PHASE II PRELIMINARY SITE INVESTIGATION REPORT

I-40/I-65 Bridges Over Clinton Street/CSX Railroad, Jo Johnston Avenue and Charlotte Avenue
Davidson County, Tennessee
TDOT PE: 19005-1161-44
TDOT PIN: 117847.00

Prepared For:
The Tennessee Department of Transportation
Environmental Planning and Permitting Division

Prepared By:
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KSWA Project No. 100-15-0001
Prepared: January 2015

Approval:

KSWA Senior Project Manager

Signature

Mark D. Luskin, P.E., P.G. January 23, 2015

Printed Name/Date

KSWA Environmental Scientist

Signature

Kollan L. Spradlin, E.I. January 23, 2015

Printed Name/Date

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1.0 EXECUTIVE SUMMARY

K. S. Ware and Associates, L.L.C. (KSWA) completed a Phase II Preliminary Site for the proposed construction area of new retaining walls located at the I-40/I-65 bridges over Clinton Street/CSX Railroad, Jo Johnston Avenue, and Charlotte Avenue. Based on the findings from a Geotechnical Report for the site prepared by TTL, Inc. in December 2014, the sites are underlain by a dark, fine-grained fill material that appears to be a coal byproduct. Because of the findings presented in the Geotechnical Report, TDOT requested that KSWA complete the Phase II Preliminary Site Investigation.

KSWA mobilized to the project sites on January 16, 2015 and performed soil sampling activities. Twelve borings (DP-01 through DP-12) were advanced in the vicinity of the three bridges using a direct push technology (DPT) drill rig operated by Richard Simmons Drilling. All twelve borings were drilled to a depth of 12 feet below surface grade (bsg) or to refusal. Refusal depths ranged from 1.5 feet to 11.0 feet bsg. Only one boring, DP-04, was drilled to 12.0 feet bsg, without refusal. Soil samples were collected continuously and logged in the field by a KSWA representative. Field screening for organic vapors was performed on the collected samples using a Photoionization Detector (PID). Based on field screening results, soil samples were collected and delivered to an accredited laboratory, Environmental Service Corporation (ESC), for environmental testing.

The laboratory analytical results indicated that soil in the vicinity of the I-40/I-65 bridge over Jo Johnston Avenue contained benzo(b)fluoranthene, benzo(a)pyrene, and dibenz(a,h)anthracene above their respective January 2015 USEPA Region 4 Regional Screening Levels (RSLs). Additionally, the soil samples collected in the vicinity of the I-40/I-65 bridge over CSX railroad contained arsenic above Tennessee Department of Environment and Conservation's (TDEC) background number of 20 ppm, for Tennessee Department of Transportation (TDOT) right of ways. One sample collected in the vicinity of the I-40/I-65 bridge over CSX railroad contained arsenic above 40 ppm. KSWA recommends that excavated soils intended to be removed from the I-40/I-65 bridge over Jo Johnston Avenue and the I-40/I-65 bridge over CSX railroad project sites be characterized at the time of construction and properly disposed of at an appropriate permitted landfill based on characterization. Construction best management practices should be implemented for all site personnel during construction to reduce site worker exposure to hazardous constituents.

2.0 INTRODUCTION

2.1 AUTHORIZATION

The Tennessee Department of Transportation (TDOT) retained K. S. Ware and Associates, L.L.C. (KSWA) to complete a Phase II Preliminary Site Investigation at the I-40/I-65 bridges over Clinton Street/CSX Railroad, Jo Johnston Avenue, and Charlotte Avenue. The investigation was completed in accordance with Agreement E1812, Work Order Number 022.

2.2 SCOPE OF WORK

TTL, Inc. conducted a geotechnical investigation at the subject bridge sites in November 2014. The subsequent "Report of Geotechnical Exploration – Rehabilitation of I-40 Bridges," dated December 12, 2014, indicated the presence of a "dark material" composed of fine to course-grained sand-sized material that appeared to be coal byproduct in fill materials encountered in all of the geotechnical test borings. TDOT requested that KSWA conduct a Phase II Preliminary Site Investigation of the bridges' footing areas to collect soil samples for laboratory testing and characterization. Results of the Phase II Preliminary Site Investigation are summarized in this report. KSWA reviewed and tabulated the information and data gathered from the field reconnaissance, regulatory research, and subsurface exploration tasks. The soil sample analytical results were then evaluated and compared to applicable regulatory standards and memorandums in order to prepare this report of investigation findings. Photographs taken during field activities are provided in **Appendix A**.

3.0 SITE LOCATION

The project sites include the I-40/I-65 bridge locations over the Clinton Street/CSX Railroad, Jo Johnston Avenue, and Charlotte Avenue in Nashville, Tennessee **(Appendix B - Figure 1)**. The area is located in the Central Basin physiographic province. The location of existing bridge footprints and areas of proposed retaining wall construction were considered for this investigation.

4.0 SUBSURFACE SOIL EXPLORATION

As indicated in section 2.2, KSWA completed a subsurface exploration to characterize soil.

4.1 SOIL BORING ACTIVITIES

KSWA completed a subsurface exploration of the project site by advancing 12 DPT soil borings in the areas where the retaining wall foundations will be constructed and near locations of borings from the previous geotechnical investigation (**Appendix B – Figure 2 through Figure 5**). KSWA representatives visited the project sites on January 14, 2015 to mark the boring locations. The locations of the soil borings are summarized in **Table 1**. Prior to performing the investigation activities, KSWA contacted Tennessee One Call to have subsurface utilities identified and located at the properties where field activities would be completed.

Table 1: Summary of Boring Locations

Hole Number	Bridge
DP-01, DP-02, DP-03	I-40/I-65 over CSX Railroad
DP-04, DP-05	I-40/I-65 over Clinton Street
DP-06, DP-07, DP-08	I-40/I-65 over Jo Johnston Avenue
DP-09, DP-10, DP-11, DP-12	I-40/I-65 over Charlotte Avenue

Soil borings were advanced using a DPT drill rig, and subsurface soil samples were collected continuously using a 1.5-inch diameter core-sampling device contained within the sampling probe. The soil samples were collected in new, clean acetate liners. Downhole sampling equipment was decontaminated by washing with non-phosphate soap prepared wash water and rinsing with tap water.

Each sample was observed for soil type, color, texture, moisture, and visual or olfactory indicators of contamination. Soil samples were screened for organic vapors using a PID. Based on PID readings and visual observations, KSWA collected soil samples and placed them in laboratory prepared jars for laboratory testing; the sample from each borehole with the highest PID reading and/or visual indication of contamination was selected for analysis. KSWA staff handled all soil samples wearing clean disposable nitrile gloves.

The soils encountered included fill material consisting of a coal byproduct with brown-black sandy clay with brick fragments, glass and rock. Boring DP-04 had light brown sandy clay between 4 to 12 feet bsg that appears to be native soils. The fill material did not have any odors, and PID field screening for volatile

organic compounds (VOC) indicated 0.0 ppm on all samples. Detailed boring logs have been included in **Appendix C.**

Soil samples were submitted to ESC, in Mt. Juliet, Tennessee, for laboratory analysis. The soil samples submitted for laboratory analysis were placed on ice, retained under standard chain-of-custody procedures, and transported to the laboratory for analysis. The samples were analyzed for; VOCs by Method 8260B, semi-volatile organic compounds (SVOCs) by Method 8270C and RCRA metals by Method 6010B. A trip blank was prepared by the laboratory and was also submitted to ESC with Samples DP-01 through DP-12 for VOC analysis by Method 8260B.

4.2 RESULTS OF LABORATORY ANALYSIS

Fourteen soil samples were collected from the twelve borings advanced across the project sites. All fourteen of the samples contained detectable levels of regulated metals, and nine of the soil samples contained detectable levels of SVOCs. All fourteen of the samples contained arsenic above the USEPA Region 4 Regional Screening Levels (RSL) for industrial soil. Samples collected from DP-01, DP-02, and DP-03 exhibited arsenic above The Tennessee Department of Environment and Conservation's (TDEC) back ground value for arsenic of 20ppm[1]. One sample collected in the vicinity of the I-40/I-65 bridge over CSX railroad contained arsenic above 40 ppm. Additionally, DP-06 and DP-07 contained benzo(b)fluoranthene and benzo(a)pyrene at levels above the USEPA RSL for industrial soil. DP-07 also contained dibenz(a,h)anthracene at levels above the USEPA RSL for industrial soil.

A table summarizing the soil analytical results is included in **Appendix D**. The laboratory analytical report and copies of the chain of custody are included in **Appendix E**.

1. July 18, 2006 TDEC Memorandum – Management of Soils Containing Arsenic on TN Department of Transportation Right of Way

5.0 CONCLUSIONS

At the request of TDOT, KSWA mobilized to the site on January 16, 2015 of the I-40/I-65 bridges over Clinton Street/CSX railroad, Jo Johnston Avenue, and Charlotte Avenue to conduct a Phase II Preliminary Site Investigation. Twelve soil borings were placed in the footprint of the bridges using a DPT drill rig where retaining walls will be constructed to collect samples of fill material consisting of a sandy clay and coal byproduct mixture for laboratory testing and characterization. Fourteen samples were collected from these twelve borings were submitted to the laboratory for analysis. Results from this investigation will assist TDOT with a plan for managing the excavated materials and plan for appropriate disposal.

Laboratory analysis of the collected samples indicates that the soil investigated during the Phase II Preliminary Site Investigation contains arsenic at levels above the USEPA RSL for industrial soil. Of the samples that contained arsenic above Industrial RSLs, DP-01, DP-02, and DP-03 contained arsenic above TDEC's background value of 20ppm established in the July 18, 2006 TDEC memo to TDOT, titled *Management of Soils Containing Arsenic on TN Department of Transportation Right of Way Sites.* One sample collected in the vicinity of the I-40/I-65 bridge over CSX railroad contained arsenic above 40 ppm. Because of the elevated levels of arsenic found in DP-01, DP-02, and DP-03, KSWA recommends that any excavated soil near the I-40/I-65 bridge over CSX railroad construction area be disposed of at a Class I Municipal Landfill or used as fill material beneath the road bed (with local approval) in accordance with the aforementioned July 18, 2006 TDEC memorandum to TDOT.

KSWA does not believe that the slightly elevated levels of SVOCs discovered in the samples near the I-40/I-65 bridge over Jo Johnston Avenue will significantly contribute to a hazardous work environment for construction site workers; however, KSWA does believe that the levels of SVOCs found in Samples DP-06 and DP-07 will affect the disposal of any excavated soil in the Jo Johnston Avenue construction area. For this reason, we recommend excavation and removal of soils from the I-40/I-65 bridge over Jo Johnston Avenue construction area should be minimized. All soil that must be removed should be characterized at the time of construction and sent to an appropriate, permitted disposal facility.

KSWA recommends that construction site best practices be implemented during construction activities at the I-40/I-65 bridges over Clinton Street/CSX railroad, Jo Johnston Avenue, and Charlotte Avenue in order to reduce unnecessary exposure to constituents of concern contained within excavated soils and that appropriate personal protective equipment be worn by site personnel.

APPENDIX A

PHOTOGRAPHS

Photograph of DPT Drill Rig Advancing DP-02

Photograph of DPT Drill Rig Advancing DP-05

Photograph of DPT Drill Rig Advancing DP-06

Photograph of DPT Drill Rig Advancing DP-07

APPENDIX B

FIGURES

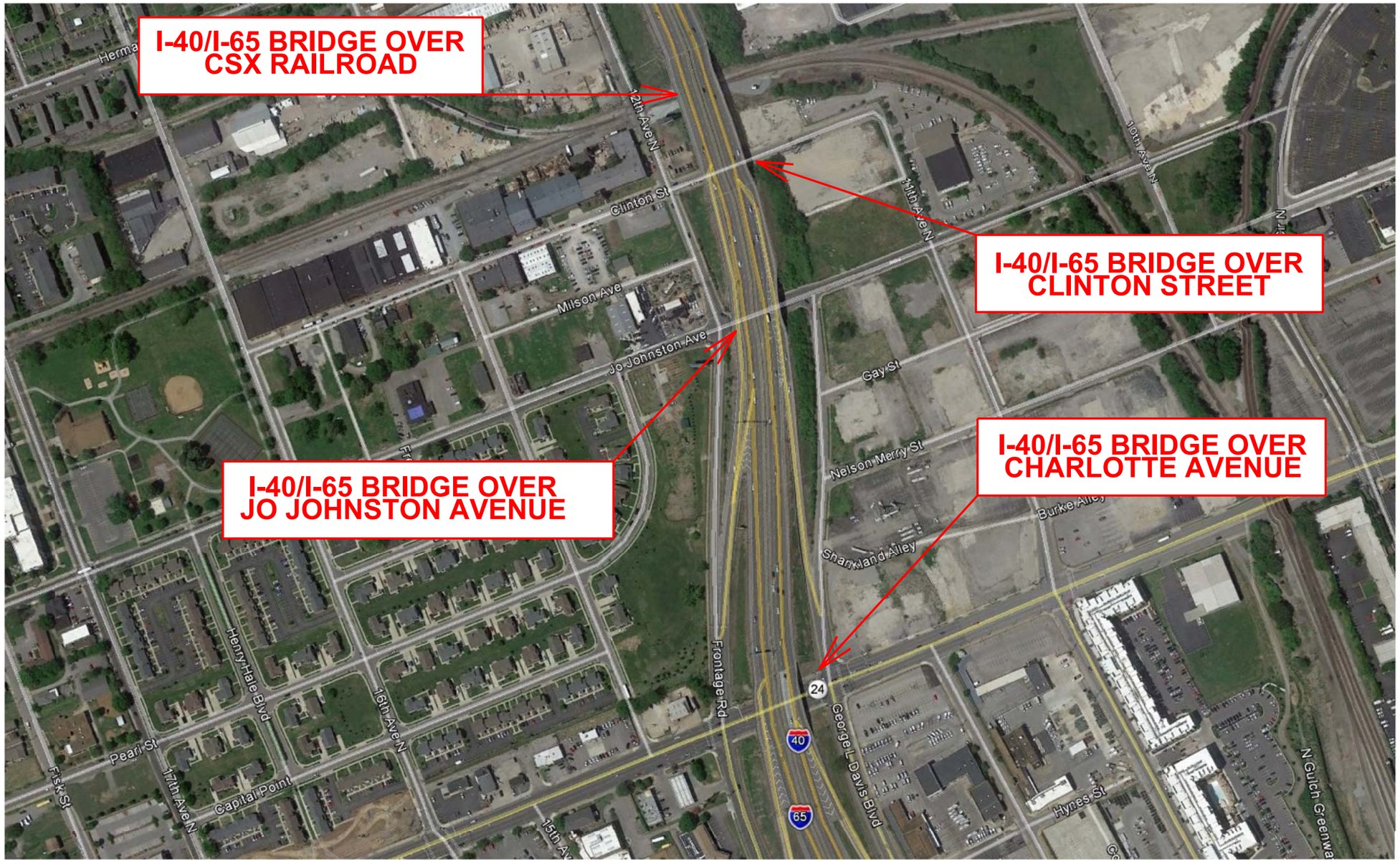

IMAGE SOURCE: GOOGLE EARTH, 2015

N

NOT TO SCALE

JOB NO.: 100-15-0001

CLIENT: TDOT

ENVIRONMENTAL DIVISION
SUITE 900
JAMES K. POLK BUILDING
500 DEADERICK STREET
NASHVILLE, TENNESSEE
37243-1402

DATE: 1/19/2015

BRIDGE LOCATION PLAN

I-40/I-65 BRIDGES
TDOT PE 19005-1161-44 | TDOT PIN 117847.00
DAVIDSON COUNTY, TENNESSEE

FILE LOCATION: PROJECTS/2015/100-15-0001/FIGURES/100-15-0001 FIGURE 1

DRAWN BY: SMA

REVIEWED BY: JWL

LEGEND

KSWA
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FIGURE 1

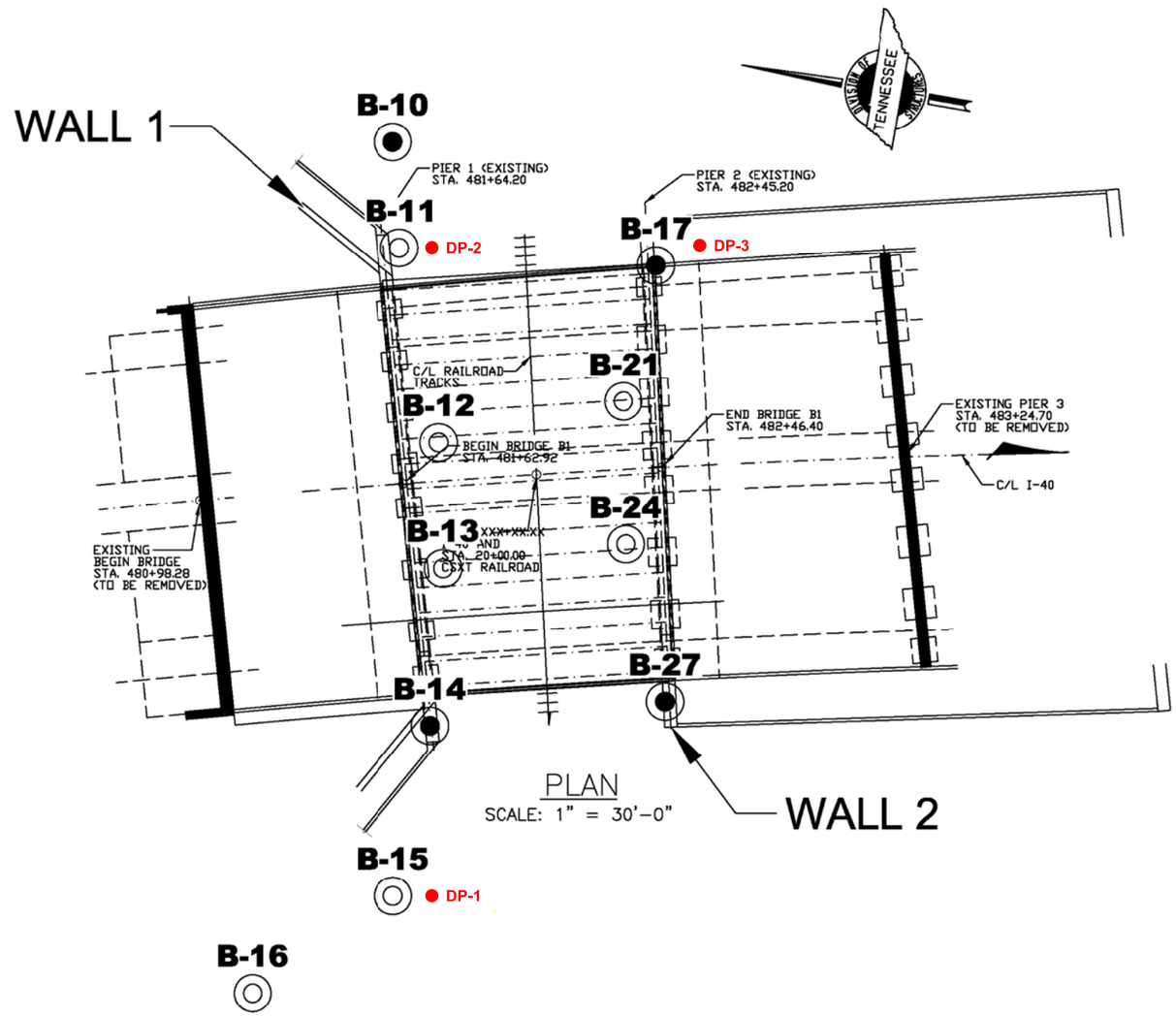

IMAGE SOURCE: TDOT DRAWING TITLED, "LAYOUT OF BRIDGE TO BE REPAIRED I-40 OVER CSX RAILROAD"

N

NOT TO SCALE

JOB NO.: 100-15-0001

CLIENT: TDOT

ENVIRONMENTAL DIVISION
SUITE 900
JAMES K. POLK BUILDING
500 DEADERICK STREET
NASHVILLE, TENNESSEE
37243-1402

DATE: 1/19/2015

SOIL BORING LOCATIONS

I-40/I-65 BRIDGE OVER CSX RAILROAD
TDOT PE 19005-1161-44 | TDOT PIN 117847.00
DAVIDSON COUNTY, TENNESSEE

FILE LOCATION: PROJECTS/2015/100-15-0001/FIGURES/100-15-0001 FIGURE 2

DRAWN BY: SMA

REVIEWED BY: JWL

LEGEND

ENVIRONMENTAL SAMPLING LOCATIONS

GEOTECHNICAL BORING LOCATIONS

KSWA
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FIGURE 2

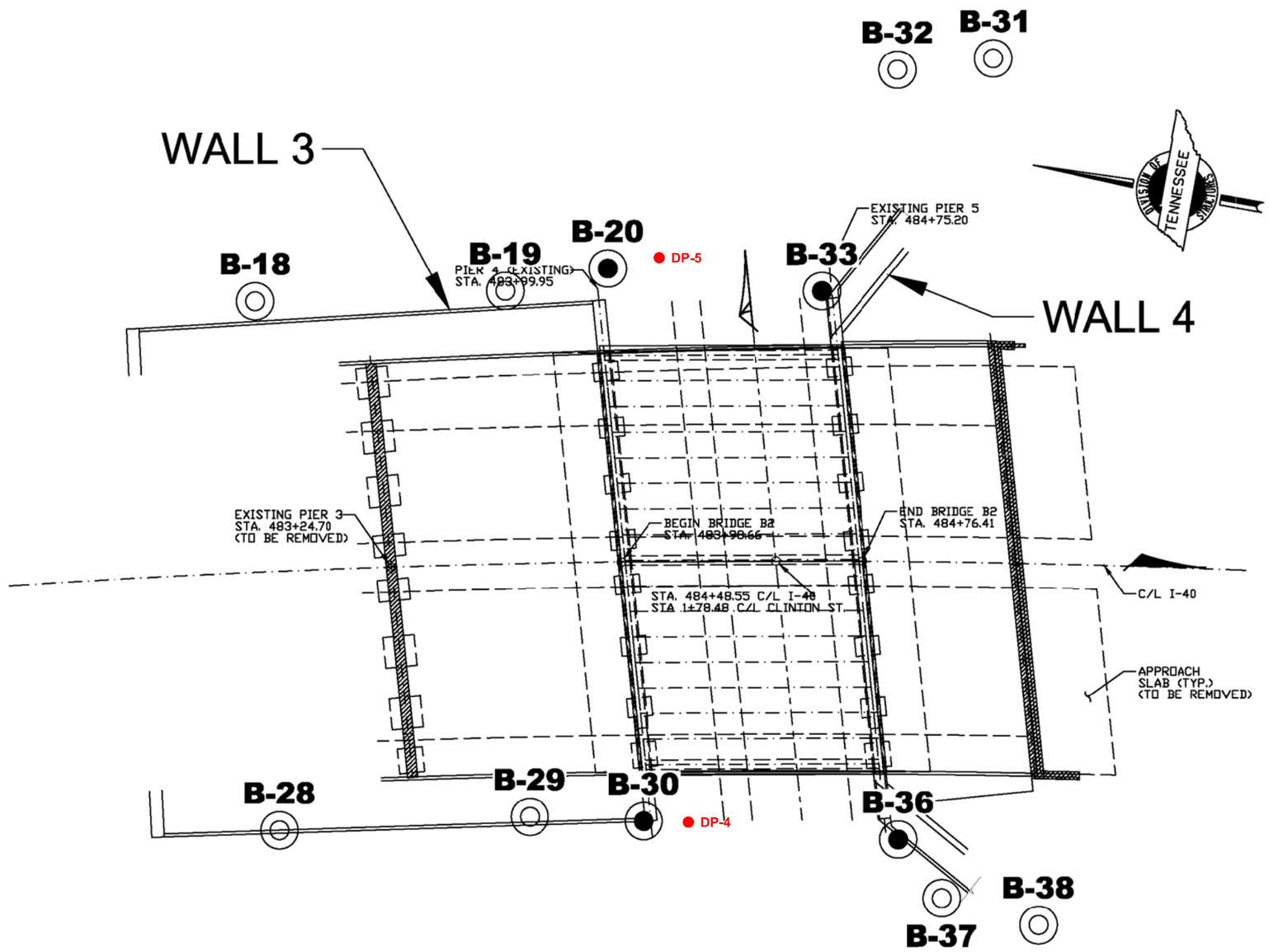

IMAGE SOURCE: TDOT DRAWING TITLED, "LAYOUT OF BRIDGE TO BE REPAIRED I-40 OVER CLINTON STREET"

N

NOT TO SCALE

JOB NO.: 100-15-0001

CLIENT: TDOT

ENVIRONMENTAL DIVISION
SUITE 900
JAMES K. POLK BUILDING
500 DEADERICK STREET
NASHVILLE, TENNESSEE
37243-1402

DATE: 1/19/2015

SOIL BORING LOCATIONS

I-40/I-65 BRIDGE OVER CLINTON STREET
TDOT PE 19005-1161-44 | TDOT PIN 117847.00
DAVIDSON COUNTY, TENNESSEE

FILE LOCATION: PROJECTS/2015/100-15-0001/FIGURES/100-15-0001 FIGURE 3

DRAWN BY: SMA

REVIEWED BY: JWL

LEGEND

● ENVIRONMENTAL SAMPLING LOCATIONS

◎ GEOTECHNICAL BORING LOCATIONS

KSWA
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FIGURE 3

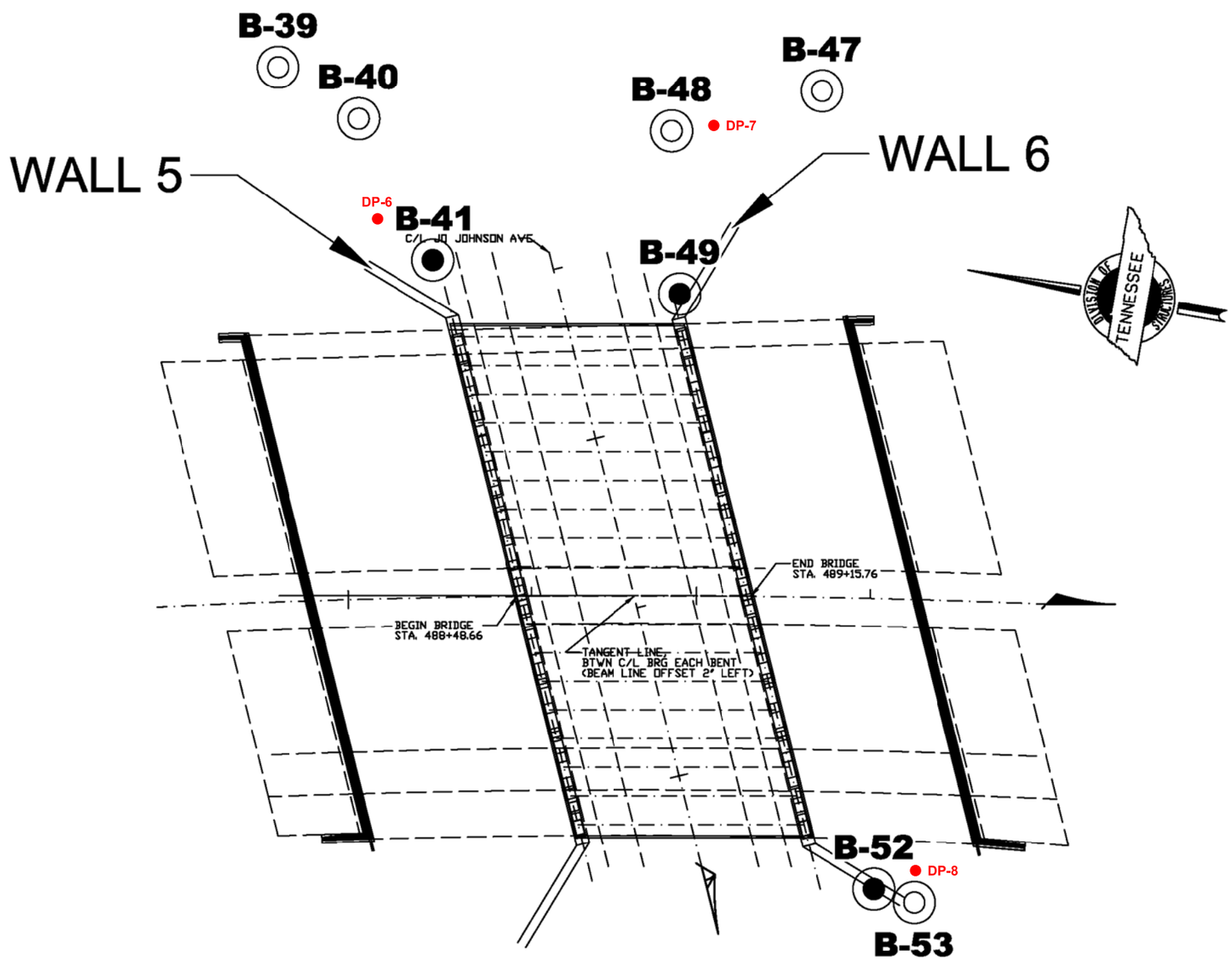

IMAGE SOURCE: TDOT DRAWING TITLED, "LAYOUT OF BRIDGE TO BE REPAIRED I-40 OVER JO JOHNSTON AVENUE"

N

NOT TO SCALE

JOB NO.: 100-15-0001

CLIENT: TDOT

ENVIRONMENTAL DIVISION
SUITE 900
JAMES K. POLK BUILDING
500 DEADERICK STREET
NASHVILLE, TENNESSEE
37243-1402

DATE: 1/19/2015

SOIL BORING LOCATIONS

I-40/I-65 BRIDGE OVER JO JOHNSTON AVENUE
TDOT PE 19005-1161-44 | TDOT PIN 117847.00
DAVIDSON COUNTY, TENNESSEE

FILE LOCATION: PROJECTS/2015/100-15-0001/FIGURES/100-15-0001 FIGURE 4

DRAWN BY: SMA

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LEGEND

ENVIRONMENTAL SAMPLING LOCATIONS

GEOTECHNICAL BORING LOCATIONS

KSWA
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FIGURE 4

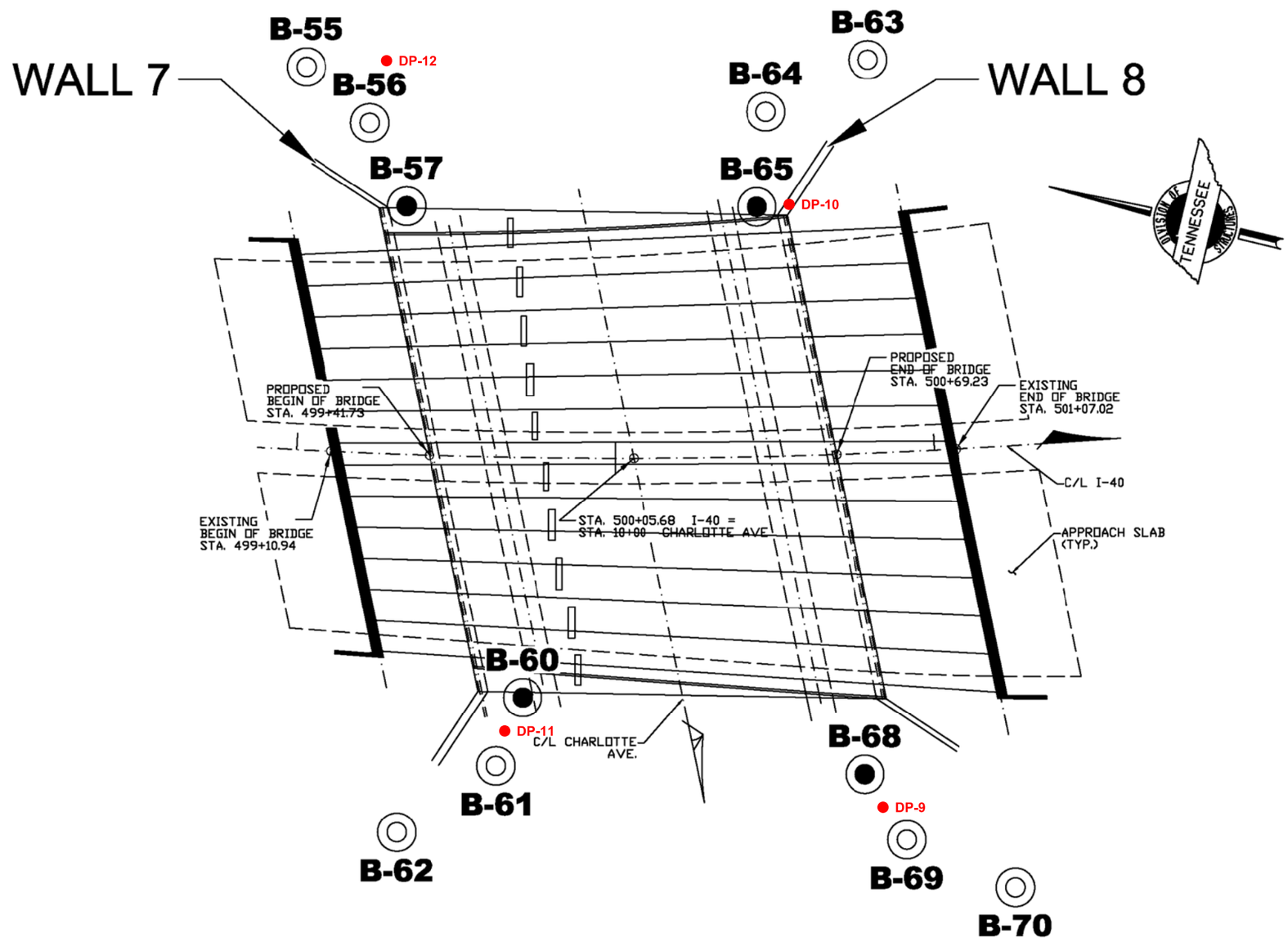

IMAGE SOURCE: TDOT DRAWING TITLED, "LAYOUT OF BRIDGE TO BE REPAIRED I-40 OVER CHARLOTTE AVENUE"

N

NOT TO SCALE

JOB NO.: 100-15-0001

CLIENT: TDOT

ENVIRONMENTAL DIVISION
SUITE 900
JAMES K. POLK BUILDING
500 DEADERICK STREET
NASHVILLE, TENNESSEE
37243-1402

DATE: 1/19/2015

SOIL BORING LOCATIONS

I-40/I-65 BRIDGE OVER CHARLOTTE AVENUE
TDOT PE 19005-1161-44 | TDOT PIN 117847.00
DAVIDSON COUNTY, TENNESSEE

FILE LOCATION: PROJECTS/2015/100-15-0001/FIGURES/100-15-0001 FIGURE 5

DRAWN BY: SMA

REVIEWED BY: JWL

LEGEND

● ENVIRONMENTAL SAMPLING LOCATIONS

◎◉ GEOTECHNICAL BORING LOCATIONS

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FIGURE 5

APPENDIX C

BORING LOGS

TEST BORING LOG

TEST BORING NO. DP- 1

K. S. Ware & Associates, L.L.C.
Geotechnical • CEI • Environmental

PROJECT NAME: I-40/I-65 Bridges
LOCATION: Nashville, Tennessee
PROJECT NO.: 100-15-0001

Approx. Surface El. (feet, MSL): feet, MSL
Location: See FIGURE

Depth, feet	Graphic Log	MATERIAL DESCRIPTION	Samples	Recovery (%)	RQD (%)	SPT Values	Pocket Pen (tsf)	Percent Fines	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index
		TOPSOIL - 6 inches (0.5)										
		FILL: SANDY CLAY, with coal byproduct, dark brown-black, no odor 0.5 - 4.0 glass and rock fragements Jar Sample 1.0' - 2.5' PID Reading 1.0' - 2.0': 0.0 PPM PID Reading 2.0' - 2.5': 0.0 PPM		63		--						
4		4.0 - 8.0 rock fragments PID Reading 4.0' - 5.0': 0.0 PPM PID Reading 5.0' - 6.0': 0.0 PPM		50		--						
8		8.0 - 11.0 brick fragments Jar Sample 8.0' - 9.5' PID Reading 8.5' - 10.0': 0.0 PPM		38		--						
12		Auger Refusal at 11 fbsg - Boring Terminated (12.0)										

Completion Depth (ft.): **11.0**
Date Started: **1/16/15**
Date Completed: **1/16/15**
Drilled By: **RS Drilling - RS**
Logged By: **KSWA - J. Leffew**

Remarks: **Groundwater was not encountered during or after drilling activities. Boring was completed with a tractor-mounted Direct Push drill rig and backfilled with bentonite chips.**

NEW GEOTECH LOG REPORT 100-15-0001 I40-65 BORING LOGS.GPJ KSWARE.GDT 1/23/15

TEST BORING LOG

TEST BORING NO. DP- 2

K. S. Ware & Associates, L.L.C.
Geotechnical • CEI • Environmental

PROJECT NAME: I-40/I-65 Bridges
LOCATION: Nashville, Tennessee
PROJECT NO.: 100-15-0001

Approx. Surface El. (feet, MSL): feet, MSL
Location: See FIGURE

Depth, feet	Graphic Log	MATERIAL DESCRIPTION	Samples	Recovery (%)	RQD (%)	SPT Values	Pocket Pen (tsf)	Percent Fines	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index
		FILL: SANDY CLAY, with coal byproduct, dark brown-black, no odor PID Reading 0.0' - 2.5': 0.0 PPM Jar Sampled 1.0' - 2.5'		69		--						
4		PID Reading 4.0' - 4.5': 0.0 PPM 4.5		100		--						
		Auger Refusal at 4.5 fbsg - Boring Terminated										
8												
12												

Completion Depth (ft.): **4.5**
Date Started: **1/16/15**
Date Completed: **1/16/15**
Drilled By: **RS Drilling - RS**
Logged By: **KSWA - J. Leffew**

Remarks: **Groundwater was not encountered during or after drilling activities. Boring was completed with a tractor-mounted Direct Push drill rig and backfilled with bentonite chips.**

TEST BORING LOG

TEST BORING NO. DP- 3

K. S. Ware & Associates, L.L.C.
Geotechnical • CEI • Environmental

PROJECT NAME: I-40/I-65 Bridges
LOCATION: Nashville, Tennessee
PROJECT NO.: 100-15-0001

Approx. Surface El. (feet, MSL): feet, MSL
Location: See FIGURE

Depth, feet	Graphic Log	MATERIAL DESCRIPTION	Samples	Recovery (%)	RQD (%)	SPT Values	Pocket Pen (tsf)	Percent Fines	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index
		FILL: SANDY CLAY, with coal byproduct, dark gray-black, no odor Jar Sample 0.0' - 1.5' PID Reading 0.0' - 1.5': 0.0 PPM		100		--						
		3.5										
		Auger Refusal at 3.5 fbsg - Boring Terminated										
4												
8												
12												

Completion Depth (ft.): **3.5**
Date Started: **1/16/15**
Date Completed: **1/16/15**
Drilled By: **RS Drilling - RS**
Logged By: **KSWA - J. Leffew**

Remarks: **Groundwater was not encountered during or after drilling activities. Boring was completed with a tractor-mounted Direct Push drill rig and backfilled with bentonite chips.**

TEST BORING LOG

TEST BORING NO. DP- 4

K. S. Ware & Associates, L.L.C.
Geotechnical • CEI • Environmental

PROJECT NAME: I-40/I-65 Bridges
LOCATION: Nashville, Tennessee
PROJECT NO.: 100-15-0001

Approx. Surface El. (feet, MSL): feet, MSL
Location: See FIGURE

Depth, feet	Graphic Log	MATERIAL DESCRIPTION	Samples	Recovery (%)	RQD (%)	SPT Values	Pocket Pen (tsf)	Percent Fines	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index
		FILL: SANDY CLAY, with coal byproduct, dark gray-black, no odor PID Reading 0.0' - 1.5': 0.0 PPM Jar Sample 1.5' - 2.9' PID Reading 1.5' - 2.9': 0.0 PPM		50		--						
4		4.0 SANDY LEAN CLAY (CL), light brown, moist PID Reading 4.0' - 6.0': 0.0 PPM PID Reading 6.0' - 8.0': 0.0 PPM		94		--						
8		PID Reading 8.0' - 10.0': 0.0 PPM Jar Sample 10.0' - 12.0' PID Reading 10.0' - 12.0': 0.0 PPM		100		--						
12		12.0 Auger Refusal at 12 fbsg - Boring Terminated										

Completion Depth (ft.): **12.0**
Date Started: **1/16/15**
Date Completed: **1/16/15**
Drilled By: **RS Drilling - RS**
Logged By: **KSWA - J. Leffew**

Remarks: **Groundwater was not encountered during or after drilling activities. Boring was completed with a tractor-mounted Direct Push drill rig and backfilled with bentonite chips.**

NEW GEOTECH LOG REPORT 100-15-0001 I40-65 BORING LOGS.GPJ KSWARE.GDT 1/23/15

TEST BORING LOG

TEST BORING NO. DP- 5

K. S. Ware & Associates, L.L.C.
Geotechnical • CEI • Environmental

PROJECT NAME: I-40/I-65 Bridges
LOCATION: Nashville, Tennessee
PROJECT NO.: 100-15-0001

Approx. Surface El. (feet, MSL): feet, MSL
Location: See FIGURE

Depth, feet	Graphic Log	MATERIAL DESCRIPTION	Samples	Recovery (%)	RQD (%)	SPT Values	Pocket Pen (tsf)	Percent Fines	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index
		FILL: SANDY CLAY, with coal byproduct, black, no odor Jar Sample 0.0' - 2.5' PID Reading 0.0' - 2.5': 0.0 PPM		80		--						
		2.5										
		Auger Refusal at 2.5 fbsg - Boring Terminated										
4												
8												
12												

Completion Depth (ft.): **2.5**
Date Started: **1/16/15**
Date Completed: **1/16/15**
Drilled By: **RS Drilling - RS**
Logged By: **KSWA - J. Leffew**

Remarks: **Groundwater was not encountered during or after drilling activities. Boring was completed with a tractor-mounted Direct Push drill rig and backfilled with bentonite chips.**

TEST BORING LOG

TEST BORING NO. DP- 6

K. S. Ware & Associates, L.L.C.
Geotechnical • CEI • Environmental

PROJECT NAME: I-40/I-65 Bridges
LOCATION: Nashville, Tennessee
PROJECT NO.: 100-15-0001

Approx. Surface El. (feet, MSL): feet, MSL
Location: See FIGURE

Depth, feet	Graphic Log	MATERIAL DESCRIPTION	Samples	Recovery (%)	RQD (%)	SPT Values	Pocket Pen (tsf)	Percent Fines	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index
		FILL: SANDY CLAY, with coal byproduct, no odor Jar Sample 0.0' - 2.5' PID Reading 0.0' - 2.5': 0.0 PPM		83		--						
		3.0										
		Auger Refusal at 3 fbsg - Boring Terminated										
4												
8												
12												

Completion Depth (ft.): **3.0**
Date Started: **1/16/15**
Date Completed: **1/16/15**
Drilled By: **RS Drilling - RS**
Logged By: **KSWA - J. Leffew**

Remarks: **Groundwater was not encountered during or after drilling activities. Boring was completed with a tractor-mounted Direct Push drill rig and backfilled with bentonite chips.**

TEST BORING LOG

TEST BORING NO. DP- 7

K. S. Ware & Associates, L.L.C.
Geotechnical • CEI • Environmental

PROJECT NAME: I-40/I-65 Bridges
LOCATION: Nashville, Tennessee
PROJECT NO.: 100-15-0001

Approx. Surface El. (feet, MSL): feet, MSL
Location: See FIGURE

Depth, feet	Graphic Log	MATERIAL DESCRIPTION	Samples	Recovery (%)	RQD (%)	SPT Values	Pocket Pen (tsf)	Percent Fines	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index
		FILL: SANDY CLAY, with coal byproduct and limestone fragments, no odor Jar Sample 0.0' - 1.5' PID Reading 0.0' - 1.5': 0.0 PPM 1.5		100		--						
		Auger Refusal at 1.5 fbsg - Boring Terminated										
4												
8												
12												

Completion Depth (ft.): **1.5**
Date Started: **1/16/15**
Date Completed: **1/16/15**
Drilled By: **RS Drilling - RS**
Logged By: **KSWA - J. Leffew**

Remarks: **Groundwater was not encountered during or after drilling activities. Boring was completed with a tractor-mounted Direct Push drill rig and backfilled with bentonite chips.**

NEW GEOTECH LOG REPORT 100-15-0001 I40-65 BORING LOGS.GPJ KSWARE.GDT 1/23/15

TEST BORING LOG

TEST BORING NO. DP- 8

K. S. Ware & Associates, L.L.C.
Geotechnical • CEI • Environmental

PROJECT NAME: I-40/I-65 Bridges
LOCATION: Nashville, Tennessee
PROJECT NO.: 100-15-0001

Approx. Surface El. (feet, MSL): feet, MSL
Location: See FIGURE

Depth, feet	Graphic Log	MATERIAL DESCRIPTION	Samples	Recovery (%)	RQD (%)	SPT Values	Pocket Pen (tsf)	Percent Fines	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index
		FILL: SANDY CLAY, with coal byproduct and rock fragments, light brown, no odor Jar Sample 0.0' - 2.0' PID Reading 0.0' - 2.0': 0.0 PPM 2.0		100		--						
		Auger Refusal at 2 fbsg - Boring Terminated										
4												
8												
12												

Completion Depth (ft.): **2.0**
Date Started: **1/16/15**
Date Completed: **1/16/15**
Drilled By: **RS Drilling - RS**
Logged By: **KSWA - J. Leffew**

Remarks: **Groundwater was not encountered during or after drilling activities. Boring was completed with a tractor-mounted Direct Push drill rig and backfilled with bentonite chips.**

NEW GEOTECH LOG REPORT 100-15-0001 I40-65 BORING LOGS.GPJ KSWARE.GDT 1/23/15

TEST BORING LOG

TEST BORING NO. DP- 9

K. S. Ware & Associates, L.L.C.
Geotechnical • CEI • Environmental

PROJECT NAME: I-40/I-65 Bridges
LOCATION: Nashville, Tennessee
PROJECT NO.: 100-15-0001

Approx. Surface El. (feet, MSL): feet, MSL
Location: See FIGURE

Depth, feet	Graphic Log	MATERIAL DESCRIPTION	Samples	Recovery (%)	RQD (%)	SPT Values	Pocket Pen (tsf)	Percent Fines	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index
		FILL: SANDY CLAY, with coal byproduct and rock fragments, no odor Jar Sample 0.0' - 2.5' PID Reading 0.0' - 2.5': 0.0 PPM		83		--						
		3.0										
		Auger Refusal at 3.0 fbsg - Boring Terminated										
4												
8												
12												

Completion Depth (ft.): **3.0**
Date Started: **1/16/15**
Date Completed: **1/16/15**
Drilled By: **RS Drilling - RS**
Logged By: **KSWA - J. Leffew**

Remarks: **Groundwater was not encountered during or after drilling activities. Boring was completed with a tractor-mounted Direct Push drill rig and backfilled with bentonite chips.**

TEST BORING LOG

TEST BORING NO. DP-10

K. S. Ware & Associates, L.L.C.
Geotechnical • CEI • Environmental

PROJECT NAME: I-40/I-65 Bridges
LOCATION: Nashville, Tennessee
PROJECT NO.: 100-15-0001

Approx. Surface El. (feet, MSL): feet, MSL
Location: See FIGURE

Depth, feet	Graphic Log	MATERIAL DESCRIPTION	Samples	Recovery (%)	RQD (%)	SPT Values	Pocket Pen (tsf)	Percent Fines	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index
		FILL: SANDY CLAY, with coal byproduct, light brown, no odor Jar Sample 0.0' - 2.5' PID Reading 0.0' - 2.5': 0.0 PPM		83		--						
3.0		Auger Refusal at 3.0 fbsg - Boring Terminated										
4												
8												
12												

Completion Depth (ft.): **3.0**
Date Started: **1/16/15**
Date Completed: **1/16/15**
Drilled By: **RS Drilling - RS**
Logged By: **KSWA - J. Leffew**

Remarks: **Groundwater was not encountered during or after drilling activities. Boring was completed with a tractor-mounted Direct Push drill rig and backfilled with bentonite chips.**

TEST BORING LOG

TEST BORING NO. DP-11

K. S. Ware & Associates, L.L.C.
Geotechnical • CEI • Environmental

PROJECT NAME: I-40/I-65 Bridges
LOCATION: Nashville, Tennessee
PROJECT NO.: 100-15-0001

Approx. Surface El. (feet, MSL): feet, MSL
Location: See FIGURE

Depth, feet	Graphic Log	MATERIAL DESCRIPTION	Samples	Recovery (%)	RQD (%)	SPT Values	Pocket Pen (tsf)	Percent Fines	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index
		TOPSOIL - 6 inches (0.5)										
		Jar Sample 0.0' - 2.5'										
		PID Reading 0.0' - 2.5': 0.0 PPM										
		FILL: SANDY CLAY, with rock fragments and minor coal pieces, no odor		100		--						
		(2.5)										
		Auger Refusal at 2.5 fbsg - Boring Terminated										
4												
8												
12												

Completion Depth (ft.): **2.5**
Date Started: **1/16/15**
Date Completed: **1/16/15**
Drilled By: **RS Drilling - RS**
Logged By: **KSWA - J. Leffew**

Remarks: **Groundwater was not encountered during or after drilling activities. Boring was completed with a tractor-mounted Direct Push drill rig and backfilled with bentonite chips.**

TEST BORING LOG

TEST BORING NO. DP-12

K. S. Ware & Associates, L.L.C.
Geotechnical • CEI • Environmental

PROJECT NAME: I-40/I-65 Bridges
LOCATION: Nashville, Tennessee
PROJECT NO.: 100-15-0001

Approx. Surface El. (feet, MSL): feet, MSL
Location: See FIGURE

Depth, feet	Graphic Log	MATERIAL DESCRIPTION	Samples	Recovery (%)	RQD (%)	SPT Values	Pocket Pen (tsf)	Percent Fines	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index
		TOPSOIL - 6 inches (0.5)										
		Jar Sample 0.0' - 2.5'										
		PID Reading 0.0' - 2.5': 0.0 PPM										
		FILL: SANDY CLAY, with rock and coal fragments, no odor		83		--						
		(3.0)										
		Auger Refusal at 3 fbsg - Boring Terminated										
4												
8												
12												

Completion Depth (ft.): **3.0**
Date Started: **1/16/15**
Date Completed: **1/16/15**
Drilled By: **RS Drilling - RS**
Logged By: **KSWA - J. Leffew**

Remarks: **Groundwater was not encountered during or after drilling activities. Boring was completed with a tractor-mounted Direct Push drill rig and backfilled with bentonite chips.**

APPENDIX D

SOIL ANALYTICAL RESULTS SUMMARY TABLE

	Consituent of Concern	Mercury	Arsenic	Barium	Cadmium	Chromium (Total)	Lead	Fluoranthene	Phenanthrene	Pyrene	Benzo (b) fluoranthene	Benzo (k) fluoranthene	Naphthalene	Benzo (g, h, i) perylene	Benzo (a) pyrene	Chrysene	Indeno (1,2,3-cd) pyrene	Fluorene	Dibenz (a,h) anthracene
	Detection Limit (mg/kg)	0.020	2.0	0.50	0.50	1.0	0.50	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.3	0.33	0.33	0.33
	Residential RSL* (mg/kg)	9.4	0.67	15000	70	N/E	400	2300	N/E	1700	0.15	1.5	3.8	N/E	0.015	15	0.15	2300	0.015
	Industrial RSL* (mg/kg)	40	3	220000	980	N/E	800	30000	N/E	23000	2.9	29	17	N/E	0.29	290	2.9	30000	0.29
Boring No.	**Depth (ft)**																		
DP-01	1.0 - 2.5	0.10	23.0	56.0	BDL	22.0	97.0	0.37	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
DP-01	8.0 - 9.5	0.045	36.0	42.0	BDL	14.0	26.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
DP-02	1.0 - 2.5	0.18	37.0	220.0	BDL	19.0	230.0	0.54	0.64	0.38	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
DP-03	0.0 - 1.5	0.069	43.0	170.0	BDL	13.0	84.0	0.41	BDL	BDL	0.50	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
DP-04	1.5 - 2.9	0.11	11.0	120.0	BDL	10.0	130.0	BDL	0.75	BDL	BDL	BDL	0.81	BDL	BDL	BDL	BDL	BDL	BDL
DP-04	10.0 - 12.0	0.071	13.0	100.0	BDL	15.0	8.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
DP-05	0.0 - 2.5	0.18	12.0	91.0	0.56	15.0	49.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
DP-06	0.0 - 2.5	0.41	12.0	280.0	0.51	20.0	180.0	9.3	9.7	6.4	3.5	1.6	0.62	0.57	2.7	3.5	0.70	1.5	BDL
DP-07	0.0 - 1.5	0.75	19.0	260.0	BDL	16.0	150.0	8.5	4.1	6.3	4.2	1.6	BDL	1	3.2	3.2	1.1	BDL	0.34
DP-08	0.0 - 2.0	0.059	15.0	440.0	BDL	24.0	14.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
DP-09	0.0 - 2.5	0.41	13.0	370.0	BDL	23.0	190.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
DP-10	0.0 - 2.5	0.56	14.0	340.0	BDL	22.0	22.0	0.51	0.35	0.39	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
DP-11	0.0 - 2.5	0.19	15.0	290.0	BDL	22.0	51.0	0.050	BDL	0.042	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
DP-12	0.0 - 2.5	0.19	12.0	290.0	BDL	19.0	45.0	0.73	0.41	0.62	0.40	BDL	BDL	BDL	BDL	0.35	BDL	BDL	BDL

BDL = Below Detection Limit
N/E = Not Established
*USEPA Region 4 (Jan 2015) Regional Screening Levels for Soil

APPENDIX E

LABORATORY ANALYTICAL REPORT

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Mr. John Leffew
K.S. Ware and Associates, LLC
54 Lindsley Ave.
Nashville, TN 37210

Report Summary

Tuesday January 20, 2015

Report Number: L743937
Samples Received: 01/16/15
Client Project: 100-15-0001

Description: TDOT Davidson Co. Bridges over Clinton St/CSX RR

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

Entire Report Reviewed By: Terrie Fudge

Terrie Fudge, ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1, TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364, EPA - TN002

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Mr. John Leffew
K.S. Ware and Associates, LLC
54 Lindsley Ave.
Nashville, TN 37210

January 20, 2015

ESC Sample # : L743937-01

Date Received : January 16, 2015
Description : TDOT Davidson Co. Bridges over Clinton St/CSX RR

Site ID :

Sample ID : DP-01 1-2.5FT

Project # : 100-15-0001

Collected By : John W. Leffew
Collection Date : 01/16/15 09:45

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Mercury	0.10	0.020	mg/kg	7471A	01/19/15	1
Arsenic	23.	2.0	mg/kg	6010B	01/18/15	1
Barium	56.	0.50	mg/kg	6010B	01/18/15	1
Cadmium	BDL	0.50	mg/kg	6010B	01/18/15	1
Chromium	22.	1.0	mg/kg	6010B	01/18/15	1
Lead	97.	0.50	mg/kg	6010B	01/18/15	1
Selenium	BDL	2.0	mg/kg	6010B	01/18/15	1
Silver	BDL	1.0	mg/kg	6010B	01/18/15	1
Volatile Organics						
Acetone	BDL	0.25	mg/kg	8260B	01/18/15	5
Acrylonitrile	BDL	0.050	mg/kg	8260B	01/18/15	5
Benzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Bromobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Bromodichloromethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Bromoform	BDL	0.0050	mg/kg	8260B	01/18/15	5
Bromomethane	BDL	0.025	mg/kg	8260B	01/18/15	5
n-Butylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
sec-Butylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
tert-Butylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Carbon tetrachloride	BDL	0.0050	mg/kg	8260B	01/18/15	5
Chlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Chlorodibromomethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Chloroethane	BDL	0.025	mg/kg	8260B	01/18/15	5
2-Chloroethyl vinyl ether	BDL	0.25	mg/kg	8260B	01/18/15	5
Chloroform	BDL	0.025	mg/kg	8260B	01/18/15	5
Chloromethane	BDL	0.012	mg/kg	8260B	01/18/15	5
2-Chlorotoluene	BDL	0.0050	mg/kg	8260B	01/18/15	5
4-Chlorotoluene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2-Dibromo-3-Chloropropane	BDL	0.025	mg/kg	8260B	01/18/15	5
1,2-Dibromoethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Dibromomethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,3-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,4-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Dichlorodifluoromethane	BDL	0.025	mg/kg	8260B	01/18/15	5
1,1-Dichloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2-Dichloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1-Dichloroethene	BDL	0.0050	mg/kg	8260B	01/18/15	5
cis-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	01/18/15	5
trans-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1-Dichloropropene	BDL	0.0050	mg/kg	8260B	01/18/15	5

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

12065 Lebanon Rd.
Mt. Juliet, TN 37122
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1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Mr. John Leffew
K.S. Ware and Associates, LLC
54 Lindsley Ave.
Nashville, TN 37210

January 20, 2015

ESC Sample # : L743937-01

Date Received : January 16, 2015
Description : TDOT Davidson Co. Bridges over Clinton St/CSX RR

Site ID :

Sample ID : DP-01 1-2.5FT

Project # : 100-15-0001

Collected By : John W. Leffew
Collection Date : 01/16/15 09:45

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
1,3-Dichloropropane	BDL	0.0050	mg/kg	8260B	01/18/15	5
cis-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	01/18/15	5
trans-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	01/18/15	5
2,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Di-isopropyl ether	BDL	0.0050	mg/kg	8260B	01/18/15	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Hexachloro-1,3-butadiene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Isopropylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
p-Isopropyltoluene	BDL	0.0050	mg/kg	8260B	01/18/15	5
2-Butanone (MEK)	BDL	0.050	mg/kg	8260B	01/18/15	5
Methylene Chloride	BDL	0.025	mg/kg	8260B	01/18/15	5
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/kg	8260B	01/18/15	5
Methyl tert-butyl ether	BDL	0.0050	mg/kg	8260B	01/18/15	5
Naphthalene	BDL	0.025	mg/kg	8260B	01/18/15	5
n-Propylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Styrene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1,1,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1,2,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1,2-Trichlorotrifluoroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Tetrachloroethene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Toluene	BDL	0.025	mg/kg	8260B	01/18/15	5
1,2,3-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2,4-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1,1-Trichloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1,2-Trichloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Trichloroethene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Trichlorofluoromethane	BDL	0.025	mg/kg	8260B	01/18/15	5
1,2,3-Trichloropropane	BDL	0.012	mg/kg	8260B	01/18/15	5
1,2,4-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2,3-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Vinyl chloride	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,3,5-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Xylenes, Total	BDL	0.015	mg/kg	8260B	01/18/15	5
Surrogate Recovery						
Toluene-d8	104.		% Rec.	8260B	01/18/15	1
Dibromofluoromethane	94.9		% Rec.	8260B	01/18/15	1
4-Bromofluorobenzene	94.2		% Rec.	8260B	01/18/15	1
Base/Neutral Extractables						
Acenaphthene	BDL	0.33	mg/kg	8270C	01/19/15	10
Acenaphthylene	BDL	0.33	mg/kg	8270C	01/19/15	10
Anthracene	BDL	0.33	mg/kg	8270C	01/19/15	10
Benzidine	BDL	3.3	mg/kg	8270C	01/19/15	10
Benzo(a)anthracene	BDL	0.33	mg/kg	8270C	01/19/15	10

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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Est. 1970

REPORT OF ANALYSIS

Mr. John Leffew
K.S. Ware and Associates, LLC
54 Lindsley Ave.
Nashville, TN 37210

January 20, 2015

ESC Sample # : L743937-01

Date Received : January 16, 2015
Description : TDOT Davidson Co. Bridges over Clinton St/CSX RR

Site ID :

Sample ID : DP-01 1-2.5FT

Project # : 100-15-0001

Collected By : John W. Leffew
Collection Date : 01/16/15 09:45

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(b)fluoranthene	BDL	0.33	mg/kg	8270C	01/19/15	10
Benzo(k)fluoranthene	BDL	0.33	mg/kg	8270C	01/19/15	10
Benzo(g,h,i)perylene	BDL	0.33	mg/kg	8270C	01/19/15	10
Benzo(a)pyrene	BDL	0.33	mg/kg	8270C	01/19/15	10
Bis(2-chlorethoxy)methane	BDL	3.3	mg/kg	8270C	01/19/15	10
Bis(2-chloroethyl)ether	BDL	3.3	mg/kg	8270C	01/19/15	10
Bis(2-chloroisopropyl)ether	BDL	3.3	mg/kg	8270C	01/19/15	10
4-Bromophenyl-phenylether	BDL	3.3	mg/kg	8270C	01/19/15	10
2-Chloronaphthalene	BDL	0.33	mg/kg	8270C	01/19/15	10
4-Chlorophenyl-phenylether	BDL	3.3	mg/kg	8270C	01/19/15	10
Chrysene	BDL	0.33	mg/kg	8270C	01/19/15	10
Dibenz(a,h)anthracene	BDL	0.33	mg/kg	8270C	01/19/15	10
3,3-Dichlorobenzidine	BDL	3.3	mg/kg	8270C	01/19/15	10
2,4-Dinitrotoluene	BDL	3.3	mg/kg	8270C	01/19/15	10
2,6-Dinitrotoluene	BDL	3.3	mg/kg	8270C	01/19/15	10
Fluoranthene	0.37	0.33	mg/kg	8270C	01/19/15	10
Fluorene	BDL	0.33	mg/kg	8270C	01/19/15	10
Hexachlorobenzene	BDL	3.3	mg/kg	8270C	01/19/15	10
Hexachloro-1,3-butadiene	BDL	3.3	mg/kg	8270C	01/19/15	10
Hexachlorocyclopentadiene	BDL	3.3	mg/kg	8270C	01/19/15	10
Hexachloroethane	BDL	3.3	mg/kg	8270C	01/19/15	10
Indeno(1,2,3-cd)pyrene	BDL	0.33	mg/kg	8270C	01/19/15	10
Isophorone	BDL	3.3	mg/kg	8270C	01/19/15	10
Naphthalene	BDL	0.33	mg/kg	8270C	01/19/15	10
Nitrobenzene	BDL	3.3	mg/kg	8270C	01/19/15	10
n-Nitrosodimethylamine	BDL	3.3	mg/kg	8270C	01/19/15	10
n-Nitrosodiphenylamine	BDL	3.3	mg/kg	8270C	01/19/15	10
n-Nitrosodi-n-propylamine	BDL	3.3	mg/kg	8270C	01/19/15	10
Phenanthrene	BDL	0.33	mg/kg	8270C	01/19/15	10
Benzylbutyl phthalate	BDL	3.3	mg/kg	8270C	01/19/15	10
Bis(2-ethylhexyl)phthalate	BDL	3.3	mg/kg	8270C	01/19/15	10
Di-n-butyl phthalate	BDL	3.3	mg/kg	8270C	01/19/15	10
Diethyl phthalate	BDL	3.3	mg/kg	8270C	01/19/15	10
Dimethyl phthalate	BDL	3.3	mg/kg	8270C	01/19/15	10
Di-n-octyl phthalate	BDL	3.3	mg/kg	8270C	01/19/15	10
Pyrene	BDL	0.33	mg/kg	8270C	01/19/15	10
1,2,4-Trichlorobenzene	BDL	3.3	mg/kg	8270C	01/19/15	10
Acid Extractables						
4-Chloro-3-methylphenol	BDL	3.3	mg/kg	8270C	01/19/15	10
2-Chlorophenol	BDL	3.3	mg/kg	8270C	01/19/15	10
2,4-Dichlorophenol	BDL	3.3	mg/kg	8270C	01/19/15	10
2,4-Dimethylphenol	BDL	3.3	mg/kg	8270C	01/19/15	10
4,6-Dinitro-2-methylphenol	BDL	3.3	mg/kg	8270C	01/19/15	10
2,4-Dinitrophenol	BDL	3.3	mg/kg	8270C	01/19/15	10

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Mr. John Leffew
K.S. Ware and Associates, LLC
54 Lindsley Ave.
Nashville, TN 37210

January 20, 2015

ESC Sample # : L743937-01

Date Received : January 16, 2015
Description : TDOT Davidson Co. Bridges over Clinton St/CSX RR

Site ID :

Sample ID : DP-01 1-2.5FT

Project # : 100-15-0001

Collected By : John W. Leffew
Collection Date : 01/16/15 09:45

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2-Nitrophenol	BDL	3.3	mg/kg	8270C	01/19/15	10
4-Nitrophenol	BDL	3.3	mg/kg	8270C	01/19/15	10
Pentachlorophenol	BDL	3.3	mg/kg	8270C	01/19/15	10
Phenol	BDL	3.3	mg/kg	8270C	01/19/15	10
2,4,6-Trichlorophenol	BDL	3.3	mg/kg	8270C	01/19/15	10
Surrogate Recovery						
2-Fluorophenol	66.6		% Rec.	8270C	01/19/15	10
Phenol-d5	67.2		% Rec.	8270C	01/19/15	10
Nitrobenzene-d5	76.5		% Rec.	8270C	01/19/15	10
2-Fluorobiphenyl	81.9		% Rec.	8270C	01/19/15	10
2,4,6-Tribromophenol	70.3		% Rec.	8270C	01/19/15	10
p-Terphenyl-d14	60.1		% Rec.	8270C	01/19/15	10

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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Reported: 01/20/15 15:39 Printed: 01/20/15 15:45

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Mr. John Leffew
K.S. Ware and Associates, LLC
54 Lindsley Ave.
Nashville, TN 37210

January 20, 2015

ESC Sample # : L743937-02

Date Received : January 16, 2015
Description : TDOT Davidson Co. Bridges over Clinton St/CSX RR

Site ID :

Sample ID : DP-01 8-9.5FT

Project # : 100-15-0001

Collected By : John W. Leffew
Collection Date : 01/16/15 09:45

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Mercury	0.045	0.020	mg/kg	7471A	01/19/15	1
Arsenic	36.	2.0	mg/kg	6010B	01/18/15	1
Barium	42.	0.50	mg/kg	6010B	01/18/15	1
Cadmium	BDL	0.50	mg/kg	6010B	01/18/15	1
Chromium	14.	1.0	mg/kg	6010B	01/18/15	1
Lead	26.	0.50	mg/kg	6010B	01/18/15	1
Selenium	BDL	2.0	mg/kg	6010B	01/18/15	1
Silver	BDL	1.0	mg/kg	6010B	01/18/15	1
Volatile Organics						
Acetone	BDL	0.25	mg/kg	8260B	01/18/15	5
Acrylonitrile	BDL	0.050	mg/kg	8260B	01/18/15	5
Benzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Bromobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Bromodichloromethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Bromoform	BDL	0.0050	mg/kg	8260B	01/18/15	5
Bromomethane	BDL	0.025	mg/kg	8260B	01/18/15	5
n-Butylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
sec-Butylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
tert-Butylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Carbon tetrachloride	BDL	0.0050	mg/kg	8260B	01/18/15	5
Chlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Chlorodibromomethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Chloroethane	BDL	0.025	mg/kg	8260B	01/18/15	5
2-Chloroethyl vinyl ether	BDL	0.25	mg/kg	8260B	01/18/15	5
Chloroform	BDL	0.025	mg/kg	8260B	01/18/15	5
Chloromethane	BDL	0.012	mg/kg	8260B	01/18/15	5
2-Chlorotoluene	BDL	0.0050	mg/kg	8260B	01/18/15	5
4-Chlorotoluene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2-Dibromo-3-Chloropropane	BDL	0.025	mg/kg	8260B	01/18/15	5
1,2-Dibromoethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Dibromomethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,3-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,4-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Dichlorodifluoromethane	BDL	0.025	mg/kg	8260B	01/18/15	5
1,1-Dichloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2-Dichloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1-Dichloroethene	BDL	0.0050	mg/kg	8260B	01/18/15	5
cis-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	01/18/15	5
trans-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1-Dichloropropene	BDL	0.0050	mg/kg	8260B	01/18/15	5

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L743937-02 (SV8270BNA) - Dilution due to matrix

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Mr. John Leffew
K.S. Ware and Associates, LLC
54 Lindsley Ave.
Nashville, TN 37210

January 20, 2015

ESC Sample # : L743937-02

Date Received : January 16, 2015
Description : TDOT Davidson Co. Bridges over Clinton St/CSX RR

Site ID :

Sample ID : DP-01 8-9.5FT

Project # : 100-15-0001

Collected By : John W. Leffew
Collection Date : 01/16/15 09:45

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
1,3-Dichloropropane	BDL	0.0050	mg/kg	8260B	01/18/15	5
cis-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	01/18/15	5
trans-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	01/18/15	5
2,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Di-isopropyl ether	BDL	0.0050	mg/kg	8260B	01/18/15	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Hexachloro-1,3-butadiene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Isopropylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
p-Isopropyltoluene	BDL	0.0050	mg/kg	8260B	01/18/15	5
2-Butanone (MEK)	BDL	0.050	mg/kg	8260B	01/18/15	5
Methylene Chloride	BDL	0.025	mg/kg	8260B	01/18/15	5
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/kg	8260B	01/18/15	5
Methyl tert-butyl ether	BDL	0.0050	mg/kg	8260B	01/18/15	5
Naphthalene	BDL	0.025	mg/kg	8260B	01/18/15	5
n-Propylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Styrene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1,1,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1,2,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1,2-Trichlorotrifluoroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Tetrachloroethene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Toluene	BDL	0.025	mg/kg	8260B	01/18/15	5
1,2,3-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2,4-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1,1-Trichloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1,2-Trichloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Trichloroethene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Trichlorofluoromethane	BDL	0.025	mg/kg	8260B	01/18/15	5
1,2,3-Trichloropropane	BDL	0.012	mg/kg	8260B	01/18/15	5
1,2,4-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2,3-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Vinyl chloride	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,3,5-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Xylenes, Total	BDL	0.015	mg/kg	8260B	01/18/15	5
Surrogate Recovery						
Toluene-d8	104.		% Rec.	8260B	01/18/15	1
Dibromofluoromethane	94.6		% Rec.	8260B	01/18/15	1
4-Bromofluorobenzene	94.9		% Rec.	8260B	01/18/15	1
Base/Neutral Extractables						
Acenaphthene	BDL	0.33	mg/kg	8270C	01/19/15	10
Acenaphthylene	BDL	0.33	mg/kg	8270C	01/19/15	10
Anthracene	BDL	0.33	mg/kg	8270C	01/19/15	10
Benzidine	BDL	3.3	mg/kg	8270C	01/19/15	10
Benzo(a)anthracene	BDL	0.33	mg/kg	8270C	01/19/15	10

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L743937-02 (SV8270BNA) - Dilution due to matrix

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
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Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Mr. John Leffew
K.S. Ware and Associates, LLC
54 Lindsley Ave.
Nashville, TN 37210

January 20, 2015

ESC Sample # : L743937-02

Date Received : January 16, 2015
Description : TDOT Davidson Co. Bridges over Clinton St/CSX RR

Site ID :

Sample ID : DP-01 8-9.5FT

Project # : 100-15-0001

Collected By : John W. Leffew
Collection Date : 01/16/15 09:45

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(b)fluoranthene	BDL	0.33	mg/kg	8270C	01/19/15	10
Benzo(k)fluoranthene	BDL	0.33	mg/kg	8270C	01/19/15	10
Benzo(g,h,i)perylene	BDL	0.33	mg/kg	8270C	01/19/15	10
Benzo(a)pyrene	BDL	0.33	mg/kg	8270C	01/19/15	10
Bis(2-chlorethoxy)methane	BDL	3.3	mg/kg	8270C	01/19/15	10
Bis(2-chloroethyl)ether	BDL	3.3	mg/kg	8270C	01/19/15	10
Bis(2-chloroisopropyl)ether	BDL	3.3	mg/kg	8270C	01/19/15	10
4-Bromophenyl-phenylether	BDL	3.3	mg/kg	8270C	01/19/15	10
2-Chloronaphthalene	BDL	0.33	mg/kg	8270C	01/19/15	10
4-Chlorophenyl-phenylether	BDL	3.3	mg/kg	8270C	01/19/15	10
Chrysene	BDL	0.33	mg/kg	8270C	01/19/15	10
Dibenz(a,h)anthracene	BDL	0.33	mg/kg	8270C	01/19/15	10
3,3-Dichlorobenzidine	BDL	3.3	mg/kg	8270C	01/19/15	10
2,4-Dinitrotoluene	BDL	3.3	mg/kg	8270C	01/19/15	10
2,6-Dinitrotoluene	BDL	3.3	mg/kg	8270C	01/19/15	10
Fluoranthene	BDL	0.33	mg/kg	8270C	01/19/15	10
Fluorene	BDL	0.33	mg/kg	8270C	01/19/15	10
Hexachlorobenzene	BDL	3.3	mg/kg	8270C	01/19/15	10
Hexachloro-1,3-butadiene	BDL	3.3	mg/kg	8270C	01/19/15	10
Hexachlorocyclopentadiene	BDL	3.3	mg/kg	8270C	01/19/15	10
Hexachloroethane	BDL	3.3	mg/kg	8270C	01/19/15	10
Indeno(1,2,3-cd)pyrene	BDL	0.33	mg/kg	8270C	01/19/15	10
Isophorone	BDL	3.3	mg/kg	8270C	01/19/15	10
Naphthalene	BDL	0.33	mg/kg	8270C	01/19/15	10
Nitrobenzene	BDL	3.3	mg/kg	8270C	01/19/15	10
n-Nitrosodimethylamine	BDL	3.3	mg/kg	8270C	01/19/15	10
n-Nitrosodiphenylamine	BDL	3.3	mg/kg	8270C	01/19/15	10
n-Nitrosodi-n-propylamine	BDL	3.3	mg/kg	8270C	01/19/15	10
Phenanthrene	BDL	0.33	mg/kg	8270C	01/19/15	10
Benzylbutyl phthalate	BDL	3.3	mg/kg	8270C	01/19/15	10
Bis(2-ethylhexyl)phthalate	BDL	3.3	mg/kg	8270C	01/19/15	10
Di-n-butyl phthalate	BDL	3.3	mg/kg	8270C	01/19/15	10
Diethyl phthalate	BDL	3.3	mg/kg	8270C	01/19/15	10
Dimethyl phthalate	BDL	3.3	mg/kg	8270C	01/19/15	10
Di-n-octyl phthalate	BDL	3.3	mg/kg	8270C	01/19/15	10
Pyrene	BDL	0.33	mg/kg	8270C	01/19/15	10
1,2,4-Trichlorobenzene	BDL	3.3	mg/kg	8270C	01/19/15	10
Acid Extractables						
4-Chloro-3-methylphenol	BDL	3.3	mg/kg	8270C	01/19/15	10
2-Chlorophenol	BDL	3.3	mg/kg	8270C	01/19/15	10
2,4-Dichlorophenol	BDL	3.3	mg/kg	8270C	01/19/15	10
2,4-Dimethylphenol	BDL	3.3	mg/kg	8270C	01/19/15	10
4,6-Dinitro-2-methylphenol	BDL	3.3	mg/kg	8270C	01/19/15	10
2,4-Dinitrophenol	BDL	3.3	mg/kg	8270C	01/19/15	10

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L743937-02 (SV8270BNA) - Dilution due to matrix

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Tax I.D. 62-0814289

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REPORT OF ANALYSIS

Mr. John Leffew
K.S. Ware and Associates, LLC
54 Lindsley Ave.
Nashville, TN 37210

January 20, 2015

ESC Sample # : L743937-02

Date Received : January 16, 2015
Description : TDOT Davidson Co. Bridges over Clinton St/CSX RR

Site ID :

Sample ID : DP-01 8-9.5FT

Project # : 100-15-0001

Collected By : John W. Leffew
Collection Date : 01/16/15 09:45

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2-Nitrophenol	BDL	3.3	mg/kg	8270C	01/19/15	10
4-Nitrophenol	BDL	3.3	mg/kg	8270C	01/19/15	10
Pentachlorophenol	BDL	3.3	mg/kg	8270C	01/19/15	10
Phenol	BDL	3.3	mg/kg	8270C	01/19/15	10
2,4,6-Trichlorophenol	BDL	3.3	mg/kg	8270C	01/19/15	10
Surrogate Recovery						
2-Fluorophenol	73.1		% Rec.	8270C	01/19/15	10
Phenol-d5	69.1		% Rec.	8270C	01/19/15	10
Nitrobenzene-d5	79.4		% Rec.	8270C	01/19/15	10
2-Fluorobiphenyl	79.4		% Rec.	8270C	01/19/15	10
2,4,6-Tribromophenol	69.0		% Rec.	8270C	01/19/15	10
p-Terphenyl-d14	46.8		% Rec.	8270C	01/19/15	10

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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Reported: 01/20/15 15:39 Printed: 01/20/15 15:45
L743937-02 (SV8270BNA) - Dilution due to matrix

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Tax I.D. 62-0814289

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REPORT OF ANALYSIS

Mr. John Leffew
K.S. Ware and Associates, LLC
54 Lindsley Ave.
Nashville, TN 37210

January 20, 2015

ESC Sample # : L743937-03

Date Received : January 16, 2015
Description : TDOT Davidson Co. Bridges over Clinton St/CSX RR

Site ID :

Sample ID : DP-02 1-2.5FT

Project # : 100-15-0001

Collected By : John W. Leffew
Collection Date : 01/16/15 10:05

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Mercury	0.18	0.020	mg/kg	7471A	01/19/15	1
Arsenic	37.	2.0	mg/kg	6010B	01/18/15	1
Barium	220	0.50	mg/kg	6010B	01/18/15	1
Cadmium	BDL	0.50	mg/kg	6010B	01/18/15	1
Chromium	19.	1.0	mg/kg	6010B	01/18/15	1
Lead	230	0.50	mg/kg	6010B	01/18/15	1
Selenium	BDL	2.0	mg/kg	6010B	01/18/15	1
Silver	BDL	1.0	mg/kg	6010B	01/18/15	1
Volatile Organics						
Acetone	BDL	0.25	mg/kg	8260B	01/18/15	5
Acrylonitrile	BDL	0.050	mg/kg	8260B	01/18/15	5
Benzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Bromobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Bromodichloromethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Bromoform	BDL	0.0050	mg/kg	8260B	01/18/15	5
Bromomethane	BDL	0.025	mg/kg	8260B	01/18/15	5
n-Butylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
sec-Butylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
tert-Butylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Carbon tetrachloride	BDL	0.0050	mg/kg	8260B	01/18/15	5
Chlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Chlorodibromomethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Chloroethane	BDL	0.025	mg/kg	8260B	01/18/15	5
2-Chloroethyl vinyl ether	BDL	0.25	mg/kg	8260B	01/18/15	5
Chloroform	BDL	0.025	mg/kg	8260B	01/18/15	5
Chloromethane	BDL	0.012	mg/kg	8260B	01/18/15	5
2-Chlorotoluene	BDL	0.0050	mg/kg	8260B	01/18/15	5
4-Chlorotoluene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2-Dibromo-3-Chloropropane	BDL	0.025	mg/kg	8260B	01/18/15	5
1,2-Dibromoethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Dibromomethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,3-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,4-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Dichlorodifluoromethane	BDL	0.025	mg/kg	8260B	01/18/15	5
1,1-Dichloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2-Dichloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1-Dichloroethene	BDL	0.0050	mg/kg	8260B	01/18/15	5
cis-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	01/18/15	5
trans-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1-Dichloropropene	BDL	0.0050	mg/kg	8260B	01/18/15	5

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Mr. John Leffew
K.S. Ware and Associates, LLC
54 Lindsley Ave.
Nashville, TN 37210

January 20, 2015

ESC Sample # : L743937-03

Date Received : January 16, 2015
Description : TDOT Davidson Co. Bridges over Clinton St/CSX RR

Site ID :

Sample ID : DP-02 1-2.5FT

Project # : 100-15-0001

Collected By : John W. Leffew
Collection Date : 01/16/15 10:05

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
1,3-Dichloropropane	BDL	0.0050	mg/kg	8260B	01/18/15	5
cis-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	01/18/15	5
trans-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	01/18/15	5
2,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Di-isopropyl ether	BDL	0.0050	mg/kg	8260B	01/18/15	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Hexachloro-1,3-butadiene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Isopropylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
p-Isopropyltoluene	BDL	0.0050	mg/kg	8260B	01/18/15	5
2-Butanone (MEK)	BDL	0.050	mg/kg	8260B	01/18/15	5
Methylene Chloride	BDL	0.025	mg/kg	8260B	01/18/15	5
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/kg	8260B	01/18/15	5
Methyl tert-butyl ether	BDL	0.0050	mg/kg	8260B	01/18/15	5
Naphthalene	BDL	0.025	mg/kg	8260B	01/18/15	5
n-Propylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Styrene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1,1,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1,2,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1,2-Trichlorotrifluoroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Tetrachloroethene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Toluene	BDL	0.025	mg/kg	8260B	01/18/15	5
1,2,3-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2,4-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1,1-Trichloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1,2-Trichloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Trichloroethene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Trichlorofluoromethane	BDL	0.025	mg/kg	8260B	01/18/15	5
1,2,3-Trichloropropane	BDL	0.012	mg/kg	8260B	01/18/15	5
1,2,4-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2,3-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Vinyl chloride	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,3,5-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Xylenes, Total	BDL	0.015	mg/kg	8260B	01/18/15	5
Surrogate Recovery						
Toluene-d8	104.		% Rec.	8260B	01/18/15	1
Dibromofluoromethane	100.		% Rec.	8260B	01/18/15	1
4-Bromofluorobenzene	88.0		% Rec.	8260B	01/18/15	1
Base/Neutral Extractables						
Acenaphthene	BDL	0.33	mg/kg	8270C	01/19/15	10
Acenaphthylene	BDL	0.33	mg/kg	8270C	01/19/15	10
Anthracene	BDL	0.33	mg/kg	8270C	01/19/15	10
Benzidine	BDL	3.3	mg/kg	8270C	01/19/15	10
Benzo(a)anthracene	BDL	0.33	mg/kg	8270C	01/19/15	10

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

12065 Lebanon Rd.
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(615) 758-5858
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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Mr. John Leffew
K.S. Ware and Associates, LLC
54 Lindsley Ave.
Nashville, TN 37210

January 20, 2015

ESC Sample # : L743937-03

Date Received : January 16, 2015
Description : TDOT Davidson Co. Bridges over Clinton St/CSX RR

Site ID :

Sample ID : DP-02 1-2.5FT

Project # : 100-15-0001

Collected By : John W. Leffew
Collection Date : 01/16/15 10:05

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(b)fluoranthene	BDL	0.33	mg/kg	8270C	01/19/15	10
Benzo(k)fluoranthene	BDL	0.33	mg/kg	8270C	01/19/15	10
Benzo(g,h,i)perylene	BDL	0.33	mg/kg	8270C	01/19/15	10
Benzo(a)pyrene	BDL	0.33	mg/kg	8270C	01/19/15	10
Bis(2-chlorethoxy)methane	BDL	3.3	mg/kg	8270C	01/19/15	10
Bis(2-chloroethyl)ether	BDL	3.3	mg/kg	8270C	01/19/15	10
Bis(2-chloroisopropyl)ether	BDL	3.3	mg/kg	8270C	01/19/15	10
4-Bromophenyl-phenylether	BDL	3.3	mg/kg	8270C	01/19/15	10
2-Chloronaphthalene	BDL	0.33	mg/kg	8270C	01/19/15	10
4-Chlorophenyl-phenylether	BDL	3.3	mg/kg	8270C	01/19/15	10
Chrysene	BDL	0.33	mg/kg	8270C	01/19/15	10
Dibenz(a,h)anthracene	BDL	0.33	mg/kg	8270C	01/19/15	10
3,3-Dichlorobenzidine	BDL	3.3	mg/kg	8270C	01/19/15	10
2,4-Dinitrotoluene	BDL	3.3	mg/kg	8270C	01/19/15	10
2,6-Dinitrotoluene	BDL	3.3	mg/kg	8270C	01/19/15	10
Fluoranthene	0.54	0.33	mg/kg	8270C	01/19/15	10
Fluorene	BDL	0.33	mg/kg	8270C	01/19/15	10
Hexachlorobenzene	BDL	3.3	mg/kg	8270C	01/19/15	10
Hexachloro-1,3-butadiene	BDL	3.3	mg/kg	8270C	01/19/15	10
Hexachlorocyclopentadiene	BDL	3.3	mg/kg	8270C	01/19/15	10
Hexachloroethane	BDL	3.3	mg/kg	8270C	01/19/15	10
Indeno(1,2,3-cd)pyrene	BDL	0.33	mg/kg	8270C	01/19/15	10
Isophorone	BDL	3.3	mg/kg	8270C	01/19/15	10
Naphthalene	BDL	0.33	mg/kg	8270C	01/19/15	10
Nitrobenzene	BDL	3.3	mg/kg	8270C	01/19/15	10
n-Nitrosodimethylamine	BDL	3.3	mg/kg	8270C	01/19/15	10
n-Nitrosodiphenylamine	BDL	3.3	mg/kg	8270C	01/19/15	10
n-Nitrosodi-n-propylamine	BDL	3.3	mg/kg	8270C	01/19/15	10
Phenanthrene	0.64	0.33	mg/kg	8270C	01/19/15	10
Benzylbutyl phthalate	BDL	3.3	mg/kg	8270C	01/19/15	10
Bis(2-ethylhexyl)phthalate	BDL	3.3	mg/kg	8270C	01/19/15	10
Di-n-butyl phthalate	BDL	3.3	mg/kg	8270C	01/19/15	10
Diethyl phthalate	BDL	3.3	mg/kg	8270C	01/19/15	10
Dimethyl phthalate	BDL	3.3	mg/kg	8270C	01/19/15	10
Di-n-octyl phthalate	BDL	3.3	mg/kg	8270C	01/19/15	10
Pyrene	0.38	0.33	mg/kg	8270C	01/19/15	10
1,2,4-Trichlorobenzene	BDL	3.3	mg/kg	8270C	01/19/15	10
Acid Extractables						
4-Chloro-3-methylphenol	BDL	3.3	mg/kg	8270C	01/19/15	10
2-Chlorophenol	BDL	3.3	mg/kg	8270C	01/19/15	10
2,4-Dichlorophenol	BDL	3.3	mg/kg	8270C	01/19/15	10
2,4-Dimethylphenol	BDL	3.3	mg/kg	8270C	01/19/15	10
4,6-Dinitro-2-methylphenol	BDL	3.3	mg/kg	8270C	01/19/15	10
2,4-Dinitrophenol	BDL	3.3	mg/kg	8270C	01/19/15	10

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Mr. John Leffew
K.S. Ware and Associates, LLC
54 Lindsley Ave.
Nashville, TN 37210

January 20, 2015

ESC Sample # : L743937-03

Date Received : January 16, 2015
Description : TDOT Davidson Co. Bridges over Clinton St/CSX RR

Site ID :

Sample ID : DP-02 1-2.5FT

Project # : 100-15-0001

Collected By : John W. Leffew
Collection Date : 01/16/15 10:05

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2-Nitrophenol	BDL	3.3	mg/kg	8270C	01/19/15	10
4-Nitrophenol	BDL	3.3	mg/kg	8270C	01/19/15	10
Pentachlorophenol	BDL	3.3	mg/kg	8270C	01/19/15	10
Phenol	BDL	3.3	mg/kg	8270C	01/19/15	10
2,4,6-Trichlorophenol	BDL	3.3	mg/kg	8270C	01/19/15	10
Surrogate Recovery						
2-Fluorophenol	62.7		% Rec.	8270C	01/19/15	10
Phenol-d5	61.2		% Rec.	8270C	01/19/15	10
Nitrobenzene-d5	82.2		% Rec.	8270C	01/19/15	10
2-Fluorobiphenyl	79.6		% Rec.	8270C	01/19/15	10
2,4,6-Tribromophenol	71.7		% Rec.	8270C	01/19/15	10
p-Terphenyl-d14	52.0		% Rec.	8270C	01/19/15	10

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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Reported: 01/20/15 15:39 Printed: 01/20/15 15:46

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REPORT OF ANALYSIS

Mr. John Leffew
K.S. Ware and Associates, LLC
54 Lindsley Ave.
Nashville, TN 37210

January 20, 2015

ESC Sample # : L743937-04

Date Received : January 16, 2015
Description : TDOT Davidson Co. Bridges over Clinton St/CSX RR

Site ID :

Sample ID : DP-03 0-1.5FT

Project # : 100-15-0001

Collected By : John W. Leffew
Collection Date : 01/16/15 10:15

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Mercury	0.069	0.020	mg/kg	7471A	01/19/15	1
Arsenic	43.	2.0	mg/kg	6010B	01/18/15	1
Barium	170	0.50	mg/kg	6010B	01/18/15	1
Cadmium	BDL	0.50	mg/kg	6010B	01/18/15	1
Chromium	13.	1.0	mg/kg	6010B	01/18/15	1
Lead	84.	0.50	mg/kg	6010B	01/18/15	1
Selenium	BDL	2.0	mg/kg	6010B	01/18/15	1
Silver	BDL	1.0	mg/kg	6010B	01/18/15	1
Volatile Organics						
Acetone	BDL	0.25	mg/kg	8260B	01/18/15	5
Acrylonitrile	BDL	0.050	mg/kg	8260B	01/18/15	5
Benzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Bromobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Bromodichloromethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Bromoform	BDL	0.0050	mg/kg	8260B	01/18/15	5
Bromomethane	BDL	0.025	mg/kg	8260B	01/18/15	5
n-Butylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
sec-Butylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
tert-Butylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Carbon tetrachloride	BDL	0.0050	mg/kg	8260B	01/18/15	5
Chlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Chlorodibromomethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Chloroethane	BDL	0.025	mg/kg	8260B	01/18/15	5
2-Chloroethyl vinyl ether	BDL	0.25	mg/kg	8260B	01/18/15	5
Chloroform	BDL	0.025	mg/kg	8260B	01/18/15	5
Chloromethane	BDL	0.012	mg/kg	8260B	01/18/15	5
2-Chlorotoluene	BDL	0.0050	mg/kg	8260B	01/18/15	5
4-Chlorotoluene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2-Dibromo-3-Chloropropane	BDL	0.025	mg/kg	8260B	01/18/15	5
1,2-Dibromoethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Dibromomethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,3-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,4-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Dichlorodifluoromethane	BDL	0.025	mg/kg	8260B	01/18/15	5
1,1-Dichloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2-Dichloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1-Dichloroethene	BDL	0.0050	mg/kg	8260B	01/18/15	5
cis-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	01/18/15	5
trans-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1-Dichloropropene	BDL	0.0050	mg/kg	8260B	01/18/15	5

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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Est. 1970

REPORT OF ANALYSIS

Mr. John Leffew
K.S. Ware and Associates, LLC
54 Lindsley Ave.
Nashville, TN 37210

January 20, 2015

ESC Sample # : L743937-04

Date Received : January 16, 2015
Description : TDOT Davidson Co. Bridges over Clinton St/CSX RR

Site ID :

Sample ID : DP-03 0-1.5FT

Project # : 100-15-0001

Collected By : John W. Leffew
Collection Date : 01/16/15 10:15

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
1,3-Dichloropropane	BDL	0.0050	mg/kg	8260B	01/18/15	5
cis-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	01/18/15	5
trans-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	01/18/15	5
2,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Di-isopropyl ether	BDL	0.0050	mg/kg	8260B	01/18/15	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Hexachloro-1,3-butadiene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Isopropylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
p-Isopropyltoluene	BDL	0.0050	mg/kg	8260B	01/18/15	5
2-Butanone (MEK)	BDL	0.050	mg/kg	8260B	01/18/15	5
Methylene Chloride	BDL	0.025	mg/kg	8260B	01/18/15	5
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/kg	8260B	01/18/15	5
Methyl tert-butyl ether	BDL	0.0050	mg/kg	8260B	01/18/15	5
Naphthalene	BDL	0.025	mg/kg	8260B	01/18/15	5
n-Propylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Styrene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1,1,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1,2,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1,2-Trichlorotrifluoroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Tetrachloroethene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Toluene	BDL	0.025	mg/kg	8260B	01/18/15	5
1,2,3-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2,4-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1,1-Trichloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1,2-Trichloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Trichloroethene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Trichlorofluoromethane	BDL	0.025	mg/kg	8260B	01/18/15	5
1,2,3-Trichloropropane	BDL	0.012	mg/kg	8260B	01/18/15	5
1,2,4-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2,3-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Vinyl chloride	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,3,5-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Xylenes, Total	BDL	0.015	mg/kg	8260B	01/18/15	5
Surrogate Recovery						
Toluene-d8	103.		% Rec.	8260B	01/18/15	1
Dibromofluoromethane	98.8		% Rec.	8260B	01/18/15	1
4-Bromofluorobenzene	90.8		% Rec.	8260B	01/18/15	1
Base/Neutral Extractables						
Acenaphthene	BDL	0.33	mg/kg	8270C	01/19/15	10
Acenaphthylene	BDL	0.33	mg/kg	8270C	01/19/15	10
Anthracene	BDL	0.33	mg/kg	8270C	01/19/15	10
Benzidine	BDL	3.3	mg/kg	8270C	01/19/15	10
Benzo(a)anthracene	BDL	0.33	mg/kg	8270C	01/19/15	10

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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Est. 1970

REPORT OF ANALYSIS

Mr. John Leffew
K.S. Ware and Associates, LLC
54 Lindsley Ave.
Nashville, TN 37210

January 20, 2015

ESC Sample # : L743937-04

Date Received : January 16, 2015
Description : TDOT Davidson Co. Bridges over Clinton St/CSX RR

Site ID :

Sample ID : DP-03 0-1.5FT

Project # : 100-15-0001

Collected By : John W. Leffew
Collection Date : 01/16/15 10:15

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(b)fluoranthene	0.50	0.33	mg/kg	8270C	01/19/15	10
Benzo(k)fluoranthene	BDL	0.33	mg/kg	8270C	01/19/15	10
Benzo(g,h,i)perylene	BDL	0.33	mg/kg	8270C	01/19/15	10
Benzo(a)pyrene	BDL	0.33	mg/kg	8270C	01/19/15	10
Bis(2-chlorethoxy)methane	BDL	3.3	mg/kg	8270C	01/19/15	10
Bis(2-chloroethyl)ether	BDL	3.3	mg/kg	8270C	01/19/15	10
Bis(2-chloroisopropyl)ether	BDL	3.3	mg/kg	8270C	01/19/15	10
4-Bromophenyl-phenylether	BDL	3.3	mg/kg	8270C	01/19/15	10
2-Chloronaphthalene	BDL	0.33	mg/kg	8270C	01/19/15	10
4-Chlorophenyl-phenylether	BDL	3.3	mg/kg	8270C	01/19/15	10
Chrysene	BDL	0.33	mg/kg	8270C	01/19/15	10
Dibenz(a,h)anthracene	BDL	0.33	mg/kg	8270C	01/19/15	10
3,3-Dichlorobenzidine	BDL	3.3	mg/kg	8270C	01/19/15	10
2,4-Dinitrotoluene	BDL	3.3	mg/kg	8270C	01/19/15	10
2,6-Dinitrotoluene	BDL	3.3	mg/kg	8270C	01/19/15	10
Fluoranthene	0.41	0.33	mg/kg	8270C	01/19/15	10
Fluorene	BDL	0.33	mg/kg	8270C	01/19/15	10
Hexachlorobenzene	BDL	3.3	mg/kg	8270C	01/19/15	10
Hexachloro-1,3-butadiene	BDL	3.3	mg/kg	8270C	01/19/15	10
Hexachlorocyclopentadiene	BDL	3.3	mg/kg	8270C	01/19/15	10
Hexachloroethane	BDL	3.3	mg/kg	8270C	01/19/15	10
Indeno(1,2,3-cd)pyrene	BDL	0.33	mg/kg	8270C	01/19/15	10
Isophorone	BDL	3.3	mg/kg	8270C	01/19/15	10
Naphthalene	BDL	0.33	mg/kg	8270C	01/19/15	10
Nitrobenzene	BDL	3.3	mg/kg	8270C	01/19/15	10
n-Nitrosodimethylamine	BDL	3.3	mg/kg	8270C	01/19/15	10
n-Nitrosodiphenylamine	BDL	3.3	mg/kg	8270C	01/19/15	10
n-Nitrosodi-n-propylamine	BDL	3.3	mg/kg	8270C	01/19/15	10
Phenanthrene	BDL	0.33	mg/kg	8270C	01/19/15	10
Benzylbutyl phthalate	BDL	3.3	mg/kg	8270C	01/19/15	10
Bis(2-ethylhexyl)phthalate	BDL	3.3	mg/kg	8270C	01/19/15	10
Di-n-butyl phthalate	BDL	3.3	mg/kg	8270C	01/19/15	10
Diethyl phthalate	BDL	3.3	mg/kg	8270C	01/19/15	10
Dimethyl phthalate	BDL	3.3	mg/kg	8270C	01/19/15	10
Di-n-octyl phthalate	BDL	3.3	mg/kg	8270C	01/19/15	10
Pyrene	BDL	0.33	mg/kg	8270C	01/19/15	10
1,2,4-Trichlorobenzene	BDL	3.3	mg/kg	8270C	01/19/15	10
Acid Extractables						
4-Chloro-3-methylphenol	BDL	3.3	mg/kg	8270C	01/19/15	10
2-Chlorophenol	BDL	3.3	mg/kg	8270C	01/19/15	10
2,4-Dichlorophenol	BDL	3.3	mg/kg	8270C	01/19/15	10
2,4-Dimethylphenol	BDL	3.3	mg/kg	8270C	01/19/15	10
4,6-Dinitro-2-methylphenol	BDL	3.3	mg/kg	8270C	01/19/15	10
2,4-Dinitrophenol	BDL	3.3	mg/kg	8270C	01/19/15	10

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Mr. John Leffew
K.S. Ware and Associates, LLC
54 Lindsley Ave.
Nashville, TN 37210

January 20, 2015

ESC Sample # : L743937-04

Date Received : January 16, 2015
Description : TDOT Davidson Co. Bridges over Clinton St/CSX RR

Site ID :

Sample ID : DP-03 0-1.5FT

Project # : 100-15-0001

Collected By : John W. Leffew
Collection Date : 01/16/15 10:15

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2-Nitrophenol	BDL	3.3	mg/kg	8270C	01/19/15	10
4-Nitrophenol	BDL	3.3	mg/kg	8270C	01/19/15	10
Pentachlorophenol	BDL	3.3	mg/kg	8270C	01/19/15	10
Phenol	BDL	3.3	mg/kg	8270C	01/19/15	10
2,4,6-Trichlorophenol	BDL	3.3	mg/kg	8270C	01/19/15	10
Surrogate Recovery						
2-Fluorophenol	61.9		% Rec.	8270C	01/19/15	10
Phenol-d5	61.2		% Rec.	8270C	01/19/15	10
Nitrobenzene-d5	75.9		% Rec.	8270C	01/19/15	10
2-Fluorobiphenyl	80.6		% Rec.	8270C	01/19/15	10
2,4,6-Tribromophenol	72.9		% Rec.	8270C	01/19/15	10
p-Terphenyl-d14	55.7		% Rec.	8270C	01/19/15	10

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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Reported: 01/20/15 15:39 Printed: 01/20/15 15:46

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Mr. John Leffew
K.S. Ware and Associates, LLC
54 Lindsley Ave.
Nashville, TN 37210

January 20, 2015

ESC Sample # : L743937-05

Date Received : January 16, 2015
Description : TDOT Davidson Co. Bridges over Clinton St/CSX RR

Site ID :

Sample ID : DP-04 1.5-2.9FT

Project # : 100-15-0001

Collected By : John W. Leffew
Collection Date : 01/16/15 10:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Mercury	0.11	0.020	mg/kg	7471A	01/19/15	1
Arsenic	11.	2.0	mg/kg	6010B	01/18/15	1
Barium	120	0.50	mg/kg	6010B	01/18/15	1
Cadmium	BDL	0.50	mg/kg	6010B	01/18/15	1
Chromium	10.	1.0	mg/kg	6010B	01/18/15	1
Lead	130	0.50	mg/kg	6010B	01/18/15	1
Selenium	BDL	2.0	mg/kg	6010B	01/18/15	1
Silver	BDL	1.0	mg/kg	6010B	01/18/15	1
Volatile Organics						
Acetone	BDL	0.25	mg/kg	8260B	01/18/15	5
Acrylonitrile	BDL	0.050	mg/kg	8260B	01/18/15	5
Benzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Bromobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Bromodichloromethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Bromoform	BDL	0.0050	mg/kg	8260B	01/18/15	5
Bromomethane	BDL	0.025	mg/kg	8260B	01/18/15	5
n-Butylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
sec-Butylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
tert-Butylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Carbon tetrachloride	BDL	0.0050	mg/kg	8260B	01/18/15	5
Chlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Chlorodibromomethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Chloroethane	BDL	0.025	mg/kg	8260B	01/18/15	5
2-Chloroethyl vinyl ether	BDL	0.25	mg/kg	8260B	01/18/15	5
Chloroform	BDL	0.025	mg/kg	8260B	01/18/15	5
Chloromethane	BDL	0.012	mg/kg	8260B	01/18/15	5
2-Chlorotoluene	BDL	0.0050	mg/kg	8260B	01/18/15	5
4-Chlorotoluene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2-Dibromo-3-Chloropropane	BDL	0.025	mg/kg	8260B	01/18/15	5
1,2-Dibromoethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Dibromomethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,3-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,4-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Dichlorodifluoromethane	BDL	0.025	mg/kg	8260B	01/18/15	5
1,1-Dichloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2-Dichloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1-Dichloroethene	BDL	0.0050	mg/kg	8260B	01/18/15	5
cis-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	01/18/15	5
trans-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1-Dichloropropene	BDL	0.0050	mg/kg	8260B	01/18/15	5

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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Est. 1970

REPORT OF ANALYSIS

Mr. John Leffew
K.S. Ware and Associates, LLC
54 Lindsley Ave.
Nashville, TN 37210

January 20, 2015

ESC Sample # : L743937-05

Date Received : January 16, 2015
Description : TDOT Davidson Co. Bridges over Clinton St/CSX RR

Site ID :

Sample ID : DP-04 1.5-2.9FT

Project # : 100-15-0001

Collected By : John W. Leffew
Collection Date : 01/16/15 10:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
1,3-Dichloropropane	BDL	0.0050	mg/kg	8260B	01/18/15	5
cis-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	01/18/15	5
trans-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	01/18/15	5
2,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Di-isopropyl ether	BDL	0.0050	mg/kg	8260B	01/18/15	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Hexachloro-1,3-butadiene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Isopropylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
p-Isopropyltoluene	BDL	0.0050	mg/kg	8260B	01/18/15	5
2-Butanone (MEK)	BDL	0.050	mg/kg	8260B	01/18/15	5
Methylene Chloride	BDL	0.025	mg/kg	8260B	01/18/15	5
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/kg	8260B	01/18/15	5
Methyl tert-butyl ether	BDL	0.0050	mg/kg	8260B	01/18/15	5
Naphthalene	BDL	0.025	mg/kg	8260B	01/18/15	5
n-Propylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Styrene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1,1,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1,2,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1,2-Trichlorotrifluoroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Tetrachloroethene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Toluene	BDL	0.025	mg/kg	8260B	01/18/15	5
1,2,3-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2,4-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1,1-Trichloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1,2-Trichloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Trichloroethene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Trichlorofluoromethane	BDL	0.025	mg/kg	8260B	01/18/15	5
1,2,3-Trichloropropane	BDL	0.012	mg/kg	8260B	01/18/15	5
1,2,4-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2,3-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Vinyl chloride	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,3,5-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Xylenes, Total	BDL	0.015	mg/kg	8260B	01/18/15	5
Surrogate Recovery						
Toluene-d8	104.		% Rec.	8260B	01/18/15	1
Dibromofluoromethane	99.0		% Rec.	8260B	01/18/15	1
4-Bromofluorobenzene	93.0		% Rec.	8260B	01/18/15	1
Base/Neutral Extractables						
Acenaphthene	BDL	0.33	mg/kg	8270C	01/19/15	10
Acenaphthylene	BDL	0.33	mg/kg	8270C	01/19/15	10
Anthracene	BDL	0.33	mg/kg	8270C	01/19/15	10
Benzidine	BDL	3.3	mg/kg	8270C	01/19/15	10
Benzo(a)anthracene	BDL	0.33	mg/kg	8270C	01/19/15	10

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Mr. John Leffew
K.S. Ware and Associates, LLC
54 Lindsley Ave.
Nashville, TN 37210

January 20, 2015

ESC Sample # : L743937-05

Date Received : January 16, 2015
Description : TDOT Davidson Co. Bridges over Clinton St/CSX RR

Site ID :

Sample ID : DP-04 1.5-2.9FT

Project # : 100-15-0001

Collected By : John W. Leffew
Collection Date : 01/16/15 10:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(b)fluoranthene	BDL	0.33	mg/kg	8270C	01/19/15	10
Benzo(k)fluoranthene	BDL	0.33	mg/kg	8270C	01/19/15	10
Benzo(g,h,i)perylene	BDL	0.33	mg/kg	8270C	01/19/15	10
Benzo(a)pyrene	BDL	0.33	mg/kg	8270C	01/19/15	10
Bis(2-chlorethoxy)methane	BDL	3.3	mg/kg	8270C	01/19/15	10
Bis(2-chloroethyl)ether	BDL	3.3	mg/kg	8270C	01/19/15	10
Bis(2-chloroisopropyl)ether	BDL	3.3	mg/kg	8270C	01/19/15	10
4-Bromophenyl-phenylether	BDL	3.3	mg/kg	8270C	01/19/15	10
2-Chloronaphthalene	BDL	0.33	mg/kg	8270C	01/19/15	10
4-Chlorophenyl-phenylether	BDL	3.3	mg/kg	8270C	01/19/15	10
Chrysene	BDL	0.33	mg/kg	8270C	01/19/15	10
Dibenz(a,h)anthracene	BDL	0.33	mg/kg	8270C	01/19/15	10
3,3-Dichlorobenzidine	BDL	3.3	mg/kg	8270C	01/19/15	10
2,4-Dinitrotoluene	BDL	3.3	mg/kg	8270C	01/19/15	10
2,6-Dinitrotoluene	BDL	3.3	mg/kg	8270C	01/19/15	10
Fluoranthene	BDL	0.33	mg/kg	8270C	01/19/15	10
Fluorene	BDL	0.33	mg/kg	8270C	01/19/15	10
Hexachlorobenzene	BDL	3.3	mg/kg	8270C	01/19/15	10
Hexachloro-1,3-butadiene	BDL	3.3	mg/kg	8270C	01/19/15	10
Hexachlorocyclopentadiene	BDL	3.3	mg/kg	8270C	01/19/15	10
Hexachloroethane	BDL	3.3	mg/kg	8270C	01/19/15	10
Indeno(1,2,3-cd)pyrene	BDL	0.33	mg/kg	8270C	01/19/15	10
Isophorone	BDL	3.3	mg/kg	8270C	01/19/15	10
Naphthalene	0.81	0.33	mg/kg	8270C	01/19/15	10
Nitrobenzene	BDL	3.3	mg/kg	8270C	01/19/15	10
n-Nitrosodimethylamine	BDL	3.3	mg/kg	8270C	01/19/15	10
n-Nitrosodiphenylamine	BDL	3.3	mg/kg	8270C	01/19/15	10
n-Nitrosodi-n-propylamine	BDL	3.3	mg/kg	8270C	01/19/15	10
Phenanthrene	0.75	0.33	mg/kg	8270C	01/19/15	10
Benzylbutyl phthalate	BDL	3.3	mg/kg	8270C	01/19/15	10
Bis(2-ethylhexyl)phthalate	BDL	3.3	mg/kg	8270C	01/19/15	10
Di-n-butyl phthalate	BDL	3.3	mg/kg	8270C	01/19/15	10
Diethyl phthalate	BDL	3.3	mg/kg	8270C	01/19/15	10
Dimethyl phthalate	BDL	3.3	mg/kg	8270C	01/19/15	10
Di-n-octyl phthalate	BDL	3.3	mg/kg	8270C	01/19/15	10
Pyrene	BDL	0.33	mg/kg	8270C	01/19/15	10
1,2,4-Trichlorobenzene	BDL	3.3	mg/kg	8270C	01/19/15	10
Acid Extractables						
4-Chloro-3-methylphenol	BDL	3.3	mg/kg	8270C	01/19/15	10
2-Chlorophenol	BDL	3.3	mg/kg	8270C	01/19/15	10
2,4-Dichlorophenol	BDL	3.3	mg/kg	8270C	01/19/15	10
2,4-Dimethylphenol	BDL	3.3	mg/kg	8270C	01/19/15	10
4,6-Dinitro-2-methylphenol	BDL	3.3	mg/kg	8270C	01/19/15	10
2,4-Dinitrophenol	BDL	3.3	mg/kg	8270C	01/19/15	10

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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Tax I.D. 62-0814289

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REPORT OF ANALYSIS

Mr. John Leffew
K.S. Ware and Associates, LLC
54 Lindsley Ave.
Nashville, TN 37210

January 20, 2015

ESC Sample # : L743937-05

Date Received : January 16, 2015
Description : TDOT Davidson Co. Bridges over Clinton St/CSX RR

Site ID :

Sample ID : DP-04 1.5-2.9FT

Project # : 100-15-0001

Collected By : John W. Leffew
Collection Date : 01/16/15 10:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2-Nitrophenol	BDL	3.3	mg/kg	8270C	01/19/15	10
4-Nitrophenol	BDL	3.3	mg/kg	8270C	01/19/15	10
Pentachlorophenol	BDL	3.3	mg/kg	8270C	01/19/15	10
Phenol	BDL	3.3	mg/kg	8270C	01/19/15	10
2,4,6-Trichlorophenol	BDL	3.3	mg/kg	8270C	01/19/15	10
Surrogate Recovery						
2-Fluorophenol	60.3		% Rec.	8270C	01/19/15	10
Phenol-d5	55.5		% Rec.	8270C	01/19/15	10
Nitrobenzene-d5	92.2		% Rec.	8270C	01/19/15	10
2-Fluorobiphenyl	81.5		% Rec.	8270C	01/19/15	10
2,4,6-Tribromophenol	71.5		% Rec.	8270C	01/19/15	10
p-Terphenyl-d14	61.1		% Rec.	8270C	01/19/15	10

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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REPORT OF ANALYSIS

Mr. John Leffew
K.S. Ware and Associates, LLC
54 Lindsley Ave.
Nashville, TN 37210

January 20, 2015

ESC Sample # : L743937-06

Date Received : January 16, 2015
Description : TDOT Davidson Co. Bridges over Clinton St/CSX RR

Site ID :

Sample ID : DP-04 10-12FT

Project # : 100-15-0001

Collected By : John W. Leffew
Collection Date : 01/16/15 10:35

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Mercury	0.071	0.020	mg/kg	7471A	01/19/15	1
Arsenic	13.	2.0	mg/kg	6010B	01/18/15	1
Barium	100	0.50	mg/kg	6010B	01/18/15	1
Cadmium	BDL	0.50	mg/kg	6010B	01/18/15	1
Chromium	15.	1.0	mg/kg	6010B	01/18/15	1
Lead	8.8	0.50	mg/kg	6010B	01/18/15	1
Selenium	BDL	2.0	mg/kg	6010B	01/18/15	1
Silver	BDL	1.0	mg/kg	6010B	01/18/15	1
Volatile Organics						
Acetone	BDL	0.25	mg/kg	8260B	01/18/15	5
Acrylonitrile	BDL	0.050	mg/kg	8260B	01/18/15	5
Benzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Bromobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Bromodichloromethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Bromoform	BDL	0.0050	mg/kg	8260B	01/18/15	5
Bromomethane	BDL	0.025	mg/kg	8260B	01/18/15	5
n-Butylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
sec-Butylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
tert-Butylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Carbon tetrachloride	BDL	0.0050	mg/kg	8260B	01/18/15	5
Chlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Chlorodibromomethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Chloroethane	BDL	0.025	mg/kg	8260B	01/18/15	5
2-Chloroethyl vinyl ether	BDL	0.25	mg/kg	8260B	01/18/15	5
Chloroform	BDL	0.025	mg/kg	8260B	01/18/15	5
Chloromethane	BDL	0.012	mg/kg	8260B	01/18/15	5
2-Chlorotoluene	BDL	0.0050	mg/kg	8260B	01/18/15	5
4-Chlorotoluene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2-Dibromo-3-Chloropropane	BDL	0.025	mg/kg	8260B	01/18/15	5
1,2-Dibromoethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Dibromomethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,3-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,4-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Dichlorodifluoromethane	BDL	0.025	mg/kg	8260B	01/18/15	5
1,1-Dichloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2-Dichloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1-Dichloroethene	BDL	0.0050	mg/kg	8260B	01/18/15	5
cis-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	01/18/15	5
trans-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1-Dichloropropene	BDL	0.0050	mg/kg	8260B	01/18/15	5

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Mr. John Leffew
K.S. Ware and Associates, LLC
54 Lindsley Ave.
Nashville, TN 37210

January 20, 2015

ESC Sample # : L743937-06

Date Received : January 16, 2015
Description : TDOT Davidson Co. Bridges over Clinton St/CSX RR

Site ID :

Sample ID : DP-04 10-12FT

Project # : 100-15-0001

Collected By : John W. Leffew
Collection Date : 01/16/15 10:35

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
1,3-Dichloropropane	BDL	0.0050	mg/kg	8260B	01/18/15	5
cis-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	01/18/15	5
trans-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	01/18/15	5
2,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Di-isopropyl ether	BDL	0.0050	mg/kg	8260B	01/18/15	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Hexachloro-1,3-butadiene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Isopropylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
p-Isopropyltoluene	BDL	0.0050	mg/kg	8260B	01/18/15	5
2-Butanone (MEK)	BDL	0.050	mg/kg	8260B	01/18/15	5
Methylene Chloride	BDL	0.025	mg/kg	8260B	01/18/15	5
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/kg	8260B	01/18/15	5
Methyl tert-butyl ether	BDL	0.0050	mg/kg	8260B	01/18/15	5
Naphthalene	BDL	0.025	mg/kg	8260B	01/18/15	5
n-Propylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Styrene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1,1,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1,2,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1,2-Trichlorotrifluoroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Tetrachloroethene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Toluene	BDL	0.025	mg/kg	8260B	01/18/15	5
1,2,3-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2,4-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1,1-Trichloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1,2-Trichloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Trichloroethene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Trichlorofluoromethane	BDL	0.025	mg/kg	8260B	01/18/15	5
1,2,3-Trichloropropane	BDL	0.012	mg/kg	8260B	01/18/15	5
1,2,4-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2,3-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Vinyl chloride	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,3,5-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Xylenes, Total	BDL	0.015	mg/kg	8260B	01/18/15	5
Surrogate Recovery						
Toluene-d8	103.		% Rec.	8260B	01/18/15	1
Dibromofluoromethane	96.3		% Rec.	8260B	01/18/15	1
4-Bromofluorobenzene	91.1		% Rec.	8260B	01/18/15	1
Base/Neutral Extractables						
Acenaphthene	BDL	0.033	mg/kg	8270C	01/19/15	1
Acenaphthylene	BDL	0.033	mg/kg	8270C	01/19/15	1
Anthracene	BDL	0.033	mg/kg	8270C	01/19/15	1
Benzidine	BDL	0.33	mg/kg	8270C	01/19/15	1
Benzo(a)anthracene	BDL	0.033	mg/kg	8270C	01/19/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

12065 Lebanon Rd.
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Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Mr. John Leffew
K.S. Ware and Associates, LLC
54 Lindsley Ave.
Nashville, TN 37210

January 20, 2015

ESC Sample # : L743937-06

Date Received : January 16, 2015
Description : TDOT Davidson Co. Bridges over Clinton St/CSX RR

Site ID :

Sample ID : DP-04 10-12FT

Project # : 100-15-0001

Collected By : John W. Leffew
Collection Date : 01/16/15 10:35

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(b)fluoranthene	BDL	0.033	mg/kg	8270C	01/19/15	1
Benzo(k)fluoranthene	BDL	0.033	mg/kg	8270C	01/19/15	1
Benzo(g,h,i)perylene	BDL	0.033	mg/kg	8270C	01/19/15	1
Benzo(a)pyrene	BDL	0.033	mg/kg	8270C	01/19/15	1
Bis(2-chlorethoxy)methane	BDL	0.33	mg/kg	8270C	01/19/15	1
Bis(2-chloroethyl)ether	BDL	0.33	mg/kg	8270C	01/19/15	1
Bis(2-chloroisopropyl)ether	BDL	0.33	mg/kg	8270C	01/19/15	1
4-Bromophenyl-phenylether	BDL	0.33	mg/kg	8270C	01/19/15	1
2-Chloronaphthalene	BDL	0.033	mg/kg	8270C	01/19/15	1
4-Chlorophenyl-phenylether	BDL	0.33	mg/kg	8270C	01/19/15	1
Chrysene	BDL	0.033	mg/kg	8270C	01/19/15	1
Dibenz(a,h)anthracene	BDL	0.033	mg/kg	8270C	01/19/15	1
3,3-Dichlorobenzidine	BDL	0.33	mg/kg	8270C	01/19/15	1
2,4-Dinitrotoluene	BDL	0.33	mg/kg	8270C	01/19/15	1
2,6-Dinitrotoluene	BDL	0.33	mg/kg	8270C	01/19/15	1
Fluoranthene	BDL	0.033	mg/kg	8270C	01/19/15	1
Fluorene	BDL	0.033	mg/kg	8270C	01/19/15	1
Hexachlorobenzene	BDL	0.33	mg/kg	8270C	01/19/15	1
Hexachloro-1,3-butadiene	BDL	0.33	mg/kg	8270C	01/19/15	1
Hexachlorocyclopentadiene	BDL	0.33	mg/kg	8270C	01/19/15	1
Hexachloroethane	BDL	0.33	mg/kg	8270C	01/19/15	1
Indeno(1,2,3-cd)pyrene	BDL	0.033	mg/kg	8270C	01/19/15	1
Isophorone	BDL	0.33	mg/kg	8270C	01/19/15	1
Naphthalene	BDL	0.033	mg/kg	8270C	01/19/15	1
Nitrobenzene	BDL	0.33	mg/kg	8270C	01/19/15	1
n-Nitrosodimethylamine	BDL	0.33	mg/kg	8270C	01/19/15	1
n-Nitrosodiphenylamine	BDL	0.33	mg/kg	8270C	01/19/15	1
n-Nitrosodi-n-propylamine	BDL	0.33	mg/kg	8270C	01/19/15	1
Phenanthrene	BDL	0.033	mg/kg	8270C	01/19/15	1
Benzylbutyl phthalate	BDL	0.33	mg/kg	8270C	01/19/15	1
Bis(2-ethylhexyl)phthalate	BDL	0.33	mg/kg	8270C	01/19/15	1
Di-n-butyl phthalate	BDL	0.33	mg/kg	8270C	01/19/15	1
Diethyl phthalate	BDL	0.33	mg/kg	8270C	01/19/15	1
Dimethyl phthalate	BDL	0.33	mg/kg	8270C	01/19/15	1
Di-n-octyl phthalate	BDL	0.33	mg/kg	8270C	01/19/15	1
Pyrene	BDL	0.033	mg/kg	8270C	01/19/15	1
1,2,4-Trichlorobenzene	BDL	0.33	mg/kg	8270C	01/19/15	1
Acid Extractables						
4-Chloro-3-methylphenol	BDL	0.33	mg/kg	8270C	01/19/15	1
2-Chlorophenol	BDL	0.33	mg/kg	8270C	01/19/15	1
2,4-Dichlorophenol	BDL	0.33	mg/kg	8270C	01/19/15	1
2,4-Dimethylphenol	BDL	0.33	mg/kg	8270C	01/19/15	1
4,6-Dinitro-2-methylphenol	BDL	0.33	mg/kg	8270C	01/19/15	1
2,4-Dinitrophenol	BDL	0.33	mg/kg	8270C	01/19/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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(615) 758-5858
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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Mr. John Leffew
K.S. Ware and Associates, LLC
54 Lindsley Ave.
Nashville, TN 37210

January 20, 2015

ESC Sample # : L743937-06

Date Received : January 16, 2015
Description : TDOT Davidson Co. Bridges over Clinton St/CSX RR

Site ID :

Sample ID : DP-04 10-12FT

Project # : 100-15-0001

Collected By : John W. Leffew
Collection Date : 01/16/15 10:35

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2-Nitrophenol	BDL	0.33	mg/kg	8270C	01/19/15	1
4-Nitrophenol	BDL	0.33	mg/kg	8270C	01/19/15	1
Pentachlorophenol	BDL	0.33	mg/kg	8270C	01/19/15	1
Phenol	BDL	0.33	mg/kg	8270C	01/19/15	1
2,4,6-Trichlorophenol	BDL	0.33	mg/kg	8270C	01/19/15	1
Surrogate Recovery						
2-Fluorophenol	76.7		% Rec.	8270C	01/19/15	1
Phenol-d5	75.8		% Rec.	8270C	01/19/15	1
Nitrobenzene-d5	79.4		% Rec.	8270C	01/19/15	1
2-Fluorobiphenyl	81.5		% Rec.	8270C	01/19/15	1
2,4,6-Tribromophenol	83.9		% Rec.	8270C	01/19/15	1
p-Terphenyl-d14	64.8		% Rec.	8270C	01/19/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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Reported: 01/20/15 15:39 Printed: 01/20/15 15:46

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REPORT OF ANALYSIS

Mr. John Leffew
K.S. Ware and Associates, LLC
54 Lindsley Ave.
Nashville, TN 37210

January 20, 2015

ESC Sample # : L743937-07

Date Received : January 16, 2015
Description : TDOT Davidson Co. Bridges over Clinton St/CSX RR

Site ID :

Sample ID : DP-05 0-2.5FT

Project # : 100-15-0001

Collected By : John W. Leffew
Collection Date : 01/16/15 10:45

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Mercury	0.18	0.020	mg/kg	7471A	01/19/15	1
Arsenic	12.	2.0	mg/kg	6010B	01/18/15	1
Barium	91.	0.50	mg/kg	6010B	01/18/15	1
Cadmium	0.56	0.50	mg/kg	6010B	01/18/15	1
Chromium	15.	1.0	mg/kg	6010B	01/18/15	1
Lead	49.	0.50	mg/kg	6010B	01/18/15	1
Selenium	BDL	2.0	mg/kg	6010B	01/18/15	1
Silver	BDL	1.0	mg/kg	6010B	01/18/15	1
Volatile Organics						
Acetone	BDL	0.25	mg/kg	8260B	01/18/15	5
Acrylonitrile	BDL	0.050	mg/kg	8260B	01/18/15	5
Benzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Bromobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Bromodichloromethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Bromoform	BDL	0.0050	mg/kg	8260B	01/18/15	5
Bromomethane	BDL	0.025	mg/kg	8260B	01/18/15	5
n-Butylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
sec-Butylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
tert-Butylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Carbon tetrachloride	BDL	0.0050	mg/kg	8260B	01/18/15	5
Chlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Chlorodibromomethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Chloroethane	BDL	0.025	mg/kg	8260B	01/18/15	5
2-Chloroethyl vinyl ether	BDL	0.25	mg/kg	8260B	01/18/15	5
Chloroform	BDL	0.025	mg/kg	8260B	01/18/15	5
Chloromethane	BDL	0.012	mg/kg	8260B	01/18/15	5
2-Chlorotoluene	BDL	0.0050	mg/kg	8260B	01/18/15	5
4-Chlorotoluene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2-Dibromo-3-Chloropropane	BDL	0.025	mg/kg	8260B	01/18/15	5
1,2-Dibromoethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Dibromomethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,3-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,4-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Dichlorodifluoromethane	BDL	0.025	mg/kg	8260B	01/18/15	5
1,1-Dichloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2-Dichloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1-Dichloroethene	BDL	0.0050	mg/kg	8260B	01/18/15	5
cis-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	01/18/15	5
trans-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1-Dichloropropene	BDL	0.0050	mg/kg	8260B	01/18/15	5

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L743937-07 (SV8270BNA) - Dilution due to matrix

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Mr. John Leffew
K.S. Ware and Associates, LLC
54 Lindsley Ave.
Nashville, TN 37210

January 20, 2015

ESC Sample # : L743937-07

Date Received : January 16, 2015
Description : TDOT Davidson Co. Bridges over Clinton St/CSX RR

Site ID :

Sample ID : DP-05 0-2.5FT

Project # : 100-15-0001

Collected By : John W. Leffew
Collection Date : 01/16/15 10:45

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
1,3-Dichloropropane	BDL	0.0050	mg/kg	8260B	01/18/15	5
cis-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	01/18/15	5
trans-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	01/18/15	5
2,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Di-isopropyl ether	BDL	0.0050	mg/kg	8260B	01/18/15	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Hexachloro-1,3-butadiene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Isopropylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
p-Isopropyltoluene	BDL	0.0050	mg/kg	8260B	01/18/15	5
2-Butanone (MEK)	BDL	0.050	mg/kg	8260B	01/18/15	5
Methylene Chloride	BDL	0.025	mg/kg	8260B	01/18/15	5
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/kg	8260B	01/18/15	5
Methyl tert-butyl ether	BDL	0.0050	mg/kg	8260B	01/18/15	5
Naphthalene	BDL	0.025	mg/kg	8260B	01/18/15	5
n-Propylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Styrene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1,1,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1,2,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1,2-Trichlorotrifluoroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Tetrachloroethene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Toluene	BDL	0.025	mg/kg	8260B	01/18/15	5
1,2,3-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2,4-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1,1-Trichloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1,2-Trichloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Trichloroethene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Trichlorofluoromethane	BDL	0.025	mg/kg	8260B	01/18/15	5
1,2,3-Trichloropropane	BDL	0.012	mg/kg	8260B	01/18/15	5
1,2,4-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2,3-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Vinyl chloride	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,3,5-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Xylenes, Total	BDL	0.015	mg/kg	8260B	01/18/15	5
Surrogate Recovery						
Toluene-d8	104.		% Rec.	8260B	01/18/15	1
Dibromofluoromethane	99.7		% Rec.	8260B	01/18/15	1
4-Bromofluorobenzene	86.1		% Rec.	8260B	01/18/15	1
Base/Neutral Extractables						
Acenaphthene	BDL	0.33	mg/kg	8270C	01/19/15	10
Acenaphthylene	BDL	0.33	mg/kg	8270C	01/19/15	10
Anthracene	BDL	0.33	mg/kg	8270C	01/19/15	10
Benzidine	BDL	3.3	mg/kg	8270C	01/19/15	10
Benzo(a)anthracene	BDL	0.33	mg/kg	8270C	01/19/15	10

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L743937-07 (SV8270BNA) - Dilution due to matrix

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Mr. John Leffew
K.S. Ware and Associates, LLC
54 Lindsley Ave.
Nashville, TN 37210

January 20, 2015

ESC Sample # : L743937-07

Date Received : January 16, 2015
Description : TDOT Davidson Co. Bridges over Clinton St/CSX RR

Site ID :

Sample ID : DP-05 0-2.5FT

Project # : 100-15-0001

Collected By : John W. Leffew
Collection Date : 01/16/15 10:45

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(b)fluoranthene	BDL	0.33	mg/kg	8270C	01/19/15	10
Benzo(k)fluoranthene	BDL	0.33	mg/kg	8270C	01/19/15	10
Benzo(g,h,i)perylene	BDL	0.33	mg/kg	8270C	01/19/15	10
Benzo(a)pyrene	BDL	0.33	mg/kg	8270C	01/19/15	10
Bis(2-chlorethoxy)methane	BDL	3.3	mg/kg	8270C	01/19/15	10
Bis(2-chloroethyl)ether	BDL	3.3	mg/kg	8270C	01/19/15	10
Bis(2-chloroisopropyl)ether	BDL	3.3	mg/kg	8270C	01/19/15	10
4-Bromophenyl-phenylether	BDL	3.3	mg/kg	8270C	01/19/15	10
2-Chloronaphthalene	BDL	0.33	mg/kg	8270C	01/19/15	10
4-Chlorophenyl-phenylether	BDL	3.3	mg/kg	8270C	01/19/15	10
Chrysene	BDL	0.33	mg/kg	8270C	01/19/15	10
Dibenz(a,h)anthracene	BDL	0.33	mg/kg	8270C	01/19/15	10
3,3-Dichlorobenzidine	BDL	3.3	mg/kg	8270C	01/19/15	10
2,4-Dinitrotoluene	BDL	3.3	mg/kg	8270C	01/19/15	10
2,6-Dinitrotoluene	BDL	3.3	mg/kg	8270C	01/19/15	10
Fluoranthene	BDL	0.33	mg/kg	8270C	01/19/15	10
Fluorene	BDL	0.33	mg/kg	8270C	01/19/15	10
Hexachlorobenzene	BDL	3.3	mg/kg	8270C	01/19/15	10
Hexachloro-1,3-butadiene	BDL	3.3	mg/kg	8270C	01/19/15	10
Hexachlorocyclopentadiene	BDL	3.3	mg/kg	8270C	01/19/15	10
Hexachloroethane	BDL	3.3	mg/kg	8270C	01/19/15	10
Indeno(1,2,3-cd)pyrene	BDL	0.33	mg/kg	8270C	01/19/15	10
Isophorone	BDL	3.3	mg/kg	8270C	01/19/15	10
Naphthalene	BDL	0.33	mg/kg	8270C	01/19/15	10
Nitrobenzene	BDL	3.3	mg/kg	8270C	01/19/15	10
n-Nitrosodimethylamine	BDL	3.3	mg/kg	8270C	01/19/15	10
n-Nitrosodiphenylamine	BDL	3.3	mg/kg	8270C	01/19/15	10
n-Nitrosodi-n-propylamine	BDL	3.3	mg/kg	8270C	01/19/15	10
Phenanthrene	BDL	0.33	mg/kg	8270C	01/19/15	10
Benzylbutyl phthalate	BDL	3.3	mg/kg	8270C	01/19/15	10
Bis(2-ethylhexyl)phthalate	BDL	3.3	mg/kg	8270C	01/19/15	10
Di-n-butyl phthalate	BDL	3.3	mg/kg	8270C	01/19/15	10
Diethyl phthalate	BDL	3.3	mg/kg	8270C	01/19/15	10
Dimethyl phthalate	BDL	3.3	mg/kg	8270C	01/19/15	10
Di-n-octyl phthalate	BDL	3.3	mg/kg	8270C	01/19/15	10
Pyrene	BDL	0.33	mg/kg	8270C	01/19/15	10
1,2,4-Trichlorobenzene	BDL	3.3	mg/kg	8270C	01/19/15	10
Acid Extractables						
4-Chloro-3-methylphenol	BDL	3.3	mg/kg	8270C	01/19/15	10
2-Chlorophenol	BDL	3.3	mg/kg	8270C	01/19/15	10
2,4-Dichlorophenol	BDL	3.3	mg/kg	8270C	01/19/15	10
2,4-Dimethylphenol	BDL	3.3	mg/kg	8270C	01/19/15	10
4,6-Dinitro-2-methylphenol	BDL	3.3	mg/kg	8270C	01/19/15	10
2,4-Dinitrophenol	BDL	3.3	mg/kg	8270C	01/19/15	10

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L743937-07 (SV8270BNA) - Dilution due to matrix

12065 Lebanon Rd.
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(615) 758-5858
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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Mr. John Leffew
K.S. Ware and Associates, LLC
54 Lindsley Ave.
Nashville, TN 37210

January 20, 2015

ESC Sample # : L743937-07

Date Received : January 16, 2015
Description : TDOT Davidson Co. Bridges over Clinton St/CSX RR

Site ID :

Sample ID : DP-05 0-2.5FT

Project # : 100-15-0001

Collected By : John W. Leffew
Collection Date : 01/16/15 10:45

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2-Nitrophenol	BDL	3.3	mg/kg	8270C	01/19/15	10
4-Nitrophenol	BDL	3.3	mg/kg	8270C	01/19/15	10
Pentachlorophenol	BDL	3.3	mg/kg	8270C	01/19/15	10
Phenol	BDL	3.3	mg/kg	8270C	01/19/15	10
2,4,6-Trichlorophenol	BDL	3.3	mg/kg	8270C	01/19/15	10
Surrogate Recovery						
2-Fluorophenol	53.9		% Rec.	8270C	01/19/15	10
Phenol-d5	49.3		% Rec.	8270C	01/19/15	10
Nitrobenzene-d5	90.9		% Rec.	8270C	01/19/15	10
2-Fluorobiphenyl	80.5		% Rec.	8270C	01/19/15	10
2,4,6-Tribromophenol	71.6		% Rec.	8270C	01/19/15	10
p-Terphenyl-d14	48.6		% Rec.	8270C	01/19/15	10

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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Reported: 01/20/15 15:39 Printed: 01/20/15 15:46
L743937-07 (SV8270BNA) - Dilution due to matrix

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Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Mr. John Leffew
K.S. Ware and Associates, LLC
54 Lindsley Ave.
Nashville, TN 37210

January 20, 2015

ESC Sample # : L743937-08

Date Received : January 16, 2015
Description : TDOT Davidson Co. Bridges over Clinton St/CSX RR

Site ID :

Sample ID : DP-06 0-2.5FT

Project # : 100-15-0001

Collected By : John W. Leffew
Collection Date : 01/16/15 11:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Mercury	0.41	0.020	mg/kg	7471A	01/19/15	1
Arsenic	12.	2.0	mg/kg	6010B	01/18/15	1
Barium	280	0.50	mg/kg	6010B	01/18/15	1
Cadmium	0.51	0.50	mg/kg	6010B	01/18/15	1
Chromium	20.	1.0	mg/kg	6010B	01/18/15	1
Lead	180	0.50	mg/kg	6010B	01/18/15	1
Selenium	BDL	2.0	mg/kg	6010B	01/18/15	1
Silver	BDL	1.0	mg/kg	6010B	01/18/15	1
Volatile Organics						
Acetone	BDL	0.25	mg/kg	8260B	01/18/15	5
Acrylonitrile	BDL	0.050	mg/kg	8260B	01/18/15	5
Benzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Bromobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Bromodichloromethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Bromoform	BDL	0.0050	mg/kg	8260B	01/18/15	5
Bromomethane	BDL	0.025	mg/kg	8260B	01/18/15	5
n-Butylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
sec-Butylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
tert-Butylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Carbon tetrachloride	BDL	0.0050	mg/kg	8260B	01/18/15	5
Chlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Chlorodibromomethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Chloroethane	BDL	0.025	mg/kg	8260B	01/18/15	5
2-Chloroethyl vinyl ether	BDL	0.25	mg/kg	8260B	01/18/15	5
Chloroform	BDL	0.025	mg/kg	8260B	01/18/15	5
Chloromethane	BDL	0.012	mg/kg	8260B	01/18/15	5
2-Chlorotoluene	BDL	0.0050	mg/kg	8260B	01/18/15	5
4-Chlorotoluene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2-Dibromo-3-Chloropropane	BDL	0.025	mg/kg	8260B	01/18/15	5
1,2-Dibromoethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Dibromomethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,3-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,4-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Dichlorodifluoromethane	BDL	0.025	mg/kg	8260B	01/18/15	5
1,1-Dichloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2-Dichloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1-Dichloroethene	BDL	0.0050	mg/kg	8260B	01/18/15	5
cis-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	01/18/15	5
trans-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1-Dichloropropene	BDL	0.0050	mg/kg	8260B	01/18/15	5

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Mr. John Leffew
K.S. Ware and Associates, LLC
54 Lindsley Ave.
Nashville, TN 37210

January 20, 2015

ESC Sample # : L743937-08

Date Received : January 16, 2015
Description : TDOT Davidson Co. Bridges over Clinton St/CSX RR

Site ID :

Sample ID : DP-06 0-2.5FT

Project # : 100-15-0001

Collected By : John W. Leffew
Collection Date : 01/16/15 11:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
1,3-Dichloropropane	BDL	0.0050	mg/kg	8260B	01/18/15	5
cis-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	01/18/15	5
trans-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	01/18/15	5
2,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Di-isopropyl ether	BDL	0.0050	mg/kg	8260B	01/18/15	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Hexachloro-1,3-butadiene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Isopropylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
p-Isopropyltoluene	BDL	0.0050	mg/kg	8260B	01/18/15	5
2-Butanone (MEK)	BDL	0.050	mg/kg	8260B	01/18/15	5
Methylene Chloride	BDL	0.025	mg/kg	8260B	01/18/15	5
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/kg	8260B	01/18/15	5
Methyl tert-butyl ether	BDL	0.0050	mg/kg	8260B	01/18/15	5
Naphthalene	BDL	0.025	mg/kg	8260B	01/18/15	5
n-Propylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Styrene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1,1,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1,2,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1,2-Trichlorotrifluoroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Tetrachloroethene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Toluene	BDL	0.025	mg/kg	8260B	01/18/15	5
1,2,3-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2,4-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1,1-Trichloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1,2-Trichloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Trichloroethene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Trichlorofluoromethane	BDL	0.025	mg/kg	8260B	01/18/15	5
1,2,3-Trichloropropane	BDL	0.012	mg/kg	8260B	01/18/15	5
1,2,4-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2,3-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Vinyl chloride	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,3,5-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Xylenes, Total	BDL	0.015	mg/kg	8260B	01/18/15	5
Surrogate Recovery						
Toluene-d8	103.		% Rec.	8260B	01/18/15	1
Dibromofluoromethane	101.		% Rec.	8260B	01/18/15	1
4-Bromofluorobenzene	92.1		% Rec.	8260B	01/18/15	1
Base/Neutral Extractables						
Acenaphthene	1.1	0.33	mg/kg	8270C	01/19/15	10
Acenaphthylene	0.50	0.33	mg/kg	8270C	01/19/15	10
Anthracene	3.3	0.33	mg/kg	8270C	01/19/15	10
Benzidine	BDL	3.3	mg/kg	8270C	01/19/15	10
Benzo(a)anthracene	4.4	0.33	mg/kg	8270C	01/19/15	10

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

12065 Lebanon Rd.
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(615) 758-5858
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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Mr. John Leffew
K.S. Ware and Associates, LLC
54 Lindsley Ave.
Nashville, TN 37210

January 20, 2015

ESC Sample # : L743937-08

Date Received : January 16, 2015
Description : TDOT Davidson Co. Bridges over Clinton St/CSX RR

Site ID :

Sample ID : DP-06 0-2.5FT

Project # : 100-15-0001

Collected By : John W. Leffew
Collection Date : 01/16/15 11:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(b)fluoranthene	3.5	0.33	mg/kg	8270C	01/19/15	10
Benzo(k)fluoranthene	1.6	0.33	mg/kg	8270C	01/19/15	10
Benzo(g,h,i)perylene	0.57	0.33	mg/kg	8270C	01/19/15	10
Benzo(a)pyrene	2.7	0.33	mg/kg	8270C	01/19/15	10
Bis(2-chlorethoxy)methane	BDL	3.3	mg/kg	8270C	01/19/15	10
Bis(2-chloroethyl)ether	BDL	3.3	mg/kg	8270C	01/19/15	10
Bis(2-chloroisopropyl)ether	BDL	3.3	mg/kg	8270C	01/19/15	10
4-Bromophenyl-phenylether	BDL	3.3	mg/kg	8270C	01/19/15	10
2-Chloronaphthalene	BDL	0.33	mg/kg	8270C	01/19/15	10
4-Chlorophenyl-phenylether	BDL	3.3	mg/kg	8270C	01/19/15	10
Chrysene	3.5	0.33	mg/kg	8270C	01/19/15	10
Dibenz(a,h)anthracene	BDL	0.33	mg/kg	8270C	01/19/15	10
3,3-Dichlorobenzidine	BDL	3.3	mg/kg	8270C	01/19/15	10
2,4-Dinitrotoluene	BDL	3.3	mg/kg	8270C	01/19/15	10
2,6-Dinitrotoluene	BDL	3.3	mg/kg	8270C	01/19/15	10
Fluoranthene	9.3	0.33	mg/kg	8270C	01/19/15	10
Fluorene	1.5	0.33	mg/kg	8270C	01/19/15	10
Hexachlorobenzene	BDL	3.3	mg/kg	8270C	01/19/15	10
Hexachloro-1,3-butadiene	BDL	3.3	mg/kg	8270C	01/19/15	10
Hexachlorocyclopentadiene	BDL	3.3	mg/kg	8270C	01/19/15	10
Hexachloroethane	BDL	3.3	mg/kg	8270C	01/19/15	10
Indeno(1,2,3-cd)pyrene	0.70	0.33	mg/kg	8270C	01/19/15	10
Isophorone	BDL	3.3	mg/kg	8270C	01/19/15	10
Naphthalene	0.62	0.33	mg/kg	8270C	01/19/15	10
Nitrobenzene	BDL	3.3	mg/kg	8270C	01/19/15	10
n-Nitrosodimethylamine	BDL	3.3	mg/kg	8270C	01/19/15	10
n-Nitrosodiphenylamine	BDL	3.3	mg/kg	8270C	01/19/15	10
n-Nitrosodi-n-propylamine	BDL	3.3	mg/kg	8270C	01/19/15	10
Phenanthrene	9.7	0.33	mg/kg	8270C	01/19/15	10
Benzylbutyl phthalate	BDL	3.3	mg/kg	8270C	01/19/15	10
Bis(2-ethylhexyl)phthalate	BDL	3.3	mg/kg	8270C	01/19/15	10
Di-n-butyl phthalate	BDL	3.3	mg/kg	8270C	01/19/15	10
Diethyl phthalate	BDL	3.3	mg/kg	8270C	01/19/15	10
Dimethyl phthalate	BDL	3.3	mg/kg	8270C	01/19/15	10
Di-n-octyl phthalate	BDL	3.3	mg/kg	8270C	01/19/15	10
Pyrene	6.4	0.33	mg/kg	8270C	01/19/15	10
1,2,4-Trichlorobenzene	BDL	3.3	mg/kg	8270C	01/19/15	10
Acid Extractables						
4-Chloro-3-methylphenol	BDL	3.3	mg/kg	8270C	01/19/15	10
2-Chlorophenol	BDL	3.3	mg/kg	8270C	01/19/15	10
2,4-Dichlorophenol	BDL	3.3	mg/kg	8270C	01/19/15	10
2,4-Dimethylphenol	BDL	3.3	mg/kg	8270C	01/19/15	10
4,6-Dinitro-2-methylphenol	BDL	3.3	mg/kg	8270C	01/19/15	10
2,4-Dinitrophenol	BDL	3.3	mg/kg	8270C	01/19/15	10

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Mr. John Leffew
K.S. Ware and Associates, LLC
54 Lindsley Ave.
Nashville, TN 37210

January 20, 2015

ESC Sample # : L743937-08

Date Received : January 16, 2015
Description : TDOT Davidson Co. Bridges over Clinton St/CSX RR

Site ID :

Sample ID : DP-06 0-2.5FT

Project # : 100-15-0001

Collected By : John W. Leffew
Collection Date : 01/16/15 11:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2-Nitrophenol	BDL	3.3	mg/kg	8270C	01/19/15	10
4-Nitrophenol	BDL	3.3	mg/kg	8270C	01/19/15	10
Pentachlorophenol	BDL	3.3	mg/kg	8270C	01/19/15	10
Phenol	BDL	3.3	mg/kg	8270C	01/19/15	10
2,4,6-Trichlorophenol	BDL	3.3	mg/kg	8270C	01/19/15	10
Surrogate Recovery						
2-Fluorophenol	56.2		% Rec.	8270C	01/19/15	10
Phenol-d5	58.8		% Rec.	8270C	01/19/15	10
Nitrobenzene-d5	82.0		% Rec.	8270C	01/19/15	10
2-Fluorobiphenyl	84.0		% Rec.	8270C	01/19/15	10
2,4,6-Tribromophenol	70.5		% Rec.	8270C	01/19/15	10
p-Terphenyl-d14	55.0		% Rec.	8270C	01/19/15	10

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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Reported: 01/20/15 15:39 Printed: 01/20/15 15:46

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REPORT OF ANALYSIS

Mr. John Leffew
K.S. Ware and Associates, LLC
54 Lindsley Ave.
Nashville, TN 37210

January 20, 2015

ESC Sample # : L743937-09

Date Received : January 16, 2015
Description : TDOT Davidson Co. Bridges over Clinton St/CSX RR

Site ID :

Sample ID : DP-07 0-1.5FT

Project # : 100-15-0001

Collected By : John W. Leffew
Collection Date : 01/16/15 11:15

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Mercury	0.75	0.020	mg/kg	7471A	01/19/15	1
Arsenic	19.	2.0	mg/kg	6010B	01/18/15	1
Barium	260	0.50	mg/kg	6010B	01/18/15	1
Cadmium	BDL	0.50	mg/kg	6010B	01/18/15	1
Chromium	16.	1.0	mg/kg	6010B	01/18/15	1
Lead	150	0.50	mg/kg	6010B	01/18/15	1
Selenium	BDL	2.0	mg/kg	6010B	01/18/15	1
Silver	BDL	1.0	mg/kg	6010B	01/18/15	1
Volatile Organics						
Acetone	BDL	0.25	mg/kg	8260B	01/18/15	5
Acrylonitrile	BDL	0.050	mg/kg	8260B	01/18/15	5
Benzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Bromobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Bromodichloromethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Bromoform	BDL	0.0050	mg/kg	8260B	01/18/15	5
Bromomethane	BDL	0.025	mg/kg	8260B	01/18/15	5
n-Butylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
sec-Butylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
tert-Butylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Carbon tetrachloride	BDL	0.0050	mg/kg	8260B	01/18/15	5
Chlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Chlorodibromomethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Chloroethane	BDL	0.025	mg/kg	8260B	01/18/15	5
2-Chloroethyl vinyl ether	BDL	0.25	mg/kg	8260B	01/18/15	5
Chloroform	BDL	0.025	mg/kg	8260B	01/18/15	5
Chloromethane	BDL	0.012	mg/kg	8260B	01/18/15	5
2-Chlorotoluene	BDL	0.0050	mg/kg	8260B	01/18/15	5
4-Chlorotoluene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2-Dibromo-3-Chloropropane	BDL	0.025	mg/kg	8260B	01/18/15	5
1,2-Dibromoethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Dibromomethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,3-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,4-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Dichlorodifluoromethane	BDL	0.025	mg/kg	8260B	01/18/15	5
1,1-Dichloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2-Dichloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1-Dichloroethene	BDL	0.0050	mg/kg	8260B	01/18/15	5
cis-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	01/18/15	5
trans-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1-Dichloropropene	BDL	0.0050	mg/kg	8260B	01/18/15	5

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Mr. John Leffew
K.S. Ware and Associates, LLC
54 Lindsley Ave.
Nashville, TN 37210

January 20, 2015

ESC Sample # : L743937-09

Date Received : January 16, 2015
Description : TDOT Davidson Co. Bridges over Clinton St/CSX RR

Site ID :

Sample ID : DP-07 0-1.5FT

Project # : 100-15-0001

Collected By : John W. Leffew
Collection Date : 01/16/15 11:15

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
1,3-Dichloropropane	BDL	0.0050	mg/kg	8260B	01/18/15	5
cis-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	01/18/15	5
trans-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	01/18/15	5
2,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Di-isopropyl ether	BDL	0.0050	mg/kg	8260B	01/18/15	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Hexachloro-1,3-butadiene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Isopropylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
p-Isopropyltoluene	BDL	0.0050	mg/kg	8260B	01/18/15	5
2-Butanone (MEK)	BDL	0.050	mg/kg	8260B	01/18/15	5
Methylene Chloride	BDL	0.025	mg/kg	8260B	01/18/15	5
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/kg	8260B	01/18/15	5
Methyl tert-butyl ether	BDL	0.0050	mg/kg	8260B	01/18/15	5
Naphthalene	BDL	0.025	mg/kg	8260B	01/18/15	5
n-Propylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Styrene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1,1,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1,2,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1,2-Trichlorotrifluoroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Tetrachloroethene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Toluene	BDL	0.025	mg/kg	8260B	01/18/15	5
1,2,3-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2,4-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1,1-Trichloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1,2-Trichloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Trichloroethene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Trichlorofluoromethane	BDL	0.025	mg/kg	8260B	01/18/15	5
1,2,3-Trichloropropane	BDL	0.012	mg/kg	8260B	01/18/15	5
1,2,4-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2,3-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Vinyl chloride	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,3,5-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Xylenes, Total	BDL	0.015	mg/kg	8260B	01/18/15	5
Surrogate Recovery						
Toluene-d8	105.		% Rec.	8260B	01/18/15	1
Dibromofluoromethane	97.9		% Rec.	8260B	01/18/15	1
4-Bromofluorobenzene	92.0		% Rec.	8260B	01/18/15	1
Base/Neutral Extractables						
Acenaphthene	BDL	0.33	mg/kg	8270C	01/19/15	10
Acenaphthylene	BDL	0.33	mg/kg	8270C	01/19/15	10
Anthracene	1.1	0.33	mg/kg	8270C	01/19/15	10
Benzidine	BDL	3.3	mg/kg	8270C	01/19/15	10
Benzo(a)anthracene	3.8	0.33	mg/kg	8270C	01/19/15	10

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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(615) 758-5858
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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Mr. John Leffew
K.S. Ware and Associates, LLC
54 Lindsley Ave.
Nashville, TN 37210

January 20, 2015

ESC Sample # : L743937-09

Date Received : January 16, 2015
Description : TDOT Davidson Co. Bridges over Clinton St/CSX RR

Site ID :

Sample ID : DP-07 0-1.5FT

Project # : 100-15-0001

Collected By : John W. Leffew
Collection Date : 01/16/15 11:15

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(b)fluoranthene	4.2	0.33	mg/kg	8270C	01/19/15	10
Benzo(k)fluoranthene	1.6	0.33	mg/kg	8270C	01/19/15	10
Benzo(g,h,i)perylene	1.0	0.33	mg/kg	8270C	01/19/15	10
Benzo(a)pyrene	3.2	0.33	mg/kg	8270C	01/19/15	10
Bis(2-chlorethoxy)methane	BDL	3.3	mg/kg	8270C	01/19/15	10
Bis(2-chloroethyl)ether	BDL	3.3	mg/kg	8270C	01/19/15	10
Bis(2-chloroisopropyl)ether	BDL	3.3	mg/kg	8270C	01/19/15	10
4-Bromophenyl-phenylether	BDL	3.3	mg/kg	8270C	01/19/15	10
2-Chloronaphthalene	BDL	0.33	mg/kg	8270C	01/19/15	10
4-Chlorophenyl-phenylether	BDL	3.3	mg/kg	8270C	01/19/15	10
Chrysene	3.2	0.33	mg/kg	8270C	01/19/15	10
Dibenz(a,h)anthracene	0.34	0.33	mg/kg	8270C	01/19/15	10
3,3-Dichlorobenzidine	BDL	3.3	mg/kg	8270C	01/19/15	10
2,4-Dinitrotoluene	BDL	3.3	mg/kg	8270C	01/19/15	10
2,6-Dinitrotoluene	BDL	3.3	mg/kg	8270C	01/19/15	10
Fluoranthene	8.5	0.33	mg/kg	8270C	01/19/15	10
Fluorene	BDL	0.33	mg/kg	8270C	01/19/15	10
Hexachlorobenzene	BDL	3.3	mg/kg	8270C	01/19/15	10
Hexachloro-1,3-butadiene	BDL	3.3	mg/kg	8270C	01/19/15	10
Hexachlorocyclopentadiene	BDL	3.3	mg/kg	8270C	01/19/15	10
Hexachloroethane	BDL	3.3	mg/kg	8270C	01/19/15	10
Indeno(1,2,3-cd)pyrene	1.1	0.33	mg/kg	8270C	01/19/15	10
Isophorone	BDL	3.3	mg/kg	8270C	01/19/15	10
Naphthalene	BDL	0.33	mg/kg	8270C	01/19/15	10
Nitrobenzene	BDL	3.3	mg/kg	8270C	01/19/15	10
n-Nitrosodimethylamine	BDL	3.3	mg/kg	8270C	01/19/15	10
n-Nitrosodiphenylamine	BDL	3.3	mg/kg	8270C	01/19/15	10
n-Nitrosodi-n-propylamine	BDL	3.3	mg/kg	8270C	01/19/15	10
Phenanthrene	4.1	0.33	mg/kg	8270C	01/19/15	10
Benzylbutyl phthalate	BDL	3.3	mg/kg	8270C	01/19/15	10
Bis(2-ethylhexyl)phthalate	BDL	3.3	mg/kg	8270C	01/19/15	10
Di-n-butyl phthalate	BDL	3.3	mg/kg	8270C	01/19/15	10
Diethyl phthalate	BDL	3.3	mg/kg	8270C	01/19/15	10
Dimethyl phthalate	BDL	3.3	mg/kg	8270C	01/19/15	10
Di-n-octyl phthalate	BDL	3.3	mg/kg	8270C	01/19/15	10
Pyrene	6.3	0.33	mg/kg	8270C	01/19/15	10
1,2,4-Trichlorobenzene	BDL	3.3	mg/kg	8270C	01/19/15	10
Acid Extractables						
4-Chloro-3-methylphenol	BDL	3.3	mg/kg	8270C	01/19/15	10
2-Chlorophenol	BDL	3.3	mg/kg	8270C	01/19/15	10
2,4-Dichlorophenol	BDL	3.3	mg/kg	8270C	01/19/15	10
2,4-Dimethylphenol	BDL	3.3	mg/kg	8270C	01/19/15	10
4,6-Dinitro-2-methylphenol	BDL	3.3	mg/kg	8270C	01/19/15	10
2,4-Dinitrophenol	BDL	3.3	mg/kg	8270C	01/19/15	10

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Mr. John Leffew
K.S. Ware and Associates, LLC
54 Lindsley Ave.
Nashville, TN 37210

January 20, 2015

ESC Sample # : L743937-09

Date Received : January 16, 2015
Description : TDOT Davidson Co. Bridges over Clinton St/CSX RR

Site ID :

Sample ID : DP-07 0-1.5FT

Project # : 100-15-0001

Collected By : John W. Leffew
Collection Date : 01/16/15 11:15

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2-Nitrophenol	BDL	3.3	mg/kg	8270C	01/19/15	10
4-Nitrophenol	BDL	3.3	mg/kg	8270C	01/19/15	10
Pentachlorophenol	BDL	3.3	mg/kg	8270C	01/19/15	10
Phenol	BDL	3.3	mg/kg	8270C	01/19/15	10
2,4,6-Trichlorophenol	BDL	3.3	mg/kg	8270C	01/19/15	10
Surrogate Recovery						
2-Fluorophenol	62.1		% Rec.	8270C	01/19/15	10
Phenol-d5	60.5		% Rec.	8270C	01/19/15	10
Nitrobenzene-d5	80.1		% Rec.	8270C	01/19/15	10
2-Fluorobiphenyl	78.8		% Rec.	8270C	01/19/15	10
2,4,6-Tribromophenol	73.9		% Rec.	8270C	01/19/15	10
p-Terphenyl-d14	55.8		% Rec.	8270C	01/19/15	10

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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Reported: 01/20/15 15:39 Printed: 01/20/15 15:46

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REPORT OF ANALYSIS

Mr. John Leffew
K.S. Ware and Associates, LLC
54 Lindsley Ave.
Nashville, TN 37210

January 20, 2015

ESC Sample # : L743937-10

Date Received : January 16, 2015
Description : TDOT Davidson Co. Bridges over Clinton St/CSX RR

Site ID :

Sample ID : DP-08 0-2.0FT

Project # : 100-15-0001

Collected By : John W. Leffew
Collection Date : 01/16/15 11:25

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Mercury	0.059	0.020	mg/kg	7471A	01/19/15	1
Arsenic	15.	2.0	mg/kg	6010B	01/18/15	1
Barium	440	0.50	mg/kg	6010B	01/18/15	1
Cadmium	BDL	0.50	mg/kg	6010B	01/18/15	1
Chromium	24.	1.0	mg/kg	6010B	01/18/15	1
Lead	14.	0.50	mg/kg	6010B	01/18/15	1
Selenium	BDL	2.0	mg/kg	6010B	01/18/15	1
Silver	BDL	1.0	mg/kg	6010B	01/18/15	1
Volatile Organics						
Acetone	BDL	0.25	mg/kg	8260B	01/18/15	5
Acrylonitrile	BDL	0.050	mg/kg	8260B	01/18/15	5
Benzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Bromobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Bromodichloromethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Bromoform	BDL	0.0050	mg/kg	8260B	01/18/15	5
Bromomethane	BDL	0.025	mg/kg	8260B	01/18/15	5
n-Butylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
sec-Butylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
tert-Butylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Carbon tetrachloride	BDL	0.0050	mg/kg	8260B	01/18/15	5
Chlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Chlorodibromomethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Chloroethane	BDL	0.025	mg/kg	8260B	01/18/15	5
2-Chloroethyl vinyl ether	BDL	0.25	mg/kg	8260B	01/18/15	5
Chloroform	BDL	0.025	mg/kg	8260B	01/18/15	5
Chloromethane	BDL	0.012	mg/kg	8260B	01/18/15	5
2-Chlorotoluene	BDL	0.0050	mg/kg	8260B	01/18/15	5
4-Chlorotoluene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2-Dibromo-3-Chloropropane	BDL	0.025	mg/kg	8260B	01/18/15	5
1,2-Dibromoethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Dibromomethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,3-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,4-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Dichlorodifluoromethane	BDL	0.025	mg/kg	8260B	01/18/15	5
1,1-Dichloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2-Dichloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1-Dichloroethene	BDL	0.0050	mg/kg	8260B	01/18/15	5
cis-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	01/18/15	5
trans-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1-Dichloropropene	BDL	0.0050	mg/kg	8260B	01/18/15	5

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Mr. John Leffew
K.S. Ware and Associates, LLC
54 Lindsley Ave.
Nashville, TN 37210

January 20, 2015

ESC Sample # : L743937-10

Date Received : January 16, 2015
Description : TDOT Davidson Co. Bridges over Clinton St/CSX RR

Site ID :

Sample ID : DP-08 0-2.0FT

Project # : 100-15-0001

Collected By : John W. Leffew
Collection Date : 01/16/15 11:25

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
1,3-Dichloropropane	BDL	0.0050	mg/kg	8260B	01/18/15	5
cis-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	01/18/15	5
trans-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	01/18/15	5
2,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Di-isopropyl ether	BDL	0.0050	mg/kg	8260B	01/18/15	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Hexachloro-1,3-butadiene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Isopropylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
p-Isopropyltoluene	BDL	0.0050	mg/kg	8260B	01/18/15	5
2-Butanone (MEK)	BDL	0.050	mg/kg	8260B	01/18/15	5
Methylene Chloride	BDL	0.025	mg/kg	8260B	01/18/15	5
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/kg	8260B	01/18/15	5
Methyl tert-butyl ether	BDL	0.0050	mg/kg	8260B	01/18/15	5
Naphthalene	BDL	0.025	mg/kg	8260B	01/18/15	5
n-Propylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Styrene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1,1,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1,2,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1,2-Trichlorotrifluoroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Tetrachloroethene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Toluene	BDL	0.025	mg/kg	8260B	01/18/15	5
1,2,3-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2,4-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1,1-Trichloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1,2-Trichloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Trichloroethene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Trichlorofluoromethane	BDL	0.025	mg/kg	8260B	01/18/15	5
1,2,3-Trichloropropane	BDL	0.012	mg/kg	8260B	01/18/15	5
1,2,4-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2,3-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Vinyl chloride	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,3,5-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Xylenes, Total	BDL	0.015	mg/kg	8260B	01/18/15	5
Surrogate Recovery						
Toluene-d8	105.		% Rec.	8260B	01/18/15	1
Dibromofluoromethane	97.5		% Rec.	8260B	01/18/15	1
4-Bromofluorobenzene	94.3		% Rec.	8260B	01/18/15	1
Base/Neutral Extractables						
Acenaphthene	BDL	0.033	mg/kg	8270C	01/19/15	1
Acenaphthylene	BDL	0.033	mg/kg	8270C	01/19/15	1
Anthracene	BDL	0.033	mg/kg	8270C	01/19/15	1
Benzidine	BDL	0.33	mg/kg	8270C	01/19/15	1
Benzo(a)anthracene	BDL	0.033	mg/kg	8270C	01/19/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Mr. John Leffew
K.S. Ware and Associates, LLC
54 Lindsley Ave.
Nashville, TN 37210

January 20, 2015

ESC Sample # : L743937-10

Date Received : January 16, 2015
Description : TDOT Davidson Co. Bridges over Clinton St/CSX RR

Site ID :

Sample ID : DP-08 0-2.0FT

Project # : 100-15-0001

Collected By : John W. Leffew
Collection Date : 01/16/15 11:25

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(b)fluoranthene	BDL	0.033	mg/kg	8270C	01/19/15	1
Benzo(k)fluoranthene	BDL	0.033	mg/kg	8270C	01/19/15	1
Benzo(g,h,i)perylene	BDL	0.033	mg/kg	8270C	01/19/15	1
Benzo(a)pyrene	BDL	0.033	mg/kg	8270C	01/19/15	1
Bis(2-chlorethoxy)methane	BDL	0.33	mg/kg	8270C	01/19/15	1
Bis(2-chloroethyl)ether	BDL	0.33	mg/kg	8270C	01/19/15	1
Bis(2-chloroisopropyl)ether	BDL	0.33	mg/kg	8270C	01/19/15	1
4-Bromophenyl-phenylether	BDL	0.33	mg/kg	8270C	01/19/15	1
2-Chloronaphthalene	BDL	0.033	mg/kg	8270C	01/19/15	1
4-Chlorophenyl-phenylether	BDL	0.33	mg/kg	8270C	01/19/15	1
Chrysene	BDL	0.033	mg/kg	8270C	01/19/15	1
Dibenz(a,h)anthracene	BDL	0.033	mg/kg	8270C	01/19/15	1
3,3-Dichlorobenzidine	BDL	0.33	mg/kg	8270C	01/19/15	1
2,4-Dinitrotoluene	BDL	0.33	mg/kg	8270C	01/19/15	1
2,6-Dinitrotoluene	BDL	0.33	mg/kg	8270C	01/19/15	1
Fluoranthene	BDL	0.033	mg/kg	8270C	01/19/15	1
Fluorene	BDL	0.033	mg/kg	8270C	01/19/15	1
Hexachlorobenzene	BDL	0.33	mg/kg	8270C	01/19/15	1
Hexachloro-1,3-butadiene	BDL	0.33	mg/kg	8270C	01/19/15	1
Hexachlorocyclopentadiene	BDL	0.33	mg/kg	8270C	01/19/15	1
Hexachloroethane	BDL	0.33	mg/kg	8270C	01/19/15	1
Indeno(1,2,3-cd)pyrene	BDL	0.033	mg/kg	8270C	01/19/15	1
Isophorone	BDL	0.33	mg/kg	8270C	01/19/15	1
Naphthalene	BDL	0.033	mg/kg	8270C	01/19/15	1
Nitrobenzene	BDL	0.33	mg/kg	8270C	01/19/15	1
n-Nitrosodimethylamine	BDL	0.33	mg/kg	8270C	01/19/15	1
n-Nitrosodiphenylamine	BDL	0.33	mg/kg	8270C	01/19/15	1
n-Nitrosodi-n-propylamine	BDL	0.33	mg/kg	8270C	01/19/15	1
Phenanthrene	BDL	0.033	mg/kg	8270C	01/19/15	1
Benzylbutyl phthalate	BDL	0.33	mg/kg	8270C	01/19/15	1
Bis(2-ethylhexyl)phthalate	BDL	0.33	mg/kg	8270C	01/19/15	1
Di-n-butyl phthalate	BDL	0.33	mg/kg	8270C	01/19/15	1
Diethyl phthalate	BDL	0.33	mg/kg	8270C	01/19/15	1
Dimethyl phthalate	BDL	0.33	mg/kg	8270C	01/19/15	1
Di-n-octyl phthalate	BDL	0.33	mg/kg	8270C	01/19/15	1
Pyrene	BDL	0.033	mg/kg	8270C	01/19/15	1
1,2,4-Trichlorobenzene	BDL	0.33	mg/kg	8270C	01/19/15	1
Acid Extractables						
4-Chloro-3-methylphenol	BDL	0.33	mg/kg	8270C	01/19/15	1
2-Chlorophenol	BDL	0.33	mg/kg	8270C	01/19/15	1
2,4-Dichlorophenol	BDL	0.33	mg/kg	8270C	01/19/15	1
2,4-Dimethylphenol	BDL	0.33	mg/kg	8270C	01/19/15	1
4,6-Dinitro-2-methylphenol	BDL	0.33	mg/kg	8270C	01/19/15	1
2,4-Dinitrophenol	BDL	0.33	mg/kg	8270C	01/19/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Mr. John Leffew
K.S. Ware and Associates, LLC
54 Lindsley Ave.
Nashville, TN 37210

January 20, 2015

ESC Sample # : L743937-10

Date Received : January 16, 2015
Description : TDOT Davidson Co. Bridges over Clinton St/CSX RR

Site ID :

Sample ID : DP-08 0-2.0FT

Project # : 100-15-0001

Collected By : John W. Leffew
Collection Date : 01/16/15 11:25

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2-Nitrophenol	BDL	0.33	mg/kg	8270C	01/19/15	1
4-Nitrophenol	BDL	0.33	mg/kg	8270C	01/19/15	1
Pentachlorophenol	BDL	0.33	mg/kg	8270C	01/19/15	1
Phenol	BDL	0.33	mg/kg	8270C	01/19/15	1
2,4,6-Trichlorophenol	BDL	0.33	mg/kg	8270C	01/19/15	1
Surrogate Recovery						
2-Fluorophenol	73.5		% Rec.	8270C	01/19/15	1
Phenol-d5	75.0		% Rec.	8270C	01/19/15	1
Nitrobenzene-d5	80.5		% Rec.	8270C	01/19/15	1
2-Fluorobiphenyl	84.3		% Rec.	8270C	01/19/15	1
2,4,6-Tribromophenol	87.0		% Rec.	8270C	01/19/15	1
p-Terphenyl-d14	73.2		% Rec.	8270C	01/19/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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Reported: 01/20/15 15:39 Printed: 01/20/15 15:46

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Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Mr. John Leffew
K.S. Ware and Associates, LLC
54 Lindsley Ave.
Nashville, TN 37210

January 20, 2015

ESC Sample # : L743937-11

Date Received : January 16, 2015
Description : TDOT Davidson Co. Bridges over Clinton St/CSX RR

Site ID :

Sample ID : DP-09 0-2.5FT

Project # : 100-15-0001

Collected By : John W. Leffew
Collection Date : 01/16/15 11:50

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Mercury	0.41	0.020	mg/kg	7471A	01/19/15	1
Arsenic	13.	2.0	mg/kg	6010B	01/18/15	1
Barium	370	0.50	mg/kg	6010B	01/18/15	1
Cadmium	BDL	0.50	mg/kg	6010B	01/18/15	1
Chromium	23.	1.0	mg/kg	6010B	01/18/15	1
Lead	190	0.50	mg/kg	6010B	01/18/15	1
Selenium	BDL	2.0	mg/kg	6010B	01/18/15	1
Silver	BDL	1.0	mg/kg	6010B	01/18/15	1
Volatile Organics						
Acetone	BDL	0.25	mg/kg	8260B	01/18/15	5
Acrylonitrile	BDL	0.050	mg/kg	8260B	01/18/15	5
Benzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Bromobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Bromodichloromethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Bromoform	BDL	0.0050	mg/kg	8260B	01/18/15	5
Bromomethane	BDL	0.025	mg/kg	8260B	01/18/15	5
n-Butylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
sec-Butylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
tert-Butylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Carbon tetrachloride	BDL	0.0050	mg/kg	8260B	01/18/15	5
Chlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Chlorodibromomethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Chloroethane	BDL	0.025	mg/kg	8260B	01/18/15	5
2-Chloroethyl vinyl ether	BDL	0.25	mg/kg	8260B	01/18/15	5
Chloroform	BDL	0.025	mg/kg	8260B	01/18/15	5
Chloromethane	BDL	0.012	mg/kg	8260B	01/18/15	5
2-Chlorotoluene	BDL	0.0050	mg/kg	8260B	01/18/15	5
4-Chlorotoluene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2-Dibromo-3-Chloropropane	BDL	0.025	mg/kg	8260B	01/18/15	5
1,2-Dibromoethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Dibromomethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,3-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,4-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Dichlorodifluoromethane	BDL	0.025	mg/kg	8260B	01/18/15	5
1,1-Dichloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2-Dichloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1-Dichloroethene	BDL	0.0050	mg/kg	8260B	01/18/15	5
cis-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	01/18/15	5
trans-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1-Dichloropropene	BDL	0.0050	mg/kg	8260B	01/18/15	5

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L743937-11 (SV8270BNA) - Dilution due to matrix

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Mr. John Leffew
K.S. Ware and Associates, LLC
54 Lindsley Ave.
Nashville, TN 37210

January 20, 2015

ESC Sample # : L743937-11

Date Received : January 16, 2015
Description : TDOT Davidson Co. Bridges over Clinton St/CSX RR

Site ID :

Sample ID : DP-09 0-2.5FT

Project # : 100-15-0001

Collected By : John W. Leffew
Collection Date : 01/16/15 11:50

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
1,3-Dichloropropane	BDL	0.0050	mg/kg	8260B	01/18/15	5
cis-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	01/18/15	5
trans-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	01/18/15	5
2,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Di-isopropyl ether	BDL	0.0050	mg/kg	8260B	01/18/15	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Hexachloro-1,3-butadiene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Isopropylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
p-Isopropyltoluene	BDL	0.0050	mg/kg	8260B	01/18/15	5
2-Butanone (MEK)	BDL	0.050	mg/kg	8260B	01/18/15	5
Methylene Chloride	BDL	0.025	mg/kg	8260B	01/18/15	5
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/kg	8260B	01/18/15	5
Methyl tert-butyl ether	BDL	0.0050	mg/kg	8260B	01/18/15	5
Naphthalene	BDL	0.025	mg/kg	8260B	01/18/15	5
n-Propylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Styrene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1,1,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1,2,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1,2-Trichlorotrifluoroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Tetrachloroethene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Toluene	BDL	0.025	mg/kg	8260B	01/18/15	5
1,2,3-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2,4-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1,1-Trichloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1,2-Trichloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Trichloroethene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Trichlorofluoromethane	BDL	0.025	mg/kg	8260B	01/18/15	5
1,2,3-Trichloropropane	BDL	0.012	mg/kg	8260B	01/18/15	5
1,2,4-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2,3-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Vinyl chloride	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,3,5-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Xylenes, Total	BDL	0.015	mg/kg	8260B	01/18/15	5
Surrogate Recovery						
Toluene-d8	104.		% Rec.	8260B	01/18/15	1
Dibromofluoromethane	99.1		% Rec.	8260B	01/18/15	1
4-Bromofluorobenzene	93.3		% Rec.	8260B	01/18/15	1
Base/Neutral Extractables						
Acenaphthene	BDL	0.33	mg/kg	8270C	01/19/15	10
Acenaphthylene	BDL	0.33	mg/kg	8270C	01/19/15	10
Anthracene	BDL	0.33	mg/kg	8270C	01/19/15	10
Benzidine	BDL	3.3	mg/kg	8270C	01/19/15	10
Benzo(a)anthracene	BDL	0.33	mg/kg	8270C	01/19/15	10

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L743937-11 (SV8270BNA) - Dilution due to matrix

12065 Lebanon Rd.
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(615) 758-5858
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Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Mr. John Leffew
K.S. Ware and Associates, LLC
54 Lindsley Ave.
Nashville, TN 37210

January 20, 2015

ESC Sample # : L743937-11

Date Received : January 16, 2015
Description : TDOT Davidson Co. Bridges over Clinton St/CSX RR

Site ID :

Sample ID : DP-09 0-2.5FT

Project # : 100-15-0001

Collected By : John W. Leffew
Collection Date : 01/16/15 11:50

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(b)fluoranthene	BDL	0.33	mg/kg	8270C	01/19/15	10
Benzo(k)fluoranthene	BDL	0.33	mg/kg	8270C	01/19/15	10
Benzo(g,h,i)perylene	BDL	0.33	mg/kg	8270C	01/19/15	10
Benzo(a)pyrene	BDL	0.33	mg/kg	8270C	01/19/15	10
Bis(2-chlorethoxy)methane	BDL	3.3	mg/kg	8270C	01/19/15	10
Bis(2-chloroethyl)ether	BDL	3.3	mg/kg	8270C	01/19/15	10
Bis(2-chloroisopropyl)ether	BDL	3.3	mg/kg	8270C	01/19/15	10
4-Bromophenyl-phenylether	BDL	3.3	mg/kg	8270C	01/19/15	10
2-Chloronaphthalene	BDL	0.33	mg/kg	8270C	01/19/15	10
4-Chlorophenyl-phenylether	BDL	3.3	mg/kg	8270C	01/19/15	10
Chrysene	BDL	0.33	mg/kg	8270C	01/19/15	10
Dibenz(a,h)anthracene	BDL	0.33	mg/kg	8270C	01/19/15	10
3,3-Dichlorobenzidine	BDL	3.3	mg/kg	8270C	01/19/15	10
2,4-Dinitrotoluene	BDL	3.3	mg/kg	8270C	01/19/15	10
2,6-Dinitrotoluene	BDL	3.3	mg/kg	8270C	01/19/15	10
Fluoranthene	BDL	0.33	mg/kg	8270C	01/19/15	10
Fluorene	BDL	0.33	mg/kg	8270C	01/19/15	10
Hexachlorobenzene	BDL	3.3	mg/kg	8270C	01/19/15	10
Hexachloro-1,3-butadiene	BDL	3.3	mg/kg	8270C	01/19/15	10
Hexachlorocyclopentadiene	BDL	3.3	mg/kg	8270C	01/19/15	10
Hexachloroethane	BDL	3.3	mg/kg	8270C	01/19/15	10
Indeno(1,2,3-cd)pyrene	BDL	0.33	mg/kg	8270C	01/19/15	10
Isophorone	BDL	3.3	mg/kg	8270C	01/19/15	10
Naphthalene	BDL	0.33	mg/kg	8270C	01/19/15	10
Nitrobenzene	BDL	3.3	mg/kg	8270C	01/19/15	10
n-Nitrosodimethylamine	BDL	3.3	mg/kg	8270C	01/19/15	10
n-Nitrosodiphenylamine	BDL	3.3	mg/kg	8270C	01/19/15	10
n-Nitrosodi-n-propylamine	BDL	3.3	mg/kg	8270C	01/19/15	10
Phenanthrene	BDL	0.33	mg/kg	8270C	01/19/15	10
Benzylbutyl phthalate	BDL	3.3	mg/kg	8270C	01/19/15	10
Bis(2-ethylhexyl)phthalate	BDL	3.3	mg/kg	8270C	01/19/15	10
Di-n-butyl phthalate	BDL	3.3	mg/kg	8270C	01/19/15	10
Diethyl phthalate	BDL	3.3	mg/kg	8270C	01/19/15	10
Dimethyl phthalate	BDL	3.3	mg/kg	8270C	01/19/15	10
Di-n-octyl phthalate	BDL	3.3	mg/kg	8270C	01/19/15	10
Pyrene	BDL	0.33	mg/kg	8270C	01/19/15	10
1,2,4-Trichlorobenzene	BDL	3.3	mg/kg	8270C	01/19/15	10
Acid Extractables						
4-Chloro-3-methylphenol	BDL	3.3	mg/kg	8270C	01/19/15	10
2-Chlorophenol	BDL	3.3	mg/kg	8270C	01/19/15	10
2,4-Dichlorophenol	BDL	3.3	mg/kg	8270C	01/19/15	10
2,4-Dimethylphenol	BDL	3.3	mg/kg	8270C	01/19/15	10
4,6-Dinitro-2-methylphenol	BDL	3.3	mg/kg	8270C	01/19/15	10
2,4-Dinitrophenol	BDL	3.3	mg/kg	8270C	01/19/15	10

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L743937-11 (SV8270BNA) - Dilution due to matrix

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(615) 758-5858
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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Mr. John Leffew
K.S. Ware and Associates, LLC
54 Lindsley Ave.
Nashville, TN 37210

January 20, 2015

ESC Sample # : L743937-11

Date Received : January 16, 2015
Description : TDOT Davidson Co. Bridges over Clinton St/CSX RR

Site ID :

Sample ID : DP-09 0-2.5FT

Project # : 100-15-0001

Collected By : John W. Leffew
Collection Date : 01/16/15 11:50

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2-Nitrophenol	BDL	3.3	mg/kg	8270C	01/19/15	10
4-Nitrophenol	BDL	3.3	mg/kg	8270C	01/19/15	10
Pentachlorophenol	BDL	3.3	mg/kg	8270C	01/19/15	10
Phenol	BDL	3.3	mg/kg	8270C	01/19/15	10
2,4,6-Trichlorophenol	BDL	3.3	mg/kg	8270C	01/19/15	10
Surrogate Recovery						
2-Fluorophenol	75.8		% Rec.	8270C	01/19/15	10
Phenol-d5	73.4		% Rec.	8270C	01/19/15	10
Nitrobenzene-d5	86.0		% Rec.	8270C	01/19/15	10
2-Fluorobiphenyl	86.7		% Rec.	8270C	01/19/15	10
2,4,6-Tribromophenol	80.4		% Rec.	8270C	01/19/15	10
p-Terphenyl-d14	56.8		% Rec.	8270C	01/19/15	10

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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Reported: 01/20/15 15:39 Printed: 01/20/15 15:46
L743937-11 (SV8270BNA) - Dilution due to matrix

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Mr. John Leffew
K.S. Ware and Associates, LLC
54 Lindsley Ave.
Nashville, TN 37210

January 20, 2015

ESC Sample # : L743937-12

Date Received : January 16, 2015
Description : TDOT Davidson Co. Bridges over Clinton St/CSX RR

Site ID :

Sample ID : DP-10 0-2.5FT

Project # : 100-15-0001

Collected By : John W. Leffew
Collection Date : 01/16/15 12:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Mercury	0.56	0.020	mg/kg	7471A	01/19/15	1
Arsenic	14.	2.0	mg/kg	6010B	01/18/15	1
Barium	340	0.50	mg/kg	6010B	01/18/15	1
Cadmium	BDL	0.50	mg/kg	6010B	01/18/15	1
Chromium	22.	1.0	mg/kg	6010B	01/18/15	1
Lead	22.	0.50	mg/kg	6010B	01/18/15	1
Selenium	BDL	2.0	mg/kg	6010B	01/18/15	1
Silver	BDL	1.0	mg/kg	6010B	01/18/15	1
Volatile Organics						
Acetone	BDL	0.25	mg/kg	8260B	01/18/15	5
Acrylonitrile	BDL	0.050	mg/kg	8260B	01/18/15	5
Benzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Bromobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Bromodichloromethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Bromoform	BDL	0.0050	mg/kg	8260B	01/18/15	5
Bromomethane	BDL	0.025	mg/kg	8260B	01/18/15	5
n-Butylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
sec-Butylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
tert-Butylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Carbon tetrachloride	BDL	0.0050	mg/kg	8260B	01/18/15	5
Chlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Chlorodibromomethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Chloroethane	BDL	0.025	mg/kg	8260B	01/18/15	5
2-Chloroethyl vinyl ether	BDL	0.25	mg/kg	8260B	01/18/15	5
Chloroform	BDL	0.025	mg/kg	8260B	01/18/15	5
Chloromethane	BDL	0.012	mg/kg	8260B	01/18/15	5
2-Chlorotoluene	BDL	0.0050	mg/kg	8260B	01/18/15	5
4-Chlorotoluene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2-Dibromo-3-Chloropropane	BDL	0.025	mg/kg	8260B	01/18/15	5
1,2-Dibromoethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Dibromomethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,3-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,4-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Dichlorodifluoromethane	BDL	0.025	mg/kg	8260B	01/18/15	5
1,1-Dichloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2-Dichloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1-Dichloroethene	BDL	0.0050	mg/kg	8260B	01/18/15	5
cis-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	01/18/15	5
trans-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1-Dichloropropene	BDL	0.0050	mg/kg	8260B	01/18/15	5

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

12065 Lebanon Rd.
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(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Mr. John Leffew
K.S. Ware and Associates, LLC
54 Lindsley Ave.
Nashville, TN 37210

January 20, 2015

ESC Sample # : L743937-12

Date Received : January 16, 2015
Description : TDOT Davidson Co. Bridges over Clinton St/CSX RR

Site ID :

Sample ID : DP-10 0-2.5FT

Project # : 100-15-0001

Collected By : John W. Leffew
Collection Date : 01/16/15 12:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
1,3-Dichloropropane	BDL	0.0050	mg/kg	8260B	01/18/15	5
cis-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	01/18/15	5
trans-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	01/18/15	5
2,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Di-isopropyl ether	BDL	0.0050	mg/kg	8260B	01/18/15	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Hexachloro-1,3-butadiene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Isopropylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
p-Isopropyltoluene	BDL	0.0050	mg/kg	8260B	01/18/15	5
2-Butanone (MEK)	BDL	0.050	mg/kg	8260B	01/18/15	5
Methylene Chloride	BDL	0.025	mg/kg	8260B	01/18/15	5
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/kg	8260B	01/18/15	5
Methyl tert-butyl ether	BDL	0.0050	mg/kg	8260B	01/18/15	5
Naphthalene	BDL	0.025	mg/kg	8260B	01/18/15	5
n-Propylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Styrene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1,1,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1,2,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1,2-Trichlorotrifluoroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Tetrachloroethene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Toluene	BDL	0.025	mg/kg	8260B	01/18/15	5
1,2,3-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2,4-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1,1-Trichloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1,2-Trichloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Trichloroethene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Trichlorofluoromethane	BDL	0.025	mg/kg	8260B	01/18/15	5
1,2,3-Trichloropropane	BDL	0.012	mg/kg	8260B	01/18/15	5
1,2,4-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2,3-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Vinyl chloride	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,3,5-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Xylenes, Total	BDL	0.015	mg/kg	8260B	01/18/15	5
Surrogate Recovery						
Toluene-d8	103.		% Rec.	8260B	01/18/15	1
Dibromofluoromethane	100.		% Rec.	8260B	01/18/15	1
4-Bromofluorobenzene	92.0		% Rec.	8260B	01/18/15	1
Base/Neutral Extractables						
Acenaphthene	BDL	0.33	mg/kg	8270C	01/19/15	10
Acenaphthylene	BDL	0.33	mg/kg	8270C	01/19/15	10
Anthracene	BDL	0.33	mg/kg	8270C	01/19/15	10
Benzidine	BDL	3.3	mg/kg	8270C	01/19/15	10
Benzo(a)anthracene	BDL	0.33	mg/kg	8270C	01/19/15	10

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

12065 Lebanon Rd.
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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Mr. John Leffew
K.S. Ware and Associates, LLC
54 Lindsley Ave.
Nashville, TN 37210

January 20, 2015

ESC Sample # : L743937-12

Date Received : January 16, 2015
Description : TDOT Davidson Co. Bridges over Clinton St/CSX RR

Site ID :

Sample ID : DP-10 0-2.5FT

Project # : 100-15-0001

Collected By : John W. Leffew
Collection Date : 01/16/15 12:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(b)fluoranthene	BDL	0.33	mg/kg	8270C	01/19/15	10
Benzo(k)fluoranthene	BDL	0.33	mg/kg	8270C	01/19/15	10
Benzo(g,h,i)perylene	BDL	0.33	mg/kg	8270C	01/19/15	10
Benzo(a)pyrene	BDL	0.33	mg/kg	8270C	01/19/15	10
Bis(2-chlorethoxy)methane	BDL	3.3	mg/kg	8270C	01/19/15	10
Bis(2-chloroethyl)ether	BDL	3.3	mg/kg	8270C	01/19/15	10
Bis(2-chloroisopropyl)ether	BDL	3.3	mg/kg	8270C	01/19/15	10
4-Bromophenyl-phenylether	BDL	3.3	mg/kg	8270C	01/19/15	10
2-Chloronaphthalene	BDL	0.33	mg/kg	8270C	01/19/15	10
4-Chlorophenyl-phenylether	BDL	3.3	mg/kg	8270C	01/19/15	10
Chrysene	BDL	0.33	mg/kg	8270C	01/19/15	10
Dibenz(a,h)anthracene	BDL	0.33	mg/kg	8270C	01/19/15	10
3,3-Dichlorobenzidine	BDL	3.3	mg/kg	8270C	01/19/15	10
2,4-Dinitrotoluene	BDL	3.3	mg/kg	8270C	01/19/15	10
2,6-Dinitrotoluene	BDL	3.3	mg/kg	8270C	01/19/15	10
Fluoranthene	0.51	0.33	mg/kg	8270C	01/19/15	10
Fluorene	BDL	0.33	mg/kg	8270C	01/19/15	10
Hexachlorobenzene	BDL	3.3	mg/kg	8270C	01/19/15	10
Hexachloro-1,3-butadiene	BDL	3.3	mg/kg	8270C	01/19/15	10
Hexachlorocyclopentadiene	BDL	3.3	mg/kg	8270C	01/19/15	10
Hexachloroethane	BDL	3.3	mg/kg	8270C	01/19/15	10
Indeno(1,2,3-cd)pyrene	BDL	0.33	mg/kg	8270C	01/19/15	10
Isophorone	BDL	3.3	mg/kg	8270C	01/19/15	10
Naphthalene	BDL	0.33	mg/kg	8270C	01/19/15	10
Nitrobenzene	BDL	3.3	mg/kg	8270C	01/19/15	10
n-Nitrosodimethylamine	BDL	3.3	mg/kg	8270C	01/19/15	10
n-Nitrosodiphenylamine	BDL	3.3	mg/kg	8270C	01/19/15	10
n-Nitrosodi-n-propylamine	BDL	3.3	mg/kg	8270C	01/19/15	10
Phenanthrene	0.35	0.33	mg/kg	8270C	01/19/15	10
Benzylbutyl phthalate	BDL	3.3	mg/kg	8270C	01/19/15	10
Bis(2-ethylhexyl)phthalate	BDL	3.3	mg/kg	8270C	01/19/15	10
Di-n-butyl phthalate	BDL	3.3	mg/kg	8270C	01/19/15	10
Diethyl phthalate	BDL	3.3	mg/kg	8270C	01/19/15	10
Dimethyl phthalate	BDL	3.3	mg/kg	8270C	01/19/15	10
Di-n-octyl phthalate	BDL	3.3	mg/kg	8270C	01/19/15	10
Pyrene	0.39	0.33	mg/kg	8270C	01/19/15	10
1,2,4-Trichlorobenzene	BDL	3.3	mg/kg	8270C	01/19/15	10
Acid Extractables						
4-Chloro-3-methylphenol	BDL	3.3	mg/kg	8270C	01/19/15	10
2-Chlorophenol	BDL	3.3	mg/kg	8270C	01/19/15	10
2,4-Dichlorophenol	BDL	3.3	mg/kg	8270C	01/19/15	10
2,4-Dimethylphenol	BDL	3.3	mg/kg	8270C	01/19/15	10
4,6-Dinitro-2-methylphenol	BDL	3.3	mg/kg	8270C	01/19/15	10
2,4-Dinitrophenol	BDL	3.3	mg/kg	8270C	01/19/15	10

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Mr. John Leffew
K.S. Ware and Associates, LLC
54 Lindsley Ave.
Nashville, TN 37210

January 20, 2015

ESC Sample # : L743937-12

Date Received : January 16, 2015
Description : TDOT Davidson Co. Bridges over Clinton St/CSX RR

Site ID :

Sample ID : DP-10 0-2.5FT

Project # : 100-15-0001

Collected By : John W. Leffew
Collection Date : 01/16/15 12:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2-Nitrophenol	BDL	3.3	mg/kg	8270C	01/19/15	10
4-Nitrophenol	BDL	3.3	mg/kg	8270C	01/19/15	10
Pentachlorophenol	BDL	3.3	mg/kg	8270C	01/19/15	10
Phenol	BDL	3.3	mg/kg	8270C	01/19/15	10
2,4,6-Trichlorophenol	BDL	3.3	mg/kg	8270C	01/19/15	10
Surrogate Recovery						
2-Fluorophenol	61.0		% Rec.	8270C	01/19/15	10
Phenol-d5	60.5		% Rec.	8270C	01/19/15	10
Nitrobenzene-d5	76.0		% Rec.	8270C	01/19/15	10
2-Fluorobiphenyl	80.0		% Rec.	8270C	01/19/15	10
2,4,6-Tribromophenol	66.4		% Rec.	8270C	01/19/15	10
p-Terphenyl-d14	46.6		% Rec.	8270C	01/19/15	10

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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Reported: 01/20/15 15:39 Printed: 01/20/15 15:46

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REPORT OF ANALYSIS

Mr. John Leffew
K.S. Ware and Associates, LLC
54 Lindsley Ave.
Nashville, TN 37210

January 20, 2015

ESC Sample # : L743937-13

Date Received : January 16, 2015
Description : TDOT Davidson Co. Bridges over Clinton St/CSX RR

Site ID :

Sample ID : DP-11 0-2.5FT

Project # : 100-15-0001

Collected By : John W. Leffew
Collection Date : 01/16/15 12:20

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Mercury	0.19	0.020	mg/kg	7471A	01/19/15	1
Arsenic	15.	2.0	mg/kg	6010B	01/18/15	1
Barium	290	0.50	mg/kg	6010B	01/18/15	1
Cadmium	BDL	0.50	mg/kg	6010B	01/18/15	1
Chromium	22.	1.0	mg/kg	6010B	01/18/15	1
Lead	51.	0.50	mg/kg	6010B	01/18/15	1
Selenium	BDL	2.0	mg/kg	6010B	01/18/15	1
Silver	BDL	1.0	mg/kg	6010B	01/18/15	1
Volatile Organics						
Acetone	BDL	0.25	mg/kg	8260B	01/18/15	5
Acrylonitrile	BDL	0.050	mg/kg	8260B	01/18/15	5
Benzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Bromobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Bromodichloromethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Bromoform	BDL	0.0050	mg/kg	8260B	01/18/15	5
Bromomethane	BDL	0.025	mg/kg	8260B	01/18/15	5
n-Butylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
sec-Butylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
tert-Butylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Carbon tetrachloride	BDL	0.0050	mg/kg	8260B	01/18/15	5
Chlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Chlorodibromomethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Chloroethane	BDL	0.025	mg/kg	8260B	01/18/15	5
2-Chloroethyl vinyl ether	BDL	0.25	mg/kg	8260B	01/18/15	5
Chloroform	BDL	0.025	mg/kg	8260B	01/18/15	5
Chloromethane	BDL	0.012	mg/kg	8260B	01/18/15	5
2-Chlorotoluene	BDL	0.0050	mg/kg	8260B	01/18/15	5
4-Chlorotoluene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2-Dibromo-3-Chloropropane	BDL	0.025	mg/kg	8260B	01/18/15	5
1,2-Dibromoethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Dibromomethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,3-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,4-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Dichlorodifluoromethane	BDL	0.025	mg/kg	8260B	01/18/15	5
1,1-Dichloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2-Dichloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1-Dichloroethene	BDL	0.0050	mg/kg	8260B	01/18/15	5
cis-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	01/18/15	5
trans-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1-Dichloropropene	BDL	0.0050	mg/kg	8260B	01/18/15	5

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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Est. 1970

REPORT OF ANALYSIS

Mr. John Leffew
K.S. Ware and Associates, LLC
54 Lindsley Ave.
Nashville, TN 37210

January 20, 2015

ESC Sample # : L743937-13

Date Received : January 16, 2015
Description : TDOT Davidson Co. Bridges over Clinton St/CSX RR

Site ID :

Sample ID : DP-11 0-2.5FT

Project # : 100-15-0001

Collected By : John W. Leffew
Collection Date : 01/16/15 12:20

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
1,3-Dichloropropane	BDL	0.0050	mg/kg	8260B	01/18/15	5
cis-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	01/18/15	5
trans-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	01/18/15	5
2,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Di-isopropyl ether	BDL	0.0050	mg/kg	8260B	01/18/15	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Hexachloro-1,3-butadiene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Isopropylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
p-Isopropyltoluene	BDL	0.0050	mg/kg	8260B	01/18/15	5
2-Butanone (MEK)	BDL	0.050	mg/kg	8260B	01/18/15	5
Methylene Chloride	BDL	0.025	mg/kg	8260B	01/18/15	5
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/kg	8260B	01/18/15	5
Methyl tert-butyl ether	BDL	0.0050	mg/kg	8260B	01/18/15	5
Naphthalene	BDL	0.025	mg/kg	8260B	01/18/15	5
n-Propylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Styrene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1,1,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1,2,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1,2-Trichlorotrifluoroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Tetrachloroethene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Toluene	BDL	0.025	mg/kg	8260B	01/18/15	5
1,2,3-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2,4-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1,1-Trichloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1,2-Trichloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Trichloroethene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Trichlorofluoromethane	BDL	0.025	mg/kg	8260B	01/18/15	5
1,2,3-Trichloropropane	BDL	0.012	mg/kg	8260B	01/18/15	5
1,2,4-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2,3-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Vinyl chloride	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,3,5-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Xylenes, Total	BDL	0.015	mg/kg	8260B	01/18/15	5
Surrogate Recovery						
Toluene-d8	105.		% Rec.	8260B	01/18/15	1
Dibromofluoromethane	100.		% Rec.	8260B	01/18/15	1
4-Bromofluorobenzene	93.2		% Rec.	8260B	01/18/15	1
Base/Neutral Extractables						
Acenaphthene	BDL	0.033	mg/kg	8270C	01/19/15	1
Acenaphthylene	BDL	0.033	mg/kg	8270C	01/19/15	1
Anthracene	BDL	0.033	mg/kg	8270C	01/19/15	1
Benzidine	BDL	0.33	mg/kg	8270C	01/19/15	1
Benzo(a)anthracene	BDL	0.033	mg/kg	8270C	01/19/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Mr. John Leffew
K.S. Ware and Associates, LLC
54 Lindsley Ave.
Nashville, TN 37210

January 20, 2015

ESC Sample # : L743937-13

Date Received : January 16, 2015
Description : TDOT Davidson Co. Bridges over Clinton St/CSX RR

Site ID :

Sample ID : DP-11 0-2.5FT

Project # : 100-15-0001

Collected By : John W. Leffew
Collection Date : 01/16/15 12:20

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(b)fluoranthene	BDL	0.033	mg/kg	8270C	01/19/15	1
Benzo(k)fluoranthene	BDL	0.033	mg/kg	8270C	01/19/15	1
Benzo(g,h,i)perylene	BDL	0.033	mg/kg	8270C	01/19/15	1
Benzo(a)pyrene	BDL	0.033	mg/kg	8270C	01/19/15	1
Bis(2-chlorethoxy)methane	BDL	0.33	mg/kg	8270C	01/19/15	1
Bis(2-chloroethyl)ether	BDL	0.33	mg/kg	8270C	01/19/15	1
Bis(2-chloroisopropyl)ether	BDL	0.33	mg/kg	8270C	01/19/15	1
4-Bromophenyl-phenylether	BDL	0.33	mg/kg	8270C	01/19/15	1
2-Chloronaphthalene	BDL	0.033	mg/kg	8270C	01/19/15	1
4-Chlorophenyl-phenylether	BDL	0.33	mg/kg	8270C	01/19/15	1
Chrysene	BDL	0.033	mg/kg	8270C	01/19/15	1
Dibenz(a,h)anthracene	BDL	0.033	mg/kg	8270C	01/19/15	1
3,3-Dichlorobenzidine	BDL	0.33	mg/kg	8270C	01/19/15	1
2,4-Dinitrotoluene	BDL	0.33	mg/kg	8270C	01/19/15	1
2,6-Dinitrotoluene	BDL	0.33	mg/kg	8270C	01/19/15	1
Fluoranthene	0.050	0.033	mg/kg	8270C	01/19/15	1
Fluorene	BDL	0.033	mg/kg	8270C	01/19/15	1
Hexachlorobenzene	BDL	0.33	mg/kg	8270C	01/19/15	1
Hexachloro-1,3-butadiene	BDL	0.33	mg/kg	8270C	01/19/15	1
Hexachlorocyclopentadiene	BDL	0.33	mg/kg	8270C	01/19/15	1
Hexachloroethane	BDL	0.33	mg/kg	8270C	01/19/15	1
Indeno(1,2,3-cd)pyrene	BDL	0.033	mg/kg	8270C	01/19/15	1
Isophorone	BDL	0.33	mg/kg	8270C	01/19/15	1
Naphthalene	BDL	0.033	mg/kg	8270C	01/19/15	1
Nitrobenzene	BDL	0.33	mg/kg	8270C	01/19/15	1
n-Nitrosodimethylamine	BDL	0.33	mg/kg	8270C	01/19/15	1
n-Nitrosodiphenylamine	BDL	0.33	mg/kg	8270C	01/19/15	1
n-Nitrosodi-n-propylamine	BDL	0.33	mg/kg	8270C	01/19/15	1
Phenanthrene	BDL	0.033	mg/kg	8270C	01/19/15	1
Benzylbutyl phthalate	BDL	0.33	mg/kg	8270C	01/19/15	1
Bis(2-ethylhexyl)phthalate	BDL	0.33	mg/kg	8270C	01/19/15	1
Di-n-butyl phthalate	BDL	0.33	mg/kg	8270C	01/19/15	1
Diethyl phthalate	BDL	0.33	mg/kg	8270C	01/19/15	1
Dimethyl phthalate	BDL	0.33	mg/kg	8270C	01/19/15	1
Di-n-octyl phthalate	BDL	0.33	mg/kg	8270C	01/19/15	1
Pyrene	0.042	0.033	mg/kg	8270C	01/19/15	1
1,2,4-Trichlorobenzene	BDL	0.33	mg/kg	8270C	01/19/15	1
Acid Extractables						
4-Chloro-3-methylphenol	BDL	0.33	mg/kg	8270C	01/19/15	1
2-Chlorophenol	BDL	0.33	mg/kg	8270C	01/19/15	1
2,4-Dichlorophenol	BDL	0.33	mg/kg	8270C	01/19/15	1
2,4-Dimethylphenol	BDL	0.33	mg/kg	8270C	01/19/15	1
4,6-Dinitro-2-methylphenol	BDL	0.33	mg/kg	8270C	01/19/15	1
2,4-Dinitrophenol	BDL	0.33	mg/kg	8270C	01/19/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Mr. John Leffew
K.S. Ware and Associates, LLC
54 Lindsley Ave.
Nashville, TN 37210

January 20, 2015

ESC Sample # : L743937-13

Date Received : January 16, 2015
Description : TDOT Davidson Co. Bridges over Clinton St/CSX RR

Site ID :

Sample ID : DP-11 0-2.5FT

Project # : 100-15-0001

Collected By : John W. Leffew
Collection Date : 01/16/15 12:20

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2-Nitrophenol	BDL	0.33	mg/kg	8270C	01/19/15	1
4-Nitrophenol	BDL	0.33	mg/kg	8270C	01/19/15	1
Pentachlorophenol	BDL	0.33	mg/kg	8270C	01/19/15	1
Phenol	BDL	0.33	mg/kg	8270C	01/19/15	1
2,4,6-Trichlorophenol	BDL	0.33	mg/kg	8270C	01/19/15	1
Surrogate Recovery						
2-Fluorophenol	65.5		% Rec.	8270C	01/19/15	1
Phenol-d5	69.1		% Rec.	8270C	01/19/15	1
Nitrobenzene-d5	80.5		% Rec.	8270C	01/19/15	1
2-Fluorobiphenyl	77.9		% Rec.	8270C	01/19/15	1
2,4,6-Tribromophenol	79.6		% Rec.	8270C	01/19/15	1
p-Terphenyl-d14	52.1		% Rec.	8270C	01/19/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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Reported: 01/20/15 15:39 Printed: 01/20/15 15:46

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Est. 1970

REPORT OF ANALYSIS

Mr. John Leffew
K.S. Ware and Associates, LLC
54 Lindsley Ave.
Nashville, TN 37210

January 20, 2015

ESC Sample # : L743937-14

Date Received : January 16, 2015
Description : TDOT Davidson Co. Bridges over Clinton St/CSX RR

Site ID :

Sample ID : DP-12 0-2.5FT

Project # : 100-15-0001

Collected By : John W. Leffew
Collection Date : 01/16/15 12:25

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Mercury	0.19	0.020	mg/kg	7471A	01/19/15	1
Arsenic	12.	2.0	mg/kg	6010B	01/18/15	1
Barium	290	0.50	mg/kg	6010B	01/18/15	1
Cadmium	BDL	0.50	mg/kg	6010B	01/18/15	1
Chromium	19.	1.0	mg/kg	6010B	01/18/15	1
Lead	45.	0.50	mg/kg	6010B	01/18/15	1
Selenium	BDL	2.0	mg/kg	6010B	01/18/15	1
Silver	BDL	1.0	mg/kg	6010B	01/18/15	1
Volatile Organics						
Acetone	BDL	0.25	mg/kg	8260B	01/18/15	5
Acrylonitrile	BDL	0.050	mg/kg	8260B	01/18/15	5
Benzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Bromobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Bromodichloromethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Bromoform	BDL	0.0050	mg/kg	8260B	01/18/15	5
Bromomethane	BDL	0.025	mg/kg	8260B	01/18/15	5
n-Butylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
sec-Butylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
tert-Butylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Carbon tetrachloride	BDL	0.0050	mg/kg	8260B	01/18/15	5
Chlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Chlorodibromomethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Chloroethane	BDL	0.025	mg/kg	8260B	01/18/15	5
2-Chloroethyl vinyl ether	BDL	0.25	mg/kg	8260B	01/18/15	5
Chloroform	BDL	0.025	mg/kg	8260B	01/18/15	5
Chloromethane	BDL	0.012	mg/kg	8260B	01/18/15	5
2-Chlorotoluene	BDL	0.0050	mg/kg	8260B	01/18/15	5
4-Chlorotoluene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2-Dibromo-3-Chloropropane	BDL	0.025	mg/kg	8260B	01/18/15	5
1,2-Dibromoethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Dibromomethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,3-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,4-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Dichlorodifluoromethane	BDL	0.025	mg/kg	8260B	01/18/15	5
1,1-Dichloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2-Dichloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1-Dichloroethene	BDL	0.0050	mg/kg	8260B	01/18/15	5
cis-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	01/18/15	5
trans-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1-Dichloropropene	BDL	0.0050	mg/kg	8260B	01/18/15	5

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

12065 Lebanon Rd.
Mt. Juliet, TN 37122
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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Mr. John Leffew
K.S. Ware and Associates, LLC
54 Lindsley Ave.
Nashville, TN 37210

January 20, 2015

ESC Sample # : L743937-14

Date Received : January 16, 2015
Description : TDOT Davidson Co. Bridges over Clinton St/CSX RR

Site ID :

Sample ID : DP-12 0-2.5FT

Project # : 100-15-0001

Collected By : John W. Leffew
Collection Date : 01/16/15 12:25

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
1,3-Dichloropropane	BDL	0.0050	mg/kg	8260B	01/18/15	5
cis-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	01/18/15	5
trans-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	01/18/15	5
2,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Di-isopropyl ether	BDL	0.0050	mg/kg	8260B	01/18/15	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Hexachloro-1,3-butadiene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Isopropylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
p-Isopropyltoluene	BDL	0.0050	mg/kg	8260B	01/18/15	5
2-Butanone (MEK)	BDL	0.050	mg/kg	8260B	01/18/15	5
Methylene Chloride	BDL	0.025	mg/kg	8260B	01/18/15	5
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/kg	8260B	01/18/15	5
Methyl tert-butyl ether	BDL	0.0050	mg/kg	8260B	01/18/15	5
Naphthalene	BDL	0.025	mg/kg	8260B	01/18/15	5
n-Propylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Styrene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1,1,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1,2,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1,2-Trichlorotrifluoroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Tetrachloroethene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Toluene	BDL	0.025	mg/kg	8260B	01/18/15	5
1,2,3-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2,4-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1,1-Trichloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,1,2-Trichloroethane	BDL	0.0050	mg/kg	8260B	01/18/15	5
Trichloroethene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Trichlorofluoromethane	BDL	0.025	mg/kg	8260B	01/18/15	5
1,2,3-Trichloropropane	BDL	0.012	mg/kg	8260B	01/18/15	5
1,2,4-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,2,3-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Vinyl chloride	BDL	0.0050	mg/kg	8260B	01/18/15	5
1,3,5-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	01/18/15	5
Xylenes, Total	BDL	0.015	mg/kg	8260B	01/18/15	5
Surrogate Recovery						
Toluene-d8	101.		% Rec.	8260B	01/18/15	1
Dibromofluoromethane	96.6		% Rec.	8260B	01/18/15	1
4-Bromofluorobenzene	93.6		% Rec.	8260B	01/18/15	1
Base/Neutral Extractables						
Acenaphthene	BDL	0.33	mg/kg	8270C	01/20/15	10
Acenaphthylene	BDL	0.33	mg/kg	8270C	01/20/15	10
Anthracene	BDL	0.33	mg/kg	8270C	01/20/15	10
Benzidine	BDL	3.3	mg/kg	8270C	01/20/15	10
Benzo(a)anthracene	0.38	0.33	mg/kg	8270C	01/20/15	10

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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(615) 758-5858
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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Mr. John Leffew
K.S. Ware and Associates, LLC
54 Lindsley Ave.
Nashville, TN 37210

January 20, 2015

ESC Sample # : L743937-14

Date Received : January 16, 2015
Description : TDOT Davidson Co. Bridges over Clinton St/CSX RR

Site ID :

Sample ID : DP-12 0-2.5FT

Project # : 100-15-0001

Collected By : John W. Leffew
Collection Date : 01/16/15 12:25

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(b)fluoranthene	0.40	0.33	mg/kg	8270C	01/20/15	10
Benzo(k)fluoranthene	BDL	0.33	mg/kg	8270C	01/20/15	10
Benzo(g,h,i)perylene	BDL	0.33	mg/kg	8270C	01/20/15	10
Benzo(a)pyrene	BDL	0.33	mg/kg	8270C	01/20/15	10
Bis(2-chlorethoxy)methane	BDL	3.3	mg/kg	8270C	01/20/15	10
Bis(2-chloroethyl)ether	BDL	3.3	mg/kg	8270C	01/20/15	10
Bis(2-chloroisopropyl)ether	BDL	3.3	mg/kg	8270C	01/20/15	10
4-Bromophenyl-phenylether	BDL	3.3	mg/kg	8270C	01/20/15	10
2-Chloronaphthalene	BDL	0.33	mg/kg	8270C	01/20/15	10
4-Chlorophenyl-phenylether	BDL	3.3	mg/kg	8270C	01/20/15	10
Chrysene	0.35	0.33	mg/kg	8270C	01/20/15	10
Dibenz(a,h)anthracene	BDL	0.33	mg/kg	8270C	01/20/15	10
3,3-Dichlorobenzidine	BDL	3.3	mg/kg	8270C	01/20/15	10
2,4-Dinitrotoluene	BDL	3.3	mg/kg	8270C	01/20/15	10
2,6-Dinitrotoluene	BDL	3.3	mg/kg	8270C	01/20/15	10
Fluoranthene	0.73	0.33	mg/kg	8270C	01/20/15	10
Fluorene	BDL	0.33	mg/kg	8270C	01/20/15	10
Hexachlorobenzene	BDL	3.3	mg/kg	8270C	01/20/15	10
Hexachloro-1,3-butadiene	BDL	3.3	mg/kg	8270C	01/20/15	10
Hexachlorocyclopentadiene	BDL	3.3	mg/kg	8270C	01/20/15	10
Hexachloroethane	BDL	3.3	mg/kg	8270C	01/20/15	10
Indeno(1,2,3-cd)pyrene	BDL	0.33	mg/kg	8270C	01/20/15	10
Isophorone	BDL	3.3	mg/kg	8270C	01/20/15	10
Naphthalene	BDL	0.33	mg/kg	8270C	01/20/15	10
Nitrobenzene	BDL	3.3	mg/kg	8270C	01/20/15	10
n-Nitrosodimethylamine	BDL	3.3	mg/kg	8270C	01/20/15	10
n-Nitrosodiphenylamine	BDL	3.3	mg/kg	8270C	01/20/15	10
n-Nitrosodi-n-propylamine	BDL	3.3	mg/kg	8270C	01/20/15	10
Phenanthrene	0.41	0.33	mg/kg	8270C	01/20/15	10
Benzylbutyl phthalate	BDL	3.3	mg/kg	8270C	01/20/15	10
Bis(2-ethylhexyl)phthalate	BDL	3.3	mg/kg	8270C	01/20/15	10
Di-n-butyl phthalate	BDL	3.3	mg/kg	8270C	01/20/15	10
Diethyl phthalate	BDL	3.3	mg/kg	8270C	01/20/15	10
Dimethyl phthalate	BDL	3.3	mg/kg	8270C	01/20/15	10
Di-n-octyl phthalate	BDL	3.3	mg/kg	8270C	01/20/15	10
Pyrene	0.62	0.33	mg/kg	8270C	01/20/15	10
1,2,4-Trichlorobenzene	BDL	3.3	mg/kg	8270C	01/20/15	10
Acid Extractables						
4-Chloro-3-methylphenol	BDL	3.3	mg/kg	8270C	01/20/15	10
2-Chlorophenol	BDL	3.3	mg/kg	8270C	01/20/15	10
2,4-Dichlorophenol	BDL	3.3	mg/kg	8270C	01/20/15	10
2,4-Dimethylphenol	BDL	3.3	mg/kg	8270C	01/20/15	10
4,6-Dinitro-2-methylphenol	BDL	3.3	mg/kg	8270C	01/20/15	10
2,4-Dinitrophenol	BDL	3.3	mg/kg	8270C	01/20/15	10

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Mr. John Leffew
K.S. Ware and Associates, LLC
54 Lindsley Ave.
Nashville, TN 37210

January 20, 2015

ESC Sample # : L743937-14

Date Received : January 16, 2015
Description : TDOT Davidson Co. Bridges over Clinton St/CSX RR

Site ID :

Sample ID : DP-12 0-2.5FT

Project # : 100-15-0001

Collected By : John W. Leffew
Collection Date : 01/16/15 12:25

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2-Nitrophenol	BDL	3.3	mg/kg	8270C	01/20/15	10
4-Nitrophenol	BDL	3.3	mg/kg	8270C	01/20/15	10
Pentachlorophenol	BDL	3.3	mg/kg	8270C	01/20/15	10
Phenol	BDL	3.3	mg/kg	8270C	01/20/15	10
2,4,6-Trichlorophenol	BDL	3.3	mg/kg	8270C	01/20/15	10
Surrogate Recovery						
2-Fluorophenol	73.0		% Rec.	8270C	01/20/15	10
Phenol-d5	70.8		% Rec.	8270C	01/20/15	10
Nitrobenzene-d5	75.0		% Rec.	8270C	01/20/15	10
2-Fluorobiphenyl	79.6		% Rec.	8270C	01/20/15	10
2,4,6-Tribromophenol	71.9		% Rec.	8270C	01/20/15	10
p-Terphenyl-d14	59.6		% Rec.	8270C	01/20/15	10

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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Reported: 01/20/15 15:39 Printed: 01/20/15 15:46

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REPORT OF ANALYSIS

Mr. John Leffew
K.S. Ware and Associates, LLC
54 Lindsley Ave.
Nashville, TN 37210

January 20, 2015

ESC Sample # : L743937-15

Date Received : January 16, 2015
Description : TDOT Davidson Co. Bridges over Clinton St/CSX RR

Site ID :

Sample ID : TRIP BLANK

Project # : 100-15-0001

Collected By : John W. Leffew
Collection Date : 01/16/15 00:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	BDL	0.050	mg/l	8260B	01/17/15	1
Acrolein	BDL	0.050	mg/l	8260B	01/17/15	1
Acrylonitrile	BDL	0.010	mg/l	8260B	01/17/15	1
Benzene	BDL	0.0010	mg/l	8260B	01/17/15	1
Bromobenzene	BDL	0.0010	mg/l	8260B	01/17/15	1
Bromodichloromethane	BDL	0.0010	mg/l	8260B	01/17/15	1
Bromoform	BDL	0.0010	mg/l	8260B	01/17/15	1
Bromomethane	BDL	0.0050	mg/l	8260B	01/17/15	1
n-Butylbenzene	BDL	0.0010	mg/l	8260B	01/17/15	1
sec-Butylbenzene	BDL	0.0010	mg/l	8260B	01/17/15	1
tert-Butylbenzene	BDL	0.0010	mg/l	8260B	01/17/15	1
Carbon tetrachloride	BDL	0.0010	mg/l	8260B	01/17/15	1
Chlorobenzene	BDL	0.0010	mg/l	8260B	01/17/15	1
Chlorodibromomethane	BDL	0.0010	mg/l	8260B	01/17/15	1
Chloroethane	BDL	0.0050	mg/l	8260B	01/17/15	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	8260B	01/17/15	1
Chloroform	BDL	0.0050	mg/l	8260B	01/17/15	1
Chloromethane	BDL	0.0025	mg/l	8260B	01/17/15	1
2-Chlorotoluene	BDL	0.0010	mg/l	8260B	01/17/15	1
4-Chlorotoluene	BDL	0.0010	mg/l	8260B	01/17/15	1
1,2-Dibromo-3-Chloropropane	BDL	0.0050	mg/l	8260B	01/17/15	1
1,2-Dibromoethane	BDL	0.0010	mg/l	8260B	01/17/15	1
Dibromomethane	BDL	0.0010	mg/l	8260B	01/17/15	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	8260B	01/17/15	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	8260B	01/17/15	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	8260B	01/17/15	1
Dichlorodifluoromethane	BDL	0.0050	mg/l	8260B	01/17/15	1
1,1-Dichloroethane	BDL	0.0010	mg/l	8260B	01/17/15	1
1,2-Dichloroethane	BDL	0.0010	mg/l	8260B	01/17/15	1
1,1-Dichloroethene	BDL	0.0010	mg/l	8260B	01/17/15	1
cis-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	01/17/15	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	01/17/15	1
1,2-Dichloropropane	BDL	0.0010	mg/l	8260B	01/17/15	1
1,1-Dichloropropene	BDL	0.0010	mg/l	8260B	01/17/15	1
1,3-Dichloropropane	BDL	0.0010	mg/l	8260B	01/17/15	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	01/17/15	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	01/17/15	1
2,2-Dichloropropane	BDL	0.0010	mg/l	8260B	01/17/15	1
Di-isopropyl ether	BDL	0.0010	mg/l	8260B	01/17/15	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	01/17/15	1
Hexachloro-1,3-butadiene	BDL	0.0010	mg/l	8260B	01/17/15	1
Isopropylbenzene	BDL	0.0010	mg/l	8260B	01/17/15	1
p-Isopropyltoluene	BDL	0.0010	mg/l	8260B	01/17/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

12065 Lebanon Rd.
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(615) 758-5858
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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Mr. John Leffew
K.S. Ware and Associates, LLC
54 Lindsley Ave.
Nashville, TN 37210

January 20, 2015

ESC Sample # : L743937-15

Date Received : January 16, 2015
Description : TDOT Davidson Co. Bridges over Clinton St/CSX RR

Site ID :

Sample ID : TRIP BLANK

Project # : 100-15-0001

Collected By : John W. Leffew
Collection Date : 01/16/15 00:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2-Butanone (MEK)	BDL	0.010	mg/l	8260B	01/17/15	1
Methylene Chloride	BDL	0.0050	mg/l	8260B	01/17/15	1
4-Methyl-2-pentanone (MIBK)	BDL	0.010	mg/l	8260B	01/17/15	1
Methyl tert-butyl ether	BDL	0.0010	mg/l	8260B	01/17/15	1
Naphthalene	BDL	0.0050	mg/l	8260B	01/17/15	1
n-Propylbenzene	BDL	0.0010	mg/l	8260B	01/17/15	1
Styrene	BDL	0.0010	mg/l	8260B	01/17/15	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	01/17/15	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	01/17/15	1
1,1,2-Trichlorotrifluoroethane	BDL	0.0010	mg/l	8260B	01/17/15	1
Tetrachloroethene	BDL	0.0010	mg/l	8260B	01/17/15	1
Toluene	BDL	0.0050	mg/l	8260B	01/17/15	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/l	8260B	01/17/15	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/l	8260B	01/17/15	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	8260B	01/17/15	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	8260B	01/17/15	1
Trichloroethene	BDL	0.0010	mg/l	8260B	01/17/15	1
Trichlorofluoromethane	BDL	0.0050	mg/l	8260B	01/17/15	1
1,2,3-Trichloropropane	BDL	0.0025	mg/l	8260B	01/17/15	1
1,2,4-Trimethylbenzene	BDL	0.0010	mg/l	8260B	01/17/15	1
1,2,3-Trimethylbenzene	BDL	0.0010	mg/l	8260B	01/17/15	1
1,3,5-Trimethylbenzene	BDL	0.0010	mg/l	8260B	01/17/15	1
Vinyl chloride	BDL	0.0010	mg/l	8260B	01/17/15	1
Xylenes, Total	BDL	0.0030	mg/l	8260B	01/17/15	1
Surrogate Recovery						
Toluene-d8	103.		% Rec.	8260B	01/17/15	1
Dibromofluoromethane	95.6		% Rec.	8260B	01/17/15	1
4-Bromofluorobenzene	96.1		% Rec.	8260B	01/17/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
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Reported: 01/20/15 15:39 Printed: 01/20/15 15:46

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L743937-01	WG765209	SAMP	Acrylonitrile	R3015093	J3
	WG765209	SAMP	2-Chloroethyl vinyl ether	R3015093	J3
	WG765209	SAMP	1,2-Dibromo-3-Chloropropane	R3015093	J3
	WG765209	SAMP	2-Butanone (MEK)	R3015093	J3
	WG765209	SAMP	4-Methyl-2-pentanone (MIBK)	R3015093	J3
	WG765209	SAMP	1,1,2,2-Tetrachloroethane	R3015093	J3
	WG765209	SAMP	1,2,3-Trichloropropane	R3015093	J3
L743937-02	WG765209	SAMP	Acrylonitrile	R3015093	J3
	WG765209	SAMP	2-Chloroethyl vinyl ether	R3015093	J3
	WG765209	SAMP	1,2-Dibromo-3-Chloropropane	R3015093	J3
	WG765209	SAMP	2-Butanone (MEK)	R3015093	J3
	WG765209	SAMP	4-Methyl-2-pentanone (MIBK)	R3015093	J3
	WG765209	SAMP	1,1,2,2-Tetrachloroethane	R3015093	J3
	WG765209	SAMP	1,2,3-Trichloropropane	R3015093	J3
L743937-03	WG765209	SAMP	Bromobenzene	R3015093	J6J3
	WG765209	SAMP	n-Butylbenzene	R3015093	J6J3
	WG765209	SAMP	sec-Butylbenzene	R3015093	J6J3
	WG765209	SAMP	tert-Butylbenzene	R3015093	J6J3
	WG765209	SAMP	Chlorobenzene	R3015093	J6J3
	WG765209	SAMP	2-Chlorotoluene	R3015093	J6J3
	WG765209	SAMP	4-Chlorotoluene	R3015093	J6J3
	WG765209	SAMP	1,2-Dibromo-3-Chloropropane	R3015093	J3
	WG765209	SAMP	1,2-Dichlorobenzene	R3015093	J6J3
	WG765209	SAMP	1,3-Dichlorobenzene	R3015093	J6J3
	WG765209	SAMP	1,4-Dichlorobenzene	R3015093	J6J3
	WG765209	SAMP	Hexachloro-1,3-butadiene	R3015093	J6J3
	WG765209	SAMP	Isopropylbenzene	R3015093	J6J3
	WG765209	SAMP	p-Isopropyltoluene	R3015093	J6J3
	WG765209	SAMP	Naphthalene	R3015093	J6J3
	WG765209	SAMP	n-Propylbenzene	R3015093	J3
	WG765209	SAMP	Styrene	R3015093	J6J3
	WG765209	SAMP	Tetrachloroethene	R3015093	J3
	WG765209	SAMP	1,2,3-Trichlorobenzene	R3015093	J6J3
	WG765209	SAMP	1,2,4-Trichlorobenzene	R3015093	J6J3
	WG765209	SAMP	1,2,4-Trimethylbenzene	R3015093	J6J3
	WG765209	SAMP	1,2,3-Trimethylbenzene	R3015093	J3
	WG765209	SAMP	1,3,5-Trimethylbenzene	R3015093	J6J3
	WG765209	SAMP	Xylenes, Total	R3015093	J3
L743937-04	WG765209	SAMP	Acrylonitrile	R3015093	J3
	WG765209	SAMP	2-Chloroethyl vinyl ether	R3015093	J3
	WG765209	SAMP	1,2-Dibromo-3-Chloropropane	R3015093	J3
	WG765209	SAMP	2-Butanone (MEK)	R3015093	J3
	WG765209	SAMP	4-Methyl-2-pentanone (MIBK)	R3015093	J3
	WG765209	SAMP	1,1,2,2-Tetrachloroethane	R3015093	J3
	WG765209	SAMP	1,2,3-Trichloropropane	R3015093	J3
L743937-05	WG765209	SAMP	Acrylonitrile	R3015093	J3
	WG765209	SAMP	2-Chloroethyl vinyl ether	R3015093	J3
	WG765209	SAMP	1,2-Dibromo-3-Chloropropane	R3015093	J3
	WG765209	SAMP	2-Butanone (MEK)	R3015093	J3
	WG765209	SAMP	4-Methyl-2-pentanone (MIBK)	R3015093	J3
	WG765209	SAMP	1,1,2,2-Tetrachloroethane	R3015093	J3
	WG765209	SAMP	1,2,3-Trichloropropane	R3015093	J3
L743937-06	WG765209	SAMP	Acrylonitrile	R3015093	J3
	WG765209	SAMP	2-Chloroethyl vinyl ether	R3015093	J3
	WG765209	SAMP	1,2-Dibromo-3-Chloropropane	R3015093	J3
	WG765209	SAMP	2-Butanone (MEK)	R3015093	J3
	WG765209	SAMP	4-Methyl-2-pentanone (MIBK)	R3015093	J3
	WG765209	SAMP	1,1,2,2-Tetrachloroethane	R3015093	J3
	WG765209	SAMP	1,2,3-Trichloropropane	R3015093	J3
L743937-07	WG765209	SAMP	Acrylonitrile	R3015093	J3
	WG765209	SAMP	2-Chloroethyl vinyl ether	R3015093	J3
	WG765209	SAMP	1,2-Dibromo-3-Chloropropane	R3015093	J3
	WG765209	SAMP	2-Butanone (MEK)	R3015093	J3
	WG765209	SAMP	4-Methyl-2-pentanone (MIBK)	R3015093	J3
	WG765209	SAMP	1,1,2,2-Tetrachloroethane	R3015093	J3
	WG765209	SAMP	1,2,3-Trichloropropane	R3015093	J3
L743937-08	WG765209	SAMP	Acrylonitrile	R3015093	J3
	WG765209	SAMP	2-Chloroethyl vinyl ether	R3015093	J3
	WG765209	SAMP	1,2-Dibromo-3-Chloropropane	R3015093	J3

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
	WG765209	SAMP	2-Butanone (MEK)	R3015093	J3
	WG765209	SAMP	4-Methyl-2-pentanone (MIBK)	R3015093	J3
	WG765209	SAMP	1,1,2,2-Tetrachloroethane	R3015093	J3
	WG765209	SAMP	1,2,3-Trichloropropane	R3015093	J3
L743937-09	WG765209	SAMP	Acrylonitrile	R3015093	J3
	WG765209	SAMP	2-Chloroethyl vinyl ether	R3015093	J3
	WG765209	SAMP	1,2-Dibromo-3-Chloropropane	R3015093	J3
	WG765209	SAMP	2-Butanone (MEK)	R3015093	J3
	WG765209	SAMP	4-Methyl-2-pentanone (MIBK)	R3015093	J3
	WG765209	SAMP	1,1,2,2-Tetrachloroethane	R3015093	J3
	WG765209	SAMP	1,2,3-Trichloropropane	R3015093	J3
L743937-10	WG765209	SAMP	Acrylonitrile	R3015093	J3
	WG765209	SAMP	2-Chloroethyl vinyl ether	R3015093	J3
	WG765209	SAMP	1,2-Dibromo-3-Chloropropane	R3015093	J3
	WG765209	SAMP	2-Butanone (MEK)	R3015093	J3
	WG765209	SAMP	4-Methyl-2-pentanone (MIBK)	R3015093	J3
	WG765209	SAMP	1,1,2,2-Tetrachloroethane	R3015093	J3
	WG765209	SAMP	1,2,3-Trichloropropane	R3015093	J3
L743937-11	WG765209	SAMP	Acrylonitrile	R3015093	J3
	WG765209	SAMP	2-Chloroethyl vinyl ether	R3015093	J3
	WG765209	SAMP	1,2-Dibromo-3-Chloropropane	R3015093	J3
	WG765209	SAMP	2-Butanone (MEK)	R3015093	J3
	WG765209	SAMP	4-Methyl-2-pentanone (MIBK)	R3015093	J3
	WG765209	SAMP	1,1,2,2-Tetrachloroethane	R3015093	J3
	WG765209	SAMP	1,2,3-Trichloropropane	R3015093	J3
L743937-12	WG765209	SAMP	Acrylonitrile	R3015093	J3
	WG765209	SAMP	2-Chloroethyl vinyl ether	R3015093	J3
	WG765209	SAMP	1,2-Dibromo-3-Chloropropane	R3015093	J3
	WG765209	SAMP	2-Butanone (MEK)	R3015093	J3
	WG765209	SAMP	4-Methyl-2-pentanone (MIBK)	R3015093	J3
	WG765209	SAMP	1,1,2,2-Tetrachloroethane	R3015093	J3
	WG765209	SAMP	1,2,3-Trichloropropane	R3015093	J3
L743937-13	WG765209	SAMP	Acrylonitrile	R3015093	J3
	WG765209	SAMP	2-Chloroethyl vinyl ether	R3015093	J3
	WG765209	SAMP	1,2-Dibromo-3-Chloropropane	R3015093	J3
	WG765209	SAMP	2-Butanone (MEK)	R3015093	J3
	WG765209	SAMP	4-Methyl-2-pentanone (MIBK)	R3015093	J3
	WG765209	SAMP	1,1,2,2-Tetrachloroethane	R3015093	J3
	WG765209	SAMP	1,2,3-Trichloropropane	R3015093	J3

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J3	The associated batch QC was outside the established quality control range for precision.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

K.S. Ware and Associates, LLC
Mr. John Leffew
54 Lindsley Ave.

Nashville, TN 37210

Quality Assurance Report
Level II

L743937

January 20, 2015

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
1,1,1,2-Tetrachloroethane	< .001	mg/l			WG765192	01/17/15 14:59
1,1,1-Trichloroethane	< .001	mg/l			WG765192	01/17/15 14:59
1,1,2,2-Tetrachloroethane	< .001	mg/l			WG765192	01/17/15 14:59
1,1,2-Trichloroethane	< .001	mg/l			WG765192	01/17/15 14:59
1,1,2-Trichlorotrifluoroethane	< .001	mg/l			WG765192	01/17/15 14:59
1,1-Dichloroethane	< .001	mg/l			WG765192	01/17/15 14:59
1,1-Dichloroethene	< .001	mg/l			WG765192	01/17/15 14:59
1,1-Dichloropropene	< .001	mg/l			WG765192	01/17/15 14:59
1,2,3-Trichlorobenzene	< .001	mg/l			WG765192	01/17/15 14:59
1,2,3-Trichloropropane	< .001	mg/l			WG765192	01/17/15 14:59
1,2,3-Trimethylbenzene	< .001	mg/l			WG765192	01/17/15 14:59
1,2,4-Trichlorobenzene	< .001	mg/l			WG765192	01/17/15 14:59
1,2,4-Trimethylbenzene	< .001	mg/l			WG765192	01/17/15 14:59
1,2-Dibromo-3-Chloropropane	< .005	mg/l			WG765192	01/17/15 14:59
1,2-Dibromoethane	< .001	mg/l			WG765192	01/17/15 14:59
1,2-Dichlorobenzene	< .001	mg/l			WG765192	01/17/15 14:59
1,2-Dichloroethane	< .001	mg/l			WG765192	01/17/15 14:59
1,2-Dichloropropane	< .001	mg/l			WG765192	01/17/15 14:59
1,3,5-Trimethylbenzene	< .001	mg/l			WG765192	01/17/15 14:59
1,3-Dichlorobenzene	< .001	mg/l			WG765192	01/17/15 14:59
1,3-Dichloropropane	< .001	mg/l			WG765192	01/17/15 14:59
1,4-Dichlorobenzene	< .001	mg/l			WG765192	01/17/15 14:59
2,2-Dichloropropane	< .001	mg/l			WG765192	01/17/15 14:59
2-Butanone (MEK)	< .01	mg/l			WG765192	01/17/15 14:59
2-Chloroethyl vinyl ether	< .05	mg/l			WG765192	01/17/15 14:59
2-Chlorotoluene	< .001	mg/l			WG765192	01/17/15 14:59
4-Chlorotoluene	< .001	mg/l			WG765192	01/17/15 14:59
4-Methyl-2-pentanone (MIBK)	< .01	mg/l			WG765192	01/17/15 14:59
Acetone	< .05	mg/l			WG765192	01/17/15 14:59
Acrolein	< .025	mg/l			WG765192	01/17/15 14:59
Acrylonitrile	< .01	mg/l			WG765192	01/17/15 14:59
Benzene	< .001	mg/l			WG765192	01/17/15 14:59
Bromobenzene	< .001	mg/l			WG765192	01/17/15 14:59
Bromodichloromethane	< .001	mg/l			WG765192	01/17/15 14:59
Bromoform	< .001	mg/l			WG765192	01/17/15 14:59
Bromomethane	< .005	mg/l			WG765192	01/17/15 14:59
Carbon tetrachloride	< .001	mg/l			WG765192	01/17/15 14:59
Chlorobenzene	< .001	mg/l			WG765192	01/17/15 14:59
Chlorodibromomethane	< .001	mg/l			WG765192	01/17/15 14:59
Chloroethane	< .005	mg/l			WG765192	01/17/15 14:59
Chloroform	< .005	mg/l			WG765192	01/17/15 14:59
Chloromethane	< .0025	mg/l			WG765192	01/17/15 14:59
cis-1,2-Dichloroethene	< .001	mg/l			WG765192	01/17/15 14:59
cis-1,3-Dichloropropene	< .001	mg/l			WG765192	01/17/15 14:59
Di-isopropyl ether	< .001	mg/l			WG765192	01/17/15 14:59
Dibromomethane	< .001	mg/l			WG765192	01/17/15 14:59
Dichlorodifluoromethane	< .005	mg/l			WG765192	01/17/15 14:59
Ethylbenzene	< .001	mg/l			WG765192	01/17/15 14:59
Hexachloro-1,3-butadiene	< .001	mg/l			WG765192	01/17/15 14:59
Isopropylbenzene	< .001	mg/l			WG765192	01/17/15 14:59
Methyl tert-butyl ether	< .001	mg/l			WG765192	01/17/15 14:59
Methylene Chloride	< .005	mg/l			WG765192	01/17/15 14:59
n-Butylbenzene	< .001	mg/l			WG765192	01/17/15 14:59
n-Propylbenzene	< .001	mg/l			WG765192	01/17/15 14:59
Naphthalene	< .005	mg/l			WG765192	01/17/15 14:59
p-Isopropyltoluene	< .001	mg/l			WG765192	01/17/15 14:59
sec-Butylbenzene	< .001	mg/l			WG765192	01/17/15 14:59
Styrene	< .001	mg/l			WG765192	01/17/15 14:59
tert-Butylbenzene	< .001	mg/l			WG765192	01/17/15 14:59

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12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
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Tax I.D. 62-0814289

Est. 1970

K.S. Ware and Associates, LLC
Mr. John Leffew
54 Lindsley Ave.

Nashville, TN 37210

Quality Assurance Report
Level II

L743937

January 20, 2015

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Tetrachloroethene	< .001	mg/l			WG765192	01/17/15 14:59
Toluene	< .005	mg/l			WG765192	01/17/15 14:59
trans-1,2-Dichloroethene	< .001	mg/l			WG765192	01/17/15 14:59
trans-1,3-Dichloropropene	< .001	mg/l			WG765192	01/17/15 14:59
Trichloroethene	< .001	mg/l			WG765192	01/17/15 14:59
Trichlorofluoromethane	< .005	mg/l			WG765192	01/17/15 14:59
Vinyl chloride	< .001	mg/l			WG765192	01/17/15 14:59
Xylenes, Total	< .003	mg/l			WG765192	01/17/15 14:59
4-Bromofluorobenzene		% Rec.	94.90	71-126	WG765192	01/17/15 14:59
Dibromofluoromethane		% Rec.	94.70	78.3-121	WG765192	01/17/15 14:59
Toluene-d8		% Rec.	103.0	88.5-111	WG765192	01/17/15 14:59
1,1,1,2-Tetrachloroethane	< .001	mg/kg			WG765209	01/18/15 00:07
1,1,1-Trichloroethane	< .001	mg/kg			WG765209	01/18/15 00:07
1,1,2,2-Tetrachloroethane	< .001	mg/kg			WG765209	01/18/15 00:07
1,1,2-Trichloroethane	< .001	mg/kg			WG765209	01/18/15 00:07
1,1,2-Trichlorotrifluoroethane	< .001	mg/kg			WG765209	01/18/15 00:07
1,1-Dichloroethane	< .001	mg/kg			WG765209	01/18/15 00:07
1,1-Dichloroethene	< .001	mg/kg			WG765209	01/18/15 00:07
1,1-Dichloropropene	< .001	mg/kg			WG765209	01/18/15 00:07
1,2,3-Trichlorobenzene	< .001	mg/kg			WG765209	01/18/15 00:07
1,2,3-Trichloropropane	< .0025	mg/kg			WG765209	01/18/15 00:07
1,2,3-Trimethylbenzene	< .001	mg/kg			WG765209	01/18/15 00:07
1,2,4-Trichlorobenzene	< .001	mg/kg			WG765209	01/18/15 00:07
1,2,4-Trimethylbenzene	< .001	mg/kg			WG765209	01/18/15 00:07
1,2-Dibromo-3-Chloropropane	< .005	mg/kg			WG765209	01/18/15 00:07
1,2-Dibromoethane	< .001	mg/kg			WG765209	01/18/15 00:07
1,2-Dichlorobenzene	< .001	mg/kg			WG765209	01/18/15 00:07
1,2-Dichloroethane	< .001	mg/kg			WG765209	01/18/15 00:07
1,2-Dichloropropane	< .001	mg/kg			WG765209	01/18/15 00:07
1,3,5-Trimethylbenzene	< .001	mg/kg			WG765209	01/18/15 00:07
1,3-Dichlorobenzene	< .001	mg/kg			WG765209	01/18/15 00:07
1,3-Dichloropropane	< .001	mg/kg			WG765209	01/18/15 00:07
1,4-Dichlorobenzene	< .001	mg/kg			WG765209	01/18/15 00:07
2,2-Dichloropropane	< .001	mg/kg			WG765209	01/18/15 00:07
2-Butanone (MEK)	< .01	mg/kg			WG765209	01/18/15 00:07
2-Chloroethyl vinyl ether	< .05	mg/kg			WG765209	01/18/15 00:07
2-Chlorotoluene	< .001	mg/kg			WG765209	01/18/15 00:07
4-Chlorotoluene	< .001	mg/kg			WG765209	01/18/15 00:07
4-Methyl-2-pentanone (MIBK)	< .01	mg/kg			WG765209	01/18/15 00:07
Acetone	< .05	mg/kg			WG765209	01/18/15 00:07
Acrylonitrile	< .01	mg/kg			WG765209	01/18/15 00:07
Benzene	< .001	mg/kg			WG765209	01/18/15 00:07
Bromobenzene	< .001	mg/kg			WG765209	01/18/15 00:07
Bromodichloromethane	< .001	mg/kg			WG765209	01/18/15 00:07
Bromoform	< .001	mg/kg			WG765209	01/18/15 00:07
Bromomethane	< .005	mg/kg			WG765209	01/18/15 00:07
Carbon tetrachloride	< .001	mg/kg			WG765209	01/18/15 00:07
Chlorobenzene	< .001	mg/kg			WG765209	01/18/15 00:07
Chlorodibromomethane	< .001	mg/kg			WG765209	01/18/15 00:07
Chloroethane	< .005	mg/kg			WG765209	01/18/15 00:07
Chloroform	< .005	mg/kg			WG765209	01/18/15 00:07
Chloromethane	< .0025	mg/kg			WG765209	01/18/15 00:07
cis-1,2-Dichloroethene	< .001	mg/kg			WG765209	01/18/15 00:07
cis-1,3-Dichloropropene	< .001	mg/kg			WG765209	01/18/15 00:07
Di-isopropyl ether	< .001	mg/kg			WG765209	01/18/15 00:07
Dibromomethane	< .001	mg/kg			WG765209	01/18/15 00:07
Dichlorodifluoromethane	< .005	mg/kg			WG765209	01/18/15 00:07

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Quality Assurance Report
Level II

L743937

January 20, 2015

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Ethylbenzene	< .001	mg/kg			WG765209	01/18/15 00:07
Hexachloro-1,3-butadiene	< .001	mg/kg			WG765209	01/18/15 00:07
Isopropylbenzene	< .001	mg/kg			WG765209	01/18/15 00:07
Methyl tert-butyl ether	< .001	mg/kg			WG765209	01/18/15 00:07
Methylene Chloride	< .005	mg/kg			WG765209	01/18/15 00:07
n-Butylbenzene	< .001	mg/kg			WG765209	01/18/15 00:07
n-Propylbenzene	< .001	mg/kg			WG765209	01/18/15 00:07
Naphthalene	< .005	mg/kg			WG765209	01/18/15 00:07
p-Isopropyltoluene	< .001	mg/kg			WG765209	01/18/15 00:07
sec-Butylbenzene	< .001	mg/kg			WG765209	01/18/15 00:07
Styrene	< .001	mg/kg			WG765209	01/18/15 00:07
tert-Butylbenzene	< .001	mg/kg			WG765209	01/18/15 00:07
Tetrachloroethene	< .001	mg/kg			WG765209	01/18/15 00:07
Toluene	< .005	mg/kg			WG765209	01/18/15 00:07
trans-1,2-Dichloroethene	< .001	mg/kg			WG765209	01/18/15 00:07
trans-1,3-Dichloropropene	< .001	mg/kg			WG765209	01/18/15 00:07
Trichloroethene	< .001	mg/kg			WG765209	01/18/15 00:07
Trichlorofluoromethane	< .005	mg/kg			WG765209	01/18/15 00:07
Vinyl chloride	< .001	mg/kg			WG765209	01/18/15 00:07
Xylenes, Total	< .003	mg/kg			WG765209	01/18/15 00:07
4-Bromofluorobenzene		% Rec.	94.90	71-126	WG765209	01/18/15 00:07
Dibromofluoromethane		% Rec.	94.10	78.3-121	WG765209	01/18/15 00:07
Toluene-d8		% Rec.	104.0	88.5-111	WG765209	01/18/15 00:07
Arsenic	< 2	mg/kg			WG765270	01/18/15 16:05
Barium	< .5	mg/kg			WG765270	01/18/15 16:05
Cadmium	< .5	mg/kg			WG765270	01/18/15 16:05
Chromium	< 1	mg/kg			WG765270	01/18/15 16:05
Lead	< .5	mg/kg			WG765270	01/18/15 16:05
Selenium	< 2	mg/kg			WG765270	01/18/15 16:05
Silver	< 1	mg/kg			WG765270	01/18/15 16:05
1,1,1,2-Tetrachloroethane	< .001	mg/kg			WG765391	01/18/15 20:19
1,1,1-Trichloroethane	< .001	mg/kg			WG765391	01/18/15 20:19
1,1,2,2-Tetrachloroethane	< .001	mg/kg			WG765391	01/18/15 20:19
1,1,2-Trichloroethane	< .001	mg/kg			WG765391	01/18/15 20:19
1,1,2-Trichlorotrifluoroethane	< .001	mg/kg			WG765391	01/18/15 20:19
1,1-Dichloroethane	< .001	mg/kg			WG765391	01/18/15 20:19
1,1-Dichloroethene	< .001	mg/kg			WG765391	01/18/15 20:19
1,1-Dichloropropene	< .001	mg/kg			WG765391	01/18/15 20:19
1,2,3-Trichlorobenzene	< .001	mg/kg			WG765391	01/18/15 20:19
1,2,3-Trichloropropane	< .0025	mg/kg			WG765391	01/18/15 20:19
1,2,3-Trimethylbenzene	< .001	mg/kg			WG765391	01/18/15 20:19
1,2,4-Trichlorobenzene	< .001	mg/kg			WG765391	01/18/15 20:19
1,2,4-Trimethylbenzene	< .001	mg/kg			WG765391	01/18/15 20:19
1,2-Dibromo-3-Chloropropane	< .005	mg/kg			WG765391	01/18/15 20:19
1,2-Dibromoethane	< .001	mg/kg			WG765391	01/18/15 20:19
1,2-Dichlorobenzene	< .001	mg/kg			WG765391	01/18/15 20:19
1,2-Dichloroethane	< .001	mg/kg			WG765391	01/18/15 20:19
1,2-Dichloropropane	< .001	mg/kg			WG765391	01/18/15 20:19
1,3,5-Trimethylbenzene	< .001	mg/kg			WG765391	01/18/15 20:19
1,3-Dichlorobenzene	< .001	mg/kg			WG765391	01/18/15 20:19
1,3-Dichloropropane	< .001	mg/kg			WG765391	01/18/15 20:19
1,4-Dichlorobenzene	< .001	mg/kg			WG765391	01/18/15 20:19
2,2-Dichloropropane	< .001	mg/kg			WG765391	01/18/15 20:19
2-Butanone (MEK)	< .01	mg/kg			WG765391	01/18/15 20:19
2-Chloroethyl vinyl ether	< .05	mg/kg			WG765391	01/18/15 20:19

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Quality Assurance Report
Level II

L743937

January 20, 2015

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
2-Chlorotoluene	< .001	mg/kg			WG765391	01/18/15 20:19
4-Chlorotoluene	< .001	mg/kg			WG765391	01/18/15 20:19
4-Methyl-2-pentanone (MIBK)	< .01	mg/kg			WG765391	01/18/15 20:19
Acetone	< .05	mg/kg			WG765391	01/18/15 20:19
Acrylonitrile	< .01	mg/kg			WG765391	01/18/15 20:19
Benzene	< .001	mg/kg			WG765391	01/18/15 20:19
Bromobenzene	< .001	mg/kg			WG765391	01/18/15 20:19
Bromodichloromethane	< .001	mg/kg			WG765391	01/18/15 20:19
Bromoform	< .001	mg/kg			WG765391	01/18/15 20:19
Bromomethane	< .005	mg/kg			WG765391	01/18/15 20:19
Carbon tetrachloride	< .001	mg/kg			WG765391	01/18/15 20:19
Chlorobenzene	< .001	mg/kg			WG765391	01/18/15 20:19
Chlorodibromomethane	< .001	mg/kg			WG765391	01/18/15 20:19
Chloroethane	< .005	mg/kg			WG765391	01/18/15 20:19
Chloroform	< .005	mg/kg			WG765391	01/18/15 20:19
Chloromethane	< .0025	mg/kg			WG765391	01/18/15 20:19
cis-1,2-Dichloroethene	< .001	mg/kg			WG765391	01/18/15 20:19
cis-1,3-Dichloropropene	< .001	mg/kg			WG765391	01/18/15 20:19
Di-isopropyl ether	< .001	mg/kg			WG765391	01/18/15 20:19
Dibromomethane	< .001	mg/kg			WG765391	01/18/15 20:19
Dichlorodifluoromethane	< .005	mg/kg			WG765391	01/18/15 20:19
Ethylbenzene	< .001	mg/kg			WG765391	01/18/15 20:19
Hexachloro-1,3-butadiene	< .001	mg/kg			WG765391	01/18/15 20:19
Isopropylbenzene	< .001	mg/kg			WG765391	01/18/15 20:19
Methyl tert-butyl ether	< .001	mg/kg			WG765391	01/18/15 20:19
Methylene Chloride	< .005	mg/kg			WG765391	01/18/15 20:19
n-Butylbenzene	< .001	mg/kg			WG765391	01/18/15 20:19
n-Propylbenzene	< .001	mg/kg			WG765391	01/18/15 20:19
Naphthalene	< .005	mg/kg			WG765391	01/18/15 20:19
p-Isopropyltoluene	< .001	mg/kg			WG765391	01/18/15 20:19
sec-Butylbenzene	< .001	mg/kg			WG765391	01/18/15 20:19
Styrene	< .001	mg/kg			WG765391	01/18/15 20:19
tert-Butylbenzene	< .001	mg/kg			WG765391	01/18/15 20:19
Tetrachloroethene	< .001	mg/kg			WG765391	01/18/15 20:19
Toluene	< .005	mg/kg			WG765391	01/18/15 20:19
trans-1,2-Dichloroethene	< .001	mg/kg			WG765391	01/18/15 20:19
trans-1,3-Dichloropropene	< .001	mg/kg			WG765391	01/18/15 20:19
Trichloroethene	< .001	mg/kg			WG765391	01/18/15 20:19
Trichlorofluoromethane	< .005	mg/kg			WG765391	01/18/15 20:19
Vinyl chloride	< .001	mg/kg			WG765391	01/18/15 20:19
Xylenes, Total	< .003	mg/kg			WG765391	01/18/15 20:19
4-Bromofluorobenzene		% Rec.	92.60	71-126	WG765391	01/18/15 20:19
Dibromofluoromethane		% Rec.	94.10	78.3-121	WG765391	01/18/15 20:19
Toluene-d8		% Rec.	100.0	88.5-111	WG765391	01/18/15 20:19
Mercury	< .02	mg/kg			WG765188	01/19/15 16:38
1,2,4-Trichlorobenzene	< .333	mg/kg			WG765187	01/19/15 14:58
2,4,6-Trichlorophenol	< .333	mg/kg			WG765187	01/19/15 14:58
2,4-Dichlorophenol	< .333	mg/kg			WG765187	01/19/15 14:58
2,4-Dimethylphenol	< .333	mg/kg			WG765187	01/19/15 14:58
2,4-Dinitrophenol	< .333	mg/kg			WG765187	01/19/15 14:58
2,4-Dinitrotoluene	< .333	mg/kg			WG765187	01/19/15 14:58
2,6-Dinitrotoluene	< .333	mg/kg			WG765187	01/19/15 14:58
2-Chloronaphthalene	< .033	mg/kg			WG765187	01/19/15 14:58
2-Chlorophenol	< .333	mg/kg			WG765187	01/19/15 14:58
2-Nitrophenol	< .333	mg/kg			WG765187	01/19/15 14:58

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Quality Assurance Report
Level II

L743937

January 20, 2015

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
3,3-Dichlorobenzidine	< .333	mg/kg			WG765187	01/19/15 14:58
4,6-Dinitro-2-methylphenol	< .333	mg/kg			WG765187	01/19/15 14:58
4-Bromophenyl-phenylether	< .333	mg/kg			WG765187	01/19/15 14:58
4-Chloro-3-methylphenol	< .333	mg/kg			WG765187	01/19/15 14:58
4-Chlorophenyl-phenylether	< .333	mg/kg			WG765187	01/19/15 14:58
4-Nitrophenol	< .333	mg/kg			WG765187	01/19/15 14:58
Acenaphthene	< .033	mg/kg			WG765187	01/19/15 14:58
Acenaphthylene	< .033	mg/kg			WG765187	01/19/15 14:58
Anthracene	< .033	mg/kg			WG765187	01/19/15 14:58
Benzidine	< .333	mg/kg			WG765187	01/19/15 14:58
Benzo(a)anthracene	< .033	mg/kg			WG765187	01/19/15 14:58
Benzo(a)pyrene	< .033	mg/kg			WG765187	01/19/15 14:58
Benzo(b)fluoranthene	< .033	mg/kg			WG765187	01/19/15 14:58
Benzo(g,h,i)perylene	< .033	mg/kg			WG765187	01/19/15 14:58
Benzo(k)fluoranthene	< .033	mg/kg			WG765187	01/19/15 14:58
Benzylbutyl phthalate	< .333	mg/kg			WG765187	01/19/15 14:58
Bis(2-chlorethoxy)methane	< .333	mg/kg			WG765187	01/19/15 14:58
Bis(2-chloroethyl)ether	< .333	mg/kg			WG765187	01/19/15 14:58
Bis(2-chloroisopropyl)ether	< .333	mg/kg			WG765187	01/19/15 14:58
Bis(2-ethylhexyl)phthalate	< .333	mg/kg			WG765187	01/19/15 14:58
Chrysene	< .033	mg/kg			WG765187	01/19/15 14:58
Di-n-butyl phthalate	< .333	mg/kg			WG765187	01/19/15 14:58
Di-n-octyl phthalate	< .333	mg/kg			WG765187	01/19/15 14:58
Dibenz(a,h)anthracene	< .033	mg/kg			WG765187	01/19/15 14:58
Diethyl phthalate	< .333	mg/kg			WG765187	01/19/15 14:58
Dimethyl phthalate	< .333	mg/kg			WG765187	01/19/15 14:58
Fluoranthene	< .033	mg/kg			WG765187	01/19/15 14:58
Fluorene	< .033	mg/kg			WG765187	01/19/15 14:58
Hexachloro-1,3-butadiene	< .333	mg/kg			WG765187	01/19/15 14:58
Hexachlorobenzene	< .333	mg/kg			WG765187	01/19/15 14:58
Hexachlorocyclopentadiene	< .333	mg/kg			WG765187	01/19/15 14:58
Hexachloroethane	< .333	mg/kg			WG765187	01/19/15 14:58
Indeno(1,2,3-cd)pyrene	< .033	mg/kg			WG765187	01/19/15 14:58
Isophorone	< .333	mg/kg			WG765187	01/19/15 14:58
n-Nitrosodi-n-propylamine	< .333	mg/kg			WG765187	01/19/15 14:58
n-Nitrosodimethylamine	< .333	mg/kg			WG765187	01/19/15 14:58
n-Nitrosodiphenylamine	< .333	mg/kg			WG765187	01/19/15 14:58
Naphthalene	< .033	mg/kg			WG765187	01/19/15 14:58
Nitrobenzene	< .333	mg/kg			WG765187	01/19/15 14:58
Pentachlorophenol	< .333	mg/kg			WG765187	01/19/15 14:58
Phenanthrene	< .033	mg/kg			WG765187	01/19/15 14:58
Phenol	< .333	mg/kg			WG765187	01/19/15 14:58
Pyrene	< .033	mg/kg			WG765187	01/19/15 14:58
2,4,6-Tribromophenol		% Rec.	81.50	21.6-142	WG765187	01/19/15 14:58
2-Fluorobiphenyl		% Rec.	86.30	34.9-129	WG765187	01/19/15 14:58
2-Fluorophenol		% Rec.	77.80	21.1-116	WG765187	01/19/15 14:58
Nitrobenzene-d5		% Rec.	79.90	21.9-129	WG765187	01/19/15 14:58
Phenol-d5		% Rec.	78.60	26.3-121	WG765187	01/19/15 14:58
p-Terphenyl-d14		% Rec.	83.20	21.5-128	WG765187	01/19/15 14:58

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
1,1,1,2-Tetrachloroethane	mg/l	.025	0.0259	103.	74.2-124	WG765192
1,1,1-Trichloroethane	mg/l	.025	0.0228	91.3	73.2-123	WG765192
1,1,2,2-Tetrachloroethane	mg/l	.025	0.0249	99.8	70.7-122	WG765192
1,1,2-Trichloroethane	mg/l	.025	0.0252	101.	77.7-118	WG765192
1,1,2-Trichlorotrifluoroethane	mg/l	.025	0.0266	107.	67.2-143	WG765192
1,1-Dichloroethane	mg/l	.025	0.0255	102.	70.7-126	WG765192

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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Tax I.D. 62-0814289

Est. 1970

K.S. Ware and Associates, LLC
Mr. John Leffew
54 Lindsley Ave.

Nashville, TN 37210

Quality Assurance Report
Level II

L743937

January 20, 2015

Analyte	Units	Laboratory Control Sample Known Val	Result	% Rec	Limit	Batch
1,1-Dichloroethene	mg/l	.025	0.0262	105.	67.8-129	WG765192
1,1-Dichloropropene	mg/l	.025	0.0246	98.6	73.1-125	WG765192
1,2,3-Trichlorobenzene	mg/l	.025	0.0245	98.0	64.9-135	WG765192
1,2,3-Trichloropropane	mg/l	.025	0.0246	98.2	71.8-121	WG765192
1,2,3-Trimethylbenzene	mg/l	.025	0.0239	95.7	72.3-116	WG765192
1,2,4-Trichlorobenzene	mg/l	.025	0.0249	99.6	69.7-136	WG765192
1,2,4-Trimethylbenzene	mg/l	.025	0.0238	95.4	75-123	WG765192
1,2-Dibromo-3-Chloropropane	mg/l	.025	0.0224	89.5	65.4-128	WG765192
1,2-Dibromoethane	mg/l	.025	0.0252	101.	76.6-121	WG765192
1,2-Dichlorobenzene	mg/l	.025	0.0243	97.3	78.4-117	WG765192
1,2-Dichloroethane	mg/l	.025	0.0231	92.3	68.8-124	WG765192
1,2-Dichloropropane	mg/l	.025	0.0264	106.	76.5-119	WG765192
1,3,5-Trimethylbenzene	mg/l	.025	0.0245	98.1	75.6-124	WG765192
1,3-Dichlorobenzene	mg/l	.025	0.0253	101.	70.8-128	WG765192
1,3-Dichloropropane	mg/l	.025	0.0255	102.	77.4-117	WG765192
1,4-Dichlorobenzene	mg/l	.025	0.0242	96.9	78.8-115	WG765192
2,2-Dichloropropane	mg/l	.025	0.0254	102.	62.4-133	WG765192
2-Butanone (MEK)	mg/l	.125	0.128	102.	55-149	WG765192
2-Chloroethyl vinyl ether	mg/l	.125	0.149	119.	43.8-150	WG765192
2-Chlorotoluene	mg/l	.025	0.0249	99.5	74.7-122	WG765192
4-Chlorotoluene	mg/l	.025	0.0240	96.0	77.5-120	WG765192
4-Methyl-2-pentanone (MIBK)	mg/l	.125	0.129	103.	70.5-133	WG765192
Acetone	mg/l	.125	0.120	95.9	35.6-163	WG765192
Acrolein	mg/l	.125	0.159	127.	10-190	WG765192
Acrylonitrile	mg/l	.125	0.131	105.	55.2-130	WG765192
Benzene	mg/l	.025	0.0251	100.	74.8-121	WG765192
Bromobenzene	mg/l	.025	0.0239	95.6	77.5-116	WG765192
Bromodichloromethane	mg/l	.025	0.0234	93.7	75.1-116	WG765192
Bromoform	mg/l	.025	0.0258	103.	67.5-130	WG765192
Bromomethane	mg/l	.025	0.0321	128.	49.9-162	WG765192
Carbon tetrachloride	mg/l	.025	0.0233	93.2	70.2-123	WG765192
Chlorobenzene	mg/l	.025	0.0256	102.	78.1-119	WG765192
Chlorodibromomethane	mg/l	.025	0.0250	100.	74-121	WG765192
Chloroethane	mg/l	.025	0.0263	105.	61.7-135	WG765192
Chloroform	mg/l	.025	0.0237	94.7	76-121	WG765192
Chloromethane	mg/l	.025	0.0253	101.	61.5-129	WG765192
cis-1,2-Dichloroethene	mg/l	.025	0.0247	98.8	76-119	WG765192
cis-1,3-Dichloropropene	mg/l	.025	0.0255	102.	78.2-120	WG765192
Di-isopropyl ether	mg/l	.025	0.0262	105.	65.6-132	WG765192
Dibromomethane	mg/l	.025	0.0248	99.3	79.5-118	WG765192
Dichlorodifluoromethane	mg/l	.025	0.0223	89.4	54.8-135	WG765192
Ethylbenzene	mg/l	.025	0.0247	98.8	78.8-122	WG765192
Hexachloro-1,3-butadiene	mg/l	.025	0.0235	94.2	64.7-129	WG765192
Isopropylbenzene	mg/l	.025	0.0244	97.8	78.6-132	WG765192
Methyl tert-butyl ether	mg/l	.025	0.0243	97.2	71.2-126	WG765192
Methylene Chloride	mg/l	.025	0.0238	95.1	70.3-120	WG765192
n-Butylbenzene	mg/l	.025	0.0237	94.8	76.2-126	WG765192
n-Propylbenzene	mg/l	.025	0.0245	98.0	78.2-122	WG765192
Naphthalene	mg/l	.025	0.0226	90.4	68.4-128	WG765192
p-Isopropyltoluene	mg/l	.025	0.0249	99.6	74-131	WG765192
sec-Butylbenzene	mg/l	.025	0.0245	97.8	74.4-127	WG765192
Styrene	mg/l	.025	0.0256	102.	80.4-126	WG765192
tert-Butylbenzene	mg/l	.025	0.0242	96.9	75.3-126	WG765192
Tetrachloroethene	mg/l	.025	0.0258	103.	72.6-126	WG765192
Toluene	mg/l	.025	0.0244	97.6	79.7-116	WG765192
trans-1,2-Dichloroethene	mg/l	.025	0.0239	95.6	72.6-121	WG765192
trans-1,3-Dichloropropene	mg/l	.025	0.0257	103.	74.3-123	WG765192
Trichloroethene	mg/l	.025	0.0248	99.2	77.7-118	WG765192
Trichlorofluoromethane	mg/l	.025	0.0279	111.	63.5-135	WG765192

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Quality Assurance Report
Level II

L743937

January 20, 2015

Analyte	Units	Laboratory Control Sample Known Val	Result	% Rec	Limit	Batch
Vinyl chloride	mg/l	.025	0.0259	104.	65.9-128	WG765192
Xylenes, Total	mg/l	.075	0.0747	99.5	78.7-121	WG765192
4-Bromofluorobenzene				94.00	71-126	WG765192
Dibromofluoromethane				95.40	78.3-121	WG765192
Toluene-d8				103.0	88.5-111	WG765192
1,1,1,2-Tetrachloroethane	mg/kg	.025	0.0241	96.3	72.9-124	WG765209
1,1,1-Trichloroethane	mg/kg	.025	0.0218	87.0	73.7-124	WG765209
1,1,2,2-Tetrachloroethane	mg/kg	.025	0.0230	91.8	69.4-122	WG765209
1,1,2-Trichloroethane	mg/kg	.025	0.0237	94.7	79.1-118	WG765209
1,1,2-Trichlorotrifluoroethane	mg/kg	.025	0.0250	100.	70-146	WG765209
1,1-Dichloroethane	mg/kg	.025	0.0237	94.6	75-124	WG765209
1,1-Dichloroethene	mg/kg	.025	0.0244	97.4	70.4-129	WG765209
1,1-Dichloropropene	mg/kg	.025	0.0229	91.5	74.9-124	WG765209
1,2,3-Trichlorobenzene	mg/kg	.025	0.0224	89.6	69.3-131	WG765209
1,2,3-Trichloropropane	mg/kg	.025	0.0226	90.5	71.4-123	WG765209
1,2,3-Trimethylbenzene	mg/kg	.025	0.0227	90.8	73.6-113	WG765209
1,2,4-Trichlorobenzene	mg/kg	.025	0.0234	93.4	71.9-137	WG765209
1,2,4-Trimethylbenzene	mg/kg	.025	0.0227	90.6	75.5-122	WG765209
1,2-Dibromo-3-Chloropropane	mg/kg	.025	0.0202	80.9	62.8-133	WG765209
1,2-Dibromoethane	mg/kg	.025	0.0235	93.8	78.6-120	WG765209
1,2-Dichlorobenzene	mg/kg	.025	0.0230	92.1	78.3-118	WG765209
1,2-Dichloroethane	mg/kg	.025	0.0211	84.4	70.1-124	WG765209
1,2-Dichloropropane	mg/kg	.025	0.0249	99.6	77.9-119	WG765209
1,3,5-Trimethylbenzene	mg/kg	.025	0.0236	94.6	75.9-124	WG765209
1,3-Dichlorobenzene	mg/kg	.025	0.0241	96.3	72-126	WG765209
1,3-Dichloropropane	mg/kg	.025	0.0240	95.9	79.1-117	WG765209
1,4-Dichlorobenzene	mg/kg	.025	0.0232	93.0	78.3-117	WG765209
2,2-Dichloropropane	mg/kg	.025	0.0237	94.6	61.3-136	WG765209
2-Butanone (MEK)	mg/kg	.125	0.115	91.7	53.7-153	WG765209
2-Chloroethyl vinyl ether	mg/kg	.125	0.134	107.	37.7-157	WG765209
2-Chlorotoluene	mg/kg	.025	0.0236	94.3	75.6-121	WG765209
4-Chlorotoluene	mg/kg	.025	0.0228	91.3	77.3-120	WG765209
4-Methyl-2-pentanone (MIBK)	mg/kg	.125	0.115	91.9	70.4-137	WG765209
Acetone	mg/kg	.125	0.105	84.1	35.1-175	WG765209
Acrylonitrile	mg/kg	.125	0.118	94.4	56.4-128	WG765209
Benzene	mg/kg	.025	0.0233	93.1	77.1-121	WG765209
Bromobenzene	mg/kg	.025	0.0227	91.0	78.2-115	WG765209
Bromodichloromethane	mg/kg	.025	0.0213	85.2	74.9-115	WG765209
Bromoform	mg/kg	.025	0.0234	93.7	65.9-132	WG765209
Bromomethane	mg/kg	.025	0.0290	116.	48.7-165	WG765209
Carbon tetrachloride	mg/kg	.025	0.0217	86.8	70-124	WG765209
Chlorobenzene	mg/kg	.025	0.0244	97.5	79.1-119	WG765209
Chlorodibromomethane	mg/kg	.025	0.0238	95.1	73.5-121	WG765209
Chloroethane	mg/kg	.025	0.0244	97.4	66.2-132	WG765209
Chloroform	mg/kg	.025	0.0218	87.3	76.7-122	WG765209
Chloromethane	mg/kg	.025	0.0227	90.8	63.4-131	WG765209
cis-1,2-Dichloroethene	mg/kg	.025	0.0229	91.8	78.2-119	WG765209
cis-1,3-Dichloropropene	mg/kg	.025	0.0236	94.3	79.6-120	WG765209
Di-isopropyl ether	mg/kg	.025	0.0238	95.1	70.4-133	WG765209
Dibromomethane	mg/kg	.025	0.0228	91.3	79.4-120	WG765209
Dichlorodifluoromethane	mg/kg	.025	0.0199	79.8	57.1-137	WG765209
Ethylbenzene	mg/kg	.025	0.0237	94.7	79.7-122	WG765209
Hexachloro-1,3-butadiene	mg/kg	.025	0.0229	91.5	68.2-123	WG765209
Isopropylbenzene	mg/kg	.025	0.0233	93.2	80-135	WG765209
Methyl tert-butyl ether	mg/kg	.025	0.0216	86.6	73-129	WG765209
Methylene Chloride	mg/kg	.025	0.0223	89.1	72.6-120	WG765209
n-Butylbenzene	mg/kg	.025	0.0230	91.8	77.5-126	WG765209

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Quality Assurance Report
Level II

L743937

January 20, 2015

Analyte	Units	Laboratory Control Sample Known Val	Result	% Rec	Limit	Batch
n-Propylbenzene	mg/kg	.025	0.0235	94.1	77.9-123	WG765209
Naphthalene	mg/kg	.025	0.0205	81.9	69.8-128	WG765209
p-Isopropyltoluene	mg/kg	.025	0.0238	95.3	75.8-129	WG765209
sec-Butylbenzene	mg/kg	.025	0.0235	93.9	75.8-126	WG765209
Styrene	mg/kg	.025	0.0245	98.0	82.4-126	WG765209
tert-Butylbenzene	mg/kg	.025	0.0233	93.4	76.4-126	WG765209
Tetrachloroethene	mg/kg	.025	0.0247	98.9	73.9-125	WG765209
Toluene	mg/kg	.025	0.0226	90.5	79.7-118	WG765209
trans-1,2-Dichloroethene	mg/kg	.025	0.0218	87.4	73.8-122	WG765209
trans-1,3-Dichloropropene	mg/kg	.025	0.0234	93.6	75.9-124	WG765209
Trichloroethene	mg/kg	.025	0.0233	93.3	77.9-118	WG765209
Trichlorofluoromethane	mg/kg	.025	0.0258	103.	67.7-131	WG765209
Vinyl chloride	mg/kg	.025	0.0234	93.7	66.7-130	WG765209
Xylenes, Total	mg/kg	.075	0.0714	95.2	78.8-121	WG765209
4-Bromofluorobenzene				95.00	71-126	WG765209
Dibromofluoromethane				92.50	78.3-121	WG765209
Toluene-d8				102.0	88.5-111	WG765209
Arsenic	mg/kg	100	97.8	98.0	80-120	WG765270
Barium	mg/kg	100	96.5	97.0	80-120	WG765270
Cadmium	mg/kg	100	100.	100.	80-120	WG765270
Chromium	mg/kg	100	96.7	97.0	80-120	WG765270
Lead	mg/kg	100	106.	106.	80-120	WG765270
Selenium	mg/kg	100	94.3	94.0	80-120	WG765270
Silver	mg/kg	100	96.9	97.0	80-120	WG765270
1,1,1,2-Tetrachloroethane	mg/kg	.025	0.0245	97.8	72.9-124	WG765391
1,1,1-Trichloroethane	mg/kg	.025	0.0241	96.6	73.7-124	WG765391
1,1,2,2-Tetrachloroethane	mg/kg	.025	0.0227	90.8	69.4-122	WG765391
1,1,2-Trichloroethane	mg/kg	.025	0.0227	90.9	79.1-118	WG765391
1,1,2-Trichlorotrifluoroethane	mg/kg	.025	0.0236	94.5	70-146	WG765391
1,1-Dichloroethane	mg/kg	.025	0.0252	101.	75-124	WG765391
1,1-Dichloroethene	mg/kg	.025	0.0223	89.4	70.4-129	WG765391
1,1-Dichloropropene	mg/kg	.025	0.0255	102.	74.9-124	WG765391
1,2,3-Trichlorobenzene	mg/kg	.025	0.0225	89.9	69.3-131	WG765391
1,2,3-Trichloropropane	mg/kg	.025	0.0216	86.5	71.4-123	WG765391
1,2,3-Trimethylbenzene	mg/kg	.025	0.0244	97.7	73.6-113	WG765391
1,2,4-Trichlorobenzene	mg/kg	.025	0.0242	96.7	71.9-137	WG765391
1,2,4-Trimethylbenzene	mg/kg	.025	0.0242	96.7	75.5-122	WG765391
1,2-Dibromo-3-Chloropropane	mg/kg	.025	0.0204	81.8	62.8-133	WG765391
1,2-Dibromoethane	mg/kg	.025	0.0219	87.4	78.6-120	WG765391
1,2-Dichlorobenzene	mg/kg	.025	0.0249	99.7	78.3-118	WG765391
1,2-Dichloroethane	mg/kg	.025	0.0227	90.6	70.1-124	WG765391
1,2-Dichloropropane	mg/kg	.025	0.0260	104.	77.9-119	WG765391
1,3,5-Trimethylbenzene	mg/kg	.025	0.0244	97.7	75.9-124	WG765391
1,3-Dichlorobenzene	mg/kg	.025	0.0233	93.0	72-126	WG765391
1,3-Dichloropropane	mg/kg	.025	0.0231	92.2	79.1-117	WG765391
1,4-Dichlorobenzene	mg/kg	.025	0.0240	95.8	78.3-117	WG765391
2,2-Dichloropropane	mg/kg	.025	0.0231	92.3	61.3-136	WG765391
2-Butanone (MEK)	mg/kg	.125	0.103	82.6	53.7-153	WG765391
2-Chloroethyl vinyl ether	mg/kg	.125	0.0984	78.7	37.7-157	WG765391
2-Chlorotoluene	mg/kg	.025	0.0234	93.7	75.6-121	WG765391
4-Chlorotoluene	mg/kg	.025	0.0239	95.6	77.3-120	WG765391
4-Methyl-2-pentanone (MIBK)	mg/kg	.125	0.119	95.5	70.4-137	WG765391
Acetone	mg/kg	.125	0.0736	58.9	35.1-175	WG765391
Acrylonitrile	mg/kg	.125	0.122	97.5	56.4-128	WG765391
Benzene	mg/kg	.025	0.0247	98.9	77.1-121	WG765391

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Quality Assurance Report
Level II

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January 20, 2015

Analyte	Units	Laboratory Control Sample Known Val	Result	% Rec	Limit	Batch
Bromobenzene	mg/kg	.025	0.0243	97.3	78.2-115	WG765391
Bromodichloromethane	mg/kg	.025	0.0242	96.7	74.9-115	WG765391
Bromoform	mg/kg	.025	0.0214	85.7	65.9-132	WG765391
Bromomethane	mg/kg	.025	0.0296	118.	48.7-165	WG765391
Carbon tetrachloride	mg/kg	.025	0.0238	95.1	70-124	WG765391
Chlorobenzene	mg/kg	.025	0.0248	99.3	79.1-119	WG765391
Chlorodibromomethane	mg/kg	.025	0.0223	89.0	73.5-121	WG765391
Chloroethane	mg/kg	.025	0.0223	89.2	66.2-132	WG765391
Chloroform	mg/kg	.025	0.0235	93.8	76.7-122	WG765391
Chloromethane	mg/kg	.025	0.0235	94.1	63.4-131	WG765391
cis-1,2-Dichloroethene	mg/kg	.025	0.0235	93.9	78.2-119	WG765391
cis-1,3-Dichloropropene	mg/kg	.025	0.0249	99.7	79.6-120	WG765391
Di-isopropyl ether	mg/kg	.025	0.0261	104.	70.4-133	WG765391
Dibromomethane	mg/kg	.025	0.0222	88.7	79.4-120	WG765391
Dichlorodifluoromethane	mg/kg	.025	0.0220	88.1	57.1-137	WG765391
Ethylbenzene	mg/kg	.025	0.0241	96.3	79.7-122	WG765391
Hexachloro-1,3-butadiene	mg/kg	.025	0.0241	96.4	68.2-123	WG765391
Isopropylbenzene	mg/kg	.025	0.0239	95.7	80-135	WG765391
Methyl tert-butyl ether	mg/kg	.025	0.0246	98.2	73-129	WG765391
Methylene Chloride	mg/kg	.025	0.0221	88.6	72.6-120	WG765391
n-Butylbenzene	mg/kg	.025	0.0268	107.	77.5-126	WG765391
n-Propylbenzene	mg/kg	.025	0.0244	97.6	77.9-123	WG765391
Naphthalene	mg/kg	.025	0.0220	88.2	69.8-128	WG765391
p-Isopropyltoluene	mg/kg	.025	0.0240	96.2	75.8-129	WG765391
sec-Butylbenzene	mg/kg	.025	0.0239	95.6	75.8-126	WG765391
Styrene	mg/kg	.025	0.0252	101.	82.4-126	WG765391
tert-Butylbenzene	mg/kg	.025	0.0238	95.2	76.4-126	WG765391
Tetrachloroethene	mg/kg	.025	0.0246	98.4	73.9-125	WG765391
Toluene	mg/kg	.025	0.0246	98.2	79.7-118	WG765391
trans-1,2-Dichloroethene	mg/kg	.025	0.0228	91.2	73.8-122	WG765391
trans-1,3-Dichloropropene	mg/kg	.025	0.0247	98.9	75.9-124	WG765391
Trichloroethene	mg/kg	.025	0.0236	94.4	77.9-118	WG765391
Trichlorofluoromethane	mg/kg	.025	0.0228	91.1	67.7-131	WG765391
Vinyl chloride	mg/kg	.025	0.0231	92.4	66.7-130	WG765391
Xylenes, Total	mg/kg	.075	0.0728	97.0	78.8-121	WG765391
4-Bromofluorobenzene				88.10	71-126	WG765391
Dibromofluoromethane				95.60	78.3-121	WG765391
Toluene-d8				98.80	88.5-111	WG765391
Mercury	mg/kg	.458	0.465	101.	80-120	WG765188
1,2,4-Trichlorobenzene	mg/kg	.333	0.269	80.9	39.8-100	WG765187
2,4,6-Trichlorophenol	mg/kg	.333	0.328	98.6	44.4-108	WG765187
2,4-Dichlorophenol	mg/kg	.333	0.301	90.3	46.2-109	WG765187
2,4-Dimethylphenol	mg/kg	.333	0.228	68.3	42.2-110	WG765187
2,4-Dinitrophenol	mg/kg	.333	0.216	65.0	10-105	WG765187
2,4-Dinitrotoluene	mg/kg	.333	0.319	95.9	53-112	WG765187
2,6-Dinitrotoluene	mg/kg	.333	0.317	95.3	51.6-110	WG765187
2-Chloronaphthalene	mg/kg	.333	0.307	92.2	47.1-105	WG765187
2-Chlorophenol	mg/kg	.333	0.276	82.9	40.8-103	WG765187
2-Nitrophenol	mg/kg	.333	0.324	97.3	44.2-113	WG765187
3,3-Dichlorobenzidine	mg/kg	.333	0.173	51.8	21-101	WG765187
4,6-Dinitro-2-methylphenol	mg/kg	.333	0.301	90.3	23.1-119	WG765187
4-Bromophenyl-phenylether	mg/kg	.333	0.302	90.6	51.4-110	WG765187
4-Chloro-3-methylphenol	mg/kg	.333	0.313	94.1	51.1-113	WG765187
4-Chlorophenyl-phenylether	mg/kg	.333	0.298	89.6	48.1-108	WG765187
4-Nitrophenol	mg/kg	.333	0.294	88.2	34.8-109	WG765187

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K.S. Ware and Associates, LLC
Mr. John Leffew
54 Lindsley Ave.

Nashville, TN 37210

Quality Assurance Report
Level II

L743937

January 20, 2015

Analyte	Units	Laboratory Control Sample Known Val	Result	% Rec	Limit	Batch
Acenaphthene	mg/kg	.333	0.296	89.0	48.9-107	WG765187
Acenaphthylene	mg/kg	.333	0.297	89.2	49.2-111	WG765187
Anthracene	mg/kg	.333	0.295	88.7	52-112	WG765187
Benzidine	mg/kg	.333	0.0362	10.9	0-48	WG765187
Benzo(a)anthracene	mg/kg	.333	0.293	87.9	52.3-106	WG765187
Benzo(a)pyrene	mg/kg	.333	0.276	83.0	51.9-106	WG765187
Benzo(b)fluoranthene	mg/kg	.333	0.296	89.0	51.3-106	WG765187
Benzo(g,h,i)perylene	mg/kg	.333	0.291	87.4	45.8-108	WG765187
Benzo(k)fluoranthene	mg/kg	.333	0.251	75.4	52.9-107	WG765187
Benzylbutyl phthalate	mg/kg	.333	0.349	105.	47.5-115	WG765187
Bis(2-chlorethoxy)methane	mg/kg	.333	0.272	81.7	44.9-108	WG765187
Bis(2-chloroethyl)ether	mg/kg	.333	0.247	74.1	32.5-112	WG765187
Bis(2-chloroisopropyl)ether	mg/kg	.333	0.287	86.1	40.4-99	WG765187
Bis(2-ethylhexyl)phthalate	mg/kg	.333	0.317	95.1	48.1-116	WG765187
Chrysene	mg/kg	.333	0.280	84.0	54.4-110	WG765187
Di-n-butyl phthalate	mg/kg	.333	0.293	88.0	49.7-113	WG765187
Di-n-octyl phthalate	mg/kg	.333	0.316	94.8	49.6-112	WG765187
Dibenz(a,h)anthracene	mg/kg	.333	0.290	87.2	45.7-111	WG765187
Diethyl phthalate	mg/kg	.333	0.296	88.9	52-112	WG765187
Dimethyl phthalate	mg/kg	.333	0.309	92.9	51.4-108	WG765187
Fluoranthene	mg/kg	.333	0.295	88.7	53.7-110	WG765187
Fluorene	mg/kg	.333	0.296	88.9	51.1-109	WG765187
Hexachloro-1,3-butadiene	mg/kg	.333	0.287	86.2	41.5-112	WG765187
Hexachlorobenzene	mg/kg	.333	0.304	91.2	43.2-104	WG765187
Hexachlorocyclopentadiene	mg/kg	.333	0.231	69.3	13.5-123	WG765187
Hexachloroethane	mg/kg	.333	0.270	81.0	36.2-103	WG765187
Indeno(1,2,3-cd)pyrene	mg/kg	.333	0.290	87.2	47.5-109	WG765187
Isophorone	mg/kg	.333	0.288	86.6	28.8-104	WG765187
n-Nitrosodi-n-propylamine	mg/kg	.333	0.269	80.9	43.3-109	WG765187
n-Nitrosodimethylamine	mg/kg	.333	0.218	65.5	18.1-122	WG765187
n-Nitrosodiphenylamine	mg/kg	.333	0.274	82.2	48.8-107	WG765187
Naphthalene	mg/kg	.333	0.267	80.1	43.4-103	WG765187
Nitrobenzene	mg/kg	.333	0.292	87.5	40.7-109	WG765187
Pentachlorophenol	mg/kg	.333	0.251	75.3	16.2-102	WG765187
Phenanthrene	mg/kg	.333	0.287	86.0	51.6-107	WG765187
Phenol	mg/kg	.333	0.280	84.0	41.5-106	WG765187
Pyrene	mg/kg	.333	0.304	91.2	47.1-108	WG765187
2,4,6-Tribromophenol				90.40	21.6-142	WG765187
2-Fluorobiphenyl				87.80	34.9-129	WG765187
2-Fluorophenol				79.90	21.1-116	WG765187
Nitrobenzene-d5				79.20	21.9-129	WG765187
Phenol-d5				79.30	26.3-121	WG765187
p-Terphenyl-d14				82.90	21.5-128	WG765187

Analyte	Units	Laboratory Control Sample Duplicate Result	Ref	%Rec	Limit	RPD	Limit	Batch
1,1,1,2-Tetrachloroethane	mg/l	0.0226	0.0259	90.0	74.2-124	13.4	20	WG765192
1,1,1-Trichloroethane	mg/l	0.0207	0.0228	83.0	73.2-123	9.88	20	WG765192
1,1,2,2-Tetrachloroethane	mg/l	0.0214	0.0249	86.0	70.7-122	15.1	20	WG765192
1,1,2-Trichloroethane	mg/l	0.0221	0.0252	88.0	77.7-118	13.1	20	WG765192
1,1,2-Trichlorotrifluoroethane	mg/l	0.0239	0.0266	96.0	67.2-143	10.8	20	WG765192
1,1-Dichloroethane	mg/l	0.0227	0.0255	91.0	70.7-126	11.5	20	WG765192
1,1-Dichloroethene	mg/l	0.0229	0.0262	91.0	67.8-129	13.5	20	WG765192
1,1-Dichloropropene	mg/l	0.0219	0.0246	87.0	73.1-125	11.9	20	WG765192
1,2,3-Trichlorobenzene	mg/l	0.0210	0.0245	84.0	64.9-135	15.5	20	WG765192
1,2,3-Trichloropropane	mg/l	0.0219	0.0246	88.0	71.8-121	11.2	20	WG765192
1,2,3-Trimethylbenzene	mg/l	0.0208	0.0239	83.0	72.3-116	13.9	20	WG765192
1,2,4-Trichlorobenzene	mg/l	0.0217	0.0249	87.0	69.7-136	13.7	20	WG765192

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Quality Assurance Report
Level II

L743937

January 20, 2015

		Laboratory Control Sample Duplicate						
Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
1,2,4-Trimethylbenzene	mg/l	0.0215	0.0238	86.0	75-123	10.2	20	WG765192
1,2-Dibromo-3-Chloropropane	mg/l	0.0184	0.0224	74.0	65.4-128	19.4	20	WG765192
1,2-Dibromoethane	mg/l	0.0216	0.0252	86.0	76.6-121	15.3	20	WG765192
1,2-Dichlorobenzene	mg/l	0.0212	0.0243	85.0	78.4-117	13.7	20	WG765192
1,2-Dichloroethane	mg/l	0.0199	0.0231	79.0	68.8-124	15.0	20	WG765192
1,2-Dichloropropane	mg/l	0.0236	0.0264	94.0	76.5-119	11.4	20	WG765192
1,3,5-Trimethylbenzene	mg/l	0.0222	0.0245	89.0	75.6-124	9.97	20	WG765192
1,3-Dichlorobenzene	mg/l	0.0228	0.0253	91.0	70.8-128	10.7	20	WG765192
1,3-Dichloropropane	mg/l	0.0219	0.0255	88.0	77.4-117	14.9	20	WG765192
1,4-Dichlorobenzene	mg/l	0.0213	0.0242	85.0	78.8-115	13.1	20	WG765192
2,2-Dichloropropane	mg/l	0.0238	0.0254	95.0	62.4-133	6.35	20	WG765192
2-Butanone (MEK)	mg/l	0.110	0.128	88.0	55-149	15.3	20	WG765192
2-Chloroethyl vinyl ether	mg/l	0.127	0.149	102.	43.8-150	15.4	20	WG765192
2-Chlorotoluene	mg/l	0.0218	0.0249	87.0	74.7-122	13.1	20	WG765192
4-Chlorotoluene	mg/l	0.0217	0.0240	87.0	77.5-120	10.1	20	WG765192
4-Methyl-2-pentanone (MIBK)	mg/l	0.112	0.129	90.0	70.5-133	14.2	20	WG765192
Acetone	mg/l	0.102	0.120	81.0	35.6-163	16.3	23.9	WG765192
Acrolein	mg/l	0.138	0.159	111.	10-190	13.7	28.1	WG765192
Acrylonitrile	mg/l	0.114	0.131	92.0	55.2-130	13.6	20	WG765192
Benzene	mg/l	0.0222	0.0251	89.0	74.8-121	12.1	20	WG765192
Bromobenzene	mg/l	0.0210	0.0239	84.0	77.5-116	12.9	20	WG765192
Bromodichloromethane	mg/l	0.0205	0.0234	82.0	75.1-116	13.2	20	WG765192
Bromoform	mg/l	0.0217	0.0258	87.0	67.5-130	17.0	20	WG765192
Bromomethane	mg/l	0.0290	0.0321	116.	49.9-162	10.2	20	WG765192
Carbon tetrachloride	mg/l	0.0203	0.0233	81.0	70.2-123	13.9	20	WG765192
Chlorobenzene	mg/l	0.0229	0.0256	92.0	78.1-119	11.1	20	WG765192
Chlorodibromomethane	mg/l	0.0216	0.0250	86.0	74-121	14.6	20	WG765192
Chloroethane	mg/l	0.0234	0.0263	94.0	61.7-135	11.9	20	WG765192
Chloroform	mg/l	0.0209	0.0237	84.0	76-121	12.2	20	WG765192
Chloromethane	mg/l	0.0235	0.0253	94.0	61.5-129	7.35	20	WG765192
cis-1,2-Dichloroethene	mg/l	0.0224	0.0247	89.0	76-119	9.97	20	WG765192
cis-1,3-Dichloropropene	mg/l	0.0226	0.0255	90.0	78.2-120	12.0	20	WG765192
Di-isopropyl ether	mg/l	0.0234	0.0262	94.0	65.6-132	11.3	20	WG765192
Dibromomethane	mg/l	0.0224	0.0248	89.0	79.5-118	10.5	20	WG765192
Dichlorodifluoromethane	mg/l	0.0199	0.0223	80.0	54.8-135	11.5	20	WG765192
Ethylbenzene	mg/l	0.0217	0.0247	87.0	78.8-122	13.1	20	WG765192
Hexachloro-1,3-butadiene	mg/l	0.0206	0.0235	82.0	64.7-129	13.3	20	WG765192
Isopropylbenzene	mg/l	0.0218	0.0244	87.0	78.6-132	11.3	20	WG765192
Methyl tert-butyl ether	mg/l	0.0215	0.0243	86.0	71.2-126	12.2	20	WG765192
Methylene Chloride	mg/l	0.0213	0.0238	85.0	70.3-120	11.1	20	WG765192
n-Butylbenzene	mg/l	0.0212	0.0237	85.0	76.2-126	11.2	20	WG765192
n-Propylbenzene	mg/l	0.0220	0.0245	88.0	78.2-122	10.7	20	WG765192
Naphthalene	mg/l	0.0194	0.0226	77.0	68.4-128	15.3	20	WG765192
p-Isopropyltoluene	mg/l	0.0221	0.0249	88.0	74-131	11.7	20	WG765192
sec-Butylbenzene	mg/l	0.0219	0.0245	87.0	74.4-127	11.2	20	WG765192
Styrene	mg/l	0.0229	0.0256	92.0	80.4-126	11.2	20	WG765192
tert-Butylbenzene	mg/l	0.0217	0.0242	87.0	75.3-126	11.3	20	WG765192
Tetrachloroethene	mg/l	0.0222	0.0258	89.0	72.6-126	15.1	20	WG765192
Toluene	mg/l	0.0217	0.0244	87.0	79.7-116	11.6	20	WG765192
trans-1,2-Dichloroethene	mg/l	0.0211	0.0239	84.0	72.6-121	12.6	20	WG765192
trans-1,3-Dichloropropene	mg/l	0.0226	0.0257	90.0	74.3-123	13.1	20	WG765192
Trichloroethene	mg/l	0.0223	0.0248	89.0	77.7-118	10.4	20	WG765192
Trichlorofluoromethane	mg/l	0.0251	0.0279	100.	63.5-135	10.3	20	WG765192
Vinyl chloride	mg/l	0.0231	0.0259	92.0	65.9-128	11.4	20	WG765192
Xylenes, Total	mg/l	0.0666	0.0747	89.0	78.7-121	11.4	20	WG765192
4-Bromofluorobenzene				95.80	71-126			WG765192
Dibromofluoromethane				94.60	78.3-121			WG765192
Toluene-d8				103.0	88.5-111			WG765192

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Quality Assurance Report
Level II

L743937

January 20, 2015

Analyte	Units	Laboratory Control Sample Duplicate Result	Ref	%Rec	Limit	RPD	Limit	Batch
1,1,1,2-Tetrachloroethane	mg/kg	0.0282	0.0241	113.	72.9-124	15.9	20	WG765209
1,1,1-Trichloroethane	mg/kg	0.0251	0.0218	100.	73.7-124	14.3	20	WG765209
1,1,2,2-Tetrachloroethane	mg/kg	0.0282	0.0230	113.	69.4-122	20.4*	20	WG765209
1,1,2-Trichloroethane	mg/kg	0.0282	0.0237	113.	79.1-118	17.3	20	WG765209
1,1,2-Trichlorotrifluoroethane	mg/kg	0.0300	0.0250	120.	70-146	18.2	20	WG765209
1,1-Dichloroethane	mg/kg	0.0273	0.0237	109.	75-124	14.1	20	WG765209
1,1-Dichloroethene	mg/kg	0.0278	0.0244	111.	70.4-129	13.2	20	WG765209
1,1-Dichloropropene	mg/kg	0.0266	0.0229	106.	74.9-124	15.2	20	WG765209
1,2,3-Trichlorobenzene	mg/kg	0.0265	0.0224	106.	69.3-131	16.7	20	WG765209
1,2,3-Trichloropropane	mg/kg	0.0277	0.0226	111.	71.4-123	20.2*	20	WG765209
1,2,3-Trimethylbenzene	mg/kg	0.0265	0.0227	106.	73.6-113	15.3	20	WG765209
1,2,4-Trichlorobenzene	mg/kg	0.0272	0.0234	109.	71.9-137	15.4	20	WG765209
1,2,4-Trimethylbenzene	mg/kg	0.0260	0.0227	104.	75.5-122	13.6	20	WG765209
1,2-Dibromo-3-Chloropropane	mg/kg	0.0262	0.0202	105.	62.8-133	25.9*	20	WG765209
1,2-Dibromoethane	mg/kg	0.0274	0.0235	110.	78.6-120	15.6	20	WG765209
1,2-Dichlorobenzene	mg/kg	0.0268	0.0230	107.	78.3-118	15.2	20	WG765209
1,2-Dichloroethane	mg/kg	0.0252	0.0211	101.	70.1-124	17.7	20	WG765209
1,2-Dichloropropane	mg/kg	0.0291	0.0249	116.	77.9-119	15.6	20	WG765209
1,3,5-Trimethylbenzene	mg/kg	0.0269	0.0236	108.	75.9-124	12.9	20	WG765209
1,3-Dichlorobenzene	mg/kg	0.0276	0.0241	110.	72-126	13.5	20	WG765209
1,3-Dichloropropane	mg/kg	0.0280	0.0240	112.	79.1-117	15.3	20	WG765209
1,4-Dichlorobenzene	mg/kg	0.0272	0.0232	109.	78.3-117	15.7	20	WG765209
2,2-Dichloropropane	mg/kg	0.0274	0.0237	110.	61.3-136	14.9	20	WG765209
2-Butanone (MEK)	mg/kg	0.146	0.115	117.	53.7-153	24.0*	21.2	WG765209
2-Chloroethyl vinyl ether	mg/kg	0.178	0.134	142.	37.7-157	28.4*	20	WG765209
2-Chlorotoluene	mg/kg	0.0274	0.0236	110.	75.6-121	15.1	20	WG765209
4-Chlorotoluene	mg/kg	0.0261	0.0228	104.	77.3-120	13.3	20	WG765209
4-Methyl-2-pentanone (MIBK)	mg/kg	0.147	0.115	117.	70.4-137	24.3*	20	WG765209
Acetone	mg/kg	0.133	0.105	107.	35.1-175	23.7	26.1	WG765209
Acrylonitrile	mg/kg	0.149	0.118	120.	56.4-128	23.6*	20	WG765209
Benzene	mg/kg	0.0274	0.0233	109.	77.1-121	16.1	20	WG765209
Bromobenzene	mg/kg	0.0261	0.0227	104.	78.2-115	13.7	20	WG765209
Bromodichloromethane	mg/kg	0.0257	0.0213	103.	74.9-115	18.8	20	WG765209
Bromoform	mg/kg	0.0279	0.0234	112.	65.9-132	17.5	20	WG765209
Bromomethane	mg/kg	0.0342	0.0290	137.	48.7-165	16.5	20	WG765209
Carbon tetrachloride	mg/kg	0.0248	0.0217	99.0	70-124	13.4	20	WG765209
Chlorobenzene	mg/kg	0.0279	0.0244	112.	79.1-119	13.6	20	WG765209
Chlorodibromomethane	mg/kg	0.0268	0.0238	107.	73.5-121	12.1	20	WG765209
Chloroethane	mg/kg	0.0281	0.0244	112.	66.2-132	14.4	20	WG765209
Chloroform	mg/kg	0.0255	0.0218	102.	76.7-122	15.6	20	WG765209
Chloromethane	mg/kg	0.0267	0.0227	107.	63.4-131	16.2	20	WG765209
cis-1,2-Dichloroethene	mg/kg	0.0271	0.0229	108.	78.2-119	16.6	20	WG765209
cis-1,3-Dichloropropene	mg/kg	0.0277	0.0236	111.	79.6-120	16.3	20	WG765209
Di-isopropyl ether	mg/kg	0.0282	0.0238	113.	70.4-133	16.9	20	WG765209
Dibromomethane	mg/kg	0.0275	0.0228	110.	79.4-120	18.6	20	WG765209
Dichlorodifluoromethane	mg/kg	0.0234	0.0199	93.0	57.1-137	15.8	20	WG765209
Ethylbenzene	mg/kg	0.0268	0.0237	107.	79.7-122	12.4	20	WG765209
Hexachloro-1,3-butadiene	mg/kg	0.0264	0.0229	106.	68.2-123	14.5	20	WG765209
Isopropylbenzene	mg/kg	0.0269	0.0233	108.	80-135	14.3	20	WG765209
Methyl tert-butyl ether	mg/kg	0.0262	0.0216	105.	73-129	19.1	20	WG765209
Methylene Chloride	mg/kg	0.0259	0.0223	104.	72.6-120	15.2	20	WG765209
n-Butylbenzene	mg/kg	0.0267	0.0230	107.	77.5-126	15.2	20	WG765209
n-Propylbenzene	mg/kg	0.0270	0.0235	108.	77.9-123	13.6	20	WG765209
Naphthalene	mg/kg	0.0250	0.0205	100.	69.8-128	19.7	20	WG765209
p-Isopropyltoluene	mg/kg	0.0273	0.0238	109.	75.8-129	13.6	20	WG765209
sec-Butylbenzene	mg/kg	0.0271	0.0235	108.	75.8-126	14.3	20	WG765209
Styrene	mg/kg	0.0283	0.0245	113.	82.4-126	14.3	20	WG765209
tert-Butylbenzene	mg/kg	0.0267	0.0233	107.	76.4-126	13.5	20	WG765209

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Tax I.D. 62-0814289

Est. 1970

K.S. Ware and Associates, LLC
Mr. John Leffew
54 Lindsley Ave.

Nashville, TN 37210

Quality Assurance Report
Level II

L743937

January 20, 2015

Analyte	Units	Laboratory Control Sample Duplicate Result	Ref	%Rec	Limit	RPD	Limit	Batch
Tetrachloroethene	mg/kg	0.0283	0.0247	113.	73.9-125	13.5	20	WG765209
Toluene	mg/kg	0.0266	0.0226	106.	79.7-118	16.3	20	WG765209
trans-1,2-Dichloroethene	mg/kg	0.0260	0.0218	104.	73.8-122	17.4	20	WG765209
trans-1,3-Dichloropropene	mg/kg	0.0274	0.0234	110.	75.9-124	15.8	20	WG765209
Trichloroethene	mg/kg	0.0270	0.0233	108.	77.9-118	14.4	20	WG765209
Trichlorofluoromethane	mg/kg	0.0307	0.0258	123.	67.7-131	17.4	20	WG765209
Vinyl chloride	mg/kg	0.0272	0.0234	109.	66.7-130	14.9	20	WG765209
Xylenes, Total	mg/kg	0.0819	0.0714	109.	78.8-121	13.7	20	WG765209
4-Bromofluorobenzene				94.20	71-126			WG765209
Dibromofluoromethane				94.50	78.3-121			WG765209
Toluene-d8				103.0	88.5-111			WG765209
Arsenic	mg/kg	106.	97.8	106.	80-120	8.00	20	WG765270
Barium	mg/kg	103.	96.5	103.	80-120	6.00	20	WG765270
Cadmium	mg/kg	108.	100.	108.	80-120	7.00	20	WG765270
Chromium	mg/kg	103.	96.7	103.	80-120	6.00	20	WG765270
Lead	mg/kg	114.	106.	114.	80-120	7.00	20	WG765270
Selenium	mg/kg	101.	94.3	101.	80-120	7.00	20	WG765270
Silver	mg/kg	104.	96.9	104.	80-120	7.00	20	WG765270
1,1,1,2-Tetrachloroethane	mg/kg	0.0243	0.0245	97.0	72.9-124	0.570	20	WG765391
1,1,1-Trichloroethane	mg/kg	0.0242	0.0241	97.0	73.7-124	0.120	20	WG765391
1,1,2,2-Tetrachloroethane	mg/kg	0.0237	0.0227	95.0	69.4-122	4.11	20	WG765391
1,1,2-Trichloroethane	mg/kg	0.0227	0.0227	91.0	79.1-118	0.0900	20	WG765391
1,1,2-Trichlorotrifluoroethane	mg/kg	0.0228	0.0236	91.0	70-146	3.61	20	WG765391
1,1-Dichloroethane	mg/kg	0.0253	0.0252	101.	75-124	0.380	20	WG765391
1,1-Dichloroethene	mg/kg	0.0225	0.0223	90.0	70.4-129	0.690	20	WG765391
1,1-Dichloropropene	mg/kg	0.0255	0.0255	102.	74.9-124	0.110	20	WG765391
1,2,3-Trichlorobenzene	mg/kg	0.0229	0.0225	92.0	69.3-131	2.06	20	WG765391
1,2,3-Trichloropropane	mg/kg	0.0221	0.0216	88.0	71.4-123	2.35	20	WG765391
1,2,3-Trimethylbenzene	mg/kg	0.0244	0.0244	97.0	73.6-113	0.250	20	WG765391
1,2,4-Trichlorobenzene	mg/kg	0.0243	0.0242	97.0	71.9-137	0.440	20	WG765391
1,2,4-Trimethylbenzene	mg/kg	0.0245	0.0242	98.0	75.5-122	1.27	20	WG765391
1,2-Dibromo-3-Chloropropane	mg/kg	0.0192	0.0204	77.0	62.8-133	6.25	20	WG765391
1,2-Dibromoethane	mg/kg	0.0220	0.0219	88.0	78.6-120	0.770	20	WG765391
1,2-Dichlorobenzene	mg/kg	0.0245	0.0249	98.0	78.3-118	1.87	20	WG765391
1,2-Dichloroethane	mg/kg	0.0227	0.0227	91.0	70.1-124	0.0400	20	WG765391
1,2-Dichloropropane	mg/kg	0.0261	0.0260	104.	77.9-119	0.300	20	WG765391
1,3,5-Trimethylbenzene	mg/kg	0.0249	0.0244	99.0	75.9-124	1.79	20	WG765391
1,3-Dichlorobenzene	mg/kg	0.0238	0.0233	95.0	72-126	2.50	20	WG765391
1,3-Dichloropropane	mg/kg	0.0228	0.0231	91.0	79.1-117	1.26	20	WG765391
1,4-Dichlorobenzene	mg/kg	0.0244	0.0240	98.0	78.3-117	1.85	20	WG765391
2,2-Dichloropropane	mg/kg	0.0230	0.0231	92.0	61.3-136	0.500	20	WG765391
2-Butanone (MEK)	mg/kg	0.106	0.103	84.0	53.7-153	2.16	21.2	WG765391
2-Chloroethyl vinyl ether	mg/kg	0.101	0.0984	81.0	37.7-157	3.02	20	WG765391
2-Chlorotoluene	mg/kg	0.0238	0.0234	95.0	75.6-121	1.77	20	WG765391
4-Chlorotoluene	mg/kg	0.0244	0.0239	98.0	77.3-120	2.12	20	WG765391
4-Methyl-2-pentanone (MIBK)	mg/kg	0.122	0.119	97.0	70.4-137	1.74	20	WG765391
Acetone	mg/kg	0.0751	0.0736	60.0	35.1-175	1.96	26.1	WG765391
Acrylonitrile	mg/kg	0.125	0.122	100.	56.4-128	2.83	20	WG765391
Benzene	mg/kg	0.0248	0.0247	99.0	77.1-121	0.420	20	WG765391
Bromobenzene	mg/kg	0.0250	0.0243	100.	78.2-115	2.62	20	WG765391
Bromodichloromethane	mg/kg	0.0240	0.0242	96.0	74.9-115	0.740	20	WG765391
Bromoform	mg/kg	0.0224	0.0214	90.0	65.9-132	4.32	20	WG765391
Bromomethane	mg/kg	0.0302	0.0296	121.	48.7-165	2.21	20	WG765391
Carbon tetrachloride	mg/kg	0.0237	0.0238	95.0	70-124	0.160	20	WG765391
Chlorobenzene	mg/kg	0.0247	0.0248	99.0	79.1-119	0.690	20	WG765391

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Analyte	Units	Laboratory Control Sample Duplicate Result	Ref	%Rec	Limit	RPD	Limit	Batch
Chlorodibromomethane	mg/kg	0.0219	0.0223	88.0	73.5-121	1.43	20	WG765391
Chloroethane	mg/kg	0.0230	0.0223	92.0	66.2-132	3.00	20	WG765391
Chloroform	mg/kg	0.0239	0.0235	96.0	76.7-122	2.04	20	WG765391
Chloromethane	mg/kg	0.0235	0.0235	94.0	63.4-131	0.100	20	WG765391
cis-1,2-Dichloroethene	mg/kg	0.0240	0.0235	96.0	78.2-119	2.09	20	WG765391
cis-1,3-Dichloropropene	mg/kg	0.0245	0.0249	98.0	79.6-120	1.88	20	WG765391
Di-isopropyl ether	mg/kg	0.0266	0.0261	106.	70.4-133	1.86	20	WG765391
Dibromomethane	mg/kg	0.0226	0.0222	90.0	79.4-120	1.84	20	WG765391
Dichlorodifluoromethane	mg/kg	0.0219	0.0220	88.0	57.1-137	0.560	20	WG765391
Ethylbenzene	mg/kg	0.0242	0.0241	97.0	79.7-122	0.450	20	WG765391
Hexachloro-1,3-butadiene	mg/kg	0.0240	0.0241	96.0	68.2-123	0.270	20	WG765391
Isopropylbenzene	mg/kg	0.0241	0.0239	96.0	80-135	0.620	20	WG765391
Methyl tert-butyl ether	mg/kg	0.0254	0.0246	102.	73-129	3.38	20	WG765391
Methylene Chloride	mg/kg	0.0229	0.0221	91.0	72.6-120	3.13	20	WG765391
n-Butylbenzene	mg/kg	0.0264	0.0268	106.	77.5-126	1.28	20	WG765391
n-Propylbenzene	mg/kg	0.0250	0.0244	100.	77.9-123	2.34	20	WG765391
Naphthalene	mg/kg	0.0225	0.0220	90.0	69.8-128	1.94	20	WG765391
p-Isopropyltoluene	mg/kg	0.0245	0.0240	98.0	75.8-129	2.06	20	WG765391
sec-Butylbenzene	mg/kg	0.0245	0.0239	98.0	75.8-126	2.46	20	WG765391
Styrene	mg/kg	0.0256	0.0252	102.	82.4-126	1.27	20	WG765391
tert-Butylbenzene	mg/kg	0.0239	0.0238	95.0	76.4-126	0.280	20	WG765391
Tetrachloroethene	mg/kg	0.0238	0.0246	95.0	73.9-125	3.47	20	WG765391
Toluene	mg/kg	0.0244	0.0246	98.0	79.7-118	0.570	20	WG765391
trans-1,2-Dichloroethene	mg/kg	0.0234	0.0228	94.0	73.8-122	2.74	20	WG765391
trans-1,3-Dichloropropene	mg/kg	0.0248	0.0247	99.0	75.9-124	0.310	20	WG765391
Trichloroethene	mg/kg	0.0236	0.0236	94.0	77.9-118	0.0800	20	WG765391
Trichlorofluoromethane	mg/kg	0.0225	0.0228	90.0	67.7-131	1.38	20	WG765391
Vinyl chloride	mg/kg	0.0230	0.0231	92.0	66.7-130	0.550	20	WG765391
Xylenes, Total	mg/kg	0.0733	0.0728	98.0	78.8-121	0.700	20	WG765391
4-Bromofluorobenzene				89.40	71-126			WG765391
Dibromofluoromethane				96.90	78.3-121			WG765391
Toluene-d8				99.00	88.5-111			WG765391
Mercury	mg/kg	0.461	0.465	101.	80-120	1.00	20	WG765188
1,2,4-Trichlorobenzene	mg/kg	0.285	0.269	86.0	39.8-100	5.78	20	WG765187
2,4,6-Trichlorophenol	mg/kg	0.341	0.328	102.	44.4-108	3.80	20	WG765187
2,4-Dichlorophenol	mg/kg	0.315	0.301	94.0	46.2-109	4.63	20	WG765187
2,4-Dimethylphenol	mg/kg	0.248	0.228	74.0	42.2-110	8.43	20	WG765187
2,4-Dinitrophenol	mg/kg	0.224	0.216	67.0	10-105	3.47	36.5	WG765187
2,4-Dinitrotoluene	mg/kg	0.343	0.319	103.	53-112	7.05	20	WG765187
2,6-Dinitrotoluene	mg/kg	0.343	0.317	103.	51.6-110	7.91	20	WG765187
2-Chloronaphthalene	mg/kg	0.316	0.307	95.0	47.1-105	2.83	20	WG765187
2-Chlorophenol	mg/kg	0.289	0.276	87.0	40.8-103	4.55	20	WG765187
2-Nitrophenol	mg/kg	0.336	0.324	101.	44.2-113	3.65	20.9	WG765187
3,3-Dichlorobenzidine	mg/kg	0.198	0.173	59.0	21-101	13.5	22	WG765187
4,6-Dinitro-2-methylphenol	mg/kg	0.328	0.301	99.0	23.1-119	8.76	23.7	WG765187
4-Bromophenyl-phenylether	mg/kg	0.327	0.302	98.0	51.4-110	7.93	20	WG765187
4-Chloro-3-methylphenol	mg/kg	0.327	0.313	98.0	51.1-113	4.19	20	WG765187
4-Chlorophenyl-phenylether	mg/kg	0.314	0.298	94.0	48.1-108	5.06	20	WG765187
4-Nitrophenol	mg/kg	0.311	0.294	94.0	34.8-109	5.82	20	WG765187
Acenaphthene	mg/kg	0.307	0.296	92.0	48.9-107	3.58	20	WG765187
Acenaphthylene	mg/kg	0.307	0.297	92.0	49.2-111	3.27	20	WG765187
Anthracene	mg/kg	0.318	0.295	96.0	52-112	7.39	20	WG765187
Benzidine	mg/kg	0.0367	0.0362	11.0	0-48	1.24	40	WG765187
Benzo(a)anthracene	mg/kg	0.319	0.293	96.0	52.3-106	8.71	20	WG765187
Benzo(a)pyrene	mg/kg	0.311	0.276	93.0	51.9-106	11.6	20	WG765187

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Quality Assurance Report
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Analyte	Units	Laboratory Control Sample Duplicate Result	Ref	%Rec	Limit	RPD	Limit	Batch
Benzo(b)fluoranthene	mg/kg	0.322	0.296	97.0	51.3-106	8.26	20	WG765187
Benzo(g,h,i)perylene	mg/kg	0.323	0.291	97.0	45.8-108	10.4	20	WG765187
Benzo(k)fluoranthene	mg/kg	0.295	0.251	89.0	52.9-107	16.3	20	WG765187
Benzylbutyl phthalate	mg/kg	0.374	0.349	112.	47.5-115	6.89	20	WG765187
Bis(2-chlorethoxy)methane	mg/kg	0.279	0.272	84.0	44.9-108	2.48	20	WG765187
Bis(2-chloroethyl)ether	mg/kg	0.247	0.247	74.0	32.5-112	0.300	26	WG765187
Bis(2-chloroisopropyl)ether	mg/kg	0.289	0.287	87.0	40.4-99	0.760	20.7	WG765187
Bis(2-ethylhexyl)phthalate	mg/kg	0.332	0.317	100.	48.1-116	4.73	20.5	WG765187
Chrysene	mg/kg	0.308	0.280	92.0	54.4-110	9.74	20	WG765187
Di-n-butyl phthalate	mg/kg	0.315	0.293	95.0	49.7-113	7.36	20	WG765187
Di-n-octyl phthalate	mg/kg	0.337	0.316	101.	49.6-112	6.48	22	WG765187
Dibenz(a,h)anthracene	mg/kg	0.321	0.290	96.0	45.7-111	9.93	20	WG765187
Diethyl phthalate	mg/kg	0.319	0.296	96.0	52-112	7.43	20	WG765187
Dimethyl phthalate	mg/kg	0.327	0.309	98.0	51.4-108	5.66	20	WG765187
Fluoranthene	mg/kg	0.319	0.295	96.0	53.7-110	7.81	20	WG765187
Fluorene	mg/kg	0.314	0.296	94.0	51.1-109	5.77	20	WG765187
Hexachloro-1,3-butadiene	mg/kg	0.296	0.287	89.0	41.5-112	3.02	20	WG765187
Hexachlorobenzene	mg/kg	0.328	0.304	98.0	43.2-104	7.76	20.1	WG765187
Hexachlorocyclopentadiene	mg/kg	0.235	0.231	71.0	13.5-123	1.97	20.7	WG765187
Hexachloroethane	mg/kg	0.278	0.270	84.0	36.2-103	3.16	22.7	WG765187
Indeno(1,2,3-cd)pyrene	mg/kg	0.319	0.290	96.0	47.5-109	9.38	20	WG765187
Isophorone	mg/kg	0.301	0.288	90.0	28.8-104	4.30	20	WG765187
n-Nitrosodi-n-propylamine	mg/kg	0.273	0.269	82.0	43.3-109	1.49	20	WG765187
n-Nitrosodimethylamine	mg/kg	0.219	0.218	66.0	18.1-122	0.210	23.5	WG765187
n-Nitrosodiphenylamine	mg/kg	0.293	0.274	88.0	48.8-107	6.72	20	WG765187
Naphthalene	mg/kg	0.275	0.267	82.0	43.4-103	2.98	20	WG765187
Nitrobenzene	mg/kg	0.297	0.292	89.0	40.7-109	1.85	21	WG765187
Pentachlorophenol	mg/kg	0.274	0.251	82.0	16.2-102	9.02	22.9	WG765187
Phenanthrene	mg/kg	0.313	0.287	94.0	51.6-107	8.89	20	WG765187
Phenol	mg/kg	0.290	0.280	87.0	41.5-106	3.62	20	WG765187
Pyrene	mg/kg	0.327	0.304	98.0	47.1-108	7.38	20	WG765187
2,4,6-Tribromophenol				94.90	21.6-142			WG765187
2-Fluorobiphenyl				85.70	34.9-129			WG765187
2-Fluorophenol				80.10	21.1-116			WG765187
Nitrobenzene-d5				80.30	21.9-129			WG765187
Phenol-d5				78.40	26.3-121			WG765187
p-Terphenyl-d14				84.30	21.5-128			WG765187

Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
1,1,1,2-Tetrachloroethane	mg/l	0.0232	0.0	.025	93.0	64-128	L743726-07	WG765192
1,1,1-Trichloroethane	mg/l	0.0218	0.0	.025	87.0	58.7-134	L743726-07	WG765192
1,1,2,2-Tetrachloroethane	mg/l	0.0235	0.0	.025	94.0	56-132	L743726-07	WG765192
1,1,2-Trichloroethane	mg/l	0.0229	0.0	.025	92.0	66.3-125	L743726-07	WG765192
1,1,2-Trichlorotrifluoroethane	mg/l	0.0251	0.0	.025	100.	54.8-154	L743726-07	WG765192
1,1-Dichloroethane	mg/l	0.0233	0.0	.025	93.0	58.5-132	L743726-07	WG765192
1,1-Dichloroethene	mg/l	0.0245	0.0	.025	98.0	51.1-140	L743726-07	WG765192
1,1-Dichloropropene	mg/l	0.0228	0.0	.025	91.0	57.3-136	L743726-07	WG765192
1,2,3-Trichlorobenzene	mg/l	0.0228	0.0	.025	91.0	59.1-138	L743726-07	WG765192
1,2,3-Trichloropropane	mg/l	0.0236	0.0	.025	94.0	61.4-128	L743726-07	WG765192
1,2,3-Trimethylbenzene	mg/l	0.0221	0.0	.025	88.0	61.3-122	L743726-07	WG765192
1,2,4-Trichlorobenzene	mg/l	0.0233	0.0	.025	93.0	63.6-143	L743726-07	WG765192
1,2,4-Trimethylbenzene	mg/l	0.0221	0.0	.025	88.0	57.4-137	L743726-07	WG765192
1,2-Dibromo-3-Chloropropane	mg/l	0.0220	0.0	.025	88.0	57.3-136	L743726-07	WG765192
1,2-Dibromoethane	mg/l	0.0229	0.0	.025	92.0	67.1-125	L743726-07	WG765192
1,2-Dichlorobenzene	mg/l	0.0225	0.0	.025	90.0	68.2-123	L743726-07	WG765192
1,2-Dichloroethane	mg/l	0.0212	0.0	.025	85.0	60-126	L743726-07	WG765192
1,2-Dichloropropane	mg/l	0.0243	0.0	.025	97.0	64.2-123	L743726-07	WG765192

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Quality Assurance Report
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Analyte	Units	MS Res	Matrix Spike Ref Res	TV	% Rec	Limit	Ref Samp	Batch
1,3,5-Trimethylbenzene	mg/l	0.0228	0.0	.025	91.0	63.6-132	L743726-07	WG765192
1,3-Dichlorobenzene	mg/l	0.0232	0.0	.025	93.0	63.1-131	L743726-07	WG765192
1,3-Dichloropropane	mg/l	0.0232	0.0	.025	93.0	67.9-121	L743726-07	WG765192
1,4-Dichlorobenzene	mg/l	0.0224	0.0	.025	90.0	68.6-123	L743726-07	WG765192
2,2-Dichloropropane	mg/l	0.0244	0.0	.025	98.0	50.5-144	L743726-07	WG765192
2-Butanone (MEK)	mg/l	0.124	0.0	.125	99.0	22.4-138	L743726-07	WG765192
2-Chloroethyl vinyl ether	mg/l	0.0747	0.0	.125	60.0	10-155	L743726-07	WG765192
2-Chlorotoluene	mg/l	0.0226	0.0	.025	90.0	63.6-128	L743726-07	WG765192
4-Chlorotoluene	mg/l	0.0221	0.0	.025	88.0	65.7-127	L743726-07	WG765192
4-Methyl-2-pentanone (MIBK)	mg/l	0.129	0.0	.125	100.	60.8-140	L743726-07	WG765192
Acetone	mg/l	0.227	0.00492	.125	180.*	10-130	L743726-07	WG765192
Acrolein	mg/l	0.160	0.0	.125	130.	10-200	L743726-07	WG765192
Acrylonitrile	mg/l	0.133	0.0	.125	110.	49.4-133	L743726-07	WG765192
Benzene	mg/l	0.0231	0.0	.025	93.0	54.3-133	L743726-07	WG765192
Bromobenzene	mg/l	0.0218	0.0	.025	87.0	63.9-124	L743726-07	WG765192
Bromodichloromethane	mg/l	0.0217	0.0	.025	87.0	63.9-121	L743726-07	WG765192
Bromoform	mg/l	0.0239	0.0	.025	96.0	59.5-134	L743726-07	WG765192
Bromomethane	mg/l	0.0287	0.0	.025	120.	41.7-155	L743726-07	WG765192
Carbon tetrachloride	mg/l	0.0216	0.0	.025	87.0	55.7-134	L743726-07	WG765192
Chlorobenzene	mg/l	0.0232	0.0	.025	93.0	67-125	L743726-07	WG765192
Chlorodibromomethane	mg/l	0.0225	0.0	.025	90.0	64.3-125	L743726-07	WG765192
Chloroethane	mg/l	0.0249	0.0	.025	100.	51.5-136	L743726-07	WG765192
Chloroform	mg/l	0.0217	0.0	.025	87.0	63-129	L743726-07	WG765192
Chloromethane	mg/l	0.0228	0.0	.025	91.0	42.4-135	L743726-07	WG765192
cis-1,2-Dichloroethene	mg/l	0.0225	0.0	.025	90.0	59.2-129	L743726-07	WG765192
cis-1,3-Dichloropropene	mg/l	0.0231	0.0	.025	93.0	66.4-125	L743726-07	WG765192
Di-isopropyl ether	mg/l	0.0238	0.0	.025	95.0	56.9-136	L743726-07	WG765192
Dibromomethane	mg/l	0.0236	0.0	.025	94.0	68.2-124	L743726-07	WG765192
Dichlorodifluoromethane	mg/l	0.0210	0.0	.025	84.0	40.6-144	L743726-07	WG765192
Ethylbenzene	mg/l	0.0225	0.0	.025	90.0	61.4-133	L743726-07	WG765192
Hexachloro-1,3-butadiene	mg/l	0.0214	0.0	.025	86.0	55.1-136	L743726-07	WG765192
Isopropylbenzene	mg/l	0.0227	0.0	.025	91.0	66.8-141	L743726-07	WG765192
Methyl tert-butyl ether	mg/l	0.0226	0.0	.025	91.0	57.7-134	L743726-07	WG765192
Methylene Chloride	mg/l	0.0217	0.0	.025	87.0	58.1-122	L743726-07	WG765192
n-Butylbenzene	mg/l	0.0226	0.0	.025	90.0	62.7-140	L743726-07	WG765192
n-Propylbenzene	mg/l	0.0229	0.0	.025	92.0	65.9-131	L743726-07	WG765192
Naphthalene	mg/l	0.0215	0.0	.025	86.0	58-135	L743726-07	WG765192
p-Isopropyltoluene	mg/l	0.0232	0.0	.025	93.0	63.2-139	L743726-07	WG765192
sec-Butylbenzene	mg/l	0.0227	0.0	.025	91.0	62.2-136	L743726-07	WG765192
Styrene	mg/l	0.0234	0.0	.025	93.0	66.8-133	L743726-07	WG765192
tert-Butylbenzene	mg/l	0.0225	0.0	.025	90.0	63.3-134	L743726-07	WG765192
Tetrachloroethene	mg/l	0.0241	0.0	.025	97.0	53-139	L743726-07	WG765192
Toluene	mg/l	0.0228	0.0	.025	91.0	61.4-130	L743726-07	WG765192
trans-1,2-Dichloroethene	mg/l	0.0222	0.0	.025	89.0	56.5-129	L743726-07	WG765192
trans-1,3-Dichloropropene	mg/l	0.0232	0.0	.025	93.0	64.1-128	L743726-07	WG765192
Trichloroethene	mg/l	0.0232	0.0	.025	93.0	44.1-149	L743726-07	WG765192
Trichlorofluoromethane	mg/l	0.0267	0.0	.025	110.	49.6-145	L743726-07	WG765192
Vinyl chloride	mg/l	0.0243	0.0	.025	97.0	47.8-137	L743726-07	WG765192
Xylenes, Total	mg/l	0.0685	0.0	.075	91.0	63.3-131	L743726-07	WG765192
4-Bromofluorobenzene					94.50	71-126		WG765192
Dibromofluoromethane					93.70	78.3-121		WG765192
Toluene-d8					104.0	88.5-111		WG765192
1,1,1,2-Tetrachloroethane	mg/kg	0.117	0.0	.025	94.0	64-128	L743937-03	WG765209
1,1,1-Trichloroethane	mg/kg	0.125	0.0	.025	100.	58.7-134	L743937-03	WG765209
1,1,2,2-Tetrachloroethane	mg/kg	0.117	0.0	.025	93.0	56-132	L743937-03	WG765209
1,1,2-Trichloroethane	mg/kg	0.120	0.0	.025	96.0	66.3-125	L743937-03	WG765209
1,1,2-Trichlorotrifluoroethane	mg/kg	0.145	0.0	.025	120.	54.8-154	L743937-03	WG765209

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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K.S. Ware and Associates, LLC
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Nashville, TN 37210

Quality Assurance Report
Level II

L743937

January 20, 2015

Analyte	Units	MS Res	Matrix Spike Ref Res	TV	% Rec	Limit	Ref Samp	Batch
1,1-Dichloroethane	mg/kg	0.134	0.0	.025	110.	58.5-132	L743937-03	WG765209
1,1-Dichloroethene	mg/kg	0.137	0.0	.025	110.	51.1-140	L743937-03	WG765209
1,1-Dichloropropene	mg/kg	0.118	0.0	.025	94.0	57.3-136	L743937-03	WG765209
1,2,3-Trichlorobenzene	mg/kg	0.0520	0.0	.025	42.0*	59.1-138	L743937-03	WG765209
1,2,3-Trichloropropane	mg/kg	0.120	0.0	.025	96.0	61.4-128	L743937-03	WG765209
1,2,3-Trimethylbenzene	mg/kg	0.0982	0.000322	.025	78.0	61.3-122	L743937-03	WG765209
1,2,4-Trichlorobenzene	mg/kg	0.0523	0.0	.025	42.0*	63.6-143	L743937-03	WG765209
1,2,4-Trimethylbenzene	mg/kg	0.0894	0.000427	.025	71.0	57.4-137	L743937-03	WG765209
1,2-Dibromo-3-Chloropropane	mg/kg	0.110	0.0	.025	88.0	57.3-136	L743937-03	WG765209
1,2-Dibromoethane	mg/kg	0.114	0.0	.025	91.0	67.1-125	L743937-03	WG765209
1,2-Dichlorobenzene	mg/kg	0.0832	0.0	.025	66.0*	68.2-123	L743937-03	WG765209
1,2-Dichloroethane	mg/kg	0.116	0.0	.025	92.0	60-126	L743937-03	WG765209
1,2-Dichloropropane	mg/kg	0.132	0.0	.025	100.	64.2-123	L743937-03	WG765209
1,3,5-Trimethylbenzene	mg/kg	0.0942	0.0	.025	75.0	63.6-132	L743937-03	WG765209
1,3-Dichlorobenzene	mg/kg	0.0775	0.0	.025	62.0*	63.1-131	L743937-03	WG765209
1,3-Dichloropropane	mg/kg	0.117	0.0	.025	93.0	67.9-121	L743937-03	WG765209
1,4-Dichlorobenzene	mg/kg	0.0798	0.0	.025	64.0*	68.6-123	L743937-03	WG765209
2,2-Dichloropropane	mg/kg	0.143	0.0	.025	120.	50.5-144	L743937-03	WG765209
2-Butanone (MEK)	mg/kg	0.729	0.0	.125	120.	22.4-138	L743937-03	WG765209
2-Chloroethyl vinyl ether	mg/kg	0.738	0.0	.125	120.	10-155	L743937-03	WG765209
2-Chlorotoluene	mg/kg	0.0943	0.0	.025	75.0	63.6-128	L743937-03	WG765209
4-Chlorotoluene	mg/kg	0.0828	0.0	.025	66.0	65.7-127	L743937-03	WG765209
4-Methyl-2-pentanone (MIBK)	mg/kg	0.713	0.0	.125	110.	60.8-140	L743937-03	WG765209
Acetone	mg/kg	0.703	0.00633	.125	110.	10-130	L743937-03	WG765209
Acrylonitrile	mg/kg	0.710	0.0	.125	110.	49.4-133	L743937-03	WG765209
Benzene	mg/kg	0.125	0.0	.025	100.	54.3-133	L743937-03	WG765209
Bromobenzene	mg/kg	0.0870	0.0	.025	70.0	63.9-124	L743937-03	WG765209
Bromodichloromethane	mg/kg	0.112	0.0	.025	89.0	63.9-121	L743937-03	WG765209
Bromoform	mg/kg	0.110	0.0	.025	88.0	59.5-134	L743937-03	WG765209
Bromomethane	mg/kg	0.176	0.0	.025	140.	41.7-155	L743937-03	WG765209
Carbon tetrachloride	mg/kg	0.121	0.0	.025	97.0	55.7-134	L743937-03	WG765209
Chlorobenzene	mg/kg	0.101	0.0	.025	81.0	67-125	L743937-03	WG765209
Chlorodibromomethane	mg/kg	0.109	0.0	.025	87.0	64.3-125	L743937-03	WG765209
Chloroethane	mg/kg	0.140	0.0	.025	110.	51.5-136	L743937-03	WG765209
Chloroform	mg/kg	0.119	0.000326	.025	95.0	63-129	L743937-03	WG765209
Chloromethane	mg/kg	0.139	0.0	.025	110.	42.4-135	L743937-03	WG765209
cis-1,2-Dichloroethene	mg/kg	0.120	0.0	.025	96.0	59.2-129	L743937-03	WG765209
cis-1,3-Dichloropropene	mg/kg	0.114	0.0	.025	91.0	66.4-125	L743937-03	WG765209
Di-isopropyl ether	mg/kg	0.138	0.0	.025	110.	56.9-136	L743937-03	WG765209
Dibromomethane	mg/kg	0.124	0.0	.025	99.0	68.2-124	L743937-03	WG765209
Dichlorodifluoromethane	mg/kg	0.120	0.0	.025	96.0	40.6-144	L743937-03	WG765209
Ethylbenzene	mg/kg	0.103	0.0	.025	82.0	61.4-133	L743937-03	WG765209
Hexachloro-1,3-butadiene	mg/kg	0.0592	0.0	.025	47.0*	55.1-136	L743937-03	WG765209
Isopropylbenzene	mg/kg	0.102	0.0	.025	81.0	66.8-141	L743937-03	WG765209
Methyl tert-butyl ether	mg/kg	0.134	0.0	.025	110.	57.7-134	L743937-03	WG765209
Methylene Chloride	mg/kg	0.124	0.000553	.025	99.0	58.1-122	L743937-03	WG765209
n-Butylbenzene	mg/kg	0.0770	0.000406	.025	61.0*	62.7-140	L743937-03	WG765209
n-Propylbenzene	mg/kg	0.0913	0.0	.025	73.0	10-176	L743937-03	WG765209
Naphthalene	mg/kg	0.0596	0.00109	.025	47.0*	58-135	L743937-03	WG765209
p-Isopropyltoluene	mg/kg	0.0860	0.0	.025	69.0	63.2-139	L743937-03	WG765209
sec-Butylbenzene	mg/kg	0.0884	0.0	.025	71.0	62.2-136	L743937-03	WG765209
Styrene	mg/kg	0.0944	0.0	.025	76.0	66.8-133	L743937-03	WG765209
tert-Butylbenzene	mg/kg	0.0979	0.0	.025	78.0	63.3-134	L743937-03	WG765209
Tetrachloroethene	mg/kg	0.106	0.0	.025	85.0	53-139	L743937-03	WG765209
Toluene	mg/kg	0.112	0.0	.025	90.0	61.4-130	L743937-03	WG765209
trans-1,2-Dichloroethene	mg/kg	0.118	0.0	.025	94.0	56.5-129	L743937-03	WG765209
trans-1,3-Dichloropropene	mg/kg	0.108	0.0	.025	86.0	64.1-128	L743937-03	WG765209
Trichloroethene	mg/kg	0.115	0.0	.025	92.0	44.1-149	L743937-03	WG765209
Trichlorofluoromethane	mg/kg	0.154	0.0	.025	120.	49.6-145	L743937-03	WG765209

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Mr. John Leffew
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Quality Assurance Report
Level II

L743937

January 20, 2015

Analyte	Units	MS Res	Matrix Spike Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Vinyl chloride	mg/kg	0.141	0.0	.025	110.	47.8-137	L743937-03	WG765209
Xylenes, Total	mg/kg	0.311	0.0	.075	83.0	63.3-131	L743937-03	WG765209
4-Bromofluorobenzene					90.60	71-126		WG765209
Dibromofluoromethane					98.70	78.3-121		WG765209
Toluene-d8					104.0	88.5-111		WG765209
Arsenic	mg/kg	102.	4.48	100	98.0	75-125	L743935-01	WG765270
Barium	mg/kg	160.	61.0	100	99.0	75-125	L743935-01	WG765270
Cadmium	mg/kg	96.9	0.0979	100	97.0	75-125	L743935-01	WG765270
Chromium	mg/kg	107.	10.4	100	97.0	75-125	L743935-01	WG765270
Lead	mg/kg	130.	37.6	100	92.0	75-125	L743935-01	WG765270
Selenium	mg/kg	93.9	0.695	100	93.0	75-125	L743935-01	WG765270
Silver	mg/kg	96.5	-0.0546	100	96.0	75-125	L743935-01	WG765270
1,1,1,2-Tetrachloroethane	mg/kg	0.109	0.0	.025	87.0	64-128	L743937-14	WG765391
1,1,1-Trichloroethane	mg/kg	0.108	0.0	.025	86.0	58.7-134	L743937-14	WG765391
1,1,2,2-Tetrachloroethane	mg/kg	0.104	0.0	.025	83.0	56-132	L743937-14	WG765391
1,1,2-Trichloroethane	mg/kg	0.103	0.0	.025	82.0	66.3-125	L743937-14	WG765391
1,1,2-Trichlorotrifluoroethane	mg/kg	0.0984	0.0	.025	79.0	54.8-154	L743937-14	WG765391
1,1-Dichloroethane	mg/kg	0.112	0.0	.025	90.0	58.5-132	L743937-14	WG765391
1,1-Dichloroethene	mg/kg	0.0925	0.0	.025	74.0	51.1-140	L743937-14	WG765391
1,1-Dichloropropene	mg/kg	0.110	0.0	.025	88.0	57.3-136	L743937-14	WG765391
1,2,3-Trichlorobenzene	mg/kg	0.0812	0.000488	.025	64.0	59.1-138	L743937-14	WG765391
1,2,3-Trichloropropane	mg/kg	0.101	0.0	.025	81.0	61.4-128	L743937-14	WG765391
1,2,3-Trimethylbenzene	mg/kg	0.105	0.0	.025	84.0	61.3-122	L743937-14	WG765391
1,2,4-Trichlorobenzene	mg/kg	0.0857	0.0	.025	68.0	63.6-143	L743937-14	WG765391
1,2,4-Trimethylbenzene	mg/kg	0.0988	0.000320	.025	79.0	57.4-137	L743937-14	WG765391
1,2-Dibromo-3-Chloropropane	mg/kg	0.0906	0.0	.025	72.0	57.3-136	L743937-14	WG765391
1,2-Dibromoethane	mg/kg	0.0971	0.0	.025	78.0	67.1-125	L743937-14	WG765391
1,2-Dichlorobenzene	mg/kg	0.102	0.0	.025	81.0	68.2-123	L743937-14	WG765391
1,2-Dichloroethane	mg/kg	0.104	0.0	.025	83.0	60-126	L743937-14	WG765391
1,2-Dichloropropane	mg/kg	0.115	0.0	.025	92.0	64.2-123	L743937-14	WG765391
1,3,5-Trimethylbenzene	mg/kg	0.101	0.0	.025	81.0	63.6-132	L743937-14	WG765391
1,3-Dichlorobenzene	mg/kg	0.0921	0.0	.025	74.0	63.1-131	L743937-14	WG765391
1,3-Dichloropropane	mg/kg	0.106	0.0	.025	85.0	67.9-121	L743937-14	WG765391
1,4-Dichlorobenzene	mg/kg	0.0999	0.0	.025	80.0	68.6-123	L743937-14	WG765391
2,2-Dichloropropane	mg/kg	0.0993	0.0	.025	79.0	50.5-144	L743937-14	WG765391
2-Butanone (MEK)	mg/kg	0.589	0.0	.125	94.0	22.4-138	L743937-14	WG765391
2-Chloroethyl vinyl ether	mg/kg	0.413	0.0	.125	66.0	10-155	L743937-14	WG765391
2-Chlorotoluene	mg/kg	0.0990	0.0	.025	79.0	63.6-128	L743937-14	WG765391
4-Chlorotoluene	mg/kg	0.0972	0.0	.025	78.0	65.7-127	L743937-14	WG765391
4-Methyl-2-pentanone (MIBK)	mg/kg	0.618	0.0	.125	99.0	60.8-140	L743937-14	WG765391
Acetone	mg/kg	0.460	0.00897	.125	72.0	10-130	L743937-14	WG765391
Acrylonitrile	mg/kg	0.579	0.0	.125	93.0	49.4-133	L743937-14	WG765391
Benzene	mg/kg	0.109	0.0	.025	87.0	54.3-133	L743937-14	WG765391
Bromobenzene	mg/kg	0.103	0.0	.025	82.0	63.9-124	L743937-14	WG765391
Bromodichloromethane	mg/kg	0.109	0.0	.025	87.0	63.9-121	L743937-14	WG765391
Bromoform	mg/kg	0.0959	0.0	.025	77.0	59.5-134	L743937-14	WG765391
Bromomethane	mg/kg	0.130	0.0	.025	100.	41.7-155	L743937-14	WG765391
Carbon tetrachloride	mg/kg	0.104	0.0	.025	83.0	55.7-134	L743937-14	WG765391
Chlorobenzene	mg/kg	0.106	0.0	.025	85.0	67-125	L743937-14	WG765391
Chlorodibromomethane	mg/kg	0.0995	0.0	.025	80.0	64.3-125	L743937-14	WG765391
Chloroethane	mg/kg	0.106	0.0	.025	84.0	51.5-136	L743937-14	WG765391
Chloroform	mg/kg	0.109	0.000353	.025	87.0	63-129	L743937-14	WG765391
Chloromethane	mg/kg	0.108	0.0	.025	86.0	42.4-135	L743937-14	WG765391
cis-1,2-Dichloroethene	mg/kg	0.105	0.0	.025	84.0	59.2-129	L743937-14	WG765391
cis-1,3-Dichloropropene	mg/kg	0.111	0.0	.025	88.0	66.4-125	L743937-14	WG765391

* Performance of this Analyte is outside of established criteria.
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12065 Lebanon Rd.
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Tax I.D. 62-0814289

Est. 1970

K.S. Ware and Associates, LLC
Mr. John Leffew
54 Lindsley Ave.

Nashville, TN 37210

Quality Assurance Report
Level II

L743937

January 20, 2015

Analyte	Units	MS Res	Matrix Spike Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Di-isopropyl ether	mg/kg	0.120	0.0	.025	96.0	56.9-136	L743937-14	WG765391
Dibromomethane	mg/kg	0.102	0.0	.025	82.0	68.2-124	L743937-14	WG765391
Dichlorodifluoromethane	mg/kg	0.105	0.0	.025	84.0	40.6-144	L743937-14	WG765391
Ethylbenzene	mg/kg	0.102	0.0	.025	82.0	61.4-133	L743937-14	WG765391
Hexachloro-1,3-butadiene	mg/kg	0.0831	0.0	.025	66.0	55.1-136	L743937-14	WG765391
Isopropylbenzene	mg/kg	0.100	0.0	.025	80.0	66.8-141	L743937-14	WG765391
Methyl tert-butyl ether	mg/kg	0.115	0.0	.025	92.0	57.7-134	L743937-14	WG765391
Methylene Chloride	mg/kg	0.0970	0.000607	.025	77.0	58.1-122	L743937-14	WG765391
n-Butylbenzene	mg/kg	0.102	0.0	.025	82.0	62.7-140	L743937-14	WG765391
n-Propylbenzene	mg/kg	0.0988	0.0	.025	79.0	10-176	L743937-14	WG765391
Naphthalene	mg/kg	0.0851	0.000724	.025	68.0	58-135	L743937-14	WG765391
p-Isopropyltoluene	mg/kg	0.0938	0.0	.025	75.0	63.2-139	L743937-14	WG765391
sec-Butylbenzene	mg/kg	0.0952	0.0	.025	76.0	62.2-136	L743937-14	WG765391
Styrene	mg/kg	0.107	0.0	.025	86.0	66.8-133	L743937-14	WG765391
tert-Butylbenzene	mg/kg	0.0960	0.0	.025	77.0	63.3-134	L743937-14	WG765391
Tetrachloroethene	mg/kg	0.0991	0.0	.025	79.0	53-139	L743937-14	WG765391
Toluene	mg/kg	0.109	0.0	.025	87.0	61.4-130	L743937-14	WG765391
trans-1,2-Dichloroethene	mg/kg	0.0973	0.0	.025	78.0	56.5-129	L743937-14	WG765391
trans-1,3-Dichloropropene	mg/kg	0.111	0.0	.025	88.0	64.1-128	L743937-14	WG765391
Trichloroethene	mg/kg	0.105	0.0	.025	84.0	44.1-149	L743937-14	WG765391
Trichlorofluoromethane	mg/kg	0.105	0.0	.025	84.0	49.6-145	L743937-14	WG765391
Vinyl chloride	mg/kg	0.107	0.0	.025	86.0	47.8-137	L743937-14	WG765391
Xylenes, Total	mg/kg	0.308	0.0	.075	82.0	63.3-131	L743937-14	WG765391
4-Bromofluorobenzene					87.40	71-126		WG765391
Dibromofluoromethane					98.20	78.3-121		WG765391
Toluene-d8					98.40	88.5-111		WG765391
Mercury	mg/kg	0.613	0.122	.458	110.	75-125	L743935-01	WG765188
1,2,4-Trichlorobenzene	mg/kg	0.314	0.0	.0333	94.0	36.5-114	L743802-06	WG765187
2,4,6-Trichlorophenol	mg/kg	0.258	0.0	.0333	78.0	33.8-133	L743802-06	WG765187
2,4-Dichlorophenol	mg/kg	0.253	0.0	.0333	76.0	34.8-134	L743802-06	WG765187
2,4-Dimethylphenol	mg/kg	0.100	0.0	.0333	30.0	12.3-149	L743802-06	WG765187
2,4-Dinitrophenol	mg/kg	0.0	0.0	.0333	0.0*	10-121	L743802-06	WG765187
2,4-Dinitrotoluene	mg/kg	0.275	0.0	.0333	83.0	27.8-147	L743802-06	WG765187
2,6-Dinitrotoluene	mg/kg	0.315	0.0	.0333	94.0	36.5-137	L743802-06	WG765187
2-Chloronaphthalene	mg/kg	0.323	0.0	.0333	97.0	37.5-123	L743802-06	WG765187
2-Chlorophenol	mg/kg	0.237	0.0	.0333	71.0	33.2-121	L743802-06	WG765187
2-Nitrophenol	mg/kg	0.321	0.0	.0333	96.0	29.5-144	L743802-06	WG765187
3,3-Dichlorobenzidine	mg/kg	0.0825	0.0	.0333	25.0	10-129	L743802-06	WG765187
4,6-Dinitro-2-methylphenol	mg/kg	0.472	0.0	.0333	140.	10-144	L743802-06	WG765187
4-Bromophenyl-phenylether	mg/kg	0.323	0.0	.0333	97.0	39-130	L743802-06	WG765187
4-Chloro-3-methylphenol	mg/kg	0.243	0.0	.0333	73.0	27-154	L743802-06	WG765187
4-Chlorophenyl-phenylether	mg/kg	0.320	0.0	.0333	96.0	37.9-123	L743802-06	WG765187
4-Nitrophenol	mg/kg	0.141	0.0	.0333	42.0	20-133	L743802-06	WG765187
Acenaphthene	mg/kg	0.344	0.0	.0333	100.	32.2-134	L743802-06	WG765187
Acenaphthylene	mg/kg	0.392	0.0	.0333	120.	38.7-129	L743802-06	WG765187
Anthracene	mg/kg	0.368	0.0658	.0333	91.0	32.3-137	L743802-06	WG765187
Benzidine	mg/kg	0.360	0.0	.0333	110.*	0-49.9	L743802-06	WG765187
Benzo(a)anthracene	mg/kg	0.405	0.151	.0333	76.0	33.3-124	L743802-06	WG765187
Benzo(a)pyrene	mg/kg	0.375	0.170	.0333	62.0	28.2-128	L743802-06	WG765187
Benzo(b)fluoranthene	mg/kg	0.403	0.215	.0333	56.0	23.3-133	L743802-06	WG765187
Benzo(g,h,i)perylene	mg/kg	0.302	0.144	.0333	47.0	10-127	L743802-06	WG765187
Benzo(k)fluoranthene	mg/kg	0.308	0.0612	.0333	74.0	31-129	L743802-06	WG765187
Benzylbutyl phthalate	mg/kg	0.366	0.0	.0333	110.	33.4-128	L743802-06	WG765187
Bis(2-chlorethoxy)methane	mg/kg	0.310	0.0	.0333	93.0	35-132	L743802-06	WG765187
Bis(2-chloroethyl)ether	mg/kg	0.280	0.0	.0333	84.0	28.8-128	L743802-06	WG765187

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Quality Assurance Report
Level II

L743937

January 20, 2015

Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Bis(2-chloroisopropyl)ether	mg/kg	0.339	0.0	.0333	100.	31.8-118	L743802-06	WG765187
Bis(2-ethylhexyl)phthalate	mg/kg	0.343	0.0483	.0333	88.0	21.8-141	L743802-06	WG765187
Chrysene	mg/kg	0.395	0.173	.0333	66.0	36.3-129	L743802-06	WG765187
Di-n-butyl phthalate	mg/kg	0.301	0.0	.0333	90.0	32.2-133	L743802-06	WG765187
Di-n-octyl phthalate	mg/kg	0.309	0.0	.0333	93.0	28.5-128	L743802-06	WG765187
Dibenz(a,h)anthracene	mg/kg	0.230	0.0	.0333	69.0	10.5-128	L743802-06	WG765187
Diethyl phthalate	mg/kg	0.331	0.0	.0333	99.0	39.4-136	L743802-06	WG765187
Dimethyl phthalate	mg/kg	0.329	0.0	.0333	99.0	35.8-137	L743802-06	WG765187
Fluoranthene	mg/kg	0.534	0.249	.0333	86.0	27.9-138	L743802-06	WG765187
Fluorene	mg/kg	0.340	0.0	.0333	100.	34-133	L743802-06	WG765187
Hexachloro-1,3-butadiene	mg/kg	0.328	0.0	.0333	99.0	36.5-125	L743802-06	WG765187
Hexachlorobenzene	mg/kg	0.301	0.0	.0333	90.0	34.4-116	L743802-06	WG765187
Hexachlorocyclopentadiene	mg/kg	0.0733	0.0	.0333	22.0	10-124	L743802-06	WG765187
Hexachloroethane	mg/kg	0.320	0.0	.0333	96.0	11.3-143	L743802-06	WG765187
Indeno(1,2,3-cd)pyrene	mg/kg	0.293	0.120	.0333	52.0	10-128	L743802-06	WG765187
Isophorone	mg/kg	0.314	0.0	.0333	94.0	25.7-116	L743802-06	WG765187
n-Nitrosodi-n-propylamine	mg/kg	0.286	0.0	.0333	86.0	33-134	L743802-06	WG765187
n-Nitrosodimethylamine	mg/kg	0.243	0.0	.0333	73.0	19.2-127	L743802-06	WG765187
n-Nitrosodiphenylamine	mg/kg	0.203	0.0	.0333	61.0	26.8-133	L743802-06	WG765187
Naphthalene	mg/kg	0.363	0.0915	.0333	82.0	36.4-121	L743802-06	WG765187
Nitrobenzene	mg/kg	0.309	0.0	.0333	93.0	30.9-134	L743802-06	WG765187
Pentachlorophenol	mg/kg	0.404	0.0	.0333	120.	10-139	L743802-06	WG765187
Phenanthrene	mg/kg	0.463	0.182	.0333	84.0	30.8-137	L743802-06	WG765187
Phenol	mg/kg	0.209	0.0	.0333	63.0	25.1-130	L743802-06	WG765187
Pyrene	mg/kg	0.535	0.259	.0333	83.0	24.1-130	L743802-06	WG765187
2,4,6-Tribromophenol					74.50	21.6-142		WG765187
2-Fluorobiphenyl					90.30	34.9-129		WG765187
2-Fluorophenol					66.50	21.1-116		WG765187
Nitrobenzene-d5					85.10	21.9-129		WG765187
Phenol-d5					61.80	26.3-121		WG765187
p-Terphenyl-d14					66.30	21.5-128		WG765187

Analyte	Units	Matrix Spike Duplicate MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
1,1,1,2-Tetrachloroethane	mg/l	0.0269	0.0232	108.	64-128	14.7	20	L743726-07	WG765192
1,1,1-Trichloroethane	mg/l	0.0246	0.0218	98.6	58.7-134	12.4	20	L743726-07	WG765192
1,1,2,2-Tetrachloroethane	mg/l	0.0280	0.0235	112.	56-132	17.8	22.2	L743726-07	WG765192
1,1,2-Trichloroethane	mg/l	0.0273	0.0229	109.	66.3-125	17.6	20	L743726-07	WG765192
1,1,2-Trichlorotrifluoroethane	mg/l	0.0287	0.0251	115.	54.8-154	13.2	22.5	L743726-07	WG765192
1,1-Dichloroethane	mg/l	0.0273	0.0233	109.	58.5-132	15.6	20	L743726-07	WG765192
1,1-Dichloroethene	mg/l	0.0280	0.0245	112.	51.1-140	13.5	20.2	L743726-07	WG765192
1,1-Dichloropropene	mg/l	0.0263	0.0228	105.	57.3-136	14.2	20	L743726-07	WG765192
1,2,3-Trichlorobenzene	mg/l	0.0265	0.0228	106.	59.1-138	15.1	23.7	L743726-07	WG765192
1,2,3-Trichloropropane	mg/l	0.0276	0.0236	110.	61.4-128	15.6	22.4	L743726-07	WG765192
1,2,3-Trimethylbenzene	mg/l	0.0255	0.0221	102.	61.3-122	14.3	20	L743726-07	WG765192
1,2,4-Trichlorobenzene	mg/l	0.0268	0.0233	107.	63.6-143	13.9	21.9	L743726-07	WG765192
1,2,4-Trimethylbenzene	mg/l	0.0256	0.0221	102.	57.4-137	14.4	20	L743726-07	WG765192
1,2-Dibromo-3-Chloropropane	mg/l	0.0262	0.0220	105.	57.3-136	17.4	27	L743726-07	WG765192
1,2-Dibromoethane	mg/l	0.0273	0.0229	109.	67.1-125	17.2	20	L743726-07	WG765192
1,2-Dichlorobenzene	mg/l	0.0258	0.0225	103.	68.2-123	13.7	20	L743726-07	WG765192
1,2-Dichloroethane	mg/l	0.0247	0.0212	98.8	60-126	15.3	20	L743726-07	WG765192
1,2-Dichloropropane	mg/l	0.0285	0.0243	114.	64.2-123	15.9	20	L743726-07	WG765192
1,3,5-Trimethylbenzene	mg/l	0.0262	0.0228	105.	63.6-132	13.8	20.5	L743726-07	WG765192
1,3-Dichlorobenzene	mg/l	0.0274	0.0232	109.	63.1-131	16.3	20	L743726-07	WG765192
1,3-Dichloropropane	mg/l	0.0270	0.0232	108.	67.9-121	15.2	20	L743726-07	WG765192
1,4-Dichlorobenzene	mg/l	0.0260	0.0224	104.	68.6-123	14.6	20	L743726-07	WG765192
2,2-Dichloropropane	mg/l	0.0270	0.0244	108.	50.5-144	10.3	21.9	L743726-07	WG765192
2-Butanone (MEK)	mg/l	0.144	0.124	115.	22.4-138	14.9	27	L743726-07	WG765192

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Quality Assurance Report
Level II

L743937

January 20, 2015

Analyte	Units	MSD	Matrix Spike Duplicate Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
2-Chloroethyl vinyl ether	mg/l	0.0192	0.0747	15.3	10-155	118.*	20	L743726-07	WG765192
2-Chlorotoluene	mg/l	0.0267	0.0226	107.	63.6-128	16.7	20	L743726-07	WG765192
4-Chlorotoluene	mg/l	0.0256	0.0221	102.	65.7-127	14.5	20	L743726-07	WG765192
4-Methyl-2-pentanone (MIBK)	mg/l	0.149	0.129	119.	60.8-140	13.9	25.1	L743726-07	WG765192
Acetone	mg/l	0.207	0.227	162.*	10-130	9.07	27.9	L743726-07	WG765192
Acrolein	mg/l	0.185	0.160	148.	10-200	14.8	27.7	L743726-07	WG765192
Acrylonitrile	mg/l	0.156	0.133	124.	49.4-133	15.9	25.3	L743726-07	WG765192
Benzene	mg/l	0.0265	0.0231	106.	54.3-133	13.6	20	L743726-07	WG765192
Bromobenzene	mg/l	0.0256	0.0218	102.	63.9-124	16.1	20	L743726-07	WG765192
Bromodichloromethane	mg/l	0.0251	0.0217	100.	63.9-121	14.7	20	L743726-07	WG765192
Bromoform	mg/l	0.0280	0.0239	112.	59.5-134	15.9	20.5	L743726-07	WG765192
Bromomethane	mg/l	0.0321	0.0287	128.	41.7-155	11.2	21.9	L743726-07	WG765192
Carbon tetrachloride	mg/l	0.0250	0.0216	100.	55.7-134	14.5	20	L743726-07	WG765192
Chlorobenzene	mg/l	0.0273	0.0232	109.	67-125	16.2	20	L743726-07	WG765192
Chlorodibromomethane	mg/l	0.0266	0.0225	106.	64.3-125	16.5	20.8	L743726-07	WG765192
Chloroethane	mg/l	0.0282	0.0249	113.	51.5-136	12.6	40	L743726-07	WG765192
Chloroform	mg/l	0.0245	0.0217	98.0	63-129	12.1	20	L743726-07	WG765192
Chloromethane	mg/l	0.0254	0.0228	102.	42.4-135	10.7	20	L743726-07	WG765192
cis-1,2-Dichloroethene	mg/l	0.0260	0.0225	104.	59.2-129	14.8	20	L743726-07	WG765192
cis-1,3-Dichloropropene	mg/l	0.0269	0.0231	107.	66.4-125	14.9	20	L743726-07	WG765192
Di-isopropyl ether	mg/l	0.0278	0.0238	111.	56.9-136	15.6	20	L743726-07	WG765192
Dibromomethane	mg/l	0.0270	0.0236	108.	68.2-124	13.6	20	L743726-07	WG765192
Dichlorodifluoromethane	mg/l	0.0243	0.0210	97.3	40.6-144	14.8	20.2	L743726-07	WG765192
Ethylbenzene	mg/l	0.0269	0.0225	108.	61.4-133	17.7	20	L743726-07	WG765192
Hexachloro-1,3-butadiene	mg/l	0.0254	0.0214	102.	55.1-136	17.0	23.6	L743726-07	WG765192
Isopropylbenzene	mg/l	0.0262	0.0227	105.	66.8-141	14.2	20	L743726-07	WG765192
Methyl tert-butyl ether	mg/l	0.0263	0.0226	105.	57.7-134	15.1	20	L743726-07	WG765192
Methylene Chloride	mg/l	0.0255	0.0217	102.	58.1-122	15.8	20	L743726-07	WG765192
n-Butylbenzene	mg/l	0.0258	0.0226	103.	62.7-140	13.4	20.3	L743726-07	WG765192
n-Propylbenzene	mg/l	0.0263	0.0229	105.	65.9-131	13.7	20	L743726-07	WG765192
Naphthalene	mg/l	0.0258	0.0215	103.	58-135	18.3	25.5	L743726-07	WG765192
p-Isopropyltoluene	mg/l	0.0268	0.0232	107.	63.2-139	14.4	20.4	L743726-07	WG765192
sec-Butylbenzene	mg/l	0.0262	0.0227	105.	62.2-136	14.3	20.3	L743726-07	WG765192
Styrene	mg/l	0.0276	0.0234	110.	66.8-133	16.8	20	L743726-07	WG765192
tert-Butylbenzene	mg/l	0.0260	0.0225	104.	63.3-134	14.2	21	L743726-07	WG765192
Tetrachloroethene	mg/l	0.0274	0.0241	110.	53-139	12.7	20	L743726-07	WG765192
Toluene	mg/l	0.0261	0.0228	104.	61.4-130	13.7	20	L743726-07	WG765192
trans-1,2-Dichloroethene	mg/l	0.0253	0.0222	101.	56.5-129	13.0	20	L743726-07	WG765192
trans-1,3-Dichloropropene	mg/l	0.0280	0.0232	112.	64.1-128	18.4	20	L743726-07	WG765192
Trichloroethene	mg/l	0.0263	0.0232	105.	44.1-149	12.4	20	L743726-07	WG765192
Trichlorofluoromethane	mg/l	0.0300	0.0267	120.	49.6-145	11.5	21.2	L743726-07	WG765192
Vinyl chloride	mg/l	0.0277	0.0243	111.	47.8-137	13.0	20	L743726-07	WG765192
Xylenes, Total	mg/l	0.0799	0.0685	106.	63.3-131	15.5	20	L743726-07	WG765192
4-Bromofluorobenzene				95.60	71-126				WG765192
Dibromofluoromethane				93.00	78.3-121				WG765192
Toluene-d8				103.0	88.5-111				WG765192
1,1,1,2-Tetrachloroethane	mg/kg	0.0989	0.117	79.1	64-128	17.1	20	L743937-03	WG765209
1,1,1-Trichloroethane	mg/kg	0.108	0.125	86.2	58.7-134	14.5	20	L743937-03	WG765209
1,1,2,2-Tetrachloroethane	mg/kg	0.0985	0.117	78.8	56-132	16.9	22.2	L743937-03	WG765209
1,1,2-Trichloroethane	mg/kg	0.103	0.120	82.6	66.3-125	14.8	20	L743937-03	WG765209
1,1,2-Trichlorotrifluoroethane	mg/kg	0.120	0.145	96.4	54.8-154	18.2	22.5	L743937-03	WG765209
1,1-Dichloroethane	mg/kg	0.117	0.134	93.4	58.5-132	13.7	20	L743937-03	WG765209
1,1-Dichloroethene	mg/kg	0.116	0.137	92.9	51.1-140	16.6	20.2	L743937-03	WG765209
1,1-Dichloropropene	mg/kg	0.0968	0.118	77.4	57.3-136	19.4	20	L743937-03	WG765209
1,2,3-Trichlorobenzene	mg/kg	0.0367	0.0520	29.3*	59.1-138	34.5*	23.7	L743937-03	WG765209
1,2,3-Trichloropropane	mg/kg	0.100	0.120	80.0	61.4-128	18.0	22.4	L743937-03	WG765209
1,2,3-Trimethylbenzene	mg/kg	0.0794	0.0982	63.3	61.3-122	21.2*	20	L743937-03	WG765209

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K.S. Ware and Associates, LLC
Mr. John Leffew
54 Lindsley Ave.

Nashville, TN 37210

Quality Assurance Report
Level II

L743937

January 20, 2015

Analyte	Units	MSD	Matrix Spike Duplicate Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
1,2,4-Trichlorobenzene	mg/kg	0.0352	0.0523	28.2*	63.6-143	38.9*	21.9	L743937-03	WG765209
1,2,4-Trimethylbenzene	mg/kg	0.0687	0.0894	54.6*	57.4-137	26.3*	20	L743937-03	WG765209
1,2-Dibromo-3-Chloropropane	mg/kg	0.0827	0.110	66.2	57.3-136	28.0*	27	L743937-03	WG765209
1,2-Dibromoethane	mg/kg	0.0937	0.114	75.0	67.1-125	19.7	20	L743937-03	WG765209
1,2-Dichlorobenzene	mg/kg	0.0621	0.0832	49.7*	68.2-123	29.0*	20	L743937-03	WG765209
1,2-Dichloroethane	mg/kg	0.101	0.116	80.7	60-126	13.6	20	L743937-03	WG765209
1,2-Dichloropropane	mg/kg	0.117	0.132	93.4	64.2-123	12.0	20	L743937-03	WG765209
1,3,5-Trimethylbenzene	mg/kg	0.0735	0.0942	58.8*	63.6-132	24.7*	20.5	L743937-03	WG765209
1,3-Dichlorobenzene	mg/kg	0.0562	0.0775	45.0*	63.1-131	31.9*	20	L743937-03	WG765209
1,3-Dichloropropane	mg/kg	0.0996	0.117	79.6	67.9-121	15.7	20	L743937-03	WG765209
1,4-Dichlorobenzene	mg/kg	0.0585	0.0798	46.8*	68.6-123	30.8*	20	L743937-03	WG765209
2,2-Dichloropropane	mg/kg	0.122	0.143	97.4	50.5-144	16.3	21.9	L743937-03	WG765209
2-Butanone (MEK)	mg/kg	0.642	0.729	103.	22.4-138	12.7	27	L743937-03	WG765209
2-Chloroethyl vinyl ether	mg/kg	0.626	0.738	100.	10-155	16.4	40	L743937-03	WG765209
2-Chlorotoluene	mg/kg	0.0700	0.0943	56.0*	63.6-128	29.6*	20	L743937-03	WG765209
4-Chlorotoluene	mg/kg	0.0618	0.0828	49.4*	65.7-127	29.1*	20	L743937-03	WG765209
4-Methyl-2-pentanone (MIBK)	mg/kg	0.631	0.713	101.	60.8-140	12.2	25.1	L743937-03	WG765209
Acetone	mg/kg	0.617	0.703	97.7	10-130	13.0	27.9	L743937-03	WG765209
Acrylonitrile	mg/kg	0.585	0.710	93.6	49.4-133	19.3	25.3	L743937-03	WG765209
Benzene	mg/kg	0.108	0.125	86.4	54.3-133	14.4	20	L743937-03	WG765209
Bromobenzene	mg/kg	0.0665	0.0870	53.2*	63.9-124	26.7*	20	L743937-03	WG765209
Bromodichloromethane	mg/kg	0.0972	0.112	77.8	63.9-121	13.9	20	L743937-03	WG765209
Bromoform	mg/kg	0.0913	0.110	73.0	59.5-134	18.2	20.8	L743937-03	WG765209
Bromomethane	mg/kg	0.150	0.176	120.	41.7-155	16.1	20.5	L743937-03	WG765209
Carbon tetrachloride	mg/kg	0.104	0.121	82.8	55.7-134	16.0	20.3	L743937-03	WG765209
Chlorobenzene	mg/kg	0.0805	0.101	64.4*	67-125	22.6*	20	L743937-03	WG765209
Chlorodibromomethane	mg/kg	0.0937	0.109	75.0	64.3-125	15.1	20	L743937-03	WG765209
Chloroethane	mg/kg	0.121	0.140	97.2	51.5-136	13.9	20.8	L743937-03	WG765209
Chloroform	mg/kg	0.104	0.119	83.3	63-129	13.1	20	L743937-03	WG765209
Chloromethane	mg/kg	0.123	0.139	98.2	42.4-135	12.6	20	L743937-03	WG765209
cis-1,2-Dichloroethene	mg/kg	0.102	0.120	81.5	59.2-129	16.4	20	L743937-03	WG765209
cis-1,3-Dichloropropene	mg/kg	0.0964	0.114	77.2	66.4-125	16.7	20	L743937-03	WG765209
Di-isopropyl ether	mg/kg	0.123	0.138	98.8	56.9-136	11.0	20	L743937-03	WG765209
Dibromomethane	mg/kg	0.107	0.124	86.0	68.2-124	14.3	20	L743937-03	WG765209
Dichlorodifluoromethane	mg/kg	0.106	0.120	84.7	40.6-144	12.5	20.2	L743937-03	WG765209
Ethylbenzene	mg/kg	0.0852	0.103	68.2	61.4-133	18.9	20	L743937-03	WG765209
Hexachloro-1,3-butadiene	mg/kg	0.0417	0.0592	33.3*	55.1-136	34.7*	23.6	L743937-03	WG765209
Isopropylbenzene	mg/kg	0.0803	0.102	64.3*	66.8-141	23.4*	20	L743937-03	WG765209
Methyl tert-butyl ether	mg/kg	0.119	0.134	95.4	57.7-134	11.3	20	L743937-03	WG765209
Methylene Chloride	mg/kg	0.108	0.124	85.9	58.1-122	13.8	20	L743937-03	WG765209
n-Butylbenzene	mg/kg	0.0538	0.0770	42.8*	62.7-140	35.4*	20	L743937-03	WG765209
n-Propylbenzene	mg/kg	0.0688	0.0913	55.0	10-176	28.2*	26.6	L743937-03	WG765209
Naphthalene	mg/kg	0.0443	0.0596	34.5*	58-135	29.4*	25.5	L743937-03	WG765209
p-Isopropyltoluene	mg/kg	0.0643	0.0860	51.4*	63.2-139	28.8*	20.4	L743937-03	WG765209
sec-Butylbenzene	mg/kg	0.0658	0.0884	52.6*	62.2-136	29.4*	20.3	L743937-03	WG765209
Styrene	mg/kg	0.0725	0.0944	58.0*	66.8-133	26.1*	20	L743937-03	WG765209
tert-Butylbenzene	mg/kg	0.0760	0.0979	60.8*	63.3-134	25.1*	20.3	L743937-03	WG765209
Tetrachloroethene	mg/kg	0.0859	0.106	68.7	53-139	21.1*	20	L743937-03	WG765209
Toluene	mg/kg	0.0950	0.112	76.0	61.4-130	16.7	20	L743937-03	WG765209
trans-1,2-Dichloroethene	mg/kg	0.0978	0.118	78.2	56.5-129	18.4	20	L743937-03	WG765209
trans-1,3-Dichloropropene	mg/kg	0.0900	0.108	72.0	64.1-128	17.8	20	L743937-03	WG765209
Trichloroethene	mg/kg	0.0962	0.115	77.0	44.1-149	17.8	20	L743937-03	WG765209
Trichlorofluoromethane	mg/kg	0.136	0.154	109.	49.6-145	12.4	21.2	L743937-03	WG765209
Vinyl chloride	mg/kg	0.124	0.141	98.9	47.8-137	13.4	20	L743937-03	WG765209
Xylenes, Total	mg/kg	0.252	0.311	67.1	63.3-131	20.9*	20	L743937-03	WG765209
4-Bromofluorobenzene				88.70	71-126				WG765209
Dibromofluoromethane				99.00	78.3-121				WG765209
Toluene-d8				104.0	88.5-111				WG765209

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Quality Assurance Report
Level II

L743937

January 20, 2015

Analyte	Units	MSD	Matrix Spike Duplicate Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Arsenic	mg/kg	102.	102.	98.0	75-125	0.0	20	L743935-01	WG765270
Barium	mg/kg	157.	160.	95.6	75-125	2.00	20	L743935-01	WG765270
Cadmium	mg/kg	97.3	96.9	97.2	75-125	0.0	20	L743935-01	WG765270
Chromium	mg/kg	105.	107.	94.2	75-125	2.00	20	L743935-01	WG765270
Lead	mg/kg	131.	130.	93.7	75-125	1.00	20	L743935-01	WG765270
Selenium	mg/kg	95.5	93.9	94.8	75-125	2.00	20	L743935-01	WG765270
Silver	mg/kg	97.0	96.5	97.1	75-125	1.00	20	L743935-01	WG765270
1,1,1,2-Tetrachloroethane	mg/kg	0.123	0.109	98.6	64-128	12.3	20	L743937-14	WG765391
1,1,1-Trichloroethane	mg/kg	0.121	0.108	96.5	58.7-134	11.1	20	L743937-14	WG765391
1,1,2,2-Tetrachloroethane	mg/kg	0.124	0.104	99.1	56-132	17.4	22.2	L743937-14	WG765391
1,1,2-Trichloroethane	mg/kg	0.118	0.103	94.1	66.3-125	13.2	20	L743937-14	WG765391
1,1,2-Trichlorotrifluoroethane	mg/kg	0.112	0.0984	89.7	54.8-154	13.0	22.5	L743937-14	WG765391
1,1-Dichloroethane	mg/kg	0.127	0.112	101.	58.5-132	11.8	20	L743937-14	WG765391
1,1-Dichloroethene	mg/kg	0.108	0.0925	86.7	51.1-140	15.8	20.2	L743937-14	WG765391
1,1-Dichloropropene	mg/kg	0.124	0.110	99.1	57.3-136	11.8	20	L743937-14	WG765391
1,2,3-Trichlorobenzene	mg/kg	0.0961	0.0812	76.5	59.1-138	16.9	23.7	L743937-14	WG765391
1,2,3-Trichloropropane	mg/kg	0.124	0.101	99.6	61.4-128	20.6	22.4	L743937-14	WG765391
1,2,3-Trimethylbenzene	mg/kg	0.119	0.105	94.9	61.3-122	12.5	20	L743937-14	WG765391
1,2,4-Trichlorobenzene	mg/kg	0.0994	0.0857	79.5	63.6-143	14.8	21.9	L743937-14	WG765391
1,2,4-Trimethylbenzene	mg/kg	0.116	0.0988	92.9	57.4-137	16.4	20	L743937-14	WG765391
1,2-Dibromo-3-Chloropropane	mg/kg	0.108	0.0906	86.6	57.3-136	17.8	27	L743937-14	WG765391
1,2-Dibromoethane	mg/kg	0.119	0.0971	95.0	67.1-125	20.0	20	L743937-14	WG765391
1,2-Dichlorobenzene	mg/kg	0.115	0.102	92.3	68.2-123	12.6	20	L743937-14	WG765391
1,2-Dichloroethane	mg/kg	0.117	0.104	93.5	60-126	11.5	20	L743937-14	WG765391
1,2-Dichloropropane	mg/kg	0.129	0.115	104.	64.2-123	11.8	20	L743937-14	WG765391
1,3,5-Trimethylbenzene	mg/kg	0.118	0.101	94.3	63.6-132	15.5	20.5	L743937-14	WG765391
1,3-Dichlorobenzene	mg/kg	0.109	0.0921	86.9	63.1-131	16.5	20	L743937-14	WG765391
1,3-Dichloropropane	mg/kg	0.121	0.106	97.2	67.9-121	13.6	20	L743937-14	WG765391
1,4-Dichlorobenzene	mg/kg	0.112	0.0999	89.7	68.6-123	11.5	20	L743937-14	WG765391
2,2-Dichloropropane	mg/kg	0.112	0.0993	89.4	50.5-144	11.8	21.9	L743937-14	WG765391
2-Butanone (MEK)	mg/kg	0.688	0.589	110.	22.4-138	15.6	27	L743937-14	WG765391
2-Chloroethyl vinyl ether	mg/kg	0.519	0.413	83.0	10-155	22.8	40	L743937-14	WG765391
2-Chlorotoluene	mg/kg	0.117	0.0990	93.6	63.6-128	16.7	20	L743937-14	WG765391
4-Chlorotoluene	mg/kg	0.115	0.0972	91.6	65.7-127	16.4	20	L743937-14	WG765391
4-Methyl-2-pentanone (MIBK)	mg/kg	0.735	0.618	118.	60.8-140	17.3	25.1	L743937-14	WG765391
Acetone	mg/kg	0.513	0.460	80.6	10-130	10.9	27.9	L743937-14	WG765391
Acrylonitrile	mg/kg	0.678	0.579	108.	49.4-133	15.7	25.3	L743937-14	WG765391
Benzene	mg/kg	0.123	0.109	98.3	54.3-133	11.7	20	L743937-14	WG765391
Bromobenzene	mg/kg	0.118	0.103	94.4	63.9-124	13.5	20	L743937-14	WG765391
Bromodichloromethane	mg/kg	0.125	0.109	99.9	63.9-121	13.8	20	L743937-14	WG765391
Bromoform	mg/kg	0.115	0.0959	91.8	59.5-134	17.9	20.8	L743937-14	WG765391
Bromomethane	mg/kg	0.148	0.130	118.	41.7-155	12.8	20.5	L743937-14	WG765391
Carbon tetrachloride	mg/kg	0.119	0.104	94.9	55.7-134	13.0	20.3	L743937-14	WG765391
Chlorobenzene	mg/kg	0.123	0.106	98.1	67-125	14.7	20	L743937-14	WG765391
Chlorodibromomethane	mg/kg	0.116	0.0995	92.8	64.3-125	15.4	20	L743937-14	WG765391
Chloroethane	mg/kg	0.111	0.106	89.0	51.5-136	5.24	20.8	L743937-14	WG765391
Chloroform	mg/kg	0.121	0.109	96.9	63-129	10.7	20	L743937-14	WG765391
Chloromethane	mg/kg	0.119	0.108	95.3	42.4-135	9.87	20	L743937-14	WG765391
cis-1,2-Dichloroethene	mg/kg	0.119	0.105	95.0	59.2-129	12.1	20	L743937-14	WG765391
cis-1,3-Dichloropropene	mg/kg	0.126	0.111	101.	66.4-125	13.0	20	L743937-14	WG765391
Di-isopropyl ether	mg/kg	0.136	0.120	109.	56.9-136	12.3	20	L743937-14	WG765391
Dibromomethane	mg/kg	0.115	0.102	91.7	68.2-124	11.2	20	L743937-14	WG765391
Dichlorodifluoromethane	mg/kg	0.113	0.105	90.0	40.6-144	6.92	20.2	L743937-14	WG765391
Ethylbenzene	mg/kg	0.118	0.102	94.3	61.4-133	13.9	20	L743937-14	WG765391
Hexachloro-1,3-butadiene	mg/kg	0.0961	0.0831	76.8	55.1-136	14.5	23.6	L743937-14	WG765391
Isopropylbenzene	mg/kg	0.117	0.100	93.7	66.8-141	15.7	20	L743937-14	WG765391

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January 20, 2015

Analyte	Units	MSD	Matrix Spike Duplicate Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Methyl tert-butyl ether	mg/kg	0.132	0.115	106.	57.7-134	13.7	20	L743937-14	WG765391
Methylene Chloride	mg/kg	0.111	0.0970	88.3	58.1-122	13.4	20	L743937-14	WG765391
n-Butylbenzene	mg/kg	0.119	0.102	95.2	62.7-140	14.9	20	L743937-14	WG765391
n-Propylbenzene	mg/kg	0.119	0.0988	95.3	10-176	18.6	26.6	L743937-14	WG765391
Naphthalene	mg/kg	0.103	0.0851	81.5	58-135	18.7	25.5	L743937-14	WG765391
p-Isopropyltoluene	mg/kg	0.114	0.0938	91.0	63.2-139	19.3	20.4	L743937-14	WG765391
sec-Butylbenzene	mg/kg	0.113	0.0952	90.5	62.2-136	17.2	20.3	L743937-14	WG765391
Styrene	mg/kg	0.125	0.107	100.	66.8-133	15.4	20	L743937-14	WG765391
tert-Butylbenzene	mg/kg	0.115	0.0960	92.1	63.3-134	18.2	20.3	L743937-14	WG765391
Tetrachloroethene	mg/kg	0.114	0.0991	91.0	53-139	13.8	20	L743937-14	WG765391
Toluene	mg/kg	0.123	0.109	98.5	61.4-130	12.5	20	L743937-14	WG765391
trans-1,2-Dichloroethene	mg/kg	0.109	0.0973	87.2	56.5-129	11.4	20	L743937-14	WG765391
trans-1,3-Dichloropropene	mg/kg	0.124	0.111	99.0	64.1-128	11.3	20	L743937-14	WG765391
Trichloroethene	mg/kg	0.118	0.105	94.1	44.1-149	11.2	20	L743937-14	WG765391
Trichlorofluoromethane	mg/kg	0.117	0.105	94.0	49.6-145	11.0	21.2	L743937-14	WG765391
Vinyl chloride	mg/kg	0.116	0.107	92.7	47.8-137	7.82	20	L743937-14	WG765391
Xylenes, Total	mg/kg	0.363	0.308	96.7	63.3-131	16.2	20	L743937-14	WG765391
4-Bromofluorobenzene				89.20	71-126				WG765391
Dibromofluoromethane				99.40	78.3-121				WG765391
Toluene-d8				100.0	88.5-111				WG765391
Mercury	mg/kg	0.612	0.613	107.	75-125	0.0	20	L743935-01	WG765188
1,2,4-Trichlorobenzene	mg/kg	0.322	0.314	96.8	36.5-114	2.55	28.4	L743802-06	WG765187
2,4,6-Trichlorophenol	mg/kg	0.270	0.258	81.0	33.8-133	4.32	28.1	L743802-06	WG765187
2,4-Dichlorophenol	mg/kg	0.284	0.253	85.2	34.8-134	11.3	27.3	L743802-06	WG765187
2,4-Dimethylphenol	mg/kg	0.113	0.100	33.8	12.3-149	11.8	32.3	L743802-06	WG765187
2,4-Dinitrophenol	mg/kg	0.0	0.0	0*	10-121	0.0	39.4	L743802-06	WG765187
2,4-Dinitrotoluene	mg/kg	0.297	0.275	89.2	27.8-147	7.50	29.7	L743802-06	WG765187
2,6-Dinitrotoluene	mg/kg	0.354	0.315	106.	36.5-137	11.8	29.7	L743802-06	WG765187
2-Chloronaphthalene	mg/kg	0.325	0.323	97.6	37.5-123	0.820	26.5	L743802-06	WG765187
2-Chlorophenol	mg/kg	0.256	0.237	76.9	33.2-121	7.57	29.3	L743802-06	WG765187
2-Nitrophenol	mg/kg	0.318	0.321	95.4	29.5-144	1.17	29.9	L743802-06	WG765187
3,3-Dichlorobenzidine	mg/kg	0.103	0.0825	30.8	10-129	21.7	40	L743802-06	WG765187
4,6-Dinitro-2-methylphenol	mg/kg	0.474	0.472	142.	10-144	0.470	32.7	L743802-06	WG765187
4-Bromophenyl-phenylether	mg/kg	0.319	0.323	95.9	39-130	1.20	26	L743802-06	WG765187
4-Chloro-3-methylphenol	mg/kg	0.263	0.243	78.9	27-154	7.90	26.6	L743802-06	WG765187
4-Chlorophenyl-phenylether	mg/kg	0.316	0.320	94.8	37.9-123	1.35	25.9	L743802-06	WG765187
4-Nitrophenol	mg/kg	0.176	0.141	52.9	20-133	22.3	30.2	L743802-06	WG765187
Acenaphthene	mg/kg	0.343	0.344	103.	32.2-134	0.0800	27.3	L743802-06	WG765187
Acenaphthylene	mg/kg	0.348	0.392	104.	38.7-129	12.0	25.9	L743802-06	WG765187
Anthracene	mg/kg	0.356	0.368	87.2	32.3-137	3.32	28.4	L743802-06	WG765187
Benzidine	mg/kg	0.363	0.360	109.*	0-49.9	0.920	40	L743802-06	WG765187
Benzo(a)anthracene	mg/kg	0.418	0.405	80.1	33.3-124	2.96	29	L743802-06	WG765187
Benzo(a)pyrene	mg/kg	0.402	0.375	69.6	28.2-128	6.94	28.4	L743802-06	WG765187
Benzo(b)fluoranthene	mg/kg	0.415	0.403	60.3	23.3-133	3.08	30.3	L743802-06	WG765187
Benzo(g,h,i)perylene	mg/kg	0.314	0.302	50.9	10-127	3.95	31.9	L743802-06	WG765187
Benzo(k)fluoranthene	mg/kg	0.316	0.308	76.5	31-129	2.64	26.7	L743802-06	WG765187
Benzylbutyl phthalate	mg/kg	0.360	0.366	108.	33.4-128	1.65	28.5	L743802-06	WG765187
Bis(2-chlorethoxy)methane	mg/kg	0.300	0.310	90.2	35-132	3.17	26.1	L743802-06	WG765187
Bis(2-chloroethyl)ether	mg/kg	0.282	0.280	84.7	28.8-128	0.930	33.6	L743802-06	WG765187
Bis(2-chloroisopropyl)ether	mg/kg	0.354	0.339	106.	31.8-118	4.48	31.7	L743802-06	WG765187
Bis(2-ethylhexyl)phthalate	mg/kg	0.308	0.343	78.0	21.8-141	10.7	35.2	L743802-06	WG765187
Chrysene	mg/kg	0.416	0.395	72.7	36.3-129	5.12	28	L743802-06	WG765187
Di-n-butyl phthalate	mg/kg	0.309	0.301	92.7	32.2-133	2.49	25.9	L743802-06	WG765187
Di-n-octyl phthalate	mg/kg	0.295	0.309	88.5	28.5-128	4.65	32.5	L743802-06	WG765187
Dibenz(a,h)anthracene	mg/kg	0.226	0.230	67.8	10.5-128	1.66	29.5	L743802-06	WG765187

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

12065 Lebanon Rd.
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(615) 758-5858
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Tax I.D. 62-0814289

Est. 1970

K.S. Ware and Associates, LLC
Mr. John Leffew
54 Lindsley Ave.

Nashville, TN 37210

Quality Assurance Report
Level II

L743937

January 20, 2015

Matrix Spike Duplicate

Analyte	Units	MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Diethyl phthalate	mg/kg	0.333	0.331	100.	39.4-136	0.670	25.5	L743802-06	WG765187
Dimethyl phthalate	mg/kg	0.340	0.329	102.	35.8-137	3.48	25.4	L743802-06	WG765187
Fluoranthene	mg/kg	0.557	0.534	92.3	27.9-138	4.09	26.9	L743802-06	WG765187
Fluorene	mg/kg	0.338	0.340	101.	34-133	0.730	27.1	L743802-06	WG765187
Hexachloro-1,3-butadiene	mg/kg	0.333	0.328	99.8	36.5-125	1.30	29.7	L743802-06	WG765187
Hexachlorobenzene	mg/kg	0.319	0.301	95.8	34.4-116	5.89	25.4	L743802-06	WG765187
Hexachlorocyclopentadiene	mg/kg	0.0580	0.0733	17.4	10-124	23.2	37.5	L743802-06	WG765187
Hexachloroethane	mg/kg	0.315	0.320	94.6	11.3-143	1.49	31.9	L743802-06	WG765187
Indeno(1,2,3-cd)pyrene	mg/kg	0.286	0.293	49.8	10-128	2.43	31.5	L743802-06	WG765187
Isophorone	mg/kg	0.305	0.314	91.7	25.7-116	2.69	27.7	L743802-06	WG765187
n-Nitrosodi-n-propylamine	mg/kg	0.304	0.286	91.4	33-134	6.16	28.2	L743802-06	WG765187
n-Nitrosodimethylamine	mg/kg	0.223	0.243	66.9	19.2-127	8.53	32	L743802-06	WG765187
n-Nitrosodiphenylamine	mg/kg	0.259	0.203	77.8	26.8-133	24.4	25.9	L743802-06	WG765187
Naphthalene	mg/kg	0.389	0.363	89.3	36.4-121	6.79	27.2	L743802-06	WG765187
Nitrobenzene	mg/kg	0.325	0.309	97.7	30.9-134	5.10	27.8	L743802-06	WG765187
Pentachlorophenol	mg/kg	0.420	0.404	126.	10-139	3.93	28.3	L743802-06	WG765187
Phenanthrene	mg/kg	0.514	0.463	99.5	30.8-137	10.3	26.5	L743802-06	WG765187
Phenol	mg/kg	0.227	0.209	68.0	25.1-130	7.96	29.6	L743802-06	WG765187
Pyrene	mg/kg	0.572	0.535	94.1	24.1-130	6.64	29.9	L743802-06	WG765187
2,4,6-Tribromophenol				75.50	21.6-142				WG765187
2-Fluorobiphenyl				92.20	34.9-129				WG765187
2-Fluorophenol				69.00	21.1-116				WG765187
Nitrobenzene-d5				91.70	21.9-129				WG765187
Phenol-d5				64.00	26.3-121				WG765187
p-Terphenyl-d14				68.20	21.5-128				WG765187

Serial Dilution

Batch number /Run number / Sample number cross reference

WG765192: R3015092: L743937-15
WG765209: R3015093: L743937-01 02 03 04 05 06 07 08 09 10 11 12 13
WG765270: R3015106: L743937-01 02 03 04 05 06 07 08 09 10 11 12 13 14
WG765391: R3015216: L743937-14
WG765188: R3015323: L743937-01 02 03 04 05 06 07 08 09 10 11 12 13 14
WG765187: R3015413 R3015448: L743937-01 02 03 04 05 06 07 08 09 10 11 12 13 14

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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Tax I.D. 62-0814289

Est. 1970

K.S. Ware and Associates, LLC
Mr. John Leffew
54 Lindsley Ave.

Nashville, TN 37210

Quality Assurance Report
Level II

L743937

January 20, 2015

The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.

K.S. Ware and Associates, LLC

54 Lindsley Ave.
Nashville, TN 37210

Billing Information:
Accounts Payable
54 Lindsley Ave.
Nashville, TN 37210

Report to: Mr. John Leffew

Email To: jleffew@kswarellc.com
mlustin@kswarellc.com
dcorlew@kswarellc.com

Project Description: TDOT Davidson Co. Bridges over Clinton S

City/State Collected:

Phone: 615-255-9702
Fax: -256-5873
615-889-0557 (cell)

Client Project # 100-15-0001

Lab Project # KSWARE-TDOTDAVID

Collected by (print): John W. Leffew

Site/Facility ID #

P.O. #

Collected by (signature):

Immediately Packed on Ice N ____ Y ✓

Rush? (Lab MUST Be Notified)
____ Same Day 200%
____ Next Day 100%
X Two Day 50%
____ Three Day 25%

Date Results Needed 1-20-2015

Email? ___No X__Yes
FAX? ___No ___Yes

Analysis / Container / Preservative

Chain of Custody Page 1 of 2

ESC LAB SCIENCES
YOUR LAB OF CHOICE
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L #

Table #

Acctnum: KSWARE
Template: T99622
Prelogin: P496401
TSR: 064 - Terrie Fudge
PB: 1-16-15
Shipped Via: Courier

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	PAHs; RCRA Mtls 4ozAmb-NoPres+SVOCs 8270	V8260 4ozClr-NoPres									Rem./Contaminant	Sample # (lab only)
DP-01	G	SS	1-2.5'	1/16/15	0945	2	X	X										
DP-01	G	SS	8-9.5'	"	0945	2	X	X										
DP-02	G	SS	1-2.5'	"	1005	2	X	X										
DP-03	G	SS	0-1.5'	"	1015	2	X	X										
DP-04	G	SS	1.5-2.9'	"	1030	2	X	X										
DP-04	G	SS	10-12'	"	1035	2	X	X										
DP-05	G	SS	0-2.5'	"	1045	2	X	X										
DP-06	G	SS	0-2.5'	"	1100	2	X	X										
DP-07	G	SS	0-1.5'	"	1115	2	X	X										
DP-08	G	SS	0-2.0'	"	1125	2	X	X										

* Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other_____

Remarks: Rush 2-day Need Results 1-20-15

pH _____ Temp _____
Flow _____ Other _____

Hold #

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Samples returned via: ☐ UPS ☐ FedEx ☐ Courier ☐ client	Condition: (lab use only) On ice
	1/16/15	1555			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:	COC Seal Intact: ____Y ____N ____NA
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 1-16-15 Time: 1555	pH Checked: NCF:

K.S. Ware and Associates, LLC

54 Lindsley Ave.
Nashville, TN 37210

Billing Information:
Accounts Payable
54 Lindsley Ave.
Nashville, TN 37210

Report to:
Mr. John Leffew

Email To: **jleffew@kswarellc.com**
gplusin@kswarellc.com, dorlow@kswarellc.com

Project Description: **TDOT Davidson Co. Bridges over Clinton S**

City/State Collected:

Phone: **615-255-9702**
Fax: **-256-5873**
615-989-0557 (cell)

Client Project # 100-15-6001

Lab Project # **KSWARE-TDOTDAVID**

Collected by (print): John W. Leffew

Site/Facility ID #

P.O. # 1

Collected by (signature):

Immediately Packed on Ice N ____ Y ✓

Rush? (Lab MUST Be Notified)
____ Same Day 200%
____ Next Day 100%
X Two Day 50%
____ Three Day 25%

Date Results Needed 1-20-2015

Email? ___No X__Yes
FAX? ___No ___Yes

Analysis / Container / Preservative

Chain of Custody Page 1 of 1

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YOUR LAB OF CHOICE
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Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L #

Table #

Acctnum: **KSWARE**
Template: **T99622**
Prelogin: **P496401**
TSR: **064 - Terrie Fudge**
PB: 1-12-15
Shipped Via: **Courier**

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	~~PAHs~~; RCRA Mtls 4ozAmb-NoPres + SVOC's 8270	V8260 4ozClr-NoPres									Rem./Contaminant	Sample # (lab only)
DP-09	G	SS	0'-2.5'	1/16/15	1150	2	X	X										
DP-10	G	SS	0'-2.5'	"	1200	2	X	X										
DP-11	G	SS	0'-2.5'	"	1220	2	X	X										
DP-12	G	SS	0-2.5'	"	1225	2	X	X										
Trip Blank	—	SS				2	X	X										
		SS				2	X	X										
DP-13	G	SS	0-2.5'		1215	2	X	X										
		SS				2	X	X										
		SS				2	X	X										
		SS				2	X	X										

* Matrix: **SS** - Soil **GW** - Groundwater **WW** - WasteWater **DW** - Drinking Water **OT** - Other_____

Remarks: Rush 2-day Need Results 1-20-15

pH _____ Temp _____
Flow _____ Other _____

Hold #

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Samples returned via: ☐ UPS ☐ FedEx ☐ Courier ☐ Client	Condition: (lab use only)
	1/16/15	1555			on ice
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:	COC Seal Intact: ____Y ____N ____NA
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 1-16-15 Time: 1555	pH Checked: NCF: