



**TETRA TECH**

June 22, 2012

Mr. Dave Williams  
On-Scene Coordinator  
U.S. Environmental Protection Agency, Region 7  
901 North 5<sup>th</sup> Street  
Kansas City, Kansas 66101

**Subject: Quality Assurance Project Plan for a Removal Assessment  
Studer Container Service Site, Kansas City, Jackson County, Missouri  
CERCLIS ID Number: MON000706453  
U.S. EPA Region 7 START 3, Contract No. EP-S7-06-01, Task Order No. 0001.129  
Task Monitor: Dave Williams, On-Scene Coordinator**

Dear Mr. Williams:

Tetra Tech EM Inc. is submitting the attached Quality Assurance Project Plan for a Removal Assessment of the Studer Container Service site in Kansas City, Missouri. If you have any questions or comments, please contact me, the project manager, at (816) 412-1745.

Sincerely,

Keith Brown  
START Project Manager

for Ted Faile, PG, CHMM  
START Program Manager

Enclosures

Cc: Roy Crossland, EPA Region 7 (cover letter only)

**QUALITY ASSURANCE PROJECT PLAN  
FOR A REMOVAL ASSESSMENT AT THE STUDER CONTAINER SERVICE SITE  
KANSAS CITY, JACKSON COUNTY, MISSOURI**

**CERCLIS ID NUMBER: MON000706453**

**Superfund Technical Assessment and Response Team (START) Contract  
Contract No. EP-S7-06-01, Task Order 0001.129**

Prepared For:

U.S. Environmental Protection Agency  
Region 7  
Superfund Division  
901 N. 5<sup>th</sup> Street  
Kansas City, Kansas 66101

June 22, 2012

Prepared By:

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**Region 7 Superfund Program  
Addendum to the QAPP for Superfund Integrated Site Assessment and Targeted Brownfields Assessment Activities (July 2007)  
for the Studer Container Service Site**

**Project Information:**

<b>Project Name:</b> Studer Container Service	<b>City:</b> Kansas City	<b>State:</b> MO
<b>EPA Project Manager:</b> Dave Williams	<b>START Project Manager:</b> Keith Brown	
<b>Approved By:</b> <i>Keith Brown</i>	<b>Date:</b> 6/22/12	<b>Prepared For:</b> EPA Region 7 Superfund Division
<b>Title:</b> START Project Manager	<b>Date:</b>	
<b>Approved By:</b> <i>David A. Ginnem</i>	<b>Date:</b> 6/22/12	<b>Prepared By:</b> Keith Brown <b>Date:</b> June 2012
<b>Title:</b> START Program Manager	<b>Date:</b>	
<b>Approved By:</b> <i>Kathy Homer</i>	<b>Date:</b> 6/22/12	<b>Tetra Tech START Project Number:</b> X9004.06.0001.129
<b>Title:</b> START QA Manager	<b>Date:</b>	
<b>Approved By:</b>	<b>Title:</b> EPA Project Manager	<b>Date:</b>
<b>Approved By:</b>	<b>Title:</b> EPA Region 7 QA Manager	<b>Date:</b>

**1.0 Project Management:**

**1.1 Distribution List**

EPA—Region 7: Dave Williams, EPA Project Manager  
Diane Harris, EPA Region 7 QA Manager

Tetra Tech START: Keith Brown, Project Manager  
Kathy Homer, QA Manager

**1.2 Project/Task Organization**

Dave Williams, of the EPA Region 7 Superfund Division, will serve as the EPA project manager for the activities described in this QAPP. Keith Brown, of Tetra Tech EM, Inc. (Tetra Tech), will serve as the START project manager for field activities.

**1.3 Problem Definition/Background:**

Description: This site-specific Quality Assurance Project Plan form is prepared as an addendum to the Generic Quality Assurance Project Plan for Superfund Integrated Assessment and Targeted Brownfields Assessment Program (updated July 2007), and contains site-specific data quality objectives for the sampling activities described herein.

- Description attached.  
 Description in referenced report: \_\_\_\_\_  
Title Date

**1.4 Project/Task Description:**

- CERCLA PA  CERCLA SI  Brownfields Assessment  Other (description attached):  
 Pre-CERCLIS Screening  Removal Assessment

Other Description:

Schedule: Field work is scheduled to begin in June 2012, and is anticipated to last about 1 day.

- Description in referenced report: \_\_\_\_\_  
Title Date

**1.5 Quality Objectives and Criteria for Measurement Data:**

a. Accuracy:	<input checked="" type="checkbox"/> Identified in attached table.
b. Precision:	<input checked="" type="checkbox"/> Identified in attached table.
c. Representativeness:	<input checked="" type="checkbox"/> Identified in attached table.
d. Completeness*:	<input checked="" type="checkbox"/> Identified in attached table.
e. Comparability:	<input checked="" type="checkbox"/> Identified in attached table.

Other Description:

\*A completeness goal of 100 percent has been established for this project. However, if the completeness goal is not met, EPA may still be able to make decisions based on any or all of the remaining validated data. No "critical samples" have been identified for this project.

**1.6 Special Training/Certification Requirements:**

- OSHA 1910  Special Equipment/Instrument Operator (describe below):  Other (describe below):

**1.7 Documentation and Records:**

- Field Sheets  Daily Log  Trip Report  Area Maps  Video  
 Chain of Custody  Health and Safety Plan  Letter Report  Photos

- Sample documentation will follow EPA Region 7 SOP 2420.05.  
 Other: Analytical information will be handled according to procedures identified in Table 2.

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Addendum to the QAPP for Superfund Integrated Site Assessment and Targeted Brownfields Assessment Activities (July 2007)  
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**2.0 Measurement and Data Acquisition:**

**2.1 Sampling Process Design:**

- |  |  |  |   |
|--|--|--|---|
| <input type="checkbox"/> Random Sampling                       | <input type="checkbox"/> Transect Sampling | <input checked="" type="checkbox"/> Biased/Judgmental Sampling           | <input type="checkbox"/> Stratified Random Sampling |
| <input type="checkbox"/> Search Sampling                       | <input type="checkbox"/> Systematic Grid   | <input type="checkbox"/> Systematic Random Sampling                      | <input type="checkbox"/> Definitive Sampling        |
| <input type="checkbox"/> Screening wo/ Definitive Confirmation |  | <input checked="" type="checkbox"/> Screening w/ Definitive Confirmation |   |
| <input type="checkbox"/> Sample Map Attached                   |  |  |   |

Other (Provide rationale behind each sample): See Appendix A for additional sampling information.

The proposed sampling scheme will be judgmental, in accordance with the *Guidance for Performing Site Inspections Under CERCLA*, OSWER Directive #9345.1-05, September 1992, and *Removal Program Representative Sampling Guidance, Volume 1: Soil*, OSWER Directive 9360.4-10, November 1991. Judgmental sampling is the subjective (biased) selection of sampling locations based on historical information, visual inspection, and the best professional judgment of the sampler(s). Samples from chemical containers will be field screened, with samples of selected materials submitted for definitive laboratory analysis. See Appendix A for additional site-specific information.

Exact sample locations will be determined during reconnaissance activities in the field. The proposed number of samples is a balance between cost and coverage, and represents a reasonable attempt to meet the study objectives while staying within the budget constraints of a typical removal assessment of this type.

Sample Summary Location	Matrix	# of Samples*	Analysis
55-gallon drums	Liquid waste	20	Metals, VOCs
55-gallon drums	Liquid waste	5	PCBs
55-gallon drums	Liquid waste	5	Flashpoint, TCLP Metals, TCLP VOCs
1-quart/gallon containers	Liquid waste	3	Metals, VOCs
1-quart/gallon containers	Liquid waste	2	Flashpoint, TCLP Metals, TCLP VOCs

\*Note: Numbers are approximate and may change significantly depending on site conditions. QC samples are not included with these totals. See Table 1 for a complete sample summary.

**2.2 Sample Methods Requirements:**

Matrix	Sampling Method	EPA Region 7 SOP(s) or other Method
Liquid Waste	Samples of liquids will be collected from 55-gallon drums and other smaller containers using disposable glass thieving rods/Coliwasas or by other suitable means.	SOP 4231.2009

Other Description:

**2.3 Sample Handling and Custody Requirements:**

- Samples will be packaged and preserved in accordance with procedures defined in Region 7 EPA SOP 2420.06.
- COC will be maintained as directed by Region 7 EPA SOP 2420.04.
- Samples will be accepted according to Region 7 EPA SOP 2420.01.
- Other (Describe): Samples will be accepted according to procedures established by the START-contracted laboratory.

**2.4 Analytical Methods Requirements:**

- Identified in attached table.
- Rationale: The requested analyses have been selected based on historic information about the area and program experience with similar types of sites.
- Other (Describe):

**2.5 Quality Control Requirements:**

- Not Applicable
- Identified in attached table.
- In accordance with the Generic Quality Assurance Project Plan for Superfund Integrated Assessment and Targeted Brownfields Assessment Program (updated July 2007).
- Field QC Samples: For this investigation, field QC samples will include one water trip blank and one field blank (water). The field blank will be prepared with deionized (DI) water provided by the EPA Region 7 laboratory. The trip blank will be collected to assess transportation-related contamination. The field blank will be collected to evaluate contamination of sampling containers and/or preservatives, and to assess contamination potentially introduced during the sampling and laboratory procedure(s). All QC samples will be submitted for the analyses listed in the attached tables. Evaluation of blank samples depends on the levels of contamination found in environmental samples to determine whether the environmental samples are representative. Analytical results of blank samples will be evaluated on a qualitative basis by the EPA Project Manager and EPA contractor(s) to determine a general indication of field-introduced and/or laboratory-introduced contamination. Determination of total method precision is not required for this event; therefore, field duplicates will not be collected.
- Other (Describe):

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**2.6 Instrument/Equipment Testing, Inspection, and Maintenance Requirements:**

- Not Applicable
- In accordance with the Generic Quality Assurance Project Plan for Superfund Integrated Assessment and Targeted Brownfields Assessment Program (updated July 2007).
- Testing, inspection, and maintenance of analytical instrumentation will proceed in accordance with the previously referenced SOPs and/or manufacturers' recommendations. Testing, inspection, and maintenance of field instruments (photoionization detector [PID], GPS unit, etc.) will proceed in accordance with manufacturers' recommendations.

**2.7 Instrument Calibration and Frequency:**

- Not Applicable
- In accordance with the Generic Quality Assurance Project Plan for Superfund Integrated Assessment and Targeted Brownfields Assessment Program (updated July 2007).
- Calibration of field and laboratory equipment will be performed as described in the previously referenced SOPs and/or manufacturers' recommendations.
- Other (Describe):

**2.8 Inspection/Acceptance Requirements for Supplies and Consumables:**

- Not Applicable
- In accordance with the Generic Quality Assurance Project Plan for Superfund Integrated Assessment and Targeted Brownfields Assessment Program (updated July 2007).
- All sample containers will meet EPA criteria for cleaning procedures for low-level chemical analysis. Sample containers will have Level II certifications provided by the manufacturer in accordance with pre-cleaning criteria established by EPA in *Specifications and Guidelines for Obtaining Contaminant-Free Containers*.
- Other (Describe):

**2.9 Data Acquisition Requirements:**

- Not Applicable
- In accordance with the Generic Quality Assurance Project Plan for Superfund Integrated Assessment and Targeted Brownfields Assessment Program (updated July 2007).
- Previous data or information pertaining to the area (including other analytical data, reports, photos, maps, etc., that are referenced in this QAPP) have been compiled by EPA and/or its contractor(s) from other sources. Some of that data have not been verified by EPA and/or its contractor(s); however, that unverified information will not be used for decision-making purposes by EPA without verification by an independent professional qualified to verify such data or information.
- Other (Describe):

**2.10 Data Management:**

- All laboratory data acquired will be managed in accordance with Region 7 EPA SOP 2410.01.
- Other (Describe): Laboratory data will be managed according to procedures established by the START-contracted laboratory.

**3.0 Assessment and Oversight:**

**3.1 Assessment and Response Actions:**

- Peer Review                       Management Review                       Field Audit                       Lab Audit
- Assessment and response actions pertaining to analytical phases of the project are addressed in Region 7 EPA SOPs 2430.06 and 2430.12.
- Other (Describe): Because of the limited duration of this project, no field audits are anticipated.

**3.1A Corrective Action:**

- Corrective actions will be at the discretion of the EPA project manager whenever problems appear that could adversely affect data quality and/or resulting decisions affecting future response actions pertaining to the area.
- Other (Describe):

**3.2 Reports to Management:**

- Audit Report                       Data Validation Report                       Project Status Report                       None Required
- A trip report describing the sampling techniques, locations, problems encountered (with resolutions to those problems), and interpretation of analytical results will be prepared by START and submitted to the EPA.
- Reports will be prepared in accordance with the Generic Quality Assurance Project Plan for Superfund Integrated Assessment and Targeted Brownfields Assessment Program (updated July 2007).
- Other (Describe):

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**4.0 Data Validation and Usability:**

**4.1 Data Review, Validation, and Verification Requirements:**

- Identified in attached table.
- Data review and verification will be performed in accordance with the Generic Quality Assurance Project Plan for Superfund Integrated Assessment and Targeted Brownfields Assessment Program (updated July 2007).
- Data review and verification will be performed by a qualified analyst and the laboratory's section manager as described in Region 7 EPA SOPs 2430.06, 2430.12, and 2410.10.
- Other (Describe): The analytical data package will be validated internally by the contracted laboratory in accordance with the laboratory's established SOPs. A Tetra Tech chemist will conduct an external verification and validation of the laboratory data package using a method consistent with a Stage 2B validation, as described in the EPA Contract Laboratory Program (CLP) Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use (EPA 2009). A Stage 2B validation includes verification and validation based on completeness and compliance check of sample receipt conditions and sample-related and instrument-related QC results. The EPA Project Manager will be responsible for overall validation and final approval of the data, in accordance with the projected use of the results.

**4.2 Validation and Verification Methods:**

- Identified in attached table.
- The data will be validated in accordance with Region 7 EPA SOPs 2430.06, 2430.12, and 2410.10.
- The EPA project manager will inspect the data to provide a final review. The EPA project manager will review the data, if applicable, for laboratory spikes and duplicates, laboratory blanks, and field QC samples to ensure the data are acceptable. The EPA project manager will also compare the sample descriptions with the field sheets for consistency, and will ensure appropriate documentation of any anomalies in the data.
- Other (Describe): If any problems with field measurements or analytical data are identified by Tetra Tech's data verification/validation, the Tetra Tech Project Manager will verbally, and in writing if requested by EPA, explain with circumstances of the failure, describe any corrective action taken, and provide an opinion on the limitations and usefulness of the data to the EPA Project Manager.

**4.3 Reconciliation with User Requirements:**

- Identified in attached table.
- If data quality indicators do not meet the project's requirements as outlined in this QAPP, the data may be discarded, and re-sampling or re-analysis of the subject samples may be required by the EPA project manager.
- Other (Describe):

**Region 7 Superfund Program  
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**Table 1: Sample Summary**

<b>Project Name:</b> Studer Container Service				<b>Location:</b> Kansas City, Missouri			
<b>START Project Manager:</b> Keith Brown				<b>Activity/ASR #:</b> To be determined			<b>Date:</b> June 2012
<b>No. of Samples</b>	<b>Matrix</b>	<b>Location</b>	<b>Purpose</b>	<b>Depth or other Descriptor</b>	<b>Requested Analysis</b>	<b>Sampling Methods</b>	<b>Analytical Method</b>
20	Liquid Waste	55-gallon drums	To determine appropriate options for disposal	NA	Metals, VOCs	EPA SOP 4231.2009	SOPs 3122.03, 3230.17
5	Liquid Waste	55-gallon drums	To determine appropriate options for disposal	NA	PCBs	EPA SOP 4231.2009	SOP 3240.02
5	Liquid Waste	55-gallon drums	To determine appropriate options for disposal	NA	Flashpoint, TCLP Metals, TCLP VOCs	EPA SOP 4231.2009	SOPs 3172.02, 3171.01, 3171.03
3	Liquid Waste	1-quart/gallon containers	To determine appropriate options for disposal	NA	Metals, VOCs	EPA SOP 4231.2009	SOPs 3122.03, 3230.17
2	Liquid Waste	1-quart/gallon containers	To determine appropriate options for disposal	NA	Flashpoint, TCLP Metals, TCLP VOCs	EPA SOP 4231.2009	SOPs 3172.02, 3171.01, 3171.03
<b>QC Samples</b>							
1	Water	Trip Blank	To assess transportation-related contamination	NA	VOCs	NA	SOP 3230.13
1	Water	Field Blank	To assess field-introduced and laboratory-introduced contamination	NA	Metals, VOCs, PCBs	NA	SOPs 3122.03, 3230.13, 3240.02

**Region 7 Superfund Program  
Addendum to the QAPP for Superfund Integrated Site Assessment and Targeted Brownfields Assessment Activities (July 2005)  
for the Studer Container Service Site**

**Table 2: Data Quality Objective Summary**

<b>Project Name:</b> Studer Container Service		<b>Location:</b> Kansas City, Missouri						
<b>START Project Manager:</b> Keith Brown		<b>Activity/ASR #:</b> To be determined					<b>Date:</b> June 2012	
Analysis	Analytical Method	Data Quality Measurements					Sample Handling Procedures	Data Management Procedures
		Accuracy	Precision	Representativeness	Completeness	Comparability		
Liquid Waste								
Metals, VOCs, PCBs, Flashpoint, TCLP Metals, TCLP VOCs	see Table 1	per analytical method	per analytical method	judgmental sampling, based on professional judgment of the sampling team	100%; no critical samples have been defined	Standardized procedures for sample collection and analysis will be used.	See Section 2.3 of QAPP form.	See Section 2.10 of QAPP form.

**APPENDIX A**

**SITE-SPECIFIC INFORMATION FOR THE STUDER CONTAINER SERVICE SITE**

## **INTRODUCTION**

The Tetra Tech EM Inc. (Tetra Tech) Superfund Technical Assessment and Response Team (START) has been tasked by the U.S. Environmental Protection Agency (EPA) Region 7 Superfund Division to conduct removal assessment activities at the Studer Container Service site, located at 520 Madison Avenue in Kansas City, Missouri. START's activities will be conducted concurrently with assessment activities by EPA's National Enforcement Investigations Center (NEIC) and Criminal Investigation Division (CID).

The removal assessment is to address approximately 25 55-gallon drums and one pallet with numerous small storage containers of liquid waste that were abandoned under the Lewis & Clark Viaduct near a metal recycling facility (Studer Container Service), who reported the containers to EPA. EPA and CID personnel conducted a site reconnaissance on June 15, 2012. The 55-gallon drums appeared to contain waste liquids that include solvents, printing ink, etc. According to label information on the drums (assuming the drums contain the labeled materials), their contents include, but are not limited to, the following: isopropyl alcohol, methylene chloride, xylene, mineral spirits, and glycol ether. The small containers on the pallet appear to contain ink or paint.

This Quality Assurance Project Plan (QAPP) was prepared to address removal assessment activities to characterize constituents of drummed or otherwise containerized wastes abandoned at the site to satisfy data needs pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Removal assessment activities conducted by START will include assistance to EPA personnel with documentation of activities, in-field screening of the waste samples, and collection of representative samples of liquid wastes for laboratory analysis to determine appropriate disposal options.

## **SITE DESCRIPTION**

The site is located at 520 Madison Avenue in Kansas City, Jackson County, Missouri. The approximate geographic coordinates for the site are 39.107046 degrees north latitude and 94.595306 degrees west longitude.

The site is bordered to the north by a metal recycler, Studer Container Service. Undeveloped land lies west, east, and south of the site, with commercial buildings beyond. Immediately overhead is the Lewis & Clark Viaduct. Approximately 25 55-gallon drums and one pallet with numerous small storage containers of liquid waste were abandoned at the site. The containers are unsecured near Madison Avenue.

## **SAMPLING STRATEGY AND METHODOLOGY**

The proposed sampling scheme for this project is judgmental (based on the best professional judgment of the sampling team), in accordance with the *Removal Program Representative Sampling Guidance, Volume 1: Soil*, Office of Solid Waste and Emergency Response (OSWER) Directive 9360.4-10, November 1991. Samples of containerized wastes will be field screened, with some of the samples submitted for follow-up laboratory analysis.

Sampling procedures will follow standard operating procedures (SOP) outlined in the QAPP and will involve collection of liquid wastes from 55-gallon drums and other various smaller containers.

Descriptions of the sampling strategy and procedures are presented below.

Tetra Tech START will open each of the 55-gallon drums and other smaller containers abandoned at the site and monitor the headspace for volatile organic compounds (VOC) with a photo-ionization detector (PID). In addition, each of the containers will also be screened for radioactive material with a radiation detector. START will then collect representative samples of the liquid wastes from each of the 55-gallon drums and other smaller containers. Each of these samples will be collected in a 40-milliliter vial using a disposable thieving rod, Coliwasa, or other appropriate disposable sampling device. The samples will be field screened by START to determine hazardous characteristics (ignitability, corrosivity, etc.).

Depending on the field screening results, composite samples of selected materials with similar characteristics will be placed into two 8-ounce jars and four 40-milliliter vials and submitted to a START-contracted laboratory for analysis of disposal profiling parameters, which may include metals, VOCs, polychlorinated biphenyls (PCB), flashpoint, leachable metals according to the Toxicity Characteristic Leaching Procedure (TCLP), and TCLP VOCs. Selection of containers to be sampled for laboratory analysis and determination of analytical parameters will be conducted by EPA. The field screening data and analytical results will be used to determine appropriate disposal options for the waste materials.

## **QUALITY CONTROL**

To evaluate sample quality control (QC), one water trip blank and one water field blank will be collected, as specified in Section 2.5 of the QAPP form.

## **ANALYTICAL METHODS**

Appropriate containers and physical and chemical preservation techniques will be employed during the field activities to help verify acquisition of representative analytical results. Submittal of all samples to

the START-contracted laboratory is expected in June 2012 for analyses by methods equivalent to the EPA SOPs referenced or described in the QAPP.