LORD

ORIGINAL

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

August 10, 2011

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, 2011 through July 31, 2011.

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 which was scheduled for shut down on June 1, 2011 was started up again on June 29, 2011 for planned operation of one month. ISVS influent was 293.5 ppm with 99.9% removal.

Groundwater Treatment:

The groundwater treatment system was operating normally during this interim.

The groundwater TOC effluent concentration was 1.6 mg/l.

Sincerely,

LORD Corporation

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

GMK11017/cmf

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

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ORIGINAL

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

PROJECT NO. 2

LORD Shope

Lot #: H1G080445

(b) (4) [redacted]

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

TESTAMERICA LABORATORIES, INC.

(b) (4) [redacted]

(b) (4) [redacted]
Project Manager

July 15, 2011

ANALYTICAL METHODS SUMMARY

H1G080445

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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

H1G080445

ORIGINAL

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
MKQXM	001	TOI/070611	07/06/11	11:40
MKQXV	002	TOE/070611	07/06/11	11:45

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.

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PROJECT NARRATIVE
H1G080445

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

Custody seals were not present.

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.

There is a significant contribution from an interfering non-target analyte to the quantitation of propene in sample TOI/070611. Therefore, the propene results are biased high and should be considered estimated. The result is flagged with "EST".

TestAmerica Knoxville maintains the following certifications, approvals and accreditations: Arkansas DEQ Lab #88-0688, California ELAP Cert. #2423, Colorado DPHE, Connecticut DPH Lab #PH-0223, DoD ELAP Cert. #ADE-1434, Florida DOH Lab #E87177, Georgia DNR Lab #906, Hawaii DOH, Indiana DOH Lab #C-TN-02, Iowa DNR Lab #375, Kansas DHE Cert. #E-10349, Kentucky EEC Lab #90101, Louisiana DEQ AI# 83979 Cert. #03079, Louisiana DOHH, Maryland DOE Cert #277, Michigan DNRE Lab #9933, Minnesota DOH ELAP Lab #047-999-429, Nevada DEP Lab #TN00009, New Jersey DEP Lab #TN001, New York DOH Lab #10781, North Carolina DHHS Lab #21705, North Carolina DENR Cert. #64, Ohio EPA VAP Lab #CL0059, Oklahoma DEQ Lab #9415, Pennsylvania DEP Lab #68-00576, South Carolina DHEC Cert #84001001, Tennessee DEC Lab #02014, Texas CEQ, Utah DOH Lab # QUAN3, Virginia DGS Lab #00165, Washington DOE Lab #C593, West Virginia DEP Cert. #345, West Virginia DHHR Cert #9955C, Wisconsin DNR Lab #998044300, and USDA Soil Permit #P330-11-00035. This list of approvals is subject to change and does not imply that laboratory certification is available for all parameters reported in this environmental sample data report.

ORIGINAL

Sample Data Summary

ORIGINAL

ARCADIS U.S., Inc.

Client Sample ID: TOI/070611

GC/MS Volatiles

Lot-Sample # H1G080445 - 001 **Work Order #** MKQXM1AA **Matrix.....:** AIR

Date Sampled...: 07/06/2011 **Date Received..:** 07/08/2011
Prep Date.....: 07/11/2011 **Analysis Date...** 07/11/2011
Prep Batch #.....: 1192113
Dilution Factor.: 4987.46 **Method.....:** TO-15

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)		REPORTING LIMIT (ug/m3)
trans-1,3-Dichloropropene	ND	1000	ND		4500
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	1000	ND		7000
Acetone	ND	25000	ND		59000
1,4-Dioxane	ND	2500	ND		9000
Ethyl acetate	ND	10000	ND		36000
Ethylbenzene	ND	1000	ND		4300
Trichlorofluoromethane	ND	1000	ND		5600
n-Heptane	ND	2500	ND		10000
Hexachlorobutadiene	ND	5000	ND		53000
n-Hexane	**1000**	**2500**	**3600**	**J**	**8800**
2-Hexanone	ND	2500	ND		10000
2,2,4-Trimethylpentane	ND	2500	ND		12000
Cumene	ND	2000	ND		9800
tert-Butyl alcohol	**230**	**10000**	**690**	**J**	**30000**
Methylene chloride	**970**	**2500**	**3400**	**J B**	**8700**
Methyl methacrylate	ND	2500	ND		10000
Benzene	**310**	**1000**	**1000**	**J**	**3200**
Acetonitrile	ND	5000	ND		8400
n-Octane	ND	2000	ND		9300
Pentane	ND	5000	ND		15000
Styrene	ND	1000	ND		4200
1,1,2,2-Tetrachloroethane	ND	1000	ND		6800
Tetrachloroethene	**8500**	**1000**	**58000**		**6800**
Toluene	**500**	**1000**	**1900**	**J**	**3800**
1,2,4-Trichlorobenzene	ND	5000	ND		37000
1,1,1-Trichloroethane	**650**	**1000**	**3500**	**J**	**5400**
1,1,2-Trichloroethane	ND	1000	ND		5400
Trichloroethene	**42000**	**1000**	**230000**		**5400**
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1000	ND		7600
1,2,4-Trimethylbenzene	ND	1000	ND		4900
1,3,5-Trimethylbenzene	ND	1000	ND		4900
Vinyl acetate	ND	5000	ND		18000
Vinyl chloride	**110000**	**1000**	**280000**		**2500**
o-Xylene	**560**	**1000**	**2400**	**J**	**4300**
Methyl tert-butyl ether	ND	5000	ND		18000
alpha-Methylstyrene	ND	2000	ND		9600
Chlorodifluoromethane	**620**	**1000**	**2200**	**J**	**3500**
m-Xylene & p-Xylene	**870**	**1000**	**3800**	**J**	**4300**
Bromodichloromethane	ND	1000	ND		6700

ARCADIS U.S., Inc. ORIGINAL

Client Sample ID: TOI/070611

GC/MS Volatiles

Lot-Sample # H1G080445 - 001 Work Order # MKQXM1AA Matrix.....: AIR

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)		REPORTING LIMIT (ug/m3)
1,2-Dibromoethane (EDB)	ND	1000	ND		7700
2-Butanone (MEK)	ND	5000	ND		15000
4-Methyl-2-pentanone (MIBK)	ND	2500	ND		10000
Bromoform	ND	1000	ND		10000
Bromomethane	ND	1000	ND		3900
1,3-Butadiene	ND	2000	ND		4400
4-Ethyltoluene	ND	2000	ND		9800
Acrolein	ND	4000	ND		9100
Carbon disulfide	ND	2500	ND		7800
Acrylonitrile	ND	10000	ND		22000
Carbon tetrachloride	ND	1000	ND		6300
Chlorobenzene	ND	1000	ND		4600
Dibromochloromethane	ND	1000	ND		8500
Chloroethane	**310**	**1000**	**810**	**J**	**2600**
Chloroform	**820**	**1000**	**4000**	**J**	**4900**
Chloromethane	ND	2500	ND		5100
3-Chloropropene	ND	1000	ND		3100
Propene	**3800**	**2500**	**6600**	**est**	**4300**
Dibromomethane	ND	2000	ND		14000
1,2-Dichlorobenzene	ND	1000	ND		6000
1,3-Dichlorobenzene	ND	1000	ND		6000
1,4-Dichlorobenzene	ND	1000	ND		6000
Dichlorodifluoromethane	ND	1000	ND		4900
1,1-Dichloroethane	**640**	**1000**	**2600**	**J**	**4000**
1,2-Dichloroethane	ND	1000	ND		4000
1,1-Dichloroethene	**1100**	**1000**	**4400**		**4000**
cis-1,2-Dichloroethene	**120000**	**1000**	**480000**		**4000**
trans-1,2-Dichloroethene	**470**	**1000**	**1900**	**J**	**4000**
1,2-Dichloropropane	ND	1000	ND		4600
cis-1,3-Dichloropropene	ND	1000	ND		4500

SURROGATE	PERCENT RECOVERY	LABORATORY CONTROL LIMITS (%)
4-Bromofluorobenzene	112	60 - 140

Qualifiers

B	Method blank contamination. The associated method blank contains the target analyte at a reportable level.
est	Estimated value. See narrative for details.
J	Estimated result. Result is less than RL.

ARCADIS U.S., Inc.

ORIGINAL

Client Sample ID: TOI/070611

GC/MS Volatiles

Lot-Sample #	H1G080445 - 001	Work Order #	MKQXM1AA	Matrix.....:	AIR

The 'Result' in ug/m3 is calculated using the following equation: Amount Found(before rounding)*(Molecular Weight/24.45)

The 'Reporting Limit' in ug/m3 is calculated using the following equation: (Reporting Limit(before rounding) * Dilution Factor) * (Molecular Weight/24.45)

ARCADIS U.S., Inc.

Client Sample ID: TOE/070611

GC/MS Volatiles

Lot-Sample #	H1G080445 - 002	Work Order #	MKQXV1AA	Matrix.....:	AIR

Date Sampled...:	07/06/2011	Date Received..:	07/08/2011
Prep Date.....:	07/11/2011	Analysis Date...	07/12/2011
Prep Batch #.....:	1192113		
Dilution Factor.:	1	Method.....:	TO-15

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)		REPORTING LIMIT (ug/m3)
trans-1,3-Dichloropropene	ND	0.20	ND		0.91
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	0.20	ND		1.4
Acetone	**30**	**5.0**	**70**		**12**
1,4-Dioxane	ND	0.50	ND		1.8
Ethyl acetate	ND	2.0	ND		7.2
Ethylbenzene	**0.86**	**0.20**	**3.7**		**0.87**
Trichlorofluoromethane	**0.051**	**0.20**	**0.29**	**J**	**1.1**
n-Heptane	**0.59**	**0.50**	**2.4**		**2.0**
Hexachlorobutadiene	ND	1.0	ND		11
n-Hexane	**0.24**	**0.50**	**0.83**	**J**	**1.8**
2-Hexanone	**13**	**0.50**	**52**		**2.0**
2,2,4-Trimethylpentane	**0.060**	**0.50**	**0.28**	**J**	**2.3**
Cumene	**0.082**	**0.40**	**0.40**	**J**	**2.0**
tert-Butyl alcohol	**19**	**2.0**	**57**		**6.1**
Methylene chloride	**0.46**	**0.50**	**1.6**	**J B**	**1.7**
Methyl methacrylate	ND	0.50	ND		2.0
Benzene	**0.20**	**0.20**	**0.64**		**0.64**
Acetonitrile	**0.24**	**1.0**	**0.40**	**J**	**1.7**
n-Octane	ND	0.40	ND		1.9
Pentane	ND	1.0	ND		3.0
Styrene	**0.063**	**0.20**	**0.27**	**J**	**0.85**
1,1,2,2-Tetrachloroethane	ND	0.20	ND		1.4
Tetrachloroethene	**0.40**	**0.20**	**2.7**		**1.4**
Toluene	**7.8**	**0.20**	**30**		**0.75**
1,2,4-Trichlorobenzene	ND	1.0	ND		7.4
1,1,1-Trichloroethane	ND	0.20	ND		1.1
1,1,2-Trichloroethane	ND	0.20	ND		1.1
Trichloroethene	**0.11**	**0.20**	**0.61**	**J**	**1.1**
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	0.20	ND		1.5
1,2,4-Trimethylbenzene	**0.79**	**0.20**	**3.9**		**0.98**
1,3,5-Trimethylbenzene	**0.26**	**0.20**	**1.3**		**0.98**
Vinyl acetate	ND	1.0	ND		3.5
Vinyl chloride	**0.084**	**0.20**	**0.22**	**J**	**0.51**
o-Xylene	**1.5**	**0.20**	**6.4**		**0.87**
Methyl tert-butyl ether	ND	1.0	ND		3.6
alpha-Methylstyrene	ND	0.40	ND		1.9
Chlorodifluoromethane	**0.14**	**0.20**	**0.49**	**J**	**0.71**
m-Xylene & p-Xylene	**3.4**	**0.20**	**15**		**0.87**
Bromodichloromethane	ND	0.20	ND		1.3

ARCADIS U.S., Inc.

ORIGINAL

Client Sample ID: TOE/070611

GC/MS Volatiles

Lot-Sample # H1G080445 - 002 Work Order # MKQXV1AA Matrix.....: AIR

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)		REPORTING LIMIT (ug/m3)
1,2-Dibromoethane (EDB)	ND	0.20	ND		1.5
2-Butanone (MEK)	**6.8**	**1.0**	**20**		**2.9**
4-Methyl-2-pentanone (MIBK)	**3.2**	**0.50**	**13**		**2.0**
Bromoform	ND	0.20	ND		2.1
Bromomethane	ND	0.20	ND		0.78
1,3-Butadiene	ND	0.40	ND		0.88
4-Ethyltoluene	**0.81**	**0.40**	**4.0**		**2.0**
Acrolein	**0.63**	**0.80**	**1.4**	**J**	**1.8**
Carbon disulfide	**1.4**	**0.50**	**4.3**		**1.6**
Acrylonitrile	ND	2.0	ND		4.3
Carbon tetrachloride	ND	0.20	ND		1.3
Chlorobenzene	ND	0.20	ND		0.92
Dibromochloromethane	ND	0.20	ND		1.7
Chloroethane	ND	0.20	ND		0.53
Chloroform	**0.19**	**0.20**	**0.92**	**J**	**0.98**
Chloromethane	**0.45**	**0.50**	**0.94**	**J**	**1.0**
3-Chloropropene	ND	0.20	ND		0.63
Propene	**0.12**	**0.50**	**0.21**	**J**	**0.86**
Dibromomethane	ND	0.40	ND		2.8
1,2-Dichlorobenzene	ND	0.20	ND		1.2
1,3-Dichlorobenzene	ND	0.20	ND		1.2
1,4-Dichlorobenzene	**0.28**	**0.20**	**1.7**		**1.2**
Dichlorodifluoromethane	ND	0.20	ND		0.99
1,1-Dichloroethane	ND	0.20	ND		0.81
1,2-Dichloroethane	ND	0.20	ND		0.81
1,1-Dichloroethene	ND	0.20	ND		0.79
cis-1,2-Dichloroethene	**0.21**	**0.20**	**0.84**		**0.79**
trans-1,2-Dichloroethene	ND	0.20	ND		0.79
1,2-Dichloropropane	ND	0.20	ND		0.92
cis-1,3-Dichloropropene	ND	0.20	ND		0.91

SURROGATE	PERCENT RECOVERY	LABORATORY CONTROL LIMITS (%)
4-Bromofluorobenzene	116	60 - 140

Qualifiers

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

J Estimated result. Result is less than RL.

ORIGINAL

ARCADIS U.S., Inc.

Client Sample ID: TOE/070611

GC/MS Volatiles

Lot-Sample #	H1G080445 - 002	**Work Order #**	MKQXV1AA	**Matrix.....:**	AIR

The 'Result' in ug/m3 is calculated using the following equation: Amount Found(before rounding)*(Molecular Weight/24.45)

The 'Reporting Limit' in ug/m3 is calculated using the following equation: (Reporting Limit(before rounding) * Dilution Factor) * (Molecular Weight/24.45)

ORIGINAL

ARCADIS U.S., Inc.

Client Sample ID: INTRA-LAB BLANK

GC/MS Volatiles

Lot-Sample #	H1G110000 - 113B	Work Order #	MKR4R1AA	Matrix.....:	AIR
	07/07/2011	Date Received..:	07/08/2011		
Prep Date.....:	07/11/2011	Analysis Date...	07/11/2011		
Prep Batch #.....:	1192113				
Dilution Factor.:	1	Method.....:	TO-15		

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)		REPORTING LIMIT (ug/m3)
trans-1,3-Dichloropropene	ND	0.20	ND		0.91
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	0.20	ND		1.4
Acetone	ND	5.0	ND		12
1,4-Dioxane	ND	0.50	ND		1.8
Ethyl acetate	ND	2.0	ND		7.2
Ethylbenzene	ND	0.20	ND		0.87
Trichlorofluoromethane	ND	0.20	ND		1.1
n-Heptane	ND	0.50	ND		2.0
Hexachlorobutadiene	ND	1.0	ND		11
n-Hexane	ND	0.50	ND		1.8
2-Hexanone	ND	0.50	ND		2.0
2,2,4-Trimethylpentane	ND	0.50	ND		2.3
Cumene	ND	0.40	ND		2.0
tert-Butyl alcohol	ND	2.0	ND		6.1
Methylene chloride	**0.053**	**0.50**	**0.18**	**J**	**1.7**
Methyl methacrylate	ND	0.50	ND		2.0
Benzene	ND	0.20	ND		0.64
Acetonitrile	ND	1.0	ND		1.7
n-Octane	ND	0.40	ND		1.9
Pentane	ND	1.0	ND		3.0
Styrene	ND	0.20	ND		0.85
1,1,2,2-Tetrachloroethane	ND	0.20	ND		1.4
Tetrachloroethene	ND	0.20	ND		1.4
Toluene	ND	0.20	ND		0.75
1,2,4-Trichlorobenzene	ND	1.0	ND		7.4
1,1,1-Trichloroethane	ND	0.20	ND		1.1
1,1,2-Trichloroethane	ND	0.20	ND		1.1
Trichloroethene	ND	0.20	ND		1.1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	0.20	ND		1.5
1,2,4-Trimethylbenzene	ND	0.20	ND		0.98
1,3,5-Trimethylbenzene	ND	0.20	ND		0.98
Vinyl acetate	ND	1.0	ND		3.5
Vinyl chloride	ND	0.20	ND		0.51
o-Xylene	ND	0.20	ND		0.87
Methyl tert-butyl ether	ND	1.0	ND		3.6
alpha-Methylstyrene	ND	0.40	ND		1.9
Chlorodifluoromethane	ND	0.20	ND		0.71
m-Xylene & p-Xylene	ND	0.20	ND		0.87

ORIGINAL

ARCADIS U.S., Inc.

Client Sample ID: INTRA-LAB BLANK

GC/MS Volatiles

Lot-Sample # H1G110000 - 113B **Work Order #** MKR4R1AA **Matrix.....:** AIR

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)
Bromodichloromethane	ND	0.20	ND	1.3
1,2-Dibromoethane (EDB)	ND	0.20	ND	1.5
2-Butanone (MEK)	ND	1.0	ND	2.9
4-Methyl-2-pentanone (MIBK)	ND	0.50	ND	2.0
Bromoform	ND	0.20	ND	2.1
Bromomethane	ND	0.20	ND	0.78
1,3-Butadiene	ND	0.40	ND	0.88
4-Ethyltoluene	ND	0.40	ND	2.0
Acrolein	ND	0.80	ND	1.8
Carbon disulfide	ND	0.50	ND	1.6
Acrylonitrile	ND	2.0	ND	4.3
Carbon tetrachloride	ND	0.20	ND	1.3
Chlorobenzene	ND	0.20	ND	0.92
Dibromochloromethane	ND	0.20	ND	1.7
Chloroethane	ND	0.20	ND	0.53
Chloroform	ND	0.20	ND	0.98
Chloromethane	ND	0.50	ND	1.0
3-Chloropropene	ND	0.20	ND	0.63
Propene	ND	0.50	ND	0.86
Dibromomethane	ND	0.40	ND	2.8
1,2-Dichlorobenzene	ND	0.20	ND	1.2
1,3-Dichlorobenzene	ND	0.20	ND	1.2
1,4-Dichlorobenzene	ND	0.20	ND	1.2
Dichlorodifluoromethane	ND	0.20	ND	0.99
1,1-Dichloroethane	ND	0.20	ND	0.81
1,2-Dichloroethane	ND	0.20	ND	0.81
1,1-Dichloroethene	ND	0.20	ND	0.79
cis-1,2-Dichloroethene	ND	0.20	ND	0.79
trans-1,2-Dichloroethene	ND	0.20	ND	0.79
1,2-Dichloropropane	ND	0.20	ND	0.92
cis-1,3-Dichloropropene	ND	0.20	ND	0.91

SURROGATE	PERCENT RECOVERY	LABORATORY CONTROL LIMITS (%)
4-Bromofluorobenzene	105	60 - 140

Qualifiers

J Estimated result. Result is less than RL.

ORIGINAL

ARCADIS U.S., Inc.

Client Sample ID: INTRA-LAB BLANK

GC/MS Volatiles

Lot-Sample #	H1G110000 - 113B	Work Order #	MKR4R1AA	Matrix.....:	AIR

The 'Result' in ug/m3 is calculated using the following equation: Amount Found(before rounding)*(Molecular Weight/24.45)

The 'Reporting Limit' in ug/m3 is calculated using the following equation: (Reporting Limit(before rounding) * Dilution Factor) * (Molecular Weight/24.45)

ORIGINAL

ARCADIS U.S., Inc.

Client Sample ID: CHECK SAMPLE

GC/MS Volatiles

Lot-Sample # H1G110000 - 113C Work Order # MKR4R1AC Matrix.....: AIR

07/07/2011 Date Received..: 07/08/2011
Prep Date.....: 07/11/2011 Analysis Date... 07/11/2011
Prep Batch #.....: 1192113
Dilution Factor.: 1 Method.....: TO-15

PARAMETER	SPIKE AMOUNT (ppb(v/v))	MEASURED AMOUNT (ppb(v/v))	SPIKE AMOUNT (ug/m3)	MEASURED AMOUNT (ug/m3)	PERCENT RECOVERY	RECOVERY LIMITS
trans-1,3-Dichloropropene	5.00	5.12	23	23	102	70 - 130
1,2-Dichloro-1,1,2,2-tetrafluoroethane	5.00	5.63	35	39	113	60 - 140
Acetone	5.00	4.56	12	11	91	60 - 140
1,4-Dioxane	5.00	4.07	18	15	81	60 - 140
Ethyl acetate	5.00	5.20	18	19	104	60 - 140
Ethylbenzene	5.00	4.83	22	21	97	70 - 130
Trichlorofluoromethane	5.00	6.05	28	34	121	60 - 140
n-Heptane	5.00	4.59	20	19	92	70 - 130
Hexachlorobutadiene	5.00	5.10	53	54	102	60 - 140
n-Hexane	5.00	5.46	18	19	109	70 - 130
2-Hexanone	5.00	4.30	20	18	86	60 - 140
2,2,4-Trimethylpentane	5.00	4.96	23	23	99	70 - 130
Cumene	5.00	4.53	25	22	91	70 - 130
tert-Butyl alcohol	5.00	5.22	15	16	104	60 - 140
Methylene chloride	5.00	5.79	17	20	116	70 - 130
Methyl methacrylate	5.00	4.66	20	19	93	60 - 140
Benzene	5.00	4.98	16	16	100	70 - 130
Acetonitrile	5.00	5.22	8.4	8.8	104	60 - 140
n-Octane	5.00	4.65	23	22	93	70 - 130
Pentane	5.00	5.46	15	16	109	70 - 130
Styrene	5.00	4.94	21	21	99	70 - 130
1,1,2,2-Tetrachloroethane	5.00	4.85	34	33	97	70 - 130
Tetrachloroethene	5.00	4.80	34	33	96	70 - 130
Toluene	5.00	4.72	19	18	94	70 - 130
1,2,4-Trichlorobenzene	5.00	4.95	37	37	99	60 - 140
1,1,1-Trichloroethane	5.00	6.25	27	34	125	70 - 130
1,1,2-Trichloroethane	5.00	4.87	27	27	97	70 - 130
Trichloroethene	5.00	5.15	27	28	103	70 - 130
1,1,2-Trichloro-1,2,2-trifluoroethane	5.00	6.38	38	49	128	70 - 130
1,2,4-Trimethylbenzene	5.00	4.66	25	23	93	70 - 130
1,3,5-Trimethylbenzene	5.00	4.66	25	23	93	70 - 130
Vinyl acetate	5.00	5.15	18	18	103	60 - 140
Vinyl chloride	5.00	5.68	13	15	114	70 - 130
o-Xylene	5.00	4.82	22	21	96	70 - 130
Methyl tert-butyl ether	5.00	4.92	18	18	98	60 - 140
alpha-Methylstyrene	5.00	4.47	24	22	89	60 - 140
Chlorodifluoromethane	5.00	6.12	18	22	122	60 - 140
m-Xylene & p-Xylene	10.0	9.76	43	42	98	70 - 130

ORIGINAL

ARCADIS U.S., Inc.

Client Sample ID: CHECK SAMPLE

GC/MS Volatiles

Lot-Sample # H1G110000 - 113C Work Order # MKR4R1AC Matrix.....: AIR

PARAMETER	SPIKE AMOUNT (ppb(v/v))	MEASURED AMOUNT (ppb(v/v))	SPIKE AMOUNT (ug/m3)	MEASURED AMOUNT (ug/m3)	PERCENT RECOVERY	RECOVERY LIMITS
Bromodichloromethane	5.00	5.28	34	35	106	70 - 130
1,2-Dibromoethane (EDB)	5.00	4.84	38	37	97	70 - 130
2-Butanone (MEK)	5.00	4.45	15	13	89	60 - 140
4-Methyl-2-pentanone (MIBK)	5.00	4.50	20	18	90	60 - 140
Bromoform	5.00	4.72	52	49	94	60 - 140
Bromomethane	5.00	4.74	19	18	95	70 - 130
1,3-Butadiene	5.00	6.01	11	13	120	60 - 140
4-Ethyltoluene	5.00	4.64	25	23	93	70 - 130
Acrolein	5.00	4.01	11	9.2	80	60 - 140
Carbon disulfide	5.00	5.68	16	18	114	70 - 130
Acrylonitrile	5.00	4.82	11	10	96	60 - 140
Carbon tetrachloride	5.00	5.35	31	34	107	70 - 130
Chlorobenzene	5.00	4.67	23	21	93	70 - 130
Dibromochloromethane	5.00	5.06	43	43	101	70 - 130
Chloroethane	5.00	5.45	13	14	109	70 - 130
Chloroform	5.00	5.80	24	28	116	70 - 130
Chloromethane	5.00	6.17	10	13	123	60 - 140
3-Chloropropene	5.00	5.63	16	18	113	60 - 140
Propene	5.00	5.92	8.6	10	118	60 - 140
Dibromomethane	5.00	5.12	36	36	102	70 - 130
1,2-Dichlorobenzene	5.00	4.56	30	27	91	70 - 130
1,3-Dichlorobenzene	5.00	4.68	30	28	94	70 - 130
1,4-Dichlorobenzene	5.00	4.55	30	27	91	70 - 130
Dichlorodifluoromethane	5.00	6.10	25	30	122	60 - 140
1,1-Dichloroethane	5.00	6.11	20	25	122	70 - 130
1,2-Dichloroethane	5.00	6.00	20	24	120	70 - 130
1,1-Dichloroethene	5.00	6.26	20	25	125	70 - 130
cis-1,2-Dichloroethene	5.00	5.60	20	22	112	70 - 130
trans-1,2-Dichloroethene	5.00	5.30	20	21	106	70 - 130
1,2-Dichloropropane	5.00	4.98	23	23	100	70 - 130
cis-1,3-Dichloropropene	5.00	4.99	23	23	100	70 - 130

SURROGATE	PERCENT RECOVERY	LABORATORY CONTROL LIMITS (%)
4-Bromofluorobenzene	111	60 - 140

ORIGINAL

ARCADIS U.S., Inc.

Client Sample ID: CHECK SAMPLE

GC/MS Volatiles

Lot-Sample #	H1G110000 - 113C	**Work Order #**	MKR4R1AC	**Matrix.....:**	AIR

The 'Result' in ug/m3 is calculated using the following equation: Amount Found(before rounding)*(Molecular Weight/24.45)

The 'Reporting Limit' in ug/m3 is calculated using the following equation: (Reporting Limit(before rounding) * Dilution Factor) * (Molecular Weight/24.45)

ORIGINAL

Sample Data Summary

ORIGINAL

ARCADIS U.S., Inc.

Client Sample ID: TOI/070611

GC Volatiles

Lot-Sample #...: H1G080445-001 Work Order #...: MKQXM1AC Matrix.....: AIR
Date Sampled...: 07/06/11 Date Received..: 07/08/11
Prep Date.....: 07/11/11 Analysis Date..: 07/11/11
Prep Batch #...: 1189136
Dilution Factor: 1.89 Method.....: ASTM D 1946/E 260

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Methane	1.6	0.19	%

ORIGINAL

METHOD BLANK REPORT

GC Volatiles

Client Lot #...: H1G080445 Work Order #...: MKQ9Q1AA Matrix.....: AIR
MB Lot-Sample #: H1G080000-136

Prep Date.....: 07/11/11
Analysis Date..: 07/11/11 Prep Batch #...: 1189136
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.

ORIGINAL

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC Volatiles

Client Lot #...: H1G080445 Work Order #...: MKQ9Q1AC Matrix.....: AIR
LCS Lot-Sample#: H1G080000-136
Prep Date.....: 07/11/11 Analysis Date..: 07/11/11
Prep Batch #...: 1189136
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Methane	**95**	**(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

ORIGINAL

GC Volatiles

Client Lot #...: H1G080445 **Work Order #...:** MKQ9Q1AC **Matrix.....:** AIR
LCS Lot-Sample#: H1G080000-136
Prep Date.....: 07/11/11 **Analysis Date..:** 07/11/11
Prep Batch #...: 1189136
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
Methane	**4.00**	**3.81**	**%**	**95**	**ASTM D 1946/I**

NOTE(S):

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

Bold print denotes control parameters

ORIGINAL

Sample Receipt Documentation

HIG080445

Chain of Custody Record

TestAmerica Laboratory location: KNOXVILLE

Regulatory program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact			
Company Name: ARCADIS US INC	Client Project Manager: (b) (4) [redacted]	Site Contact: (b) (4) [redacted]	Lab Contact:
Address: 284 CRAMER CREEK COURT	Telephone: 614-764-2310	Telephone: 814-720-1212	Telephone:
City/State/Zip: DUBLIN OH 43017	Email:	Analysis Turnaround Time (Calendar days)	
Phone: 614-764-2310		TAT if different from below ____ ☐ 3 weeks ☐ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day	
Project Name: LORD SHOPE LANDFILL	Method of Shipment/Carrier: UPS		
Project Number:	Shipping/Tracking No:		
PO#			

COC No: 013840

1 of 2 COCs

Analyses

Sample Identification	Sample Date	Sample Time	Matrix: Air	Aqueous	Sediment	Solid	Other	Containers & Preservatives: H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Unpres	Other:	Filtered Sample (Y/N)	Composite (Y/N)	VOC-TO15	METHANE EPA-18	Sample Specific Notes / Special Instructions:
TOI/070611	7/6/11	11:40A	X											X			X	X	
TOE/070611	7/6/11	11:45A	X											X			X		

1 Box Rec'd @ Ambient Temp without custody Seal BAA 7/9/11

1 Box ~~Rec'd~~ Sent 7/6/11 UPS # 1Z183X760355550801

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

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

Special Instructions/QC Requirements & Comments: 2 cans / no flows.

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
(b) (4) [redacted]	GROUNDWATER RESOURCES	7/6/11 4:00PM	(b) (4) [redacted]	[redacted]	7/9/11 1230
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

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TAL 0018- 1 (04/10)

ORIGINAL

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

H1G080445

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: (b)(4) [redacted]	Sampled By: [redacted]	2 of 2 COCs
Company: ARCADIS US INC	Phone: 614-764-2310		
Address: 284 CRAMER CREEK COURT	Site Contact:		
City/State/Zip DUBLIN OH 43017	TAL Contact:		
Phone: 614-799-4701			
FAX:			
Project Name: LORD-SHOPE L.F.	Analysis Turnaround Time		
Site/location:	Standard (Specify)		
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)
TOI/070611	7/6/11		11:40				92073	X					X					X	
TOE/070611	7/6/11		11:45				12470	X										X	

Sampled by :

Temperature (Fahrenheit)	Interior	Ambient
Start		
Stop		

Pressure (inches of Hg)	Interior	Ambient
Start		
Stop		

X- METHANE - EPA-18

Special Instructions/QC Requirements & Comments:

Canisters Shipped by: (b)(4) [redacted]	Date/Time: 7/6/11 4:00PM	[redacted]	7/8/11 12:30
Samples Relinquished by:	Date/Time:		
Relinquished by:	Date/Time:	Received by:	

ORIGINAL