A.Lanfranco & Associates Inc.
Environmental Consultants

Prepared for

METRO VANCOUVER

Metrotower III
4515 Central Boulevard
Burnaby, BC V5H 0C6

WASTE-TO-ENERGY FACILITY

Appendices of Emissions Testing Report

July 2025 Survey

Third Quarter 2025

Table of Contents

Appendix

APPENDIX – A

QUALITY ASSURANCE / QUALITY CONTROL RESULTS

Quality assurance / quality control (QA/QC) is divided into four categories: administration, preparation, testing, and analysis. The following sections detail results found for the above four categories.

Administration:

- All field, process, and analytical data was reviewed to ensure data integrity and accuracy.
- Duplicate proof of draft and final report, including data entry, conducted.

Preparation:

- All glassware cleaned
- Blank samples of reagents collected.

Testing:

- Stack diameter and absence of cyclonic flow confirmed
- Calibrated magnehelic used for all velocity measurements
- All trains past pre- and post- leak checks.
- Isokinetics all within 100% $\pm$ 10%.

Analysis:

- Trace Metals and Mercury analysis conducted at Element Labs, Surrey, B.C.
- Fluoride (HF) analysis conducted at Element Labs in Surrey, B.C.
- Nitrous Oxide (N_2O) analysis conducted at Bureau Veritas in Mississauga, ON.
- Volatile Organic Compounds (VOC) analysis conducted at ALS Environmental in Simi Valley, CA.
- Particulate analysis conducted at A. Lanfranco and Associates Inc., Surrey, BC.
- Chain of Custody protocols followed for all samples.
- Acceptable blank values for all sample types. All samples blank corrected.

Sample Type	**Blank Value**		
Third Quarter 2025	**Unit 1**	**Unit 2**	**Unit 3**
Filter	0.0 mg	0.1 mg	0.1 mg
Front Half Washings	1.5 mg	1.3 mg	1.7 mg
Mercury Front	<0.02 ug	<0.02 ug	<0.02 ug
Mercury Back	<0.27 ug	<0.27 ug	<0.27 ug
Trace Metals Front *	<39.0 ug	<64.2 ug	<44.8 ug
Trace Metals Back*	<27.9 ug	<28.1 ug	<28.1 ug
Ammonia	64.0 ug	25.5 ug	20.0 ug
Fluoride	<7 ug	<7 ug	<7 ug
Chloride	<10 ug	<10 ug	<10 ug

Sum of all reported elements except Hg*

APPENDIX - B

CALCULATIONS

The following sections show the equations and define the variables that were used for this survey. The equations are organized in three sections. Equations 1-11 were used to calculate particulate concentration at standard conditions on a dry basis. Equations 12-26 were used to sample within the 100 ± 10% isokinetic variation and to confirm that sampling meets this isokinetic variation threshold. Equations 27-29 were used to calculate the volumetric flowrate of the stack flue gas.

App B.1 Contaminant Concentration Calculations

$$c = \frac{m}{V_{std}} \quad \textbf{Equation 1}$$

$$m_{part} = m_{filter} + m_{pw} \quad \textbf{Equation 2}$$

$$m_i = m_{ana,i} - m_{blank} \quad \textbf{Equation 3}$$

$$V_{std} = \frac{V_{std(imp)}}{35.315} \quad \textbf{Equation 4}$$

$$V_{std(imp)} = \frac{V_{samp} \times y \times P_m \times (T_{std} + 459.67)}{P_{std} \times (T_{m(ave)} + 459.67)} \quad \textbf{Equation 5}$$

$$V_{samp} = V_{final} - V_{init} \quad \textbf{Equation 6}$$

$$P_m = P_B + \frac{\Delta H_{ave}}{13.6} \quad \textbf{Equation 7}$$

$$\Delta H_{ave} = \frac{1}{n}\sum_{i=1}^{n} \Delta H_{i(act)}, where\ n = the\ number\ of\ points \quad \textbf{Equation 8}$$

$$OC = \frac{20.9 - \%O_{2c}}{20.9 - \%O_{2m}} \quad \textbf{Equation 9}$$

$$\%O_{2m} = \frac{1}{n}\sum_{i=1}^{n} \%O_{2i}, where\ n = the\ number\ of\ O_2\ measurements \quad \textbf{Equation 10}$$

$$\%CO_{2m} = \frac{1}{n}\sum_{i=1}^{n} \%CO_{2i}, where\ n = the\ number\ of\ CO_2\ measurements \quad \textbf{Equation 11}$$

Where,

c	= Contaminant concentration
m	= Contaminant mass
m_i	= Net analytical mass (mg, ng, or µg)
$m_{ana,i}$	= Analytical mass (mg, ng, or µg)
m_{blank}	= Blank analytical mass (mg, ng, or µg)
m_{part}	= Total particulate mass (mg)
m_{filter}	= Net particulate gain from filter (mg)
m_{pw}	= Net particulate gain from probe wash (mg)
$V_{std(imp)}$	= Sample volume at standard conditions (ft^3)
V_{std}	= Sample volume at standard conditions (m^3)
V_{samp}	= Sample volume at actual conditions (ft^3)
V_{final}	= Final gas meter reading (ft^3)
V_{init}	= Initial gas meter reading (ft^3)
T_{std}	= Standard temperature (68 °F)
T_m	= Gas meter temperature (°F)
$T_{m(ave)}$	= Average gas meter temperature (°F)
P_m	= Absolute meter pressure (inches of Hg)
P_B	= Barometric pressure (inches of Hg)
ΔH_{ave}	= Average of individual point orifice pressures (inches of H_2O)
$\Delta H_{i(act)}$	= Individual recorded point orifice pressures (inches of H_2O)
OC	= Oxygen correction factor (dimensionless)
$\%O_{2c}$	= Oxygen concentration to correct to (% dry basis)
$\%O_{2m}$	= Average measured stack gas oxygen concentration (% dry basis)
$\%CO_{2m}$	= Average measured stack gas oxygen concentration (% dry basis)

Equation 1 is the general concentration calculation used for all contaminants. The contaminant mass, *m*, is the net analytic mass for the given contaminant. For particulate, *m* is the sum of the mass contributed from probe washing and filter particulate.

App B.2 Isokinetic Variation Calculations

$$\Delta H_i = \frac{2.62 \times 10^7 \times c_p \times A_n \times (1 - B_{wo}) \times M_D \times (T_m + 459.67) \times \Delta p_i}{k_o \times M_w \times (T_{Stk} + 459.67)}$$ **Equation 12**

$$R_m = 85.49 \times c_p \times \sqrt{\Delta p_i} \times \sqrt{\frac{(T_{stk_i} + 459.67)}{M_w \times P_B}} \times 60 \times A_n \times \frac{(T_{m_i} + 459.67) \times (1 - B_{wo})}{(T_{stk_i} + 459.67) \times y}$$ **Equation 13**

$$A_n = \pi \left(\frac{d_n}{24}\right)^2$$ **Equation 14**

$$M_w = M_D \times (1 - B_{wo}) + 18 \times B_{wo}$$ **Equation 15**

$$M_D = 0.44 \times \%CO_2 + 0.32 \times \%O_2 + 0.28 \times (100 - \%CO_2 - \%O_2)$$ **Equation 16**

$$T_{Stk} = \frac{1}{n}\sum_{i=1}^{n} T_{Stk_i}, where\ n = the\ number\ of\ points$$ **Equation 17**

$$B_{wo} = \frac{V_{cond}}{V_{cond} + V_{std(imp)}}$$ **Equation 18**

$$V_{cond} = 0.04707 \times V_{gain}$$ **Equation 19**

$$Iso = \frac{1}{n}\sum_{i=1}^{n} Iso_i, where\ n = the\ number\ of\ points$$ **Equation 20**

$$Iso_i = \frac{v_{nzi}}{v_i}$$ **Equation 21**

$$v_i = 85.49 \times c_p \times \sqrt{\Delta p_i} \times \sqrt{\frac{(T_{Stk_i} + 459.67)}{(P_{Stk} \times M_W)}}$$ **Equation 22**

$$v_{nzi} = \frac{(V_i - V_{i-1}) \times y \times (T_{Stk_i} + 459.67) \times (P_B + \frac{\Delta H_{i(act)}}{13.6})}{A_n \times t_i \times 60 \times (T_{m(i)} + 459.67) \times P_{stk} \times (1 - B_{wo})}$$ **Equation 23**

$$P_{stk} = P_B + \frac{P_g}{13.6}$$ **Equation 24**

$$v_{stk} = \frac{1}{n}\sum_{i=1}^{n} v_i \text{ , where } n = \text{the number of points}$$ **Equation 25**

$$v_{nz} = \frac{1}{n}\sum_{i=1}^{n} v_{nzi} \text{ , where } n = \text{the number of points}$$ **Equation 26**

Where,

A_n = *Nozzle area (ft^2)*
d_n = *Diameter of nozzle (inches)*
c_p = *Pitot coefficient (dimensionless)*
Δp_i = *Individual point differential pressures (inches of H_2O)*
T_{Stk} = *Average flue gas temperature (°F), second subscript i, indicates individual point measurements*
$\Delta H_{i(act)}$ = *Calculated individual point orifice pressures (inches of H_2O)*
P_g = *Stack Static pressure (inches of H_2O)*
P_{stk} = *Absolute stack pressure (inches of Hg)*
M_w = *Wet gas molecular weight (g/gmol)*
M_D = *Dry gas molecular weight (g/gmol)*
$\%CO_2$ = *Stack gas carbon dioxide concentration (% dry basis)*
$\%O_2$ = *Stack gas oxygen concentration (% dry basis)*
B_{wo} = *Stack gas water vapour, proportion by volume*
V_{cond} = *Total volume of water vapor collected, corrected to standard conditions (ft^3)*
V_{gain} = *Condensate gain of impinger contents (mL)*
P_{std} = *Standard pressure (29.92 inches of Hg)*
v_{stk} = *Average flue gas velocity (ft/sec)*
v_i = *Individual point flue gas velocity (ft/sec)*
v_{nz} = *Average velocity at nozzle(ft/sec)*
v_{nzi} = *Individual point velocity at nozzle(ft/sec)*
Iso_i = *Individual point isokinetic variation (%)*
Iso = *Average isokinetic variation (%)*
R_m = *Isokinetic sampling rate (ft^3/min)*

App B.3 Volumetric Flowrate Calculations

$$Q_S = Q_A \times \frac{(T_{Std} + 459.67)}{(T_{Stk} + 459.67)} \times \frac{P_{Stk}}{P_{Std}}$$ **Equation 27**

$$Q_A = \frac{v_{stk} \times 60 \times A_{stk}}{35.315}$$ **Equation 28**

$$A_{stk} = \pi \left(\frac{d}{24}\right)^2$$ **Equation 29**

Where,

Q_A = *Actual flowrate (Am³/min)*
Q_S = *Flowrate (m³/min) at standard conditions on a dry basis*
A_{stk} = *Area of stack (ft²)*
d = *Diameter of stack (inches)*

APPENDIX - C

LABORATORY RESULTS

Appendix C - Particulate Analysis

Client:	Metro Vancouver	**Sample Date:**	July 14 - 17, 2025
Source:	Units 1, 2, and 3	**Location:**	WTE (Burnaby, B.C)

A. Lanfranco & Associates Standard Operating Procedure:

SOP 1.2.1 Gravimetric determination of total particulate matter

Filter Collection:

Test #	Initial (grams)	Final (grams)	Net Diference (grams)	Blank Adjusted (grams)
Unit 1 Blank	0.4443	0.4443	0.0000	
Unit 1 Run 1	0.4478	0.4474	-0.0004	ND
Unit 1 Run 2	0.4467	0.4463	-0.0004	ND
Unit 1 Run 3	0.4451	0.4457	0.0006	0.0006
Unit 2 Blank	0.4488	0.4489	0.0001	
Unit 2 Run 1	0.4461	0.4456	-0.0005	ND
Unit 2 Run 2	0.4475	0.4472	-0.0003	ND
Unit 2 Run 3	0.4460	0.4566	0.0106	0.0105
Unit 3 Blank	0.4505	0.4506	0.0001	
Unit 3 Run 1	0.4445	0.4452	0.0007	0.0006
Unit 3 Run 2	0.4469	0.4478	0.0009	0.0008
Unit 3 Run 3	0.4468	0.4487	0.0019	0.0018

Front Half Washings:

Test #	Initial (grams)	Final (grams)	Net Diference (grams)	Blank Adjusted (grams)
Unit 1 Blank	117.6295	117.6310	0.0015	
Unit 1 Run 1	113.3306	113.3397	0.0091	0.0076
Unit 1 Run 2	122.2428	122.2446	0.0018	0.0003
Unit 1 Run 3	108.7373	108.7400	0.0027	0.0012
Unit 2 Blank	97.4707	97.4720	0.0013	
Unit 2 Run 1	118.5695	118.5747	0.0052	0.0039
Unit 2 Run 2	110.9580	110.9620	0.0040	0.0027
Unit 2 Run 3	86.4742	86.4771	0.0029	0.0016
Unit 3 Blank	84.6635	84.6652	0.0017	
Unit 3 Run 1	123.7566	123.7586	0.0020	0.0003
Unit 3 Run 2	117.3466	117.3483	0.0017	ND
Unit 3 Run 3	122.9362	122.9389	0.0027	0.0010

Task	Unit	Personnel	Date	Quality Control	Y/N
Filter Recovery:	Unit 1	C. Lanfranco	15-Jul-25	Adequate PW volume:	Y
	Unit 2	C. Lanfranco	16-Jul-25	No sample leakage:	Y
	Unit 3	L. Agassiz	17-Jul-25	Filter not compromised:	Y
PW Initial Analysis:	Unit 1	C. De La O	21-Jul-25		
	Unit 2	C. De La O	21-Jul-25		
	Unit 3	C. De La O	21-Jul-25		
PW, Filter Final Analysis:	Unit 1	J. Ching	24-Jul-25		
	Unit 2	J. Ching	24-Jul-25		
	Unit 3	J. Ching	24-Jul-25		
Data Entered to Computer:	All	L. Agassiz	20-Aug-25		

Comments:

No problems encountered in sample analysis.

Element
#104, 19575-55 A Ave.
Surrey, British Columbia
V3S 8P8, Canada

T: +1 (604) 514-3322
E: info.vancouver@element.com
W: www.element.com

Report Transmission Cover Page

Bill To:	A. Lanfranco & Associates #101, 9488 - 189 Street Surrey, BC, Canada V4N 4W7	Project ID:	Metro Vancouver WTE	Lot ID:	**1831404**
Attn:	Missy	Project Name:	Reagent Blanks	Control Number:	
Sampled By:		Project Location:		Date Received:	Jul 25, 2025
Company:		LSD:		Date Reported:	Aug 18, 2025
		P.O.:		Report Number:	3162585
		Proj. Acct. code:		Report Type:	Final Report

Contact	Company	Address
Mark Lanfranco	**A. Lanfranco & Associates**	#101, 9488 - 189 Street Surrey, BC V4N 4W7 Phone: (604) 881-2582 Fax: (604) 881-2581 Email: mark.lanfranco@alanfranco.com

Delivery	Format	Deliverables
Email	PDF	COA / COC
Email	PDF	COC / Test Report

Contact	Company	Address
Missy	**A. Lanfranco & Associates**	#101, 9488 - 189 Street Surrey, BC V4N 4W7 Phone: (604) 881-2582 Fax: (604) 881-2581 Email: missy@alanfranco.com

Delivery	Format	Deliverables
Email	PDF	Invoice

Element
#104, 19575-55 A Ave.
Surrey, British Columbia
V3S 8P8, Canada

T: +1 (604) 514-3322
E: info.vancouver@element.com
W: www.element.com

Analytical Report

Bill To: A. Lanfranco & Associates
#101, 9488 - 189 Street
Surrey, BC, Canada
V4N 4W7
Attn: Missy
Sampled By:
Company:

Project ID: Metro Vancouver WTE
Project Name: Reagent Blanks
Project Location:
LSD:
P.O.:
Proj. Acct. code:

Lot ID: **1831404**
Control Number:
Date Received: Jul 25, 2025
Date Reported: Aug 18, 2025
Report Number: 3162585
Report Type: Final Report

Reference Number	1831404-1	1831404-2	1831404-3
Sample Date	Jul 14, 2025	Jul 14, 2025	Jul 14, 2025
Sample Time	NA	NA	NA
Sample Location			
Sample Description	Reagent Blank Unit 1 / 21.4 °C	Reagent Blank Unit 2 / 21.4 °C	Reagent Blank Unit 3 / 21.4 °C
Matrix	Stack Samples	Stack Samples	Stack Samples

Analyte		Units	Results	Results	Results	Nominal Detection Limit
Front Half Metals Fraction 1A						
Aluminum		µg	27	<5	46	5
Antimony		µg	<2	<2	<2	2.5
Arsenic		µg	12	4.0	7.1	1
Cadmium		µg	<0.3	<0.3	<0.3	0.25
Chromium		µg	<0.2	<0.2	<0.2	0.2
Cobalt		µg	<0.3	<0.3	<0.3	0.25
Copper		µg	<0.3	1	<0.3	0.25
Lead		µg	<2	2	<2	1.5
Manganese		µg	<0.3	<0.3	<0.3	0.25
Nickel		µg	<0.5	<0.5	<0.5	0.5
Phosphorus		µg	<2	<2	<2	2.5
Selenium		µg	<2	<2	2	1.5
Tellurium		µg	8.9	8.6	4.4	2
Thallium		µg	<2	<2	<2	1.5
Vanadium		µg	<1	<1	<1	1
Zinc		µg	<0.5	1	5.7	0.5
Back Half Metals Fraction 2A						
Aluminum		µg	8	<5	77	5
Antimony		µg	<3	<3	<3	2.5
Arsenic		µg	17	8.8	9.3	1
Cadmium		µg	<0.3	<0.3	<0.3	0.25
Chromium		µg	<0.2	<0.2	<0.2	0.2
Cobalt		µg	<0.3	<0.3	<0.3	0.25
Copper		µg	<0.3	<0.3	0.9	0.25
Lead		µg	<2	<2	<2	1.5
Manganese		µg	<0.3	<0.3	<0.3	0.25
Nickel		µg	<0.5	<0.5	<0.5	0.5
Phosphorus		µg	<3	<3	<3	2.5
Selenium		µg	<2	<2	6.4	1.5
Tellurium		µg	9.1	6.0	17	2
Thallium		µg	<2	<2	<2	1.5
Vanadium		µg	<1	<1	<1	1
Zinc		µg	<0.5	<0.5	2	0.5
Volume	Sample	mL	208	211	215	
Volume	aliquot volume	mL	158	161	165	
Mercury by CVAA						
Mercury	As Tested	µg/L	<0.05	<0.05	<0.05	0.05
Dilution Factor	As Tested		1	1	1	

Element
#104, 19575-55 A Ave.
Surrey, British Columbia
V3S 8P8, Canada

T: +1 (604) 514-3322
E: info.vancouver@element.com
W: www.element.com

Analytical Report

Bill To: A. Lanfranco & Associates
#101, 9488 - 189 Street
Surrey, BC, Canada
V4N 4W7
Attn: Missy
Sampled By:
Company:

Project ID: Metro Vancouver WTE
Project Name: Reagent Blanks
Project Location:
LSD:
P.O.:
Proj. Acct. code:

Lot ID: **1831404**
Control Number:
Date Received: Jul 25, 2025
Date Reported: Aug 18, 2025
Report Number: 3162585
Report Type: Final Report

Reference Number	1831404-1	1831404-2	1831404-3
Sample Date	Jul 14, 2025	Jul 14, 2025	Jul 14, 2025
Sample Time	NA	NA	NA
Sample Location			
Sample Description	Reagent Blank Unit 1 / 21.4 °C	Reagent Blank Unit 2 / 21.4 °C	Reagent Blank Unit 3 / 21.4 °C
Matrix	Stack Samples	Stack Samples	Stack Samples

Analyte		Units	Results	Results	Results	Nominal Detection Limit
Mercury by CVAA - Continued						
Volume	Sample	mL	250	250	250	
Volume	aliquot volume	mL	25	25	25	
Volume	Final	mL	40	40	40	
Mercury	Fraction 1B	µg/sample	<0.02	<0.02	<0.02	
Mercury	As Tested	µg/L	0.06	<0.05	<0.05	0.05
Dilution Factor	As Tested		1	1	1	
Volume	Sample	mL	208	211	215	
Volume	aliquot volume	mL	5.0	5.0	5.0	
Volume	Final	mL	45	45	45	
Mercury	Fraction 2B	µg/sample	0.1	<0.09	<0.10	
Mercury	As Tested	µg/L	<0.05	<0.05	<0.05	0.05
Dilution Factor	As Tested		1	1	1	
Volume	Sample	mL	101	96	100	
Volume	aliquot volume	mL	25	25	25	
Volume	Final	mL	40	40	40	
Mercury	Fraction 3A	µg/sample	<0.008	<0.008	<0.008	
Mercury	As Tested	µg/L	<0.05	<0.05	<0.05	0.05
Dilution Factor	As Tested		1	1	1	
Volume	Sample	mL	500	500	500	
Volume	aliquot volume	mL	25	25	25	
Volume	Final	mL	40	40	40	
Mercury	Fraction 3B	µg/sample	<0.04	<0.04	<0.04	
Mercury	As Tested	µg/L	<0.05	<0.05	<0.05	0.05
Dilution Factor	As Tested		1	1	1	
Volume	Sample	mL	200	200	200	
Volume	aliquot volume	mL	25	25	25	
Volume	Final	mL	40	40	40	
Mercury	Fraction 3C	µg/sample	<0.02	<0.02	<0.02	

Approved by:

Reena Sharma
Operations Chemist

Data have been validated by Analytical Quality Control and Element's Integrated Data Validation System (IDVS).
Generation and distribution of the report, and approval by the digitized signature above, are performed through a secure and controlled automatic process.

Element
#104, 19575-55 A Ave.
Surrey, British Columbia
V3S 8P8, Canada

T: +1 (604) 514-3322
E: info.vancouver@element.com
W: www.element.com

Methodology and Notes

Bill To: A. Lanfranco & Associates
#101, 9488 - 189 Street
Surrey, BC, Canada
V4N 4W7
Attn: Missy
Sampled By:
Company:

Project ID: Metro Vancouver WTE
Project Name: Reagent Blanks
Project Location:
LSD:
P.O.:
Proj. Acct. code:

Lot ID: **1831404**
Control Number:
Date Received: Jul 25, 2025
Date Reported: Aug 18, 2025
Report Number: 3162585
Report Type: Final Report

Method of Analysis

Method Name	Reference		Method	Date Analysis Started	Location
Mercury in Air (VAN) - 1B	EMC	*	Metals Emissions from Stationary Sources, 29	Aug 13, 2025	Element Vancouver
Mercury in Air (VAN) - 2B	EMC	*	Metals Emissions from Stationary Sources, 29	Aug 13, 2025	Element Vancouver
Mercury in Air (VAN) - 3A	EMC	*	Metals Emissions from Stationary Sources, 29	Aug 13, 2025	Element Vancouver
Mercury in Air (VAN) - 3B	EMC	*	Metals Emissions from Stationary Sources, 29	Aug 13, 2025	Element Vancouver
Mercury in Air (VAN) - 3C	EMC	*	Metals Emissions from Stationary Sources, 29	Aug 13, 2025	Element Vancouver
Metals in Stack Samples - Back half (VAN)	EMC	*	Metals Emissions from Stationary Sources, 29	Jul 28, 2025	Element Vancouver
Metals in Stack Samples - Front half (VAN)	EMC	*	Metals Emissions from Stationary Sources, 29	Jul 28, 2025	Element Vancouver

** Reference Method Modified*

References

EMC Emission Measurement Center of EPA

Element
#104, 19575-55 A Ave.
Surrey, British Columbia
V3S 8P8, Canada

T: +1 (604) 514-3322
E: info.vancouver@element.com
W: www.element.com

Report Transmission Cover Page

Bill To: A. Lanfranco & Associates
#101, 9488 - 189 Street
Surrey, BC, Canada
V4N 4W7
Attn: Missy
Sampled By:
Company:

Project ID: Metro Vancouver WTE
Project Name: Field Blanks
Project Location:
LSD:
P.O.:
Proj. Acct. code:

Lot ID: **1831402**
Control Number:
Date Received: Jul 25, 2025
Date Reported: Aug 18, 2025
Report Number: 3162581
Report Type: Final Report

Contact	Company	Address
Mark Lanfranco	**A. Lanfranco & Associates**	#101, 9488 - 189 Street Surrey, BC V4N 4W7 Phone: (604) 881-2582 Fax: (604) 881-2581 Email: mark.lanfranco@alanfranco.com

Delivery	Format	Deliverables
Email	PDF	COA / COC
Email	PDF	COC / Test Report

Contact	Company	Address
Missy	**A. Lanfranco & Associates**	#101, 9488 - 189 Street Surrey, BC V4N 4W7 Phone: (604) 881-2582 Fax: (604) 881-2581 Email: missy@alanfranco.com

Delivery	Format	Deliverables
Email	PDF	Invoice

Element
#104, 19575-55 A Ave.
Surrey, British Columbia
V3S 8P8, Canada

T: +1 (604) 514-3322
E: info.vancouver@element.com
W: www.element.com

Analytical Report

Bill To: A. Lanfranco & Associates
#101, 9488 - 189 Street
Surrey, BC, Canada
V4N 4W7
Attn: Missy
Sampled By:
Company:

Project ID: Metro Vancouver WTE
Project Name: Field Blanks
Project Location:
LSD:
P.O.:
Proj. Acct. code:

Lot ID: **1831402**
Control Number:
Date Received: Jul 25, 2025
Date Reported: Aug 18, 2025
Report Number: 3162581
Report Type: Final Report

Reference Number	1831402-1	1831402-2	1831402-3
Sample Date	Jul 15, 2025	Jul 16, 2025	Jul 17, 2025
Sample Time	NA	NA	NA
Sample Location			
Sample Description	Field Blank Unit 1 ('MV Unit 1 Blank' + 4 Bottles) / 21.4 °C	Field Blank Unit 2 ('MV Unit 2 Blank' + 4 Bottles) / 21.4 °C	Field Blank Unit 3 ('MV Unit 3 Blank' + 4 Bottles) / 21.4 °C
Matrix	Stack Samples	Stack Samples	Stack Samples

Analyte		Units	Results	Results	Results	Nominal Detection Limit
Front Half Metals Fraction 1A						
Aluminum		µg	<5	531	<5	5
Antimony		µg	<2	<2	<2	2.5
Arsenic		µg	5.7	8.2	9.2	1
Cadmium		µg	<0.3	<0.3	<0.3	0.25
Chromium		µg	<0.2	<0.2	<0.2	0.2
Cobalt		µg	<0.3	<0.3	<0.3	0.25
Copper		µg	1	<0.3	<0.3	0.25
Lead		µg	<2	<2	<2	1.5
Manganese		µg	<0.3	<0.3	<0.3	0.25
Nickel		µg	<0.5	<0.5	<0.5	0.5
Phosphorus		µg	26	43	25	2.5
Selenium		µg	<2	<2	<2	1.5
Tellurium		µg	6.3	11	2.8	2
Thallium		µg	<2	<2	7.1	1.5
Vanadium		µg	<1	<1	<1	1
Zinc		µg	<0.5	2	0.7	0.5
Back Half Metals Fraction 2A						
Aluminum		µg	<4	<4	<4	5
Antimony		µg	<2	<2	<2	2.5
Arsenic		µg	4.8	5.5	11	1
Cadmium		µg	<0.2	<0.2	<0.2	0.25
Chromium		µg	<0.2	<0.2	<0.2	0.2
Cobalt		µg	<0.2	<0.2	<0.2	0.25
Copper		µg	<0.2	<0.2	<0.2	0.25
Lead		µg	<1	<1	<1	1.5
Manganese		µg	<0.2	<0.2	<0.2	0.25
Nickel		µg	<0.4	<0.4	0.5	0.5
Phosphorus		µg	4	6	7	2.5
Selenium		µg	5.6	7.5	<1	1.5
Tellurium		µg	13	8.4	9.6	2
Thallium		µg	<1	<1	<1	1.5
Vanadium		µg	<0.9	<0.9	<0.9	1
Zinc		µg	0.5	0.7	<0.4	0.5
Volume	Sample	mL	454	517	460	
Volume	aliquot volume	mL	404	467	410	
Mercury by CVAA						
Mercury	As Tested	µg/L	<0.05	<0.05	<0.05	0.05

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#104, 19575-55 A Ave.
Surrey, British Columbia
V3S 8P8, Canada

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E: info.vancouver@element.com
W: www.element.com

Analytical Report

Bill To: A. Lanfranco & Associates
#101, 9488 - 189 Street
Surrey, BC, Canada
V4N 4W7
Attn: Missy
Sampled By:
Company:

Project ID: Metro Vancouver WTE
Project Name: Field Blanks
Project Location:
LSD:
P.O.:
Proj. Acct. code:

Lot ID: **1831402**
Control Number:
Date Received: Jul 25, 2025
Date Reported: Aug 18, 2025
Report Number: 3162581
Report Type: Final Report

Reference Number	1831402-1	1831402-2	1831402-3
Sample Date	Jul 15, 2025	Jul 16, 2025	Jul 17, 2025
Sample Time	NA	NA	NA
Sample Location			
Sample Description	Field Blank Unit 1 ('MV Unit 1 Blank' + 4 Bottles) / 21.4 °C	Field Blank Unit 2 ('MV Unit 2 Blank' + 4 Bottles) / 21.4 °C	Field Blank Unit 3 ('MV Unit 3 Blank' + 4 Bottles) / 21.4 °C
Matrix	Stack Samples	Stack Samples	Stack Samples

Analyte		Units	Results	Results	Results	Nominal Detection Limit
Mercury by CVAA - Continued						
Dilution Factor	As Tested		1	1	1	
Volume	Sample	mL	250	250	250	
Volume	aliquot volume	mL	25	25	25	
Volume	Final	mL	40	40	40	
Mercury	Fraction 1B	µg/sample	<0.02	<0.02	<0.02	
Mercury	As Tested	µg/L	<0.05	<0.05	<0.05	0.05
Dilution Factor	As Tested		1	1	1	
Volume	Sample	mL	454	517	460	
Volume	aliquot volume	mL	5.0	5.0	5.0	
Volume	Final	mL	40	40	40	
Mercury	Fraction 2B	µg/sample	<0.2	<0.2	<0.2	
Mercury	As Tested	µg/L	<0.05	<0.05	<0.05	0.05
Dilution Factor	As Tested		1	1	1	
Volume	Sample	mL	81	99	91	
Volume	aliquot volume	mL	25	25	25	
Volume	Final	mL	40	40	40	
Mercury	Fraction 3A	µg/sample	<0.006	<0.008	<0.007	
Mercury	As Tested	µg/L	<0.05	<0.05	<0.05	0.05
Dilution Factor	As Tested		1	1	1	
Volume	Sample	mL	500	500	500	
Volume	aliquot volume	mL	25	25	25	
Volume	Final	mL	40	40	40	
Mercury	Fraction 3B	µg/sample	<0.04	<0.04	<0.04	
Mercury	As Tested	µg/L	<0.05	<0.05	<0.05	0.05
Dilution Factor	As Tested		1	1	1	
Volume	Sample	mL	200	200	200	
Volume	aliquot volume	mL	25	25	25	
Volume	Final	mL	40	40	40	
Mercury	Fraction 3C	µg/sample	<0.02	<0.02	<0.02	

Approved by:

Reena Sharma
Operations Chemist

Data have been validated by Analytical Quality Control and Element's Integrated Data Validation System (IDVS).
Generation and distribution of the report, and approval by the digitized signature above, are performed through a secure and controlled automatic process.

Element
#104, 19575-55 A Ave.
Surrey, British Columbia
V3S 8P8, Canada

T: +1 (604) 514-3322
E: info.vancouver@element.com
W: www.element.com

Methodology and Notes

Bill To:	A. Lanfranco & Associates #101, 9488 - 189 Street Surrey, BC, Canada V4N 4W7	Project ID:	Metro Vancouver WTE
Attn:	Missy	Project Name:	Field Blanks
Sampled By:		Project Location:	
Company:		LSD:	
		P.O.:	
		Proj. Acct. code:	

Lot ID:	**1831402**
Control Number:	
Date Received:	Jul 25, 2025
Date Reported:	Aug 18, 2025
Report Number:	3162581
Report Type:	Final Report

Method of Analysis

Method Name	Reference		Method	Date Analysis Started	Location
Mercury in Air (VAN) - 1B	EMC	*	Metals Emissions from Stationary Sources, 29	Aug 13, 2025	Element Vancouver
Mercury in Air (VAN) - 2B	EMC	*	Metals Emissions from Stationary Sources, 29	Aug 13, 2025	Element Vancouver
Mercury in Air (VAN) - 3A	EMC	*	Metals Emissions from Stationary Sources, 29	Aug 13, 2025	Element Vancouver
Mercury in Air (VAN) - 3B	EMC	*	Metals Emissions from Stationary Sources, 29	Aug 13, 2025	Element Vancouver
Mercury in Air (VAN) - 3C	EMC	*	Metals Emissions from Stationary Sources, 29	Aug 13, 2025	Element Vancouver
Metals in Stack Samples - Back half (VAN)	EMC	*	Metals Emissions from Stationary Sources, 29	Jul 28, 2025	Element Vancouver
Metals in Stack Samples - Front half (VAN)	EMC	*	Metals Emissions from Stationary Sources, 29	Jul 28, 2025	Element Vancouver

** Reference Method Modified*

References

EMC	Emission Measurement Center of EPA

Element
#104, 19575-55 A Ave.
Surrey, British Columbia
V3S 8P8, Canada

T: +1 (604) 514-3322
E: info.vancouver@element.com
W: www.element.com

Report Transmission Cover Page

Bill To: A. Lanfranco & Associates
#101, 9488 - 189 Street
Surrey, BC, Canada
V4N 4W7
Attn: Missy
Sampled By:
Company:

Project ID: Metro Vancouver WTE
Project Name: Metals and Hg Samples
Project Location:
LSD:
P.O.:
Proj. Acct. code:

Lot ID: **1831390**
Control Number:
Date Received: Jul 25, 2025
Date Reported: Aug 18, 2025
Report Number: 3162564
Report Type: Final Report

Contact	Company	Address
Mark Lanfranco	**A. Lanfranco & Associates**	#101, 9488 - 189 Street Surrey, BC V4N 4W7 Phone: (604) 881-2582 Fax: (604) 881-2581 Email: mark.lanfranco@alanfranco.com

Delivery	Format	Deliverables
Email	PDF	COA / COC
Email	PDF	COC / Test Report

Contact	Company	Address
Missy	**A. Lanfranco & Associates**	#101, 9488 - 189 Street Surrey, BC V4N 4W7 Phone: (604) 881-2582 Fax: (604) 881-2581 Email: missy@alanfranco.com

Delivery	Format	Deliverables
Email	PDF	Invoice

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#104, 19575-55 A Ave.
Surrey, British Columbia
V3S 8P8, Canada

T: +1 (604) 514-3322
E: info.vancouver@element.com
W: www.element.com

Analytical Report

Bill To: A. Lanfranco & Associates
#101, 9488 - 189 Street
Surrey, BC, Canada
V4N 4W7
Attn: Missy
Sampled By:
Company:

Project ID: Metro Vancouver WTE
Project Name: Metals and Hg Samples
Project Location:
LSD:
P.O.:
Proj. Acct. code:

Lot ID: **1831390**
Control Number:
Date Received: Jul 25, 2025
Date Reported: Aug 18, 2025
Report Number: 3162564
Report Type: Final Report

Reference Number	1831390-1	1831390-2	1831390-3
Sample Date	Jul 14, 2025	Jul 15, 2025	Jul 15, 2025
Sample Time	NA	NA	NA
Sample Location			
Sample Description	Unit 1 Run 1 (Unit 1 R1 + 4 Bottles) / 21.4 °C	Unit 1 Run 2 (MV Unit 1 Run 2 + 4 Bottles) / 21.4 °C	Unit 1 Run 3 (MV Unit 1 Run 3 + 4 Bottles) / 21.4 °C
Matrix	Stack Samples	Stack Samples	Stack Samples

Analyte		Units	Results	Results	Results	Nominal Detection Limit
Front Half Metals Fraction 1A						
Aluminum		µg	190	6	20	5
Antimony		µg	<2	<2	3	2.5
Arsenic		µg	11	5.5	4.9	1
Cadmium		µg	<0.3	<0.3	<0.3	0.25
Chromium		µg	4.63	<0.2	<0.2	0.2
Cobalt		µg	<0.3	<0.3	<0.3	0.25
Copper		µg	3.0	1	2	0.25
Lead		µg	6.4	<2	<2	1.5
Manganese		µg	14	<0.3	<0.3	0.25
Nickel		µg	3.5	<0.5	<0.5	0.5
Phosphorus		µg	49	37	31	2.5
Selenium		µg	<2	<2	21	1.5
Tellurium		µg	10	11	11	2
Thallium		µg	<2	<2	<2	1.5
Vanadium		µg	<1	<1	<1	1
Zinc		µg	35.4	13	22	0.5
Back Half Metals Fraction 2A						
Aluminum		µg	20	10	20	5
Antimony		µg	<2	<2	<2	2.5
Arsenic		µg	2	6.6	10	1
Cadmium		µg	<0.2	<0.2	<0.2	0.25
Chromium		µg	<0.2	<0.2	<0.2	0.2
Cobalt		µg	<0.2	<0.2	<0.2	0.25
Copper		µg	<0.2	2	<0.2	0.25
Lead		µg	2	<1	<1	1.5
Manganese		µg	0.5	0.3	0.5	0.25
Nickel		µg	<0.4	2	<0.4	0.5
Phosphorus		µg	10	10	<2	2.5
Selenium		µg	<1	<1	<1	1.5
Tellurium		µg	10	3.5	11	2
Thallium		µg	<1	<1	<1	1.5
Vanadium		µg	<0.9	<0.9	<0.9	1
Zinc		µg	2	3.0	2	0.5
Volume	Sample	mL	770	673	756	
Volume	aliquot volume	mL	720	623	706	
Mercury by CVAA						
Mercury	As Tested	µg/L	<0.05	<0.05	<0.05	0.05

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Surrey, British Columbia
V3S 8P8, Canada

T: +1 (604) 514-3322
E: info.vancouver@element.com
W: www.element.com

Analytical Report

Bill To: A. Lanfranco & Associates
#101, 9488 - 189 Street
Surrey, BC, Canada
V4N 4W7
Attn: Missy
Sampled By:
Company:

Project ID: Metro Vancouver WTE
Project Name: Metals and Hg Samples
Project Location:
LSD:
P.O.:
Proj. Acct. code:

Lot ID: **1831390**
Control Number:
Date Received: Jul 25, 2025
Date Reported: Aug 18, 2025
Report Number: 3162564
Report Type: Final Report

Reference Number	1831390-1	1831390-2	1831390-3
Sample Date	Jul 14, 2025	Jul 15, 2025	Jul 15, 2025
Sample Time	NA	NA	NA
Sample Location			
Sample Description	Unit 1 Run 1 (Unit 1 R1 + 4 Bottles) / 21.4 °C	Unit 1 Run 2 (MV Unit 1 Run 2 + 4 Bottles) / 21.4 °C	Unit 1 Run 3 (MV Unit 1 Run 3 + 4 Bottles) / 21.4 °C
Matrix	Stack Samples	Stack Samples	Stack Samples

Analyte		Units	Results	Results	Results	Nominal Detection Limit
Mercury by CVAA - Continued						
Dilution Factor	As Tested		1	1	1	
Volume	Sample	mL	250	250	250	
Volume	aliquot volume	mL	25	25	25	
Volume	Final	mL	40	40	40	
Mercury	Fraction 1B	µg/sample	<0.02	<0.02	<0.02	
Mercury	As Tested	µg/L	<0.05	0.08	<0.05	0.05
Dilution Factor	As Tested		1	1	1	
Volume	Sample	mL	770	673	756	
Volume	aliquot volume	mL	5.0	5.0	5.0	
Volume	Final	mL	40	40	40	
Mercury	Fraction 2B	µg/sample	<0.3	0.4	<0.3	
Mercury	As Tested	µg/L	<0.05	<0.05	<0.05	0.05
Dilution Factor	As Tested		1	1	1	
Volume	Sample	mL	71	81	70	
Volume	aliquot volume	mL	25	25	25	
Volume	Final	mL	40	40	40	
Mercury	Fraction 3A	µg/sample	<0.006	<0.006	<0.006	
Mercury	As Tested	µg/L	<0.05	<0.05	<0.05	0.05
Dilution Factor	As Tested		1	1	1	
Volume	Sample	mL	500	500	500	
Volume	aliquot volume	mL	25	25	25	
Volume	Final	mL	40	40	40	
Mercury	Fraction 3B	µg/sample	<0.04	<0.04	<0.04	
Mercury	As Tested	µg/L	0.20	0.06	0.10	0.05
Dilution Factor	As Tested		1	1	1	
Volume	Sample	mL	200	200	200	
Volume	aliquot volume	mL	25	25	25	
Volume	Final	mL	40	40	40	
Mercury	Fraction 3C	µg/sample	0.065	0.02	0.03	

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#104, 19575-55 A Ave.
Surrey, British Columbia
V3S 8P8, Canada

T: +1 (604) 514-3322
E: info.vancouver@element.com
W: www.element.com

Analytical Report

Bill To: A. Lanfranco & Associates
#101, 9488 - 189 Street
Surrey, BC, Canada
V4N 4W7
Attn: Missy
Sampled By:
Company:

Project ID: Metro Vancouver WTE
Project Name: Metals and Hg Samples
Project Location:
LSD:
P.O.:
Proj. Acct. code:

Lot ID: **1831390**
Control Number:
Date Received: Jul 25, 2025
Date Reported: Aug 18, 2025
Report Number: 3162564
Report Type: Final Report

Reference Number	1831390-4	1831390-5	1831390-6
Sample Date	Jul 15, 2025	Jul 16, 2025	Jul 16, 2025
Sample Time	NA	NA	NA
Sample Location			
Sample Description	Unit 2 Run 1 (Unit 2 R1 + 4 Bottles) / 21.4 °C	Unit 2 Run 2 (MV Unit 2 Run 2 + 4 Bottles) / 21.4 °C	Unit 2 Run 3 (MV Unit 2 R3 + 4 Bottles) / 21.4 °C
Matrix	Stack Samples	Stack Samples	Stack Samples

Analyte		Units	Results	Results	Results	Nominal Detection Limit
Front Half Metals Fraction 1A						
Aluminum		µg	27	78	30	5
Antimony		µg	3	10	<2	2.5
Arsenic		µg	11	7.7	5.3	1
Cadmium		µg	0.8	1	0.5	0.25
Chromium		µg	0.46	27.1	26.7	0.2
Cobalt		µg	<0.3	0.3	<0.3	0.25
Copper		µg	5.2	12	10	0.25
Lead		µg	5.1	16	9.0	1.5
Manganese		µg	1	3.4	2.6	0.25
Nickel		µg	2	76.7	55.2	0.5
Phosphorus		µg	44	46	44	2.5
Selenium		µg	8.6	2	<2	1.5
Tellurium		µg	8.1	11	4.7	2
Thallium		µg	<2	<2	<2	1.5
Vanadium		µg	<1	<1	<1	1
Zinc		µg	119	127	112	0.5
Back Half Metals Fraction 2A						
Aluminum		µg	10	3	7	5
Antimony		µg	<2	<1	<2	2.5
Arsenic		µg	9.5	4.5	3.8	1
Cadmium		µg	<0.2	<0.1	<0.2	0.25
Chromium		µg	<0.2	<0.1	<0.2	0.2
Cobalt		µg	<0.2	<0.1	<0.2	0.25
Copper		µg	0.8	0.7	1	0.25
Lead		µg	<1	<0.9	2.4	1.5
Manganese		µg	1	<0.1	<0.2	0.25
Nickel		µg	<0.4	<0.3	<0.4	0.5
Phosphorus		µg	7	8	10	2.5
Selenium		µg	<1	9.4	6.2	1.5
Tellurium		µg	3.1	3.9	7.1	2
Thallium		µg	<1	<0.9	<1	1.5
Vanadium		µg	<0.9	<0.6	<0.9	1
Zinc		µg	1	0.6	1	0.5
Volume	Sample	mL	782	692	832	
Volume	aliquot volume	mL	732	942	782	
Mercury by CVAA						
Mercury	As Tested	µg/L	0.10	2.58	0.18	0.05

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#104, 19575-55 A Ave.
Surrey, British Columbia
V3S 8P8, Canada

T: +1 (604) 514-3322
E: info.vancouver@element.com
W: www.element.com

Analytical Report

Bill To: A. Lanfranco & Associates
#101, 9488 - 189 Street
Surrey, BC, Canada
V4N 4W7
Attn: Missy
Sampled By:
Company:

Project ID: Metro Vancouver WTE
Project Name: Metals and Hg Samples
Project Location:
LSD:
P.O.:
Proj. Acct. code:

Lot ID: **1831390**
Control Number:
Date Received: Jul 25, 2025
Date Reported: Aug 18, 2025
Report Number: 3162564
Report Type: Final Report

Reference Number	1831390-4	1831390-5	1831390-6
Sample Date	Jul 15, 2025	Jul 16, 2025	Jul 16, 2025
Sample Time	NA	NA	NA
Sample Location			
Sample Description	Unit 2 Run 1 (Unit 2 R1 + 4 Bottles) / 21.4 °C	Unit 2 Run 2 (MV Unit 2 Run 2 + 4 Bottles) / 21.4 °C	Unit 2 Run 3 (MV Unit 2 R3 + 4 Bottles) / 21.4 °C
Matrix	Stack Samples	Stack Samples	Stack Samples

Analyte		Units	Results	Results	Results	Nominal Detection Limit
Mercury by CVAA - Continued						
Dilution Factor	As Tested		1	1	1	
Volume	Sample	mL	250	250	250	
Volume	aliquot volume	mL	25	25	25	
Volume	Final	mL	40	40	40	
Mercury	Fraction 1B	µg/sample	0.04	1.0	0.073	
Mercury	As Tested	µg/L	<0.05	<0.05	0.34	0.05
Dilution Factor	As Tested		1	1	1	
Volume	Sample	mL	782	692	832	
Volume	aliquot volume	mL	5.0	5.0	5.0	
Volume	Final	mL	40	40	40	
Mercury	Fraction 2B	µg/sample	<0.3	<0.3	2.3	
Mercury	As Tested	µg/L	<0.05	<0.05	0.65	0.05
Dilution Factor	As Tested		1	1	1	
Volume	Sample	mL	77	77	90	
Volume	aliquot volume	mL	25	25	25	
Volume	Final	mL	40	40	40	
Mercury	Fraction 3A	µg/sample	<0.006	<0.006	0.093	
Mercury	As Tested	µg/L	<0.05	<0.05	<0.05	0.05
Dilution Factor	As Tested		1	1	1	
Volume	Sample	mL	500	500	500	
Volume	aliquot volume	mL	25	25	25	
Volume	Final	mL	40	40	40	
Mercury	Fraction 3B	µg/sample	<0.04	<0.04	<0.04	
Mercury	As Tested	µg/L	0.21	<0.05	2.38	0.05
Dilution Factor	As Tested		1	1	1	
Volume	Sample	mL	200	200	200	
Volume	aliquot volume	mL	25	25	25	
Volume	Final	mL	40	40	40	
Mercury	Fraction 3C	µg/sample	0.067	<0.02	0.76	

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#104, 19575-55 A Ave.
Surrey, British Columbia
V3S 8P8, Canada

T: +1 (604) 514-3322
E: info.vancouver@element.com
W: www.element.com

Analytical Report

Bill To: A. Lanfranco & Associates
#101, 9488 - 189 Street
Surrey, BC, Canada
V4N 4W7
Attn: Missy
Sampled By:
Company:

Project ID: Metro Vancouver WTE
Project Name: Metals and Hg Samples
Project Location:
LSD:
P.O.:
Proj. Acct. code:

Lot ID: **1831390**
Control Number:
Date Received: Jul 25, 2025
Date Reported: Aug 18, 2025
Report Number: 3162564
Report Type: Final Report

Reference Number	1831390-7	1831390-8	1831390-9
Sample Date	Jul 16, 2025	Jul 17, 2025	Jul 17, 2025
Sample Time	NA	NA	NA
Sample Location			
Sample Description	Unit 3 Run 1 (MV U3 R-1 + 4 Bottles / 21.4 °C	Unit 3 Run 2 (Unit 3 Run 2 + 4 Bottles) / 21.4 °C	Unit 3 Run 3 (MV Unit 3 R-3 + 4 Bottles) / 21.4 °C
Matrix	Stack Samples	Stack Samples	Stack Samples

Analyte		Units	Results	Results	Results	Nominal Detection Limit
Front Half Metals Fraction 1A						
Aluminum		µg	6	6	10	5
Antimony		µg	<2	<2	<2	2.5
Arsenic		µg	13	13	16	1
Cadmium		µg	<0.3	<0.3	<0.3	0.25
Chromium		µg	1.4	32.4	42.2	0.2
Cobalt		µg	<0.3	<0.3	0.4	0.25
Copper		µg	1	2	3.3	0.25
Lead		µg	3.4	<2	2.7	1.5
Manganese		µg	<0.3	0.9	8.2	0.25
Nickel		µg	2.5	25.1	79.4	0.5
Phosphorus		µg	44	27	34	2.5
Selenium		µg	<2	9.9	20	1.5
Tellurium		µg	<2	11	6.6	2
Thallium		µg	<2	<2	<2	1.5
Vanadium		µg	<1	<1	<1	1
Zinc		µg	21	20	29.5	0.5
Back Half Metals Fraction 2A						
Aluminum		µg	20	6	6	5
Antimony		µg	<2	<2	<2	2.5
Arsenic		µg	2.6	11	6.7	1
Cadmium		µg	<0.2	<0.2	<0.2	0.25
Chromium		µg	4.26	2.0	<0.2	0.2
Cobalt		µg	<0.2	<0.2	<0.2	0.25
Copper		µg	0.9	6.6	4.1	0.25
Lead		µg	<1	2.6	<1	1.5
Manganese		µg	1	0.7	<0.2	0.25
Nickel		µg	2	<0.4	<0.4	0.5
Phosphorus		µg	10	5	9	2.5
Selenium		µg	<1	<1	<1	1.5
Tellurium		µg	4.6	7.6	5.6	2
Thallium		µg	<1	<1	<1	1.5
Vanadium		µg	<0.9	<0.9	<0.9	1
Zinc		µg	2	2	5.9	0.5
Volume	Sample	mL	739	709	617	
Volume	aliquot volume	mL	689	659	567	
Mercury by CVAA						
Mercury	As Tested	µg/L	<0.05	<0.05	<0.05	0.05

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Analytical Report

Bill To: A. Lanfranco & Associates
#101, 9488 - 189 Street
Surrey, BC, Canada
V4N 4W7
Attn: Missy
Sampled By:
Company:

Project ID: Metro Vancouver WTE
Project Name: Metals and Hg Samples
Project Location:
LSD:
P.O.:
Proj. Acct. code:

Lot ID: **1831390**
Control Number:
Date Received: Jul 25, 2025
Date Reported: Aug 18, 2025
Report Number: 3162564
Report Type: Final Report

Reference Number	1831390-7	1831390-8	1831390-9
Sample Date	Jul 16, 2025	Jul 17, 2025	Jul 17, 2025
Sample Time	NA	NA	NA
Sample Location			
Sample Description	Unit 3 Run 1 (MV U3 R-1 + 4 Bottles / 21.4 °C	Unit 3 Run 2 (Unit 3 Run 2 + 4 Bottles) / 21.4 °C	Unit 3 Run 3 (MV Unit 3 R-3 + 4 Bottles) / 21.4 °C
Matrix	Stack Samples	Stack Samples	Stack Samples

Analyte		Units	Results	Results	Results	Nominal Detection Limit
Mercury by CVAA - Continued						
Dilution Factor	As Tested		1	1	1	
Volume	Sample	mL	250	250	250	
Volume	aliquot volume	mL	25	25	25	
Volume	Final	mL	40	40	40	
Mercury	Fraction 1B	µg/sample	<0.02	<0.02	<0.02	
Mercury	As Tested	µg/L	<0.05	<0.05	<0.05	0.05
Dilution Factor	As Tested		1	1	1	
Volume	Sample	mL	739	709	617	
Volume	aliquot volume	mL	5.0	5.0	5.0	
Volume	Final	mL	40	40	40	
Mercury	Fraction 2B	µg/sample	<0.3	<0.3	<0.2	
Mercury	As Tested	µg/L	<0.05	<0.05	<0.05	0.05
Dilution Factor	As Tested		1	1	1	
Volume	Sample	mL	87	97	105	
Volume	aliquot volume	mL	25	25	25	
Volume	Final	mL	40	40	40	
Mercury	Fraction 3A	µg/sample	<0.007	<0.008	<0.008	
Mercury	As Tested	µg/L	<0.05	<0.05	<0.05	0.05
Dilution Factor	As Tested		1	1	1	
Volume	Sample	mL	500	500	500	
Volume	aliquot volume	mL	25	25	25	
Volume	Final	mL	40	40	40	
Mercury	Fraction 3B	µg/sample	<0.04	<0.04	<0.04	
Mercury	As Tested	µg/L	0.12	<0.05	0.14	0.05
Dilution Factor	As Tested		1	1	1	
Volume	Sample	mL	200	200	200	
Volume	aliquot volume	mL	25	25	25	
Volume	Final	mL	40	40	40	
Mercury	Fraction 3C	µg/sample	0.040	<0.02	0.045	

Approved by:

Rachel Eden , B. Sc.
Operations Manager

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Methodology and Notes

Bill To: A. Lanfranco & Associates
#101, 9488 - 189 Street
Surrey, BC, Canada
V4N 4W7
Attn: Missy
Sampled By:
Company:

Project ID: Metro Vancouver WTE
Project Name: Metals and Hg Samples
Project Location:
LSD:
P.O.:
Proj. Acct. code:

Lot ID: **1831390**
Control Number:
Date Received: Jul 25, 2025
Date Reported: Aug 18, 2025
Report Number: 3162564
Report Type: Final Report

Method of Analysis

Method Name	Reference		Method	Date Analysis Started	Location
Mercury in Air (VAN) - 1B	EMC	*	Metals Emissions from Stationary Sources, 29	Aug 13, 2025	Element Vancouver
Mercury in Air (VAN) - 2B	EMC	*	Metals Emissions from Stationary Sources, 29	Aug 13, 2025	Element Vancouver
Mercury in Air (VAN) - 3A	EMC	*	Metals Emissions from Stationary Sources, 29	Aug 13, 2025	Element Vancouver
Mercury in Air (VAN) - 3B	EMC	*	Metals Emissions from Stationary Sources, 29	Aug 13, 2025	Element Vancouver
Mercury in Air (VAN) - 3C	EMC	*	Metals Emissions from Stationary Sources, 29	Aug 13, 2025	Element Vancouver
Metals in Stack Samples - Back half (VAN)	EMC	*	Metals Emissions from Stationary Sources, 29	Jul 28, 2025	Element Vancouver
Metals in Stack Samples - Front half (VAN)	EMC	*	Metals Emissions from Stationary Sources, 29	Jul 28, 2025	Element Vancouver

** Reference Method Modified*

References

EMC Emission Measurement Center of EPA

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V3S 8P8, Canada

T: +1 (604) 514-3322
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Project ID: Metro Vancouver WTE
Project Name: HF/HCL Blanks
Project Location:
LSD:
P.O.:
Proj. Acct. code:

Lot ID: **1831415**
Control Number:
Date Received: Jul 25, 2025
Date Reported: Jul 31, 2025
Report Number: 3162611
Report Type: Final Report

Contact	Company	Address
Mark Lanfranco	**A. Lanfranco & Associates**	#101, 9488 - 189 Street Surrey, BC V4N 4W7 Phone: (604) 881-2582 Fax: (604) 881-2581 Email: mark.lanfranco@alanfranco.com

Delivery	Format	Deliverables
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Email	PDF	COC / Test Report

Contact	Company	Address
Missy	**A. Lanfranco & Associates**	#101, 9488 - 189 Street Surrey, BC V4N 4W7 Phone: (604) 881-2582 Fax: (604) 881-2581 Email: missy@alanfranco.com

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Email	PDF	Invoice

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Analytical Report

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#101, 9488 - 189 Street
Surrey, BC, Canada
V4N 4W7
Attn: Missy
Sampled By:
Company:

Project ID: Metro Vancouver WTE
Project Name: HF/HCL Blanks
Project Location:
LSD:
P.O.:
Proj. Acct. code:

Lot ID: **1831415**
Control Number:
Date Received: Jul 25, 2025
Date Reported: Jul 31, 2025
Report Number: 3162611
Report Type: Final Report

Reference Number	1831415-1	1831415-2	1831415-3
Sample Date	Jul 15, 2025	Jul 16, 2025	Jul 17, 2025
Sample Time	NA	NA	NA
Sample Location			
Sample Description	Unit #1 HF/HCL Blank / 22.1 °C	Unit #2 HF/HCL Blank / 22.1 °C	Unit #3 HF/HCL Blank / 22.1 °C
Matrix	Stack Samples	Stack Samples	Stack Samples

Analyte		Units	Results	Results	Results	Nominal Detection Limit
Air Quality						
Volume	Sample	mL	241	245	243	
Dilution Factor	chloride		1.00	1.00	1.00	
Chloride	As Tested	mg/L	<0.05	<0.05	<0.05	0.05
Chloride	Water Soluble	µg/sample	<10	<10	<10	
Dilution Factor	fluoride		1.00	1.00	1.00	
Fluoride	As Tested	mg/L	<0.03	<0.03	<0.03	0.03
Fluoride	Water Soluble	µg/sample	<7	<7	<7	

Approved by:

Carol Nam, Dipl. T.
Quality Assurance Coordinator

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E: info.vancouver@element.com
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Methodology and Notes

Bill To:	A. Lanfranco & Associates #101, 9488 - 189 Street Surrey, BC, Canada V4N 4W7	Project ID:	Metro Vancouver WTE	Lot ID:	**1831415**
Attn:	Missy	Project Name:	HF/HCL Blanks	Control Number:	
Sampled By:		Project Location:		Date Received:	Jul 25, 2025
Company:		LSD:		Date Reported:	Jul 31, 2025
		P.O.:		Report Number:	3162611
		Proj. Acct. code:		Report Type:	Final Report

Method of Analysis

Method Name	Reference		Method	Date Analysis Started	Location
Anions by IEC in air (VAN)	EMC	*	Determination of Hydrogen Halide & Halogen Emissions from Stationary Sources (Isokinetic), 26A	Jul 28, 2025	Element Vancouver

** Reference Method Modified*

References

EMC	Emission Measurement Center of EPA

Please direct any inquiries regarding this report to our Client Services group.
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Project ID: Metro Vancouver WTE
Project Name: HF/HCL Samples
Project Location:
LSD:
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Proj. Acct. code:

Lot ID: **1831416**
Control Number:
Date Received: Jul 25, 2025
Date Reported: Jul 31, 2025
Report Number: 3162612
Report Type: Final Report

Contact	Company	Address
Mark Lanfranco	**A. Lanfranco & Associates**	#101, 9488 - 189 Street Surrey, BC V4N 4W7 Phone: (604) 881-2582 Fax: (604) 881-2581 Email: mark.lanfranco@alanfranco.com

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Contact	Company	Address
Missy	**A. Lanfranco & Associates**	#101, 9488 - 189 Street Surrey, BC V4N 4W7 Phone: (604) 881-2582 Fax: (604) 881-2581 Email: missy@alanfranco.com

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Notes To Clients:

- Reduction of analytical volume was necessary for anion analysis due to matrix effects in lot 1831416. Detection limits are adjusted accordingly.

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Company:

Project ID: Metro Vancouver WTE
Project Name: HF/HCL Samples
Project Location:
LSD:
P.O.:
Proj. Acct. code:

Lot ID: **1831416**
Control Number:
Date Received: Jul 25, 2025
Date Reported: Jul 31, 2025
Report Number: 3162612
Report Type: Final Report

Reference Number	1831416-1	1831416-2	1831416-3
Sample Date	Jul 15, 2025	Jul 15, 2025	Jul 15, 2025
Sample Time	NA	NA	NA
Sample Location			
Sample Description	Unit #1 HF/HCL Run 1 / 22.1 °C	Unit #1 HF/HCL Run 2 / 22.1 °C	Unit #1 HF/HCL Run 3 / 22.1 °C
Matrix	Stack Samples	Stack Samples	Stack Samples

Analyte		Units	Results	Results	Results	Nominal Detection Limit
Air Quality						
Volume	Sample	mL	394	395	435	
Dilution Factor	chloride		1.00	10.00	10.00	
Chloride	As Tested	mg/L	10.8	29.9	28.3	0.05
Chloride	Water Soluble	µg/sample	4250	11800	12300	
Dilution Factor	fluoride		1.00	10.00	10.00	
Fluoride	As Tested	mg/L	<0.03	<0.3	<0.3	0.03
Fluoride	Water Soluble	µg/sample	<10	<100	<100	

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Sampled By:
Company:

Project ID: Metro Vancouver WTE
Project Name: HF/HCL Samples
Project Location:
LSD:
P.O.:
Proj. Acct. code:

Lot ID: **1831416**
Control Number:
Date Received: Jul 25, 2025
Date Reported: Jul 31, 2025
Report Number: 3162612
Report Type: Final Report

Reference Number	1831416-4	1831416-5	1831416-6
Sample Date	Jul 16, 2025	Jul 16, 2025	Jul 16, 2025
Sample Time	NA	NA	NA
Sample Location			
Sample Description	Unit #2 HF/HCL Run 1 / 22.1 °C	Unit #2 HF/HCL Run 2 / 22.1 °C	Unit #2 HF/HCL Run 3 / 22.1 °C
Matrix	Stack Samples	Stack Samples	Stack Samples

Analyte		Units	Results	Results	Results	Nominal Detection Limit
Air Quality						
Volume	Sample	mL	411	454	378	
Dilution Factor	chloride		10.00	1.00	10.00	
Chloride	As Tested	mg/L	26.1	18.1	56.4	0.05
Chloride	Water Soluble	µg/sample	10700	8230	21300	
Dilution Factor	fluoride		10.00	1.00	10.00	
Fluoride	As Tested	mg/L	<0.3	<0.03	<0.3	0.03
Fluoride	Water Soluble	µg/sample	<100	<10	<100	

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Analytical Report

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#101, 9488 - 189 Street
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Attn: Missy
Sampled By:
Company:

Project ID: Metro Vancouver WTE
Project Name: HF/HCL Samples
Project Location:
LSD:
P.O.:
Proj. Acct. code:

Lot ID: **1831416**
Control Number:
Date Received: Jul 25, 2025
Date Reported: Jul 31, 2025
Report Number: 3162612
Report Type: Final Report

Reference Number	1831416-7	1831416-8	1831416-9
Sample Date	Jul 17, 2025	Jul 17, 2025	Jul 17, 2025
Sample Time	NA	NA	NA
Sample Location			
Sample Description	Unit #3 HF/HCL Run 1 / 22.1 °C	Unit #3 HF/HCL Run 2 / 22.1 °C	Unit #3 HF/HCL Run 3 / 22.1 °C
Matrix	Stack Samples	Stack Samples	Stack Samples

Analyte		Units	Results	Results	Results	Nominal Detection Limit
Air Quality						
Volume	Sample	mL	404	391	440	
Dilution Factor	chloride		10.00	10.00	10.00	
Chloride	As Tested	mg/L	99.7	104	20.2	0.05
Chloride	Water Soluble	µg/sample	40300	40500	8900	
Dilution Factor	fluoride		10.00	10.00	10.00	
Fluoride	As Tested	mg/L	<0.3	<0.3	<0.3	0.03
Fluoride	Water Soluble	µg/sample	<100	<100	<100	

Approved by:

Carol Nam, Dipl. T.
Quality Assurance Coordinator

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Methodology and Notes

Bill To:	A. Lanfranco & Associates #101, 9488 - 189 Street Surrey, BC, Canada V4N 4W7	Project ID:	Metro Vancouver WTE	Lot ID:	**1831416**
Attn:	Missy	Project Name:	HF/HCL Samples	Control Number:	
Sampled By:		Project Location:		Date Received:	Jul 25, 2025
Company:		LSD:		Date Reported:	Jul 31, 2025
		P.O.:		Report Number:	3162612
		Proj. Acct. code:		Report Type:	Final Report

Method of Analysis

Method Name	Reference		Method	Date Analysis Started	Location
Anions by IEC in air (VAN)	EMC	*	Determination of Hydrogen Halide & Halogen Emissions from Stationary Sources (Isokinetic), 26A	Jul 28, 2025	Element Vancouver

** Reference Method Modified*

References

EMC	Emission Measurement Center of EPA

Comments:

- Reduction of analytical volume was necessary for anion analysis due to matrix effects in lot 1831416. Detection limits are adjusted accordingly.

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Surrey, British Columbia
V3S 8P8, Canada

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Attn: Missy
Sampled By:
Company:

Project ID: Metro Vancouver WTE
Project Name: NH3 Blanks
Project Location:
LSD:
P.O.:
Proj. Acct. code:

Lot ID: **1831408**
Control Number:
Date Received: Jul 25, 2025
Date Reported: Jul 31, 2025
Report Number: 3162589
Report Type: Final Report

Contact	Company	Address
Mark Lanfranco	**A. Lanfranco & Associates**	#101, 9488 - 189 Street Surrey, BC V4N 4W7 Phone: (604) 881-2582 Fax: (604) 881-2581 Email: mark.lanfranco@alanfranco.com

Delivery	Format	Deliverables
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Email	PDF	COC / Test Report

Contact	Company	Address
Missy	**A. Lanfranco & Associates**	#101, 9488 - 189 Street Surrey, BC V4N 4W7 Phone: (604) 881-2582 Fax: (604) 881-2581 Email: missy@alanfranco.com

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V4N 4W7
Attn: Missy
Sampled By:
Company:

Project ID: Metro Vancouver WTE
Project Name: NH3 Blanks
Project Location:
LSD:
P.O.:
Proj. Acct. code:

Lot ID: **1831408**
Control Number:
Date Received: Jul 25, 2025
Date Reported: Jul 31, 2025
Report Number: 3162589
Report Type: Final Report

Reference Number	1831408-1	1831408-2	1831408-3
Sample Date	Jul 15, 2025	Jul 16, 2025	Jul 17, 2025
Sample Time	NA	NA	NA
Sample Location			
Sample Description	Unit #1 NH3 Blk / 22.1 °C	Unit #2 NH3 Blk / 22.1 °C	Unit #3 NH3 Blk / 22.1 °C
Matrix	Stack Samples	Stack Samples	Stack Samples

Analyte		Units	Results	Results	Results	Nominal Detection Limit
Air Quality						
Ammonium - N	As Tested	µg/L	258	103	82	25
Dilution Factor	As Tested		1.00	1.00	1.00	
Sample Volume	Sample volume	mL	248	248	248	
Ammonium - N		µg/sample	64.0	25.5	20	

Approved by:

Misato Perry, B.Sc Biology
Customer Experience Supervisor

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Methodology and Notes

Bill To:	A. Lanfranco & Associates #101, 9488 - 189 Street Surrey, BC, Canada V4N 4W7	Project ID:	Metro Vancouver WTE	Lot ID:	**1831408**
Attn:	Missy	Project Name:	NH3 Blanks	Control Number:	
Sampled By:		Project Location:		Date Received:	Jul 25, 2025
Company:		LSD:		Date Reported:	Jul 31, 2025
		P.O.:		Report Number:	3162589
		Proj. Acct. code:		Report Type:	Final Report

Method of Analysis

Method Name	Reference		Method	Date Analysis Started	Location
Ammonium in Impingers	APHA	*	Automated Phenate Method, 4500-NH3 G	Jul 31, 2025	Element Edmonton - Roper Road

** Reference Method Modified*

References

APHA	Standard Methods for the Examination of Water and Wastewater

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Project ID: Metro Vancouver WTE
Project Name: NH3 Samples
Project Location:
LSD:
P.O.:
Proj. Acct. code:

Lot ID: **1831409**
Control Number:
Date Received: Jul 25, 2025
Date Reported: Jul 31, 2025
Report Number: 3162590
Report Type: Final Report

Contact	Company	Address
Mark Lanfranco	**A. Lanfranco & Associates**	#101, 9488 - 189 Street Surrey, BC V4N 4W7 Phone: (604) 881-2582 Fax: (604) 881-2581 Email: mark.lanfranco@alanfranco.com

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Email	PDF	COC / Test Report

Contact	Company	Address
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Attn: Missy
Sampled By:
Company:

Project ID: Metro Vancouver WTE
Project Name: NH3 Samples
Project Location:
LSD:
P.O.:
Proj. Acct. code:

Lot ID: **1831409**
Control Number:
Date Received: Jul 25, 2025
Date Reported: Jul 31, 2025
Report Number: 3162590
Report Type: Final Report

Reference Number	1831409-1	1831409-2	1831409-3
Sample Date	Jul 15, 2025	Jul 15, 2025	Jul 15, 2025
Sample Time	NA	NA	NA
Sample Location			
Sample Description	Unit 1 Run 1 NH3 / 22.1 °C	Unit 1 Run 2 NH3 / 22.1 °C	Unit 1 Run 3 NH3 / 22.1 °C
Matrix	Stack Samples	Stack Samples	Stack Samples

Analyte		Units	Results	Results	Results	Nominal Detection Limit
Air Quality						
Ammonium - N	As Tested	µg/L	31500	19800	26900	25
Dilution Factor	As Tested		10.0	10.0	10.0	
Sample Volume	Sample volume	mL	450	475	475	
Ammonium - N		µg/sample	14200	9420	12800	

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Surrey, British Columbia
V3S 8P8, Canada

T: +1 (604) 514-3322
E: info.vancouver@element.com
W: www.element.com

Analytical Report

Bill To: A. Lanfranco & Associates
#101, 9488 - 189 Street
Surrey, BC, Canada
V4N 4W7
Attn: Missy
Sampled By:
Company:

Project ID: Metro Vancouver WTE
Project Name: NH3 Samples
Project Location:
LSD:
P.O.:
Proj. Acct. code:

Lot ID: **1831409**
Control Number:
Date Received: Jul 25, 2025
Date Reported: Jul 31, 2025
Report Number: 3162590
Report Type: Final Report

Reference Number	1831409-4	1831409-5	1831409-6
Sample Date	Jul 16, 2025	Jul 16, 2025	Jul 16, 2025
Sample Time	NA	NA	NA
Sample Location			
Sample Description	Unit 2 Run 1 NH3 / 22.1 °C	Unit 2 Run 2 NH3 / 22.1 °C	Unit 2 Run 3 NH3 / 22.1 °C
Matrix	Stack Samples	Stack Samples	Stack Samples

Analyte		Units	Results	Results	Results	Nominal Detection Limit
Air Quality						
Ammonium - N	As Tested	µg/L	23400	28900	18200	25
Dilution Factor	As Tested		10.0	10.0	10.0	
Sample Volume	Sample volume	mL	395	442	378	
Ammonium - N		µg/sample	9230	12800	6890	

Element
#104, 19575-55 A Ave.
Surrey, British Columbia
V3S 8P8, Canada

T: +1 (604) 514-3322
E: info.vancouver@element.com
W: www.element.com

Analytical Report

Bill To: A. Lanfranco & Associates
#101, 9488 - 189 Street
Surrey, BC, Canada
V4N 4W7
Attn: Missy
Sampled By:
Company:

Project ID: Metro Vancouver WTE
Project Name: NH3 Samples
Project Location:
LSD:
P.O.:
Proj. Acct. code:

Lot ID: **1831409**
Control Number:
Date Received: Jul 25, 2025
Date Reported: Jul 31, 2025
Report Number: 3162590
Report Type: Final Report

Reference Number	1831409-7	1831409-8	1831409-9
Sample Date	Jul 17, 2025	Jul 17, 2025	Jul 17, 2025
Sample Time	NA	NA	NA
Sample Location			
Sample Description	Unit 3 Run 1 NH3 / 22.1 °C	Unit 3 Run 2 NH3 / 22.1 °C	Unit 3 Run 3 NH3 / 22.1 °C
Matrix	Stack Samples	Stack Samples	Stack Samples

Analyte		Units	Results	Results	Results	Nominal Detection Limit
Air Quality						
Ammonium - N	As Tested	µg/L	3480	4150	6340	25
Dilution Factor	As Tested		1.00	1.00	1.00	
Sample Volume	Sample volume	mL	386	422	414	
Ammonium - N		µg/sample	1340	1750	2630	

Approved by:

Misato Perry, B.Sc Biology
Customer Experience Supervisor

Data have been validated by Analytical Quality Control and Element's Integrated Data Validation System (IDVS).
Generation and distribution of the report, and approval by the digitized signature above, are performed through a secure and controlled automatic process.

Element
#104, 19575-55 A Ave.
Surrey, British Columbia
V3S 8P8, Canada

T: +1 (604) 514-3322
E: info.vancouver@element.com
W: www.element.com

Methodology and Notes

Bill To:	A. Lanfranco & Associates #101, 9488 - 189 Street Surrey, BC, Canada V4N 4W7	Project ID:	Metro Vancouver WTE	Lot ID:	**1831409**
Attn:	Missy	Project Name:	NH3 Samples	Control Number:	
Sampled By:		Project Location:		Date Received:	Jul 25, 2025
Company:		LSD:		Date Reported:	Jul 31, 2025
		P.O.:		Report Number:	3162590
		Proj. Acct. code:		Report Type:	Final Report

Method of Analysis

Method Name	Reference		Method	Date Analysis Started	Location
Ammonium in Impingers	APHA	*	Automated Phenate Method, 4500-NH3 G	Jul 31, 2025	Element Edmonton - Roper Road

** Reference Method Modified*

References

APHA Standard Methods for the Examination of Water and Wastewater

ALS Environmental
2655 Park Center Dr., Suite A
Simi Valley, CA 93065
T +1 805 526 7161

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LABORATORY REPORT

July 29, 2025

Mark Lanfranco
A. Lanfranco and Associates Inc.
Unit 101 - 9488 189 St.
Surrey, BC V4N 4W7

RE: Veolia (MV WTE)

Dear Mark:

Enclosed are the results of the samples submitted to our laboratory on July 21, 2025. For your reference, these analyses have been assigned our service request number P2502647.

All analyses were performed according to our laboratory's NELAP and DoD-ELAP-approved quality assurance program. The test results meet requirements of the current NELAP and DoD-ELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP and DoD-ELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein.

If you have any questions, please call me at (805) 526-7161.

ALS | Environmental

By Sue Anderson at 12:20 pm, Jul 29, 2025

Sue Anderson
Project Manager

ALS Environmental
2655 Park Center Dr., Suite A
Simi Valley, CA 93065
T +1 805 526 7161

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Client: A. Lanfranco and Associates Inc. Service Request No: P2502647
Project: Veolia (MV WTE)

CASE NARRATIVE

The samples were received intact under chain of custody on July 21, 2025 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

C3 through C6 Hydrocarbons, Methane, Ethane and Ethylene Analysis

The samples were analyzed per modified EPA Method TO-3 for C3 through >C6 hydrocarbons and methane, ethane and ethylene using a gas chromatograph equipped with a flame ionization detector (FID). This procedure is described in laboratory SOP VOA-TO3C1C6. This method is included on the laboratory's DoD-ELAP scope of accreditation, however it is not part of the NELAP or AIHA-LAP, LLC accreditation.

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2655 Park Center Dr., Suite A
Simi Valley, CA 93065
T +1 805 526 7161

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CERTIFICATIONS, ACCREDITATIONS, AND REGISTRATIONS

Agency	Web Site	Number
Alaska DEC	https://dec.alaska.gov/spar/csp/lab-approval/list-of-approved-labs	17-019
Arizona DHS	http://www.azdhs.gov/preparedness/state-laboratory/lab-licensure-certification/index.php#laboratory-licensure-home	AZ0694
Florida DOH (NELAP)	http://www.floridahealth.gov/licensing-and-regulation/environmental-laboratories/index.html	E871020
Louisiana DEQ (NELAP)	https://internet.deq.louisiana.gov/portal/divisions/lelap/accredited-laboratories	203013
Maine DHHS	http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/professionals/labCert.shtm	CA012627
Minnesota DOH (NELAP)	http://www.health.state.mn.us/accreditation	006-999-456
New Jersey DEP (NELAP)	https://dep.nj.gov/dsr/oqa/certified-laboratories/	CA009
New York DOH (NELAP)	http://www.wadsworth.org/labcert/elap/elap.html	11221
Oklahoma DEQ (NELAP)	labaccreditation.deq.ok.gov/labaccreditation/	2207
Oregon PHD (NELAP)	http://www.oregon.gov/oha/ph/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	4068
Pennsylvania DEP	hhttp://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx	68-03307 (Registration only)
PJLA (DoD ELAP)	http://www.pjlabs.com/search-accredited-labs	65818 (Testing)
Texas CEQ (NELAP)	http://www.tceq.texas.gov/agency/qa/env_lab_accreditation.html	T104704413
Utah DOH (NELAP)	https://uphl.utah.gov/certifications/environmental-laboratory-certification/	CA01627
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C946

Analyses were performed according to our laboratory's NELAP and DoD-ELAP approved quality assurance program. A complete listing of specific NELAP and DoD-ELAP certified analytes can be found in the certifications section at www.alsglobal.com, or at the accreditation body's website.

Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact the laboratory for information corresponding to a particular certification.

ALS ENVIRONMENTAL

DETAIL SUMMARY REPORT

Client: A. Lanfranco and Associates Inc. Service Request: P2502647

Project ID: Veolia (MV WTE)

Date Received: 7/21/2025

Time Received: 09:19

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	Container ID	Pi1 (psig)	Pfl (psig)	TO-3 Modified - C1C6+ Can	TO-3 Modified - MEEPP Can
Unit 1 Run 1	P2502647-001	Air	7/15/2025	10:44	SC02321	-3.85	3.71	X	X
Unit 1 Run 2	P2502647-002	Air	7/15/2025	11:58	SC02325	-3.47	3.73	X	X
Unit 1 Run 3	P2502647-003	Air	7/15/2025	13:10	SC02322	-3.89	4.33	X	X
Unit 2 Run 1	P2502647-004	Air	7/16/2025	10:23	SC02061	-3.34	4.13	X	X
Unit 2 Run 2	P2502647-005	Air	7/16/2025	11:39	SC00778	-3.08	3.51	X	X
Unit 2 Run 3	P2502647-006	Air	7/16/2025	12:55	SC00844	-3.65	3.95	X	X
Unit 3 Run 1	P2502647-007	Air	7/17/2025	10:27	SC00314	-3.83	3.67	X	X
Unit 3 Run 2	P2502647-008	Air	7/17/2025	11:40	SC01006	-4.15	3.42	X	X
Unit 3 Run 3	P2502647-009	Air	7/17/2025	12:51	SC00306	-4.52	3.87	X	X

Air - Chain of Custody Record & Analytical Service Request

Page 1 of 1

ALS

2655 Park Center Drive, Suite A
Simi Valley, California 93065
Phone (805) 526-7161
Fax (805) 526-7270

Requested Turnaround Time in Business Days (Surcharges) please circle
1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10 Day-Standard

ALS Project No. P2502647

ALS Contact:

Company Name & Address (Reporting Information): A. Lanfranco & Associates Inc.

Project Name: Veolia (MV WTE)

Project Number:

Project Manager: Mark Lanfranco

P.O. # / Billing Information:

Phone: 604 881 2582

Fax:

Email Address for Result Reporting: mark.lanfranco@alanfranco.com

Sampler (Print & Sign): Jack Dennis [signature]

Client Sample ID	Laboratory ID Number	Date Collected	Time Collected	Canister ID (Bar code # - AC, SC, etc.)	Flow Controller ID (Bar code # - FC #)	Canister Start Pressure "Hg	Canister End Pressure "Hg/psig	Sample Volume	Analysis Method: EPA TO-3		Comments e.g. Actual Preservative or specific instructions
Unit 1 Run 1	1	15 July 25	0944-1044	SC02321	0A00759	-30	-12		✓		
Unit 1 Run 2	2	15 July 25	1058-1158	SC02325	0A00759	-30	-8		✓		
Unit 1 Run 3	3	15 July 25	1210-1310	SC02322	0A00759	-30	-8		✓		
Unit 2 Run 1	4	16 July 25	0923-1023	SC02061	0A02283	-30	-7		✓		
Unit 2 Run 2	5	16 July 25	1039-1139	SC00778	0A02283	-30	-4		✓		
Unit 2 Run 3	6	16 July 25	1155-1255	SC00844	0A02283	-30	-8		✓		
Unit 3 Run 1	7	17 July 25	0927-1027	SC00314	0A01889	-30	-8		✓		
Unit 3 Run 2	8	17 July 25	1040-1140	SC01006	0A01889	-30	-9		✓		
Unit 3 Run 3	9	17 July 25	1151-1251	SC00306	0A01889	-30	-10		✓		

Report Tier Levels - please select
Tier I - Results (Default if not specified) ____
Tier II (Results + QC Summaries) ____
Tier III (Results + QC & Calibration Summaries) ____
Tier IV (Data Validation Package) 10% Surcharge ____

EDD required Yes / No
Type: ____________ Units: ________

Chain of Custody Seal: (Circle)
INTACT BROKEN ABSENT

Project Requirements (MRLs, QAPP)

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
[signature]	18 Jul 25	10 00			
FedEx			[signature]	7-21-25	0918

Cooler / Blank Temperature ____ °C

ALS Environmental
Sample Acceptance Check Form

Client: A. Lanfranco and Associates Inc. Work order: P2502647

Project: Veolia (MV WTE)

Sample(s) received on: 7/21/25 Date opened: 7/21/25 by: ADAVID

Note: This form is used for all samples received by ALS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

		Yes	No	N/A
1	Were **sample containers** properly marked with client sample ID?	☒	☐	☐
2	Did **sample containers** arrive in good condition?	☒	☐	☐
3	Were **chain-of-custody** papers used and filled out?	☒	☐	☐
4	Did **sample container labels** and/or tags agree with custody papers?	☒	☐	☐
5	Was **sample volume** received adequate for analysis?	☒	☐	☐
6	Are samples within specified holding times?	☒	☐	☐
7	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☐	☐	☒
8	Were **custody seals** on outside of cooler/Box/Container?	☐	☒	
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
9	Do containers have appropriate **preservation**, according to method/SOP or Client specified information?	☐	☐	☒
	Is there a client indication that the submitted samples are **pH** preserved?	☐	☐	☒
	Were **VOA vials** checked for presence/absence of air bubbles?	☐	☐	☒
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	☐	☐	☒
10	**Tubes:** Are the tubes capped and intact?	☐	☐	☒
11	**Badges:** Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☒
12	Lab Notification: Analyst and PM were alerted of Short HT or RUSH samples?	☐	☐	☒
13	Client Notification: Client has been notified regarding HT exceedances and/or other CoC discrepancies?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P2502647-001.01	6.0 L Source Can					
P2502647-002.01	6.0 L Source Can					
P2502647-003.01	6.0 L Source Can					
P2502647-004.01	6.0 L Source Can					
P2502647-005.01	6.0 L Source Can					
P2502647-006.01	6.0 L Source Can					
P2502647-007.01	6.0 L Source Can					
P2502647-008.01	6.0 L Source Can					
P2502647-009.01	6.0 L Source Can					

Explain any discrepancies: (include lab sample ID numbers): _____

Sulfur (pH>4)

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **A. Lanfranco and Associates Inc.**
Client Sample ID: **Unit 1 Run 1**
Client Project ID: **Veolia (MV WTE)**

ALS Project ID: P2502647
ALS Sample ID: P2502647-001

Test Code: EPA TO-3 Modified
Instrument ID: HP5890 II/GC8/FID
Analyst: Stephanie Reynoso
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: SC02321

Date Collected: 7/15/25
Date Received: 7/21/25
Date Analyzed: 7/23/25
Volume(s) Analyzed: 1.0 ml(s)

Initial Pressure (psig): -3.85 Final Pressure (psig): 3.71

Container Dilution Factor: 1.70

Compound	Result ppmV	MRL ppmV	Data Qualifier
C_3 as Propane	ND	1.7	
C_4 as n-Butane	ND	1.7	
C_5 as n-Pentane	ND	1.7	
C_6 as n-Hexane	ND	10	
C_6+ as n-Hexane	ND	1.7	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **A. Lanfranco and Associates Inc.**
Client Sample ID: **Unit 1 Run 2** ALS Project ID: P2502647
Client Project ID: **Veolia (MV WTE)** ALS Sample ID: P2502647-002

Test Code: EPA TO-3 Modified Date Collected: 7/15/25
Instrument ID: HP5890 II/GC8/FID Date Received: 7/21/25
Analyst: Stephanie Reynoso Date Analyzed: 7/23/25
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.0 ml(s)
Test Notes:
Container ID: SC02325

Initial Pressure (psig): -3.47 Final Pressure (psig): 3.73

Container Dilution Factor: 1.64

Compound	Result ppmV	MRL ppmV	Data Qualifier
C_3 as Propane	ND	1.6	
C_4 as n-Butane	ND	1.6	
C_5 as n-Pentane	ND	1.6	
C_6 as n-Hexane	ND	9.8	
C_6+ as n-Hexane	ND	1.6	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **A. Lanfranco and Associates Inc.**
Client Sample ID: **Unit 1 Run 3** ALS Project ID: P2502647
Client Project ID: **Veolia (MV WTE)** ALS Sample ID: P2502647-003

Test Code: EPA TO-3 Modified Date Collected: 7/15/25
Instrument ID: HP5890 II/GC8/FID Date Received: 7/21/25
Analyst: Stephanie Reynoso Date Analyzed: 7/23/25
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.0 ml(s)
Test Notes:
Container ID: SC02322

Initial Pressure (psig): -3.89 Final Pressure (psig): 4.33

Container Dilution Factor: 1.76

Compound	Result ppmV	MRL ppmV	Data Qualifier
C_3 as Propane	ND	1.8	
C_4 as n-Butane	ND	1.8	
C_5 as n-Pentane	ND	1.8	
C_6 as n-Hexane	ND	11	
C_6+ as n-Hexane	ND	1.8	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **A. Lanfranco and Associates Inc.**
Client Sample ID: **Unit 2 Run 1** ALS Project ID: P2502647
Client Project ID: **Veolia (MV WTE)** ALS Sample ID: P2502647-004

Test Code: EPA TO-3 Modified Date Collected: 7/16/25
Instrument ID: HP5890 II/GC8/FID Date Received: 7/21/25
Analyst: Stephanie Reynoso Date Analyzed: 7/23/25
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.0 ml(s)
Test Notes:
Container ID: SC02061

Initial Pressure (psig): -3.34 Final Pressure (psig): 4.13

Container Dilution Factor: 1.66

Compound	Result ppmV	MRL ppmV	Data Qualifier
C_3 as Propane	ND	1.7	
C_4 as n-Butane	ND	1.7	
C_5 as n-Pentane	ND	1.7	
C_6 as n-Hexane	ND	10	
C_6+ as n-Hexane	ND	1.7	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **A. Lanfranco and Associates Inc.**
Client Sample ID: **Unit 2 Run 2** ALS Project ID: P2502647
Client Project ID: **Veolia (MV WTE)** ALS Sample ID: P2502647-005

Test Code:	EPA TO-3 Modified	Date Collected:	7/16/25
Instrument ID:	HP5890 II/GC8/FID	Date Received:	7/21/25
Analyst:	Stephanie Reynoso	Date Analyzed:	7/23/25
Sampling Media:	6.0 L Summa Canister	Volume(s) Analyzed:	1.0 ml(s)
Test Notes:			
Container ID:	SC00778		

Initial Pressure (psig): -3.08 Final Pressure (psig): 3.51

Container Dilution Factor: 1.57

Compound	Result ppmV	MRL ppmV	Data Qualifier
C_3 as Propane	ND	1.6	
C_4 as n-Butane	ND	1.6	
C_5 as n-Pentane	ND	1.6	
C_6 as n-Hexane	ND	9.4	
C_6+ as n-Hexane	ND	1.6	

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ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **A. Lanfranco and Associates Inc.**
Client Sample ID: **Unit 2 Run 3** ALS Project ID: P2502647
Client Project ID: **Veolia (MV WTE)** ALS Sample ID: P2502647-006

Test Code:	EPA TO-3 Modified	Date Collected:	7/16/25
Instrument ID:	HP5890 II/GC8/FID	Date Received:	7/21/25
Analyst:	Stephanie Reynoso	Date Analyzed:	7/23/25
Sampling Media:	6.0 L Summa Canister	Volume(s) Analyzed:	1.0 ml(s)
Test Notes:			
Container ID:	SC00844		

Initial Pressure (psig): -3.65 Final Pressure (psig): 3.95

Container Dilution Factor: 1.69

Compound	Result ppmV	MRL ppmV	Data Qualifier
C_3 as Propane	ND	1.7	
C_4 as n-Butane	ND	1.7	
C_5 as n-Pentane	ND	1.7	
C_6 as n-Hexane	ND	10	
C_6+ as n-Hexane	ND	1.7	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **A. Lanfranco and Associates Inc.**
Client Sample ID: **Unit 3 Run 1** ALS Project ID: P2502647
Client Project ID: **Veolia (MV WTE)** ALS Sample ID: P2502647-007

Test Code: EPA TO-3 Modified Date Collected: 7/17/25
Instrument ID: HP5890 II/GC8/FID Date Received: 7/21/25
Analyst: Stephanie Reynoso Date Analyzed: 7/23/25
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.0 ml(s)
Test Notes:
Container ID: SC00314

Initial Pressure (psig): -3.83 Final Pressure (psig): 3.67

Container Dilution Factor: 1.69

Compound	Result ppmV	MRL ppmV	Data Qualifier
C_3 as Propane	ND	1.7	
C_4 as n-Butane	ND	1.7	
C_5 as n-Pentane	ND	1.7	
C_6 as n-Hexane	ND	10	
C_6+ as n-Hexane	ND	1.7	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **A. Lanfranco and Associates Inc.**
Client Sample ID: **Unit 3 Run 2** ALS Project ID: P2502647
Client Project ID: **Veolia (MV WTE)** ALS Sample ID: P2502647-008

Test Code: EPA TO-3 Modified Date Collected: 7/17/25
Instrument ID: HP5890 II/GC8/FID Date Received: 7/21/25
Analyst: Stephanie Reynoso Date Analyzed: 7/23/25
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.0 ml(s)
Test Notes:
Container ID: SC01006

Initial Pressure (psig): -4.15 Final Pressure (psig): 3.42

Container Dilution Factor: 1.72

Compound	Result ppmV	MRL ppmV	Data Qualifier
C_3 as Propane	ND	1.7	
C_4 as n-Butane	ND	1.7	
C_5 as n-Pentane	ND	1.7	
C_6 as n-Hexane	ND	10	
C_6+ as n-Hexane	ND	1.7	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **A. Lanfranco and Associates Inc.**
Client Sample ID: **Unit 3 Run 3** ALS Project ID: P2502647
Client Project ID: **Veolia (MV WTE)** ALS Sample ID: P2502647-009

Test Code:	EPA TO-3 Modified	Date Collected:	7/17/25
Instrument ID:	HP5890 II/GC8/FID	Date Received:	7/21/25
Analyst:	Stephanie Reynoso	Date Analyzed:	7/23/25
Sampling Media:	6.0 L Summa Canister	Volume(s) Analyzed:	1.0 ml(s)
Test Notes:			
Container ID:	SC00306		

Initial Pressure (psig): -4.52 Final Pressure (psig): 3.87

Container Dilution Factor: 1.82

Compound	Result ppmV	MRL ppmV	Data Qualifier
C_3 as Propane	ND	1.8	
C_4 as n-Butane	ND	1.8	
C_5 as n-Pentane	ND	1.8	
C_6 as n-Hexane	ND	11	
C_6+ as n-Hexane	ND	1.8	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **A. Lanfranco and Associates Inc.**
Client Sample ID: **Method Blank** ALS Project ID: P2502647
Client Project ID: **Veolia (MV WTE)** ALS Sample ID: P250723-MB

Test Code: EPA TO-3 Modified Date Collected: NA
Instrument ID: HP5890 II/GC8/FID Date Received: NA
Analyst: Stephanie Reynoso Date Analyzed: 7/23/25
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.0 ml(s)
Test Notes:

Compound	Result ppmV	MRL ppmV	Data Qualifier
C_3 as Propane	ND	1.0	
C_4 as n-Butane	ND	1.0	
C_5 as n-Pentane	ND	1.0	
C_6 as n-Hexane	ND	6.0	
C_6+ as n-Hexane	ND	1.0	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

Client: **A. Lanfranco and Associates Inc.**
Client Sample ID: **Duplicate Lab Control Sample** ALS Project ID: P2502647
Client Project ID: **Veolia (MV WTE)** ALS Sample ID: P250723-DLCS

Test Code: EPA TO-3 Modified Date Collected: NA
Instrument ID: HP5890 II/GC8/FID Date Received: NA
Analyst: Stephanie Reynoso Date Analyzed: 7/23/25
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: NA ml(s)
Test Notes:

Compound	Spike Amount LCS / DLCS ppmV	Result LCS ppmV	Result DLCS ppmV	% Recovery LCS	% Recovery DLCS	ALS Acceptance Limits	RPD	RPD Limit	Data Qualifier
Propane	1,000	1,120	1,110	**112**	**111**	92-120	0.9	6	
n-Butane	1,000	1,090	1,080	**109**	**108**	91-121	0.9	6	
n-Pentane	1,000	1,000	989	**100**	**99**	89-118	1	6	
n-Hexane	1,000	939	927	**94**	**93**	92-125	1	6	
C_6+ as n-Hexane				**#VALUE!**	**#VALUE!**	NA	#VALUE!	30	**#VALUE!**

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **A. Lanfranco and Associates Inc.**
Client Sample ID: **Unit 1 Run 1** ALS Project ID: P2502647
Client Project ID: **Veolia (MV WTE)** ALS Sample ID: P2502647-001

Test Code: EPA TO-3 Modified Date Collected: 7/15/25
Instrument ID: HP5890A/GC10/FID/TCD Date Received: 7/21/25
Analyst: Stephanie Reynoso Date Analyzed: 7/23/25
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.50 ml(s)
Test Notes:
Container ID: SC02321

Initial Pressure (psig): -3.85 Final Pressure (psig): 3.71

Container Dilution Factor: 1.70

CAS #	Compound	Result mg/m³	MRL mg/m³	Result ppmV	MRL ppmV	Data Qualifier
74-82-8	Methane	ND	2.2	ND	3.4	
74-85-1	Ethene	ND	1.2	ND	1.0	
74-84-0	Ethane	ND	1.3	ND	1.0	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **A. Lanfranco and Associates Inc.**
Client Sample ID: **Unit 1 Run 2** ALS Project ID: P2502647
Client Project ID: **Veolia (MV WTE)** ALS Sample ID: P2502647-002

Test Code: EPA TO-3 Modified Date Collected: 7/15/25
Instrument ID: HP5890A/GC10/FID/TCD Date Received: 7/21/25
Analyst: Stephanie Reynoso Date Analyzed: 7/23/25
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.50 ml(s)
Test Notes:
Container ID: SC02325

Initial Pressure (psig): -3.47 Final Pressure (psig): 3.73

Container Dilution Factor: 1.64

CAS #	Compound	Result mg/m³	MRL mg/m³	Result ppmV	MRL ppmV	Data Qualifier
74-82-8	Methane	ND	2.2	ND	3.3	
74-85-1	Ethene	ND	1.1	ND	0.98	
74-84-0	Ethane	ND	1.2	ND	0.98	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **A. Lanfranco and Associates Inc.**
Client Sample ID: **Unit 1 Run 3** ALS Project ID: P2502647
Client Project ID: **Veolia (MV WTE)** ALS Sample ID: P2502647-003

Test Code: EPA TO-3 Modified Date Collected: 7/15/25
Instrument ID: HP5890A/GC10/FID/TCD Date Received: 7/21/25
Analyst: Stephanie Reynoso Date Analyzed: 7/23/25
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.50 ml(s)
Test Notes:
Container ID: SC02322

Initial Pressure (psig): -3.89 Final Pressure (psig): 4.33

Container Dilution Factor: 1.76

CAS #	Compound	Result mg/m³	MRL mg/m³	Result ppmV	MRL ppmV	Data Qualifier
74-82-8	Methane	**3.4**	2.3	**5.1**	3.5	
74-85-1	Ethene	ND	1.2	ND	1.1	
74-84-0	Ethane	ND	1.3	ND	1.1	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **A. Lanfranco and Associates Inc.**
Client Sample ID: **Unit 2 Run 1** ALS Project ID: P2502647
Client Project ID: **Veolia (MV WTE)** ALS Sample ID: P2502647-004

Test Code: EPA TO-3 Modified Date Collected: 7/16/25
Instrument ID: HP5890A/GC10/FID/TCD Date Received: 7/21/25
Analyst: Stephanie Reynoso Date Analyzed: 7/23/25
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.50 ml(s)
Test Notes:
Container ID: SC02061

Initial Pressure (psig): -3.34 Final Pressure (psig): 4.13

Container Dilution Factor: 1.66

CAS #	Compound	Result mg/m³	MRL mg/m³	Result ppmV	MRL ppmV	Data Qualifier
74-82-8	Methane	ND	2.2	ND	3.3	
74-85-1	Ethene	ND	1.1	ND	1.0	
74-84-0	Ethane	ND	1.2	ND	1.0	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **A. Lanfranco and Associates Inc.**
Client Sample ID: **Unit 2 Run 2** ALS Project ID: P2502647
Client Project ID: **Veolia (MV WTE)** ALS Sample ID: P2502647-005

Test Code: EPA TO-3 Modified Date Collected: 7/16/25
Instrument ID: HP5890A/GC10/FID/TCD Date Received: 7/21/25
Analyst: Stephanie Reynoso Date Analyzed: 7/23/25
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.50 ml(s)
Test Notes:
Container ID: SC00778

Initial Pressure (psig): -3.08 Final Pressure (psig): 3.51

Container Dilution Factor: 1.57

CAS #	Compound	Result mg/m³	MRL mg/m³	Result ppmV	MRL ppmV	Data Qualifier
74-82-8	Methane	ND	2.1	ND	3.1	
74-85-1	Ethene	ND	1.1	ND	0.94	
74-84-0	Ethane	ND	1.2	ND	0.94	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **A. Lanfranco and Associates Inc.**
Client Sample ID: **Unit 2 Run 3** ALS Project ID: P2502647
Client Project ID: **Veolia (MV WTE)** ALS Sample ID: P2502647-006

Test Code: EPA TO-3 Modified Date Collected: 7/16/25
Instrument ID: HP5890A/GC10/FID/TCD Date Received: 7/21/25
Analyst: Stephanie Reynoso Date Analyzed: 7/23/25
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.50 ml(s)
Test Notes:
Container ID: SC00844

Initial Pressure (psig): -3.65 Final Pressure (psig): 3.95

Container Dilution Factor: 1.69

CAS #	Compound	Result mg/m³	MRL mg/m³	Result ppmV	MRL ppmV	Data Qualifier
74-82-8	Methane	ND	2.2	ND	3.4	
74-85-1	Ethene	ND	1.2	ND	1.0	
74-84-0	Ethane	ND	1.2	ND	1.0	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **A. Lanfranco and Associates Inc.**
Client Sample ID: **Unit 3 Run 1** ALS Project ID: P2502647
Client Project ID: **Veolia (MV WTE)** ALS Sample ID: P2502647-007

Test Code: EPA TO-3 Modified Date Collected: 7/17/25
Instrument ID: HP5890A/GC10/FID/TCD Date Received: 7/21/25
Analyst: Stephanie Reynoso Date Analyzed: 7/23/25
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.50 ml(s)
Test Notes:
Container ID: SC00314

Initial Pressure (psig): -3.83 Final Pressure (psig): 3.67

Container Dilution Factor: 1.69

CAS #	Compound	Result mg/m³	MRL mg/m³	Result ppmV	MRL ppmV	Data Qualifier
74-82-8	Methane	ND	2.2	ND	3.4	
74-85-1	Ethene	ND	1.2	ND	1.0	
74-84-0	Ethane	ND	1.2	ND	1.0	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **A. Lanfranco and Associates Inc.**
Client Sample ID: **Unit 3 Run 2** ALS Project ID: P2502647
Client Project ID: **Veolia (MV WTE)** ALS Sample ID: P2502647-008

Test Code: EPA TO-3 Modified Date Collected: 7/17/25
Instrument ID: HP5890A/GC10/FID/TCD Date Received: 7/21/25
Analyst: Stephanie Reynoso Date Analyzed: 7/23/25
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.50 ml(s)
Test Notes:
Container ID: SC01006

Initial Pressure (psig): -4.15 Final Pressure (psig): 3.42

Container Dilution Factor: 1.72

CAS #	Compound	Result mg/m³	MRL mg/m³	Result ppmV	MRL ppmV	Data Qualifier
74-82-8	Methane	**2.6**	2.3	**3.9**	3.4	
74-85-1	Ethene	ND	1.2	ND	1.0	
74-84-0	Ethane	ND	1.3	ND	1.0	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **A. Lanfranco and Associates Inc.**
Client Sample ID: **Unit 3 Run 3** ALS Project ID: P2502647
Client Project ID: **Veolia (MV WTE)** ALS Sample ID: P2502647-009

Test Code: EPA TO-3 Modified Date Collected: 7/17/25
Instrument ID: HP5890A/GC10/FID/TCD Date Received: 7/21/25
Analyst: Stephanie Reynoso Date Analyzed: 7/23/25
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.50 ml(s)
Test Notes:
Container ID: SC00306

Initial Pressure (psig): -4.52 Final Pressure (psig): 3.87

Container Dilution Factor: 1.82

CAS #	Compound	Result mg/m³	MRL mg/m³	Result ppmV	MRL ppmV	Data Qualifier
74-82-8	Methane	**2.7**	2.4	**4.0**	3.6	
74-85-1	Ethene	ND	1.3	ND	1.1	
74-84-0	Ethane	ND	1.3	ND	1.1	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **A. Lanfranco and Associates Inc.**
Client Sample ID: **Method Blank** ALS Project ID: P2502647
Client Project ID: **Veolia (MV WTE)** ALS Sample ID: P250723-MB

Test Code: EPA TO-3 Modified Date Collected: NA
Instrument ID: HP5890A/GC10/FID/TCD Date Received: NA
Analyst: Stephanie Reynoso Date Analyzed: 7/23/25
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.50 ml(s)
Test Notes:

CAS #	Compound	Result mg/m³	MRL mg/m³	Result ppmV	MRL ppmV	Data Qualifier
74-82-8	Methane	ND	1.3	ND	2.0	
74-85-1	Ethene	ND	0.69	ND	0.60	
74-84-0	Ethane	ND	0.74	ND	0.60	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

Client: **A. Lanfranco and Associates Inc.**
Client Sample ID: **Duplicate Lab Control Sample** ALS Project ID: P2502647
Client Project ID: **Veolia (MV WTE)** ALS Sample ID: P250723-DLCS

Test Code: EPA TO-3 Modified Date Collected: NA
Instrument ID: HP5890A/GC10/FID/TCD Date Received: NA
Analyst: Stephanie Reynoso Date Analyzed: 7/23/25
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: NA ml(s)
Test Notes:

CAS #	Compound	Spike Amount LCS / DLCS ppmV	Result LCS ppmV	Result DLCS ppmV	% Recovery LCS	% Recovery DLCS	ALS Acceptance Limits	RPD	RPD Limit	Data Qualifier
74-82-8	Methane	7.79	7.35	7.42	**94**	**95**	70-130	1	15	
74-85-1	Ethene	7.74	7.41	7.47	**96**	**97**	70-130	1	15	
74-84-0	Ethane	7.68	7.59	7.71	**99**	**100**	70-130	1	15	

Site#: C563239
Your C.O.C. #: C563239-ONTV-01-01

Attention: Shanaz Akbar

Bureau Veritas
4606 Canada Way
Burnaby, BC
CANADA V5G 1K5

Report Date: 2025/07/29
Report #: R8584699
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C587280
Received: 2025/07/19, 12:00

Sample Matrix: Tedlar Bag
Samples Received: 9

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Nitrous Oxide	9	N/A	2025/07/23	CAM SOP-00203	GC/ECD

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Site#: C563239
Your C.O.C. #: C563239-ONTV-01-01

Attention: Shanaz Akbar

Bureau Veritas
4606 Canada Way
Burnaby, BC
CANADA V5G 1K5

Report Date: 2025/07/29
Report #: R8584699
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C587280
Received: 2025/07/19, 12:00

Encryption Key

Julian Tong
Project Manager Assistant
29 Jul 2025 17:02:33

Please direct all questions regarding this Certificate of Analysis to:
Julian Tong, Project Manager Assistant
Email: Julian.Tong@bureauveritas.com
Phone# (905) 817-5700

==========

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Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

COMPRESSED GAS PARAMETERS (TEDLAR BAG)

Bureau Veritas ID		ATDV89	ATDV90	ATDV91		
Sampling Date		2025/07/17	2025/07/17	2025/07/17		
COC Number		C563239-ONTV-01-01	C563239-ONTV-01-01	C563239-ONTV-01-01		
	UNITS	DDPF474-UNIT 3 BAG 1	DDPF475-UNIT 3 BAG 2	DDPF476-UNIT 3 BAG 3	RDL	QC Batch
Gas						
Nitrous Oxide	ppmv	2.9	3.0	5.0	0.1	9978979

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas ID		ATDV92	ATDV92	ATDV93		
Sampling Date		2025/07/16	2025/07/16	2025/07/16		
COC Number		C563239-ONTV-01-01	C563239-ONTV-01-01	C563239-ONTV-01-01		
	UNITS	DDPF477-UNIT 2 BAG 1	DDPF477-UNIT 2 BAG 1 Lab-Dup	DDPF478-UNIT 2 BAG 2	RDL	QC Batch
Gas						
Nitrous Oxide	ppmv	3.4	3.5	3.4	0.1	9978979

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

Bureau Veritas ID		ATDV94	ATDV95	ATDV96		
Sampling Date		2025/07/16	2025/07/15	2025/07/15		
COC Number		C563239-ONTV-01-01	C563239-ONTV-01-01	C563239-ONTV-01-01		
	UNITS	DDPF479-UNIT 2 BAG 3	DDPF480-UNIT 1 BAG 1	DDPF481-UNIT 1 BAG 2	RDL	QC Batch
Gas						
Nitrous Oxide	ppmv	4.1	3.7	3.8	0.1	9978979

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas ID		ATDV97		
Sampling Date		2025/07/15		
COC Number		C563239-ONTV-01-01		
	UNITS	DDPF482-UNIT 1 BAG 3	RDL	QC Batch
Gas				
Nitrous Oxide	ppmv	2.8	0.1	9978979

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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TEST SUMMARY

Bureau Veritas ID: ATDV89
Sample ID: DDPF474-UNIT 3 BAG 1
Matrix: Tedlar Bag
Collected: 2025/07/17
Shipped:
Received: 2025/07/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Nitrous Oxide	GC/ECD	9978979	N/A	2025/07/23	Cathy Li

Bureau Veritas ID: ATDV90
Sample ID: DDPF475-UNIT 3 BAG 2
Matrix: Tedlar Bag
Collected: 2025/07/17
Shipped:
Received: 2025/07/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Nitrous Oxide	GC/ECD	9978979	N/A	2025/07/23	Cathy Li

Bureau Veritas ID: ATDV91
Sample ID: DDPF476-UNIT 3 BAG 3
Matrix: Tedlar Bag
Collected: 2025/07/17
Shipped:
Received: 2025/07/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Nitrous Oxide	GC/ECD	9978979	N/A	2025/07/23	Cathy Li

Bureau Veritas ID: ATDV92
Sample ID: DDPF477-UNIT 2 BAG 1
Matrix: Tedlar Bag
Collected: 2025/07/16
Shipped:
Received: 2025/07/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Nitrous Oxide	GC/ECD	9978979	N/A	2025/07/23	Cathy Li

Bureau Veritas ID: ATDV92 Dup
Sample ID: DDPF477-UNIT 2 BAG 1
Matrix: Tedlar Bag
Collected: 2025/07/16
Shipped:
Received: 2025/07/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Nitrous Oxide	GC/ECD	9978979	N/A	2025/07/23	Cathy Li

Bureau Veritas ID: ATDV93
Sample ID: DDPF478-UNIT 2 BAG 2
Matrix: Tedlar Bag
Collected: 2025/07/16
Shipped:
Received: 2025/07/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Nitrous Oxide	GC/ECD	9978979	N/A	2025/07/23	Cathy Li

Bureau Veritas ID: ATDV94
Sample ID: DDPF479-UNIT 2 BAG 3
Matrix: Tedlar Bag
Collected: 2025/07/16
Shipped:
Received: 2025/07/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Nitrous Oxide	GC/ECD	9978979	N/A	2025/07/23	Cathy Li

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TEST SUMMARY

Bureau Veritas ID: ATDV95
Sample ID: DDPF480-UNIT 1 BAG 1
Matrix: Tedlar Bag

Collected: 2025/07/15
Shipped:
Received: 2025/07/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Nitrous Oxide	GC/ECD	9978979	N/A	2025/07/23	Cathy Li

Bureau Veritas ID: ATDV96
Sample ID: DDPF481-UNIT 1 BAG 2
Matrix: Tedlar Bag

Collected: 2025/07/15
Shipped:
Received: 2025/07/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Nitrous Oxide	GC/ECD	9978979	N/A	2025/07/23	Cathy Li

Bureau Veritas ID: ATDV97
Sample ID: DDPF482-UNIT 1 BAG 3
Matrix: Tedlar Bag

Collected: 2025/07/15
Shipped:
Received: 2025/07/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Nitrous Oxide	GC/ECD	9978979	N/A	2025/07/23	Cathy Li

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GENERAL COMMENTS

Sample ATDV89 [DDPF474-UNIT 3 BAG 1] : The sample was analysed 6 days after the date of sampling. The recommended holding time is 2 days.

Sample ATDV90 [DDPF475-UNIT 3 BAG 2] : The sample was analysed 6 days after the date of sampling. The recommended holding time is 2 days.

Sample ATDV91 [DDPF476-UNIT 3 BAG 3] : The sample was analysed 6 days after the date of sampling. The recommended holding time is 2 days.

Sample ATDV92 [DDPF477-UNIT 2 BAG 1] : The sample was analysed 7 days after the date of sampling. The recommended holding time is 2 days.

Sample ATDV93 [DDPF478-UNIT 2 BAG 2] : The sample was analysed 7 days after the date of sampling. The recommended holding time is 2 days.

Sample ATDV94 [DDPF479-UNIT 2 BAG 3] : The sample was analysed 7 days after the date of sampling. The recommended holding time is 2 days.

Sample ATDV95 [DDPF480-UNIT 1 BAG 1] : The sample was analysed 8 days after the date of sampling. The recommended holding time is 2 days.

Sample ATDV96 [DDPF481-UNIT 1 BAG 2] : The sample was analysed 8 days after the date of sampling. The recommended holding time is 2 days.

Sample ATDV97 [DDPF482-UNIT 1 BAG 3] : The sample was analysed 8 days after the date of sampling. The recommended holding time is 2 days.

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

			Method Blank		RPD	
QC Batch	Parameter	Date	Value	UNITS	Value (%)	QC Limits
9978979	Nitrous Oxide	2025/07/23	<0.1	ppmv	NC	N/A

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

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VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Tom Mitchell, B.Sc, Supervisor, Compressed Gases

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C587280
2025/07/19 12:00

IMMEDIATE

Sent to: Bureau Veritas Campobello
6740 Campobello Road
Mississauga, ON, L5N 2L8
Tel: (905) 817-5700

BUREAU VERITAS INTERLAB CHAIN OF CUSTODY RECORD

COC # C563239-ONTV-01-01

REPORT INFORMATION	
Company:	Bureau Veritas
Address:	4606 Canada Way, Burnaby, British Columbia, V5G 1K5
Contact Name:	Shanaz Akbar
Email:	Shanaz.Akbar@bureauveritas.com, Customersolutionswest@bureauveritas.com
Phone:	
BV Project #:	CS63239
Client Invoice To:	A. LANFRANCO & ASSOCIATES INC. (1301)
Client Report To:	A. LANFRANCO & ASSOCIATES INC. (1301)

Incl. on Report? Yes / No

#	SAMPLE ID	MATRIX	DATE SAMPLED (YYYY/MM/DD)	TIME SAMPLED (HH:MM)	SAMPLER INITIALS	# CONT.	ANALYSIS REQUESTED: N2O Gas CSA Z2396.1-09 Subcontract	ADDITIONAL SAMPLE INFORMATION
1	DPF474-UNIT 3 BAG 1	AIR	2025/05/17			1	X	(P: 01)
2	DPF475-UNIT 3 BAG 2	AIR	2025/05/17			1	X	(P: 01)
3	DPF476-UNIT 3 BAG 3	AIR	2025/05/17			1	X	(P: 01)
4	DPF477-UNIT 2 BAG 1	AIR	2025/05/16			1	X	(P: 01)
5	DPF478-UNIT 2 BAG 2	AIR	2025/05/16			1	X	(P: 01)
6	DPF479-UNIT 2 BAG 3	AIR	2025/05/16			1	X	(P: 01)
7	DPF480-UNIT 1 BAG 1	AIR	2025/05/15			1	X	(P: 01)
8	DPF481-UNIT 1 BAG 2	AIR	2025/05/15			1	X	(P: 01)
9	DPF482-UNIT 3 BAG 3	AIR	2025/05/15			1	X	(P: 01)
10								

Lab Barcode Label

NONT-2025-07-4287

ADDITIONAL SAMPLE INFORMATION

SITE LOCATION:	REGULATORY CRITERIA	SPECIAL INSTRUCTIONS	REQUIRED EDDs	TURNAROUND TIME
SITE #:		Please inform Bureau Veritas immediately if you are not accredited for the requested test(s) or the hold time is approaching. **Please return a copy of this form with the report.**	National Excel (N001)	☐ Rush Required 2025/07/31 Date Required *Please inform us if rush charges will be incurred.*
PROJECT #:				
PO/AFE, TASK ORDER/SERVICE ORDER, LINE ITEM:				

COOLER ID:	YES	NO	Temp: (°C)
Custody Seal Present			
Custody Seal Intact			
Cooling Media Present			

COOLER ID:	YES	NO	Temp: (°C)
Custody Seal Present			
Custody Seal Intact			
Cooling Media Present			

COOLER ID:	YES	NO	Temp: (°C)
Custody Seal Present			
Custody Seal Intact			
Cooling Media Present			

RECEIVING LAB USE ONLY

Bureau Veritas Job #

RELINQUISHED BY: (SIGN & PRINT)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	RECEIVED BY: (SIGN & PRINT)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)
1. BILLO PUNI	2025-07-18	15:00	1.	2025/07/19	12:00
2.			2.		

Sent to: **Bureau Veritas Campobello**
6740 Campobello Road
Mississauga, ON, L5N 2L8
Tel: (905) 817-5700

BUREAU VERITAS INTERLAB CHAIN OF CUSTODY RECORD

COC # C563239-ONTV-01-01

REPORT INFORMATION

Company:	Bureau Veritas
Address:	4606 Canada Way, Burnaby, British Columbia, V5G 1K5
Contact Name:	Shanaz Akbar
Email:	Shanaz.Akbar@bureauveritas.com, Customersolutionswest@bureauveritas.com
Phone:	
BV Project #:	C563239
Client Invoice To:	A. LANFRANCO & ASSOCIATES INC. (1301)
Client Report To:	A. LANFRANCO & ASSOCIATES INC. (1301) — Incl. on Report? Yes / No

ANALYSIS REQUESTED — *Job Barcode Label*

#	SAMPLE ID	MATRIX	DATE SAMPLED (YYYY/MM/DD)	TIME SAMPLED (HH:MM)	SAMPLER INITIALS	# CONT.	N2O Gas CSA Z2396.1-09 Subcontract	ADDITIONAL SAMPLE INFORMATION
1	DPF474-UNIT 3 BAG 1	AIR	2025/07/17			1	X	(P: 01)
2	DPF475-UNIT 3 BAG 2	AIR	2025/07/17			1	X	(P: 01)
3	DPF476-UNIT 3 BAG 3	AIR	2025/07/17			1	X	(P: 01)
4	DPF477-UNIT 2 BAG 1	AIR	2025/07/16			1	X	(P: 01)
5	DPF478-UNIT 2 BAG 2	AIR	2025/07/16			1	X	(P: 01)
6	DPF479-UNIT 2 BAG 3	AIR	2025/07/16			1	X	(P: 01)
7	DPF480-UNIT 1 BAG 1	AIR	2025/07/15			1	X	(P: 01)
8	DPF481-UNIT 1 BAG 2	AIR	2025/07/15			1	X	(P: 01)
9	DPF482-UNIT 1 BAG 3	AIR	2025/07/15			1	X	(P: 01)
10								

SITE LOCATION:

SITE #:

PROJECT #:

PO/AFE, TASK ORDER/SERVICE ORDER, LINE ITEM:

REGULATORY CRITERIA

SPECIAL INSTRUCTIONS

Please inform Bureau Veritas immediately if you are not accredited for the requested test(s) or the hold time is approaching.
Please return a copy of this form with the report.

REQUIRED EDDs

National Excel (N001)

TURNAROUND TIME

☐ Rush Required

2025/07/31
Date Required

Please inform us if rush charges will be incurred.

COOLER ID:	YES	NO	Temp: (°C)	1	2	3
Custody Seal Present						
Custody Seal Intact						
Cooling Media Present						

COOLER ID:	YES	NO	Temp: (°C)	1	2	3
Custody Seal Present						
Custody Seal Intact						
Cooling Media Present						

COOLER ID:	YES	NO	Temp: (°C)	1	2	3
Custody Seal Present						
Custody Seal Intact						
Cooling Media Present						

RECEIVING LAB USE ONLY

Bureau Veritas Job #

RELINQUISHED BY: (SIGN & PRINT)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	RECEIVED BY: (SIGN & PRINT)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)
1.			1.		
2.			2.		

APPENDIX - D

COMPUTER GENERATED RESULTS

Client:	Metro Vancouver	**Date:**	14-Jul-25
Jobsite:	WTE (Burnaby, BC)	**Run:**	1 - Particulate / Metals
Source:	Unit 1	**Run Time:**	11:24 - 13:28

Concentrations:

Particulate	3.17	mg/dscm	0.00138	gr/dscf
	1.70	mg/Acm	0.00074	gr/Acf
	2.82	mg/dscm (@ 11% O2)	0.00123	gr/dscf (@ 11% O2)

Emission Rates:

Particulate	0.229	Kg/hr	0.504	lb/hr

Flue Gas Characteristics:

Flow	1204	dscm/min	42522	dscf/min
	20.07	dscm/sec	709	dscf/sec
	2241	Acm/min	79136	Acf/min
Velocity	14.663	m/sec	48.11	f/sec
Temperature	157.8	oC	316.0	oF
Moisture	17.5	%		
Gas Analysis	9.8	% O2		
	10.0	% CO2		
	29.989	Mol. Wt (g/gmole) Dry		
	27.889	Mol. Wt (g/gmole) Wet		

Sample Parameters:

Sample Volume	2.4154	dscm	85.298	dscf
Sample Time	120.0	minutes		
Isokineticity	107.2	%		

*** Standard Conditions:** Metric: 20 deg C, 101.325 kPa
Imperial: 68 deg F, 29.92 in.Hg

Client:	Metro Vancouver	**Date:**	14-Jul-25
Jobsite:	WTE (Burnaby, BC)	**Run:**	1 - Particulate / Metals
Source:	Unit 1	**Run Time:**	08:30 - 10:34

Control Unit (Y)	0.9758
Nozzle Diameter (in.)	0.2800
Pitot Factor	0.8510
Baro. Press. (in. Hg)	30.00
Static Press. (in. H20)	-18.30
Stack Height (ft)	30
Stack Diameter (in.)	70.90
Stack Area (sq.ft.)	27.417
Minutes Per Reading	5.0
Minutes Per Point	5.0

Collection:

Filter (grams)	0.00005
Washings (grams)	0.00760
Total (grams)	**0.00765**

Gas Analysis (Vol. %):

	CO2	O2
Traverse 1	10.07	9.83
Traverse 2	9.90	9.77
	9.98	**9.80**

Condensate Collection:

Impinger 1	292.0
Impinger 2	72.0
Impinger 3	6.0
Impinger 4	2.0
Impinger 5	0.0
Impinger 6	0.0
Gel	13.0
Gain (grams)	**385.0**

Traverse / Point	Time (min.)	Dry Gas Meter (ft3)	Pitot ^P (in. H2O)	Orifice ^H (in. H2O)	Dry Gas Temperature Inlet (oF)	Dry Gas Temperature Outlet (oF)	Vacuum (in. Hg.)	Stack Temp. (oF)	Wall Dist. (in.)	Isokin. (%)
Traverse 1	0.0	579.971								
1	5.0	583.610	0.43	1.72	80	80	4	315	1.5	107.8
2	10.0	587.310	0.45	1.78	80	80	4	315	4.7	107.2
3	15.0	591.130	0.48	1.90	80	80	4	315	8.4	107.2
4	20.0	595.000	0.49	1.94	80	80	4	315	12.5	107.5
5	25.0	598.900	0.50	1.98	81	81	4	316	17.7	107.1
6	30.0	602.920	0.53	2.10	81	81	4	316	25.2	107.3
7	35.0	606.790	0.49	1.94	82	82	4	316	45.6	107.2
8	40.0	610.420	0.43	1.70	82	82	4	316	53.2	107.2
9	45.0	614.010	0.42	1.67	82	82	4	314	58.3	107.2
10	50.0	617.570	0.41	1.64	83	83	4	311	62.5	107.1
11	55.0	621.040	0.39	1.56	83	83	4	311	66.1	107.1
12	60.0	624.520	0.39	1.56	84	84	4	311	69.4	107.2
Traverse 2	0.0	624.520								
1	5.0	628.120	0.42	1.67	84	84	4	315	1.5	107.1
2	10.0	631.850	0.45	1.80	84	84	4	314	4.7	107.2
3	15.0	635.660	0.47	1.87	85	85	4	316	8.4	107.1
4	20.0	639.550	0.49	1.95	85	85	4	316	12.5	107.1
5	25.0	643.410	0.48	1.91	86	86	4	317	17.7	107.3
6	30.0	647.340	0.50	1.99	86	86	4	318	25.2	107.1
7	35.0	651.150	0.47	1.87	86	86	4	320	45.6	107.2
8	40.0	654.920	0.46	1.83	86	86	4	320	53.2	107.2
9	45.0	658.650	0.45	1.79	86	86	4	319	58.3	107.1
10	50.0	662.300	0.43	1.71	87	87	4	320	62.5	107.1
11	55.0	665.860	0.41	1.63	87	87	4	320	66.1	107.0
12	60.0	669.340	0.39	1.55	87	87	4	319	69.4	107.1
Average:			0.451	1.794	83.6	83.6	4.0	316.0		107.2

Client:	Metro Vancouver	**Date:**	15-Jul-25
Jobsite:	WTE (Burnaby, B.C)	**Run:**	2 - Particulate / Metals
Source:	Unit 1	**Run Time:**	09:18 - 11:20

Concentrations:

Particulate	0.14	mg/dscm	0.00006	gr/dscf
	0.08	mg/Acm	0.00004	gr/Acf
	0.13	mg/dscm (@ 11% O2)	0.00006	gr/dscf (@ 11% O2)

Emission Rates:

Particulate	0.011	Kg/hr	0.024	lb/hr

Flue Gas Characteristics:

Flow	1254	dscm/min	44281	dscf/min
	20.90	dscm/sec	738	dscf/sec
	2219	Acm/min	78367	Acf/min
Velocity	14.520	m/sec	47.64	f/sec
Temperature	157.3	oC	315.1	oF
Moisture	13.7	%		
Gas Analysis	9.6	% O2		
	10.1	% CO2		
	29.999	Mol. Wt (g/gmole) Dry		
	28.357	Mol. Wt (g/gmole) Wet		

Sample Parameters:

Sample Volume	2.4260	dscm	85.676	dscf
Sample Time	120.0	minutes		
Isokineticity	103.4	%		

*** Standard Conditions:** Metric: 20 deg C, 101.325 kPa
Imperial: 68 deg F, 29.92 in.Hg

Client:	Metro Vancouver	**Date:**	15-Jul-25
Jobsite:	WTE (Burnaby, B.C)	**Run:**	2 - Particulate / Metals
Source:	Unit 1	**Run Time:**	09:18 - 11:20

Control Unit (Y)	0.9758	**Collection:**			**Gas Analysis (Vol. %):**			**Condensate Collection:**	
Nozzle Diameter (in.)	0.2800	Filter (grams)	0.00005		CO2	O2		Impinger 1	177.0
Pitot Factor	0.8510	Washings (grams)	0.00030	Traverse 1	10.00	9.83		Impinger 2	82.0
Baro. Press. (in. Hg)	30.03			Traverse 2	10.17	9.43		Impinger 3	12.0
Static Press. (in. H20)	-17.30	**Total (grams)**	**0.00035**					Impinger 4	2.0
Stack Height (ft)	30							Impinger 5	0.0
Stack Diameter (in.)	70.90							Impinger 6	0.0
Stack Area (sq.ft.)	27.417							Gel	15.5
Minutes Per Reading	5.0				**10.08**	**9.63**		**Gain (grams)**	**288.5**
Minutes Per Point	5.0								

Traverse / Point	Time (min.)	Dry Gas Meter (ft3)	Pitot ^P (in. H2O)	Orifice ^H (in. H2O)	Dry Gas Temperature Inlet (oF)	Dry Gas Temperature Outlet (oF)	Vacuum (in. Hg.)	Stack Temp. (oF)	Wall Dist. (in.)	Isokin. (%)
Traverse 1	0.0	670.312								
1	5.0	673.780	0.38	1.54	88	88	3	311	1.5	103.4
2	10.0	677.410	0.42	1.70	88	88	3	315	4.7	103.2
3	15.0	681.080	0.43	1.73	87	87	3	316	8.4	103.4
4	20.0	685.000	0.49	1.97	86	86	3	317	12.5	103.8
5	25.0	689.020	0.52	2.09	86	86	3	317	17.7	103.4
6	30.0	692.890	0.48	1.93	86	86	3	316	25.2	103.5
7	35.0	696.590	0.44	1.77	86	86	3	315	45.6	103.2
8	40.0	700.390	0.46	1.86	87	87	3	312	53.2	103.3
9	45.0	704.030	0.42	1.70	87	87	3	310	58.3	103.4
10	50.0	707.720	0.43	1.75	88	88	3	309	62.5	103.3
11	55.0	711.330	0.41	1.67	88	88	3	308	66.1	103.4
12	60.0	714.890	0.40	1.63	88	88	3	309	69.4	103.3
Traverse 2	0.0	714.890								
1	5.0	718.400	0.39	1.58	88	88	3	312	1.5	103.4
2	10.0	722.000	0.41	1.66	89	89	3	316	4.7	103.0
3	15.0	725.490	0.39	1.57	88	88	3	319	8.4	103.2
4	20.0	728.950	0.38	1.53	89	89	3	318	12.5	103.4
5	25.0	732.490	0.40	1.61	89	89	3	321	17.7	103.4
6	30.0	736.030	0.40	1.61	89	89	3	321	25.2	103.4
7	35.0	740.260	0.57	2.29	90	90	3	321	45.6	103.4
8	40.0	744.460	0.56	2.26	90	90	3	318	53.2	103.4
9	45.0	748.890	0.62	2.50	91	91	3	319	58.3	103.6
10	50.0	753.070	0.55	2.24	91	91	3	314	62.5	103.4
11	55.0	756.980	0.48	1.95	91	91	3	315	66.1	103.5
12	60.0	760.770	0.45	1.83	92	92	3	314	69.4	103.4
Average:			0.454	1.832	88.4	88.4	3.0	315.1		103.4

Client:	Metro Vancouver	**Date:**	15-Jul-25
Jobsite:	WTE (Burnaby, B.C)	**Run:**	3 - Particulate / Metals
Source:	Unit 1	**Run Time:**	11:47 - 13:49

Concentrations:

Particulate	0.7	mg/dscm	0.0003	gr/dscf
	0.4	mg/Acm	0.0002	gr/Acf
	0.7	mg/dscm (@ 11% O2)	0.0003	gr/dscf (@ 11% O2)

Emission Rates:

Particulate	0.055	Kg/hr	0.121	lb/hr

Flue Gas Characteristics:

Flow	1256	dscm/min	44341	dscf/min
	20.93	dscm/sec	739	dscf/sec
	2251	Acm/min	79482	Acf/min
Velocity	14.727	m/sec	48.32	f/sec
Temperature	159.1	oC	318.3	oF
Moisture	14.4	%		
Gas Analysis	10.0	% O2		
	10.0	% CO2		
	29.990	Mol. Wt (g/gmole) Dry		
	28.261	Mol. Wt (g/gmole) Wet		

Sample Parameters:

Sample Volume	2.4670	dscm	87.121	dscf
Sample Time	120.0	minutes		
Isokineticity	105.1	%		

*** Standard Conditions:** Metric: 20 deg C, 101.325 kPa
Imperial: 68 deg F, 29.92 in.Hg

Client:	Metro Vancouver	**Date:**	15-Jul-25
Jobsite:	WTE (Burnaby, B.C)	**Run:**	3 - Particulate / Metals
Source:	Unit 1	**Run Time:**	11:47 - 13:49

Control Unit (Y)	0.9758
Nozzle Diameter (in.)	0.2800
Pitot Factor	0.8510
Baro. Press. (in. Hg)	30.03
Static Press. (in. H20)	-17.30
Stack Height (ft)	30
Stack Diameter (in.)	70.90
Stack Area (sq.ft.)	27.417
Minutes Per Reading	5.0
Minutes Per Point	5.0

Collection:	
Filter (grams)	0.00060
Washings (grams)	0.00120
Total (grams)	**0.00180**

Gas Analysis (Vol. %):	CO2	O2
Traverse 1	9.83	10.07
Traverse 2	10.07	9.83
	9.95	**9.95**

Condensate Collection:	
Impinger 1	195.0
Impinger 2	84.0
Impinger 3	12.0
Impinger 4	0.0
Impinger 5	2.0
Impinger 6	2.0
Gel	17.0
Gain (grams)	**312.0**

Traverse / Point	Time (min.)	Dry Gas Meter (ft3)	Pitot ^P (in. H2O)	Orifice ^H (in. H2O)	Dry Gas Temperature Inlet (oF)	Dry Gas Temperature Outlet (oF)	Vacuum (in. Hg.)	Stack Temp. (oF)	Wall Dist. (in.)	Isokin. (%)
Traverse 1	0.0	761.198								
1	5.0	765.360	0.36	1.46	90	90	4	312	1.5	128.0
2	10.0	768.830	0.38	1.54	90	90	4	315	4.7	104.1
3	15.0	772.430	0.41	1.66	90	90	4	317	8.4	104.1
4	20.0	775.980	0.40	1.61	90	90	4	318	12.5	104.0
5	25.0	779.480	0.39	1.57	90	90	4	319	17.7	103.9
6	30.0	782.890	0.37	1.49	90	90	4	320	25.2	104.0
7	35.0	786.850	0.50	2.01	90	90	4	321	45.6	104.0
8	40.0	790.950	0.53	2.15	91	91	4	317	53.2	104.2
9	45.0	795.020	0.52	2.11	91	91	4	314	58.3	104.2
10	50.0	799.390	0.60	2.44	92	92	4	315	62.5	104.1
11	55.0	803.340	0.49	1.98	92	92	4	318	66.1	104.3
12	60.0	807.200	0.47	1.90	92	92	4	319	69.4	104.1
Traverse 2	0.0	807.200								
1	5.0	811.140	0.49	1.98	93	93	4	322	1.5	104.1
2	10.0	815.160	0.51	2.06	93	93	4	322	4.7	104.1
3	15.0	819.260	0.53	2.14	93	93	4	322	8.4	104.2
4	20.0	823.510	0.57	2.30	93	93	4	322	12.5	104.2
5	25.0	827.460	0.49	1.99	94	94	4	320	17.7	104.0
6	30.0	831.380	0.48	1.95	94	94	4	319	25.2	104.2
7	35.0	835.220	0.46	1.87	94	94	4	318	45.6	104.2
8	40.0	839.190	0.49	2.00	95	95	4	317	53.2	104.1
9	45.0	843.000	0.45	1.83	95	95	4	319	58.3	104.4
10	50.0	846.670	0.42	1.71	95	95	4	319	62.5	104.1
11	55.0	850.300	0.41	1.67	96	96	4	318	66.1	103.9
12	60.0	853.850	0.39	1.59	96	96	4	317	69.4	104.1
Average:			0.463	1.875	92.5	92.5	4.0	318.3		105.1

Client: Metro Vancouver
Jobsite: WTE (Burnaby,B.C)
Source: Unit 1

Sample Type: HF

Parameter		Test 1	Test 2	Test 3
Test Date		15-Jul-25	15-Jul-25	15-Jul-25
Test Time		09:44 - 10:44	10:58 - 11:58	12:10 - 13:10
Test Duration	(min.)	60	60	60
Baro. Press.	(in. Hg)	30.03	30.03	30.03
DGM Factor	(Y)	1.0258	1.0258	1.0258
Initial Reading	(m^3)	171.570	171.942	172.308
Final Reading	(m^3)	171.939	172.303	172.688
Temp. Outlet	(Avg. oF)	80.0	82.5	85.0
Orifice Press.	(ΔH in.H2O)	0.50	0.50	0.50
Gas Volume	(Sm^3)	0.37	0.36	0.38
HF	(mg)	0.005	0.053	0.053
Oxygen	(Vol. %)	9.8	9.6	10.0
HF	**(mg/Sm^3)**	**0.014**	**0.145**	**0.139**
HF	**(mg/Sm^3 @ 11% O2)**	**0.013**	**0.128**	**0.125**
Moisture	**(Vol. %)**	13.7	13.7	14.4

Tstd. (oF) 68 Pstd. (in. Hg) 29.92

Client: Metro Vancouver
Jobsite: WTE (Burnaby,B.C)
Source: Unit 1

Sample Type: HCl

Parameter		Test 1	Test 2	Test 3
Test Date		15-Jul-25	15-Jul-25	15-Jul-25
Test Time		09:44 - 10:44	10:58 - 11:58	12:10 - 13:10
Test Duration	(min.)	60	60	60
Baro. Press.	(in. Hg)	30.03	30.03	30.03
DGM Factor	(Y)	1.0258	1.0258	1.0258
Initial Reading	(m^3)	171.570	171.942	172.308
Final Reading	(m^3)	171.939	172.303	172.688
Temp. Outlet	(Avg. oF)	80.0	82.5	85.0
Orifice Press.	(ΔH in.H2O)	0.50	0.50	0.50
Gas Volume	(Sm^3)	0.37	0.36	0.38
HCl	(mg)	4.647	12.130	12.644
Oxygen	(Vol. %)	9.8	9.6	10.0
HCl	**(mg/Sm^3)**	**12.5**	**33.5**	**33.3**
HCl	**(mg/Sm^3 @ 11% O2)**	**11.1**	**29.4**	**30.1**
Moisture	**(Vol. %)**	13.7	13.7	14.4

Tstd. (oF) 68 Pstd. (in. Hg) 29.92

Client: Metro Vancouver
Jobsite: WTE (Burnaby,B.C)
Source: Unit 1

Sample Type: NH_3

Parameter		Test 1	Test 2	Test 3
Test Date		15-Jul-25	15-Jul-25	15-Jul-25
Test Time		09:44 - 10:44	10:58 - 11:58	12:10 - 13:10
Test Duration	(min.)	60	60	60
Baro. Press.	(in. Hg)	30.03	30.03	30.03
DGM Factor	(Y)	1.0017	1.0017	1.0017
Initial Reading	(m^3)	332.364	332.933	333.527
Final Reading	(m^3)	332.928	333.521	334.121
Temp. Outlet	(Avg. oF)	75.5	78.0	82.5
Orifice Press.	(ΔH in.H2O)	0.50	0.50	0.50
Gas Volume	(Sm^3)	0.56	0.58	0.58
NH_3	(mg)	17.2	11.4	15.5
Oxygen	(Vol. %)	9.8	9.6	10.0
NH_3	**(mg/Sm^3)**	**30.7**	**19.6**	**26.6**
NH_3	**(mg/Sm^3 @ 11% O2)**	**27.3**	**17.2**	**24.1**
Moisture	**(Vol. %)**	13.7	13.7	14.4

Tstd. (oF) 68 Pstd. (in. Hg) 29.92

Client:	Metro Vancouver	**Date:**	15-Jul-25
Jobsite:	WTE (Burnaby, B.C)	**Run:**	1 - Particulate / Metals
Source:	Unit 2	**Run Time:**	10:33 - 12:35

Concentrations:

Particulate	1.5	mg/dscm	0.0007	gr/dscf
	0.8	mg/Acm	0.0004	gr/Acf
	1.3	mg/dscm (@ 11% O2)	0.0006	gr/dscf (@ 11% O2)

Emission Rates:

Particulate	0.097	Kg/hr	0.213	lb/hr

Flue Gas Characteristics:

Flow	1073	dscm/min	37878	dscf/min
	17.88	dscm/sec	631	dscf/sec
	1915	Acm/min	67633	Acf/min
Velocity	12.532	m/sec	41.11	f/sec
Temperature	153.3	oC	308.0	oF
Moisture	14.7	%		
Gas Analysis	9.9	% O2		
	9.0	% CO2		
	29.828	Mol. Wt (g/gmole) Dry		
	28.087	Mol. Wt (g/gmole) Wet		

Sample Parameters:

Sample Volume	2.6341	dscm	93.022	dscf
Sample Time	120.0	minutes		
Isokineticity	104.6	%		

*** Standard Conditions:** Metric: 20 deg C, 101.325 kPa
Imperial: 68 deg F, 29.92 in.Hg

Client:	Metro Vancouver	**Date:**	15-Jul-25
Jobsite:	WTE (Burnaby, B.C)	**Run:**	1 - Particulate / Metals
Source:	Unit 2	**Run Time:**	10:33 - 12:35

Control Unit (Y)	0.9986
Nozzle Diameter (in.)	0.3137
Pitot Factor	0.8428
Baro. Press. (in. Hg)	30.02
Static Press. (in. H20)	-19.50
Stack Height (ft)	30
Stack Diameter (in.)	70.90
Stack Area (sq.ft.)	27.417
Minutes Per Reading	5.0
Minutes Per Point	5.0

Collection:	
Filter (grams)	0.00005
Washings (grams)	0.00390
Total (grams)	**0.00395**

Gas Analysis (Vol. %):		
	CO2	O2
Traverse 1	9.15	9.90
Traverse 2	8.75	9.90
	8.95	**9.90**

Condensate Collection:	
Impinger 1	158.0
Impinger 2	112.0
Impinger 3	36.0
Impinger 4	5.0
Impinger 5	7.0
Impinger 6	3.0
Gel	20.2
Gain (grams)	**341.2**

Traverse / Point	Time (min.)	Dry Gas Meter (ft3)	Pitot ^P (in. H2O)	Orifice ^H (in. H2O)	Dry Gas Temperature Inlet (oF)	Dry Gas Temperature Outlet (oF)	Vacuum (in. Hg.)	Stack Temp. (oF)	Wall Dist. (in.)	Isokin. (%)
Traverse 1	0.0	636.151								
1	5.0	639.690	0.27	1.35	79	79	4	301	1.5	105.1
2	10.0	643.250	0.28	1.39	79	79	4	304	4.7	104.0
3	15.0	646.690	0.26	1.29	79	79	4	307	8.4	104.5
4	20.0	650.200	0.27	1.34	79	79	4	308	12.5	104.7
5	25.0	653.830	0.29	1.43	80	80	4	310	17.7	104.4
6	30.0	657.350	0.27	1.33	80	80	4	311	25.2	105.0
7	35.0	661.840	0.44	2.18	82	82	5	310	45.6	104.7
8	40.0	666.500	0.48	2.38	83	83	5	312	53.2	104.0
9	45.0	671.500	0.54	2.69	84	84	5	309	58.3	104.9
10	50.0	676.410	0.52	2.59	85	85	5	311	62.5	104.9
11	55.0	681.600	0.58	2.90	86	86	5	310	66.1	104.8
12	60.0	686.700	0.56	2.81	86	86	5	308	69.4	104.6
Traverse 2	0.0	686.700								
1	5.0	690.700	0.34	1.72	88	88	4	303	1.5	104.3
2	10.0	694.880	0.37	1.87	88	88	4	306	4.7	104.8
3	15.0	699.150	0.39	1.96	88	88	4	308	8.4	104.4
4	20.0	703.650	0.43	2.16	88	88	5	309	12.5	104.9
5	25.0	708.080	0.42	2.11	88	88	5	308	17.7	104.4
6	30.0	712.150	0.35	1.76	89	89	5	310	25.2	104.9
7	35.0	715.900	0.30	1.51	89	89	5	310	45.6	104.4
8	40.0	719.470	0.27	1.36	89	89	5	308	53.2	104.5
9	45.0	722.900	0.25	1.26	90	90	4	307	58.3	104.1
10	50.0	726.200	0.23	1.16	90	90	4	309	62.5	104.5
11	55.0	728.880	0.15	0.76	90	90	4	307	66.1	104.9
12	60.0	731.640	0.16	0.81	90	90	4	306	69.4	104.5
Average:			0.351	1.755	85.4	85.4	4.5	308.0		104.6

Client:	Metro Vancouver	**Date:**	16-Jul-25
Jobsite:	WTE (Burnaby, B.C)	**Run:**	2 - Particulate / Metals
Source:	Unit 2	**Run Time:**	09:10 - 11:12

Concentrations:

Particulate	1.05	mg/dscm	0.00046	gr/dscf
	0.59	mg/Acm	0.00026	gr/Acf
	0.92	mg/dscm (@ 11% O2)	0.00040	gr/dscf (@ 11% O2)

Emission Rates:

Particulate	0.070	Kg/hr	0.154	lb/hr

Flue Gas Characteristics:

Flow	1107	dscm/min	39081	dscf/min
	18.44	dscm/sec	651	dscf/sec
	1991	Acm/min	70324	Acf/min
Velocity	13.030	m/sec	42.75	f/sec
Temperature	156.7	oC	314.0	oF
Moisture	15.1	%		
Gas Analysis	9.6	% O2		
	9.3	% CO2		
	29.871	Mol. Wt (g/gmole) Dry		
	28.080	Mol. Wt (g/gmole) Wet		

Sample Parameters:

Sample Volume	2.6109	dscm	92.205	dscf
Sample Time	120.0	minutes		
Isokineticity	104.3	%		

*** Standard Conditions:** Metric: 20 deg C, 101.325 kPa
Imperial: 68 deg F, 29.92 in.Hg

Client:	Metro Vancouver	**Date:**	16-Jul-25
Jobsite:	WTE (Burnaby, B.C)	**Run:**	2 - Particulate / Metals
Source:	Unit 2	**Run Time:**	09:10 - 11:12

Control Unit (Y)	0.9986	**Collection:**			**Gas Analysis (Vol. %):**			**Condensate Collection:**	
Nozzle Diameter (in.)	0.3137	Filter (grams)	0.00005		CO2	O2		Impinger 1	220.0
Pitot Factor	0.8510	Washings (grams)	0.00270	Traverse 1	9.25	9.70		Impinger 2	94.0
Baro. Press. (in. Hg)	29.85			Traverse 2	9.33	9.53		Impinger 3	12.0
Static Press. (in. H20)	-15.5	**Total (grams)**	**0.00275**					Impinger 4	2.0
Stack Height (ft)	30							Impinger 5	2.0
Stack Diameter (in.)	70.90							Impinger 6	2.0
Stack Area (sq.ft.)	27.417							Gel	16.1
Minutes Per Reading	5.0				**9.29**	**9.62**		**Gain (grams)**	**348.1**
Minutes Per Point	5.0								

Traverse / Point	Time (min.)	Dry Gas Meter (ft3)	Pitot ^P (in. H2O)	Orifice ^H (in. H2O)	Dry Gas Temperature Inlet (oF)	Dry Gas Temperature Outlet (oF)	Vacuum (in. Hg.)	Stack Temp. (oF)	Wall Dist. (in.)	Isokin. (%)
Traverse 1	0.0	732.669								
1	5.0	736.690	0.35	1.76	79	79	5	310	1.5	104.2
2	10.0	741.080	0.42	2.10	79	79	5	316	4.7	104.3
3	15.0	745.430	0.41	2.05	80	80	5	316	8.4	104.4
4	20.0	749.900	0.43	2.16	81	81	5	314	12.5	104.5
5	25.0	754.320	0.42	2.11	82	82	5	315	17.7	104.4
6	30.0	758.630	0.40	2.01	82	82	5	315	25.2	104.3
7	35.0	762.790	0.37	1.87	83	83	5	313	45.6	104.3
8	40.0	766.660	0.32	1.62	83	83	5	312	53.2	104.2
9	45.0	770.290	0.28	1.42	84	84	5	310	58.3	104.1
10	50.0	773.660	0.24	1.22	86	86	4	312	62.5	104.1
11	55.0	776.670	0.19	0.97	88	88	4	313	66.1	104.1
12	60.0	779.530	0.17	0.87	90	90	4	313	69.4	104.2
Traverse 2	0.0	779.530								
1	5.0	783.260	0.29	1.48	90	90	5	315	1.5	104.3
2	10.0	787.180	0.32	1.63	91	91	5	316	4.7	104.3
3	15.0	791.000	0.30	1.54	92	92	5	315	8.4	104.7
4	20.0	794.740	0.29	1.49	93	93	5	316	12.5	104.1
5	25.0	798.420	0.28	1.44	93	93	5	315	17.7	104.2
6	30.0	802.300	0.31	1.60	94	94	6	314	25.2	104.2
7	35.0	806.930	0.44	2.27	95	95	6	315	45.6	104.4
8	40.0	811.920	0.51	2.63	95	95	6	313	53.2	104.4
9	45.0	817.110	0.55	2.84	96	96	6	314	58.3	104.5
10	50.0	822.060	0.50	2.58	97	97	6	316	62.5	104.5
11	55.0	827.120	0.52	2.69	98	98	6	315	66.1	104.5
12	60.0	832.140	0.51	2.65	98	98	6	313	69.4	104.5
Average:			0.368	1.875	88.7	88.7	5.2	314.0		104.3

Client:	Metro Vancouver	**Date:**	16-Jul-25
Jobsite:	WTE (Burnaby, B.C)	**Run:**	3 - Particulate / Metals
Source:	Unit 2	**Run Time:**	11:40 - 13:42

Concentrations:

Particulate	4.5	mg/dscm	0.0020	gr/dscf
	2.5	mg/Acm	0.0011	gr/Acf
	3.9	mg/dscm (@ 11% O2)	0.0017	gr/dscf (@ 11% O2)

Emission Rates:

Particulate	0.29	Kg/hr	0.647	lb/hr

Flue Gas Characteristics:

Flow	1087	dscm/min	38378	dscf/min
	18.11	dscm/sec	640	dscf/sec
	1977	Acm/min	69821	Acf/min
Velocity	12.937	m/sec	42.44	f/sec
Temperature	156.6	oC	314.0	oF
Moisture	16.0	%		
Gas Analysis	9.5	% O2		
	9.6	% CO2		
	29.912	Mol. Wt (g/gmole) Dry		
	28.004	Mol. Wt (g/gmole) Wet		

Sample Parameters:

Sample Volume	2.6882	dscm	94.932	dscf
Sample Time	120.0	minutes		
Isokineticity	105.3	%		

*** Standard Conditions:** Metric: 20 deg C, 101.325 kPa
Imperial: 68 deg F, 29.92 in.Hg

Client:	Metro Vancouver	**Date:**	16-Jul-25
Jobsite:	WTE (Burnaby, B.C)	**Run:**	3 - Particulate / Metals
Source:	Unit 2	**Run Time:**	11:40 - 13:42

Control Unit (Y)	0.9986	**Collection:**			**Gas Analysis (Vol. %):**			**Condensate Collection:**	
Nozzle Diameter (in.)	0.3137	Filter (grams)	0.01050		CO2	O2		Impinger 1	242.0
Pitot Factor	0.8510	Washings (grams)	0.00160	Traverse 1	9.67	9.40		Impinger 2	98.0
Baro. Press. (in. Hg)	29.85			Traverse 2	9.50	9.50		Impinger 3	26.0
Static Press. (in. H20)	-15.50	**Total (grams)**	**0.0121**					Impinger 4	2.0
Stack Height (ft)	30							Impinger 5	2.0
Stack Diameter (in.)	70.90							Impinger 6	0.0
Stack Area (sq.ft.)	27.417							Gel	14.7
Minutes Per Reading	5.0				**9.59**	**9.45**		**Gain (grams)**	**384.7**
Minutes Per Point	5.0								

Traverse / Point	Time (min.)	Dry Gas Meter (ft3)	Pitot ^P (in. H2O)	Orifice ^H (in. H2O)	Dry Gas Temperature Inlet (oF)	Dry Gas Temperature Outlet (oF)	Vacuum (in. Hg.)	Stack Temp. (oF)	Wall Dist. (in.)	Isokin. (%)
Traverse 1	0.0	833.080								
1	5.0	836.580	0.25	1.29	96	96	4	315	1.5	105.3
2	10.0	840.350	0.29	1.50	96	96	4	315	4.7	105.3
3	15.0	844.250	0.31	1.60	97	97	4	316	8.4	105.3
4	20.0	847.950	0.28	1.45	96	96	4	314	12.5	105.1
5	25.0	851.600	0.27	1.40	97	97	4	313	17.7	105.3
6	30.0	855.430	0.30	1.55	96	96	5	315	25.2	105.2
7	35.0	860.380	0.50	2.58	97	97	5	316	45.6	105.5
8	40.0	865.490	0.53	2.75	98	98	5	314	53.2	105.5
9	45.0	870.790	0.57	2.95	97	97	5	313	58.3	105.7
10	50.0	876.000	0.55	2.85	98	98	5	314	62.5	105.6
11	55.0	881.070	0.52	2.70	98	98	5	314	66.1	105.6
12	60.0	886.030	0.50	2.59	98	98	5	315	69.4	105.4
Traverse 2	0.0	886.030								
1	5.0	890.320	0.37	1.93	99	99	5	311	1.5	105.4
2	10.0	894.720	0.39	2.03	99	99	5	313	4.7	105.4
3	15.0	899.230	0.41	2.13	100	100	5	314	8.4	105.3
4	20.0	903.800	0.42	2.19	100	100	5	313	12.5	105.4
5	25.0	908.320	0.41	2.14	101	101	5	314	17.7	105.3
6	30.0	912.780	0.40	2.08	101	101	5	315	25.2	105.3
7	35.0	916.710	0.31	1.62	101	101	5	314	45.6	105.2
8	40.0	920.310	0.26	1.36	101	101	5	313	53.2	105.1
9	45.0	923.850	0.25	1.31	102	102	5	314	58.3	105.3
10	50.0	927.320	0.24	1.25	102	102	4	314	62.5	105.3
11	55.0	930.490	0.20	1.05	103	103	4	313	66.1	105.1
12	60.0	933.500	0.18	0.94	103	103	4	313	69.4	105.1
Average:			0.363	1.885	99.0	99.0	3.0	314.0		105.3

Client: Metro Vancouver
Jobsite: WTE (Burnaby,B.C)
Source: Unit 2

Sample Type: HF

Parameter		Test 1	Test 2	Test 3
Test Date		16-Jul-25	16-Jul-25	16-Jul-25
Test Time		09:23 - 10:23	10:39 - 11:39	11:55 - 12:55
Test Duration	(min.)	60	60	60
Baro. Press.	(in. Hg)	29.85	29.85	29.85
DGM Factor	(Y)	1.0258	1.0258	1.0258
Initial Reading	(m^3)	172.693	173.089	173.486
Final Reading	(m^3)	173.085	173.483	173.869
Temp. Outlet	(Avg. oF)	82.0	86.0	86.5
Orifice Press.	(ΔH in.H2O)	0.50	0.50	0.50
Gas Volume	(Sm^3)	0.39178	0.39020	0.37925
HF	(mg)	0.053	0.005	0.053
Oxygen	(Vol. %)	9.9	9.6	9.5
HF	**(mg/Sm^3)**	**0.134**	**0.013**	**0.139**
HF	**(mg/Sm^3 @ 11% O2)**	**0.121**	**0.012**	**0.120**
Moisture (isokinetic)	**(Vol. %)**	14.7	15.1	16.0

*Wet Basis Calculated on moisture from isokinetic tests
Tstd. (oF) 68 Pstd. (in. Hg) 29.92

Client: Metro Vancouver
Jobsite: WTE (Burnaby,B.C)
Source: Unit 2

Sample Type: HCl

Parameter		Test 1	Test 2	Test 3
Test Date		16-Jul-25	16-Jul-25	16-Jul-25
Test Time		09:23 - 10:23	10:45 - 11:45	11:55 - 12:55
Test Duration	(min.)	60	60	60
Baro. Press.	(in. Hg)	29.85	29.85	29.85
DGM Factor	(Y)	1.0258	1.0258	1.0258
Initial Reading	(m^3)	172.693	173.089	173.486
Final Reading	(m^3)	173.085	173.483	173.869
Temp. Outlet	(Avg. oF)	82.0	86.0	86.5
Orifice Press.	(ΔH in.H2O)	0.50	0.50	0.50
Gas Volume	(Sm^3)	0.39178	0.39020	0.37925
HCl	(mg)	11.000	8.460	21.896
Oxygen	(Vol. %)	9.9	9.6	9.5
HCl	**(mg/Sm^3)**	**28.1**	**21.7**	**57.7**
HCl	**(mg/Sm^3 @ 11% O2)**	**25.3**	**19.0**	**49.9**
Moisture (isokinetic)	**(Vol. %)**	14.7	15.1	16.0

*Wet Basis Calculated on moisture from isokinetic tests
Tstd. (oF) 68 Pstd. (in. Hg) 29.92

Client: Metro Vancouver
Jobsite: WTE (Burnaby,B.C)
Source: Unit 2

Sample Type: NH_3

Parameter		Test 1	Test 2	Test 3
Test Date		16-Jul-25	16-Jul-25	16-Jul-25
Test Time		09:23 - 10:23	10:39 - 11:39	11:55 - 12:55
Test Duration	(min.)	60	60	60
Baro. Press.	(in. Hg)	29.85	29.85	29.85
DGM Factor	(Y)	1.0017	1.0017	1.0017
Initial Reading	(m^3)	334.126	334.697	335.264
Final Reading	(m^3)	334.691	335.259	335.825
Temp. Outlet	(Avg. oF)	79.5	82.0	86.5
Orifice Press.	(ΔH in.H2O)	0.50	0.50	0.50
Gas Volume	(Sm^3)	0.55278	0.54770	0.54222
NH_3	(mg)	11.2	15.53	8.35
Oxygen	(Vol. %)	9.9	9.6	9.5
NH_3	**(mg/Sm^3)**	**20.2**	**28.4**	**15.4**
NH_3	**(mg/Sm^3 @ 11% O2)**	**18.2**	**24.9**	**13.31**
Moisture (isokinetic)	**(Vol. %)**	14.7	15.1	16.0

*Wet Basis Calculated on moisture from isokinetic tests
Tstd. (oF) 68 Pstd. (in. Hg) 29.92

Client:	Metro Vancouver	**Date:**	16-Jul-25
Jobsite:	WTE (Burnaby, B.C)	**Run:**	1 - Particulate / Metals
Source:	Unit 3	**Run Time:**	09:55 - 11:57

Concentrations:

Particulate	0.36	mg/dscm	0.00016	gr/dscf
	0.20	mg/Acm	0.00009	gr/Acf
	0.29	mg/dscm (@ 11% O2)	0.00013	gr/dscf (@ 11% O2)

Emission Rates:

Particulate	0.023	Kg/hr	0.051	lb/hr

Flue Gas Characteristics:

Flow	1088	dscm/min	38410	dscf/min
	18.13	dscm/sec	640	dscf/sec
	1985	Acm/min	70106	Acf/min
Velocity	12.990	m/sec	42.62	f/sec
Temperature	155.6	oC	312.2	oF
Moisture	15.5	%		
Gas Analysis	8.7	% O2		
	9.6	% CO2		
	29.889	Mol. Wt (g/gmole) Dry		
	28.049	Mol. Wt (g/gmole) Wet		

Sample Parameters:

Sample Volume	2.5174	dscm	88.901	dscf
Sample Time	120.0	minutes		
Isokineticity	105.4	%		

*** Standard Conditions:** Metric: 20 deg C, 101.325 kPa
Imperial: 68 deg F, 29.92 in.Hg

Client:	Metro Vancouver	**Date:**	16-Jul-25
Jobsite:	WTE (Burnaby, B.C)	**Run:**	1 - Particulate / Metals
Source:	Unit 3	**Run Time:**	09:55 - 11:57

Control Unit (Y)	0.9608	**Collection:**			**Gas Analysis (Vol. %):**			**Condensate Collection:**	
Nozzle Diameter (in.)	0.3034	Filter (grams)	0.00060		CO2	O2		Impinger 1	198.0
Pitot Factor	0.8428	Washings (grams)	0.00030	Traverse 1	9.50	8.90		Impinger 2	112.0
Baro. Press. (in. Hg)	29.84			Traverse 2	9.75	8.55		Impinger 3	20.0
Static Press. (in. H20)	-20.00	**Total (grams)**	**0.00090**					Impinger 4	2.0
Stack Height (ft)	30							Impinger 5	2.0
Stack Diameter (in.)	70.90							Impinger 6	0.0
Stack Area (sq.ft.)	27.417							Gel	12.0
Minutes Per Reading	5.0				**9.63**	**8.73**		**Gain (grams)**	**346.0**
Minutes Per Point	5.0								

Traverse / Point	Time (min.)	Dry Gas Meter (ft3)	Pitot ^P (in. H2O)	Orifice ^H (in. H2O)	Dry Gas Temperature Inlet (oF)	Dry Gas Temperature Outlet (oF)	Vacuum (in. Hg.)	Stack Temp. (oF)	Wall Dist. (in.)	Isokin. (%)
Traverse 1	0.0	21.570								
1	5.0	24.800	0.24	1.29	80	80	4	303	1.5	105.2
2	10.0	28.100	0.25	1.34	80	80	4	304	4.7	105.4
3	15.0	31.330	0.24	1.28	81	81	4	308	8.4	105.3
4	20.0	34.690	0.26	1.38	81	81	4	312	12.5	105.6
5	25.0	38.160	0.28	1.48	81	81	4	315	17.7	105.3
6	30.0	41.750	0.30	1.59	83	83	5	316	25.2	105.0
7	35.0	45.990	0.41	2.19	85	85	5	312	45.6	105.5
8	40.0	50.610	0.49	2.61	85	85	5	314	53.2	105.4
9	45.0	55.430	0.53	2.83	87	87	5	312	58.3	105.3
10	50.0	60.400	0.56	3.01	88	88	6	313	62.5	105.5
11	55.0	64.920	0.46	2.48	89	89	6	312	66.1	105.5
12	60.0	69.350	0.44	2.38	90	90	6	310	69.4	105.4
Traverse 2	0.0	69.350								
1	5.0	74.000	0.48	2.61	92	92	6	309	1.5	105.5
2	10.0	78.740	0.50	2.71	92	92	6	311	4.7	105.5
3	15.0	83.620	0.53	2.87	93	93	6	314	8.4	105.6
4	20.0	88.350	0.50	2.70	94	94	6	316	12.5	105.3
5	25.0	92.940	0.47	2.54	94	94	6	317	17.7	105.4
6	30.0	97.400	0.44	2.39	95	95	7	315	25.2	105.5
7	35.0	101.200	0.32	1.74	96	96	7	314	45.6	105.0
8	40.0	104.640	0.26	1.41	97	97	7	316	53.2	105.3
9	45.0	107.950	0.24	1.31	97	97	5	313	58.3	105.2
10	50.0	111.330	0.25	1.36	97	97	5	314	62.5	105.3
11	55.0	114.580	0.23	1.26	98	98	5	312	66.1	105.2
12	60.0	117.690	0.21	1.15	98	98	4	310	69.4	105.2
Average:			0.370	1.996	89.7	89.7	5.3	312.2		105.4

Client:	Metro Vancouver	**Date:**	17-Jul-25
Jobsite:	WTE (Burnaby, B.C)	**Run:**	2 - Particulate / Metals
Source:	Unit 3	**Run Time:**	09:05 - 11:07

Concentrations:

Particulate	0.34	mg/dscm	0.00015	gr/dscf
	0.20	mg/Acm	0.00009	gr/Acf
	0.32	mg/dscm (@ 11% O2)	0.00014	gr/dscf (@ 11% O2)

Emission Rates:

Particulate	0.023	Kg/hr	0.051	lb/hr

Flue Gas Characteristics:

Flow	1118	dscm/min	39497	dscf/min
	18.64	dscm/sec	658	dscf/sec
	1963	Acm/min	69310	Acf/min
Velocity	12.842	m/sec	42.13	f/sec
Temperature	152.9	oC	307.3	oF
Moisture	12.6	%		
Gas Analysis	10.3	% O2		
	9.4	% CO2		
	29.912	Mol. Wt (g/gmole) Dry		
	28.412	Mol. Wt (g/gmole) Wet		

Sample Parameters:

Sample Volume	2.4799	dscm	87.576	dscf
Sample Time	120.0	minutes		
Isokineticity	101.0	%		

*** Standard Conditions:** Metric: 20 deg C, 101.325 kPa
Imperial: 68 deg F, 29.92 in.Hg

Client:	Metro Vancouver	**Date:**	17-Jul-25
Jobsite:	WTE (Burnaby, B.C)	**Run:**	2 - Particulate / Metals
Source:	Unit 3	**Run Time:**	09:05 - 11:07

Control Unit (Y)	0.9608
Nozzle Diameter (in.)	0.3034
Pitot Factor	0.8510
Baro. Press. (in. Hg)	29.82
Static Press. (in. H20)	-20.00
Stack Height (ft)	30
Stack Diameter (in.)	70.90
Stack Area (sq.ft.)	27.417
Minutes Per Reading	5.0
Minutes Per Point	5.0

Collection:	
Filter (grams)	0.00080
Washings (grams)	0.00005
Total (grams)	**0.00085**

Gas Analysis (Vol. %):		
	CO2	O2
Traverse 1	9.75	10.40
Traverse 2	9.00	10.20
	9.38	**10.30**

Condensate Collection:	
Impinger 1	153.0
Impinger 2	91.0
Impinger 3	9.0
Impinger 4	2.0
Impinger 5	0.0
Impinger 6	0.0
Gel	13.0
Gain (grams)	**268.0**

Traverse / Point	Time (min.)	Dry Gas Meter (ft3)	Pitot ^P (in. H2O)	Orifice ^H (in. H2O)	Dry Gas Temperature Inlet (oF)	Dry Gas Temperature Outlet (oF)	Vacuum (in. Hg.)	Stack Temp. (oF)	Wall Dist. (in.)	Isokin. (%)
Traverse 1	0.0	118.100								
1	5.0	121.350	0.25	1.29	74	74	4	308	1.5	101.4
2	10.0	124.700	0.27	1.39	74	74	4	310	4.7	100.7
3	15.0	128.250	0.30	1.55	75	75	4	309	8.4	101.0
4	20.0	131.930	0.32	1.66	76	76	4	307	12.5	101.1
5	25.0	135.420	0.29	1.50	76	76	5	309	17.7	100.8
6	30.0	138.800	0.27	1.40	77	77	5	310	25.2	101.0
7	35.0	143.100	0.44	2.29	78	78	5	308	45.6	100.6
8	40.0	147.810	0.52	2.72	80	80	6	307	53.2	101.0
9	45.0	152.440	0.50	2.61	80	80	6	309	58.3	101.4
10	50.0	157.250	0.54	2.83	81	81	5	306	62.5	101.0
11	55.0	161.650	0.45	2.36	82	82	5	308	66.1	101.1
12	60.0	165.800	0.40	2.11	83	83	5	305	69.4	100.6
Traverse 2	0.0	165.800								
1	5.0	170.200	0.45	2.39	85	85	6	304	1.5	100.2
2	10.0	174.770	0.48	2.54	85	85	6	305	4.7	100.9
3	15.0	179.450	0.50	2.65	86	86	6	307	8.4	101.2
4	20.0	184.250	0.53	2.80	86	86	6	309	12.5	101.0
5	25.0	188.880	0.49	2.59	87	87	7	310	17.7	101.2
6	30.0	193.350	0.45	2.39	89	89	7	308	25.2	101.4
7	35.0	196.980	0.30	1.59	89	89	7	308	45.6	100.6
8	40.0	200.250	0.24	1.28	89	89	7	306	53.2	101.1
9	45.0	203.390	0.22	1.17	89	89	6	305	58.3	101.3
10	50.0	206.350	0.20	1.07	89	89	4	305	62.5	100.2
11	55.0	209.100	0.17	0.90	89	89	4	307	66.1	101.0
12	60.0	211.692	0.15	0.80	90	90	4	304	69.4	101.0
Average:			0.364	1.912	82.9	82.9	5.3	307.3		101.0

Client:	Metro Vancouver	**Date:**	17-Jul-25
Jobsite:	WTE(Burnaby,B.C)	**Run:**	3 - Particulate / Metals
Source:	Unit 3	**Run Time:**	11:32 - 13:33

Concentrations:

Particulate	1.11	mg/dscm	0.00048	gr/dscf
	0.63	mg/Acm	0.00027	gr/Acf
	1.07	mg/dscm (@ 11% O2)	0.00047	gr/dscf (@ 11% O2)

Emission Rates:

Particulate	0.076	Kg/hr	0.167	lb/hr

Flue Gas Characteristics:

Flow	1138	dscm/min	40200	dscf/min
	18.97	dscm/sec	670	dscf/sec
	2015	Acm/min	71151	Acf/min
Velocity	13.183	m/sec	43.25	f/sec
Temperature	155.3	oC	311.5	oF
Moisture	12.9	%		
Gas Analysis	10.6	% O2		
	8.4	% CO2		
	29.773	Mol. Wt (g/gmole) Dry		
	28.259	Mol. Wt (g/gmole) Wet		

Sample Parameters:

Sample Volume	2.5243	dscm	89.146	dscf
Sample Time	120.0	minutes		
Isokineticity	100.9	%		

*** Standard Conditions:** Metric: 20 deg C, 101.325 kPa
Imperial: 68 deg F, 29.92 in.Hg

Client:	Metro Vancouver	**Date:**	17-Jul-25
Jobsite:	WTE(Burnaby,B.C)	**Run:**	3 - Particulate / Metals
Source:	Unit 3	**Run Time:**	11:32 - 13:33

Control Unit (Y)	0.9608	**Collection:**			**Gas Analysis (Vol. %):**			**Condensate Collection:**	
Nozzle Diameter (in.)	0.3034	Filter (grams)	0.00180		CO2	O2		Impinger 1	184.0
Pitot Factor	0.8510	Washings (grams)	0.00100	Traverse 1	8.75	10.55		Impinger 2	74.0
Baro. Press. (in. Hg)	29.82			Traverse 2	8.10	10.70		Impinger 3	4.0
Static Press. (in. H20)	-20.00	**Total (grams)**	**0.00280**					Impinger 4	2.0
Stack Height (ft)	30							Impinger 5	2.0
Stack Diameter (in.)	70.90							Impinger 6	0.0
Stack Area (sq.ft.)	27.417							Gel	13.5
Minutes Per Reading	5.0				**8.43**	**10.63**		**Gain (grams)**	**279.5**
Minutes Per Point	5.0								

Traverse / Point	Time (min.)	Dry Gas Meter (ft3)	Pitot ^P (in. H2O)	Orifice ^H (in. H2O)	Dry Gas Temperature Inlet (oF)	Dry Gas Temperature Outlet (oF)	Vacuum (in. Hg.)	Stack Temp. (oF)	Wall Dist. (in.)	Isokin. (%)
Traverse 1	0.0	212.204								
1	5.0	215.600	0.26	1.38	88	88	4	305	1.5	101.1
2	10.0	219.110	0.28	1.49	88	88	4	307	4.7	100.8
3	15.0	222.750	0.30	1.59	87	87	4	308	8.4	101.3
4	20.0	226.550	0.33	1.74	87	87	5	309	12.5	100.9
5	25.0	230.150	0.30	1.59	88	88	5	310	17.7	100.1
6	30.0	233.650	0.28	1.48	88	88	5	310	25.2	100.7
7	35.0	238.150	0.46	2.44	89	89	6	309	45.6	101.0
8	40.0	242.850	0.50	2.65	89	89	6	311	53.2	101.4
9	45.0	247.690	0.53	2.81	91	91	6	313	58.3	101.2
10	50.0	252.600	0.55	2.92	91	91	7	312	62.5	100.8
11	55.0	257.120	0.46	2.45	92	92	7	310	66.1	101.0
12	60.0	261.350	0.40	2.14	92	92	6	308	69.4	101.2
Traverse 2	0.0	261.350								
1	5.0	266.050	0.50	2.67	93	93	6	310	1.5	100.6
2	10.0	270.900	0.53	2.82	93	93	6	312	4.7	101.0
3	15.0	275.850	0.55	2.92	93	93	6	314	8.4	101.4
4	20.0	280.580	0.50	2.66	94	94	6	314	12.5	101.3
5	25.0	285.200	0.48	2.55	94	94	5	316	17.7	101.1
6	30.0	289.600	0.43	2.29	95	95	5	315	25.2	101.4
7	35.0	293.550	0.35	1.87	95	95	5	313	45.6	100.7
8	40.0	296.950	0.26	1.38	95	95	4	316	53.2	100.6
9	45.0	300.300	0.25	1.33	96	96	4	314	58.3	100.8
10	50.0	303.440	0.22	1.17	96	96	4	317	62.5	100.9
11	55.0	306.350	0.19	1.02	96	96	4	313	66.1	100.3
12	60.0	309.045	0.16	0.86	97	97	4	309	69.4	100.7
Average:			0.378	2.009	92.0	92.0	5.2	311.5		100.9

Client: Metro Vancouver
Jobsite: WTE (Burnaby,B.C)
Source: Unit 3

Sample Type: HF

Parameter		Test 1	Test 2	Test 3
Test Date		17-Jul-25	17-Jul-25	17-Jul-25
Test Time		09:27 - 10:27	10:40 - 11:40	11:51 - 12:51
Test Duration	(min.)	60	60	60
Baro. Press.	(in. Hg)	29.82	29.82	29.82
DGM Factor	(Y)	1.0258	1.0258	1.0258
Initial Reading	(m^3)	173.889	174.281	174.663
Final Reading	(m^3)	174.278	174.661	175.038
Temp. Outlet	(Avg. oF)	79.5	81.0	84.5
Orifice Press.	(ΔH in.H2O)	0.30	0.30	0.30
Gas Volume	(Sm^3)	0.38901	0.37964	0.37144
HF	(mg)	0.051	0.051	0.051
Oxygen	(Vol. %)	8.7	10.3	10.6
HF	**(mg/Sm^3)**	**0.132**	**0.135**	**0.138**
HF	**(mg/Sm^3 @ 11% O2)**	**0.107**	**0.127**	**0.133**
Moisture (isokinetic)	**(Vol. %)**	15.5	12.6	12.9

*Wet Basis Calculated on moisture from isokinetic tests
Tstd. (oF) 68 Pstd. (in. Hg) 29.92

Client: Metro Vancouver
Jobsite: WTE (Burnaby,B.C)
Source: Unit 3

Sample Type: HCl

Parameter		Test 1	Test 2	Test 3
Test Date		17-Jul-25	17-Jul-25	17-Jul-25
Test Time		09:27 - 10:27	10:40 - 11:40	11:51 - 12:51
Test Duration	(min.)	60	60	60
Baro. Press.	(in. Hg)	29.82	29.82	29.82
DGM Factor	(Y)	1.0258	1.0258	1.0258
Initial Reading	(m^3)	173.889	174.281	174.663
Final Reading	(m^3)	174.278	174.661	175.038
Temp. Outlet	(Avg. oF)	79.5	81.0	84.5
Orifice Press.	(ΔH in.H2O)	0.30	0.30	0.30
Gas Volume	(Sm^3)	0.38901	0.37964	0.37144
HCl	(mg)	41.43	41.63	9.15
Oxygen	(Vol. %)	8.7	10.3	10.6
HCl	**(mg/Sm^3)**	**106.5**	**109.7**	**24.6**
HCl	**(mg/Sm^3 @ 11% O2)**	**86.6**	**102.4**	**23.7**
Moisture (isokinetic)	**(Vol. %)**	15.5	12.6	12.9

*Wet Basis Calculated on moisture from isokinetic tests
Tstd. (oF) 68 Pstd. (in. Hg) 29.92

Client: Metro Vancouver
Jobsite: WTE (Burnaby,B.C)
Source: Unit 3

Sample Type: NH_3

Parameter		Test 1	Test 2	Test 3
Test Date		17-Jul-25	17-Jul-25	17-Jul-25
Test Time		09:27 - 10:27	10:40 - 11:40	11:51 - 12:51
Test Duration	(min.)	60	60	60
Baro. Press.	(in. Hg)	29.82	29.82	29.82
DGM Factor	(Y)	1.0017	1.0017	1.0017
Initial Reading	(m^3)	335.832	336.401	336.971
Final Reading	(m^3)	336.395	336.966	337.538
Temp. Outlet	(Avg. oF)	77.5	81.0	84.5
Orifice Press.	(ΔH in.H2O)	0.30	0.30	0.30
Gas Volume	(Sm^3)	0.55274	0.55091	0.54873
NH_3	(mg)	1.60	2.10	3.17
Oxygen	(Vol. %)	8.7	10.3	10.6
NH_3	**(mg/Sm^3)**	**2.90**	**3.82**	**5.78**
NH_3	**(mg/Sm^3 @ 11% O2)**	**2.36**	**3.57**	**5.57**
Moisture (isokinetic)	**(Vol. %)**	15.5	12.6	12.9

*Wet Basis Calculated on moisture from isokinetic tests
Tstd. (oF) 68 Pstd. (in. Hg) 29.92

Client: Metro Vancouver
Jobsite: WTE (Burnaby,B.C)

Parameter: N_2O

Molecular Weight: 44.00 grams/mol
Lab Detection Limit: 0.1 ppm
Reportable Detection Limit: 0.18 mg/Sm^3

Sample ID	Date	Time	N_2O ppm	N_2O mg/Sm^3	N_2O mg/Sm^3 @ 11% O_2
Unit 1 - Run 1	15-Jul-25	09:44 - 10:44	3.70	6.77	6.05
Unit 1 - Run 2	15-Jul-25	10:58 - 11:58	3.80	6.95	6.12
Unit 1 - Run 3	15-Jul-25	12:10 - 13:10	2.80	5.12	4.64
Average					**5.60**
Unit 2 - Run 1	16-Jul-25	09:23 - 10:23	3.40	6.22	5.61
Unit 2 - Run 2	16-Jul-25	10:39 - 11:39	3.40	6.22	5.46
Unit 2 - Run 3	16-Jul-25	11:55 - 12:55	4.10	7.50	6.49
Average					**5.86**
Unit 3 - Run 1	17-Jul-25	09:27 - 10:27	2.90	5.31	4.32
Unit 3 - Run 2	17-Jul-25	10:40 - 11:40	3.00	5.49	5.13
Unit 3 - Run 3	17-Jul-25	11:51 - 12:51	5.00	9.15	8.56
Average					**6.00**

Date:	**15-Jul-25**			**16-Jul-25**			**17-Jul-25**		
	Unit 1			**Unit 2**			**Unit 3**		
	Run 1	Run 2	Run 3	Run 1	Run 2	Run 3	Run 1	Run 2	Run 3
Test Times:	09:44 - 10:44	10:58 - 11:58	12:10 - 11:10	09:23 - 10:23	10:39 - 11:39	11:55 - 12:55	09:27 - 10:27	10:40 - 11:40	11:51 - 12:51
Methane (ppmv)	ND	ND	5.1	ND	ND	ND	ND	3.9	4.0
Ethane (ppmv)	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethene (ppmv)	ND	ND	ND	ND	ND	ND	ND	ND	ND
C3 as Propane (ppmv)	ND	ND	ND	ND	ND	ND	ND	ND	ND
C4 as n-Butane (ppmv)	ND	ND	ND	ND	ND	ND	ND	ND	ND
C5 as n-Pentane (ppmv)	ND	ND	ND	ND	ND	ND	ND	ND	ND
C6 as n-Hexane (ppmv)	ND	ND	ND	ND	ND	ND	ND	ND	ND
C6+ as n-Hexane (ppmv)	ND	ND	ND	ND	ND	ND	ND	ND	ND
Detection Limits:									
Methane	3.4	3.3	3.5	3.3	3.1	3.4	3.4	3.4	3.6
Ethane	1.00	0.98	1.1	1	0.94	1.00	1.00	1	1.10
Ethene	1.00	0.98	1.1	1	0.94	1.00	1.00	1	1.10
C3 as Propane	1.70	1.6	1.8	1.7	1.6	1.70	1.70	1.7	1.8
C4 as n-Butane	1.70	1.6	1.8	1.7	1.6	1.70	1.70	1.7	1.8
C5 as n-Pentane	1.70	1.6	1.8	1.7	1.6	1.70	1.70	1.7	1.8
C6 as n-Hexane	10.00	9.8	11	10	9.4	10.00	10.00	10	11
C6+	1.7	1.6	1.8	1.7	1.6	1.7	1.7	1.7	1.8

Using 1/2 DL Convention

Sample Date:	**15-Jul-25**			**16-Jul-25**			**17-Jul-25**		
	Unit 1			**Unit 2**			**Unit 3**		
	Run 1	Run 2	Run 3	Run 1	Run 2	Run 3	Run 1	Run 2	Run 3
Test Times:	09:44 - 10:44	10:58 - 11:58	12:10 - 11:10	09:23 - 10:23	10:39 - 11:39	11:55 - 12:55	09:27 - 10:27	10:40 - 11:40	11:51 - 12:51
Methane (ppm)	1.70	1.65	5.10	1.65	1.55	1.70	1.70	3.90	4.00
Ethane (ppm)	0.50	0.49	0.55	0.50	0.47	0.50	0.50	0.50	0.55
Ethene (ppm)	0.50	0.49	0.55	0.50	0.47	0.50	0.50	0.50	0.55
C3 as Propane (ppm)	0.85	0.80	0.90	0.85	0.80	0.85	0.85	0.85	0.90
C4 as n-Butane (ppm)	0.85	0.80	0.90	0.85	0.80	0.85	0.85	0.85	0.90
C5 as n-Pentane (ppm)	0.85	0.80	0.90	0.85	0.80	0.85	0.85	0.85	0.90
C6 as n-Hexane (ppm)	5.00	4.90	5.50	5.00	4.70	5.00	5.00	5.00	5.50
C6+ as n-Hexane (ppm)	0.85	0.80	0.90	0.85	0.80	0.85	0.85	0.85	0.90
Methane (mg/m^3 as CH_4)	1.13	1.10	3.40	1.10	1.03	1.13	1.13	2.60	2.67
Ethane (mg/m^3 as CH_4)	0.33	0.33	0.37	0.33	0.31	0.33	0.33	0.33	0.37
Ethene (mg/m^3 as CH_4)	0.33	0.33	0.37	0.33	0.31	0.33	0.33	0.33	0.37
C3 as Propane (mg/m^3 as CH_4)	0.57	0.53	0.60	0.57	0.53	0.57	0.57	0.57	0.60
C4 as n-Butane (mg/m^3 as CH_4)	0.57	0.53	0.60	0.57	0.53	0.57	0.57	0.57	0.60
C5 as n-Pentane (mg/m^3 as CH_4)	0.57	0.53	0.60	0.57	0.53	0.57	0.57	0.57	0.60
C6 as n-Hexane (mg/m^3 as CH_4)	3.34	3.27	3.67	3.34	3.14	3.34	3.34	3.34	3.67
C6+ as n-Hexane (mg/m^3 as CH_4)	0.57	0.53	0.60	0.57	0.53	0.57	0.57	0.57	0.60
Total mg/Sm^3 @11% O_2 as CH_4	5.54	5.28	7.53	5.47	5.27	5.72	5.47	6.34	6.56

All data is corrected to standard conditions (S) of 20 °C, 101.325 kPa (dry) unless otherwise noted.

APPENDIX - E

FIELD DATA SHEETS

A. Lanfranco and Associates Inc.

CLIENT: Veolia - MV WTE	NOZZLE ~~C-3121~~ C-280	DIAMETER, IN. ~~0.3063~~ 0.2800	
SOURCE: Unit 1	PROBE 7C	Cp 0.8510	
PARAMETER / RUN No Metals Run 1	PORT LENGTH		
DATE 14 July 2025	STATIC PRESSURE, IN. H2O	-18.3	
OPERATOR: LA JD	STACK DIAMETER		
CONTROL UNIT ST CAE 1	Y 0.9756	STACK HEIGHT	
	ΔH@ 1.897		
BAROMETRIC PRESSURE, IN. Hg 30.00	INITIAL LEAK TEST 0.001@15"	Upstream Diameters	
ASSUMED MOISTURE, Bw 13.3%	FINAL LEAK TEST 0.001@15"	Downstream Diameters	

IMPINGER VOLUMES	INITIAL (mL)	FINAL (mL)	TOTAL GAIN (mL)
Imp. #1	0	292	292
Imp. #2	100	172	72
Imp. #3	100	106	6
Imp. #4	0	2	2
Imp. #5	100	100	
Imp. #6	100	100	

Point	Clock Time	Dry Gas Meter ft^3	Pitot ΔP IN. H_2O	Orifice ΔH IN. H_2O	Temperature °F Dry Gas Outlet	Stack	Probe	Box	Impinger Exit	Pump Vac. IN. Hg	Fyrites CO_2 Vol. %	O_2 Vol. %	Testa Mins	
	1124	579.971												
1		583.61	0.43	1.72	80	315	255	251	59	4				
2		587.31	0.45	1.78	80	315					10	9.9		
3		591.13	0.48	1.90	80	315	254	252	58	4				
4		595.00	0.49	1.94	80	315								
5		598.90	0.50	1.98	80	316	256	250	57	4				
6		602.92	0.53	2.10	81	316					10	9.9		
7		606.79	0.49	1.94	82	316	255	251	57	4				
8		610.42	0.43	1.70	82	316								
9		614.01	0.42	1.67	82	314	256	250	57	4				
10		617.57	0.41	1.64	83	311					10.2	9.7		
11		621.04	0.39	1.56	83	311	255	250	58	4				
12		624.52	0.39	1.56	84	311								
1		628.12	0.42	1.67	84	315	256	252	58	4				
2		631.85	0.45	1.80	84	314					10.2	9.6		
3		635.66	0.47	1.87	85	316	255	251	59	4				
4		639.55	0.49	1.95	85	316								
5		643.41	0.48	1.91	86	317	255	250	60	4				
6		647.34	0.50	1.99	86	318					9.0	10.5		
7		651.15	0.47	1.87	86	320	254	250	60	4				
8		654.92	0.46	1.83	86	320								
9		658.65	0.45	1.79	86	319	255	249	59	4				
10		662.30	0.43	1.71	87	320					10.5	9.2		
11		665.86	0.41	1.63	87	320	254	250	58	4				
12	1328	669.34	0.39	1.55	87	319								

A. Lanfranco and Associates Inc.

CLIENT: Veolia - MV WTF	NOZZLE C-290 DIAMETER, IN. 0.2900	IMPINGER	INITIAL	FINAL	TOTAL GAIN
SOURCE: Unit 1	PROBE 7C Cp 0.8510	VOLUMES	(mL)	(mL)	(mL)
PARAMETER / RUN No Metals Run 3	PORT LENGTH	Imp. #1	0	177	177
DATE 15 July 2025	STATIC PRESSURE, IN. H2O -17.3	Imp. #2	100	183	83
OPERATOR: LA JD	STACK DIAMETER	Imp. #3	100	112	12
CONTROL UNIT ST CAE 2 Y 0.9758	STACK HEIGHT	Imp. #4	0	2	2
ΔH@ 1.897		Imp. #5	100	100	
BAROMETRIC PRESSURE, IN. Hg 30.03	INITIAL LEAK TEST 0.001@15"	Imp. #6	100	100	
ASSUMED MOISTURE, Bw 13%	FINAL LEAK TEST 0.001@15"	Upstream Diameters			
		Downstream Diameters			
				Testo Mfc	

Point	Clock Time	Dry Gas Meter ft³	Pitot ΔP IN. H_2O	Orifice ΔH IN. H_2O	Temperature °F					Pump Vac. IN. Hg	Fyrites			
					Dry Gas Outlet	Stack	Probe	Box	Impinger Exit		CO_2 Vol. %	O_2 Vol. %		
	0918	670.312												
1		673.78	0.38	1.84	88	311	255	249	61	3				
2		677.41	0.42	1.70	86	315					10	9.5		
3		681.08	0.43	1.73	87	316	254	251	60	3				
4		685.00	0.49	1.97	86	317								
5		689.02	0.52	2.09	86	314	255	250	60	3				
6		692.89	0.48	1.93	86	316					10	10		
7		696.59	0.44	1.77	86	315	255	251	59	3				
8		700.39	0.46	1.86	87	312								
9		704.03	0.42	1.70	87	310	256	250	59	3				
10		707.77	0.43	1.75	88	309					10	10		
11		711.33	0.41	1.67	88	308	255	251	60	3				
12		714.89	0.40	1.63	88	309								
1		718.40	0.39	1.58	88	312	255	250	61	3				
2		722.00	0.41	1.66	89	316					10.5	9.0		
3		725.49	0.39	1.57	88	319	253	251	60	3				
4		728.95	0.38	1.53	89	318								
5		732.49	0.40	1.61	84	321	255	250	59	3				
6		736.03	0.40	1.61	89	321					10	9.5		
7		740.26	0.57	2.29	90	321	254	251	59	3				
8		744.46	0.56	2.26	90	318								
9		748.89	0.62	2.50	91	319	255	250	60	3				
10		753.07	0.55	2.24	91	314					10	9.8		
11		756.98	0.49	1.95	91	315	254	249	61	3				
12	1120	760.77	0.45	1.83	92	314								

A. Lanfranco and Associates Inc.

CLIENT: Veolia - MV WTE	NOZZLE C280 DIAMETER, IN. 0.2800	IMPINGER VOLUMES	INITIAL (mL) / FINAL (mL) / TOTAL GAIN (mL)
SOURCE: Unit 1	PROBE 7C Cp 0.8510	Imp. #1	0 / 195 / 195
PARAMETER / RUN No Metals Run 3	PORT LENGTH	Imp. #2	100 / 184 / 84
DATE 13 July 2025	STATIC PRESSURE, IN. H2O -17.3	Imp. #3	100 / 112 / 12
OPERATOR: LA JD	STACK DIAMETER	Imp. #4	0 / 0 / 0
CONTROL UNIT STCAE 2 Y 0.9758	STACK HEIGHT	Imp. #5	100 / 102 / 2
ΔH@ 1.897		Imp. #6	100 / 102 / 2
BAROMETRIC PRESSURE, IN. Hg 30.03	INITIAL LEAK TEST 0.001@15"	Upstream Diameters	
ASSUMED MOISTURE, Bw 13%	FINAL LEAK TEST 0.001@15"	Downstream Diameters	
		Testo Mini	

Point	Clock Time	Dry Gas Meter ft^3	Pitot ΔP IN. H_2O	Orifice ΔH IN. H_2O	Temperature °F Dry Gas Outlet	Stack	Probe	Box	Impinger Exit	Pump Vac. IN. Hg	Fyrites CO_2 Vol. %	O_2 Vol. %		
	1147	761.198												
1		765.36	0.36	1.46	90	312	254	250	63	4				
2		768.83	0.38	1.54	90	315					10	9.8		
3		772.43	0.41	1.66	90	317	255	251	62	4				
4		775.98	0.40	1.61	90	318								
5		779.48	0.39	1.57	90	319	254	250	61	4				
6		782.89	0.37	1.49	90	320					10	10.1		
7		786.85	0.50	2.01	90	321	253	251	60	4				
8		790.95	0.53	2.15	91	317								
9		795.02	0.52	2.11	91	314	255	250	59	4				
10		799.39	0.60	2.44	92	315					9.5	10.5		
11		803.34	0.49	1.98	93	318	255	251	60	4				
12		807.20	0.47	1.90	92	319								
1		811.14	0.49	1.98	93	322	255	252	61	4				
2		815.16	0.51	2.06	93	323					10	9.8		
3		819.26	0.53	2.14	93	322	255	251	60	4				
4		823.31	0.57	2.30	93	322								
5		827.46	0.49	1.99	94	320	255	250	59	4				
6		831.38	0.48	1.95	94	319					10	10.1		
7		835.22	0.46	1.97	94	318	255	249	59	4				
8		839.19	0.49	2.00	95	317								
9		843.00	0.45	1.83	95	319	256	250	60	4				
10		846.67	0.42	1.71	95	319					10.2	9.6		
11		850.30	0.41	1.67	95	318	256	249	61	4				
12	1349	853.85	0.39	1.59	96	317								

CLIENT: Veolia (MV WTE)	NOZZLE P314 DIAMETER, IN. 0.3137	IMPINGER VOLUMES	INITIAL (mL) / FINAL (mL) / TOTAL GAIN (mL)
SOURCE: Unit #2	PROBE 7A-1 Cp 0.8428	Imp. #1	0 / 158 / 158
PARAMETER / RUN No Metals/Partic Run-1	PORT LENGTH	Imp. #2	100 / 212 / 112
DATE July 15, 2025	STATIC PRESSURE, IN. H2O -19.5"	Imp. #3	100 / 136 / 36
OPERATOR: LF + SV	STACK DIAMETER	Imp. #4	0 / 5 / 5
CONTROL UNIT AV-15 Y 0.9986	STACK HEIGHT	Imp. #5	100 / 107 / 7
ΔH@ 1.517		Imp. #6	100 / 103 / 3
BAROMETRIC PRESSURE, IN. Hg 30.02	INITIAL LEAK TEST 0.001@15"	Upstream Diameters	
ASSUMED MOISTURE, Bw 13%	FINAL LEAK TEST 0.001@15"	Downstream Diameters	
		Testo-2	

Point	Clock Time	Dry Gas Meter ft³	Pitot ΔP IN. H_2O	Orifice ΔH IN. H_2O	Temperature °F Dry Gas Outlet	Stack	Probe	Box	Impinger Exit	Pump Vac. IN. Hg	Fyrites CO_2 Vol. %	O_2 Vol. %		
	10:33	636.151												
1		639.69	0.27	1.35	79	301	249	251	62	4				
2	10	643.25	0.28	1.39	79	304					8.8	10.1		
3		646.69	0.26	1.29	79	307	253	253	62	4				
4	20	650.20	0.27	1.34	79	308								
5		653.83	0.29	1.43	80	310	255	257	61	4				
6	30	657.35	0.27	1.33	80	311								
7		661.84	0.44	2.18	82	310	252	252	62	5				
8	40	666.50	0.48	2.38	83	312					9.5	9.7		
9		671.50	0.54	2.69	84	309	251	257	61	5				
10	50	676.41	0.52	2.59	85	311								
11		681.60	0.58	2.90	86	310	251	256	61	5				
12	60	686.70	0.56	2.81	86	308								
/														
1		690.70	0.34	1.72	88	303	251	258	63	4				
2	70	694.88	0.37	1.87	88	306					9.0	9.4		
3		699.15	0.39	1.96	88	308	252	254	63	5				
4	80	703.65	0.43	2.16	88	309								
5		708.08	0.42	2.11	88	308	254	252	63	5				
6	90	712.15	0.35	1.76	89	310								
7		715.90	0.30	1.51	89	310	253	252	62	4				
8	100	719.47	0.27	1.36	89	308					8.5	10.4		
9		722.90	0.25	1.26	90	307	250	252	63	4				
10	110	726.20	0.23	1.16	90	309								
11		728.88	0.15	0.76	90	307	252	254	61	4				
12	120	731.64	0.16	0.81	90	306								
End	12:35													

A. Lanfranco and Associates Inc.

CLIENT: Vealia - MV · WTE	NOZZLE P314 DIAMETER, IN. 0.3137	IMPINGER VOLUMES	INITIAL (mL) / FINAL (mL) / TOTAL GAIN (mL)
SOURCE: Unit 2	PROBE 7C Cp 0.8516	Imp. #1	0 / 220 / 220
PARAMETER / RUN No Metals Run 2	PORT LENGTH	Imp. #2	100 / 194 / 94
DATE 16 July 2025	STATIC PRESSURE, IN. H2O -15.5	Imp. #3	100 / 112 / 12
OPERATOR: LA JO	STACK DIAMETER	Imp. #4	0 / 2 / 2
CONTROL UNIT A415 Y 0.9986	STACK HEIGHT	Imp. #5	100 / 102 / 2
ΔH@ 1.517		Imp. #6	100 / 102 / 2
BAROMETRIC PRESSURE, IN. Hg 29.85	INITIAL LEAK TEST 0.001@15"	Upstream Diameters	
ASSUMED MOISTURE, Bw 13%	FINAL LEAK TEST 0.001@15"	Downstream Diameters	
			Testo 2

Point	Clock Time	Dry Gas Meter ft³	Pitot ΔP IN. H_2O	Orifice ΔH IN. H_2O	Temperature °F Dry Gas Outlet	Stack	Probe	Box	Impinger Exit	Pump Vac. IN. Hg	Fyrites CO_2 Vol. %	O_2 Vol. %
	0910	732.669										
1		736.69	0.35	1.76	79	310	256	249	63	4.5		
2		741.08	0.42	2.10	79	316					9.0	10.1
3		745.43	0.41	2.05	80	316	257	250	62	5		
4		749.90	0.43	2.16	81	314						
5		754.32	0.42	2.11	82	315	255	252	60	5		
6		758.63	0.40	2.01	82	315					9.5	9.5
7		762.79	0.37	1.87	83	313	254	253	59	5		
8		766.66	0.32	1.62	83	312						
9		770.29	0.28	1.42	84	310	255	252	59	4.5		
10		773.66	0.24	1.22	86	312					9.5	9.5
11		776.67	0.19	0.97	88	313	255	253	58	4		
12		779.53	0.17	0.87	90	313						
1		783.26	0.29	1.48	90	315	255	254	59	4.5		
2		787.18	0.32	1.63	91	316					10.3	8.0
3		791.00	0.30	1.54	92	315	255	250	58	5		
4		794.74	0.29	1.49	93	316						
5		798.42	0.28	1.44	93	315	253	252	57	5		
6		802.30	0.31	1.60	94	314					9.0	10.1
7		806.93	0.44	2.27	95	315	255	231	56	5.5		
8		811.92	0.51	2.63	95	313						
9		817.11	0.55	2.84	96	314	286	251	57	5.5		
10		822.06	0.50	2.58	97	316					8.5	10.5
11		827.12	0.52	2.69	98	315	235	251	58	5.5		
12	1112	832.14	0.51	2.65	98	313						

A. Lanfranco and Associates Inc.

CLIENT: Veolia - MV WTE		NOZZLE P314	DIAMETER, IN. 0.3137	IMPINGER VOLUMES	INITIAL (mL) / FINAL (mL) / TOTAL GAIN (mL)
SOURCE: Unit 2		PROBE 7C	Cp 0.8518	Imp. #1	0 / 242 /
PARAMETER / RUN No Metals Run 3		PORT LENGTH		Imp. #2	100 / 198 /
DATE 16 July 2025		STATIC PRESSURE, IN. H2O	-18.5	Imp. #3	100 / 126 /
OPERATOR: LA JD		STACK DIAMETER		Imp. #4	0 / 2 /
CONTROL UNIT AU15	Y 0.9986	STACK HEIGHT		Imp. #5	100 / 102 /
	ΔH@ 1.817			Imp. #6	100 / 100 /
BAROMETRIC PRESSURE, IN. Hg 29.85		INITIAL LEAK TEST 0.001@15"		Upstream Diameters	
ASSUMED MOISTURE, Bw 13%		FINAL LEAK TEST 0.001@15"		Downstream Diameters	

Testo 2

Point	Clock Time	Dry Gas Meter ft³	Pitot ΔP IN. H_2O	Orifice ΔH IN. H_2O	Temperature °F Dry Gas Outlet	Stack	Probe	Box	Impinger Exit	Pump Vac. IN. Hg	Fyrites CO_2 Vol. %	O_2 Vol. %		
	11:40	833.080												
1		836.58	0.25	1.29	96	315	258	255	62	4				
2		840.35	0.29	1.50	96	315					9.5	9.5		
3		844.25	0.31	1.60	97	316	257	253	61	4				
4		847.93	0.28	1.45	96	314								
5		851.60	0.27	1.40	97	313	255	254	60	4				
6		855.43	0.30	1.55	96	313					9.0	10.2		
7		860.38	0.50	2.58	97	316	255	253	59	5				
8		865.49	0.53	2.75	98	314								
9		870.79	0.57	2.95	97	313	256	254	56	5				
10		876.00	0.55	2.85	98	314					10.5	8.5		
11		881.07	0.52	2.70	98	314	255	252	57	5				
12		886.03	0.50	2.59	98	315								
1		890.32	0.37	1.93	99	311	255	252	58	5				
2		894.72	0.39	2.03	99	313					10.0	9.0		
3		899.23	0.44	2.13	100	314	256	254	60	5				
4		903.80	0.42	2.19	100	313								
5		908.33	0.41	2.14	101	314	255	252	59	5				
6		912.78	0.40	2.08	101	315					9.5	9.5		
7		916.71	0.31	1.62	101	314	254	253	58	5				
8		920.31	0.26	1.36	101	313								
9		923.85	0.25	1.31	102	314	253	252	56	4.5				
10		927.33	0.24	1.25	102	314					9.0	10.0		
11		930.49	0.20	1.05	103	313	255	251	57	4				
12	13:43	933.50	0.18	0.94	103	313								

A. Lanfranco and Associates Inc.

CLIENT: Veolia (MV WTE)	NOZZLE G-304 DIAMETER, IN. 0.3034	IMPINGER VOLUMES	INITIAL (mL) / FINAL (mL) / TOTAL GAIN (mL)
	PROBE 7A-1 Cp 0.8428		
SOURCE: Unit #3		Imp. #1	0 / 198 / 198
PARAMETER / RUN No Metals Partic Run #1	PORT LENGTH	Imp. #2	100 / 212 / 112
DATE July 16, 2025	STATIC PRESSURE, IN. H2O -20"	Imp. #3	100 / 120 / 20
OPERATOR: LF + SV	STACK DIAMETER	Imp. #4	0 / 2 / 2
CONTROL UNIT CAE AL-1 Y 0.9608	STACK HEIGHT	Imp. #5	100 / 102 / 2
ΔH@ 1.862		Imp. #6	100 / 100 / 0
BAROMETRIC PRESSURE, IN. Hg 29.84	INITIAL LEAK TEST 0.000@15"	Upstream Diameters	
ASSUMED MOISTURE, Bw 13%	FINAL LEAK TEST 0.000@15"	Downstream Diameters	
		Testo-4	

Point	Clock Time	Dry Gas Meter ft^3	Pitot ΔP IN. H_2O	Orifice ΔH IN. H_2O	Temperature °F Dry Gas Outlet	Stack	Probe	Box	Impinger Exit	Pump Vac. IN. Hg	Fyrites CO_2 Vol. %	O_2 Vol. %		
	09:55	21.570												
1		24.80	0.24	1.29	80	303	250	250	62	4				
2	10	28.10	0.25	1.34	80	304					10.0	8.8		
3		31.33	0.24	1.28	81	308	255	258	63	4				
4	20	34.69	0.26	1.38	81	312								
5		38.16	0.28	1.48	81	315	256	258	63	4				
6	30	41.75	0.30	1.59	83	316								
7		45.99	0.41	2.19	85	312	255	255	64	5				
8	40	50.61	0.49	2.61	85	314					9.0	9.0		
9		55.43	0.53	2.83	87	315	256	257	64	6				
10	50	60.40	0.56	3.01	88	313								
11		64.92	0.46	2.48	89	312	256	255	63	6				
12	60	69.35	0.44	2.38	90	310								
1		74.00	0.48	2.61	92	309	254	250	61	6				
2	70	78.74	0.50	2.71	92	311					9.5	8.4		
3		83.62	0.53	2.87	93	314	255	253	61	6				
4	80	88.35	0.50	2.70	94	316								
5		92.94	0.47	2.54	94	317	255	255	63	7				
6	90	97.40	0.44	2.39	95	315								
7		101.20	0.32	1.74	96	314	251	255	64	5				
8	100	104.64	0.26	1.41	97	316			~~64~~		10.0	8.7		
9		107.95	0.24	1.31	97	313	258	256	64	5				
10	110	111.33	0.25	1.36	97	314								
11		114.58	0.23	1.26	98	312	256	258	63	4				
12	120	117.691	0.21	1.15	98	310								
End	11:57													

A. Lanfranco and Associates Inc.

CLIENT: Veolia (MV WTE)	NOZZLE G-304 DIAMETER, IN. 0.3034		
SOURCE: Unit 3	PROBE 7C Cp 0.8510		
PARAMETER / RUN No Metals Partic Run #2	PORT LENGTH		
DATE July 17, 2025	STATIC PRESSURE, IN. H2O -20"		
OPERATOR: LF + SV + SD	STACK DIAMETER		
CONTROL UNIT CAE AL-1 Y 0.9608	STACK HEIGHT		
ΔH@ 1.862			
BAROMETRIC PRESSURE, IN. Hg 29.82	INITIAL LEAK TEST 0.000 @ 15"	Upstream Diameters	
ASSUMED MOISTURE, Bw 15%	FINAL LEAK TEST 0.000 @ 15"	Downstream Diameters	

IMPINGER VOLUMES	INITIAL (mL)	FINAL (mL)	TOTAL GAIN (mL)
Imp. #1	0	153	153
Imp. #2	100	191	91
Imp. #3	100	109	9
Imp. #4	0	2	2
Imp. #5	100	100	0
Imp. #6	100	100	0

Tes 10.4

Point	Clock Time	Dry Gas Meter ft³	Pitot ΔP IN. H_2O	Orifice ΔH IN. H_2O	Temperature °F Dry Gas Outlet	Stack	Probe	Box	Impinger Exit	Pump Vac. IN. Hg	Fyrites CO_2 Vol. %	O_2 Vol. %
	09:05	118.100										
1		121.35	0.25	1.29	74	308	256	251	60	4		
2	10	124.70	0.27	1.39	74	310					9.0	10.5
3		128.25	0.30	1.55	75	309	258	252	58	4		
4	20	131.93	0.32	1.66	76	307						
5		135.42	0.29	1.50	76	309	257	257	56	4		
6	30	138.80	0.27	1.40	77	310						
7		143.10	0.44	2.29	78	308	254	256	56	5		
8	40	147.81	0.52	2.72	80	307					8.5	10.3
9		152.44	0.50	2.61	80	309	256	256	56	6		
10	50	157.25	0.54	2.83	81	306						
11		161.65	0.45	2.36	82	308	256	256	60	5		
12	60	165.80	0.40	2.11	83	305						
1		170.20	0.45	2.39	85	304	256	254	59	6		
2	70	174.77	0.48	2.54	85	305					9.0	10.6
3		179.45	0.50	2.65	86	307	258	255	58	7		
4	80	184.25	0.53	2.80	86	309						
5		188.88	0.49	2.59	87	310	254	255	58	7		
6	90	193.35	0.45	2.39	89	308						
7		196.98	0.30	1.59	89	308	255	255	60	6		
8	100	200.25	0.24	1.28	89	306					9.0	9.8
9		203.39	0.22	1.17	89	305	252	254	59	4		
10	110	206.35	0.20	1.07	89	305						
11		209.10	0.17	0.90	89	307	254	255	58	4		
12	120	211.692	0.15	0.80	90	304						
End	11:07											

CLIENT: Veolia (MV WTE)	NOZZLE G-304 DIAMETER, IN. 0.3034	IMPINGER VOLUMES	INITIAL (mL) / FINAL (mL) / TOTAL GAIN (mL)
SOURCE: Unit #3	PROBE 7C Cp 0.8510	Imp. #1	0 / 184 / 184
PARAMETER / RUN No Metals Partic Run#3	PORT LENGTH	Imp. #2	100 / 174 / 74
DATE July 17, 2025	STATIC PRESSURE, IN. H2O -20"	Imp. #3	100 / 104 / 4
OPERATOR: LF + SU + JD	STACK DIAMETER	Imp. #4	0 / 2 / 2
CONTROL UNIT CAEAL-1 Y 0.9608	STACK HEIGHT	Imp. #5	100 / 102 / 2
ΔH@ 1.862		Imp. #6	100 / 100 / 0
BAROMETRIC PRESSURE, IN. Hg 29.82	INITIAL LEAK TEST 0.001 @ 15"	Upstream Diameters	
ASSUMED MOISTURE, Bw 15%	FINAL LEAK TEST 0.001 @ 15"	Downstream Diameters	

Testo-4

Point	Clock Time	Dry Gas Meter ft³	Pitot ΔP IN. H_2O	Orifice ΔH IN. H_2O	Temperature °F Dry Gas Outlet	Stack	Probe	Box	Impinger Exit	Pump Vac. IN. Hg	Fyrites CO_2 Vol. %	O_2 Vol. %		
	11:32	212.204												
1		215.60	0.26	1.38	88	305	251	250	61	4				
2	10	219.11	0.28	1.49	88	307					8.5	10.7		
3		222.75	0.30	1.59	87	308	252	253	61	4				
4	20	226.55	0.33	1.74	87	309								
5		230.15	0.30	1.59	88	310	254	256	60	5				
6	30	233.65	0.28	1.48	88	310								
7		238.15	0.46	2.44	89	309	256	257	59	6				
8	40	242.85	0.50	2.65	89	311					9.0	10.4		
9		247.69	0.53	2.81	91	313	258	256	58	7				
10	50	252.60	0.55	2.92	91	312								
11		257.12	0.46	2.45	92	310	255	255	59	6				
12	60	261.35	0.40	2.14	92	308								
1		266.05	0.50	2.67	93	310	255	253	60	6				
2	70	270.90	0.53	2.82	93	312					8.2	10.3		
3		275.85	0.55	2.92	93	314	250	253	61	6				
4	80	280.58	0.50	2.66	94	314								
5		285.20	0.48	2.55	94	316	251	254	60	5				
6	90	289.60	0.43	2.29	95	315								
7		293.55	0.35	1.87	95	313	252	255	62	5				
8	100	296.95	0.26	1.38	95	316					8.0	11.0		
9		300.30	0.25	1.33	96	314	254	255	62	4				
10	110	303.44	0.22	1.17	96	317								
11		306.35	0.19	1.02	96	313	253	254	61	4				
12	120	309.045	0.16	0.86	97	309								
End	13:33													

Client	MV WTE	Y	LMV-C 1.0258
Source	Unit #1	Cp	
Parameter	HF	Pbar	30.03 Static
Date	15 July 2025	Operator	JD + SV
Stack Dia		Down	Up

Leak Check	Run 1	Run 2	Run 3
Initial	0.0002	0.0001	0.0001
Final	0.0001	0.0001	0.0001

Run No.	Time (hhmm)	DGM Volume (cu ft) / (m^3)	Temp (°F) DGM Outlet	Temp (°F) Stack	Imp. Vol. (mL)	ΔP IN. H_2O R1	ΔP IN. H_2O R2	ΔP IN. H_2O R3
1	0944	171.5701	78					
	1044	171.9390	82					
2	1058	171.9424	81					
	1158	172.3032	84					
3	1210	172.3075	83					
	1310	172.6881	87					

	Run 1	Run 2	Run 3
O_2			
CO_2			

Client	MV WTE	Y	LMV-B 1.0017
Source	Unit #1	Cp	
Parameter	NH_3	Pbar	30.03 Static
Date	~~15~~ 15 July 2025	Operator	JD + SV
Stack Dia		Down	Up

Leak Check	Run 1	Run 2	Run 3
Initial	0.0001	0.0001	0.0001
Final	0.0001	0.0001	0.0001

Run No.	Time (hhmm)	DGM Volume (cu ft) / (m^3)	Temperature (°F) DGM Outlet	Temperature (°F) Stack	Imp. Vol. (mL)	ΔP IN. H_2O R1	ΔP IN. H_2O R2	ΔP IN. H_2O R3
1	0944	332.5635	74					
	1044	332.9284	77					
2	1058	332.9334	76					
	1158	333.5215	82					
3	1210	333.5270	81					
	1310	334.1208	84					

	Run 1	Run 2	Run 3
O_2			
CO_2			

Client	MW WTE	Y	LMU-C 1-0258		
Source	Unit #2	Cp			
Parameter	HF	Pbar	29.85	Static	
Date	16 July 2025	Operator	JD + SV		
Stack Dia		Down		Up	

Leak Check	Run 1	Run 2	Run 3
Initial	0.0001	0.0001	0.0001
Final	0.0001	0.0001	0.0001

Run No.	Time (hhmm)	DGM Volume (cu ft) / (m^3)	Temp (°F) DGM Outlet	Temp (°F) Stack	Imp. Vol. (mL)	ΔP IN. H_2O R1	ΔP IN. H_2O R2	ΔP IN. H_2O R3
1	0923	172.6928	79					
	1023	173.0853	85					
2	1039	173.0890	82					
	1139	173.4878	90					
3	1155	173.4861	85					
	1255	173.8692	88					

	Run 1	Run 2	Run 3
O_2			
CO_2			

Client	MW WTE	Y	LMU-B 1-0017		
Source	Unit #2	Cp			
Parameter	NH_3	Pbar	29.85	Static	
Date	16 July 2025	Operator	JD + SV		
Stack Dia		Down		Up	

Leak Check	Run 1	Run 2	Run 3
Initial	0.0001	0.0001	0.0001
Final	0.0001	0.0001	0.0001

Run No.	Time (hhmm)	DGM Volume (cu ft) / (m^3)	Temperature (°F) DGM Outlet	Temperature (°F) Stack	Imp. Vol. (mL)	ΔP IN. H_2O R1	ΔP IN. H_2O R2	ΔP IN. H_2O R3
1	0923	334.1261	78					
	1023	334.6906	81					
2	1039	334.6970	80					
	1139	335.2589	84					
3	1155	335.2659	86					
	1255	335.8248	87					

	Run 1	Run 2	Run 3
O_2			
CO_2			

Client	MW WTE	Y	LMU-C 1.0258
Source	Unit #3	Cp	
Parameter	HF	Pbar	29.82 Static
Date	17 July 2025	Operator	JD +SV
Stack Dia		Down	Up

Leak Check	Run 1	Run 2	Run 3
Initial	0.0001	0.0001	0.0001
Final	0.0001	0.0001	0.0001

Run No.	Time (hhmm)	DGM Volume (cu ft) / (m^3)	Temp (°F) DGM Outlet	Temp (°F) Stack	Imp. Vol. (mL)	ΔP IN. H_2O R1	ΔP IN. H_2O R2	ΔP IN. H_2O R3
1	0927	173.8893	75					
	1027	174.2778	84					
2	1040	174.2808	82					
	1140	174.6610	88					
3	1151	174.6634	86					
	1251	175.0378	88					

	Run 1	Run 2	Run 3
O_2			
CO_2			

Client	MW WTE	Y	LMU-B 1.0017
Source	Unit #3	Cp	
Parameter	NH_3	Pbar	29.82 Static
Date	17 July 2025	Operator	JD +SV
Stack Dia		Down	Up

Leak Check	Run 1	Run 2	Run 3
Initial	0.0001	0.0001	0.0001
Final	0.0001	0.0001	0.0001

Run No.	Time (hhmm)	DGM Volume (cu ft) / (m^3)	Temperature (°F) DGM Outlet	Temperature (°F) Stack	Imp. Vol. (mL)	ΔP IN. H_2O R1	ΔP IN. H_2O R2	ΔP IN. H_2O R3
1	0927	335.8317	74					
	1027	336.3949	81					
2	1040	336.4006	79					
	1140	336.9656	83					
3	1151	336.9713	83					
	1251	337.5377	86					

	Run 1	Run 2	Run 3
O_2			
CO_2			

Canister sampling sheet

Client MV WTE Test Date 15 July 2025
File No. ~~Unit #1~~ Recovery Date

Source: Unit #1

		R1	R2	R3		15 July 2025	
Pbar in hg		30.03	30.03	30.03			
Canister number		SC02321	SC02325	SC02322			
Controller number		OA00759	OA00759	OA00759			
Initial:	Start time	0944	1058	1210			
	Flask Vac. (in Hg)	-30	-30	-30			
Final:	Finish time	1044	1158	1310			
	Flask Vac. (in Hg)	-12	-8	-8			

Source: Unit #2

		R1	R2	R3		16 July 2025	
Pbar in hg		29.85	29.85	29.85			
Canister number		SC02061	SC00778	SC00844			
Controller number		OA02283	OA02283	OA02283			
Initial:	Start time	0923	1039	1155			
	Flask Vac. (in Hg)	-30	-30	-30			
Final:	End time	1023	1139	1255			
	Flask Vac. (in Hg)	-7	-4	~~1255~~ -8			

Source: Unit #3

		R1	R2	R3		17 July 2025	
Pbar in hg		29.82	29.82	29.82			
Canister number		SC00314	SC01006	SC00306			
Controller number		OA01889	OA01889	OA01889			
Initial:	Start time	0927	1040	1151			
	Flask Vac. (in Hg)	-30	-30	-30			
Final:	End time	1027	1140	1251			
	Flask Vac. (in Hg)	-8	-9	-10			

Source:

Pbar in hg							
Canister number							
Controller number							
Initial:	Start time						
	Flask Vac. (in Hg)						
Final:	End time						
	Flask Vac. (in Hg)						

APPENDIX – F

CALIBRATION SHEETS and

TECHNICIAN CERTIFICATES

A. LANFRANCO and ASSOCIATES INC.

ENVIRONMENTAL CONSULTANTS

GLASS NOZZLE DIAMETER CALIBRATION FORM

Calibrated by: Christian De La O
Date: 24-Jun-25

Signature: 

Nozzle I.D.	d1	d2	d3	difference	average dia.	average area
	(inch)	(inch)	(inch)	(inch)	(inch)	(ft^2)
A	0.1270	0.1270	0.1255	0.0015	0.1265	0.0000873
G-165	0.1650	0.1660	0.1645	0.0015	0.1652	0.0001488
G-170	0.1700	0.1710	0.1695	0.0015	0.1702	0.0001579
G-178	0.1760	0.1770	0.1790	0.0030	0.1773	0.0001715
J	0.1881	0.1884	0.1874	0.0010	0.1880	0.0001927
E	0.1950	0.1930	0.1960	0.0030	0.1947	0.0002067
Q	0.2030	0.2040	0.2050	0.0020	0.2040	0.0002270
L	0.2100	0.2070	0.2090	0.0030	0.2087	0.0002375
P-2240	0.2160	0.2155	0.2170	0.0015	0.2162	0.0002549
P-224	0.2160	0.2170	0.2150	0.0020	0.2160	0.0002545
G-221	0.2160	0.2185	0.2190	0.0030	0.2178	0.0002588
G-2232	0.2210	0.2200	0.2215	0.0015	0.2208	0.0002660
P-223	0.2297	0.2296	0.2298	0.0002	0.2297	0.0002878
C-250	0.2500	0.2500	0.2500	0.0000	0.2500	0.0003409
P-250	0.2500	0.2495	0.2505	0.0010	0.2500	0.0003409
P-254	0.2535	0.2535	0.2530	0.0005	0.2533	0.0003500
P-256	0.2520	0.2510	0.2515	0.0010	0.2515	0.0003450
C-280	0.2800	0.2800	0.2800	0.0000	0.2800	0.0004276
C-281	0.2800	0.2820	0.2780	0.0040	0.2800	0.0004276
P-281	0.2820	0.2820	0.2815	0.0005	0.2818	0.0004332
C-282	0.2800	0.2800	0.2800	0.0000	0.2800	0.0004276
C-283	0.2800	0.2800	0.2800	0.0000	0.2800	0.0004276
G-2825	0.2825	0.2820	0.2825	0.0005	0.2823	0.0004348
G-304	0.3038	0.3028	0.3035	0.0010	0.3034	0.0005020
G-3121	0.3055	0.3063	0.3070	0.0015	0.3063	0.0005116
P-307	0.3070	0.3065	0.3075	0.0010	0.3070	0.0005140
G-3092	0.3100	0.3085	0.3090	0.0015	0.3092	0.0005213
P-31	0.3120	0.312	0.3120	0.0000	0.3120	0.0005309
P-311	0.3105	0.3115	0.3110	0.0010	0.3110	0.0005275
P-312	0.3120	0.312	0.3120	0.0000	0.3120	0.0005309
P-314	0.3135	0.3135	0.3140	0.0005	0.3137	0.0005366
P-315	0.3145	0.3145	0.3145	0.0000	0.3145	0.0005395
V-06	0.3210	0.3200	0.3200	0.0010	0.3203	0.0005597
P-34	0.3430	0.3430	0.3430	0.0000	0.3430	0.0006417
343-GS	0.3430	0.3430	0.3430	0.0000	0.3430	0.0006417
P-343	0.3425	0.3420	0.3425	0.0005	0.3423	0.0006392
G-345	0.3470	0.3475	0.3475	0.0005	0.3473	0.0006580
G-349	0.3655	0.3659	0.3665	0.0010	0.3660	0.0007305
G-367	0.3680	0.3660	0.3658	0.0022	0.3666	0.0007330
G-372	0.3669	0.3700	0.3668	0.0032	0.3679	0.0007382
P-375	0.3705	0.3710	0.3709	0.0005	0.3708	0.0007499
C-3751	0.3675	0.3672	0.3673	0.0003	0.3673	0.0007359
P-38	0.3750	0.3750	0.3750	0.0000	0.3750	0.0007670
P-381	0.3800	0.3800	0.3800	0.0000	0.3800	0.0007876
P-401	0.3980	0.3990	0.4000	0.0020	0.3990	0.0008683
P-405	0.4047	0.4055	0.4056	0.0009	0.4053	0.0008958
P-407	0.4065	0.4070	0.4072	0.0007	0.4069	0.0009030
P-406	0.4058	0.4062	0.4060	0.0004	0.4060	0.0008990
P-41	0.4060	0.4060	0.4060	0.0000	0.4060	0.0008990
G-433	0.4360	0.4360	0.4355	0.0005	0.4358	0.0010360
P-47	0.4680	0.4680	0.4680	0.0000	0.4680	0.0011946
P-29	0.4681	0.4683	0.4685	0.0004	0.4683	0.0011961
G-468	0.4700	0.4685	0.4720	0.0035	0.4702	0.0012057
P-7	0.4965	0.4945	0.4975	0.0030	0.4962	0.0013427
G-540	0.5400	0.5410	0.5400	0.0010	0.5403	0.0015924

(a) D1, D2, D3 = three different nozzle diameters; each diameter must be measured to within (0.025mm) 0.001 in.

(b) Difference = maximum difference between any two diameters; must be less than or equal to (0.1mm) 0.004 in.

(c) Average = average of D1, D2 and D3

Pitot Tube Calibration

Date: 02-Jul-25
Pbar (in.Hg): 29.94

Temp (R): 539
Dn (in.): 0.25

Pitot ID: **7A-1**

Reference Pitot (in H2O)	S-Type Pitot (in H2O)	Air Velocity (ft/s)	Pitot Coeff. Cp	Deviation (absolute)
0.025	0.035	10.6	0.8367	0.0061
0.140	0.195	25.0	0.8388	0.0040
0.225	0.310	31.7	0.8434	0.0006
0.510	0.695	47.7	0.8481	0.0052
0.820	1.120	60.4	0.8471	0.0043
		Average :	0.8428	0.0040

Pitot ID: **ST 8A**

Reference Pitot (in H2O)	S-Type Pitot (in H2O)	Air Velocity (ft/s)	Pitot Coeff. Cp	Deviation (absolute)
0.220	0.300	31.3	0.8478	0.0128
0.340	0.480	38.9	0.8332	0.0018
0.430	0.610	43.8	0.8312	0.0038
0.520	0.740	48.1	0.8299	0.0051
0.630	0.890	53.0	0.8329	0.0021
		Average :	0.8350	0.0051

Pitot ID: **7B**

Reference Pitot (in H2O)	S-Type Pitot (in H2O)	Air Velocity (ft/s)	Pitot Coeff. Cp	Deviation (absolute)
0.050	0.070	14.9	0.8367	0.0020
0.150	0.205	25.8	0.8468	0.0082
0.260	0.360	34.0	0.8413	0.0027
0.420	0.595	43.3	0.8318	0.0069
0.750	1.050	57.8	0.8367	0.0020
		Average :	0.8387	0.0043

Pitot ID: **ST 8B**

Reference Pitot (in H2O)	S-Type Pitot (in H2O)	Air Velocity (ft/s)	Pitot Coeff. Cp	Deviation (absolute)
0.050	0.070	14.9	0.8367	0.0091
0.175	0.240	27.9	0.8454	0.0005
0.330	0.450	38.3	0.8478	0.0019
0.560	0.760	49.9	0.8498	0.0040
0.810	1.100	60.1	0.8495	0.0037
		Average :	0.8458	0.0038

Pitot ID: **7 AL GVRD-1**

Reference Pitot (in H2O)	S-Type Pitot (in H2O)	Air Velocity (ft/s)	Pitot Coeff. Cp	Deviation (absolute)
0.060	0.080	16.3	0.8574	0.0006
0.175	0.235	19.9	0.8543	0.0025
0.320	0.430	25.3	0.8540	0.0028
0.505	0.670	35.8	0.8595	0.0027
0.790	1.050	48.4	0.8587	0.0019
		Average :	0.8568	0.0021

Pitot ID: **ST 8C**

Reference Pitot (in H2O)	S-Type Pitot (in H2O)	Air Velocity (ft/s)	Pitot Coeff. Cp	Deviation (absolute)
0.030	0.040	14.9	0.8574	0.0093
0.160	0.220	19.4	0.8443	0.0038
0.255	0.360	29.0	0.8332	0.0149
0.580	0.790	43.1	0.8483	0.0002
0.900	1.200	52.8	0.8574	0.0093
		Average :	0.8481	0.0075

Pitot ID: **7C**

Reference Pitot (in H2O)	S-Type Pitot (in H2O)	Air Velocity (ft/s)	Pitot Coeff. Cp	Deviation (absolute)
0.025	0.035	10.6	0.8367	0.0143
0.140	0.190	16.3	0.8498	0.0012
0.255	0.345	33.7	0.8511	0.0001
0.425	0.565	30.5	0.8586	0.0076
0.700	0.930	47.0	0.8589	0.0079
		Average :	0.8510	0.0062

Pitot ID:

Reference Pitot (in H2O)	S-Type Pitot (in H2O)	Air Velocity (ft/s)	Pitot Coeff. Cp	Deviation (absolute)
		Average :		

* Average absolute deviation must not exceed 0.01.

Calibrated by: Jack Dennis Signature:  Date: July 2, 2024

A.Lanfranco & Associates inc.

EPA Method 5

Meter Box Calibration

English Meter Box Units, English K' Factor

Model #: AU 15
Serial #: 0028SPC-081915-1

Date: 02-Jul-25
Barometric Pressure: 29.84 (in. Hg)
Theoretical Critical Vacuum: 14.08 (in. Hg)

!!!!!!!!!
IMPORTANT For valid test results, the Actual Vacuum should be 1 to 2 in. Hg greater than the Theoretical Critical Vacuum shown above.
IMPORTANT The Critical Orifice Coefficient, K', must be entered in English units, (ft)^3*(deg R)^0.5/((in.Hg)*(min)).
!!!!!!!!!

---------- DRY GAS METER READINGS ----------									-CRITICAL ORIFICE READINGS-					
		Volume	Volume	Volume	Initial Temps.		Final Temps.		Orifice	K' Orifice	Actual	-- Ambient Temperature --		
dH (in H2O)	Time (min)	Initial (cu ft)	Final (cu ft)	Total (cu ft)	Inlet (deg F)	Outlet (deg F)	Inlet (deg F)	Outlet (deg F)	Serial# (number)	Coefficient (see above)	Vacuum (in Hg)	Initial (deg F)	Final (deg F)	Average (deg F)
3.30	20.00	428.332	449.940	21.608	77.0	77.0	80.0	80.0	73	0.8185	17.0	73.0	75.0	74.0
1.70	16.00	415.837	428.332	12.495	76.0	76.0	77.0	77.0	63	0.5956	20.0	74.0	73.0	73.5
1.00	18.00	393.355	404.309	10.954	74.0	74.0	74.0	74.0	55	0.4606	22.0	71.0	71.0	71.0
0.51	25.00	404.329	415.837	11.508	74.0	74.0	76.0	76.0	48	0.3560	23.0	71.0	74.0	72.5
0.26	17.00	387.945	393.355	5.410	73.0	73.0	74.0	74.0	40	0.2408	24.0	70.0	71.0	70.5

********** RESULTS **********

--- DRY GAS METER ---		--------- ORIFICE ---------			-- DRY GAS METER --		--------- ORIFICE ---------			
					CALIBRATION FACTOR Y		CALIBRATION FACTOR dH@			
VOLUME CORRECTED Vm(std) (cu ft)	VOLUME CORRECTED Vm(std) (liters)	VOLUME CORRECTED Vcr(std) (cu ft)	VOLUME CORRECTED Vcr(std) (liters)	VOLUME NOMINAL Vcr (cu ft)	Value (number)	Variation (number)	Value (in H2O)	Value (mm H2O)	Variation (in H2O)	Ko (value)
21.293	603.0	21.139	598.6	21.445	0.993	-0.006	1.625	41.27	0.108	0.755
12.311	348.6	12.311	348.7	12.478	1.000	0.002	1.585	40.26	0.068	0.761
10.824	306.5	10.736	304.0	10.830	0.992	-0.007	1.559	39.60	0.042	0.774
11.337	321.1	11.509	325.9	11.643	1.015	0.017	1.332	33.84	-0.185	0.818
5.341	151.3	5.303	150.2	5.345	0.993	-0.006	1.483	37.67	-0.034	0.793
				Average Y---------->	**0.9986**		**Average dH@----->**	**1.517**	**38.5**	**Average Ko----->**	**0.780**

TEMPERATURE CALIBRATION

Calibration Standard -------> Omega Model CL23A S/N:T-218768

Reference	Temperature Device Reading									
Set-Point	Stack		Hot Box		Probe		Imp Out		Aux	
(deg F)	(deg F)	(% diff)	(deg F)	(% diff)	(deg F)	(% diff)	(deg F)	(% diff)	(deg F)	(% diff)
32	32	0.00%	31	-0.20%	32	0.00%	32	0.00%	31	-0.20%
100	100	0.00%	99	-0.18%	99	-0.18%	100	0.00%	99	-0.18%
300	299	-0.13%	298	-0.26%	298	-0.26%	299	-0.13%	299	-0.13%
500	499	-0.10%	498	-0.21%	498	-0.21%	498	-0.21%	498	-0.21%
1000	998	-0.14%	998	-0.14%	998	-0.14%	998	-0.14%	998	-0.14%

Note: For Calibration Factor Y, the ratio of the reading of the calibration meter to the dry gas meter, acceptable tolerance of individual values from the average is +-0.02.
For Orifice Calibration Factor dH@, the orifice differential pressure in inches of H20 that equates to 0.75 cfm of air at 68 F and 29.92 inches of Hg, acceptable tolerance of individual values from the average is +-0.2.
For Temperature Devicee, the reading must be within 1.5% of certified calibration standard (absolute temperature) to be acceptable.

Calibrated by: Justin Ching Signature: _____ Date: July 2, 2025

A.Lanfranco & Associates inc.

EPA Method 5

Meter Box Calibration

English Meter Box Units, English K' Factor

Model #: ST CAE2
Serial #: 0028-072911-1

Date: 2-Jul-25
Barometric Pressure: 29.84 (in. Hg)
Theoretical Critical Vacuum: 14.08 (in. Hg)

!!!!!!!!!
IMPORTANT For valid test results, the Actual Vacuum should be 1 to 2 in. Hg greater than the Theoretical Critical Vacuum shown above.
IMPORTANT The Critical Orifice Coefficient, K', must be entered in English units, (ft)^3*(deg R)^0.5/((in.Hg)*(min)).
!!!!!!!!!

---------- DRY GAS METER READINGS ----------

dH (in H2O)	Time (min)	Volume Initial (cu ft)	Volume Final (cu ft)	Volume Total (cu ft)	Initial Temps. Inlet (deg F)	Initial Temps. Outlet (deg F)	Final Temps. Inlet (deg F)	Final Temps. Outlet (deg F)
3.85	18.00	475.662	495.617	19.955	74.0	74.0	74.0	74.0
2.00	18.00	523.907	538.242	14.335	76.0	76.0	78.0	78.0
1.20	25.00	500.816	516.370	15.554	75.0	75.0	76.0	76.0
0.71	16.00	516.370	523.907	7.537	76.0	76.0	76.0	76.0
0.35	16.00	495.617	500.816	5.199	74.0	74.0	75.0	75.0

-CRITICAL ORIFICE READINGS-

Orifice Serial# (number)	K' Orifice Coefficient (see above)	Actual Vacuum (in Hg)	-- Ambient Temperature -- Initial (deg F)	Final (deg F)	Average (deg F)
73	0.8185	16.0	70.0	71.0	70.5
63	0.5956	17.0	75.0	75.0	75.0
55	0.4606	19.0	70.0	74.0	72.0
48	0.3560	51.0	74.0	73.0	73.5
40	0.2408	22.0	71.0	70.0	70.5

********** **RESULTS** **********

--- DRY GAS METER --- VOLUME CORRECTED Vm(std) (cu ft)	VOLUME CORRECTED Vm(std) (liters)	--------- ORIFICE --------- VOLUME CORRECTED Vcr(std) (cu ft)	VOLUME CORRECTED Vcr(std) (liters)	VOLUME NOMINAL Vcr (cu ft)	-- DRY GAS METER -- CALIBRATION FACTOR Y Value (number)	CALIBRATION FACTOR Y Variation (number)	--------- ORIFICE --------- CALIBRATION FACTOR dH@ Value (in H2O)	CALIBRATION FACTOR dH@ Value (mm H2O)	CALIBRATION FACTOR dH@ Variation (in H2O)	Ko (value)
19.857	562.3	19.087	540.6	19.237	0.961	-0.014	1.899	48.24	0.002	0.705
14.121	399.9	13.831	391.7	14.057	0.979	0.004	1.868	47.46	-0.028	0.699
15.334	434.3	14.897	421.9	15.056	0.972	-0.004	1.869	47.48	-0.028	0.705
7.415	210.0	7.359	208.4	7.458	0.992	0.017	1.855	47.11	-0.042	0.693
5.124	145.1	4.992	141.4	5.031	0.974	-0.002	1.993	50.62	0.096	0.682
				Average Y---------->	**0.9758**	**Average dH@----->**	**1.897**	**48.2**	**Average Ko----->**	**0.697**

TEMPERATURE CALIBRATION

Calibration Standard -------> Omega Model CL23A S/N:T-218768

Reference Set-Point (deg F)	Temperature Device Reading Stack (deg F)	Stack (% diff)	Hot Box (deg F)	Hot Box (% diff)	Probe (deg F)	Probe (% diff)	Imp Out (deg F)	Imp Out (% diff)	Aux (deg F)	Aux (% diff)
32	32	0.00%	32	0.00%	31	-0.20%	31	-0.20%	32	0.00%
100	100	0.00%	99	-0.18%	99	-0.18%	99	-0.18%	99	-0.18%
300	300	0.00%	299	-0.13%	298	-0.26%	299	-0.13%	299	-0.13%
500	499	-0.10%	498	-0.21%	498	-0.21%	499	-0.10%	498	-0.21%
1000	999	-0.07%	998	-0.14%	998	-0.14%	999	-0.07%	998	-0.14%

Note: For Calibration Factor Y, the ratio of the reading of the calibration meter to the dry gas meter, acceptable tolerance of individual values from the average is +-0.02.
For Orifice Calibration Factor dH@, the orifice differential pressure in inches of H20 that equates to 0.75 cfm of air at 68 F and 29.92 inches of Hg, acceptable tolerance of individual values from the average is +-0.2.
For Temperature Devicee, the reading must be within 1.5% of certified calibration standard (absolute temperature) to be acceptable.

Calibrated by: Justin Ching Signature: _____ Date: July 2, 2025

A. Lanfranco & Associates inc.

EPA Method 5

Meter Box Calibration

English Meter Box Units, English K' Factor

Model #: LMU-B

Serial #: Wizit 6276

Date: 02-Jul-25

Barometric Pressure: 29.84 (in. Hg)

Theoretical Critical Vacuum: 14.08 (in. Hg)

!!!!!!!!!
IMPORTANT For valid test results, the Actual Vacuum should be 1 to 2 in. Hg greater than the Theoretical Critical Vacuum shown above.
IMPORTANT The Critical Orifice Coefficient, K', must be entered in English units, (ft)^3*(deg R)^0.5/((in.Hg)*(min)).
!!!!!!!!!

---------- DRY GAS METER READINGS ----------

dH (in H2O)	Time (min)	Volume Initial (m^3)	Volume Final (m^3)	Volume Total (cu ft)	Initial Temps. Inlet (deg F)	Initial Temps. Outlet (deg F)	Final Temps. Inlet (deg F)	Final Temps. Outlet (deg F)
0.00	51.00	328.8270	329.4918	23.477	74.0	74.0	74.0	74.0
0.00	26.00	329.4918	329.8348	12.113	74.0	74.0	76.0	76.0
0.00	31.00	329.8348	330.2437	14.440	76.0	76.0	77.0	77.0

-CRITICAL ORIFICE READINGS-

Orifice Serial# (number)	K' Orifice Coefficient (see above)	Actual Vacuum (in Hg)	-- Ambient Temperature -- Initial (deg F)	Final (deg F)	Average (deg F)
48	0.3560	20.0	72.0	81.0	76.5
48	0.3560	20.0	81.0	82.0	81.5
48	0.3560	20.0	82.0	82.0	82.0

********** **RESULTS** **********

--- DRY GAS METER ---

VOLUME CORRECTED Vm(std) (cu ft)	VOLUME CORRECTED Vm(std) (liters)
23.142	655.4
11.918	337.5
14.168	401.2

--------- ORIFICE ---------

VOLUME CORRECTED Vcr(std) (cu ft)	VOLUME CORRECTED Vcr(std) (liters)	VOLUME NOMINAL Vcr (cu ft)
23.390	662.4	23.840
11.869	336.1	12.210
14.145	400.6	14.565

-- DRY GAS METER --

CALIBRATION FACTOR Y Value (number)	Variation (number)
1.011	0.009
0.996	-0.006
0.998	-0.003

--------- ORIFICE ---------

CALIBRATION FACTOR dH@ Value (in H2O)	Value (mm H2O)	Variation (in H2O)
0.000	0.00	0.000
0.000	0.00	0.000
0.000	0.00	0.000

Average Y---------> 1.0017 **Average dH@-----> 0.0000 0.00**

Note: For Calibration Factor Y, the ratio of the reading of the calibration meter to the dry gas meter, acceptable tolerance of individual values from the average is +-0.02.
For Orifice Calibration Factor dH@, the orifice differential pressure in inches of H20 that equates to 0.75 cfm of air at 68 F and 29.92 inches of Hg, acceptable tolerance of individual values from the average is +-0.2.
For Temperature Devicee, the reading must be within 1.5% of certified calibration standard (absolute temperature) to be acceptable.

Calibrated by: Justin Ching Signature:  Date: July 2, 2025

A. Lanfranco & Associates Inc.

EPA Method 5

Meter Box Calibration

English Meter Box Units, English K' Factor

Model #: LMU-C

Serial #: Wizit 4615

Date: 02-Jul-25

Barometric Pressure: 29.84 (in. Hg)

Theoretical Critical Vacuum: 14.08 (in. Hg)

!!!!!!!!!
IMPORTANT For valid test results, the Actual Vacuum should be 1 to 2 in. Hg greater than the Theoretical Critical Vacuum shown above.
IMPORTANT The Critical Orifice Coefficient, K', must be entered in English units, (ft)^3*(deg R)^0.5/((in.Hg)*(min)).
!!!!!!!!!

---------- DRY GAS METER READINGS ----------

dH (in H2O)	Time (min)	Volume Initial (m^3)	Volume Final (m^3)	Volume Total (cu ft)	Initial Temps. Inlet (deg F)	Initial Temps. Outlet (deg F)	Final Temps. Inlet (deg F)	Final Temps. Outlet (deg F)
0.00	16.00	169.472	169.677	7.264	76.0	76.0	81.0	81.0
0.00	25.00	169.677	170.002	11.467	81.0	81.0	86.0	86.0
0.00	17.00	170.002	170.224	7.836	86.0	86.0	87.0	87.0

-CRITICAL ORIFICE READINGS-

Orifice Serial# (number)	K' Orifice Coefficient (see above)	Actual Vacuum (in Hg)	-- Ambient Temperature -- Initial (deg F)	Final (deg F)	Average (deg F)
48	0.3560	20.0	78.0	83.0	80.5
48	0.3560	20.0	83.0	86.0	84.5
48	0.3560	20.0	86.0	88.0	87.0

********** **RESULTS** **********

--- DRY GAS METER --- VOLUME CORRECTED Vm(std) (cu ft)	VOLUME CORRECTED Vm(std) (liters)	--------- ORIFICE --------- VOLUME CORRECTED Vcr(std) (cu ft)	VOLUME CORRECTED Vcr(std) (liters)	VOLUME NOMINAL Vcr (cu ft)	-- DRY GAS METER -- CALIBRATION FACTOR Y Value (number)	Variation (number)	--------- ORIFICE --------- CALIBRATION FACTOR dH@ Value (in H2O)	Value (mm H2O)	Variation (in H2O)
7.101	201.1	7.311	207.0	7.507	1.030	0.004	0.000	0.00	0.000
11.105	314.5	11.381	322.3	11.773	1.025	-0.001	0.000	0.00	0.000
7.548	213.8	7.722	218.7	8.024	1.023	-0.003	0.000	0.00	0.000

Average Y---------> 1.0258 **Average dH@-----> 0.0000 0.00**

Note: For Calibration Factor Y, the ratio of the reading of the calibration meter to the dry gas meter, acceptable tolerance of individual values from the average is +-0.02.
For Orifice Calibration Factor dH@, the orifice differential pressure in inches of H20 that equates to 0.75 cfm of air at 68 F and 29.92 inches of Hg, acceptable tolerance of individual values from the average is +-0.2.
For Temperature Devicee, the reading must be within 1.5% of certified calibration standard (absolute temperature) to be acceptable.

Calibrated by: Justin Ching Signature: _____ Date: July 2, 2025

BAROMETER CALIBRATION FORM						
		Pbar Env Canada		Device (inches of Hg)		Difference
Device	Cal Date	(kPa)	(inches of Hg)	Reading	Elevation Corrected	(Env Can - Elv Corr)
LA	2-Jul-25	101.4	29.95	29.88	29.95	0.00
DS	2-Jul-25	101.4	29.95	29.86	29.93	0.02
CL	2-Jul-25	101.4	29.95	29.88	29.95	0.00
JC	2-Jul-25	101.4	29.95	29.88	29.95	0.00
LF	2-Jul-25	101.4	29.95	29.85	29.92	0.03
SV	2-Jul-25	101.4	29.95	29.85	29.92	0.03
CDO	2-Jul-25	101.4	29.95	29.85	29.92	0.03
JG	2-Jul-25	101.4	29.95	29.85	29.92	0.03
ML	2-Jul-25	101.4	29.95	29.85	29.92	0.03
JD	2-Jul-25	101.4	29.95	29.87	29.94	0.01

Calibrated by: Louis Agassiz Signature:  Date: 02-Jul-25

Performance Specification is
Device Corrected for Elevation must be +/- 0.1 " Hg of ENV CANADA SEA-LEVEL Pbar
Enter Environment canada Pressure from their website for Vancouver (link below)
and the reading from your barometer on the ground floor of the office.

https://weather.gc.ca/city/pages/bc-74_metric_e.html

A. LANFRANCO and ASSOCIATES INC.

ENVIRONMENTAL CONSULTANTS

TEMPERATURE CALIBRATION FORM

Calibrated by: Christian De La O

Date: 2-Jul-25

Signature: _____

TEMPERATURE DEVICE CALIBRATIONS

Reference Device Model CL23A Calibrator			Temperature Settings (degrees F)													
			32		100		200		300		500		800		1700	
Device	**ALA #**	**Serial #**	**Reading**	**Variation**	**Reading**	**Variation**	**Reading**	**Variation**	**Reading**	**Variation**	**Reading**	**Variation**	**Reading**	**Variation**	**Reading**	**Variation**
TPI 341K	7	20314590036		-6.51%		-17.87%		-30.32%		-39.49%		-52.10%		-63.51%		-78.72%
TPI 341K	8	20313490047	30.8	-0.24%	99.1	-0.16%	198.6	-0.21%	298.1	-0.25%	497.7	-0.24%	796.9	-0.25%	1695	-0.23%
TPI 341K	11	20345510024	31.6	-0.08%	99.7	-0.05%	199.7	-0.05%	299.1	-0.12%	498.5	-0.16%	798.5	-0.12%	1696	-0.19%
TPI 341K	12	20345510031		-6.51%		-17.87%		-30.32%		-39.49%		-52.10%		-63.51%		-78.72%
TPI 341K	18	20329480036		-6.51%		-17.87%		-30.32%		-39.49%		-52.10%		-63.51%		-78.72%
TPI 341K	20	20329480013	31	-0.20%	99.5	-0.09%	199.1	-0.14%	298.6	-0.18%	498.6	-0.15%	798.2	-0.14%	1698	-0.09%
TPI 341K	22	20329480041	30.4	-0.33%	98.4	-0.29%	198	-0.30%	298.1	-0.25%	497.4	-0.27%	797.3	-0.21%	1696	-0.19%
TPI 341K	24	20142030017		-6.51%		-17.87%		-30.32%		-39.49%		-52.10%		-63.51%		-78.72%
TPI 341K	26	20345510036		-6.51%		-17.87%		-30.32%		-39.49%		-52.10%		-63.51%		-78.72%
TPI 341K	28	20142030009		-6.51%		-17.87%		-30.32%		-39.49%		-52.10%		-63.51%		-78.72%
TPI 341K	30	20345510023		-6.51%		-17.87%		-30.32%		-39.49%		-52.10%		-63.51%		-78.72%
TPI 341K	32	20142030028	28.9	-0.63%	97.6	-0.43%	198.4	-0.24%	298.4	-0.21%	498.5	-0.16%	798.4	-0.13%	1697	-0.14%
Reference device is a NIST certified digital thermocouple calibrator																
Variation expressed as a percentage of the absolute temperature must be within 1.5 %																

Kalibrier-Protokoll

Certificate of conformity • Protocole d'étalonnage
Certificato di taratura • Informe de calibración

Be sure. testo

Gerät / Module type / Type de modèle / Prodotto / Modelo: T310 II
Seriennummer / Serial No. / No. de série / No. Serie strumento / n° de serie: 64910282

	Sollwert Reference Référence Valore campione Referencia	Istwert Actual value Valeur effective Valore misurato Valor medido	zulässige Abweichung Permissible deviation Différence admissible Scostamento ammesso Desviación permitida
Temperaturmessung **Temperature measurement** **Measure de température** **Misura della temperatura** **Medición de temperatura**			
Verbrennungslufttemp./ Ambient air temp. Température d'air de combustion Temperatura aria comburente Temperatura ambiente	60.1 °C	60.1 °C	± 1.0 °C
Abgastemperatur / Flue gas temperature Température des fumées Temperatura fumi Temperatura gases	60.1 °C	60.1 °C	± 1.0 °C
Druckmessung **Pressure measurement** **Mesure de pression** **Misura della tiraggio** **Medición de presión**	1.00 hPa	1.00 hPa	± 0.50 hPa

Gasmeßwerte / Gas values / Valeurs de gaz measurées / Parametri di misura dei gas / Gases patrón

Reg. Nr. Reg. No. Reg. No. Num. reg. n° certi	Gas Gas Gaz Gas Gas	Sollwert Reference Référence Valore campione Referencia	Istwert Actual value Valeur effective Valore misurato Valor medido	zulässige Abweichung Permissible deviation Différence admissible Scostamento ammesso Desviación permitida
409D704082	O2	2.5 %	2.5 %	±0.2 %
408D328084	O2	0.0 %	0.0 %	±0.2 %
409D704082	CO	700 ppm	701 ppm	±35 ppm
408D328084	CO	100 ppm	103 ppm	±20 ppm

Datum/Date/Date/Data/Fecha: 13.02.2025 **Prüfer/Inspector/Vérificateur/Verificatore/Verificador:** 7092

Canadian Association for Laboratory Accreditation Inc.

Certificate of Accreditation

A. Lanfranco and Associates Inc.
101 - 9488 - 189th Street
Surrey, British Columbia

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017.
This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).

Accreditation No.: 1004232
Issued On: 4/11/2023
Accreditation Date: 2/5/2021
Expiry Date: 10/11/2025

President and CEO

MOUNT ROYAL COLLEGE

Faculty of Continuing Education and Extension

Carter Lanfranco

has successfully completed

Stack Sampling

May 2009

Date

Norma D. MacDonald

Dean
Faculty of Continuing Education and Extension

BRITISH COLUMBIA | Ministry of Environment and Climate Change Strategy

Conflict of Interest Disclosure Statement

A qualified professional [1] providing services to either the Ministry of Environment and Climate Change Strategy ("ministry"), or to a regulated person for the purpose of obtaining an authorization from the ministry, or pursuant to a requirement imposed under the *Environmental Management Act,* the *Integrated Pest Management Act* or the *Park Act* has a real or perceived conflict of interest when the qualified professional, or their relatives, close associates or personal friends have a financial or other interest in the outcome of the work being performed.

A real or perceived conflict of interest occurs when a qualified professional has

a) an ownership interest in the regulated person's business;

b) an opportunity to influence a decision that leads to financial benefits from the regulated person or their business other than a standard fee for service (e.g. bonuses, stock options, other profit sharing arrangements);

c) a personal or professional interest in a specific outcome;

d) the promise of a long term or ongoing business relationship with the regulated person, that is contingent upon a specific outcome of work;

e) a spouse or other family member who will benefit from a specific outcome; or

f) any other interest that could be perceived as a threat to the independence or objectivity of the qualified professional in performing a duty or function.

Qualified professionals who work under ministry legislation must take care in the conduct of their work that potential conflicts of interest within their control are avoided or mitigated. Precise rules in conflict of interest are not possible and professionals must rely on guidance of their professional associations, their common sense, conscience and sense of personal integrity.

Declaration

I Carter Lanfranco, as a member of Air and Waste Management Association declare

Select one of the following:

☒ Absence from conflict of interest

Other than the standard fee I will receive for my professional services, I have no financial or other interest in the outcome of this project. I further declare that should a conflict of interest arise in the future during the course of this work, I will fully disclose the circumstances in writing and without delay to Mr. Sajid Barlas, erring on the side of caution.

☐ Real or perceived conflict of interest

Description and nature of conflict(s):

_____

_____

_____

I will maintain my objectivity, conducting my work in accordance with my Code of Ethics and standards of practice.

In addition, I will take the following steps to mitigate the real or perceived conflict(s) I have disclosed, to ensure the public interest remains paramount:

_____

_____

_____

Further, I acknowledge that this disclosure may be interpreted as a threat to my independence and will be considered by the statutory decision maker accordingly.

This conflict of interest disclosure statement is collected under section 26(c) of the *Freedom of Information and Protection of Privacy Act* for the purposes of increasing government transparency and ensuring professional ethics and accountability. By signing and submitting this statement you consent to its publication and its disclosure outside of Canada. This consent is valid from the date submitted and cannot be revoked. If you have any questions about the collection, use or disclosure of your personal information please contact the Ministry of Environment and Climate Change Strategy Headquarters Office at 1-800-663-7867.

Signature:

X _____

Print name: Carter Lanfranco

Witnessed by:

X _____

Print name: Mark Lanfranco

Date: Dec. 16, 2020

[1]*Qualified Professional, in relation to a duty or function under ministry legislation, means an individual who*

a) is registered in British Columbia with a professional association, is acting under that organization's code of ethics, and is subject to disciplinary action by that association, and

b) through suitable education, experience, accreditation and knowledge, may reasonably be relied on to provide advice within his or her area of expertise, which area of expertise is applicable to the duty or function.

BRITISH COLUMBIA | Ministry of Environment and Climate Change Strategy

Declaration of Competency

The Ministry of Environment and Climate Change Strategy relies on the work, advice, recommendations and in some cases decision making of qualified professionals[1], under government's professional reliance regime. With this comes an assumption that professionals who undertake work in relation to ministry legislation, regulations and codes of practice have the knowledge, experience and objectivity necessary to fulfill this role.

1. Name of Qualified Professional Carter LanFranco

   Title Chief operations officer / owner

2. Are you a registered member of a professional association in B.C.? ☐ Yes ☒ No

   Name of Association: _____ Registration # _____

3. Brief description of professional services:

   _____

   _____

This declaration of competency is collected under section 26(c) of the *Freedom of Information and Protection of Privacy Act* for the purposes of increasing government transparency and ensuring professional ethics and accountability. By signing and submitting this statement you consent to its publication and its disclosure outside of Canada. This consent is valid from the date submitted and cannot be revoked. If you have any questions about the collection, use or disclosure of your personal information please contact the Ministry of Environment and Climate Change Strategy Headquarters Office at 1-800-663-7867.

Declaration

I am a qualified professional with the knowledge, skills and experience to provide expert information, advice and/or recommendations in relation to the specific work described above.

Signature:

x _____

Print Name: Carter LanFranco

Witnessed by:

x Shawn Harrington

Print Name: Shawn Harrington

Date signed: Dec. 7/2020

[1] *Qualified Professional, in relation to a duty or function under ministry legislation, means an individual who*

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MOUNT ROYAL UNIVERSITY
Faculty of Continuing Education

MOUNT ROYAL
UNIVERSITY
1910
CALGARY, ALBERTA

Liam Forrer

has successfully completed

Stack Sampling

The Faculty of Continuing Education
Mount Royal University

30 hours | May 26, 2023

Dimitra Fotopoulos, Vice Dean
Professional and Continuing Education

BRITISH COLUMBIA | Ministry of Environment and Climate Change Strategy

Conflict of Interest Disclosure Statement

A qualified professional [1] providing services to either the Ministry of Environment and Climate Change Strategy ("ministry"), or to a regulated person for the purpose of obtaining an authorization from the ministry, or pursuant to a requirement imposed under the *Environmental Management Act,* the *Integrated Pest Management Act* or the *Park Act* has a real or perceived conflict of interest when the qualified professional, or their relatives, close associates or personal friends have a financial or other interest in the outcome of the work being performed.

A real or perceived conflict of interest occurs when a qualified professional has

a) an ownership interest in the regulated person's business;

b) an opportunity to influence a decision that leads to financial benefits from the regulated person or their business other than a standard fee for service (e.g. bonuses, stock options, other profit sharing arrangements);

c) a personal or professional interest in a specific outcome;

d) the promise of a long term or ongoing business relationship with the regulated person, that is contingent upon a specific outcome of work;

e) a spouse or other family member who will benefit from a specific outcome; or

f) any other interest that could be perceived as a threat to the independence or objectivity of the qualified professional in performing a duty or function.

Qualified professionals who work under ministry legislation must take care in the conduct of their work that potential conflicts of interest within their control are avoided or mitigated. Precise rules in conflict of interest are not possible and professionals must rely on guidance of their professional associations, their common sense, conscience and sense of personal integrity.

Declaration

I Liam Forrer, as a member of **Air and Waste Management Association** declare

Select one of the following:

☒ Absence from conflict of interest

Other than the standard fee I will receive for my professional services, I have no financial or other interest in the outcome of this **project**. I further declare that should a conflict of interest arise in the future during the course of this work, I will fully disclose the circumstances in writing and without delay to **Mr. Sajid Barlas**, erring on the side of caution.

Ministry of Environment and Climate Change Strategy

☐ Real or perceived conflict of interest

Description and nature of conflict(s):

I will maintain my objectivity, conducting my work in accordance with my Code of Ethics and standards of practice.

In addition, I will take the following steps to mitigate the real or perceived conflict(s) I have disclosed, to ensure the public interest remains paramount:

Further, I acknowledge that this disclosure may be interpreted as a threat to my independence and will be considered by the statutory decision maker accordingly.

This conflict of interest disclosure statement is collected under section 26(c) of the *Freedom of Information and Protection of Privacy Act* for the purposes of increasing government transparency and ensuring professional ethics and accountability. By signing and submitting this statement you consent to its publication and its disclosure outside of Canada. This consent is valid from the date submitted and cannot be revoked. If you have any questions about the collection, use or disclosure of your personal information please contact the Ministry of Environment and Climate Change Strategy Headquarters Office at 1-800-663-7867.

Signature:

X Liam Forrer

Print name: Liam Forrer

Witnessed by:

X

Print name: Mark Lanfranco

Date: July 12, 2023

[1]*Qualified Professional, in relation to a duty or function under ministry legislation, means an individual who*

a) is registered in British Columbia with a professional association, is acting under that organization's code of ethics, and is subject to disciplinary action by that association, and

b) *through suitable education, experience, accreditation and knowledge, may reasonably be relied on to provide advice within his or her area of expertise, which area of expertise is applicable to the duty or function.*

BRITISH COLUMBIA | Ministry of Environment and Climate Change Strategy

Declaration of Competency

The Ministry of Environment and Climate Change Strategy relies on the work, advice, recommendations and in some cases decision making of qualified professionals[1], under government's professional reliance regime. With this comes an assumption that professionals who undertake work in relation to ministry legislation, regulations and codes of practice have the knowledge, experience and objectivity necessary to fulfill this role.

1. Name of Qualified Professional Liam Forrer

Title Environmental Technician

2. Are you a registered member of a professional association in B.C.? ☐ Yes ☒ No

Name of Association: _____ Registration # _____

3. Brief description of professional services:

Environmental consulting, specializing in air and atmospheric sciences

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Declaration

I am a qualified professional with the knowledge, skills and experience to provide expert information, advice and/or recommendations in relation to the specific work described above.

Signature:

x Liam Forrer

Print Name: Liam Forrer

Witnessed by:

x Daryl Sampson

Print Name: Daryl Sampson

Date signed: July 12, 2023

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b) *through suitable education, experience, accreditation and knowledge, may reasonably be relied on to provide advice within his or her area of expertise, which area of expertise is applicable to the duty or function.*

Walter Smith & Associates, Inc.

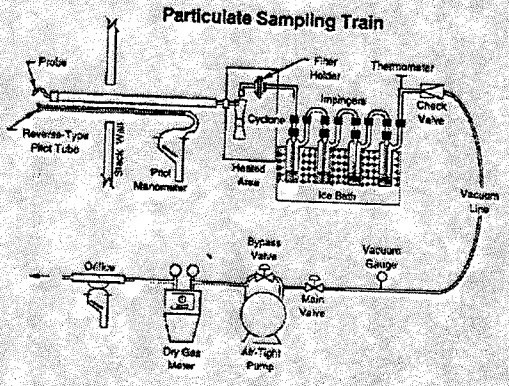
is hereby granted to:

Louis Agassiz

to certify that they have completed to satisfaction

Source Sampling & CEMS Workshop

Granted: March 11, 2011



Walter S, Smith, PE, DEE

3.5 CEU

BRITISH COLUMBIA | Ministry of Environment and Climate Change Strategy

Conflict of Interest Disclosure Statement

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b) an opportunity to influence a decision that leads to financial benefits from the regulated person or their business other than a standard fee for service (e.g. bonuses, stock options, other profit sharing arrangements);

c) a personal or professional interest in a specific outcome;

d) the promise of a long term or ongoing business relationship with the regulated person, that is contingent upon a specific outcome of work;

e) a spouse or other family member who will benefit from a specific outcome; or

f) any other interest that could be perceived as a threat to the independence or objectivity of the qualified professional in performing a duty or function.

Qualified professionals who work under ministry legislation must take care in the conduct of their work that potential conflicts of interest within their control are avoided or mitigated. Precise rules in conflict of interest are not possible and professionals must rely on guidance of their professional associations, their common sense, conscience and sense of personal integrity.

Declaration

I Louis Agassiz, as a member of ECO Canada declare

Select one of the following:

☒ Absence from conflict of interest

Other than the standard fee I will receive for my professional services, I have no financial or other interest in the outcome of this **project**. I further declare that should a conflict of interest arise in the future during the course of this work, I will fully disclose the circumstances in writing and without delay to **Mr. Sajid Barlas**, erring on the side of caution.

☐ Real or perceived conflict of interest

Description and nature of conflict(s):

_____

_____

_____

I will maintain my objectivity, conducting my work in accordance with my Code of Ethics and standards of practice.

In addition, I will take the following steps to mitigate the real or perceived conflict(s) I have disclosed, to ensure the public interest remains paramount:

_____

_____

_____

Further, I acknowledge that this disclosure may be interpreted as a threat to my independence and will be considered by the statutory decision maker accordingly.

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Signature:

X _____

Print name: Louis Agassiz

Witnessed by:

X _____

Print name: Mark Lanfranco

Date: Jan. 4, 2021

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BRITISH COLUMBIA | Ministry of Environment and Climate Change Strategy

Declaration of Competency

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1. Name of Qualified Professional Louis Agassiz

   Title Senior Environmental Technician/Project Manager

2. Are you a registered member of a professional association in B.C.? ☐ Yes ☑ No

   Name of Association: _____ Registration # _____

3. Brief description of professional services:

   Environmental consulting, specializing in air and atmospheric sciences

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Declaration

I am a qualified professional with the knowledge, skills and experience to provide expert information, advice and/or recommendations in relation to the specific work described above.

Signature: Witnessed by:

X _____ **X** Daryl Sampson

Print Name: Louis Agassiz Print Name: Daryl Sampson

Date signed: November 23, 2020

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Faculty of Continuing Education

MOUNT ROYAL
UNIVERSITY
1910
CALGARY, ALBERTA

Sean Verby

has successfully completed

Stack Sampling

The Faculty of Continuing Education
Mount Royal University

30 hours | May 1, 2024

Dimitra Fotopoulos, Vice Dean
Professional and Continuing Education

BRITISH COLUMBIA | Ministry of Environment and Climate Change Strategy

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f) any other interest that could be perceived as a threat to the independence or objectivity of the qualified professional in performing a duty or function.

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Declaration

I Sean Verby, as a member of **Air and Waste Management Association** declare

Select one of the following:

☒ Absence from conflict of interest

Other than the standard fee I will receive for my professional services, I have no financial or other interest in the outcome of this **project**. I further declare that should a conflict of interest arise in the future during the course of this work, I will fully disclose the circumstances in writing and without delay to **Mr. Sajid Barlas**, erring on the side of caution.

☐ Real or perceived conflict of interest

Description and nature of conflict(s):

_____

_____

_____

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In addition, I will take the following steps to mitigate the real or perceived conflict(s) I have disclosed, to ensure the public interest remains paramount:

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Signature:

X _____

Print name: Sean Verby

Witnessed by:

X _____

Print name: Mark Lanfranco

Date: Sept, 4, 2024

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BRITISH COLUMBIA | Ministry of Environment and Climate Change Strategy

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1. Name of Qualified Professional Sean Verby

   Title Environmental Technician

2. Are you a registered member of a professional association in B.C.? ☐ Yes ☒ No

   Name of Association: _____ Registration # _____

3. Brief description of professional services:

   Environmental consulting, specializing in air and atmospheric sciences

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Declaration

I am a qualified professional with the knowledge, skills and experience to provide expert information, advice and/or recommendations in relation to the specific work described above.

Signature: Witnessed by:

X _____ **X** _____

Print Name: Sean Verby Print Name: Daryl Sampson

Date signed: Sept, 4, 2024

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