromofluoromethane	Fluorobenzene
MTBE	Dibromofluoromethane	Fluorobenzene
2-Chloro-1,3-butadiene	Dibromofluoromethane	Fluorobenzene
1,1-Dichloroethane	Dibromofluoromethane	Fluorobenzene
1,2-Dichloroethene (total)	Dibromofluoromethane	Fluorobenzene
Acrylonitrile	Dibromofluoromethane	Fluorobenzene
Vinyl acetate	Dibromofluoromethane	Fluorobenzene
cis-1,2-Dichloroethene	Dibromofluoromethane	Fluorobenzene
2,2-Dichloropropane	Dibromofluoromethane	Fluorobenzene
Bromochloromethane	Dibromofluoromethane	Fluorobenzene
2-Butoxyethanol	Dibromofluoromethane	Fluorobenzene
Cyclohexane	Dibromofluoromethane	Fluorobenzene
Chloroform	Dibromofluoromethane	Fluorobenzene
t-Butyl Alcohol	Dibromofluoromethane	Fluorobenzene
Diisopropyl Ether	Dibromofluoromethane	Fluorobenzene
ETBE	Dibromofluoromethane	Fluorobenzene
Ethanol	Dibromofluoromethane	Fluorobenzene
2,2-Dimethylpentane	Dibromofluoromethane	Fluorobenzene
2,4-Dimethylpentane	Dibromofluoromethane	Fluorobenzene
2,2,3-Trimethylbutane	Dibromofluoromethane	Fluorobenzene

3,3-Dimethylpentane	Dibromofluoromethane	Fluorobenzene
Ethyl Acetate	Dibromofluoromethane	Fluorobenzene
Carbon Tetrachloride	Dibromofluoromethane	Fluorobenzene
Tetrahydrofuran	Dibromofluoromethane	Fluorobenzene
1,1,1-Trichloroethane	1,2-Dichloroethane-d4	Fluorobenzene
2-Butanone	1,2-Dichloroethane-d4	Fluorobenzene
1,1-Dichloropropene	1,2-Dichloroethane-d4	Fluorobenzene
Heptane	1,2-Dichloroethane-d4	Fluorobenzene
Benzene	1,2-Dichloroethane-d4	Fluorobenzene
Propionitrile	1,2-Dichloroethane-d4	Fluorobenzene
Methacrylonitrile	1,2-Dichloroethane-d4	Fluorobenzene
Isobutanol	1,2-Dichloroethane-d4	Fluorobenzene
1,2-Dichloroethane	1,2-Dichloroethane-d4	Fluorobenzene
Trichloroethene	1,2-Dichloroethane-d4	Fluorobenzene
Methyl cyclohexane	1,2-Dichloroethane-d4	Fluorobenzene
n-butanol	1,2-Dichloroethane-d4	Fluorobenzene
Dibromomethane	1,2-Dichloroethane-d4	Fluorobenzene
1,2-Dichloropropane	1,2-Dichloroethane-d4	Fluorobenzene
Bromodichloromethane	1,2-Dichloroethane-d4	Fluorobenzene
Methyl methacrylate	1,2-Dichloroethane-d4	Fluorobenzene
1,4-Dioxane	1,2-Dichloroethane-d4	Fluorobenzene
Cis-1,3-Dichloropropene	1,2-Dichloroethane-d4	Fluorobenzene
2-Chloroethylvinyl ether	1,2-Dichloroethane-d4	Fluorobenzene
TAME	1,2-Dichloroethane-d4	Fluorobenzene
2-Methylhexane	1,2-Dichloroethane-d4	Fluorobenzene
2,3-Dimethylpentane	1,2-Dichloroethane-d4	Fluorobenzene
3-Methylhexane	1,2-Dichloroethane-d4	Fluorobenzene
3-Ethypentane	1,2-Dichloroethane-d4	Fluorobenzene
Heptane	1,2-Dichloroethane-d4	Fluorobenzene
Toluene	Toluene-d8	Chlorobenzene-d5
Dimethyl Disulfide	Toluene-d8	Chlorobenzene-d5
2-Nitropropane	Toluene-d8	Chlorobenzene-d5
4-Methyl-2-pentanone (MEK)	Toluene-d8	Chlorobenzene-d5
trans-1,3-Dichloropropene	Toluene-d8	Chlorobenzene-d5
Tetrachloroethene	Toluene-d8	Chlorobenzene-d5
Ethyl methacrylate	Toluene-d8	Chlorobenzene-d5
1,1,2-Trichloroethane	Toluene-d8	Chlorobenzene-d5
Chlorodibromomethane	Toluene-d8	Chlorobenzene-d5
1,3-Dichloropropane	Toluene-d8	Chlorobenzene-d5
1,2-Dibromoethane	Toluene-d8	Chlorobenzene-d5
2-Hexanone	Toluene-d8	Chlorobenzene-d5
Ethylbenzene	Toluene-d8	Chlorobenzene-d5
Chlorobenzene	Toluene-d8	Chlorobenzene-d5

1,1,1,2-Tetrachloroethane	Toluene-d8	Chlorobenzene-d5
m,p-Xylenes	Toluene-d8	Chlorobenzene-d5
o-Xylenes	Toluene-d8	Chlorobenzene-d5
Styrene	Toluene-d8	Chlorobenzene-d5
1-Chlorohexane	Toluene-d8	Chlorobenzene-d5
Bromoform	Toluene-d8	1,4-Dichlorobenzene-d4
Isopropylbenzene	Toluene-d8	1,4-Dichlorobenzene-d4
n-Propylbenzene	4-Bromofluorobenzene	1,4-Dichlorobenzene-d4
1,1,2,2-Tetrachloroethane	4-Bromofluorobenzene	1,4-Dichlorobenzene-d4
Bromobenzene	4-Bromofluorobenzene	1,4-Dichlorobenzene-d4
1,3,5-Trimethylbenzene	4-Bromofluorobenzene	1,4-Dichlorobenzene-d4
2-Chlorotoluene	4-Bromofluorobenzene	1,4-Dichlorobenzene-d4
trans-1,4-dichlorobenzene-2-butene	4-Bromofluorobenzene	1,4-Dichlorobenzene-d4
1,2,3-Trichloropropane	4-Bromofluorobenzene	1,4-Dichlorobenzene-d4
4-Chlorotoluene	4-Bromofluorobenzene	1,4-Dichlorobenzene-d4
Cyclohexanone	4-Bromofluorobenzene	1,4-Dichlorobenzene-d4
t-Butylbenzene	4-Bromofluorobenzene	1,4-Dichlorobenzene-d4
1,2,4-Trimethylbenzene	4-Bromofluorobenzene	1,4-Dichlorobenzene-d4
Pentachloroethane	4-Bromofluorobenzene	1,4-Dichlorobenzene-d4
sec-Butylbenzene	4-Bromofluorobenzene	1,4-Dichlorobenzene-d4
4-Isopropyltoluene	4-Bromofluorobenzene	1,4-Dichlorobenzene-d4
1,3-Dichlorobenzene	4-Bromofluorobenzene	1,4-Dichlorobenzene-d4
1,4-Dichlorobenzene	4-Bromofluorobenzene	1,4-Dichlorobenzene-d4
n-Butylbenzene	4-Bromofluorobenzene	1,4-Dichlorobenzene-d4
1,2-Dichlorobenzene	4-Bromofluorobenzene	1,4-Dichlorobenzene-d4
1,3,5-trichlorobenzene	4-Bromofluorobenzene	1,4-Dichlorobenzene-d4
1,2-Dibromo-3-chloropropane	4-Bromofluorobenzene	1,4-Dichlorobenzene-d4
Hexachlorobutadiene	4-Bromofluorobenzene	1,4-Dichlorobenzene-d4
1,2,4-Trichlorobenzene	4-Bromofluorobenzene	1,4-Dichlorobenzene-d4
Naphthalene	4-Bromofluorobenzene	1,4-Dichlorobenzene-d4
1,2,3-Trichlorobenzene	4-Bromofluorobenzene	1,4-Dichlorobenzene-d4
4-Chlorophenyl methyl sulfide	4-Bromofluorobenzene	1,4-Dichlorobenzene-d4

* ISTD assignment is based on instrument operating conditions and column type and may vary slightly from this listing.

RQC058

TestAmerica Laboratories, Inc.
EXTRACTION BENCH WORKSHEET

Run Date: 7/25/11
Time: 12:12:29

LEV 1	LEV 2		LEV 1	LEV 2	
_	_	Blank	_	_	Weights/Volumes
_	_	Check	_	_	Spike & Surrogate Worksheet
_	_	MS/MSD	_	_	Vial contains correct volume
_	_		_	_	Labels, greenbars, worksheets
			_	_	computer batch: correct & all match
			_	_	Anomalies to Extraction Method

_ Expanded Deliverable
_ COC Completed
_ Bench Sheet Copied
_ Package Submitted to AnalyticalGroup
_ Bench Sheet Copied per COC

Extractionist: _____
_____
Concentrationist: _____
_____

Reviewer/Date: _____ / 0/00/00

****
* *
* **QC BATCH: 1206129** *
* *
****

PREP DATE: 7/24/11
COMP DATE: 7/24/11

Volatile Organics, GC/MS (8260B)
PURGE AND TRAP - 5 mL purge

EXTR EXPR	ANL DUE	LOT#,MSRUN# / WORK ORDER	TEST FLGS	EXT	MTH	MATRIX	INIT/FIN WT/VOL	PH"S INIT	PH"S ADJ1	PH"S ADJ2	SOLVENTS EXTRACTION	SOLVENTS VOL	SOLVENTS EXCHANGE	SOLVENTS VOL	SPIKE STANDARD/ SURROGATE ID
0/00/00	7/26/11	F1G150469-001 1206059 **MKX8L-1-CH**	R	15	QK	SOLID	**4.97g** 5.00mL	NA	NA	NA		.0		.0	
COMMENTS:															
0/00/00	7/26/11	F1G150469-001 1206059 **MKX8L-1-EUS**	R	15	QK	SOLID	**5.01g** 5.00mL	NA	NA	NA		.0		.0	
COMMENTS:															
0/00/00	7/26/11	F1G150469-001 1206059 **MKX8L-1-EVD**	R	15	QK	SOLID	**5.02g** 5.00mL	NA	NA	NA		.0		.0	
COMMENTS:															
0/00/00	7/26/11	F1G200464-001 1206059 **MK2L5-1-AA**	R	15	QK	SOLID	**5.00g** 5.00mL	NA	NA	NA		.0		.0	
COMMENTS:															
0/00/00	7/26/11	F1G200464-002 1206059 **MK2L6-1-AA**	R	15	QK	SOLID	**5.05g** 5.00mL	NA	NA	NA		.0		.0	
COMMENTS:															
0/00/00	7/26/11	F1G200464-003 1206059 **MK2L7-1-AA**	R	15	QK	SOLID	**5.01g** 5.00mL	NA	NA	NA		.0		.0	
COMMENTS:															
0/00/00	7/26/11	F1G200464-004 1206059 **MK2L8-1-AA**	R	15	QK	SOLID	**4.96g** 5.00mL	NA	NA	NA		.0		.0	
COMMENTS:															

RQC058

TestAmerica Laboratories, Inc.
EXTRACTION BENCH WORKSHEET

Run Date: 7/25/11
Time: 12:12:29

QC BATCH: 1206129

PREP DATE: 7/24/11
COMP DATE: 7/24/11

EXTR EXPR	ANL DUE	LOT#,MSRUN#/ WORK ORDER	TEST FLGS	EXT	MTH	MATRIX	INIT/FIN WT/VOL	PH"S INIT	PH"S ADJ1	PH"S ADJ2	SOLVENTS EXTRACTION	SOLVENTS VOL	SOLVENTS EXCHANGE	VOL	SPIKE STANDARD/ SURROGATE ID
0/00/00	0/00/00	F1G250000-129 **MK5K7-1-AAB**		15	QK	SOLID	**5.00g** 5.00mL	NA	NA	NA		.0		.0	
COMMENTS:															
0/00/00	0/00/00	F1G250000-129 **MK5K7-1-ACC**		15	QK	SOLID	**5.00g** 5.00mL	NA	NA	NA		.0		.0	
COMMENTS:															

R = RUSH C = CLP
E = EPA 600 D = EXP.DEL)
M = CLIENT REQ MS/MSD
‡

NUMBER OF WORK ORDERS IN BATCH: 9

LOT# F1G200464_REV01

SDG# BEA025553_TBD

74

45 of 57

TestAmerica St. Louis GC/MS Volatiles Runlog — Heated Purge (Y) / N

Instrument: MSF Date: 6-12-11B Operator: JDH Batch #: 1164173 Logbook No.: 3656

Data File	Time	Pos	Lot Number	Method	Lab ID	Matrix	pH <2	Wt/Vol g/ml	MeOH Vol.	Dil. Fact.	IS	Sur	Comments	
FSBK5569		1			S.BLK									-
FBFB5570					50ng BFB									N
5571					50ng BFB									N
5572					50ng BFB									N
5573					50ng BFB									N
5574	16:54				50ng BFB								2µl 3/90	Y
FSBK5575	cont'd	2		BZ60C	S.BLK									-
FICL5576		3			VSTD001	5g/5ml		5.00mls			/		0.2µl	
5577		4			VSTD002.5						/		0.5µl	
5578		5			VSTD005						/		1µl	curve OK
5579		6			VSTD010						/		2µl	BZ60C_LOW
5580		7			VSTD020						/		4µl	JDH
5581		8			VSTD050								10µl	
5582		9			VSTD100						/		4µl *	
5583		10			VSTD200						/		8µl *	
FSBK5584		11			S.BLK									-
FICV5585		12			ICV050						/		10µl	
FLCS5586		13	FIF130000-173C		MJCKT7CT1AC JDH 6-14-11	H_2O			NA		/	/		Y
FSBK5587		14			S.BLK									-
FBLK5588		15	FIF130000-173B		MJ7CT1AA	H_2O		5.00mls			/	/		Y
FSMP5589		16	FIF100444-1		MJSP61AA	>	> 2			1x	/	/		Y
5590		17	FIF100439-1		MJSNW1AA		> 2				/	/		Y
5591		18	-2		MJSNX1AA		> 2				/	/		Y
5592		19	-2S		IAC (MS)						/	/	10µl	Y
5593	00:22	20	-2D		IAD (MSD)						/	/	10µl	Y

BFB VA0382-11 CAL VA0385-11 / 388-11 *

LCS/MS/MSD/ICV VA0387-11 SURR VA0365-11

IS VA0377-11 Other

Note: Concentrations for standards can be found in the standards log.

Form: SL-ORG-0021 Rev 8/5/10

Definitions: QCLCS or LCS – Laboratory Control Sample; QCBLK or BLK – Method Blank;

MeOH Lot#: N/A

Reporting Flags: Y=Yes data reported; N=No data not reported; TBD=to be determined pending re-analysis; TBD Y = data reported; TBD N = data not reported

QC Reviewed By/Date: 6-16-11

Clock Review Assigned To: JDH

ICAL NCMs 06-0180917 -0180918

BEA-SOW-8500, REV.4

SOP Reference ST-MS-0002

77

[redacted]

TestAmerica St. Louis GC/MS Volatiles Runlog 1206129 Soil Heated Purge (Y) N

Instrument: MSF Date: 7-24-11A Operator: JDH Batch #: 1205015 H_2O Logbook No.: 3704

Data File	Time	Pos	Lot Number	Method	Lab ID	Matrix	pH <2	Wt/Vol g/ml	MeOH Vol.	Dil. Fact.	IS	Sur	Comments	
FSBK6158		1			5.BLK									—
FBFB 6159	12:40				50ng BFB								2µl	Y
FCCV6160	Cont'd	2		8260C	VSTD050			5.00mls			/		10µl	Y
FLCS 6161	↓	3	FIG240000 015C		MK5AJIAC	H_2O		↓	NA		/	/	10µl	Y
FSBK 6162		4			5.BLK									—
FBLK 6163		5	FIG240000-015B		MK5AJIAA	H_2O		5.00mls			/	/		Y
FSMP 6164		6	FIG220464-1		MK4QFIAA		>2			1x	/	/		Y
6165		7	FIG200449-1		MK2JCIAA		>2				/	/		Y
6166		8	-4		MK2JLIAE		>2				/	/		Y
6167		9	-4S		IAL (MS)						/	/	10µl	Y
6168		10	-4D		IAM (MSD)						/	/	10µl	Y
FSBK 6169		11			5.BLK								TCE 0.72 ppb	—
FSMP 6170		12	FIG200449-5		MK2JRIAD		>2				/	/		Y
6171		13	-6		MK2JVIAD		>2				/	/		Y
FSBK 6172		14	FIG2		5.BLK								TCE 0.52 ppb	—
FSMP 6173		15	FIG220464-2		MK4QM1AFC JDH 7-25-11		>2				/	/		Y
6174		16	FIG200449-4		MK2JLZAE		>2	1.00ml		5x	/	/		Y
6175		17	-6		MK2JVZAD		>2	↓		↓	/	/		Y
FBLK 6176		18	FIG250000-129B		MK5K71AA	SOIL	NA	5.00g			/	/		Y
FLCS 6177		19	-129C		MK5K71AC			5.00g			/	/	10µl	Y
FSMP 6178		20	FIG150469-1S		MKX8L1EU (MS)			5.01g		1x	/	/	10µl	Y
6179		21	-1D		1EV (MSD)			5.02g		↓	/	/	10µl	Y
FSBK 6180		22			5.BLK									—
FSMP 6181	↓	23	FIG150469-1		MKX8LICH			4.97g		1x	/	/		Y
6182	22:04	24	FIG200464-1	↓	MK2L51AA	↓	↓	5.00g	↓	↓	/	/		Y

Note: Concentrations for standards can be found in the standards log.

BFB	VA0452-11	CAL	VA0474-11
LCS/MS/MSD/ICV	VA0471-11	SURR	VA0460-11
IS	VA0458-11	Other	

Form: SL-ORG-0021 Rev 8/5/10

Definitions: QCLCS or LCS – Laboratory Control Sample; QCBLK or BLK – Method Blank;

MeOH Lot#: N/A

Reporting Flags: Y=Yes data reported; N=No data not reported; TBD=to be determined pending re-analysis; TBD Y = data reported; TBD N = data not reported

QC Reviewed By/Date: [signature] 7-25-11

Clock Review Assigned To: JDH

[redacted]

TestAmerica St. Louis GC/MS Volatiles Runlog

Heated Purge (Y) / N

Instrument: MSF Date: 7-24-11A Operator: JDH Batch #: 1206129 Soil Logbook No.: 3704

Data File	Time	Pos	Lot Number	Method	Lab ID	Matrix	pH <2	Wt/Vol g/ml	MeOH Vol.	Dil. Fact.	IS	Sur	Comments	
FSMP 6183		25	F1G200464-2	8260C	MK2L61AA	Soil	NA	5.05g	NA	1x	/	/		Y
6184		26	-3		MK2L71AA			5.01g			/	/		Y
6185		27	-4		MK2L81AA			4.96g			/	/		Y
6186	23:42	28	F1G190452-3		MK1LL1AC			0.98g		5x	/		too dilute	N

JDH 7-25-11

BFB	VA0452-11	CAL	VA0474-11
LCS/MS/MSD/ICV	VA0471-11	SURR	VA0460-11
IS	VA0458-11	Other	

Note: Concentrations for standards can be found in the standards log.

Form: SL-ORG-0021 Rev 8/5/10

Definitions: QCLCS or LCS – Laboratory Control Sample; QCBLK or BLK – Method Blank;

MeOH Lot#: N/A

Reporting Flags: Y=Yes data reported; N=No data not reported; TBD=to be determined pending re-analysis; TBD Y = data reported; TBD N = data not reported

QC Reviewed By/Date: Dan 7-25-11

Clock Review Assigned To: JDH

SOP Reference ST-MS-0002

21

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica St. Louis
Data Review Checklist
GC/MS Volatiles

Regular 8260C ICAL JA
NaHSO4 ICAL
524 ICAL
624 ICAL
BRC ICAL
Special ICAL F110612B 8260C_LOW

Clock ID: F110724A

12 Hour ISTD Reference: FCCV6160

Method: 8260C Batch #: ① 1206129 SOIL ② 1205015 H_2O Due Date (earliest): 7-26-11

	①	②
Original Runs:	FIG250000-129 BLK,LCS	FIG240000-015 BLK,LCS
	FIG150469-1,15,1D	FIG220469-1,2
	FIG200464-1,2,3,4	FIG200449-1,4,4S,4D,5,6
Do Not Release		
Dilution/Reruns		FIG200449-4,6
Not Reported Samples		

Review Item	Yes	No	N/A	2nd Review
A. Tuning 1. BFB tuning meets method criteria?	✓			✓
B. Continuing Calibration (CCV) 1. Continuing Calibration meets method acceptance criteria (max. 20%)? If not, please reference NCM # 06-0183337		✓		✓
C. Batch QC – Method Blanks 1. Are the associated batch method blanks included in this submission? (No - only applicable for medium level extractions and TCLP) If not, please indicate where to find:	✓			✓
2. Is the method blank "ND" for targets of interest? If not, please reference NCM #	✓			✓
D. Batch QC – LCS 1. Are the associated batch LCSs included in this submission? (No -only applicable for medium level extractions and TCLP) If not, please indicate where to find:	✓			✓
2. Are the LCS (LCSD) recoveries within method acceptance? If not, please reference NCM # 06-0183338	② ✓	① ✓		✓
E. Batch QC – MS/MSD 1. Are the associated batch MS/MSDs included in this submission? (No -only applicable for medium level extractions) If not, please indicate where to find:	✓			✓
2. MS/MSD performed? If not, please reference NCM#	✓			✓
3. Are the MS/MSD recoveries within method acceptance? If not, please reference NCM #	✓			✓

GCMS VOA Data Review
QA/Forms/Review/GCMS VOA
Revision 3 10/12/10

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TestAmerica St. Louis
Data Review Checklist
GC/MS Volatiles

Review Item	Yes	No	N/A	2nd Review
F. Batch QC – RPD				
1. MS/MSD (LCS/LCSD) RPD within acceptance criteria? If not, please reference NCM # _____	/			/
G. Batch QC – Surrogate				
1. Surrogate recoveries for QC and samples within acceptance criteria? If not, please reference NCM # _____	/			/
H. Sample Results – Dilutions				
1. Did samples required dilution due to matrix interference or high target analyte concentration(s)? If so, please reference NCM # 06-0183344	(2) /	(1) /		/
I. Sample Results – Internal Standards				
1. Were sample internal standard responses acceptable? If not, please reference NCM # _____	/			/
J. Sample Results – Hold time/Clock time				
1. Were sample analyses within hold/clock time? If not, please reference NCM # _____	/			/
2. Were sample analyses within 12 hr clock (24 hr clock for method 624)? If not, please reference NCM#: _____	/			/
3. Are correct analytes reported for dilution/reanalysis?	(2) /		(1) /	/
4. Do dilutions/re-analysis "match up" to initial run?	(2) /		(1) /	/
K. Sample Results – Misc. information				
1. Are Batch sheets, Ext. logs (if applicable) included?	/			/
2. Are copies of run logs included, initialed and dated?	/			/
3. Are pH verifications recorded on the runlog?	(2) /		(1) /	/
4. Are library searches included? (only if requested by the client)			/	
L. Other (for QA spot assessment)				
1. Were manual integrations checked, signed and dated?	/			/
2. Client requirement sheets followed in data package?	/			/

ICAL NCMs 06-0180917, -0180918

Analyst: John D. Hamm Date: 7-25-11

Second-Level Review: Date: 7/26/11

GCMS VOA Data Review
QA/Forms/Review/GCMS VOA
Revision 3 10/12/10

Battelle Energy Alliance

Client Sample ID: BEA025553_TBD

General Chemistry

Lot-Sample #...: F1G200464-001 Work Order #...: MK2L5 Matrix.....: SOLID
Date Sampled...: 07/18/11 12:15 Date Received..: 07/20/11
% Moisture.....: 15

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Moisture	14.7	0.10	%	MCAWW 160.3 MOD	07/22-07/23/11	1203021
	Dilution Factor: 1			Analysis Time..: 00:00		

Battelle Energy Alliance

Client Sample ID: BEA025554_TBD

General Chemistry

Lot-Sample #...: F1G200464-002 Work Order #...: MK2L6 Matrix.....: SOLID
Date Sampled...: 07/18/11 14:15 Date Received..: 07/20/11
% Moisture.....: 15

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP DATCH #
Percent Moisture	15.4	0.10	%	MCAWW 160.3 MOD	07/22-07/23/11	1203021
	Dilution Factor: 1			Analysis Time..: 00:00		

Battelle Energy Alliance

Client Sample ID: BEA025556_TBD

General Chemistry

Lot-Sample #...: F1G200464-003 Work Order #...: MK2L7 Matrix.....: SOLID
Date Sampled...: 07/18/11 14:55 Date Received..: 07/20/11
% Moisture.....: 18

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP DATCH #
Percent Moisture	17.6	0.10	%	MCAWW 160.3 MOD	07/22-07/23/11	1203021
	Dilution Factor: 1			Analysis Time..: 00:00		

Battelle Energy Alliance

Client Sample ID: BEA025557_TBD

General Chemistry

Lot-Sample #...: F1G200464-004 Work Order #...: MK2L8 Matrix.....: SOLID
Date Sampled...: 07/18/11 15:10 Date Received..: 07/20/11
% Moisture.....: 14

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP DATCH #
Percent Moisture	13.9	0.10	%	MCAWW 160.3 MOD	07/22-07/23/11	1203021
	Dilution Factor: 1			Analysis Time..: 00:00		

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F1G200464 **Work Order #...:** MK1D8-SMP **Matrix.....:** SOLID
MK1D8-DUP
Date Sampled...: 07/18/11 08:00 **Date Received..:** 07/19/11
% Moisture.....: 15

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Moisture						SD Lot-Sample #: F1G190427-001		
	15.1	17.0	%	12	(0-30)	MCAWW 160.3 MOD	07/22-07/23/11	1203021

Dilution Factor: 1 Analysis Time..: 00:00

BEA-SOW-8500, REV.4

F1G200464

CLIENT ANALYSIS SUMMARY

Storage Loc: **VS20**

Project Manager: JK2 Quote #: 89239 SDG:

Project: 101847330 TOS-A1147/TAN-664 Fuel Tank So

PO#: Report to: Peggy Sherbinske

Client: 9661 Battelle Energy Alliance

RUSH

#SMPS in LOT: 4

Date Received: 2011-07-20

Analytical Due Date: 2011-07-26

Report Due Date: 2011-07-27

Report Type: F Forms Only

EDD Code: 00

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
1	BEA025553_TBD			2011-07-18 / 1215	MK2L5	SOLID

SAMPLE COMMENTS: LET VOA ALIQUOT FIRST

XX	QK	SW846	8260B	SOLID, 8260B, BTEX+MTBE+Nap (IVOA-A-014)	4B	PURGE AND TRAP - Lab MEOH Ext. (Solids or Wastes)	01	STANDARD TEST SET	PROT: A	WRK LOC	06	TIC: N
XX	WM	MCAW W	160.3 MOD	SOLID, 160.3 MOD, Percent Moisture	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
2	BEA025554_TBD			2011-07-18 / 1415	MK2L6	SOLID

SAMPLE COMMENTS: LET VOA ALIQUOT FIRST

XX	QK	SW846	8260B	SOLID, 8260B, BTEX+MTBE+Nap (IVOA-A-014)	4B	PURGE AND TRAP - Lab MEOH Ext. (Solids or Wastes)	01	STANDARD TEST SET	PROT: A	WRK LOC	06	TIC: N
XX	WM	MCAW W	160.3 MOD	SOLID, 160.3 MOD, Percent Moisture	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
3	BEA025556_TBD			2011-07-18 / 1455	MK2L7	SOLID

SAMPLE COMMENTS: LET VOA ALIQUOT FIRST

XX	QK	SW846	8260B	SOLID, 8260B, BTEX+MTBE+Nap (IVOA-A-014)	4B	PURGE AND TRAP - Lab MEOH Ext. (Solids or Wastes)	01	STANDARD TEST SET	PROT: A	WRK LOC	06	TIC: N
XX	WM	MCAW W	160.3 MOD	SOLID, 160.3 MOD, Percent Moisture	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
4	BEA025557_TBD			2011-07-18 / 1510	MK2L8	SOLID

SAMPLE COMMENTS: LET VOA ALIQUOT FIRST

XX	QK	SW846	8260B	SOLID, 8260B, BTEX+MTBE+Nap (IVOA-A-014)	4B	PURGE AND TRAP - Lab MEOH Ext. (Solids or Wastes)	01	STANDARD TEST SET	PROT: A	WRK LOC	06	TIC: N
XX	WM	MCAW W	160.3 MOD	SOLID, 160.3 MOD, Percent Moisture	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	

CUL 202

BEA-SOW-8500, REV.4

Idaho National Laboratory

Chain of Custody Number : 4432 7144 9910

Laboratory: Test America
Facility: Earth City, MO
Contact: Jim Kleszczewski
Phone: 314-298-8566

Address:
13715 Rider Trail North
Earth City MO 63405

INL Contact: Peggy Scherbinske **Phone:** 533-7144

Sample Number	Sample Details			
BEA025553_TBD	**Location:**	TO BE DETERMINED (TBD)		
	Analysis:	BTEX \ IVOA-A-014 \ BTEX		
	Sample Date:	7/18/2011 12:15:00 PM	**Container Qty - Type:**	1 - 125ml AG
	Contract:	TOS-A1147	**Filtered?**	N
	Hold Time:		**Preservative:**	Cool to 4 deg C
	Matrix:	SOIL		
BEA025554_TBD	**Location:**	TO BE DETERMINED (TBD)		
	Analysis:	BTEX \ IVOA-A-014 \ BTEX		
	Sample Date:	7/18/2011 2:15:00 PM	**Container Qty - Type:**	1 - 125ml AG
	Contract:	TOS-A1147	**Filtered?**	N
	Hold Time:		**Preservative:**	Cool to 4 deg C
	Matrix:	SOIL		
BEA025556_TBD	**Location:**	TO BE DETERMINED (TBD)		
	Analysis:	BTEX \ IVOA-A-014 \ BTEX		
	Sample Date:	7/18/2011 2:55:00 PM	**Container Qty - Type:**	1 - 125ml AG
	Contract:	TOS-A1147	**Filtered?**	N
	Hold Time:		**Preservative:**	Cool to 4 deg C
	Matrix:	SOIL		
BEA025557_TBD	**Location:**	TO BE DETERMINED (TBD)		
	Analysis:	BTEX \ IVOA-A-014 \ BTEX		
	Sample Date:	7/18/2011 3:10:00 PM	**Container Qty - Type:**	1 - 125ml AG
	Contract:	TOS-A1147	**Filtered?**	N
	Hold Time:		**Preservative:**	Cool to 4 deg C
	Matrix:	SOIL		

Relinquished By:	Date:	Time:	Received By:
	7/19/11	1430	
	7/20/11	0925	

Comments:

TOS-A1147 BTEX IVOA-A-014/BTEX/BTEX (Plus MTBE and Naphthalene). If any problems arise please contact Mike Towler at 208-589-2311. Thanks

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

CUR Form #: 202

Lot #(s): F1G200464

BEA-SOW-8500, REV.4

CONDITION UPON RECEIPT FORM

Client: ~~DENVER~~ MET LAB

Quote No: 89239

COC/RFA No: 4432 7144 9910

Initiated By: NVO Date: 7/20/11 Time: 0925

Shipping Information

Shipper: (FedEx) UPS DHL Courier Client Other: Multiple Packages: Y (N)

Shipping # (s):*				Sample Temperature (s):**			
1.	4432 7144 9910	6.		1.	2	6.	
2.		7.		2.		7.	
3.		8.		3.		8.	
4.		9.		4.		9.	
5		10.		5.		10.	

*Numbered shipping lines correspond to Numbered Sample Temp lines

**Sample must be received at 4°C ± 2°C- If not, note contents below. Temperature variance does NOT affect the following: Metals-Liquid; Rad tests- Liquid or Solids; Perchlorate

Condition (Circle "Y" for yes, "N" for no and "N/A" for not applicable):

1.	(Y) N	Are there custody seals present on the cooler?	8.	Y (N)	Are there custody seals present on bottles?
2.	Y (N) N/A	Do custody seals on cooler appear to be tampered with?	9.	Y N (N/A)	Do custody seals on bottles appear to be tampered with?
3.	(Y) N	Were contents of cooler frisked after opening, but before unpacking?	10.	Y N (N/A)	Was sample received with proper pH[1]? (If not, make note below)
4.	(Y) N	Sample received with Chain of Custody?	11.	Y N (N/A)	Containers for C-14, H-3 & I-129/131 marked with "Do Not Preserve" label?
5.	(Y) N N/A	Does the Chain of Custody match sample ID's on the container(s)?	12.	(Y) N	Sample received in proper containers?
6.	Y (N)	Was sample received broken?	13.	Y N (N/A)	Headspace in VOA or TOX liquid samples? (If Yes, note sample ID's below)
7.	(Y) N	Is sample volume sufficient for analysis?	14.	Y N (N/A)	Was Internal COC/Workshare received?

[1] For DOE-AL (Pantex, LANL, Sandia) sites, pH of ALL containers received must be verified, EXCEPT VOA, TOX, Oil & Grease and soils.

Notes:

Corrective Action:

Client Contact Name: Informed by:

Sample(s) processed "as is"

Sample(s) on hold until: If released, notify:

Project Management Review: JMK Date: 07-22-11

THIS FORM MUST BE COMPLETED AT THE TIME THE ITEMS ARE BEING CHECKED IN. IF ANY ITEM IS COMPLETED BY SOMEONE OTHER THAN THE INITIATOR, THEN THAT PERSON IS REQUIRED TO APPLY THEIR INITIAL AND THE DATE NEXT TO THAT ITEM.