



Watervliet Arsenal

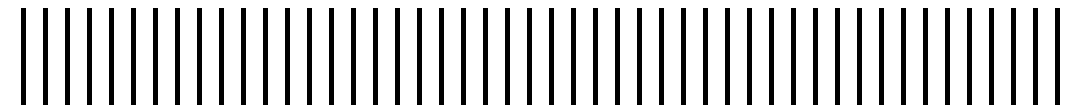
Watervliet, New York

Data Summary Report – 2007 Vapor Intrusion Evaluation

Main Manufacturing Area

Watervliet Arsenal, Watervliet New York

December 2007



Report Prepared By:

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Report Prepared For:

U.S. Army Corps of Engineers

Baltimore District, Baltimore, Maryland
Contract No. W912DR-05-D-0004



**US Army Corps
of Engineers**

2118136

**MALCOLM
PIRNIE**

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1. Introduction

In accordance with a request from the New York State Departments of Health (NYSDOH) and Environmental Conservation (NYSDEC), the Watervliet Arsenal (WVA), located in the City of Watervliet, New York (Figure 1), conducted a vapor intrusion evaluation at buildings located in the Main Manufacturing Area (MMA) of the WVA. The evaluation was conducted under the Administrative Order on Consent between the WVA, the NYSDEC, and the United States Environmental Protection Agency (USEPA).

The evaluation was conducted in accordance with the approved *Vapor Intrusion Evaluation Work Plan, Main Manufacturing Area, Watervliet Arsenal, Watervliet, New York*, dated June 2007 (Work Plan), as amended by letter dated August 1, 2007 (Malcolm Pirnie 2007). The purpose of the evaluation was to assess whether chlorinated volatile organic compounds (CVOCs) are present in the sub-slab soil vapor beneath, and the indoor air within, MMA buildings that once containing degreasing operations and/or are located near potential subsurface sources of CVOCs. The evaluation also evaluated whether soil vapor at the WVA southern and eastern property boundaries contains CVOCs. This Data Summary Report presents the results of the 2007 vapor intrusion evaluation.



2. Field Investigation

In accordance with the approved Work Plan, vapor intrusion evaluations were conducted at the following buildings/locations within the MMA:

- WVA southern and eastern property boundaries near Building 25;
- Building 20;
- Building 22;
- Building 25;
- Building 115; and
- Building 120.

2.1. Pre-Sampling Inspection for Confounding Sources

Prior to initiating indoor air or sub-slab soil vapor sampling, a visual pre-sampling inspection was conducted to evaluate whether any potential confounding sources were present in the buildings. However, due to the size and varying uses of the buildings (i.e., manufacturing, office, laboratory, etc.), a full inventory was not practical. Accordingly, chemical inventory lists of the chemicals utilized in each building were obtained from the Watervliet Arsenal Environmental Office. Based on a review of the chemical inventories and interviews with Watervliet Arsenal personnel, none of the chemicals of concern (see Section 2.2) are currently utilized at the Watervliet Arsenal. Copies of the chemical inventories are presented in Appendix A.

2.2. Sampling

Indoor air, outdoor air, and sub-slab soil vapor sampling was conducted to evaluate the potential for soil vapor intrusion at each building. Soil vapor sampling was also conducted at the southern and eastern WVA property boundary near Building 25 to evaluate the potential for off-site vapor intrusion.

2.2.1. Indoor and Outdoor Air Sampling

Indoor air and outdoor air samples were collected on November 13, 2007 during normal business operating hours. All buildings included in the evaluation were under heating conditions at the time of sampling. In accordance with the approved Work Plan, one indoor air sample was collected from each building. One duplicate sample was also collected from Building 25 using a “T” splitting device. The indoor air sample locations are shown on Figure 2 and are summarized below.

- Building 20: Second floor mezzanine office area



- Building 22: First floor office area/fire rescue personnel quarters
- Building 25: Third floor central hallway near the freight elevator and restrooms
- Building 115: First floor office area
- Building 120: First floor office area

Two outdoor air samples were collected during the investigation: one at the southern property boundary and one at the northern property boundary. The locations of the outdoor air samples are also shown on Figure 2.

Indoor and outdoor air samples were collected using a Summa canister sampling train in accordance with the approved Work Plan. Flow regulators calibrated and supplied by the analytical laboratory were used to allow for continuous sampling over the eight-hour sampling period. All samples were analyzed by Air Toxics, Inc. a National Environmental Laboratory Accreditation Conference (NELAC)-accredited and NYDOH-certified analytical laboratory. Full data packages were requested for all samples.

In accordance with the approved Work Plan, all samples were analyzed for the following compounds:

- | | |
|-------------------------------|---|
| ■ Trichloroethene (TCE) | ■ 1,1-Dichloroethene |
| ■ Tetrachloroethene (PCE) | ■ cis- & trans-1,2-Dichloroethene (DCE) |
| ■ 1,1,2,2-Tetrachloroethane | ■ 1,2-Dichloroethane |
| ■ 1,1,1-Trichloroethane (TCA) | ■ Chlorobenzene |
| ■ 1,1,2-Trichloroethane | ■ Carbon tetrachloride |
| ■ Chloromethane | ■ Chloroethane |
| ■ Vinyl chloride | ■ 1,1-Dichloroethane |

2.2.2. Sub-Slab Soil Vapor Sampling

Sub-slab soil vapor sampling was conducted on November 16, 2007, after the completion of indoor air sampling. The locations of the sub-slab sampling points are shown on Figure 2. Sub-slab samples were collected using a Summa canister sampling train. Each sample was collected over an eight-hour time period from just below the concrete slab of each building through a small-diameter vapor point constructed in accordance with the approved Work Plan. A helium tracer gas was used to verify the integrity of the soil vapor point seal. Helium concentrations in all of the soil vapor points were less than 10 percent during the testing. Soil vapor samples were analyzed by Air Toxics, Inc. by EPA Method Low Level TO-15 (GC/MS) SIM for the same list of VOCs as the outdoor and indoor air samples.



2.2.3. Property Boundary Soil Vapor Sampling

Four soil vapor sampling points were installed along the southern and eastern WVA property boundary on November 13, 2007. The locations of the soil vapor points are shown on Figure 2. The soil vapor points were installed using a direct-push drilling rig. The target depth for each of the soil vapor points was the basement floor level of the adjacent residential structures or just above the groundwater table, whichever was shallower. Accordingly, the soil vapor points were installed to the “Target Depth” shown in Table 1, below. However, air could not be purged from soil vapor points SV-1 and SV-3 when purging was attempted on November 16, 2007. A second mobilization was conducted on November 20, 2007 to evaluate subsurface conditions at these locations and to install new sampling points. Continuous soil cores were collected from the ground surface to the original target depth of each soil vapor point. The soil samples showed that a vertically continuous stiff clay layer was present at the original target depth of the two borings. This clay layer did not transmit soil vapor and, therefore, prevented the collection of soil vapor samples. Based on this information, the soil vapor point was set immediately above the clay layer at soil vapor point SV-1. At soil vapor point SV-3, the clay layer began just below the asphalt and continued to the original target depth, therefore, a new soil vapor point was not installed at this location and no soil vapor sample was collected. The construction of each soil vapor point is summarized in Table 1, below.

Table 1 – Soil Vapor Point Construction

Soil Vapor Point ID	Target Depth (feet bgs)	Depth to Clay Layer (feet bgs)	Actual Depth (feet bgs)	Soil Vapor Sample Collected?
SV-1	9.5	6.0	6.0	Yes
SV-2	5.0	> 5.0	5.0	Yes
SV-3	6.0	At ground surface	6.0	No
SV-4	13	> 13	13	Yes

Notes:

bgs – below ground surface

Soil vapor sampling and analysis was conducted using the same methods and procedures as those for sub-slab soil vapor sampling.



3. Sampling Results

The analytical results for the outdoor air, indoor air, sub-slab soil vapor, and property boundary soil vapor samples collected during the November 2007 investigation are presented in Table 2. Laboratory reporting forms for all samples are presented in Appendix B.

3.1. Outdoor Air

As shown in Table 2, low concentrations of PCE, chloromethane, 1,1-dichloroethane, 1,2-dichloroethane, and carbon tetrachloride were detected in the outdoor air samples.

3.2. Building 20

3.2.1. Indoor Air

Trace concentrations of PCE, 1,1,1-TCA, chloromethane, and carbon tetrachloride were detected in the indoor air sample collected in the office mezzanine area of Building 20. These concentrations were similar to those detected in the outdoor air samples, with the exception of 1,1,1-TCA ($0.31 \mu\text{g}/\text{m}^3$), which was not detected in the outdoor air samples.

3.2.2. Sub-Slab

Three sub-slab samples, designated B20-SS-01, -02, and -03, were collected in Building 20. Sub-slab sampling points B20-SS-01 and B20-SS-02 were placed at the east end of the building where a vapor degreaser was reported to have been located in the past. Sub-slab sampling point B20-SS-03 was placed at the western end of the building beneath the office mezzanine area. TCE ($110 \mu\text{g}/\text{m}^3$ and $76 \mu\text{g}/\text{m}^3$), PCE ($2.2 \mu\text{g}/\text{m}^3$ and $1,200 \mu\text{g}/\text{m}^3$), and 1,1,1-TCA ($1,500 \mu\text{g}/\text{m}^3$ and $15 \mu\text{g}/\text{m}^3$) were detected in sub-slab sampling points B20-SS-01 and B20-SS-02, respectively. These compounds were also detected in sub-slab sample B20-SS-03, but at much lower concentrations. Chloromethane, carbon tetrachloride, and 1,1-dichloroethane were also detected in the Building 20 sub-slab samples.

3.3. Building 22

3.3.1. Indoor Air

Trace concentrations of PCE, 1,1,1-TCA, chloromethane, and carbon tetrachloride were detected in the indoor air sample collected in the office/quarters area of Building 22, which serves as the firehouse for the WVA. These concentrations were similar to those detected in the outdoor air samples, with the exception of 1,1,1-TCA ($1.4 \mu\text{g}/\text{m}^3$), which was not detected in the outdoor air samples.



3.3.2. Sub-Slab

TCE ($140 \mu\text{g}/\text{m}^3$) and PCE ($470 \mu\text{g}/\text{m}^3$) were detected in the sub-slab sample collected from the garage area of Building 22 (B22-SS-01). Carbon tetrachloride and cis-1,2-DCE were also detected in the Building 22 sub-slab sample.

3.4. Building 25

3.4.1. Indoor Air

TCE was detected at a concentration of 420 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) in the indoor air sample collected on the third floor Building 25 (B25-IA-01). This concentration was confirmed in the field duplicate sample collected at this location and in the laboratory duplicate. Chloromethane was also detected in the indoor air sample, but at a concentration similar to that detected in the outside air sample.

3.4.2. Sub-Slab

Three sub-slab samples, designated B25-SS-01, -02, and -03, were collected along the eastern wall of Building 25. Sub-slab sampling point B25-SS-01 was placed in the southeastern portion of the building in the reported area of the former vapor degreaser. TCE ($87,000 \mu\text{g}/\text{m}^3$), PCE ($690 \mu\text{g}/\text{m}^3$), 1,1,1-TCA ($7,700 \mu\text{g}/\text{m}^3$), and 1,1-Dichloroethene ($2,000 \mu\text{g}/\text{m}^3$) were detected in sample B25-SS-01. These compounds were also detected in sub-slab samples B25-SS-02 and B25-SS-03, but at much lower concentrations. Lower concentrations of several other compounds were also detected in the Building 25 sub-slab samples.

3.5. Building 115

3.5.1. Indoor Air

Trace concentrations of PCE, 1,1,1-TCA, chloromethane, and carbon tetrachloride were detected in the indoor air sample collected in the first floor office area of Building 115. These concentrations were similar to those detected in the outdoor air samples, with the exception of 1,1,1-TCA ($2.7 \mu\text{g}/\text{m}^3$), which was not detected in the outdoor air samples.

3.5.2. Sub-Slab

One sub-slab sample (B115-SS-01) was collected from the open bay area of Building 115. Low concentrations of TCE ($2.7 \mu\text{g}/\text{m}^3$), PCE ($1.2 \mu\text{g}/\text{m}^3$), and carbon tetrachloride ($0.43 \mu\text{g}/\text{m}^3$) were detected in the sub-slab sample.

3.6. Building 120

3.6.1. Indoor Air

Trace concentrations of PCE, 1,1,1-TCA, chloromethane, and carbon tetrachloride were detected in the indoor air sample collected in the first floor office area of Building 120.



These concentrations were similar to those detected in the outdoor air samples, with the exception of 1,1,1-TCA ($0.38 \mu\text{g}/\text{m}^3$), which was not detected in the outdoor air samples.

3.6.2. Sub-Slab

One sub-slab sample (B120-SS-01) was collected from the carpentry shop area of Building 120, near the reported location of a former vapor degreaser. Concentrations of TCE ($150 \mu\text{g}/\text{m}^3$) and PCE ($430 \mu\text{g}/\text{m}^3$) were detected in the sub-slab sample. Lower concentrations of 1,1,1-TCA and carbon tetrachloride were also detected in the sub-slab sample.

3.7. Property Boundary Soil Vapor

3.7.1. Eastern Property Boundary

PCE ($0.49 \mu\text{g}/\text{m}^3$) was the only compound detected in soil vapor point SV-1, which was located at the eastern edge of the parking lot south of the industrial wastewater treatment plant (Building 36). TCE ($0.78 \mu\text{g}/\text{m}^3$), PCE ($3.5 \mu\text{g}/\text{m}^3$), and 1,1-dichloroethene ($0.96 \mu\text{g}/\text{m}^3$) were detected in soil vapor point SV-2, which was located along the property line in the grassed area east of Building 36.

3.7.2. Southern Property Boundary

TCE ($210 \mu\text{g}/\text{m}^3$), PCE ($64 \mu\text{g}/\text{m}^3$), and 1,1,1-TCA ($14 \mu\text{g}/\text{m}^3$) were detected at soil vapor point SV-4, which was located adjacent to the north side of the retaining wall at the southern WVA property boundary. Lower concentrations of several other compounds were also detected in the SV-4 sample. As discussed previously, a sample could not be collected from soil vapor point SV-3 due to the presence of the clay layer in that area.



4. Data Usability

A third-party data validation subcontractor will review and validate the analytical data for all samples collected during this evaluation. The data will be assessed by the validator for completeness and compliance with the appropriate state and federal protocols. A data usability summary report (DUSR) will be prepared by the data validator following review of the analytical data. The DUSR will be submitted under separate cover.



5. References

Malcolm Pirnie 2007. *Vapor Intrusion Evaluation Work Plan, Main Manufacturing Area, Watervliet Arsenal, Watervliet, New York*, June 2007 (amended August 1, 2007 and approved September 20, 2007).

NYSDOH 2006. *New York State Department of Health Guidance for Evaluating Soil Vapor Intrusion in the State of New York*, October 2006.

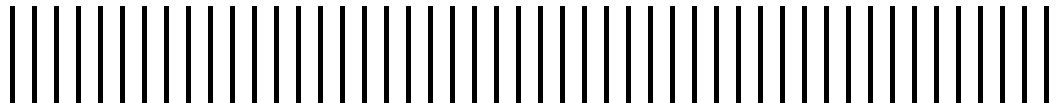


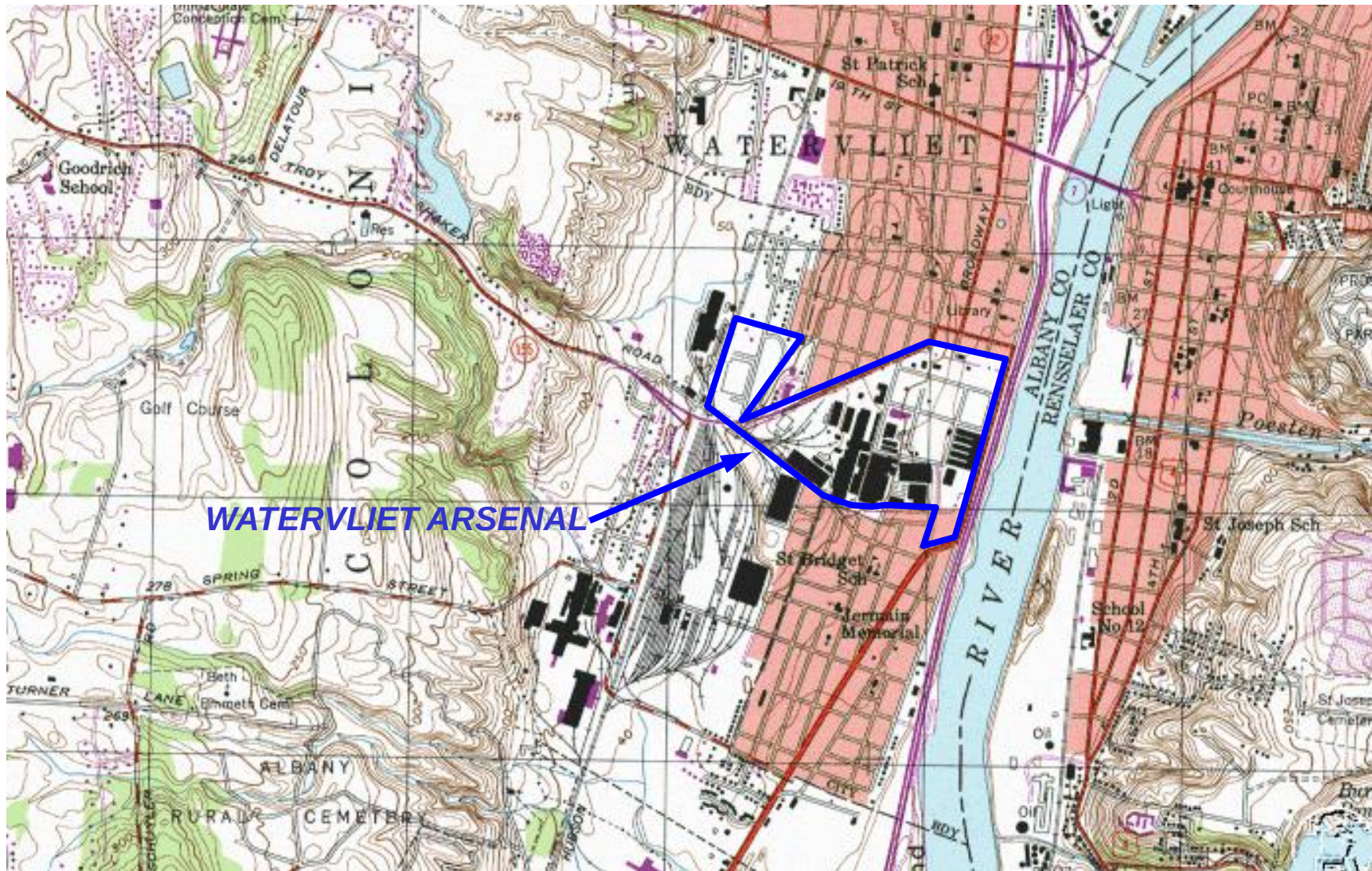


Watervliet Arsenal, Watervliet, New York

Data Summary Report – 2007 Vapor Intrusion Evaluation

Figures





WATERVLIET ARSENAL

SCALE IN FEET

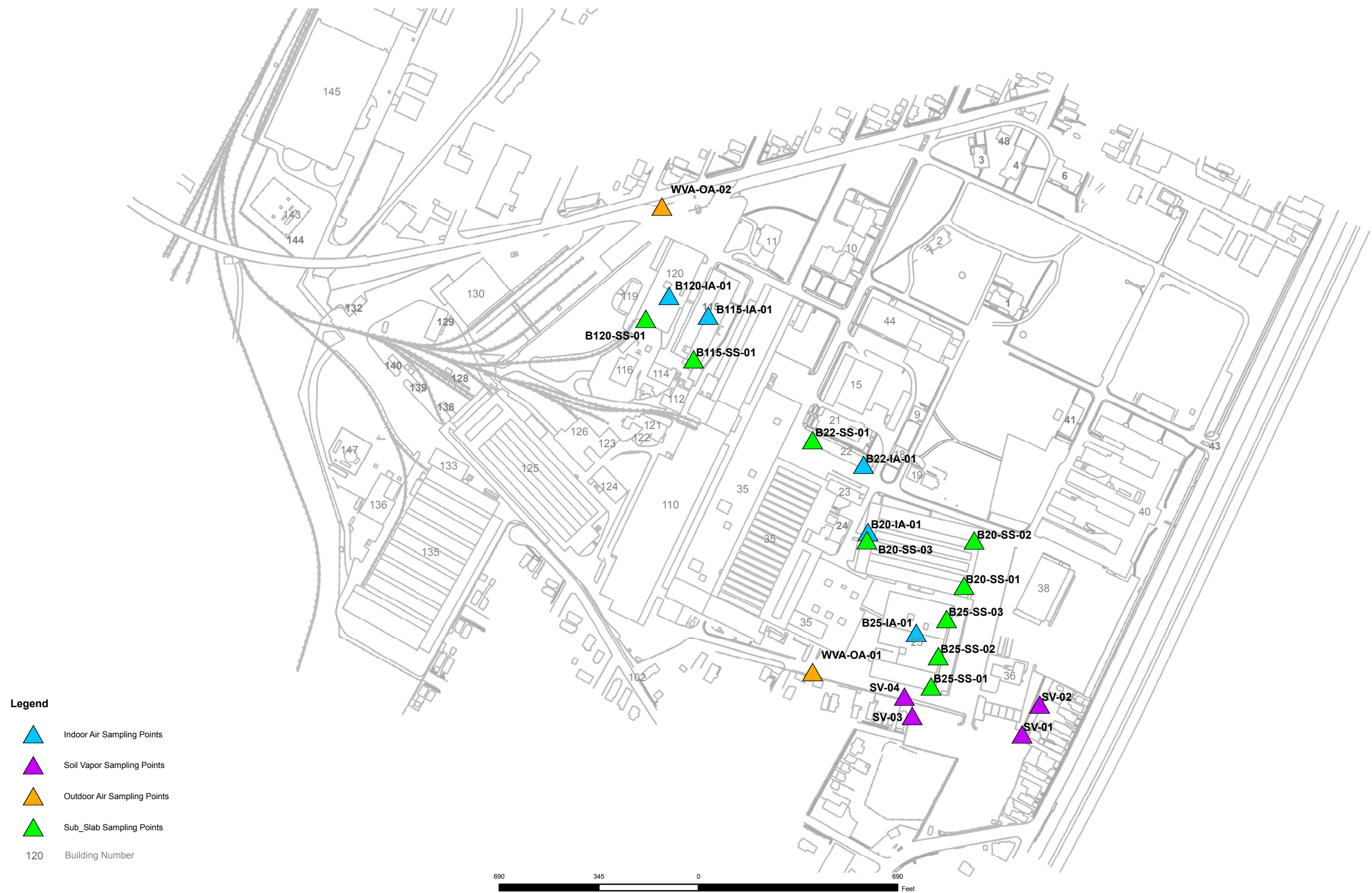


SOURCE: U.S.G.S 7.5 MIN. TROY SOUTH QUADRANGLE

**MALCOLM
PIRNIE**

WATERVLIET ARSENAL
WATERVLIET, NEW YORK
SITE LOCATION

FIGURE 1



- Legend**
-  Indoor Air Sampling Points
 -  Soil Vapor Sampling Points
 -  Outdoor Air Sampling Points
 -  Sub_Slab Sampling Points
 - 120 Building Number

**WATERVLIET ARSENAL MAIN MANUFACTURING AREA
WATERVLIET, NEW YORK**

VAPOR INTRUSION SAMPLING LOCATIONS (NOVEMBER 2007)





Watervliet Arsenal, Watervliet, New York

Data Summary Report – 2007 Vapor Intrusion Evaluation

Tables

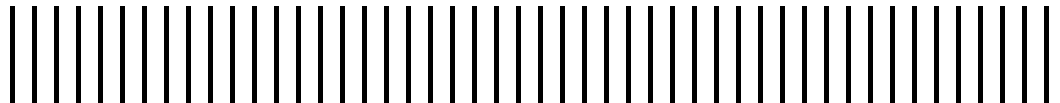


Table 2
Summary of Air and Soil Vapor Analytical Data
November 2007 Vapor Intrusion Evaluation
Watervliet Arsenal, Watervliet, New York

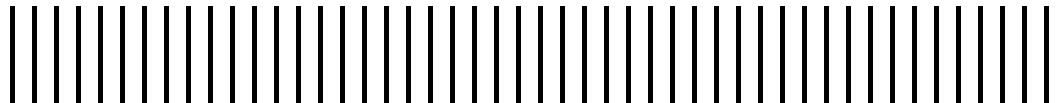
Compound	Ambient		Building 25						Building 20				Building 22		Building 115		Building 120		Soil Vapor	Soil Vapor	Soil Vapor
	Outside		Indoor Air			Sub-Slab			Indoor Air	Sub-Slab			Indoor Air	Sub-Slab	Indoor Air	Sub-Slab	Indoor Air	Sub-Slab	SV-1	SV-2	SV-4
	WVA-OA-01	WVA-OA-02	B25-IA-01	Dup of B25-IA-01	Lab Dup of B25-IA-01	B25-SS-01	B25-SS-02	B25-SS-03	B20-IA-01	B20-SS-01	B20-SS-02	B20-SS-03	B22-IA-01	B22-SS-01	B115-IA-01	B115-SS-01	B120-IA-01	B120-SS-01			
	11/13/2007	11/13/2007	11/13/2007	11/13/2007	11/13/2007	11/16/2007	11/16/2007	11/16/2007	11/13/2007	11/16/2007	11/16/2007	11/16/2007	11/13/2007	11/16/2007	11/13/2007	11/16/2007	11/13/2007	11/16/2007	11/26/2007	11/26/2007	11/26/2007
Trichloroethene (TCE)			420	430	440	87,000	120	80		110	76	6.4		140		2.7		150		0.78	210
Tetrachloroethene (PCE)	0.28					690	64	2.2	0.32	2.2	1200	16	0.34	470	0.46	1.2	0.49	430	0.49	3.5	64
1,1,2,2-Tetrachloroethane																					
1,1,1-Trichloroethane (TCA)						7,700	3.2	430	0.31	1,500 E	15	2.3	1.4		2.7		0.38	5.3			14
1,1,2-Trichloroethane																					
Chloromethane	1	1.2	1.2	1.4	1.2				1.1			0.55	1.2		2.1		1				0.3
Chloroethane																					
Vinyl Chloride							0.4														0.16
1,1-Dichloroethane		0.16					0.54	0.19 J												0.96	0.23
cis-1,2-Dichloroethene							16							1.9							1.9
trans-1,2-Dichloroethene																					
1,2-Dichloroethane		0.87																			
Chlorobenzene																					
Carbon tetrachloride	0.48	0.52					0.6	3.9	0.48	7.1		0.63	0.48	5.5	0.46	0.43	0.48	11			0.62
1,1-Dichloroethene						2,000	0.15	1.8		5.9											

Notes:
Results reported in ug/m³
Blank space - compound not detected
ug/m³ - micrograms per cubic meter
SV-1 and SV-2 located on eastern property boundary
SV-4 located on southern property boundary
J - Estimated
E - Exceeds instrument calibration range



Watervliet Arsenal, Watervliet, New York
Data Summary Report – 2007 Vapor Intrusion Evaluation

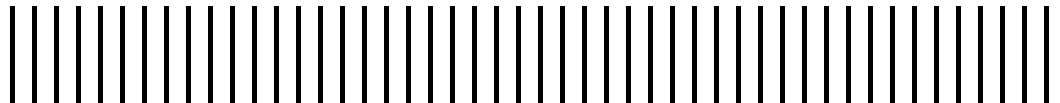
Appendix A – Chemical Inventories





Watervliet Arsenal, Watervliet, New York
Data Summary Report – 2007 Vapor Intrusion Evaluation

Appendix B – Analytical Laboratory Reporting Forms





AN ENVIRONMENTAL ANALYTICAL LABORATORY

WORK ORDER #: 0711292

Work Order Summary

CLIENT:	Mr. Mark Flusche Malcolm Pirmie 43 British American Blvd. Latham, NY 12110	BILL TO:	Mr. Mark Flusche Malcolm Pirmie 43 British American Blvd. Latham, NY 12110
PHONE:	518-782-2100	P.O. #	
FAX:	518-782-0500	PROJECT #	2118136 WVA V1
DATE RECEIVED:	11/14/2007	CONTACT:	Bryanna Langley
DATE COMPLETED:	11/28/2007		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>
01A	WVA-OA-01	Modified TO-15 SIM	5.0 "Hg
02A	B25-IA-01	Modified TO-15 SIM	6.5 "Hg
03A	X-1	Modified TO-15 SIM	7.0 "Hg
03AA	X-1 Lab Duplicate	Modified TO-15 SIM	7.0 "Hg
04A	B20-IA-01	Modified TO-15 SIM	7.0 "Hg
05A	B22-IA-01	Modified TO-15 SIM	6.5 "Hg
06A	B115-IA-01	Modified TO-15 SIM	6.0 "Hg
07A	B120-IA-01	Modified TO-15 SIM	6.5 "Hg
08A	WVA-OA-02	Modified TO-15 SIM	6.0 "Hg
09A	Lab Blank	Modified TO-15 SIM	NA
09B	Lab Blank	Modified TO-15 SIM	NA
10A	CCV	Modified TO-15 SIM	NA
10B	CCV	Modified TO-15 SIM	NA
11A	LCS	Modified TO-15 SIM	NA
11B	LCS	Modified TO-15 SIM	NA

CERTIFIED BY:

Laboratory Director

DATE: 11/28/07

Certification numbers: CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763, NJ NELAP - CA004
NY NELAP - 11291, UT NELAP - 9166389892

Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,

Accreditation number: E87680, Effective date: 07/01/07, Expiration date: 06/30/08

Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

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

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



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Summary of Detected Compounds MODIFIED EPA METHOD TO-15 GC/MS SIM

Client Sample ID: WVA-OA-01

Lab ID#: 0711292-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Tetrachloroethene	0.032	0.042	0.22	0.28
Chloromethane	0.080	0.50	0.17	1.0
Carbon Tetrachloride	0.032	0.076	0.20	0.48

Client Sample ID: B25-IA-01

Lab ID#: 0711292-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Trichloroethene	0.090	77	0.48	420
Chloromethane	0.22	0.56	0.46	1.2

Client Sample ID: X-1

Lab ID#: 0711292-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Trichloroethene	0.12	80	0.63	430
Chloromethane	0.29	0.69	0.60	1.4

Client Sample ID: X-1 Lab Duplicate

Lab ID#: 0711292-03AA

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Trichloroethene	0.21	82	1.1	440
Chloromethane	0.52	0.60	1.1	1.2

Client Sample ID: B20-IA-01

Lab ID#: 0711292-04A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
1,1,1-Trichloroethane	0.035	0.057	0.19	0.31
Tetrachloroethene	0.035	0.047	0.24	0.32
Chloromethane	0.088	0.53	0.18	1.1
Carbon Tetrachloride	0.035	0.077	0.22	0.48



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Summary of Detected Compounds MODIFIED EPA METHOD TO-15 GC/MS SIM

Client Sample ID: B22-IA-01

Lab ID#: 0711292-05A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
1,1,1-Trichloroethane	0.034	0.26	0.19	1.4
Tetrachloroethene	0.034	0.050	0.23	0.34
Chloromethane	0.086	0.59	0.18	1.2
Carbon Tetrachloride	0.034	0.076	0.22	0.48

Client Sample ID: B115-IA-01

Lab ID#: 0711292-06A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
1,1,1-Trichloroethane	0.034	0.50	0.18	2.7
Tetrachloroethene	0.034	0.068	0.23	0.46
Chloromethane	0.084	1.0	0.17	2.1
Carbon Tetrachloride	0.034	0.073	0.21	0.46

Client Sample ID: B120-IA-01

Lab ID#: 0711292-07A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
1,1,1-Trichloroethane	0.034	0.070	0.19	0.38
Tetrachloroethene	0.034	0.072	0.23	0.49
Chloromethane	0.086	0.48	0.18	1.0
Carbon Tetrachloride	0.034	0.076	0.22	0.48

Client Sample ID: WVA-OA-02

Lab ID#: 0711292-08A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
1,1-Dichloroethane	0.034	0.040	0.14	0.16
1,2-Dichloroethane	0.034	0.21	0.14	0.87
Chloromethane	0.084	0.61	0.17	1.2
Carbon Tetrachloride	0.034	0.083	0.21	0.52



AN ENVIRONMENTAL ANALYTICAL LABORATORY

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Thank you for choosing Air Toxics Ltd. To better serve our customers, we are providing your report by e-mail. This document is provided in Portable Document Format which can be viewed with Acrobat Reader by Adobe.

This electronic report includes the following:

- Work order Summary;
- Laboratory Narrative;
- Results; and
- Chain of Custody (copy).

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630

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



AN ENVIRONMENTAL ANALYTICAL LABORATORY

WORK ORDER #: 0711379A

Work Order Summary

CLIENT:	Mr. Mark Flusche Malcolm Pirnie 43 British American Blvd. Latham, NY 12110	BILL TO:	Mr. Mark Flusche Malcolm Pirnie 43 British American Blvd. Latham, NY 12110
PHONE:	518-782-2100	P.O. #	
FAX:	518-782-0500	PROJECT #	2118 136 WVA V1
DATE RECEIVED:	11/19/2007	CONTACT:	Bryanna Langley
DATE COMPLETED:	12/03/2007		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>
02A	B25-SS-02	Modified TO-15 SIM	6.5 "Hg
03A	B25-SS-03	Modified TO-15 SIM	6.5 "Hg
04A	B20-SS-01	Modified TO-15 SIM	7.0 "Hg
05A	B20-SS-02	Modified TO-15 SIM	7.0 "Hg
06A	B20-SS-03	Modified TO-15 SIM	6.5 "Hg
07A	B22-SS-01	Modified TO-15 SIM	6.0 "Hg
08A	B115-SS-01	Modified TO-15 SIM	5.5 "Hg
09A	B120-SS-01	Modified TO-15 SIM	5.0 "Hg
10A	Lab Blank	Modified TO-15 SIM	NA
10B	Lab Blank	Modified TO-15 SIM	NA
11A	CCV	Modified TO-15 SIM	NA
11B	CCV	Modified TO-15 SIM	NA
12A	LCS	Modified TO-15 SIM	NA
12B	LCS	Modified TO-15 SIM	NA

CERTIFIED BY:

Laboratory Director

DATE: 12/03/07

Certification numbers: CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763, NJ NELAP - CA004
NY NELAP - 11291, UT NELAP - 9166389892

Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,
Accreditation number: E87680, Effective date: 07/01/07, Expiration date: 06/30/08

Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

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LABORATORY NARRATIVE
Modified TO-15 SIM
Malcolm Pirnie
Workorder# 0711379A



Eight 6 Liter Summa Canister samples were received on November 19, 2007. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the SIM acquisition mode. The method involves concentrating up to 0.5 liters of air. The concentrated aliquot is then flash vaporized and swept through a water management system to remove water vapor. Following dehumidification, the sample passes directly into the GC/MS for analysis.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

Requirement	TO-15	ATL Modifications
ICAL %RSD acceptance criteria	$\leq 30\%$ RSD with 2 compounds allowed out to $< 40\%$ RSD	Project specific; default criteria is $\leq 30\%$ RSD with 10% of compounds allowed out to $< 40\%$ RSD
Daily Calibration	$\pm 30\%$ Difference	Project specific; default criteria is $\leq 30\%$ Difference with 10% of compounds allowed out up to $\leq 40\%$.; flag and narrate outliers
Blank and standards	Zero air	Nitrogen
Method Detection Limit	Follow 40CFR Pt.136 App. B	The MDL met all relevant requirements in Method TO-15 (statistical MDL less than the LOQ). The concentration of the spiked replicate may have exceeded 10X the calculated MDL in some cases

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

There were no analytical discrepancies.

Definition of Data Qualifying Flags

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

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

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 reporting limit.
- UJ- Non-detected compound associated with low bias in the CCV
- 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



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Summary of Detected Compounds MODIFIED EPA METHOD TO-15 GC/MS SIM

Client Sample ID: B25-SS-02

Lab ID#: 0711379A-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Vinyl Chloride	0.017	0.16	0.044	0.40
1,1-Dichloroethene	0.017	0.037	0.068	0.15
1,1-Dichloroethane	0.034	0.13	0.14	0.54
cis-1,2-Dichloroethene	0.034	4.0	0.14	16
1,1,1-Trichloroethane	0.034	0.59	0.19	3.2
Trichloroethene	0.034	23	0.18	120
Tetrachloroethene	0.034	9.4	0.23	64
Carbon Tetrachloride	0.034	0.095	0.22	0.60

Client Sample ID: B25-SS-03

Lab ID#: 0711379A-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
1,1-Dichloroethene	0.049	0.44	0.19	1.8
1,1-Dichloroethane	0.098	0.048 J	0.40	0.19 J
1,1,1-Trichloroethane	0.098	79	0.53	430
Trichloroethene	0.098	15	0.52	80
Tetrachloroethene	0.098	0.32	0.66	2.2
Carbon Tetrachloride	0.098	0.62	0.61	3.9

Client Sample ID: B20-SS-01

Lab ID#: 0711379A-04A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
1,1-Dichloroethene	0.14	1.5	0.56	5.9
1,1,1-Trichloroethane	0.28	280 E	1.5	1500 E
Trichloroethene	0.28	21	1.5	110
Tetrachloroethene	0.28	0.33	1.9	2.2
Carbon Tetrachloride	0.28	1.1	1.8	7.1

Client Sample ID: B20-SS-02

Lab ID#: 0711379A-05A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
1,1,1-Trichloroethane	0.35	2.8	1.9	15



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Summary of Detected Compounds MODIFIED EPA METHOD TO-15 GC/MS SIM

Client Sample ID: B20-SS-02

Lab ID#: 0711379A-05A

Trichloroethene	0.35	14	1.9	76
Tetrachloroethene	0.35	180	2.4	1200

Client Sample ID: B20-SS-03

Lab ID#: 0711379A-06A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
1,1,1-Trichloroethane	0.034	0.42	0.19	2.3
Trichloroethene	0.034	1.2	0.18	6.4
Tetrachloroethene	0.034	2.3	0.23	16
Chloromethane	0.086	0.26	0.18	0.55
Carbon Tetrachloride	0.034	0.10	0.22	0.63

Client Sample ID: B22-SS-01

Lab ID#: 0711379A-07A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
cis-1,2-Dichloroethene	0.17	0.47	0.67	1.9
Trichloroethene	0.17	26	0.90	140
Tetrachloroethene	0.17	69	1.1	470
Carbon Tetrachloride	0.17	0.88	1.0	5.5

Client Sample ID: B115-SS-01

Lab ID#: 0711379A-08A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Trichloroethene	0.033	0.50	0.18	2.7
Tetrachloroethene	0.033	0.18	0.22	1.2
Carbon Tetrachloride	0.033	0.068	0.21	0.43

Client Sample ID: B120-SS-01

Lab ID#: 0711379A-09A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
1,1,1-Trichloroethane	0.11	0.98	0.59	5.3
Trichloroethene	0.11	28	0.58	150



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Summary of Detected Compounds
MODIFIED EPA METHOD TO-15 GC/MS SIM

Client Sample ID: B120-SS-01

Lab ID#: 0711379A-09A

Tetrachloroethene	0.11	64	0.73	430
Carbon Tetrachloride	0.11	1.8	0.68	11



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: B25-SS-02

Lab ID#: 0711379A-02A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	a112916	Date of Collection: 11/16/07
Dil. Factor:	1.71	Date of Analysis: 11/30/07 01:05 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Vinyl Chloride	0.017	0.16	0.044	0.40
1,1-Dichloroethene	0.017	0.037	0.068	0.15
1,1-Dichloroethane	0.034	0.13	0.14	0.54
cis-1,2-Dichloroethene	0.034	4.0	0.14	16
1,1,1-Trichloroethane	0.034	0.59	0.19	3.2
1,2-Dichloroethane	0.034	Not Detected	0.14	Not Detected
Trichloroethene	0.034	23	0.18	120
1,1,2-Trichloroethane	0.034	Not Detected	0.19	Not Detected
Tetrachloroethene	0.034	9.4	0.23	64
1,1,2,2-Tetrachloroethane	0.034	Not Detected	0.23	Not Detected
trans-1,2-Dichloroethene	0.17	Not Detected	0.68	Not Detected
Chloromethane	0.086	Not Detected	0.18	Not Detected
Chloroethane	0.086	Not Detected	0.22	Not Detected
Chlorobenzene	0.034	Not Detected	0.16	Not Detected
Carbon Tetrachloride	0.034	0.095	0.22	0.60

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	91	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	95	70-130



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: B25-SS-03

Lab ID#: 0711379A-03A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	a112921	Date of Collection:	11/16/07
Dil. Factor:	4.88	Date of Analysis:	11/30/07 05:59 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Vinyl Chloride	0.049	Not Detected	0.12	Not Detected
1,1-Dichloroethene	0.049	0.44	0.19	1.8
1,1-Dichloroethane	0.098	0.048 J	0.40	0.19 J
cis-1,2-Dichloroethene	0.098	Not Detected	0.39	Not Detected
1,1,1-Trichloroethane	0.098	79	0.53	430
1,2-Dichloroethane	0.098	Not Detected	0.40	Not Detected
Trichloroethene	0.098	15	0.52	80
1,1,2-Trichloroethane	0.098	Not Detected	0.53	Not Detected
Tetrachloroethene	0.098	0.32	0.66	2.2
1,1,2,2-Tetrachloroethane	0.098	Not Detected	0.67	Not Detected
trans-1,2-Dichloroethene	0.49	Not Detected	1.9	Not Detected
Chloromethane	0.24	Not Detected	0.50	Not Detected
Chloroethane	0.24	Not Detected	0.64	Not Detected
Chlorobenzene	0.098	Not Detected	0.45	Not Detected
Carbon Tetrachloride	0.098	0.62	0.61	3.9

J = Estimated value.

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	94	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	94	70-130



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: B20-SS-01

Lab ID#: 0711379A-04A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	a112922	Date of Collection:	11/16/07
Dil. Factor:	14.0	Date of Analysis:	11/30/07 06:44 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Vinyl Chloride	0.14	Not Detected	0.36	Not Detected
1,1-Dichloroethene	0.14	1.5	0.56	5.9
1,1-Dichloroethane	0.28	Not Detected	1.1	Not Detected
cis-1,2-Dichloroethene	0.28	Not Detected	1.1	Not Detected
1,1,1-Trichloroethane	0.28	280 E	1.5	1500 E
1,2-Dichloroethane	0.28	Not Detected	1.1	Not Detected
Trichloroethene	0.28	21	1.5	110
1,1,2-Trichloroethane	0.28	Not Detected	1.5	Not Detected
Tetrachloroethene	0.28	0.33	1.9	2.2
1,1,2,2-Tetrachloroethane	0.28	Not Detected	1.9	Not Detected
trans-1,2-Dichloroethene	1.4	Not Detected	5.6	Not Detected
Chloromethane	0.70	Not Detected	1.4	Not Detected
Chloroethane	0.70	Not Detected	1.8	Not Detected
Chlorobenzene	0.28	Not Detected	1.3	Not Detected
Carbon Tetrachloride	0.28	1.1	1.8	7.1

E = Exceeds instrument calibration range.

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	94	70-130
Toluene-d8	96	70-130
4-Bromofluorobenzene	93	70-130



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: B20-SS-02

Lab ID#: 0711379A-05A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	a113008	Date of Collection: 11/16/07
Dil. Factor:	17.5	Date of Analysis: 11/30/07 02:04 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Vinyl Chloride	0.18	Not Detected	0.45	Not Detected
1,1-Dichloroethene	0.18	Not Detected	0.69	Not Detected
1,1-Dichloroethane	0.35	Not Detected	1.4	Not Detected
cis-1,2-Dichloroethene	0.35	Not Detected	1.4	Not Detected
1,1,1-Trichloroethane	0.35	2.8	1.9	15
1,2-Dichloroethane	0.35	Not Detected	1.4	Not Detected
Trichloroethene	0.35	14	1.9	76
1,1,2-Trichloroethane	0.35	Not Detected	1.9	Not Detected
Tetrachloroethene	0.35	180	2.4	1200
1,1,2,2-Tetrachloroethane	0.35	Not Detected	2.4	Not Detected
trans-1,2-Dichloroethene	1.8	Not Detected	6.9	Not Detected
Chloromethane	0.88	Not Detected	1.8	Not Detected
Chloroethane	0.88	Not Detected	2.3	Not Detected
Chlorobenzene	0.35	Not Detected	1.6	Not Detected
Carbon Tetrachloride	0.35	Not Detected	2.2	Not Detected

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	94	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	93	70-130



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: B20-SS-03

Lab ID#: 0711379A-06A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	a113010	Date of Collection: 11/16/07
Dil. Factor:	1.71	Date of Analysis: 11/30/07 03:34 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Vinyl Chloride	0.017	Not Detected	0.044	Not Detected
1,1-Dichloroethene	0.017	Not Detected	0.068	Not Detected
1,1-Dichloroethane	0.034	Not Detected	0.14	Not Detected
cis-1,2-Dichloroethene	0.034	Not Detected	0.14	Not Detected
1,1,1-Trichloroethane	0.034	0.42	0.19	2.3
1,2-Dichloroethane	0.034	Not Detected	0.14	Not Detected
Trichloroethene	0.034	1.2	0.18	6.4
1,1,2-Trichloroethane	0.034	Not Detected	0.19	Not Detected
Tetrachloroethene	0.034	2.3	0.23	16
1,1,2,2-Tetrachloroethane	0.034	Not Detected	0.23	Not Detected
trans-1,2-Dichloroethene	0.17	Not Detected	0.68	Not Detected
Chloromethane	0.086	0.26	0.18	0.55
Chloroethane	0.086	Not Detected	0.22	Not Detected
Chlorobenzene	0.034	Not Detected	0.16	Not Detected
Carbon Tetrachloride	0.034	0.10	0.22	0.63

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	94	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	92	70-130



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: B22-SS-01

Lab ID#: 0711379A-07A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	a113011	Date of Collection: 11/16/07
Dil. Factor:	8.40	Date of Analysis: 11/30/07 04:21 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Vinyl Chloride	0.084	Not Detected	0.21	Not Detected
1,1-Dichloroethene	0.084	Not Detected	0.33	Not Detected
1,1-Dichloroethane	0.17	Not Detected	0.68	Not Detected
cis-1,2-Dichloroethene	0.17	0.47	0.67	1.9
1,1,1-Trichloroethane	0.17	Not Detected	0.92	Not Detected
1,2-Dichloroethane	0.17	Not Detected	0.68	Not Detected
Trichloroethene	0.17	26	0.90	140
1,1,2-Trichloroethane	0.17	Not Detected	0.92	Not Detected
Tetrachloroethene	0.17	69	1.1	470
1,1,2,2-Tetrachloroethane	0.17	Not Detected	1.2	Not Detected
trans-1,2-Dichloroethene	0.84	Not Detected	3.3	Not Detected
Chloromethane	0.42	Not Detected	0.87	Not Detected
Chloroethane	0.42	Not Detected	1.1	Not Detected
Chlorobenzene	0.17	Not Detected	0.77	Not Detected
Carbon Tetrachloride	0.17	0.88	1.0	5.5

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	93	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	90	70-130



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: B115-SS-01

Lab ID#: 0711379A-08A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	a113012	Date of Collection:	11/16/07
Dil. Factor:	1.64	Date of Analysis:	11/30/07 05:09 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Vinyl Chloride	0.016	Not Detected	0.042	Not Detected
1,1-Dichloroethene	0.016	Not Detected	0.065	Not Detected
1,1-Dichloroethane	0.033	Not Detected	0.13	Not Detected
cis-1,2-Dichloroethene	0.033	Not Detected	0.13	Not Detected
1,1,1-Trichloroethane	0.033	Not Detected	0.18	Not Detected
1,2-Dichloroethane	0.033	Not Detected	0.13	Not Detected
Trichloroethene	0.033	0.50	0.18	2.7
1,1,2-Trichloroethane	0.033	Not Detected	0.18	Not Detected
Tetrachloroethene	0.033	0.18	0.22	1.2
1,1,2,2-Tetrachloroethane	0.033	Not Detected	0.22	Not Detected
trans-1,2-Dichloroethene	0.16	Not Detected	0.65	Not Detected
Chloromethane	0.082	Not Detected	0.17	Not Detected
Chloroethane	0.082	Not Detected	0.22	Not Detected
Chlorobenzene	0.033	Not Detected	0.15	Not Detected
Carbon Tetrachloride	0.033	0.068	0.21	0.43

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	92	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	94	70-130



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: B120-SS-01

Lab ID#: 0711379A-09A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	a113013	Date of Collection: 11/16/07
Dil. Factor:	5.37	Date of Analysis: 11/30/07 05:49 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Vinyl Chloride	0.054	Not Detected	0.14	Not Detected
1,1-Dichloroethene	0.054	Not Detected	0.21	Not Detected
1,1-Dichloroethane	0.11	Not Detected	0.43	Not Detected
cis-1,2-Dichloroethene	0.11	Not Detected	0.42	Not Detected
1,1,1-Trichloroethane	0.11	0.98	0.59	5.3
1,2-Dichloroethane	0.11	Not Detected	0.43	Not Detected
Trichloroethene	0.11	28	0.58	150
1,1,2-Trichloroethane	0.11	Not Detected	0.59	Not Detected
Tetrachloroethene	0.11	64	0.73	430
1,1,2,2-Tetrachloroethane	0.11	Not Detected	0.74	Not Detected
trans-1,2-Dichloroethene	0.54	Not Detected	2.1	Not Detected
Chloromethane	0.27	Not Detected	0.55	Not Detected
Chloroethane	0.27	Not Detected	0.71	Not Detected
Chlorobenzene	0.11	Not Detected	0.49	Not Detected
Carbon Tetrachloride	0.11	1.8	0.68	11

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	92	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	95	70-130



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: Lab Blank

Lab ID#: 0711379A-10A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	a112905	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 11/29/07 02:24 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Vinyl Chloride	0.010	Not Detected	0.026	Not Detected
1,1-Dichloroethene	0.010	Not Detected	0.040	Not Detected
1,1-Dichloroethane	0.020	Not Detected	0.081	Not Detected
cis-1,2-Dichloroethene	0.020	Not Detected	0.079	Not Detected
1,1,1-Trichloroethane	0.020	Not Detected	0.11	Not Detected
1,2-Dichloroethane	0.020	Not Detected	0.081	Not Detected
Trichloroethene	0.020	Not Detected	0.11	Not Detected
1,1,2-Trichloroethane	0.020	Not Detected	0.11	Not Detected
Tetrachloroethene	0.020	Not Detected	0.14	Not Detected
1,1,2,2-Tetrachloroethane	0.020	Not Detected	0.14	Not Detected
trans-1,2-Dichloroethene	0.10	Not Detected	0.40	Not Detected
Chloromethane	0.050	Not Detected	0.10	Not Detected
Chloroethane	0.050	Not Detected	0.13	Not Detected
Chlorobenzene	0.020	Not Detected	0.092	Not Detected
Carbon Tetrachloride	0.020	Not Detected	0.12	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	92	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	90	70-130



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: Lab Blank

Lab ID#: 0711379A-10B

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	a113005	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 11/30/07 10:54 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Vinyl Chloride	0.010	Not Detected	0.026	Not Detected
1,1-Dichloroethene	0.010	Not Detected	0.040	Not Detected
1,1-Dichloroethane	0.020	Not Detected	0.081	Not Detected
cis-1,2-Dichloroethene	0.020	Not Detected	0.079	Not Detected
1,1,1-Trichloroethane	0.020	Not Detected	0.11	Not Detected
1,2-Dichloroethane	0.020	Not Detected	0.081	Not Detected
Trichloroethene	0.020	Not Detected	0.11	Not Detected
1,1,2-Trichloroethane	0.020	Not Detected	0.11	Not Detected
Tetrachloroethene	0.020	Not Detected	0.14	Not Detected
1,1,2,2-Tetrachloroethane	0.020	Not Detected	0.14	Not Detected
trans-1,2-Dichloroethene	0.10	Not Detected	0.40	Not Detected
Chloromethane	0.050	Not Detected	0.10	Not Detected
Chloroethane	0.050	Not Detected	0.13	Not Detected
Chlorobenzene	0.020	Not Detected	0.092	Not Detected
Carbon Tetrachloride	0.020	Not Detected	0.12	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	96	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	90	70-130



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: CCV

Lab ID#: 0711379A-11A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	a112902	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 11/29/07 11:02 AM

Compound	%Recovery
Vinyl Chloride	93
1,1-Dichloroethene	87
1,1-Dichloroethane	98
cis-1,2-Dichloroethene	94
1,1,1-Trichloroethane	85
1,2-Dichloroethane	83
Trichloroethene	80
1,1,2-Trichloroethane	93
Tetrachloroethene	78
1,1,2,2-Tetrachloroethane	102
trans-1,2-Dichloroethene	98
Chloromethane	104
Chloroethane	116
Chlorobenzene	95
Carbon Tetrachloride	90

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	88	70-130
Toluene-d8	105	70-130
4-Bromofluorobenzene	98	70-130



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: CCV

Lab ID#: 0711379A-11B

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	a113002	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 11/30/07 08:15 AM

Compound	%Recovery
Vinyl Chloride	103
1,1-Dichloroethene	92
1,1-Dichloroethane	95
cis-1,2-Dichloroethene	96
1,1,1-Trichloroethane	89
1,2-Dichloroethane	87
Trichloroethene	82
1,1,2-Trichloroethane	96
Tetrachloroethene	85
1,1,2,2-Tetrachloroethane	93
trans-1,2-Dichloroethene	100
Chloromethane	103
Chloroethane	121
Chlorobenzene	95
Carbon Tetrachloride	96

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	91	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	96	70-130



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: LCS

Lab ID#: 0711379A-12A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	a112903	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 11/29/07 11:46 AM

Compound	%Recovery
Vinyl Chloride	107
1,1-Dichloroethene	98
1,1-Dichloroethane	102
cis-1,2-Dichloroethene	97
1,1,1-Trichloroethane	86
1,2-Dichloroethane	86
Trichloroethene	82
1,1,2-Trichloroethane	93
Tetrachloroethene	79
1,1,2,2-Tetrachloroethane	95
trans-1,2-Dichloroethene	98
Chloromethane	113
Chloroethane	122
Chlorobenzene	93
Carbon Tetrachloride	95

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	90	70-130
Toluene-d8	106	70-130
4-Bromofluorobenzene	97	70-130



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: LCS

Lab ID#: 0711379A-12B

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	a113003	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 11/30/07 09:07 AM

Compound	%Recovery
Vinyl Chloride	101
1,1-Dichloroethene	103
1,1-Dichloroethane	100
cis-1,2-Dichloroethene	99
1,1,1-Trichloroethane	91
1,2-Dichloroethane	89
Trichloroethene	84
1,1,2-Trichloroethane	96
Tetrachloroethene	86
1,1,2,2-Tetrachloroethane	88
trans-1,2-Dichloroethene	102
Chloromethane	97
Chloroethane	93
Chlorobenzene	95
Carbon Tetrachloride	101

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	91	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	94	70-130



CHAIN-OF-CUSTODY RECORD

Sample Transportation Notice
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Page 1 of 1

Project Manager MARK FLUSCHE

Collected by: (Print and Sign) Mark Flusche

Company MALCOLM PIRNIE Email MFLUSCHE@PIRNIE.COM

Address 43 BRITISH AMERICAN BURY City CATHAM State NY Zip 12110

Phone 518-782-2100 Fax 518-782-0500

Project Info:

P.O. #

Project # 2118136

Project Name WVA V1

Turn Around Time:

☒ Normal

☐ Rush

Lab Use Only

Pressurized by: MD

Date: 11/10/07

Pressurization Gas: (N) He

Lab I.D.	Field Sample I.D. (Location)	Can #	Date of Collection	Time of Collection	Analyses Requested	Canister Pressure/Vacuum			
						Initial	Final	Receipt	Final (cell)

01A	WVA-OA-01	34358	11/13/07	0807	TO-15	-30	-7.5	5.14	5.14
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02A	B25-1A-01	32465		0819		-30	-7.5	6.54	6.54
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03A	X-1	14473				-30	-8	7.04	7.04
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04A	B20-1A-01	31496		0823		-30	-8	7.04	7.04
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05A	B22-1A-01	30847		0828		-30	-8	6.54	6.54
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06A	B115-1A-01	12083		0839		-30	-9	6.04	6.04
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07A	B120-1A-01	33567		0843		-30	-7.5	6.54	6.54
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08A	WVA-OA-02	10790	✓	0845	✓	-30	-9	6.04	6.04
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Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time	Notes:					
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<u>Mark Flusche</u>	<u>11/10/07 1700</u>	<u>Mark Flusche</u>	<u>11/10/07 1700</u>	SEE ATTACHED PAGE FOR ANALYTE LIST + REPORTING LIMITS.					
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Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time						
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Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time						
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Lab	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
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Use Only	<u>Red Ex</u>	<u>MA</u>	<u>Good</u>	<u>Yes</u> <u>No</u> <u>None</u>	<u>0711292</u>	<u>MDW/1407</u>
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AN ENVIRONMENTAL ANALYTICAL LABORATORY

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Thank you for choosing Air Toxics Ltd. To better serve our customers, we are providing your report by e-mail. This document is provided in Portable Document Format which can be viewed with Acrobat Reader by Adobe.

This electronic report includes the following:

- Work order Summary;
- Laboratory Narrative;
- Results; and
- Chain of Custody (copy).

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Hours 8:00 A.M to 6:00 P.M. Pacific**



AN ENVIRONMENTAL ANALYTICAL LABORATORY

WORK ORDER #: 0711292

Work Order Summary

CLIENT:	Mr. Mark Flusche Malcolm Pirmie 43 British American Blvd. Latham, NY 12110	BILL TO:	Mr. Mark Flusche Malcolm Pirmie 43 British American Blvd. Latham, NY 12110
PHONE:	518-782-2100	P.O. #	
FAX:	518-782-0500	PROJECT #	2118136 WVA V1
DATE RECEIVED:	11/14/2007	CONTACT:	Bryanna Langley
DATE COMPLETED:	11/28/2007		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>
01A	WVA-OA-01	Modified TO-15 SIM	5.0 "Hg
02A	B25-IA-01	Modified TO-15 SIM	6.5 "Hg
03A	X-1	Modified TO-15 SIM	7.0 "Hg
03AA	X-1 Lab Duplicate	Modified TO-15 SIM	7.0 "Hg
04A	B20-IA-01	Modified TO-15 SIM	7.0 "Hg
05A	B22-IA-01	Modified TO-15 SIM	6.5 "Hg
06A	B115-IA-01	Modified TO-15 SIM	6.0 "Hg
07A	B120-IA-01	Modified TO-15 SIM	6.5 "Hg
08A	WVA-OA-02	Modified TO-15 SIM	6.0 "Hg
09A	Lab Blank	Modified TO-15 SIM	NA
09B	Lab Blank	Modified TO-15 SIM	NA
10A	CCV	Modified TO-15 SIM	NA
10B	CCV	Modified TO-15 SIM	NA
11A	LCS	Modified TO-15 SIM	NA
11B	LCS	Modified TO-15 SIM	NA

CERTIFIED BY:

Laboratory Director

DATE: 11/28/07

Certification numbers: CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763, NJ NELAP - CA004
NY NELAP - 11291, UT NELAP - 9166389892

Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,

Accreditation number: E87680, Effective date: 07/01/07, Expiration date: 06/30/08

Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

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LABORATORY NARRATIVE**Modified TO-15 SIM****Malcolm Pirnie****Workorder# 0711292**

Eight 6 Liter Summa Canister samples were received on November 14, 2007. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the SIM acquisition mode. The method involves concentrating up to 0.5 liters of air. The concentrated aliquot is then flash vaporized and swept through a water management system to remove water vapor. Following dehumidification, the sample passes directly into the GC/MS for analysis.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

Requirement	TO-15	ATL Modifications
ICAL %RSD acceptance criteria	$\leq 30\%$ RSD with 2 compounds allowed out to $< 40\%$ RSD	Project specific; default criteria is $\leq 30\%$ RSD with 10% of compounds allowed out to $< 40\%$ RSD
Daily Calibration	$\pm 30\%$ Difference	Project specific; default criteria is $\leq 30\%$ Difference with 10% of compounds allowed out up to $\leq 40\%$; flag and narrate outliers
Blank and standards	Zero air	Nitrogen
Method Detection Limit	Follow 40CFR Pt.136 App. B	The MDL met all relevant requirements in Method TO-15 (statistical MDL less than the LOQ). The concentration of the spiked replicate may have exceeded 10X the calculated MDL in some cases

Receiving Notes

The Chain of Custody (COC) information for samples B25-IA-01, X-1 and B20-IA-01 did not match the information on the canisters with regard to canister identification. The client was notified of the discrepancy and the information on the canisters were used to process and report the samples.

Analytical Notes

There were no analytical discrepancies.

Definition of Data Qualifying Flags

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

B - Compound present in laboratory blank greater than reporting limit (background subtraction not)

performed).

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 reporting limit.

UJ- Non-detected compound associated with low bias in the CCV

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



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Summary of Detected Compounds MODIFIED EPA METHOD TO-15 GC/MS SIM

Client Sample ID: WVA-OA-01

Lab ID#: 0711292-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Tetrachloroethene	0.032	0.042	0.22	0.28
Chloromethane	0.080	0.50	0.17	1.0
Carbon Tetrachloride	0.032	0.076	0.20	0.48

Client Sample ID: B25-IA-01

Lab ID#: 0711292-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Trichloroethene	0.090	77	0.48	420
Chloromethane	0.22	0.56	0.46	1.2

Client Sample ID: X-1

Lab ID#: 0711292-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Trichloroethene	0.12	80	0.63	430
Chloromethane	0.29	0.69	0.60	1.4

Client Sample ID: X-1 Lab Duplicate

Lab ID#: 0711292-03AA

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Trichloroethene	0.21	82	1.1	440
Chloromethane	0.52	0.60	1.1	1.2

Client Sample ID: B20-IA-01

Lab ID#: 0711292-04A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
1,1,1-Trichloroethane	0.035	0.057	0.19	0.31
Tetrachloroethene	0.035	0.047	0.24	0.32
Chloromethane	0.088	0.53	0.18	1.1
Carbon Tetrachloride	0.035	0.077	0.22	0.48



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Summary of Detected Compounds MODIFIED EPA METHOD TO-15 GC/MS SIM

Client Sample ID: B22-IA-01

Lab ID#: 0711292-05A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
1,1,1-Trichloroethane	0.034	0.26	0.19	1.4
Tetrachloroethene	0.034	0.050	0.23	0.34
Chloromethane	0.086	0.59	0.18	1.2
Carbon Tetrachloride	0.034	0.076	0.22	0.48

Client Sample ID: B115-IA-01

Lab ID#: 0711292-06A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
1,1,1-Trichloroethane	0.034	0.50	0.18	2.7
Tetrachloroethene	0.034	0.068	0.23	0.46
Chloromethane	0.084	1.0	0.17	2.1
Carbon Tetrachloride	0.034	0.073	0.21	0.46

Client Sample ID: B120-IA-01

Lab ID#: 0711292-07A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
1,1,1-Trichloroethane	0.034	0.070	0.19	0.38
Tetrachloroethene	0.034	0.072	0.23	0.49
Chloromethane	0.086	0.48	0.18	1.0
Carbon Tetrachloride	0.034	0.076	0.22	0.48

Client Sample ID: WVA-OA-02

Lab ID#: 0711292-08A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
1,1-Dichloroethane	0.034	0.040	0.14	0.16
1,2-Dichloroethane	0.034	0.21	0.14	0.87
Chloromethane	0.084	0.61	0.17	1.2
Carbon Tetrachloride	0.034	0.083	0.21	0.52



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: WVA-OA-01

Lab ID#: 0711292-01A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	a112608	Date of Collection: 11/13/07
Dil. Factor:	1.61	Date of Analysis: 11/26/07 02:18 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Vinyl Chloride	0.016	Not Detected	0.041	Not Detected
1,1-Dichloroethene	0.016	Not Detected	0.064	Not Detected
1,1-Dichloroethane	0.032	Not Detected	0.13	Not Detected
cis-1,2-Dichloroethene	0.032	Not Detected	0.13	Not Detected
1,1,1-Trichloroethane	0.032	Not Detected	0.18	Not Detected
1,2-Dichloroethane	0.032	Not Detected	0.13	Not Detected
Trichloroethene	0.032	Not Detected	0.17	Not Detected
1,1,2-Trichloroethane	0.032	Not Detected	0.18	Not Detected
Tetrachloroethene	0.032	0.042	0.22	0.28
1,1,2,2-Tetrachloroethane	0.032	Not Detected	0.22	Not Detected
trans-1,2-Dichloroethene	0.16	Not Detected	0.64	Not Detected
Chloromethane	0.080	0.50	0.17	1.0
Chloroethane	0.080	Not Detected	0.21	Not Detected
Chlorobenzene	0.032	Not Detected	0.15	Not Detected
Carbon Tetrachloride	0.032	0.076	0.20	0.48

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	90	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	89	70-130



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: B25-IA-01

Lab ID#: 0711292-02A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	a112615	Date of Collection: 11/13/07
Dil. Factor:	4.50	Date of Analysis: 11/27/07 05:41 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Vinyl Chloride	0.045	Not Detected	0.12	Not Detected
1,1-Dichloroethene	0.045	Not Detected	0.18	Not Detected
1,1-Dichloroethane	0.090	Not Detected	0.36	Not Detected
cis-1,2-Dichloroethene	0.090	Not Detected	0.36	Not Detected
1,1,1-Trichloroethane	0.090	Not Detected	0.49	Not Detected
1,2-Dichloroethane	0.090	Not Detected	0.36	Not Detected
Trichloroethene	0.090	77	0.48	420
1,1,2-Trichloroethane	0.090	Not Detected	0.49	Not Detected
Tetrachloroethene	0.090	Not Detected	0.61	Not Detected
1,1,2,2-Tetrachloroethane	0.090	Not Detected	0.62	Not Detected
trans-1,2-Dichloroethene	0.45	Not Detected	1.8	Not Detected
Chloromethane	0.22	0.56	0.46	1.2
Chloroethane	0.22	Not Detected	0.59	Not Detected
Chlorobenzene	0.090	Not Detected	0.41	Not Detected
Carbon Tetrachloride	0.090	Not Detected	0.57	Not Detected

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	92	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	90	70-130



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: X-1

Lab ID#: 0711292-03A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	a112614	Date of Collection: 11/13/07
Dil. Factor:	5.83	Date of Analysis: 11/27/07 04:44 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Vinyl Chloride	0.058	Not Detected	0.15	Not Detected
1,1-Dichloroethene	0.058	Not Detected	0.23	Not Detected
1,1-Dichloroethane	0.12	Not Detected	0.47	Not Detected
cis-1,2-Dichloroethene	0.12	Not Detected	0.46	Not Detected
1,1,1-Trichloroethane	0.12	Not Detected	0.64	Not Detected
1,2-Dichloroethane	0.12	Not Detected	0.47	Not Detected
Trichloroethene	0.12	80	0.63	430
1,1,2-Trichloroethane	0.12	Not Detected	0.64	Not Detected
Tetrachloroethene	0.12	Not Detected	0.79	Not Detected
1,1,2,2-Tetrachloroethane	0.12	Not Detected	0.80	Not Detected
trans-1,2-Dichloroethene	0.58	Not Detected	2.3	Not Detected
Chloromethane	0.29	0.69	0.60	1.4
Chloroethane	0.29	Not Detected	0.77	Not Detected
Chlorobenzene	0.12	Not Detected	0.54	Not Detected
Carbon Tetrachloride	0.12	Not Detected	0.73	Not Detected

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	91	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	90	70-130



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: X-1 Lab Duplicate

Lab ID#: 0711292-03AA

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	a112610	Date of Collection: 11/13/07
Dil. Factor:	10.3	Date of Analysis: 11/26/07 03:43 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Vinyl Chloride	0.10	Not Detected	0.26	Not Detected
1,1-Dichloroethene	0.10	Not Detected	0.41	Not Detected
1,1-Dichloroethane	0.21	Not Detected	0.83	Not Detected
cis-1,2-Dichloroethene	0.21	Not Detected	0.82	Not Detected
1,1,1-Trichloroethane	0.21	Not Detected	1.1	Not Detected
1,2-Dichloroethane	0.21	Not Detected	0.83	Not Detected
Trichloroethene	0.21	82	1.1	440
1,1,2-Trichloroethane	0.21	Not Detected	1.1	Not Detected
Tetrachloroethene	0.21	Not Detected	1.4	Not Detected
1,1,2,2-Tetrachloroethane	0.21	Not Detected	1.4	Not Detected
trans-1,2-Dichloroethene	1.0	Not Detected	4.1	Not Detected
Chloromethane	0.52	0.60	1.1	1.2
Chloroethane	0.52	Not Detected	1.4	Not Detected
Chlorobenzene	0.21	Not Detected	0.95	Not Detected
Carbon Tetrachloride	0.21	Not Detected	1.3	Not Detected

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	92	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	87	70-130



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: B20-IA-01

Lab ID#: 0711292-04A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	a112607	Date of Collection: 11/13/07
Dil. Factor:	1.75	Date of Analysis: 11/26/07 01:37 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Vinyl Chloride	0.018	Not Detected	0.045	Not Detected
1,1-Dichloroethene	0.018	Not Detected	0.069	Not Detected
1,1-Dichloroethane	0.035	Not Detected	0.14	Not Detected
cis-1,2-Dichloroethene	0.035	Not Detected	0.14	Not Detected
1,1,1-Trichloroethane	0.035	0.057	0.19	0.31
1,2-Dichloroethane	0.035	Not Detected	0.14	Not Detected
Trichloroethene	0.035	Not Detected	0.19	Not Detected
1,1,2-Trichloroethane	0.035	Not Detected	0.19	Not Detected
Tetrachloroethene	0.035	0.047	0.24	0.32
1,1,2,2-Tetrachloroethane	0.035	Not Detected	0.24	Not Detected
trans-1,2-Dichloroethene	0.18	Not Detected	0.69	Not Detected
Chloromethane	0.088	0.53	0.18	1.1
Chloroethane	0.088	Not Detected	0.23	Not Detected
Chlorobenzene	0.035	Not Detected	0.16	Not Detected
Carbon Tetrachloride	0.035	0.077	0.22	0.48

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	90	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	90	70-130



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: B22-IA-01

Lab ID#: 0711292-05A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	a112613	Date of Collection: 11/13/07
Dil. Factor:	1.71	Date of Analysis: 11/26/07 10:28 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Vinyl Chloride	0.017	Not Detected	0.044	Not Detected
1,1-Dichloroethene	0.017	Not Detected	0.068	Not Detected
1,1-Dichloroethane	0.034	Not Detected	0.14	Not Detected
cis-1,2-Dichloroethene	0.034	Not Detected	0.14	Not Detected
1,1,1-Trichloroethane	0.034	0.26	0.19	1.4
1,2-Dichloroethane	0.034	Not Detected	0.14	Not Detected
Trichloroethene	0.034	Not Detected	0.18	Not Detected
1,1,2-Trichloroethane	0.034	Not Detected	0.19	Not Detected
Tetrachloroethene	0.034	0.050	0.23	0.34
1,1,2,2-Tetrachloroethane	0.034	Not Detected	0.23	Not Detected
trans-1,2-Dichloroethene	0.17	Not Detected	0.68	Not Detected
Chloromethane	0.086	0.59	0.18	1.2
Chloroethane	0.086	Not Detected	0.22	Not Detected
Chlorobenzene	0.034	Not Detected	0.16	Not Detected
Carbon Tetrachloride	0.034	0.076	0.22	0.48

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	91	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	88	70-130



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: B115-IA-01

Lab ID#: 0711292-06A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	a112012	Date of Collection: 11/13/07
Dil. Factor:	1.68	Date of Analysis: 11/20/07 05:54 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Vinyl Chloride	0.017	Not Detected	0.043	Not Detected
1,1-Dichloroethene	0.017	Not Detected	0.067	Not Detected
1,1-Dichloroethane	0.034	Not Detected	0.14	Not Detected
cis-1,2-Dichloroethene	0.034	Not Detected	0.13	Not Detected
1,1,1-Trichloroethane	0.034	0.50	0.18	2.7
1,2-Dichloroethane	0.034	Not Detected	0.14	Not Detected
Trichloroethene	0.034	Not Detected	0.18	Not Detected
1,1,2-Trichloroethane	0.034	Not Detected	0.18	Not Detected
Tetrachloroethene	0.034	0.068	0.23	0.46
1,1,2,2-Tetrachloroethane	0.034	Not Detected	0.23	Not Detected
trans-1,2-Dichloroethene	0.17	Not Detected	0.67	Not Detected
Chloromethane	0.084	1.0	0.17	2.1
Chloroethane	0.084	Not Detected	0.22	Not Detected
Chlorobenzene	0.034	Not Detected	0.15	Not Detected
Carbon Tetrachloride	0.034	0.073	0.21	0.46

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	94	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	91	70-130



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: B120-IA-01

Lab ID#: 0711292-07A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	a112606	Date of Collection: 11/13/07
Dil. Factor:	1.71	Date of Analysis: 11/26/07 12:41 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Vinyl Chloride	0.017	Not Detected	0.044	Not Detected
1,1-Dichloroethene	0.017	Not Detected	0.068	Not Detected
1,1-Dichloroethane	0.034	Not Detected	0.14	Not Detected
cis-1,2-Dichloroethene	0.034	Not Detected	0.14	Not Detected
1,1,1-Trichloroethane	0.034	0.070	0.19	0.38
1,2-Dichloroethane	0.034	Not Detected	0.14	Not Detected
Trichloroethene	0.034	Not Detected	0.18	Not Detected
1,1,2-Trichloroethane	0.034	Not Detected	0.19	Not Detected
Tetrachloroethene	0.034	0.072	0.23	0.49
1,1,2,2-Tetrachloroethane	0.034	Not Detected	0.23	Not Detected
trans-1,2-Dichloroethene	0.17	Not Detected	0.68	Not Detected
Chloromethane	0.086	0.48	0.18	1.0
Chloroethane	0.086	Not Detected	0.22	Not Detected
Chlorobenzene	0.034	Not Detected	0.16	Not Detected
Carbon Tetrachloride	0.034	0.076	0.22	0.48

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	90	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	90	70-130



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: WVA-OA-02

Lab ID#: 0711292-08A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	a112014	Date of Collection: 11/13/07
Dil. Factor:	1.68	Date of Analysis: 11/20/07 07:50 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Vinyl Chloride	0.017	Not Detected	0.043	Not Detected
1,1-Dichloroethene	0.017	Not Detected	0.067	Not Detected
1,1-Dichloroethane	0.034	0.040	0.14	0.16
cis-1,2-Dichloroethene	0.034	Not Detected	0.13	Not Detected
1,1,1-Trichloroethane	0.034	Not Detected	0.18	Not Detected
1,2-Dichloroethane	0.034	0.21	0.14	0.87
Trichloroethene	0.034	Not Detected	0.18	Not Detected
1,1,2-Trichloroethane	0.034	Not Detected	0.18	Not Detected
Tetrachloroethene	0.034	Not Detected	0.23	Not Detected
1,1,2,2-Tetrachloroethane	0.034	Not Detected	0.23	Not Detected
trans-1,2-Dichloroethene	0.17	Not Detected	0.67	Not Detected
Chloromethane	0.084	0.61	0.17	1.2
Chloroethane	0.084	Not Detected	0.22	Not Detected
Chlorobenzene	0.034	Not Detected	0.15	Not Detected
Carbon Tetrachloride	0.034	0.083	0.21	0.52

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	95	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	91	70-130



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: Lab Blank

Lab ID#: 0711292-09A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	a112006	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 11/20/07 01:39 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Vinyl Chloride	0.010	Not Detected	0.026	Not Detected
1,1-Dichloroethene	0.010	Not Detected	0.040	Not Detected
1,1-Dichloroethane	0.020	Not Detected	0.081	Not Detected
cis-1,2-Dichloroethene	0.020	Not Detected	0.079	Not Detected
1,1,1-Trichloroethane	0.020	Not Detected	0.11	Not Detected
1,2-Dichloroethane	0.020	Not Detected	0.081	Not Detected
Trichloroethene	0.020	Not Detected	0.11	Not Detected
1,1,2-Trichloroethane	0.020	Not Detected	0.11	Not Detected
Tetrachloroethene	0.020	Not Detected	0.14	Not Detected
1,1,2,2-Tetrachloroethane	0.020	Not Detected	0.14	Not Detected
trans-1,2-Dichloroethene	0.10	Not Detected	0.40	Not Detected
Chloromethane	0.050	Not Detected	0.10	Not Detected
Chloroethane	0.050	Not Detected	0.13	Not Detected
Chlorobenzene	0.020	Not Detected	0.092	Not Detected
Carbon Tetrachloride	0.020	Not Detected	0.12	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	91	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	88	70-130



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: Lab Blank

Lab ID#: 0711292-09B

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	a112605	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 11/26/07 11:46 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Vinyl Chloride	0.010	Not Detected	0.026	Not Detected
1,1-Dichloroethene	0.010	Not Detected	0.040	Not Detected
1,1-Dichloroethane	0.020	Not Detected	0.081	Not Detected
cis-1,2-Dichloroethene	0.020	Not Detected	0.079	Not Detected
1,1,1-Trichloroethane	0.020	Not Detected	0.11	Not Detected
1,2-Dichloroethane	0.020	Not Detected	0.081	Not Detected
Trichloroethene	0.020	Not Detected	0.11	Not Detected
1,1,2-Trichloroethane	0.020	Not Detected	0.11	Not Detected
Tetrachloroethene	0.020	Not Detected	0.14	Not Detected
1,1,2,2-Tetrachloroethane	0.020	Not Detected	0.14	Not Detected
trans-1,2-Dichloroethene	0.10	Not Detected	0.40	Not Detected
Chloromethane	0.050	Not Detected	0.10	Not Detected
Chloroethane	0.050	Not Detected	0.13	Not Detected
Chlorobenzene	0.020	Not Detected	0.092	Not Detected
Carbon Tetrachloride	0.020	Not Detected	0.12	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	90	70-130
Toluene-d8	96	70-130
4-Bromofluorobenzene	90	70-130



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: CCV

Lab ID#: 0711292-10A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	a112003	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 11/20/07 10:48 AM

Compound	%Recovery
Vinyl Chloride	106
1,1-Dichloroethene	93
1,1-Dichloroethane	99
cis-1,2-Dichloroethene	99
1,1,1-Trichloroethane	86
1,2-Dichloroethane	81
Trichloroethene	79
1,1,2-Trichloroethane	95
Tetrachloroethene	79
1,1,2,2-Tetrachloroethane	87
trans-1,2-Dichloroethene	100
Chloromethane	104
Chloroethane	104
Chlorobenzene	92
Carbon Tetrachloride	92

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	89	70-130
Toluene-d8	104	70-130
4-Bromofluorobenzene	90	70-130



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: CCV

Lab ID#: 0711292-10B

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	a112602	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 11/26/07 09:14 AM

Compound	%Recovery
Vinyl Chloride	102
1,1-Dichloroethene	98
1,1-Dichloroethane	97
cis-1,2-Dichloroethene	101
1,1,1-Trichloroethane	91
1,2-Dichloroethane	85
Trichloroethene	85
1,1,2-Trichloroethane	99
Tetrachloroethene	88
1,1,2,2-Tetrachloroethane	93
trans-1,2-Dichloroethene	104
Chloromethane	100
Chloroethane	121
Chlorobenzene	97
Carbon Tetrachloride	98

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	88	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	94	70-130



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: LCS

Lab ID#: 0711292-11A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	a112004	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 11/20/07 11:27 AM

Compound	%Recovery
Vinyl Chloride	106
1,1-Dichloroethene	107
1,1-Dichloroethane	107
cis-1,2-Dichloroethene	105
1,1,1-Trichloroethane	91
1,2-Dichloroethane	84
Trichloroethene	81
1,1,2-Trichloroethane	96
Tetrachloroethene	82
1,1,2,2-Tetrachloroethane	88
trans-1,2-Dichloroethene	105
Chloromethane	104
Chloroethane	123
Chlorobenzene	95
Carbon Tetrachloride	99

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	90	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	90	70-130



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: LCS

Lab ID#: 0711292-11B

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	a112603	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 11/26/07 10:07 AM

Compound	%Recovery
Vinyl Chloride	108
1,1-Dichloroethene	111
1,1-Dichloroethane	104
cis-1,2-Dichloroethene	106
1,1,1-Trichloroethane	96
1,2-Dichloroethane	90
Trichloroethene	86
1,1,2-Trichloroethane	100
Tetrachloroethene	90
1,1,2,2-Tetrachloroethane	88
trans-1,2-Dichloroethene	106
Chloromethane	101
Chloroethane	104
Chlorobenzene	98
Carbon Tetrachloride	106

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	90	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	94	70-130



AN ENVIRONMENTAL ANALYTICAL LABORATORY

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Thank you for choosing Air Toxics Ltd. To better serve our customers, we are providing your report by e-mail. This document is provided in Portable Document Format which can be viewed with Acrobat Reader by Adobe.

This electronic report includes the following:

- Work order Summary;
- Laboratory Narrative;
- Results; and
- Chain of Custody (copy).

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Hours 8:00 A.M to 6:00 P.M. Pacific**



AN ENVIRONMENTAL ANALYTICAL LABORATORY

WORK ORDER #: 0711502

Work Order Summary

CLIENT:	Mr. Mark Flusche Malcolm Pirmie 43 British American Blvd. Latham, NY 12110	BILL TO:	Mr. Mark Flusche Malcolm Pirmie 43 British American Blvd. Latham, NY 12110
PHONE:	518-782-2100	P.O. #	
FAX:	518-782-0500	PROJECT #	2118136 WVA V1
DATE RECEIVED:	11/27/2007	CONTACT:	Bryanna Langley
DATE COMPLETED:			

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>
01A	WVA-SV-1	Modified TO-15 SIM	5.0 "Hg
02A	WVA-SV-2	Modified TO-15 SIM	5.0 "Hg
03A	WVA-SV-4	Modified TO-15 SIM	5.0 "Hg
03AA	WVA-SV-4 Lab Duplicate	Modified TO-15 SIM	5.0 "Hg
04A	Lab Blank	Modified TO-15 SIM	NA
05A	CCV	Modified TO-15 SIM	NA
06A	LCS	Modified TO-15 SIM	NA

CERTIFIED BY:

Laboratory Director

DATE: 12/04/07

Certification numbers: CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763, NJ NELAP - CA004
NY NELAP - 11291, UT NELAP - 9166389892

Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,

Accreditation number: E87680, Effective date: 07/01/07, Expiration date: 06/30/08

Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

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LABORATORY NARRATIVE**Modified TO-15 SIM****Malcolm Pirnie****Workorder# 0711502**

Three 6 Liter Summa Canister samples were received on November 27, 2007. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the SIM acquisition mode. The method involves concentrating up to 0.5 liters of air. The concentrated aliquot is then flash vaporized and swept through a water management system to remove water vapor. Following dehumidification, the sample passes directly into the GC/MS for analysis.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

Requirement	TO-15	ATL Modifications
ICAL %RSD acceptance criteria	$\leq 30\%$ RSD with 2 compounds allowed out to $< 40\%$ RSD	Project specific; default criteria is $\leq 30\%$ RSD with 10% of compounds allowed out to $< 40\%$ RSD
Daily Calibration	$\pm 30\%$ Difference	Project specific; default criteria is $\leq 30\%$ Difference with 10% of compounds allowed out up to $\leq 40\%$; flag and narrate outliers
Blank and standards	Zero air	Nitrogen
Method Detection Limit	Follow 40CFR Pt.136 App. B	The MDL met all relevant requirements in Method TO-15 (statistical MDL less than the LOQ). The concentration of the spiked replicate may have exceeded 10X the calculated MDL in some cases

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

There were no analytical discrepancies.

Definition of Data Qualifying Flags

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

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

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 reporting limit.

UJ- Non-detected compound associated with low bias in the CCV

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



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Summary of Detected Compounds MODIFIED EPA METHOD TO-15 GC/MS SIM

Client Sample ID: WVA-SV-1

Lab ID#: 0711502-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Tetrachloroethene	0.032	0.072	0.22	0.49

Client Sample ID: WVA-SV-2

Lab ID#: 0711502-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
1,1-Dichloroethane	0.032	0.24	0.13	0.96
Trichloroethene	0.032	0.14	0.17	0.78
Tetrachloroethene	0.032	0.51	0.22	3.5

Client Sample ID: WVA-SV-4

Lab ID#: 0711502-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Vinyl Chloride	0.027	0.063	0.068	0.16
1,1-Dichloroethane	0.054	0.057	0.22	0.23
cis-1,2-Dichloroethene	0.054	0.48	0.21	1.9
1,1,1-Trichloroethane	0.054	2.6	0.29	14
Trichloroethene	0.054	39	0.29	210
Tetrachloroethene	0.054	9.4	0.36	64
Chloromethane	0.13	0.15	0.28	0.30
Carbon Tetrachloride	0.054	0.099	0.34	0.62

Client Sample ID: WVA-SV-4 Lab Duplicate

Lab ID#: 0711502-03AA

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Vinyl Chloride	0.040	0.064	0.10	0.16
1,1-Dichloroethane	0.080	0.060 J	0.32	0.24 J
cis-1,2-Dichloroethene	0.080	0.49	0.32	2.0
1,1,1-Trichloroethane	0.080	2.7	0.44	15
Trichloroethene	0.080	40	0.43	220
Tetrachloroethene	0.080	9.6	0.54	65
Carbon Tetrachloride	0.080	0.099	0.50	0.62



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: WVA-SV-1

Lab ID#: 0711502-01A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	a120315	Date of Collection: 11/26/07
Dil. Factor:	1.61	Date of Analysis: 12/4/07 12:48 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Vinyl Chloride	0.016	Not Detected	0.041	Not Detected
1,1-Dichloroethene	0.016	Not Detected	0.064	Not Detected
1,1-Dichloroethane	0.032	Not Detected	0.13	Not Detected
cis-1,2-Dichloroethene	0.032	Not Detected	0.13	Not Detected
1,1,1-Trichloroethane	0.032	Not Detected	0.18	Not Detected
1,2-Dichloroethane	0.032	Not Detected	0.13	Not Detected
Trichloroethene	0.032	Not Detected	0.17	Not Detected
1,1,2-Trichloroethane	0.032	Not Detected	0.18	Not Detected
Tetrachloroethene	0.032	0.072	0.22	0.49
1,1,2,2-Tetrachloroethane	0.032	Not Detected	0.22	Not Detected
trans-1,2-Dichloroethene	0.16	Not Detected	0.64	Not Detected
Chloromethane	0.080	Not Detected	0.17	Not Detected
Chloroethane	0.080	Not Detected	0.21	Not Detected
Chlorobenzene	0.032	Not Detected	0.15	Not Detected
Carbon Tetrachloride	0.032	Not Detected	0.20	Not Detected

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	93	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	92	70-130



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: WVA-SV-2

Lab ID#: 0711502-02A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	a120316	Date of Collection: 11/26/07
Dil. Factor:	1.61	Date of Analysis: 12/4/07 01:32 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Vinyl Chloride	0.016	Not Detected	0.041	Not Detected
1,1-Dichloroethene	0.016	Not Detected	0.064	Not Detected
1,1-Dichloroethane	0.032	0.24	0.13	0.96
cis-1,2-Dichloroethene	0.032	Not Detected	0.13	Not Detected
1,1,1-Trichloroethane	0.032	Not Detected	0.18	Not Detected
1,2-Dichloroethane	0.032	Not Detected	0.13	Not Detected
Trichloroethene	0.032	0.14	0.17	0.78
1,1,2-Trichloroethane	0.032	Not Detected	0.18	Not Detected
Tetrachloroethene	0.032	0.51	0.22	3.5
1,1,2,2-Tetrachloroethane	0.032	Not Detected	0.22	Not Detected
trans-1,2-Dichloroethene	0.16	Not Detected	0.64	Not Detected
Chloromethane	0.080	Not Detected	0.17	Not Detected
Chloroethane	0.080	Not Detected	0.21	Not Detected
Chlorobenzene	0.032	Not Detected	0.15	Not Detected
Carbon Tetrachloride	0.032	Not Detected	0.20	Not Detected

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	93	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	94	70-130



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: WVA-SV-4

Lab ID#: 0711502-03A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	a120318	Date of Collection: 11/26/07
Dil. Factor:	2.68	Date of Analysis: 12/4/07 03:00 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Vinyl Chloride	0.027	0.063	0.068	0.16
1,1-Dichloroethene	0.027	Not Detected	0.11	Not Detected
1,1-Dichloroethane	0.054	0.057	0.22	0.23
cis-1,2-Dichloroethene	0.054	0.48	0.21	1.9
1,1,1-Trichloroethane	0.054	2.6	0.29	14
1,2-Dichloroethane	0.054	Not Detected	0.22	Not Detected
Trichloroethene	0.054	39	0.29	210
1,1,2-Trichloroethane	0.054	Not Detected	0.29	Not Detected
Tetrachloroethene	0.054	9.4	0.36	64
1,1,2,2-Tetrachloroethane	0.054	Not Detected	0.37	Not Detected
trans-1,2-Dichloroethene	0.27	Not Detected	1.1	Not Detected
Chloromethane	0.13	0.15	0.28	0.30
Chloroethane	0.13	Not Detected	0.35	Not Detected
Chlorobenzene	0.054	Not Detected	0.25	Not Detected
Carbon Tetrachloride	0.054	0.099	0.34	0.62

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	92	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	91	70-130



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: WVA-SV-4 Lab Duplicate

Lab ID#: 0711502-03AA

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	a120317	Date of Collection: 11/26/07
Dil. Factor:	4.02	Date of Analysis: 12/4/07 02:11 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Vinyl Chloride	0.040	0.064	0.10	0.16
1,1-Dichloroethene	0.040	Not Detected	0.16	Not Detected
1,1-Dichloroethane	0.080	0.060 J	0.32	0.24 J
cis-1,2-Dichloroethene	0.080	0.49	0.32	2.0
1,1,1-Trichloroethane	0.080	2.7	0.44	15
1,2-Dichloroethane	0.080	Not Detected	0.32	Not Detected
Trichloroethene	0.080	40	0.43	220
1,1,2-Trichloroethane	0.080	Not Detected	0.44	Not Detected
Tetrachloroethene	0.080	9.6	0.54	65
1,1,2,2-Tetrachloroethane	0.080	Not Detected	0.55	Not Detected
trans-1,2-Dichloroethene	0.40	Not Detected	1.6	Not Detected
Chloromethane	0.20	Not Detected	0.42	Not Detected
Chloroethane	0.20	Not Detected	0.53	Not Detected
Chlorobenzene	0.080	Not Detected	0.37	Not Detected
Carbon Tetrachloride	0.080	0.099	0.50	0.62

J = Estimated value.

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	93	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	91	70-130



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: Lab Blank

Lab ID#: 0711502-04A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	a120306	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 12/3/07 03:18 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Vinyl Chloride	0.010	Not Detected	0.026	Not Detected
1,1-Dichloroethene	0.010	Not Detected	0.040	Not Detected
1,1-Dichloroethane	0.020	Not Detected	0.081	Not Detected
cis-1,2-Dichloroethene	0.020	Not Detected	0.079	Not Detected
1,1,1-Trichloroethane	0.020	Not Detected	0.11	Not Detected
1,2-Dichloroethane	0.020	Not Detected	0.081	Not Detected
Trichloroethene	0.020	Not Detected	0.11	Not Detected
1,1,2-Trichloroethane	0.020	Not Detected	0.11	Not Detected
Tetrachloroethene	0.020	Not Detected	0.14	Not Detected
1,1,2,2-Tetrachloroethane	0.020	Not Detected	0.14	Not Detected
trans-1,2-Dichloroethene	0.10	Not Detected	0.40	Not Detected
Chloromethane	0.050	Not Detected	0.10	Not Detected
Chloroethane	0.050	Not Detected	0.13	Not Detected
Chlorobenzene	0.020	Not Detected	0.092	Not Detected
Carbon Tetrachloride	0.020	Not Detected	0.12	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	92	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	90	70-130



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: CCV

Lab ID#: 0711502-05A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	a120304	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 12/3/07 01:47 PM

Compound	%Recovery
Vinyl Chloride	107
1,1-Dichloroethene	89
1,1-Dichloroethane	98
cis-1,2-Dichloroethene	97
1,1,1-Trichloroethane	84
1,2-Dichloroethane	82
Trichloroethene	80
1,1,2-Trichloroethane	96
Tetrachloroethene	79
1,1,2,2-Tetrachloroethane	94
trans-1,2-Dichloroethene	99
Chloromethane	108
Chloroethane	111
Chlorobenzene	93
Carbon Tetrachloride	88

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	88	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	93	70-130



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: LCS

Lab ID#: 0711502-06A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	a120303	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 12/3/07 12:58 PM

Compound	%Recovery
Vinyl Chloride	109
1,1-Dichloroethene	96
1,1-Dichloroethane	99
cis-1,2-Dichloroethene	96
1,1,1-Trichloroethane	83
1,2-Dichloroethane	82
Trichloroethene	80
1,1,2-Trichloroethane	94
Tetrachloroethene	79
1,1,2,2-Tetrachloroethane	89
trans-1,2-Dichloroethene	98
Chloromethane	111
Chloroethane	111
Chlorobenzene	90
Carbon Tetrachloride	91

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	89	70-130
Toluene-d8	104	70-130
4-Bromofluorobenzene	94	70-130



AN ENVIRONMENTAL ANALYTICAL LABORATORY

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Thank you for choosing Air Toxics Ltd. To better serve our customers, we are providing your report by e-mail. This document is provided in Portable Document Format which can be viewed with Acrobat Reader by Adobe.

This electronic report includes the following:

- Work order Summary;
- Laboratory Narrative;
- Results; and
- Chain of Custody (copy).

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630

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



AN ENVIRONMENTAL ANALYTICAL LABORATORY

WORK ORDER #: 0711379B

Work Order Summary

CLIENT:	Mr. Mark Flusche Malcolm Pirnie 43 British American Blvd. Latham, NY 12110	BILL TO:	Mr. Mark Flusche Malcolm Pirnie 43 British American Blvd. Latham, NY 12110
PHONE:	518-782-2100	P.O. #	
FAX:	518-782-0500	PROJECT #	2118 136 WVA V1
DATE RECEIVED:	11/19/2007	CONTACT:	Bryanna Langley
DATE COMPLETED:	12/03/2007		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>
01A	B25-SS-01	Modified TO-15	6.5 "Hg
02A	Lab Blank	Modified TO-15	NA
03A	CCV	Modified TO-15	NA
04A	LCS	Modified TO-15	NA

CERTIFIED BY:

Laboratory Director

DATE: 12/03/07

Certification numbers: CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763, NJ NELAP - CA004
NY NELAP - 11291, UT NELAP - 9166389892

Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,
Accreditation number: E87680, Effective date: 07/01/07, Expiration date: 06/30/08

Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

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LABORATORY NARRATIVE
Modified TO-15
Malcolm Pirnie
Workorder# 0711379B



One 6 Liter Summa Canister sample was received on November 19, 2007. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the full scan mode. The method involves concentrating up to 0.2 liters of air. The concentrated aliquot is then flash vaporized and swept through a water management system to remove water vapor. Following dehumidification, the sample passes directly into the GC/MS for analysis.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

Requirement	TO-15	ATL Modifications
Daily CCV	+/- 30% Difference	<= 30% Difference with two allowed out up to <=40%; flag and narrate outliers
Sample collection media	Summa canister	ATL recommends use of summa canisters to insure data defensibility, but will report results from Tedlar bags at client request
Method Detection Limit	Follow 40CFR Pt.136 App. B	The MDL met all relevant requirements in Method TO-15 (statistical MDL less than the LOQ). The concentration of the spiked replicate may have exceeded 10X the calculated MDL in some cases

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

Sample B25-SS-01 was/were transferred from SIM/Low Level analysis to full scan TO-15 due to high levels of target/non-target compounds.

Definition of Data Qualifying Flags

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

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

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 reporting limit.

UJ- Non-detected compound associated with low bias in the CCV

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



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Summary of Detected Compounds

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: B25-SS-01

Lab ID#: 0711379B-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
1,1-Dichloroethene	86	520	340	2000
1,1,1-Trichloroethane	86	1400	470	7700
Trichloroethene	86	16000	460	87000
Tetrachloroethene	86	100	580	690



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: B25-SS-01

Lab ID#: 0711379B-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	1113009	Date of Collection: 11/16/07
Dil. Factor:	171	Date of Analysis: 11/30/07 04:07 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Chloromethane	340	Not Detected	710	Not Detected
Vinyl Chloride	86	Not Detected	220	Not Detected
Chloroethane	86	Not Detected	220	Not Detected
1,1-Dichloroethene	86	520	340	2000
trans-1,2-Dichloroethene	86	Not Detected	340	Not Detected
1,1-Dichloroethane	86	Not Detected	350	Not Detected
cis-1,2-Dichloroethene	86	Not Detected	340	Not Detected
1,1,1-Trichloroethane	86	1400	470	7700
Carbon Tetrachloride	86	Not Detected	540	Not Detected
1,2-Dichloroethane	86	Not Detected	350	Not Detected
Trichloroethene	86	16000	460	87000
1,1,2-Trichloroethane	86	Not Detected	470	Not Detected
Tetrachloroethene	86	100	580	690
Chlorobenzene	86	Not Detected	390	Not Detected
1,1,2,2-Tetrachloroethane	86	Not Detected	590	Not Detected

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	100	70-130
1,2-Dichloroethane-d4	122	70-130
4-Bromofluorobenzene	110	70-130



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: Lab Blank

Lab ID#: 0711379B-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	1113004	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 11/30/07 10:55 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Chloromethane	2.0	Not Detected	4.1	Not Detected
Vinyl Chloride	0.50	Not Detected	1.3	Not Detected
Chloroethane	0.50	Not Detected	1.3	Not Detected
1,1-Dichloroethene	0.50	Not Detected	2.0	Not Detected
trans-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
1,1-Dichloroethane	0.50	Not Detected	2.0	Not Detected
cis-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
1,1,1-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Carbon Tetrachloride	0.50	Not Detected	3.1	Not Detected
1,2-Dichloroethane	0.50	Not Detected	2.0	Not Detected
Trichloroethene	0.50	Not Detected	2.7	Not Detected
1,1,2-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Tetrachloroethene	0.50	Not Detected	3.4	Not Detected
Chlorobenzene	0.50	Not Detected	2.3	Not Detected
1,1,2,2-Tetrachloroethane	0.50	Not Detected	3.4	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	99	70-130
1,2-Dichloroethane-d4	106	70-130
4-Bromofluorobenzene	107	70-130



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: CCV

Lab ID#: 0711379B-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	1113002	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 11/30/07 09:11 AM

Compound	%Recovery
Chloromethane	105
Vinyl Chloride	104
Chloroethane	101
1,1-Dichloroethene	105
trans-1,2-Dichloroethene	94
1,1-Dichloroethane	107
cis-1,2-Dichloroethene	103
1,1,1-Trichloroethane	115
Carbon Tetrachloride	116
1,2-Dichloroethane	102
Trichloroethene	100
1,1,2-Trichloroethane	98
Tetrachloroethene	101
Chlorobenzene	98
1,1,2,2-Tetrachloroethane	101

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130
1,2-Dichloroethane-d4	107	70-130
4-Bromofluorobenzene	110	70-130



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: LCS

Lab ID#: 0711379B-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	1113003	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 11/30/07 09:57 AM

Compound	%Recovery
Chloromethane	108
Vinyl Chloride	105
Chloroethane	105
1,1-Dichloroethene	121
trans-1,2-Dichloroethene	103
1,1-Dichloroethane	120
cis-1,2-Dichloroethene	110
1,1,1-Trichloroethane	127
Carbon Tetrachloride	125
1,2-Dichloroethane	110
Trichloroethene	108
1,1,2-Trichloroethane	105
Tetrachloroethene	111
Chlorobenzene	106
1,1,2,2-Tetrachloroethane	110

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	98	70-130
1,2-Dichloroethane-d4	105	70-130
4-Bromofluorobenzene	110	70-130



CHAIN-OF-CUSTODY RECORD

Sample Transportation Notice

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(916) 985-1000 FAX (916) 985-1020

Page 1 of 1

Project Manager MARK FLOUSCHE

Collected by: (Print and Sign) Mark Flousche

Company MALCOLM PIRNIE Email MFLOUSCHE@PIRNIE.CO

Address 93 BRITISH AMERICAN DR City CATHAM State NY Zip 12110

Phone 518-782-2100 Fax 518-782-0500

Project Info:

P.O. #

Project # 2118136

Project Name WVA V1

Turn Around Time:

☒ Normal

☐ Rush

Specify

Lab Use Only
Pressurized by: JS

Date: 11/16/07

Pressurization Gas: He

Lab ID	Field Sample ID (Location)	Can #	Date of Collection	Time of Collection	Analyses Requested
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015	B25-SS-01	34309	11/16/07	0747	TD-15
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02A	B25-SS-02	35259		0749	
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03A	B25-SS-03	22077		0752	
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04A	B20-SS-01	10781		0755	
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05A	B20-SS-02	05359		0758	
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06A	B20-SS-03	94610		0801	
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07A	B22-SS-01	03786		0810	
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08A	B115-SS-01	11878		0820	
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09A	B120-SS-01	14124	Y	0820	Y
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Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
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<u>Mark Flousche</u>	<u>11/16/07 1700</u>		
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Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
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Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
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Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
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	<u>Fed-Ex</u>		<u>NA</u>	<u>Good</u>	<u>No</u> <u>(None)</u>	<u>0711379</u>
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Notes: SEE ATTACHED PAGE FOR ANALYTE LIST + REPORTING LIMITS.