LORD Corporation
2000 West Grandview Blvd.
Erie, PA 16509-1029
USA
+1 814 868 0924
www.lord.com

Mr. David P. Turner, RPM (3HS22)
Western PA Section
United States Environmental Protection Agency, Region 3
1650 Arch Street
Philadelphia, PA 19103-2029

August 23, 2013

Reference: LORD-Shope RA Monthly Progress Report

Dear Mr. Turner:

LORD is hereby submitting two copies of the monthly progress report for the period of July 1, 2013 through July 31, 2013.

The following work was conducted during this period:

REMEDIAL ACTION

NPDES Report:

The July report will be submitted under a separate cover.

Thermal Oxidizer:

The thermal oxidizer was shut down as planned, on October 26, 2011. Startup of ISVS was April 24, 2012. As planned, ISVS was shut down again on May 30 and restarted June 27, 2012. ISVS was shut down as planned on August 1, 2012. The oxidizer was restarted on August 29 and was shut down for the year on October 30, 2012 as planned. The thermal oxidizer was restarted for the year on May 1, 2013 and shut down May 29, 2013 as scheduled. The thermal oxidizer was restarted on June 26, and shut down again on July 31, 2013 as planned. The ISVS influent was 215.5 ppm and the removal efficiency was 99.9%

Groundwater Treatment:

The groundwater treatment system was operating normally during this interim. The groundwater TOC effluent concentration was 1.5 mg/l.

Sincerely,

LORD Corporation

George M. Kickel
Director, Environment, Safety, Health, and Regulatory Compliance

GMK13026/cmf

cc: (b) (4) [redacted] ARCADIS, Inc.
John Morettini, PADEP

Test America List	May-13		Jul-13		Sep-13		Oct-13	
	Influent ppb(v)	Effluent ppb(v)	Influent ppb(v)	Effluent ppb(v)	Influent ppb(v)	Effluent ppb(v)	Influent ppb(v)	Effluent ppb(v)
Ethylbenzene	ND	ND	ND	ND				
Styrene	ND	ND	ND	ND				
cis-1,3-Dichloropropene	ND	ND	ND	ND				
trans-1,3-Dichloropropene	ND	ND	ND	ND				
1,4-Dichlorobenzene	ND	ND	ND	ND				
1,2-Dibromoethane (EDB)	ND	ND	ND	ND				
1,3-Butadiene	ND	ND	ND	ND				
Acrolein	ND	ND	ND	ND				
3-Chloropropene	ND	ND	ND	ND				
1,2-Dichloroethane	ND	ND	ND	ND				
Acrylonitrile	ND	ND	ND	ND				
Vinyl acetate	ND	ND	ND	ND				
4-Methyl-2-pentanone (MIBK)	ND	0.64	ND	1.3				
1,3,5-Trimethylbenzene	ND	ND	ND	ND				
Toluene	280	ND	370	ND				
Chlorobenzene	110	ND	ND	ND				
Pentane	220	ND	ND	ND				
n-Hexane	600	ND	920	ND				
n-Octane	ND	ND	ND	ND				
Propene	2100	1	1800	1.4				
1,2,4-Trichlorobenzene	ND	ND	ND	ND				
1,4-Dioxane	ND	ND	ND	ND				
Dibromochloromethane	ND	ND	ND	ND				
Tetrachloroethene	5700	ND	9900	ND				
m-Xylene & p-Xylene	620	ND	870	ND				
Ethyl acetate	ND	ND	ND	ND				
n-Heptane	ND	ND	ND	ND				
cis-1,2-Dichloroethene	71000	ND	91000	1.4				
trans-1,2-Dichloroethene	350	ND	460	ND				
Methyl tert-butyl ether	ND	ND	ND	ND				
4-Bromofluorobenzene	102	103	103	102				
2,2,4-Trimethylpentane	ND	ND	ND	ND				
1,3-Dichlorobenzene	ND	ND	ND	ND				
Carbon tetrachloride	ND	ND	ND	ND				
2-Hexanone	ND	0.67	ND	1.6				
4-Ethyltoluene	ND	ND	ND	ND				

Acetone	ND	ND	ND	24		
Chloroform	350	ND	430	ND		
Benzene	150	ND	ND	ND		
1,1,1-Trichloroethane	310	ND	400	ND		
Bromomethane	ND	ND	ND	ND		
Chloromethane	ND	ND	ND	ND		
Dibromomethane	ND	ND	ND	ND		
Chloroethane	190	ND	ND	ND		
Vinyl chloride	73000	ND	63000	1.1		
Acetonitrile	ND	ND	ND	ND		
Methylene chloride	310	0.67	1300	0.51		
Carbon disulfide	ND	0.4	ND	1.8		
Bromoform	ND	ND	ND	ND		
Bromodichloromethane	ND	ND	ND	ND		
1,1-Dichloroethane	350	ND	440	ND		
1,1-Dichloroethene	600	ND	780	ND		
Chlorodifluoromethane	ND	ND	ND	ND		
tert-Butyl alcohol	ND	11	ND	24		
Trichlorofluoromethane	ND	ND	ND	ND		
Dichlorodifluoromethane	ND	ND	ND	ND		
1,1,2-Trichloro-1,2,2-trifluor	ND	ND	ND	ND		
1,2-Dichloro-1,1,2,2-tetrafluo	ND	ND	ND	ND		
1,2-Dichloropropane	ND	ND	ND	ND		
2-Butanone (MEK)	ND	2.4	ND	5.4		
1,1,2-Trichloroethane	ND	ND	ND	ND		
Trichloroethene	26000	ND	43000	0.62		
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND		
Methyl methacrylate	ND	ND	ND	ND		
Hexachlorobutadiene	ND	ND	ND	ND		
o-Xylene	510	ND	800	ND		
1,2-Dichlorobenzene	ND	ND	ND	ND		
1,2,4-Trimethylbenzene	ND	ND	ND	ND		
Cumene	ND	ND	ND	ND		
alpha-Methylstyrene	ND	ND	ND	ND		
Totals	182,852	120	215,573	165	0	0
		99.93%		99.92%		#DIV/0!

% Methane Influent	1	0.32

H3G110430 Analytical Report **1**

Sample Receipt Documentation **24**

Volatiles **30**
- Raw Sample Data 31
- Standards Data 71
  - Initial Calibration j042313im.pdf 72
  - Continuing Calibration j071213.pdf 161
- Raw QC Data 176
- Miscellaneous Data 200

Fixed Gases **206**
- Raw Sample Data 207
- Standards Data 211
  - Initial Calibration PG112712I.pdf 212
  - Continuing Calibration PG071713.pdf 244
- Raw QC Data 253
- Miscellaneous Data 261

Sample Receipt Documentation **265**

Total Number of Pages **270**

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

LORD Shope

Lot #: H3G110430

(b) (4) [redacted]

ARCADIS U.S., Inc.
284 Cramer Creek Court
Dublin, OH 43017

TESTAMERICA LABORATORIES, INC.

(b) (4) [redacted]

Project Manager

July 19, 2013

ANALYTICAL METHODS SUMMARY

H3G110430

PARAMETER	ANALYTICAL METHOD
Method for Analysis of Reformed Gas by GC	ASTM D 1946/E 260
Volatile Organics by TO15	EPA-2 TO-15

References:

ASTM Annual Book Of ASTM Standards.

EPA-2 "Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air", EPA-625/R-96/010b, January 1999.

SAMPLE SUMMARY

H3G110430

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
M1CKW	001	TOI/070913	07/09/13	12:45
M1CK1	002	TOE/070913	07/09/13	12:55

NOTE(S):

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

PROJECT NARRATIVE
H3G110430

The results reported herein are applicable to the samples submitted for analysis only. If you have any questions about this report, please call (865) 291-3000 to speak with the TestAmerica project manager listed on the cover page.

This report shall not be reproduced except in full, without the written approval of the laboratory.

The original chain of custody documentation is included with this report.

Sample Receipt

There were no problems with the condition of the samples received.

Quality Control and Data Interpretation

Unless otherwise noted, all holding times and QC criteria were met and the test results shown in this report meet all applicable NELAC requirements.

Volatiles

EPA methods TO-14A and TO-15 specify the use of humidified "zero air" as the blank reagent for canister cleaning, instrument calibration and sample analysis. Ultra-high purity humidified nitrogen from a cryogenic reservoir is used in place of "zero air" by TestAmerica Knoxville.

The daily standard and laboratory control sample recovery for 3-chloropropene was above QC limits for batch 3196021. However, since the recovery was high, and 3-chloropropene was not detected above the reporting limit in the associated samples, the validity of the data is unaffected.

CERTIFICATION SUMMARY

Laboratory	Authority	Program	EPA Region	Certification ID
TestAmerica Knoxville	ACLASS	DoD ELAP		ADE-1434
TestAmerica Knoxville	Arkansas	State Program	6	88-0688
TestAmerica Knoxville	California	State Program	9	2423
TestAmerica Knoxville	Colorado	State Program	8	N/A
TestAmerica Knoxville	Connecticut	State Program	1	PH-0223
TestAmerica Knoxville	Florida	NELAC	4	E87177
TestAmerica Knoxville	Georgia	State Program	4	906
TestAmerica Knoxville	Hawaii	State Program	9	N/A
TestAmerica Knoxville	Indiana	State Program	5	C-TN-02
TestAmerica Knoxville	Iowa	State Program	7	375
TestAmerica Knoxville	Kansas	NELAC	7	E-10349
TestAmerica Knoxville	Kentucky	State Program	4	90101
TestAmerica Knoxville	Louisiana	NELAC	6	LA110001
TestAmerica Knoxville	Louisiana	NELAC	6	83979
TestAmerica Knoxville	Maryland	State Program	3	277
TestAmerica Knoxville	Michigan	State Program	5	9933
TestAmerica Knoxville	Minnesota	NELAC	5	047-999-429
TestAmerica Knoxville	Nevada	State Program	9	TN00009
TestAmerica Knoxville	New Jersey	NELAC	2	TN001
TestAmerica Knoxville	New York	NELAC	2	10781
TestAmerica Knoxville	North Carolina	North Carolina DENR	4	64
TestAmerica Knoxville	North Carolina	North Carolina PHL	4	21705
TestAmerica Knoxville	Ohio	OVAP	5	CL0059
TestAmerica Knoxville	Oklahoma	State Program	6	9415
TestAmerica Knoxville	Pennsylvania	NELAC	3	68-00576
TestAmerica Knoxville	South Carolina	State Program	4	84001
TestAmerica Knoxville	Tennessee	State Program	4	2014
TestAmerica Knoxville	Texas	NELAC	6	T104704380-TX
TestAmerica Knoxville	USDA	USDA		P330-11-00035
TestAmerica Knoxville	Utah	NELAC	8	QUAN3
TestAmerica Knoxville	Virginia	State Program	3	165
TestAmerica Knoxville	Washington	State Program	10	C593
TestAmerica Knoxville	West Virginia	West Virginia DEP	3	345
TestAmerica Knoxville	West Virginia	West Virginia DHHR (DW)	3	9955C
TestAmerica Knoxville	Wisconsin	State Program	5	998044300

Accreditation may not be offered or required for all methods and analytes reported in this package. Please contact your project manager for the laboratory's current list of certified methods and analytes.

Sample Data Summary

ARCADIS U.S., Inc.

Client Sample ID: TOI/070913

GC/MS Volatiles

Lot-Sample #...: H3G110430-001 Work Order #...: M1CKW1AA Matrix.....: AIR
Date Sampled...: 07/09/13 Date Received..: 07/11/13
Prep Date.....: 07/12/13 Analysis Date..: 07/13/13
Prep Batch #...: 3196021
Dilution Factor: 6090.54 Method.....: EPA-2 TO-15

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	30000	ppb(v/v)
Acetonitrile	ND	6100	ppb(v/v)
Acrolein	ND	4900	ppb(v/v)
alpha-Methylstyrene	ND	2400	ppb(v/v)
Benzene	ND	1200	ppb(v/v)
Bromodichloromethane	ND	1200	ppb(v/v)
Bromoform	ND	1200	ppb(v/v)
Bromomethane	ND	1200	ppb(v/v)
1,3-Butadiene	ND	2400	ppb(v/v)
2-Butanone (MEK)	ND	6100	ppb(v/v)
tert-Butyl alcohol	ND	12000	ppb(v/v)
Carbon disulfide	ND	3000	ppb(v/v)
Carbon tetrachloride	ND	1200	ppb(v/v)
Chlorobenzene	ND	1200	ppb(v/v)
Dibromochloromethane	ND	1200	ppb(v/v)
Chlorodifluoromethane	ND	1200	ppb(v/v)
Chloroethane	ND	1200	ppb(v/v)
Chloroform	**430 J**	**1200**	**ppb(v/v)**
Chloromethane	ND	3000	ppb(v/v)
1,2-Dibromoethane (EDB)	ND	1200	ppb(v/v)
Dibromomethane	ND	2400	ppb(v/v)
1,2-Dichlorobenzene	ND	1200	ppb(v/v)
1,3-Dichlorobenzene	ND	1200	ppb(v/v)
1,4-Dichlorobenzene	ND	1200	ppb(v/v)
Dichlorodifluoromethane	ND	1200	ppb(v/v)
1,1-Dichloroethane	**440 J**	**1200**	**ppb(v/v)**
1,2-Dichloroethane	ND	1200	ppb(v/v)
cis-1,2-Dichloroethene	**91000**	**1200**	**ppb(v/v)**
trans-1,2-Dichloroethene	**460 J**	**1200**	**ppb(v/v)**
1,1-Dichloroethene	**780 J**	**1200**	**ppb(v/v)**
1,2-Dichloropropane	ND	1200	ppb(v/v)
cis-1,3-Dichloropropene	ND	1200	ppb(v/v)
trans-1,3-Dichloropropene	ND	1200	ppb(v/v)
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	1200	ppb(v/v)
1,4-Dioxane	ND	3000	ppb(v/v)
Ethyl acetate	ND	12000	ppb(v/v)
Ethylbenzene	ND	1200	ppb(v/v)
4-Ethyltoluene	ND	2400	ppb(v/v)

(Continued on next page)

ARCADIS U.S., Inc.

Client Sample ID: TOI/070913

GC/MS Volatiles

Lot-Sample #...: H3G110430-001 Work Order #...: M1CKW1AA Matrix.....: AIR

PARAMETER	RESULT	REPORTING LIMIT	UNITS
n-Heptane	ND	3000	ppb(v/v)
Hexachlorobutadiene	ND	6100	ppb(v/v)
n-Hexane	**920 J**	**3000**	**ppb(v/v)**
2-Hexanone	ND	3000	ppb(v/v)
Cumene	ND	2400	ppb(v/v)
Methyl methacrylate	ND	3000	ppb(v/v)
4-Methyl-2-pentanone (MIBK)	ND	3000	ppb(v/v)
Methyl tert-butyl ether	ND	6100	ppb(v/v)
n-Octane	ND	2400	ppb(v/v)
Pentane	ND	6100	ppb(v/v)
Propene	**1800 J**	**3000**	**ppb(v/v)**
Styrene	ND	1200	ppb(v/v)
1,1,2,2-Tetrachloroethane	ND	1200	ppb(v/v)
Tetrachloroethene	**9900**	**1200**	**ppb(v/v)**
Toluene	**370 J**	**1200**	**ppb(v/v)**
1,2,4-Trichloro-benzene	ND	6100	ppb(v/v)
1,1,1-Trichloroethane	**400 J**	**1200**	**ppb(v/v)**
1,1,2-Trichloroethane	ND	1200	ppb(v/v)
Trichloroethene	**43000**	**1200**	**ppb(v/v)**
Trichlorofluoromethane	ND	1200	ppb(v/v)
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1200	ppb(v/v)
1,2,4-Trimethylbenzene	ND	1200	ppb(v/v)
1,3,5-Trimethylbenzene	ND	1200	ppb(v/v)
2,2,4-Trimethylpentane	ND	3000	ppb(v/v)
Vinyl acetate	ND	6100	ppb(v/v)
Vinyl chloride	**63000**	**1200**	**ppb(v/v)**
m-Xylene & p-Xylene	**870 J**	**1200**	**ppb(v/v)**
o-Xylene	**800 J**	**1200**	**ppb(v/v)**
Acrylonitrile	ND	12000	ppb(v/v)
3-Chloropropene	ND	1200	ppb(v/v)
Methylene chloride	**1300 J**	**3000**	**ppb(v/v)**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	103	(60 - 140)

NOTE(S):

J Estimated result. Result is less than RL.

ARCADIS U.S., Inc.

Client Sample ID: TOE/070913

GC/MS Volatiles

Lot-Sample #...: H3G110430-002 Work Order #...: M1CK11AA Matrix.....: AIR
Date Sampled...: 07/09/13 Date Received..: 07/11/13
Prep Date.....: 07/12/13 Analysis Date..: 07/13/13
Prep Batch #...: 3196021
Dilution Factor: 10 Method.....: EPA-2 TO-15

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	**24 J**	**50**	**ppb(v/v)**
Acetonitrile	ND	10	ppb(v/v)
Acrolein	ND	8.0	ppb(v/v)
alpha-Methylstyrene	ND	4.0	ppb(v/v)
Benzene	ND	2.0	ppb(v/v)
Bromodichloromethane	ND	2.0	ppb(v/v)
Bromoform	ND	2.0	ppb(v/v)
Bromomethane	ND	2.0	ppb(v/v)
1,3-Butadiene	ND	4.0	ppb(v/v)
2-Butanone (MEK)	**5.4 J**	**10**	**ppb(v/v)**
tert-Butyl alcohol	**24**	**20**	**ppb(v/v)**
Carbon disulfide	**1.8 J**	**5.0**	**ppb(v/v)**
Carbon tetrachloride	ND	2.0	ppb(v/v)
Chlorobenzene	ND	2.0	ppb(v/v)
Dibromochloromethane	ND	2.0	ppb(v/v)
Chlorodifluoromethane	ND	2.0	ppb(v/v)
Chloroethane	ND	2.0	ppb(v/v)
Chloroform	ND	2.0	ppb(v/v)
Chloromethane	ND	5.0	ppb(v/v)
1,2-Dibromoethane (EDB)	ND	2.0	ppb(v/v)
Dibromomethane	ND	4.0	ppb(v/v)
1,2-Dichlorobenzene	ND	2.0	ppb(v/v)
1,3-Dichlorobenzene	ND	2.0	ppb(v/v)
1,4-Dichlorobenzene	ND	2.0	ppb(v/v)
Dichlorodifluoromethane	ND	2.0	ppb(v/v)
1,1-Dichloroethane	ND	2.0	ppb(v/v)
1,2-Dichloroethane	ND	2.0	ppb(v/v)
cis-1,2-Dichloroethene	**1.4 J**	**2.0**	**ppb(v/v)**
trans-1,2-Dichloroethene	ND	2.0	ppb(v/v)
1,1-Dichloroethene	ND	2.0	ppb(v/v)
1,2-Dichloropropane	ND	2.0	ppb(v/v)
cis-1,3-Dichloropropene	ND	2.0	ppb(v/v)
trans-1,3-Dichloropropene	ND	2.0	ppb(v/v)
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	2.0	ppb(v/v)
1,4-Dioxane	ND	5.0	ppb(v/v)
Ethyl acetate	ND	20	ppb(v/v)
Ethylbenzene	ND	2.0	ppb(v/v)
4-Ethyltoluene	ND	4.0	ppb(v/v)

(Continued on next page)

ARCADIS U.S., Inc.

Client Sample ID: TOE/070913

GC/MS Volatiles

Lot-Sample #...: H3G110430-002 Work Order #...: M1CK11AA Matrix.....: AIR

PARAMETER	RESULT	REPORTING LIMIT	UNITS
n-Heptane	ND	5.0	ppb(v/v)
Hexachlorobutadiene	ND	10	ppb(v/v)
n-Hexane	ND	5.0	ppb(v/v)
2-Hexanone	**1.6 J**	**5.0**	**ppb(v/v)**
Cumene	ND	4.0	ppb(v/v)
Methyl methacrylate	ND	5.0	ppb(v/v)
4-Methyl-2-pentanone (MIBK)	**1.3 J**	**5.0**	**ppb(v/v)**
Methyl tert-butyl ether	ND	10	ppb(v/v)
n-Octane	ND	4.0	ppb(v/v)
Pentane	ND	10	ppb(v/v)
Propene	**1.4 J**	**5.0**	**ppb(v/v)**
Styrene	ND	2.0	ppb(v/v)
1,1,2,2-Tetrachloroethane	ND	2.0	ppb(v/v)
Tetrachloroethene	ND	2.0	ppb(v/v)
Toluene	ND	2.0	ppb(v/v)
1,2,4-Trichloro-benzene	ND	10	ppb(v/v)
1,1,1-Trichloroethane	ND	2.0	ppb(v/v)
1,1,2-Trichloroethane	ND	2.0	ppb(v/v)
Trichloroethene	**0.62 J**	**2.0**	**ppb(v/v)**
Trichlorofluoromethane	ND	2.0	ppb(v/v)
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	2.0	ppb(v/v)
1,2,4-Trimethylbenzene	ND	2.0	ppb(v/v)
1,3,5-Trimethylbenzene	ND	2.0	ppb(v/v)
2,2,4-Trimethylpentane	ND	5.0	ppb(v/v)
Vinyl acetate	ND	10	ppb(v/v)
Vinyl chloride	**1.1 J**	**2.0**	**ppb(v/v)**
m-Xylene & p-Xylene	ND	2.0	ppb(v/v)
o-Xylene	ND	2.0	ppb(v/v)
Acrylonitrile	ND	20	ppb(v/v)
3-Chloropropene	ND	2.0	ppb(v/v)
Methylene chloride	**0.51 J**	**5.0**	**ppb(v/v)**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	102	(60 - 140)

NOTE(S):

J Estimated result. Result is less than RL.

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: H3G110430 Work Order #...: M1C0C1AA Matrix.....: AIR
MB Lot-Sample #: H3G150000-021

Prep Date.....: 07/12/13
Analysis Date..: 07/12/13 Prep Batch #...: 3196021
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Benzene	ND	0.20	ppb(v/v)	EPA-2 TO-15
Bromomethane	ND	0.20	ppb(v/v)	EPA-2 TO-15
Carbon tetrachloride	ND	0.20	ppb(v/v)	EPA-2 TO-15
Chlorobenzene	ND	0.20	ppb(v/v)	EPA-2 TO-15
Chloroethane	ND	0.20	ppb(v/v)	EPA-2 TO-15
Chloroform	ND	0.20	ppb(v/v)	EPA-2 TO-15
Chloromethane	ND	0.50	ppb(v/v)	EPA-2 TO-15
1,2-Dichlorobenzene	ND	0.20	ppb(v/v)	EPA-2 TO-15
1,3-Dichlorobenzene	ND	0.20	ppb(v/v)	EPA-2 TO-15
1,4-Dichlorobenzene	ND	0.20	ppb(v/v)	EPA-2 TO-15
Dichlorodifluoromethane	ND	0.20	ppb(v/v)	EPA-2 TO-15
1,1-Dichloroethane	ND	0.20	ppb(v/v)	EPA-2 TO-15
1,2-Dichloroethane	ND	0.20	ppb(v/v)	EPA-2 TO-15
1,1-Dichloroethene	ND	0.20	ppb(v/v)	EPA-2 TO-15
cis-1,2-Dichloroethene	ND	0.20	ppb(v/v)	EPA-2 TO-15
1,2-Dichloropropane	ND	0.20	ppb(v/v)	EPA-2 TO-15
cis-1,3-Dichloropropene	ND	0.20	ppb(v/v)	EPA-2 TO-15
trans-1,3-Dichloropropene	ND	0.20	ppb(v/v)	EPA-2 TO-15
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	0.20	ppb(v/v)	EPA-2 TO-15
Ethylbenzene	ND	0.20	ppb(v/v)	EPA-2 TO-15
Trichlorofluoromethane	ND	0.20	ppb(v/v)	EPA-2 TO-15
Hexachlorobutadiene	ND	1.0	ppb(v/v)	EPA-2 TO-15
Methylene chloride	ND	0.50	ppb(v/v)	EPA-2 TO-15
Styrene	ND	0.20	ppb(v/v)	EPA-2 TO-15
1,1,2,2-Tetrachloroethane	ND	0.20	ppb(v/v)	EPA-2 TO-15
Tetrachloroethene	ND	0.20	ppb(v/v)	EPA-2 TO-15
Toluene	ND	0.20	ppb(v/v)	EPA-2 TO-15
1,2,4-Trichlorobenzene	ND	1.0	ppb(v/v)	EPA-2 TO-15
1,1,1-Trichloroethane	ND	0.20	ppb(v/v)	EPA-2 TO-15
1,1,2-Trichloroethane	ND	0.20	ppb(v/v)	EPA-2 TO-15
Trichloroethene	ND	0.20	ppb(v/v)	EPA-2 TO-15
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	0.20	ppb(v/v)	EPA-2 TO-15
1,2,4-Trimethylbenzene	ND	0.20	ppb(v/v)	EPA-2 TO-15
1,3,5-Trimethylbenzene	ND	0.20	ppb(v/v)	EPA-2 TO-15
Vinyl chloride	ND	0.20	ppb(v/v)	EPA-2 TO-15
o-Xylene	ND	0.20	ppb(v/v)	EPA-2 TO-15
m-Xylene & p-Xylene	ND	0.20	ppb(v/v)	EPA-2 TO-15
1,2-Dibromoethane (EDB)	ND	0.20	ppb(v/v)	EPA-2 TO-15

(Continued on next page)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: H3G110430 Work Order #...: M1C0C1AA Matrix.....: AIR

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acetone	ND	5.0	ppb(v/v)	EPA-2 TO-15
Acetonitrile	ND	1.0	ppb(v/v)	EPA-2 TO-15
Acrolein	ND	0.80	ppb(v/v)	EPA-2 TO-15
Acrylonitrile	ND	2.0	ppb(v/v)	EPA-2 TO-15
Bromodichloromethane	ND	0.20	ppb(v/v)	EPA-2 TO-15
Bromoform	ND	0.20	ppb(v/v)	EPA-2 TO-15
1,3-Butadiene	ND	0.40	ppb(v/v)	EPA-2 TO-15
Carbon disulfide	ND	0.50	ppb(v/v)	EPA-2 TO-15
Dibromochloromethane	ND	0.20	ppb(v/v)	EPA-2 TO-15
3-Chloropropene	ND	0.20	ppb(v/v)	EPA-2 TO-15
Dibromomethane	ND	0.40	ppb(v/v)	EPA-2 TO-15
trans-1,2-Dichloroethene	ND	0.20	ppb(v/v)	EPA-2 TO-15
1,4-Dioxane	ND	0.50	ppb(v/v)	EPA-2 TO-15
Ethyl acetate	ND	2.0	ppb(v/v)	EPA-2 TO-15
n-Heptane	ND	0.50	ppb(v/v)	EPA-2 TO-15
n-Hexane	ND	0.50	ppb(v/v)	EPA-2 TO-15
2-Hexanone	ND	0.50	ppb(v/v)	EPA-2 TO-15
2,2,4-Trimethylpentane	ND	0.50	ppb(v/v)	EPA-2 TO-15
Cumene	ND	0.40	ppb(v/v)	EPA-2 TO-15
tert-Butyl alcohol	ND	2.0	ppb(v/v)	EPA-2 TO-15
Methyl methacrylate	ND	0.50	ppb(v/v)	EPA-2 TO-15
n-Octane	ND	0.40	ppb(v/v)	EPA-2 TO-15
Pentane	ND	1.0	ppb(v/v)	EPA-2 TO-15
Vinyl acetate	ND	1.0	ppb(v/v)	EPA-2 TO-15
Methyl tert-butyl ether	ND	1.0	ppb(v/v)	EPA-2 TO-15
alpha-Methylstyrene	ND	0.40	ppb(v/v)	EPA-2 TO-15
Chlorodifluoromethane	ND	0.20	ppb(v/v)	EPA-2 TO-15
2-Butanone (MEK)	ND	1.0	ppb(v/v)	EPA-2 TO-15
4-Methyl-2-pentanone (MIBK)	ND	0.50	ppb(v/v)	EPA-2 TO-15
4-Ethyltoluene	ND	0.40	ppb(v/v)	EPA-2 TO-15
Propene	ND	0.50	ppb(v/v)	EPA-2 TO-15

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	103	(60 - 140)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: H3G110430 Work Order #...: M1C0C1AC Matrix.....: AIR
LCS Lot-Sample#: H3G150000-021
Prep Date.....: 07/12/13 Analysis Date..: 07/12/13
Prep Batch #...: 3196021
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Chlorodifluoromethane	123	(60 - 140)	EPA-2 TO-15
Propene	118	(60 - 140)	EPA-2 TO-15
Dichlorodifluoromethane	115	(60 - 140)	EPA-2 TO-15
Chloromethane	109	(60 - 140)	EPA-2 TO-15
1,2-Dichloro-1,1,2,2-tetrafluoroethane	107	(60 - 140)	EPA-2 TO-15
Vinyl chloride	100	(70 - 130)	EPA-2 TO-15
1,3-Butadiene	106	(60 - 140)	EPA-2 TO-15
Bromomethane	94	(70 - 130)	EPA-2 TO-15
Chloroethane	98	(70 - 130)	EPA-2 TO-15
Trichlorofluoromethane	122	(60 - 140)	EPA-2 TO-15
Acrolein	115	(60 - 140)	EPA-2 TO-15
Acetonitrile	106	(60 - 140)	EPA-2 TO-15
Acetone	82	(60 - 140)	EPA-2 TO-15
Pentane	108	(70 - 130)	EPA-2 TO-15
1,1-Dichloroethene	101	(70 - 130)	EPA-2 TO-15
Acrylonitrile	89	(60 - 140)	EPA-2 TO-15
tert-Butyl alcohol	114	(60 - 140)	EPA-2 TO-15
1,1,2-Trichloro-1,2,2-trifluoroethane	103	(70 - 130)	EPA-2 TO-15
Methylene chloride	94	(70 - 130)	EPA-2 TO-15
3-Chloropropene	166 a	(60 - 140)	EPA-2 TO-15
Carbon disulfide	101	(70 - 130)	EPA-2 TO-15
trans-1,2-Dichloroethene	94	(70 - 130)	EPA-2 TO-15
Methyl tert-butyl ether	103	(60 - 140)	EPA-2 TO-15
1,1-Dichloroethane	98	(70 - 130)	EPA-2 TO-15
Vinyl acetate	97	(60 - 140)	EPA-2 TO-15
n-Hexane	95	(70 - 130)	EPA-2 TO-15
2-Butanone (MEK)	93	(60 - 140)	EPA-2 TO-15
cis-1,2-Dichloroethene	88	(70 - 130)	EPA-2 TO-15
Ethyl acetate	121	(60 - 140)	EPA-2 TO-15
Chloroform	96	(70 - 130)	EPA-2 TO-15
1,1,1-Trichloroethane	100	(70 - 130)	EPA-2 TO-15
1,2-Dichloroethane	96	(70 - 130)	EPA-2 TO-15

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: H3G110430 Work Order #...: M1C0C1AC Matrix.....: AIR
LCS Lot-Sample#: H3G150000-021

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Benzene	74	(70 - 130)	EPA-2 TO-15
Carbon tetrachloride	124	(70 - 130)	EPA-2 TO-15
2,2,4-Trimethylpentane	95	(70 - 130)	EPA-2 TO-15
n-Heptane	90	(70 - 130)	EPA-2 TO-15
1,2-Dichloropropane	83	(70 - 130)	EPA-2 TO-15
Trichloroethene	85	(70 - 130)	EPA-2 TO-15
Dibromomethane	91	(70 - 130)	EPA-2 TO-15
Bromodichloromethane	97	(70 - 130)	EPA-2 TO-15
1,4-Dioxane	92	(60 - 140)	EPA-2 TO-15
Methyl methacrylate	120	(60 - 140)	EPA-2 TO-15
4-Methyl-2-pentanone (MIBK)	116	(60 - 140)	EPA-2 TO-15
cis-1,3-Dichloropropene	83	(70 - 130)	EPA-2 TO-15
trans-1,3-Dichloropropene	93	(70 - 130)	EPA-2 TO-15
Toluene	77	(70 - 130)	EPA-2 TO-15
1,1,2-Trichloroethane	85	(70 - 130)	EPA-2 TO-15
2-Hexanone	113	(60 - 140)	EPA-2 TO-15
n-Octane	94	(70 - 130)	EPA-2 TO-15
Dibromochloromethane	93	(70 - 130)	EPA-2 TO-15
1,2-Dibromoethane (EDB)	81	(70 - 130)	EPA-2 TO-15
Tetrachloroethene	92	(70 - 130)	EPA-2 TO-15
Chlorobenzene	82	(70 - 130)	EPA-2 TO-15
Ethylbenzene	85	(70 - 130)	EPA-2 TO-15
m-Xylene & p-Xylene	88	(70 - 130)	EPA-2 TO-15
Bromoform	87	(60 - 140)	EPA-2 TO-15
Styrene	85	(70 - 130)	EPA-2 TO-15
o-Xylene	90	(70 - 130)	EPA-2 TO-15
1,1,2,2-Tetrachloroethane	99	(70 - 130)	EPA-2 TO-15
Cumene	94	(70 - 130)	EPA-2 TO-15
4-Ethyltoluene	101	(70 - 130)	EPA-2 TO-15
1,3,5-Trimethylbenzene	99	(70 - 130)	EPA-2 TO-15
alpha-Methylstyrene	92	(60 - 140)	EPA-2 TO-15
1,2,4-Trimethylbenzene	105	(70 - 130)	EPA-2 TO-15
1,3-Dichlorobenzene	84	(70 - 130)	EPA-2 TO-15
1,4-Dichlorobenzene	85	(70 - 130)	EPA-2 TO-15
1,2-Dichlorobenzene	89	(70 - 130)	EPA-2 TO-15
1,2,4-Trichloro-benzene	90	(60 - 140)	EPA-2 TO-15

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: H3G110430 Work Order #...: M1C0C1AC Matrix.....: AIR
LCS Lot-Sample#: H3G150000-021

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Hexachlorobutadiene	87	(60 - 140)	EPA-2 TO-15

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	107	(60 - 140)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: H3G110430 Work Order #...: M1C0C1AC Matrix.....: AIR
LCS Lot-Sample#: H3G150000-021
Prep Date.....: 07/12/13 Analysis Date..: 07/12/13
Prep Batch #...: 3196021
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
Chlorodifluoromethane	5.00	6.16	ppb(v/v)	123	EPA-2 TO-15
Propene	5.00	5.92	ppb(v/v)	118	EPA-2 TO-15
Dichlorodifluoromethane	5.00	5.74	ppb(v/v)	115	EPA-2 TO-15
Chloromethane	5.00	5.47	ppb(v/v)	109	EPA-2 TO-15
1,2-Dichloro-1,1,2,2-tetrafluoroethane	5.00	5.33	ppb(v/v)	107	EPA-2 TO-15
Vinyl chloride	5.00	4.98	ppb(v/v)	100	EPA-2 TO-15
1,3-Butadiene	5.00	5.29	ppb(v/v)	106	EPA-2 TO-15
Bromomethane	5.00	4.68	ppb(v/v)	94	EPA-2 TO-15
Chloroethane	5.00	4.91	ppb(v/v)	98	EPA-2 TO-15
Trichlorofluoromethane	5.00	6.10	ppb(v/v)	122	EPA-2 TO-15
Acrolein	5.00	5.73	ppb(v/v)	115	EPA-2 TO-15
Acetonitrile	5.00	5.30	ppb(v/v)	106	EPA-2 TO-15
Acetone	5.00	4.09	ppb(v/v)	82	EPA-2 TO-15
Pentane	5.00	5.40	ppb(v/v)	108	EPA-2 TO-15
1,1-Dichloroethene	5.00	5.04	ppb(v/v)	101	EPA-2 TO-15
Acrylonitrile	5.00	4.46	ppb(v/v)	89	EPA-2 TO-15
tert-Butyl alcohol	5.00	5.70	ppb(v/v)	114	EPA-2 TO-15
1,1,2-Trichloro-1,2,2-trifluoroethane	5.00	5.15	ppb(v/v)	103	EPA-2 TO-15
Methylene chloride	5.00	4.72	ppb(v/v)	94	EPA-2 TO-15
3-Chloropropene	5.00	8.29 a	ppb(v/v)	166	EPA-2 TO-15
Carbon disulfide	5.00	5.06	ppb(v/v)	101	EPA-2 TO-15
trans-1,2-Dichloroethene	5.00	4.71	ppb(v/v)	94	EPA-2 TO-15
Methyl tert-butyl ether	5.00	5.16	ppb(v/v)	103	EPA-2 TO-15
1,1-Dichloroethane	5.00	4.91	ppb(v/v)	98	EPA-2 TO-15
Vinyl acetate	5.00	4.85	ppb(v/v)	97	EPA-2 TO-15
n-Hexane	5.00	4.77	ppb(v/v)	95	EPA-2 TO-15
2-Butanone (MEK)	5.00	4.66	ppb(v/v)	93	EPA-2 TO-15
cis-1,2-Dichloroethene	5.00	4.40	ppb(v/v)	88	EPA-2 TO-15
Ethyl acetate	5.00	6.04	ppb(v/v)	121	EPA-2 TO-15
Chloroform	5.00	4.80	ppb(v/v)	96	EPA-2 TO-15
1,1,1-Trichloroethane	5.00	5.02	ppb(v/v)	100	EPA-2 TO-15
1,2-Dichloroethane	5.00	4.82	ppb(v/v)	96	EPA-2 TO-15

(Continued on next page)

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: H3G110430 Work Order #...: M1C0C1AC Matrix.....: AIR
LCS Lot-Sample#: H3G150000-021

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
Benzene	5.00	3.71	ppb(v/v)	74	EPA-2 TO-15
Carbon tetrachloride	5.00	6.18	ppb(v/v)	124	EPA-2 TO-15
2,2,4-Trimethylpentane	5.00	4.77	ppb(v/v)	95	EPA-2 TO-15
n-Heptane	5.00	4.48	ppb(v/v)	90	EPA-2 TO-15
1,2-Dichloropropane	5.00	4.16	ppb(v/v)	83	EPA-2 TO-15
Trichloroethene	5.00	4.25	ppb(v/v)	85	EPA-2 TO-15
Dibromomethane	5.00	4.54	ppb(v/v)	91	EPA-2 TO-15
Bromodichloromethane	5.00	4.85	ppb(v/v)	97	EPA-2 TO-15
1,4-Dioxane	5.00	4.62	ppb(v/v)	92	EPA-2 TO-15
Methyl methacrylate	5.00	5.98	ppb(v/v)	120	EPA-2 TO-15
4-Methyl-2-pentanone (MIBK)	5.00	5.80	ppb(v/v)	116	EPA-2 TO-15
cis-1,3-Dichloropropene	5.00	4.16	ppb(v/v)	83	EPA-2 TO-15
trans-1,3-Dichloropropene	5.00	4.64	ppb(v/v)	93	EPA-2 TO-15
Toluene	5.00	3.84	ppb(v/v)	77	EPA-2 TO-15
1,1,2-Trichloroethane	5.00	4.25	ppb(v/v)	85	EPA-2 TO-15
2-Hexanone	5.00	5.67	ppb(v/v)	113	EPA-2 TO-15
n-Octane	5.00	4.70	ppb(v/v)	94	EPA-2 TO-15
Dibromochloromethane	5.00	4.63	ppb(v/v)	93	EPA-2 TO-15
1,2-Dibromoethane (EDB)	5.00	4.05	ppb(v/v)	81	EPA-2 TO-15
Tetrachloroethene	5.00	4.59	ppb(v/v)	92	EPA-2 TO-15
Chlorobenzene	5.00	4.10	ppb(v/v)	82	EPA-2 TO-15
Ethylbenzene	5.00	4.27	ppb(v/v)	85	EPA-2 TO-15
m-Xylene & p-Xylene	10.0	8.80	ppb(v/v)	88	EPA-2 TO-15
Bromoform	5.00	4.36	ppb(v/v)	87	EPA-2 TO-15
Styrene	5.00	4.27	ppb(v/v)	85	EPA-2 TO-15
o-Xylene	5.00	4.51	ppb(v/v)	90	EPA-2 TO-15
1,1,2,2-Tetrachloroethane	5.00	4.96	ppb(v/v)	99	EPA-2 TO-15
Cumene	5.00	4.68	ppb(v/v)	94	EPA-2 TO-15
4-Ethyltoluene	5.00	5.03	ppb(v/v)	101	EPA-2 TO-15
1,3,5-Trimethylbenzene	5.00	4.97	ppb(v/v)	99	EPA-2 TO-15
alpha-Methylstyrene	5.00	4.62	ppb(v/v)	92	EPA-2 TO-15
1,2,4-Trimethylbenzene	5.00	5.26	ppb(v/v)	105	EPA-2 TO-15
1,3-Dichlorobenzene	5.00	4.20	ppb(v/v)	84	EPA-2 TO-15
1,4-Dichlorobenzene	5.00	4.24	ppb(v/v)	85	EPA-2 TO-15
1,2-Dichlorobenzene	5.00	4.45	ppb(v/v)	89	EPA-2 TO-15
1,2,4-Trichloro-benzene	5.00	4.50	ppb(v/v)	90	EPA-2 TO-15

(Continued on next page)

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: H3G110430 Work Order #...: M1C0C1AC Matrix.....: AIR
LCS Lot-Sample#: H3G150000-021

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
Hexachlorobutadiene	5.00	4.34	ppb(v/v)	87	EPA-2 TO-15

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	107	(60 - 140)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

Sample Data Summary

ARCADIS U.S., Inc.

Client Sample ID: TOI/070913

GC Volatiles

Lot-Sample #...:	H3G110430-001	Work Order #...:	M1CKW1AC	Matrix.....:	AIR
Date Sampled...:	07/09/13	Date Received..:	07/11/13		
Prep Date.....:	07/17/13	Analysis Date..:	07/17/13		
Prep Batch #...:	3197061				
Dilution Factor:	1.93	Method.....:	ASTM D 1946/E 260		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Methane	0.32	0.19	%

METHOD BLANK REPORT

GC Volatiles

Client Lot #...: H3G110430 Work Order #...: M1DJJ1AA Matrix.....: AIR
MB Lot-Sample #: H3G160000-061

Prep Date.....: 07/17/13
Analysis Date..: 07/17/13 Prep Batch #...: 3197061
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Methane	ND	0.10	%	ASTM D 1946/E 260

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC Volatiles

Client Lot #...: H3G110430 Work Order #...: M1DJJ1AC Matrix.....: AIR
LCS Lot-Sample#: H3G160000-061
Prep Date.....: 07/17/13 Analysis Date..: 07/17/13
Prep Batch #...: 3197061
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Methane	96	(70 - 130)	ASTM D 1946/E 260

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC Volatiles

Client Lot #...: H3G110430 Work Order #...: M1DJJ1AC Matrix.....: AIR
LCS Lot-Sample#: H3G160000-061
Prep Date.....: 07/17/13 Analysis Date..: 07/17/13
Prep Batch #...: 3197061
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
Methane	4.00	3.85	%	96	ASTM D 1946/E

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

Sample Receipt Documentation

TAL Knoxville #3G10-430
5815 Middlebrook Pike
Knoxville, TN 37921
phone 865-291-3000 fax 865-584-4315

Canister Samples Chain of Custody Record

TestAmerica assumes no liability with respect to the collection and shipment of these samples.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Contact Information	Project Manager: [redacted] (b) (4)	Sampled By: (b) (4) [redacted]
Company: ARCADIS US INC	Phone: 614-985-9130	1 of 2 COCs
Address: 100 EAST CAMPUS VIEW BLVD	Site Contact: [redacted]	
City/State/Zip COLUMBUS OH 43235	TAL Contact:	
Phone: 614-985-9130		
FAX:		
Project Name: LORD-SHOPE L.F.	Analysis Turnaround Time	
Site/location: GIRARD TWP PA	Standard (Specify) X	
PO #	Rush (Specify)	

	Sample Identification	Sample Date(s)	Time Start	Time Stop	Canister Vacuum in Field, "Hg (Start)	Canister Vacuum in Field, "Hg (Stop)	Flow Controller ID	Canister ID	TO-15	TO-14A	EPA 3C	EPA 25C	ASTM D-1946	Other (Please specify in notes section)	Sample Type	Indoor Air	Ambient Air	Soil Gas	Landfill Gas	Other (Please specify in notes section)
6125	TOI/070913	7/9/13	12:45P						X					X					X	
6120	TOE/070913	7/9/13	12:55P						X										X	

Sampled by :

	Temperature (Fahrenheit)		
	Interior	Ambient	
Start			
Stop			

	Pressure (inches of Hg)		
	Interior	Ambient	
Start			
Stop			

OTHER - METHANE EPA-18

1 Box Reid @ Ambient Temp with custody seal intact [illegible] 7/11/13

1 Box UPS #
1Z 5AR 403 03 0578 1633

Special Instructions/QC Requirements & Comments:

2 cans/no flows

Canisters Shipped by:	Date/Time:	Canisters Received by: (b) (4) [redacted] 7/11/13 1440
Samples Relinquished by: (b) (4) [redacted]	Date/Time: 7/9/13 4:00PM	Received by:
Relinquished by:	Date/Time:	Received by:

[redacted]

Chain of Custody Record

H3G100430

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TAL-4142 (0408)

Client: ARCADIS US INC	Project Manager: (b) (4) [redacted]	Date: 7/9/13	Chain of Custody Number: 013924
Address: 100 EAST CAMPUS VIEW BLVD	Telephone Number (Area Code)/Fax Number: 614-985-9130	Lab Number:	Page 2 of 2
City: COLUMBUS; State: OH; Zip Code: 43235	Site Contact: G. RADEMACHER	Lab Contact:	
Project Name and Location (State): LORD-SHOPE LF. GIRARD TWP PA	Carrier/Waybill Number:		
Contract/Purchase Order/Quote No.			

Analysis (Attach list if more space is needed): SUMMA CANISTER; TO-15; METHANE-EPA-18

Special Instructions/ Conditions of Receipt

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Air	Aqueous	Sed.	Soil		Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/ NaOH	SUMMA CANISTER	TO-15	METHANE-EPA-18
TOI/070913	7/9/13	12:45P	X					X						X	X	X
TOE/070913	7/9/13	12:55P	X					X						X	X	

Possible Hazard Identification: [X] Non-Hazard [ ] Flammable [ ] Skin Irritant [ ] Poison B [ ] Unknown

Sample Disposal: [ ] Return To Client [X] Disposal By Lab [ ] Archive For ____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: [ ] 24 Hours [ ] 48 Hours [ ] 7 Days [ ] 14 Days [ ] 21 Days [ ] Other ____

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By (b) (4) [redacted]	7/9/13	4:00PM	1. Received By (b) (4) [redacted]	7/11/13	14:40
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By		

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

TESTAMERICA KNOXVILLE SAMPLE RECEIPT/CONDITION UPON RECEIPT ANOMALY CHECKLIST

Lot Number: H3G110430

Review Items	Yes	No	NA	If No, what was the problem?	Comments/Actions Taken
1. Do sample container labels match COC? (IDs, Dates, Times)	✓			☐ 1a Do not match COC ☐ 1b Incomplete information ☐ 1c Marking smeared ☐ 1d Label torn ☐ 1e No label ☐ 1f COC not received ☐ 1g Other:	
2. Is the cooler temperature within limits? (> freezing temp. of water to 6 °C, VOST: 10°C)	✓			☐ 2a Temp Blank = _____ ☐ 2b Cooler Temp = _____ ☐ 2c Cooling initiated for recently collected samples, ice present.	
3. Were samples received with correct chemical preservative (excluding Encore)?			✓	☐ 3a Sample preservative =	
4. Were custody seals present/intact on cooler and/or containers?	✓			☐ 4a Not present ☐ 4b Not intact ☐ 4c Other:	
5. Were all of the samples listed on the COC received?	✓			☐ 5a Samples received-not on COC ☐ 5b Samples not received-on COC	
6. Were all of the sample containers received intact?	✓			☐ 6a Leaking ☐ 6b Broken	
7. Were VOA samples received without headspace?			✓	☐ 7a Headspace (VOA only)	
8. Were samples received in appropriate containers?	✓			☐ 8a Improper container	
9. Did you check for residual chlorine, if necessary? (e.g. 1613B, 1668)			✓	☐ 9a Could not be determined due to matrix interference	
10. Were samples received within holding time?	✓			☐ 10a Holding time expired	
11. For rad samples, was sample activity info. provided?			✓	☐ Incomplete information	
12. For 1613B water samples is pH<9?			✓	If no, was pH adjusted to pH 7 - 9 with sulfuric acid? _____	
13. Are the shipping containers intact?	✓			☐ 13a Leaking ☐ 13b Other:	
14. Was COC relinquished? (Signed/Dated/Timed)	✓			☐ 14a Not relinquished	
15. Are tests/parameters listed for each sample?	✓			☐ 15a Incomplete information	
16. Is the matrix of the samples noted?	✓			☐ 15a Incomplete information	
17. Is the date/time of sample collection noted?	✓			☐ 15a Incomplete information	
18. Is the client and project name/# identified?	✓			☐ 15a Incomplete information	
19. Was the sampler identified on the COC?	✓			☐ 19a Other	

Quote #: 79678 PM Instructions: _____

Sample Receiving Associate: (b) (4) [redacted] Date: 7/11/13

QA026R24.doc, 060413

Test America - Knoxville ---- Air Canister Dilution Log

Lot Number: *H3G110430*

Initial Can Pressure							Subsequent Dilutions											
Analyst/Date	Can or Tedlar bag prep Time	Baro ID B2 Pbarr (in)	Sample ID	Can #	Pres. upon receipt (-in or + psig)	Adj. Initial Pres. (-in or + psig)	Analyst/Date	I / S	Baro ID B2 Pbarr (in)	Initial Pres. Pi (in)	Final Pres. Pf (psig)	First InCan Final Pres. Pf (psig)	Second In-can Final Pres. Pf (psig)	Third InCan Final Pres. Pf (psig)	Serial Dilution Can #	Vol (mL)	Final Pres. Pf (psig)	Comments
NB 7/11/13	1530	28.75	M1CKW	6125	-2.7	—	NB 7/11/13	S	28.69	2.8	+10.5				0073	5	+4.4	10639
↓	↓	↓	M1CK1	6120	-9.3	+3.7												↓

Test America - Knoxville ---- Air Canister Dilution Log

Lot Number: *H3G110430*

Fixed Gas

Initial Can Pressure							Subsequent Dilutions											
Analyst/Date	Can or Tedlar bag prep Time	Baro ID B2 Pbarr (in)	Sample ID	Can #	Pres. upon receipt (-in or + psig)	Adj. Initial Pres. (-in or + psig)	Analyst/Date	I / S	Baro ID B2 Pbarr (in)	Initial Pres. Pi (in)	Final Pres. Pf (psig)	First InCan Final Pres. Pf (psig)	Second In-can Final Pres. Pf (psig)	Third InCan Final Pres. Pf (psig)	Serial Dilution Can #	Vol (mL)	Final Pres. Pf (psig)	Comments
NB 7/11/13	1530	28.75	M1CKW	6125	-2.7	—	NB 7/11/13	S	28.69	2.8	+10.5				0073	5	+4.4	10639
↓	↓	↓	M1CK1	6120	-9.3	+3.7												↓

NA

Volatiles

Raw Sample Data

ARCADIS U.S., Inc.

Client Sample ID: TOI/070913

GC/MS Volatiles

Lot-Sample #...:	H3G110430-001	**Work Order #...:**	M1CKW1AA	**Matrix.....:**	AIR
Date Sampled...:	07/09/13	**Date Received..:**	07/11/13		
Prep Date.....:	07/12/13	**Analysis Date..:**	07/13/13		
Prep Batch #...:	3196021				
Dilution Factor:	6090.54	**Method.....:**	EPA-2 TO-15		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	30000	ppb(v/v)
Acetonitrile	ND	6100	ppb(v/v)
Acrolein	ND	4900	ppb(v/v)
alpha-Methylstyrene	ND	2400	ppb(v/v)
Benzene	ND	1200	ppb(v/v)
Bromodichloromethane	ND	1200	ppb(v/v)
Bromoform	ND	1200	ppb(v/v)
Bromomethane	ND	1200	ppb(v/v)
1,3-Butadiene	ND	2400	ppb(v/v)
2-Butanone (MEK)	ND	6100	ppb(v/v)
tert-Butyl alcohol	ND	12000	ppb(v/v)
Carbon disulfide	ND	3000	ppb(v/v)
Carbon tetrachloride	ND	1200	ppb(v/v)
Chlorobenzene	ND	1200	ppb(v/v)
Dibromochloromethane	ND	1200	ppb(v/v)
Chlorodifluoromethane	ND	1200	ppb(v/v)
Chloroethane	ND	1200	ppb(v/v)
Chloroform	**430 J**	**1200**	**ppb(v/v)**
Chloromethane	ND	3000	ppb(v/v)
1,2-Dibromoethane (EDB)	ND	1200	ppb(v/v)
Dibromomethane	ND	2400	ppb(v/v)
1,2-Dichlorobenzene	ND	1200	ppb(v/v)
1,3-Dichlorobenzene	ND	1200	ppb(v/v)
1,4-Dichlorobenzene	ND	1200	ppb(v/v)
Dichlorodifluoromethane	ND	1200	ppb(v/v)
1,1-Dichloroethane	**440 J**	**1200**	**ppb(v/v)**
1,2-Dichloroethane	ND	1200	ppb(v/v)
cis-1,2-Dichloroethene	**91000**	**1200**	**ppb(v/v)**
trans-1,2-Dichloroethene	**460 J**	**1200**	**ppb(v/v)**
1,1-Dichloroethene	**780 J**	**1200**	**ppb(v/v)**
1,2-Dichloropropane	ND	1200	ppb(v/v)
cis-1,3-Dichloropropene	ND	1200	ppb(v/v)
trans-1,3-Dichloropropene	ND	1200	ppb(v/v)
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	1200	ppb(v/v)
1,4-Dioxane	ND	3000	ppb(v/v)
Ethyl acetate	ND	12000	ppb(v/v)
Ethylbenzene	ND	1200	ppb(v/v)
4-Ethyltoluene	ND	2400	ppb(v/v)

(Continued on next page)

ARCADIS U.S., Inc.

Client Sample ID: TOI/070913

GC/MS Volatiles

Lot-Sample #...: H3G110430-001 Work Order #...: M1CKW1AA Matrix.....: AIR

PARAMETER	RESULT	REPORTING LIMIT	UNITS
n-Heptane	ND	3000	ppb(v/v)
Hexachlorobutadiene	ND	6100	ppb(v/v)
n-Hexane	**920 J**	**3000**	**ppb(v/v)**
2-Hexanone	ND	3000	ppb(v/v)
Cumene	ND	2400	ppb(v/v)
Methyl methacrylate	ND	3000	ppb(v/v)
4-Methyl-2-pentanone (MIBK)	ND	3000	ppb(v/v)
Methyl tert-butyl ether	ND	6100	ppb(v/v)
n-Octane	ND	2400	ppb(v/v)
Pentane	ND	6100	ppb(v/v)
Propene	**1800 J**	**3000**	**ppb(v/v)**
Styrene	ND	1200	ppb(v/v)
1,1,2,2-Tetrachloroethane	ND	1200	ppb(v/v)
Tetrachloroethene	**9900**	**1200**	**ppb(v/v)**
Toluene	**370 J**	**1200**	**ppb(v/v)**
1,2,4-Trichloro-benzene	ND	6100	ppb(v/v)
1,1,1-Trichloroethane	**400 J**	**1200**	**ppb(v/v)**
1,1,2-Trichloroethane	ND	1200	ppb(v/v)
Trichloroethene	**43000**	**1200**	**ppb(v/v)**
Trichlorofluoromethane	ND	1200	ppb(v/v)
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1200	ppb(v/v)
1,2,4-Trimethylbenzene	ND	1200	ppb(v/v)
1,3,5-Trimethylbenzene	ND	1200	ppb(v/v)
2,2,4-Trimethylpentane	ND	3000	ppb(v/v)
Vinyl acetate	ND	6100	ppb(v/v)
Vinyl chloride	**63000**	**1200**	**ppb(v/v)**
m-Xylene & p-Xylene	**870 J**	**1200**	**ppb(v/v)**
o-Xylene	**800 J**	**1200**	**ppb(v/v)**
Acrylonitrile	ND	12000	ppb(v/v)
3-Chloropropene	ND	1200	ppb(v/v)
Methylene chloride	**1300 J**	**3000**	**ppb(v/v)**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	103	(60 - 140)

NOTE(S):

J Estimated result. Result is less than RL.

Data File: /var/chem/gcms/mj.i/J071213.b/m1ckw1aa.d
Report Date: 15-Jul-2013 11:37

TestAmerica Knoxville

Modified Method TO-14/TO-15

Data file : /var/chem/gcms/mj.i/J071213.b/m1ckw1aa.d
Lab Smp Id: M1CKW1AA Client Smp ID: TOI/070913
Inj Date : 13-JUL-2013 06:42
Operator : 7126 Inst ID: mj.i
Smp Info : ,6090.54,0,,,
Misc Info : J071213,TO15,lord.sub,,,
Comment :
Method : /var/chem/gcms/mj.i/J071213.b/TO15.m
Meth Date : 15-Jul-2013 11:37 barlozha Quant Type: ISTD
Cal Date : 23-APR-2013 14:53 Cal File: jicd233.d
Als bottle: 14
Dil Factor: 6090.54000
Integrator: HP RTE Compound Sublist: lord.sub
Target Version: 3.50

Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

Name	Value	Description
DF	6090.54000	Dilution Factor
Vt	500.00000	Default Calibration Volume
Vo	200.00000	Default Sample Volume

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb(v/v))	FINAL (ppb(v/v))
* 1 Bromochloromethane	128	8.546	8.546	(1.000)	181245	4.00000	4.000
* 2 1,4-Difluorobenzene	114	10.725	10.730	(1.000)	894335	4.00000	4.000
* 3 Chlorobenzene-d5	117	15.518	15.523	(1.000)	734950	4.00000	4.000
§ 4 4-Bromofluorobenzene	95	17.175	17.175	(1.107)	588831	4.10560	10.26
6 Propene	41	3.748	3.747	(0.439)	11449	0.12065	1837
12 Vinyl Chloride	62	4.114	4.113	(0.481)	368775	4.15133	63210
27 1,1-Dichloroethene	96	5.808	5.808	(0.680)	3311	0.05110	778.1
31 Methylene Chloride	84	6.120	6.120	(0.716)	5253	0.08360	1273
34 trans-1,2-Dichloroethene	96	6.895	6.900	(0.807)	2036	0.03015	459.1
37 1,1-Dichloroethane	63	7.287	7.287	(0.853)	4022	0.02909	442.9
40 Hexane	56	7.890	7.884	(0.923)	4316	0.06013	915.6
41 cis 1,2-Dichloroethene	96	8.229	8.234	(0.963)	400285	5.97643	91000
43 Chloroform	83	8.568	8.573	(1.003)	3823	0.02843	432.9
45 1,1,1-Trichloroethane	97	9.579	9.584	(1.121)	3539	0.02633	401.0
56 Trichloroethene	130	11.451	11.456	(1.068)	226724	2.79394	42540
65 Toluene	91	13.533	13.538	(0.872)	4465	0.02458	374.2

Data File: /var/chem/gcms/mj.i/J071213.b/m1ckw1aa.d
Report Date: 15-Jul-2013 11:37

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ppb(v/v))	FINAL (ppb(v/v))
73 Tetrachloroethene	129	14.695	14.695	(0.947)	44270	0.64961	9891
78 m&p-Xylene	91	16.040	16.039	(1.034)	8894	0.05719	870.8
82 o-Xylene	91	16.562	16.567	(1.067)	8207	0.05224	795.5