APPENDIX 13 2023 STACK TESTING REPORT

CONSULAIR
AIR & ENVIRONMENT GLOBAL MANAGEMENT

PROFESSIONAL SERVICES

ATMOSPHERIC EMISSION CHARACTERIZATION REPORT

DOMESTIC WASTE INCINERATOR - MELIADINE DIVISION

AGNICO EAGLE

Agnico Eagle Mines Ltd.

SARA SAVOIE
ENVIRONMENTAL SUPERINTENDENT

OUR REFERENCE: #**23-7693**

consul-air.com

Quebec
2022 Lavoisier street, suite 125
Quebec (Quebec) G1N 4L5
PHONE - 418 650.5960
FAX - 418 704.2221
TOLL-FREE - 1 866 6969.AIR (247)

Repentigny
600 Leclerc street, suite 101
Repentigny (Quebec) J6A 2E5
PHONE - 450 654.8000
FAX - 450 654.6730

Longueuil
992 Joliette street, suite 102
Longueuil (Quebec) J4K 4V9
PHONE - 450 332.4322

WRITTEN BY

Mohamed Bensalah, Project Manager

REVIEWED BY

Jérémy Martin, Eng. (5017292)
Project manager

Quebec City,March 2024

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GLOSSARY

Deviation

A deviation refers to the failure to comply with a sampling method for various reasons.

A sampling method may have to be modified because of the particular nature of an emission point (for example, if it is impossible to properly install the sampling equipment, the temperature of the gas streams is too high, or their speed is too low).

A deviation can also occur during sampling (for example, collection of a volume of gas smaller than that required by the methodology). In such cases, the deviation must be recorded and clearly explained on the field data sheets and included in the report.

Emission point

Stack, vent, fan or any other opening that may release emissions into the air.

A sampling campaign may involve a number of emission points.

Environmental compliance verification

Process to verify compliance with a regulatory requirement.

Isokinetic sampling

Sampling is isokinetic when the linear velocity of the gas entering the sampling nozzle is equal to that of the undisturbed gas stream at the sampling point.

Qualified personnel

Personnel with the training and experience described in *Lignes directrices concernant les prélèvements des emissions atmosphériques en provenance de sources fixes (Guidelines for Sampling of Atmospheric Emissions from Stationary Sources),* DR-12-AIR-01, available on the CEAEQ website.

Source operator

Operator of the emission source being sampled.

Sampling site

Location of the emission points where samples are collected. Sampling methods include instructions for choosing the sampling site.

Sampler

The team that collects the samples during a sampling campaign; the team may be from a regulatory body or an external sampling firm or be employed by the operator of the emission source targeted by the sampling campaign.

Campaign site

Location where the sampling campaign is carried out (plant and the municipality in which it is located).

Stationary emission source

Activity, equipment, or process, other than a mobile vehicle, aircraft, ship, or locomotive, that generates emissions; a stationary source may have one or more emission points.

Test

Collection of a sample, with its duration depending on the sampling method.

ABBREVIATIONS, ACRONYMS AND SYMBOLS

Agnico Eagle: Agnico Eagle Mines Limited

CCME: Canadian Council of Ministers of the Environment

CEMS: Continuous Emission monitoring System

CO: Carbon Monoxide

CO_2: Carbon Dioxide

ECCC: Environment and Climate Change Canada (since 2016)

HCl: Hydrogen chloride or Hydrochloric acid

ISO/CEI 17025: General prescriptions concerning the jurisdiction of calibration and testing laboratories distributed jointly by the International Organization for Standardization and the International Electrochemical Commission

Me: Metals

NO_X: Nitrogen oxides

O_2: Oxygen

PM: Particle matter

PCDD/F: Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans

QA: Quality Assurance

QA/QC: Quality Assurance and Quality Control

QC: Quality Control

RDL: Reported detection Limit

SO_2: Sulfur dioxide

SVOC: Semi-Volatile Organic Compounds

USEPA or US EPA: United States Environmental Protection Agency

%vs: Volumetric percentage on a dry basis

SUMMARY

Consulair was mandated by Agnico Eagle Mines Limited (Agnico Eagle), Meliadine Division to perform an atmospheric emission characterization program at the outlet of an incinerator located on the industrial pad of the Meliadine Mine, as part of an environmental compliance program. The Mine is located approximately 25 km north of Rankin Inlet, Nunavut. The campaign was carried out from September 29th to October 1st 2023.

The objectives of this atmospheric emission characterization were as follows:

- Obtain an overview of atmospheric emissions in current conditions;
- Compare the results to the emission standards;
- Assess the concentrations and emission rate of the main parameters of interest emitted by the source;
- Ensure that the sampling work meets quality control recognized criteria.

The standards come from the “Environmental Guideline for the Burning and Incineration of Solid Waste” emitted by the Department of Environment of the Government of Nunavut based on the Canadian Council of Ministers of the Environment (CCME) Canada - Wide Standards for Dioxins and Furans and Mercury Emissions. The parameters of interest during the present characterization campaign were the filterable particles (P), metals (Me), gaseous hydrochloric acid (HCl), semi-volatile organic compounds (SVOC), oxygen (O_2), carbon dioxide (CO_2), carbon monoxide (CO), sulfur dioxide (SO_2) and nitrogen oxides (NO_x). A summary of the results obtained during this campaign is presented in the following table.

SUMMARY OF RESULTS

PARTICULATE MATTER	
CONCENTRATION (mg/m^{3}R)	26.0
CONCENTRATION (mg/m^{3}R at 11% O_2)	25.3
EMISSION (kg/h)	0.106
TOTAL METALS	
CONCENTRATION (µg/m^{3}R)	8970
CONCENTRATION (µg/m^{3}R at 11% O_2)	8720
EMISSION (g/h)	36.6
MERCURY	
CONCENTRATION (µg/m^{3}R)	0.350
CONCENTRATION (µg/m^{3}R at 11% O_2)	**0.336**
STANDARD (µg/m^{3}R at 11% O_2)	**20**
EMISSION (g/h)	0.00144
HYDROGEN CHLORIDE	
CONCENTRATION (mg/m^{3}R)	172.7
EMISSION (kg/h)	0.683
SVOC (PCDD/F)	
CONCENTRATION (ng TEQ/m^{3}R)	0.116
CONCENTRATION (ng TEQ/m^{3}R at 11% O_2)	**0.108**
STANDARD (ng TEQ/m^{3}R at 11% O_2)	**0.08**
EMISSION (µg/h) TEQ	0.186

For this program, the applicable standards for mercury (Hg) are respected but not for dioxins and furans (PCDD/F). An average value of 0.108 ng TEQ/m^{3}R at 11% O_2 was recorded, compared to the applicable limit from the GN Guideline of 0.08 ng TEQ/m^{3}R at 11% O_2.

The sample collection was performed in accordance with the requirements of the Report No. EPS 3/UP/2, including methods recommended by Environment and Climate Change Canada (ECCC) inside “Environment Canada, the National Incinerator Testing and Evaluation program: Air Pollution Control Technology”. Report No. EPS 3/UP/2, Ottawa, 1986.

1 INTRODUCTION

Consulair was mandated by Agnico Eagle Mines Limited (Agnico Eagle), Meliadine Division to perform an atmospheric emission characterization program at the outlet of an incinerator located on the industrial pad of the Meliadine Mine, as part of an environmental compliance program. The Mine is located approximately 25 km north of Rankin Inlet, Nunavut. The campaign was carried out from September 29th to October 1st 2023.

1.1 PROGRAM OBJECTIVES

The objectives of the atmospheric emission characterization were as follows:

- Evaluate the physical characteristics of the stack's gas flow;
- Evaluate the concentration and the emission rate of the main parameters of interest emitted by the incinerator;
- Compare the emission results to the applicable standards;
- Ensure that the sampling work respects the recognized quality control criteria.

1.2 PROGRAM SCOPE

The program included the source (process) and the parameters outlined in table 1-1.

TABLE 1-1 – TARGETED SOURCE AND PARAMETERS

SOURCE / PARAMETERS	P	Me*	HCl	SVOC**	O_2	CO_2	CO	SO_2	NO_x
Meliadine Incinerator	3	3	3	3	3	3	3	3	3

*Al, Sb, Ag, As, Ba, Be, Bi, B, Ca, Cr, Co, Cu, Sn, Fe, Li, Mg, Mb, Mo, Ni, Pb, K, Se, Na, Ti, V, Zn, Sr, Tl, Si (Silicium soluble) and Hg
** PCDD/F

Gas characteristics (velocity, temperature and humidity) were also measured during isokinetic sampling.

2 KEY PERSONNEL

Table 2-1 presents the contact information for the company subject to validation testing. The Consulair team involved in the project is presented in table 2-2. The laboratories used as subcontractors are listed in table 2-3.

TABLE 2-1 – CLIENT CONTACT INFORMATION

COMPANY & ADRESS	CONTACT	ROLE
Agnico Eagle Mines Limited Meliadine Division Suite 879 Rankin Inlet, Nunavut, Canada, X0C 0G0	Randy Schwandt Environmental coordinator Tel: 819-759-3555, ext. 4603996 randy.schwandt@agnicoeagle.com	Program coordinator

TABLE 2-2 – CONSULAIR'S TEAM INVOLVED IN THE PROJECT

PERSONNEL	TITLE	EXPERIENCE	ROLE
Christian Gagnon	President	33 years	Project manager
Carl Jackson	Vise President	30 years	On-site sampling Data compilation.
Elouan Lefeuvre	Technician	2 years	On-site sampling
Mohamed Bensalah	Project Manager	4 years	Data compilation. Writing of report
Jérémy Martin, Eng.	Project manager	9 years	Validation of report

TABLE 2-3 – LABORATORIES

LABORATORY	ANALYSIS	ACCREDITATION DOMAIN DR-12-LLA
Consulair	P	400
	Hydrogen chloride (HCl)	Not applicable
Bureau Veritas	Me / PCDD/F	404/406/510

3 ENVIRONMENTAL NORMS AND REQUIREMENTS TO BE RESPECTED

The Government of Nunavut presented a Guideline document in October 2010, which was revised in January 2012, for the burning and incineration of solid waste. The document includes two criteria for air emissions which are applicable for the current project. Air emission standards establish limits on the amount of contaminants that can be released into the atmosphere. These standards are expressed as a concentration in the exhaust gases leaving the stack and are capable of being achieved using generally available incineration technology and waste diversion practices. The following emission standards apply to existing, new or expanding solid waste incinerators operating in Nunavut and have been adopted from the Canadian Council of Ministers of the Environment (CCME) Canada-Wide Standards for Dioxins and Furans and Mercury Emissions, respectively. Similar standards for the open burning of solid waste have not been established.

TABLE 3-1 – AIR EMISSION STANDARDS FOR SOLIDS WASTE INCINERATORS

PARAMETER	NUMERIC STANDARD*
Dioxins and Furans	80 pg I-TEQ/m^3
Mercury	20 µg/ Rm^3

*Stack concentrations are corrected to 11% oxygen content for reporting purposes

4 SAMPLING

4.1 PROCESS OPERATING CONDITIONS

An Agnico Eagle representative was responsible for monitoring operating conditions to ensure representative sampling conditions. To perform this sampling program under accurate conditions, strict communication was maintained between Consulair and Agnico Eagle personnel involved

Process operating conditions were Agnico Eagle's responsibility and were maintained at a stable condition throughout the sampling program.

4.2 EMISSION POINT CHARACTERISTICS

The emission and sampling point characteristics are presented in table 4-1. Figure 4-1 shows the two selection criteria for the sampling site; length of the duct or stack upstream (A) and downstream (B) from flow disturbances. The number of sampling points was chosen using these two lengths according to the EPS 1/RM/8 Method A by ECCC titled "Determination of Sampling Site and Traverse Points".

TABLE 4-1 – CHARACTERISTICS OF THE SAMPLING LOCATION OF THE EMISSION POINTS

SOURCE / EMISSION POINT	DIAMETER AT THE SAMPLING POINT (m)	NUMBER OF DIAMETERS		NUMBER OF SAMPLING PORTS USED	NUMBER OF SAMPLING POINTS	
		B_D	A_D		PER TRAVERSE	TOTAL
Meliadine Incinerator	0.85	5.0	2.0	2	20	40

A_D - multiples of stack diameter upstream from a flow disturbance
B_D - multiples of stack diameter downstream from a flow disturbance

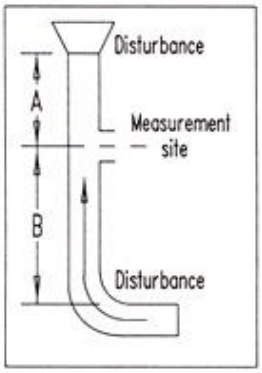

FIGURE 4-1 – SAMPLING SITE PLACEMENT CRITERIA

4.3 SAMPLING METHODS

Samples were collected using standards methods from ECCC and/or the United States Environmental Protection Agency (USEPA).

The different sampling methods used during this campaign are presented in table 4-2.

TABLE 4-2 – SAMPLING METHODS

PARAMETERS	METHOD
Sampling location and points	ECCC EPS 1/RM/8 Method A
Temperature	Thermocouple
Gas velocity	ECCC EPS 1/RM/8 Method B
Humidity	ECCC EPS 1/RM/8 Method D
Filterable particles	ECCC EPS 1/RM/8 Method E
Metals	USEPA 40CFR60 Method 29
Gaseous hydrochloric acid	ECCC EPS 1/RM/1
Semi-volatile organic compounds	ECCC EPS 1/RM/2
Oxygen (O_2)	USEPA 40CFR60 Method 3A
Carbon dioxide (CO_2)	USEPA 40CFR60 Method 3A
Carbon monoxide (CO)	USEPA 40CFR60 Method 10
Sulfur dioxide (SO_2)	USEPA 40CFR60 Method 6C
Nitrogen oxides (NO_x)	USEPA 40CFR60 Method 7E

The limits and values obtained for the quality assurance and quality control (QA/QC) criteria of the methods used are presented in Appendix 6. This Appendix also presents the calibration constants of the equipment used during this sampling program.

4.3.1 Particles, metals and hydrogen chloride

The reference sampling method used to determine particle emission is the method published by ECCC under EPS 1/RM/8 titled “Reference Method for Measuring Releases of Particulate from Stationary Sources”. This method is divided into six testing methods (A to F) that can be used either individually or in diverse combinations to establish gas flow characteristics. These testing methods are:

- Method A – Determination of Sampling Site and Traverse Points;
- Method B – Determination of Stack Gas Velocity and Volumetric Flow Rate;
- Method C – Determination of Molecular Weight by Gas Analysis;
- Method D – Determination of Moisture Content;
- Method E – Determination of Particulate Releases;
- Method F – Calibration Procedure for S-Type Pitot Tube, Dry Gas Meter and Orifice Meter.

A description of the sampling train equipment necessary for the analysis of particles is presented in table 4-3. This method was combined with USEPA method 29 entitled “Metal emissions from stationary sources” for metal sampling. HCl was also analyzed in the first impinger.

TABLE 4-3 – SAMPLING TRAIN – PARTICLES – METHOD EPS 1/RM/8 & USEPA 29

SAMPLING TRAIN ENVIRONMENT CANADA METHOD EPS 1/RM/8 & USEPA 29	
NOZZLE	Glass
PROBE	Glass, heated at 120 ± 14°C
FILTER	Glass fiber 125 mm, heated at 120 ± 14°C
FILTER HOLDER	Glass, heated at 120 ± 14°C
FILTER SUPPORT	PTFE, heated at 120 ± 14°C
1st IMPINGER	Modified Greenburg-Smith; H_2O 100 mL, in an ice bath
2nd IMPINGER	Modified Greenburg-Smith; 5% HNO_3 / 10% H_2O_2 100 mL, in an ice bath
3rd IMPINGER	Greenburg-Smith; 5% HNO_3 / 10% H_2O_2 100 mL, in an ice bath
4th IMPINGER	Modified Greenburg-Smith; empty, in an ice bath
5th IMPINGER	Modified Greenburg-Smith; 4 % $KMnO_4$ / 10% H_2SO_4 100 mL, in an ice bath
6th IMPINGER	Modified Greenburg-Smith; 4 % $KMnO_4$ / 10% H_2SO_4 100 mL, in an ice bath
SILICA GEL	Container with saturation indicator

4.3.2 Semi-volatile Organic Compounds

The emission rate of semi-volatile organic compounds (SVOC) was determined using samples obtained in isokinetic conditions in a predetermined amount of points within the stack. The method used is the EPS 1/RM/2 published by ECCC and titled “Reference Method for Source Testing: Measurement of Releases of Selected Semi-volatile Organic Compounds from Stationary Sources”. SVOCs are defined as organic compounds with a boiling point above 100°C. They include the polychlorinated dibenzo-para-dioxins (PCDDs), the polychlorinated dibenzofurans (PCDFs), the polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAHs), chlorobenzenes (CB) and phenolic compounds (PC).

Before any sampling an SVOC analysis is performed on the rinsing solvents recovered during decontamination of the sampling train glassware to ensure the cleanliness of the equipment.

Each run has a minimum duration of 180 minutes, with a sampled gas volume of at least 3.0 m^3R. Table 4-4 presents the various equipment of the SVOC sampling train.

TABLE 4-4 – SAMPLING TRAIN – SVOC – EPS 1/RM/2

SAMPLING TRAIN ECCC EPS 1/RM/2	
NOZZLE	Stainless steel 316L
PROBE	Glass, heated at 120 ± 14°C
FILTER	Glass fiber 125 mm, heated at 120 ± 14°C
FILTER HOLDER	Glass, heated at 120 ± 14°C
FILTER SUPPORT	PTFE, heated at 120 ± 14°C
CONDENSER	Glass
SORBENT TRAP	XAD-2 resin
CONDENSATE TRAP	Empty
1st IMPINGER	Greenburg-Smith; Ethylene glycol 100 mL, in an ice bath
2nd IMPINGER	Modified Greenburg-Smith; empty, in an ice bath
SILICA GEL	Container with saturation indicator

4.3.3 Gaseous Parameters (O_2, CO_2, CO, NO_X and SO_2)

The gaseous parameters, such as oxygen (O_2), carbon monoxide (CO), carbon dioxide (CO_2), nitrogen oxides (NO_X) and sulfur dioxide (SO_2) were measured using continuous instrumental analyzers. Data points were recorded every minute for the duration of the test run.

The effluent gas is continuously sampled from a fixed point in the stack and conveyed to the analyzers through a stainless steel sampling probe tube and is filtered to remove particles. The gas is then passed through a sample line made of Teflon followed by a condenser and is then directed to the individual analyzers. The Teflon sampling line is heated to at least 120°C or at least 5°C above the dew point, whichever is highest, in order to prevent condensation. The required sampling equipment for these parameters is as follows:

- Stainless steel probe heated at 120°C or more;
- Glass fiber or ceramic filter placed inside a heated housing at 120°C or higher;
- Heated sample line, made of Teflon tubes, that maintains the gases at a temperature of 120°C or higher;
- A condenser whose temperature is maintained at approximately 4°C to ensure proper gas humidity condensation;
- Peristaltic pump following the condenser to evacuate the gas condensate;
- Calibration gas manifold to allow the introduction of calibration gases directly to the gas analyzer in direct calibration mode or into the measurement system, at the probe, in system calibration mode, or both;
- Sample gas manifold to divert a portion of the sample to the analyzers, delivering the remainder to the by-pass discharge vent.

The analyzers characteristics are presented in table 4-5.

TABLE 4-5 – CARACTERISTICS OF THE ANALYZERS

ANALYZERS	O_2	CO / CO_2	SO_2	NO_X
Method	USEPA 3A	USEPA 10 / 3A	USEPA 6C	USEPA 7E
Brand	Servomex	California analytical	Ametek	Thermo Env.
Model	1400	ZRH	Serie 900	42C
Detector	Paramagnetic	Infrared	NDUV	Chemiluminescence
Working Scale	0-25 %	0-1500 ppm / 0-30 %	0 – 2000 ppm	0-1000 ppm

4.4 SCHEDULE

The following table shows the sampling schedule at the characterized source.

TABLE 4-6 – TEST SCHEDULE – MELIADINE INCINERATOR

SOURCE / EMISSION POINT	PARAMETER	RUN NUMBER	DATE	RUN START	RUN END
Meliadine Incinerator	SVOC	INC-COSV-E1	2023-09-29	10h20	13h40
		INC-COSV-E2	2023-09-30	11h08	14h28
		INC-COSV-E3	2023-10-01	10h43	14h03
	Me / P / HCl	INC-Me/P/HCl-E1	2023-09-29	10h18	13h40
		INC-Me/P/HCl-E2	2023-09-30	11h05	14h25
		INC-Me/P/HCl-E3	2023-10-01	10h40	14h00
	GAS	INC-GAZ-E1	2023-09-29	10h18	13h40
		INC-GAZ-E2	2023-09-30	11h05	14h25
		INC-GAZ-E3	2023-10-01	10h40	14h00

5 QA/QC PROGRAM

The quality assurance and quality control (QA/QC) program in place at Consulair is comprised of many elements aimed at validating the methodologies used during the characterization program. Throughout the campaign, Consulair ensured that each step of the atmospheric emissions characterization program, including the QA/QC program, allowed proper fulfillment of the defined objectives, while also respecting the fixed deadline. The main elements of this program are detailed in this section.

5.1 QA/QC DURING PLANNING PHASE

5.1.1 Sampling Team

The sampling team was composed of two qualified individuals. Their titles and tasks performed during the characterization program are presented in table 2-2.

The personnel had the necessary training in order to respect the applicable health and safety requirements present at the site.

5.1.2 Sampling Methods

The sampling methods used were determined according to the process type and/or the emission point characteristics, the mandate objectives and the parameters considered. The methods are presented in table 4-2.

5.1.3 Equipment, Instruments and Reagents Used

The sampling train glassware as well as the sample containers were cleaned and verified according to the applicable reference methods.

The instruments that were used are regularly maintained and were calibrated less than a year ago. The equipment's calibration certificates are presented in Appendix 2 of this report.

The grade of the solvents and reagents used in this mandate was verified.

The calibration gases used to calibrate the direct reading gas analysers were valid during their use on the field by taking into account the retention period imposed by the manufacturer. The calibration gases were of either "certified ± 2%" or "USEPA Protocol" quality. The gas analysis certificates are presented in Appendix 2 of this report.

5.1.4 Field Forms

The forms required for field sampling of the required parameters are presented in Appendix 4 along with the field notes.

5.2 QA/QC DURING SAMPLING

5.2.1 Sampling Train Assembly and Sample Recuperation

Sample recovery was performed according to the recommended method procedures. At the end of the test runs, the ends of the sampling train were sealed for transport to the mobile laboratory to prevent contamination of the sample.

The samples were recovered in appropriate containers as specified by the methods used. All samples were preserved according to the applicable methodology criteria for the entirety of the project until their delivery to the analysis laboratories. Consulair used a sample identification system to easily trace a sample's origin by a descriptive code coupled with a corresponding table. Each sample code includes the date, sample number, precise sampling location, its nature and destination (i.e. analysis, archiving). This

information is enclosed in the chain of custody form that is included with the laboratory analysis report presented in Appendix 3.

5.2.2 Leak Tests

Sample train leak tests were performed before and after each traverse, when applicable.

5.2.3 Specific Criteria

The manual sampling methods used had specific criteria such as the positioning of the sampling points, number of sampling points, stack diameter, leak tests, gas velocity, temperatures, presence of cyclonic or inverse flow, isokinetism, sampling rate, the test duration, and gas sample volume, which were followed to ensure method compliance.

5.2.4 Analyser Calibration

Before analysis, Consulair personnel ensured that all components of the continuous instrumental analysers were functional, that there was no leak in the setup, that the apparatus's analogue outputs were connected to the data acquisition system and that the recorded data corresponded to the values indicated by the analysers. To ensure valid measurements, the analysers were heated for at least 2 hours prior to their calibration.

Instrumental linearity (the calibration error of the analysers) was verified on the field by passing three calibration gases – zero, middle concentration and high concentration – directly at the inlet of the instruments. The calibration forms are filled out on site and systematic error evaluation as well as the analyzers' calibration drift was verified immediately before and after each measurement period using three calibration gases (zero, low span and middle or high span).

5.3 POST-SAMPLING QA/QC

5.3.1 Analysis Laboratories

The laboratories chosen for sample analysis are accredited by the *Centre d'expertise en analyse environnementale du Québec* (CEAEQ) and they conform to the ISO/CEI 17025 standard. The analysis reports were signed by a chemist and are presented in Appendix 3. The quality assurance and quality control programs specific to the analyzed parameters are included in the analysis reports.

5.3.2 QA/QC – Report Drafting

The computational tools used to analyze the data were verified to ensure calculation precision. This report was written by a project manager with 4 years of relevant experience. The report was also reviewed by a senior project manager.

5.4 METHOD CRITERIA AND TEST VALIDITY

Appendix 6 presents the results of the QA/QC program for each sampling method used at the emission points during the atmospheric emission characterization program for the present mandate. The limits and values obtained for the QA/QC program for these methods are also presented in Appendix 6. No deviation from the sampling method's QA/QC criteria was detected in the current characterization campaign.

6 RESULTS

The reference values are reported at a temperature of 25°C and at an atmospheric pressure of 101.3 kPa, on a dry basis.

In the results tables, a value starting with the sign “<” signifies that the laboratory result is below the reported detection limit (RDL) and represents a maximum result. Unless otherwise indicated, when an analysis result is given by the laboratory as being below the RDL, the detection limit is used in the calculations directly.

The averages in the following tables correspond to the average of all the runs performed at a given source for a given operating condition.

The computer-compiled data is presented in Appendix 1 and the continuous measurement graphs are presented in Appendix 5.

TABLE 6-1 – RESULTS – INCINERATOR – GASES

SAMPLING SCHEDULE				
RUN NUMBER	INC-GAZ-E1	INC-GAZ-E2	INC-GAZ-E3	AVERAGE
DATE	2023-09-29	2023-09-30	2023-10-01	
RUN START	10h18	11h05	10h40	
RUN END	13h40	14h28	14h00	
RUN LENGTH (min)	202	203	200	
SULFUR DIOXIDE (SO_2)				
SO_2 (mg/m^3R)	27.0	46.7	68.9	47.5
SO_2 (ppm) dry - average	10.3	17.9	26.3	18.2
SO_2 (ppm) dry- minimum	4.3	9.0	4.5	n/a
SO_2 (ppm) dry - maximum	31.4	40.8	205.9	n/a
SO_2 (kg/h)	0.111	0.198	0.269	0.193
SO_2 (g/s)	0.0310	0.0550	0.0746	0.0535
NITRIC OXIDE (NO_x)				
NO_x (mg/m^3R)	165	226	151	180
NO_x (ppm) dry - average	87.5	120.2	80.3	96.0
NO_x (ppm) dry - minimum	60.0	56.0	29.4	n/a
NO_x (ppm) dry - maximum	104.8	150.9	125.1	n/a
NO_x (kg/h)	0.680	0.957	0.589	0.742
NO_x (g/s)	0.189	0.266	0.164	0.206
CARBON MONOXIDE (CO)				
CO (mg/m^3R)	5.29	4.93	6.49	5.57
CO (ppm) dry - average	4.6	4.3	5.7	4.9
CO (ppm) dry - minimum	3.5	3.1	3.3	n/a
CO (ppm) dry - maximum	26.3	25.4	14.1	n/a
CO (kg/h)	0.0218	0.0209	0.0253	0.0227
CO (g/s)	0.00607	0.00581	0.00702	0.00630
OXYGEN (O_2)				
O_2 (mg/m^3R)	130000	134000	150000	138000
O_2 (%) dry - average	9.9	10.3	11.5	10.6
O_2 (%) dry - minimum	8.2	7.3	9.3	n/a
O_2 (%) dry - maximum	11.3	11.8	13.7	n/a
O_2 (kg/h)	537	570	584	564
O_2 (g/s)	149	158	162	157
CARBON DIOXIDE (CO_2)				
CO_2 (mg/m^3R)	149000	147000	128000	141000
CO_2 (%) dry - average	8.3	8.2	7.1	7.8
CO_2 (%) dry - minimum	7.1	6.7	5.3	n/a
CO_2 (%) dry - maximum	9.7	10.6	8.7	n/a
CO_2 (kg/h)	615	621	497	578
CO_2 (g/s)	171	173	138	161

R: Reference conditions at 101.3 kPa and 25°C, on a dry basis

TABLE 6-2 – RESULTS – INCINERATOR – METALS, PARTICULATE MATTER AND HCl

SAMPLING SCHEDULE				
RUN NUMBER	INC-Me/P/HCl-E1	INC-Me/P/HCl-E2	INC-Me/P/HCl-E3	AVERAGE
DATE	2023-09-29	2023-09-30	2023-10-01	
RUN START	10h18	11h05	10h40	
RUN END	13h40	14h25	14h00	
RUN LENGTH (min)	200	200	200	
SAMPLED GAS PROPERTIES				
STATIC PRESSURE (kPa)	-0.03	-0.03	-0.03	-0.03
GAS HUMIDITY (%v)	10.0	10.4	11.2	10.5
GAS TEMPERATURE (°C)	842	861	865	856
GAS VELOCITY (ft/s)	27.5	28.8	26.8	27.7
GAS VELOCITY (m/s)	8.4	8.8	8.2	8.4
ACTUAL GAS FLOW RATE (m^3/h)	17190	18000	16760	17320
REFERENCE GAS FLOW RATE (m^3R/h)	4132	4237	3897	4089
ACTUAL GAS FLOW RATE (ACFM)	10120	10590	9866	10190
REFERENCE GAS FLOW RATE (RCFM)	2432	2494	2294	2407
CO_2 (%vs)	8.3	8.2	7.1	7.9
O_2 (%vs)	9.9	10.3	11.5	10.6
CO (ppmvs)	5	4	6	5
SAMPLED GAS				
SAMPLED GAS VOLUME (m^3R)	3.16	3.19	2.94	n/a
PARTICLES				
MASS PARTICLES FILTER (mg)	37.7	69.7	54.8	n/a
MASS PARTICLES NOZZLE & PROBE (mg)	19.1	26.3	33.5	n/a
CONCENTRATION (mg/m^3R)	18.0	30.1	30.0	26.0
CONCENTRATION (mg/m^3R) AT 11 % O_2	16.2	28.1	31.6	25.3
EMISSION (kg/h)	0.0743	0.128	0.117	0.106
HYDROCHLORIC ACID (HCl)				
MASS Cl^- (mg)	348.66	696.69	545.38	n/a
HCl CONCENTRATION (mg/m^3R)	113.6	226.9	177.6	172.7
HCl EMISSION (kg/h)	0.422	0.898	0.729	0.683
R: Reference conditions at 101.3 kPa and 25°C, on a dry basis				

TABLE 6-2 – RESULTS – INCINERATOR – METALS, PARTICULATE MATTER AND HCl (CONTD')

METALS				
RUN NUMBER	INC-Me/P/HCl-E1	INC-Me/P/HCl-E2	INC-Me/P/HCl-E3	AVERAGE
PARTICULATE METALS (µg/m³R)				
Aluminum (Al)	45.6	100	104	83.2
Antimony (Sb)	78.2	104	85.6	89.2
Silver (Ag)	0.602	2.48	1.05	1.38
Arsenic (As)	22.8	67.8	74.1	54.9
Barium (Ba)	0.950	1.69	1.85	1.50
Beryllium (Be)	< 0.0158	< 0.0157	< 0.0170	< 0.0162
Bismuth (Bi)	0.998	2.33	1.78	1.70
Boron (B)	2.25	1.10	1.43	1.59
Cadmium (Cd)	1.19	3.70	1.66	2.19
Calcium (Ca)	1270	882	1080	1080
Chrome (Cr)	2.06	3.04	4.93	3.34
Cobalt (Co)	0.0633	0.0941	0.102	0.0865
Copper (Cu)	28.9	51.2	60.5	46.8
Tin (Sn)	5.16	12.2	21.1	12.8
Iron (Fe)	30.7	52.4	56.0	46.4
Lithium (Li)	7.92	2.82	2.04	4.26
Magnesium (Mg)	23.8	43.9	49.6	39.1
Manganese (Mn)	3.33	3.33	3.06	3.24
Molybdenum (Mo)	1.14	1.51	2.41	1.69
Nickel (Ni)	0.348	0.502	0.408	0.419
Lead (Pb)	28.3	83.8	136	82.7
Potassium (K)	2570	4170	4930	3890
Selenium (Se)	0.222	0.220	0.340	0.260
Silicon (Si)	128	212	287	209
Sodium (Na)	1790	3000	3070	2620
Strontium (Sr)	1.20	1.22	1.36	1.26
Thallium (Tl)	< 0.0317	0.0941	0.0679	0.0646
Titanium (Ti)	4.43	11.6	14.3	10.1
Vanadium (V)	< 0.0633	0.0941	0.136	0.0978
Zinc (Zn)	159	659	425	414
DETECTED METALS	**6210**	**9480**	**10400**	**8700**
TOTAL METALS	**6210**	**9480**	**10400**	**8700**

TABLE 6-2 – RESULTS – INCINERATOR – METALS, PARTICULATE MATTER (CONTD')

SAMPLING SCHEDULE				
RUN NUMBER	INC-Me/P/HCl-E1	INC-Me/P/HCl-E2	INC-Me/P/HCl-E3	AVERAGE
GASEOUS METALS (µg/m³R)				
Aluminum (Al)	7.60	10.7	6.79	8.35
Antimony (Sb)	0.158	1.29	0.374	0.606
Silver (Ag)	< 0.633	< 0.628	< 0.679	< 0.647
Arsenic (As)	< 0.127	0.439	0.544	0.370
Barium (Ba)	< 0.0633	0.596	0.170	0.276
Beryllium (Be)	< 0.0633	< 0.0628	< 0.0679	< 0.0647
Bismuth (Bi)	< 0.0633	0.973	0.170	0.402
Boron (B)	16.1	17.0	17.0	16.7
Cadmium (Cd)	< 0.0633	< 0.0628	< 0.0679	< 0.0647
Calcium (Ca)	120	97.0	57.7	91.6
Chrome (Cr)	< 0.127	< 0.126	< 0.136	< 0.129
Cobalt (Co)	< 0.127	< 0.126	< 0.136	< 0.129
Copper (Cu)	0.602	0.502	1.09	0.730
Tin (Sn)	7.28	6.59	7.13	7.00
Iron (Fe)	< 6.33	< 6.28	< 6.79	< 6.47
Lithium (Li)	< 1.27	< 1.26	< 1.36	< 1.29
Magnesium (Mg)	33.3	52.7	6.11	30.7
Manganese (Mn)	1.33	1.54	1.05	1.31
Molybdenum (Mo)	< 0.633	< 0.628	< 0.679	< 0.647
Nickel (Ni)	0.158	0.377	0.408	0.314
Lead (Pb)	6.97	< 0.628	< 0.679	2.76
Potassium (K)	< 12.7	< 12.6	< 13.6	< 12.9
Selenium (Se)	0.507	1.10	0.985	0.863
Silicon (Si)	35.8	19.8	12.9	22.8
Sodium (Na)	27.9	21.3	25.5	24.9
Strontium (Sr)	< 0.127	< 0.126	< 0.136	< 0.129
Thallium (Tl)	< 0.127	0.126	< 0.136	0.129
Titanium (Ti)	< 1.27	< 1.26	1.36	1.29
Vanadium (V)	< 0.253	< 0.282	0.306	0.280
Zinc (Zn)	14.1	47.9	28.7	30.2
DETECTED METALS	**272**	**280**	**168**	**240**
TOTAL METALS	**296**	**304**	**193**	**264**

TABLE 6-2 – RESULTS – INCINERATOR – METALS, PARTICULATE MATTER (CONTD')

SAMPLING SCHEDULE				
RUN NUMBER	INC-Me/P/HCl-E1	INC-Me/P/HCl-E2	INC-Me/P/HCl-E3	AVERAGE
TOTAL METALS (µg/m³R)				
Aluminum (Al)	53.2	111	110	91.6
Antimony (Sb)	78.4	105	86.0	89.8
Silver (Ag)	1.24	3.11	1.73	2.02
Arsenic (As)	23.0	68.2	74.6	55.3
Barium (Ba)	1.01	2.29	2.02	1.78
Beryllium (Be)	< 0.0792	< 0.0785	< 0.0849	< 0.0808
Bismuth (Bi)	1.06	3.30	1.95	2.10
Boron (B)	18.3	18.1	18.4	18.3
Cadmium (Cd)	1.26	3.77	1.73	2.25
Calcium (Ca)	1390	979	1140	1170
Chrome (Cr)	2.19	3.17	5.06	3.47
Cobalt (Co)	0.190	0.220	0.238	0.216
Copper (Cu)	29.5	51.7	61.6	47.6
Tin (Sn)	12.4	18.8	28.2	19.8
Iron (Fe)	37.1	58.7	62.8	52.9
Lithium (Li)	9.18	4.08	3.40	5.55
Magnesium (Mg)	57.0	96.7	55.7	69.8
Manganese (Mn)	4.66	4.86	4.11	4.54
Molybdenum (Mo)	1.77	2.13	3.09	2.33
Nickel (Ni)	0.507	0.879	0.815	0.734
Lead (Pb)	35.3	84.4	137	85.4
Potassium (K)	2590	4190	4940	3900
Selenium (Se)	0.728	1.32	1.32	1.12
Silicon (Si)	163	232	300	232
Sodium (Na)	1820	3020	3100	2650
Strontium (Sr)	1.33	1.35	1.49	1.39
Thallium (Tl)	< 0.158	0.220	0.204	0.194
Titanium (Ti)	5.70	12.9	15.6	11.4
Vanadium (V)	< 0.317	0.377	0.442	0.378
Zinc (Zn)	173	707	453	445
Mercury (Hg)	0.291	0.446	0.313	0.350
DETECTED METALS	**6500**	**9790**	**10600**	**8970**
TOTAL METALS	**6500**	**9790**	**10600**	**8970**

TABLE 6-2 – RESULTS – INCINERATOR – METALS, PARTICULATE MATTER (CONTD')

SAMPLING SCHEDULE				
RUN NUMBER	INC-Me/P/HCl-E1	INC-Me/P/HCl-E2	INC-Me/P/HCl-E3	AVERAGE
TOTAL METALS (µg/m³R) at 11% O_2				
Aluminum (Al)	47.9	104	116	89.3
Antimony (Sb)	70.5	98.2	90.5	86.4
Silver (Ag)	1.11	2.90	1.82	1.95
Arsenic (As)	20.7	63.7	78.6	54.3
Barium (Ba)	0.912	2.14	2.13	1.73
Beryllium (Be)	< 0.0713	< 0.0733	< 0.0894	< 0.0780
Bismuth (Bi)	0.955	3.09	2.05	2.03
Boron (B)	16.5	16.9	19.4	17.6
Cadmium (Cd)	1.13	3.52	1.82	2.16
Calcium (Ca)	1250	914	1200	1120
Chrome (Cr)	1.97	2.96	5.33	3.42
Cobalt (Co)	0.171	0.205	0.250	0.209
Copper (Cu)	26.5	48.2	64.8	46.5
Tin (Sn)	11.2	17.6	29.7	19.5
Iron (Fe)	33.3	54.8	66.2	51.4
Lithium (Li)	8.27	3.81	3.58	5.22
Magnesium (Mg)	51.3	90.3	58.7	66.7
Manganese (Mn)	4.19	4.54	4.33	4.35
Molybdenum (Mo)	1.60	1.99	3.26	2.28
Nickel (Ni)	0.456	0.821	0.859	0.712
Lead (Pb)	31.7	78.8	144	84.8
Potassium (K)	2330	3910	5200	3810
Selenium (Se)	0.656	1.23	1.40	1.09
Silicon (Si)	147	216	316	226
Sodium (Na)	1640	2820	3260	2570
Strontium (Sr)	1.20	1.26	1.57	1.34
Thallium (Tl)	< 0.143	0.205	0.215	0.187
Titanium (Ti)	5.13	12.0	16.5	11.2
Vanadium (V)	< 0.285	0.352	0.465	0.367
Zinc (Zn)	156	660	477	431
Mercury (Hg)	**0.262**	**0.416**	**0.329**	**0.336**
Air Emission Standard for Mercury (µg/m³R at 11% O_2)		**20**		
DETECTED METALS	**5850**	**9140**	**11200**	**8720**
TOTAL METALS	**5850**	**9140**	**11200**	**8720**

TABLE 6-2 – RESULTS – INCINERATOR – METALS, PARTICULATE MATTER (CONTD')

SAMPLING SCHEDULE				
RUN NUMBER	INC-Me/P/HCl-E1	INC-Me/P/HCl-E2	INC-Me/P/HCl-E3	AVERAGE
TOTAL METALS (g/h)				
Aluminum (Al)	0.221	0.471	0.430	0.374
Antimony (Sb)	0.326	0.446	0.335	0.369
Silver (Ag)	0.00513	0.0132	0.00675	0.00835
Arsenic (As)	0.0954	0.289	0.291	0.225
Barium (Ba)	0.00421	0.00969	0.00789	0.00727
Beryllium (Be)	< 0.000329	< 0.000332	< 0.000331	< 0.000331
Bismuth (Bi)	0.00441	0.0140	0.00759	0.00867
Boron (B)	0.0761	0.0767	0.0719	0.0749
Cadmium (Cd)	0.00522	0.0160	0.00674	0.00931
Calcium (Ca)	5.76	4.15	4.45	4.79
Chrome (Cr)	0.00908	0.0134	0.0197	0.0141
Cobalt (Co)	0.000790	0.000931	0.000927	0.000882
Copper (Cu)	0.123	0.219	0.240	0.194
Tin (Sn)	0.0517	0.0798	0.110	0.0805
Iron (Fe)	0.154	0.249	0.245	0.216
Lithium (Li)	0.0382	0.0173	0.0132	0.0229
Magnesium (Mg)	0.237	0.410	0.217	0.288
Manganese (Mn)	0.0193	0.0206	0.0160	0.0187
Molybdenum (Mo)	0.00737	0.00904	0.0120	0.00949
Nickel (Ni)	0.00211	0.00372	0.00318	0.00300
Lead (Pb)	0.147	0.358	0.532	0.345
Potassium (K)	10.8	17.7	19.2	15.9
Selenium (Se)	0.00303	0.00558	0.00516	0.00459
Silicon (Si)	0.679	0.981	1.17	0.943
Sodium (Na)	7.55	12.8	12.1	10.8
Strontium (Sr)	0.00553	0.00572	0.00582	0.00569
Thallium (Tl)	< 0.000658	0.000931	0.000794	0.000794
Titanium (Ti)	0.0237	0.0545	0.0609	0.0464
Vanadium (V)	< 0.00132	0.00160	0.00172	0.00154
Zinc (Zn)	0.720	3.00	1.77	1.83
Mercury (Hg)	0.00121	0.00189	0.00122	0.00144
DETECTED METALS	**27.0**	**41.5**	**41.3**	**36.6**
TOTAL METALS	**27.0**	**41.5**	**41.3**	**36.6**
R: Reference conditions at 101.3 kPa and 25°C, on a dry basis				

TABLE 6-3 – RESULTS – INCINERATOR – SVOC

SAMPLING SCHEDULE				
RUN NUMBER	INC-COSV-E1	INC-COSV-E2	INC-COSV-E3	AVERAGE
DATE	2023-09-29	2023-09-30	2023-10-01	
RUN START	10h20	11h08	10h43	
RUN END	13h40	14h28	14h03	
RUN LENGTH (min)	200	200	200	
SAMPLED GAS PROPERTIES				
STATIC PRESSURE (kPa)	-0.03	-0.03	-0.03	-0.03
GAS HUMIDITY (%v)	9.9	10.3	11.2	10.4
GAS TEMPERATURE (°C)	847	862	868	859
GAS VELOCITY (m/s)	7.9	9.5	9.0	8.8
ACTUAL GAS FLOW RATE (m^3/h)	16120	19460	18450	18010
REFERENCE GAS FLOW RATE (m^3R/h)	3861	4583	4279	4241
CO_2 (%vs)	8.3	8.2	7.1	7.9
O_2 (%vs)	9.9	10.3	11.5	10.6
CO (ppmvs)	5	4	6	5
SAMPLED GAS				
SAMPLED GAS VOLUME (m^3R)	3.02	3.50	3.28	n/a
DIOXINS AND FURANS (ng/m^3R) – Calculated according to the TEF				
2,3,7,8-TCDD	0.00530	0.00485	< 0.00102	0.00372
1,2,3,7,8 PeCDD	0.0364	0.0656	0.00366	0.0352
1,2,3,4,7,8 HxCDD	0.00215	0.00571	0.000427	0.00276
1,2,3,6,7,8 HxCDD	0.00431	0.0342	0.000854	0.0131
1,2,3,7,8,9 HxCDD	0.00268	0.0191	0.000488	0.00743
1,2,3,4,6,7,8 HpCDD	0.00202	0.0185	0.000671	0.00708
OCDD	0.0000219	0.000211	0.0000195	0.0000842
2,3,7,8 TCDF	0.00464	0.00280	0.000488	0.00264
1,2,3,7,8 PeCDF	0.00141	0.00136	0.000275	0.00101
2,3,4,7,8-PeCDF	0.0331	0.0342	0.00748	0.0249
1,2,3,4,7,8 HxCDF	0.00398	0.00457	0.00119	0.00324
1,2,3,6,7,8 HxCDF	0.00431	0.00599	0.00137	0.00389
2,3,4,6,7,8-HxCDF	0.00861	0.0103	0.00275	0.00721
1,2,3,7,8,9 HxCDF	0.00222	0.00265	0.000458	0.00178
1,2,3,4,6,7,8 HpCDF	0.00152	0.00228	0.000915	0.00157
1,2,3,4,7,8,9 HpCDF	0.000225	0.000265	0.0000458	0.000179
OCDF	0.00000497	0.00000999	0.00000244	0.00000580
TOTAL TOXIC EQUIVALENCE	**0.113**	**0.213**	**0.0211**	**0.116**
DIOXINS AND FURANS (ng/m^3R at 11% O_2) – Calculated according to the TEF				
2,3,7,8-TCDD	0.00477	0.00453	< 0.00107	0.00346
1,2,3,7,8 PeCDD	0.0328	0.0613	0.00386	0.0326
1,2,3,4,7,8 HxCDD	0.00194	0.00533	0.000450	0.00257
1,2,3,6,7,8 HxCDD	0.00388	0.0320	0.000900	0.0123
1,2,3,7,8,9 HxCDD	0.00241	0.0179	0.000514	0.00693
1,2,3,4,6,7,8 HpCDD	0.00182	0.0173	0.000707	0.00662
OCDD	0.0000197	0.000197	0.0000206	0.0000791
2,3,7,8 TCDF	0.00417	0.00261	0.000514	0.00243
1,2,3,7,8 PeCDF	0.00127	0.00127	0.000289	0.000941
2,3,4,7,8-PeCDF	0.0298	0.0320	0.00787	0.0232
1,2,3,4,7,8 HxCDF	0.00358	0.00426	0.00125	0.00303
1,2,3,6,7,8 HxCDF	0.00388	0.00560	0.00145	0.00364
2,3,4,6,7,8-HxCDF	0.00775	0.00959	0.00289	0.00675
1,2,3,7,8,9 HxCDF	0.00200	0.00248	0.000482	0.00165
1,2,3,4,6,7,8 HpCDF	0.00137	0.00213	0.000964	0.00149
1,2,3,4,7,8,9 HpCDF	0.000203	0.000248	0.0000482	0.000166
OCDF	0.00000447	0.00000933	0.00000257	0.00000546
TOTAL TOXIC EQUIVALENCE	**0.102**	**0.199**	**0.0222**	**0.108**
Air Emission Standard for Dioxins and Furans (ng/m^3R at 11% O_2)		**0.08**		

TABLE 6-3 – RESULTS – INCINERATOR – SVOC (CONTD')

SAMPLING SCHEDULE				
RUN NUMBER	INC-COSV-E1	INC-COSV-E2	INC-COSV-E3	AVERAGE
DIOXINS AND FURANS (µg/h) – Calculated according to the TEF				
2,3,7,8-TCDD	0.0205	0.0222	< 0.00435	0.0157
1,2,3,7,8 PeCDD	0.141	0.301	0.0157	0.152
1,2,3,4,7,8 HxCDD	0.00831	0.0262	0.00183	0.0121
1,2,3,6,7,8 HxCDD	0.0166	0.157	0.00366	0.0591
1,2,3,7,8,9 HxCDD	0.0104	0.0876	0.00209	0.0334
1,2,3,4,6,7,8 HpCDD	0.00780	0.0850	0.00287	0.0319
OCDD	0.0000844	0.000968	0.0000836	0.000379
2,3,7,8 TCDF	0.0179	0.0128	0.00209	0.0109
1,2,3,7,8 PeCDF	0.00544	0.00621	0.00118	0.00427
2,3,4,7,8-PeCDF	0.128	0.157	0.0320	0.106
1,2,3,4,7,8 HxCDF	0.0153	0.0209	0.00509	0.0138
1,2,3,6,7,8 HxCDF	0.0166	0.0275	0.00588	0.0167
2,3,4,6,7,8-HxCDF	0.0333	0.0471	0.0118	0.0307
1,2,3,7,8,9 HxCDF	0.00857	0.0122	0.00196	0.00756
1,2,3,4,6,7,8 HpCDF	0.00588	0.0105	0.00392	0.00675
1,2,3,4,7,8,9 HpCDF	0.000870	0.00122	0.000196	0.000761
OCDF	0.0000192	0.0000458	0.0000104	0.0000251
TOTAL TOXIC EQUIVALENCE	**0.436**	**0.975**	**0.0903**	**0.500**
R: Reference conditions at 101.3 kPa and 25°C, on a dry basis				

7 RESULT ANALYSIS

According to the sampling methods and procedures combined with rigorous quality control, the concentration and/or emission rate results presented in this report are valid and representative of the normal operating conditions of the process.

The domestic waste incinerator is complying with mercury standards, but results for PCDD/Fs exceeded the applicable limit

8 CONCLUSION

Consulair was mandated by Agnico Eagle Mines Limited (Agnico Eagle), Meliadine Division to perform an atmospheric emission characterization program at the outlet of an incinerator located on the industrial pad of the Meliadine Mine, as part of an environmental compliance program. The Mine is located approximately 25 km north of Rankin Inlet, Nunavut. The campaign was carried out from September 29th to October 1st 2023.

For this program, the applicable standards are respected for mercury (Hg) but not for dioxins and furans (PCDD/F). An average value of 0.108 ng TEQ/m^{3}R at 11% O_2 was recorded, compared to the applicable limit from the GN Guideline of 0.08 ng TEQ/m^{3}R at 11% O_2.

The sample collection was performed in accordance with the requirements of the Report No. EPS 3/UP/2, including methods recommended by ECCC inside “Environment Canada, the National Incinerator Testing and Evaluation program: Air Pollution Control Technology”. Report No. EPS 3/UP/2, Ottawa, 1986.

9 REFERENCES

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APPENDIX 1
COMPUTER COMPILED DATA

AGNICO EAGLE

CONSULAIR
AIR & ENVIRONMENT GLOBAL MANAGEMENT

AGNICO EAGLE MINES LTD. Meliadine 23-7693 INCINERATOR Particles and metals				
EXPERIMENTAL SCHEDULE				
RUN NUMBER	INC-Me-E1	INC-Me-E2	INC-Me-E3	AVERAGE
RUN DATE	29/09/2023	30/09/2023	01/10/2023	(1 to 3)
START OF RUN	10h18	11h05	10h40	
END OF RUN	13H40	14h25	14h00	
RUN DURATION (minutes)	200	200	200	
NUMBER OF MEASUREMENTS	40	40	40	
SAMPLING EQUIPMENT DATA				
BAROMETRIC PRESSURE ("Hg)	29.90	29.90	29.90	29.90
STATIC PRESSURE ("H_2O)	-0.12	-0.12	-0.12	-0.12
PRESSION STATIQUE (kPa)	-0.030	-0.030	-0.030	-0.030
DRY GAS METER COEFFICIENT	1.020	1.020	1.020	n/a
PITOT TUBE COEFFICIENT	0.739	0.739	0.739	n/a
NOZZLE DIAMETER (in)	0.502	0.502	0.502	n/a
DRY GAS METER TEMPERATURE (°F)	60.0	60.0	60.0	n/a
DRY GAS METER TEMPERATURE (°C)	15.6	15.6	15.6	n/a
GAS HUMIDITY & SAMPLED VOLUME				
MASS OF WATER (g)	258.6	271.1	273.0	n/a
VOLUME OF WATER (ft^3R)	12.40	13.00	13.10	n/a
GAS HUMIDITY (BWO)	0.100	0.104	0.112	0.105
GAS HUMIDITY (% v/v)	10.0	10.4	11.2	10.5
REFERENCE GAS VOLUME (ft^3R)	111.52	112.54	103.96	109.34
REFERENCE GAS VOLUME (m^3R)	**3.16**	**3.19**	**2.94**	**3.10**
STACK CHARACTERISTICS				
NUMBER OF DIAMETERS BEFORE SAMPLING PORTS	5.0	5.0	5.0	n/a
NUMBER OF DIAMETERS AFTER SAMPLING PORTS	2.0	2.0	2.0	n/a
STACK DIAMETER (ft)	2.8	2.8	2.8	n/a
STACK DIAMETER (m)	0.85	0.85	0.85	n/a
LENGTH OF SAMPLING PORTS (in)	7.8	7.8	7.8	n/a
STACK PRESSURE ("Hg)	29.89	29.89	29.89	29.89
STACK PRESSURE (kPa)	101.22	101.22	101.22	101.22
DRY GAS METER PRESSURE ("Hg)	29.94	29.94	29.93	29.94
STACK SURFACE (pi^2)	6.1	6.1	6.1	n/a
STACK SURFACE (m^2)	0.57	0.57	0.57	n/a
GAZ CHARACTERISTICS				
CHIMNEY TEMPERATURE (°F)	1547.7	1581.8	1588.9	1572.8
CHIMNEY TEMPERATURE (°C)	842.1	861.0	864.9	856.0
CO_2 (%v, dry)	8.3	8.2	7.1	7.9
O_2 (%v, dry)	9.9	10.3	11.5	10.6
O_2 (%v, dry)	8.9	9.2	10.2	9.5
CO (ppmv, dry)	4.6	4.3	5.7	4.9
N_2 (%v, dry)	81.8	81.5	81.4	81.6
DRY MOLECULAR WEIGHT	29.7	29.7	29.6	29.7
WET MOLECULAR WEIGHT	28.6	28.5	28.3	28.5
GAS VELOCITY (ft/s)	27.5	28.8	26.8	27.7
GAS VELOCITY (m/s)	8.4	8.8	8.2	8.4
ACTUAL GAS FLOW RATE (pi^3/h)	607 033	635 492	591 939	611 488
ACTUAL GAS FLOW RATE (m^3/h)	17 189	17 995	16 762	17 315
ACTUAL GAS FLOW RATE (ft^3/min) (ACFM)	10 117	10 592	9 866	10 191
REFERENCE GAS FLOW RATE (ft^3R/h)	145 934	149 644	137 623	144 400
REFERENCE GAS FLOW RATE (m^3R/h)	4 132	4 237	3 897	4 089
REFERENCE GAS FLOW RATE (ft^3R/min) (RCFM)	2 432	2 494	2 294	2 407

AGNICO EAGLE MINES LTD. Meliadine

23-7693

INCINERATOR

Particles and metals

EXPERIMENTAL SCHEDULE				
RUN NUMBER	INC-Me-E1	INC-Me-E2	INC-Me-E3	AVERAGE
RUN DATE	29/09/2023	30/09/2023	01/10/2023	(1 to 3)
START OF RUN	10h18	11h05	10h40	
END OF RUN	13H40	14h25	14h00	
RUN DURATION (minutes)	200	200	200	
NUMBER OF MEASUREMENTS	40	40	40	
SAMPLING INFORMATION				
DRY GAS METER ORIFICE COEFFICIENT	0.993	0.993	0.993	n/a
MAXIMUM VELOCITY (m/s)	12.4	10.0	9.1	n/a
MINIMUM VELOCITY (m/s)	5.2	6.2	5.6	n/a
10%Vmax (m/s)	1.24	1.00	0.91	n/a
PERCENTAGE >10%Vmax	1.00	1.00	1.00	1.00
AVERAGE ISOKINETISM (%)	103.1	100.8	101.3	101.7
% POINTS RESPECTING ISOKINETIC CRITERIA	100%	100%	100%	100%
MAXIMUM PUMPING FLOW RATE (ft^3/min)	0.76	0.61	0.55	n/a
MAXIMUM VACCUM PRESSURE DURING RUN ("Hg)	-7.0	-5.0	-6.0	n/a
MAXIMUM PROBE TEMPERATURE (°F)	250	250	250	n/a
MINIMUM PROBE TEMPERATURE (°F)	250	250	250	n/a
MAXIMUM FILTER TEMPERATURE (°F)	258	257	264	n/a
MINIMUM FILTER TEMPERATURE (°F)	239	243	238	n/a
MAXIMUM TEMPERATURE AT EXIT (°F)	46	47	43	n/a
MINIMUM TEMPERATURE AT EXIT (°F)	44	43	39	n/a
AVERAGE PUMPING FLOW RATE (ft^3/min)	0.54	0.54	0.50	0.53
4% OF AVERAGE PUMPING FLOW RATE (ft^3/min)	0.022	0.022	0.020	0.021
LEAK TEST BEFORE RUN AT 15 "Hg (ft^3/min)	< 0.02	< 0.02	< 0.02	< 0.02
LEAK TEST AFTER RUN (ft^3/min)	< 0.02	< 0.02	< 0.02	< 0.02
CYCLONIC FLOW				
AVERAGE FLOW ANGLE	0	0	0	0
VERTICAL GAS VELOCITY (m/s)	8.39	8.78	8.18	8.45
FILTRABLE PARTICLES – SPE 1/RM/8				
MASS FILTER (mg)	37.7	69.7	54.8	n/a
MASS NOZZLE & PROBE (mg)	19.1	26.3	33.5	n/a
MASS ACETONE BLANK (mg)		<LDR		n/a
VOLUME ACETONE BLANK (mL)		195.0		n/a
ACETONE RESIDUAL (%)		0.0		n/a
DETECTION LIMIT NOZZLE & PROBE (mg)	1.0	1.0	1.0	n/a
DETECTION LIMIT FILTER (mg)	0.1	0.1	0.1	n/a
MASS NOZZLE & PROBE (mg)	19.1	26.3	33.5	n/a
MASS FILTER (mg)	37.7	69.7	54.8	n/a
TOTAL MASS (mg)	56.8	96.0	88.3	n/a
CONCENTRATION (mg/m^3R)	18.0	30.1	30.0	26.0
METHOD DETECTION LIMIT (mg/m^3R)	0.3	0.3	0.4	0.4
CONCENTRATION (mg/m3R) at 11% O2	16.2	28.1	31.6	25.3
EMISSION RATE (kg/h)	0.1	0.1	0.1	0.1
PARTICULATE SULFUR				
PARTICULATE SULFUR (µg)	348.66	696.69	545.38	n/a
DETECTION LIMIT PARTICULATE SULFUR (µg)	6.24	14.24	8.8	n/a
SULFUR BLANK (µg)		<LDR		n/a
DETECTION LIMIT SULFUR BLANK (µg)		0		n/a
SULFUR CONCENTRATION (µg/m^3R)	113.555626	226.9060663	177.6256735	172.6957886
SULFUR EMISSION (g/h)	102.2000634	211.9217035	187.0738476	167.0652048
METALS – USEPA Method 29				

AGNICO EAGLE MINES LTD. Meliadine				
23-7693				
INCINERATOR				
Particles and metals				
EXPERIMENTAL SCHEDULE				
RUN NUMBER	INC-Me-E1	INC-Me-E2	INC-Me-E3	AVERAGE
RUN DATE	29/09/2023	30/09/2023	01/10/2023	(1 to 3)
START OF RUN	10h18	11h05	10h40	
END OF RUN	13H40	14h25	14h00	
RUN DURATION (minutes)	200	200	200	
NUMBER OF MEASUREMENTS	40	40	40	
PARTICULATE METALS (µg)				
Aluminum (Al)	144.0	320.0	305.0	256.3
Antimony (Sb)	247.0	331.0	252.0	276.7
Silver (Ag)	1.9	7.9	3.1	4.3
Arsenic (As)	72.1	216.0	218.0	168.7
Barium (Ba)	3.0	5.4	5.5	4.6
Beryllium (Be)	< 0.1	< 0.1	< 0.1	< 0.1
Bismuth (Bi)	3.2	7.4	5.2	5.3
Boron (B)	7.1	3.5	4.2	4.9
Cadmium (Cd)	3.8	11.8	4.9	6.8
Calcium (Ca)	4000.0	2810.0	3190.0	3333.3
Chrome (Cr)	6.5	9.7	14.5	10.2
Cobalt (Co)	0.2	0.3	0.3	0.3
Copper (Cu)	91.2	163.0	178.0	144.1
Tin (Sn)	16.3	39.0	62.1	39.1
Iron (Fe)	97.0	167.0	165.0	143.0
Lithium (Li)	25.0	9.0	6.0	13.3
Magnesium (Mg)	75.0	140.0	146.0	120.3
Manganese (Mn)	10.5	10.6	9.0	10.0
Molybdenum (Mo)	3.6	4.8	7.1	5.2
Nickel (Ni)	1.1	1.6	1.2	1.3
Lead (Pb)	89.4	267.0	400.0	252.1
Potassium (K)	8130.0	13300.0	14500.0	11976.7
Selenium (Se)	0.7	0.7	1.0	0.8
Silicon (Si)	403.0	675.0	845.0	641.0
Sodium (Na)	5650.0	9570.0	9040.0	8086.7
Strontium (Sr)	3.8	3.9	4.0	3.9
Thallium (Tl)	< 0.1	0.3	0.2	0.2
Titanium (Ti)	14.0	37.0	42.0	31.0
Vanadium (V)	< 0.2	0.3	0.4	0.3
Zinc (Zn)	503.0	2100.0	1250.0	1284.3
DETECTED METALS	**19602.3**	**30212.2**	**30659.7**	**26824.7**
TOTAL METALS	**19602.7**	**30212.3**	**30659.7**	**26824.9**
Proportion metals vs particles (%)	**34.5**	**31.5**	**34.7**	**33.6**

AGNICO EAGLE MINES LTD. Meliadine

23-7693

INCINERATOR

Particles and metals

EXPERIMENTAL SCHEDULE				
RUN NUMBER	INC-Me-E1	INC-Me-E2	INC-Me-E3	AVERAGE
RUN DATE	29/09/2023	30/09/2023	01/10/2023	(1 to 3)
START OF RUN	10h18	11h05	10h40	
END OF RUN	13H40	14h25	14h00	
RUN DURATION (minutes)	200	200	200	
NUMBER OF MEASUREMENTS	40	40	40	
GASEOUS METALS (µg)				
Aluminum (Al)	24.0	34.0	20.0	26.0
Antimony (Sb)	0.5	4.1	1.1	1.9
Silver (Ag)	< 2.0	< 2.0	< 2.0	< 2.0
Arsenic (As)	< 0.4	1.4	1.6	1.1
Barium (Ba)	< 0.2	1.9	0.5	0.9
Beryllium (Be)	< 0.2	< 0.2	< 0.2	< 0.2
Bismuth (Bi)	< 0.2	3.1	0.5	1.3
Boron (B)	50.7	54.2	50.1	51.7
Cadmium (Cd)	< 0.2	< 0.2	< 0.2	< 0.2
Calcium (Ca)	379.0	309.0	170.0	286.0
Chrome (Cr)	< 0.4	< 0.4	< 0.4	< 0.4
Cobalt (Co)	< 0.4	< 0.4	< 0.4	< 0.4
Copper (Cu)	1.9	1.6	3.2	2.2
Tin (Sn)	23.0	21.0	21.0	21.7
Iron (Fe)	< 20.0	< 20.0	< 20.0	< 20.0
Lithium (Li)	< 4.0	< 4.0	< 4.0	< 4.0
Magnesium (Mg)	105.0	168.0	18.0	97.0
Manganese (Mn)	4.2	4.9	3.1	4.1
Molybdenum (Mo)	< 2.0	< 2.0	< 2.0	< 2.0
Nickel (Ni)	0.5	1.2	1.2	1.0
Lead (Pb)	22.0	< 2.0	< 2.0	8.7
Potassium (K)	< 40.0	< 40.0	< 40.0	< 40.0
Selenium (Se)	1.6	3.5	2.9	2.7
Silicon (Si)	113.0	63.0	38.0	71.3
Sodium (Na)	88.0	68.0	75.0	77.0
Strontium (Sr)	< 0.4	< 0.4	< 0.4	< 0.4
Thallium (Tl)	< 0.4	0.4	< 0.4	0.4
Titanium (Ti)	< 4.0	< 4.0	4.0	4.0
Vanadium (V)	< 0.8	< 0.9	0.9	0.9
Zinc (Zn)	44.4	152.6	84.4	93.8
DETECTED METALS	**857.8**	**891.9**	**495.5**	**748.4**
TOTAL METALS	**933.4**	**968.4**	**567.5**	**823.1**

AGNICO EAGLE MINES LTD. Meliadine				
23-7693				
INCINERATOR				
Particles and metals				
EXPERIMENTAL SCHEDULE				
RUN NUMBER	INC-Me-E1	INC-Me-E2	INC-Me-E3	AVERAGE
RUN DATE	29/09/2023	30/09/2023	01/10/2023	(1 to 3)
START OF RUN	10h18	11h05	10h40	
END OF RUN	13H40	14h25	14h00	
RUN DURATION (minutes)	200	200	200	
NUMBER OF MEASUREMENTS	40	40	40	
TOTAL METALS (µg)				
Aluminum (Al)	168.0	354.0	325.0	282.3
Antimony (Sb)	247.5	335.1	253.1	278.6
Silver (Ag)	3.9	9.9	5.1	6.3
Arsenic (As)	72.5	217.4	219.6	169.8
Barium (Ba)	3.2	7.3	6.0	5.5
Beryllium (Be)	< 0.3	< 0.3	< 0.3	< 0.3
Bismuth (Bi)	3.4	10.5	5.7	6.5
Boron (B)	57.8	57.7	54.3	56.6
Cadmium (Cd)	4.0	12.0	5.1	7.0
Calcium (Ca)	4379.0	3119.0	3360.0	3619.3
Chrome (Cr)	6.9	10.1	14.9	10.6
Cobalt (Co)	0.6	0.7	0.7	0.7
Copper (Cu)	93.1	164.6	181.2	146.3
Tin (Sn)	39.3	60.0	83.1	60.8
Iron (Fe)	117.0	187.0	185.0	163.0
Lithium (Li)	29.0	13.0	10.0	17.3
Magnesium (Mg)	180.0	308.0	164.0	217.3
Manganese (Mn)	14.7	15.5	12.1	14.1
Molybdenum (Mo)	5.6	6.8	9.1	7.2
Nickel (Ni)	1.6	2.8	2.4	2.3
Lead (Pb)	111.4	269.0	402.0	260.8
Potassium (K)	8170.0	13340.0	14540.0	12016.7
Selenium (Se)	2.3	4.2	3.9	3.5
Silicon (Si)	516.0	738.0	883.0	712.3
Sodium (Na)	5738.0	9638.0	9115.0	8163.7
Strontium (Sr)	4.2	4.3	4.4	4.3
Thallium (Tl)	< 0.5	0.7	0.6	0.6
Titanium (Ti)	18.0	41.0	46.0	35.0
Vanadium (V)	< 1.0	1.2	1.3	1.2
Zinc (Zn)	547.4	2252.6	1334.4	1378.1
Mercury (Hg)	0.9	1.4	0.9	1.1
DETECTED METALS	**20535.2**	**31181.8**	**31227.9**	**27648.3**
TOTAL METALS	**20537.0**	**31182.1**	**31228.2**	**27649.1**

AGNICO EAGLE MINES LTD. Meliadine

23-7693

INCINERATOR

Particles and metals

EXPERIMENTAL SCHEDULE				
RUN NUMBER	INC-Me-E1	INC-Me-E2	INC-Me-E3	AVERAGE
RUN DATE	29/09/2023	30/09/2023	01/10/2023	(1 to 3)
START OF RUN	10h18	11h05	10h40	
END OF RUN	13H40	14h25	14h00	
RUN DURATION (minutes)	200	200	200	
NUMBER OF MEASUREMENTS	40	40	40	
PARTICULATE METALS (µg/m^{3}R)				
Aluminum (Al)	45.60	100.4	103.6	83.21
Antimony (Sb)	78.22	103.9	85.60	89.23
Silver (Ag)	0.6017	2.479	1.053	1.378
Arsenic (As)	22.83	67.78	74.05	54.89
Barium (Ba)	0.9500	1.691	1.855	1.499
Beryllium (Be)	< 0.01583	< 0.01569	< 0.01698	< 0.01617
Bismuth (Bi)	0.9975	2.332	1.777	1.702
Boron (B)	2.248	1.098	1.427	1.591
Cadmium (Cd)	1.194	3.703	1.661	2.186
Calcium (Ca)	1267	881.8	1084	1077
Chrome (Cr)	2.058	3.044	4.926	3.343
Cobalt (Co)	0.06333	0.09414	0.1019	0.08646
Copper (Cu)	28.88	51.15	60.47	46.83
Tin (Sn)	5.162	12.24	21.09	12.83
Iron (Fe)	30.72	52.41	56.05	46.39
Lithium (Li)	7.917	2.824	2.038	4.260
Magnesium (Mg)	23.75	43.93	49.60	39.09
Manganese (Mn)	3.325	3.326	3.057	3.236
Molybdenum (Mo)	1.140	1.506	2.412	1.686
Nickel (Ni)	0.3483	0.5021	0.4076	0.4194
Lead (Pb)	28.31	83.79	135.9	82.66
Potassium (K)	2575	4174	4926	3891
Selenium (Se)	0.2217	0.2197	0.3397	0.2603
Silicon (Si)	127.6	211.8	287.0	208.8
Sodium (Na)	1789	3003	3071	2621
Strontium (Sr)	1.203	1.224	1.359	1.262
Thallium (Tl)	< 0.03167	0.09414	0.06794	0.06458
Titanium (Ti)	4.433	11.61	14.27	10.10
Vanadium (V)	< 0.06333	0.09414	0.1359	0.09778
Zinc (Zn)	159.3	659.0	424.6	414.3
DETECTED METALS	**6207**	**9481**	**10410**	**8701**
TOTAL METALS	**6208**	**9481**	**10410**	**8701**

AGNICO EAGLE MINES LTD. Meliadine

23-7693

INCINERATOR

Particles and metals

EXPERIMENTAL SCHEDULE				
RUN NUMBER	INC-Me-E1	INC-Me-E2	INC-Me-E3	AVERAGE
RUN DATE	29/09/2023	30/09/2023	01/10/2023	(1 to 3)
START OF RUN	10h18	11h05	10h40	
END OF RUN	13H40	14h25	14h00	
RUN DURATION (minutes)	200	200	200	
NUMBER OF MEASUREMENTS	40	40	40	
GASEOUS METALS (µg/m^{3}R)				
Aluminum (Al)	7.600	10.67	6.794	8.354
Antimony (Sb)	0.1583	1.287	0.3737	0.6062
Silver (Ag)	< 0.6333	< 0.6276	< 0.6794	< 0.6468
Arsenic (As)	< 0.1267	0.4393	0.5435	0.3698
Barium (Ba)	< 0.06333	0.5962	0.1698	0.2765
Beryllium (Be)	< 0.06333	< 0.06276	< 0.06794	< 0.06468
Bismuth (Bi)	< 0.06333	0.9728	0.1698	0.4020
Boron (B)	16.06	17.01	17.02	16.69
Cadmium (Cd)	< 0.06333	< 0.06276	< 0.06794	< 0.06468
Calcium (Ca)	120.0	96.97	57.75	91.58
Chrome (Cr)	< 0.1267	< 0.1255	< 0.1359	< 0.1294
Cobalt (Co)	< 0.1267	< 0.1255	< 0.1359	< 0.1294
Copper (Cu)	0.6017	0.5021	1.087	0.7303
Tin (Sn)	7.283	6.590	7.134	7.002
Iron (Fe)	< 6.333	< 6.276	< 6.794	< 6.468
Lithium (Li)	< 1.267	< 1.255	< 1.359	< 1.294
Magnesium (Mg)	33.25	52.72	6.114	30.69
Manganese (Mn)	1.330	1.538	1.053	1.307
Molybdenum (Mo)	< 0.6333	< 0.6276	< 0.6794	< 0.6468
Nickel (Ni)	0.1583	0.3766	0.4076	0.3142
Lead (Pb)	6.967	< 0.6276	< 0.6794	2.758
Potassium (K)	< 12.67	< 12.55	< 13.59	< 12.94
Selenium (Se)	0.5067	1.098	0.9851	0.8634
Silicon (Si)	35.78	19.77	12.91	22.82
Sodium (Na)	27.87	21.34	25.48	24.89
Strontium (Sr)	< 0.1267	< 0.1255	< 0.1359	< 0.1294
Thallium (Tl)	< 0.1267	0.1255	< 0.1359	0.1294
Titanium (Ti)	< 1.267	< 1.255	1.359	1.294
Vanadium (V)	< 0.2533	< 0.2824	0.3057	0.2805
Zinc (Zn)	14.06	47.89	28.67	30.21
DETECTED METALS	**271.6**	**279.9**	**168.3**	**239.9**
TOTAL METALS	**295.6**	**303.9**	**192.8**	**264.1**

AGNICO EAGLE MINES LTD. Meliadine				
23-7693				
INCINERATOR				
Particles and metals				
EXPERIMENTAL SCHEDULE				
RUN NUMBER	INC-Me-E1	INC-Me-E2	INC-Me-E3	AVERAGE
RUN DATE	29/09/2023	30/09/2023	01/10/2023	(1 to 3)
START OF RUN	10h18	11h05	10h40	
END OF RUN	13H40	14h25	14h00	
RUN DURATION (minutes)	200	200	200	
NUMBER OF MEASUREMENTS	40	40	40	
TOTAL METALS (µg/m^{3}R)				
Aluminum (Al)	53.20	111.1	110.4	91.56
Antimony (Sb)	78.38	105.2	85.98	89.84
Silver (Ag)	1.235	3.107	1.732	2.025
Arsenic (As)	22.96	68.22	74.60	55.26
Barium (Ba)	1.013	2.288	2.025	1.775
Beryllium (Be)	< 0.07917	< 0.07845	< 0.08492	< 0.08085
Bismuth (Bi)	1.061	3.304	1.946	2.104
Boron (B)	18.30	18.11	18.45	18.29
Cadmium (Cd)	1.257	3.766	1.729	2.251
Calcium (Ca)	1387	978.8	1141	1169
Chrome (Cr)	2.185	3.169	5.061	3.472
Cobalt (Co)	0.1900	0.2197	0.2378	0.2158
Copper (Cu)	29.48	51.65	61.55	47.56
Tin (Sn)	12.45	18.83	28.23	19.83
Iron (Fe)	37.05	58.68	62.84	52.86
Lithium (Li)	9.183	4.079	3.397	5.553
Magnesium (Mg)	57.00	96.65	55.71	69.79
Manganese (Mn)	4.655	4.864	4.110	4.543
Molybdenum (Mo)	1.773	2.134	3.091	2.333
Nickel (Ni)	0.5067	0.8787	0.8153	0.7335
Lead (Pb)	35.28	84.41	136.6	85.42
Potassium (K)	2587	4186	4939	3904
Selenium (Se)	0.7283	1.318	1.325	1.124
Silicon (Si)	163.4	231.6	299.9	231.6
Sodium (Na)	1817	3024	3096	2646
Strontium (Sr)	1.330	1.349	1.495	1.391
Thallium (Tl)	< 0.1583	0.2197	0.2038	0.1939
Titanium (Ti)	5.700	12.87	15.63	11.40
Vanadium (V)	< 0.3167	0.3766	0.4416	0.3783
Zinc (Zn)	173.3	706.9	453.3	444.5
Mercury (Hg)	0.2913	0.4456	0.3125	0.3498
DETECTED METALS	**6503**	**9785**	**10610**	**8965**
TOTAL METALS	**6503**	**9785**	**10610**	**8966**

AGNICO EAGLE MINES LTD. Meliadine				
23-7693				
INCINERATOR				
Particles and metals				
EXPERIMENTAL SCHEDULE				
RUN NUMBER	INC-Me-E1	INC-Me-E2	INC-Me-E3	AVERAGE
RUN DATE	29/09/2023	30/09/2023	01/10/2023	(1 to 3)
START OF RUN	10h18	11h05	10h40	
END OF RUN	13H40	14h25	14h00	
RUN DURATION (minutes)	200	200	200	
NUMBER OF MEASUREMENTS	40	40	40	
TOTAL METALS (µg/m3R) at 11% O2				
Aluminum (Al)	47.88	103.8	116.3	89.30
Antimony (Sb)	70.54	98.21	90.55	86.43
Silver (Ag)	1.112	2.902	1.825	1.946
Arsenic (As)	20.66	63.72	78.56	54.31
Barium (Ba)	0.9120	2.137	2.132	1.727
Beryllium (Be)	< 0.07125	< 0.07327	< 0.08944	< 0.07799
Bismuth (Bi)	0.9548	3.086	2.050	2.030
Boron (B)	16.47	16.91	19.43	17.60
Cadmium (Cd)	1.131	3.517	1.821	2.156
Calcium (Ca)	1248	914.1	1202	1121
Chrome (Cr)	1.967	2.960	5.331	3.419
Cobalt (Co)	0.1710	0.2052	0.2504	0.2089
Copper (Cu)	26.53	48.24	64.83	46.53
Tin (Sn)	11.20	17.58	29.73	19.51
Iron (Fe)	33.35	54.81	66.19	51.45
Lithium (Li)	8.265	3.810	3.578	5.218
Magnesium (Mg)	51.30	90.27	58.67	66.75
Manganese (Mn)	4.190	4.543	4.329	4.354
Molybdenum (Mo)	1.596	1.993	3.256	2.282
Nickel (Ni)	0.4560	0.8206	0.8586	0.7118
Lead (Pb)	31.75	78.84	143.8	84.80
Potassium (K)	2328	3910	5202	3813
Selenium (Se)	0.6555	1.231	1.395	1.094
Silicon (Si)	147.1	216.3	315.9	226.4
Sodium (Na)	1635	2825	3261	2574
Strontium (Sr)	1.197	1.260	1.574	1.344
Thallium (Tl)	< 0.1425	0.2052	0.2147	0.1874
Titanium (Ti)	5.130	12.02	16.46	11.20
Vanadium (V)	< 0.2850	0.3517	0.4651	0.3673
Zinc (Zn)	156.0	660.2	477.4	431.2
Mercury (Hg)	0.2622	0.4162	0.3291	0.3358
DETECTED METALS	**5853**	**9139**	**11170**	**8721**
TOTAL METALS	**5853**	**9139**	**11170**	**8721**

AGNICO EAGLE MINES LTD. Meliadine

23-7693

INCINERATOR

Particles and metals

EXPERIMENTAL SCHEDULE				
RUN NUMBER	INC-Me-E1	INC-Me-E2	INC-Me-E3	AVERAGE
RUN DATE	29/09/2023	30/09/2023	01/10/2023	(1 to 3)
START OF RUN	10h18	11h05	10h40	
END OF RUN	13H40	14h25	14h00	
RUN DURATION (minutes)	200	200	200	
NUMBER OF MEASUREMENTS	40	40	40	
PARTICULATE METALS (g/h)				
Aluminum (Al)	0.1884	0.4255	0.4038	0.3392
Antimony (Sb)	0.3232	0.4401	0.3336	0.3657
Silver (Ag)	0.002486	0.01050	0.004104	0.005698
Arsenic (As)	0.09435	0.2872	0.2886	0.2234
Barium (Ba)	0.003926	0.007167	0.007228	0.006107
Beryllium (Be)	< 0.00006543	< 0.00006649	< 0.00006619	< 0.00006604
Bismuth (Bi)	0.004122	0.009880	0.006923	0.006975
Boron (B)	0.009291	0.004654	0.005560	0.006502
Cadmium (Cd)	0.004933	0.01569	0.006473	0.009033
Calcium (Ca)	5.234	3.737	4.223	4.398
Chrome (Cr)	0.008506	0.01290	0.01920	0.01353
Cobalt (Co)	0.0002617	0.0003989	0.0003971	0.0003526
Copper (Cu)	0.1193	0.2167	0.2356	0.1906
Tin (Sn)	0.02133	0.05186	0.08221	0.05180
Iron (Fe)	0.1269	0.2221	0.2184	0.1891
Lithium (Li)	0.03272	0.01197	0.007943	0.01754
Magnesium (Mg)	0.09815	0.1862	0.1933	0.1592
Manganese (Mn)	0.01374	0.01410	0.01191	0.01325
Molybdenum (Mo)	0.004711	0.006383	0.009399	0.006831
Nickel (Ni)	0.001439	0.002128	0.001589	0.001719
Lead (Pb)	0.1170	0.3550	0.5295	0.3338
Potassium (K)	10.64	17.69	19.20	15.84
Selenium (Se)	0.0009160	0.0009308	0.001324	0.001057
Silicon (Si)	0.5274	0.8976	1.119	0.8478
Sodium (Na)	7.394	12.73	11.97	10.70
Strontium (Sr)	0.004973	0.005186	0.005295	0.005151
Thallium (Tl)	< 0.0001309	0.0003989	0.0002648	0.0002648
Titanium (Ti)	0.01832	0.04920	0.05560	0.04104
Vanadium (V)	< 0.0002617	0.0003989	0.0005295	0.0003967
Zinc (Zn)	0.6582	2.792	1.655	1.702
DETECTED METALS	**25.65**	**40.17**	**40.59**	**35.47**
TOTAL METALS	**25.65**	**40.17**	**40.59**	**35.47**

AGNICO EAGLE MINES LTD. Meliadine

23-7693

INCINERATOR

Particles and metals

EXPERIMENTAL SCHEDULE				
RUN NUMBER	INC-Me-E1	INC-Me-E2	INC-Me-E3	AVERAGE
RUN DATE	29/09/2023	30/09/2023	01/10/2023	(1 to 3)
START OF RUN	10h18	11h05	10h40	
END OF RUN	13H40	14h25	14h00	
RUN DURATION (minutes)	200	200	200	
NUMBER OF MEASUREMENTS	40	40	40	
GASEOUS METALS (g/h)				
Aluminum (Al)	0.03141	0.04521	0.02648	0.03436
Antimony (Sb)	0.0006543	0.005452	0.001456	0.002521
Silver (Ag)	< 0.002617	< 0.002659	< 0.002648	< 0.002641
Arsenic (As)	< 0.0005234	0.001862	0.002118	0.001501
Barium (Ba)	< 0.0002617	0.002526	0.0006619	0.001150
Beryllium (Be)	< 0.0002617	< 0.0002659	< 0.0002648	< 0.0002641
Bismuth (Bi)	< 0.0002617	0.004122	0.0006619	0.001682
Boron (B)	0.06635	0.07207	0.06632	0.06825
Cadmium (Cd)	< 0.0002617	< 0.0002659	< 0.0002648	< 0.0002641
Calcium (Ca)	0.4960	0.4109	0.2250	0.3773
Chrome (Cr)	< 0.0005234	< 0.0005319	< 0.0005295	< 0.0005283
Cobalt (Co)	< 0.0005234	< 0.0005319	< 0.0005295	< 0.0005283
Copper (Cu)	0.002486	0.002128	0.004236	0.002950
Tin (Sn)	0.03010	0.02792	0.02780	0.02861
Iron (Fe)	< 0.02617	< 0.02659	< 0.02648	< 0.02641
Lithium (Li)	< 0.005234	< 0.005319	< 0.005295	< 0.005283
Magnesium (Mg)	0.1374	0.2234	0.02383	0.1282
Manganese (Mn)	0.005496	0.006516	0.004104	0.005372
Molybdenum (Mo)	< 0.002617	< 0.002659	< 0.002648	< 0.002641
Nickel (Ni)	0.0006543	0.001596	0.001589	0.001280
Lead (Pb)	0.02879	< 0.002659	< 0.002648	0.01137
Potassium (K)	< 0.05234	< 0.05319	< 0.05295	< 0.05283
Selenium (Se)	0.002094	0.004654	0.003839	0.003529
Silicon (Si)	0.1479	0.08377	0.05030	0.09398
Sodium (Na)	0.1152	0.09042	0.09928	0.1016
Strontium (Sr)	< 0.0005234	< 0.0005319	< 0.0005295	< 0.0005283
Thallium (Tl)	< 0.0005234	0.0005319	< 0.0005295	0.0005283
Titanium (Ti)	< 0.005234	< 0.005319	0.005295	0.005283
Vanadium (V)	< 0.001047	< 0.001197	0.001191	0.001145
Zinc (Zn)	0.05810	0.2029	0.1117	0.1242
DETECTED METALS	**1.123**	**1.186**	**0.6559**	**0.9882**
TOTAL METALS	**1.221**	**1.288**	**0.7513**	**1.087**

AGNICO EAGLE MINES LTD. Meliadine

23-7693

INCINERATOR

Particles and metals

EXPERIMENTAL SCHEDULE				
RUN NUMBER	INC-Me-E1	INC-Me-E2	INC-Me-E3	AVERAGE
RUN DATE	29/09/2023	30/09/2023	01/10/2023	(1 to 3)
START OF RUN	10h18	11h05	10h40	
END OF RUN	13H40	14h25	14h00	
RUN DURATION (minutes)	200	200	200	
NUMBER OF MEASUREMENTS	40	40	40	
TOTAL METALS (g/h)				
Aluminum (Al)	0.2198	0.4707	0.4302	0.3736
Antimony (Sb)	0.3239	0.4456	0.3351	0.3682
Silver (Ag)	0.005104	0.01316	0.006751	0.008340
Arsenic (As)	0.09487	0.2891	0.2907	0.2249
Barium (Ba)	0.004188	0.009694	0.007890	0.007257
Beryllium (Be)	< 0.0003272	< 0.0003324	< 0.0003309	< 0.0003302
Bismuth (Bi)	0.004384	0.01400	0.007585	0.008657
Boron (B)	0.07564	0.07673	0.07188	0.07475
Cadmium (Cd)	0.005195	0.01596	0.006738	0.009297
Calcium (Ca)	5.730	4.147	4.448	4.775
Chrome (Cr)	0.009029	0.01343	0.01972	0.01406
Cobalt (Co)	0.0007852	0.0009308	0.0009267	0.0008809
Copper (Cu)	0.1218	0.2189	0.2399	0.1935
Tin (Sn)	0.05143	0.07978	0.1100	0.08041
Iron (Fe)	0.1531	0.2487	0.2449	0.2156
Lithium (Li)	0.03795	0.01729	0.01324	0.02282
Magnesium (Mg)	0.2355	0.4096	0.2171	0.2874
Manganese (Mn)	0.01924	0.02061	0.01602	0.01862
Molybdenum (Mo)	0.007328	0.009042	0.01205	0.009472
Nickel (Ni)	0.002094	0.003723	0.003177	0.002998
Lead (Pb)	0.1458	0.3577	0.5322	0.3452
Potassium (K)	10.69	17.74	19.25	15.89
Selenium (Se)	0.003010	0.005585	0.005163	0.004586
Silicon (Si)	0.6752	0.9813	1.169	0.9418
Sodium (Na)	7.509	12.82	12.07	10.80
Strontium (Sr)	0.005496	0.005718	0.005825	0.005680
Thallium (Tl)	< 0.0006543	0.0009308	0.0007943	0.0007931
Titanium (Ti)	0.02355	0.05452	0.06089	0.04632
Vanadium (V)	< 0.001309	0.001596	0.001721	0.001542
Zinc (Zn)	0.7163	2.995	1.766	1.826
Mercury (Hg)	0.001204	0.001888	0.001218	0.001437
DETECTED METALS	**26.87**	**41.46**	**41.34**	**36.56**
TOTAL METALS	**26.87**	**41.46**	**41.34**	**36.56**

R: Reference conditions at 101.3 kPa and 25°C, on a dry basis

Sampling survey : INCINERATOR – Particles and metals – Run 1																					
Time	Trav. #	Point #	Pumping duration (min)	Pressure difference (in H_2O)		Temperatures (°F)				Gas volume (ft^3)			Velocity (m/s)	Iso. (%)	O_2 (%v)	CO_2 (%v)	CO (ppmv)	Vaccuum (in. Hg)	Temperatures (°F)		
				ΔP	ΔH	Stack	Dry gas meter in	Dry gas meter out	Orifice	Start	End	Total							Probe	Filter	Exit
10h18	1	1	5	0.04	0.32	1121	60	60	57	46.24	48.45	2.21	5.24	107.45	11.0	7.2	26.0	-2	250	248	45
		2	5	0.04	0.31	1198	60	60	54	48.45	50.57	2.12	5.37	105.55	10.9	7.2	10.0	-2	250	252	45
		3	5	0.04	0.30	1243	60	60	55	50.57	52.67	2.10	5.44	105.96	10.9	7.2	7.0	-2	250	246	44
		4	5	0.04	0.29	1304	60	60	55	52.67	54.78	2.11	5.53	108.36	9.9	8.0	6.0	-2	250	256	44
		5	5	0.05	0.35	1366	60	60	55	54.78	56.98	2.20	6.30	102.83	10.0	8.1	4.0	-2	250	249	44
		6	5	0.06	0.40	1427	60	60	55	56.98	59.40	2.42	7.01	104.98	10.0	8.1	4.0	-2	250	254	45
		7	5	0.07	0.46	1478	60	60	55	59.40	61.93	2.53	7.67	102.99	10.0	8.1	4.0	-3	250	253	45
		8	5	0.07	0.45	1506	60	60	55	61.93	64.45	2.52	7.73	103.32	10.0	8.1	4.0	-3	250	244	44
		9	5	0.06	0.38	1550	60	60	55	64.45	66.81	2.36	7.24	105.65	10.0	8.1	4.0	-3	250	248	44
		10	5	0.07	0.44	1550	60	60	56	66.81	69.31	2.50	7.82	103.64	10.0	8.1	4.0	-4	250	250	45
		11	5	0.07	0.44	1575	60	60	56	69.31	71.85	2.54	7.86	105.95	8.4	9.4	4.0	-4	250	257	45
		12	5	0.07	0.43	1585	60	60	56	71.85	74.29	2.44	7.88	102.02	8.4	9.4	4.0	-4	250	256	44
		13	5	0.08	0.50	1587	60	60	56	74.29	76.91	2.62	8.43	102.54	8.4	9.4	4.0	-4	250	244	44
		14	5	0.07	0.43	1588	60	60	57	76.91	79.30	2.39	7.89	100.01	8.7	9.1	4.0	-4	250	239	44
		15	5	0.07	0.43	1598	60	60	57	79.30	81.75	2.45	7.91	102.77	8.7	9.1	4.0	-4	250	245	44
		16	5	0.06	0.40	1454	60	60	58	81.75	84.14	2.39	7.06	104.42	8.7	9.1	4.0	-4	250	248	44
		17	5	0.06	0.42	1354	60	60	58	84.14	86.56	2.42	6.87	102.93	8.7	9.1	4.0	-4	250	247	44
		18	5	0.06	0.38	1551	60	60	58	86.56	88.87	2.31	7.24	103.44	8.7	9.1	4.0	-4	250	245	44
		19	5	0.07	0.43	1612	60	60	58	88.87	91.35	2.48	7.94	104.38	8.7	9.1	4.0	-5	250	246	44
		20	5	0.05	0.31	1609	60	60	58	91.35	93.43	2.08	6.70	103.48	8.7	9.1	4.0	-5	250	245	44
	2	1	5	0.11	0.67	1633	60	60	58	93.43	96.37	2.94	10.00	99.266	9.4	8.5	4.0	-5	250	244	45
		2	5	0.12	0.73	1630	60	60	58	96.37	99.54	3.17	10.43	102.42	9.4	8.5	4.0	-6	250	252	45
		3	5	0.14	0.85	1632	60	60	58	99.54	102.97	3.43	11.28	102.68	9.4	8.5	4.0	-6	250	249	45
		4	5	0.16	0.97	1637	60	60	58	102.97	106.52	3.55	12.07	99.553	9.4	8.5	4.0	-7	250	255	45
		5	5	0.16	0.98	1631	60	60	60	106.52	110.15	3.63	12.05	101.65	9.4	8.5	4.0	-7	250	256	45
		6	5	0.17	1.04	1636	60	60	61	110.15	113.85	3.70	12.44	100.65	10.7	7.7	4.0	-7	250	242	45
		7	5	0.17	1.04	1636	60	60	61	113.85	117.56	3.71	12.44	100.93	10.7	7.7	4.0	-6	250	258	44
		8	5	0.17	1.04	1640	60	60	61	117.56	121.10	3.54	12.45	96.393	10.7	7.7	4.0	-6	250	250	44
		9	5	0.12	0.73	1642	60	60	61	121.10	124.36	3.26	10.46	105.63	10.7	7.7	4.0	-6	250	253	44
		10	5	0.11	0.67	1648	60	60	61	124.36	127.30	2.94	10.03	99.621	10.7	7.7	4.0	-6	250	251	45
		11	5	0.06	0.37	1632	60	60	61	127.30	129.61	2.31	7.38	105.5	10.7	7.7	4.0	-5	250	252	44
		12	5	0.06	0.37	1633	60	60	62	129.61	131.78	2.17	7.38	99.131	10.7	7.7	4.0	-5	250	258	44
		13	5	0.07	0.43	1629	60	60	63	131.78	134.25	2.47	7.97	104.38	10.7	7.7	4.0	-5	250	251	45
		14	5	0.08	0.49	1629	60	60	63	134.25	136.88	2.63	8.52	103.98	10.7	7.7	4.0	-5	250	248	45
		15	5	0.07	0.43	1622	60	60	63	136.88	139.31	2.43	7.95	102.52	10.7	7.7	4.0	-5	250	250	45
		16	5	0.07	0.43	1625	60	60	63	139.31	141.74	2.43	7.96	102.59	10.7	7.7	4.0	-5	250	252	45
		17	5	0.08	0.49	1629	60	60	63	141.74	144.37	2.63	8.52	103.98	10.7	7.7	4.0	-5	250	251	45
		18	5	0.08	0.49	1630	60	60	63	144.37	147.02	2.65	8.52	104.8	10.4	7.9	4.0	-5	250	250	46
		19	5	0.07	0.43	1629	60	60	65	147.02	149.45	2.43	7.97	102.69	10.4	7.9	4.0	-5	250	252	46
13H40		20	5	0.08	0.49	1629	60	60	65	149.45	152.07	2.62	8.52	103.59	10.4	7.9	4.0	-5	250	247	46

Sampling survey : INCINERATOR – Particles and metals – Run 2																					
Time	Trav. #	Point #	Pumping duration (min)	Pressure difference (in H_2O)		Temperatures (°F)				Gas volume (ft^3)			Velocity (m/s)	Iso. (%)	O_2 (%v)	CO_2 (%v)	CO (ppmv)	Vaccuum (in. Hg)	Temperatures (°F)		
				ΔP	ΔH	Stack	Dry gas meter in	Dry gas meter out	Orifice	Start	End	Total							Probe	Filter	Exit
11h05	1	1	5	0.05	0.34	1302	60	60	56	53.24	55.52	2.28	6.19	105.01	11.3	6.9	36.0	-2	250	253	47
		2	5	0.05	0.32	1420	60	60	57	55.52	57.66	2.14	6.39	101.8	11.3	6.9	36.0	-2	250	252	47
		3	5	0.05	0.31	1467	60	60	57	57.66	59.78	2.12	6.47	102.1	9.4	8.5	6.0	-2	250	244	47
		4	5	0.05	0.30	1490	60	60	57	59.78	61.90	2.12	6.51	102.71	9.4	8.5	6.0	-2	250	250	47
		5	5	0.05	0.30	1488	60	60	58	61.90	64.01	2.11	6.51	102.17	9.4	8.5	6.0	-2	250	250	47
		6	5	0.05	0.30	1498	60	60	57	64.01	66.12	2.11	6.52	102.44	9.7	8.3	4.0	-2	250	253	47
		7	5	0.08	0.48	1526	60	60	57	66.12	68.71	2.59	8.31	100.16	8.3	9.8	4.0	-2	250	252	47
		8	5	0.09	0.53	1536	60	60	57	68.71	71.45	2.74	8.84	100.16	8.3	9.8	4.0	-2	250	252	47
		9	5	0.09	0.53	1560	60	60	57	71.45	74.19	2.74	8.89	100.76	8.3	9.8	4.0	-3	250	253	47
		10	5	0.09	0.53	1556	60	60	57	74.19	76.93	2.74	8.88	100.66	9.2	8.9	4.0	-3	250	252	47
		11	5	0.09	0.53	1561	60	60	57	76.93	79.64	2.71	8.89	99.682	9.2	8.9	4.0	-4	250	245	47
		12	5	0.09	0.53	1569	60	60	58	79.64	82.40	2.76	8.91	101.72	9.5	8.8	4.0	-4	250	249	46
		13	5	0.09	0.52	1576	60	60	58	82.40	85.12	2.72	8.93	100.42	9.5	8.8	4.0	-4	250	246	46
		14	5	0.10	0.58	1579	60	60	58	85.12	88.04	2.92	9.42	102.36	9.5	8.8	4.0	-4	250	243	46
		15	5	0.10	0.58	1589	60	60	58	88.04	90.82	2.78	9.44	97.692	9.5	8.8	4.0	-4	250	257	46
		16	5	0.10	0.58	1594	60	60	58	90.82	93.62	2.80	9.45	98.514	9.8	8.5	4.0	-4	250	256	46
		17	5	0.10	0.58	1599	60	60	58	93.62	96.48	2.86	9.46	100.75	9.8	8.5	4.0	-4	250	255	46
		18	5	0.10	0.58	1597	60	60	58	96.48	99.33	2.85	9.46	100.35	10.0	8.4	4.0	-5	250	254	44
		19	5	0.11	0.63	1615	60	60	58	99.33	102.32	2.99	9.96	100.83	10.0	8.4	4.0	-5	250	250	44
		20	5	0.11	0.63	1613	60	60	58	102.32	105.28	2.96	9.96	99.768	10.2	8.1	4.0	-5	250	249	46
	2	1	5	0.11	0.63	1614	60	60	60	5.28	8.25	2.97	9.96	100.13	10.2	8.1	4.0	-5	250	248	46
		2	5	0.10	0.57	1621	60	60	60	8.25	11.05	2.80	9.51	99.158	10.2	8.1	4.0	-5	250	245	46
		3	5	0.11	0.63	1623	60	60	60	11.05	14.05	3.00	9.98	101.36	10.2	8.1	4.0	-5	250	245	46
		4	5	0.11	0.63	1619	60	60	60	14.05	17.03	2.98	9.97	100.59	10.2	8.2	4.0	-5	250	245	47
		5	5	0.10	0.57	1628	60	60	60	17.03	19.86	2.83	9.53	100.39	10.2	8.2	4.0	-5	250	245	47
		6	5	0.09	0.51	1627	60	60	60	19.86	22.55	2.69	9.04	100.55	10.2	8.2	4.0	-5	250	245	45
		7	5	0.09	0.52	1624	60	60	62	22.55	25.29	2.74	9.03	102.34	10.4	8.0	4.0	-5	250	245	45
		8	5	0.11	0.63	1627	60	60	62	25.29	28.26	2.97	9.99	100.44	10.4	8.0	4.0	-5	250	245	45
		9	5	0.10	0.57	1635	60	60	62	28.26	31.07	2.81	9.54	99.846	10.6	7.8	4.0	-5	250	245	45
		10	5	0.10	0.57	1627	60	60	62	31.07	33.86	2.79	9.53	98.947	10.6	7.8	4.0	-5	250	245	44
		11	5	0.10	0.57	1626	60	60	62	33.86	36.67	2.81	9.52	99.632	10.6	7.8	4.0	-5	250	245	44
		12	5	0.09	0.51	1636	60	60	63	36.67	39.38	2.71	9.06	101.51	10.5	7.9	4.0	-5	250	245	44
		13	5	0.09	0.52	1632	60	60	63	39.38	42.08	2.70	9.05	101.04	10.5	7.9	4.0	-5	250	245	44
		14	5	0.09	0.52	1630	60	60	63	42.08	44.78	2.70	9.04	100.99	10.5	7.9	4.0	-5	250	245	44
		15	5	0.09	0.52	1634	60	60	63	44.78	47.48	2.70	9.05	101.09	10.5	7.9	4.0	-5	250	245	44
		16	5	0.09	0.52	1613	60	60	63	47.48	50.17	2.69	9.01	100.21	10.5	7.9	4.0	-5	250	245	44
		17	5	0.08	0.46	1640	60	60	63	50.17	52.68	2.51	8.55	99.804	10.5	8.0	4.0	-5	250	245	44
		18	5	0.07	0.40	1619	60	60	63	52.68	55.08	2.40	7.95	101.49	10.5	8.0	4.0	-5	250	245	43
		19	5	0.07	0.40	1634	60	60	63	55.08	57.45	2.37	7.98	100.59	10.5	8.0	4.0	-5	250	245	43
14h25		20	5	0.08	0.46	1627	60	60	63	57.45	60.04	2.59	8.52	102.67	10.5	8.0	4.0	-5	250	245	44

Sampling survey : INCINERATOR – Particles and metals – Run 3																					
Time	Trav. #	Point #	Pumping duration (min)	Pressure difference (in H_2O)		Temperatures (°F)				Gas volume (ft^3)			Velocity (m/s)	Iso. (%)	O_2 (%v)	CO_2 (%v)	CO (ppmv)	Vaccuum (in. Hg)	Temperatures (°F)		
				ΔP	ΔH	Stack	Dry gas meter in	Dry gas meter out	Orifice	Start	End	Total							Probe	Filter	Exit
10h40	1	1	5	0.04	0.26	1354	60	60	52	60.61	62.62	2.01	5.64	105.58	9.1	9.0	10.0	-2	250	245	43
		2	5	0.04	0.26	1370	60	60	53	62.62	64.56	1.94	5.66	102.36	9.1	9.0	10.0	-2	250	250	42
		3	5	0.04	0.25	1400	60	60	52	64.56	66.49	1.93	5.71	102.66	11.6	6.8	7.0	-2	250	254	42
		4	5	0.05	0.31	1435	60	60	52	66.49	68.59	2.10	6.44	100.86	11.6	6.8	7.0	-2	250	253	42
		5	5	0.05	0.30	1476	60	60	52	68.59	70.67	2.08	6.51	100.97	11.6	6.8	7.0	-2	250	254	42
		6	5	0.07	0.42	1498	60	60	52	70.67	73.15	2.48	7.75	102.35	11.7	7.3	11.0	-4	250	253	42
		7	5	0.08	0.47	1523	60	60	52	73.15	75.76	2.61	8.34	101.42	11.7	7.3	11.0	-4	250	249	41
		8	5	0.07	0.41	1550	60	60	53	75.76	78.18	2.42	7.85	101.19	11.7	7.3	11.0	-4	250	257	41
		9	5	0.08	0.47	1555	60	60	53	78.18	80.78	2.60	8.40	101.84	11.2	7.1	6.0	-4	250	244	41
		10	5	0.08	0.46	1572	60	60	53	80.78	83.33	2.55	8.44	100.3	11.2	7.1	6.0	-4	250	254	41
		11	5	0.07	0.40	1576	60	60	53	83.33	85.79	2.46	7.90	103.53	11.4	7.3	6.0	-4	250	255	40
		12	5	0.07	0.40	1588	60	60	54	85.79	88.20	2.41	7.92	101.72	11.4	7.3	6.0	-4	250	247	41
		13	5	0.07	0.40	1590	60	60	54	88.20	90.53	2.33	7.93	98.392	11.4	7.3	6.0	-4	250	246	40
		14	5	0.07	0.40	1601	60	60	55	90.53	92.93	2.40	7.95	101.62	11.4	7.3	6.0	-4	250	242	40
		15	5	0.08	0.46	1596	60	60	55	92.93	95.49	2.56	8.49	101.28	11.4	7.3	6.0	-4	250	245	40
		16	5	0.08	0.46	1604	60	60	55	95.49	98.04	2.55	8.50	101.08	11.4	7.3	6.0	-4	250	248	40
		17	5	0.08	0.46	1606	60	60	56	98.04	100.58	2.54	8.51	100.74	11.4	7.3	6.0	-4	250	252	40
		18	5	0.08	0.46	1615	60	60	56	100.58	103.12	2.54	8.53	100.96	11.4	7.3	6.0	-4	250	246	39
		19	5	0.08	0.46	1613	60	60	58	103.12	105.68	2.56	8.52	101.7	11.4	7.3	6.0	-5	250	256	39
		20	5	0.08	0.46	1617	60	60	58	105.68	108.25	2.57	8.53	102.2	11.4	7.3	6.0	-5	250	253	39
	2	1	5	0.07	0.40	1622	60	60	57	8.25	10.79	2.54	7.99	108.09	11.4	7.3	6.0	-5	250	254	39
		2	5	0.09	0.51	1621	60	60	57	10.79	13.48	2.69	9.06	100.96	11.4	7.3	6.0	-5	250	261	39
		3	5	0.08	0.45	1627	60	60	57	13.48	16.00	2.52	8.55	100.45	11.4	7.3	6.0	-5	250	242	39
		4	5	0.08	0.45	1626	60	60	57	16.00	18.52	2.52	8.55	100.43	11.4	7.3	6.0	-5	250	249	40
		5	5	0.09	0.51	1631	60	60	57	18.52	21.15	2.63	9.08	98.947	11.4	7.3	6.0	-5	250	251	40
		6	5	0.09	0.51	1630	60	60	57	21.15	23.80	2.65	9.08	99.675	11.4	7.3	6.0	-5	250	248	40
		7	5	0.08	0.45	1643	60	60	57	23.80	26.31	2.51	8.58	100.43	11.4	7.3	6.0	-5	250	251	40
		8	5	0.09	0.51	1638	60	60	57	26.31	29.01	2.70	9.09	101.75	11.4	7.3	6.0	-5	250	252	39
		9	5	0.09	0.51	1646	60	60	58	29.01	31.69	2.68	9.11	101.19	11.4	7.3	6.0	-5	250	253	39
		10	5	0.08	0.45	1645	60	60	58	31.69	34.20	2.51	8.59	100.48	11.4	7.3	6.0	-5	250	238	39
		11	5	0.08	0.45	1649	60	60	59	34.20	36.71	2.51	8.60	100.58	11.4	7.3	6.0	-5	250	243	40
		12	5	0.08	0.45	1645	60	60	59	36.71	39.21	2.50	8.59	100.08	11.4	7.3	6.0	-5	250	244	40
		13	5	0.09	0.51	1646	60	60	60	39.21	41.90	2.69	9.11	101.57	11.4	7.3	6.0	-5	250	239	40
		14	5	0.08	0.45	1648	60	60	60	41.90	44.41	2.51	8.59	100.55	11.4	7.3	6.0	-6	250	250	40
		15	5	0.08	0.45	1652	60	60	60	44.41	46.91	2.50	8.60	100.25	10.6	8.0	5.0	-6	250	247	40
		16	5	0.08	0.45	1646	60	60	60	46.91	49.41	2.50	8.59	100.1	10.7	7.9	5.0	-6	250	264	40
		17	5	0.08	0.45	1655	60	60	61	49.41	51.94	2.53	8.61	101.52	10.5	8.1	4.0	-6	250	263	41
		18	5	0.07	0.40	1645	60	60	61	51.94	54.31	2.37	8.03	101.41	10.6	8.0	4.0	-6	250	246	41
		19	5	0.08	0.45	1644	60	60	61	54.31	56.76	2.45	8.59	98.056	10.5	8.1	4.0	-6	250	240	40
14h00		20	5	0.08	0.45	1656	60	60	61	56.76	59.29	2.53	8.61	101.55	10.5	8.1	4.0	-6	250	249	40

INC-Me-E1

Impingers – liquid mass

	Before	After	Difference
IMP. 1	783.3	675.2	108.1
IMP. 2	629.8	541.6	88.2
IMP. 3	774	740.7	33.3
IMP. 4	651.7	644.5	7.2
IMP. 5	599.9	598.5	1.4
IMP. 6	574.2	573.3	0.9
IMP. 7	627.5	627.8	-0.3
IMP. 8			
IMP. 9			
Silica gel	2032.2	2012.4	19.8
Total	6672.6	6414	258.6

Water mass (g)	**258.6**

INC-Me-E2

Impingers – liquid mass

	Before	After	Difference
IMP. 1	873.4	636.9	236.5
IMP. 2	568.1	556.4	11.7
IMP. 3	742.7	736.6	6.1
IMP. 4	632.7	632.3	0.4
IMP. 5	528.6	528.4	0.2
IMP. 6	658.7	659.2	-0.5
IMP. 7	739.7	740	-0.3
IMP. 8			
IMP. 9			
Silica gel	2051	2034	17
Total	6794.9	6523.8	271.1

Water mass (g)	**271.1**

INC-Me-E3

Impingers – liquid mass

	Before	After	Difference
IMP. 1	866.4	639.3	#REF!
IMP. 2	581.7	560	#REF!
IMP. 3	669.2	660.5	29.9
IMP. 4	615.8	614.9	55.8
IMP. 5	520.9	520.7	-139.6
IMP. 6	649	650	34.1
IMP. 7	591.7	592	71
IMP. 8			
IMP. 9			
Silica gel	2066.4	2050.7	15.7
Total	6561.1	6288.1	273

Water mass (g)	**273**

AGNICO EAGLE MINES LTD. Meliadine

23-7693

INCINERATOR

Semi-Volatile Organic Compounds

EXPERIMENTAL SCHEDULE				
RUN NUMBER	INC-COSV-E1	INC-COSV-E2	INC-COSV-E3	AVERAGE
RUN DATE	29/09/2023	30/09/2023	01/10/2023	(1 to 3)
START OF RUN	10h20	11h08	10h43	
END OF RUN	13h40	14h28	14h03	
RUN DURATION (minutes)	200	200	200	
NUMBER OF MEASUREMENTS	40	40	40	
SAMPLING EQUIPMENT DATA				
BAROMETRIC PRESSURE ("Hg)	29.90	29.90	29.90	29.90
STATIC PRESSURE ("H_2O)	-0.12	-0.12	-0.12	-0.12
PRESSION STATIQUE (kPa)	-0.030	-0.030	-0.030	-0.030
DRY GAS METER COEFFICIENT	0.994	0.994	0.994	n/a
PITOT TUBE COEFFICIENT	0.755	0.755	0.755	n/a
NOZZLE DIAMETER (in)	0.509	0.509	0.509	n/a
DRY GAS METER TEMPERATURE (°F)	60.0	60.0	60.0	n/a
DRY GAS METER TEMPERATURE (°C)	15.6	15.6	15.6	n/a
GAS HUMIDITY & SAMPLED VOLUME				
MASS OF WATER (g)	244.4	294.9	303.4	n/a
VOLUME OF WATER (ft^3R)	11.72	14.15	14.55	n/a
GAS HUMIDITY (BWO)	0.099	0.103	0.112	0.104
GAS HUMIDITY (% v/v)	9.9	10.3	11.2	10.4
REFERENCE GAS VOLUME (ft^3R)	106.61	123.77	115.73	115.37
REFERENCE GAS VOLUME (m^3R)	**3.02**	**3.50**	**3.28**	**3.27**
STACK CHARACTERISTICS				
NUMBER OF DIAMETERS BEFORE SAMPLING PORTS	5.0	5.0	5.0	n/a
NUMBER OF DIAMETERS AFTER SAMPLING PORTS	2.0	2.0	2.0	n/a
STACK DIAMETER (ft)	2.8	2.8	2.8	n/a
STACK DIAMETER (m)	0.85	0.85	0.85	n/a
LENGTH OF SAMPLING PORTS (in)	7.8	7.8	7.8	n/a
STACK PRESSURE ("Hg)	29.89	29.89	29.89	29.89
STACK PRESSURE (kPa)	101.22	101.22	101.22	101.22
DRY GAS METER PRESSURE ("Hg)	29.93	29.94	29.94	29.94
STACK SURFACE (pi^2)	6.1	6.1	6.1	n/a
STACK SURFACE (m^2)	0.57	0.57	0.57	n/a
GAZ CHARACTERISTICS				
CHIMNEY TEMPERATURE (°F)	1557.2	1583.6	1594.2	1578.3
CHIMNEY TEMPERATURE (°C)	847.3	862.0	867.9	859.1
CO_2 (%v, dry)	8.3	8.2	7.1	7.9
O_2 (%v, dry)	9.9	10.3	11.5	10.6
O_2 (%v, dry)	8.9	9.2	10.2	9.5
CO (ppmv, dry)	4.6	4.3	5.7	4.9
N_2 (%v, dry)	81.8	81.5	81.4	81.6
DRY MOLECULAR WEIGHT	29.7	29.7	29.6	29.7
WET MOLECULAR WEIGHT	28.6	28.5	28.3	28.5
GAS VELOCITY (ft/s)	25.8	31.1	29.5	28.8
GAS VELOCITY (m/s)	7.9	9.5	9.0	8.8
ACTUAL GAS FLOW RATE (pi^3/h)	569 205	687 092	651 582	635 960
ACTUAL GAS FLOW RATE (m^3/h)	16 118	19 456	18 451	18 008
ACTUAL GAS FLOW RATE (ft^3/min) (ACFM)	9 487	11 452	10 860	10 599
REFERENCE GAS FLOW RATE (ft^3R/h)	136 351	161 837	151 122	149 770
REFERENCE GAS FLOW RATE (m^3R/h)	**3 861**	**4 583**	**4 279**	**4 241**
REFERENCE GAS FLOW RATE (ft^3R/min) (RCFM)	2 273	2 697	2 519	2 496

AGNICO EAGLE MINES LTD. Meliadine 23-7693 INCINERATOR Semi-Volatile Organic Compounds				
EXPERIMENTAL SCHEDULE				
RUN NUMBER	INC-COSV-E1	INC-COSV-E2	INC-COSV-E3	AVERAGE
RUN DATE	29/09/2023	30/09/2023	01/10/2023	(1 to 3)
START OF RUN	10h20	11h08	10h43	
END OF RUN	13h40	14h28	14h03	
RUN DURATION (minutes)	200	200	200	
NUMBER OF MEASUREMENTS	40	40	40	
SAMPLING INFORMATION				
DRY GAS METER ORIFICE COEFFICIENT	1.027	1.027	1.027	n/a
MAXIMUM VELOCITY (m/s)	9.2	11.9	9.8	n/a
MINIMUM VELOCITY (m/s)	4.6	5.8	6.5	n/a
10%Vmax (m/s)	0.92	1.19	0.98	n/a
PERCENTAGE >10%Vmax	1.00	1.00	1.00	1.00
AVERAGE ISOKINETISM (%)	102.2	99.6	99.7	100.5
% POINTS RESPECTING ISOKINETIC CRITERIA	100%	100%	100%	100%
MAXIMUM PUMPING FLOW RATE (ft^3/min)	0.61	0.74	0.62	n/a
MAXIMUM VACCUM PRESSURE DURING RUN ("Hg)	-5.0	-6.0	-9.0	n/a
MAXIMUM PROBE TEMPERATURE (°F)	250	250	250	n/a
MINIMUM PROBE TEMPERATURE (°F)	250	250	250	n/a
MAXIMUM FILTER TEMPERATURE (°F)	258	257	258	n/a
MINIMUM FILTER TEMPERATURE (°F)	245	243	235	n/a
MAXIMUM TEMPERATURE AT EXIT (°F)	43	44	41	n/a
MINIMUM TEMPERATURE AT EXIT (°F)	40	42	38	n/a
MAXIMUM TRAP TEMPERATURE (°F)	48	51	45	n/a
MINIMUM TRAP TEMPERATURE (°F)	44	47	41	n/a
AVERAGE PUMPING FLOW RATE (ft^3/min)	0.52	0.60	0.56	0.56
4% OF AVERAGE PUMPING FLOW RATE (ft^3/min)	0.021	0.024	0.022	0.022
LEAK TEST BEFORE RUN AT 15 "Hg (ft^3/min)	< 0.02	< 0.02	< 0.02	< 0.02
LEAK TEST AFTER RUN (ft^3/min)	< 0.02	< 0.02	< 0.02	< 0.02
CYCLONIC FLOW				
AVERAGE FLOW ANGLE	0	0	0	0
VERTICAL GAS VELOCITY (m/s)	7.86	9.49	9.00	8.79

AGNICO EAGLE MINES LTD. Meliadine

23-7693

INCINERATOR

Semi-Volatile Organic Compounds

EXPERIMENTAL SCHEDULE				
RUN NUMBER	INC-COSV-E1	INC-COSV-E2	INC-COSV-E3	AVERAGE
RUN DATE	29/09/2023	30/09/2023	01/10/2023	(1 to 3)
START OF RUN	10h20	11h08	10h43	
END OF RUN	13h40	14h28	14h03	
RUN DURATION (minutes)	200	200	200	
NUMBER OF MEASUREMENTS	40	40	40	
DIOXINS AND FURANS (pg)				
2,3,7,8-TCDD	16.0	17.0	< 3.3	n/a
1,2,3,7,8 PeCDD	110.0	230.0	12.0	n/a
1,2,3,4,7,8 HxCDD	65.0	200.0	14.0	n/a
1,2,3,6,7,8 HxCDD	130.0	1200.0	28.0	n/a
1,2,3,7,8,9 HxCDD	81.0	670.0	16.0	n/a
1,2,3,4,6,7,8 HpCDD	610.0	6500.0	220.0	n/a
OCDD	660.0	7400.0	640.0	n/a
2,3,7,8 TCDF	140.0	98.0	16.0	n/a
1,2,3,7,8 PeCDF	85.0	95.0	18.0	n/a
2,3,4,7,8-PeCDF	200.0	240.0	49.0	n/a
1,2,3,4,7,8 HxCDF	120.0	160.0	39.0	n/a
1,2,3,6,7,8 HxCDF	130.0	210.0	45.0	n/a
2,3,4,6,7,8-HxCDF	260.0	360.0	90.0	n/a
1,2,3,7,8,9 HxCDF	67.0	93.0	15.0	n/a
1,2,3,4,6,7,8 HpCDF	460.0	800.0	300.0	n/a
1,2,3,4,7,8,9 HpCDF	68.0	93.0	15.0	n/a
OCDF	150.0	350.0	80.0	n/a
Summation of Tetrachlorodibenzodioxins	3000.0	6000.0	1100.0	n/a
Summation of Pentachlorodibenzodioxins	2200.0	9600.0	170.0	n/a
Summation of Hexachlorodibenzodioxins	2200.0	20000.0	330.0	n/a
Summation of Heptachlorodibenzodioxins	1400.0	17000.0	470.0	n/a
Summation of PCDDs	9400.0	59000.0	2700.0	n/a
Summation of Tetrachlorodibenzofurans	4700.0	3800.0	690.0	n/a
Summation of Pentachlorodibenzofurans	2800.0	3000.0	580.0	n/a
Summation of Hexachlorodibenzofurans	1700.0	2300.0	550.0	n/a
Summation of Heptachlorodibenzofurans	760.0	1100.0	380.0	n/a
Summation of PCDFs	10000.0	10000.0	2300.0	n/a
TOTAL TOXIC CONGENERS	**3352.0**	**18716.0**	**1600.3**	**n/a**
TOTAL HOMOLOGOUS GROUPS	**19400.0**	**69000.0**	**5000.0**	**n/a**

AGNICO EAGLE MINES LTD. Meliadine 23-7693 INCINERATOR Semi-Volatile Organic Compounds				
EXPERIMENTAL SCHEDULE				
RUN NUMBER	INC-COSV-E1	INC-COSV-E2	INC-COSV-E3	AVERAGE
RUN DATE	29/09/2023	30/09/2023	01/10/2023	(1 to 3)
START OF RUN	10h20	11h08	10h43	
END OF RUN	13h40	14h28	14h03	
RUN DURATION (minutes)	200	200	200	
NUMBER OF MEASUREMENTS	40	40	40	
DIOXINS AND FURANS (pg) – Calculated according to the TEF				
2,3,7,8-TCDD	16.0	17.0	< 3.3	n/a
1,2,3,7,8 PeCDD	110.0	230.0	12.0	n/a
1,2,3,4,7,8 HxCDD	6.5	20.0	1.4	n/a
1,2,3,6,7,8 HxCDD	13.0	120.0	2.8	n/a
1,2,3,7,8,9 HxCDD	8.1	67.0	1.6	n/a
1,2,3,4,6,7,8 HpCDD	6.1	65.0	2.2	n/a
OCDD	0.1	0.7	0.1	n/a
2,3,7,8 TCDF	14.0	9.8	1.6	n/a
1,2,3,7,8 PeCDF	4.3	4.8	0.9	n/a
2,3,4,7,8-PeCDF	100.0	120.0	24.5	n/a
1,2,3,4,7,8 HxCDF	12.0	16.0	3.9	n/a
1,2,3,6,7,8 HxCDF	13.0	21.0	4.5	n/a
2,3,4,6,7,8-HxCDF	26.0	36.0	9.0	n/a
1,2,3,7,8,9 HxCDF	6.7	9.3	1.5	n/a
1,2,3,4,6,7,8 HpCDF	4.6	8.0	3.0	n/a
1,2,3,4,7,8,9 HpCDF	0.7	0.9	0.2	n/a
OCDF	0.0	0.0	0.0	n/a
TOTAL TOXIC EQUIVALENCE	**341.0**	**745.6**	**69.1**	**n/a**

AGNICO EAGLE MINES LTD. Meliadine

23-7693

INCINERATOR

Semi-Volatile Organic Compounds

EXPERIMENTAL SCHEDULE				
RUN NUMBER	INC-COSV-E1	INC-COSV-E2	INC-COSV-E3	AVERAGE
RUN DATE	29/09/2023	30/09/2023	01/10/2023	(1 to 3)
START OF RUN	10h20	11h08	10h43	
END OF RUN	13h40	14h28	14h03	
RUN DURATION (minutes)	200	200	200	
NUMBER OF MEASUREMENTS	40	40	40	
DIOXINS AND FURANS (ng/m^{3}R)				
2,3,7,8-TCDD	0.005300	0.004851	< 0.001016	0.003722
1,2,3,7,8 PeCDD	0.03644	0.06563	0.003662	0.03524
1,2,3,4,7,8 HxCDD	0.02153	0.05707	0.004272	0.02762
1,2,3,6,7,8 HxCDD	0.04306	0.3424	0.008544	0.1313
1,2,3,7,8,9 HxCDD	0.02683	0.1912	0.004882	0.07429
1,2,3,4,6,7,8 HpCDD	0.2021	1.855	0.06713	0.7079
OCDD	0.2186	2.111	0.1953	0.8418
2,3,7,8 TCDF	0.04638	0.02796	0.004882	0.02641
1,2,3,7,8 PeCDF	0.02816	0.02711	0.005493	0.02025
2,3,4,7,8-PeCDF	0.06625	0.06848	0.01495	0.04989
1,2,3,4,7,8 HxCDF	0.03975	0.04565	0.01190	0.03243
1,2,3,6,7,8 HxCDF	0.04306	0.05992	0.01373	0.03890
2,3,4,6,7,8-HxCDF	0.08613	0.1027	0.02746	0.07210
1,2,3,7,8,9 HxCDF	0.02219	0.02654	0.004577	0.01777
1,2,3,4,6,7,8 HpCDF	0.1524	0.2283	0.09154	0.1574
1,2,3,4,7,8,9 HpCDF	0.02253	0.02654	0.004577	0.01788
OCDF	0.04969	0.09987	0.02441	0.05799
Summation of Tetrachlorodibenzodioxins	0.9938	1.712	0.3357	1.014
Summation of Pentachlorodibenzodioxins	0.7288	2.739	0.05187	1.173
Summation of Hexachlorodibenzodioxins	0.7288	5.707	0.1007	2.179
Summation of Heptachlorodibenzodioxins	0.4638	4.851	0.1434	1.819
Summation of PCDDs	3.114	16.83	0.8239	6.924
Summation of Tetrachlorodibenzofurans	1.557	1.084	0.2106	0.9506
Summation of Pentachlorodibenzofurans	0.9275	0.8560	0.1770	0.6535
Summation of Hexachlorodibenzofurans	0.5631	0.6563	0.1678	0.4624
Summation of Heptachlorodibenzofurans	0.2518	0.3139	0.1160	0.2272
Summation of PCDFs	3.313	2.853	0.7018	2.289
TOTAL TOXIC CONGENERS	**1.110**	**5.340**	**0.4883**	**2.313**
TOTAL HOMOLOGOUS GROUPS	**6.426**	**19.69**	**1.526**	**9.213**

AGNICO EAGLE MINES LTD. Meliadine

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INCINERATOR

Semi-Volatile Organic Compounds

EXPERIMENTAL SCHEDULE				
RUN NUMBER	INC-COSV-E1	INC-COSV-E2	INC-COSV-E3	AVERAGE
RUN DATE	29/09/2023	30/09/2023	01/10/2023	(1 to 3)
START OF RUN	10h20	11h08	10h43	
END OF RUN	13h40	14h28	14h03	
RUN DURATION (minutes)	200	200	200	
NUMBER OF MEASUREMENTS	40	40	40	
DIOXINS AND FURANS (ng/m^{3}R) – Calculated according to the TEF				
2,3,7,8-TCDD	0.005300	0.004851	< 0.001016	0.003722
1,2,3,7,8 PeCDD	0.03644	0.06563	0.003662	0.03524
1,2,3,4,7,8 HxCDD	0.002153	0.005707	0.0004272	0.002762
1,2,3,6,7,8 HxCDD	0.004306	0.03424	0.0008544	0.01313
1,2,3,7,8,9 HxCDD	0.002683	0.01912	0.0004882	0.007429
1,2,3,4,6,7,8 HpCDD	0.002021	0.01855	0.0006713	0.007079
OCDD	0.00002186	0.0002111	0.00001953	0.00008418
2,3,7,8 TCDF	0.004638	0.002796	0.0004882	0.002641
1,2,3,7,8 PeCDF	0.001408	0.001355	0.0002746	0.001013
2,3,4,7,8-PeCDF	0.03313	0.03424	0.007476	0.02495
1,2,3,4,7,8 HxCDF	0.003975	0.004565	0.001190	0.003243
1,2,3,6,7,8 HxCDF	0.004306	0.005992	0.001373	0.003890
2,3,4,6,7,8-HxCDF	0.008613	0.01027	0.002746	0.007210
1,2,3,7,8,9 HxCDF	0.002219	0.002654	0.0004577	0.001777
1,2,3,4,6,7,8 HpCDF	0.001524	0.002283	0.0009154	0.001574
1,2,3,4,7,8,9 HpCDF	0.0002253	0.0002654	0.00004577	0.0001788
OCDF	0.000004969	0.000009987	0.000002441	0.000005799
TOTAL TOXIC EQUIVALENCE	**0.1130**	**0.2127**	**0.02109**	**0.1156**

AGNICO EAGLE MINES LTD. Meliadine

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INCINERATOR

Semi-Volatile Organic Compounds

EXPERIMENTAL SCHEDULE				
RUN NUMBER	INC-COSV-E1	INC-COSV-E2	INC-COSV-E3	AVERAGE
RUN DATE	29/09/2023	30/09/2023	01/10/2023	(1 to 3)
START OF RUN	10h20	11h08	10h43	
END OF RUN	13h40	14h28	14h03	
RUN DURATION (minutes)	200	200	200	
NUMBER OF MEASUREMENTS	40	40	40	
DIOXINS AND FURANS (ng/m3R at 11% O2)				
2,3,7,8-TCDD	0.004770	0.004530	< 0.001070	0.003457
1,2,3,7,8 PeCDD	0.03279	0.06129	0.003857	0.03265
1,2,3,4,7,8 HxCDD	0.01938	0.05330	0.004499	0.02573
1,2,3,6,7,8 HxCDD	0.03876	0.3198	0.008999	0.1225
1,2,3,7,8,9 HxCDD	0.02415	0.1785	0.005142	0.06928
1,2,3,4,6,7,8 HpCDD	0.1819	1.732	0.07070	0.6616
OCDD	0.1968	1.972	0.2057	0.7915
2,3,7,8 TCDF	0.04174	0.02612	0.005142	0.02433
1,2,3,7,8 PeCDF	0.02534	0.02532	0.005785	0.01881
2,3,4,7,8-PeCDF	0.05963	0.06396	0.01575	0.04644
1,2,3,4,7,8 HxCDF	0.03578	0.04264	0.01253	0.03032
1,2,3,6,7,8 HxCDF	0.03876	0.05596	0.01446	0.03639
2,3,4,6,7,8-HxCDF	0.07751	0.09594	0.02892	0.06746
1,2,3,7,8,9 HxCDF	0.01997	0.02478	0.004821	0.01653
1,2,3,4,6,7,8 HpCDF	0.1371	0.2132	0.09641	0.1489
1,2,3,4,7,8,9 HpCDF	0.02027	0.02478	0.004821	0.01663
OCDF	0.04472	0.09327	0.02571	0.05457
Summation of Tetrachlorodibenzodioxins	0.8944	1.599	0.3535	0.9489
Summation of Pentachlorodibenzodioxins	0.6559	2.558	0.05463	1.090
Summation of Hexachlorodibenzodioxins	0.6559	5.330	0.1061	2.031
Summation of Heptachlorodibenzodioxins	0.4174	4.530	0.1510	1.700
Summation of PCDDs	2.802	15.72	0.8677	6.464
Summation of Tetrachlorodibenzofurans	1.401	1.013	0.2218	0.8785
Summation of Pentachlorodibenzofurans	0.8348	0.7995	0.1864	0.6069
Summation of Hexachlorodibenzofurans	0.5068	0.6129	0.1768	0.4322
Summation of Heptachlorodibenzofurans	0.2266	0.2931	0.1221	0.2139
Summation of PCDFs	2.981	2.665	0.7392	2.128
TOTAL TOXIC CONGENERS	**0.9993**	**4.988**	**0.5143**	**2.167**
TOTAL HOMOLOGOUS GROUPS	**5.784**	**18.39**	**1.607**	**8.593**

AGNICO EAGLE MINES LTD. Meliadine 23-7693 INCINERATOR Semi-Volatile Organic Compounds				
EXPERIMENTAL SCHEDULE				
RUN NUMBER	INC-COSV-E1	INC-COSV-E2	INC-COSV-E3	AVERAGE
RUN DATE	29/09/2023	30/09/2023	01/10/2023	(1 to 3)
START OF RUN	10h20	11h08	10h43	
END OF RUN	13h40	14h28	14h03	
RUN DURATION (minutes)	200	200	200	
NUMBER OF MEASUREMENTS	40	40	40	
DIOXINS AND FURANS (ng/m3R at 11% O2) – Calculated according to the TEF				
2,3,7,8-TCDD	0.004770	0.004530	< 0.001070	0.003457
1,2,3,7,8 PeCDD	0.03279	0.06129	0.003857	0.03265
1,2,3,4,7,8 HxCDD	0.001938	0.005330	0.0004499	0.002573
1,2,3,6,7,8 HxCDD	0.003876	0.03198	0.0008999	0.01225
1,2,3,7,8,9 HxCDD	0.002415	0.01785	0.0005142	0.006928
1,2,3,4,6,7,8 HpCDD	0.001819	0.01732	0.0007070	0.006616
OCDD	0.00001968	0.0001972	0.00002057	0.00007915
2,3,7,8 TCDF	0.004174	0.002612	0.0005142	0.002433
1,2,3,7,8 PeCDF	0.001267	0.001266	0.0002892	0.0009407
2,3,4,7,8-PeCDF	0.02981	0.03198	0.007874	0.02322
1,2,3,4,7,8 HxCDF	0.003578	0.004264	0.001253	0.003032
1,2,3,6,7,8 HxCDF	0.003876	0.005596	0.001446	0.003639
2,3,4,6,7,8-HxCDF	0.007751	0.009594	0.002892	0.006746
1,2,3,7,8,9 HxCDF	0.001997	0.002478	0.0004821	0.001653
1,2,3,4,6,7,8 HpCDF	0.001371	0.002132	0.0009641	0.001489
1,2,3,4,7,8,9 HpCDF	0.0002027	0.0002478	0.00004821	0.0001663
OCDF	0.000004472	0.000009327	0.000002571	0.000005457
TOTAL TOXIC EQUIVALENCE	**0.1017**	**0.1987**	**0.02221**	**0.1075**
Air Emission Standard for Dioxines and Furanes (ng/m3R à 11% O		**0.08**		

AGNICO EAGLE MINES LTD. Meliadine

23-7693

INCINERATOR

Semi-Volatile Organic Compounds

EXPERIMENTAL SCHEDULE				
RUN NUMBER	INC-COSV-E1	INC-COSV-E2	INC-COSV-E3	AVERAGE
RUN DATE	29/09/2023	30/09/2023	01/10/2023	(1 to 3)
START OF RUN	10h20	11h08	10h43	
END OF RUN	13h40	14h28	14h03	
RUN DURATION (minutes)	200	200	200	
NUMBER OF MEASUREMENTS	40	40	40	
DIOXINS AND FURANS (µg/h)				
2,3,7,8-TCDD	0.02046	0.02223	< 0.004348	0.01568
1,2,3,7,8 PeCDD	0.1407	0.3007	0.01567	0.1524
1,2,3,4,7,8 HxCDD	0.08313	0.2615	0.01828	0.1210
1,2,3,6,7,8 HxCDD	0.1663	1.569	0.03656	0.5906
1,2,3,7,8,9 HxCDD	0.1036	0.8761	0.02089	0.3335
1,2,3,4,6,7,8 HpCDD	0.7802	8.499	0.2873	3.189
OCDD	0.8441	9.676	0.8357	3.785
2,3,7,8 TCDF	0.1791	0.1281	0.02089	0.1094
1,2,3,7,8 PeCDF	0.1087	0.1242	0.02350	0.08548
2,3,4,7,8-PeCDF	0.2558	0.3138	0.06398	0.2112
1,2,3,4,7,8 HxCDF	0.1535	0.2092	0.05093	0.1379
1,2,3,6,7,8 HxCDF	0.1663	0.2746	0.05876	0.1665
2,3,4,6,7,8-HxCDF	0.3325	0.4707	0.1175	0.3069
1,2,3,7,8,9 HxCDF	0.08569	0.1216	0.01959	0.07563
1,2,3,4,6,7,8 HpCDF	0.5883	1.046	0.3917	0.6754
1,2,3,4,7,8,9 HpCDF	0.08697	0.1216	0.01959	0.07605
OCDF	0.1918	0.4577	0.1045	0.2513
Summation of Tetrachlorodibenzodioxins	3.837	7.846	1.436	4.373
Summation of Pentachlorodibenzodioxins	2.814	12.55	0.2220	5.196
Summation of Hexachlorodibenzodioxins	2.814	26.15	0.4309	9.799
Summation of Heptachlorodibenzodioxins	1.791	22.23	0.6137	8.211
Summation of PCDDs	12.02	77.15	3.526	30.90
Summation of Tetrachlorodibenzofurans	6.011	4.969	0.9010	3.960
Summation of Pentachlorodibenzofurans	3.581	3.923	0.7574	2.754
Summation of Hexachlorodibenzofurans	2.174	3.007	0.7182	1.967
Summation of Heptachlorodibenzofurans	0.9720	1.438	0.4962	0.9689
Summation of PCDFs	12.79	13.08	3.003	9.623
TOTAL TOXIC CONGENERS	**4.287**	**24.47**	**2.090**	**10.28**
TOTAL HOMOLOGOUS GROUPS	**24.81**	**90.22**	**6.529**	**40.52**

AGNICO EAGLE MINES LTD. Meliadine				
23-7693				
INCINERATOR				
Semi-Volatile Organic Compounds				
EXPERIMENTAL SCHEDULE				
RUN NUMBER	INC-COSV-E1	INC-COSV-E2	INC-COSV-E3	AVERAGE
RUN DATE	29/09/2023	30/09/2023	01/10/2023	(1 to 3)
START OF RUN	10h20	11h08	10h43	
END OF RUN	13h40	14h28	14h03	
RUN DURATION (minutes)	200	200	200	
NUMBER OF MEASUREMENTS	40	40	40	
DIOXINS AND FURANS (µg/h) – Calculated according to the TEF				
2,3,7,8-TCDD	0.02046	0.02223	< 0.004348	0.01568
1,2,3,7,8 PeCDD	0.1407	0.3007	0.01567	0.1524
1,2,3,4,7,8 HxCDD	0.008313	0.02615	0.001828	0.01210
1,2,3,6,7,8 HxCDD	0.01663	0.1569	0.003656	0.05906
1,2,3,7,8,9 HxCDD	0.01036	0.08761	0.002089	0.03335
1,2,3,4,6,7,8 HpCDD	0.007802	0.08499	0.002873	0.03189
OCDD	0.00008441	0.0009676	0.00008357	0.0003785
2,3,7,8 TCDF	0.01791	0.01281	0.002089	0.01094
1,2,3,7,8 PeCDF	0.005436	0.006211	0.001175	0.004274
2,3,4,7,8-PeCDF	0.1279	0.1569	0.03199	0.1056
1,2,3,4,7,8 HxCDF	0.01535	0.02092	0.005093	0.01379
1,2,3,6,7,8 HxCDF	0.01663	0.02746	0.005876	0.01665
2,3,4,6,7,8-HxCDF	0.03325	0.04707	0.01175	0.03069
1,2,3,7,8,9 HxCDF	0.008569	0.01216	0.001959	0.007563
1,2,3,4,6,7,8 HpCDF	0.005883	0.01046	0.003917	0.006754
1,2,3,4,7,8,9 HpCDF	0.0008697	0.001216	0.0001959	0.0007605
OCDF	0.00001918	0.00004577	0.00001045	0.00002513
TOTAL TOXIC EQUIVALENCE	**0.4361**	**0.9749**	**0.09026**	**0.5004**
R: Reference conditions at 101.3 kPa and 25°C, on a dry basis				

Sampling survey : INCINERATOR – SVOC – Run 1																						
Time	Trav. #	Point #	Pumping duration (min)	Pressure difference (in H_2O)		Temperatures (°F)				Gas volume (ft^3)			Velocity (m/s)	Iso. (%)	O_2 (%v)	CO_2 (%v)	CO (ppmv)	Vaccuum (in. Hg)	Temperatures (°F)			
				ΔP	ΔH	Stack	Dry gas meter in	Dry gas meter out	Orifice	Start	End	Total							Probe	Filter	Exit	Trap
10h20	1	1	5	0.03	0.25	1121	60	60	56	73.18	75.09	1.91	4.63	99.426	11.0	7.2	26.0	-2	250	247	42	48
		2	5	0.03	0.24	1198	60	60	55	75.09	76.99	1.90	4.75	101.28	10.9	7.2	10.0	-2	250	250	41	47
		3	5	0.03	0.23	1259	60	60	55	76.99	78.92	1.93	4.83	104.76	10.9	7.2	7.0	-2	250	252	41	47
		4	5	0.03	0.22	1304	60	60	55	78.92	80.86	1.94	4.90	106.67	9.9	8.0	6.0	-2	250	251	41	47
		5	5	0.04	0.28	1383	60	60	55	80.86	83.00	2.14	5.78	104.17	10.0	8.1	4.0	-3	250	249	41	46
		6	5	0.06	0.41	1440	60	60	55	83.00	85.50	2.50	7.19	100.92	8.4	9.6	4.0	-3	250	248	42	46
		7	5	0.05	0.34	1486	60	60	56	85.50	87.65	2.15	6.64	96.203	8.4	9.6	4.0	-3	250	252	42	46
		8	5	0.07	0.47	1506	60	60	56	87.65	90.20	2.55	7.90	96.958	8.4	9.6	4.0	-3	250	249	42	47
		9	5	0.07	0.45	1559	60	60	55	90.20	92.85	2.65	8.00	102.11	8.4	9.6	4.0	-4	250	250	41	47
		10	5	0.07	0.45	1575	60	60	57	92.85	95.52	2.67	8.03	103.28	8.4	9.6	4.0	-5	250	251	41	46
		11	5	0.07	0.45	1585	60	60	57	95.52	98.17	2.65	8.05	102.76	8.4	9.6	4.0	-5	250	254	40	47
		12	5	0.07	0.45	1590	60	60	57	98.17	100.81	2.64	8.06	102.5	8.4	9.6	4.0	-5	250	256	40	46
		13	5	0.07	0.45	1586	60	60	57	100.81	103.46	2.65	8.05	102.79	8.4	9.6	4.0	-5	250	245	40	46
		14	5	0.09	0.58	1596	60	60	58	103.46	106.42	2.96	9.16	101.53	9.3	8.9	4.0	-5	250	253	41	46
		15	5	0.08	0.51	1602	60	60	58	106.42	109.22	2.80	8.64	102	9.1	8.7	4.0	-5	250	251	41	46
		16	5	0.09	0.59	1544	60	60	58	109.22	112.20	2.98	9.04	100.92	9.1	8.7	4.0	-5	250	248	41	46
		17	5	0.09	0.61	1471	60	60	58	112.20	115.25	3.05	8.87	101.4	9.1	8.7	4.0	-5	250	248	42	45
		18	5	0.09	0.57	1604	60	60	58	115.25	118.16	2.91	9.17	100.01	9.1	8.7	4.0	-5	250	245	42	45
		19	5	0.09	0.57	1614	60	60	59	118.16	121.10	2.94	9.20	101.29	9.1	8.7	4.0	-5	250	246	43	46
		20	5	0.08	0.51	1622	60	60	59	121.10	123.92	2.82	8.69	103.23	9.1	8.7	4.0	-5	250	245	42	45
	2	1	5	0.08	0.50	1636	60	60	59	123.92	126.73	2.81	8.71	103.2	9.1	8.7	4.0	-5	250	251	43	45
		2	5	0.09	0.57	1634	60	60	59	126.73	129.65	2.92	9.24	101.08	9.8	8.4	4.0	-5	250	253	41	45
		3	5	0.08	0.50	1636	60	60	59	129.65	132.36	2.71	8.71	99.532	9.8	8.4	4.0	-5	250	252	41	44
		4	5	0.08	0.50	1636	60	60	59	132.36	135.29	2.93	8.71	107.61	9.8	8.4	4.0	-5	250	245	41	45
		5	5	0.08	0.50	1639	60	60	59	135.29	138.05	2.76	8.72	101.44	9.8	8.4	4.0	-5	250	248	42	45
		6	5	0.08	0.50	1640	60	60	60	138.05	140.76	2.71	8.72	99.627	10.1	7.8	4.0	-5	250	255	42	44
		7	5	0.07	0.44	1639	60	60	60	140.76	143.40	2.64	8.16	103.71	10.1	7.8	4.0	-5	250	250	42	45
		8	5	0.07	0.44	1634	60	60	60	143.40	146.01	2.61	8.15	102.41	10.1	8.1	4.0	-5	250	248	42	45
		9	5	0.07	0.44	1639	60	60	61	146.01	148.61	2.60	8.16	102.14	10.1	8.1	4.0	-5	250	249	42	45
		10	5	0.07	0.44	1628	60	60	61	148.61	151.24	2.63	8.14	103.05	10.1	8.1	4.0	-5	250	250	41	46
		11	5	0.06	0.38	1631	60	60	61	151.24	153.65	2.41	7.54	102.05	10.1	8.1	4.0	-5	250	250	41	46
		12	5	0.07	0.44	1630	60	60	62	153.65	156.22	2.57	8.14	100.75	10.1	8.1	4.0	-5	250	246	41	45
		13	5	0.06	0.38	1632	60	60	62	156.22	158.66	2.44	7.54	103.35	10.1	8.1	4.0	-5	250	251	41	45
		14	5	0.07	0.44	1627	60	60	62	158.66	161.24	2.58	8.13	101.07	10.1	8.1	4.0	-5	250	250	41	44
		15	5	0.07	0.45	1623	60	60	63	161.24	163.91	2.67	8.13	104.49	10.1	8.1	4.0	-5	250	254	41	44
		16	5	0.07	0.44	1628	60	60	63	163.91	166.57	2.66	8.14	104.23	10.1	8.1	4.0	-5	250	245	41	45
		17	5	0.06	0.38	1626	60	60	64	166.57	169.04	2.47	7.53	104.47	10.3	8.0	4.0	-5	250	247	42	44
		18	5	0.07	0.45	1628	60	60	64	169.04	171.70	2.66	8.14	104.23	10.3	8.0	4.0	-5	250	258	41	44
		19	5	0.07	0.45	1628	60	60	65	171.70	174.35	2.65	8.14	103.84	10.5	7.8	4.0	-5	250	253	41	45
13h40		20	5	0.07	0.45	1629	60	60	65	174.35	176.97	2.62	8.14	102.68	10.5	7.8	4.0	-5	250	252	41	45

Sampling survey : INCINERATOR – SVOC – Run 2																						
Time	Trav. #	Point #	Pumping duration (min)	Pressure difference (in H_2O)		Temperatures (°F)				Gas volume (ft^3)			Velocity (m/s)	Iso. (%)	O_2 (%v)	CO_2 (%v)	CO (ppmv)	Vaccuum (in. Hg)	Temperatures (°F)			
				ΔP	ΔH	Stack	Dry gas meter in	Dry gas meter out	Orifice	Start	End	Total							Probe	Filter	Exit	Trap
11h08	1	1	5	0.04	0.27	1387	60	60	60	77.49	79.47	1.98	5.79	96.79	11.4	7.0	16.0	-2	250	248	44	51
		2	5	0.05	0.32	1455	60	60	59	79.47	81.71	2.24	6.59	99.74	11.4	7.0	16.0	-2	250	245	44	50
		3	5	0.06	0.38	1458	60	60	59	81.71	84.11	2.40	7.22	97.645	9.9	7.0	16.0	-2	250	248	44	50
		4	5	0.06	0.38	1490	60	60	59	84.11	86.48	2.37	7.28	97.224	9.9	7.0	16.0	-2	250	250	44	50
		5	5	0.05	0.31	1507	60	60	59	86.48	88.67	2.19	6.68	98.827	9.9	7.0	16.0	-2	250	251	44	50
		6	5	0.07	0.45	1468	60	60	59	88.67	91.31	2.64	7.82	99.716	7.1	10.4	4.0	-3	250	245	44	50
		7	5	0.09	0.56	1526	60	60	59	91.31	94.26	2.95	9.00	99.762	7.1	10.4	4.0	-3	250	246	44	49
		8	5	0.08	0.49	1536	60	60	59	94.26	97.00	2.74	8.51	98.513	7.1	10.4	4.0	-3	250	247	44	49
		9	5	0.09	0.55	1552	60	60	59	97.00	99.89	2.89	9.06	98.369	9.0	9.0	3.0	-4	250	249	44	50
		10	5	0.09	0.55	1563	60	60	59	99.89	102.80	2.91	9.09	99.32	9.0	9.0	3.0	-4	250	254	44	50
		11	5	0.11	0.67	1563	60	60	60	102.80	106.03	3.23	10.05	99.747	9.0	9.0	3.0	-5	250	253	43	51
		12	5	0.11	0.67	1572	60	60	60	106.03	109.24	3.21	10.07	99.349	9.5	8.8	4.0	-5	250	250	43	51
		13	5	0.10	0.60	1580	60	60	60	109.24	112.29	3.05	9.62	99.184	9.5	8.8	4.0	-6	250	255	43	50
		14	5	0.14	0.84	1589	60	60	61	112.29	115.91	3.62	11.41	99.769	9.5	8.8	4.0	-6	250	251	43	50
		15	5	0.14	0.84	1589	60	60	61	115.91	119.52	3.61	11.41	99.494	9.5	8.8	4.0	-6	250	250	43	50
		16	5	0.13	0.78	1585	60	60	61	119.52	122.98	3.46	10.98	98.848	9.5	8.8	4.0	-6	250	247	42	49
		17	5	0.13	0.78	1603	60	60	61	122.98	126.47	3.49	11.03	100.14	9.6	8.6	4.0	-6	250	248	42	49
		18	5	0.13	0.77	1610	60	60	61	126.47	129.96	3.49	11.05	100.31	9.6	8.6	4.0	-6	250	253	42	49
		19	5	0.15	0.90	1606	60	60	62	129.96	133.67	3.71	11.86	99.205	9.6	8.6	4.0	-6	250	252	42	49
		20	5	0.14	0.83	1613	60	60	62	133.67	137.28	3.61	11.47	100.07	9.6	8.6	4.0	-6	250	256	42	49
	2	1	5	0.13	0.77	1615	60	60	62	37.28	40.71	3.43	11.06	98.705	10.2	8.1	4.0	-6	250	249	42	49
		2	5	0.14	0.83	1619	60	60	62	40.71	44.33	3.62	11.49	100.49	10.2	8.1	4.0	-6	250	250	42	48
		3	5	0.13	0.77	1623	60	60	62	44.33	47.79	3.46	11.08	99.76	10.2	8.1	4.0	-6	250	250	42	48
		4	5	0.14	0.83	1626	60	60	62	47.79	51.38	3.59	11.51	99.829	10.2	8.1	4.0	-6	250	251	42	49
		5	5	0.11	0.65	1630	60	60	62	51.38	54.62	3.24	10.21	101.69	10.2	8.1	4.0	-6	250	254	42	49
		6	5	0.10	0.59	1624	60	60	63	54.62	57.67	3.05	9.72	100.25	10.4	8.0	4.0	-6	250	253	42	49
		7	5	0.11	0.65	1627	60	60	63	57.67	60.73	3.06	10.20	95.977	10.4	8.0	4.0	-6	250	256	43	49
		8	5	0.10	0.59	1628	60	60	63	60.73	63.78	3.05	9.73	100.34	10.4	8.0	4.0	-6	250	257	43	50
		9	5	0.11	0.65	1629	60	60	63	63.78	66.99	3.21	10.21	100.73	10.5	8.0	4.0	-6	250	245	43	49
		10	5	0.11	0.65	1630	60	60	63	66.99	70.19	3.20	10.21	100.44	10.5	8.0	4.0	-6	250	255	43	49
		11	5	0.10	0.59	1629	60	60	63	70.19	73.19	3.00	9.73	98.72	10.5	8.0	4.0	-6	250	253	43	48
		12	5	0.10	0.60	1622	60	60	64	73.19	76.30	3.11	9.72	102.17	10.6	7.8	4.0	-6	250	244	43	48
		13	5	0.09	0.54	1619	60	60	64	76.30	79.23	2.93	9.21	101.37	10.6	7.8	4.0	-6	250	243	42	48
		14	5	0.10	0.60	1618	60	60	64	79.23	82.27	3.04	9.71	99.774	10.6	7.8	4.0	-6	250	246	42	48
		15	5	0.08	0.48	1618	60	60	65	82.27	85.04	2.77	8.68	101.61	10.6	7.8	4.0	-6	250	248	42	47
		16	5	0.08	0.48	1628	60	60	65	85.04	87.78	2.74	8.70	100.75	10.6	7.8	4.0	-6	250	254	43	47
		17	5	0.08	0.48	1628	60	60	65	87.78	90.52	2.74	8.70	100.75	10.6	7.8	4.0	-6	250	255	43	48
		18	5	0.07	0.42	1619	60	60	65	90.52	93.08	2.56	8.12	100.4	10.6	7.8	4.0	-6	250	256	43	48
		19	5	0.07	0.42	1627	60	60	65	93.08	95.62	2.54	8.14	99.81	10.6	7.8	4.0	-6	250	257	44	47
14h28		20	5	0.06	0.36	1631	60	60	65	95.62	97.94	2.32	7.54	98.549	10.6	7.8	4.0	-6	250	249	44	48

Sampling survey : INCINERATOR – SVOC – Run 3																						
Time	Trav. #	Point #	Pumping duration (min)	Pressure difference (in H_2O)		Temperatures (°F)				Gas volume (ft^3)			Velocity (m/s)	Iso. (%)	O_2 (%v)	CO_2 (%v)	CO (ppmv)	Vaccuum (in. Hg)	Temperatures (°F)			
				ΔP	ΔH	Stack	Dry gas meter in	Dry gas meter out	Orifice	Start	End	Total							Probe	Filter	Exit	Trap
10h43	1	1	5	0.05	0.33	1375	60	60	55	98.32	100.48	2.16	6.48	94.75	9.1	9.0	7.0	-3	250	251	40	45
		2	5	0.05	0.33	1382	60	60	54	100.48	102.68	2.20	6.49	96.688	9.1	9.0	7.0	-3	250	250	41	45
		3	5	0.06	0.39	1424	60	60	54	102.68	105.07	2.39	7.19	96.987	11.6	6.8	7.0	-3	250	248	40	44
		4	5	0.05	0.31	1480	60	60	54	105.07	107.19	2.12	6.66	95.615	11.6	6.8	7.0	-3	250	247	40	44
		5	5	0.06	0.37	1490	60	60	54	107.19	109.54	2.35	7.31	97.017	11.6	6.8	7.0	-5	250	252	40	43
		6	5	0.07	0.43	1525	60	60	54	109.54	112.12	2.58	7.97	99.506	11.7	7.3	11.0	-5	250	255	39	44
		7	5	0.08	0.49	1537	60	60	54	112.12	114.85	2.73	8.55	98.802	11.7	7.3	11.0	-5	250	258	39	43
		8	5	0.09	0.54	1560	60	60	55	114.85	117.73	2.88	9.12	98.848	11.1	7.4	66.0	-7	250	251	39	43
		9	5	0.10	0.60	1565	60	60	55	117.73	120.73	3.00	9.62	97.818	11.1	7.4	66.0	-7	250	250	39	43
		10	5	0.09	0.54	1580	60	60	55	120.73	123.62	2.89	9.16	99.68	11.1	7.4	66.0	-7	250	250	39	43
		11	5	0.10	0.60	1580	60	60	55	123.62	126.57	2.95	9.66	96.542	11.5	7.0	5.0	-7	250	243	38	42
		12	5	0.09	0.54	1588	60	60	56	126.57	129.59	3.02	9.18	104.37	11.5	7.0	5.0	-7	250	245	38	42
		13	5	0.09	0.54	1590	60	60	56	129.59	132.50	2.91	9.18	100.61	11.5	7.0	5.0	-7	250	256	39	43
		14	5	0.09	0.53	1600	60	60	56	132.50	135.26	2.76	9.21	95.661	11.5	7.0	5.0	-7	250	248	39	43
		15	5	0.10	0.59	1606	60	60	57	135.26	138.36	3.10	9.72	102.09	11.8	6.6	5.0	-8	250	249	39	43
		16	5	0.09	0.53	1606	60	60	57	138.36	141.23	2.87	9.22	99.618	11.8	6.6	5.0	-8	250	251	40	42
		17	5	0.09	0.53	1612	60	60	57	141.23	144.10	2.87	9.23	99.762	11.8	6.6	5.0	-8	250	252	40	42
		18	5	0.10	0.59	1614	60	60	57	144.10	147.15	3.05	9.74	100.64	11.8	6.6	5.0	-8	250	253	39	42
		19	5	0.10	0.59	1613	60	60	57	147.15	150.17	3.02	9.73	99.627	11.8	6.6	5.0	-8	250	256	39	43
		20	5	0.09	0.53	1616	60	60	58	150.17	153.04	2.87	9.24	99.858	11.8	6.6	5.0	-8	250	247	39	43
	2	1	5	0.10	0.59	1619	60	60	58	53.04	56.06	3.02	9.75	99.771	11.8	6.6	5.0	-8	250	248	39	42
		2	5	0.09	0.53	1626	60	60	58	56.06	58.94	2.88	9.26	100.45	11.8	6.6	5.0	-8	250	242	39	42
		3	5	0.09	0.53	1627	60	60	58	58.94	61.81	2.87	9.27	100.12	11.8	6.6	5.0	-8	250	246	39	42
		4	5	0.09	0.53	1622	60	60	59	61.81	64.68	2.87	9.26	100	11.8	6.6	5.0	-8	250	245	39	42
		5	5	0.09	0.53	1631	60	60	59	64.68	67.53	2.85	9.28	99.519	11.8	6.6	5.0	-8	250	243	39	42
		6	5	0.10	0.59	1637	60	60	60	67.53	70.57	3.04	9.79	100.87	11.8	6.6	5.0	-9	250	256	39	42
		7	5	0.09	0.53	1643	60	60	60	70.57	73.47	2.90	9.30	101.55	11.8	6.6	5.0	-8	250	249	39	42
		8	5	0.10	0.58	1644	60	60	60	73.47	76.48	3.01	9.81	100.04	11.8	6.6	5.0	-9	250	251	39	42
		9	5	0.10	0.59	1640	60	60	60	76.48	79.51	3.03	9.80	100.61	11.8	6.6	5.0	-9	250	250	39	41
		10	5	0.09	0.53	1644	60	60	61	79.51	82.42	2.91	9.30	101.93	11.8	6.6	5.0	-9	250	253	39	41
		11	5	0.09	0.53	1650	60	60	61	82.42	85.34	2.92	9.32	102.43	11.8	6.6	5.0	-9	250	249	39	41
		12	5	0.09	0.53	1646	60	60	61	85.34	88.23	2.89	9.31	101.28	11.8	6.6	5.0	-9	250	245	40	41
		13	5	0.09	0.53	1645	60	60	61	88.23	91.13	2.90	9.31	101.6	11.8	6.6	5.0	-9	250	240	39	41
		14	5	0.09	0.53	1652	60	60	62	91.13	94.00	2.87	9.32	100.72	11.8	6.6	5.0	-9	250	241	39	41
		15	5	0.09	0.53	1643	60	60	62	94.00	96.87	2.87	9.30	100.5	10.6	8.0	5.0	-9	250	235	39	41
		16	5	0.09	0.53	1652	60	60	62	96.87	99.73	2.86	9.32	100.37	10.7	7.9	5.0	-9	250	248	40	41
		17	5	0.09	0.53	1652	60	60	63	99.73	102.58	2.85	9.32	100.02	10.5	8.1	4.0	-9	250	247	40	41
		18	5	0.09	0.53	1649	60	60	63	102.58	105.43	2.85	9.32	99.947	10.6	8.0	4.0	-9	250	249	40	41
		19	5	0.09	0.53	1648	60	60	63	105.43	108.24	2.81	9.31	98.521	10.5	8.1	4.0	-9	250	257	40	42
14h03		20	5	0.08	0.47	1655	60	60	63	108.24	110.97	2.73	8.79	101.68	10.5	8.1	4.0	-9	250	251	40	42

INC-COSV-E1

Impingers – liquid mass

	Before	After	Difference
IMP. 1	146.8	136.3	10.5
IMP. 2	584.3	374.3	210
IMP. 3	606.2	605.9	0.3
IMP. 4	537.3	536.9	0.4
IMP. 5			
IMP. 6			
IMP. 7			
IMP. 8			
IMP. 9			
Silica gel	1805.9	1782.7	23.2
Total	3680.5	3436.1	244.4

Water mass (g)	**244.4**

INC-COSV-E2

Impingers – liquid mass

	Before	After	Difference
IMP. 1	155	144.2	10.8
IMP. 2	528.3	272.4	255.9
IMP. 3	692.3	691.3	1
IMP. 4	531.8	532.4	-0.6
IMP. 5			
IMP. 6			
IMP. 7			
IMP. 8			
IMP. 9			
Silica gel	1833.6	1805.8	27.8
Total	3741	3446.1	294.9

Water mass (g)	**294.9**

INC-COSV-E3

Impingers – liquid mass

	Before	After	Difference
IMP. 1	123.12	113.1	10.02
IMP. 2	704.5	433.1	271.4
IMP. 3	649.7	652	-2.3
IMP. 4	477.3	478.8	-1.5
IMP. 5			
IMP. 6			
IMP. 7			
IMP. 8			
IMP. 9			
Silica gel	1899.9	1874.1	25.8
Total	3854.52	3551.1	303.42

Water mass (g)	**303.42**

APPENDIX 2
CALIBRATION CERTIFICATES

AGNICO EAGLE

CONSULAIR
AIR & ENVIRONMENT GLOBAL MANAGEMENT

CONSULAIR
GESTION GLOBALE AIR ET ENVIRONNEMENT

Module 1

Technician: **Jean-Sébastien Dumas**
Date : Tuesday November 1, 2022
Barometric pressure: 29.80 poHg
Compensated at 60°F: YES
ÿH@: 1.022 poHÿO

Orifice (poHÿO)	Total volume (ft³)		Temperature (°F)				Meter pressure hum. (poHÿO)	Time (min)	Coefficients		Y (<1.5%)
	Wet meter	Dry meter	Wet meter	Dry meter					KB	Kc	
				IN	OUT	Average					
0.13	2.78	2.62	71.5	83.3	77.3	80.3	-0.16	10.3	0.938	1,038	1.8
0.49	5.86	5.60	71.1	86.0	78.0	82.0	-0.3	10.6	1.013	1,022	0.3
1.00	9.23	8.82	72.4	84.2	75.2	79.7	-0.38	11.9	0.986	1,019	0.0
2.00	12.11	11.62	72.0	87.8	76.3	82.1	-0.55	11.3	0.976	1.013	0.7
3.00	13.70	13.20	71.7	90.0	77.7	83.8	-0.75	10.2	0.997	1.006	1.3
								Average	0.993	1.020	

Checking the temperature reader

thermometer Reference probe (°F)	(°F)	Oven (°F)	To the 3 (°F)	Stack (°F)	To the 7 (°F)	To the 8 (°F)	IN (°F)	OUT (°F)
32								32
212	35,215	36,216	32,213	33,212	32,212	32,212	33,212	213
500	504	505	501	501	500	501	499	500
1000			1001	1001	1001	1001		

Reference: Prova 123 multifunction calibrator

Checking inclined pressure gauges

Reference pressure gauge (poH2O)	ÿP (poHÿO)	ÿH (poHÿO)
0.05	0.050	0.050
0.20	0.200	0.200
0.50	0.500	0.500
1.0	1.00	1.00
2.0	2.00	2.00
5.0	5.00	5.00

Reference: Kimo MPR 2500 differential pressure gauge

Checking the vacuum pressure gauge

Vacuum (inHg)	Reference pressure gauge (inHg)
-5.0	-4.80
-10.0	-9.80
-15.0	-14.80
-20.0	-20.00

Reference: Dwyer DPG-000 pressure gauge

CONSULAIR
GESTION GLOBALE AIR ET ENVIRONNEMENT

Unit 8

Technician: Paul Vachon
Date : Tuesday June 13, 2023 **Barometric pressure:** 29.48 inHg
Compensated at 60°F: YES **ÿH@:** 0.938 inHÿO

Orifice (poHÿO)	Total volume (ft³)		Temperature (°F)				Meter pressure hum. (poHÿO)	Time (min)	Coefficients		Y
	Wet meter	Dry meter	Wet meter	Dry meter					KB	Kc	(<1.5%)
				IN	OUT	Average					
0.39	5.07	5.00	71.7	82.7	77.0	79.8	-0.21	10.1	1.024	0.989	0.5
0.79	7.17	7.06	71.6	84.3	77.0	80.7	-0.31	10.0	1,027	0.991	0.3
0.98	8.03	7.86	71.7	83.2	76.5	79.8	-0.35	10.0	1.025	0.996	0.2
1.57	10.92	10.74	71.8	82.0	75.8	78.9	-0.48	10.6	1.042	0.989	0.5
1.97	11.51	11.20	71.9	80.0	75.2	77.6	-0.57	10.1	1,027	0.999	0.5
								Average	1,027	0.994	

Checking the temperature reader

Reference thermometer (°F)	Probe (°F)	Oven (°F)	To the 3 (°F)	Stack (°F)	To the 7 (°F)	To the 8 (°F)	IN (°F)	OUT (°F)
32	30	30	30	30	30	30	30	30
212	211	211	211	212	212	212	211	212
500				498				499
1000			999	999	999	998		

Reference: Prova 123 multifunction calibrator

Checking inclined pressure gauges

Reference pressure gauge (poH2O)	ÿP (poHÿO)	ÿH (poHÿO)
0.05	0.050	0.050
0.20	0.200	0.200
0.50	0.500	0.500
1.0	1.00	1.00
2.0	2.00	2.00
5.0	5.00	5.00

Reference: Kimo MPR 2500 differential pressure gauge

Checking the vacuum pressure gauge

Vacuum (inHg)	Reference pressure gauge (inHg)
-5.0	-4.80
-10.0	-9.80
-15.0	-14.80
-20.0	-20.00

Reference: Dwyer DPG-000 pressure gauge

CONSULAIR
GESTION GLOBALE AIR ET ENVIRONNEMENT

PROBES CALIBRATION SUMMARY - V-03

Version 1 (2023)

--- Year MDF LV --- --- --- # --- 1 --- 2 --- 3 --- 4 --- 5 --- 6 --- 7 --- 8 --- 9 --- 10 --- 11 --- 12 --- 13 --- 14 15 Avg. V L. Eff. L. Total Thermocouple PTB Location --- --- --- in. in. (Validation) --- ---

Nozzle v-125 v-180 v-218 v-250 v-280 v-312 v-343 v-375 v-406 v-437 v-500 v-562 v-625 ---
03-02 2023 Ct 0.782 0.781 0.780 0.779 0.783 0.785 0.780 0.785 0.781 0.784 0.784 0.783 0.780 0.782
E. Rel 0.6 1.1 0.9 0.9 0.2 0.6 1.1 1.3 1.1 0.6 0.8 1.2 1.0 0.9

Nozzle v-125 v-180 v-218 v-250 v-280 v-312 v-343 v-375 v-406 v-437 v-500 v-562 v-625 ---
03-05 2023 Ct 0.743 0.755 0.747 0.745 0.749 0.750 0.755 0.770 0.753 0.736 0.752 0.764 0.764 E. Rel 0.6 1.2 0.6 0.3 1.0 1.1 1.2 Nozzle 0.753
Q-370 Q-43 0 Q-500 Q-680 0.6 0.5 1.1 0.5 0.9 1.1 0.8

03-06 2023 Ct 0.711 0.713 0.739 0.775 0.734
E. Rel 1.0 0.8 1.2 0.5 0.9
Nozzle v-125 v-180 v-218 v-250 v-280 v-312 v-343 v-375 v-406 v-437 v-500 v-562 v-625 ---
03-07 2023 Ct 0.761 0.764 0.761 0.764 0.765 0.765 0.763 0.763 0.763 0.761 0.759 0.763 0.761 0.763
E. Rel 0.8 1.0 0.8 0.5 0.6 1.1 0. 0.9 1.0 1.0 0.8 0.9 0.9 0.9
Nozzle Q-370 Q-430 Q-500 Q-680 Ct ---
03-08 2023 0.759 0.760 0.755 0.771 E. Rel 0.6 1.0 0.761
0.4 0.2 0.6
Nozzle v-125 v-180 v-218 v-250 v-280 v-312 v-343 v-375 v-406 v-437 v-500 v-562 v-625 ---
03-09 2023 Ct 0.798 0.795 0.795 0.796 0.796 0.801 0.796 0.798 0.800 0.792 0.794 0.802 0.785 0.796
E. Rel 1.3 0.8 0.5 0.6 0.7 0.7 0.8 0.6 0.6 0.7 1.0 1.2 1.1 0.8

Nozzle v-125 v-180 v-218 v-250 v-280 v-312 v-343 v-375 v-406 v-437 v-500 v-562 v-625 ---
03-12 2023 Ct 0.782 0.782 0.782 0.783 0.785 0.782 0.778 0.784 0.783 0.783 0.784 0.784 0.780 0.783
E. Rel 1.2 1.1 1.2 1.2 0.9 1.1 0.9 1.2 1.1 1.1 1.2 1.2 0.9 1.1
Nozzle v-125 v-180 v-218 v-250 v-280 v-312 v-343 v-375 v-406 v-437 v-500 v-562 v-625 ---
03-13 2023 Ct 0.775 0.781 0.778 0.778 0.769 0.775 0.781 0.778 0.779 0.772 0.782 0.777 0.778 0.777
E. Rel 0.8 0.7 0.3 0.4 1.1 0.8 1.2 1.4 1.0 0.6 1.1 0.9 0.8 0.9

Nozzle v-125 v-180 v-218 v-250 v-280 v-312 v-343 v-375 v-406 v-437 v-500 v-562 v-625 ---
03-15 2023 Ct 0.775 0.774 0.775 0.774 0.777 0.775 0.773 0.776 0.777 0.770 0.774 0.777 0.768 0.774
E. Rel 0.9 0.6 0.8 0.9 0.7 1.0 0.8 1.1 0.9 0.8 0.8 0.7 0.7 0.8
Nozzle v-125 v-180 v-218 v-250 v-280 v-312 v-343 v-375 v-406 v-437 v-500 v-562 v-625 ---
03-16 2023 Ct 0.770 0.769 0.767 0.767 0.768 0.775 0.772 0.773 0.773 0.764 0.769 0.775 0.767 E. Rel 0.8 0.3 0.5 0.5 0.7 0.770
0.4 0.4 0.3 0.3 0.5 0.4 0.5 0.3 0.5

Nozzle v-125 v-180 v-218 v-250 v-280 v-312 v-343 v-375 v-406 v-437 v-500 v-562 v-625 ---
03-18 2023 Ct 0.799 0.800 0.800 0.804 0.794 0.800 0.797 0.797 0.792 0.800 0.802 0.800 0.796 0.799
E. Rel 0.8 0.7 0.7 0.6 0.4 0.8 0.5 0.7 0.3 0.3 0.4 0.4 0.4 0.5
Nozzle v-125 v-180 v-218 v-250 v-280 v-312 v-343 v-375 v-406 v-437 v-500 v-562 v-625 ---
03-19 2023 Ct 0.789 0.793 0.792 0.786 0.786 0.788 0.784 0.794 0.790 0.788 0.790 0.791 0.783 E. Rel 0.4 1.2 1.2 0.5 0.7 0.789
0.6 0.6 0.9 1.3 0.7 0.8 0.5 0.8 0.8
Nozzle v-125 v-180 v-218 v-250 v-280 v-312 v-343 v-375 v-406 v-437 v-500 v-562 v-625 ---
03-20 2023 Ct 0.801 0.799 0.803 0.804 0.807 0.803 0.800 0.812 0.801 0.805 0.802 0.812 0.799 0.804
E. Rel 1.1 0.7 0.4 0.9 1.0 0.9 0.6 0.4 1.0 0.6 0.6 1.1 0.5 0.7
Nozzle v-125 v-180 v-218 v-250 v-280 v-312 v-343 v-375 v-406 v-437 v-500 v-562 v-625 ---
03-21 2023 Ct 0.790 0.798 0.796 0.795 0.790 0.796 0.792 0.790 0.792 0.787 0.785 0.789 0.777 0.790
E. Rel 0.728 0.435 0.297 0.54 0.826 0.793 0.404 1.067 0.848 0.904 1.11 0.82 1.24 0.8

Buse V-125 V-180 V-218 V-250 V-280 V-312 V-343 V-406 V-437 V-500 V-562 V-625 CT 0.791 0.791 0.783 0.785 0.787 0.789 ---
03-28 2023 0.784 0.791 0.790 0.784 0.790 0.787 0.786 E. Rel 0.9 0.4 0.5 0.9 0.9 Nozzle v-125 v-180 v-218 v-250 v-280 v-312 v-343 0.788
v-375 v-406 v-437 v-500 v-562 v -625 0.795 0.796 0.796 0.794 0.796 0.797 0.794 0.796 0.794 0.3 0.6 0.3 0.6
0.795 0.792 0.791 0.792 18v-250v-280v-312v-343v-375v-406 v-437 v-500 v-562 v-625 Ct 0.772 0.780 0.780 0.777 0.779 ---
03-29 2023 Ct 0.788 0.780 0.784 0.778 0.777 0.775 0.775 0.772 E. Rel 0.4 0.8 0.6 1.0 0. 9 Nozzle v-125 v-180 v-218 v-250 v-280 0.795
v-312 v-343 v-375 v-406 v-437 v-500 1.02 0.613 0.77 0.281 0.422 0.703 0.524 0.479 0.29 0.5
v-562 v-625 Ct 0.775 0.776 0.773 0.779 0.774 0.776 0.771 0.774 0.773 0.772 0.776 0.778 0.771 E. I 0.3 0.8 0.3 0.7 0.5 Nozzle ---
03-30 2023 v-125 v-180 v-218 v-250 v-280 v-312 v-343 v-375 v-406 v-437 v-500 v-562 v-625 0.757 0.762 0.762 0.765 0.764 0.761 0.778
0.764 0.762 0.763 0.758 0. 759 0.762 0.761 1.1 0.1 0.6 1.2 0.8 1.1 0.9

03-31 2023 0.774
0.4 0.9 0.5 0.4 0.3 0.5 0.5 0.8 0.5

03-32 2023 Ct 0.762
E. Rel 0.9 1.3 Nozzle v-125 v-180 v-218 v-250 v-280 v-312 v-343 v-375 v-406 v-437 v-500 v-562 1.4 1.0 1.0 1.1
v-625 0.791 0.788 0.789 0.790 0.792 0.792 0.788 0.789 0.791 0.786 0.789 0.790 0.785 ---
03-33 2023 Ct 0.789
E. Rel 0.6 0.8 0.4 0.6 0.3 0.5 0.3 0.9 0.4 0.5 0.4 0.4 0.3 0.5

Buse V-125 V-180 V-218 V-250 V-280 V-312 V-343 V-375 V-406 V-437 V-500 V-562 V-625 CT 0.805 0.794 0.792 0.793 0.787 ---
03-35 2023 0.792 0.784 0.792 0.785 0.797 0.801 0.801 0.795 E. Rel 1.1 1.3 1.0 1.3 Nozzle v-125 v-180 v-218 v-250 v-280 v-312 v-343 0.794
v-375 v-406 v-437 v-500 v-562 v- 625 Ct 0.783 0.784 0.789 0.780 0.782 0.783 0.785 0.789 0.784 0.781 0.779 0.772 0.778 E. 1.2
Rel 0.3 0.8 1.0 0.7 0.7 Nozzle v-125 v-180 v-2 18v-250v-280v-312v-343v-375v- 406 v-437 v-500 v-562 v-625 Ct 0.768 0.774 ---
03-36 2023 0.766 0.770 0.768 0.770 0.762 0.773 0.769 0.771 0.768 0.773 0.763 E. Rel 0.6 0.2 0.9 0. 5 0.783
0.4 0.9 1.3 1.3 0.8 0.2 0.5 1.2 0.8

03-37 2023 0.769
0.6 1.0 0.2 0.5 0.8 0.9 1.1 0.5 0.4 0.6

Performed by: AL/EL/SAP/SBE/AnL/PV/JSD
Date: February 2023
Calibration location: Laval University
Verified by: Eric Trépanier
Signature:
Date: February 2023

CONSULAIR
GESTION GLOBALE AIR ET ENVIRONNEMENT

CALIBRATION OF QUARTZ "ONE PIECES"

Identification	Long. Total of the liner	--	.	\	/	Average	Max deviation
"Liner" for 3' probe (03-06)							
	53½''					#DIV/0!	0.000
3Q-372	53½''	0.3735	0.3735	0.3725	0.3720	0.3729	0.002
3Q-373	53½''	0.3740	0.3750	0.3750	0.3745	0.3746	0.001
3Q-374	53½''	0.3530	0.3525	0.3515	0.3510	0.3520	0.002
3Q-375	53½''	0.3500	0.3510	0.3525	0.3520	0.3514	0.003
3Q-376	53½''	0.3520	0.3505	0.3540	0.3500	0.3516	0.004
	53½''					#DIV/0!	0.000
3Q-432	53½''	0.4320	0.4320	0.4340	0.4315	0.4324	0.003
	53½''					#DIV/0!	0.000
3Q-434	53½''	0.4290	0.4300	0.4310	0.4295	0.4299	0.002
3Q-435	53½''	0.4320	0.4305	0.4305	0.4320	0.4313	0.002
3Q-436	53½''	0.4350	0.4300	0.4300	0.4320	0.4318	0.005
3Q-437	52½''	0.4320	0.4380	0.4335	0.4335	0.4343	0.006
3Q-501	52½''					0.5085	0.000
3Q-504	53½''	0.5025	0.5025	0.5005	0.5035	0.5023	0.003
3Q-507	52¼''	0.5105	0.5095	0.5080	0.5090	0.5093	0.002
3Q-508	53½''	0.5070	0.5095	0.5095	0.5085	0.5086	0.002
	53½''					#DIV/0!	0.000
3Q-681	53½''	0.6660	0.6650	0.6640	0.6670	0.6655	0.003
	53½''					#DIV/0!	0.000
	53½''					#DIV/0!	0.000
3Q-684	53½''	0.6640	0.6660	0.6675	0.6660	0.6659	0.003
3Q-685	53½''	0.6660	0.6680	0.6700	0.6690	0.6683	0.004
"Liner" for 9' probe (09-03)							
9Q-681	107½''	0.6690	0.6665	0.6670	0.6680	0.6676	0.003
9Q-682	107½''	0.6920	0.6935	0.6935	0.6925	0.6929	0.002
9Q-683	107½''	0.6770	0.6755	0.6740	0.6760	0.6750	0.003

Calibrated by: Amy Laroche — Date: 03/10/2023

Validated by: Eric Trépanier — Date: 03/12/2023

MESSER 124 311-01 88 03 22
CYL 23-049

MESSER CANADA INC
530 Watson St. East
Whitby, ON, Canada L1N 5R9

CERTIFICATE OF ANALYSIS

Grade of Product: EPA PROTOCOL STANDARD

Part Number # 24075272
Lot # 1701184
Cylinder Number: CC168530

PGVP ID # L12023
Procedure: G1
Gas Type Code: NO
Cylinder pressure: 2000 psig

Certification date
May 24, 2023

Expiration Date
May 25, 2031

ANALYTICAL RESULTS

Component	Requested Concentration ± blending tolerance	Date of Assay	Mean Concentration	Certified Concentration Uncertainty expressed at 95% confidence
Nitric Oxide	900 ppm ± 5%	May 17, 2023 May 24, 2023	902.2 ppm 904.3 ppm	903.3 ± 2.81 ppm RD
Oxides of Nitrogen -	900 ppm ± 5%	May 17, 2023 May 24, 2023	902.2 ppm 904.3 ppm	903.3 ± 2.81 ppm

BALANCE GAS: Nitrogen

REFERENCE STANDARDS

Component	Type	Serial Number	Reference Number	Concentration	Expiration Date
Nitric Oxide	GMIS	CC173641	499807	1011.9 ± 4.45 ppm	July 23, 2029
	SRM	FF28064	41-M-30	996.7 ± 50 ppm	April 13, 2025
Oxides of Nitrogen	GMIS	CC173641-NOX	499807	1011.9 ± 4.45 ppm	July 23, 2029
	SRM	FF28064-NOX	41-M-30	996.7 ± 50 ppm	April 13, 2025

CERTIFICATION INSTRUMENTS

Component	Make/Model	Measurement Principle	Serial Number	Last calibration
Nitric Oxide	FTIR CX 4015	Infrared	122434	May 4, 2023
Oxides of Nitrogen -	FTIR CX 4015	Infrared	122434	May 4, 2023

THIS STANDARD IS NIST TRACEABLE. IT WAS CERTIFIED ACCORDING TO THE 2012 EPA PROTOCOL PROCEDURE

DO NOT USE THIS CYLINDER WHEN THE PRESSURE FALLS BELOW 100 PSIG

Analyst: Joey Zhao Signature: Date: May 24, 2023

Notes:

Tel: 1-(866) 385-1349 Fax: 1-(866) 385-5347

MESSER 124311-01 77 0377
cyl 23-050

MESSER CANADA INC
530 Watson St. East
Whitby, ON, Canada L1N 5R9

CERTIFICATE OF ANALYSIS

Grade of Product: EPA PROTOCOL STANDARD

Part Number # 24100494
Lot # 1701187
Cylinder Number: AS759522

PGVP ID # L12023
Procedure: G1
Gas Type Code: OCC
Cylinder pressure: 2000 psig

Certification date
May 18, 2023

Expiration Date
May 19, 2031

ANALYTICAL RESULTS

Component	Requested Concentration ± blending tolerance	Date of Assay	Mean Concentration	Certified Concentration Uncertainty expressed at 95% confidence
Oxygen	12.5 % ± 5%	May 18, 2023	12.59 %	12.59 ± 0.06 %
Carbon Monoxide	500 ppm ± 5%	May 18, 2023	487.9 ppm	487.9 ± 2.1 ppm
Carbon Dioxide	10 % ± 5%	May 18, 2023	10.08 %	10.08 ± 0.09 %

BALANCE GAS: Nitrogen

REFERENCE STANDARDS

Component	Type	Serial Number	Reference Number	Concentration	Expiration Date
Oxygen	GMIS SRM	551109 FF61023	1501278 71-F-XX	24 ± 0.05 % 20.753 ± 0.02 %	June 25, 2029 February 27, 2026
Carbon Monoxide	GMIS NTRM	sx11478 D167891	1482400 56-G-15	995.3 ± 10.3 ppm 2472.8 ± 4.2 ppm	August 30, 2027 July 7, 2022
Carbon Dioxide	GMIS NTRM	CC173721 SG9916842	1438051 101001	19.96 ± 0.02 % 19.98 ± 0.14 %	May 31, 2026 June 16, 2022

CERTIFICATION INSTRUMENTS

Component	Make/Model	Measurement Principle	Serial Number	Last calibration
Oxygen	Servomex 04100 C1	Paramagnetic Sensor	392350	April 25, 2023
Carbon Monoxide	FTIR CX 4015	Infrared	122434	May 1, 2023
Carbon Dioxide	FTIR CX 4015	Infrared	122434	May 1, 2023

THIS STANDARD IS NIST TRACEABLE. IT WAS CERTIFIED ACCORDING TO THE 2012 EPA PROTOCOL PROCEDURE

DO NOT USE THIS CYLINDER WHEN THE PRESSURE FALLS BELOW 100 PSIG

Analyst: Joey Zhao Signature: Date: May 18, 2023

Notes:

Tel: 1-(866) 385-5349 Fax:1-(866) 385-5347

Machine Translated by Google

MESSER

MESSER CANADA INC
530 Watson St. East
Whitby, ON, Canada L1N 5R9

124 3M-01880394 CYL23-057

CERTIFICATE OF ANALYSIS

Grade of Product: EPA PROTOCOL STANDARD

Part Number # 24099176
Lot # 1701186
Cylinder Number: AS759561

PGVP ID #L12023
Procedure: G1
Gas Type Code: OCC
Cylinder pressure: 2000 psig

Certification date
May 18, 2023

Expiration Date
May 19, 2031

ANALYTICAL RESULTS

Component	Requested Concentration ± blending tolerance	Date of Assay	Mean Concentration	Certified Concentration Uncertainty expressed at 95% confidence
Oxygen	22.5 % ± 5%	May 18, 2023	22.51%	22.51 ± 0.07 %
Carbon Monoxide	900 ppm ± 5%	May 18, 2023	935.5 ppm	935.5 ± 6.45 ppm
Carbon Dioxide	18 % ± 5%	May 18, 2023	17.91%	17.91 ± 0.15 %

BALANCE GAS: Nitrogen

REFERENCE STANDARDS

Component	Type	Serial Number	Reference Number	Concentration	Expiration Date
Oxygen	GMIS SRM	551109 FF61023	1501278 71 P-XX	24 ± 0.05 % 20.753 ± 0.02 %	June 25, 2029 February 27, 2026
Carbon Monoxide	GMIS NTRM	sx11478 D167891	1482400 56-G-15	995.3 ± 10.3 ppm 2472.8 ± 4.2 ppm	August 30, 2027 July 7, 2022
Carbon Dioxide	GMIS NTRM	CC173721 SG9916842	1438051 101601	19.96 ± 0.02 % 19.98 ± 0.14 %	May 31, 2026 June 16, 2022

CERTIFICATION INSTRUMENTS

Component	Make/Model	Measurement Principle	Serial Number	Last calibration
Oxygen	Servomex 04100 C1	Paramagnetic Sensor	392350	April 25, 2023
Carbon Monoxide	FTIR CX 4015	Infrared	122434	May 1, 2023
Carbon Dioxide	FTIR CX 4015	Infrared	122434	May 1, 2023

THIS STANDARD IS NIST TRACEABLE. IT WAS CERTIFIED ACCORDING TO THE 2012 EPA PROTOCOL PROCEDURE

DO NOT USE THIS CYLINDER WHEN THE PRESSURE FALLS BELOW 100 PSIG

Analyst: Joey Zhao Signature: Date: May 18, 2023

Notes:

MESSER

Whitby Spec Gas Plant/Usine
530 Watson Street East
Whitby ON L1N 5R9
Canada

MCRT SULPHUR DIOXIDE 900PPM N2 BAL 152SZ/ MCRT DIOXYDE SOUFRE 900PPM N2 BAL 152SZ CERTIFIED

124 311-0135693 CYL23-058

Component Composant	Nominal Nominale	Certified Certifiée
Sulfur Dioxide / DIOXYDE SOUFRE	900 PPM	924.6 PPM
Nitrogen / AZOTE		BAL

Cylinder Details/ Détails - bouteille:
Cylinder Size/ Taille de la bouteille: 152 Contents/ Capacité: 3.800 M3 Valve Outlet/ Robinet de sortie: 660 Nominal Pressure/Pression nominale: 2,000 PSI

Analytical Details/ Détails d'analyse:
Certification Accuracy ± 2% for concentrations 10 ppm and above, ± 5% for concentrations < 10 ppm.
INMS and NIST traceability by one of the following: 1) Mass calibration certificate 2154736Z, 2154736B, 1845447, 2204452, W-017181-11799 or W-028737-17611; 2) Comparison to SRM or NTRM gas mixture.
Certification de précision ± 2% pour des concentrations de 10 ppm et plus, ± 5% pour des concentrations < 10 ppm.
Traçabilité IÉNM et NIST par l'une des façons suivantes : 1) Certificat d'étalonnage de la masse 2154736Z, 2154736B, 1845447, 2204452, W-017181-11799 ou W-028737-17611; 2) Comparaison avec le mélange gazeux SRM ou NTRM.

To reorder, please quote/ Pour renouveler une commande, veuillez indiquer le code: 24075556
Certificate Date (mm/dd/yy) / Date du certificat (mm/jj/aa) :05/25/2023 Use by / Utilisé par: 05/24/2028

Approved Signature/ Approbation du Signataire _____
Analyst/Analyste: Guihai Zhao

Lot No./ No. lot	Cylinder No./ No. bouteille	Code	Page
1701188	SX39282	24075556	1/1

MESSER

Whitby Spec Gas Plant/Usine
530 Watson Street East
Whitby ON L1N 5R9
Canada

MCRT NITRIC OXIDE 500PPM N2 BAL 152SZ/ MCRT OXYDE NITRIQUE 500PPM N2 BAL 152SZ CERTIFIED

REG 3M - 005158M CA-CYL 23 - 059

Component Composant			Nominal Nominale	Certified Certifiée
Nitric Oxide / OXYDE NITRIQUE			500 PPM	529.1 PPM
Nitrogen / AZOTE				BAL
NO2	<=	5	PPM	0.1

Cylinder Details/ Détails - bouteille:
Cylinder Size/ Taille de la bouteille: 152 Contents/ Capacité: 3.820 M3 Valve Outlet/ Robinet de sortie: 660 Nominal Pressure/Pression nominale: 2,000 PSG

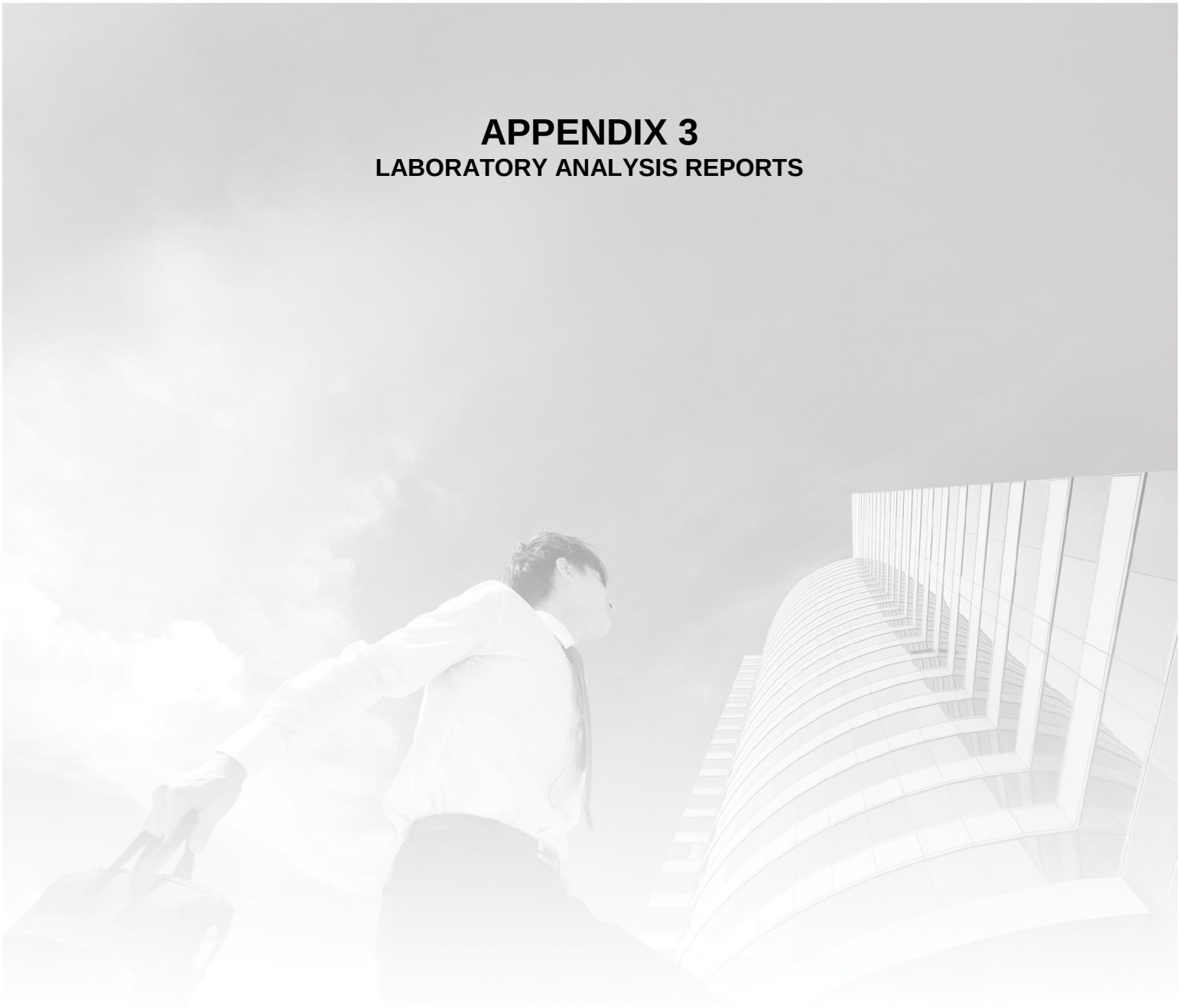
Analytical Details/ Détails d'analyse:
Certification Accuracy ± 2% for concentrations 10 ppm and above, ± 5% for concentrations < 10 ppm.
INMS and NIST traceability by one of the following: 1) Mass calibration certificate 2154736Z, 2154736B, 1845447, 2204452, W-017181-11799 or W-028737-17611; 2) Comparison to SRM or NTRM gas mixture.
Certification de précision ± 2% pour des concentrations de 10 ppm et plus, ± 5% pour des concentrations < 10 ppm.
Traçabilité IÉNM et NIST par l'une des façons suivantes : 1) Certificat d'étalonnage de la masse 2154736Z, 2154736B, 1845447, 2204452, W-017181-11799 ou W-028737-17611; 2) Comparaison avec le mélange gazeux SRM ou NTRM.

To reorder, please quote/ Pour renouveler une commande, veuillez indiquer le code: 24078345
Certificate Date (mm/dd/yy) / Date du certificat (mm/jj/aa) :05/29/2023 Use by / Utilisé par: 05/28/2025

Approved Signature/ Approbation du Signataire _____
Analyst/Analyste: Guihai Zhao

Lot No./ No. lot	Cylinder No./ No. bouteille	Code	Page
1701190	SX36741	24078345	1/1

APPENDIX 3
LABORATORY ANALYSIS REPORTS



AGNICO EAGLE

CONSULAIR
AIR & ENVIRONMENT GLOBAL MANAGEMENT

Your Project #: 23-7693
Site Location: AGNICO EAGLE, MELIADINE
Your C.O.C. #: n/a

Attention: Éric Trépanier

CONSULAIR INC.
2022 Lavoisier
Local 125
Québec, QC
Canada G1N 4L5

Report Date: 2024/04/26
Report #: R2936058
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BUREAU VERITAS JOB #: C357778
Received: 2023/10/12, 14:00

Sample Matrix: Impinger Solution
Samples Received: 18

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Mercury by CVAA	4	2023/10/26	2023/10/26	STL SOP-00075	MA.200-Mét. 1.2 r 7m
Extractable Metals in Impinger	10	2023/10/27	2023/10/28	STL SOP-00075	MA.200–Mét. 1.2 R7 m
Extractable Metals in Impinger	1	2023/10/28	2023/10/28	STL SOP-00075	MA.200–Mét. 1.2 R7 m
Volume of Impinger Solution	3	2023/10/23	2023/10/23		

Sample Matrix: Train
Samples Received: 4

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Extractable Metals (Impinger+filter)	3	2023/10/23	2023/11/04	STL SOP-00075	MA.200–Mét. 1.2 R7
Extractable Metals (Impinger+filter)	1	2023/10/23	2023/11/07	STL SOP-00075	MA.200–Mét. 1.2 R7

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.

Your Project #: 23-7693
Site Location: AGNICO EAGLE, MELIADINE
Your C.O.C. #: n/a

Attention: Éric Trépanier

CONSULAIR INC.
2022 Lavoisier
Local 125
Québec, QC
Canada G1N 4L5

Report Date: 2024/04/26
Report #: R2936058
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BUREAU VERITAS JOB #: C357778

Received: 2023/10/12, 14:00

Note: RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Note: All parameters included in the present certificate are accredited by the Québec Ministry of the Environment, unless stated otherwise.

Encryption Key

Argyro Frangoulis
Team Leader for Multisector
customer Experience
29 Apr 2024 16:09:18

Please direct all questions regarding this Certificate of Analysis to:
Argyro Frangoulis, Team Leader for Multisector customer Experience
Email: argyro.frangoulis@bureauveritas.com
Phone# (514)208-0388

==========

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Aglaia Yannakis, General Manager responsible for Quebec Environmental laboratory operations.

Bureau Veritas Bureau Veritas 889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tel: (514) 448-9001 Fax: (514) 448-9199 Ligne sans frais : 1-877-462-9926

METALS (IMPINGER SOLUTION)

Bureau Veritas ID		MI9766		MI9781	MI9781		
Sampling Date		2023/09/29		2023/09/29	2023/09/29		
COC Number		n/a		n/a	n/a		
	Units	**304-INC-B12-1 VT:390ML**	**RDL**	**305-INC-B1234-HNO3/H2O2-1 VT:330ML**	**305-INC-B1234-HNO3/H2O2-1 VT:330ML Lab-Dup**	**RDL**	**QC Batch**
METALS							
' Aluminum (Al) †	ug	12	4	12	11	3	2458979
' Antimony (Sb) †	ug	0.5	0.4	<0.3	<0.3	0.3	2458979
' Silver (Ag) †	ug	<2	2	<2	<2	2	2458979
' Arsenic (As) †	ug	<0.4	0.4	<0.3	<0.3	0.3	2458979
' Barium (Ba) †	ug	0.6	0.2	0.6	0.5	0.2	2458979
' Beryllium (Be) †	ug	<0.2	0.2	<0.2	<0.2	0.2	2458979
' Bismuth (Bi) †	ug	<0.2	0.2	<0.2	<0.2	0.2	2458979
' Boron (B) †	ug	39.8	0.8	10.9	10.0	0.7	2458979
' Cadmium (Cd) †	ug	<0.2	0.2	<0.2	<0.2	0.2	2458979
' Calcium (Ca) †	ug	164	20	215	177	20	2458979
' Chromium (Cr) †	ug	<0.4	0.4	0.4	0.4	0.3	2458979
' Cobalt (Co) †	ug	<0.4	0.4	<0.3	<0.3	0.3	2458979
' Copper (Cu) †	ug	0.7	0.4	1.2	1.1	0.3	2458979
' Tin (Sn) †	ug	<2	2	23	21	2	2458979
' Iron (Fe) †	ug	<20	20	<20	<20	20	2458979
' Lithium (Li) †	ug	<4	4	<3	<3	3	2458979
' Magnesium (Mg) †	ug	65	8	40	37	7	2458979
' Manganese (Mn) †	ug	1.6	0.4	2.6	2.3	0.3	2458979
' Mercury (Hg) †	ug	0.3	0.2	<0.2	<0.2	0.2	2458979
' Molybdenum (Mo) †	ug	<2	2	<2	<2	2	2458979
' Nickel (Ni) †	ug	<0.4	0.4	0.5	0.6	0.3	2458979
' Lead (Pb) †	ug	<2	2	<2	<2	2	2458979
' Potassium (K) †	ug	<40	40	39	32	30	2458979
' Selenium (Se) †	ug	1.6	0.4	<0.3	<0.3	0.3	2458979
' Silicon (Si) †	ug	62	20	51	49	20	2458979
' Sodium (Na) †	ug	34	20	54	45	20	2458979
' Strontium (Sr) †	ug	<0.4	0.4	<0.3	<0.3	0.3	2458979
' Thallium (Tl) †	ug	<0.4	0.4	<0.3	<0.3	0.3	2458979
' Titanium (Ti) †	ug	<4	4	3	3	3	2458979
' Vanadium (V) †	ug	<0.8	0.8	<0.7	<0.7	0.7	2458979
' Zinc (Zn) †	ug	31.2	0.4	13.2	11.6	0.3	2458979

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable

Bureau Veritas Bureau Veritas 889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tel: (514) 448-9001 Fax: (514) 448-9199 Ligne sans frais : 1-877-462-9926

METALS (IMPINGER SOLUTION)

Bureau Veritas ID		MI9782			MI9784		
Sampling Date		2023/09/29			2023/09/29		
COC Number		n/a			n/a		
	Units	**306-INC-B5-HNO3-1 VT:100ML**	**RDL**	**QC Batch**	**307+308-INC-1 VT:615ML**	**RDL**	**QC Batch**
METALS							
Mercury (Hg)	ug				<0.62	0.62	2458262
' Mercury (Hg) †	ug	<0.05	0.05	2458979			

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable

Bureau Veritas Bureau Veritas 889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tel: (514) 448-9001 Fax: (514) 448-9199 Ligne sans frais : 1-877-462-9926

METALS (IMPINGER SOLUTION)

Bureau Veritas ID		MI9836		MI9843			MI9848		
Sampling Date		2023/09/30		2023/09/30			2023/09/30		
COC Number		n/a		n/a			n/a		
	Units	**312-INC-B12-2 VT:445ML**	**RDL**	**313-INC-B1234-HNO3/H2O2-2 VT:290ML**	**RDL**	**QC Batch**	**314-INC-B5-HNO3-2 VT:100ML**	**RDL**	**QC Batch**
METALS									
' Aluminum (Al) †	ug	20	4	14	3	2458979			
' Antimony (Sb) †	ug	4.1	0.4	<0.3	0.3	2458979			
' Silver (Ag) †	ug	<2	2	<1	1	2458979			
' Arsenic (As) †	ug	1.4	0.4	<0.3	0.3	2458979			
' Barium (Ba) †	ug	0.4	0.2	1.5	0.1	2458979			
' Beryllium (Be) †	ug	<0.2	0.2	<0.1	0.1	2458979			
' Bismuth (Bi) †	ug	3.1	0.2	<0.1	0.1	2458979			
' Boron (B) †	ug	49.6	0.9	4.8	0.6	2458979			
' Cadmium (Cd) †	ug	<0.2	0.2	<0.1	0.1	2458979			
' Calcium (Ca) †	ug	187	20	122	10	2458979			
' Chromium (Cr) †	ug	<0.4	0.4	<0.3	0.3	2458979			
' Cobalt (Co) †	ug	<0.4	0.4	<0.3	0.3	2458979			
' Copper (Cu) †	ug	0.8	0.4	0.8	0.3	2458979			
' Tin (Sn) †	ug	<2	2	21	1	2458979			
' Iron (Fe) †	ug	<20	20	16	10	2458979			
' Lithium (Li) †	ug	<4	4	<3	3	2458979			
' Magnesium (Mg) †	ug	140	9	28	6	2458979			
' Manganese (Mn) †	ug	3.4	0.4	1.5	0.3	2458979			
' Mercury (Hg) †	ug	0.2	0.2	0.5	0.1	2458979	<0.05	0.05	2458979
' Molybdenum (Mo) †	ug	<2	2	<1	1	2458979			
' Nickel (Ni) †	ug	0.6	0.4	0.6	0.3	2458979			
' Lead (Pb) †	ug	<2	2	<1	1	2458979			
' Potassium (K) †	ug	<40	40	32	30	2458979			
' Selenium (Se) †	ug	3.5	0.4	<0.3	0.3	2458979			
' Silicon (Si) †	ug	36	20	27	10	2458979			
' Sodium (Na) †	ug	29	20	39	10	2458979			
' Strontium (Sr) †	ug	<0.4	0.4	<0.3	0.3	2458979			
' Thallium (Tl) †	ug	<0.4	0.4	<0.3	0.3	2458979			
' Titanium (Ti) †	ug	<4	4	3	3	2458979			
' Vanadium (V) †	ug	<0.9	0.9	<0.6	0.6	2458979			
' Zinc (Zn) †	ug	107	0.4	45.6	0.3	2458979			

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable

Bureau Veritas Bureau Veritas 889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tel: (514) 448-9001 Fax: (514) 448-9199 Ligne sans frais : 1-877-462-9926

METALS (IMPINGER SOLUTION)

Bureau Veritas ID		MI9849			MI9858		MI9860		
Sampling Date		2023/09/30			2023/10/01		2023/10/01		
COC Number		n/a			n/a		n/a		
	Units	**315+316-INC-2 VT:620ML**	**RDL**	**QC Batch**	**320-INC-B12-3 VT:440ML**	**RDL**	**321-INC-B1234-HNO3/H2O2-3 VT:300ML**	**RDL**	**QC Batch**
METALS									
' Aluminum (Al) †	ug				11	4	9	3	2458979
' Antimony (Sb) †	ug				1.1	0.4	<0.3	0.3	2458979
' Silver (Ag) †	ug				<2	2	<2	2	2458979
' Arsenic (As) †	ug				1.6	0.4	<0.3	0.3	2458979
' Barium (Ba) †	ug				0.2	0.2	0.3	0.2	2458979
' Beryllium (Be) †	ug				<0.2	0.2	<0.2	0.2	2458979
' Bismuth (Bi) †	ug				0.5	0.2	<0.2	0.2	2458979
' Boron (B) †	ug				40.8	0.9	9.3	0.6	2458979
' Cadmium (Cd) †	ug				<0.2	0.2	<0.2	0.2	2458979
' Calcium (Ca) †	ug				111	20	59	20	2458979
' Chromium (Cr) †	ug				<0.4	0.4	0.3	0.3	2458979
' Cobalt (Co) †	ug				<0.4	0.4	<0.3	0.3	2458979
' Copper (Cu) †	ug				2.0	0.4	1.2	0.3	2458979
' Tin (Sn) †	ug				<2	2	21	2	2458979
' Iron (Fe) †	ug				<20	20	<20	20	2458979
' Lithium (Li) †	ug				<4	4	<3	3	2458979
' Magnesium (Mg) †	ug				11	9	7	6	2458979
' Manganese (Mn) †	ug				1.5	0.4	1.6	0.3	2458979
Mercury (Hg)	ug	<0.62	0.62	2458262					
' Mercury (Hg) †	ug				<0.2	0.2	<0.2	0.2	2458979
' Molybdenum (Mo) †	ug				<2	2	<2	2	2458979
' Nickel (Ni) †	ug				0.8	0.4	0.4	0.3	2458979
' Lead (Pb) †	ug				<2	2	<2	2	2458979
' Potassium (K) †	ug				<40	40	32	30	2458979
' Selenium (Se) †	ug				2.9	0.4	<0.3	0.3	2458979
' Silicon (Si) †	ug				<20	20	38	20	2458979
' Sodium (Na) †	ug				29	20	46	20	2458979
' Strontium (Sr) †	ug				<0.4	0.4	<0.3	0.3	2458979
' Thallium (Tl) †	ug				<0.4	0.4	<0.3	0.3	2458979
' Titanium (Ti) †	ug				4	4	<3	3	2458979
' Vanadium (V) †	ug				<0.9	0.9	<0.6	0.6	2458979
' Zinc (Zn) †	ug				73.0	0.4	11.4	0.3	2458979

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable

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METALS (IMPINGER SOLUTION)

Bureau Veritas ID		MI9861			MI9863		
Sampling Date		2023/10/01			2023/10/01		
COC Number		n/a			n/a		
	Units	**322-INC-B5-HNO3-3 VT:100ML**	**RDL**	**QC Batch**	**323+324-INC-3 VT:615ML**	**RDL**	**QC Batch**
METALS							
Mercury (Hg)	ug				<0.62	0.62	2458262
' Mercury (Hg) †	ug	<0.05	0.05	2458979			

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable

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METALS (IMPINGER SOLUTION)

Bureau Veritas ID		MI9876		MI9877			MI9878		
Sampling Date		2023/10/01		2023/10/01			2023/10/01		
COC Number		n/a		n/a			n/a		
	Units	**328-BL-B12-H2O-BL VT:200ML**	**QC Batch**	**329-BL-B34-HNO3/H2O2-BL VT:200ML**	**RDL**	**QC Batch**	**330+331-BL-BL VT:325ML**	**RDL**	**QC Batch**
METALS									
' Aluminum (Al) †	ug	<2	2458979	3	2	2462909			
' Antimony (Sb) †	ug	<0.2	2458979	<0.2	0.2	2462909			
' Silver (Ag) †	ug	<1	2458979	<1	1	2462909			
' Arsenic (As) †	ug	<0.2	2458979	<0.2	0.2	2462909			
' Barium (Ba) †	ug	<0.1	2458979	<0.1	0.1	2462909			
' Beryllium (Be) †	ug	<0.1	2458979	<0.1	0.1	2462909			
' Bismuth (Bi) †	ug	<0.1	2458979	<0.1	0.1	2462909			
' Boron (B) †	ug	<0.4	2458979	0.5 (1)	0.4	2462909			
' Cadmium (Cd) †	ug	<0.1	2458979	<0.1	0.1	2462909			
' Calcium (Ca) †	ug	25	2458979	71	10	2462909			
' Chromium (Cr) †	ug	<0.2	2458979	0.2	0.2	2462909			
' Cobalt (Co) †	ug	<0.2	2458979	<0.2	0.2	2462909			
' Copper (Cu) †	ug	<0.2	2458979	<0.2	0.2	2462909			
' Tin (Sn) †	ug	<1	2458979	24	1	2462909			
' Iron (Fe) †	ug	<10	2458979	<10	10	2462909			
' Lithium (Li) †	ug	<2	2458979	<2	2	2462909			
' Magnesium (Mg) †	ug	<4	2458979	<4	4	2462909			
' Manganese (Mn) †	ug	<0.2	2458979	1.1	0.2	2462909			
Mercury (Hg)	ug						<0.33	0.33	2458262
' Mercury (Hg) †	ug	<0.1	2458979	<0.1	0.1	2462909			
' Molybdenum (Mo) †	ug	<1	2458979	<1	1	2462909			
' Nickel (Ni) †	ug	<0.2	2458979	<0.2	0.2	2462909			
' Lead (Pb) †	ug	<1	2458979	<1	1	2462909			
' Potassium (K) †	ug	<20	2458979	28	20	2462909			
' Selenium (Se) †	ug	<0.2	2458979	<0.2	0.2	2462909			
' Silicon (Si) †	ug	<10	2458979	<10	10	2462909			
' Sodium (Na) †	ug	<10	2458979	15	10	2462909			
' Strontium (Sr) †	ug	<0.2	2458979	<0.2	0.2	2462909			
' Thallium (Tl) †	ug	<0.2	2458979	<0.2	0.2	2462909			
' Titanium (Ti) †	ug	<2	2458979	<2	2	2462909			
' Vanadium (V) †	ug	<0.4	2458979	<0.4	0.4	2462909			
' Zinc (Zn) †	ug	0.8	2458979	1.6	0.2	2462909			

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable
(1) La limite de détection a été augmentée dû à l'instrumentation.

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CONVENTIONAL PARAMETERS (IMPINGER SOLUTION)

Bureau Veritas ID		MI9705	MI9809	MI9852	
Sampling Date		2023/09/29	2023/09/30	2023/10/01	
COC Number		n/a	n/a	n/a	
	Units	**302-INC-BS-HNO3-1**	**310-INC-BS-HNO3-2**	**318-INC-BS-HNO3-3**	**QC Batch**
CONVENTIONALS					
Final volume †	ml	130	220	190	2457072

QC Batch = Quality Control Batch
† Parameter is not accreditable

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METALS (TRAIN)

Bureau Veritas ID		MI9705	MI9809	MI9852		
Sampling Date		2023/09/29	2023/09/30	2023/10/01		
COC Number		n/a	n/a	n/a		
	Units	**301+302+303-INC-1**	**309+310+311-INC-2**	**317+318+319-INC-3**	**RDL**	**QC Batch**
METALS						
Impinger Solution Aluminum (Al) †	ug	144	320	305	2	2456931
Impinger Solution Antimony (Sb) †	ug	247	331	252	0.1	2456931
Impinger Solution Silver (Ag) †	ug	1.9	7.9	3.1	0.5	2456931
Impinger Solution Arsenic (As) †	ug	72.1	216	218	0.1	2456931
Impinger Solution Barium (Ba) †	ug	3.00	5.39	5.46	0.05	2456931
Impinger Solution Beryllium (Be) †	ug	<0.05	<0.05	<0.05	0.05	2456931
Impinger Solution Bismuth (Bi) †	ug	3.15	7.43	5.23	0.05	2456931
Impinger Solution Boron (B) †	ug	7.1	3.5	4.2	0.5	2456931
Impinger Solution Cadmium (Cd) †	ug	3.77	11.8	4.89	0.05	2456931
Impinger Solution Calcium (Ca) †	ug	4000	2810	3190	50	2456931
Impinger Solution Chromium (Cr) †	ug	6.5	9.7	14.5	0.1	2456931
Impinger Solution Cobalt (Co) †	ug	0.2	0.3	0.3	0.1	2456931
Impinger Solution Copper (Cu) †	ug	91.2	163	178	0.1	2456931
Impinger Solution Tin (Sn) †	ug	16.3	39.0	62.1	0.5	2456931
Impinger Solution Iron (Fe) †	ug	97	167	165	5	2456931
Impinger Solution Lithium (Li) †	ug	25	9	6	1	2456931
Impinger Solution Magnesium (Mg) †	ug	75	140	146	2	2456931
Impinger Solution Manganese (Mn) †	ug	10.5	10.6	9.0	0.1	2456931
Impinger Solution Mercury (Hg) †	ug	<0.1	<0.1	<0.1	0.1	2456931
Impinger Solution Molybdenum (Mo) †	ug	3.6	4.8	7.1	0.5	2456931
Impinger Solution Nickel (Ni) †	ug	1.1	1.6	1.2	0.3	2456931
Impinger Solution Lead (Pb) †	ug	89.4	267	400	0.5	2456931
Impinger Solution Potassium (K) †	ug	8130	13300	14500	10	2456931
Impinger Solution Selenium (Se) †	ug	0.7	0.7	1.0	0.5	2456931
Impinger Solution Silicon (Si) †	ug	403	675	845	5	2456931
Impinger Solution Sodium (Na) †	ug	5650	9570	9040	10	2456931
Impinger Solution Strontium (Sr) †	ug	3.8	3.9	4.0	0.1	2456931
Impinger Solution Thallium (Tl) †	ug	<0.1	0.3	0.2	0.1	2456931
Impinger Solution Titanium (Ti) †	ug	14	37	42	1	2456931
Impinger Solution Vanadium (V) †	ug	<0.2	0.3	0.4	0.2	2456931
Impinger Solution Zinc (Zn) †	ug	503	2100	1250	1	2456931

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable

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METALS (TRAIN)

Bureau Veritas ID		MI9872		
Sampling Date		2023/10/01		
COC Number		n/a		
	Units	**325+326+327-BL-BL**	**RDL**	**QC Batch**
METALS				
Impinger Solution Aluminum (Al) †	ug	6	3	2456931
Impinger Solution Antimony (Sb) †	ug	<0.3	0.3	2456931
Impinger Solution Silver (Ag) †	ug	<1	1	2456931
Impinger Solution Arsenic (As) †	ug	<0.3	0.3	2456931
Impinger Solution Barium (Ba) †	ug	0.2	0.1	2456931
Impinger Solution Beryllium (Be) †	ug	<0.1	0.1	2456931
Impinger Solution Bismuth (Bi) †	ug	<0.1	0.1	2456931
Impinger Solution Boron (B) †	ug	0.5	0.5	2456931
Impinger Solution Cadmium (Cd) †	ug	<0.1	0.1	2456931
Impinger Solution Calcium (Ca) †	ug	91	50	2456931
Impinger Solution Chromium (Cr) †	ug	<0.3	0.3	2456931
Impinger Solution Cobalt (Co) †	ug	<0.3	0.3	2456931
Impinger Solution Copper (Cu) †	ug	0.7	0.3	2456931
Impinger Solution Tin (Sn) †	ug	<1	1	2456931
Impinger Solution Iron (Fe) †	ug	<10	10	2456931
Impinger Solution Lithium (Li) †	ug	<3	3	2456931
Impinger Solution Magnesium (Mg) †	ug	<5	5	2456931
Impinger Solution Manganese (Mn) †	ug	<0.3	0.3	2456931
Impinger Solution Mercury (Hg) †	ug	<0.1	0.1	2456931
Impinger Solution Molybdenum (Mo) †	ug	<1	1	2456931
Impinger Solution Nickel (Ni) †	ug	<0.3	0.3	2456931
Impinger Solution Lead (Pb) †	ug	<1	1	2456931
Impinger Solution Potassium (K) †	ug	<30	30	2456931
Impinger Solution Selenium (Se) †	ug	<0.5	0.5	2456931
Impinger Solution Silicon (Si) †	ug	24	10	2456931
Impinger Solution Sodium (Na) †	ug	91	10	2456931
Impinger Solution Strontium (Sr) †	ug	<0.3	0.3	2456931
Impinger Solution Thallium (Tl) †	ug	<0.3	0.3	2456931
Impinger Solution Titanium (Ti) †	ug	<3	3	2456931
Impinger Solution Vanadium (V) †	ug	<0.5	0.5	2456931
Impinger Solution Zinc (Zn) †	ug	2	1	2456931

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable

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GENERAL COMMENTS

Revised report to provide report in English.

METALS (IMPINGER SOLUTION)

Reported detection limits are modified according to the volume of sample received.

Mercury : Analysis done past holding time for the following samples MI9705, MI9766, MI9781, MI9782, MI9809, MI9852 and MI9872.

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
2458262	ANB	Spiked Blank	Mercury (Hg)	2023/10/26		103	%
2458262	ANB	Method Blank	Mercury (Hg)	2023/10/26	<0.10		ug
2458979	ST5	Spiked Blank	' Aluminum (Al)	2023/10/28		105	%
			' Antimony (Sb)	2023/10/28		101	%
			' Silver (Ag)	2023/10/28		96	%
			' Arsenic (As)	2023/10/28		98	%
			' Barium (Ba)	2023/10/28		98	%
			' Beryllium (Be)	2023/10/28		99	%
			' Bismuth (Bi)	2023/10/28		96	%
			' Boron (B)	2023/10/28		100	%
			' Cadmium (Cd)	2023/10/28		96	%
			' Calcium (Ca)	2023/10/28		104	%
			' Chromium (Cr)	2023/10/28		98	%
			' Cobalt (Co)	2023/10/28		96	%
			' Copper (Cu)	2023/10/28		95	%
			' Tin (Sn)	2023/10/28		101	%
			' Iron (Fe)	2023/10/28		104	%
			' Lithium (Li)	2023/10/28		97	%
			' Magnesium (Mg)	2023/10/28		104	%
			' Manganese (Mn)	2023/10/28		99	%
			' Mercury (Hg)	2023/10/28		83	%
			' Molybdenum (Mo)	2023/10/28		99	%
			' Nickel (Ni)	2023/10/28		95	%
			' Lead (Pb)	2023/10/28		97	%
			' Potassium (K)	2023/10/28		103	%
			' Selenium (Se)	2023/10/28		99	%
			' Silicon (Si)	2023/10/28		100	%
			' Sodium (Na)	2023/10/28		103	%
			' Strontium (Sr)	2023/10/28		97	%
			' Thallium (Tl)	2023/10/28		96	%
			' Titanium (Ti)	2023/10/28		103	%
			' Vanadium (V)	2023/10/28		98	%
			' Zinc (Zn)	2023/10/28		94	%
2458979	ST5	Method Blank	' Aluminum (Al)	2023/10/29	<1		ug
			' Antimony (Sb)	2023/10/29	<0.1		ug
			' Silver (Ag)	2023/10/29	<0.5		ug
			' Arsenic (As)	2023/10/29	<0.1		ug
			' Barium (Ba)	2023/10/29	<0.05		ug
			' Beryllium (Be)	2023/10/29	<0.05		ug
			' Bismuth (Bi)	2023/10/29	<0.05		ug
			' Boron (B)	2023/10/29	0.2, RDL=0.2		ug
			' Cadmium (Cd)	2023/10/29	<0.05		ug
			' Calcium (Ca)	2023/10/29	<5		ug
			' Chromium (Cr)	2023/10/29	<0.1		ug
			' Cobalt (Co)	2023/10/29	<0.1		ug
			' Copper (Cu)	2023/10/29	<0.1		ug
			' Tin (Sn)	2023/10/29	<0.5		ug
			' Iron (Fe)	2023/10/29	<5		ug
			' Lithium (Li)	2023/10/29	<1		ug
			' Magnesium (Mg)	2023/10/29	<2		ug
			' Manganese (Mn)	2023/10/29	<0.1		ug

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
			' Mercury (Hg)	2023/10/29	<0.05		ug
			' Molybdenum (Mo)	2023/10/29	<0.5		ug
			' Nickel (Ni)	2023/10/29	<0.1		ug
			' Lead (Pb)	2023/10/29	<0.5		ug
			' Potassium (K)	2023/10/29	<10		ug
			' Selenium (Se)	2023/10/29	<0.1		ug
			' Silicon (Si)	2023/10/29	<5		ug
			' Sodium (Na)	2023/10/29	<5		ug
			' Strontium (Sr)	2023/10/29	<0.1		ug
			' Thallium (Tl)	2023/10/29	<0.1		ug
			' Titanium (Ti)	2023/10/29	<1		ug
			' Vanadium (V)	2023/10/29	<0.2		ug
			' Zinc (Zn)	2023/10/29	<0.1		ug
2462909	ST5	Spiked Blank	' Aluminum (Al)	2023/10/28		105	%
			' Antimony (Sb)	2023/10/28		101	%
			' Silver (Ag)	2023/10/28		96	%
			' Arsenic (As)	2023/10/28		98	%
			' Barium (Ba)	2023/10/28		98	%
			' Beryllium (Be)	2023/10/28		99	%
			' Bismuth (Bi)	2023/10/28		96	%
			' Boron (B)	2023/10/28		100	%
			' Cadmium (Cd)	2023/10/28		96	%
			' Calcium (Ca)	2023/10/28		104	%
			' Chromium (Cr)	2023/10/28		98	%
			' Cobalt (Co)	2023/10/28		96	%
			' Copper (Cu)	2023/10/28		95	%
			' Tin (Sn)	2023/10/28		101	%
			' Iron (Fe)	2023/10/28		104	%
			' Lithium (Li)	2023/10/28		97	%
			' Magnesium (Mg)	2023/10/28		104	%
			' Manganese (Mn)	2023/10/28		99	%
			' Mercury (Hg)	2023/10/28		83	%
			' Molybdenum (Mo)	2023/10/28		99	%
			' Nickel (Ni)	2023/10/28		95	%
			' Lead (Pb)	2023/10/28		97	%
			' Potassium (K)	2023/10/28		103	%
			' Selenium (Se)	2023/10/28		99	%
			' Silicon (Si)	2023/10/28		100	%
			' Sodium (Na)	2023/10/28		103	%
			' Strontium (Sr)	2023/10/28		97	%
			' Thallium (Tl)	2023/10/28		96	%
			' Titanium (Ti)	2023/10/28		103	%
			' Vanadium (V)	2023/10/28		98	%
			' Zinc (Zn)	2023/10/28		94	%
2462909	ST5	Method Blank	' Aluminum (Al)	2023/10/29	<1		ug
			' Antimony (Sb)	2023/10/29	<0.1		ug
			' Silver (Ag)	2023/10/29	<0.5		ug
			' Arsenic (As)	2023/10/29	<0.1		ug
			' Barium (Ba)	2023/10/29	<0.05		ug
			' Beryllium (Be)	2023/10/29	<0.05		ug
			' Bismuth (Bi)	2023/10/29	<0.05		ug

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
			' Boron (B)	2023/10/29	0.2, RDL=0.2		ug
			' Cadmium (Cd)	2023/10/29	<0.05		ug
			' Calcium (Ca)	2023/10/29	<5		ug
			' Chromium (Cr)	2023/10/29	<0.1		ug
			' Cobalt (Co)	2023/10/29	<0.1		ug
			' Copper (Cu)	2023/10/29	<0.1		ug
			' Tin (Sn)	2023/10/29	<0.5		ug
			' Iron (Fe)	2023/10/29	<5		ug
			' Lithium (Li)	2023/10/29	<1		ug
			' Magnesium (Mg)	2023/10/29	<2		ug
			' Manganese (Mn)	2023/10/29	<0.1		ug
			' Mercury (Hg)	2023/10/29	<0.05		ug
			' Molybdenum (Mo)	2023/10/29	<0.5		ug
			' Nickel (Ni)	2023/10/29	<0.1		ug
			' Lead (Pb)	2023/10/29	<0.5		ug
			' Potassium (K)	2023/10/29	<10		ug
			' Selenium (Se)	2023/10/29	<0.1		ug
			' Silicon (Si)	2023/10/29	<5		ug
			' Sodium (Na)	2023/10/29	<5		ug
			' Strontium (Sr)	2023/10/29	<0.1		ug
			' Thallium (Tl)	2023/10/29	<0.1		ug
			' Titanium (Ti)	2023/10/29	<1		ug
			' Vanadium (V)	2023/10/29	<0.2		ug
			' Zinc (Zn)	2023/10/29	<0.1		ug

RDL = Reportable Detection Limit

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

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

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VALIDATION SIGNATURE PAGE

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

Jonathan Fauvel, B.Sc., Chemist, Montreal, Scientific Specialist

Mira El Masri, M.Sc. Chemist, Montréal, Analyst II

Simran Kaur LNU, B.Sc. Biochemist, Montreal, Analyst 2

Zineb El Ouali
Membre OCQ#2021-051

Zineb El Ouali, M.Sc.,Chemist, Analyst II

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CONSULAIR
GESTION GLOBALE AIR ET ENVIRONNEMENT

Québec, le lundi 9 octobre 2023

Argyro Frangoulis
Chef d'équipe de l'expérience client
Multi-secteurs- pétrolier, qualité de l'air et eau potable
Laboratoires Bureau Veritas
889, Montée de Liesse, Saint-Laurent, Qc. H4T 1P5
Tél. : 514 448 9001, poste 7066229 Cellulaire : 514 208 0388 Télec. : 514 448 9199
argyro.frangoulis@bvlabs.com

Objet : **Explications de la demande d'analyses pour le projet de Agnico Eagle (Meliadine).**

Notre no de projet : #23-7693

Bonjour Argyro,

Voici la demande d'analyse concernant le dossier mentionné précédemment. Les mesures ont été effectuées du 29 septembre au 1 octobre 2023. Il y a 2 demandes d'analyse, une pour les métaux et une pour les COSV.

DEMANDE D'ANALYSES #1 / MÉTAUX

Cela correspond à 3 essais pour une source (Inc.) et les blancs.

Les fractions filtres et buse-sonde acétone vous seront envoyées un peu plus tard afin de faire l'analyse pour les métaux particulaires. Pour chacun des essais, nous voulons un résultat combiné des 2 fractions Buse-Sonde (Acétone et HNO_3) et le Filtre() (donc **3 échantillons à combiner).** Aussi, pour le Mercure d'un même essai, les fractions de $KmnO_4$ (BB67) et de HCl 8N (BB67-HCL) doivent être combinées. Il est important de respecter ces combinaisons exigées.

Les métaux à analyser sont les suivants : Al, Sb, Ag, As, Ba, Be, Bi, B, Cd, Ca, Cr, Co, Cu, Sn, Fe, Li, Mg, Mn, Mo, Ni, Pb, K, Se, Na, Ti, V, Zn, Sr, Tl, Si (Silicium soluble), Hg.

12-Oct-23 14:00
Argyro Frangoulis
C357778

GR

C357778_COC

DEMANDE D'ANALYSES #2 / COSV

Cela correspond à 3 essais pour une source (Inc.) et les blancs.

Pour les COSV (PCDD/DF), il faut combiner les échantillons par essai. Un essai comprend 6 matrices, donc les 6 matrices doivent être combinées pour l'obtention d'un seul résultat par essai. Les matrices sont :

- Buse et sonde (BS).
- Filtre.
- Trappe XAD-2.
- Avant- Trappe (AV-TR).
- Eau
- Rinçage final (Fin).

Il est important de ne pas jeter les échantillons et de nous les retourner après l'analyse.

Pour des renseignements supplémentaires n'hésitez pas à communiquer avec nous.

Envoyer les résultats à eric.trepanier@consul-air.com.

Salutations.

Eric Trépanier

CONSULAIR
GESTION GLOBALE AIR ET ENVIRONNEMENT

CHAÎNE DE RESPONSABILITÉ

2022-125, rue Lavoiser
Québec (Qc) G1N 4L5
Tél..: (418) 650-5960
Fax : (418) 704-2221
www.consul-air.com

Travaux effectués à : Agnico Eagle Meliadine

Projet #: 23-7693

Chargé de Projet : Eric Trépanier

Demande #1

LABORATOIRE RESPONSABLE DES ANALYSES :
Bureau Véritas
889 Montée de Liesse
St-Laurent (Qc) H4T 1P5
Téléphone : (514) 448-9001
Télécopieur : (514) 448-5922

ÉCHANTILLON	Matrice	Fraction	Qte	Date	Paramètres	Unité	Remarque
301 - Inc - BS-Acétone - 1	Acétone	BS-Acétone	1	2023-09-29	Métaux, Hg	mg	Combiner les échantillons 301 à 303 pour les métaux particulaires de la source Inc - Essai #1
302 - Inc - BS-HNO3 - 1	HNO3 0,1N	BS-HNO3	1	2023-09-29	Métaux, Hg	mg	Combiner avec les échantillons 301 et 303 pour les métaux particulaires de la source Inc - Essai #1
303 - Inc - Filtre - 1	Filtre Quartz	Poids avant : 0.5225 gr	1	2023-09-29	Métaux, Hg	mg	Combiner les échantillons 301 à 303 pour les métaux particulaires de la source Inc - Essai #1
304 - Inc - B12 - 1	H2O	B12 - Vt: 390 mL	1	2023-09-29	Métaux, Hg	mg	
305 - Inc - B1234-HNO3/H2O2 - 1	H2O2 10% / HNO3 5%	B1234-HNO3/H2O2 - Vt: 330 mL	1	2023-09-29	Métaux, Hg	mg	
306 - Inc - B5-HNO3 - 1	HNO3 0.1 N	B5-HNO3 - Vt: 100 mL	1	2023-09-29	Hg	mg	

REMIS PAR:	DATE:	HEURE:	
REÇU PAR: Sarah Cook	DATE: 2023/10/12	HEURE: 14:00	

Ice packs sealed intact cooler
8.6.7 9.5.11

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Travaux effectués à : Agnico Eagle Meliadine

Projet #:

Chargé de Projet :

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889 Montée de Liesse
St-Laurent (Qc) H4T 1P5
Téléphone : (514) 448-9001
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ÉCHANTILLON	Matrice	Fraction	Qte	Date	Paramètres	Unité	Remarque
307 - Inc - B67-KMnO4/H2SO4 - 1	KMNO4 4%/H2SO4 10%	B67-KMnO4/H2SO4 - Vt: 390 mL	1	2023-09-29	Hg	mg	Combiner les échantillons 307 et 308 pour le Hg de la source Inc - Essai #1
308 - Inc - B67-HCl - 1	HCl 0,9N	B67-HCl - Vt: 225 mL	1	2023-09-29	Hg	mg	Combiner les échantillons 307 et 308 pour le Hg de la source Inc - Essai #1
309 - Inc - BS-Acétone - 2	Acétone	BS-Acétone	1	2023-09-30	Métaux, Hg	mg	Combiner les échantillons 309 à 311 pour les métaux particulaires de la source Inc - Essai #2
310 - Inc - BS-HNO3 - 2	HNO3 0,1N	BS-HNO3	1	2023-09-30	Métaux, Hg	mg	Combiner avec les échantillons 309 et 311 pour les métaux particulaires de la source Inc - Essai #2
311 - Inc - Filtre - 2	Filtre Quartz	Poids avant : 0.5225 gr	1	2023-09-30	Métaux, Hg	mg	Combiner les échantillons 309 à 311 pour les métaux particulaires de la source Inc - Essai #2
312 - Inc - B12 - 2	H2O	B12 - Vt: 445 mL	1	2023-09-30	Métaux, Hg	mg	

Ice-yes
3 200 no
cooler
8.6.7 9.8.4

REMIS PAR: **DATE:** **HEURE:**

REÇU PAR: Sandra Coot **DATE:** 2023/10/12 **HEURE:** 14:00

CONSULAIR
GESTION GLOBALE AIR ET ENVIRONNEMENT

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Travaux effectués à : Agnico Eagle Meliadine

Projet #:

Chargé de Projet :

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St-Laurent (Qc) H4T 1P5
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ÉCHANTILLON	Matrice	Fraction	Qte	Date	Paramètres	Unité	Remarque
313 - Inc - B1234-HNO3/H2O2 - 2	H2O2 10% / HNO3 5%	B1234-HNO3/H2O2 - Vt: 290 mL	1	2023-09-30	Métaux, Hg	mg	
314 - Inc - B5-HNO3 - 2	HNO3 0.1 N	B5-HNO3 - Vt: 100 mL	1	2023-09-30	Hg	mg	
315 - Inc - B67-KMnO4/H2SO4 - 2	KMNO4 4%/H2SO4 10%	B67-KMnO4/H2SO4 - Vt: 390 mL	1	2023-09-30	Hg	mg	Combiner les échantillons 315 et 316 pour le Hg de la source Inc - Essai #2
316 - Inc - B67-HCl - 2	HCl 0,9N	B67-HCl - Vt: 230 mL	1	2023-09-30	Hg	mg	Combiner les échantillons 315 et 316 pour le Hg de la source Inc - Essai #2
317 - Inc - BS-Acétone - 3	Acétone	BS-Acétone	1	2023-10-01	Métaux, Hg	mg	Combiner les échantillons 317 à 319 pour les métaux particulaires de la source Inc - Essai #3
318 - Inc - BS-HNO3 - 3	HNO3 0,1N	BS-HNO3	1	2023-10-01	Métaux, Hg	mg	Combiner avec les échantillons 317 et 319 pour les métaux particulaires de la source Inc - Essai #3

REMIS PAR: **DATE:** **HEURE:**

REÇU PAR: Sarah Cool **DATE:** 2023-10-12 **HEURE:** 14:00

Ice yes Sealed Cooler

9.8.11 BC0?023 10/12 8.6.7

CONSULAIR
GESTION GLOBALE AIR ET ENVIRONNEMENT

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Travaux effectués à : Agnico Eagle Meliadine

Projet #:

Chargé de Projet :

LABORATOIRE RESPONSABLE DES ANALYSES :
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St-Laurent (Qc) H4T 1P5
Téléphone : (514) 448-9001
Télécopieur : (514) 448-5922

ÉCHANTILLON	Matrice	Fraction	Qte	Date	Paramètres	Unité	Remarque
319 - Inc - Filtre - 3	Filtre Quartz	Poids avant : 0.5223 gr	1	2023-10-01	Métaux, Hg	mg	Combiner les échantillons 317 à 319 pour les métaux particulaires de la source Inc - Essai #3
320 - Inc - B12 - 3	H2O	B12 - Vt: 440 mL	1	2023-10-01	Métaux, Hg	mg	
321 - Inc - B1234-HNO3/H2O2 - 3	H2O2 10% / HNO3 5%	B1234-HNO3/H2O2 - Vt: 300 mL	1	2023-10-01	Métaux, Hg	mg	
322 - Inc - B5-HNO3 - 3	HNO3 0.1 N	B5-HNO3 - Vt: 100 mL	1	2023-10-01	Hg	mg	
323 - Inc - B67-KMnO4/H2SO4 - 3	KMNO4 4%/H2SO4 10%	B67-KMnO4/H2SO4 - Vt: 390 mL	1	2023-10-01	Hg	mg	Combiner les échantillons 323 et 324 pour le Hg de la source Inc - Essai #3
324 - Inc - B67-HCl - 3	HCl 0,9N	B67-HCl - Vt: 225 mL	1	2023-10-01	Hg	mg	Combiner les échantillons 323 et 324 pour le Hg de la source Inc - Essai #3

REMIS PAR:	**DATE:**	**HEURE:**
REÇU PAR: Sandu Coot	**DATE:** 2023/10/12	**HEURE:** 14:00

1 ley cs
Seal no
LT?25
Amer
8.6.7 9.8.11

CONSULAIR
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Québec (Qc) G1N 4L5
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Fax : (418) 704-2221
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Travaux effectués à : Agnico Eagle Meliadine

Projet #:

Chargé de Projet :

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ÉCHANTILLON	Matrice	Fraction	Qte	Date	Paramètres	Unité	Remarque
325 - BI - BS-Acétone - BI	Acétone	BS-Acétone - Vt: 200 mL	1	2023-10-01	Métaux, Hg	mg	Combiner les échantillons 325 à 327 pour les métaux particulaires de la source Blanc - Essai #BI
326 - BI - BS-HNO3 - BI	HNO3 0,1N	BS-HNO3 - Vt: 250 mL	1	2023-10-01	Métaux, Hg	mg	Combiner avec les échantillons 325 et 327 pour les métaux particulaires de la source Blanc - Essai #BI
327 - BI - Filtre - BI	Filtre Quartz	Poids avant : 0.5221 gr	1	2023-10-01	Métaux, Hg	mg	Combiner les échantillons 325 à 327 pour les métaux particulaires de la source Blanc - Essai #BI
328 - BI - B12-H2O - BI	H2O	B12-H2O - Vt: 200 mL	1	2023-10-01	Métaux, Hg	mg	
329 - BI - B34-HNO3/H2O2 - BI	H2O2 10% / HNO3 5%	B34-HNO3/H2O2 - Vt: 200 mL	1	2023-10-01	Métaux, Hg	mg	
330 - BI - B67-KMnO4/H2SO4 - BI	KMNO4 4%/H2SO4 10%	B67-KMnO4/H2SO4 - Vt: 100 mL	1	2023-10-01	Hg	mg	Combiner les échantillons 330 et 331 pour le Hg de la source Blanc - Essai #BI

REMIS PAR:		**DATE:**	**HEURE:**
REÇU PAR: Sandra Leek		**DATE:** 2023/10/12	**HEURE:** 14:00

Ice yes
Seal no
intact
cooler
8.6 7 9.8 11

CHAÎNE DE RESPONSABILITÉ

CONSULAIR
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Travaux effectués à : Agnico Eagle Meliadine

Projet #:___________________________

Chargé de Projet :___________________________

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ÉCHANTILLON	Matrice	Fraction	Qte	Date	Paramètres	Unité	Remarque
331 - BI - B67-HCl - BI	HCl 0,9N	B67-HCl - Vt: 225 mL	1	2023-10-01	Hg	mg	Combiner les échantillons 330 et 331 pour le Hg de la source Blanc - Essai #BI

REMIS PAR:		**DATE:**	**HEURE:**
REÇU PAR: Sandoloed		**DATE:** 2023/10/12	**HEURE:** 14:00

Keys Sealed 20 WT20 dmer 8.6.7 9.8.11

Your Project #: 23-7693
Site Location: AGNICO EAGLE, MELIADINE
Your C.O.C. #: n/a

Attention: Éric Trépanier

CONSULAIR INC.
2022 Lavoisier
Local 125
Québec, QC
Canada G1N 4L5

Report Date: 2024/04/23
Report #: R2934818
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BUREAU VERITAS JOB #: C357869
Received: 2023/10/12, 14:00

Sample Matrix: Train
Samples Received: 4

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
PCDD/PCDF-sampling train	4	2023/12/12	2023/12/18	STL SOP-00150	MA400 D.F. 1.1 R6 m

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.
Note: RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Note: All parameters included in the present certificate are accredited by the Québec Ministry of the Environment, unless stated otherwise.

Bureau Veritas Bureau Veritas 889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tel: (514) 448-9001 Fax: (514) 448-9199 Ligne sans frais : 1-877-462-9926

Your Project #: 23-7693
Site Location: AGNICO EAGLE, MELIADINE
Your C.O.C. #: n/a

Attention: Éric Trépanier

CONSULAIR INC.
2022 Lavoisier
Local 125
Québec, QC
Canada G1N 4L5

Report Date: 2024/04/23
Report #: R2934818
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BUREAU VERITAS JOB #: C357869
Received: 2023/10/12, 14:00

Encryption Key

Argyro Frangoulis
Team Leader for Multisector
customer Experience
23 Apr 2024 12:36:55

Please direct all questions regarding this Certificate of Analysis to:
Argyro Frangoulis, Team Leader for Multisector customer Experience
Email: argyro.frangoulis@bureauveritas.com
Phone# (514)208-0388

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Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Aglaia Yannakis, General Manager responsible for Quebec Environmental laboratory operations.

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DIOXIN AND FURANS BY HRMS (TRAIN)

Bureau Veritas ID		MJ0032					
Sampling Date		2023/09/29					
COC Number		n/a		**TOXIC EQUIVALENCY**		# of	
	Units	**501+502+503+504+505+506-INC.-1**	**EDL**	**TEF (1998 WHO)**	**TEQ(0DL)**	**Isomers**	**QC Batch**
DIOXINS & FURANS							
2,3,7,8-Tetra CDD *	pg	16	1.4	1.0	16		2476139
1,2,3,7,8-Penta CDD *	pg	110	2.4	1.0	110		2476139
1,2,3,4,7,8-Hexa CDD *	pg	65	1.4	0.10	6.5		2476139
1,2,3,6,7,8-Hexa CDD *	pg	130	1.5	0.10	13		2476139
1,2,3,7,8,9-Hexa CDD *	pg	81	1.4	0.10	8.1		2476139
1,2,3,4,6,7,8-Hepta CDD *	pg	610	1.7	0.010	6.1		2476139
Octachlorodibenzo-p-dioxin	pg	660	3.2	0.00010	0.066	1	2476139
Total Tetrachlorodibenzo-p-dioxins †	pg	3000	1.4			13	2476139
Total Pentachlorodibenzo-p-dioxins †	pg	2200	2.4			9	2476139
Total Hexachlorodibenzo-p-dioxins †	pg	2200	1.4			8	2476139
Total Heptachlorodibenzo-p-dioxins †	pg	1400	1.7			2	2476139
Total Chlorodibenzo-p-dioxins †	pg	9400	N/A			33	2476139
2,3,7,8-Tetra CDF **	pg	140	15	0.10	14		2476139
1,2,3,7,8-Penta CDF **	pg	85	6.9	0.050	4.3		2476139
2,3,4,7,8-Penta CDF **	pg	200	7.3	0.50	100		2476139
1,2,3,4,7,8-Hexa CDF **	pg	120	3.3	0.10	12		2476139
1,2,3,6,7,8-Hexa CDF **	pg	130	3.4	0.10	13		2476139
2,3,4,6,7,8-Hexa CDF **	pg	260	3.6	0.10	26		2476139
1,2,3,7,8,9-Hexa CDF **	pg	67	4.3	0.10	6.7		2476139
1,2,3,4,6,7,8-Hepta CDF **	pg	460	1.6	0.010	4.6		2476139
1,2,3,4,7,8,9-Hepta CDF **	pg	68	1.8	0.010	0.68		2476139
Octachlorodibenzofuran	pg	150	1.1	0.00010	0.015	1	2476139
Total Tetrachlorodibenzofurans †	pg	4700	15			21	2476139
Total Pentachlorodibenzofurans †	pg	2800	7.1			18	2476139
Total Hexachlorodibenzofurans †	pg	1700	3.6			14	2476139
Total Heptachlorodibenzofurans †	pg	760	1.7			4	2476139
Total Chlorodibenzofurans †	pg	10000	N/A			58	2476139

EDL = Estimated Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(1998): The 1998 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

† Parameter is not accreditable

N/A = Not Applicable

** CDF = Chloro Dibenzo-p-Furan

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DIOXIN AND FURANS BY HRMS (TRAIN)

Bureau Veritas ID		MJ0032					
Sampling Date		2023/09/29					
COC Number		n/a		**TOXIC EQUIVALENCY**		# of	
	Units	**501+502+503+504+505+506-INC.-1**	**EDL**	**TEF (1998 WHO)**	**TEQ(0DL)**	**Isomers**	**QC Batch**
TOTAL TOXIC EQUIVALENCY †	pg				340		
Surrogate Recovery (%)							
C13-1,2,3,4,6,7,8-H7CDD *	%	74					2476139
C13-1,2,3,4,6,7,8-H7CDF **	%	69					2476139
C13-1,2,3,6,7,8-H6CDD *	%	72					2476139
C13-1,2,3,6,7,8-H6CDF **	%	66					2476139
C13-1,2,3,7,8-P5CDD *	%	78					2476139
C13-1,2,3,7,8-PCDF **	%	65					2476139
C13-2,3,7,8-TCDD *	%	68					2476139
C13-2,3,7,8-TCDF **	%	66					2476139
C13-OCTA-CDD *	%	56					2476139

EDL = Estimated Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,

The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(1998): The 1998 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

† Parameter is not accreditable

* CDD = Chloro Dibenzo-p-Dioxin

** CDF = Chloro Dibenzo-p-Furan

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DIOXIN AND FURANS BY HRMS (TRAIN)

Bureau Veritas ID		MJ0046					
Sampling Date		2023/09/30					
COC Number		n/a		**TOXIC EQUIVALENCY**		# of	
	Units	**507+508+509+510+511+512-INC.-2**	**EDL**	**TEF (1998 WHO)**	**TEQ(0DL)**	**Isomers**	**QC Batch**
DIOXINS & FURANS							
2,3,7,8-Tetra CDD *	pg	17	1.4	1.0	17		2476139
1,2,3,7,8-Penta CDD *	pg	230	5.3	1.0	230		2476139
1,2,3,4,7,8-Hexa CDD *	pg	200	11	0.10	20		2476139
1,2,3,6,7,8-Hexa CDD *	pg	1200	12	0.10	120		2476139
1,2,3,7,8,9-Hexa CDD *	pg	670	11	0.10	67		2476139
1,2,3,4,6,7,8-Hepta CDD *	pg	6500	16	0.010	65		2476139
Octachlorodibenzo-p-dioxin	pg	7400	11	0.00010	0.74	1	2476139
Total Tetrachlorodibenzo-p-dioxins †	pg	6000	1.4			11	2476139
Total Pentachlorodibenzo-p-dioxins †	pg	9600	5.3			9	2476139
Total Hexachlorodibenzo-p-dioxins †	pg	20000	11			8	2476139
Total Heptachlorodibenzo-p-dioxins †	pg	17000	16			2	2476139
Total Chlorodibenzo-p-dioxins †	pg	59000	N/A			31	2476139
2,3,7,8-Tetra CDF **	pg	98	11	0.10	9.8		2476139
1,2,3,7,8-Penta CDF **	pg	95	3.3	0.050	4.8		2476139
2,3,4,7,8-Penta CDF **	pg	240	3.5	0.50	120		2476139
1,2,3,4,7,8-Hexa CDF **	pg	160	3.1	0.10	16		2476139
1,2,3,6,7,8-Hexa CDF **	pg	210	3.1	0.10	21		2476139
2,3,4,6,7,8-Hexa CDF **	pg	360	3.4	0.10	36		2476139
1,2,3,7,8,9-Hexa CDF **	pg	93	4.0	0.10	9.3		2476139
1,2,3,4,6,7,8-Hepta CDF **	pg	800	2.2	0.010	8.0		2476139
1,2,3,4,7,8,9-Hepta CDF **	pg	93	2.5	0.010	0.93		2476139
Octachlorodibenzofuran	pg	350	1.5	0.00010	0.035	1	2476139
Total Tetrachlorodibenzofurans †	pg	3800	11			22	2476139
Total Pentachlorodibenzofurans †	pg	3000	3.4			19	2476139
Total Hexachlorodibenzofurans †	pg	2300	3.4			14	2476139
Total Heptachlorodibenzofurans †	pg	1100	2.3			3	2476139
Total Chlorodibenzofurans †	pg	10000	N/A			59	2476139

EDL = Estimated Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(1998): The 1998 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

† Parameter is not accreditable

N/A = Not Applicable

** CDF = Chloro Dibenzo-p-Furan

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DIOXIN AND FURANS BY HRMS (TRAIN)

Bureau Veritas ID		MJ0046					
Sampling Date		2023/09/30					
COC Number		n/a		**TOXIC EQUIVALENCY**		# of	
	Units	**507+508+509+510+511+512-INC.-2**	**EDL**	**TEF (1998 WHO)**	**TEQ(0DL)**	**Isomers**	**QC Batch**
TOTAL TOXIC EQUIVALENCY †	pg				750		
Surrogate Recovery (%)							
C13-1,2,3,4,6,7,8-H7CDD *	%	66					2476139
C13-1,2,3,4,6,7,8-H7CDF **	%	65					2476139
C13-1,2,3,6,7,8-H6CDD *	%	68					2476139
C13-1,2,3,6,7,8-H6CDF **	%	58					2476139
C13-1,2,3,7,8-P5CDD *	%	79					2476139
C13-1,2,3,7,8-PCDF **	%	60					2476139
C13-2,3,7,8-TCDD *	%	62					2476139
C13-2,3,7,8-TCDF **	%	57					2476139
C13-OCTA-CDD *	%	53					2476139

EDL = Estimated Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,

The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(1998): The 1998 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

† Parameter is not accreditable

* CDD = Chloro Dibenzo-p-Dioxin

** CDF = Chloro Dibenzo-p-Furan

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DIOXIN AND FURANS BY HRMS (TRAIN)

Bureau Veritas ID		MJ0059					
Sampling Date		2023/10/01					
COC Number		n/a		**TOXIC EQUIVALENCY**		# of	
	Units	**513+514+515+516+517+518-INC.-3**	**EDL**	**TEF (1998 WHO)**	**TEQ(0DL)**	**Isomers**	**QC Batch**
DIOXINS & FURANS							
2,3,7,8-Tetra CDD *	pg	DNQ	1.0	1.0	0		2476139
1,2,3,7,8-Penta CDD *	pg	12	1.4	1.0	12		2476139
1,2,3,4,7,8-Hexa CDD *	pg	14	1.1	0.10	1.4		2476139
1,2,3,6,7,8-Hexa CDD *	pg	28	1.2	0.10	2.8		2476139
1,2,3,7,8,9-Hexa CDD *	pg	16	1.1	0.10	1.6		2476139
1,2,3,4,6,7,8-Hepta CDD *	pg	220	1.3	0.010	2.2		2476139
Octachlorodibenzo-p-dioxin	pg	640	1.5	0.00010	0.064	1	2476139
Total Tetrachlorodibenzo-p-dioxins †	pg	1100	1.0			5	2476139
Total Pentachlorodibenzo-p-dioxins †	pg	170	1.4			8	2476139
Total Hexachlorodibenzo-p-dioxins †	pg	330	1.1			8	2476139
Total Heptachlorodibenzo-p-dioxins †	pg	470	1.3			2	2476139
Total Chlorodibenzo-p-dioxins †	pg	2700	N/A			24	2476139
2,3,7,8-Tetra CDF **	pg	16	2.1	0.10	1.6		2476139
1,2,3,7,8-Penta CDF **	pg	18	2.3	0.050	0.90		2476139
2,3,4,7,8-Penta CDF **	pg	49	2.4	0.50	25		2476139
1,2,3,4,7,8-Hexa CDF **	pg	39	1.6	0.10	3.9		2476139
1,2,3,6,7,8-Hexa CDF **	pg	45	1.6	0.10	4.5		2476139
2,3,4,6,7,8-Hexa CDF **	pg	90	1.7	0.10	9.0		2476139
1,2,3,7,8,9-Hexa CDF **	pg	15	2.1	0.10	1.5		2476139
1,2,3,4,6,7,8-Hepta CDF **	pg	300	0.59	0.010	3.0		2476139
1,2,3,4,7,8,9-Hepta CDF **	pg	15	0.66	0.010	0.15		2476139
Octachlorodibenzofuran	pg	80	1.1	0.00010	0.0080	1	2476139
Total Tetrachlorodibenzofurans †	pg	690	2.1			21	2476139
Total Pentachlorodibenzofurans †	pg	580	2.4			15	2476139
Total Hexachlorodibenzofurans †	pg	550	1.7			13	2476139
Total Heptachlorodibenzofurans †	pg	380	0.62			4	2476139
Total Chlorodibenzofurans †	pg	2300	N/A			54	2476139

EDL = Estimated Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(1998): The 1998 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

DNQ = Detected, Not Quantified (Result < 3.33 * EDL)

† Parameter is not accreditable

N/A = Not Applicable

** CDF = Chloro Dibenzo-p-Furan

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DIOXIN AND FURANS BY HRMS (TRAIN)

Bureau Veritas ID		MJ0059					
Sampling Date		2023/10/01					
COC Number		n/a		**TOXIC EQUIVALENCY**		# of	
	Units	**513+514+515+516+517+518-INC.-3**	**EDL**	**TEF (1998 WHO)**	**TEQ(0DL)**	**Isomers**	**QC Batch**
TOTAL TOXIC EQUIVALENCY †	pg				70		
Surrogate Recovery (%)							
C13-1,2,3,4,6,7,8-H7CDD *	%	73					2476139
C13-1,2,3,4,6,7,8-H7CDF **	%	69					2476139
C13-1,2,3,6,7,8-H6CDD *	%	78					2476139
C13-1,2,3,6,7,8-H6CDF **	%	63					2476139
C13-1,2,3,7,8-P5CDD *	%	75					2476139
C13-1,2,3,7,8-PCDF **	%	58					2476139
C13-2,3,7,8-TCDD *	%	66					2476139
C13-2,3,7,8-TCDF **	%	61					2476139
C13-OCTA-CDD *	%	59					2476139

EDL = Estimated Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,

The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(1998): The 1998 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

† Parameter is not accreditable

* CDD = Chloro Dibenzo-p-Dioxin

** CDF = Chloro Dibenzo-p-Furan

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DIOXIN AND FURANS BY HRMS (TRAIN)

Bureau Veritas ID		MJ0065					
Sampling Date		2023/10/01					
COC Number		n/a		**TOXIC EQUIVALENCY**		# of	
	Units	**519+520+521+522+523+524-INC.-BL**	**EDL**	**TEF (1998 WHO)**	**TEQ(0DL)**	**Isomers**	**QC Batch**
DIOXINS & FURANS							
2,3,7,8-Tetra CDD *	pg	<0.37	0.37	1.0	0		2476139
1,2,3,7,8-Penta CDD *	pg	<0.54	0.54	1.0	0		2476139
1,2,3,4,7,8-Hexa CDD *	pg	<0.98	0.98	0.10	0		2476139
1,2,3,6,7,8-Hexa CDD *	pg	<0.42	0.42	0.10	0		2476139
1,2,3,7,8,9-Hexa CDD *	pg	<0.39	0.39	0.10	0		2476139
1,2,3,4,6,7,8-Hepta CDD *	pg	1.4	0.29	0.010	0.014		2476139
Octachlorodibenzo-p-dioxin	pg	6.5	0.39	0.00010	0.00065	1	2476139
Total Tetrachlorodibenzo-p-dioxins †	pg	0.70	0.37			1	2476139
Total Pentachlorodibenzo-p-dioxins †	pg	<0.54	0.54			0	2476139
Total Hexachlorodibenzo-p-dioxins †	pg	<0.40	0.40			0	2476139
Total Heptachlorodibenzo-p-dioxins †	pg	2.8	0.29			2	2476139
Total Chlorodibenzo-p-dioxins †	pg	10	N/A			4	2476139
2,3,7,8-Tetra CDF **	pg	<0.19	0.19	0.10	0		2476139
1,2,3,7,8-Penta CDF **	pg	<0.46	0.46	0.050	0		2476139
2,3,4,7,8-Penta CDF **	pg	<0.49	0.49	0.50	0		2476139
1,2,3,4,7,8-Hexa CDF **	pg	<0.32	0.32	0.10	0		2476139
1,2,3,6,7,8-Hexa CDF **	pg	<0.32	0.32	0.10	0		2476139
2,3,4,6,7,8-Hexa CDF **	pg	<0.34	0.34	0.10	0		2476139
1,2,3,7,8,9-Hexa CDF **	pg	<0.41	0.41	0.10	0		2476139
1,2,3,4,6,7,8-Hepta CDF **	pg	<0.43	0.43	0.010	0		2476139
1,2,3,4,7,8,9-Hepta CDF **	pg	<0.26	0.26	0.010	0		2476139
Octachlorodibenzofuran	pg	1.0	0.27	0.00010	0.00010	1	2476139
Total Tetrachlorodibenzofurans †	pg	0.50	0.19			1	2476139
Total Pentachlorodibenzofurans †	pg	<0.47	0.47			0	2476139
Total Hexachlorodibenzofurans †	pg	<0.34	0.34			0	2476139
Total Heptachlorodibenzofurans †	pg	<0.25	0.25			0	2476139
Total Chlorodibenzofurans †	pg	1.5	N/A			2	2476139

EDL = Estimated Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(1998): The 1998 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

† Parameter is not accreditable

N/A = Not Applicable

** CDF = Chloro Dibenzo-p-Furan

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DIOXIN AND FURANS BY HRMS (TRAIN)

Bureau Veritas ID		MJ0065					
Sampling Date		2023/10/01					
COC Number		n/a		**TOXIC EQUIVALENCY**		# of	
	Units	**519+520+521+522+523+524-INC.-BL**	**EDL**	**TEF (1998 WHO)**	**TEQ(0DL)**	**Isomers**	**QC Batch**
TOTAL TOXIC EQUIVALENCY †	pg				0.015		
Surrogate Recovery (%)							
C13-1,2,3,4,6,7,8-H7CDD *	%	71					2476139
C13-1,2,3,4,6,7,8-H7CDF **	%	68					2476139
C13-1,2,3,6,7,8-H6CDD *	%	72					2476139
C13-1,2,3,6,7,8-H6CDF **	%	64					2476139
C13-1,2,3,7,8-P5CDD *	%	73					2476139
C13-1,2,3,7,8-PCDF **	%	61					2476139
C13-2,3,7,8-TCDD *	%	65					2476139
C13-2,3,7,8-TCDF **	%	61					2476139
C13-OCTA-CDD *	%	58					2476139

EDL = Estimated Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,

The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(1998): The 1998 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

† Parameter is not accreditable

* CDD = Chloro Dibenzo-p-Dioxin

** CDF = Chloro Dibenzo-p-Furan

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GENERAL COMMENTS

Revised report to provide report in English.

DIOXIN AND FURANS BY HRMS (TRAIN)

Please note that the results have been corrected for the surrogates recoveries and the method blank.

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
2476139	JF2	Spiked Blank	C13-1,2,3,4,6,7,8-H7CDD	2023/12/18		68	%
			C13-1,2,3,4,6,7,8-H7CDF	2023/12/18		65	%
			C13-1,2,3,6,7,8-H6CDD	2023/12/18		73	%
			C13-1,2,3,6,7,8-H6CDF	2023/12/18		67	%
			C13-1,2,3,7,8-P5CDD	2023/12/18		82	%
			C13-1,2,3,7,8-PCDF	2023/12/18		65	%
			C13-2,3,7,8-TCDD	2023/12/18		56	%
			C13-2,3,7,8-TCDF	2023/12/18		55	%
			C13-OCTA-CDD	2023/12/18		50	%
			2,3,7,8-Tetra CDD	2023/12/18		107	%
			1,2,3,7,8-Penta CDD	2023/12/18		96	%
			1,2,3,4,7,8-Hexa CDD	2023/12/18		104	%
			1,2,3,6,7,8-Hexa CDD	2023/12/18		112	%
			1,2,3,7,8,9-Hexa CDD	2023/12/18		108	%
			1,2,3,4,6,7,8-Hepta CDD	2023/12/18		105	%
			Octachlorodibenzo-p-dioxin	2023/12/18		117	%
			2,3,7,8-Tetra CDF	2023/12/18		102	%
			1,2,3,7,8-Penta CDF	2023/12/18		94	%
			2,3,4,7,8-Penta CDF	2023/12/18		117	%
			1,2,3,4,7,8-Hexa CDF	2023/12/18		97	%
			1,2,3,6,7,8-Hexa CDF	2023/12/18		99	%
			2,3,4,6,7,8-Hexa CDF	2023/12/18		103	%
			1,2,3,7,8,9-Hexa CDF	2023/12/18		99	%
			1,2,3,4,6,7,8-Hepta CDF	2023/12/18		100	%
			1,2,3,4,7,8,9-Hepta CDF	2023/12/18		93	%
			Octachlorodibenzofuran	2023/12/18		105	%
2476139	JF2	Method Blank	C13-1,2,3,4,6,7,8-H7CDD	2023/12/18		70	%
			C13-1,2,3,4,6,7,8-H7CDF	2023/12/18		70	%
			C13-1,2,3,6,7,8-H6CDD	2023/12/18		69	%
			C13-1,2,3,6,7,8-H6CDF	2023/12/18		63	%
			C13-1,2,3,7,8-P5CDD	2023/12/18		73	%
			C13-1,2,3,7,8-PCDF	2023/12/18		61	%
			C13-2,3,7,8-TCDD	2023/12/18		55	%
			C13-2,3,7,8-TCDF	2023/12/18		55	%
			C13-OCTA-CDD	2023/12/18		60	%
			2,3,7,8-Tetra CDD	2023/12/18	<0.64, EDL=0.64		pg
			1,2,3,7,8-Penta CDD	2023/12/18	<0.67, EDL=0.67		pg
			1,2,3,4,7,8-Hexa CDD	2023/12/18	<1.0, EDL=1.0		pg
			1,2,3,6,7,8-Hexa CDD	2023/12/18	<0.86, EDL=0.86		pg
			1,2,3,7,8,9-Hexa CDD	2023/12/18	<0.81, EDL=0.81		pg
			1,2,3,4,6,7,8-Hepta CDD	2023/12/18	<0.50, EDL=0.50		pg
			Octachlorodibenzo-p-dioxin	2023/12/18	<1.0, EDL=1.0		pg
			Total Tetrachlorodibenzo-p-dioxins	2023/12/18	<0.64, EDL=0.64		pg
			Total Pentachlorodibenzo-p-dioxins	2023/12/18	<0.67, EDL=0.67		pg

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units
			Total Hexachlorodibenzo-p-dioxins	2023/12/18	<0.82, EDL=0.82		pg
			Total Heptachlorodibenzo-p-dioxins	2023/12/18	<0.50, EDL=0.50		pg
			Total Chlorodibenzo-p-dioxins	2023/12/18	ND		pg
			2,3,7,8-Tetra CDF	2023/12/18	<0.39, EDL=0.39		pg
			1,2,3,7,8-Penta CDF	2023/12/18	<0.56, EDL=0.56		pg
			2,3,4,7,8-Penta CDF	2023/12/18	<0.59, EDL=0.59		pg
			1,2,3,4,7,8-Hexa CDF	2023/12/18	<0.48, EDL=0.48		pg
			1,2,3,6,7,8-Hexa CDF	2023/12/18	<0.49, EDL=0.49		pg
			2,3,4,6,7,8-Hexa CDF	2023/12/18	<0.53, EDL=0.53		pg
			1,2,3,7,8,9-Hexa CDF	2023/12/18	<0.63, EDL=0.63		pg
			1,2,3,4,6,7,8-Hepta CDF	2023/12/18	<0.23, EDL=0.23		pg
			1,2,3,4,7,8,9-Hepta CDF	2023/12/18	<0.26, EDL=0.26		pg
			Octachlorodibenzofuran	2023/12/18	<0.54, EDL=0.54		pg
			Total Tetrachlorodibenzofurans	2023/12/18	<0.39, EDL=0.39		pg
			Total Pentachlorodibenzofurans	2023/12/18	<0.57, EDL=0.57		pg
			Total Hexachlorodibenzofurans	2023/12/18	<0.53, EDL=0.53		pg
			Total Heptachlorodibenzofurans	2023/12/18	<0.25, EDL=0.25		pg
			Total Chlorodibenzofurans	2023/12/18	ND		pg

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

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

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

EDL = Estimated Detection Limit

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VALIDATION SIGNATURE PAGE

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

Sylvain Chevigny, B.Sc., Chemist, Montréal, Scientific Service Specialist

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Bureau Veritas Bureau Veritas 889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tel: (514) 448-9001 Fax: (514) 448-9199 Ligne sans frais : 1-877-462-9926

CONSULAIR
GESTION GLOBALE AIR ET ENVIRONNEMENT

Québec, le lundi 9 octobre 2023

Argyro Frangoulis
Chef d'équipe de l'expérience client
Multi-secteurs- pétrolier, qualité de l'air et eau potable
Laboratoires Bureau Veritas
885, Montée de Liesse, Saint-Laurent, Qc. H4T 1P5
Tél. : 514 448 9001, poste 7066229 Cellulaire : 514 208 0388 Télec. : 514 448 9199
argyro.frangoulis@bvlabs.com

Objet : **Explications de la demande d'analyses pour le projet de Agnico Eagle (Meliadine).**

Notre no de projet : #23-7693

Bonjour Argyro,

Voici la demande d'analyse concernant le dossier mentionné précédemment. Les mesures ont été effectuées du 29 septembre au 1 octobre 2023. Il y a 2 demandes d'analyse, une pour les métaux et une pour les COSV.

DEMANDE D'ANALYSES #1 / MÉTAUX

Cela correspond à 3 essais pour une source (Inc.) et les blancs.

Les fractions filtres et buse-sonde acétone vous seront envoyées un peu plus tard afin de faire l'analyse pour les métaux particulaires. Pour chacun des essais, nous voulons un résultat combiné des 2 fractions Buse-Sonde (Acétone et HNO_3) et le Filtre() (donc **3 échantillons à combiner).** Aussi, pour le Mercure d'un même essai, les fractions de $KmnO_4$ (BB67) et de HCl 8N (BB67-HCL) doivent être combinées. Il est important de respecter ces combinaisons exigées.

Les métaux à analyser sont les suivants : Al, Sb, Ag, As, Ba, Be, Bi, B, Cd, Ca, Cr, Co, Cu, Sn, Fe, Li, Mg, Mn, Mo, Ni, Pb, K, Se, Na, Ti, V, Zn, Sr, Tl, Si (Silicium soluble), Hg.

12-Oct-23 14:00
Argyro Frangoulis
C357778

GR

C357869_COC

DEMANDE D'ANALYSES #2 / COSV

Cela correspond à 3 essais pour une source (Inc.) et les blancs.

Pour les COSV (PCDD/DF), il faut combiner les échantillons par essai. Un essai comprend 6 matrices, donc les 6 matrices doivent être combinées pour l'obtention d'un seul résultat par essai. Les matrices sont :

- Buse et sonde (BS).
- Filtre.
- Trappe XAD-2.
- Avant- Trappe (AV-TR).
- Eau
- Rinçage final (Fin).

Il est important de ne pas jeter les échantillons et de nous les retourner après l'analyse.

Pour des renseignements supplémentaires n'hésitez pas à communiquer avec nous.

Envoyer les résultats à eric.trepanier@consul-air.com.

Salutations.

Eric Trépanier

CONSULAIR
GESTION GLOBALE AIR ET ENVIRONNEMENT

CHAÎNE DE RESPONSABILITÉ

2022-125, rue Lavoiser
Québec (Qc) G1N 4L5
Tél..: (418) 650-5960
Fax : (418) 704-2221
www.consul-air.com

Travaux effectués à : Agnico Eagle Meliadine

Projet #: 23-7693

Chargé de Projet : Eric Tépanier

Demande #2

LABORATOIRE RESPONSABLE DES ANALYSES :
Bureau Véritas
889 Montée de Liesse
Ville St-Laurent (Qc) H4T 1P5
Téléphone : (514) 448-9001
Télécopieur : (514) 448-5922

ÉCHANTILLON	Matrice	Fraction	Qte	Date	Paramètres	Unité	Remarque
501 - Inc. - BS - 1	Acetone/Hexane	BS	1	2023-09-29	PCDD/DF	µg	Combinaison des échantillons 501 à 506 Pour la source Inc. -
502 - Inc. - Filtre - 1	Filtre FV	Filtre	1	2023-09-29	PCDD/DF	µg	Combinaison des échantillons 501 à 506 Pour la source Inc. -
503 - Inc. - Trappe - 1	XAD-2	Trappe	1	2023-09-29	PCDD/DF	µg	Combinaison des échantillons 501 à 506 Pour la source Inc. -
504 - Inc. - AV.Tr. - 1	Acetone/Hexane	AV.Tr.	1	2023-09-29	PCDD/DF	µg	Combinaison des échantillons 501 à 506 Pour la source Inc. -
505 - Inc. - Eau - 1	H2O	Eau	1	2023-09-29	PCDD/DF	µg	Combinaison des échantillons 501 à 506 Pour la source Inc. -
506 - Inc. - Fin - 1	Acetone/Hexane	Fin	1	2023-09-29	PCDD/DF	µg	Combinaison des échantillons 501 à 506 Pour la source Inc. -
507 - Inc. - BS - 2	Acetone/Hexane	BS	1	2023-09-30	PCDD/DF	µg	Combinaison des échantillons 507 à 512 Pour la source Inc. -
508 - Inc. - Filtre - 2	Filtre FV	Filtre	1	2023-09-30	PCDD/DF	µg	Combinaison des échantillons 507 à 512 Pour la source Inc. -
509 - Inc. - Trappe - 2	XAD-2	Trappe	1	2023-09-30	PCDD/DF	µg	Combinaison des échantillons 507 à 512 Pour la source Inc. -
510 - Inc. - AV.Tr. - 2	Acetone/Hexane	AV.Tr.	1	2023-09-30	PCDD/DF	µg	Combinaison des échantillons 507 à 512 Pour la source Inc. -
511 - Inc. - Eau - 2	H2O	Eau	1	2023-09-30	PCDD/DF	µg	Combinaison des échantillons 507 à 512 Pour la source Inc. -
512 - Inc. - Fin - 2	Acetone/Hexane	Fin	1	2023-09-30	PCDD/DF	µg	Combinaison des échantillons 507 à 512 Pour la source Inc. -
513 - Inc. - BS - 3	Acetone/Hexane	BS	1	2023-10-01	PCDD/DF	µg	Combinaison des échantillons 513 à 518 Pour la source Inc. -
514 - Inc. - Filtre - 3	Filtre FV	Filtre	1	2023-10-01	PCDD/DF	µg	Combinaison des échantillons 513 à 518 Pour la source Inc. -
515 - Inc. - Trappe - 3	XAD-2	Trappe	1	2023-10-01	PCDD/DF	µg	Combinaison des échantillons 513 à 518 Pour la source Inc. -
516 - Inc. - AV.Tr. - 3	Acetone/Hexane	AV.Tr.	1	2023-10-01	PCDD/DF	µg	Combinaison des échantillons 513 à 518 Pour la source Inc. -

REMIS PAR: DATE: HEURE:

REÇU PAR: Sandu Look DATE: 2023/10/12 HEURE: 14:00

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UT)28
[illegible] 8.6.7
9.8.11

CONSULAIR
GESTION GLOBALE AIR ET ENVIRONNEMENT

CHAÎNE DE RESPONSABILITÉ

2022-125, rue Lavoiser
Québec (Qc) G1N 4L5
Tél..: (418) 650-5960
Fax : (418) 704-2221
www.consul-air.com

Travaux effectués à : Agnico Eagle Meliadine

Projet #:

Chargé de Projet :

LABORATOIRE RESPONSABLE DES ANALYSES :
Bureau Véritas
889 Montée de Liesse
Ville St-Laurent (Qc) H4T 1P5
Téléphone : (514) 448-9001
Télécopieur : (514) 448-5922

ÉCHANTILLON	Matrice	Fraction	Qte	Date	Paramètres	Unité	Remarque
517 - Inc. - Eau - 3	H2O	Eau	1	2023-10-01	PCDD/DF	µg	Combinaison des échantillons 513 à 518 Pour la source Inc. -
518 - Inc. - Fin - 3	Acetone/Hexane	Fin	1	2023-10-01	PCDD/DF	µg	Combinaison des échantillons 513 à 518 Pour la source Inc. -
519 - Inc. - BS - BL	Acetone/Hexane	BS	1	2023-10-01	PCDD/DF	µg	Combinaison des échantillons 519 à 524 Pour la source Inc. -
520 - Inc. - Filtre - BL	Filtre FV	Filtre	1	2023-10-01	PCDD/DF	µg	Combinaison des échantillons 519 à 524 Pour la source Inc. -
521 - Inc. - Trappe - BL	XAD-2	Trappe	1	2023-10-01	PCDD/DF	µg	Combinaison des échantillons 519 à 524 Pour la source Inc. -
522 - Inc. - AV.Tr. - BL	Acetone/Hexane	AV.Tr.	1	2023-10-01	PCDD/DF	µg	Combinaison des échantillons 519 à 524 Pour la source Inc. -
523 - Inc. - Eau - BL	H2O	Eau	1	2023-10-01	PCDD/DF	µg	Combinaison des échantillons 519 à 524 Pour la source Inc. -
524 - Inc. - Fin - BL	Acetone/Hexane	Fin	1	2023-10-01	PCDD/DF	µg	Combinaison des échantillons 519 à 524 Pour la source Inc. -

icepks
sealed
intact
driver 8.6.7.
9.8.11

REMIS PAR:		**DATE:**	**HEURE:**
REÇU PAR:	Sandwlook	**DATE:** 2023/10/12	**HEURE:** 14:00

CONSULAIR
GESTION GLOBALE AIR ET ENVIRONNEMENT
LABORATOIRE 483

TEST REPORT

Date : 25 october 2023

Ref : P3438-1

Customer

Customer #: C1

Name : Jackson Carl

Telephone : (418) 650-5960 #2204

Email : carl.jakson@consul-air.com

Address :
Consulair Quebec
125-2022 Lavoisier Street,
Quebec City, Qc
G1N 4L5 Canada

Projet Summary

Nb. of objects : 11

Customer project #: 23-7993

Lab. Project # : P3438

Site : Agnico Eagle Meliadine

Tests Summary

Accredited Parameter

SC	Parameter	Q.	Principle (Method)	Matrix
	Particulate matter (PM-A)	4	Gravemetry (LPT1)	Acetone
	Particulate matter (PM-F)	3	Gravemetry (LPT2)	Filter

SC : Subcontracted parameter

Non-accredited Parameters(s)

SC	Parameter	Q.	Principle (Method)	Matrix
	Chlorides	4	Spectrometry	Water

SC : Subcontracted parameter

Tests resultts

SC	Param.	Sample (s)		Dates			Result(s)		RDL
		# Lab	*# Customer*	*Sample*	*Receipt.*	*Test*	*Value*	*Unit*	
	PM-A	111023-1	**301 - Inc - BS-Acetone - 1**	29-09-23	11-10-23	11-10-23	**19,1**	mg	1,0
		111023-2	**309 - Inc - BS-Acetone - 2**	30-09-23	11-10-23	11-10-23	**26,3**	mg	1,0
		111023-3	**317 - Inc - BS-Acetone - 3**	01-10-23	11-10-23	11-10-23	**33,5**	mg	1,0
		111023-4	**325 - BI - BS-Acetone - BI**	01-10-23	11-10-23	11-10-23	**<LDR**	mg	1,0
	PM-F	111023-5	**303 - Inc - Filter - 1**	29-09-23	11-10-23	12-10-23	**37,7**	mg	0,1
		111023-6	**311 - Inc - Filter - 2**	30-09-23	11-10-23	12-10-23	**69,7**	mg	0,1
		111023-7	**319 - Inc - Filter - 3**	01-10-23	11-10-23	12-10-23	**54,8**	mg	0,1
	Cl-	111023-8	**304 - Inc - B12 - 1**	29-09-23	11-10-23	13-10-23	**348,66**	mg	6,24
		111023-9	**312 - Inc - B12 - 2**	30-09-23	11-10-23	13-10-23	**696,69**	mg	14,24
		111023-10	**320 - Inc - B12 - 3**	01-10-23	11-10-23	13-10-23	**545,38**	mg	8,80
		111023-11	**328 - BI - Water - BI**	01-10-23	11-10-23	13-10-23	**<LDR**	mg	0,08

SC : Subcontracted test
RDL : Reported Detection Limit

Comment(s)

1. LPT1 & LPT2: Method MA.100-Part 1.0 (Field 400 of Air Chemistry). 95%≤MR≤105%.
2. Sample volume 111023-4, V=195ml.
3. Samples from 111023-1 to 111023-7: Subcontracted for further analysis.
4. Chlorides (Cl-): 90%≤MR≤110%, 90%≤AD≤110% & |DP|≤10%

Quality Control

ST	Param.	Date	# Ref.	Type	Result(s)		RDL
					Value	*Unit*	
	PM-A	11-10-23	BL1110	BL	<LDR	mg	1,0
			MR1110	RM	99,6	% Recovery	-
	PM-F	12-10-23	AP-02 Compliant	-	-	mg	0,1
	Cl-	13-10-23	BL1310	BL	<LDR	mg/L	0,40
			MR1310	RM	103,3	% Recovery	-
			DP111023-8	DP	0,9	% Variance	-
			AD111023-9	SP	102,1	% Recovery	-
			DP111023-10	DP	2,4	% Variance	-
			AD111023-11	SP	97,0	% Recovery	-

SC : Subcontracted quality control
 # Ref : Quality control reference in the laboratory monitoring system
BL : Blank
RM : Reference Material
DP : Duplicate
RP : Replicate
DL : Dilution
SP : Spike
AS : Analoguous Standard
EC: Extraction Control
RDL : Reported Detection Limit

Signature

The results only refer to the tested objects.
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This test resport is certified by the person(s) listed below.
For any question about this certificate of analysis, you can refer to:

Ismahane Kerrouche

APPENDIX 4
FIELD FORMS

AGNICO EAGLE

CONSULAIR
AIR & ENVIRONMENT GLOBAL MANAGEMENT

(1)

CONSULAIR — GESTION GLOBALE AIR ET ENVIRONNEMENT	Formulaire « Étalonnage des analyseurs à lecture directe »	
Document : F ECH 18	Révision Nº : 8	Page : 1 de 2

ÉTALONNAGE DES ANALYSEURS - MÉTHODE 7E / 10 / 6C / 3A

Compagnie :	ADM Mol[illegible]	# de projet :	23-9693
Date :	29-09-2023	Source :	Incinérator

Identification des analyseurs (# Consulair)					
O_2 : 5583	CO_2 : 5583	CO : 5587	SO_2 : 5587	NO : 5583	AUTRE :

Identification des bombonnes (# Bombonne)				
Azote : 23-056	$O_2/CO_2/CO$: 23-057	SO_2 : 23-058	NO : 23-049	AUTRE :
Air zéro : —	$O_2/CO_2/CO$: 23-050	SO_2 : AS759495	NO : 23-059	AUTRE :

Vérification du système de prélèvement/conditionnement			
Test de fuite (O/N) : OK	Temp. Refroidisseur : <4°C	Temp. cordon : 250°F	Temp. pompe : —
Pression analyseurs : OK	Débit principal (# 2) : OK	Débit excès (# 7) : <5 L/min	Temps de réponse syst. : —

AGENDA DE L'ÉTALONNAGE						ANALYSEURS / ÉCHELLES PHYSIQUES								Prendre en notes les valeurs d'écart	
GAZ	Conc. de vérification	Dilution (O/N)	Vérif. Analyseur (*)	Vérif. Sonde	Heure	O2	CO2	CO	SO2	NO					
						25	30	1000	1000	1000					
						SQUIRRELL / CONCENTRATIONS								% err.	OK?
Logger time 8H17 → Ma montre 7H17 Donc calcul 1 heure au logger data															
Azote	∅	N	✓		7H19	-0,03	0,00	0	3	1					
NO 529,1		N	✓		7H22					516					
NO 903,3		N	✓		7H27					892					
SO_2 924,6		N	✓		7H33				918						
SO_2 499,3		N	✓		7H36				498						
O_2 22,51 % CO_2 11,51 % CO 935,5 ppm		N	✓		7H40	22,51	11,91	935							
O_2 12,59 % CO_2 10,08 % CO 487,9 ppm		N	✓		7H45	12,63	10,33	505							
Azote	∅	N		✓	8H21	-0,09	0,00	-0	0	0					
O_2 12,59 % CO_2 10,08 % CO 487,9 ppm		N		✓	8H48	12,40	10,10	498							

Technicien :

(*) Noter la valeur de l'analyseur, puis sur la ligne du dessous, la valeur de l'acquisition de données

CONSULAIR
GESTION GLOBALE AIR ET ENVIRONNEMENT

Formulaire
« Étalonnage des analyseurs à lecture directe »

Document : F ECH 18	Révision N° : 8	Page : 2 de 2

AGENDA DE L'ÉTALONNAGE						ANALYSEURS / ÉCHELLES PHYSIQUES								Prendre en notes les valeurs d'écart	
GAZ	Conc. de vérification	Dilution (O/N)	Vérif. Analyseur (*)	Vérif. Sonde	Heure	O2	CO2	CO	SO2	NO					
						25	30	1000	1000	1000					
						SQUIRRELL / CONCENTRATIONS								% err.	OK?
29-09-2023															
SO2	499,3	N		✓	8H31				485						
NO	529,1	N		✓	8H34	[crossed out]				888					
Azote	Ø			✓	14H22	-0,24	-0,05	0	0	0					
O2 12,59 % / CO2 10,08 % / CO 481,9 ppm		N		✓	14H26	12,36	10,19	512							
NO	529,1	N		✓	14H28					513					
SO2	499,3	N		✓	14H33				485						
30-08-2023				Lockout – 1 Heure											
Azote	Ø			✓	8H41	-0,06	-0,05	0	0	0					
O2 12,59 % / CO2 10,08 % / CO 481,9 ppm				✓	8H45	12,42	10,15	518							
SO2	499,3 ppm			✓	8H47				450						
NO	529,1 ppm			✓	8H50					515					

Data - O2 pour Samedi 30 Sept.

Technicien :

(*) Noter la valeur de l'analyseur, puis sur la ligne du dessous, la valeur de l'acquisition de données

23-7673 AERM [illegible]

CONSULAIR
GESTION GLOBALE AIR ET ENVIRONNEMENT

Formulaire
« Étalonnage des analyseurs à lecture directe »

Document : F ECH 18 | Révision Nº : 8 |

AGENDA DE L'ÉTALONNAGE						ANALYSEURS / ÉCHELLES PHYSIQUES							Prendre en notes les valeurs d'écart	
GAZ	Conc. de vérification	Dilution (O/N)	Vérif. Analyseur (*)	Vérif. Sonde	Heure	O2	CO2	CO	SO2	NO				
						25	30	1000	1000	1000				
						SQUIRRELL / CONCENTRATIONS							% err.	OK?
20-05-2023					Location Vehicule Donc -1 Hours Data									
Azote	∅	N		✓	15h04	-0,01	-0,02	0	0	0				
NO	529,4 ppm	N		✓	15h07					515				
SO2	499,3 ppm	N		✓	15h13				499					
O2 / CO2 / CO	12,59 % / 10,08 % / 481,9 ppm	N		✓	15h16	12,30	10,25	513						
Dim 1er oct											Data -03 -1 hours son heure location			
Azote	∅	N		✓	8h10	-0,01	0,01	0	0	0				
O2 / CO2 / CO	12,59 % / 10,08 % / 481,9 ppm	N		✓	8h22	12,44	10,24	510						
SO2	499,3 ppm	N		✓	8h24				500					
NO	529,4 ppm	N		✓	8h27					516				
Mesures off → 13h36 à 16h47 Calibration à bloqué en début de l'essai 3 reprise de 13h36 à 16h47														
Azote	∅	N		✓	16h49	-0,24	0,05	1	1	1				
O2 / CO2 / CO	12,59 % / 10,08 % / 481,9 ppm	N		✓	16h52	12,3	10,35	514						
SO2	499,4	N		✓	16h59				498					
NO	529,4	N		✓	16h53					513				

Technicien :

(*) Noter la valeur de l'analyseur, puis sur la ligne du dessous, la valeur de l'acquisition de données

CONSULAIR
GESTION GLOBALE AIR ET ENVIRONNEMENT

Formulaire
« Données de prélèvement manuel »

23-7693
Code d'essai : ME -Inc -El

Document : F ECH 09 | Révision N° : 9 | Page : 1 de 1

Usine : AEM	**Date :** 29 septembre 2023	**P. Bar (po Hg) :** 29,9	**# Cold box :**
Ville : Meliadine		**P. Stat. (po H_2O) :** -0,12	
ID point d'émission : Incinérateur	**Sonde N° :** 03-06 Q-500	**Module N° :** 1 (C) NC	**K' :** 24,62
Diamètre : ~~33,52~~ 33,52" 7,75"	**Cp :** 0,739	**Kc :** 1,020	
Distance avant : 5D	**Buse N° :** 32 - 504	**Ko :** 0,993	**Niveau du manomètre :** ✓
Distance après : 2D	**Coef :** 0,3523	**Distance P-T°-B :** ✓	**Zéro du manomètre :** ✓

Heure	Trav.	Point	Temps prélèv. (min)	ΔP (po H_2O)	ΔH (po H_2O)	Températures (°F) Cheminée	Compteur Entrée	Compteur Sortie	Orifice	Volume Prélevé (pi³)	Masse molaire O_2 (%v)	Masse molaire CO_2 (%v)	Masse molaire CO (ppmv)	Vaccum po. Hg	Température Sonde (°F)	Température Filtre (°F)	Température Sortie (°F)	Température Trappe/Filtre (°F)
										46,24								
10h18	1	1	5	0,04	0,32	1121	60	60	57	48,45	11,0	7,2	26	-2	250	248	45	
		2		0,04	0,31	1198			56	50,57	10,9	7,2	10	-2		252	45	
		3		0,04	0,30	1243			55	52,67	10,9	7,2	7	-2		246	44	
		4		0,04	0,29	1304			55	54,78	9,9	8,0	6	-2		256	44	
		5		0,05	0,35	1366			55	56,08	10	8,1	4	-2		249	44	
		6		0,06	0,40	1477			55	59,40	10	8,1	4	-2		254	45	
		7		0,07	0,46	1478			55	61,93	10	8,1	4	-3		253	45	
		8		0,07	0,45	1506			55	64,43	10	8,1	4	-3		244	44	
		9		0,06	0,38	1550			55	66,81	10	8,1	4	-3		248	45	
		10		0,07	0,44	1550			56	69,31	10	8,1	4	-4		250	45	
		11		0,07	0,44	1575			56	71,85	8,4	9,4	4	-4		257	44	
		12		0,07	0,43	1585			58	74,29	8,4	9,4	4	-4		256	44	
		13		0,08	0,50	1587			58	76,91	8,4	9,4	4	-4		244	44	
		14		0,07	0,43	1588			57	79,30	8,7	9,1	4	-4		239	44	
		15		0,07	0,43	1598			57	81,75	8,7	9,1	4	-4		245	44	
		16		0,06	0,40	1454			58	84,14	8,7	9,1	4	-4		248	44	
		17		0,06	0,42	1354			58	86,56	8,7	9,1	4	-4		247	44	
		18		0,06	0,38	1451			58	88,87	8,7	9,1	4	-4		245	44	
		19		0,07	0,43	1612			~~58~~ 59	91,35	8,7	9,1	4	-5		246	44	
	▷	20	▽	0,05	0,38	1609	▽	▽	59	93,43	8,7	9,1	4	-5	▽	245	44	

TDF Initial Débit (pi³/min):	**Pression (inhg) :**	**Volume ini (pi³) :**	**Volume fin (pi³) :**	**Volume (pi³) :**
TDF Final Débit (pi³/min):	**Pression (inhg) :**	**Volume ini (pi³) :**	**Volume fin (pi³) :**	**Volume (pi³) :**

Fuite Pitot (ΔP) :

REMARQUES | **O_2/CO_2 - Utiliser le formulaire de gaz en continu pour calibration des appareils.**

TECHNICIEN : FL

CONSULAIR GESTION GLOBALE AIR ET ENVIRONNEMENT

Formulaire
« Données de prélèvement manuel »

23-7693
Code d'essai : ME -Inc -El

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Usine : AEM	**Date :** 29 septembre 2023	**P. Bar (po Hg) :** 29,90		**# Cold box :**	
Ville : Meliadine		**P. Stat. (po H_2O) :** -0,12			
ID point d'émission : Incinerator	**Sonde N° :** 63-06 39-500	**Module N° :** 1	Ⓒ / NC	**K' :** 24,62	
Diamètre : 33,52" 7,75"	**Cp :** 0,739	**Kc :** 1,020			
Distance avant : 5D	**Buse N° :** 39-504	**Ko :** 0,993		**Niveau du manomètre :** ✓	
Distance après : 2D	**Coef :** 0,5623	**Distance P-T°-B :** ✓		**Zéro du manomètre :** ✓	

Heure	Trav.	Point	Temps prélèv. (min)	ΔP (po H_2O)	ΔH (po H_2O)	Températures (°F) Cheminée	Compteur Entrée	Compteur Sortie	Orifice	Volume Prélevé (pi^3)	Masse molaire O_2 (%v)	CO_2 (%v)	CO (ppmv)	Vaccum po. Hg	Température Sonde (°F)	Filtre (°F)	Sortie (°F)	Trappe/Filtre (°F)
										93,43								
	2	1	5	0,11	0,68	1633	60	60	58	96,37	9,4	8,5	4,0	-5	250	248	44	
		2		0,12	0,73	1636			58	99,54	9,4	8,5	4	-6		252	45	
		3		0,14	0,85	1632			58	102,97	9,4	8,5	4	-6		249	45	
		4		0,16	0,97	1637			58	106,52	9,4	8,5	4	-7		255	45	
		5		0,16	0,98	1631			60	110,15	9,4	8,5	4	-7		256	45	
		6		0,17	1,04	1636			61	113,85	10,7	7,7	4	-7		242	45	
		7		0,17	1,04	1636			61	117,56	10,7	7,7	4	-7		258	44	
		8		0,15	0,92	1640			61	121,10	10,7	7,7	4	-6		250	44	
		9		0,12	0,72	1642			61	124,36	10,7	7,7	4	-6		253	44	
		10		0,11	0,67	1648			61	127,30	10,7	7,7	4	-6		251	45	
		11		0,06	0,37	1632			61	129,61	10,7	7,7	4	-5		252	44	
		12		0,06	0,37	1633			62	131,78	10,7	7,7	4	-5		258	44	
		13		0,07	0,43	1629			63	134,25	10,7	7,7	4	-5		251	45	
		14		0,08	0,49	1629			63	136,88	10,7	7,7	4	-5		248	45	
		15		0,07	0,43	1622			63	139,31	10,7	7,7	4	-5		250	45	
		16		0,07	0,43	1625			63	141,74	10,7	7,7	4	-5		252	45	
		17		0,08	0,49	1629			63	144,37	10,7	7,7	4	-5		251	45	
		18		0,08	0,49	1630			63	147,02	10,4	7,9	4	-5		256	46	
		19		0,07	0,43	1629			65	149,45	10,4	7,9	4	-5		252	46	
13h38		20		0,08	0,49	1629			65	152,07	10,4	7,9	4	-5		247	46	

TDF Initial Débit (pi^3/min):	**Pression (inhg) :**	**Volume ini (pi^3) :**	**Volume fin (pi^3) :**	**Volume (pi^3) :**	**Fuite Pitot (ΔP) :**
TDF Final Débit (pi^3/min):	**Pression (inhg) :**	**Volume ini (pi^3) :**	**Volume fin (pi^3) :**	**Volume (pi^3) :**	

REMARQUES | **O_2/CO_2 - Utiliser le formulaire de gaz en continu pour calibration des appareils.**

TECHNICIEN : El

CONSULAIR GESTION GLOBALE AIR ET ENVIRONNEMENT	**Formulaire « Détermination des métaux »**	**CODE D'ESSAI :** Inc-ME-E1
Document : F ECH 12	Révision N° : 12	Page : 1 de 2

Décontamination avant essai et détermination de l'humidité recueillie - USEPA 29

Compagnie :	AFM Meliadine	Projet :	23-7693	# du filtre:	
Source :	Incinerator	Essai :	ME-E1	# Cold Box:	ME-14
Échantillonnée le :	29-09-2023	Date de l'assemblage :	28-09-2023	Heure :	16 Hres

Décontamination avant essai de la buse et de la sonde

Item	Remarques	Brosser acétone	Rincer 3x HNO_3 10 %	Rincer 3x eau démin.	Rincer 3x Acétone
Buse et liner de verre		✓	✓	✓	✓
Vérification de la buse et sondes d'échantillonnage à conserver :				OUI	NON

Décontamination avant essai du train

Item	Remarques	Brosser acétone (si nécessaire)	Rincer 3x HNO_3 10 %	Rincer 3x eau démin.	Rincer 3x Acétone
du by-pass au barboteur 6		✓	✓	✓	✓
Vérification du train d'échantillonnage à conserver :				OUI	NON

Remarques :

Volume d'eau receuilli (g)

ITEM #	PIÈCES	CONTENU	POIDS		
			APRÈS	AVANT	TOTAL
1	Barboteur 1 - GS mod	VIDE (optionnel) OU CMM H_2O déminéralisée (100 ml)	783,3	675,2	H_2O HCl
2	Barboteur 2 - GS mod	HNO_3 5% / H_2O_2 10% (100 ml)	629,8	541,6	VIDE
3	Barboteur 3 - GS	HNO_3 5% / H_2O_2 10% (100 ml)	774,0	740,7	HNO_3 5%
4	Barboteur 4 - GS mod	VIDE (normalement) *Si présence de liquide, ajouter aux BB1,2 et 3*	651,7	644,5	HNO_3 2%
5	Barboteur 5 - GS mod	$KMnO_4$ 4% / H_2SO_4 10% (100 ml) recouvert d'aluminium	599,9	598,5	VIDE
6	Barboteur 6 - GS mod	$KMnO_4$ 4% / H_2SO_4 10% (100 ml) recouvert d'aluminium	574,2	573,3	$KMnO_4$
7	Contenant de dessiccant	GEL DE SILICE	627,5	627,8	$KMnO_4$
		TOTAL :	2032,2	2012,4	

Particules totales (g)

# FILTRE QUARTZ	POIDS (g)	REMARQUES
Q23-76-20	0,5225 g	

Lots des produits utilisés

Produits	# LOT
Acétone ACS	
Solution d'acide nitrique (HNO_3) 10%	
Solution d'acide nitrique (HNO_3) 0.1N	
Solution d'acide sulfurique (H_2SO_4) 10%	
Solution d'acide chlorhydrique (HCl) 8N	
Permanganate de potassium ($KMnO_4$)	
Solution H_2O_2 10% / HNO_3 5%	

Remarques :

Technicien : C.J.

CONSULAIR GESTION GLOBALE AIR ET ENVIRONNEMENT	**Formulaire « Détermination des métaux »**	**CODE D'ESSAI :** Inc-ME-E1
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Récupération finale du dispositif de prélèvement MÉTAUX USEPA 29

Date de récupération : 29-03-2023		Heure de récupération : 15H12	
Pesée des barboteurs pour l'humidité :	✓	Nettoyage de l'extérieur des différentes pièces :	✓
Conditionnement des contenants de récupération :	✓		

Contenant 1 - Récupération du filtre (Séparateur principal)

Mettre le filtre dans un pétri propre et scellé (pince en polyéthylène ou teflon)	✓

Contenants 2 et 3 - Récupération de la buse et de la sonde

Items	Remarques	Brosser 100 ml Acétone	Rincer 100 ml HNO_3 0,1N	Niveau
de la buse à la partie avant du porte-filtre		✓	✓	✓

Contenant 4 - Récupération de la partie arrière du porte-filtre aux barboteurs métaux (Barb. 1, 2, 3)

Items	Remarques	Rincer 100 mL HNO_3 0.1N	Niveau	Volume (mL)
de la partie arrière du porte-filtre aux barboteurs métaux (Barb. 1, 2, 3)				330 ~

Contenant 5 - Récupération barboteurs 4 seul. Si présence de liquide, ajouter aux barboteurs 1, 2, 3

Items	Remarques	Rincer 100 ml HNO_3 0.1N	Niveau	Volume (mL)
barboteur 4			✓	100 ~

Contenant 6 - Récupération barboteurs 5 et 6 ($KMnO_4$)

Items	Remarques	Rincer 100 ml $KMnO_4/H_2SO_4$	Rincer 100 ml eau	Niveau	Volume (mL)
du barboteur 5 au barboteur 6 (pot de **verre ambré**)		✓	✓	✓	380 ~

Contenant 7 - Récupération barboteurs 5 et 6 ($KMnO_4$) avec HCl 8N

Items	Remarques	200 mL H_2O dans bouteille récup. Rincer 25 mL HCl 8N	Niveau	Volume (mL)
du barboteur 5 au barboteur 6		✓	✓	225 ~

Remarques :

BB (12) → HCl → 390 ~ l BB 12 HCl

BB 12 (34) → ME → 330 ~ l

HNO_3

Blancs :

100 mL Acétone	
300 mL HNO_3 0.1N	
100 mL H_2O	
200 mL Solution H_2O_2 10% / HNO_3 5%	
100 mL $KMnO_4$ 4% / H_2SO_4 10%	
200 mL H_2O + 25 mL HCl 8N	
Filtre Quartz	

Pour la demande d'analyse, voici les échantillons :
1a - Métaux sur contenants 1 + 2 + 3
1b - Hg sur contenants 1 + 2 + 3
2a - Métaux sur contenant 4
2b - Hg sur contenant 4
3a - Hg sur contenant 5
3b - Hg sur contenant 6
3c - Hg sur contenant 7

Technicien : C.J.

CONSULAIR GESTION GLOBALE AIR ET ENVIRONNEMENT	**Formulaire « ME - Décontamination de la verrerie »**	
Document : F ECH 11	Révision N° : 6	Page : 1 de 1

Partie B : Décontamination initiale Barboteurs - Métaux USEPA 29

Compagnie :	Projet :	# du Cold box : ME-14
Source :	Essai :	# du filtre :
Échantillonnée le :	Date décontamination : 09/08/2023	Heure :

Identification des pièces seulement si nécessaire.

Décontamination			Rinçage Eau	Eau + Savon	Eau	Rincer H_2O démin.	Tremper HNO_3 10 %	Rincer H_2O démin.	Rincer Acétone
Item (dans l'ordre)	**#**	**Remarques**	**1 x**	**1 x**	**3 x**	**3 x**	**4 hres**	**3 x**	**3 x**
S (bas cloche - barb.)			✓	✓	✓	✓	✓	✓	✓
Barboteur 1			✓	✓	✓	✓	✓	✓	✓
Barboteur 2			✓	✓	✓	✓	✓	✓	✓
Barboteur 3			✓	✓	✓	✓	✓	✓	✓
Barboteur 4 (si applicable)			✓	✓	✓	✓	✓	✓	✓
Barboteur 5 (si Hg)			✓	✓	✓	✓	✓	✓	✓
Barboteur 6 (si Hg)			✓	✓	✓	✓	✓	✓	✓
Coudes (5 ou...)			✓	✓	✓	✓	✓	✓	✓

Vérification initiale de la verrerie du train d'échantillonnage et conserver le dernier rinçage à l'acétone si nécessaire.

N.B. Joint d'étanchéité à réaliser avec du tape de téflon si absence de O-ring

Commentaires :

Décontaminé par : HSO, YZ	Date : 09/09/2023	Endroit : QC

CONSULAIR GESTION GLOBALE AIR ET ENVIRONNEMENT	**Formulaire** **« ME - Décontamination de la verrerie »**	
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Partie A : Décontamination initiale Cloches - Métaux USEPA 29

Compagnie :	Projet :	# du coffre : V-86-2
Source :	Essai :	
Échantillonnée le :	Date décontamination :	Heure :

Identification des pièces seulement si nécessaire.

Décontamination			Rinçage Eau	Eau + Savon	Eau	Rincer H_2O démin.	Tremper HNO_3 10 %	Rincer H_2O démin.	Rincer Acétone
Item (dans l'ordre)	**#**	**Remarques**	**1 x**	**1 x**	**3 x**	**3 x**	**4 hres**	**3 x**	**3 x**
Cloche 1 :	# de filtre :								
By pass			—	—	—	—	—	—	—
Cloche femelle			—	—	—	—	—	—	—
Support à filtre en téflon			—	—	—	—	—	—	—
Cloche mâle			—	—	—	—	—	—	—
Cloche 2 :	# de filtre :								
By pass			—	—	—	—	—	—	—
Cloche femelle			—	—	—	—	—	—	—
Support à filtre en téflon			—	—	—	—	—	—	—
Cloche mâle			—	—	—	—	—	—	—
Cloche 3 :	# de filtre :								
By pass			—	—	—	—	—	—	—
Cloche femelle			—	—	—	—	—	—	—
Support à filtre en téflon			—	—	—	—	—	—	—
Cloche mâle			—	—	—	—	—	—	—

Vérification initiale de la verrerie et conserver le dernier rinçage à l'acétone si nécessaire.

N.B. Joint d'étanchéité à réaliser avec du tape de téflon si absence de O-ring

Commentaires :

Décontaminé par : HSO et WF	Date : 03/08/2023.	Endroit : Q.C.

(1/2)

CONSULAIR
GESTION GLOBALE AIR ET ENVIRONNEMENT

Formulaire
« Données de prélèvement manuel »

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23-7693
Code d'essai : ME - Inc - E2

Usine : AEM	**Date :** 30 septembre 2023	**P. Bar (po Hg) :** 29,9	**# Cold box :**
Ville : Melocheville		**P. Stat. (po H_2O) :** -0,12	
ID point d'émission : Incinerateur	**Sonde N° :** 03-06 Q-506	**Module N° :** 1 ©/NC	**K' :** ~~0,822~~ 22,93
Diamètre : 33,52" 7,75"	**Cp :** 0,739	**Kc :** 1,020	
Distance avant : 5D	**Buse N° :** 3Q-504	**Ko :** 0,993	**Niveau du manomètre :** ✓
Distance après : 2D	**Coef :** 0,5023	**Distance P-T°-B :** ✓	**Zéro du manomètre :** ✓

Heure	Trav.	Point	Temps prélèv. (min)	ΔP (po H_2O)	ΔH (po H_2O)	Températures (°F) Cheminée	Compteur Entrée	Compteur Sortie	Orifice	Volume Prélevé (pi^3)	Masse molaire O_2 (%v)	Masse molaire CO_2 (%v)	Masse molaire CO (ppmv)	Vaccum po. Hg	Température Sonde (°F)	Température Filtre (°F)	Température Sortie (°F)	Température Trappe/Filtre (°F)
										53,24								
0h05	1	1	5	0,05	0,34	1302	60	60	56	55,57	11,3	6,0	36	-2	250	253	47	
		2		0,05	0,32	1420			57	57,66	11,3	8,5	36	-2		252	47	
		3		0,05	0,31	1467			57	59,78	9,4	8,5	6	-2		244	47	
		4		0,05	0,30	1490			57	61,90	9,4	8,5	6	-2		250	47	
		5		0,05	0,30	1488			58	~~64,01~~ 64,01	9,4	8,5	6	-2		250	47	
		6		0,05	0,30	1498			57	~~66,12~~ 66,12	9,7	8,3	4	-2		253	47	
		7		0,08	0,48	1526			57	~~68,71~~ 68,71	8,3	9,8	4	-2		252	47	
		8		~~0,09~~ 0,09	0,53	1536			57	71,45	8,3	9,8	4	-2		252	47	
		9		0,09	0,53	1560			57	74,19	8,3	9,8	4	-3		253	47	
		10		0,09	0,53	1556			57	76,93	9,2	8,9	4	-3		252	47	
		11		0,09	0,53	1561			57	79,64	9,2	8,9	4	-4		245	47	
		12		0,09	0,53	1569			58	82,40	9,5	8,8	4	-4		249	46	
		13		0,09	0,52	1576			58	~~85,17~~ 85,17	9,5	8,8	4	-4		246	46	
		14		0,10	0,58	1579			58	88,04	9,5	8,8	4	-4		243	46	
		15		0,10	0,58	1585			58	90,82	9,5	8,8	4	-4		257	46	
		16		0,10	0,58	1594			58	93,62	9,8	8,5	4	-4		256	46	
		17		0,10	0,58	1599			58	96,48	9,8	8,5	4	-4		255	46	
		18		0,10	0,58	1597			58	99,33	10,0	8,4	4	-5		254	44	
		19		0,11	0,63	1615			58	102,32	10,0	8,4	4	-5		250	44	
	↓	20	↓	0,11	0,63	1613	↓	↓	58	105,28	10,2	8,1	4	-5	↓	249	45	

TDF Initial Débit (pi^3/min):	**Pression (inhg) :**	**Volume ini (pi^3) :**	**Volume fin (pi^3) :**	**Volume (pi^3) :**	**Fuite Pitot (ΔP) :** ✓
TDF Final Débit (pi^3/min):	**Pression (inhg) :**	**Volume ini (pi^3) :**	**Volume fin (pi^3) :**	**Volume (pi^3) :**	

REMARQUES | **O_2/CO_2 - Utiliser le formulaire de gaz en continu pour calibration des appareils.**

TECHNICIEN :

CONSULAIR
GESTION GLOBALE AIR ET ENVIRONNEMENT

Formulaire
« Données de prélèvement manuel »

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23-7893
Code d'essai : ME-Inc-EL

Usine : AEM
Ville : Melocheville
ID point d'émission : Incinérateur
Diamètre : 33,52" 7,75"
Distance avant : 5D
Distance après : 2D

Date : 30 septembre 2023
Sonde N° : 03-06 Q-500
Cp : 0,739
Buse N° : 38 - 304
Coef : 0,5023

P. Bar (po Hg) : 29,9
P. Stat. (po H_2O) : -0,12
Module N° : 1 C / NC
Kc : 1,020
Ko : 0,993
Distance P-T°-B : V

 # Cold box :
K' : ~~22,08~~ 22,93
Niveau du manomètre : V
Zéro du manomètre : V

Heure	Trav.	Point	Temps prélèv. (min)	ΔP (po H_2O)	ΔH (po H_2O)	Températures (°F) Cheminée	Compteur Entrée	Compteur Sortie	Orifice	Volume Prélevé (pi^3)	Masse molaire O_2 (%v)	Masse molaire CO_2 (%v)	Masse molaire CO (ppmv)	Vaccum po. Hg	Température Sonde (°F)	Température Filtre (°F)	Température Sortie (°F)	Température Trappe/Filtre (°F)
										5,28								
	2	1	5	0,11	0,63	1614	60	60	60	8,25	10,2	8,1	4	-5	250	248	46	
		2		0,10	0,57	1621			60	11,05	10,2	8,1	4	-5		245	46	
		3		0,11	0,63	1623			60	14,05	10,2	8,1	4	-5		247	46	
		4		0,11	0,63	1619			60	17,03	10,2	8,2	4	-5		248	46	
		5		0,10	0,57	1629			60	19,86	10,2	8,2	4	-5		248	47	
		6		0,09	0,51	1627			60	22,55	10,4	8,0	4	-5		248	47	
		7		0,09	0,52	1624			63	25,29	10,4	8,0	4	-5		251	45	
		8		0,11	0,63	1627			62	28,26	10,4	8,0	4	-5		252	45	
		9		0,10	0,57	1635			62	31,07	10,6	7,8	4	-5		250	45	
		10		0,10	0,57	1627			62	33,86	10,6	7,8	4	-5		251	45	
		11		0,10	0,57	1626			62	36,67	10,6	7,8	4	-5		251	44	
		12		0,09	0,51	1636			63	39,38	10,5	7,9	4	-5		250	44	
		13		0,09	0,52	1632			63	42,08	10,5	7,9	4	-5		255	44	
		14		0,09	0,52	1630			63	44,78	10,5	7,9	4	-5		249	44	
		15		0,09	0,52	1634			63	47,48	10,5	7,9	4	-5		248	44	
		16		0,09	0,52	1633			63	50,17	10,5	7,9	4	-5		245	44	
		17		0,08	0,46	1640			63	52,68	10,5	8,0	4	-5		253	44	
		18		0,07	0,40	1619			63	55,08	10,5	8,0	4	-5		254	43	
		19		0,07	0,40	1634			63	57,45	10,5	8,0	4	-5		248	43	
14h25	↓	20	↓	0,08	0,46	1627	↓	↓	63	60,04	10,5	8,0	4	-5		250	44	

TDF Initial Débit (pi^3/min): | **Pression (inhg) :** | **Volume ini (pi^3) :** | **Volume fin (pi^3) :** | **Volume (pi^3) :** | **Fuite Pitot (ΔP) :** V

TDF Final Débit (pi^3/min): | **Pression (inhg) :** | **Volume ini (pi^3) :** | **Volume fin (pi^3) :** | **Volume (pi^3) :**

REMARQUES | **O_2/CO_2 - Utiliser le formulaire de gaz en continu pour calibration des appareils.**

TECHNICIEN : EL

CONSULAIR GESTION GLOBALE AIR ET ENVIRONNEMENT	**Formulaire « Détermination des métaux »**	**CODE D'ESSAI :** Inc-ME-E2
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Décontamination avant essai et détermination de l'humidité recueillie - USEPA 29

Compagnie :	AEM MELIADINE	Projet :	23-7693	# du filtre:	
Source :	INCINERATOR	Essai :	ME-E2	# Cold Box:	ME-14
Échantillonnée le :	30-05-2023	Date de l'assemblage :	29-05-2023	Heure :	16H16

Décontamination avant essai de la buse et de la sonde

Item	Remarques	Brosser acétone	Rincer 3x HNO_3 10 %	Rincer 3x eau démin.	Rincer 3x Acétone
Buse et liner de verre		✓	✓	✓	✓
Vérification de la buse et sondes d'échantillonnage à conserver :				OUI	NON

Décontamination avant essai du train

Item	Remarques	Brosser acétone (si nécessaire)	Rincer 3x HNO_3 10 %	Rincer 3x eau démin.	Rincer 3x Acétone
du by-pass au barboteur 6		✓	✓	✓	✓
Vérification du train d'échantillonnage à conserver :				OUI	NON

Remarques :

Volume d'eau receuilli (g)

ITEM #	PIÈCES	CONTENU	15H41 POIDS		
			APRÈS	AVANT	TOTAL
1	Barboteur 1 - GS mod	VIDE (optionnel) OU CMM H_2O déminéralisée (100 ml)	873,4	636,9	H_2O
2	Barboteur 2 - GS mod	HNO_3 5% / H_2O_2 10% (100 ml)	568,1	556,4	VIDE
3	Barboteur 3 - GS	HNO_3 5% / H_2O_2 10% (100 ml)	742,7	736,6	HNO_3/H_2O_2
4	Barboteur 4 - GS mod	VIDE (normalement) *Si présence de liquide, ajouter aux BB1,2 et 3*	632,7	632,3	HNO_3/H_2O_2
5	Barboteur 5 - GS mod	$KMnO_4$ 4% / H_2SO_4 10% (100 ml) recouvert d'aluminium	528,6	528,4	VIDE
6	Barboteur 6 - GS mod	$KMnO_4$ 4% / H_2SO_4 10% (100 ml) recouvert d'aluminium	658,7	659,2	$KMnO_4$
7	Contenant de dessiccant	GEL DE SILICE	739,7	740,0	$KMnO_4$
TOTAL :			2051,0	2034,0	Gel silica

Particules totales (g)

# FILTRE QUARTZ	POIDS (g)	REMARQUES
Q26-76-21	0,5225 g	

Lots des produits utilisés

Produits	# LOT
Acétone ACS	
Solution d'acide nitrique (HNO_3) 10%	
Solution d'acide nitrique (HNO_3) 0.1N	
Solution d'acide sulfurique (H_2SO_4) 10%	
Solution d'acide chlorhydrique (HCl) 8N	
Permanganate de potassium ($KMnO_4$)	
Solution H_2O_2 10% / HNO_3 5%	

Remarques :

Technicien : [signature]

CONSULAIR GESTION GLOBALE AIR ET ENVIRONNEMENT	**Formulaire « Détermination des métaux »**	**CODE D'ESSAI :** Exe-MET
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Récupération finale du dispositif de prélèvement MÉTAUX USEPA 29

Date de récupération :	Sam 30 sept	Heure de récupération :	18h43
Pesée des barboteurs pour l'humidité :	✓	Nettoyage de l'extérieur des différentes pièces :	✓
Conditionnement des contenants de récupération :	✓		

Contenant 1 - Récupération du filtre (Séparateur principal)

Mettre le filtre dans un pétri propre et scellé (pince en polyéthylène ou teflon)	✓

Contenants 2 et 3 - Récupération de la buse et de la sonde

Items	Remarques	Brosser 100 ml Acétone	Rincer 100 ml HNO_3 0,1N	Niveau
de la buse à la partie avant du porte-filtre		✓	✓	✓

Contenant 4 - Récupération de la partie arrière du porte-filtre aux barboteurs métaux (Barb. 1, 2, 3)

Items	Remarques	Rincer 100 mL HNO_3 0.1N	Niveau	Volume (mL)
de la partie arrière du porte-filtre aux barboteurs métaux (Barb. 1, 2, 3)		✓	✓	250 ~

Contenant 5 - Récupération barboteurs 4 seul. Si présence de liquide, ajouter aux barboteurs 1, 2, 3

Items	Remarques	Rincer 100 ml HNO_3 0.1N	Niveau	Volume (mL)
barboteur 4		✓	✓	100 ~

Contenant 6 - Récupération barboteurs 5 et 6 ($KMnO_4$)

Items	Remarques	Rincer 100 ml $KMnO_4/H_2SO_4$	Rincer 100 ml eau	Niveau	Volume (mL)
du barboteur 5 au barboteur 6 (pot de **verre ambré**)		✓	✓	✓	390 ~

Contenant 7 - Récupération barboteurs 5 et 6 ($KMnO_4$) avec HCl 8N

Items	Remarques	200 mL H_2O dans bouteille récup. Rincer 25 mL HCl 8N	Niveau	Volume (mL)
du barboteur 5 au barboteur 6		✓	✓	230 ~

Remarques :

BB(2) - HCl → 445 ~ 16h24

BB(234) - HCl → 290 ~

Blancs :

100 mL Acétone	
300 mL HNO_3 0.1N	
100 mL H_2O	
200 mL Solution H_2O_2 10% / HNO_3 5%	
100 mL $KMnO_4$ 4% / H_2SO_4 10%	
200 mL H_2O + 25 mL HCl 8N	
Filtre Quartz	

Pour la demande d'analyse, voici les échantillons :
1a - Métaux sur contenants 1 + 2 + 3
1b - Hg sur contenants 1 + 2 + 3
2a - Métaux sur contenant 4
2b - Hg sur contenant 4
3a - Hg sur contenant 5
3b - Hg sur contenant 6
3c - Hg sur contenant 7

Technicien : O.S.

CONSULAIR GESTION GLOBALE AIR ET ENVIRONNEMENT	**Formulaire « ME - Décontamination de la verrerie »**	
Document : F ECH 11	Révision N° : 6	Page : 1 de 1

Partie B : Décontamination initiale Barboteurs - Métaux USEPA 29

Compagnie :	Projet :	# du Cold box : GE2
Source :	Essai :	# du filtre :
Échantillonnée le :	Date décontamination :	Heure :

Identification des pièces seulement si nécessaire.

Décontamination			Rinçage Eau	Eau + Savon	Eau	Rincer H_2O démin.	Tremper HNO_3 10 %	Rincer H_2O démin.	Rincer Acétone
Item (dans l'ordre)	**#**	**Remarques**	**1 x**	**1 x**	**3 x**	**3 x**	**4 hres**	**3 x**	**3 x**
S (bas cloche - barb.)			✓	✓	✓	✓	✓	✓	✓
Barboteur 1			✓	✓	✓	✓	✓	✓	✓
Barboteur 2			✓	✓	✓	✓	✓	✓	✓
Barboteur 3			✓	✓	✓	✓	✓	✓	✓
Barboteur 4 (si applicable)			✓	✓	✓	✓	✓	✓	✓
Barboteur 5 (si Hg)			✓	✓	✓	✓	✓	✓	✓
Barboteur 6 (si Hg)			✓	✓	✓	✓	✓	✓	✓
Coudes (5 ou...)									

Vérification initiale de la verrerie du train d'échantillonnage et conserver le dernier rinçage à l'acétone si nécessaire.

N.B. Joint d'étanchéité à réaliser avec du tape de téflon si absence de O-ring

Commentaires :

Décontaminé par : AG	Date : 02-08-2023	Endroit : Q.C

CONSULAIR
GESTION GLOBALE AIR ET ENVIRONNEMENT

Formulaire
« Données de prélèvement manuel »

Document : F ECH 09 | Révision N° : 9 | Page : 1 de 1

23-7693
Code d'essai : ME-Inc-E3

Usine : AEM	**Date :** 01 octobre 2023	**P. Bar (po Hg) :** 29,9	**# Cold box :**
Ville : Meliadine		**P. Stat. (po H_2O) :** -0,12	
ID point d'émission : Incinerateur	**Sonde N° :** 03-06 Q-500	**Module N° :** 1 ⓒ / NC	**K' :** 22,93
Diamètre : 33,52" 7,75"	**Cp :** 0,739	**Kc :** 1,020	
Distance avant : 5D	**Buse N° :** 3Q-504	**Ko :** 0,993	**Niveau du manomètre :** V
Distance après : 2D	**Coef :** 0,5023	**Distance P-T°-B :** V	**Zéro du manomètre :** V

Heure	Trav.	Point	Temps prélèv. (min)	ΔP (po H_2O)	ΔH (po H_2O)	Températures (°F) Cheminée	Compteur Entrée	Compteur Sortie	Orifice	Volume Prélevé (pi^3)	Masse molaire O_2 (%v)	Masse molaire CO_2 (%v)	Masse molaire CO (ppmv)	Vaccum po. Hg	Température Sonde (°F)	Température Filtre (°F)	Température Sortie (°F)	Température Trappe/Filtre (°F)
										60,61								
10 h 40	1	1	5	0,04	0,26	1354	60	60	52	62,62	9,1	9,0	10	-2	250	245	43	
		2		0,04	0,26	1370			53	64,56	9,1	9,0	10	-2		250	42	
		3		0,04	0,25	1400			52	66,49	11,1	6,8	7	-2		254	42	
		4		0,05	0,31	1435			52	68,53	11,6	6,8	7	-2		253	42	
		5		0,05	0,30	1476			52	70,67	11,6	6,8	7	-2		254	42	
		6		0,07	0,42	1498			52	73,15	11,7	7,3	11	-4		253	41	
		7		0,08	0,47	1523			52	75,76	11,7	7,3	11	-4		249	41	
		8		0,07	0,41	1550			53	78,18	11,7	7,3	11	-4		257	41	
		9		0,08	0,47	1555			53	80,78	11,2	7,1	6	-4		244	41	
		10		0,08	0,46	1572			53	83,33	11,2	7,1	6	-4		256	46	
		11		0,07	0,40	1576			53	85,79	11,4	7,3	6	-4		255	41	
		12		0,07	0,40	1588			54	88,20	11,4	7,3	6	-4		247	46	
		13		0,07	0,40	1590			54	90,53	11,4	7,3	6	-4		246	40	
		14		0,07	0,40	1601			55	92,93	11,4	7,3	6	-4		245	40	
		15		0,08	0,46	1529			55	95,44	11,4	7,3	6	-4		248	40	
		16		0,08	0,46	1604			55	98,04	11,4	7,3	6	-4		252	46	
		17		0,08	0,46	1606			56	100,58	11,4	7,3	6	-4		246	39	
		18		0,08	0,46	1615			56	103,12	11,4	7,3	6	-4		246	39	
		19		0,08	0,46	1613			58	105,68	11,4	7,3	6	-5		253	39	
*		20		0,08	0,46	1617			58	108,25	11,4	7,3	6	-5		254	39	

TDF Initial Débit (pi^3/min):	**Pression (inhg) :**	**Volume ini (pi^3) :**	**Volume fin (pi^3) :**	**Volume (pi^3) :**	**Fuite Pitot (ΔP) :** V
TDF Final Débit (pi^3/min):	**Pression (inhg) :**	**Volume ini (pi^3) :**	**Volume fin (pi^3) :**	**Volume (pi^3) :**	

REMARQUES | **O_2/CO_2 - Utiliser le formulaire de gaz en continu pour calibration des appareils.**

* On s'apperçoit que le * cordon de contrôle est bouché

TECHNICIEN : EL

CONSULAIR
GESTION GLOBALE AIR ET ENVIRONNEMENT

Formulaire
« Données de prélèvement manuel »

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Code d'essai : 23-7693 ME - Inc - E3

Usine : AEM	Date : 01 octobre 2023	P. Bar (po Hg) : 29,9	# Cold box :
Ville : Melocheville		P. Stat. (po H_2O) : -0,12	
ID point d'émission : Incinérateur	Sonde N° : 03-06 Q-500	Module N° : 1 (C) / NC	K' : 22,93
Diamètre : 33,52" 7,75"	Cp : 0,739	Kc : 1,020	
Distance avant : 5D	Buse N° : 32 - 504	Ko : 0,993	Niveau du manomètre : V
Distance après : 2D	Coef : 0,5023	Distance P-T°-B : V	Zéro du manomètre : V

Heure	Trav.	Point	Temps prélèv. (min)	ΔP (po H_2O)	ΔH (po H_2O)	Températures (°F) Cheminée	Compteur Entrée	Compteur Sortie	Orifice	Volume Prélevé (pi^3)	Masse molaire O_2 (%v)	Masse molaire CO_2 (%v)	Masse molaire CO (ppmv)	Vaccum po. Hg	Température Sonde (°F)	Température Filtre (°F)	Température Sortie (°F)	Température Trappe/Filtre (°F)
										8,25								
12h20	2	1	5	0,07	0,46	1627	60	60	57	10,79				-5	250	254	39	
		2		0,09	0,51	1621			57	13,48				-5		261	39	
		3		0,08	0,45	1627			57	16,00				-5		242	39	
		4		0,08	0,45	1626			57	18,53				-5		249	40	
		5		0,09	0,51	1631			57	21,15				-5		251	40	
		6		0,09	0,51	1630			57	23,80				-5		248	40	
		7		0,08	0,45	1643			57	26,31				-5		251	40	
		8		0,09	0,51	1638			57	29,01				-5		252	39	
		9		0,09	0,51	1646			58	31,69				-5		253	39	
		10		0,08	0,45	1645			58	34,20				-5		248	39	
		11		0,08	0,45	1649			59	36,71				-5		243	40	
		12		0,08	0,45	1645			59	39,21				-5		244	40	
		13		0,09	0,51	1646			60	41,90				-5		239	40	
		14		0,08	0,45	1648			60	44,41				-5		230	40	
		15		0,08	0,45	1652			60	46,91				-6		247	40	
**		16		0,08	0,45	1646			60	49,41				-6		264	40	
		17		0,10	0,45	1655			61	51,94				-6		263	41	
		18		0,07	0,40	1645			61	54,31				-6		246	41	
		19		0,08	0,45	1644			61	56,76				-6		240	40	
14h00	↓	20	↓	0,08	0,45	1656	↓	↓	61	59,29				-6	↓	249	40	

TDF Initial Débit (pi^3/min):	Pression (inhg) :	Volume ini (pi^3) :	Volume fin (pi^3) :	Volume (pi^3) :
TDF Final Débit (pi^3/min):	Pression (inhg) :	Volume ini (pi^3) :	Volume fin (pi^3) :	Volume (pi^3) :

Fuite Pitot (ΔP) : V

REMARQUES | O_2/CO_2 - Utiliser le formulaire de gaz en continu pour calibration des appareils.

** 13h36 de l'horloge est débranché

TECHNICIEN : EL

CONSULAIR GESTION GLOBALE AIR ET ENVIRONNEMENT	**Formulaire « Détermination des métaux »**	**CODE D'ESSAI :** INC-ME-E3
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Décontamination avant essai et détermination de l'humidité recueillie - USEPA 29

Compagnie :	AEM MECANOS	Projet :	28-7693	# du filtre:	
Source :	INCINERATEUR	Essai :		# Cold Box:	ME-04
Échantillonnée le :	1er-10	Date de l'assemblage :	30-09	Heure :	16H30

Décontamination avant essai de la buse et de la sonde

Item	Remarques	Brosser acétone	Rincer 3x HNO_3 10 %	Rincer 3x eau démin.	Rincer 3x Acétone
Buse et liner de verre		✓	✓	✓	✓
Vérification de la buse et sondes d'échantillonnage à conserver :				OUI	NON

Décontamination avant essai du train

Item	Remarques	Brosser acétone (si nécessaire)	Rincer 3x HNO_3 10 %	Rincer 3x eau démin.	Rincer 3x Acétone
du by-pass au barboteur 6		✓	✓	✓	✓
Vérification du train d'échantillonnage à conserver :				OUI	NON

Remarques :

14H58

Volume d'eau recueilli (g)

ITEM #	PIÈCES	CONTENU	POIDS		
			APRÈS	AVANT	TOTAL
1	Barboteur 1 - GS mod	VIDE (optionnel) OU CMM H_2O déminéralisée (100 ml)	866,4	639,3	H_2O
2	Barboteur 2 - GS mod	HNO_3 5% / H_2O_2 10% (100 ml)	581,7	560,0	VIDE
3	Barboteur 3 - GS	HNO_3 5% / H_2O_2 10% (100 ml)	669,2	660,5	HNO_3 / H_2O_2
4	Barboteur 4 - GS mod	VIDE (normalement) *Si présence de liquide, ajouter aux BB1,2 et 3*	615,8	614,9	HNO_3 / H_2O_2
5	Barboteur 5 - GS mod	$KMnO_4$ 4% / H_2SO_4 10% (100 ml) recouvert d'aluminium	520,9	520,7	VIDE
6	Barboteur 6 - GS mod	$KMnO_4$ 4% / H_2SO_4 10% (100 ml) recouvert d'aluminium	649,0	650,0	$KMnO_4$
7	Contenant de dessiccant	GEL DE SILICE	591,7	592,0	$KMnO_4$ Gel
TOTAL :			2066,4	2030,7	

Particules totales (g)

# FILTRE QUARTZ	POIDS (g)	REMARQUES
0225-Te-22	0,5223 g	

Lots des produits utilisés

Produits	# LOT
Acétone ACS	62 090
Solution d'acide nitrique (HNO_3) 10%	322 270
Solution d'acide nitrique (HNO_3) 0.1N	322 270
Solution d'acide sulfurique (H_2SO_4) 10%	225 894
Solution d'acide chlorhydrique (HCl) 8N	62297
Permanganate de potassium ($KMnO_4$)	L0222
Solution H_2O_2 10% / HNO_3 5%	63037312 / 322270

Remarques :

Technicien : EL

CONSULAIR GESTION GLOBALE AIR ET ENVIRONNEMENT	**Formulaire « Détermination des métaux »**	**CODE D'ESSAI :** INC-ME-E3
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Récupération finale du dispositif de prélèvement MÉTAUX USEPA 29

Date de récupération :	1-10-2023	Heure de récupération :	15h02
Pesée des barboteurs pour l'humidité :	✓	Nettoyage de l'extérieur des différentes pièces :	✓
Conditionnement des contenants de récupération :	✓		

Contenant 1 - Récupération du filtre (Séparateur principal)

Mettre le filtre dans un pétri propre et scellé (pince en polyéthylène ou teflon)	✓

Contenants 2 et 3 - Récupération de la buse et de la sonde

Items	Remarques	Brosser 100 ml Acétone	Rincer 100 ml HNO_3 0,1N	Niveau
de la buse à la partie avant du porte-filtre		✓	✓	—

Contenant 4 - Récupération de la partie arrière du porte-filtre aux barboteurs métaux (Barb. 1, 2, 3) 3+4

Items	Remarques	Rincer 100 mL HNO_3 0.1N	Niveau	Volume (mL)
de la partie arrière du porte-filtre aux barboteurs métaux (Barb. 1, 2, 3)		✓	✓	300

Contenant 5 - Récupération barboteurs 4 seul. Si présence de liquide, ajouter aux barboteurs 1, 2, 3 5

Items	Remarques	Rincer 100 ml HNO_3 0.1N	Niveau	Volume (mL)
barboteur 4		✓	✓	100

Contenant 6 - Récupération barboteurs 5 et 6 ($KMnO_4$) 6+7

Items	Remarques	Rincer 100 ml $KMnO_4/H_2SO_4$	Rincer 100 ml eau	Niveau	Volume (mL)
du barboteur 5 au barboteur 6 (pot de **verre ambré**)		✓	✓	✓	350

Contenant 7 - Récupération barboteurs 5 et 6 ($KMnO_4$) avec HCl 8N 6+7

Items	Remarques	200 mL H_2O dans bouteille récup. Rincer 25 mL HCl 8N	Niveau	Volume (mL)
du barboteur 5 au barboteur 6		✓	✓	225

Remarques :

BB(12)-HCl-E3 → 440 mL

BB(12)(34)-HNO_3 → 300 mL

BL-HCl-BL H_2O → 200 mL

Blancs :

200 mL Acétone	BL-ME-BL-Acétone	200 mL
250 mL HNO_3 0.1N	BL-ME-BL-HNO_3 0,1N	250 mL
200 mL H_2O	BL-ME-BL-H_2O	200 mL
200 mL Solution H_2O_2 10% / HNO_3 5%	BL-ME-BL-HNO_3/H_2O_2	200 mL
100 mL $KMnO_4$ 4% / H_2SO_4 10%	BL-ME-BL-$KMnO_4$	100 mL
200 mL H_2O + 25 mL HCl 8N	BL-ME-BL-HCl 8N	225 mL
Filtre Quartz	BL-ME-BL-FILTRE	2223-76-14 0,5221 g

Pour la demande d'analyse, voici les échantillons :
1a - Métaux sur contenants 1 + 2 + 3
1b - Hg sur contenants 1 + 2 + 3
2a - Métaux sur contenant 4
2b - Hg sur contenant 4
3a - Hg sur contenant 5
3b - Hg sur contenant 6
3c - Hg sur contenant 7

Technicien : C.J.

CONSULAIR GESTION GLOBALE AIR ET ENVIRONNEMENT	**Formulaire** **« ME - Décontamination de la verrerie »**	
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Partie B : Décontamination initiale Barboteurs - Métaux USEPA 29

Compagnie :	Projet :	# du Cold box : Me 2
Source :	Essai :	# du filtre :
Échantillonnée le :	Date décontamination :	Heure :

Identification des pièces seulement si nécessaire.

Décontamination			Rinçage Eau	Eau + Savon	Eau	Rincer H_2O démin.	Tremper HNO_3 10 %	Rincer H_2O démin.	Rincer Acétone
Item (dans l'ordre)	**#**	**Remarques**	**1 x**	**1 x**	**3 x**	**3 x**	**4 hres**	**3 x**	**3 x**
S (bas cloche - barb.)			✓	✓	✓	✓	✓	✓	✓
Barboteur 1			✓	✓	✓	✓	✓	✓	✓
Barboteur 2			✓	✓	✓	✓	✓	✓	✓
Barboteur 3			✓	–	–	–	✓	✓	✓
Barboteur 4 (si applicable)			✓	✓	✓	–	✓	✓	✓
Barboteur 5 (si Hg)			✓	✓	✓	–	–	✓	✓
Barboteur 6 (si Hg)			✓	✓	✓	✓	✓	✓	✓
Coudes (5 ou...)									

Vérification initiale de la verrerie du train d'échantillonnage et conserver le dernier rinçage à l'acétone si nécessaire.

N.B. Joint d'étanchéité à réaliser avec du tape de téflon si absence de O-ring

Commentaires :

Décontaminé par : HSO	Date : [illegible]-08-2023	Endroit : Q.C

CONSULAIR GESTION GLOBALE AIR ET ENVIRONNEMENT	**Formulaire « Vérification Modules »**	
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INFORMATIONS DE BASE

Compagnie : AEM	**Source :** Incinerator	**# Projet :** 7693
Ville : Meliadine	**Date :** 28 septembre 2023	

VÉRIFICATION DES MODULES AVEC ORIFICES CRITIQUES

# POMPE :	
# KIT CALIB	2
# MODULE	1

Gamma (K_C) : 1,020

PRESSION BAROMÉTRIQUE (In Hg) : INITIAL 29,90 ; FINAL 29,90

Ⓒ / NC

#ORIFICE	#ESSAI	K' FACTEUR (moy)	TEST VACUUM (In Hg)	COMPTEUR VOLUME (pi^3) INITIAL	COMPTEUR VOLUME (pi^3) FINAL	COMPTEUR VOLUME (pi^3) NET (V_m)	TEMPÉRATURES °F AMBIANT INITIAL	TEMPÉRATURES °F COMPTEUR IN INITIAL	TEMPÉRATURES °F COMPTEUR IN FINAL	TEMPÉRATURES °F COMPTEUR OUT INITIAL	TEMPÉRATURES °F COMPTEUR OUT FINAL	TEMPÉRATURES °F AMBIANT FINAL	DURÉE (min)	DGM ΔH (In H_2O)
2-1	1	0,3920	-16	22,16	29,33	7,23	67	62	69	66	62	73	15	0,4
2-1	2	0,3920	-16	29,33	36,53	7,20	73	69	72	62	66	74	15	0,4
2-1	3	0,3920	-16	36,53			74	72	78	66	68	74	17	0,4

Commentaires :

Respect de l'écart de 5 % du K_C :	3,5	**Technicien :**

CONSULAIR
GESTION GLOBALE AIR ET ENVIRONNEMENT

Formulaire
« Données de prélèvement manuel »

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23-7693
Code d'essai : ~~SOSV~~-Inc-E1

Usine : AEM
Ville : Meliadine
ID point d'émission : Incinerator
Diamètre : 33,52" 7,75"
Distance avant : 5D
Distance après : 2D

Date : 29 septembre 2023
Sonde N° : 03-08 Q-500
Cp : 0,755
Buse N° : 3Q -507
Coef : ~~0,5093~~ 0,5093

P. Bar (po Hg) : 29,90
P. Stat. (po H_2O) : ~~-0,12~~ -0,12
Module N° : 8 (C) / NC
Kc : 0,994
Ko : 1,027
Distance P-T°-B : ✓

 # Cold box :
K' : 25,39
Niveau du manomètre : ✓
Zéro du manomètre : ✓

Heure	Trav.	Point	Temps prélèv. (min)	ΔP (po H_2O)	ΔH (po H_2O)	Températures (°F) Cheminée	Compteur Entrée	Compteur Sortie	Orifice	Volume Prélevé (pi^3)	Masse molaire O_2 (%v)	Masse molaire CO_2 (%v)	Masse molaire CO (ppmv)	Vaccum po. Hg	Température Sonde (°F)	Température Filtre (°F)	Température Sortie (°F)	Température Trappe/Filtre (°F)
										73,18								
10h20	1	1	5	0,03	0,25	1121	66	60	56	75,09	11	7,2	26	-2	250	247	~~42~~	48
		2		0,03	0,24	1198			55	76,95	10,9	7,2	16	-2		250	41	47
		3		0,03	0,23	1259			55	78,97	10,4	7,2	7	-2		252	41	47
		4		0,03	0,22	1304			55	80,86	9,9	8,0	6	-2		251	41	47
		5		0,04	0,28	1383			55	83,06	10	8,1	4	-3		249	41	46
		6		0,06	0,48	1440			55	85,5	8,4	9,6	4	-3		248	42	46
		7		0,05	0,34	1478			56	87,65	8,4	9,6	4	-3		252	42	46
		8		0,07	0,47	1506			56	90,20	8,4	9,6	4	-3		249	42	47
		9		0,07	0,49	1559			55	92,85	8,4	9,6	4	-4		250	41	47
		10		0,07	0,45	1573			57	95,52	8,4	9,6	4	-5		251	41	46
		11		0,07	0,45	1585			57	98,17	8,4	9,6	4	-5		254	40	47
		12		0,07	0,45	1590			57	100,81	8,4	9,6	4	-5		256	40	46
		13		0,07	0,44	1586			~~58~~ 57	103,46	8,4	9,6	4	-5		244	40	46
		14		0,09	0,58	1596			58	106,42	9,3	8,9	4	-5		253	41	46
		15		0,08	0,51	1602			58	109,22	9,1	8,7	4	-5		251	41	46
		16		0,09	0,59	1554			58	112,20	9,1	8,7	4	-5		248	41	46
		17		0,09	0,61	1471			58	115,25	9,1	8,7	4	-5		248	42	45
		18		0,09	0,57	1604			58	118,16	9,1	8,7	4	-5		245	42	45
		19		0,09	0,57	1614			59	121,10	9,1	8,7	4	-5		246	43	46
	↓	20	↓	0,08	0,51	1672	↓	↓	59	123,92	9,1	8,7	4	-5	↓	245	42	45

TDF Initial Débit (pi^3/min): | **Pression (inhg) :** | **Volume ini (pi^3) :** | **Volume fin (pi^3) :** | **Volume (pi^3) :** | **Fuite Pitot (ΔP) :**
TDF Final Débit (pi^3/min): | **Pression (inhg) :** | **Volume ini (pi^3) :** | **Volume fin (pi^3) :** | **Volume (pi^3) :**

REMARQUES | **O_2/CO_2 - Utiliser le formulaire de gaz en continu pour calibration des appareils.**

TECHNICIEN : EL

CONSULAIR
GESTION GLOBALE AIR ET ENVIRONNEMENT

Formulaire
« Données de prélèvement manuel »

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23-7693
Code d'essai : COSV-Inc-E1

Usine : AEM	**Date :** 29 septembre 2023	**P. Bar (po Hg) :** 29,90	**# Cold box :**
Ville : Mélocheville		**P. Stat. (po H_2O) :** -0,12	
ID point d'émission : Incinérateur	**Sonde N° :** 03-08 a-500	**Module N° :** 8 Ⓒ / NC	**K' :** 25,39
Diamètre : 33,52" 7,75"	**Cp :** 0,754	**Kc :** 0,994	
Distance avant : 5D	**Buse N° :** 32-507	**Ko :** 1,027	**Niveau du manomètre :** V
Distance après : 2D	**Coef :** 0,5093	**Distance P-T°-B :** V	**Zéro du manomètre :** V

Heure	Trav.	Point	Temps prélèv. (min)	ΔP (po H_2O)	ΔH (po H_2O)	Températures (°F) Cheminée	Compteur Entrée	Compteur Sortie	Orifice	Volume Prélevé (pi^3)	Masse molaire O_2 (%v)	Masse molaire CO_2 (%v)	Masse molaire CO (ppmv)	Vaccum po. Hg	Température Sonde (°F)	Température Filtre (°F)	Température Sortie (°F)	Température Trappe/Filtre (°F)
										123,92								
	1	1	5	0,08	0,50	1636	60	60	59	126,73	9,8	8,4	4	-5	250	251	45	42
		2		0,09	0,57	1634			59	129,65	9,8	8,4	4	-5		253	45	43
		3		0,08	0,50	1636			59	132,36	9,8	8,4	4	-5		252	44	41
		4		0,08	0,50	1636			59	135,20	9,8	8,4	4	-5		245	45	41
		5		0,08	0,50	1639			59	138,05	9,8	8,4	4	-5		248	45	41
		6		0,08	0,50	1640			60	140,76	10,1	7,8	4	-5		255	44	42
		7		0,07	0,44	1639			66	143,40	10,1	7,8	4	-5		250	45	42
		8		0,07	0,44	1634			60	146,01	10,1	8,1	4	-5		248	45	42
		9		0,07	0,44	1639			61	148,61	10,1	8,1	4	-5		249	45	42
		10		0,07	0,44	1628			61	151,24	10,1	8,1	4	-5		250	46	42
		11		0,06	0,38	1631			61	153,65	10,1	8,1	4	-5		250	45	41
		12		0,07	0,44	1630			62	156,22	10,1	8,1	4	-5		246	45	41
		13		0,06	0,38	1632			62	158,66	10,1	8,1	4	-5		251	45	41
		14		0,07	0,44	1627			62	161,24	10,1	8,1	4	-5		250	44	41
		15		0,07	0,45	1623			63	163,91	10,1	8,1	4	-5		254	44	41
		16		0,07	0,44	1628			63	166,57	10,1	8,1	4	-5		245	45	41
		17		0,06	0,38	1626			64	169,04	10,3	8,0	4	-5		247	44	42
		18		0,07	0,45	1628			64	171,70	10,3	8,0	4	-5		258	44	41
		19		0,07	0,45	1628			65	174,35	10,3	8,0	4	-5		253	45	41
13h40	⇩	20	⇩	0,07	0,45	1629	⇩	⇩	65	176,97	10,3	8,0	4	-5	⇩	252	45	41

TDF Initial Débit (pi^3/min): | **Pression (Inhg) :** | **Volume ini (pi^3) :** | **Volume fin (pi^3) :** | **Volume (pi^3) :** | **Fuite Pitot (ΔP) :**

TDF Final Débit (pi^3/min): | **Pression (Inhg) :** | **Volume ini (pi^3) :** | **Volume fin (pi^3) :** | **Volume (pi^3) :**

REMARQUES | **O_2/CO_2 - Utiliser le formulaire de gaz en continu pour calibration des appareils.**

TECHNICIEN : EL

CONSULAIR GESTION GLOBALE AIR ET ENVIRONNEMENT	**Formulaire « Détermination des COSV »**	
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CODE DE L'ESSAI : Inc-COSV-E1

Vérification avant essai et montage du dispositif de prélèvement - COSV (SPE 1/RM/2)

Compagnie : AEM	Projet : 23-7693	# Ensemble de verrerie : 20
Source : Incinerator	Essai : E1	# Hot Box:
Date : 28 septembre 2023	Heure : 14h45	

1 - DÉCONTAMINATION & VÉRIFICATION AVANT ESSAI - BUSE ET SONDE

Item :	Remarques :	Brosse - DHA 3x Ch.	HA 3x Ch.
Buse et sonde		✓	
Vérification de la buse et sondes d'échantillonnage à conserver :		OUI	NON

2 - VÉRIFICATION AVANT ESSAI - TRAIN

Item :	Remarques :	HA 3x Ch.	
Train		✓	
Vérification de la verrerie du train d'échantillonnage à conserver :		OUI	NON

3 - VOLUME D'EAU RECUEILLIE

ITEM #	PIÈCE	CONTENU	POIDS (g) APRÈS	AVANT	TOTAL
1	Condenseur (réfrigérant)	VIDE			
2	Trappe de résine *	XAD-2	146,8	136,3	
3	Trappe à condensat	VIDE	584,3	374,3	
4	Barboteur Greenburg-Smith	ÉTHYLÈNE GLYCOL (100-150 mL)	606,2	605,9	
5	Barboteur modifié	VIDE	537,3	536,9	
6	Contenant de dessiccant	GEL DE SILICE	1805,9	1782,7	
				TOTAL	

* : Recouvrir de papier d'aluminium après la prépesée, et retirer avant la pesée après essai.

REMARQUES :

4 - LOTS DES SOLVANTS UTILISÉS

SOLVANTS	# LOT
Dichlorométhane (grade optima)	
Hexane (grade optima)	
Acétone (grade optima)	
Éthylène glycol	
Eau HPLC	
Résine XAD-2	

Vérifié par :	Date :	Endroit :

CONSULAIR GESTION GLOBALE AIR ET ENVIRONNEMENT	**Formulaire « Détermination des COSV »**	
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CODE DE L'ESSAI :

Récupération finale du dispositif de prélèvement - COSV (SPE 1/RM/2)

Date de récupération : 29 septembre 2023.			Heure de récupération : 15h	
Nettoyage de l'extérieur des différentes pièces :		V		
Conditionnement (HA) des contenants **(verre ambré)** de récupération		V		

Contenant 1 - Buse-Sonde

Item :	Remarques :	Brosse HA	HA 3x Ch.	Niveau
Buse et Sonde		V		

Contenant 2 - Filtre

Filtre	Pétri scellé avec ruban de teflon - dans le papier d'aluminium	V

Contenant 3 - Récupération de la partie arrière du Porte-filtre au Condenseur (avant trappe)

Item :	Remarques :	Tremp. H-A 5 min. Ch.	HA 3x Ch.	Niveau
Avant trappe résine		V	V	V

Contenant 4 - Récupération de la Trappe de résine XAD-2

Trappe de résine XAD-2	Sceller avec ruban de teflon - enveloppé papier d'aluminium	V

Contenant 5 - Récupération de la Trappe à condensat au 1er Barboteur (eau)

Item (dans l'ordre) :	Remarques :	H_2O HPLC 3x	Niveau
Eau		V	V

Contenant 6 - Rinçage final de la partie arrière du Porte-filtre au dernier Barboteur

Item :	Remarques :	HA 3x Ch.	Niveau
Rinçage final		V	V

Les pots doivent être en verre ambré.

Remarques

Blancs :

Blanc de terrain (1x pour chaque 3 essais) - faire aspirer volume d'air équivalent à tous les tests de fuite	
Résine XAD-2 (environ 40g, 1 tube)	
Eau HPLC	
Éthylène Glycol	
Acétone	
Hexane	

Récupération par : EL	Date : 29/09/2023	Endroit : Mélodine

CONSULAIR GESTION GLOBALE AIR ET ENVIRONNEMENT	**Formulaire « COSV - Décontamination de la verrerie »**	
Document : F ECH 06	Révision N° : 6	Page : 1 de 1

Partie A : Décontamination initiale du train - COSV (SPE 1/RM/2)

Compagnie :	# Projet :
Date de la décontamination :	Heure : 20

Numéro de l'ensemble de verrerie (Train) :							
Décontamination			**Sol. RBS**	**Eau + Savon**	**Eau démin.**	**DHA**	**HA**
Identifier les pièces de verre seulement si elles sont différentes de l'ensemble							
Item (dans l'ordre)	**# pièce**	**Remarques / pièce**	**2 hrs**	**3x Rinç.**	**3x Rinç.**	**3x Ch.**	**3x Ch.**
By pass			✓	✓	✓	✓	✓
Cloche femelle			✓	✓	✓	✓	✓
Support à filtre en téflon			✓	✓	✓	✓	✓
Cloche mâle			✓	✓	✓	✓	✓
Réfrigérant	Ref						
	M-F						
Trappe de résine							
Trappe à condensat			✓	✓	✓	✓	✓
Grand L	L		✓	✓	✓	✓	✓
Barboteur Greenburg-Smith			✓	✓	✓	✓	✓
Coude			✓	✓	✓	✓	✓
Barboteur Std			✓	✓	✓	✓	✓
Coude (HAP)							
Barboteur Std (HAP)							
Pétri de verre							
Bouteilles de verre ambré							
Garnitures (Téflon + Aluminium)							
Nombre total de pièces		**Code de décontamination (# Contenant) :** HSO-08/08/2023-COSV-20					

 # Lot des Solvants :

Dichlorométhane (grade optima) : 190357

Hexane (grade optima) : 23C246 2008

Acétone (grade optima) : 63032

Commentaires :

Décontaminé par : HSO, YZ Date : 08/08/2023 Endroit : Qc

CONSULAIR
GESTION GLOBALE AIR ET ENVIRONNEMENT

Formulaire
« Données de prélèvement manuel »

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23-7693
Code d'essai : COSV -Inc -E2

Usine : AEM	**Date :** 30 septembre 2023	**P. Bar (po Hg) :** 29,90	**# Cold box :**
Ville : Meliadine		**P. Stat. (po H_2O) :** -0,12	
ID point d'émission : Incinerator	**Sonde N° :** 03-08 Q-500	**Module N° :** 8 (C) / NC	**K' :** ~~23,65~~ 23,65
Diamètre : 33,5" 7,75"	**Cp :** 0,753	**Kc :** 0,994	
Distance avant : 5D	**Buse N° :** 30-507	**Ko :** 1,027	**Niveau du manomètre :** ✓
Distance après : 2D	**Coef :** 0,5093	**Distance P-T°-B :** ✓	**Zéro du manomètre :** ✓

Heure	Trav.	Point	Temps prélèv. (min)	ΔP (po H_2O)	ΔH (po H_2O)	Températures (°F) Cheminée	Compteur Entrée	Compteur Sortie	Orifice	Volume Prélevé (pi³)	Masse molaire O_2 (%v)	Masse molaire CO_2 (%v)	Masse molaire CO (ppmv)	Vaccum po. Hg	Température Sonde (°F)	Température Filtre (°F)	Température Sortie (°F)	Température Trappe/Filtre (°F)
										77,49								
11h08	1	1	5	0,04	0,27	1387	60	60	60	79,67	11,4	7,0	16	-2	250	248	44	51
		2		0,05	0,32	1455			59	81,71	11,4	7,0	16	-2		245	44	50
		3		0,06	0,38	1458			59	84,11	9,9	7,0	16	-2		248	44	50
		4		0,06	0,38	1490			59	86,48	9,9	7,0	16	-2		250	44	50
		5		0,05	0,31	1507			59	88,67	9,9	7,0	16	-2		251	44	50
		6		0,07	0,45	1468			59	~~91,28~~ 91,31	~~7,1~~ 7,1	10,4	4,0	-3		245	44	50
		7		0,09	0,57	1526			59	94,26	7,1	10,4	4	-3		246	44	49
		8		0,08	0,49	1536			59	97,00	7,1	10,4	4	-3		247	44	49
		9		0,09	0,55	1552			59	99,89	9,0	9,0	3	-4		249	44	50
		10		0,09	0,55	1563			59	103,80	9,0	9,0	3	-4		254	44	50
		11		0,11	0,67	1563			60	106,03	9,0	9,0	3	-5		253	43	51
		12		0,11	0,67	1572			60	109,24	9,5	8,8	4	-5		256	43	41
		13		0,10	0,58	1586			60	112,23	9,5	8,8	4	-6		255	43	50
		14		~~0,14~~ 0,14	0,84	1589			61	115,91	9,5	8,8	4	-6		255	43	50
		15		0,14	0,84	1589			61	119,52	9,5	8,8	4	-6		251	43	50
		16		0,13	0,73	1585			61	122,98	9,5	8,8	4	-6		256	42	49
		17		0,13	0,78	1603			61	126,47	9,6	8,6	4	-6		248	42	49
		18		0,13	0,77	1616			61	129,96	9,6	8,6	4	-6		253	42	49
		19		0,14	0,90	1606			62	133,67	9,6	8,6	4	-6		252	42	49
	↓	20	↓	0,14	0,83	1613	↓	↓	62	137,28	9,6	8,6	4	-6	↓	256	42	49

TDF Initial Débit (pi³/min): | **Pression (inhg) :** | **Volume ini (pi³) :** | **Volume fin (pi³) :** | **Volume (pi³) :** | **Fuite Pitot (ΔP) :** ✓

TDF Final Débit (pi³/min): | **Pression (inhg) :** | **Volume ini (pi³) :** | **Volume fin (pi³) :** | **Volume (pi³) :**

REMARQUES | **O_2/CO_2 - Utiliser le formulaire de gaz en continu pour calibration des appareils.**

TECHNICIEN : EL

CONSULAIR GESTION GLOBALE AIR ET ENVIRONNEMENT	Formulaire « Données de prélèvement manuel »	23-7693 Code d'essai : COSU-Inc-E2
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Usine : AEM	Date : 30 septembre 2023	P. Bar (po Hg) : 29,90	# Cold box :		
Ville : Meliadine		P. Stat. (po H_2O) : -0,12			
ID point d'émission : Incinerator	Sonde N° : 08-08 9-500	Module N° : 8 (C) / NC	K' : 23,75		
Diamètre : 33,52" 7,75"	Cp : 0,755	Kc : 0,994			
Distance avant : 5D	Buse N° : 36-507	Ko : 1,027	Niveau du manomètre : ✓		
Distance après : 2D	Coef : 0,5093	Distance P-T°-B : ✓	Zéro du manomètre : ✓		

Heure	Trav.	Point	Temps prélèv. (min)	ΔP (po H_2O)	ΔH (po H_2O)	Températures (°F) Cheminée	Compteur Entrée	Compteur Sortie	Orifice	Volume Prélevé (pi^3)	Masse molaire O_2 (%v)	CO_2 (%v)	CO (ppmv)	Vaccum po. Hg	Température Sonde (°F)	Filtre (°F)	Sortie (°F)	Trappe/Filtre (°F)
										37,28								
	2	1	5	0,13	0,77	1615	60	60	62	40,71	10,2	8,1	4	-5	250	249	42	49
		2		0,14	0,83	1619			62	44,33	10,2	8,1	4	-5		256	42	48
		3		0,13	0,77	1623			62	47,79	10,2	8,1	4	-5		250	42	48
		4		0,14	0,63	1626			62	51,38	10,2	8,1	4	-5		251	42	49
		5		0,11	0,65	1630			62	54,62	10,2	8,1	4	-5		254	42	49
		6		0,10	0,59	1624			63	57,67	10,4	8,0	4	-5		253	42	49
		7		0,11	0,65	1627			63	60,72	10,4	8,0	4	-5		256	43	49
		8		0,16	0,59	1628			63	63,78	10,4	8,0	4	-5		257	43	50
		9		0,11	0,65	1629			63	66,99	10,5	8,0	4	-5		245	43	49
		10		0,11	0,64	1630			63	73,19	10,5	8,0	4	-5		255	43	49
		11		0,16	0,59	1629			63	70,19	10,5	8,0	4	-5		243	43	48
		12		0,10	0,60	1622			64	73,19	10,6	7,8	4	-5		244	43	48
		13		0,09	0,54	1619			64	76,30	10,6	7,8	4	-5		243	42	48
		14		0,08	0,60	1618			65	82,27	10,6	7,8	4	-5		246	42	48
		15		0,08	0,48	1618			65	85,04	10,6	7,8	4	-5		248	42	47
		16		0,08	0,48	1628			65	87,78	10,6	7,8	4	-5		254	43	47
		17		0,08	0,48	1628			65	90,52	10,6	7,8	4	-5		255	43	48
		18		0,07	0,42	1619			65	93,08	10,6	7,8	4	-5		256	43	48
		19		0,07	0,42	1627			65	95,62	10,6	7,8	4	-5		257	44	47
14h28		20		0,06	0,36	1631			65	97,94	10,6	7,8	4	-5		249	44	48

TDF Initial Débit (pi^3/min): Pression (inhg) : Volume ini (pi^3) : Volume fin (pi^3) : Volume (pi^3) : Fuite Pitot (ΔP) : ✓

TDF Final Débit (pi^3/min): Pression (inhg) : Volume ini (pi^3) : Volume fin (pi^3) : Volume (pi^3) :

REMARQUES — O_2/CO_2 - Utiliser le formulaire de gaz en continu pour calibration des appareils.

TECHNICIEN : EL

CONSULAIR GESTION GLOBALE AIR ET ENVIRONNEMENT	**Formulaire « Détermination des COSV »**	
Document : F ECH 07	Révision N° : 6	Page : 1 de 2

CODE DE L'ESSAI : INC-(COSV)-E2

Vérification avant essai et montage du dispositif de prélèvement - COSV (SPE 1/RM/2)

Compagnie : AEM Melindine	Projet : 23-7693	# Ensemble de verrerie : 15
Source : Incinerator	Essai : E2	# Hot Box:
Date : 29 septembre 2023	Heure : 15h30	

1 - DÉCONTAMINATION & VÉRIFICATION AVANT ESSAI - BUSE ET SONDE

Item :	Remarques :	Brosse - DHA	HA
		3x Ch.	3x Ch.
Buse et sonde		V	V
Vérification de la buse et sondes d'échantillonnage à conserver :		OUI	NON

2 - VÉRIFICATION AVANT ESSAI - TRAIN

Item :	Remarques :	HA
		3x Ch.
Train		V
Vérification de la verrerie du train d'échantillonnage à conserver :		OUI / NON

3 - VOLUME D'EAU RECUEILLIE

ITEM #	PIÈCE	CONTENU	POIDS (g)		
			APRÈS	AVANT	TOTAL
1	Condenseur (réfrigérant)	VIDE			
2	Trappe de résine *	XAD-2	155,0	144,2	
3	Trappe à condensat	VIDE	528,3	272,35	
4	Barboteur Greenburg-Smith	ÉTHYLÈNE GLYCOL (100-150 mL)	692,30	691,3	
5	Barboteur modifié	VIDE	531,8	532,4	
6	Contenant de dessiccant	GEL DE SILICE	1833,6	1805,8	
				TOTAL	

* : Recouvrir de papier d'aluminium après la prépesée, et retirer avant la pesée après essai.

REMARQUES :

4 - LOTS DES SOLVANTS UTILISÉS

SOLVANTS	# LOT
Dichlorométhane (grade optima)	
Hexane (grade optima)	
Acétone (grade optima)	
Éthylène glycol	
Eau HPLC	
Résine XAD-2	

Vérifié par :	Date :	Endroit :

CONSULAIR GESTION GLOBALE AIR ET ENVIRONNEMENT	**Formulaire « Détermination des COSV »**	
Document : F ECH 07	Révision N° : 6	Page : 2 de 2

CODE DE L'ESSAI :

Récupération finale du dispositif de prélèvement - COSV (SPE 1/RM/2)

Date de récupération :	Heure de récupération :	
Nettoyage de l'extérieur des différentes pièces :		
Conditionnement (HA) des contenants **(verre ambré)** de récupération		

Contenant 1 - Buse-Sonde

Item :	Remarques :	Brosse HA	HA 3x Ch.	Niveau
Buse et Sonde				

Contenant 2 - Filtre

Filtre	Pétri scellé avec ruban de teflon - dans le papier d'aluminium	✓

Contenant 3 - Récupération de la partie arrière du Porte-filtre au Condenseur (avant trappe)

Item :	Remarques :	Tremp. H-A 5 min. Ch.	HA 3x Ch.	Niveau
Avant trappe résine			V	V

Contenant 4 - Récupération de la Trappe de résine XAD-2

Trappe de résine XAD-2	Sceller avec ruban de teflon - enveloppé papier d'aluminium	V

Contenant 5 - Récupération de la Trappe à condensat au 1er Barboteur (eau)

Item (dans l'ordre) :	Remarques :	H_2O HPLC 3x	Niveau
Eau		V	V

Contenant 6 - Rinçage final de la partie arrière du Porte-filtre au dernier Barboteur

Item :	Remarques :	HA 3x Ch.	Niveau
Rinçage final		V	V

Les pots doivent être en verre ambré.

Remarques

Blancs :

Blanc de terrain (1x pour chaque 3 essais) - faire aspirer volume d'air équivalent à tous les tests de fuite	
Résine XAD-2 (environ 40g, 1 tube)	
Eau HPLC	
Éthylène Glycol	
Acétone	
Hexane	

Récupération par :	Date :	Endroit :

CONSULAIR GESTION GLOBALE AIR ET ENVIRONNEMENT	**Formulaire « COSV - Décontamination de la verrerie »**	
Document : F ECH 06	Révision N° : 6	Page : 1 de 1

Partie A : Décontamination initiale du train - COSV (SPE 1/RM/2)

Compagnie :	# Projet :
Date de la décontamination :	Heure :

Numéro de l'ensemble de verrerie (Train) : 15

Décontamination			Sol. RBS	Eau + Savon	Eau démin.	DHA	HA
Identifier les pièces de verre seulement si elles sont différentes de l'ensemble							
Item (dans l'ordre)	**# pièce**	**Remarques / pièce**	**2 hrs**	**3x Rinç.**	**3x Rinç.**	**3x Ch.**	**3x Ch.**
By pass			✓	✓	✓	✓	✓
Cloche femelle			✓	✓	✓	✓	✓
Support à filtre en téflon			✓	✓	✓	✓	✓
Cloche mâle			✓	✓	✓	✓	✓
Réfrigérant	Ref		✓	✓	✓	✓	✓
	M.F		✓	✓	✓	✓	✓
Trappe de résine							
Trappe à condensat			✓	✓	✓	✓	✓
Grand L	L		✓	✓	✓	✓	✓
	[illegible]						
Barboteur Greenburg-Smith			✓	✓	✓	✓	✓
Coude			✓	✓	✓	✓	✓
Barboteur Std			✓	✓	✓	✓	✓
Coude (HAP)							
Barboteur Std (HAP)							
Pétri de verre							
Bouteilles de verre ambré							
Garnitures (Téflon + Aluminium)							
Nombre total de pièces		**Code de décontamination (# Contenant) :** HSO-08/08/2023-COSV-15					

 # Lot des Solvants :

Dichlorométhane (grade optima) : 212200

Hexane (grade optima) : 23C2462008

Acétone (grade optima) : 63032

Commentaires :

Décontaminé par : HSO, YZ Date : 08/08/2023 Endroit : QC

(1/2)

CONSULAIR
GESTION GLOBALE AIR ET ENVIRONNEMENT

Formulaire
« Données de prélèvement manuel »

23-7693
Code d'essai : COSV-Inc-E3

Document : F ECH 09 | Révision N° : 9 | Page : 1 de 1

Usine : AEM	**Date :** 01 octobre 2023	**P. Bar (po Hg) :** 29,90	**# Cold box :**
Ville : Meliadine		**P. Stat. (po H_2O) :** -0,12	
ID point d'émission : Incinerateur	**Sonde N° :** 03-08 Q500	**Module N° :** 8 C / NC	**K' :** 23,75
Diamètre : 33,52" 7,75"	**Cp :** 0,755	**Kc :** 0,994	
Distance avant : 5D	**Buse N° :** 32-507	**Ko :** 1,027	**Niveau du manomètre :** ✓
Distance après : 2D	**Coef :** 0,5093	**Distance P-T°-B :** ✓	**Zéro du manomètre :** ✓

Heure	Trav.	Point	Temps prélèv. (min)	ΔP (po H_2O)	ΔH (po H_2O)	Températures (°F)				Volume Prélevé (pi^3)	Masse molaire			Vaccum po. Hg	Température			
						Cheminée	Compteur Entrée	Compteur Sortie	Orifice		O_2 (%v)	CO_2 (%v)	CO (ppmv)		Sonde (°F)	Filtre (°F)	Sortie (°F)	Trappe/Filtre (°F)
										98,32								
10h43	1	1	5	0,05	0,33	1375	60	60	55	160,48	9,1	9,0	7	-3	250	251	40	45
		2		0,05	0,33	1382			54	102,68	9,1	9,0	7	-3		250	41	45
		3		0,06	0,39	1424			54	105,07	11,6	6,8	7	-3		248	40	44
		4		0,05	0,31	1480			54	107,19	11,6	6,8	7	-3		247	40	44
		5		0,06	0,37	1490			54	109,54	11,6	6,8	7	-5		252	40	43
		6		0,07	0,43	1525			54	112,12	11,7	7,3	11	-5		255	39	44
		7		0,08	0,49	1537			54	114,85	11,7	7,3	11	-5		258	39	43
		8		0,09	0,54	1580			55	117,73	11,1	7,4	6	-7		251	39	43
		9		0,10	0,60	1565			55	120,73	11,1	7,4	6	-7		250	39	45
		10		0,09	0,54	1586			55	123,62	11,1	7,4	6	-7		250	38	43
		11		0,10	0,60	1580			55	126,67	11,5	7,0	5	-7		243	38	42
		12		0,09	0,54	1588			56	129,59	11,5	7,0	5	-7		245	39	42
		13		0,09	0,54	1590			56	132,50	11,5	7,0	5	-7		251	39	43
		14		0,09	0,53	1604			56	135,26	11,5	7,0	5	-7		248	39	43
		15		0,10	0,53	1606			57	138,36	11,8	6,6	5	-8		249	39	43
		16		0,09	0,53	1606			57	141,23	11,8	6,6	5	-8		251	40	42
		17		0,09	0,53	1612			57	144,10	11,8	6,6	5	-8		252	40	42
		18		0,10	0,59	1614			57	147,1	11,8	6,6	5	-8		253	39	42
		19		0,10	0,59	1613			57	150,17	11,8	6,6	5	-8		256	39	43
*	↓	20	↓	0,09	0,53	1616	↓	↓	58	153,04	11,8	6,6	5	-8	↓	247	39	42

TDF Initial Débit (pi^3/min):	**Pression (inhg) :**	**Volume ini (pi^3) :**	**Volume fin (pi^3) :**	**Volume (pi^3) :**
TDF Final Débit (pi^3/min):	**Pression (inhg) :**	**Volume ini (pi^3) :**	**Volume fin (pi^3) :**	**Volume (pi^3) :**

Fuite Pitot (ΔP) : ✓

REMARQUES | **O_2/CO_2 - Utiliser le formulaire de gaz en continu pour calibration des appareils.**

* On s'apercoit que le cordon de contrôle est bouché

TECHNICIEN : EL

CONSULAIR
GESTION GLOBALE AIR ET ENVIRONNEMENT

Formulaire
« Données de prélèvement manuel »

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23-7693
Code d'essai : COSV - Inc - E3

Usine : AEM	Date : 01 octobre 2023	P. Bar (po Hg) : 29,90	# Cold box :
Ville : Melocheville		P. Stat. (po H_2O) : -0,12	
ID point d'émission : Incinerateur	Sonde N° : 03-08 Q-500	Module N° : 8 (C)1 NC	K' : 23,75
Diamètre : 33,52" 7,75"	Cp : 0,755	Kc : 0,994	
Distance avant : 5D	Buse N° : 3Q-507	Ko : 1,027	Niveau du manomètre : ✓
Distance après : 2D	Coef : 0,5093	Distance P-T°-B : ✓	Zéro du manomètre : ✓

Heure	Trav.	Point	Temps prélèv. (min)	ΔP (po H_2O)	ΔH (po H_2O)	Températures (°F) Cheminée	Compteur Entrée	Compteur Sortie	Orifice	Volume Prélevé (pi^3)	Masse molaire O_2 (%v)	Masse molaire CO_2 (%v)	Masse molaire CO (ppmv)	Vaccum po. Hg	Température Sonde (°F)	Température Filtre (°F)	Température Sortie (°F)	Température Trappe/Filtre (°F)
										53,04								
	2	1	5	0,10	0,59	1619	60	60	58	56,06				-8	250	248	39	42
		2		0,09	0,53	1626			58	58,94				-8		248	39	42
		3		0,09	0,53	1627			58	61,81				-8		246	39	42
		4		0,09	0,53	1622			59	64,68				-8		245	39	42
		5		0,09	0,53	1631			59	67,53				-8		243	39	42
		6		0,10	0,58	1637			66	70,57				-9		256	39	42
		7		0,09	0,53	1643			60	73,47				-8		249	39	42
		8		0,10	0,58	1644			60	76,48				-9		251	39	42
		9		0,10	0,59	1640			60	79,51				-9		250	39	41
		10		0,09	0,53	1644			61	82,42				-9		253	39	41
		11		0,09	0,53	1650			61	85,34				-9		249	39	41
		12		0,09	0,53	1646			61	88,23				-9		245	40	41
		13		0,09	0,53	1645			61	91,12				-9		240	39	41
		14		0,10	0,53	1652			62	94,00				-9		241	39	41
		15		0,09	0,53	1643			62	96,47				-9		235	39	41
**		16		0,09	0,53	1632			62	99,93				-9		248	40	41
		17		0,09	0,53	1652			63	102,58				-9		247	40	41
		18		0,09	0,53	1649			63	105,43				-9		249	40	41
		19		0,09	0,53	1648			63	108,24				-9		257	40	42
14h03	↓	20	↓	0,08	0,47	1655	↓	↓	63	110,97				-9	↓	251	40	42

TDF Initial Débit (pi^3/min):	Pression (inhg) :	Volume ini (pi^3) :	Volume fin (pi^3) :	Volume (pi^3) :
TDF Final Débit (pi^3/min):	Pression (inhg) :	Volume ini (pi^3) :	Volume fin (pi^3) :	Volume (pi^3) :

Fuite Pitot (ΔP) : ✓

REMARQUES | O_2/CO_2 - Utiliser le formulaire de gaz en continu pour calibration des appareils.

** 13h36 l'horiba est de retour

TECHNICIEN :

CONSULAIR GESTION GLOBALE AIR ET ENVIRONNEMENT	**Formulaire « Détermination des COSV »**	
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CODE DE L'ESSAI : COSV – Inc – E3

Vérification avant essai et montage du dispositif de prélèvement - COSV (SPE 1/RM/2)

Compagnie : AEM Méliadine	Projet : 23-7693	# Ensemble de verrerie : 19
Source : Incinérateur	Essai : E3	# Hot Box: —
Date : 30 septembre 2023	Heure : 16 h	

1 - DÉCONTAMINATION & VÉRIFICATION AVANT ESSAI - BUSE ET SONDE

Item :	Remarques :	Brosse - DHA 3x Ch.	HA 3x Ch.
Buse et sonde			
Vérification de la buse et sondes d'échantillonnage à conserver :		OUI	NON

2 - VÉRIFICATION AVANT ESSAI - TRAIN

Item :	Remarques :	HA 3x Ch.	
Train		✓	
Vérification de la verrerie du train d'échantillonnage à conserver :		OUI	NON

3 - VOLUME D'EAU RECUEILLIE

ITEM #	PIÈCE	CONTENU	POIDS (g) APRÈS	AVANT	TOTAL
1	Condenseur (réfrigérant)	VIDE			
2	Trappe de résine *	XAD-2	123,12	113,1	
3	Trappe à condensat	VIDE	704,5	433,1	
4	Barboteur Greenburg-Smith	ÉTHYLÈNE GLYCOL (100-150 mL)	649,7	652,0	
5	Barboteur modifié	VIDE	477,3	478,8	
6	Contenant de dessiccant	GEL DE SILICE	1899,9	1874,1	
				TOTAL	

* : Recouvrir de papier d'aluminium après la prépesée, et retirer avant la pesée après essai.

REMARQUES :

4 - LOTS DES SOLVANTS UTILISÉS

SOLVANTS	# LOT
Dichlorométhane (grade optima)	
Hexane (grade optima)	
Acétone (grade optima)	
Éthylène glycol	
Eau HPLC	
Résine XAD-2	

Vérifié par :	Date :	Endroit :

CONSULAIR GESTION GLOBALE AIR ET ENVIRONNEMENT	**Formulaire « Détermination des COSV »**	
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CODE DE L'ESSAI :

Récupération finale du dispositif de prélèvement - COSV (SPE 1/RM/2)

Date de récupération :	Heure de récupération :	
Nettoyage de l'extérieur des différentes pièces :		
Conditionnement (HA) des contenants **(verre ambré)** de récupération		

Contenant 1 - Buse-Sonde

Item :	Remarques :	Brosse HA	HA 3x Ch.	Niveau
Buse et Sonde				

Contenant 2 - Filtre

Filtre	Pétri scellé avec ruban de teflon - dans le papier d'aluminium	V

Contenant 3 - Récupération de la partie arrière du Porte-filtre au Condenseur (avant trappe)

Item :	Remarques :	Tremp. H-A 5 min. Ch.	HA 3x Ch.	Niveau
Avant trappe résine			V	V

Contenant 4 - Récupération de la Trappe de résine XAD-2

Trappe de résine XAD-2	Sceller avec ruban de teflon - enveloppé papier d'aluminium	V

Contenant 5 - Récupération de la Trappe à condensat au 1er Barboteur (eau)

Item (dans l'ordre) :	Remarques :	H_2O HPLC 3x	Niveau
Eau			V

Contenant 6 - Rinçage final de la partie arrière du Porte-filtre au dernier Barboteur

Item :	Remarques :	HA 3x Ch.	Niveau
Rinçage final			V

Les pots doivent être en verre ambré.

Remarques

Blancs :

Blanc de terrain (1x pour chaque 3 essais) - faire aspirer volume d'air équivalent à tous les tests de fuite	
Résine XAD-2 (environ 40g, 1 tube)	
Eau HPLC	
Éthylène Glycol	
Acétone	
Hexane	

Récupération par : EL	Date : 01/10/2023	Endroit : Mélicetine

CONSULAIR GESTION GLOBALE AIR ET ENVIRONNEMENT	**Formulaire « COSV - Décontamination de la verrerie »**	
Document : F ECH 06	Révision N° : 6	Page : 1 de 1

Partie A : Décontamination initiale du train - COSV (SPE 1/RM/2)

Compagnie :	# Projet :
Date de la décontamination :	Heure :

Numéro de l'ensemble de verrerie (Train) : 19

Décontamination			Sol. RBS	Eau + Savon	Eau démin.	DHA	HA
Identifier les pièces de verre seulement si elles sont différentes de l'ensemble							
Item (dans l'ordre)	**# pièce**	**Remarques / pièce**	**2 hrs**	**3x Rinç.**	**3x Rinç.**	**3x Ch.**	**3x Ch.**
By pass			✓	✓	✓	✓	✓
Cloche femelle			✓	✓	✓	✓	✓
Support à filtre en téflon			✓	✓	✓	✓	✓
Cloche mâle			✓	✓	✓	✓	✓
Réfrigérant	Ref		✓	✓	✓	✓	✓
	MZ		✓	✓	✓	✓	✓
Trappe de résine							
Trappe à condensat			✓	✓	✓	✓	✓
Grand L	Coude		✓	✓	✓	✓	✓
Barboteur Greenburg-Smith			✓	✓	✓	✓	✓
Coude			✓	✓	✓	✓	✓
Barboteur Std			✓	✓	✓	✓	✓
Coude (HAP)							
Barboteur Std (HAP)							
Pétri de verre							
Bouteilles de verre ambré							
Garnitures (Téflon + Aluminium)							
Nombre total de pièces		**Code de décontamination (# Contenant) :** HSD-08-08-2023-COSV-19					

 # Lot des Solvants :

Dichlorométhane (grade optima) : 212200

Hexane (grade optima) : 23C24620008

Acétone (grade optima) : 68032

Commentaires :

Décontaminé par : HSD, MZ Date : 08/08/2023 Endroit : QC

CONSULAIR
GESTION GLOBALE AIR ET ENVIRONNEMENT

Formulaire
« Données de prélèvement manuel »

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23-7693
Code d'essai : ~~AEM~~ COSV - Inc - BLANC

Usine : AEM	**Date :** 01 octobre 2023	**P. Bar (po Hg) :** 29,9		**# Cold box :**	
Ville : Mirabel		**P. Stat. (po H_2O) :** -0,12			
ID point d'émission : Incinérateur	**Sonde N° :** /	**Module N° :** 1	C / NC	**K' :**	
Diamètre : 33,52" 7,75"	**Cp :**	**Kc :** ~~0,840~~ 1,020			
Distance avant : 5D	**Buse N° :** /	**Ko :** ~~0,993~~ 0,993		**Niveau du manomètre :** ✓	
Distance après : 2D	**Coef :**	**Distance P-T°-B :** ✓		**Zéro du manomètre :** ✓	

Heure	Trav.	Point	Temps prélèv. (min)	ΔP (po H_2O)	ΔH (po H_2O)	Températures (°F)				Volume Prélevé (pi^3)	Masse molaire			Vaccum po. Hg	Température			
						Cheminée	Compteur Entrée	Compteur Sortie	Orifice		O_2 (%v)	CO_2 (%v)	CO (ppmv)		Sonde (°F)	Filtre (°F)	Sortie (°F)	Trappe/Filtre (°F)
										59,49								
14h24										60,53								
14h26																		

TDF Initial Débit (pi^3/min):	**Pression (inhg) :**	**Volume ini (pi^3) :**	**Volume fin (pi^3) :**	**Volume (pi^3) :**
TDF Final Débit (pi^3/min):	**Pression (inhg) :**	**Volume ini (pi^3) :**	**Volume fin (pi^3) :**	**Volume (pi^3) :**

Fuite Pitot (ΔP) :

REMARQUES | **O_2/CO_2 - Utiliser le formulaire de gaz en continu pour calibration des appareils.**

TECHNICIEN : EL

CONSULAIR GESTION GLOBALE AIR ET ENVIRONNEMENT	**Formulaire « Détermination des COSV »**	
Document : F ECH 07	Révision N° : 6	Page : 1 de 2

CODE DE L'ESSAI : COSV - Inc - Blanc

Vérification avant essai et montage du dispositif de prélèvement - COSV (SPE 1/RM/2)

Compagnie : AEM Meliadine	Projet : 23-7693	# Ensemble de verrerie : 9
Source : Incinerator	Essai : Blanc	# Hot Box:
Date : 30 septembre 2023	Heure : 16h30	

1 - DÉCONTAMINATION & VÉRIFICATION AVANT ESSAI - BUSE ET SONDE

Item :	Remarques :	Brosse - DHA	HA
		3x Ch.	3x Ch.
Buse et sonde		√	√
Vérification de la buse et sondes d'échantillonnage à conserver :		OUI	NON

2 - VÉRIFICATION AVANT ESSAI - TRAIN

Item :	Remarques :	HA	
		3x Ch.	
Train			
Vérification de la verrerie du train d'échantillonnage à conserver :		OUI	NON

3 - VOLUME D'EAU RECUEILLIE

ITEM #	PIÈCE	CONTENU	POIDS (g)		
			APRÈS	AVANT	TOTAL
1	Condenseur (réfrigérant)	VIDE			
2	Trappe de résine *	XAD-2			
3	Trappe à condensat	VIDE			
4	Barboteur Greenburg-Smith	ÉTHYLÈNE GLYCOL (100-150 mL)			
5	Barboteur modifié	VIDE			
6	Contenant de dessiccant	GEL DE SILICE			
				TOTAL	

* : Recouvrir de papier d'aluminium après la prépesée, et retirer avant la pesée après essai.

REMARQUES :

4 - LOTS DES SOLVANTS UTILISÉS

SOLVANTS	# LOT
Dichlorométhane (grade optima)	62183
Hexane (grade optima)	62112
Acétone (grade optima)	62161
Éthylène glycol	NA
Eau HPLC	22160232
Résine XAD-2	NA

Vérifié par : EL | Date : 01/10/2023 | Endroit : Meliadine

CONSUL IR GESTION GLOBALE AIR ET ENVIRONNEMENT	**Formulaire « COSV - Décontamination de la verrerie »**	
Document : F ECH 06	Révision N° : 6	Page : 1 de 1

Partie A : Décontamination initiale du train - COSV (SPE 1/RM/2)

Compagnie :	# Projet :
Date de la décontamination :	Heure :

Numéro de l'ensemble de verrerie (Train) :			9				
Décontamination			**Sol. RBS**	**Eau + Savon**	**Eau démin.**	**DHA**	**HA**
Identifier les pièces de verre seulement si elles sont différentes de l'ensemble							
Item (dans l'ordre)	**# pièce**	**Remarques / pièce**	**2 hrs**	**3x Rinç.**	**3x Rinç.**	**3x Ch.**	**3x Ch.**
By pass			✓	✓	✓	—	✓
Cloche femelle			✓	✓	✓	✓	✓
Support à filtre en téflon			✓	✓	✓	✓	✓
Cloche mâle			✓	✓	✓	✓	✓
Réfrigérant	Ref		✓	✓	✓	✓	✓
	M-F		✓	✓	✓	✓	✓
Trappe de résine							
Trappe à condensat			✓	✓	✓	✓	✓
Grand L	L		✓	✓	✓	✓	✓
Barboteur Greenburg-Smith			✓	✓	✓	✓	✓
Coude			✓	✓	✓	✓	✓
Barboteur Std			✓	✓	✓	✓	—
Coude (HAP)							
Barboteur Std (HAP)							
Pétri de verre							
Bouteilles de verre ambré							
Garnitures (Téflon + Aluminium)							
Nombre total de pièces		**Code de décontamination (# Contenant) :** HSO - 08/08/2023 - COSV-9					

# Lot des Solvants :	Dichlorométhane (grade optima) : 212200
	Hexane (grade optima) : 23C 24 62008
	Acétone (grade optima) : 63032

Commentaires :

Décontaminé par : HSO, YZ	Date : 08/08/2023	Endroit : QC

CONSULAIR
GESTION GLOBALE AIR ET ENVIRONNEMENT

Formulaire « Vérification Modules »

Document : F ECH 03	Révision N° : 6	Page : 1 de 1

INFORMATIONS DE BASE

Compagnie : AEM	**Source :** Incinerator	**# Projet :** 23-7693
Ville : Meliadine	**Date :** 28 septembre 2023	

VÉRIFICATION DES MODULES AVEC ORIFICES CRITIQUES

# POMPE :		**Gamma (K_c)**	0,994	**PRESSION BAROMÉTRIQUE (In Hg) :**	**INITIAL**	29,9
# KIT CALIB	2				**FINAL**	29,9
# MODULE	8	(C) / NC				

#ORIFICE	#ESSAI	K' FACTEUR (moy)	TEST VACUUM (In Hg)	COMPTEUR VOLUME (pl^3) INITIAL	COMPTEUR VOLUME (pl^3) FINAL	COMPTEUR VOLUME (pl^3) NET (V_m)	TEMPÉRATURES °F AMBIANT INITIAL	COMPTEUR IN INITIAL	COMPTEUR IN FINAL	COMPTEUR OUT INITIAL	COMPTEUR OUT FINAL	AMBIANT FINAL	DURÉE (min)	DGM ΔH (In H_2O)
2-2	1	0,5936	-16	37,6	48,06	11,060	68	65	76	58	63	73	15	0,88
2-2	2	0,5930	-16	48,06	59,16	11,10	73	70	75	63	67	76	15	0,88
2-2	3	0,5930	-16	59,16			76	75		67		74		0,89

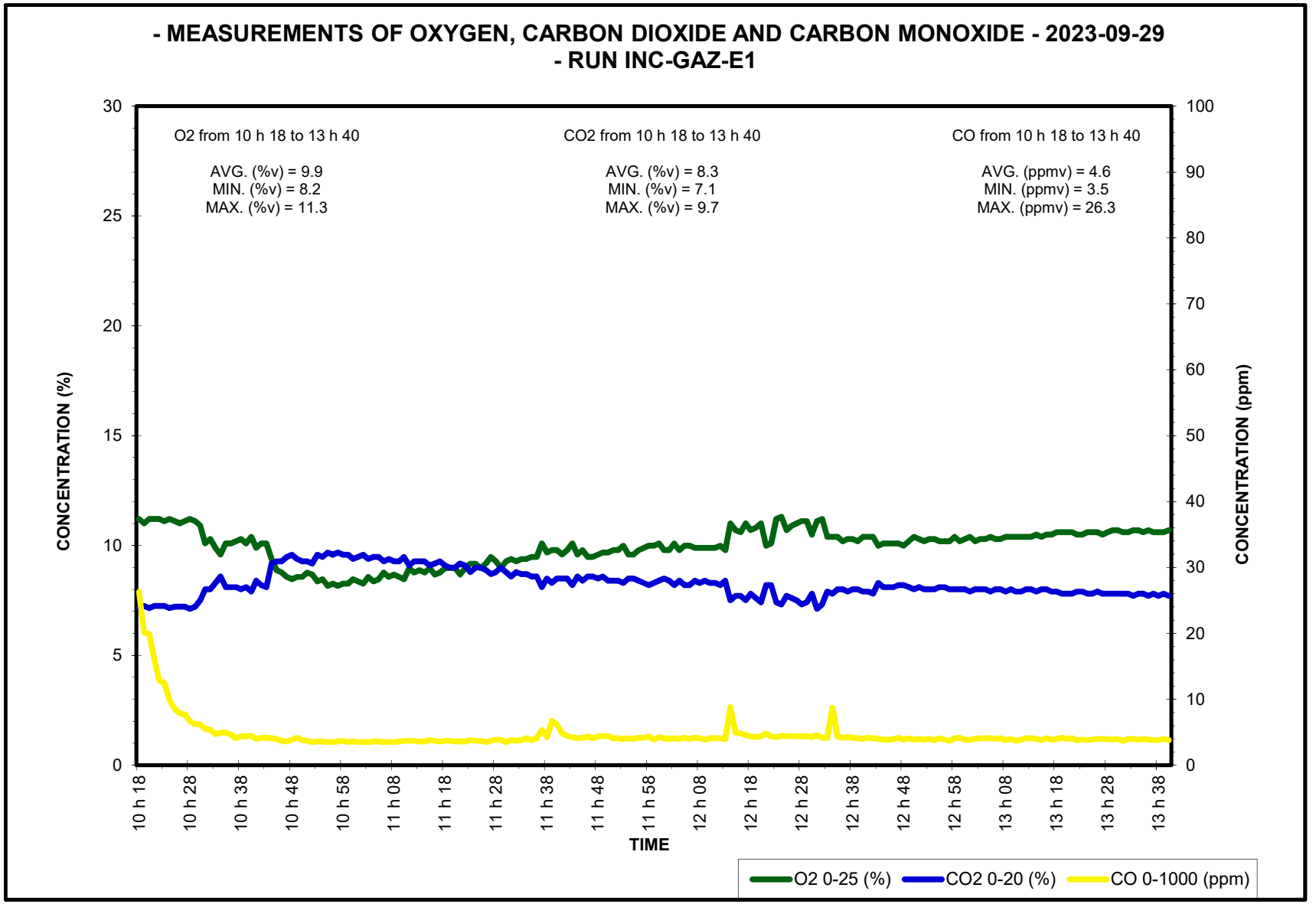
Commentaires :

Respect de l'écart de 5 % du K_c :	4,2	Technicien : EL

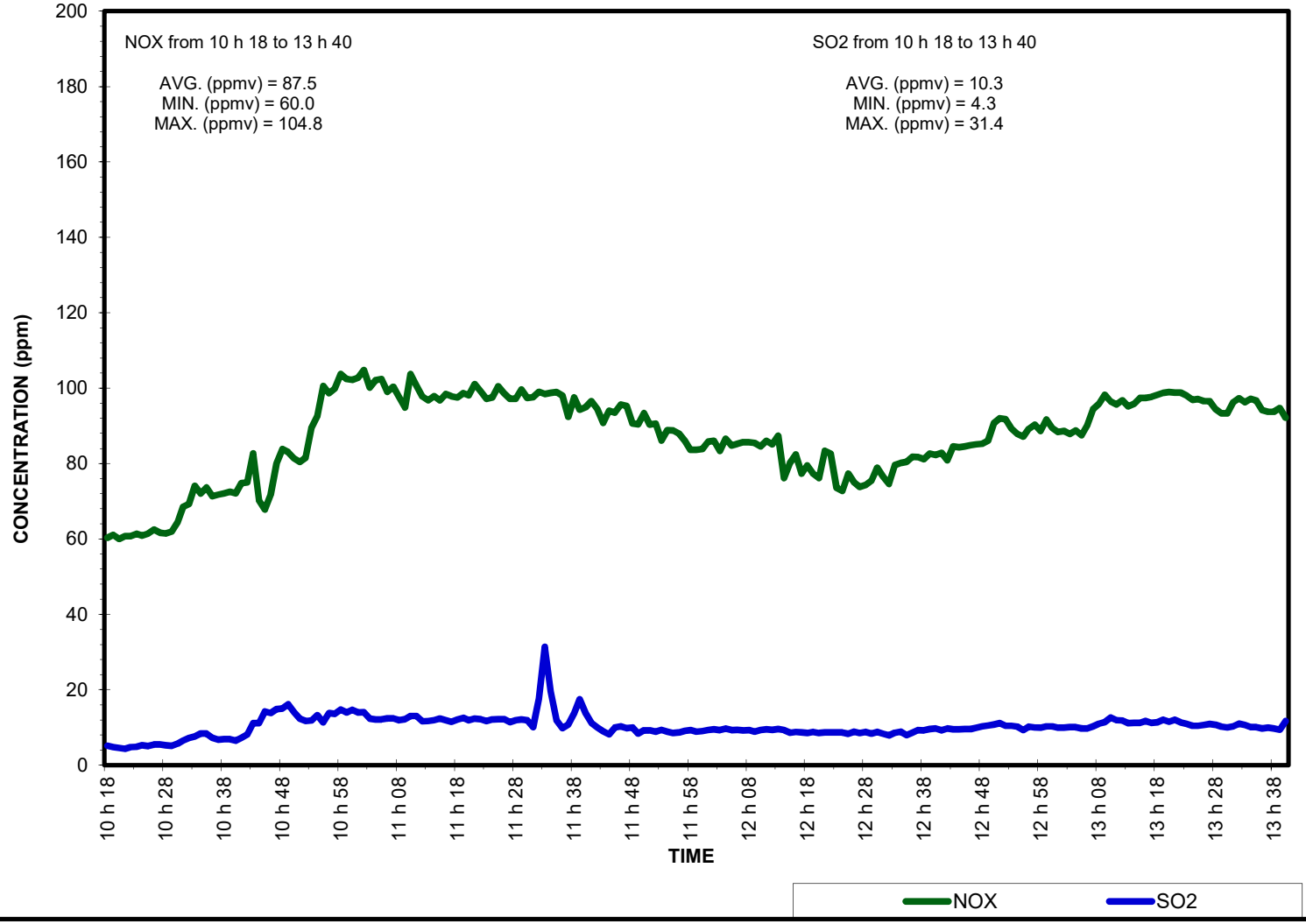
APPENDIX 5
CEMS GRAPHS

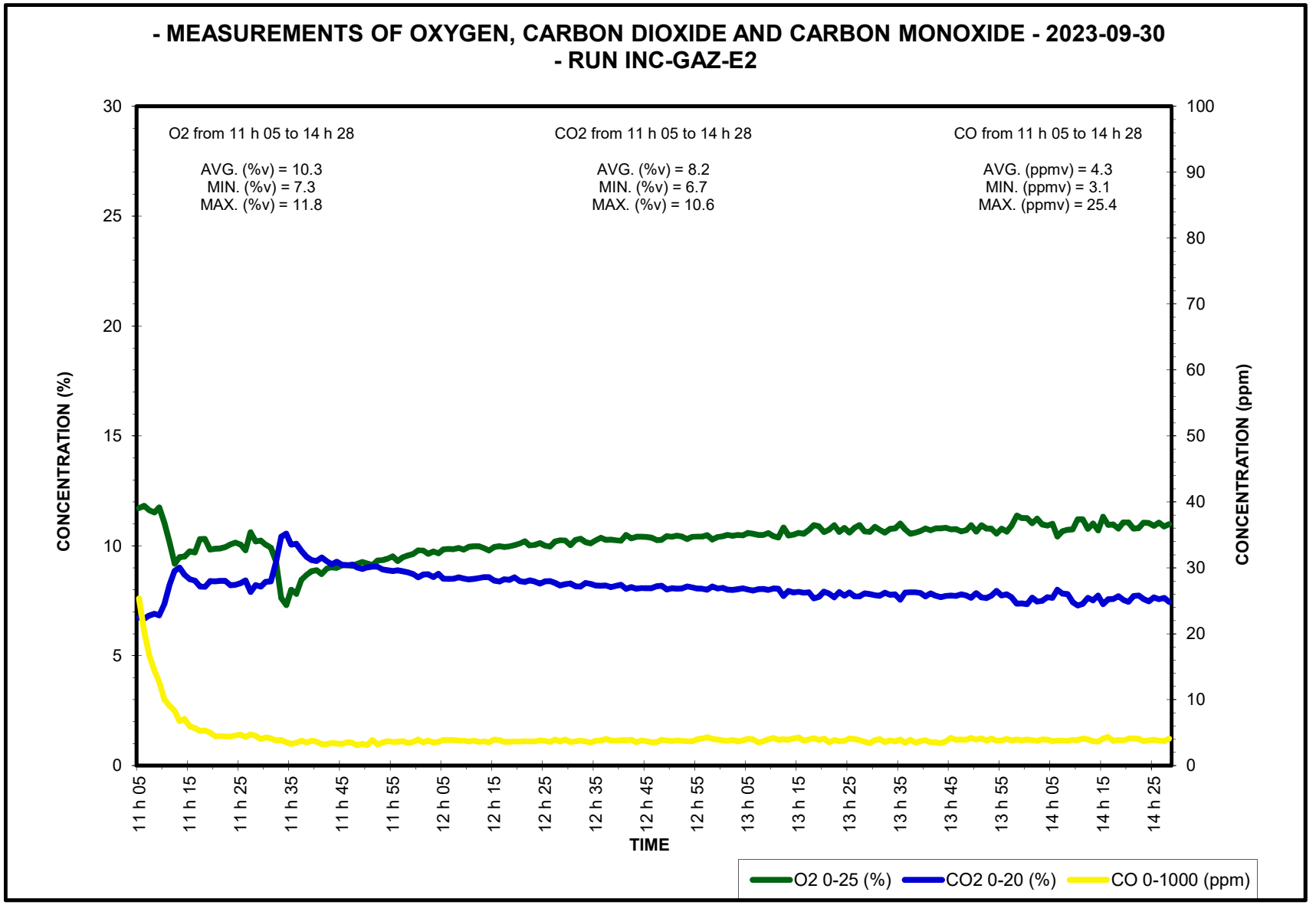
AGNICO EAGLE

CONSULAIR
AIR & ENVIRONMENT GLOBAL MANAGEMENT

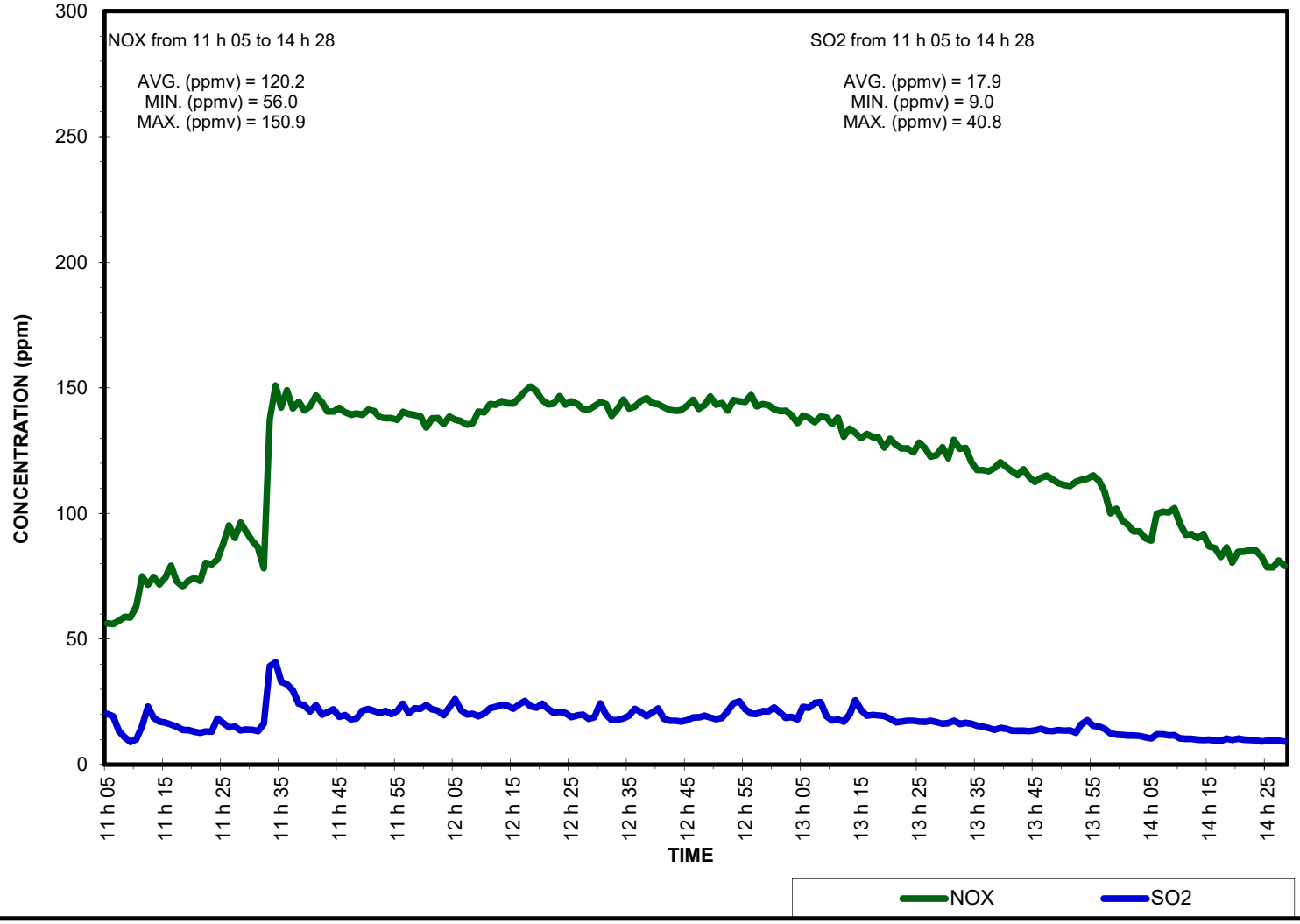

- MEASUREMENTS OF OXYGEN, CARBON DIOXIDE AND CARBON MONOXIDE - 2023-09-29
- RUN INC-GAZ-E1
O2 from 10 h 18 to 13 h 40
AVG. (%v) = 9.9
MIN. (%v) = 8.2
MAX. (%v) = 11.3
CO2 from 10 h 18 to 13 h 40
AVG. (%v) = 8.3
MIN. (%v) = 7.1
MAX. (%v) = 9.7
CO from 10 h 18 to 13 h 40
AVG. (ppmv) = 4.6
MIN. (ppmv) = 3.5
MAX. (ppmv) = 26.3
CONCENTRATION (%)
CONCENTRATION (ppm)
TIME
O2 0-25 (%)
CO2 0-20 (%)
CO 0-1000 (ppm)

- MEASUREMENTS OF NITROGEN OXYDES AND SULFUR DIOXIDE - 2023-09-29 - RUN INC-GAZ-E1

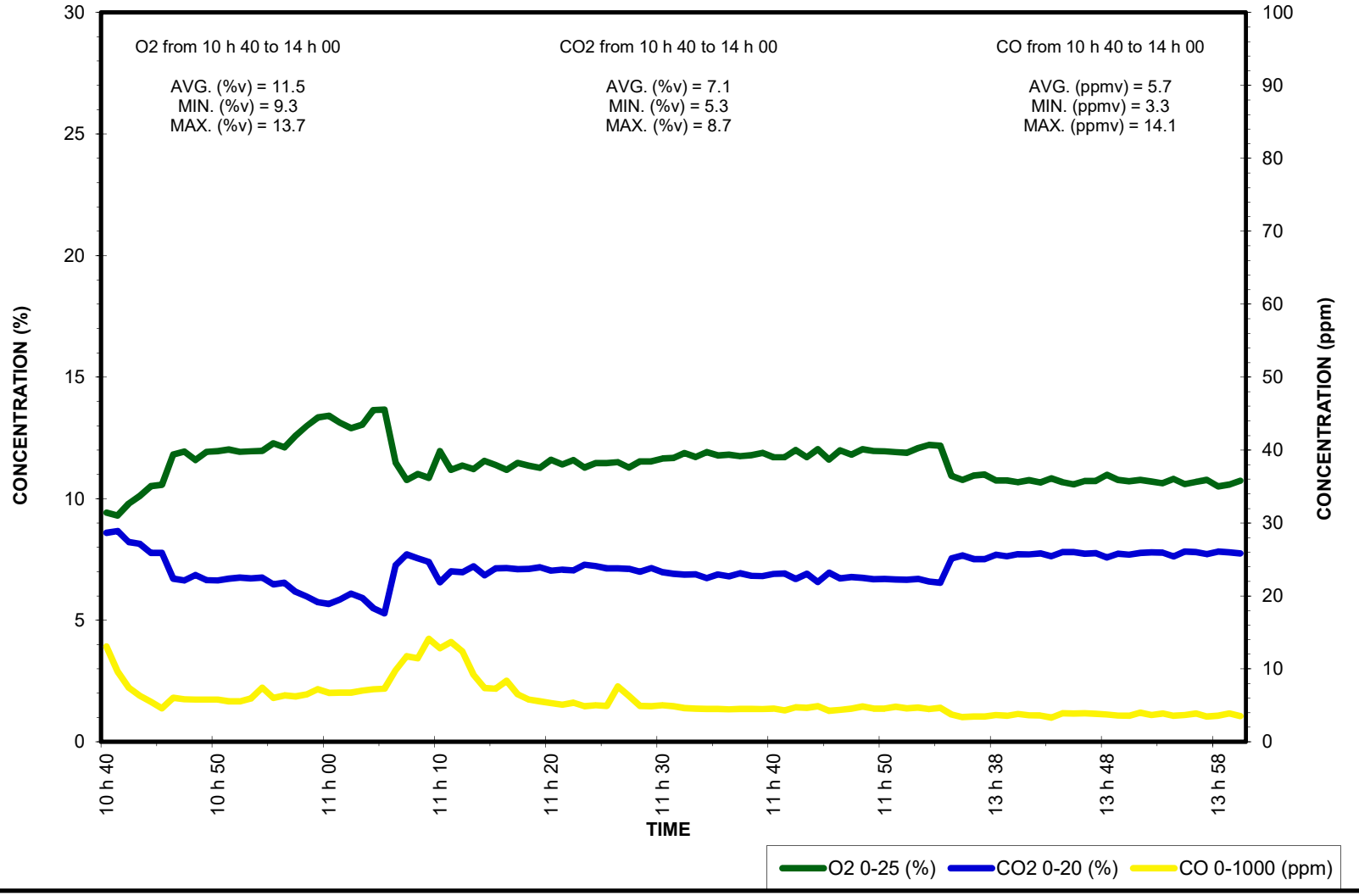



- MEASUREMENTS OF OXYGEN, CARBON DIOXIDE AND CARBON MONOXIDE - 2023-09-30
- RUN INC-GAZ-E2
O2 from 11 h 05 to 14 h 28
AVG. (%v) = 10.3
MIN. (%v) = 7.3
MAX. (%v) = 11.8
CO2 from 11 h 05 to 14 h 28
AVG. (%v) = 8.2
MIN. (%v) = 6.7
MAX. (%v) = 10.6
CO from 11 h 05 to 14 h 28
AVG. (ppmv) = 4.3
MIN. (ppmv) = 3.1
MAX. (ppmv) = 25.4
CONCENTRATION (%)
CONCENTRATION (ppm)
TIME
O2 0-25 (%)
CO2 0-20 (%)
CO 0-1000 (ppm)

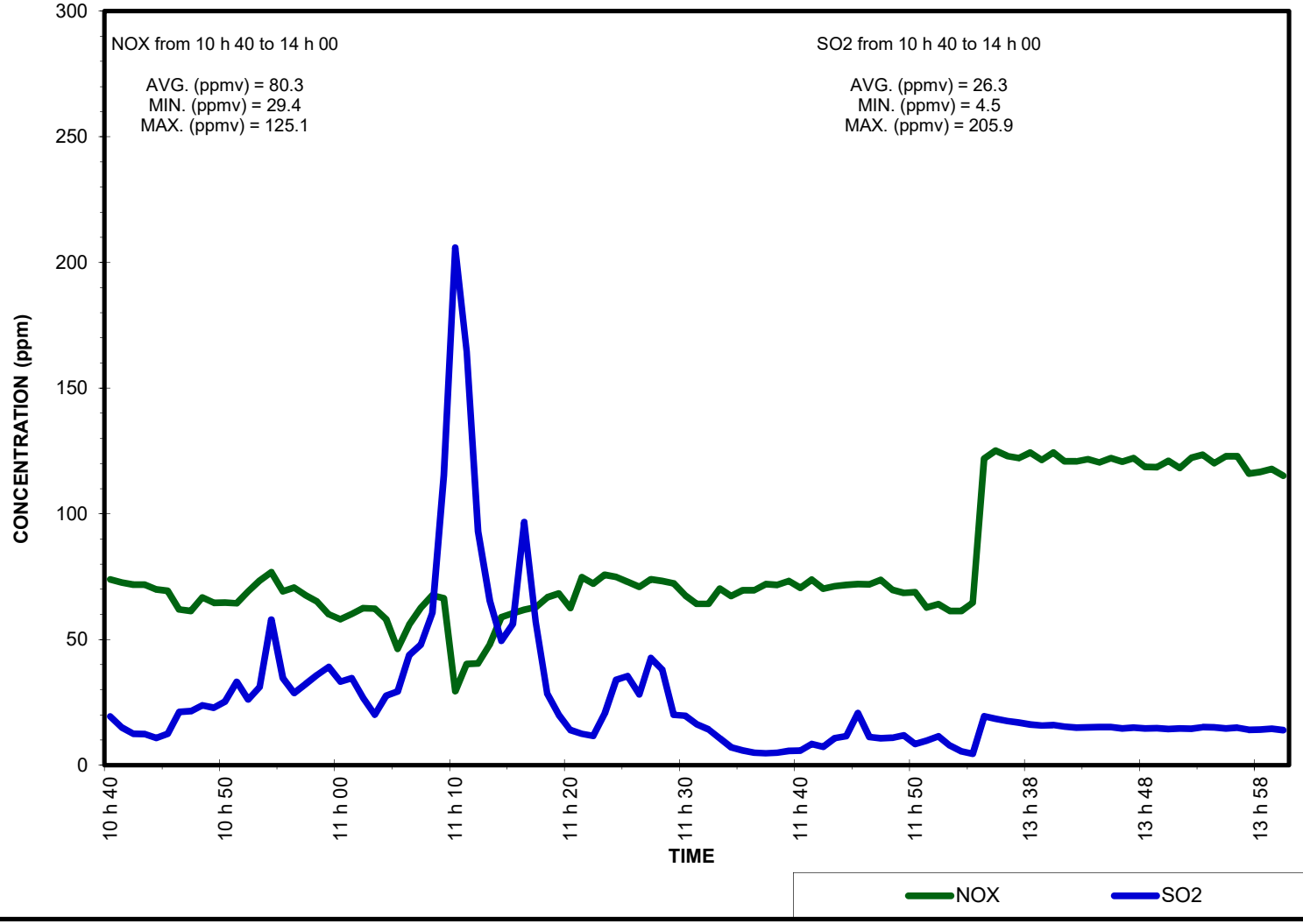
- MEASUREMENTS OF NITROGEN OXYDES AND SULFUR DIOXIDE - 2023-09-30 - RUN INC-GAZ-E2



- MEASUREMENTS OF OXYGEN, CARBON DIOXIDE AND CARBON MONOXIDE - 2023-10-01
- RUN INC-GAZ-E3



- MEASUREMENTS OF NITROGEN OXYDES AND SULFUR DIOXIDE - 2023-10-01 - RUN INC-GAZ-E3



APPENDIX 6
QA/QC DATA

AGNICO EAGLE

CONSULAIR
AIR & ENVIRONMENT GLOBAL MANAGEMENT

QA/QC – Project 23-7693 – INCINERATOR – AGNICO EAGLE MINES LTD. – Metals and particles

INFORMATION ON SAMPLING SITE – EPS 1/RM/8 METHOD A				
RUN NUMBER	INC-Me-E1	INC-Me-E2	INC-Me-E3	**CRITERIA**
CYCLONIC FLOW ANGLE (°)		0		ÿ 15°
REVERSE FLOW		NO		NO
STACK DIAMETER (m)		0.851		ÿ 0.3
A.D.		2.0		ÿ 0.5
comics		5.0		ÿ2.0
NUMBER OF SAMPLING POINTS	40	40	40	ÿ20
GAS VELOCITY (m/s)	8.4	8.8	8.2	3.0 ÿ V ÿ 30
PARTICULATES SAMPLING CRITERIA – EPS 1/RM/8 METHOD E				
SAMPLING DURATION (min)	200	200	200	ÿ60
SAMPLING VOLUME (m3R)	3.16	3.19	2.94	ÿ1.5
AVERAGE ISOKINETISM (%)	103	101	101	90 ÿ ISO ÿ 110
ISOKINETIC CRITERIA (% points)	100%	100%	100%	ÿ90
PROBE TEMPERATURE (°F)	OK	OK	OK	223 ÿ TP ÿ 273
TEMPERATURE FILTER (°F)	OK	OK	OK	223 ÿ TF ÿ 273
EXIT TEMPERATURE (°F)	OK	OK	OK	32 ÿ All ÿ 68
4% Davg (ft3 /min)	0.022	0.022	0.020	
LEAK TEST BEFORE AT -15 inHg (ft3 /min)	< 0.02	< 0.02	< 0.02	ÿ 0.02 or 4% Davg
LEAK TEST AFTER (ft3 /min)	< 0.02	< 0.02	< 0.02	ÿ 0.02 or 4% Davg
ACETONE RESIDUAL (%)		0.0654%		ÿ 0.001%
SAMPLING CRITERIA OF METALS – USEPA METHOD 29				
MAX PUMPING RATE (ft3 /min)	0.76	0.61	0.55	ÿ 1.0
SAMPLING VOLUME (m3R)	3.2	3.2	2.9	ÿ2.8
SAMPLING DURATION (min)	200	200	200	ÿ120
METAL RESIDUE IN H2O (ng/mL)		OK		ÿ 1.0
METAL RESIDUE IN HNO3 /H2O2 (ng/mL)		OK		ÿ 2.0
METAL RESIDUE IN KMnO4 (ng/mL)		OK		ÿ 2.0
METAL RESIDUE IN HNO3 0.1N (ng/mL)		OK		ÿ 2.0
METAL RESIDUE IN HCl 8N (ng/mL)		OK		ÿ 2.0
EQUIPMENT INFORMATION				
SAMPLING CONSOLE NUMBER	1	1	1	
DRY GAS METER COEFFICIENT Kc	1.020	1.020	1.020	0.95 < KC < 1.05
ORIFICE COEFFICIENT Ko	0.993	0.993	0.993	
GAS METER COMPENSATED TO 60°F	YES	YES	YES	
ÿh@	1.022	1.022	1.022	
ID PITOT	03-06 Q-500	03-06 Q-500	03-06 Q-500	
PITOT TUBE COEFFICIENT	0.739	0.739	0.739	
NOZZLE REFERENCE No.	3Q-504	3Q-504	3Q-504	
NOZZLE DIAMETER (in)	0.5023	0.5023	0.5023	

QA/QC – Project 23-7693 – AGNICO EAGLE MINES LTD. – INCINERATOR – SVOC

INFORMATION ON SAMPLING SITE – EPS 1/RM/8 METHOD A				
RUN NUMBER	INC-COSV-E1	INC-COSV-E2	INC-COSV-E3	**CRITERIA**
CYCLONIC FLOW ANGLE (°)		0		ÿ 15°
REVERSE FLOW		NO		NO
STACK DIAMETER (m)		0.851		ÿ 0.3
A.D.		2.0		ÿ 0.5
comics		5.0		ÿ2.0
NUMBER OF SAMPLING POINTS	40	40	40	ÿ20
GAS VELOCITY (m/s)	7.9	9.5	9.0	3.0 ÿ V ÿ 30
GENERAL SAMPLING CRITERIA – EPS 1/RM/8 METHOD E				
SAMPLING DURATION (min)	200	200	200	ÿ60
SAMPLING VOLUME (m3R)	3.02	3.50	3.28	ÿ1.5
AVERAGE ISOKINETISM (%)	102	100	100	90 ÿ ISO ÿ 110
ISOKINETIC CRITERIA (% points)	100%	100%	100%	ÿ90
PROBE TEMPERATURE (°F)	OK	OK	OK	223 ÿ TP ÿ 273
TEMPERATURE FILTER (°F)	OK	OK	OK	223 ÿ TF ÿ 273
EXIT TEMPERATURE (°F)	OK	OK	OK	32 ÿ All ÿ 68
4% Davg (ft3 /min)	0.021	0.024	0.022	
LEAK TEST BEFORE AT -15 inHg (ft3 /min)	< 0.02	< 0.02	< 0.02	ÿ 0.02 or 4% Davg
LEAK TEST AFTER (ft3 /min)	< 0.02	< 0.02	< 0.02	ÿ 0.02 or 4% Davg
SVOC SAMPLING CRITERIA – SPE 1/RM/2				
TRAP TEMPERATURE	OK	OK	OK	32 ÿ Trap ÿ 68
MAXIMUM PUMPING RATE (ft3 /min)	0.606	0.738	0.616	ÿ 1.0
SAMPLING VOLUME (m3R)	3.019	3.505	3,277	ÿ3.0
SAMLING DURATION (min)	200,000	200,000	200,000	ÿ180
HEXANE/ACETONE BLANK	OK	OK	OK	OK
H2O HPLC BLANK	OK	OK	OK	OK
RESIN BLANK	OK	OK	OK	OK
FIELD BLANK	OK	OK	OK	OK
EQUIPMENT INFORMATION				
SAMPLING CONSOLE NUMBER	8	8	8	
DRY GAS METER COEFFICIENT Kc	0.994	0.994	0.994	0.95 < KC < 1.05
ORIFICE COEFFICIENT Ko	1,027	1,027	1,027	
GAS METER COMPENSATED TO 60°F	YES	YES	YES	
ÿh@	0.938	0.938	0.938	
ID PITOT	03-08 Q-500	03-08 Q-500	03-08 Q-500	
PITOT TUBE COEFFICIENT	0.755	0.755	0.755	
NOZZLE REFERENCE No.	3Q-507	3Q-507	3Q-507	
NOZZLE DIAMETER (in)	0.5093	0.5093	0.5093	

SUMMARY OF CALIBRATION AND VERIFICATION OF DIRECT READING DEVICES

Gas	Ladder	Validation of data acquisition	Check. to the analyzer (calibration error)	Initial Probe Check - Systematic error	Final Probe Verification - Systematic error	Device drift
		TOLERANCE +/- 0.5%	TOLERANCE +/- 2%	TOLERANCE +/- 5%	TOLERANCE +/- 5%	TOLERANCE +/- 3%
O2	Low (zero)	0.00	0.13	0.27	0.93	0.67
	Average	0.00	0.18	1.02	1.20	0.18
	High	0.00	0.00	N / A	N / A	N / A
CO2	Low (zero)	0.00	0.00	0.00	0.28	0.28
	Average	0.00	1.40	1.28	0.78	0.50
	High	0.00	0.00	N / A	N / A	N / A
CO	Low (zero)	0.00	0.00	0.00	0.00	0.00
	Average	0.00	1.83	0.75	0.75	0.00
	High	0.00	0.05	N / A	N / A	N / A
SO2	Low (zero)	0.00	0.32	0.32	0.00	0.32
	Average	0.00	0.14	1.41	1.41	0.00
	High	0.00	0.61	NA	NA	N / A
NOX	Low (zero)	0.00	0.11	0.11	0.00	0.11
	Average	0.00	1.45	0.89	0.33	0.55
	High	0.00	1.25	NA	NA	N / A
OTHER	Low (zero)			N / A	N / A	N / A
	Average			N / A	N / A	N / A
	High					

Gas	Ladder	Validation of data acquisition	Check. to the analyzer (calibration error)	Initial Probe Check - Performance of	Final Probe Verification - Performance of	Device drift
		TOLERANCE +/- 0.5%	TOLERANCE +/- 5%	TOLERANCE +/- 20%	TOLERANCE +/- 20%	TOLERANCE +/- 3%
SRT	Low (zero)			N / A	N / A	N / A
	Average					
	High					N / A

Concentrations of primary standard gases

Scale O2	(%) CO2 (%)		CO (ppm)	SO2 (ppm)	NOX (ppm)	TRS (ppm)	Other
Average 12.59	10.08	High 22.51	487.9 499.3 529.1 935.5 924.6 903.3			15.0	500.0
17.91						30.0	900.0

Calibration Error Verification Concentrations

Scale O2	(%) CO2 (%)		CO (ppm)	SO2 (ppm)	NOX (ppm)	SRT (ppm)	Other
Zero 0.00	0.00	Average 12.59	0.0	0.0 0.0 0.0 499.3 529.1 15.0 924.6 903.3 300			0.0
10.08	High 22.51	17.91	487.9				500.0
			935.5				900.0

SO2 Systematic Error Check Concentrations (ppm)

Scale O2	(%) CO2 (%)		CO (ppm)		NOX (ppm)	TRS (ppm)	Other
Average 12.59	10.08		487.9	499.3 529.1 15.0			500.0

System response time	Number of points used (stratification)
	Use 12 points according to SPE1RM8 method

SUMMARY OF CALIBRATION AND VERIFICATION OF DIRECT READING DEVICES

Gas	Ladder	Validation of data acquisition	Check. to the analyzer (calibration error)	Initial Verification to the Probe - Error systematic	Final Verification at the Probe - Error systematic	Derived from the device
		TOLERANCE +/- 0.5%	TOLERANCE +/- 2%	TOLERANCE +/- 5%	TOLERANCE +/- 5%	TOLERANCE +/- 3%
O2	Low (zero)	0.00	0.13	0.13	0.09	0.04
	Average	0.00	0.18	0.93	1.47	0.53
	High	0.00	0.00	NA	N / A	N / A
CO2	Low (zero)	0.00	0.00	0.17	0.11	0.06
	Average	0.00	1.40	0.78	0.56	0.22
	High	0.00	0.00	N / A	N / A	N / A
CO	Low (zero)	0.00	0.00	0.00	0.00	0.00
	Average	0.00	1.83	1.39	0.86	0.53
	High	0.00	0.05	N / A	N / A	N / A
SO2	Low (zero)	0.00	0.32	0.32	0.00	0.32
	Average	0.00	0.14	0.87	0.11	0.76
	High	0.00	0.61	NA	NA	N / A
NOX	Low (zero)	0.00	0.11	0.11	0.00	0.11
	Average	0.00	1.45	0.11	0.11	0.00
	High	0.00	1.25	NA	NA	N / A
OTHER	Low (zero)			N / A	N / A	N / A
	Average					
	High			N / A	N / A	N / A

Gas	Ladder	Validation of data acquisition	Check. to the analyzer (calibration error)	Initial Verification at the Sunda - Performance of	Final Verification at the probe - Performance of	Derived from the device
		TOLERANCE +/- 0.5%	TOLERANCE +/- 5%	TOLERANCE +/- 20%	TOLERANCE +/- 20%	TOLERANCE +/- 3%
SRT	Low (zero)			N / A	N / A	N / A
	Average					
	High					N / A

Concentrations of primary standard gases

Scale O2 (%)	CO2 (%)		CO (ppm)	SO2 (ppm)	NOX (ppm)	TRS (ppm)	Other
Average 12.59	10.08	High 22.51	487.9 499.3 529.1 935.5 924.6 903.3			15.0	500.0
17.91						30.0	900.0

Calibration Error Verification Concentrations

Scale O2 (%)	CO2 (%)		CO (ppm)	SO2 (ppm)	NOX (ppm)	SRT (ppm)	Other
Zero	0.00	0.00	0.0	0.0 0.0 0.0 499.3 529.1 15.0 924.6 903.3 30.0			0.0
Average 12.59		10.08	487.9				500.0
High 22.51		17.91	935.5				900.0

SO2 Systematic Error Check Concentrations (ppm)

Scale O2 (%)	CO2 (%)		CO (ppm)		NOX (ppm)	TRS (ppm)	Other
Average 12.59		10.08	487.9	499.3 529.1 15.0			500.0

System response time	Number of points used (stratification)
	Use 12 points according to SPE1RM8 method

SUMMARY OF CALIBRATION AND VERIFICATION OF DIRECT READING DEVICES

Gas	Ladder	Validation of data acquisition	Check. to the analyzer (calibration error)	Initial Verification to the Probe - Error systematic	Final Verification at the Probe - Error systematic	Derived from the device
		TOLERANCE +/- 0.5%	TOLERANCE +/- 2%	TOLERANCE +/- 5%	TOLERANCE +/- 5%	TOLERANCE +/- 3%
O2	Low (zero)	0.00	0.13	0.04	0.93	0.89
	Average	0.00	0.18	0.84	1.47	0.62
	High	0.00	0.00	NA	N / A	N / A
CO2	Low (zero)	0.00	0.00	0.06	0.28	0.22
	Average	0.00	1.40	0.50	0.11	0.39
	High	0.00	0.00	N / A	N / A	N / A
CO	Low (zero)	0.00	0.00	0.00	0.11	0.11
	Average	0.00	1.83	0.53	0.96	0.43
	High	0.00	0.05	N / A	N / A	N / A
SO2	Low (zero)	0.00	0.32	0.32	0.22	0.11
	Average	0.00	0.14	0.32	0.00	0.32
	High	0.00	0.61	NA	NA	N / A
NOX	Low (zero)	0.00	0.11	0.11	0.00	0.11
	Average	0.00	1.45	0.00	0.33	0.33
	High	0.00	1.25	NA	NA	N / A
OTHER	Low (zero)			N / A	N / A	N / A
	Average					
	High			N / A	N / A	N / A

Gas	Ladder	Validation of data acquisition	Check. to the analyzer (calibration error)	Initial Verification at the Sunda - Performance of	Final Verification at the probe - Performance of	Derived from the device
		TOLERANCE +/- 0.5%	TOLERANCE +/- 5%	TOLERANCE +/- 20%	TOLERANCE +/- 20%	TOLERANCE +/- 3%
SRT	Low (zero)			N / A	N / A	N / A
	Average					
	High					N / A

Concentrations of primary standard gases

Scale O2 (%)	CO2 (%)		CO (ppm)	SO2 (ppm)	NOX (ppm)	TRS (ppm)	Other
Average 12.59	10.08	High 22.51	487.9 499.3 529.1	935.5 924.6 903.3		15.0	500.0
17.91						30.0	900.0

Calibration Error Verification Concentrations

Scale O2 (%)	CO2 (%)		CO (ppm)	SO2 (ppm)	NOX (ppm)	SRT (ppm)	Other
Zero	0.00	0.00	0.0	0.0 0.0 0.0 499.3	529.1 15.0 924.6 903.3 30.0		0.0
Average 12.59		10.08	487.9				500.0
High 22.51		17.91	935.5				900.0

SO2 Systematic Error Check Concentrations (ppm)

Scale O2 (%)	CO2 (%)		CO (ppm)		NOX (ppm)	TRS (ppm)	Other
Average 12.59		10.08	487.9	499.3 529.1 15.0			500.0

System response time	Number of points used (stratification)
	Use 12 points according to SPE1RM8 method

SUMMARY OF EQUIPMENT CRITERIA	
Verification of the standard gas dilution system <2% Analyzer resolution <2% of span	*
Data acquisition system resolution <0.5% of span	
Frequency of data acquisition Average 1 minute	
Sampling probe material Stainless steel	
Calibration valve material Stainless steel	
Sampling pump diaphragm material Teflon	
Pneumatic system material Teflon	
Pre-filter material Stainless steel	
Heated pump filter material Microfiber glass	
Heating cord temperature 250°F	
Heat pump temperature 250°F	
Cooler temperature 39°F	
Heating probe temperature 356°F	
System purge time 2x response time	
Stability of flow and pressure <10% drift *If there is a standard gas dilution system, this criterion must be respected before starting sampling.	**

**See V_End_probe tab for validation of this point.