

COMPREHENSIVE VALIDATION PACKAGE

ATL Applications

INVENTORY SHEET

WORK ORDER # 0908628D

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Completed by:

Kara McKiernan

(Signature)

Kara McKiernan/ Document Control

(Print Name & Title)

09/21/09

(Date)

WORK ORDER #: 0908628D

Work Order Summary

CLIENT:	Mr. Taeko Minegishi Environmental Health & Engineering, Inc. 117 Fourth Avenue Needham, MA 02494	BILL TO:	Accounts Payable Environmental Health & Engineering, Inc. 117 Fourth Avenue Needham, MA 02494
PHONE:	800-825-5343	P.O. #	16512
FAX:	781-247-4305	PROJECT #	16512
DATE RECEIVED:	08/28/2009	CONTACT:	Ausha Scott
DATE COMPLETED:	09/17/2009		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>
48A	101427	ATL Applications
49A	101428	ATL Applications
50A	101429	ATL Applications
51A	101738	ATL Applications
52A	101739	ATL Applications
53A	101740	ATL Applications
53AA	101740 Lab Duplicate	ATL Applications
54A	101741	ATL Applications
55A	101742	ATL Applications
56A	101737	ATL Applications
57A	101475	ATL Applications
58A	101476	ATL Applications
59A	101477	ATL Applications
59AA	101477 Lab Duplicate	ATL Applications
60A	101478	ATL Applications
61A	101479	ATL Applications
62A	101480	ATL Applications

Continued on next page

**LABORATORY NARRATIVE
Ozone by Radiello 172
Environmental Health & Engineering, Inc.
Workorder# 0908628D**

Fifteen Radiello 172 (Ozone) samples were received on August 28, 2009. The procedure involves reaction of 4-pyridylaldehyde with 3-methyl-2-benzothiazolinone hydrazone to yield the corresponding azide. The absorbance is then measured at 430 nm using a spectrophotometer. Results are reported in uG and uG/m3.

Sampling rate of 24.6 mL/min was provided by the manufacturer.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

Results were calculated based on 25 deg C without temperature correction. The actual exposure time was used to calculate sample concentrations and reporting limits.

An exposure time of 18720 minutes was used for the QC samples.

All media used for the sampling were supplied by the client. Blank subtraction was not performed on the sample results since the media used for Method Blanks may be from a different lot than the media used for the samples.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicate as follows:

- B - Compound present in laboratory blank greater than reporting limit.
- J - Estimated value.
- E - Exceeds instrument calibration range.
- S - Saturated peak.
- Q - Exceeds quality control limits.
- U - Compound analyzed for but not detected above the detection limit.
- M - Reported value may be biased due to apparent matrix interferences.
- N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

- a-File was requantified
- b-File was quantified by a second column and detector
- r1-File was requantified for the purpose of reissue

Sample Results and Raw Data

AIR TOXICS LTD.

ATL Application # 62 for RAD 172 (Ozone)

Spectrophotometer

Field	Lab	Collection Date	Analysis Date	Dilution Factor	Reporting Limit (ug)	Reporting Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Sample ID.	Sample ID.							
101427	0908628D-48A	NA	8/31/2009	1.00	0.64	1.4	ND	ND
101428	0908628D-49A	NA	8/31/2009	1.00	0.64	1.4	ND	ND
101429	0908628D-50A	NA	8/31/2009	1.00	0.64	1.4	ND	ND
101738	0908628D-51A	8/27/2009	8/31/2009	1.00	0.64	1.4	ND	ND
101739	0908628D-52A	8/27/2009	8/31/2009	1.00	0.64	1.4	ND	ND
101740	0908628D-53A	8/27/2009	8/31/2009	2.00	1.3	2.8	14	29
101740 Lab Duplicate	0908628D-53AA	8/27/2009	8/31/2009	2.00	1.3	2.8	14	29
101741	0908628D-54A	8/27/2009	8/31/2009	1.00	0.64	1.4	ND	ND
101742	0908628D-55A	8/27/2009	8/31/2009	1.00	0.64	1.4	ND	ND
101737	0908628D-56A	NA	8/31/2009	1.00	0.64	1.4	ND	ND
101475	0908628D-57A	8/26/2009	8/31/2009	1.00	0.64	1.5	ND	ND
101476	0908628D-58A	8/26/2009	8/31/2009	1.00	0.64	1.5	ND	ND
101477	0908628D-59A	8/26/2009	8/31/2009	1.00	0.64	1.5	9.4	22
101477 Lab Duplicate	0908628D-59AA	8/26/2009	8/31/2009	1.00	0.64	1.5	9.4	22
101478	0908628D-60A	8/26/2009	8/31/2009	1.00	0.64	1.5	ND	ND
101479	0908628D-61A	8/26/2009	8/31/2009	1.00	0.64	1.5	ND	ND
101480	0908628D-62A	NA	8/31/2009	1.00	0.64	1.4	ND	ND
Method Blank	0908628D-63A	NA	8/31/2009	1.00	0.64	1.4	ND	ND
Method Blank	0908628D-63B	NA	8/31/2009	1.00	0.64	1.4	ND	ND
Method Blank	0908628D-63C	NA	8/31/2009	1.00	0.64	1.4	ND	ND
CCV	0908628D-64A	NA	8/31/2009	1.00	0.64	1.4	%Rec 104	

COMMENTS: 1. NA=Not Applicable
 2. ND=Not Detected
 3. Exposure time of 18720 minutes was assumed for the QC samples.
 4. Background subtraction not performed.

Ozone Radiello Calculation Worksheet

Workorder #: 0908628D

Sampling Rate (ml/min) 24.6 Typically 24.6 for Ozone

Sampling T (deg C) 25 Typically 25

Volume (ml) 5 Typically 5 for Ozone

Date of Analysis: 8/31/2009

$$\frac{(\text{Abs}-Y\text{-int})\times DF}{\text{Slope}} = \frac{\text{rnc}(\mu\text{g}) \times 1000 \times \text{Low Point} \times DF}{Q \times \text{Duration}} = \frac{\text{RL}(\mu\text{g}) \times 1000000}{Q \times \text{Duration}}$$

LabSampleID	Client	Date of Collection	Abs	Duration (min)	DF	Ozone Conc (ug)	Conc (ug/m3)	RL(ug)	RL (ug/m3)	Result (ug)
48A	101427	NA	0.033	18720	1.00	0.08085217	0.176	0.638	1.386	ND
49A	101428	NA	0.030	18720	1.00	0.052733633	0.115	0.638	1.386	ND
50A	101429	NA	0.031	18720	1.00	0.062106479	0.135	0.638	1.386	ND
51A	101738	8/27/2009	0.052	18720	1.00	0.258936241	0.562	0.638	1.386	ND
52A	101739	8/27/2009	0.040	18720	1.00	0.1464462091	0.318	0.638	1.386	ND
53A	101740	8/27/2009	0.745	18720	2.00	13.50863682	29.334	1.277	2.773	13.50863682
53AA	101740 Lab Duplicate	8/27/2009	0.749	18720	2.00	13.58361959	29.497	1.277	2.773	13.58361959
54A	101741	8/27/2009	0.040	18720	1.00	0.1464462091	0.318	0.638	1.386	ND
55A	101742	8/27/2009	0.053	18720	1.00	0.268309087	0.583	0.638	1.386	ND
56A	101737	NA	0.031	18720	1.00	0.062106479	0.135	0.638	1.386	ND
57A	101475	8/26/2009	0.049	17280	1.00	0.230817704	0.543	0.638	1.502	ND
58A	101476	8/26/2009	0.039	17280	1.00	0.137089245	0.322	0.638	1.502	ND
59A	101477	8/26/2009	1.032	17280	1.00	9.444325166	22.217	0.638	1.502	9.444325166
59AA	101477 Lab Duplicate	8/26/2009	1.032	17280	1.00	9.444325166	22.217	0.638	1.502	9.444325166
60A	101478	8/26/2009	0.063	17280	1.00	0.362037545	0.852	0.638	1.502	ND
61A	101479	8/26/2009	0.055	17280	1.00	0.287054779	0.675	0.638	1.502	ND
62A	101480	NA	0.028	18720	1.00	0.033987941	0.074	0.638	1.386	ND
63A	Method Blank	NA	0.035	18720	1.00	-0.228451743	#DIV/0!	0.638	1.386	ND
63B	Method Blank	NA	0.032	18720	1.00	-0.228451743	#DIV/0!	0.638	1.386	ND
63C	Method Blank	NA	0.027	18720	1.00	-0.228451743	#DIV/0!	0.638	1.386	ND
64A	CCV	NA	0.731	18720	1.00	-0.228451743	#DIV/0!	0.638	1.386	6.623098567

QC Duration 18720
 CCV Spike Amt 6.384

QC Results and Raw Data

Spectrophotometer Logbook

@Air Toxics Ltd.

Log Book #: 1564

Work Order: 0908628D

Date: 8/31/09

Method: Rad 172

Analyst: A. Toyama

Wavelength: 430 nm

Prep. Notes:

Standard ID	Concentration	ABS
1858 - 24 - 5.7	5.7 ^{ug} /mL	0.078
↓ - 11.4	11.4	0.160
- 22.8	22.8	0.300
- 57	57	0.729
↓ - 114	114	1.375

$$r = \frac{0.99920911}{m = \frac{0.106691182}{b = \frac{0.024373786}}$$

Fraction	Dilution	ABS	Sample ID	Sample Volume
48A	1.00	0.033	101427	5.0 mL
49A	↓	0.030	428	↓
50A	↓	0.031	429	↓
51A	↓	0.052	738	↓
52A	↓	0.040	739	↓
53A	2.00	0.745	740	↓
54A	1.00	0.040	741	↓
55A	↓	0.053	742	↓
56A	↓	0.031	737	↓
57A	↓	0.049	475	↓
58A	↓	0.039	476	↓
59A	↓	1.032	477	↓
60A	↓	0.063	478	↓
61A	↓	0.055	479	↓
62A	↓	0.028	↓ 480	↓

Notes: Blank Cartridges: Lot 09146

Spectrophotometer Standard Preparation Log

@Air Toxics Ltd. Log Book #: 1858

Standard ID: 1858-24
Project: Rad 172 Calibration Solution
Analyst: A. Toyama
Preparation Date: 8/31/09
Expiration Date: 8/31/09

Solvent: DI H₂O
Solvent Lot #: NA

Procedure/Comments: Dissolve 20 µl of 4-Pyridine - carboxaldehyde, 97% (1476-1103, Located F2214) in 200 ml DI H₂O. From this solution prepare dilutions at 1:2, 1:5, 1:10, 1:20 and ~~1:40~~^{8/31/09 AT}. Stock Solution = 114 µg/ml

1:2) 250 µl Pyridine solution with 250 µl of DI H₂O = 57 µg/ml

1:5) 100 µl of Pyridine solution with 400 µl of DI H₂O = 22.8 µg/ml

1:10) 100 µl of Pyridine solution with 900 µl of DI H₂O = 11.4 µg/ml

1:20) 250 µl of Pyridine 1:10 solution with 250 µl of DI H₂O = 5.7 µg/ml
(then remove 250 µl of 1:10 solution to yield final volume of 0.5 ml)

Then add 4.5 ml of MBTH solution to each level, stir and let stand for 1 hour (cover with parafilm) Then read absorbance at 430 nm.

1 µg of 4-pyridylaldehyde = 0.224 µg of ozone

8/31/09
AT

Shipping/ Receiving Documents

**180 Blue Ravine Road, Suite B
Folsom, CA 95630**

**Phone (916) 985-1000 FAX (916) 985-1020
Hours 8:00 A.M. to 6:00 P.M. Pacific**

COMPANY: Environmental Health & Engineering, Inc.
ATTENTION: Mr. Taeko Minegishi
FAX #: 781-247-4305
FROM: Sample Receiving
Workorder #: 0908628D
of pages (Including Cover): 4

9/18/2009

Thank you for selecting Air Toxics Ltd. We have received your samples and have found no discrepancies. In order to expedite analysis and reporting, please review the attached information for accuracy.

Corrections can be faxed to **Ausha Scott at 916-985-1020.**

ATL will proceed with the analysis as specified on the Chain of Custody and Sample Login page.

FROM: Environmental Health and Engineering, Inc.
117 Fourth Avenue
Needham, MA 02494-2725

TO: Air Toxics

Please send invoices to ATTN: Accounts Payable
Please send reports to ATTN: Data Coordinator

In all correspondence regarding this matter, please refer to EH&E Project # 16512

The cost of this analysis will be covered by EH&E Purchase Order # 16512

For EH & E Data Coordinator - URGENT DATA

SAMPLE ID	SAMPLE TYPE	ANALYTICAL METHOD/NUMBER	OTHER:Time/Date/Vol.
48A 101427	AIR PASSIVE	OZONE ANALYSIS 8/13/09	
49A 101428			φ
50A 101429			φ
51A 101738		8/14/09	8/27/09
52A 101739			
53A 101740			
54A 101741			
55A 101742			
56A 101737			φ
57A 101475		8/14/09	8/26/09
58A 101476			
59A 101477			
60A 101478			
61A 101479			
62A 101480		Fedex	φ

CUSTODY SEAL INTACT?
Y N NONE TEMP 6°C

Special Instructions:

- Standard turn around time
- Fax results 781-247-4305
- RETURN SAMPLES
- Additional report recipient mfragala@ehinc.com
- Rush by _____ date/time 8704 2333 1898
- Electronic transfer - datacoordinator@ehinc.com

Each signatory please return one copy of this form to the above address

Relinquished by: [Signature] of Environmental Health & Engineering, Inc. Date: 8/27/09
 Received by: [Signature] 0850 of (company name) ATI Date: 8/28/09
 Relinquished by: _____ of (company name) _____ Date: _____
 Received by: _____ of (company name) _____ Date: _____
 Relinquished by: _____ of (company name) _____ Date: _____
 Received by: _____ of (company name) _____ Date: _____
 Lab Data
 Received by: _____ of Environmental Health & Engineering, Inc. Date: _____

SAMPLE RECEIPT SUMMARY

WORKORDER 0908628D

Client

 Mr. Taeko Minegishi
 Environmental Health &
 Engineering, Inc.
 117 Fourth Avenue
 Needham, MA 02494

Phone

800-825-5343

Fax

781-247-4305

Date Promised: 09/09/09 11:59 pm

Date Completed: 9/17/09

Date Received: 8/28/09

PO#: 16512

Project#: 16512

Total \$: \$ 825.00

Logged By: MG

Sales Rep: TL

<u>Fraction</u>	<u>Sample #</u>	<u>Analysis</u>	<u>Collected</u>	<u>Amount\$</u>
48A	101427	ATL Applications	NA	\$50.00
49A	101428	ATL Applications	NA	\$50.00
50A	101429	ATL Applications	NA	\$50.00
51A	101738	ATL Applications	8/27/2009	\$50.00
52A	101739	ATL Applications	8/27/2009	\$50.00
53A	101740	ATL Applications	8/27/2009	\$50.00
53AA	101740 Lab Duplicate	ATL Applications	8/27/2009	\$0.00
54A	101741	ATL Applications	8/27/2009	\$50.00
55A	101742	ATL Applications	8/27/2009	\$50.00
56A	101737	ATL Applications	NA	\$50.00
57A	101475	ATL Applications	8/26/2009	\$50.00
58A	101476	ATL Applications	8/26/2009	\$50.00
59A	101477	ATL Applications	8/26/2009	\$50.00
59AA	101477 Lab Duplicate	ATL Applications	8/26/2009	\$0.00
60A	101478	ATL Applications	8/26/2009	\$50.00
61A	101479	ATL Applications	8/26/2009	\$50.00
62A	101480	ATL Applications	NA	\$50.00
63A	Method Blank	ATL Applications	NA	\$0.00
63B	Method Blank	ATL Applications	NA	\$0.00
63C	Method Blank	ATL Applications	NA	\$0.00

Note: Samples received after 3 P.M. PST are considered to be received on the following work day.
 Atlas Project Name/Profile#: CPSC Indoor Air Monitoring/13297

BILL TO: Accounts Payable
 Environmental Health & Engineering, Inc.
 117 Fourth Avenue
 Needham, MA 02494

Analysis Code: Other GC

TERMS:

Reporting Method: ATL Application #62 Ozone-Radiello 172

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
 (916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

SAMPLE RECEIPT SUMMARY Continued

Client	Phone	Date Promised: 09/09/09 11:59 pm
Mr. Taeko Minegishi	800-825-5343	Date Completed: 9/17/09
Environmental Health & Engineering, Inc.	Fax	Date Received: 8/28/09
117 Fourth Avenue	781-247-4305	PO#: 16512
Needham, MA 02494		Project#: 16512
Sales Rep: TL		Total \$: \$ 825.00
		Logged By: MG

<u>Fraction</u>	<u>Sample #</u>	<u>Analysis</u>	<u>Collected</u>	<u>Amount\$</u>
64A	CCV	ATL Applications	NA	\$0.00
Misc. Charges eCVP (15) @ \$5.00 each.				\$75.00

Note: Samples received after 3 P.M. PST are considered to be received on the following work day.
Atlas Project Name/Profile#: CPSC Indoor Air Monitoring/13297

BILL TO: Accounts Payable
Environmental Health & Engineering, Inc.
117 Fourth Avenue
Needham, MA 02494

Analysis Code: Other GC

TERMS:

Reporting Method: ATL Application #62 Ozone-Radiello 172

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

Other Records



Method : ATL Application #62 Ozone-Radiello 172

CAS Number	Compound	Rpt. Limit (ug)
10028-15-6	Ozone	1.0

DATA REVIEW CHECKLIST

Work Order #:

0908628D

A1 A2 R T M Q
[checkboxes]

Analysis/Reporting vs. Project Profile/SOP requirements checked (i.e. 100% Dups, J-Flag to MDL, etc)
The final report has the correct reporting list, special units, and header info.
Lab Narrative is correct (proper method & description/Receiving & Analytical notes correct)
Sample Discrepancy Report (SDR) is completed

NA [checkboxes]

Corrective Action issued - #
Unusual circumstances have been documented in the notes section below

LUMEN validation report present and initialed

CIRCLE (YES / NO)

[checkboxes]

Lab Blank, CCV, LCS and DUP met QC criteria
Hold time is met for all samples
Appropriate data qualifier flags are applied
Manual integrations for samples and QC are properly documented
Samples analyzed within the project or method specific clock
Retention times have been verified
Appropriate ICAL(s) included
At least one result per sample is verified against the target quant sheets/raw data

[checkboxes]

Dilution factor correctly calculated (sample load volume, syringe and bag dilutions, can pressurization(s))
Correct amount of sample analyzed (i.e. sample not over-diluted)
Spectra verified - documentation of spectral defense included (Section 5A of eCVP pkg)

[checkboxes]

TICs resemble reference spectra
TICs between duplicate samples are consistent
Checked samples for trends (i.e. Influent vs. Effluent, Field Dups, Field/Trip Blank, etc.)
Data for multiple analyses of sample(s) has been evaluated for comparability of results

[checkboxes]

Special units for all samples in the final report are correctly calculated
Manually entered results checked (i.e. TPH/NMOC)

[checkboxes]

Chain of Custody verified for any special comments (i.e. different compounds/RLs, action levels)
Chain of Custody scanned correctly
Verify sample id's vs. chain of custody
Date MDL(s) performed per instrument(s)

NA [checkboxes]

Samples pressurized w/ appropriate gas (N2 or He)
Final pressure consistent with canister size (6L vs. 1L)
Verify receipt pressures
Verify canister ID #'s

[checkboxes]

Final invoice amount correct (adjusted for TAT, Penalties, Re-issue Charges etc.)
MDL date(s) present for all instruments utilized

[checkboxes]

Client LUMEN report reviewed for accuracy and completeness

Notes: (to include: noting samples with QA/QC problems, Blanks with positive hits, narratives, etc.)

A/R:

Dup : 59A ; 53A

M/Q:

A1/A2 (Analytical Review/Date) R/T (Reporting Review/Date) M (Management Review/Date) Q (QA Review/Date)
A1: 9/11/09 R: M 9/17/09