

Appendix E-1

2019 Stack Testing Report



PROFESSIONAL SERVICES

ATMOSPHERIC EMISSION REPORT STACK SAMPLING PROGRAM

DOMESTIC WASTE INCINERATOR



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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 due to the particular nature of an emission point (for example, if proper installation of sampling equipment is not possible, gas stream temperature is too high, or gas velocity is too low). In such cases, prior approval from the Ministry or the proper authority concerned is required.

A deviation can also occur during sampling (for example, collection of a gas volume 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 atmosphere.

A sampling campaign may involve a number of emission points.

Environmental compliance verification

Compliance verification process of a regulatory requirement or a requirement included in an authorization under *Québec's Environmental Quality Act*.

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 émissions atmosphériques en provenance de sources fixes (Guidelines for Sampling of Atmospheric Emissions from Stationary Sources)*, DR-12-AIR-01, available on the CEAEQ website.

Reference conditions "R"

Reference conditions specified in relevant legislation.

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 an appropriate sampling site.

Sampler

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 at which 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

ACFM: Actual Cubic Feet per Minute

CEMS: Continuous Emission Monitoring System (the client's fixed and permanent system)

CEMIS: Continuous Emission Monitoring Instrumental System (portable and temporary system of a sampling firm)

CO: Carbon Monoxide

CO₂: Carbon Dioxide

EC: Environment Canada (before 2016)

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

O₂: Oxygen

PM: Particulate matter

PCDD/F: Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans

QA: Quality Assurance

QA/QC: Quality Assurance and Quality Control

QC: Quality Control

RCFM: Reference cubic feet per minute

SO₂: Sulfur dioxide

SVOC: Semi-Volatile Organic Compounds

USEPA or US EPA: United States Environmental Protection Agency

ΔP: Differential pressure of stack gases

ΔH: Drop in pressure at orifice meter

%vs: Volumetric percentage on a dry basis

SUMMARY

Consulair was mandated by Agnico Eagle Mines, Meliadine Division to perform an atmospheric emission characterisation program at the outlet of an incinerator located at their plant 25km north of Rankin Inlet, Nunavut as part of an environmental compliance program. The campaign was carried out from December 15th to December 19th 2019.

The objectives of this atmospheric emission sampling program were as follows:

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

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)	15.3
CONCENTRATION (mg/m ³ R at 11% O ₂)	22.0
EMISSION (kg/h)	0.0832
TOTAL METALS	
CONCENTRATION (µg/m ³ R)	9 340
CONCENTRATION (µg/m ³ R at 11% O ₂)	13 500
EMISSION (g/h)	50.6
MERCURY	
CONCENTRATION (µg/m ³ R)	0.262
CONCENTRATION (µg/m ³ R at 11% O ₂)	0.376
STANDARD (µg/m ³ R at 11% O ₂)	20
EMISSION (g/h)	0.00144
HYDROGEN CHLORIDE	
CONCENTRATION (µg/m ³ R)	58.2
EMISSION (kg/h)	0.326
SVOC (PCDD/F)	
CONCENTRATION (ng TEQ/m ³ R)	0.0398
CONCENTRATION (ng TEQ/m ³ R at 11% O ₂)	0.0551
STANDARD (ng TEQ/m ³ R at 11% O ₂)	0.08
EMISSION (µg/h) TEQ	0.243

For this program, the applicable standards for dioxins and furans (PCDD/F) as well as for mercury (Hg) are met.

STACK GAS PROPERTIES (SUMMARY)

STACK GAS PROPERTIES	
TEMPERATURE (°C)	713.6
MOISTURE CONTENT (% v/v)	6.3
VELOCITY (m/s)	10.0
VOLUMETRIC FLOW RATE (m³/h)	19 262
VOLUMETRIC FLOW RATE (m³R/h)	5 445
O ₂ (% vs)	14.0
CO ₂ (% vs)	5.2
CO (ppmv)	1.5

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) of the Government of Canada 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, Meliadine Division to perform an atmospheric emission characterisation program at the outlet of an incinerator located at their plant 25km north of Rankin Inlet, Nunavut as part of an environmental compliance program. The campaign was carried out from December 15th to December 19th 2019.

1.1 PROGRAM OBJECTIVES

The objectives of this atmospheric emission sampling program were as follows:

- Evaluate the physical characteristics of the stack's gas flow;
- Evaluate the concentration and the emission rate of the main contaminants 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 sources (processes) and the contaminants outlined in table 1-1.

TABLE 1-1 – TARGETED SOURCES AND PARAMETERS

EMISSION POINT	Me*	PM	HCl	SVOC**	O ₂	CO ₂	CO	NO _x	SO ₂
DOMESTIC WASTE INCINERATOR	3	3	3	3	3	3	3	3	3

*Targeted metals: 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

**Targeted SVOCs: 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 compliance testing. The Consulair team implicated in the project is presented in table 2-2. The laboratories used as subcontractors are defined in table 2-3.

TABLE 2-1 – CLIENT CONTACT INFORMATION

COMPANY & ADRESS	CONTACT	ROLE
Agnico Eagle Mines Limited Meliadine Division Rankin Inlet, Nunavut, Canada X0C 0G0	Dan Gorton Environmental coordinator Tel: 819-759-3555, ext. 4603996 dan.gorton@agnicoeagle.com	Program coordinator

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

PERSONNEL	TITLE	EXPERIENCE	ROLE
Louis Lawson	Project Manager	36 years	Project manager
Jean-François Guay	Health and Safety Manager	3 years	On-site sampling Data compilation
Eduardo Vargas	Technician	2 years	On-site sampling
Catherine Chasse	Technician	2 years	Data compilation Report drafting
Samuel Bastien	Project Manager	8 years	Report validation

TABLE 2-3 – LABORATORIES

LABORATORY	ANALYSIS	ACCREDITATION DOMAIN DR-12-LLA
Consulair	P & Hydrogen chloride	400
Bureau Veritas	Me	404/406
Agat	PCDD/F	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 process. The following emission standards apply to existing, new or expanding solid waste incinerators operating in Nunavut and have been adopted by the Canadian Council of Ministers of the Environment (CCME) Canada - Wide Standards for Dioxins and Furans and Mercury Emissions. The document presented two criteria for air emission which are applicable in this current sampling program. A standard for Dioxins and Furans is stated at 80 pg I-TEQ/m³R and another standard for mercury is stated at 20 µg/Rm³. The R conditions are stated at 101.3 kPa and 25°C. Both standards are corrected to 11% O₂.

4 **SAMPLING**

4.1 **PROCESS OPERATION**

An Agnico Eagle Mines representative was responsible for monitoring operating conditions to ensure representative sampling conditions. To perform this sampling program under accurate conditions, strict communication was maintained with process operators during sampling procedures.

Process operating conditions were Agnico Eagle Mines’ 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 presents the two sampling site selection criteria; length of the stack upstream (A) and downstream (B) from flow disturbances. The number of sampling points was chosen using these two lengths according to the Environment and Climate Change Canada EPS 1/RM/8 Method A titled “Determination of Sampling Site and Traverse Points”.

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

SOURCE	STACK DIAMETER (m)	DIAMETER NUMBER)		NUMBER OF SAMPLING POINTS	
		A _D	B _D	Number of port used and sampling points	Total
Incinerator outlet	0.826	5.0	2.0	2/18	36

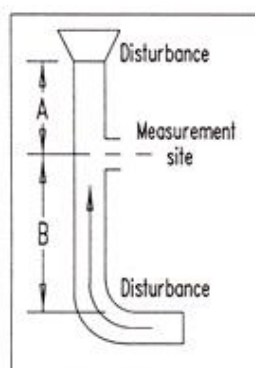


FIGURE 4-1 – SAMPLING SITE PLACEMENT CRITERIA

4.3 SAMPLING METHODS

The sampling methods used during this characterisation program are approved and recommended by well-known organisations, such as Environment Canada (EC) and 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	METHODS	SAMPLING DURATION (min)
Manual sampling methods		
Temperature	Thermometer or thermocouple	With isokinetic value
Gas flow	SPE 1/RM/8, method B – Environment Canada	With isokinetic value
Moisture content	SPE 1/RM/8, method D – Environment Canada	With isokinetic value
Particulate matter (PM)	SPE 1/RM/8, method E – Environment Canada	120 / 170 / 180
HCl	SPE 1/RM/1 – Environment Canada	
Metals	USEPA, CFR 40, Part 60, Method 29	
SVOC (PCDD/F)	SPE 1/RM/2 – Environment Canada	240 / 150 / 180
Instrumental sampling method		
O ₂	USEPA, CFR 40, Part 60, Method 3A	60
CO ₂	USEPA, CFR 40, Part 60, Method 3A	60
CO	USEPA, CFR 40, Part 60, Method 10	60
NO _x	USEPA, CFR 40, Part 60, Method 7E	60
SO ₂	USEPA, CFR 40, Part 60, Method 6C	60

The limits and values obtained for the quality assurance and quality control criteria (QA/QC) of the methods used are presented in section 5 of this report. This section also presents the calibration constants of the equipment used during this sampling program.

The distribution of parameters withing sampling trains is presented in the following table.

TABLE 4-3 – DISTRIBUTION OF PARAMETERS

SAMPLING TRAIN	PARAMETERS
Metals & Particulate matter & HCl	PM & Metals & HCl
SVOC	PCDD/F

4.3.1 Temperature, moisture content and flowrate

Gas temperature, flowrate, velocity and moisture content was measured at the sampling site according to "Reference methods for source testing: measurement of releases of particulate from stationary sources". Methods B and D, Environment Canada, December 1993, EPS 1/RM/8.

4.3.2 Particulate matter, metals and hydrogen chloride

The reference sampling method used to determine particulate emissions was method EPS 1/RM/8 titled "Reference Method for Measuring Releases of Particulate from Stationary Sources" published by Environment and Climate Change Canada. 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.

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.

A description of the sampling train equipment necessary for the analysis of these parameters is presented in table 4-4.

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

SAMPLING TRAIN – EPS 1/RM/8 & USEPA METHOD 29	
NOZZLE	Glass
PROBE	Glass, heated at $120 \pm 14^{\circ}\text{C}$
FILTER	Quartz fiber 86 mm, heated at $120 \pm 14^{\circ}\text{C}$
FILTER HOLDER	Glass, heated at $120 \pm 14^{\circ}\text{C}$
FILTER SUPPORT	Teflon, heated at $120 \pm 14^{\circ}\text{C}$
1 st IMPINGER	Modified Greenburg-Smith; 100mL H ₂ O
2 nd IMPINGER	Modified Greenburg-Smith; 5% HNO ₃ / 10%H ₂ O ₂ 100 mL, in an ice bath
3 rd IMPINGER	Greenburg-Smith; 5% HNO ₃ / 10%H ₂ O ₂ 100 mL, in an ice bath
4 th IMPINGER	Modified Greenburg-Smith; empty, in an ice bath
5 th IMPINGER	Modified Greenburg-Smith; 4 % KMnO ₄ / 10% H ₂ SO ₄ 100 mL, in an ice bath
6 th IMPINGER	Modified Greenburg-Smith; 4 % KMnO ₄ / 10% H ₂ SO ₄ 100 mL, in an ice bath
SILICA GEL	Container with saturation indicator

4.3.3 Semi-volatile Organic Compounds

The emission rate for 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 was Environment and Climate Change Canada method EPS 1/RM/2 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 following compounds: polychlorinated dibenzo-para-dioxins (PCDDs), polychlorinated dibenzofurans (PCDFs), polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAHs), chlorobenzenes (CB) and phenolic compounds (PC). In the present case, only PCDDs and PCDFs were desired.

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 m³R. Table 4-5 presents the various equipment of an SVOC sampling train.

TABLE 4-5 – 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
1 st IMPINGER	Greenburg-Smith; Ethylene glycol 100 mL, in an ice bath
2 nd IMPINGER	Modified Greenburg-Smith; empty, in an ice bath
SILICA GEL	Container with saturation indicator

4.3.4 Gaseous Parameters (O₂, CO₂, CO, NO_x & SO₂)

The following gaseous parameters were measured using continuous instrumental analysers: oxygen (O₂), carbon monoxide (CO), carbon dioxide (CO₂), nitrogen oxides (NO_x) and sulfur dioxide (SO₂). Data was recorded every minute for the duration of each test.

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 wither 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 4-6.

TABLE 4-6 – CHARACTERISTICS OF THE ANALYZERS

APPARATUS	O ₂	CO ₂	CO	SO ₂	NO _x
Method	USEPA 3A	USEPA 3A	USEPA 10	USEPA 6C	USEPA 7E
Brand	Horiba	Horiba	Horiba	Horiba	Horiba
Model	PG250	PG 250	PG 250	PG 250	PG250
Detection	Galvanic Cell	Infrared	Infrared	Infrared	Chemiluminescence
Physical scale	0 – 25 % v/v	0 – 30 % v/v	0 – 100 ppm	0 – 500 ppm	0 – 1000 ppm
Zero Gas	Nitrogen				

4.4 SCHEDULE

The following table presents the sampling schedule at the domestic was incinerator.

TABLE 4-7 – SAMPLING SCHEDULE

EMISSION POINT	PARAMETER	RUN CODE	DATE	START TIME	END TIME
Incinerator	SVOC	INC-COSV-E1	2019-12-15	16h29	19h29
		INC-COSV-E3	2019-12-18	19h15	22h18
		INC-COSV-E4	2019-12-18 & 2019-12-19	22h36	20h13
	Me/PM/HCl	INC-Me/HCl/PM-E1	2019-12-15	16h21	19h21
		INC-Me/HCl/PM-E3	2019-12-18	19h22	22h03
		INC-Me/HCl/PM-E4	2019-12-18 & 2019-12-19	00h00	21h21
	Gas (O ₂ , CO ₂ , CO, NO _x , SO ₂)	INC-Gas-E1	2019-12-15	17h32	18h32
		INC-Gas-E3	2019-12-18	19h31	22h31
		INC-Gas-E4	2019-12-19	20h06	21h40

5 QA/QC PROGRAM

The quality assurance and quality control program (QA/QC) in place at Consulair is comprised of many elements aimed at validating the methodologies used during the sampling program. Throughout the campaign, Consulair ensured that each step of the atmospheric emissions characterisation 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 PLANING

5.1.1 Sampling Team

The sampling team was composed of two qualified individuals. Their titles and tasks performed during the sampling 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 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 instrument 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 solvent and reagent grades used in this mandate were verified.

The calibration gases used to calibrate the gas analysers were valid during their use on the field taking into account the retention period imposed by the manufacturer. The calibration gases were of either "certified $\pm 2\%$ " 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 field notes.

5.2 QA/QC DURING SAMPLING

5.2.1 Sampling Train Assembly and Sample Recuperation

A clean room inside the incinerator building was used for the assembly and the different stages of recovery of sampling trains. Sample recovery was performed according to the procedures recommended by the methods. At the end of the runs, the ends of the sampling train were sealed for transport of the components 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 allowing 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 test, 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, our personnel ensured that all components of the continuous instrumental analyzers 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 analyzers. To ensure valid measurements, the analyzers 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-zero, low concentration and high concentration – directly at the inlet of the instruments and at the probe.

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 two or three calibration gases (zero, low span and 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) for different air chemistry domains and they conform to the ISO/CEI 17025 norm. The analysis reports were signed by a chemist and are presented in appendix 3. The quality assurance and quality programs specific to the analysed parameter were included in the analysis reports.

5.3.2 QA/QC – Report Drafting

The computational tools used to analyse the data were verified to ensure calculation precision. This report was reviewed by a project manager with 8 years of pertinent experience.

5.4 METHOD CRITERIA AND TEST VALIDITY

Appendix 6 presents the results of the quality assurance and quality control program for each sampling method used at all emission points during the atmospheric emission characterisation program for the present mandate. The limits and values obtained for the quality assurance and quality control (QA/QC) program for these methods are also presented in appendix 6.

During the second tests end of run calibration of the gas analysers, the CO₂-mid concentration did not respect validation criteria. This was probably due to the fact that the analyzer was subject to pronounced temperature variations as it was exposed to temperatures between -10 and 25°C as there was a garage door close to the set up that was regularly opened and closed during the test. Despite this deviation, CO₂ content obtained during this test was within range of the other two tests performed. For this reason, the results obtained are considered valid and representative of normal operating conditions.

Due to some issues encountered during the second run, this trial had to be set aside. These issues included, freezing temperatures in the condenser that's caused it to burst. The condenser coil allowing the gas to travel to the sorbent trap was intact, however, no water could be used to cool the gases entering the sorbent trap. For this reason, gases entering the sorbent trap were too warm and did not respect the

method's QA/QC criteria. The run was therefore canceled and two other trials were launched on following days to gather three valid trials.

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, this 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 – STACK GAS PROPERTIES AND PARTICULATE MATTER AND HCL RESULTS

SAMPLING SCHEDULE				
TEST CODE	INC-Me/HCl/PM-E1	INC-Me/HCl/PM-E3	INC-Me/HCl/PM-E4	AVERAGE
DATE	2019-12-15	2019-12-18	2019-12-19	
START TIME	16h21	19h22	00h00	
END TIME	19h21	22h03	21h21	
RUN LENGTH (min)	180	160	160	
STACK GAS PROPERTIES				
STATIC PRESSURE (kPa)	-0.04	-0.04	-0.04	-0.04
MOISTURE CONTENT (%v)	5.7	7.1	6.1	6.3
TEMPERATURE (°C)	697	725	718	714
GAS VELOCITY (m/s)	9.4	11.5	9.0	10.0
GAS FLOWRATE (m³/h)	18230	22130	17430	19260
GAS FLOW RATE (m³R/h)	5244	6158	4934	5445
CO ₂ (%vs)	4.9	5.6	5.2	5.2
O ₂ (%vs)	14.4	13.5	14.1	14.0
CO (ppmvs)	2	0	2	1
SAMPLED GAS				
REFERENCE GAS VOLUME (m³R)	2.89	2.98	3.25	n/a
PARTICULATE MATTER				
FILTER MASS (mg)	33.5	34.6	40.2	n/a
NOZZLE AND PROBE MASS (mg)	8.4	11.5	11.4	n/a
CONCENTRATION (mg/m³R)	14.5	15.5	15.9	15.3
CONCENTRATION (mg/m³R at 11% O ₂)	22.1	20.7	23.1	22.0
EMISSION RATE (kg/h)	0.0760	0.0954	0.0783	0.0832
HYDROGEN CHLORIDE				
HCl MASS (mg)	133	249	146	n/a
CONCENTRATION (mg/m³R)	46.03	83.69	44.88	58.20
EMISSION RATE (kg/h)	0.241	0.515	0.222	0.326
EMISSION RATE (g/s)	0.067	0.143	0.062	0.091

TABLE 6-2 – RESULTS – INCINERATOR – METAL

SAMPLING SCHEDULE				
TEST CODE	INC-Me/HCl/PM-E1	INC-Me/HCl/PM-E3	INC-Me/HCl/PM-E4	AVERAGE
METALS				
PARTICULATE METALS (µg/m³R)				
Aluminium (Al)	15.6	27.2	23.4	22.1
Antimony (Sb)	51.2	57.8	27.0	45.4
Silver (Ag)	0.692	0.437	1.14	0.756
Arsenic (As)	30.6	154	40.6	75.1
Barium (Ba)	0.682	0.887	0.695	0.755
Beryllium (Be)	< 0.0208	< 0.0269	< 0.0246	< 0.0241
Bismuth (Bi)	0.232	1.10	0.252	0.527
Boron (B)	0.796	0.874	0.861	0.844
Cadmium (Cd)	1.51	1.03	0.529	1.02
Calcium (Ca)	186	477	144	269
Chrome (Cr)	4.50	4.03	4.98	4.50
Cobalt (Co)	< 0.0346	< 0.0672	4.86	1.65
Copper (Cu)	110	48.4	72.5	77.1
Tin (Sn)	11.2	23.7	8.18	14.4
Iron (Fe)	18.3	27.6	20.6	22.2
Lithium (Li)	5.88	3.03	5.23	4.71
Magnesium (Mg)	10.7	22.9	11.1	14.9
Manganese (Mn)	1.07	1.21	8.12	3.47
Molybdene (Mo)	1.52	1.61	1.88	1.67
Nickel (Ni)	0.485	0.101	11.6	4.07
Lead (Pb)	89.3	159	81.8	110
Potassium (K)	5810	4240	5230	5090
Selenium (Se)	0.208	< 0.168	< 0.154	0.176
Silicium (Si)	103	171	59.9	111
Sodium (Na)	3360	2850	3230	3150
Strontium (Sr)	0.623	1.04	0.523	0.729
Thallium (Tl)	< 0.0346	< 0.0672	< 0.0615	< 0.0544
Titane (Ti)	2.08	3.70	1.54	2.44
Vanadium (V)	< 0.0692	< 0.101	< 0.0922	< 0.0874
Zinc (Zn)	134	165	88.8	129
DETECTED METALS	9960	8440	9070	9160
TOTAL METALS	9960	8440	9070	9160

TABLE 6-2 – RESULTS – INCINERATOR – METAL (CONTD')

SAMPLING SCHEDULE				
TEST CODE	INC-Me/HCl/PM-E1	INC-Me/HCl/PM-E3	INC-Me/HCl/PM-E4	AVERAGE
GASEOUS METALS (µg/m³R)				
Aluminium (Al)	5.88	4.03	12.0	7.30
Antimony (Sb)	< 0.138	< 0.168	< 0.123	< 0.143
Silver (Ag)	< 0.692	< 0.672	< 0.615	< 0.660
Arsenic (As)	< 0.138	0.370	0.154	0.221
Barium (Ba)	0.173	0.134	0.584	0.297
Beryllium (Be)	< 0.0692	< 0.0672	< 0.0615	< 0.0660
Bismuth (Bi)	< 0.0692	< 0.0672	< 0.0615	< 0.0660
Boron (B)	5.71	5.04	5.32	5.36
Cadmium (Cd)	< 0.0692	< 0.0672	< 0.0615	< 0.0660
Calcium (Ca)	29.4	16.5	41.2	29.0
Chrome (Cr)	< 0.138	< 0.168	0.246	0.184
Cobalt (Co)	< 0.138	< 0.168	< 0.123	< 0.143
Copper (Cu)	0.554	0.202	1.72	0.826
Tin (Sn)	6.92	7.06	14.8	9.58
Iron (Fe)	< 6.92	< 6.72	12.3	8.65
Lithium (Li)	< 1.38	< 1.68	< 1.23	< 1.43
Magnesium (Mg)	5.88	< 3.36	7.69	7.72
Manganese (Mn)	< 0.138	0.370	0.646	0.823
Molybdene (Mo)	< 0.692	< 0.672	< 0.615	< 0.660
Nickel (Ni)	< 0.138	< 0.168	0.584	0.297
Lead (Pb)	< 0.692	< 0.672	< 0.615	< 0.660
Potassium (K)	< 13.8	< 16.8	< 12.3	< 14.3
Selenium (Se)	0.242	0.807	2.00	1.02
Silicium (Si)	30.5	15.8	55.3	33.9
Sodium (Na)	15.6	8.07	59.6	27.8
Strontium (Sr)	< 0.138	< 0.168	0.154	0.153
Thallium (Tl)	< 0.138	< 0.168	< 0.123	< 0.143
Titane (Ti)	< 1.38	< 1.68	< 1.23	< 1.43
Vanadium (V)	< 0.311	< 0.336	< 0.277	< 0.308
Zinc (Zn)	74.4	4.00	5.20	27.9
DETECTED METALS	183	62.4	219	155
TOTAL METALS	210	96.2	237	181

TABLE 6-2 – RESULTS – INCINERATOR – METAL (CONTD')

SAMPLING SCHEDULE				
TEST CODE	INC-Me/HCl/PM-E1	INC-Me/HCl/PM-E3	INC-Me/HCl/PM-E4	AVERAGE
TOTAL METALS (µg/m³R)				
Aluminium (Al)	21.5	31.3	35.4	29.4
Antimony (Sb)	51.4	58.0	27.1	45.5
Silver (Ag)	1.38	1.11	1.75	1.42
Arsenic (As)	30.7	155	40.7	75.4
Barium (Ba)	0.855	1.02	1.28	1.05
Beryllium (Be)	< 0.0900	< 0.0941	< 0.0861	< 0.0901
Bismuth (Bi)	0.301	1.16	0.314	0.593
Boron (B)	6.51	5.92	6.18	6.20
Cadmium (Cd)	1.58	1.10	0.590	1.09
Calcium (Ca)	216	494	185	298
Chrome (Cr)	4.64	4.20	5.23	4.69
Cobalt (Co)	< 0.173	< 0.235	4.98	1.80
Copper (Cu)	111	48.6	74.3	77.9
Tin (Sn)	18.1	30.8	22.9	23.9
Iron (Fe)	25.3	34.3	32.9	30.8
Lithium (Li)	7.27	4.71	6.46	6.14
Magnesium (Mg)	22.8	26.2	18.8	22.6
Manganese (Mn)	2.53	1.58	8.76	4.29
Molybdene (Mo)	2.22	2.29	2.49	2.33
Nickel (Ni)	0.623	0.269	12.2	4.37
Lead (Pb)	90.0	160	82.4	111
Potassium (K)	5830	4250	5240	5110
Selenium (Se)	0.450	0.975	2.15	1.19
Silicium (Si)	133	187	115	145
Sodium (Na)	3380	2860	3290	3180
Strontium (Sr)	0.761	1.21	0.676	0.883
Thallium (Tl)	< 0.173	< 0.235	< 0.184	< 0.198
Titane (Ti)	3.46	5.38	2.77	3.87
Vanadium (V)	< 0.381	< 0.437	< 0.369	< 0.396
Zinc (Zn)	209	169	94.0	157
Mercury (Hg)	0.284	0.286	0.215	0.262
STANDARD FOR MERCURY (µg/m³R)		20		
DETECTED METALS	10200	8540	9310	9340
TOTAL METALS	10200	8540	9310	9340

TABLE 6-2 – RESULTS – INCINERATOR – METAL (CONTD')

SAMPLING SCHEDULE				
TEST CODE	INC-Me/HCl/PM-E1	INC-Me/HCl/PM-E3	INC-Me/HCl/PM-E4	AVERAGE
TOTAL METALS ($\mu\text{g}/\text{m}^3\text{R}$ at 11% O ₂)				
Aluminium (Al)	32.7	41.8	51.5	42.0
Antimony (Sb)	78.2	77.6	39.5	65.1
Silver (Ag)	2.11	1.48	2.55	2.05
Arsenic (As)	46.8	207	59.3	104
Barium (Ba)	1.30	1.37	1.86	1.51
Beryllium (Be)	< 0.137	< 0.126	< 0.125	< 0.129
Bismuth (Bi)	0.459	1.56	0.457	0.824
Boron (B)	9.91	7.91	9.00	8.94
Cadmium (Cd)	2.41	1.47	0.859	1.58
Calcium (Ca)	328	661	270	420
Chrome (Cr)	7.06	5.62	7.61	6.76
Cobalt (Co)	< 0.264	< 0.315	7.25	2.61
Copper (Cu)	169	65.0	108	114
Tin (Sn)	27.6	41.2	33.4	34.0
Iron (Fe)	38.5	45.9	47.9	44.1
Lithium (Li)	11.1	6.30	9.40	8.92
Magnesium (Mg)	34.8	35.1	27.3	32.4
Manganese (Mn)	3.85	2.11	12.8	6.24
Molybdene (Mo)	3.37	3.06	3.63	3.35
Nickel (Ni)	0.949	0.360	17.8	6.36
Lead (Pb)	137	214	120	157
Potassium (K)	8880	5690	7630	7400
Selenium (Se)	0.685	1.30	3.13	1.71
Silicium (Si)	203	250	168	207
Sodium (Na)	5140	3830	4790	4590
Strontium (Sr)	1.16	1.62	0.985	1.25
Thallium (Tl)	< 0.264	< 0.315	< 0.269	< 0.282
Titane (Ti)	5.27	7.19	4.03	5.50
Vanadium (V)	< 0.580	< 0.585	< 0.537	< 0.567
Zinc (Zn)	318	226	137	227
Mercury (Hg)	0.432	0.382	0.313	0.376
DETECTED METALS	15500	11400	13600	13500
TOTAL METALS	15500	11400	13600	13500

TABLE 6-2 – RESULTS – INCINERATOR – METAL (CONTD')

SAMPLING SCHEDULE				
TEST CODE	INC-Me/HCl/PM-E1	INC-Me/HCl/PM-E3	INC-Me/HCl/PM-E4	AVERAGE
TOTAL METALS (g/h)				
Aluminium (Al)	0.113	0.192	0.174	0.160
Antimony (Sb)	0.269	0.357	0.134	0.253
Silver (Ag)	0.00726	0.00683	0.00865	0.00758
Arsenic (As)	0.161	0.952	0.201	0.438
Barium (Ba)	0.00448	0.00629	0.00631	0.00570
Beryllium (Be)	< 0.000472	< 0.000580	< 0.000425	< 0.000492
Bismuth (Bi)	0.00158	0.00716	0.00155	0.00343
Boron (B)	0.0341	0.0364	0.0305	0.0337
Cadmium (Cd)	0.00829	0.00677	0.00291	0.00599
Calcium (Ca)	1.13	3.04	0.915	1.70
Chrome (Cr)	0.0243	0.0259	0.0258	0.0253
Cobalt (Co)	< 0.000908	< 0.00145	0.0246	0.00898
Copper (Cu)	0.582	0.299	0.366	0.416
Tin (Sn)	0.0949	0.190	0.113	0.133
Iron (Fe)	0.132	0.211	0.162	0.169
Lithium (Li)	0.0381	0.0290	0.0319	0.0330
Magnesium (Mg)	0.120	0.161	0.0925	0.125
Manganese (Mn)	0.0132	0.00973	0.0432	0.0221
Molybdene (Mo)	0.0116	0.0141	0.0123	0.0127
Nickel (Ni)	0.00327	0.00166	0.0602	0.0217
Lead (Pb)	0.472	0.985	0.407	0.621
Potassium (K)	30.6	26.2	25.8	27.5
Selenium (Se)	0.00236	0.00600	0.0106	0.00633
Silicium (Si)	0.699	1.15	0.569	0.805
Sodium (Na)	17.7	17.6	16.2	17.2
Strontium (Sr)	0.00399	0.00745	0.00334	0.00493
Thallium (Tl)	< 0.000908	< 0.00145	< 0.000910	< 0.00109
Titane (Ti)	0.0182	0.0331	0.0137	0.0216
Vanadium (V)	< 0.00200	< 0.00269	< 0.00182	< 0.00217
Zinc (Zn)	1.09	1.04	0.464	0.866
Mercury (Hg)	0.00149	0.00176	0.00106	0.00144
DETECTED METALS	53.3	52.6	45.9	50.6
TOTAL METALS	53.3	52.6	45.9	50.6
R : Reference conditions at 101.3 kPa and 25°C, on a dry basis				

TABLE 6-3 – RESULTS – INCINERATOR - SVOC (PCDD/F)

SAMPLING SCHEDULE				
TEST CODE	INC-COSV-E1	INC-COSV-E3	INC-COSV-E4	MOYENNE
DATE	2019-12-15	2019-12-18	2019-12-18	
START TIME	16h29	19h15	22h36	
END TIME	19h29	22h18	20h13	
RUN LENGTH (min)	180	180	180	
STACK GAS PROPERTIES				
STATIC PRESSURE (kPa)	-0.04	-0.04	-0.04	-0.04
MOISTURE CONTENT (%v)	5.6	7.1	5.8	6.2
TEMPERATURE (°C)	688	727	723	713
GAS VELOCITY (m/s)	8.9	12.2	10.2	10.4
GAS FLOWRATE (m³/h)	17160	23480	19590	20080
GAS FLOW RATE (m³R/h)	4987	6518	5539	5681
CO ₂ (%vs)	4.9	5.6	5.2	5.2
O ₂ (%vs)	14.4	13.5	14.1	14.0
CO (ppmvs)	2	0	2	1
SAMPLED GAS				
SAMPLED GAS VOLUME (m³)	3.70	3.52	3.01	n/a
PCDD/F (ng/m³R)				
2,3,7,8-TCDD	< 0.00216	0.00313	0.00133	0.00221
1,2,3,7,8 PeCDD	0.00216	0.0302	0.00465	0.0123
1,2,3,4,7,8 HxCDD	0.000379	0.00324	0.000399	0.00134
1,2,3,6,7,8 HxCDD	0.000866	0.0128	0.00110	0.00493
1,2,3,7,8,9 HxCDD	0.000541	0.0121	0.00140	0.00467
1,2,3,4,6,7,8 HpCDD	0.000501	0.00697	0.000691	0.00272
OCDD	0.00000463	0.0000418	0.00000695	0.0000178
2,3,7,8 TCDF	0.00257	0.000683	0.00296	0.00207
1,2,3,7,8 PeCDF	0.000176	0.000228	0.000249	0.000218
2,3,4,7,8-PeCDF	0.00365	0.00612	0.00615	0.00531
1,2,3,4,7,8 HxCDF	0.00152	0.00128	0.00253	0.00177
1,2,3,6,7,8 HxCDF	0.000676	0.000853	0.00113	0.000887
2,3,4,6,7,8-HxCDF	0.00114	0.00162	0.00186	0.00154
1,2,3,7,8,9 HxCDF	< 0.000271	< 0.000114	< 0.000233	< 0.000206
1,2,3,4,6,7,8 HpCDF	0.000306	0.000279	0.000528	0.000371
1,2,3,4,7,8,9 HpCDF	0.000106	0.0000569	0.000150	0.000104
OCDF	0.00000141	0.000000996	0.00000263	0.00000168
TOTAL TOXIC EQUIVALENCE	0.0146	0.0795	0.0251	0.0398

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

PCDD/F (ng/m ³ R at 11% O ₂)				
2,3,7,8-TCDD	< 0.00330	0.00419	0.00194	0.00314
1,2,3,7,8 PeCDD	0.00330	0.0403	0.00677	0.0168
1,2,3,4,7,8 HxCDD	0.000577	0.00434	0.000581	0.00183
1,2,3,6,7,8 HxCDD	0.00132	0.0172	0.00160	0.00669
1,2,3,7,8,9 HxCDD	0.000824	0.0161	0.00203	0.00633
1,2,3,4,6,7,8 HpCDD	0.000762	0.00932	0.00101	0.00370
OCDD	0.00000705	0.0000559	0.0000101	0.0000244
2,3,7,8 TCDF	0.00392	0.000913	0.00431	0.00305
1,2,3,7,8 PeCDF	0.000268	0.000304	0.000363	0.000312
2,3,4,7,8-PeCDF	0.00556	0.00818	0.00895	0.00757
1,2,3,4,7,8 HxCDF	0.00231	0.00171	0.00368	0.00257
1,2,3,6,7,8 HxCDF	0.00103	0.00114	0.00165	0.00127
2,3,4,6,7,8-HxCDF	0.00173	0.00217	0.00271	0.00220
1,2,3,7,8,9 HxCDF	< 0.000412	< 0.000152	< 0.000339	< 0.000301
1,2,3,4,6,7,8 HpCDF	0.000466	0.000373	0.000769	0.000536
1,2,3,4,7,8,9 HpCDF	0.000161	0.0000761	0.000218	0.000152
OCDF	0.00000214	0.00000133	0.00000382	0.00000243
TOTAL TOXIC EQUIVALENCE	0.0222	0.106	0.0366	0.0551
STANDARD 0.08 ng/m ³ R at 11% O ₂				
PCDD/F (µg/h)				
2,3,7,8-TCDD	< 0.0108	0.0204	0.00736	0.0129
1,2,3,7,8 PeCDD	0.0108	0.197	0.0258	0.0777
1,2,3,4,7,8 HxCDD	0.00189	0.0211	0.00221	0.00841
1,2,3,6,7,8 HxCDD	0.00432	0.0836	0.00608	0.0313
1,2,3,7,8,9 HxCDD	0.00270	0.0786	0.00773	0.0297
1,2,3,4,6,7,8 HpCDD	0.00250	0.0454	0.00383	0.0173
OCDD	0.0000231	0.000273	0.0000385	0.000111
2,3,7,8 TCDF	0.0128	0.00445	0.0164	0.0112
1,2,3,7,8 PeCDF	0.000877	0.00148	0.00138	0.00125
2,3,4,7,8-PeCDF	0.0182	0.0399	0.0341	0.0307
1,2,3,4,7,8 HxCDF	0.00756	0.00834	0.0140	0.00996
1,2,3,6,7,8 HxCDF	0.00337	0.00556	0.00626	0.00507
2,3,4,6,7,8-HxCDF	0.00567	0.0106	0.0103	0.00885
1,2,3,7,8,9 HxCDF	< 0.00135	< 0.000742	< 0.00129	< 0.00113
1,2,3,4,6,7,8 HpCDF	0.00152	0.00182	0.00293	0.00209
1,2,3,4,7,8,9 HpCDF	0.000526	0.000371	0.000828	0.000575
OCDF	0.00000702	0.00000649	0.0000145	0.00000935
TOTAL TOXIC EQUIVALENCE	0.0728	0.519	0.139	0.243
R : Reference conditions at 101.3 kPa and 25°C, on a dry basis				

TABLE 6-4 – RESULTS – INCINERATOR – GASEOUS PARAMETERS

SCHEDULE OF TESTS			
TEST CODE	Inc-GASES-E1	Inc-GASES-E3	Inc-GASES-E4
DATE	2019-12-15	2019-12-18	2019-12-19
START OF TEST	17:32	19:31	20:06
END OF TEST	18:32	22:31	21:40
DURATION OF THE TEST (MINUTES)	60	180	94
OXYGEN (O ₂)			
O ₂ (% v/v d) average	14.4	13.5	14.1
O ₂ (% v/v d) minimum	13.9	12.6	13.3
O ₂ (% v/v d) maximum	14.8	14.2	14.9
CARBON DIOXIDE (CO ₂)			
CO ₂ (% v/v d) average	4.9	5.6	5.2
CO ₂ (% v/v d) minimum	4.6	5.1	3.5
CO ₂ (% v/v d) maximum	5.4	6.2	5.8
CARBON MONOXIDE (CO)			
CO (ppmvd) average	2.1	0.0	2.3
CO (ppmvd) minimum	1.7	0.0	1.8
CO (ppmvd) maximum	2.4	0.0	3.3
CO (mg/Rm ³)	2.37	0.0	2.59
AVERAGE EMISSION (kg/h)	0.0119	0.0	0.0144
NITROGEN OXIDES (NO _x as NO ₂)			
NO _x (ppmvd) average	48.5	100.5	49.3
NO _x (ppmvd) minimum	41.4	80.6	42.8
NO _x (ppmvd) maximum	56.3	121.8	54.9
NO _x (mg/Rm ³)	91.3	189	92.7
AVERAGE EMISSION (kg/h)	0.456	1.23	0.513
SULPHUR DIOXIDES (SO ₂)			
SO ₂ (ppmvd) average	2.6	7.4	0.2
SO ₂ (ppmvd) minimum	1.3	3.8	0.0
SO ₂ (ppmvd) maximum	6.4	11.8	6.7
SO ₂ (mg/Rm ³)	6.82	19.4	0.530
AVERAGE EMISSION (kg/h)	0.0341	0.126	0.00293
R: Reference conditions at 101.3 kPa et 25°C, and dry basis.			

7 RESULT ANALYSIS

According to the sampling methods and procedures combined with a rigorous quality control, the results of concentrations and / or emission rates presented in this report are valid and representative of the process operation conditions sampled for period test results.

The domestic waste incinerator complies with both PCDD/F and mercury standards.

8 CONCLUSION

Consulair was mandated by Agnico Eagle Mines, Meliadine Division to perform an atmospheric emission characterisation program at the outlet of an incinerator located at their plant 25km north of Rankin Inlet,

Nunavut as part of an environmental compliance program. The campaign was carried out from December 15th to December 19th 2019.

All applicable standards are respected.

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) of the Government of Canada inside “Environment Canada, the National Incinerator Testing and Evaluation program: Air Pollution Control Technology”. Report No. EPS 3/UP/2, Ottawa, 1986.

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APPENDIX 1

COMPUTER COMPILED DATA



AGNICO EAGLE MINES LTD. Meliadine				
19-6012				
INCINERATOR				
Particles and metals				
EXPERIMENTAL SCHEDULE				
RUN NUMBER	NC-Me/HCl/PM-E:NC-Me/HCl/PM-E:NC-Me/HCl/PM-E:			AVERAGE
RUN DATE	2019-12-15	2019-12-18	2019-12-19	(1 to 4)
START OF RUN	16h21	19h22	00h00	
END OF RUN	19h21	22h03	21h21	
RUN DURATION (minutes)	180	160	160	
NUMBER OF MEASUREMENTS	36	32	32	
SAMPLING EQUIPMENT DATA				
BAROMETRIC PRESSURE ("Hg)	29.70	30.00	30.00	29.90
STATIC PRESSURE ("H ₂ O)	-0.15	-0.15	-0.15	-0.15
PRESSION STATIQUE (kPa)	-0.037	-0.037	-0.037	-0.037
DRY GAS METER COEFFICIENT	1.024	1.024	1.021	n/a
PITOT TUBE COEFFICIENT	0.798	0.798	0.798	n/a
NOZZLE DIAMETER (in)	0.432	0.432	0.510	n/a
DRY GAS METER TEMPERATURE (°F)	62.2	56.7	57.1	n/a
DRY GAS METER TEMPERATURE (°C)	16.8	13.7	13.9	n/a
GAS HUMIDITY & SAMPLED VOLUME				
MASS OF WATER (g)	127.5	166.3	155.2	n/a
VOLUME OF WATER (ft ³)	6.12	7.98	7.45	n/a
GAS HUMIDITY (BWO)	0.057	0.071	0.061	0.063
GAS HUMIDITY (% v/v)	5.7	7.1	6.1	6.3
REFERENCE GAS VOLUME (ft ³ R)	102.04	105.06	114.88	107.33
REFERENCE GAS VOLUME (m³R)	2.89	2.98	3.25	3.04
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)	2.7	2.7	2.7	n/a
STACK DIAMETER (m)	0.83	0.83	0.83	n/a
LENGTH OF SAMPLING PORTS (in)	7.5	7.5	7.5	n/a
STACK PRESSURE ("Hg)	29.69	29.99	29.99	29.89
STACK PRESSURE (kPa)	100.54	101.55	101.55	101.22
DRY GAS METER PRESSURE ("Hg)	29.73	30.05	30.06	29.95
STACK SURFACE (pi ²)	5.8	5.8	5.8	n/a
STACK SURFACE (m ²)	0.54	0.54	0.54	n/a
GAZ CHARACTERISTICS				
CHIMNEY TEMPERATURE (°F)	1286.8	1337.4	1325.0	1316.4
CHIMNEY TEMPERATURE (°C)	697.1	725.2	718.4	713.6
CO ₂ (%v, dry)	4.9	5.6	5.2	5.2
O ₂ (%v, dry)	14.4	13.5	14.1	14.0
O ₂ (%v, dry)	13.6	12.5	13.2	13.1
CO (ppmv, dry)	2.1	0.0	2.3	1.5
SO ₂ (%v, dry)	0.0	0.0	0.0	0.0
N ₂ (%v, dry)	80.7	80.9	80.7	80.8
Ar (%v, dry)	0.0	0.0	0.0	0.0
DRY MOLECULAR WEIGHT	29.4	29.4	29.4	29.4
WET MOLECULAR WEIGHT	28.7	28.6	28.7	28.7
GAS VELOCITY (ft/s)	31.0	37.6	29.6	32.8
GAS VELOCITY (m/s)	9.4	11.5	9.0	10.0
ACTUAL GAS FLOW RATE (pi ³ /h)	643 653	781 533	615 492	680 226
ACTUAL GAS FLOW RATE (m ³ /h)	18 226	22 131	17 429	19 262
ACTUAL GAS FLOW RATE (ft ³ /min) (ACFM)	10 728	13 026	10 258	11 337
REFERENCE GAS FLOW RATE (ft ³ R/h)	185 198	217 467	174 248	192 304
REFERENCE GAS FLOW RATE (m³R/h)	5 244	6 158	4 934	5 445
REFERENCE GAS FLOW RATE (ft ³ R/min) (RCFM)	3 087	3 624	2 904	3 205

AGNICO EAGLE MINES LTD. Meliadine				
19-6012				
INCINERATOR				
Particles and metals				
EXPERIMENTAL SCHEDULE				
RUN NUMBER	NC-Me/HCl/PM-E:NC-Me/HCl/PM-E:NC-Me/HCl/PM-E			AVERAGE
RUN DATE	2019-12-15	2019-12-18	2019-12-19	(1 to 4)
START OF RUN	16h21	19h22	00h00	
END OF RUN	19h21	22h03	21h21	
RUN DURATION (minutes)	180	160	160	
NUMBER OF MEASUREMENTS	36	32	32	
SAMPLING INFORMATION				
DRY GAS METER ORIFICE COEFFICIENT	1.000	1.000	1.000	n/a
MAXIMUM VELOCITY (m/s)	10.6	12.9	11.2	n/a
MINIMUM VELOCITY (m/s)	7.8	10.0	8.0	n/a
10%Vmax (m/s)	1.06	1.29	1.12	n/a
PERCENTAGE >10%Vmax	1.00	1.00	1.00	1.00
AVERAGE ISOKINETISM (%)	104.2	102.7	100.6	102.5
% POINTS RESPECTING ISOKINETIC CRITERIA	100%	100%	100%	100%
MAXIMUM PUMPING FLOW RATE (ft ³ /min)	0.61	0.69	0.88	n/a
MAXIMUM VACUUM PRESSURE DURING RUN ("Hg)	-4.0	-4.5	-12.5	n/a
MAXIMUM PROBE TEMPERATURE (°F)	250	250	250	n/a
MINIMUM PROBE TEMPERATURE (°F)	250	250	250	n/a
MAXIMUM FILTER TEMPERATURE (°F)	262	262	271	n/a
MINIMUM FILTER TEMPERATURE (°F)	256	248	259	n/a
MAXIMUM TEMPERATURE AT EXIT (°F)	50	59	48	n/a
MINIMUM TEMPERATURE AT EXIT (°F)	34	50	33	n/a
AVERAGE PUMPING FLOW RATE (ft ³ /min)	0.55	0.63	0.69	0.62
4% OF AVERAGE PUMPING FLOW RATE (ft ³ /min)	0.022	0.025	0.028	0.025
LEAK TEST BEFORE RUN AT 15 "Hg (ft ³ /min)	< 0.02	< 0.02	< 0.02	0.000
LEAK TEST AFTER RUN (ft ³ /min)	< 0.02	< 0.02	< 0.02	0.000
CYCLONIC FLOW				
AVERAGE FLOW ANGLE	0	0	0	0
VERTICAL GAS VELOCITY (m/s)	9.45	11.47	9.03	9.98
FILTRABLE PARTICLES – SPE 1/RM/8				
MASS FILTER (mg)	33.5	34.6	40.2	n/a
MASS NOZZLE & PROBE (mg)	8.4	11.5	11.4	n/a
MASS ACETONE BLANK (mg)		< LDR		n/a
VOLUME ACETONE BLANK (mL)		88.0		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)	8.4	11.5	11.4	n/a
MASS FILTER (mg)	33.5	34.6	40.2	n/a
TOTAL MASS (mg)	41.9	46.1	51.6	n/a
CONCENTRATION (mg/m³R)	14.5	15.5	15.9	15.3
METHOD DETECTION LIMIT (mg/m ³ R)	0.4	0.4	0.3	0.4
CONCENTRATION (mg/m³R) at 11% O₂	22.1	20.7	23.1	22.0
EMISSION RATE (kg/h)	0.1	0.1	0.1	0.1

AGNICO EAGLE MINES LTD. Meliadine
19-6012
INCINERATOR
Particles and metals

EXPERIMENTAL SCHEDULE

RUN NUMBER	NC-Me/HCl/PM-E:NC-Me/HCl/PM-E:NC-Me/HCl/PM-E:			AVERAGE
RUN DATE	2019-12-15	2019-12-18	2019-12-19	(1 to 4)
START OF RUN	16h21	19h22	00h00	
END OF RUN	19h21	22h03	21h21	
RUN DURATION (minutes)	180	160	160	
NUMBER OF MEASUREMENTS	36	32	32	

METALS – USEPA Method 29

PARTICULATE METALS (µg)

Aluminum (Al)	45.000	81.000	76.000	67.333
Antimony (Sb)	148.000	172.000	87.900	135.967
Silver (Ag)	2.000	1.300	3.700	2.333
Arsenic (As)	88.300	459.000	132.000	226.433
Barium (Ba)	1.970	2.640	2.260	2.290
Beryllium (Be)	< 0.060	< 0.080	< 0.080	< 0.073
Bismuth (Bi)	0.670	3.260	0.820	1.583
Boron (B)	2.300	2.600	2.800	2.567
Cadmium (Cd)	4.370	3.070	1.720	3.053
Calcium (Ca)	538.000	1420.000	469.000	809.000
Chrome (Cr)	13.000	12.000	16.200	13.733
Cobalt (Co)	< 0.100	< 0.200	15.800	5.367
Copper (Cu)	319.000	144.000	236.000	233.000
Tin (Sn)	32.300	70.600	26.600	43.167
Iron (Fe)	53.000	82.000	67.000	67.333
Lithium (Li)	17.000	9.000	17.000	14.333
Magnesium (Mg)	31.000	68.000	36.000	45.000
Manganese (Mn)	3.100	3.600	26.400	11.033
Molybdenum (Mo)	4.400	4.800	6.100	5.100
Nickel (Ni)	1.400	0.300	37.800	13.167
Lead (Pb)	258.000	474.000	266.000	332.667
Potassium (K)	16800.000	12600.000	17000.000	15466.667
Selenium (Se)	0.600	< 0.500	< 0.500	0.533
Silicon (Si)	297.000	508.000	195.000	333.333
Sodium (Na)	9710.000	8490.000	10500.000	9566.667
Strontium (Sr)	1.800	3.100	1.700	2.200
Thallium (Tl)	< 0.100	< 0.200	< 0.200	< 0.167
Titanium (Ti)	6.000	11.000	5.000	7.333
Vanadium (V)	< 0.200	< 0.300	< 0.300	< 0.267
Zinc (Zn)	388.000	491.000	289.000	389.333
DETECTED METALS	28766.210	25116.270	29517.800	27800.093
TOTAL METALS	28766.670	25117.550	29518.880	27801.033
Proportion metals vs particles (%)	68.656	54.485	57.207	#DIV/0!

AGNICO EAGLE MINES LTD. Meliadine
19-6012
INCINERATOR
Particles and metals

EXPERIMENTAL SCHEDULE

RUN NUMBER	NC-Me/HCl/PM-E:NC-Me/HCl/PM-E:NC-Me/HCl/PM-E:			AVERAGE
RUN DATE	2019-12-15	2019-12-18	2019-12-19	(1 to 4)
START OF RUN	16h21	19h22	00h00	
END OF RUN	19h21	22h03	21h21	
RUN DURATION (minutes)	180	160	160	
NUMBER OF MEASUREMENTS	36	32	32	

GASEOUS METALS (µg)

Aluminum (Al)	17.000	12.000	39.000	22.667
Antimony (Sb)	< 0.400	< 0.500	< 0.400	< 0.433
Silver (Ag)	< 2.000	< 2.000	< 2.000	< 2.000
Arsenic (As)	< 0.400	1.100	0.500	0.667
Barium (Ba)	0.500	0.400	1.900	0.933
Beryllium (Be)	< 0.200	< 0.200	< 0.200	< 0.200
Bismuth (Bi)	< 0.200	< 0.200	< 0.200	< 0.200
Boron (B)	16.500	15.000	17.300	16.267
Cadmium (Cd)	< 0.200	< 0.200	< 0.200	< 0.200
Calcium (Ca)	85.000	49.000	134.000	89.333
Chrome (Cr)	< 0.400	< 0.500	0.800	0.567
Cobalt (Co)	< 0.400	< 0.500	< 0.400	< 0.433
Copper (Cu)	1.600	0.600	5.600	2.600
Tin (Sn)	20.000	21.000	48.000	29.667
Iron (Fe)	< 20.000	< 20.000	40.000	26.667
Lithium (Li)	< 4.000	< 5.000	< 4.000	< 4.333
Magnesium (Mg)	35.000	< 10.000	25.000	23.333
Manganese (Mn)	4.200	1.100	2.100	2.467
Molybdenum (Mo)	< 2.000	< 2.000	< 2.000	< 2.000
Nickel (Ni)	< 0.400	< 0.500	1.900	0.933
Lead (Pb)	< 2.000	< 2.000	< 2.000	< 2.000
Potassium (K)	< 40.000	< 50.000	< 40.000	< 43.333
Selenium (Se)	0.700	2.400	6.500	3.200
Silicon (Si)	88.000	47.000	180.000	105.000
Sodium (Na)	45.000	24.000	194.000	87.667
Strontium (Sr)	< 0.400	< 0.500	0.500	0.467
Thallium (Tl)	< 0.400	< 0.500	< 0.400	< 0.433
Titanium (Ti)	< 4.000	< 5.000	< 4.000	< 4.333
Vanadium (V)	< 0.900	< 1.000	< 0.900	< 0.933
Zinc (Zn)	215.000	11.900	16.900	81.267
DETECTED METALS	528.500	185.500	714.000	476.000
TOTAL METALS	606.800	286.100	770.700	554.533

AGNICO EAGLE MINES LTD. Meliadine

19-6012

INCINERATOR

Particles and metals

EXPERIMENTAL SCHEDULE

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END OF RUN	19h21	22h03	21h21	
RUN DURATION (minutes)	180	160	160	
NUMBER OF MEASUREMENTS	36	32	32	

TOTAL METALS (µg)

Aluminum (Al)	62.000	93.000	115.000	90.000
Antimony (Sb)	148.400	172.500	88.300	136.400
Silver (Ag)	4.000	3.300	5.700	4.333
Arsenic (As)	88.700	460.100	132.500	227.100
Barium (Ba)	2.470	3.040	4.160	3.223
Beryllium (Be)	< 0.260	< 0.280	< 0.280	< 0.273
Bismuth (Bi)	0.870	3.460	1.020	1.783
Boron (B)	18.800	17.600	20.100	18.833
Cadmium (Cd)	4.570	3.270	1.920	3.253
Calcium (Ca)	623.000	1469.000	603.000	898.333
Chrome (Cr)	13.400	12.500	17.000	14.300
Cobalt (Co)	< 0.500	< 0.700	16.200	5.800
Copper (Cu)	320.600	144.600	241.600	235.600
Tin (Sn)	52.300	91.600	74.600	72.833
Iron (Fe)	73.000	102.000	107.000	94.000
Lithium (Li)	21.000	14.000	21.000	18.667
Magnesium (Mg)	66.000	78.000	61.000	68.333
Manganese (Mn)	7.300	4.700	28.500	13.500
Molybdenum (Mo)	6.400	6.800	8.100	7.100
Nickel (Ni)	1.800	0.800	39.700	14.100
Lead (Pb)	260.000	476.000	268.000	334.667
Potassium (K)	16840.000	12650.000	17040.000	15510.000
Selenium (Se)	1.300	2.900	7.000	3.733
Silicon (Si)	385.000	555.000	375.000	438.333
Sodium (Na)	9755.000	8514.000	10694.000	9654.333
Strontium (Sr)	2.200	3.600	2.200	2.667
Thallium (Tl)	< 0.500	< 0.700	< 0.600	< 0.600
Titanium (Ti)	10.000	16.000	9.000	11.667
Vanadium (V)	< 1.100	< 1.300	< 1.200	< 1.200
Zinc (Zn)	603.000	502.900	305.900	470.600
Mercury (Hg)	0.820	0.850	0.700	0.790
DETECTED METALS	29371.930	25401.520	30288.200	28353.883
TOTAL METALS	29374.290	25404.500	30290.280	28356.357

AGNICO EAGLE MINES LTD. Meliadine
19-6012
INCINERATOR
Particles and metals

EXPERIMENTAL SCHEDULE

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END OF RUN	19h21	22h03	21h21	
RUN DURATION (minutes)	180	160	160	
NUMBER OF MEASUREMENTS	36	32	32	

PARTICULATE METALS (µg/m³R)

Aluminum (Al)	15.6	27.2	23.4	22.1
Antimony (Sb)	51.2	57.8	27.0	45.4
Silver (Ag)	0.692	0.437	1.14	0.756
Arsenic (As)	30.6	154	40.6	75.1
Barium (Ba)	0.682	0.887	0.695	0.755
Beryllium (Be)	< 0.0208	< 0.0269	< 0.0246	< 0.0241
Bismuth (Bi)	0.232	1.10	0.252	0.527
Boron (B)	0.796	0.874	0.861	0.844
Cadmium (Cd)	1.51	1.03	0.529	1.02
Calcium (Ca)	186	477	144	269
Chrome (Cr)	4.50	4.03	4.98	4.50
Cobalt (Co)	< 0.0346	< 0.0672	4.86	1.65
Copper (Cu)	110	48.4	72.5	77.1
Tin (Sn)	11.2	23.7	8.18	14.4
Iron (Fe)	18.3	27.6	20.6	22.2
Lithium (Li)	5.88	3.03	5.23	4.71
Magnesium (Mg)	10.7	22.9	11.1	14.9
Manganese (Mn)	1.07	1.21	8.12	3.47
Molybdenum (Mo)	1.52	1.61	1.88	1.67
Nickel (Ni)	0.485	0.101	11.6	4.07
Lead (Pb)	89.3	159	81.8	110
Potassium (K)	5810	4240	5230	5090
Selenium (Se)	0.208	< 0.168	< 0.154	0.176
Silicon (Si)	103	171	59.9	111
Sodium (Na)	3360	2850	3230	3150
Strontium (Sr)	0.623	1.04	0.523	0.729
Thallium (Tl)	< 0.0346	< 0.0672	< 0.0615	< 0.0544
Titanium (Ti)	2.08	3.70	1.54	2.44
Vanadium (V)	< 0.0692	< 0.101	< 0.0922	< 0.0874
Zinc (Zn)	134	165	88.8	129
DETECTED METALS	9960	8440	9070	9160
TOTAL METALS	9960	8440	9070	9160

AGNICO EAGLE MINES LTD. Meliadine
19-6012
INCINERATOR
Particles and metals

EXPERIMENTAL SCHEDULE

RUN NUMBER	NC-Me/HCl/PM-E:NC-Me/HCl/PM-E:NC-Me/HCl/PM-E:			AVERAGE
RUN DATE	2019-12-15	2019-12-18	2019-12-19	(1 to 4)
START OF RUN	16h21	19h22	00h00	
END OF RUN	19h21	22h03	21h21	
RUN DURATION (minutes)	180	160	160	
NUMBER OF MEASUREMENTS	36	32	32	

GASEOUS METALS (µg/m³R)

Aluminum (Al)	5.88	4.03	12.0	7.30
Antimony (Sb)	< 0.138	< 0.168	< 0.123	< 0.143
Silver (Ag)	< 0.692	< 0.672	< 0.615	< 0.660
Arsenic (As)	< 0.138	0.370	0.154	0.221
Barium (Ba)	0.173	0.134	0.584	0.297
Beryllium (Be)	< 0.0692	< 0.0672	< 0.0615	< 0.0660
Bismuth (Bi)	< 0.0692	< 0.0672	< 0.0615	< 0.0660
Boron (B)	5.71	5.04	5.32	5.36
Cadmium (Cd)	< 0.0692	< 0.0672	< 0.0615	< 0.0660
Calcium (Ca)	29.4	16.5	41.2	29.0
Chrome (Cr)	< 0.138	< 0.168	0.246	0.184
Cobalt (Co)	< 0.138	< 0.168	< 0.123	< 0.143
Copper (Cu)	0.554	0.202	1.72	0.826
Tin (Sn)	6.92	7.06	14.8	9.58
Iron (Fe)	< 6.92	< 6.72	12.3	8.65
Lithium (Li)	< 1.38	< 1.68	< 1.23	< 1.43
Magnesium (Mg)	12.1	< 3.36	7.69	7.72
Manganese (Mn)	1.45	0.370	0.646	0.823
Molybdenum (Mo)	< 0.692	< 0.672	< 0.615	< 0.660
Nickel (Ni)	< 0.138	< 0.168	0.584	0.297
Lead (Pb)	< 0.692	< 0.672	< 0.615	< 0.660
Potassium (K)	< 13.8	< 16.8	< 12.3	< 14.3
Selenium (Se)	0.242	0.807	2.00	1.02
Silicon (Si)	30.5	15.8	55.3	33.9
Sodium (Na)	15.6	8.07	59.6	27.8
Strontium (Sr)	< 0.138	< 0.168	0.154	0.153
Thallium (Tl)	< 0.138	< 0.168	< 0.123	< 0.143
Titanium (Ti)	< 1.38	< 1.68	< 1.23	< 1.43
Vanadium (V)	< 0.311	< 0.336	< 0.277	< 0.308
Zinc (Zn)	74.4	4.00	5.20	27.9
DETECTED METALS	183	62.4	219	155
TOTAL METALS	210	96.2	237	181

AGNICO EAGLE MINES LTD. Meliadine

19-6012

INCINERATOR

Particles and metals

EXPERIMENTAL SCHEDULE

RUN NUMBER	NC-Me/HCl/PM-E:NC-Me/HCl/PM-E:NC-Me/HCl/PM-E:			AVERAGE
RUN DATE	2019-12-15	2019-12-18	2019-12-19	(1 to 4)
START OF RUN	16h21	19h22	00h00	
END OF RUN	19h21	22h03	21h21	
RUN DURATION (minutes)	180	160	160	
NUMBER OF MEASUREMENTS	36	32	32	

TOTAL METALS (µg/m³R)

Aluminum (Al)	21.5	31.3	35.4	29.4
Antimony (Sb)	51.4	58.0	27.1	45.5
Silver (Ag)	1.38	1.11	1.75	1.42
Arsenic (As)	30.7	155	40.7	75.4
Barium (Ba)	0.855	1.02	1.28	1.05
Beryllium (Be)	< 0.0900	< 0.0941	< 0.0861	< 0.0901
Bismuth (Bi)	0.301	1.16	0.314	0.593
Boron (B)	6.51	5.92	6.18	6.20
Cadmium (Cd)	1.58	1.10	0.590	1.09
Calcium (Ca)	216	494	185	298
Chrome (Cr)	4.64	4.20	5.23	4.69
Cobalt (Co)	< 0.173	< 0.235	4.98	1.80
Copper (Cu)	111	48.6	74.3	77.9
Tin (Sn)	18.1	30.8	22.9	23.9
Iron (Fe)	25.3	34.3	32.9	30.8
Lithium (Li)	7.27	4.71	6.46	6.14
Magnesium (Mg)	22.8	26.2	18.8	22.6
Manganese (Mn)	2.53	1.58	8.76	4.29
Molybdenum (Mo)	2.22	2.29	2.49	2.33
Nickel (Ni)	0.623	0.269	12.2	4.37
Lead (Pb)	90.0	160	82.4	111
Potassium (K)	5830	4250	5240	5110
Selenium (Se)	0.450	0.975	2.15	1.19
Silicon (Si)	133	187	115	145
Sodium (Na)	3380	2860	3290	3180
Strontium (Sr)	0.761	1.21	0.676	0.883
Thallium (Tl)	< 0.173	< 0.235	< 0.184	< 0.198
Titanium (Ti)	3.46	5.38	2.77	3.87
Vanadium (V)	< 0.381	< 0.437	< 0.369	< 0.396
Zinc (Zn)	209	169	94.0	157
Mercury (Hg)	0.284	0.286	0.215	0.262
DETECTED METALS	10200	8540	9310	9340
TOTAL METALS	10200	8540	9310	9340

AGNICO EAGLE MINES LTD. Meliadine

19-6012

INCINERATOR

Particles and metals

EXPERIMENTAL SCHEDULE

RUN NUMBER	NC-Me/HCl/PM-E:NC-Me/HCl/PM-E:NC-Me/HCl/PM-E:			AVERAGE
RUN DATE	2019-12-15	2019-12-18	2019-12-19	(1 to 4)
START OF RUN	16h21	19h22	00h00	
END OF RUN	19h21	22h03	21h21	
RUN DURATION (minutes)	180	160	160	
NUMBER OF MEASUREMENTS	36	32	32	

TOTAL METALS (µg/m3R) at 11% O2

Aluminum (Al)	32.68	41.82	51.47	41.99
Antimony (Sb)	78.23	77.57	39.52	65.10
Silver (Ag)	2.109	1.484	2.551	2.048
Arsenic (As)	46.76	206.9	59.30	104.3
Barium (Ba)	1.302	1.367	1.862	1.510
Beryllium (Be)	< 0.1371	< 0.1259	< 0.1253	< 0.1294
Bismuth (Bi)	0.4586	1.556	0.4565	0.8237
Boron (B)	9.910	7.914	8.996	8.940
Cadmium (Cd)	2.409	1.470	0.8593	1.580
Calcium (Ca)	328.4	660.6	269.9	419.6
Chrome (Cr)	7.064	5.621	7.608	6.764
Cobalt (Co)	< 0.2636	< 0.3148	7.250	2.610
Copper (Cu)	169.0	65.02	108.1	114.1
Tin (Sn)	27.57	41.19	33.39	34.05
Iron (Fe)	38.48	45.87	47.89	44.08
Lithium (Li)	11.07	6.295	9.399	8.921
Magnesium (Mg)	34.79	35.07	27.30	32.39
Manganese (Mn)	3.848	2.113	12.76	6.239
Molybdenum (Mo)	3.374	3.058	3.625	3.352
Nickel (Ni)	0.9488	0.3597	17.77	6.359
Lead (Pb)	137.1	214.0	119.9	157.0
Potassium (K)	8877	5688	7626	7397
Selenium (Se)	0.6853	1.304	3.133	1.707
Silicon (Si)	202.9	249.6	167.8	206.8
Sodium (Na)	5142	3829	4786	4586
Strontium (Sr)	1.160	1.619	0.9846	1.254
Thallium (Tl)	< 0.2636	< 0.3148	< 0.2685	< 0.2823
Titanium (Ti)	5.271	7.195	4.028	5.498
Vanadium (V)	< 0.5798	< 0.5846	< 0.5371	< 0.5672
Zinc (Zn)	317.9	226.1	136.9	227.0
Mercury (Hg)	0.4322	0.3822	0.3133	0.3759
DETECTED METALS	15480	11420	13560	13490
TOTAL METALS	15480	11420	13560	13490

AGNICO EAGLE MINES LTD. Meliadine				
19-6012				
INCINERATOR				
Particles and metals				
EXPERIMENTAL SCHEDULE				
RUN NUMBER	NC-Me/HCl/PM-E:NC-Me/HCl/PM-E:NC-Me/HCl/PM-E:			AVERAGE
RUN DATE	2019-12-15	2019-12-18	2019-12-19	(1 to 4)
START OF RUN	16h21	19h22	00h00	
END OF RUN	19h21	22h03	21h21	
RUN DURATION (minutes)	180	160	160	
NUMBER OF MEASUREMENTS	36	32	32	
TOTAL METALS (g/h)				
Aluminum (Al)	0.113	0.192	0.174	0.160
Antimony (Sb)	0.269	0.357	0.134	0.253
Silver (Ag)	0.00726	0.00683	0.00865	0.00758
Arsenic (As)	0.161	0.952	0.201	0.438
Barium (Ba)	0.00448	0.00629	0.00631	0.00570
Beryllium (Be)	< 0.000472	< 0.000580	< 0.000425	< 0.000492
Bismuth (Bi)	0.00158	0.00716	0.00155	0.00343
Boron (B)	0.0341	0.0364	0.0305	0.0337
Cadmium (Cd)	0.00829	0.00677	0.00291	0.00599
Calcium (Ca)	1.13	3.04	0.915	1.70
Chrome (Cr)	0.0243	0.0259	0.0258	0.0253
Cobalt (Co)	< 0.000908	< 0.00145	0.0246	0.00898
Copper (Cu)	0.582	0.299	0.366	0.416
Tin (Sn)	0.0949	0.190	0.113	0.133
Iron (Fe)	0.132	0.211	0.162	0.169
Lithium (Li)	0.0381	0.0290	0.0319	0.0330
Magnesium (Mg)	0.120	0.161	0.0925	0.125
Manganese (Mn)	0.0132	0.00973	0.0432	0.0221
Molybdenum (Mo)	0.0116	0.0141	0.0123	0.0127
Nickel (Ni)	0.00327	0.00166	0.0602	0.0217
Lead (Pb)	0.472	0.985	0.407	0.621
Potassium (K)	30.6	26.2	25.8	27.5
Selenium (Se)	0.00236	0.00600	0.0106	0.00633
Silicon (Si)	0.699	1.15	0.569	0.805
Sodium (Na)	17.7	17.6	16.2	17.2
Strontium (Sr)	0.00399	0.00745	0.00334	0.00493
Thallium (Tl)	< 0.000908	< 0.00145	< 0.000910	< 0.00109
Titanium (Ti)	0.0182	0.0331	0.0137	0.0216
Vanadium (V)	< 0.00200	< 0.00269	< 0.00182	< 0.00217
Zinc (Zn)	1.09	1.04	0.464	0.866
Mercury (Hg)	0.00149	0.00176	0.00106	0.00144
DETECTED METALS	53.3	52.6	45.9	50.6
TOTAL METALS	53.3	52.6	45.9	50.6
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 ₂ O)		Temperatures (°F)				Gas volume (m³)			Velocity (m/s)	Iso. (%)	> 10% V _{max}	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
16h21	1	1	5	0.13	0.55	1301	44.6	45.5	45.5	19.29	19.37	0.08	10.56	105.7	1	16.4	3.6	3.0		250	260	36
		2	5	0.12	0.53	1298	51.3	46.4	46.4	19.37	19.45	0.08	10.34	104.42	1	16.4	3.6	3.0	0	250	259	36
		3	5	0.12	0.54	1299	53.2	47.5	47.5	19.45	19.53	0.08	10.34	106.06	1	16.4	3.6	3.0	0	250	257	35
		4	5	0.12	0.54	1294	54.2	48.8	48.8	19.53	19.62	0.08	10.33	103.76	1	16.4	3.6	3.0	0	250	259	34
		5	5	0.12	0.54	1296	55.3	49.9	49.9	19.62	19.70	0.08	10.33	104.87	1	16.4	3.6	3.0	0	250	258.2	40.2
		6	5	0.12	0.54	1289	56.3	50.7	50.7	19.70	19.78	0.08	10.31	103.21	1	16.4	3.6	3.0	0	250	259.3	40.4
		7	5	0.12	0.54	1287	57.3	52.1	52.1	19.78	19.86	0.08	10.31	102.28	1	16.4	3.6	3.0	0	250	258.5	40.6
		8	5	0.12	0.55	1284	58.2	53	53	19.86	19.94	0.08	10.30	103.27	1	16.4	3.6	3.0	0	250	261.5	41.3
		9	5	0.11	0.50	1283	58.9	53.9	53.9	19.94	20.02	0.08	9.86	105.69	1	16.4	3.6	3.0	0	250	259.3	41.9
		10	5	0.11	0.50	1295	59.8	54.8	54.8	20.02	20.10	0.08	9.89	106.52	1	16.4	3.6	3.0	0	250	259.5	43.6
		11	5	0.12	0.54	1298	59.6	55.1	55.1	20.10	20.19	0.08	10.34	102.7	1	16.4	3.6	3.0	0	250	258.3	44.1
		12	5	0.12	0.54	1303	61.1	57.2	57.2	20.19	20.27	0.08	10.35	101.87	1	16.4	3.6	3.0	0	250	260.8	45.8
		13	5	0.12	0.54	1305	60.2	56.9	56.9	20.27	20.35	0.08	10.36	101.41	1	16.4	3.6	3.0	-0.5	250	258.9	45.7
		14	5	0.10	0.46	1278	61	57.6	57.6	20.35	20.42	0.08	9.38	105.95	1	16.4	3.6	3.0	-1	250	258.6	46.5
		15	5	0.09	0.42	1275	61.7	58.1	58.1	20.42	20.50	0.07	8.90	107.13	1	16.4	3.6	3.0	-1	250	260.1	47.8
		16	5	0.09	0.41	1278	61.7	58.1	58.1	20.50	20.57	0.07	8.90	105.07	1	16.4	3.6	3.0	-1	250	259.3	48.7
		17	5	0.09	0.42	1276	63.2	59.5	59.5	20.57	20.65	0.07	8.90	105.43	1	16.4	3.6	3.0	-1	250	259.4	49.1
	2	18	5	0.11	0.50	1295	63.9	60.3	60.3	20.65	20.73	0.08	9.89	105.54	1	16.4	3.6	3.0	-1.5	250	259	49.4
		1	5	0.11	0.51	1287	64.8	61.1	61.1	20.73	20.81	0.08	9.87	104.48	1	16.4	3.6	3.0	-1.5	250	258.6	50
		2	5	0.09	0.42	1285	64.2	62.3	62.3	20.81	20.88	0.08	8.92	107.47	1	16.4	3.6	3.0	-2.5	250	260.1	50
		3	5	0.09	0.42	1274	66.3	62.9	62.9	20.88	20.96	0.07	8.89	106.86	1	16.4	3.6	3.0	-2.5	250	258.3	50
		4	5	0.10	0.46	1287	66.7	63.5	63.5	20.96	21.03	0.08	9.41	103.7	1	16.4	3.6	3.0	-2.5	250	257.7	49.7
		5	5	0.11	0.51	1284	67.7	63.5	63.5	21.03	21.12	0.08	9.86	105.16	1	16.4	3.6	3.0	-3	250	258.1	49.8
		6	5	0.11	0.51	1287	68.1	63	63	21.12	21.20	0.08	9.87	108.49	1	16.4	3.6	3.0	-3.5	250	257.1	50
		7	5	0.10	0.46	1298	68.1	64.1	64.1	21.20	21.28	0.08	9.44	103.83	1	16.4	3.6	3.0	-3.5	250	258.9	47.3
		8	5	0.10	0.47	1287	70	66.7	66.7	21.28	21.35	0.08	9.41	105.76	1	16.4	3.6	3.0	-3.5	250	259.4	46.5
		9	5	0.09	0.42	1289	70.6	67.5	67.5	21.35	21.43	0.07	8.93	104.99	1	16.4	3.6	3.0	-4	250	259.8	46.8
		10	5	0.09	0.42	1279	71	68	68	21.43	21.50	0.07	8.91	101.78	1	16.4	3.6	3.0	-3.5	250	259.2	46.7
		11	5	0.09	0.42	1282	71.4	68.7	68.7	21.50	21.57	0.07	8.91	102.47	1	16.4	3.6	3.0	-3.5	250	261.8	46.6
		12	5	0.09	0.42	1279	72	69.4	69.4	21.57	21.64	0.07	8.91	101.55	1	16.4	3.6	3.0	-4	250	257.3	45.9
		13	5	0.09	0.42	1281	72.6	70.1	70.1	21.64	21.72	0.07	8.91	100.78	1	16.4	3.6	3.0	-4	250	256.4	45.5
		14	5	0.09	0.42	1279	72.9	70.7	70.7	21.72	21.79	0.07	8.91	100.63	1	16.4	3.6	3.0	-4	250	258.1	45
		15	5	0.07	0.33	1274	73.3	71.4	71.4	21.79	21.85	0.06	7.84	103.46	1	16.4	3.6	3.0	-4	250	259.1	44.7
		16	5	0.07	0.33	1280	73.7	73.1	73.1	21.85	21.92	0.07	7.86	104.23	1	16.4	3.6	3.0	-4	250	259.3	44.5
		17	5	0.07	0.33	1285	74	72.4	72.4	21.92	21.98	0.06	7.87	102.82	1	16.4	3.6	3.0	-4	250	259.2	41.3
19h21		18	5	0.07	0.33	1274	74.1	72.9	72.9	21.98	22.05	0.06	7.84	101.64	1	16.4	3.6	3.0	-4	250	258.7	41.5

Sampling survey : INCINERATOR – Particles and metals – Run 3																						
Time	Trav. #	Point #	Pumping duration (min)	Pressure difference (in H ₂ O)		Temperatures (°F)				Gas volume (m³)			Velocity (m/s)	Iso. (%)	> 10% V _{max}	O ₂ (%v)	CO ₂ (%v)	CO (ppmv)	Vacuum (in. Hg)	Temperatures (°F)		
				ΔP	ΔH	Stack	Dry gas meter in	Dry gas meter out	Orifice	Start	End	Total								Probe	Filter	Exit
19h22	1	1	5	0.13	0.57	1309	43	42	42	23.32	23.40	0.08	10.76	104.45	1	12.7	6.6	3.0	-1	250	250	54
		2	5	0.14	0.61	1321	49	43	43	23.40	23.49	0.09	11.20	105.2	1	12.7	6.6	3.0	-1	250	249	55
		3	5	0.15	0.65	1326	54	44	44	23.49	23.57	0.09	11.61	101.18	1	12.7	6.6	3.0	-1	250	258	55
		4	5	0.15	0.65	1333	56	45	45	23.57	23.66	0.08	11.63	98.732	1	12.7	6.6	3.0	-1	250	258	55
		5	5	0.15	0.65	1333	56	45	45	23.66	23.74	0.09	11.63	101.08	1	12.7	6.6	3.0	-1	250	258	55
		6	5	0.15	0.65	1344	55	46	46	23.74	23.83	0.09	11.67	100.72	1	12.7	6.6	3.0	-1	250	262	59
		7	5	0.16	0.69	1358	56	47	47	23.83	23.92	0.09	12.10	107.03	1	12.7	6.6	3.0	-1	250	255	56
		8	5	0.18	0.77	1365	56	47	47	23.92	24.01	0.09	12.86	98.345	1	12.7	6.6	3.0	-1	250	255	56
		9	5	0.18	0.77	1370	57	48	48	24.01	24.11	0.09	12.87	100.45	1	12.7	6.6	3.0	-1	250	248	53
		10	5	0.17	0.73	1362	58	48	48	24.11	24.20	0.09	12.48	105.24	1	12.7	6.6	3.0	-1	250	249	52
		11	5	0.17	0.73	1366	62	49	49	24.20	24.29	0.09	12.50	100.72	1	12.7	6.6	3.0	-1	250	249	52
		12	5	0.12	0.53	1334	59	50	50	24.29	24.37	0.08	10.41	106.58	1	12.7	6.6	3.0	-1	250	249	52
		13	5	0.11	0.48	1350	59	50	50	24.37	24.45	0.08	10.01	103.95	1	12.7	6.6	3.0	-1	250	249	52
		14	5	0.13	0.57	1354	59	51	51	24.45	24.53	0.08	10.89	100.72	1	12.7	6.6	3.0	-1	250	249	52
		15	5	0.12	0.52	1363	60	51	51	24.53	24.61	0.08	10.49	103.6	1	12.7	6.6	3.0	-1	250	250	51
	2	16	5	0.14	0.62	1339	60	52	52	24.61	24.69	0.09	11.26	103.68	1	12.7	6.6	3.0	-2.5	250	250	50
		1	5	0.13	0.58	1327	60	53	53	24.69	24.78	0.09	10.81	107.12	1	12.7	6.6	3.0	-2.5	250	251	50
		2	5	0.13	0.58	1318	61	53	53	24.78	24.87	0.09	10.78	106.13	1	12.7	6.6	3.0	-2.5	250	256	51
		3	5	0.13	0.58	1322	61	53	53	24.87	24.95	0.08	10.80	98.789	1	12.7	6.6	3.0	-2.5	250	250	51
		4	5	0.14	0.63	1313	63	55	55	24.95	25.03	0.09	11.18	102.33	1	12.7	6.6	3.0	-2.5	250	251	51
		5	5	0.14	0.63	1312	63	55	55	25.03	25.12	0.09	11.17	102.31	1	12.7	6.6	3.0	-2.5	250	250	52
		6	5	0.16	0.71	1332	65	56	56	25.12	25.21	0.09	12.01	103.23	1	12.7	6.6	3.0	-2.5	250	250	51
		7	5	0.16	0.71	1332	65	57	57	25.21	25.30	0.09	12.01	101.46	1	12.7	6.6	3.0	-2.5	250	251	52
		8	5	0.15	0.67	1335	66	57	57	25.30	25.39	0.09	11.64	104.76	1	12.7	6.6	3.0	-3	250	251	53
		9	5	0.14	0.63	1330	66	58	58	25.39	25.48	0.09	11.23	104.02	1	12.7	6.6	3.0	-3	250	250	53
		10	5	0.15	0.67	1334	67	59	59	25.48	25.57	0.09	11.64	103.86	1	12.7	6.6	3.0	-3	250	251	53
		11	5	0.15	0.67	1335	67	60	60	25.57	25.66	0.09	11.64	103.22	1	12.7	6.6	3.0	-3.5	250	250	55
		12	5	0.15	0.67	1339	68	60	60	25.66	25.75	0.09	11.65	101.51	1	12.7	6.6	3.0	-3.5	250	251	54
		13	5	0.15	0.67	1334	68	61	61	25.75	25.84	0.09	11.64	102.99	1	12.7	6.6	3.0	-3.5	250	251	55
		14	5	0.15	0.67	1333	68	61	61	25.84	25.93	0.09	11.63	101.82	1	12.7	6.6	3.0	-4	250	252	54
		15	5	0.14	0.63	1340	70	62	62	25.93	26.01	0.09	11.26	103.51	1	12.7	6.6	3.0	-4	250	250	57
22h03		16	5	0.15	0.68	1333	70	63	63	26.01	26.10	0.09	11.63	98.585	1	12.7	6.6	3.0	-4.5	250	251	58

Sampling survey : INCINERATOR – Particles and metals – Run 4																						
Time	Trav. #	Point #	Pumping duration (min)	Pressure difference (in H ₂ O)		Temperatures (°F)				Gas volume (m³)			Velocity (m/s)	Iso. (%)	> 10% V _{max}	O ₂ (%v)	CO ₂ (%v)	CO (ppmv)	Vacuum (in. Hg)	Temperatures (°F)		
				ΔP	ΔH	Stack	Dry gas meter in	Dry gas meter out	Orifice	Start	End	Total								Probe	Filter	Exit
00h00	1	1	5	0.09	0.80	1289	60	60	60	23.55	23.65	0.10	8.89	106.11	1	14.4	5.4	2.0	-1.5	250	261	36
		2	5	0.10	0.88	1281	53	52	52	23.65	23.75	0.10	9.35	103.43	1	14.4	5.4	2.0	-2	250	268	35
		3	5	0.10	0.88	1284	57	53	53	23.75	23.85	0.10	9.36	102.02	1	14.4	5.4	2.0	-4	250	268	34
		4	5	0.11	0.97	1282	57	53	53	23.85	23.96	0.11	9.81	103.44	1	14.4	5.4	2.0	-4	250	265	35
		5	5	0.11	0.98	1268	61	55	55	23.96	24.07	0.11	9.77	104.31	1	14.4	5.4	2.0	-5	250	266	37
		6	5	0.11	0.98	1268	61	55	55	24.07	24.18	0.11	9.77	103.37	1	14.4	5.4	2.0	-5	250	266	37
		7	5	0.12	1.07	1275	64	57	57	24.18	24.30	0.11	10.22	103.22	1	14.4	5.4	2.0	-5	250	266	40
		8	5	0.14	1.24	1281	64	57	57	24.30	24.42	0.12	11.06	102.04	1	14.4	5.4	2.0	-10	250	266	43
00h45	19h26	9	5	0.14	1.24	1281	64	57	57	24.42	24.53	0.11	11.06	93.678	1	14.4	5.4	2.0	-12.5	250	266	45
10		5	0.14	1.18	1306	38	38	38	24.56	24.67	0.11	11.14	100.36	1	14.4	5.4	2.0	-8	250	259	45	
11		5	0.14	1.18	1317	48	39	39	24.67	24.78	0.11	11.17	96.95	1	14.4	5.4	2.0	-11	250	260	33	
12		5	0.09	0.76	1311	50	40	40	24.78	24.88	0.09	8.94	101.82	1	14.4	5.4	2.0	-8.5	250	263	35	
13		5	0.09	0.76	1312	53	42	42	24.88	24.97	0.09	8.95	99.189	1	14.4	5.4	2.0	-8.5	250	264	35	
14		5	0.09	0.76	1313	56	43	43	24.97	25.06	0.09	8.95	100	1	14.4	5.4	2.0	-9	250	266	38	
15		5	0.09	0.77	1314	58	45	45	25.06	25.15	0.09	8.95	100	1	14.4	5.4	2.0	-9	250	268	39	
16		5	0.09	0.77	1325	59	48	48	25.15	25.25	0.09	8.98	97.832	1	14.4	5.4	2.0	-9	250	265	40	
2		1	5	0.08	0.68	1341	60	49	49	25.25	25.33	0.09	8.50	98.913	1	14.4	5.4	2.0	-9	250	267	41
		2	5	0.08	0.68	1335	61	50	50	25.33	25.42	0.09	8.49	98.557	1	14.4	5.4	2.0	-9	250	269	41
		3	5	0.08	0.68	1344	62	51	51	25.42	25.51	0.09	8.51	98.612	1	14.4	5.4	2.0	-9	250	271	41
		4	5	0.08	0.68	1340	63	53	53	25.51	25.60	0.09	8.50	102.73	1	14.4	5.4	2.0	-10	250	270	41
		5	5	0.08	0.68	1347	64	54	54	25.60	25.69	0.09	8.52	100.48	1	14.4	5.4	2.0	-10	250	269	41
		6	5	0.08	0.68	1348	65	55	55	25.69	25.78	0.09	8.52	100.31	1	14.4	5.4	2.0	-10	250	270	41
		7	5	0.08	0.68	1354	66	56	56	25.78	25.87	0.09	8.53	101.41	1	14.4	5.4	2.0	-10	250	269	42
		8	5	0.08	0.69	1349	67	58	58	25.87	25.96	0.09	8.52	100.98	1	14.4	5.4	2.0	-10	250	269	43
		9	5	0.08	0.68	1355	68	59	59	25.96	26.05	0.09	8.54	102.08	1	14.4	5.4	2.0	-10	250	269	45
		10	5	0.07	0.60	1353	68	60	60	26.05	26.13	0.09	7.98	101.76	1	14.4	5.4	2.0	-9	250	270	46
		11	5	0.07	0.59	1387	69	61	61	26.13	26.21	0.08	8.06	98.89	1	14.4	5.4	2.0	-9	250	270	47
		12	5	0.07	0.59	1378	64	60	60	26.21	26.30	0.08	8.04	99.216	1	14.4	5.4	2.0	-9	250	269	47
		13	5	0.07	0.60	1361	65	60	60	26.30	26.38	0.08	8.00	98.663	1	14.4	5.4	2.0	-9	250	269	47
		14	5	0.07	0.60	1371	67	61	61	26.38	26.46	0.08	8.02	101.06	1	14.4	5.4	2.0	-9	250	268	48
		15	5	0.07	0.60	1365	68	61	61	26.46	26.54	0.08	8.01	97.195	1	14.4	5.4	2.0	-9	250	269	48
	21h21	16	5	0.07	0.60	1366	70	62	62	26.54	26.63	0.08	8.01	100.06	1	14.4	5.4	2.0	-9	250	268	48

INC-Me/HCl/PM-E1
Impingers – liquid mass

	Before	After	Difference
IMP. 1	682.82	672.05	10.77
IMP. 2	705.74	643.82	61.92
IMP. 3	653.9	632.11	21.79
IMP. 4	539.14	532.1	7.04
IMP. 5	726.99	724.03	2.96
IMP. 6	741.04	743.01	-1.97
IMP. 7			
IMP. 8			
IMP. 9			
Silica gel	1787.11	1762.15	24.96
Total	5836.74	5709.27	127.47

Water mass (g)	127.47
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INC-Me/HCl/PM-E3
Impingers – liquid mass

	Before	After	Difference
IMP. 1	737.05	667.61	69.44
IMP. 2	699.85	648.07	51.78
IMP. 3	645.35	631.21	14.14
IMP. 4	535.61	533	2.61
IMP. 5	722.63	723.75	-1.12
IMP. 6	739.75	743.54	-3.79
IMP. 7			
IMP. 8			
IMP. 9			
Silica gel	1824.55	1791.32	33.23
Total	5904.79	5738.5	166.29

Water mass (g)	166.29
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INC-Me/HCl/PM-E4
Impingers – liquid mass

	Before	After	Difference
IMP. 1	671.2	680.85	-9.65
IMP. 2	766.14	695.74	70.4
IMP. 3	750.53	718.31	32.22
IMP. 4	543.69	532.94	10.75
IMP. 5	657.26	631.13	26.13
IMP. 6	642.15	641.07	1.08
IMP. 7			
IMP. 8			
IMP. 9			
Silica gel	1897.71	1873.4	24.31
Total	5928.68	5773.44	155.24

Water mass (g)	155.24
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AGNICO EAGLE MINES LTD. Meliadine				
19-6012				
INCINERATOR				
Semi-Volatile Organic Compounds				
EXPERIMENTAL SCHEDULE				
RUN NUMBER	INC-COSV-E1	INC-COSV-E3	INC-COSV-E4	AVERAGE
RUN DATE	2019-12-15	2019-12-18	2019-12-18	(1 to 4)
START OF RUN	16h29	19h15	22h36	
END OF RUN	19h29	22h18	20h13	
RUN DURATION (minutes)	180	180	180	
NUMBER OF MEASUREMENTS	36	36	36	
SAMPLING EQUIPMENT DATA				
BAROMETRIC PRESSURE ("Hg)	29.70	30.00	30.00	29.90
STATIC PRESSURE ("H ₂ O)	-0.15	-0.15	-0.15	-0.15
PRESSION STATIQUE (kPa)	-0.037	-0.037	-0.037	-0.037
DRY GAS METER COEFFICIENT	1.021	1.021	1.024	n/a
PITOT TUBE COEFFICIENT	0.805	0.802	0.802	n/a
NOZZLE DIAMETER (in)	0.509	0.433	0.434	n/a
DRY GAS METER TEMPERATURE (°F)	62.7	58.8	51.9	n/a
DRY GAS METER TEMPERATURE (°C)	17.1	14.9	11.0	n/a
GAS HUMIDITY & SAMPLED VOLUME				
MASS OF WATER (g)	160.9	197.3	136.9	n/a
VOLUME OF WATER (ft ³)	7.72	9.47	6.57	n/a
GAS HUMIDITY (BWO)	0.056	0.071	0.058	0.062
GAS HUMIDITY (% v/v)	5.6	7.1	5.8	6.2
REFERENCE GAS VOLUME (ft ³ R)	130.51	124.14	106.25	120.30
REFERENCE GAS VOLUME (m³R)	3.70	3.52	3.01	3.41
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)	2.7	2.7	2.7	n/a
STACK DIAMETER (m)	0.83	0.83	0.83	n/a
LENGTH OF SAMPLING PORTS (in)	7.5	7.5	7.5	n/a
STACK PRESSURE ("Hg)	29.69	29.99	29.99	29.89
STACK PRESSURE (kPa)	100.54	101.55	101.55	101.22
DRY GAS METER PRESSURE ("Hg)	29.76	30.05	30.04	29.95
STACK SURFACE (pi ²)	5.8	5.8	5.8	n/a
STACK SURFACE (m ²)	0.54	0.54	0.54	n/a
GAZ CHARACTERISTICS				
CHIMNEY TEMPERATURE (°F)	1270.8	1341.1	1332.7	1314.8
CHIMNEY TEMPERATURE (°C)	688.2	727.3	722.6	712.7
CO ₂ (%v, dry)	4.9	5.6	5.2	5.2
O ₂ (%v, dry)	14.4	13.5	14.1	14.0
O ₂ (%v, dry)	13.6	12.5	13.3	13.1
CO (ppmv, dry)	2.1	0.0	1.8	1.3
SO ₂ (%v, dry)	0.0	0.0	0.0	0.0
N ₂ (%v, dry)	80.7	80.9	80.7	80.8
Ar (%v, dry)	0.0	0.0	0.0	0.0
DRY MOLECULAR WEIGHT	29.4	29.4	29.4	29.4
WET MOLECULAR WEIGHT	28.7	28.6	28.7	28.7
GAS VELOCITY (ft/s)	29.2	39.9	33.3	34.1
GAS VELOCITY (m/s)	8.9	12.2	10.2	10.4
ACTUAL GAS FLOW RATE (pi ³ /h)	606 024	829 182	691 886	709 030
ACTUAL GAS FLOW RATE (m ³ /h)	17 161	23 480	19 592	20 078
ACTUAL GAS FLOW RATE (ft ³ /min) (ACFM)	10 100	13 820	11 531	11 817
REFERENCE GAS FLOW RATE (ft ³ R/h)	176 117	230 183	195 594	200 631
REFERENCE GAS FLOW RATE (m³R/h)	4 987	6 518	5 539	5 681
REFERENCE GAS FLOW RATE (ft ³ R/min) (RCFM)	2 935	3 836	3 260	3 344

AGNICO EAGLE MINES LTD. Meliadine
19-6012
INCINERATOR
Semi-Volatile Organic Compounds

EXPERIMENTAL SCHEDULE

RUN NUMBER	INC-COSV-E1	INC-COSV-E3	INC-COSV-E4	AVERAGE
RUN DATE	2019-12-15	2019-12-18	2019-12-18	(1 to 4)
START OF RUN	16h29	19h15	22h36	
END OF RUN	19h29	22h18	20h13	
RUN DURATION (minutes)	180	180	180	
NUMBER OF MEASUREMENTS	36	36	36	

SAMPLING INFORMATION

DRY GAS METER ORIFICE COEFFICIENT	1.000	1.000	1.000	n/a
MAXIMUM VELOCITY (m/s)	10.4	13.8	11.8	n/a
MINIMUM VELOCITY (m/s)	6.0	9.4	8.5	n/a
10%Vmax (m/s)	1.04	1.38	1.18	n/a
PERCENTAGE >10%Vmax	1.00	1.00	1.00	1.00
AVERAGE ISOKINETISM (%)	100.7	101.9	101.5	101.4
% POINTS RESPECTING ISOKINETIC CRITERIA	100%	100%	100%	100%
MAXIMUM PUMPING FLOW RATE (ft ³ /min)	0.02	0.02	0.02	n/a
MAXIMUM VACCUUM PRESSURE DURING RUN ("Hg)	-9.5	-6.5	-5.0	n/a
MAXIMUM PROBE TEMPERATURE (°F)	250	250	250	n/a
MINIMUM PROBE TEMPERATURE (°F)	250	250	250	n/a
MAXIMUM FILTER TEMPERATURE (°F)	260	268	269	n/a
MINIMUM FILTER TEMPERATURE (°F)	255	248	249	n/a
MAXIMUM TEMPERATURE AT EXIT (°F)	46	65	47	n/a
MINIMUM TEMPERATURE AT EXIT (°F)	34	43	33	n/a
MAXIMUM TRAP TEMPERATURE (°F)	57	67	55	n/a
MINIMUM TRAP TEMPERATURE (°F)	34	42	33	n/a
AVERAGE PUMPING FLOW RATE (ft ³ /min)	0.02	0.02	0.02	0.02
4% OF AVERAGE PUMPING FLOW RATE (ft ³ /min)	0.001	0.001	0.001	0.001
LEAK TEST BEFORE RUN AT 15 "Hg (ft ³ /min)	0.000	0.000	0.000	0.000
LEAK TEST AFTER RUN (ft ³ /min)	0.000	0.000	0.000	0.000

CYCLONIC FLOW

AVERAGE FLOW ANGLE	0	0	0	0
VERTICAL GAS VELOCITY (m/s)	8.90	12.17	10.16	10.41

AGNICO EAGLE MINES LTD. Meliadine
19-6012
INCINERATOR
Semi-Volatile Organic Compounds

EXPERIMENTAL SCHEDULE

RUN NUMBER	INC-COSV-E1	INC-COSV-E3	INC-COSV-E4	AVERAGE
RUN DATE	2019-12-15	2019-12-18	2019-12-18	(1 to 4)
START OF RUN	16h29	19h15	22h36	
END OF RUN	19h29	22h18	20h13	
RUN DURATION (minutes)	180	180	180	
NUMBER OF MEASUREMENTS	36	36	36	

DIOXINS AND FURANS (pg)

2,3,7,8-TCDD	< 8.0	11.0	4.0	n/a
1,2,3,7,8 PeCDD	8.0	106.0	14.0	n/a
1,2,3,4,7,8 HxCDD	14.0	114.0	12.0	n/a
1,2,3,6,7,8 HxCDD	32.0	451.0	33.0	n/a
1,2,3,7,8,9 HxCDD	20.0	424.0	42.0	n/a
1,2,3,4,6,7,8 HpCDD	185.0	2450.0	208.0	n/a
OCDD	171.0	1470.0	209.0	n/a
2,3,7,8 TCDF	95.0	24.0	89.0	n/a
1,2,3,7,8 PeCDF	13.0	16.0	15.0	n/a
2,3,4,7,8-PeCDF	27.0	43.0	37.0	n/a
1,2,3,4,7,8 HxCDF	56.0	45.0	76.0	n/a
1,2,3,6,7,8 HxCDF	25.0	30.0	34.0	n/a
2,3,4,6,7,8-HxCDF	42.0	57.0	56.0	n/a
1,2,3,7,8,9 HxCDF	< 10.0	< 4.0	< 7.0	n/a
1,2,3,4,6,7,8 HpCDF	113.0	98.0	159.0	n/a
1,2,3,4,7,8,9 HpCDF	39.0	20.0	45.0	n/a
OCDF	52.0	35.0	79.0	n/a
Summation of Tetrachlorodibenzodioxins	125.0	1380.0	407.0	n/a
Summation of Pentachlorodibenzodioxins	99.0	2630.0	249.0	n/a
Summation of Hexachlorodibenzodioxins	259.0	6810.0	394.0	n/a
Summation of Heptachlorodibenzodioxins	438.0	6700.0	509.0	n/a
Summation of PCDDs	1090.0	19000.0	1770.0	n/a
Summation of Tetrachlorodibenzofurans	382.0	387.0	752.0	n/a
Summation of Pentachlorodibenzofurans	289.0	428.0	393.0	n/a
Summation of Hexachlorodibenzofurans	188.0	231.0	221.0	n/a
Summation of Heptachlorodibenzofurans	279.0	225.0	344.0	n/a
Summation of PCDFs	1190.0	1310.0	1790.0	n/a
TOTAL TOXIC CONGENERS	910.0	5398.0	1119.0	n/a
TOTAL HOMOLOGOUS GROUPS	2280.0	20310.0	3560.0	n/a

DIOXINS AND FURANS (pg) – Calculated according to the TEF

2,3,7,8-TCDD	< 8.0	11.0	4.0	n/a
1,2,3,7,8 PeCDD	8.0	106.0	14.0	n/a
1,2,3,4,7,8 HxCDD	1.4	11.4	1.2	n/a
1,2,3,6,7,8 HxCDD	3.2	45.1	3.3	n/a
1,2,3,7,8,9 HxCDD	2.0	42.4	4.2	n/a
1,2,3,4,6,7,8 HpCDD	1.9	24.5	2.1	n/a
OCDD	0.0	0.1	0.0	n/a
2,3,7,8 TCDF	9.5	2.4	8.9	n/a
1,2,3,7,8 PeCDF	0.7	0.8	0.8	n/a
2,3,4,7,8-PeCDF	13.5	21.5	18.5	n/a
1,2,3,4,7,8 HxCDF	5.6	4.5	7.6	n/a
1,2,3,6,7,8 HxCDF	2.5	3.0	3.4	n/a
2,3,4,6,7,8-HxCDF	4.2	5.7	5.6	n/a
1,2,3,7,8,9 HxCDF	< 1.0	< 0.4	< 0.7	n/a
1,2,3,4,6,7,8 HpCDF	1.1	1.0	1.6	n/a
1,2,3,4,7,8,9 HpCDF	0.4	0.2	0.5	n/a
OCDF	0.0	0.0	0.0	n/a
TOTAL TOXIC EQUIVALENCE	53.9	279.6	75.6	n/a

AGNICO EAGLE MINES LTD. Meliadine
19-6012
INCINERATOR
Semi-Volatile Organic Compounds

EXPERIMENTAL SCHEDULE

RUN NUMBER	INC-COSV-E1	INC-COSV-E3	INC-COSV-E4	AVERAGE
RUN DATE	2019-12-15	2019-12-18	2019-12-18	(1 to 4)
START OF RUN	16h29	19h15	22h36	
END OF RUN	19h29	22h18	20h13	
RUN DURATION (minutes)	180	180	180	
NUMBER OF MEASUREMENTS	36	36	36	

DIOXINS AND FURANS (ng/m³R)

2,3,7,8-TCDD	< 0.002165	0.003129	0.001330	0.002208
1,2,3,7,8 PeCDD	0.002165	0.03015	0.004653	0.01232
1,2,3,4,7,8 HxCDD	0.003788	0.03243	0.003989	0.01340
1,2,3,6,7,8 HxCDD	0.008659	0.1283	0.01097	0.04931
1,2,3,7,8,9 HxCDD	0.005412	0.1206	0.01396	0.04666
1,2,3,4,6,7,8 HpCDD	0.05006	0.6970	0.06914	0.2721
OCDD	0.04627	0.4182	0.06947	0.1780
2,3,7,8 TCDF	0.02571	0.006827	0.02958	0.02071
1,2,3,7,8 PeCDF	0.003518	0.004552	0.004986	0.004352
2,3,4,7,8-PeCDF	0.007306	0.01223	0.01230	0.01061
1,2,3,4,7,8 HxCDF	0.01515	0.01280	0.02526	0.01774
1,2,3,6,7,8 HxCDF	0.006765	0.008534	0.01130	0.008867
2,3,4,6,7,8-HxCDF	0.01136	0.01622	0.01861	0.01540
1,2,3,7,8,9 HxCDF	< 0.002706	< 0.001138	< 0.002327	< 0.002057
1,2,3,4,6,7,8 HpCDF	0.03058	0.02788	0.05285	0.03710
1,2,3,4,7,8,9 HpCDF	0.01055	0.005690	0.01496	0.01040
OCDF	0.01407	0.009957	0.02626	0.01676
Summation of Tetrachlorodibenzodioxins	0.03382	0.3926	0.1353	0.1872
Summation of Pentachlorodibenzodioxins	0.02679	0.7482	0.08276	0.2859
Summation of Hexachlorodibenzodioxins	0.07008	1.937	0.1310	0.7128
Summation of Heptachlorodibenzodioxins	0.1185	1.906	0.1692	0.7312
Summation of PCDDs	0.2949	5.405	0.5883	2.096
Summation of Tetrachlorodibenzofurans	0.1034	0.1101	0.2500	0.1545
Summation of Pentachlorodibenzofurans	0.07820	0.1218	0.1306	0.1102
Summation of Hexachlorodibenzofurans	0.05087	0.06571	0.07346	0.06335
Summation of Heptachlorodibenzofurans	0.07549	0.06401	0.1143	0.08461
Summation of PCDFs	0.3220	0.3727	0.5950	0.4299
TOTAL TOXIC CONGENERS	0.2462	1.536	0.3719	0.7179
TOTAL HOMOLOGOUS GROUPS	0.6169	5.778	1.183	2.526

DIOXINS AND FURANS (ng/m³R) – Calculated according to the TEF

2,3,7,8-TCDD	< 0.002165	0.003129	0.001330	0.002208
1,2,3,7,8 PeCDD	0.002165	0.03015	0.004653	0.01232
1,2,3,4,7,8 HxCDD	0.0003788	0.003243	0.0003989	0.001340
1,2,3,6,7,8 HxCDD	0.0008659	0.01283	0.001097	0.004931
1,2,3,7,8,9 HxCDD	0.0005412	0.01206	0.001396	0.004666
1,2,3,4,6,7,8 HpCDD	0.0005006	0.006970	0.0006914	0.002721
OCDD	0.000004627	0.00004182	0.000006947	0.00001780
2,3,7,8 TCDF	0.002571	0.0006827	0.002958	0.002071
1,2,3,7,8 PeCDF	0.0001759	0.0002276	0.0002493	0.0002176
2,3,4,7,8-PeCDF	0.003653	0.006116	0.006149	0.005306
1,2,3,4,7,8 HxCDF	0.001515	0.001280	0.002526	0.001774
1,2,3,6,7,8 HxCDF	0.0006765	0.0008534	0.001130	0.0008867
2,3,4,6,7,8-HxCDF	0.001136	0.001622	0.001861	0.001540
1,2,3,7,8,9 HxCDF	< 0.0002706	< 0.0001138	< 0.0002327	< 0.0002057
1,2,3,4,6,7,8 HpCDF	0.0003058	0.0002788	0.0005285	0.0003710
1,2,3,4,7,8,9 HpCDF	0.0001055	0.00005690	0.0001496	0.0001040
OCDF	0.000001407	0.0000009957	0.000002626	0.000001676
TOTAL TOXIC EQUIVALENCE	0.01460	0.07955	0.02513	0.03976

AGNICO EAGLE MINES LTD. Meliadine 19-6012 INCINERATOR Semi-Volatile Organic Compounds				
EXPERIMENTAL SCHEDULE				
RUN NUMBER	INC-COSV-E1	INC-COSV-E3	INC-COSV-E4	AVERAGE
RUN DATE	2019-12-15	2019-12-18	2019-12-18	(1 to 4)
START OF RUN	16h29	19h15	22h36	
END OF RUN	19h29	22h18	20h13	
RUN DURATION (minutes)	180	180	180	
NUMBER OF MEASUREMENTS	36	36	36	
DIOXINS AND FURANS (ng/m3R at 11% O2)				
2,3,7,8-TCDD	< 0.003297	0.004186	0.001936	0.003140
1,2,3,7,8 PeCDD	0.003297	0.04034	0.006775	0.01680
1,2,3,4,7,8 HxCDD	0.005770	0.04339	0.005807	0.01832
1,2,3,6,7,8 HxCDD	0.01319	0.1716	0.01597	0.06693
1,2,3,7,8,9 HxCDD	0.008243	0.1614	0.02032	0.06331
1,2,3,4,6,7,8 HpCDD	0.07624	0.9324	0.1007	0.3698
OCDD	0.07047	0.5595	0.1011	0.2437
2,3,7,8 TCDF	0.03915	0.009134	0.04307	0.03045
1,2,3,7,8 PeCDF	0.005358	0.006089	0.007259	0.006235
2,3,4,7,8-PeCDF	0.01113	0.01637	0.01790	0.01513
1,2,3,4,7,8 HxCDF	0.02308	0.01713	0.03678	0.02566
1,2,3,6,7,8 HxCDF	0.01030	0.01142	0.01645	0.01272
2,3,4,6,7,8-HxCDF	0.01731	0.02169	0.02710	0.02203
1,2,3,7,8,9 HxCDF	< 0.004121	< 0.001522	< 0.003387	< 0.003010
1,2,3,4,6,7,8 HpCDF	0.04657	0.03730	0.07694	0.05360
1,2,3,4,7,8,9 HpCDF	0.01607	0.007612	0.02178	0.01515
OCDF	0.02143	0.01332	0.03823	0.02433
Summation of Tetrachlorodibenzodioxins	0.05152	0.5252	0.1970	0.2579
Summation of Pentachlorodibenzodioxins	0.04080	1.001	0.1205	0.3874
Summation of Hexachlorodibenzodioxins	0.1067	2.592	0.1907	0.9631
Summation of Heptachlorodibenzodioxins	0.1805	2.550	0.2463	0.9922
Summation of PCDDs	0.4492	7.231	0.8565	2.846
Summation of Tetrachlorodibenzofurans	0.1574	0.1473	0.3639	0.2229
Summation of Pentachlorodibenzofurans	0.1191	0.1629	0.1902	0.1574
Summation of Hexachlorodibenzofurans	0.07748	0.08791	0.1069	0.09078
Summation of Heptachlorodibenzofurans	0.1150	0.08563	0.1665	0.1224
Summation of PCDFs	0.4904	0.4986	0.8662	0.6184
TOTAL TOXIC CONGENERS	0.3750	2.054	0.5415	0.9903
TOTAL HOMOLOGOUS GROUPS	0.9397	7.730	1.723	3.464
DIOXINS AND FURANS (ng/m3R at 11% O2) – Calculated according to the TEF				
2,3,7,8-TCDD	< 0.003297	0.004186	0.001936	0.003140
1,2,3,7,8 PeCDD	0.003297	0.04034	0.006775	0.01680
1,2,3,4,7,8 HxCDD	0.0005770	0.004339	0.0005807	0.001832
1,2,3,6,7,8 HxCDD	0.001319	0.01716	0.001597	0.006693
1,2,3,7,8,9 HxCDD	0.0008243	0.01614	0.002032	0.006331
1,2,3,4,6,7,8 HpCDD	0.0007624	0.009324	0.001007	0.003698
OCDD	0.000007047	0.00005595	0.00001011	0.00002437
2,3,7,8 TCDF	0.003915	0.0009134	0.004307	0.003045
1,2,3,7,8 PeCDF	0.0002679	0.0003045	0.0003629	0.0003118
2,3,4,7,8-PeCDF	0.005564	0.008183	0.008952	0.007566
1,2,3,4,7,8 HxCDF	0.002308	0.001713	0.003678	0.002566
1,2,3,6,7,8 HxCDF	0.001030	0.001142	0.001645	0.001272
2,3,4,6,7,8-HxCDF	0.001731	0.002169	0.002710	0.002203
1,2,3,7,8,9 HxCDF	< 0.0004121	< 0.0001522	< 0.0003387	< 0.0003010
1,2,3,4,6,7,8 HpCDF	0.0004657	0.0003730	0.0007694	0.0005360
1,2,3,4,7,8,9 HpCDF	0.0001607	0.00007612	0.0002178	0.0001515
OCDF	0.000002143	0.000001332	0.000003823	0.000002433
TOTAL TOXIC EQUIVALENCE	0.02223	0.1064	0.03658	0.05508
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AGNICO EAGLE MINES LTD. Meliadine 19-6012 INCINERATOR Semi-Volatile Organic Compounds				
EXPERIMENTAL SCHEDULE				
RUN NUMBER	INC-COSV-E1	INC-COSV-E3	INC-COSV-E4	AVERAGE
RUN DATE	2019-12-15	2019-12-18	2019-12-18	(1 to 4)
START OF RUN	16h29	19h15	22h36	
END OF RUN	19h29	22h18	20h13	
RUN DURATION (minutes)	180	180	180	
NUMBER OF MEASUREMENTS	36	36	36	
DIOXINS AND FURANS (µg/h)				
2,3,7,8-TCDD	< 0.01080	0.02040	0.007364	0.01285
1,2,3,7,8 PeCDD	0.01080	0.1965	0.02577	0.07771
1,2,3,4,7,8 HxCDD	0.01889	0.2114	0.02209	0.08412
1,2,3,6,7,8 HxCDD	0.04318	0.8363	0.06075	0.3134
1,2,3,7,8,9 HxCDD	0.02699	0.7862	0.07732	0.2968
1,2,3,4,6,7,8 HpCDD	0.2496	4.543	0.3829	1.725
OCDD	0.2308	2.726	0.3848	1.114
2,3,7,8 TCDF	0.1282	0.04450	0.1638	0.1122
1,2,3,7,8 PeCDF	0.01754	0.02967	0.02761	0.02494
2,3,4,7,8-PeCDF	0.03643	0.07973	0.06812	0.06143
1,2,3,4,7,8 HxCDF	0.07557	0.08344	0.1399	0.09964
1,2,3,6,7,8 HxCDF	0.03374	0.05563	0.06259	0.05065
2,3,4,6,7,8-HxCDF	0.05668	0.1057	0.1031	0.08849
1,2,3,7,8,9 HxCDF	< 0.01349	< 0.007417	< 0.01289	< 0.01127
1,2,3,4,6,7,8 HpCDF	0.1525	0.1817	0.2927	0.2090
1,2,3,4,7,8,9 HpCDF	0.05263	0.03708	0.08284	0.05752
OCDF	0.07017	0.06490	0.1454	0.09350
Summation of Tetrachlorodibenzodioxins	0.1687	2.559	0.7493	1.159
Summation of Pentachlorodibenzodioxins	0.1336	4.877	0.4584	1.823
Summation of Hexachlorodibenzodioxins	0.3495	12.63	0.7253	4.567
Summation of Heptachlorodibenzodioxins	0.5911	12.42	0.9370	4.650
Summation of PCDDs	1.471	35.23	3.258	13.32
Summation of Tetrachlorodibenzofurans	0.5155	0.7176	1.384	0.8725
Summation of Pentachlorodibenzofurans	0.3900	0.7936	0.7235	0.6357
Summation of Hexachlorodibenzofurans	0.2537	0.4283	0.4069	0.3630
Summation of Heptachlorodibenzofurans	0.3765	0.4172	0.6333	0.4757
Summation of PCDFs	1.606	2.429	3.295	2.443
TOTAL TOXIC CONGENERS	1.228	10.01	2.060	4.432
TOTAL HOMOLOGOUS GROUPS	3.077	37.66	6.554	15.76
DIOXINS AND FURANS (µg/h) – Calculated according to the TEF				
2,3,7,8-TCDD	< 0.01080	0.02040	0.007364	0.01285
1,2,3,7,8 PeCDD	0.01080	0.1965	0.02577	0.07771
1,2,3,4,7,8 HxCDD	0.001889	0.02114	0.002209	0.008412
1,2,3,6,7,8 HxCDD	0.004318	0.08363	0.006075	0.03134
1,2,3,7,8,9 HxCDD	0.002699	0.07862	0.007732	0.02968
1,2,3,4,6,7,8 HpCDD	0.002496	0.04543	0.003829	0.01725
OCDD	0.00002308	0.0002726	0.00003848	0.0001114
2,3,7,8 TCDF	0.01282	0.004450	0.01638	0.01122
1,2,3,7,8 PeCDF	0.0008771	0.001483	0.001381	0.001247
2,3,4,7,8-PeCDF	0.01822	0.03987	0.03406	0.03071
1,2,3,4,7,8 HxCDF	0.007557	0.008344	0.01399	0.009964
1,2,3,6,7,8 HxCDF	0.003374	0.005563	0.006259	0.005065
2,3,4,6,7,8-HxCDF	0.005668	0.01057	0.01031	0.008849
1,2,3,7,8,9 HxCDF	< 0.001349	< 0.0007417	< 0.001289	< 0.001127
1,2,3,4,6,7,8 HpCDF	0.001525	0.001817	0.002927	0.002090
1,2,3,4,7,8,9 HpCDF	0.0005263	0.0003708	0.0008284	0.0005752
OCDF	0.000007017	0.000006490	0.00001454	0.000009350
TOTAL TOXIC EQUIVALENCE	0.07279	0.5185	0.1392	0.2435
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 ₂ O)		Temperatures (°F)				Gas volume (m³)			Velocity (m/s)	Iso. (%)	> 10% V _{max}	O ₂ (%v)	CO ₂ (%v)	CO (ppmv)	Vaccum (in. Hg)	Temperatures (°F)			
				ΔP	ΔH	Stack	Dry gas meter in	Dry gas meter out	Orifice	Start	End	Total								Probe	Filter	Exit	Trap
16h29	1	1	5	0.06	0.53	1285	46.2	47	47	15.25	15.33	0.08	7.35	100.63	1	16.9	3.3	3.0	-1	250	259	34	34
		2	5	0.12	1.06	1285	53.5	46.7	46.7	15.33	15.43	0.11	10.39	96.618	1	16.9	3.3	3.0	-1	250	259.2	35	35.6
		3	5	0.12	1.07	1265	56.5	47.8	47.8	15.43	15.55	0.11	10.33	100.62	1	16.9	3.3	3.0	-4	250	258.8	35.7	41.6
		4	5	0.12	1.08	1260	58.4	49	49	15.55	15.66	0.11	10.31	98.385	1	16.9	3.3	3.0	-4.5	250	258.8	36.8	44.5
		5	5	0.11	0.99	1260	60	50	50	15.66	15.76	0.11	9.88	102.01	1	16.9	3.3	3.0	-5	250	257.6	38.8	46
		6	5	0.11	0.99	1260	61	51.3	51.3	15.76	15.87	0.11	9.88	98.532	1	16.9	3.3	3.0	-5	250	256.3	39.9	47.2
		7	5	0.11	0.99	1260	61.8	52.6	52.6	15.87	15.98	0.11	9.88	100.65	1	16.9	3.3	3.0	-5.5	250	258.5	41.3	48.6
		8	5	0.12	1.08	1265	62.1	53.6	53.6	15.98	16.09	0.11	10.33	101.74	1	16.9	3.3	3.0	-6	250	257.4	41.8	49.3
		9	5	0.12	1.09	1264	62.9	54.5	54.5	16.09	16.21	0.11	10.33	101.1	1	16.9	3.3	3.0	-6.5	250	258.5	42.6	49.5
		10	5	0.06	0.53	1296	63.5	55.5	55.5	16.21	16.29	0.08	7.37	102.86	1	16.9	3.3	3.0	-7	250	259.2	41.8	49.3
		11	5	0.06	0.53	1300	60.5	56	56	16.29	16.37	0.08	7.38	102.59	1	16.9	3.3	3.0	-4	250	257.2	44.8	50.6
		12	5	0.04	0.36	1270	60	56.2	56.2	16.37	16.44	0.07	5.97	100.72	1	16.9	3.3	3.0	-4.5	250	257.8	44.1	49.5
		13	5	0.06	0.54	1281	60.4	56.7	56.7	16.44	16.51	0.07	7.34	94.426	1	16.9	3.3	3.0	-3.5	250	258.7	43.6	48.2
		14	5	0.06	0.54	1285	60.9	57.2	57.2	16.51	16.58	0.07	7.35	91.295	1	16.9	3.3	3.0	-4	250	257.7	44.1	47.8
		15	5	0.07	0.63	1285	62.2	57.8	57.8	16.58	16.67	0.09	7.94	103.59	1	16.9	3.3	3.0	-5	250	259.8	43.7	48.6
		16	5	0.07	0.63	1279	63.2	58.6	58.6	16.67	16.76	0.09	7.92	101.5	1	16.9	3.3	3.0	-5.5	250	257.8	44.1	50.6
		17	5	0.05	0.45	1295	64.1	59.3	59.3	16.76	16.83	0.07	6.73	100.45	1	16.9	3.3	3.0	-5.5	250	257.8	44	51.7
		18	5	0.05	0.45	1278	64.5	60	60	16.83	16.91	0.07	6.69	99.859	1	16.9	3.3	3.0	-5	250	258.2	43.3	52
	2	1	5	0.05	0.46	1274	65.1	60.8	60.8	16.91	16.98	0.07	6.69	99.61	1	16.9	3.3	3.0	-5	250	258.6	43	52.5
		2	5	0.05	0.45	1282	65.6	61.4	61.4	16.98	17.05	0.07	6.70	101.78	1	16.9	3.3	3.0	-5	250	258.1	43.4	53
		3	5	0.09	0.83	1264	66.7	62.1	62.1	17.05	17.15	0.10	8.94	100.72	1	16.9	3.3	3.0	-5	250	257	43.3	53.7
		4	5	0.11	1.01	1266	66.5	62.3	62.3	17.15	17.26	0.11	9.89	100.36	1	16.9	3.3	3.0	-5	250	258.3	43.2	55.1
		5	5	0.11	1.01	1265	66.7	64.1	64.1	17.26	17.37	0.11	9.89	101.06	1	16.9	3.3	3.0	-8.5	250	259	43.8	55
		6	5	0.11	1.01	1267	63.1	65.2	65.2	17.37	17.48	0.11	9.90	100.44	1	16.9	3.3	3.0	-8.5	250	259.8	45.5	53.9
		7	5	0.11	1.01	1270	70.7	65.2	65.2	17.48	17.60	0.11	9.90	102.99	1	16.9	3.3	3.0	-9	250	258.6	44.2	53.8
		8	5	0.11	1.01	1268	71.3	65.2	65.2	17.60	17.71	0.11	9.90	101.05	1	16.9	3.3	3.0	-9	250	257.1	43.8	51.9
		9	5	0.11	1.02	1261	71.9	66.7	66.7	17.71	17.82	0.11	9.88	101.56	1	16.9	3.3	3.0	-9	250	256.2	43.5	52.1
		10	5	0.11	1.02	1271	72.4	67.5	67.5	17.82	17.93	0.11	9.91	100.36	1	16.9	3.3	3.0	-9	250	259.1	44.3	52
		11	5	0.11	1.02	1273	72.9	68	68	17.93	18.04	0.11	9.91	101.24	1	16.9	3.3	3.0	-9	250	257.8	43.5	54.7
		12	5	0.11	1.02	1261	73.1	68.6	68.6	18.04	18.15	0.11	9.88	100.81	1	16.9	3.3	3.0	-9	250	255.2	42.9	55.9
		13	5	0.10	0.94	1255	73.3	69.3	69.3	18.15	18.25	0.10	9.40	93.141	1	16.9	3.3	3.0	-9	250	258.1	42.8	57.1
		14	5	0.10	0.94	1256	73.8	69.8	69.8	18.25	18.36	0.11	9.41	102.53	1	16.9	3.3	3.0	-9	250	258.2	39.7	56.8
		15	5	0.10	0.94	1254	73.6	70.2	70.2	18.36	18.47	0.11	9.40	102.92	1	16.9	3.3	3.0	-9	250	256.7	40.8	51.8
		16	5	0.10	0.93	1269	73.5	70.4	70.4	18.47	18.58	0.11	9.44	104.78	1	16.9	3.3	3.0	-9	250	259.2	41.6	53.3
		17	5	0.09	0.84	1255	73.4	70.5	70.5	18.58	18.68	0.11	8.92	104.51	1	16.9	3.3	3.0	-9.5	250	254.7	42.6	55.4
19h29		18	5	0.09	0.84	1264	73.1	71.1	71.1	18.68	18.79	0.11	8.94	106.75	1	16.9	3.3	3.0	-9.5	250	259.4	43.2	55

Sampling survey : INCINERATOR – SVOC – Run 3																							
Time	Trav. #	Point #	Pumping duration (min)	Pressure difference (in H ₂ O)		Temperatures (°F)				Gas volume (m³)			Velocity (m/s)	Iso. (%)	> 10% V _{max}	O ₂ (%v)	CO ₂ (%v)	CO (ppmv)	Vaccum (in. Hg)	Temperatures (°F)			
				ΔP	ΔH	Stack	Dry gas meter in	Dry gas meter out	Orifice	Start	End	Total								Probe	Filter	Exit	Trap
19h15	1	1	5	0.14	0.63	1296	43	42	42	20.12	20.20	0.08	11.18	97.482	1	12.7	6.6	3.0	-1	250	250	53	42
19h20-22		2	5	0.15	0.67	1296	43	42	42	20.21	20.30	0.09	11.57	105.3	1	12.7	6.6	3.0	-1	250	250	53	42
		3	5	0.18	0.78	1355	52	44	44	20.30	20.39	0.09	12.89	100.99	1	12.7	6.6	3.0	-1	250	251	61	48
		4	5	0.18	0.78	1368	54	44	44	20.39	20.48	0.09	12.93	100.08	1	12.7	6.6	3.0	-1	250	249	60	56
		5	5	0.18	0.78	1378	54	45	45	20.48	20.58	0.09	12.97	101.33	1	12.7	6.6	3.0	-1	250	251	65	56
		6	5	0.18	0.78	1375	56	46	46	20.58	20.67	0.09	12.96	100.95	1	12.7	6.6	3.0	-1	250	248	65	56
		7	5	0.20	0.87	1379	56	47	47	20.67	20.77	0.10	13.67	101.92	1	12.7	6.6	3.0	-1	250	248	65	56
		8	5	0.20	0.86	1385	57	47	47	20.77	20.87	0.10	13.70	103	1	12.7	6.6	3.0	-1	250	248	65	56
		9	5	0.20	0.86	1390	57	47	47	20.87	20.97	0.10	13.71	100.08	1	12.7	6.6	3.0	-1	250	248	65	56
		10	5	0.20	0.86	1392	59	48	48	20.97	21.07	0.10	13.72	104.93	1	12.7	6.6	3.0	-1	250	248	65	56
		11	5	0.20	0.86	1396	61	49	49	21.07	21.17	0.10	13.74	98.638	1	12.7	6.6	3.0	-1	250	267	65	59
		12	5	0.18	0.78	1390	62	49	49	21.17	21.26	0.09	13.01	101.55	1	12.7	6.6	3.0	-1	250	265	44	55
		13	5	0.19	0.82	1393	61	48	48	21.26	21.36	0.10	13.38	101.21	1	12.7	6.6	3.0	-1	250	261	43	54
		14	5	0.19	0.82	1395	64	51	51	21.36	21.46	0.10	13.38	101.71	1	12.7	6.6	3.0	-1	250	267	52	64
		15	5	0.20	0.86	1404	65	51	51	21.46	21.56	0.10	13.77	98.278	1	12.7	6.6	3.0	-1	250	263	45	53
		16	5	0.17	0.75	1361	66	52	52	21.56	21.65	0.10	12.54	105.13	1	12.7	6.6	3.0	-1	250	264	46	54
		17	5	0.16	0.71	1357	66	53	53	21.65	21.75	0.09	12.16	104.23	1	12.7	6.6	3.0	-1	250	265	47	56
		18	5	0.16	0.71	1360	66	54	54	21.75	21.84	0.09	12.17	102.54	1	12.7	6.6	3.0	-5	250	267	47	59
2	1	5	0.16	0.71	1354	66	54	54	21.84	21.93	0.09	12.15	101.82	1	12.7	6.6	3.0	-5	250	265	44	55	
	2	5	0.17	0.80	1255	66	54	54	21.93	22.03	0.10	12.17	102.36	1	12.7	6.6	3.0	-5	250	261	43	54	
	3	5	0.17	0.76	1349	68	56	56	22.03	22.13	0.10	12.50	104.72	1	12.7	6.6	3.0	-5	250	267	52	64	
	4	5	0.16	0.72	1331	68	56	56	22.13	22.22	0.09	12.07	103.54	1	12.7	6.6	3.0	-5	250	266	53	65	
	5	5	0.15	0.68	1328	69	57	57	22.22	22.31	0.09	11.68	102.66	1	12.7	6.6	3.0	-5	250	267	53	66	
	6	5	0.16	0.73	1326	69	58	58	22.31	22.40	0.09	12.05	98.163	1	12.7	6.6	3.0	-5.5	250	265	54	66	
	7	5	0.15	0.68	1330	70	58	58	22.40	22.49	0.09	11.68	101.95	1	12.7	6.6	3.0	-5.5	250	267	52	67	
	8	5	0.15	0.68	1330	70	59	59	22.49	22.58	0.09	11.68	102.42	1	12.7	6.6	3.0	-6	250	267	50	66	
	9	5	0.15	0.68	1329	70	60	60	22.58	22.67	0.09	11.68	101.73	1	12.7	6.6	3.0	-6	250	267	48	61	
	10	5	0.15	0.72	1230	70	60	60	22.67	22.76	0.09	11.35	97.238	1	12.7	6.6	3.0	-6	250	266	49	60	
	11	5	0.15	0.69	1327	71	60	60	22.76	22.85	0.09	11.67	103.27	1	12.7	6.6	3.0	-6	250	266	46	51	
	12	5	0.15	0.68	1328	71	60	60	22.85	22.94	0.09	11.68	101.04	1	12.7	6.6	3.0	-6.5	250	267	48	52	
	13	5	0.15	0.68	1337	71	60	60	22.94	23.03	0.09	11.71	101.29	1	12.7	6.6	3.0	-6.5	250	267	50	54	
	14	5	0.14	0.64	1327	73	62	62	23.03	23.12	0.09	11.28	102.41	1	12.7	6.6	3.0	-6.5	250	267	50	55	
	15	5	0.14	0.64	1333	73	63	63	23.12	23.20	0.09	11.30	101.9	1	12.7	6.6	3.0	-6.5	250	267	51	57	
	16	5	0.10	0.48	1261	73	63	63	23.20	23.28	0.08	9.35	101.88	1	12.7	6.6	3.0	-6.5	250	267	53	58	
	17	5	0.10	0.48	1264	73	63	63	23.28	23.36	0.08	9.36	101.97	1	12.7	6.6	3.0	-6.5	250	267	53	58	
	22h18	18	5	0.10	0.47	1270	73	63	63	23.36	23.44	0.08	9.38	108.23	1	12.7	6.6	3.0	-6	250	268	43	58

Sampling survey : INCINERATOR – SVOC – Run 4																							
Time	Trav. #	Point #	Pumping duration (min)	Pressure difference (in H ₂ O)		Temperatures (°F)				Gas volume (m³)			Velocity (m/s)	Iso. (%)	> 10% V _{max}	O ₂ (%v)	CO ₂ (%v)	CO (ppmv)	Vaccum (in. Hg)	Temperatures (°F)			
				ΔP	ΔH	Stack	Dry gas meter in	Dry gas meter out	Orifice	Start	End	Total								Probe	Filter	Exit	Trap
22h36	1	1	5	0.13	0.60								1336	57	60	60	26.13	26.22	0.09				
22h41-45		2	5	0.15	0.68	1363	55	60	60	26.22	26.31	0.09	11.77	102.56	1	14.0	5.7	2.0	-0.5	250	267	33	46
		3	5	0.13	0.59	1327	50	53	53	26.31	26.39	0.08	10.85	100.53	1	14.0	5.7	2.0	-0.5	250	269	33	36
		4	5	0.13	0.59	1326	50	53	53	26.39	26.47	0.08	10.84	99.887	1	14.0	5.7	2.0	-0.5	250	269	33	36
		5	5	0.13	0.59	1326	50	53	53	26.47	26.55	0.08	10.84	102.34	1	14.0	5.7	2.0	-0.5	250	268	34	38
		6	5	0.11	0.50	1327	50	53	53	26.55	26.63	0.08	9.98	105.26	1	14.0	5.7	2.0	-0.5	250	260	45	40
		7	5	0.12	0.54	1330	51	50	50	26.63	26.71	0.08	10.43	104.91	1	14.0	5.7	2.0	-0.5	250	262	44	41
		8	5	0.12	0.54	1331	50	49	49	26.71	26.80	0.09	10.43	109.64	1	14.0	5.7	2.0	-0.5	250	250	45	40
		9	5	0.12	0.54	1337	50	49	49	26.80	26.88	0.08	10.45	102.75	1	14.0	5.7	2.0	-2	250	250	45	45
		10	5	0.12	0.55	1314	55	52	52	26.88	26.96	0.08	10.38	103.2	1	14.0	5.7	2.0	-2	250	250	45	45
		11	5	0.12	0.55	1314	55	52	52	26.96	27.04	0.08	10.38	99.402	1	14.0	5.7	2.0	-2	250	250	45	45
		12	5	0.12	0.55	1321	55	52	52	27.04	27.12	0.08	10.40	99.598	1	14.0	5.7	2.0	-2	250	250	45	45
		13	5	0.12	0.55	1321	55	52	52	27.12	27.20	0.08	10.40	97.695	1	14.0	5.7	2.0	-2	250	250	45	45
		14	5	0.11	0.50	1320	55	52	52	27.20	27.27	0.08	9.96	105.31	1	14.0	5.7	2.0	-4	250	251	47	46
		15	5	0.11	0.50	1324	54	52	52	27.27	27.35	0.08	9.97	102.88	1	14.0	5.7	2.0	-4	250	251	47	46
		16	5	0.11	0.50	1324	54	52	52	27.35	27.43	0.08	9.97	106.19	1	14.0	5.7	2.0	-4	250	251	47	46
		17	5	0.11	0.50	1323	57	54	54	27.43	27.51	0.08	9.97	104.33	1	14.0	5.7	2.0	-3.5	250	250	46	51
		18	5	0.11	0.51	1320	57	54	54	27.51	27.59	0.08	9.96	100.94	1	14.0	5.7	2.0	-3.5	250	249	46	52
00h47 19h03	2	1	5	0.11	0.51	1305	57	54	54	27.59	27.66	0.08	9.92	100.52	1	14.0	5.7	2.0	-3.5	250	249	46	52
		2	5	0.11	0.51	1305	57	54	54	27.66	27.74	0.08	9.92	99.861	1	14.0	5.7	2.0	-3.5	250	249	46	52
		3	5	0.11	0.51	1305	57	54	54	27.74	27.82	0.08	9.92	101.83	1	14.0	5.7	2.0	-4	250	249	45	51
		4	5	0.13	0.63	1243	63	59	59	27.82	27.91	0.09	10.59	103.4	1	14.0	5.7	2.0	-5	250	250	45	55
		5	5	0.08	0.35	1314	32	33	33	28.02	28.08	0.06	8.48	99.719	1	14.0	5.7	2.0	-1	250	263	34	33
		6	5	0.08	0.36	1314	42	36	36	28.08	28.14	0.06	8.48	99.719	1	14.0	5.7	2.0	-1	250	266	34	33
		7	5	0.08	0.36	1318	46	37	37	28.14	28.21	0.06	8.49	99.719	1	14.0	5.7	2.0	-1	250	262	34	34
		8	5	0.09	0.39	1359	44	39	39	28.21	28.27	0.07	9.11	100.08	1	14.0	5.7	2.0	-1	250	259	34	34
		9	5	0.10	0.44	1356	46	41	41	28.27	28.34	0.07	9.59	95.874	1	14.0	5.7	2.0	-1	250	259	34	34
		10	5	0.10	0.44	1360	52	42	42	28.34	28.41	0.07	9.60	99.719	1	14.0	5.7	2.0	-1	250	258	34	35
		11	5	0.10	0.44	1362	54	43	43	28.41	28.48	0.07	9.61	99.212	1	14.0	5.7	2.0	-1	250	262	34	35
		12	5	0.10	0.44	1369	56	45	45	28.48	28.55	0.07	9.62	104.81	1	14.0	5.7	2.0	-1	250	265	34	36
		13	5	0.13	0.57	1379	58	49	49	28.55	28.63	0.08	11.00	99.1	1	14.0	5.7	2.0	-1	250	263	34	36
		14	5	0.13	0.58	1371	60	51	51	28.63	28.72	0.08	10.98	99.733	1	14.0	5.7	2.0	-1	250	264	34	36
		15	5	0.13	0.58	1357	61	52	52	28.72	28.80	0.08	10.94	99.16	1	14.0	5.7	2.0	-1	250	262	34	36
		16	5	0.12	0.54	1360	62	53	53	28.80	28.87	0.08	10.52	96.72	1	14.0	5.7	2.0	-1	250	259	34	36
		17	5	0.12	0.54	1364	63	54	54	28.87	28.95	0.08	10.53	99.719	1	14.0	5.7	2.0	-1	250	257	34	36
20h13		18	5	0.12	0.54	1351	64	54	54	28.95	29.03	0.08	10.49	102	1	14.0	5.7	2.0	-1	250	258	34	36

INC-COSV-E1
Impingers – liquid mass

	Before	After	Difference
IMP. 1	168.7	153.2	15.5
IMP. 2	380.8	268.8	112
IMP. 3	733.4	712.1	21.3
IMP. 4	427.3	429.3	-2
IMP. 5			
IMP. 6			
IMP. 7			
IMP. 8			
IMP. 9			
Silica gel	1850.8	1836.7	14.1
Total	3561	3400.1	160.9

Water mass (g)	160.9
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INC-COSV-E3
Impingers – liquid mass

	Before	After	Difference
IMP. 1	149.1	133.2	15.9
IMP. 2	521.9	373.4	148.5
IMP. 3	741.2	722	19.2
IMP. 4	427.5	428.4	-0.9
IMP. 5			
IMP. 6			
IMP. 7			
IMP. 8			
IMP. 9			
Silica gel	1873.4	1858.8	14.6
Total	3713.1	3515.8	197.3

Water mass (g)	197.3
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INC-COSV-E4
Impingers – liquid mass

	Before	After	Difference
IMP. 1	127.8	112.2	15.6
IMP. 2	405	304.1	100.9
IMP. 3	730	717.9	12.1
IMP. 4	609.9	612.1	-2.2
IMP. 5			
IMP. 6			
IMP. 7			
IMP. 8			
IMP. 9			
Silica gel	1830.5	1820	10.5
Total	3703.2	3566.3	136.9

Water mass (g)	136.9
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APPENDIX 2

CALIBRATION CERTIFICATES



124 311-01255804

CVL 19-043

CERTIFICATE OF ANALYSIS

EPA PROTOCOL MIXTURE

Purchase order # 4501969299

PGVP ID # L12018

Lot # 1479391

Procedure: G1

Cylinder Number: CC 711726

Gas Type Code: OCC

Cylinder pressure: 2000 psig

Certification date

March 30, 2019

Expiration Date

March 31, 2027

ANALYTICAL RESULTS

Component	Requested Concentration ± blending tolerance	Date of Assay	Mean Concentration	Certified Concentration Uncertainty expressed at 95% confidence
Oxygen	12.5 % ± 5%	March 30, 2019	12.40 %	12.40 ± 0.01 %
Carbon Monoxide	500 ppm ± 10%	March 30, 2019	498.1 ppm	498.1 ± 2.59 ppm
Carbon Dioxide	15 % ± 5%	March 30, 2019	15.39 %	15.39 ± 0.1 %

BALANCE GAS: Nitrogen

REFERENCE STANDARDS

Component	Type	Serial Number	Reference Number	Concentration	Expiration Date
Oxygen	GMIS	CC 261564	1329060	23.9 ± 0.03 %	March 17, 2019
	NTRM	CC 237234	071001	24.52 ± 0.12 %	March 27, 2017
Carbon Monoxide	GMIS	CC 1541	GMIS CC 1541	1001.7 ± 0.51 ppm	January 15, 2021
	NTRM	D 167891	56-G-15	2472.8 ± 4.2 ppm	July 7, 2022
Carbon Dioxide	GMIS	SX 19355	1187941	20.32 ± 0.02 %	February 21, 2021
	NTRM	SG 9916842	101001	19.98 ± 0.14 %	June 16, 2022

CERTIFICATION INSTRUMENTS

Component	Make/Model	Measurement Principle	Serial Number	Last calibration
Oxygen	Servomex 04100 C1	Paramagnetic Sensor	392350	March 17, 2019
Carbon Monoxide	FTIR CX 4015	Infrared	122434	March 7, 2019
Carbon Dioxide	FTIR CX 4015	Infrared	122434	March 23, 2019

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: Keith Cybulski Signature

Date: March 30, 2019

Notes:



CERTIFICATE OF ANALYSIS (BATCH)

MONTREAL GAS PLANT
11201 RAY LAWSON
MONTREAL QC
H1J 1M6

LOT #: 10223_357_2019135_003

ANALYSIS DATE: 2019-05-16
PRODUCT CODE: A0492788
GRADE: ALPHAGAZ 1
SIZE: 44
Valve outlet: 350

PRESSURE: 13500 kPa (15°C)
2000 psi (21°C)
VOLUME: 5.41 m3
EXPIRY DATE: 5 years after analysis
date

Servitrax Barcode Traceability:

T022YMA T015WKN
T1568UL

HYDROGEN 99.999%

IMPURITIES	NOMINAL CONCENTRATION	ANALYSIS RESULTS
THC	< 0.5 ppm molar	< 0.5 ppm molar
OXYGEN	< 2 ppm molar	<2 ppm molar
WATER	< 3 ppm molar	<3 ppm molar

Analysis performed by: 

METHOD OF ANALYSIS:

Method of analysis is based on principles of gas chromatography and, as documented in Air Liquide Canada Operating Procedures. Where applicable, FID or TCD were used in conjunction with packed or capillary columns.

The moisture content is determined using an MCM hygrometer.

The oxygen analysis is performed using a Teledyne trace oxygen analyzer.

ANALYTICAL ACCURACY:

The specifications for the reported concentrations are: +/- 2% for components greater than 0.5% and +/- 5% for components less than 0.5%. Analytical accuracy is given, unless otherwise stated, in percent relative to the concentration of the component. This value may change in some cases with the nature, number and concentration of components in the mixture.

How to contact us & order



E-mail within your region:

specgas.atlantic@airliquide.com
specgas.qc@airliquide.com

specgas.on@airliquide.com
specgas.ab@airliquide.com

specgas.midwest@airliquide.com
specgas.pacific@airliquide.com



Customer Solution Center: 1 800 217-2688



Online 24/7 through My.Airliquide.ca



Air Liquide Mobile App

AIR LIQUIDE CANADA INC.
1250, Boul. René-Lévesque
West, #1700 – Montréal, QC
H3B 5E6
Phone: (514) 933-0303

CYL19-083



CERTIFICATE OF ANALYSIS
Grade: EPA Protocol RATA Class

Work Order Number: 1147181 Cylinder Number: T2EKA41
Part Number: A1076451 Cylinder Size: 30AL
Laboratory: SPG Calgary - AB Cylinder Volume: 4.0 M3
Certification Date: 6/25/2019 Cylinder Pressure: 2000 PSI
Expiration Date: 6/25/2027 Valve Outlet Connection: CGA 660

Certification performed in reference to EPA document 600/R-12/531 (EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards – May 2012), using the assay procedures listed and NIST/NTRM traceable standards.
Do not use this cylinder below 100 psi.

ANALYTICAL RESULTS

Component	Nominal Concentration	Actual Concentration	Protocol Method	Total Relative Uncertainty	Assay Dates
SULFUR DIOXIDE	900 PPM	905.3 PPM	G1	+/- 0.05%	6/25/2019
NITRIC OXIDE	900 PPM	903.5 PPM	G1	+/- 0.19%	6/25/2019
NOX	900 PPM	903.5 PPM		Reference value only	
NITROGEN	BALANCE				

TRACEABILITY

Type	Lot ID	Cylinder #	Composition	Uncertainty	Expiration Date
NTRM	PLU0322446	ALM020981	504 ppm NO in N2	+/- 1.0%	2/8/2023
			498 ppm SO2 in N2	+/- 0.6%	2/8/2023

ANALYTICAL EQUIPMENT

Instrument	Analytical Principle	Last Multipoint Calibration
MKS 2031 FT-IR	Fourier transform infrared spectroscopy	NO: 6/24/2019
MKS 2031 FT-IR	Fourier transform infrared spectroscopy	SO2: 6/24/2019

CERTIFIED BY:

AYMEN OUESLATI
Lab Tech.

A handwritten signature in blue ink, appearing to read "Aymen", written over a horizontal line.

REVISED BY:

TAI CHAN
Lab Tech.

A handwritten signature in blue ink, appearing to read "Tai Chan", written over a horizontal line.

AIR LIQUIDE CANADA INC.
1250, Boul. René-Lévesque
West, #1700 – Montréal, QC
H3B 5E6
Phone: (514) 933-0303

CYL19-089



CERTIFICATE OF ANALYSIS

Grade: EPA Protocol RATA Class

Work Order Number: 1147182 **Cylinder Number:** T2MNM2L
Part Number: A1076450 **Cylinder Size:** 30AL
Laboratory: SPG Calgary - AB **Cylinder Volume:** 4.0 M3
Certification Date: 6/25/2019 **Cylinder Pressure:** 2000 PSI
Expiration Date: 6/25/2027 **Valve Outlet Connection:** CGA 660

Certification performed in reference to EPA document 600/R-12/531 (EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards – May 2012), using the assay procedures listed and NIST/NTRM traceable standards.
Do not use this cylinder below 100 psi.

ANALYTICAL RESULTS

Component	Nominal Concentration	Actual Concentration	Protocol Method	Total Relative Uncertainty	Assay Dates
SULFUR DIOXIDE	500 PPM	487.5 PPM	G1	+/- 0.1%	6/25/2019
NITRIC OXIDE	500 PPM	510.0 PPM	G1	+/- 0.20%	6/25/2019
NOX	500 PPM	510.0 PPM		Reference value only	
NITROGEN	BALANCE				

TRACEABILITY

Type	Lot ID	Cylinder #	Composition	Uncertainty	Expiration Date
NTRM	PLU0322446	ALM020981	504 ppm NO in N2	+/- 1.0%	2/8/2023
			498 ppm SO2 in N2	+/- 0.6%	2/8/2023

ANALYTICAL EQUIPMENT

Instrument	Analytical Principle	Last Multipoint Calibration
MKS 2031 FT-IR	Fourier transform infrared spectroscopy	NO: 6/24/2019
MKS 2031 FT-IR	Fourier transform infrared spectroscopy	SO2: 6/24/2019

CERTIFIED BY:

AYMEN OUESLATI
Lab Tech.

REVISED BY:

TAI CHAN
Lab Tech.



19-123

124 311-01304240

MESSER CANADA INC.

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

CERTIFICATE OF ANALYSIS

Purchase order # 4502013420

Lot # 1483970

Cylinder Number: CC 146956

PGVP ID # L12018

Procedure: G1

Gas Type Code: OCC

Cylinder pressure: 2000 psig

Certification date

September 9, 2019

Expiration Date

September 10, 2027

ANALYTICAL RESULTS

Component	Requested Concentration ± blending tolerance	Date of Assay	Mean Concentration	Certified Concentration Uncertainty expressed at 95% confidence
Oxygen	22.5 % ± 5%	September 9, 2019	22.50 %	22.50 ± 0.02 %
Carbon Monoxide	900 ppm ± 5%	September 9, 2019	884.6 ppm	884.6 ± 2.74 ppm
Carbon Dioxide	27 % ± 5%	September 9, 2019	26.93 %	26.93 ± 0.14 %

BALANCE GAS: Nitrogen

REFERENCE STANDARDS

Component	Type	Serial Number	Reference Number	Concentration	Expiration Date
Oxygen	GMIS	CC 261564	1329060	23.9 ± 0.03 %	March 17, 2025
	NTRM	CC 237234	071001	24.52 ± 0.12 %	March 27, 2017
Carbon Monoxide	GMIS	CC 1541	GMIS CC 1541	1001.7 ± 0.51 ppm	January 15, 2021
	NTRM	D 167891	56-G-15	2472.8 ± 4.2 ppm	July 7, 2022
Carbon Dioxide	GMIS	XC 000251	1438051	19.96 ± 0.02 %	May 31, 2020
	NTRM	SG 9916842	101001	19.98 ± 0.14 %	June 16, 2022

CERTIFICATION INSTRUMENTS

Component	Make/Model	Measurement Principle	Serial Number	Last calibration
Oxygen	Servomex 04100 C1	Paramagnetic Sensor	392350	August 15, 2019
Carbon Monoxide	FTIR CX 4015	Infrared	122434	August 15, 2019
Carbon Dioxide	FTIR CX 4015	Infrared	122434	August 15, 2019

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: Keith Cybulski Signature

Date: September 9, 2019

Notes:

Tel: 1-(866) 385-5349

Fax: 1-(866) 385-5347

Page 1 of 1

APPENDIX 3

LABORATORY ANALYSIS REPORTS



**NOM DU CLIENT: CONSULAIR GASTON BOULANGER INC
2022 LAVOISIER LOCAL 125
QUEBEC, QC G1N4L5
(418) 650-5960**

À L'ATTENTION DE: Eric Trepanier

N° DE PROJET: 19-6012-Agnico-Eagle-Meliadine

N° BON DE TRAVAIL: 19M542786

HAUTE RÉOLUTION VÉRIFIÉ PAR: Philippe Morneau, chimiste

DATE DU RAPPORT: 2019-11-25

VERSION*: 1

NOMBRE DE PAGES: 9

Si vous désirez de l'information concernant cette analyse, S.V.P. contacter votre chargé de projets au (514) 337-1000.

*NOTES

Nous disposerons des échantillons dans les 30 jours suivants les analyses. S.V.P. Contactez le laboratoire si vous désirez avoir un délai d'entreposage.



AGAT Laboratoires

Certificat d'analyse

N° BON DE TRAVAIL: 19M542786

N° DE PROJET: 19-6012-Agnico-Eagle-Meliadine

9770 ROUTE TRANSCANADIENNE
ST. LAURENT, QUEBEC
CANADA H4S 1V9
TEL (514)337-1000
FAX (514)333-3046
<http://www.agatlabs.com>

NOM DU CLIENT: CONSULAIR GASTON BOULANGER INC

PRÉLEVÉ PAR:

À L'ATTENTION DE: Eric Trepanier

LIEU DE PRÉLÈVEMENT: Lab.Consulair QC

QC Dioxines et furanes - Air (train d'échantillonnage - OMS 1998)

DATE DE RÉCEPTION: 2019-11-12

DATE DU RAPPORT: 2019-11-25

IDENTIFICATION DE L'ÉCHANTILLON: 501-AEM- Proofing-6012			
MATRICE: Solvant			
DATE D'ÉCHANTILLONNAGE: 2019-11-05			
Paramètre	Unités	C / N	LDR
2,3,7,8-TCDD (pg total)	pg		3
1,2,3,7,8 PeCDD (pg total)	pg		1
1,2,3,4,7,8 HxCDD (pg total)	pg		4
1,2,3,6,7,8 HxCDD (pg total)	pg		4
1,2,3,7,8,9 HxCDD (pg total)	pg		4
1,2,3,4,6,7,8 HpCDD (pg total)	pg		5
OCDD (pg total)	pg		3
2,3,7,8 TCDF (pg total)	pg		2
1,2,3,7,8 PeCDF (pg total)	pg		2
2,3,4,7,8-PeCDF (pg total)	pg		1
1,2,3,4,7,8 HxCDF (pg total)	pg		2
1,2,3,6,7,8 HxCDF (pg total)	pg		1
2,3,4,6,7,8-HxCDF (pg total)	pg		1
1,2,3,7,8,9 HxCDF (pg total)	pg		3
1,2,3,4,6,7,8 HpCDF (pg total)	pg		0.8
1,2,3,4,7,8,9 HpCDF (pg total)	pg		0.6
OCDF (pg total)	pg		3
Sommation des Tétrachlorodibenzodioxines	pg		3
Sommation des Pentachlorodibenzodioxines	pg		1
Sommation des Hexachlorodibenzodioxines	pg		4
Sommation des Heptachlorodibenzodioxines	pg		5
Sommation des PCDDs	pg		5
Sommation des Tétrachlorodibenzofuranes	pg		2

Certifié par:




La procédure des Laboratoires AGAT concernant les signatures et les signataires se conforme strictement aux exigences d'accréditation ISO 17025:2005 comme le requiert, lorsque applicable, CALA, CCN et MDDELCC. Toutes les signatures sur les certificats d'AGAT sont protégées par des mots de passe et les signataires rencontrent les exigences des domaines d'accréditation ainsi que les exigences régionales approuvées par CALA, CCN et MDDELCC.



AGAT Laboratoires

Certificat d'analyse

N° BON DE TRAVAIL: 19M542786

N° DE PROJET: 19-6012-Agnico-Eagle-Meliadine

9770 ROUTE TRANSCANADIENNE
ST. LAURENT, QUEBEC
CANADA H4S 1V9
TEL (514)337-1000
FAX (514)333-3046
<http://www.agatlabs.com>

NOM DU CLIENT: CONSULAIR GASTON BOULANGER INC

PRÉLEVÉ PAR:

À L'ATTENTION DE: Eric Trepanier

LIEU DE PRÉLÈVEMENT: Lab.Consulair QC

QC Dioxines et furanes - Air (train d'échantillonnage - OMS 1998)

DATE DE RÉCEPTION: 2019-11-12

DATE DU RAPPORT: 2019-11-25

IDENTIFICATION DE L'ÉCHANTILLON: 501-AEM- Proofing-6012			
MATRICE: Solvant			
DATE D'ÉCHANTILLONNAGE: 2019-11-05			
Paramètre	Unités	C / N	LDR 707600
Sommation des Pentachlorodibenzofuranes	pg		2 <2
Sommation des Hexachlorodibenzofuranes	pg		3 <3
Sommation des Heptachlorodibenzofuranes	pg		0.8 <0.8
Sommation des PCDFs	pg		3 <3
2,3,7,8-Tetra CDD (TEF 1.0)	TEQ		0
1,2,3,7,8-Penta CDD (TEF 1.0)	TEQ		0
1,2,3,4,7,8-Hexa CDD (TEF 0.1)	TEQ		0
1,2,3,6,7,8-Hexa CDD (TEF 0.1)	TEQ		0
1,2,3,7,8,9-Hexa CDD (TEF 0.1)	TEQ		0
1,2,3,4,6,7,8-Hepta CDD (TEF 0.01)	TEQ		0
Octa CDD (TEF 0.0001)	TEQ		0
2,3,7,8-Tetra CDF (TEF 0.1)	TEQ		0
1,2,3,7,8-Penta CDF (TEF 0.05)	TEQ		0
2,3,4,7,8-Penta CDF (TEF 0.5)	TEQ		0
1,2,3,4,7,8-Hexa CDF (TEF 0.1)	TEQ		0
1,2,3,6,7,8-Hexa CDF (TEF 0.1)	TEQ		0
2,3,4,6,7,8-Hexa CDF (TEF 0.1)	TEQ		0
1,2,3,7,8,9-Hexa CDF (TEF 0.1)	TEQ		0
1,2,3,4,6,7,8-Hepta CDF (TEF 0.01)	TEQ		0
1,2,3,4,7,8,9-Hepta CDF (TEF 0.01)	TEQ		0
Octa CDF (TEF 0.0001)	TEQ		0
Sommation des PCDDs et PCDFs (TEQ)			0

Certifié par:




La procédure des Laboratoires AGAT concernant les signatures et les signataires se conforme strictement aux exigences d'accréditation ISO 17025:2005 comme le requiert, lorsque applicable, CALA, CCN et MDDELCC. Toutes les signatures sur les certificats d'AGAT sont protégées par des mots de passe et les signataires rencontrent les exigences des domaines d'accréditation ainsi que les exigences régionales approuvées par CALA, CCN et MDDELCC.

AGAT CERTIFICAT D'ANALYSE (V1)

Page 3 de 9

Cette version remplace et annule toute version, le cas échéant. Ce document ne doit pas être reproduit, sinon en entier, sans l'autorisation écrite du laboratoire. Les résultats ne se rapportent qu'aux échantillons soumis pour analyse. Les résultats s'appliquent aux échantillons tels que reçus.



AGAT Laboratoires

Certificat d'analyse

N° BON DE TRAVAIL: 19M542786

N° DE PROJET: 19-6012-Agnico-Eagle-Meliadine

9770 ROUTE TRANSCANADIENNE
ST. LAURENT, QUEBEC
CANADA H4S 1V9
TEL (514)337-1000
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NOM DU CLIENT: CONSULAIR GASTON BOULANGER INC

PRÉLEVÉ PAR:

À L'ATTENTION DE: Eric Trepanier

LIEU DE PRÉLÈVEMENT: Lab.Consulair QC

QC Dioxines et furanes - Air (train d'échantillonnage - OMS 1998)

DATE DE RÉCEPTION: 2019-11-12

DATE DU RAPPORT: 2019-11-25

IDENTIFICATION DE L'ÉCHANTILLON:			501-AEM-
MATRICE:			Proofing-6012
DATE D'ÉCHANTILLONNAGE:			Solvant
			2019-11-05
Étalon de recouvrement	Unités	Limites	707600
13C-2378-TCDF	%	30-140	45
13C-12378-PeCDF	%	30-140	46
13C-23478-PeCDF	%	30-140	51
13C-123478-HxCDF	%	30-140	36
13C-123678-HxCDF	%	30-140	52
13C-234678-HxCDF	%	30-140	53
13C-123789-HxCDF	%	30-140	46
13C-1234678-HpCDF	%	30-140	36
13C-1234789-HpCDF	%	30-140	39
13C-2378-TCDD	%	30-140	55
13C-12378-PeCDD	%	30-140	80
13C-123478-HxCDD	%	30-140	57
13C-123678-HxCDD	%	30-140	74
13C-1234678-HxCDD	%	30-140	38
13C-OCDD	%	30-140	42

Commentaires: LDR - Limite de détection rapportée; C / N - Critères Normes

707600 Le résultat en pg total correspond au composite de chacune des parties du train d'échantillonnage.

Certifié par:




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Contrôle de qualité

NOM DU CLIENT: CONSULAIR GASTON BOULANGER INC

N° BON DE TRAVAIL: 19M542786

N° DE PROJET: 19-6012-Agnico-Eagle-Meliadine

À L'ATTENTION DE: Eric Trepanier

PRÉLEVÉ PAR:

LIEU DE PRÉLÈVEMENT: Lab.Consulair QC

Analyse haute résolution

Date du rapport: 2019-11-25			DUPLICATA			MATÉRIAU DE RÉFÉRENCE			BLANC FORTIFIÉ			ÉCH. FORTIFIÉ			
PARAMÈTRE	Lot	N° éch.	Dup #1	Dup #2	% d'écart	Blanc de méthode	% Récup.	Limites		% Récup.	Limites		% Récup.	Limites	
								Inf.	Sup.		Inf.	Sup.		Inf.	Sup.

QC Dioxines et furanes - Air (train d'échantillonnage - OMS 1998)

2,3,7,8-TCDD (pg total)	1		NA	NA	0.0	< 0.3	NA	30%	140%	NA	30%	140%	NA	30%	140%
1,2,3,7,8 PeCDD (pg total)	1		NA	NA	0.0	< 0.2	NA	30%	140%	NA	30%	140%	NA	30%	140%
1,2,3,4,7,8 HxCDD (pg total)	1		NA	NA	0.0	< 0.4	NA	30%	140%	NA	30%	140%	NA	30%	140%
1,2,3,6,7,8 HxCDD (pg total)	1		NA	NA	0.0	< 0.4	NA	30%	140%	NA	30%	140%	NA	30%	140%
1,2,3,7,8,9 HxCDD (pg total)	1		NA	NA	0.0	< 0.4	NA	30%	140%	NA	30%	140%	NA	30%	140%
1,2,3,4,6,7,8 HpCDD (pg total)	1		NA	NA	0.0	< 0.7	NA	30%	140%	NA	30%	140%	NA	30%	140%
OCDD (pg total)	1		NA	NA	0.0	< 0.7	NA	30%	140%	NA	30%	140%	NA	30%	140%
2,3,7,8 TCDF (pg total)	1		NA	NA	0.0	< 0.2	NA	30%	140%	NA	30%	140%	NA	30%	140%
1,2,3,7,8 PeCDF (pg total)	1		NA	NA	0.0	< 0.2	NA	30%	140%	NA	30%	140%	NA	30%	140%
2,3,4,7,8-PeCDF (pg total)	1		NA	NA	0.0	< 0.5	NA	30%	140%	NA	30%	140%	NA	30%	140%
1,2,3,4,7,8 HxCDF (pg total)	1		NA	NA	0.0	< 0.5	NA	30%	140%	NA	30%	140%	NA	30%	140%
1,2,3,6,7,8 HxCDF (pg total)	1		NA	NA	0.0	< 0.6	NA	30%	140%	NA	30%	140%	NA	30%	140%
2,3,4,6,7,8-HxCDF (pg total)	1		NA	NA	0.0	< 0.7	NA	30%	140%	NA	30%	140%	NA	30%	140%
1,2,3,7,8,9 HxCDF (pg total)	1		NA	NA	0.0	< 1	NA	30%	140%	NA	30%	140%	NA	30%	140%
1,2,3,4,6,7,8 HpCDF (pg total)	1		NA	NA	0.0	< 0.8	NA	30%	140%	NA	30%	140%	NA	30%	140%
1,2,3,4,7,8,9 HpCDF (pg total)	1		NA	NA	0.0	< 0.4	NA	30%	140%	NA	30%	140%	NA	30%	140%
OCDF (pg total)	1		NA	NA	0.0	< 0.9	NA	30%	140%	NA	30%	140%	NA	30%	140%

Certifié par:



La procédure des Laboratoires AGAT concernant les signatures et les signataires se conforme strictement aux exigences d'accréditation ISO 17025:2005 comme le requiert, lorsque applicable, CALA, CCN et MDDELCC. Toutes les signatures sur les certificats d'AGAT sont protégées par des mots de passe et les signataires rencontrent les exigences des domaines d'accréditation ainsi que les exigences régionales approuvées par CALA, CCN et MDDELCC. Les pourcentages de différence relative sont calculés à partir des données brutes. Il se peut que le pourcentage de différence relative ne reflète pas les valeurs dupliquées rapportées en raison de l'arrondissement des résultats finaux.

Sommaire de méthode

NOM DU CLIENT: CONSULAIR GASTON BOULANGER INC

N° BON DE TRAVAIL: 19M542786

N° DE PROJET: 19-6012-Agnico-Eagle-Meliadine

À L'ATTENTION DE: Eric Trepanier

PRÉLEVÉ PAR:
LIEU DE PRÉLÈVEMENT: Lab.Consulair QC

PARAMÈTRE	PRÉPARÉ LE	ANALYSÉ LE	AGAT P.O.N.	RÉFÉRENCE DE LITTÉRATURE	TECHNIQUE ANALYTIQUE
Analyse haute résolution					
2,3,7,8-TCDD (pg total)	2019-11-22	2019-11-25	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,7,8 PeCDD (pg total)	2019-11-22	2019-11-25	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,4,7,8 HxCDD (pg total)	2019-11-22	2019-11-25	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,6,7,8 HxCDD (pg total)	2019-11-22	2019-11-25	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,7,8,9 HxCDD (pg total)	2019-11-22	2019-11-25	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,4,6,7,8 HpCDD (pg total)	2019-11-22	2019-11-25	HR-151-5400	EPA 1613/EPA Method 23	HRMS
OCDD (pg total)	2019-11-22	2019-11-25	HR-151-5400	EPA 1613/EPA Method 23	HRMS
2,3,7,8 TCDF (pg total)	2019-11-22	2019-11-25	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,7,8 PeCDF (pg total)	2019-11-22	2019-11-25	HR-151-5400	EPA 1613/EPA Method 23	HRMS
2,3,4,7,8-PeCDF (pg total)	2019-11-22	2019-11-25	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,4,7,8 HxCDF (pg total)	2019-11-22	2019-11-25	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,6,7,8 HxCDF (pg total)	2019-11-22	2019-11-25	HR-151-5400	EPA 1613/EPA Method 23	HRMS
2,3,4,6,7,8-HxCDF (pg total)	2019-11-22	2019-11-25	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,7,8,9 HxCDF (pg total)	2019-11-22	2019-11-25	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,4,6,7,8 HpCDF (pg total)	2019-11-22	2019-11-25	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,4,7,8,9 HpCDF (pg total)	2019-11-22	2019-11-25	HR-151-5400	EPA 1613/EPA Method 23	HRMS
OCDF (pg total)	2019-11-22	2019-11-25	HR-151-5400	EPA 1613/EPA Method 23	HRMS
Sommation des Tétrachlorodibenzodioxines	2019-11-22	2019-11-25	HR-151-5400	EPA 1613/EPA Method 23	HRMS
Sommation des Pentachlorodibenzodioxines	2019-11-22	2019-11-25	HR-151-5400	EPA 1613/EPA Method 23	HRMS
Sommation des Hexachlorodibenzodioxines	2019-11-22	2019-11-25	HR-151-5400	EPA 1613/EPA Method 23	HRMS
Sommation des Heptachlorodibenzodioxines	2019-11-22	2019-11-25	HR-151-5400	EPA 1613/EPA Method 23	HRMS
Sommation des PCDDs	2019-11-22	2019-11-25	HR-151-5400	EPA 1613/EPA Method 23	HRMS
Sommation des Tétrachlorodibenzofuranes	2019-11-22	2019-11-25	HR-151-5400	EPA 1613/EPA Method 23	HRMS
Sommation des Pentachlorodibenzofuranes	2019-11-22	2019-11-25	HR-151-5400	EPA 1613/EPA Method 23	HRMS
Sommation des Hexachlorodibenzofuranes	2019-11-22	2019-11-25	HR-151-5400	EPA 1613/EPA Method 23	HRMS
Sommation des Heptachlorodibenzofuranes	2019-11-22	2019-11-25	HR-151-5400	EPA 1613/EPA Method 23	HRMS
Sommation des PCDFs	2019-11-22	2019-11-25	HR-151-5400	EPA 1613/EPA Method 23	HRMS
2,3,7,8-Tetra CDD (TEF 1.0)	2019-11-22	2019-11-25	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,7,8-Penta CDD (TEF 1.0)	2019-11-22	2019-11-25	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,4,7,8-Hexa CDD (TEF 0.1)	2019-11-22	2019-11-25	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,6,7,8-Hexa CDD (TEF 0.1)	2019-11-22	2019-11-25	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,7,8,9-Hexa CDD (TEF 0.1)	2019-11-22	2019-11-25	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,4,6,7,8-Hepta CDD (TEF 0.01)	2019-11-22	2019-11-25	HR-151-5400	EPA 1613/EPA Method 23	HRMS
Octa CDD (TEF 0.0001)	2019-11-22	2019-11-25	HR-151-5400	EPA 1613/EPA Method 23	HRMS
2,3,7,8-Tetra CDF (TEF 0.1)	2019-11-22	2019-11-25	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,7,8-Penta CDF (TEF 0.05)	2019-11-22	2019-11-25	HR-151-5400	EPA 1613/EPA Method 23	HRMS
2,3,4,7,8-Penta CDF (TEF 0.5)	2019-11-22	2019-11-25	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,4,7,8-Hexa CDF (TEF 0.1)	2019-11-22	2019-11-25	HR_151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,6,7,8-Hexa CDF (TEF 0.1)	2019-11-22	2019-11-25	HR-151-5400	EPA 1613/EPA Method 23	HRMS
2,3,4,6,7,8-Hexa CDF (TEF 0.1)	2019-11-22	2019-11-25	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,7,8,9-Hexa CDF (TEF 0.1)	2019-11-22	2019-11-25	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,4,6,7,8-Hepta CDF (TEF 0.01)	2019-11-22	2019-11-25	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,4,7,8,9-Hepta CDF (TEF 0.01)	2019-11-22	2019-11-25	HR-151-5400	EPA 1613/EPA Method 23	HRMS

Sommaire de méthode

NOM DU CLIENT: CONSULAIR GASTON BOULANGER INC

N° BON DE TRAVAIL: 19M542786

N° DE PROJET: 19-6012-Agnico-Eagle-Meliadine

À L'ATTENTION DE: Eric Trepanier

PRÉLEVÉ PAR:

LIEU DE PRÉLÈVEMENT: Lab.Consulair QC

PARAMÈTRE	PRÉPARÉ LE	ANALYSÉ LE	AGAT P.O.N.	RÉFÉRENCE DE LITTÉRATURE	TECHNIQUE ANALYTIQUE
Octa CDF (TEF 0.0001)	2019-11-22	2019-11-25	HR-151-5400	EPA 1613/EPA Method 23	HRMS
Sommation des PCDDs et PCDFs (TEQ)	2019-11-22	2019-11-25	HR-151-5400	EPA 1613/EPA Method 23	HRMS
13C-2378-TCDF	2019-11-22	2019-11-25	HR-151-5400	EPA 1613/EPA Method 23	HRMS
13C-12378-PeCDF	2019-11-22	2019-11-25	HR-151-5400	EPA 1613/EPA Method 23	HRMS
13C-23478-PeCDF	2019-11-22	2019-11-25	HR-151-5400	EPA 1613/EPA Method 23	HRMS
13C-123478-HxCDF	2019-11-22	2019-11-25	HR-151-5400	EPA 1613/EPA Method 23	HRMS
13C-123678-HxCDF	2019-11-22	2019-11-25	HR-151-5400	EPA 1613/EPA Method 23	HRMS
13C-234678-HxCDF	2019-11-22	2019-11-25	HR-151-5400	EPA 1613/EPA Method 23	HRMS
13C-123789-HxCDF	2019-11-22	2019-11-25	HR-151-5400	EPA 1613/EPA Method 23	HRMS
13C-1234678-HpCDF	2019-11-22	2019-11-25	HR-151-5400	EPA 1613/EPA Method 23	HRMS
13C-1234789-HpCDF	2019-11-22	2019-11-25	HR-151-5400	EPA 1613/EPA Method 23	HRMS
13C-2378-TCDD	2019-11-22	2019-11-25	HR-151-5400	EPA 1613/EPA Method 23	HRMS
13C-12378-PeCDD	2019-11-22	2019-11-25	HR-151-5400	EPA 1613/EPA Method 23	HRMS
13C-123478-HxCDD	2019-11-22	2019-11-25	HR-151-5400	EPA 1613/EPA Method 23	HRMS
13C-123678-HxCDD	2019-11-22	2019-11-25	HR-151-5400	EPA 1613/EPA Method 23	HRMS
13C-1234678-HxCDD	2019-11-22	2019-11-25	HR-151-5400	EPA 1613/EPA Method 23	HRMS
13C-OCDD	2019-11-22	2019-11-25	HR-151-5400	EPA 1613/EPA Method 23	HRMS



www.agatlabs.com

Notes :

Tél.: 514.337.1000 • Sans frais: 1.866.417.5227 • Téléc.: 514.333.3046

Page 8 de 9

Québec, le mercredi 6 novembre 2019

Mme Saida Amouch

Laboratoire Agat

9770 route Transcanadienne

St-Laurent QC. H4S 1V9

Canada

Tél : (514) 337-1633

Cellulaire : (514) 430-4143

Courriel : amouch@agatiabs.com

Objet :

**Explications de la demande d'analyses pour le projet de Agnico Eagle
(Meladine) - Proofing.**

Notre no de projet : 19-6012

Bonjour Saïda,

Voici une demande d'analyse pour la solution de lavage de la verrière des trains, qui vont être utilisés pour le projet de Agnico Eagle (19-6012).

SVP faire l'analyse de proofing pour les PCDD/DF, et me faire parvenir les résultats de l'analyse (eric.trepanier@consul-air.com).

Il est important de conserver les échantillons. Même après l'analyse de l'échantillon. Ne rien jeter SVP sans m'avoir contacté avant.

Pour toutes questions n'hésites pas à communiquer avec moi.

Merci.

Salutations.


Eric Trépanier

www.consul-air.com

NOM DU CLIENT: CONSULAIR GASTON BOULANGER INC
2022 LAVOISIER LOCAL 125
QUEBEC, QC G1N4L5
(418) 650-5960

À L'ATTENTION DE: Eric Trepanier

N° DE PROJET: 19-6012-Agnico Eagle

N° BON DE TRAVAIL: 20M563959

HAUTE RÉOLUTION VÉRIFIÉ PAR: Anastasia Kazakova, chimiste

DATE DU RAPPORT: 2020-02-06

VERSION*: 1

NOMBRE DE PAGES: 7

Si vous désirez de l'information concernant cette analyse, S.V.P. contactez votre chargé de projets au (514) 337-1000.

*NOTES

Nous disposerons des échantillons dans les 30 jours suivants les analyses. S.V.P. Contactez le laboratoire si vous désirez avoir un délai d'entreposage.



Certificat d'analyse

N° BON DE TRAVAIL: 20M563959

N° DE PROJET: 19-6012-Agnico Eagle

9770 ROUTE TRANSCANADIENNE
ST. LAURENT, QUEBEC
CANADA H4S 1V9
TEL (514)337-1000
FAX (514)333-3046
<http://www.agatlabs.com>

NOM DU CLIENT: CONSULAIR GASTON BOULANGER INC

PRÉLEVÉ PAR:CONSULAIR

À L'ATTENTION DE: Eric Trepanier

LIEU DE PRÉLÈVEMENT:Meliadine Qc

QC Dioxines et furanes - Air (train d'échantillonnage - OTAN 1988)

DATE DE RÉCEPTION: 2020-01-15

DATE DU RAPPORT: 2020-02-06

IDENTIFICATION DE L'ÉCHANTILLON:				501-Inc.-BS-1		507-Inc.-BS-3		513-Inc.-BS-4		519-Inc.-BS-BL	
MATRICE:				Solvant		Solvant		Solvant		Solvant	
DATE D'ÉCHANTILLONNAGE:				2020-01-15		2020-01-15		2020-01-19		2020-01-20	
Paramètre	Unités	C / N	LDR	863871	LDR	863878	LDR	863879	LDR	863880	
2,3,7,8-TCDD (pg total)	pg		8	<8	2	11	4	4	2	<2	
1,2,3,7,8 PeCDD (pg total)	pg		7	8	4	106	4	14	2	<2	
1,2,3,4,7,8 HxCDD (pg total)	pg		10	14	6	114	6	12	1	<1	
1,2,3,6,7,8 HxCDD (pg total)	pg		9	32	6	451	6	33	1	<1	
1,2,3,7,8,9 HxCDD (pg total)	pg		10	20	6	424	6	42	2	<2	
1,2,3,4,6,7,8 HpCDD (pg total)	pg		20	185	10	2450	20	208	3	<3	
OCDD (pg total)	pg		60	171	20	1470	50	209	3	<3	
2,3,7,8 TCDF (pg total)	pg		8	95	4	24	5	89	2	<2	
1,2,3,7,8 PeCDF (pg total)	pg		5	13	3	16	4	15	2	<2	
2,3,4,7,8-PeCDF (pg total)	pg		5	27	3	43	4	37	2	<2	
1,2,3,4,7,8 HxCDF (pg total)	pg		7	56	3	45	4	76	2	<2	
1,2,3,6,7,8 HxCDF (pg total)	pg		7	25	3	30	5	34	3	<3	
2,3,4,6,7,8-HxCDF (pg total)	pg		7	42	3	57	5	56	2	<2	
1,2,3,7,8,9 HxCDF (pg total)	pg		10	<10	4	<4	7	<7	1	<1	
1,2,3,4,6,7,8 HpCDF (pg total)	pg		8	113	5	98	7	159	3	<3	
1,2,3,4,7,8,9 HpCDF (pg total)	pg		10	39	7	20	10	45	2	<2	
OCDF (pg total)	pg		40	52	10	35	30	79	3	<3	
Sommaton des Tétrachlorodibenzodioxines	pg		8	125	2	1380	4	407	2	<2	
Sommaton des Pentachlorodibenzodioxines	pg		7	99	4	2630	4	249	2	<2	
Sommaton des Hexachlorodibenzodioxines	pg		10	259	6	6810	6	394	1	<1	
Sommaton des Heptachlorodibenzodioxines	pg		20	438	10	6700	20	509	3	<3	
Sommaton des PCDDs	pg		60	1090	20	19000	50	1770	3	<3	
Sommaton des Tétrachlorodibenzofuranes	pg		8	382	4	387	5	752	2	<2	
Sommaton des Pentachlorodibenzofuranes	pg		5	289	3	428	4	393	2	<2	

Certifié par:



La procédure des Laboratoires AGAT concernant les signatures et les signataires se conforme strictement aux exigences d'accréditation ISO 17025:2005 comme le requiert, lorsque applicable, CALA, CCN et MDDELCC. Toutes les signatures sur les certificats d'AGAT sont protégées par des mots de passe et les signataires rencontrent les exigences des domaines d'accréditation ainsi que les exigences régionales approuvées par CALA, CCN et MDDELCC.



AGAT Laboratoires

Certificat d'analyse

N° BON DE TRAVAIL: 20M563959

N° DE PROJET: 19-6012-Agnico Eagle

9770 ROUTE TRANSCANADIENNE
ST. LAURENT, QUEBEC
CANADA H4S 1V9
TEL (514)337-1000
FAX (514)333-3046
<http://www.agatlabs.com>

NOM DU CLIENT: CONSULAIR GASTON BOULANGER INC

PRÉLEVÉ PAR:CONSULAIR

À L'ATTENTION DE: Eric Trepanier

LIEU DE PRÉLÈVEMENT:Meliadine Qc

QC Dioxines et furanes - Air (train d'échantillonnage - OTAN 1988)

DATE DE RÉCEPTION: 2020-01-15

DATE DU RAPPORT: 2020-02-06

IDENTIFICATION DE L'ÉCHANTILLON:				501-Inc.-BS-1		507-Inc.-BS-3		513-Inc.-BS-4		519-Inc.-BS-BL	
MATRICE:				Solvant		Solvant		Solvant		Solvant	
DATE D'ÉCHANTILLONNAGE:				2020-01-15		2020-01-15		2020-01-19		2020-01-20	
Paramètre	Unités	C / N	LDR	863871	LDR	863878	LDR	863879	LDR	863880	
Somation des Hexachlorodibenzofuranes	pg		10	188	4	231	7	221	3	<3	
Somation des Heptachlorodibenzofuranes	pg		10	279	7	225	10	344	3	<3	
Somation des PCDFs	pg		40	1190	10	1310	30	1790	3	<3	
2,3,7,8-Tetra CDD (TEF 1.0)	TEQ			0		11.1		4.34		0	
1,2,3,7,8-Penta CDD (TEF 0.5)	TEQ			4.10		52.9		7.03		0	
1,2,3,4,7,8-Hexa CDD (TEF 0.1)	TEQ			1.35		11.4		1.16		0	
1,2,3,6,7,8-Hexa CDD (TEF 0.1)	TEQ			3.24		45.1		3.26		0	
1,2,3,7,8,9-Hexa CDD (TEF 0.1)	TEQ			1.96		42.4		4.22		0	
1,2,3,4,6,7,8-Hepta CDD (TEF 0.01)	TEQ			1.85		24.5		2.08		0	
Octa CDD (TEF 0.001)	TEQ			0.171		1.47		0.209		0	
2,3,7,8-Tetra CDF (TEF 0.1)	TEQ			9.51		2.36		8.86		0	
1,2,3,7,8-Penta CDF (TEF 0.05)	TEQ			0.664		0.796		0.731		0	
2,3,4,7,8-Penta CDF (TEF 0.5)	TEQ			13.5		21.5		18.6		0	
1,2,3,4,7,8-Hexa CDF (TEF 0.1)	TEQ			5.63		4.52		7.59		0	
1,2,3,6,7,8-Hexa CDF (TEF 0.1)	TEQ			2.51		2.95		3.42		0	
2,3,4,6,7,8-Hexa CDF (TEF 0.1)	TEQ			4.17		5.68		5.60		0	
1,2,3,7,8,9-Hexa CDF (TEF 0.1)	TEQ			0		0		0		0	
1,2,3,4,6,7,8-Hepta CDF (TEF 0.01)	TEQ			1.13		0.984		1.59		0	
1,2,3,4,7,8,9-Hepta CDF (TEF 0.01)	TEQ			0.390		0.196		0.452		0	
Octa CDF (TEF 0.001)	TEQ			0.0523		0.0348		0.0790		0	
Somation des PCDDs et PCDFs (TEQ)				50.3		228		69.2		0	

Certifié par:



La procédure des Laboratoires AGAT concernant les signatures et les signataires se conforme strictement aux exigences d'accréditation ISO 17025:2005 comme le requiert, lorsque applicable, CALA, CCN et MDDELCC. Toutes les signatures sur les certificats d'AGAT sont protégées par des mots de passe et les signataires rencontrent les exigences des domaines d'accréditation ainsi que les exigences régionales approuvées par CALA, CCN et MDDELCC.



Certificat d'analyse

N° BON DE TRAVAIL: 20M563959

N° DE PROJET: 19-6012-Agnico Eagle

9770 ROUTE TRANSCANADIENNE
ST. LAURENT, QUEBEC
CANADA H4S 1V9
TEL (514)337-1000
FAX (514)333-3046
<http://www.agatlabs.com>

NOM DU CLIENT: CONSULAIR GASTON BOULANGER INC

PRÉLEVÉ PAR:CONSULAIR

À L'ATTENTION DE: Eric Trepanier

LIEU DE PRÉLÈVEMENT:Meliadine Qc

QC Dioxines et furanes - Air (train d'échantillonnage - OTAN 1988)

DATE DE RÉCEPTION: 2020-01-15

DATE DU RAPPORT: 2020-02-06

IDENTIFICATION DE L'ÉCHANTILLON:			501-Inc.-BS-1	507-Inc.-BS-3	513-Inc.-BS-4	519-Inc.-BS-BL
MATRICE:			Solvant	Solvant	Solvant	Solvant
DATE D'ÉCHANTILLONNAGE:			2020-01-15	2020-01-15	2020-01-19	2020-01-20
Étalon de recouvrement	Unités	Limites	863871	863878	863879	863880
13C-2378-TCDF	%	30-140	41	47	42	41
13C-12378-PeCDF	%	30-140	36	44	39	33
13C-23478-PeCDF	%	30-140	39	41	39	30
13C-123478-HxCDF	%	30-140	58	61	81	71
13C-123678-HxCDF	%	30-140	62	62	81	67
13C-234678-HxCDF	%	30-140	58	56	74	71
13C-123789-HxCDF	%	30-140	45	52	74	58
13C-1234678-HpCDF	%	30-140	34	34	39	42
13C-1234789-HpCDF	%	30-140	32	37	44	38
13C-2378-TCDD	%	30-140	43	51	46	49
13C-12378-PeCDD	%	30-140	40	48	43	36
13C-123478-HxCDD	%	30-140	65	65	88	83
13C-123678-HxCDD	%	30-140	71	72	98	96
13C-1234678-HxCDD	%	30-140	41	46	54	50
13C-OCDD	%	30-140	30	31	34	31

Commentaires: LDR - Limite de détection rapportée; C / N - Critères Normes

863871-863880 Le résultat en pg total correspond au composite de chacune des parties du train d'échantillonnage.

Certifié par:



La procédure des Laboratoires AGAT concernant les signatures et les signataires se conforme strictement aux exigences d'accréditation ISO 17025:2005 comme le requiert, lorsque applicable, CALA, CCN et MDDELCC. Toutes les signatures sur les certificats d'AGAT sont protégées par des mots de passe et les signataires rencontrent les exigences des domaines d'accréditation ainsi que les exigences régionales approuvées par CALA, CCN et MDDELCC.

Contrôle de qualité

NOM DU CLIENT: CONSULAIR GASTON BOULANGER INC

N° BON DE TRAVAIL: 20M563959

N° DE PROJET: 19-6012-Agnico Eagle

À L'ATTENTION DE: Eric Trepanier

PRÉLEVÉ PAR: CONSULAIR

LIEU DE PRÉLÈVEMENT: Meliadine Qc

Analyse haute résolution

Date du rapport: 2020-02-06

Date du rapport: 2020-02-06			DUPLICATA			MATÉRIAU DE RÉFÉRENCE			BLANC FORTIFIÉ			ÉCH. FORTIFIÉ			
PARAMÈTRE	Lot	N° éch.	Dup #1	Dup #2	% d'écart	Blanc de méthode	% Récup.	Limites		% Récup.	Limites		% Récup.	Limites	
								Inf.	Sup.		Inf.	Sup.		Inf.	Sup.

QC Dioxines et furanes - Air (train d'échantillonnage - OTAN 1988)

2,3,7,8-TCDD (pg total)	1	NA	NA	NA	0.0	< 0.9	109%	30%	140%	NA	30%	140%	NA	30%	140%
1,2,3,7,8 PeCDD (pg total)	1	NA	NA	NA	0.0	< 0.9	105%	30%	140%	NA	30%	140%	NA	30%	140%
1,2,3,4,7,8 HxCDD (pg total)	1	NA	NA	NA	0.0	< 1	104%	30%	140%	NA	30%	140%	NA	30%	140%
1,2,3,6,7,8 HxCDD (pg total)	1	NA	NA	NA	0.0	< 1	106%	30%	140%	NA	30%	140%	NA	30%	140%
1,2,3,7,8,9 HxCDD (pg total)	1	NA	NA	NA	0.0	< 1	106%	30%	140%	NA	30%	140%	NA	30%	140%
1,2,3,4,6,7,8 HpCDD (pg total)	1	NA	NA	NA	0.0	< 1	112%	30%	140%	NA	30%	140%	NA	30%	140%
OCDD (pg total)	1	NA	NA	NA	0.0	< 2	116%	30%	140%	NA	30%	140%	NA	30%	140%
2,3,7,8 TCDF (pg total)	1	NA	NA	NA	0.0	< 0.8	101%	30%	140%	NA	30%	140%	NA	30%	140%
1,2,3,7,8 PeCDF (pg total)	1	NA	NA	NA	0.0	< 0.8	108%	30%	140%	NA	30%	140%	NA	30%	140%
2,3,4,7,8-PeCDF (pg total)	1	NA	NA	NA	0.0	< 1	108%	30%	140%	NA	30%	140%	NA	30%	140%
1,2,3,4,7,8 HxCDF (pg total)	1	NA	NA	NA	0.0	< 1	120%	30%	140%	NA	30%	140%	NA	30%	140%
1,2,3,6,7,8 HxCDF (pg total)	1	NA	NA	NA	0.0	< 1	101%	30%	140%	NA	30%	140%	NA	30%	140%
2,3,4,6,7,8-HxCDF (pg total)	1	NA	NA	NA	0.0	< 1	109%	30%	140%	NA	30%	140%	NA	30%	140%
1,2,3,7,8,9 HxCDF (pg total)	1	NA	NA	NA	0.0	< 1	102%	30%	140%	NA	30%	140%	NA	30%	140%
1,2,3,4,6,7,8 HpCDF (pg total)	1	NA	NA	NA	0.0	< 1	118%	30%	140%	NA	30%	140%	NA	30%	140%
1,2,3,4,7,8,9 HpCDF (pg total)	1	NA	NA	NA	0.0	< 0.7	125%	30%	140%	NA	30%	140%	NA	30%	140%
OCDF (pg total)	1	NA	NA	NA	0.0	< 1	116%	30%	140%	NA	30%	140%	NA	30%	140%

Certifié par:



La procédure des Laboratoires AGAT concernant les signatures et les signataires se conforme strictement aux exigences d'accréditation ISO 17025:2005 comme le requiert, lorsque applicable, CALA, CCN et MDDELCC. Toutes les signatures sur les certificats d'AGAT sont protégées par des mots de passe et les signataires rencontrent les exigences des domaines d'accréditation ainsi que les exigences régionales approuvées par CALA, CCN et MDDELCC. Les pourcentages de différence relative sont calculés à partir des données brutes. Il se peut que le pourcentage de différence relative ne reflète pas les valeurs dupliquées rapportées en raison de l'arrondissement des résultats finaux.

Sommaire de méthode

NOM DU CLIENT: CONSULAIR GASTON BOULANGER INC

N° BON DE TRAVAIL: 20M563959

N° DE PROJET: 19-6012-Agnico Eagle

À L'ATTENTION DE: Eric Trepanier

PRÉLEVÉ PAR: CONSULAIR

LIEU DE PRÉLÈVEMENT: Meliadine Qc

PARAMÈTRE	PRÉPARÉ LE	ANALYSÉ LE	AGAT P.O.N.	RÉFÉRENCE DE LITTÉRATURE	TECHNIQUE ANALYTIQUE
Analyse haute résolution					
2,3,7,8-TCDD (pg total)	2020-01-20	2020-02-06	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,7,8 PeCDD (pg total)	2020-01-20	2020-02-06	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,4,7,8 HxCDD (pg total)	2020-01-20	2020-02-06	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,6,7,8 HxCDD (pg total)	2020-01-20	2020-02-06	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,7,8,9 HxCDD (pg total)	2020-01-20	2020-02-06	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,4,6,7,8 HpCDD (pg total)	2020-01-20	2020-02-06	HR-151-5400	EPA 1613/EPA Method 23	HRMS
OCDD (pg total)	2020-01-20	2020-02-06	HR-151-5400	EPA 1613/EPA Method 23	HRMS
2,3,7,8 TCDF (pg total)	2020-01-20	2020-02-06	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,7,8 PeCDF (pg total)	2020-01-20	2020-02-06	HR-151-5400	EPA 1613/EPA Method 23	HRMS
2,3,4,7,8-PeCDF (pg total)	2020-01-20	2020-02-06	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,4,7,8 HxCDF (pg total)	2020-01-20	2020-02-06	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,6,7,8 HxCDF (pg total)	2020-01-20	2020-02-06	HR-151-5400	EPA 1613/EPA Method 23	HRMS
2,3,4,6,7,8-HxCDF (pg total)	2020-01-20	2020-02-06	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,7,8,9 HxCDF (pg total)	2020-01-20	2020-02-06	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,4,6,7,8 HpCDF (pg total)	2020-01-20	2020-02-06	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,4,7,8,9 HpCDF (pg total)	2020-01-20	2020-02-06	HR-151-5400	EPA 1613/EPA Method 23	HRMS
OCDF (pg total)	2020-01-20	2020-02-06	HR-151-5400	EPA 1613/EPA Method 23	HRMS
Sommation des Tétrachlorodibenzodioxines	2020-01-20	2020-02-06	HR-151-5400	EPA 1613/EPA Method 23	HRMS
Sommation des Pentachlorodibenzodioxines	2020-01-20	2020-02-06	HR-151-5400	EPA 1613/EPA Method 23	HRMS
Sommation des Hexachlorodibenzodioxines	2020-01-20	2020-02-06	HR-151-5400	EPA 1613/EPA Method 23	HRMS
Sommation des Heptachlorodibenzodioxines	2020-01-20	2020-02-06	HR-151-5400	EPA 1613/EPA Method 23	HRMS
Sommation des PCDDs	2020-01-20	2020-02-06	HR-151-5400	EPA 1613/EPA Method 23	HRMS
Sommation des Tétrachlorodibenzofuranes	2020-01-20	2020-02-06	HR-151-5400	EPA 1613/EPA Method 23	HRMS
Sommation des Pentachlorodibenzofuranes	2020-01-20	2020-02-06	HR-151-5400	EPA 1613/EPA Method 23	HRMS
Sommation des Hexachlorodibenzofuranes	2020-01-20	2020-02-06	HR-151-5400	EPA 1613/EPA Method 23	HRMS
Sommation des Heptachlorodibenzofuranes	2020-01-20	2020-02-06	HR-151-5400	EPA 1613/EPA Method 23	HRMS
Sommation des PCDFs	2020-01-20	2020-02-06	HR-151-5400	EPA 1613/EPA Method 23	HRMS
2,3,7,8-Tetra CDD (TEF 1.0)	2020-01-20	2020-02-06	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,7,8-Penta CDD (TEF 0.5)	2020-01-20	2020-02-06	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,4,7,8-Hexa CDD (TEF 0.1)	2020-01-20	2020-02-06	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,6,7,8-Hexa CDD (TEF 0.1)	2020-01-20	2020-02-06	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,7,8,9-Hexa CDD (TEF 0.1)	2020-01-20	2020-02-06	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,4,6,7,8-Hepta CDD (TEF 0.01)	2020-01-20	2020-02-06	HR-151-5400	EPA 1613/EPA Method 23	HRMS
Octa CDD (TEF 0.001)	2020-01-20	2020-02-06	HR-151-5400	EPA 1613/EPA Method 23	HRMS
2,3,7,8-Tetra CDF (TEF 0.1)	2020-01-20	2020-02-06	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,7,8-Penta CDF (TEF 0.05)	2020-01-20	2020-02-06	HR-151-5400	EPA 1613/EPA Method 23	HRMS
2,3,4,7,8-Penta CDF (TEF 0.5)	2020-01-20	2020-02-06	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,4,7,8-Hexa CDF (TEF 0.1)	2020-01-20	2020-02-06	HR_151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,6,7,8-Hexa CDF (TEF 0.1)	2020-01-20	2020-02-06	HR-151-5400	EPA 1613/EPA Method 23	HRMS
2,3,4,6,7,8-Hexa CDF (TEF 0.1)	2020-01-20	2020-02-06	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,7,8,9-Hexa CDF (TEF 0.1)	2020-01-20	2020-02-06	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,4,6,7,8-Hepta CDF (TEF 0.01)	2020-01-20	2020-02-06	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,4,7,8,9-Hepta CDF (TEF 0.01)	2020-01-20	2020-02-06	HR-151-5400	EPA 1613/EPA Method 23	HRMS

Sommaire de méthode

NOM DU CLIENT: CONSULAIR GASTON BOULANGER INC

N° BON DE TRAVAIL: 20M563959

N° DE PROJET: 19-6012-Agnico Eagle

À L'ATTENTION DE: Eric Trepanier

PRÉLEVÉ PAR: CONSULAIR

LIEU DE PRÉLÈVEMENT: Meliadine Qc

PARAMÈTRE	PRÉPARÉ LE	ANALYSÉ LE	AGAT P.O.N.	RÉFÉRENCE DE LITTÉRATURE	TECHNIQUE ANALYTIQUE
Octa CDF (TEF 0.001)	2020-01-20	2020-02-06	HR-151-5400	EPA 1613/EPA Method 23	HRMS
Sommation des PCDDs et PCDFs (TEQ)	2020-01-20	2020-02-06	HR-151-5400	EPA 1613/EPA Method 23	HRMS
13C-2378-TCDF	2020-01-20	2020-02-06	HR-151-5400	EPA 1613/EPA Method 23	HRMS
13C-12378-PeCDF	2020-01-20	2020-02-06	HR-151-5400	EPA 1613/EPA Method 23	HRMS
13C-23478-PeCDF	2020-01-20	2020-02-06	HR-151-5400	EPA 1613/EPA Method 23	HRMS
13C-123478-HxCDF	2020-01-20	2020-02-06	HR-151-5400	EPA 1613/EPA Method 23	HRMS
13C-123678-HxCDF	2020-01-20	2020-02-06	HR-151-5400	EPA 1613/EPA Method 23	HRMS
13C-234678-HxCDF	2020-01-20	2020-02-06	HR-151-5400	EPA 1613/EPA Method 23	HRMS
13C-123789-HxCDF	2020-01-20	2020-02-06	HR-151-5400	EPA 1613/EPA Method 23	HRMS
13C-1234678-HpCDF	2020-01-20	2020-02-06	HR-151-5400	EPA 1613/EPA Method 23	HRMS
13C-1234789-HpCDF	2020-01-20	2020-02-06	HR-151-5400	EPA 1613/EPA Method 23	HRMS
13C-2378-TCDD	2020-01-20	2020-02-06	HR-151-5400	EPA 1613/EPA Method 23	HRMS
13C-12378-PeCDD	2020-01-20	2020-02-06	HR-151-5400	EPA 1613/EPA Method 23	HRMS
13C-123478-HxCDD	2020-01-20	2020-02-06	HR-151-5400	EPA 1613/EPA Method 23	HRMS
13C-123678-HxCDD	2020-01-20	2020-02-06	HR-151-5400	EPA 1613/EPA Method 23	HRMS
13C-1234678-HxCDD	2020-01-20	2020-02-06	HR-151-5400	EPA 1613/EPA Method 23	HRMS
13C-OCDD	2020-01-20	2020-02-06	HR-151-5400	EPA 1613/EPA Method 23	HRMS

Votre # du projet: 19-6012
Adresse du site: AGNICO EAGLE MELLIADINE
Votre # Bordereau: N/A

Attention: Éric Trépanier

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

Date du rapport: 2020/02/04
Rapport: R2548947
Version: 1 - Finale

CERTIFICAT D'ANALYSES

DE DOSSIER LAB BV: C002140

Reçu: 2020/01/15, 15:00

Matrice: Filtre
Nombre d'échantillons reçus: 4

Analyses	Quantité	Date de l' extraction	Date Analysé	Méthode de laboratoire	Méthode d'analyse
Métaux extractibles totaux par ICP-MS	4	2020/01/30	2020/01/31	STL SOP-00075	MA.200-Mét. 1.2 R5 m

Matrice: Solution Barboteur
Nombre d'échantillons reçus: 16

Analyses	Quantité	Date de l' extraction	Date Analysé	Méthode de laboratoire	Méthode d'analyse
Mercure par AAVF	4	2020/01/30	2020/01/31	STL SOP-00042	EPA Method 7470A Hg
Métaux extractibles	4	2020/01/29	2020/01/30	STL SOP-00075	MA.200-Mét. 1.2 R5 m
Métaux extractibles	1	2020/01/30	2020/01/30	STL SOP-00075	MA.200-Mét. 1.2 R5 m
Métaux extractibles	7	2020/01/30	2020/01/31	STL SOP-00075	MA.200-Mét. 1.2 R5 m
Volume d'échantillon	3	2020/01/29	2020/01/29		

Matrice: Solvant
Nombre d'échantillons reçus: 4

Analyses	Quantité	Date de l' extraction	Date Analysé	Méthode de laboratoire	Méthode d'analyse
Métaux extractibles	4	2020/01/30	2020/01/30	STL SOP-00075	MA.200-Mét. 1.2 R5 m

Matrice: Train
Nombre d'échantillons reçus: 4

Analyses	Quantité	Date de l' extraction	Date Analysé	Méthode de laboratoire	Méthode d'analyse
Métaux extractibles	3	2020/01/30	2020/01/31	STL SOP-00075	MA.200-Mét. 1.2 R5 m
Métaux extractibles	1	2020/01/30	2020/02/03	STL SOP-00075	MA.200-Mét. 1.2 R5 m

Remarques:

Laboratoires Bureau Veritas sont certifiés ISO/IEC 17025 pour certains paramètres précis des portées d'accréditation. Sauf indication contraire, les méthodes d'analyses utilisées par Labs BV s'inspirent des méthodes de référence d'organismes provinciaux, fédéraux et américains, tels que le CCME, le MELCC, l'EPA et l'APHA.

Toutes les analyses présentées ont été réalisées conformément aux procédures et aux pratiques relatives à la méthodologie, à l'assurance qualité et au contrôle de la qualité généralement appliqués par les employés de Labs BV (sauf s'il en a été convenu autrement par écrit entre le client et Labs BV). Toutes les données de laboratoire rencontrent les contrôles statistiques et respectent tous les critères de CQ et les critères de performance des méthodes, sauf s'il en a été signalé autrement. Tous les blancs de méthode sont rapportés, toutefois, les données des échantillons correspondants ne sont pas corrigées pour

Votre # du projet: 19-6012
Adresse du site: AGNICO EAGLE MELLIADINE
Votre # Bordereau: N/A

Attention: Éric Trépanier

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

Date du rapport: 2020/02/04
Rapport: R2548947
Version: 1 - Finale

CERTIFICAT D'ANALYSES

DE DOSSIER LAB BV: C002140

Reçu: 2020/01/15, 15:00

la valeur du blanc, sauf indication contraire. Le cas échéant, sauf indication contraire, l'incertitude de mesure n'a pas été prise en considération lors de la déclaration de la conformité à la norme de référence.

Les responsabilités de Labs BV sont restreintes au coût réel de l'analyse, sauf s'il en a été convenu autrement par écrit. Il n'existe aucune autre garantie, explicite ou implicite. Le client a fait appel à Labs BV pour l'analyse de ses échantillons conformément aux méthodes de référence mentionnées dans ce rapport. L'interprétation et l'utilisation des résultats sont sous l'entière responsabilité du client et ne font pas partie des services offerts par Labs BV, sauf si convenu autrement par écrit. Labs BV ne peut pas garantir l'exactitude des résultats qui dépendent des renseignements fournis par le client ou son représentant.

Les résultats des échantillons solides, sauf les biotes, sont rapportés en fonction de la masse sèche, sauf indication contraire. Les analyses organiques ne sont pas corrigées en fonction de la récupération, sauf pour les méthodes de dilution isotopique.

Les résultats s'appliquent seulement aux échantillons analysés. Si l'échantillonnage n'est pas effectué par Labs BV, les résultats se rapportent aux échantillons fournis pour analyse.

Le présent rapport ne doit pas être reproduit, sinon dans son intégralité, sans le consentement écrit du laboratoire.

Lorsque la méthode de référence comprend un suffixe « m », cela signifie que la méthode d'analyse du laboratoire contient des modifications validées et appliquées afin d'améliorer la performance de la méthode de référence.

Notez: Les données brutes sont utilisées pour le calcul du RPD (% d'écart relatif). L'arrondissement des résultats finaux peut expliquer la variation apparente.

Note : Les paramètres inclus dans le présent certificat sont accrédités par le MELCC, à moins d'indication contraire.

clé de cryptage

Veuillez adresser toute question concernant ce certificat d'analyse à votre chargé(e) de projets

Argyro Frangoulis, Chargée de projets

Courriel: Argyro.FRANGOULIS@bvlabs.com

Téléphone (514)448-9001 Ext:7066229

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Lab BV a mis en place des procédures qui protègent contre l'utilisation non autorisée de la signature électronique et emploie les «signataires» requis, conformément à l'ISO/CEI 17025. Veuillez vous référer à la page des signatures de validation pour obtenir les détails des validations pour chaque division.



BUREAU
VERITAS

Dossier Lab BV: C002140

Date du rapport: 2020/02/04

CONSULAIR INC.

Votre # du projet: 19-6012

Adresse du site: AGNICO EAGLE MELLIADINE

MÉTAUX (SOLUTION BARBOTEUR)

ID Lab BV		HM7428			HM7429		
Date d'échantillonnage		2019/12/15			2019/12/15		
# Bordereau		N/A			N/A		
	Unités	304-INC-B123-1 VT:430ML	LDR	Lot CQ	305-INC-B4-1 VT:140ML	LDR	Lot CQ

MÉTAUX

Aluminium (Al) †	ug	17	4	2068607		
Antimoine (Sb) †	ug	<0.4	0.4	2068607		
Argent (Ag) †	ug	<2	2	2068607		
Arsenic (As) †	ug	<0.4	0.4	2068607		
Baryum (Ba) †	ug	0.5	0.2	2068607		
Béryllium (Be) †	ug	<0.2	0.2	2068607		
Bismuth (Bi) †	ug	<0.2	0.2	2068607		
Bore (B) †	ug	16.5	0.9	2068607		
Cadmium (Cd) †	ug	<0.2	0.2	2068607		
Calcium (Ca) †	ug	85	20	2068607		
Chrome (Cr) †	ug	<0.4	0.4	2068607		
Cobalt (Co) †	ug	<0.4	0.4	2068607		
Cuivre (Cu) †	ug	1.6	0.4	2068607		
Etain (Sn) †	ug	20	2	2068607		
Fer (Fe) †	ug	<20	20	2068607		
Lithium (Li) †	ug	<4	4	2068607		
Magnésium (Mg) †	ug	35	9	2068607		
Manganèse (Mn) †	ug	4.2	0.4	2068607		
Mercure (Hg) †	ug	<0.2	0.2	2068607	<0.07	0.07 2068607
Molybdène (Mo) †	ug	<2	2	2068607		
Nickel (Ni) †	ug	<0.4	0.4	2068607		
Plomb (Pb) †	ug	<2	2	2068607		
Potassium (K) †	ug	<40	40	2068607		
Sélénium (Se) †	ug	0.7	0.4	2068607		
Silicium (Si) †	ug	88	20	2068607		
Sodium (Na) †	ug	45	20	2068607		
Strontium (Sr) †	ug	<0.4	0.4	2068607		
Thallium (Tl) †	ug	<0.4	0.4	2068607		
Titane (Ti) †	ug	<4	4	2068607		
Vanadium (V) †	ug	<0.9	0.9	2068607		
Zinc (Zn) †	ug	215	0.4	2068607		

LDR = Limite de détection rapportée

Lot CQ = Lot contrôle qualité

† Accréditation non existante pour ce paramètre



BUREAU
VERITAS

Dossier Lab BV: C002140

Date du rapport: 2020/02/04

CONSULAIR INC.

Votre # du projet: 19-6012

Adresse du site: AGNICO EAGLE MELLIADINE

MÉTAUX (SOLUTION BARBOTEUR)

ID Lab BV		HM7465			HM7476		
Date d'échantillonnage		2019/12/15			2019/12/18		
# Bordereau		N/A			N/A		
	Unités	306+307-INC-B56-1 VT:625ML	LDR	Lot CQ	311-INC-B123-3 VT:480ML	LDR	Lot CQ

MÉTAUX							
Aluminium (Al) †	ug				12	5	2068607
Antimoine (Sb) †	ug				<0.5	0.5	2068607
Argent (Ag) †	ug				<2	2	2068607
Arsenic (As) †	ug				1.1	0.5	2068607
Baryum (Ba) †	ug				0.4	0.2	2068607
Béryllium (Be) †	ug				<0.2	0.2	2068607
Bismuth (Bi) †	ug				<0.2	0.2	2068607
Bore (B) †	ug				15	1	2068607
Cadmium (Cd) †	ug				<0.2	0.2	2068607
Calcium (Ca) †	ug				49	20	2068607
Chrome (Cr) †	ug				<0.5	0.5	2068607
Cobalt (Co) †	ug				<0.5	0.5	2068607
Cuivre (Cu) †	ug				0.6	0.5	2068607
Etain (Sn) †	ug				21	2	2068607
Fer (Fe) †	ug				<20	20	2068607
Lithium (Li) †	ug				<5	5	2068607
Magnésium (Mg) †	ug				<10	10	2068607
Manganèse (Mn) †	ug				1.1	0.5	2068607
Mercure (Hg)	ug	0.45	0.31	2068632			
Mercure (Hg) †	ug				0.4	0.2	2068607
Molybdène (Mo) †	ug				<2	2	2068607
Nickel (Ni) †	ug				<0.5	0.5	2068607
Plomb (Pb) †	ug				<2	2	2068607
Potassium (K) †	ug				<50	50	2068607
Sélénium (Se) †	ug				2.4	0.5	2068607
Silicium (Si) †	ug				47	20	2068607
Sodium (Na) †	ug				24	20	2068607
Strontium (Sr) †	ug				<0.5	0.5	2068607
Thallium (Tl) †	ug				<0.5	0.5	2068607
Titane (Ti) †	ug				<5	5	2068607
Vanadium (V) †	ug				<1	1	2068607
Zinc (Zn) †	ug				11.9	0.5	2068607

LDR = Limite de détection rapportée

Lot CQ = Lot contrôle qualité

† Accréditation non existante pour ce paramètre



BUREAU
VERITAS

Dossier Lab BV: C002140

Date du rapport: 2020/02/04

CONSULAIR INC.

Votre # du projet: 19-6012

Adresse du site: AGNICO EAGLE MELLIADINE

MÉTAUX (SOLUTION BARBOTEUR)

ID Lab BV		HM7477			HM7478		
Date d'échantillonnage		2019/12/18			2019/12/18		
# Bordereau		N/A			N/A		
	Unités	312-INC-B4-3 VT:102ML	LDR	Lot CQ	313+314-INC-B56-3 VT:605ML	LDR	Lot CQ

MÉTAUX

Mercure (Hg)	ug				<0.30	0.30	2068632
Mercure (Hg) †	ug	<0.05	0.05	2068607			

LDR = Limite de détection rapportée

Lot CQ = Lot contrôle qualité

† Accréditation non existante pour ce paramètre



BUREAU
VERITAS

Dossier Lab BV: C002140

Date du rapport: 2020/02/04

CONSULAIR INC.

Votre # du projet: 19-6012

Adresse du site: AGNICO EAGLE MELLIADINE

MÉTAUX (SOLUTION BARBOTEUR)

ID Lab BV		HM7479			HM7480		
Date d'échantillonnage		2019/12/19			2019/12/19		
# Bordereau		N/A			N/A		
	Unités	318-INC-B123-4 VT:430ML	LDR	Lot CQ	319-INC-B4-4 VT:108ML	LDR	Lot CQ

MÉTAUX							
Aluminium (Al) †	ug	39	4	2068607			
Antimoine (Sb) †	ug	<0.4	0.4	2068607			
Argent (Ag) †	ug	<2	2	2068607			
Arsenic (As) †	ug	0.5	0.4	2068607			
Baryum (Ba) †	ug	1.9	0.2	2068607			
Béryllium (Be) †	ug	<0.2	0.2	2068607			
Bismuth (Bi) †	ug	<0.2	0.2	2068607			
Bore (B) †	ug	17.3	0.9	2068607			
Cadmium (Cd) †	ug	<0.2	0.2	2068607			
Calcium (Ca) †	ug	134	20	2068607			
Chrome (Cr) †	ug	0.8	0.4	2068607			
Cobalt (Co) †	ug	<0.4	0.4	2068607			
Cuivre (Cu) †	ug	5.6	0.4	2068607			
Etain (Sn) †	ug	48	2	2068607			
Fer (Fe) †	ug	40	20	2068607			
Lithium (Li) †	ug	<4	4	2068607			
Magnésium (Mg) †	ug	25	9	2068607			
Manganèse (Mn) †	ug	2.1	0.4	2068607			
Mercure (Hg) †	ug	<0.2	0.2	2068607	0.09	0.05	2068607
Molybdène (Mo) †	ug	<2	2	2068607			
Nickel (Ni) †	ug	1.9	0.4	2068607			
Plomb (Pb) †	ug	<2	2	2068607			
Potassium (K) †	ug	<40	40	2068607			
Sélénium (Se) †	ug	6.5	0.4	2068607			
Silicium (Si) †	ug	180	20	2068607			
Sodium (Na) †	ug	194	20	2068607			
Strontium (Sr) †	ug	0.5	0.4	2068607			
Thallium (Tl) †	ug	<0.4	0.4	2068607			
Titane (Ti) †	ug	<4	4	2068607			
Vanadium (V) †	ug	<0.9	0.9	2068607			
Zinc (Zn) †	ug	16.9	0.4	2068607			

LDR = Limite de détection rapportée

Lot CQ = Lot contrôle qualité

† Accréditation non existante pour ce paramètre



BUREAU
VERITAS

Dossier Lab BV: C002140

Date du rapport: 2020/02/04

CONSULAIR INC.

Votre # du projet: 19-6012

Adresse du site: AGNICO EAGLE MELLIADINE

MÉTAUX (SOLUTION BARBOTEUR)

ID Lab BV		HM7481			HM7492		
Date d'échantillonnage		2019/12/19			2019/12/15		
# Bordereau		N/A			N/A		
	Unités	320+321-INC-B56-4 VT:625ML	LDR	Lot CQ	325-BL-EAU-BL VT:100ML	LDR	Lot CQ

MÉTAUX							
Aluminium (Al) †	ug				1	1	2068607
Antimoine (Sb) †	ug				<0.1	0.1	2068607
Argent (Ag) †	ug				<0.5	0.5	2068607
Arsenic (As) †	ug				<0.1	0.1	2068607
Baryum (Ba) †	ug				0.07	0.05	2068607
Béryllium (Be) †	ug				<0.05	0.05	2068607
Bismuth (Bi) †	ug				<0.05	0.05	2068607
Bore (B) †	ug				<0.2	0.2	2068607
Cadmium (Cd) †	ug				<0.05	0.05	2068607
Calcium (Ca) †	ug				8	5	2068607
Chrome (Cr) †	ug				<0.1	0.1	2068607
Cobalt (Co) †	ug				<0.1	0.1	2068607
Cuivre (Cu) †	ug				0.2	0.1	2068607
Etain (Sn) †	ug				<0.5	0.5	2068607
Fer (Fe) †	ug				<5	5	2068607
Lithium (Li) †	ug				<1	1	2068607
Magnésium (Mg) †	ug				<2	2	2068607
Manganèse (Mn) †	ug				<0.1	0.1	2068607
Mercure (Hg)	ug	<0.31	0.31	2068632			
Mercure (Hg) †	ug				<0.05	0.05	2068607
Molybdène (Mo) †	ug				<0.5	0.5	2068607
Nickel (Ni) †	ug				<0.1	0.1	2068607
Plomb (Pb) †	ug				<0.5	0.5	2068607
Potassium (K) †	ug				<10	10	2068607
Sélénium (Se) †	ug				<0.1	0.1	2068607
Silicium (Si) †	ug				<5	5	2068607
Sodium (Na) †	ug				<5	5	2068607
Strontium (Sr) †	ug				<0.1	0.1	2068607
Thallium (Tl) †	ug				<0.1	0.1	2068607
Titane (Ti) †	ug				<1	1	2068607
Vanadium (V) †	ug				<0.2	0.2	2068607
Zinc (Zn) †	ug				0.4	0.1	2068607

LDR = Limite de détection rapportée

Lot CQ = Lot contrôle qualité

† Accréditation non existante pour ce paramètre



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Dossier Lab BV: C002140

Date du rapport: 2020/02/04

CONSULAIR INC.

Votre # du projet: 19-6012

Adresse du site: AGNICO EAGLE MELLIADINE

MÉTAUX (SOLUTION BARBOTEUR)

ID Lab BV		HM7493			HM7494		
Date d'échantillonnage		2019/12/15			2019/12/15		
# Bordereau		N/A			N/A		
	Unités	326-BL-B123-BL VT:200ML	LDR	Lot CQ	327+328-BL-B56-BL VT:325ML	LDR	Lot CQ

MÉTAUX

Aluminium (Al) †	ug	<2	2	2068607		
Antimoine (Sb) †	ug	<0.2	0.2	2068607		
Argent (Ag) †	ug	<1	1	2068607		
Arsenic (As) †	ug	<0.2	0.2	2068607		
Baryum (Ba) †	ug	<0.1	0.1	2068607		
Béryllium (Be) †	ug	<0.1	0.1	2068607		
Bismuth (Bi) †	ug	<0.1	0.1	2068607		
Bore (B) †	ug	<0.4	0.4	2068607		
Cadmium (Cd) †	ug	<0.1	0.1	2068607		
Calcium (Ca) †	ug	<10	10	2068607		
Chrome (Cr) †	ug	0.3	0.2	2068607		
Cobalt (Co) †	ug	<0.2	0.2	2068607		
Cuivre (Cu) †	ug	<0.2	0.2	2068607		
Etain (Sn) †	ug	32	1	2068607		
Fer (Fe) †	ug	<10	10	2068607		
Lithium (Li) †	ug	<2	2	2068607		
Magnésium (Mg) †	ug	<4	4	2068607		
Manganèse (Mn) †	ug	<0.2	0.2	2068607		
Mercure (Hg)	ug				<0.16	0.16 2068632
Mercure (Hg) †	ug	<0.1	0.1	2068607		
Molybdène (Mo) †	ug	<1	1	2068607		
Nickel (Ni) †	ug	0.2	0.2	2068607		
Plomb (Pb) †	ug	<1	1	2068607		
Potassium (K) †	ug	<20	20	2068607		
Sélénium (Se) †	ug	<0.2	0.2	2068607		
Silicium (Si) †	ug	<10	10	2068607		
Sodium (Na) †	ug	<10	10	2068607		
Strontium (Sr) †	ug	<0.2	0.2	2068607		
Thallium (Tl) †	ug	<0.2	0.2	2068607		
Titane (Ti) †	ug	<2	2	2068607		
Vanadium (V) †	ug	<0.4	0.4	2068607		
Zinc (Zn) †	ug	<0.2	0.2	2068607		

LDR = Limite de détection rapportée

Lot CQ = Lot contrôle qualité

† Accréditation non existante pour ce paramètre



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Dossier Lab BV: C002140

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CONSULAIR INC.

Votre # du projet: 19-6012

Adresse du site: AGNICO EAGLE MELLIADINE

PARAMÈTRES CONVENTIONNELS (SOLUTION BARBOTEUR)

ID Lab BV		HN2139	HN2144	HN2145	
Date d'échantillonnage		2019/12/15	2019/12/18	2019/12/19	
# Bordereau		N/A	N/A	N/A	
	Unités	302-INC-BS-HNO3-1	309-INC-BS-HNO3-3	316-INC-BS-HNO3-4	Lot CQ

CONVENTIONNELS

Volume final †	ml	110	150	160	2068212
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Lot CQ = Lot contrôle qualité

† Accréditation non existante pour ce paramètre



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CONSULAIR INC.

Votre # du projet: 19-6012

Adresse du site: AGNICO EAGLE MELLIADINE

MÉTAUX (TRAIN)

ID Lab BV		HN2139		HN2144	HN2145		
Date d'échantillonnage		2019/12/15		2019/12/18	2019/12/19		
# Bordereau		N/A		N/A	N/A		
	Unités	301+302+303-INC-1	LDR	308+309+310-INC-3	315+316+317-INC-4	LDR	Lot CQ

MÉTAUX							
Aluminium (Al) †	ug	45	2	81	76	2	2068494
Antimoine (Sb) †	ug	148	0.1	172	87.9	0.2	2068494
Argent (Ag) †	ug	2.0	0.6	1.3	3.7	0.8	2068494
Arsenic (As) †	ug	88.3	0.1	459	132	0.2	2068494
Baryum (Ba) †	ug	1.97	0.06	2.64	2.26	0.08	2068494
Béryllium (Be) †	ug	<0.06	0.06	<0.08	<0.08	0.08	2068494
Bismuth (Bi) †	ug	0.67	0.06	3.26	0.82	0.08	2068494
Bore (B) †	ug	2.3	0.5	2.6	2.8	0.5	2068494
Cadmium (Cd) †	ug	4.37	0.06	3.07	1.72	0.08	2068494
Calcium (Ca) †	ug	538	50	1420	469	50	2068494
Chrome (Cr) †	ug	13.0	0.1	12.0	16.2	0.2	2068494
Cobalt (Co) †	ug	<0.1	0.1	<0.2	15.8	0.2	2068494
Cuivre (Cu) †	ug	319	0.1	144	236	0.2	2068494
Etain (Sn) †	ug	32.3	0.6	70.6	26.6	0.8	2068494
Fer (Fe) †	ug	53	6	82	67	8	2068494
Lithium (Li) †	ug	17	1	9	17	2	2068494
Magnésium (Mg) †	ug	31	2	68	36	3	2068494
Manganèse (Mn) †	ug	3.1	0.1	3.6	26.4	0.2	2068494
Mercure (Hg) †	ug	<0.1	0.1	<0.1	<0.1	0.1	2068494
Molybdène (Mo) †	ug	4.4	0.6	4.8	6.1	0.8	2068494
Nickel (Ni) †	ug	1.4	0.3	0.3	37.8	0.3	2068494
Plomb (Pb) †	ug	258	0.6	474	266	0.8	2068494
Potassium (K) †	ug	16800	10	12600	17000	20	2068494
Sélénium (Se) †	ug	0.6	0.5	<0.5	<0.5	0.5	2068494
Silicium (Si) †	ug	297	6	508	195	8	2068494
Sodium (Na) †	ug	9710	10	8490	10500	10	2068494
Strontium (Sr) †	ug	1.8	0.1	3.1	1.7	0.2	2068494
Thallium (Tl) †	ug	<0.1	0.1	<0.2	<0.2	0.2	2068494
Titane (Ti) †	ug	6	1	11	5	2	2068494
Vanadium (V) †	ug	<0.2	0.2	<0.3	<0.3	0.3	2068494
Zinc (Zn) †	ug	388	1	491	289	1	2068494

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† Accréditation non existante pour ce paramètre

**MÉTAUX (TRAIN)**

ID Lab BV		HN2146		
Date d'échantillonnage		2019/12/15		
# Bordereau		N/A		
	Unités	322+323+324-BL-BL	LDR	Lot CQ

MÉTAUX				
Aluminium (Al) †	ug	<3	3	2068494
Antimoine (Sb) †	ug	<0.3	0.3	2068494
Argent (Ag) †	ug	<2	2	2068494
Arsenic (As) †	ug	<0.3	0.3	2068494
Baryum (Ba) †	ug	<0.2	0.2	2068494
Béryllium (Be) †	ug	<0.2	0.2	2068494
Bismuth (Bi) †	ug	<0.2	0.2	2068494
Bore (B) †	ug	2.1	0.6	2068494
Cadmium (Cd) †	ug	<0.2	0.2	2068494
Calcium (Ca) †	ug	<50	50	2068494
Chrome (Cr) †	ug	<0.3	0.3	2068494
Cobalt (Co) †	ug	<0.3	0.3	2068494
Cuivre (Cu) †	ug	<0.3	0.3	2068494
Etain (Sn) †	ug	<2	2	2068494
Fer (Fe) †	ug	<20	20	2068494
Lithium (Li) †	ug	<3	3	2068494
Magnésium (Mg) †	ug	<6	6	2068494
Manganèse (Mn) †	ug	<0.3	0.3	2068494
Mercure (Hg) †	ug	<0.2	0.2	2068494
Molybdène (Mo) †	ug	<2	2	2068494
Nickel (Ni) †	ug	<0.3	0.3	2068494
Plomb (Pb) †	ug	<2	2	2068494
Potassium (K) †	ug	<30	30	2068494
Sélénium (Se) †	ug	<0.5	0.5	2068494
Silicium (Si) †	ug	42	20	2068494
Sodium (Na) †	ug	78	20	2068494
Strontium (Sr) †	ug	<0.3	0.3	2068494
Thallium (Tl) †	ug	<0.3	0.3	2068494
Titane (Ti) †	ug	<3	3	2068494
Vanadium (V) †	ug	<0.6	0.6	2068494
Zinc (Zn) †	ug	<1	1	2068494

LDR = Limite de détection rapportée

Lot CQ = Lot contrôle qualité

† Accréditation non existante pour ce paramètre



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Dossier Lab BV: C002140

Date du rapport: 2020/02/04

CONSULAIR INC.

Votre # du projet: 19-6012

Adresse du site: AGNICO EAGLE MELLIADINE

REMARQUES GÉNÉRALES

Métaux extractibles: Délai maximum de conservation dépassé sur réception.: HM7428, HM7429

Mercure par AAVF: Délai maximum de conservation dépassé sur réception.: HM7465

Métaux extractibles: Délai maximum de conservation dépassé sur réception.: HM7476, HM7477

Mercure par AAVF: Délai maximum de conservation dépassé sur réception.: HM7478

Métaux extractibles: Délai maximum de conservation dépassé sur réception.: HM7479, HM7480

Mercure par AAVF: Délai maximum de conservation dépassé sur réception.: HM7481

Métaux extractibles: Délai maximum de conservation dépassé sur réception.: HM7492, HM7493

Mercure par AAVF: Délai maximum de conservation dépassé sur réception.: HM7494

Métaux extractibles: Délai maximum de conservation dépassé sur réception.: HN2139, HN2144, HN2145, HN2146

MÉTAUX (SOLUTION BARBOTEUR)

Les limites de détection indiquées sont modifiées en fonction du volume d'échantillon reçu.

Mercure (Vapeur froide): Analyse effectuée à délai de conservation dépassé

Les résultats ne se rapportent qu'aux échantillons soumis pour analyse



BUREAU
VERITAS

Dossier Lab BV: C002140

Date du rapport: 2020/02/04

CONSULAIR INC.

Votre # du projet: 19-6012

Adresse du site: AGNICO EAGLE MELLIADINE

RAPPORT ASSURANCE QUALITÉ

Lot AQ/CQ	Init	Type CQ	Groupe	Date Analysé	Valeur	Réc	Unités
2068607	AT7	Blanc fortifié	Aluminium (Al)	2020/01/30		101	%
			Antimoine (Sb)	2020/01/30		107	%
			Argent (Ag)	2020/01/30		103	%
			Arsenic (As)	2020/01/30		108	%
			Baryum (Ba)	2020/01/30		106	%
			Béryllium (Be)	2020/01/30		106	%
			Bismuth (Bi)	2020/01/30		109	%
			Bore (B)	2020/01/30		107	%
			Cadmium (Cd)	2020/01/30		95	%
			Calcium (Ca)	2020/01/30		99	%
			Chrome (Cr)	2020/01/30		107	%
			Cobalt (Co)	2020/01/30		104	%
			Cuivre (Cu)	2020/01/30		104	%
			Etain (Sn)	2020/01/30		111	%
			Fer (Fe)	2020/01/30		101	%
			Lithium (Li)	2020/01/30		106	%
			Magnésium (Mg)	2020/01/30		102	%
			Manganèse (Mn)	2020/01/30		107	%
			Mercure (Hg)	2020/01/30		108	%
			Molybdène (Mo)	2020/01/30		109	%
			Nickel (Ni)	2020/01/30		105	%
			Plomb (Pb)	2020/01/30		104	%
			Potassium (K)	2020/01/30		100	%
			Sélénium (Se)	2020/01/30		106	%
			Silicium (Si)	2020/01/30		101	%
			Sodium (Na)	2020/01/30		102	%
			Strontium (Sr)	2020/01/30		110	%
			Thallium (Tl)	2020/01/30		104	%
			Titane (Ti)	2020/01/30		104	%
			Vanadium (V)	2020/01/30		108	%
			Zinc (Zn)	2020/01/30		101	%
2068607	AT7	Blanc de méthode	Aluminium (Al)	2020/01/30	<1		ug
			Antimoine (Sb)	2020/01/30	<0.1		ug
			Argent (Ag)	2020/01/30	<0.5		ug
			Arsenic (As)	2020/01/30	<0.1		ug
			Baryum (Ba)	2020/01/30	<0.05		ug
			Béryllium (Be)	2020/01/30	<0.05		ug
			Bismuth (Bi)	2020/01/30	<0.05		ug
			Bore (B)	2020/01/30	<0.2		ug
			Cadmium (Cd)	2020/01/30	<0.05		ug
			Calcium (Ca)	2020/01/30	<5		ug
			Chrome (Cr)	2020/01/30	<0.1		ug
			Cobalt (Co)	2020/01/30	<0.1		ug
			Cuivre (Cu)	2020/01/30	<0.1		ug
			Etain (Sn)	2020/01/30	<0.5		ug
			Fer (Fe)	2020/01/30	<5		ug
			Lithium (Li)	2020/01/30	<1		ug
			Magnésium (Mg)	2020/01/30	<2		ug
			Manganèse (Mn)	2020/01/30	<0.1		ug
			Mercure (Hg)	2020/01/30	<0.05		ug
			Molybdène (Mo)	2020/01/30	<0.5		ug
			Nickel (Ni)	2020/01/30	<0.1		ug



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VERITAS

Dossier Lab BV: C002140

Date du rapport: 2020/02/04

CONSULAIR INC.

Votre # du projet: 19-6012

Adresse du site: AGNICO EAGLE MELLIADINE

RAPPORT ASSURANCE QUALITÉ (SUITE)

Lot AQ/CQ	Init	Type CQ	Groupe	Date Analysé	Valeur	Réc	Unités
			Plomb (Pb)	2020/01/30	<0.5		ug
			Potassium (K)	2020/01/30	<10		ug
			Sélénium (Se)	2020/01/30	<0.1		ug
			Silicium (Si)	2020/01/30	<5		ug
			Sodium (Na)	2020/01/30	<5		ug
			Strontium (Sr)	2020/01/30	<0.1		ug
			Thallium (Tl)	2020/01/30	<0.1		ug
			Titane (Ti)	2020/01/30	<1		ug
			Vanadium (V)	2020/01/30	<0.2		ug
			Zinc (Zn)	2020/01/30	<0.1		ug
2068632	CMA	Blanc fortifié	Mercure (Hg)	2020/01/31		93	%
2068632	CMA	Blanc de méthode	Mercure (Hg)	2020/01/31	<0.050		ug
Blanc fortifié: Un blanc, d'une matrice exempte de contaminants, auquel a été ajouté une quantité connue d'analyte provenant généralement d'une deuxième source. Utilisé pour évaluer la précision de la méthode.							
Blanc de méthode: Une partie aliquote de matrice pure soumise au même processus analytique que les échantillons, du prétraitement au dosage. Sert à évaluer toutes contaminations du laboratoire.							
Réc = Récupération							



BUREAU
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Dossier Lab BV: C002140

Date du rapport: 2020/02/04

CONSULAIR INC.

Votre # du projet: 19-6012

Adresse du site: AGNICO EAGLE MELLIADINE

PAGE DES SIGNATURES DE VALIDATION

Les résultats analytiques ainsi que les données de contrôle-qualité contenus dans ce rapport furent vérifiés et validés par les personnes suivantes:

Audrey Mélissa Benoit, B.Sc., Chimiste à l'entraînement



Caroline Bougie, B.Sc. Chimiste

Erum Mansuri
Membre OCQ #2016-122

Erum Mansuri, M.Sc., chimiste à l'entraînement



Jonathan Fauvel, B.Sc, Chimiste

Lab BV a mis en place des procédures qui protègent contre l'utilisation non autorisée de la signature électronique et emploie les «signataires» requis, conformément à l'ISO/CEI 17025. Veuillez vous référer à la page des signatures de validation pour obtenir les détails des validations pour chaque division.



RAPPORT D'ESSAI

Date : 30 janvier 2020

Réf : P2688-1

Client

Client : C8

Nom : Trépanier Éric

Téléphone : (418) 650-5960 # 2208

Courriel : eric.trepanier@consul-air.com

Adresse :

CONSULAIR Québec

125-2022, rue Lavoisier

Québec QC

G1N 4L5 Canada

Résumé du projet

Nb. d'objets : 11

Votre # projet : 19-6012

Projet lab. : P2688

Chantier : Agnico Eagle (Meliadine)

Résumé des essais

Paramètre(s) accrédités

ST	Paramètre	Q.	Principe (Méthode)	Matrice
	Matières particulaires (MP-A)	4	Gravimétrie (LPT1)	Acétone
	Matières particulaires (MP-F)	3	Gravimétrie (LPT2)	Filtre

ST : paramètre Sous-Traité

Paramètre(s) non accrédités

ST	Paramètre	Q.	Principe (Méthode)	Matrice
	Chlorures (Cl-)	4	Spectrophotométrie	Eau

ST : Paramètre Sous-Traité

Résultats d'essai(s)

ST	Param.	Échantillon (s)		Dates			Résultat (s)		LDR
		# Lab	# Client	Échantillon.	Récep.	Essai	Valeur	Unité	
MP-A		140120-1	301 - Inc - BS-Acétone - 1	15-12-19	14-01-20	15-01-20	8.4	mg	1.0
		140120-2	308 - Inc - BS-Acétone - 3	18-12-19	14-01-20	15-01-20	11.5	mg	1.0
		140120-3	315 - Inc - BS-Acétone - 4	19-12-19	14-01-20	15-01-20	11.4	mg	1.0
		140120-4	322 - BI - BS-Acétone - BI	15-12-19	14-01-20	15-01-20	<LDR	mg	1.0
MP-F		140120-5	303 - Inc - Filtre - 1	15-12-19	14-01-20	20-01-20	33.5	mg	0.1
		140120-6	310 - Inc - Filtre - 3	18-12-19	14-01-20	20-01-20	34.6	mg	0.1
		140120-7	317 - Inc - Filtre - 4	19-12-19	14-01-20	20-01-20	40.2	mg	0.1
CI-		140120-8	400 - Inc - B1 - 1	15-12-19	14-01-20	14-01-20	133	mg	3.51
		140120-9	401 - Inc - B1 - 3	18-12-19	14-01-20	14-01-20	249	mg	6.59
		140120-10	402 - Inc - B1 - 4	19-12-19	14-01-20	14-01-20	146	mg	4.33
		140120-11	403 - BI - Eau - BI	15-12-19	14-01-20	14-01-20	<LDR	mg	0.04

ST : Essai Sous-Traité
LDR : Limite de Détection Rapportée

Commentaire(s)

1. LPT1 & LPT2: Méthode MA.100-Part 1.0 (Domaine 400 de Chimie de l'air).
2. Le volume de l'échantillon 140120-4; V= 88 ml.

Contrôle de qualité

ST	Param.	Date	# Réf	Type	Résultat(s)		LDR
					Valeur	Unité	
	MP-A	15-01-20	BL1501	BL	<LDR	mg	1.0
			MR1501	MR	99.7	% Récup.	-
	MP-F	20-01-20	AP-02 Conforme	-	-	mg	0.1
	CI-	14-01-20	BL1401	BL	<LDR	mg/L	0.39
			MR1401	MR	100.3	% Récup.	-
			AD140120-8	AD	99.1	% Récup.	-
			DP140120-9	DP	0.8	% d'écart	-
			DP140120-10	DP	0.1	% d'écart	-
			AD140120-11	AD	102.0	% Récup.	-

ST : Contrôle qualité Sous-Traité

Réf : Référence du contrôle qualité dans le système de suivi du laboratoire

BL : Blanc

MR : Matériau de Référence

DP : Duplicata

RP : Réplicata

AD : Ajout Dosé

EA : Étalon Analogue

TM: Témoin de l'extraction

LDR : Limite de Détection Rapportée

Signature

Les résultats ne se rapportent qu'aux objets soumis à l'essai

Tout ou partie de ce document ne peut être reproduit sans l'autorisation du laboratoire de CONSULAIR.

Ce rapport d'essai est certifié par la (les) personne(s) mentionnée(s) ci-après.

Pour toute question concernant ce certificat d'analyse, veuillez vous adresser directement à :




Malha Kirèche

APPENDIX 4

FIELD FORMS



	FORMULAIRE: F_18_V8		Compagnie: <u>Agnico Eagle Mines LTD.</u>										
	ÉTALONNAGE DES ANALYSEURS		# de projet: <u>19-6012</u>										
	METHODE 7E / 10 / 6C / 3A		Source: <u>Incinerator</u>										
			Date: <u>13 dec 2019</u>										
Identification des analyseurs (# Consulair)													
O ₂ : <u>5313</u>	CO ₂ : <u>5313</u>	CO: <u>5313</u>	SO ₂ : <u>5313</u>	NO: <u>5313</u> AUTRE: <u>—</u>									
Identification des bombonnes (# Bombonne)													
Azote: <u>CYL19-061</u>	O ₂ /CO ₂ /CO: <u>CYL19-043.H.</u>	SO ₂ : <u>CYL19-084.H.</u>	NO: <u>CYL19-084.H.</u>	AUTRE: <u>—</u>									
Air zéro:	O ₂ /CO ₂ /CO: <u>CYL19-023.H.</u>	SO ₂ : <u>CYL19-083.H.</u>	NO: <u>CYL19-083.H.</u>	AUTRE: <u>—</u>									
Vérification du système de prélèvement/conditionnement													
Test de fuite (O/N): <u>OK</u>	Temp. Refroidisseur: <u>3.8</u>	Temp. cordon: <u>250</u>	Temp. pompe: <u>—</u>										
Pression analyseurs: <u>—</u>	Débit principal (#2): <u>—</u>	Débit excès (#7): <u>1.5</u>	Temps de réponse syst.: <u>30 sec.</u>										
AGENDA DE L'ÉTALONNAGE			ANALYSEURS / ÉCHELLES PHYSIQUES										
GAZ	Conc. de vérification	Dilution (O/N)	Vérif. Analyseur	Vérif. Sonde	Heure	O2	CO2	CO	SO2	NO	Prendre en notes les valeurs d'écart		
						SQUIRRELL / CONCENTRATIONS					% err.	OK?	
<u>V. étalonnage</u>													
<u>N₂</u>	<u>"0"</u>	<u>N</u>	<u>✓</u>		<u>11h28</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>			
<u>O₂ CO₂ CO</u>	<u>22.50</u>	<u>N</u>	<u>✓</u>		<u>11h34</u>	<u>22.50</u>							
<u>High</u>	<u>26.83</u>	<u>N</u>	<u>✓</u>			<u>26.97</u>							
	<u>884.6</u>	<u>N</u>	<u>✓</u>					<u>886</u>					
<u>O₂ CO₂ CO</u>													
<u>SO₂-NOx</u>	<u>905.3</u>	<u>N</u>	<u>✓</u>		<u>11h46</u>				<u>905</u>				
<u>High</u>	<u>903.5</u>	<u>N</u>	<u>✓</u>							<u>904</u>			
<u>O₂ CO₂ CO</u>	<u>12.40</u>	<u>N</u>	<u>✓</u>		<u>11h55</u>	<u>12.39</u>							
<u>Mid</u>	<u>15.39</u>	<u>N</u>	<u>✓</u>			<u>15.39</u>		<u>495</u>					
	<u>498.1</u>	<u>N</u>	<u>✓</u>										
<u>SO₂-NOx</u>	<u>487.5</u>	<u>N</u>	<u>✓</u>		<u>12h02</u>				<u>487</u>				
<u>Mid</u>	<u>510.0</u>	<u>N</u>	<u>✓</u>							<u>507</u>			

Technicien:

Eduardo Vargas.

Technicien: Eduardo Vargas.

Technicien: E. V

Technicien:
E. V.

		FORMULAIRE: F_18_V8		Compagnie: <u>AEML</u>								
		ÉTALONNAGE DES ANALYSEURS MÉTHODE 7E / 10 / 6C / 3A		# de projet: <u>19-6012</u> Source: <u>incinérateur</u> Date: <u>16 dec 2019</u>								
Identification des analyseurs (# Consulair)												
O ₂ : <u>5313</u>	CO ₂ : <u>5313</u>	CO: <u>5313</u>	SO ₂ : <u>5313</u>	NO: <u>5313</u>	AUTRE: <u>—</u>							
Identification des bombonnes (# Bombonne)												
Azote: <u>(4619-061)</u>	O ₂ /CO ₂ /CO: <u>C4619-043 M.</u>	SO ₂ : <u>C4619-084 H</u>	NO: <u>C4619-081 M</u>	AUTRE: <u>—</u>								
Air zéro:	O ₂ /CO ₂ /CO: <u>C4619-123 H</u>	SO ₂ : <u>C4619-083 H</u>	NO: <u>C4619-085 H</u>	AUTRE: <u>—</u>								
Vérification du système de prélèvement/conditionnement												
Test de fuite (O/N): <u>OK</u>	Temp. Refroidisseur: <u>1,6</u>	Temp. cordon: <u>249</u>	Temp. pompe:									
Pression analyseurs:	Débit principal (#2):	Débit excès (#7): <u>1,5 L/min</u>	Temps de réponse syst.:									
AGENDA DE L'ÉTALONNAGE												
GAZ	Conc. de vérification	Dilution (O/N)	Vérif. Analyseur	Vérif. Sonde	Heure	ANALYSEURS / ÉCHELLES PHYSIQUES					Prendre en notes les valeurs d'écart	
						O2	CO2	CO	SO2	NO	% err.	OK?
SQUIRRELL / CONCENTRATIONS												
<u>N₂</u>	<u>"0"</u>	<u>N</u>	<u>✓</u>		<u>17h27</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>		
<u>O₂ CO₂ CO</u>	<u>22,50</u>	<u>N</u>	<u>✓</u>		<u>17h23</u>	<u>22,50</u>						
<u>High</u>	<u>26,93</u>	<u>N</u>	<u>✓</u>			<u>26,95</u>						
	<u>224,6</u>	<u>N</u>	<u>✓</u>				<u>225</u>					
<u>SO₂ NOx</u>	<u>905,3</u>	<u>N</u>	<u>✓</u>		<u>17h29</u>			<u>906</u>				
<u>High</u>	<u>903,5</u>	<u>N</u>	<u>✓</u>					<u>903</u>				
<u>O₂ CO₂ CO</u>	<u>12,40</u>	<u>N</u>	<u>✓</u>		<u>17h35</u>	<u>12,55</u>						
<u>MID</u>	<u>15,39</u>	<u>N</u>	<u>✓</u>			<u>15,24</u>						
	<u>498,1</u>	<u>N</u>	<u>✓</u>				<u>491</u>					
<u>SO₂ NOx</u>	<u>427,5</u>	<u>N</u>	<u>✓</u>		<u>17h43</u>			<u>420</u>				
<u>MID</u>	<u>510</u>	<u>N</u>	<u>✓</u>					<u>505</u>				
<u>V. int</u>	<u>Systeme</u>											
<u>N₂</u>	<u>"0"</u>	<u>N</u>	<u>✓</u>		<u>17h54</u>	<u>0,14</u>	<u>0</u>	<u>0</u>	<u>1,9</u>	<u>0</u>		
<u>O₂ CO₂ CO</u>	<u>12,40</u>	<u>N</u>	<u>✓</u>		<u>17h57</u>	<u>12,52</u>						
<u>MID</u>	<u>15,39</u>	<u>N</u>	<u>✓</u>			<u>15,49</u>						
	<u>498,1</u>	<u>N</u>	<u>✓</u>				<u>497</u>					
<u>SO₂ NOx</u>	<u>427,5</u>	<u>N</u>	<u>✓</u>		<u>18h01</u>			<u>421</u>				
<u>MID</u>	<u>510</u>	<u>N</u>	<u>✓</u>					<u>508</u>				
<u>continu dans la cheminée</u>						<u>20h00</u>						
<u>E2-COSU début</u>						<u>20h05</u>						
<u>E2-ME début</u>						<u>20h08</u>						

Technicien: EU

Technicien: E.V.

E.V.

 ÉMISSION GLOBALE AIR ET ENVIRONNEMENT	FORMULAIRE: F_18_V8		Compagnie: <u>AEML</u>											
	ETALONNAGE DES ANALYSEURS		# de projet: <u>19-6012</u>											
	METHODE 7E / 10 / 6C / 3A		Source: <u>Incinerateur</u>											
			Date: <u>18 et 19 déc 2019</u>											
Identification des analyseurs (# Consulair)														
O ₂ : <u>5313</u>	CO ₂ : <u>5313</u>	CO: <u>5313</u>	SO ₂ : <u>5313</u>	NO: <u>5313</u> AUTRE: <u>—</u>										
Identification des bombonnes (# Bombonne)														
Azote: <u>CYL19-061</u>	O ₂ /CO ₂ /CO: <u>CYL19-043 M</u>	SO ₂ : <u>CYL19-084 M</u>	NO: <u>CYL19-084 M</u>	AUTRE: <u>—</u>										
Air zéro:	O ₂ /CO ₂ /CO: <u>CYL19-123 H</u>	SO ₂ : <u>CYL19-083 H</u>	NO: <u>CYL19-083 H</u>	AUTRE: <u>—</u>										
Vérification du système de prélèvement/conditionnement														
Test de fuite (O/N): <u>OUI</u>	Temp. Refroidisseur: <u>3,7</u>	Temp. cordon: <u>248</u>	Temp. pompe: <u>—</u>											
Pression analyseurs:	Débit principal (#2):	Débit excès (#7): <u>1,5 l/min</u>	Temps de réponse syst.:											
AGENDA DE L'ÉTALONNAGE														
GAZ	Conc. de vérification	Dilution (O/N)	Vérif. Analyseur	Vérif. Sonde	Heure	ANALYSEURS / ÉCHELLES PHYSIQUES					Prendre en notes les valeurs d'écart			
						O2	CO2	CO	SO2	NO				
						SQUIRRELL / CONCENTRATIONS					% err.	OK?		
<u>V. int. système</u>					<u>18/12/2019</u>									
<u>N₂</u>	<u>"0"</u>	<u>N</u>		<u>✓</u>	<u>12h11</u>	<u>9,77</u>	<u>0,02</u>	<u>0</u>	<u>0</u>	<u>0</u>				
<u>O₂ CO₂ CO</u>	<u>12,40</u>	<u>N</u>		<u>✓</u>	<u>12h13</u>	<u>12,27</u>								
<u>Mid</u>	<u>15,39</u>	<u>N</u>		<u>✓</u>		<u>16,55</u>								
	<u>498,1</u>	<u>N</u>		<u>✓</u>				<u>508</u>						
<u>SO₂ NOx</u>	<u>487,5</u>	<u>N</u>		<u>✓</u>	<u>12h17</u>				<u>482</u>					
<u>Mid</u>	<u>510,0</u>	<u>N</u>		<u>✓</u>						<u>543</u>				
<u>continu à l'intérieur de la cheminée</u>														
<u>continu à l'extérieur de la cheminée pendant quelques minutes</u>														
<u>continu à l'intérieur de la cheminée</u>														
<u>continu à l'extérieur de la cheminée</u>														
<u>Début essai 3 ME</u>														
<u>Début essai 3 COSU</u>														

Technicien: E.V.

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				% err.	OK?
Continu à l'intérieur de la cheminée															
Continu à l'extérieur de la cheminée															
Début	E4	ME			20h00										
Début	E4	COSU			22h30										
V-Finale 19/12/2019															
N2	"O11"	N		✓	20h57	-0,39	905	0	3	1					
O2	CO2	CO	12,40	N	✓	1h00	12,34								
MID			13,39	N	✓		17,42								
			498,1	N	✓			513							
SO2	NOx		487,5	N	✓	1h05			481						
MID			510,0	N	✓					343					
Problème avec la lecture de la concentration de CO2 MID.															

Technicien:

E.V.

		FORMULAIRE: F_18_V8		Compagnie: <u>AEM L</u>									
		ÉTALONNAGE DES ANALYSEURS MÉTHODE 7E / 10 / 6C / 3A		# de projet: <u>19-6012</u>									
				Source: <u>Incinerator</u>									
				Date: <u>19 dec 2019</u>									
Identification des analyseurs (# Consulair)													
O ₂ : <u>5313</u>	CO ₂ : <u>5313</u>	CO: <u>5313</u>	SO ₂ : <u>5313</u>	NO: <u>5313</u>	AUTRE: <u>—</u>								
Identification des bombonnes (# Bombonne)													
Azote: <u>CYL19-061</u>	O ₂ /CO ₂ /CO: <u>CYL19-043 M</u>	SO ₂ : <u>CYL19-084 M</u>	NO: <u>CYL19-084 M</u>	AUTRE: <u>—</u>									
Air zéro:	O ₂ /CO ₂ /CO: <u>CYL19-123 H</u>	SO ₂ : <u>CYL19-083 H</u>	NO: <u>CYL19-083 H</u>	AUTRE: <u>—</u>									
Vérification du système de prélèvement/conditionnement													
Test de fuite (O/N): <u>oui</u>	Temp. Refroidisseur: <u>3.01</u>	Temp. cordon: <u>25.1</u>	Temp. pompe:										
Pression analyseurs:	Débit principal (#2):	Débit excès (#7): <u>1.5 l/min</u>	Temps de réponse syst.:										
AGENDA DE L'ÉTALONNAGE													
GAZ	Conc. de vérification	Dilution (O/N)	Vérif. Analyseur	Vérif. Sonde	Heure	ANALYSEURS / ÉCHELLES PHYSIQUES					Prendre en notes les valeurs d'écart		
						O2	CO2	CO	SO2	NO			
SQUIRRELL / CONCENTRATIONS						% err.	OK?						
V- étalonnage													
N ₂	110.11	N	✓		19h24	0	0	0	0	0.01			
O ₂ CO ₂ CO	22.50	N	✓		19h30	22.50							
High	26.93	N	✓			26.90							
	284.6	N	✓				885						
SO ₂ NOx	905.3	N	✓		19h26			907					
High	903.5	N	✓					904					
O ₂ CO ₂ CO	12.40	N	✓		19h44	12.42							
MID	15.39	N	✓			15.32							
	498.1	N	✓				295						
SO ₂ NOx	487.5	N	✓		19h49			485					
MID	510.0	N	✓					514					
V. Int. système													
N ₂	110.11	N	✓	✓	19h56	-0.06	0.01	0	5				
O ₂ CO ₂ CO	12.40	N	✓	✓	19h58	12.36							
MID	15.39	N	✓	✓		15.35							
	498.1	N	✓	✓			490						
SO ₂ NOx	487.5	N	✓	✓	20h01			482					
MID	510.0	N	✓	✓				514					

Technicien:

E.V

Technicien: E.V.

Technicien: E.V.

Formulaire-F_03_V3 Décembre 2015

Compagnie: Agnico Eagle Mines LTD. Source: Incinerator # Projet: 19-6012
 Ville: Meladine Date: 13 déc 2019 ME-P-HCL

1 - VÉRIFICATION DES MODULES AVEC ORIFICES CRITIQUES

PRESSION BAROMÉTRIQUE (in Hg)

INITIAL 2990 FINAL 2990

C / NC

MODULE MAR-01
 Gamma (Kc) 1.024

POMPE: MAR-01
 # KIT CALIB 4

#ORIFICE	#ESSAI	K' FACTEUR (AVG)	TEST VACUUM (in Hg)	COMPTEUR VOLUME (FT ³)			TEMPERATURES °F						DURÉE TEMPS (μv)	DGM ΔH (in H ₂ O)
				COMPTEUR VOLUME (FT ³)			COMPTEUR IN		COMPTEUR OUT		AMBIANT			
				INITIAL	FINAL	NET (V _m)	INITIAL	FINAL	INITIAL	FINAL	INITIAL	FINAL		
4-2	1	0,5040	-17	643,9025	937	6,932	56,7	55,6	55	49,2	50,9	57,7	10	0,63
4-1	2	0,3540	-17	655,44021	75507	5,315	47,6	57,6	51,4	59,6	55,4	43,8	12	0,06
4-3	3	0,7000	-15	663,82744	22237	7,063	44,7	50,2	50,6	54,2	52,7	44,1	8	1,12

Commentaires:

Respect de l'écart de 5 % du K_C :

Technicien : ✓ Eduardo Vargas

Formulaire-F_03_V3 Décembre 2015

Compagnie: <u>Agnico Eagle Mines LTD.</u>	Source: <u>Incinerator</u>	# Projet: <u>19-6012</u>
Ville: <u>Melville</u>	Date: <u>13 déc 2019</u>	<u>COSV</u>

1 - VÉRIFICATION DES MODULES AVEC ORIFICES CRITIQUES

PRESSION BAROMÉTRIQUE (in Hg)

INITIAL FINAL

INITIAL: 29,90 FINAL: 29,90

C / NC

MODULE: MAR-02
Gamma (K_C): 1,021

POMPE: MAR-02
KIT CALIB: 4

		K'	TEST	TEMPERATURES °F						DURÉE	DGM ΔH (in H ₂ O)		
#ORIFICE	#ESSAI	FACTEUR (AVG)	VACUUM (in Hg)	COMPTEUR VOLUME (ft ³)			COMPTEUR IN		COMPTEUR OUT			TEMPS (μiv)	
				INITIAL	FINAL	NET (V _m)	AMBIANT INITIAL	INITIAL	FINAL	INITIAL	FINAL	AMBIANT FINAL	
4-2	1	0,5040	-17	526. 54168	533. 46336	6,922	45,7	50,7	49,8	49,6	49,2	45,4	11 0,66
4-1	2	0,3549	-17	511. 35637	517. 18329	5,827	45,1	49,7	50	50,1	50,2	46,2	13 0,33
4-3	3	0,7000	-15	518. 41931	524. 59937	6,180	46,5	50,3	51	50	49,7	46,4	7 1,25

Commentaires:

Respect de l'écart de 5 % du K_C:

Technicien: Edwardo Lanzas

CONSULAR
SOLUTION GLOBALE AIR ET ENVIRONNEMENT

Formulaire: F_09_V6
FEUILLE DE VÉRIFICATIONS ET DE DONNÉES DE PRÉLÈVEMENT MANUEL

Code d'essai: 19-0912-INC ME-P-HCC-EI
mai-2019

Usine: AEML
Ville: Melhadine

ID point d'émission: Incineratoire

Diamètre: 32,52

Distance avant: 5 D

Distance après: 2 D

Date: 15 dec 2019

Sonde N°: 05-06 moy V

Cp: 9,798

Buse N°: 01-05-04

Coef: 0,4320

P. Bar (po Hg): 29,70

P. Stat. (po H₂O): -9,15

Module N°: MAR-01 C (NO)

Kc: 1,024

Ko: 1,000

Distance P-T-B: ✓

Cold box: ME-4

K: 15,47

Niveau du manomètre: ✓

Zéro du manomètre: ✓

Heure	Trav.	Point	Temps prélév. (min)	ΔP (po H ₂ O)	ΔH (po H ₂ O)	Températures (°F)			Volume Prélevé (pi³)	Masse molaire			Vaccum		Température			
						Cheminée	Compteur	Orifice		O ₂ (%)	CO ₂ (%)	CO (ppmv)	po. Hg	Sonde (°F)	Filtre (°F)	Sortie (°F)	Trappe/Filtre (°F)	
1	1	5		0,11	0,51	128,7	64,8	61,1	61,1	20,7265	16,4	3,6	3	-1,5	250	258,6	50	
	2			0,09	0,42	128,5	64,7	62,3	62,3	20,8820				-2,5		260,1	50	
	3			0,09	0,42	127,4	66,3	66,9	66,9	20,4570				-2,5		258,3	50	
	4			0,10	0,46	128,7	66,7	63,5	63,5	21,0335				-2,5		257,7	49,7	
	5			0,11	0,51	128,4	63,7	63,5	63,5	21,1150				-3		258,1	49,8	
	6			0,11	0,51	128,7	68,1	63	63	21,1990				-3,5		257,1	50	
	7			0,10	0,46	128,8	68,1	64,1	64,1	21,2755				-3,5		258,7	47,3	
	8			0,10	0,47	128,7	70	66,7	66,7	21,3540				-3,5		259,4	46,5	
	9			0,09	0,42	128,9	70,6	67,5	67,5	21,4280				-4		259,8	46,8	
	10			0,09	0,42	127,9	71	68	68	21,5000				-3,5		259,1	46,7	
	11			0,09	0,42	129,2	71,4	68,7	68,7	21,5725				-3,5		261,8	46,6	
	12			0,09	0,42	127,9	72	69,4	69,4	21,6445				-4		257,3	45,9	
	13			0,09	0,42	128	72,6	70,1	70,1	21,7160				-4		256,4	45,5	
	14			0,09	0,42	127,9	72,9	70,7	70,7	21,7875				-4		258,1	45	
	15			0,07	0,33	127,4	72,3	71,4	71,4	21,8525				-4		259,1	44,7	
	16			0,07	0,33	128,9	73,7	73,1	73,1	21,9180				-4		259,3	44,5	
	17			0,07	0,33	128,5	72,4	72,4	72,4	21,9825				-4		259,2	41,3	
19h21	18			0,07	0,33	127,4	72,9	72,9	72,9	22,0465				-4		258,7	41,5	✓

TDF Initial Débit (pi³/min):

Pression (inhg):

Volume fin (pi³):

Volume (pi³):

Fuite Pitot (ΔP):

TDF Final Débit (pi³/min): < 90005

Pression (inhg): -7

Volume fin (pi³): 22,0525

Volume (pi³): 9,0065

OK

REMARQUES: O₂/CO₂ - Utiliser le formulaire de gaz en continu pour calibration des appareils.

* Module en m³.

TECHNICIEN: EV - JFG

Usine : AEML	Date : 15 dec 2019	P. Bar (po Hg) : 29,70	# Cold box : QR-6
Ville: Meladine		P. Stat. (po H ₂ O) : -0,15	
ID point d'émission : Incinerator	Sonde N° : 05-04 moy V	Module N° : MAR-02	K' : 30,34
Diamètre : 32,52	Cp : 9,805	Kc : 1,021	
Distance avant : 50	Buse N° : 02-05-02	Ko : 1,000	Niveau du manomètre : ✓
Distance après : 20	Coef : 0,5090	Distance P-T°-B : ✓	Zéro du manomètre : ✓

Heure	Trav.	Point	Temps prélèv. (min)	ΔP (po H ₂ O)	ΔH (po H ₂ O)	Températures (°F)				Volume Prélevé (pi ³)	Masse molaire			Vaccum po. Hg	Température			
						Cheminée		Compteur			Orifice	O ₂ (%v)	CO ₂ (%v)		CO (ppmv)	Sonde (°F)	Filtre (°F)	Sortie (°F)
							Entrée	Sortie										
	2	1	5	0,05	0,46	127,9	65,1	60,8	60,8	16,9055	16,9	3,3	3	-5	250	258,2	43	52,5
		2		0,05	0,45	128,2	65,6	61,4	61,4	16,9385				-5		258,1	43,4	53
		3		0,07	0,83	126,4	66,7	62,1	62,1	17,1525				-5		257	43,3	53,7
		4		0,11	1,01	126,6	66,5	62,3	62,3	17,2620				-5		258,3	43,2	55,1
		5		0,11	1,01	126,5	66,7	64,1	64,1	17,3725				-8,5		257	43,8	55
		6		0,11	1,01	126,7	65,1	65,2	65,2	17,4820				-8,5		259,8	45,5	53,9
		7		0,11	1,01	127,0	70,7	65,2	65,2	17,5950				-9		258,6	44,2	53,8
		8		0,11	1,01	126,8	71,3	65,2	65,2	17,7060				-9		257,1	43,8	51,9
		9		0,11	1,02	126,1	71,9	66,7	66,7	17,8181				-9		256,2	43,5	52,1
		10		0,11	1,02	127,1	72,4	67,5	67,5	17,9285				-9		259,1	44,3	52
		11		0,11	1,02	127,3	72,9	68	68	18,0400				-9		257,8	43,5	54,7
		12		0,11	1,02	126,1	73,1	68,6	68,6	18,1515				-9		255,2	42,9	55,9
		13		0,10	0,94	125,5	73,3	69,3	69,3	18,2509				-9		258,1	42,8	57,1
		14		0,10	0,94	125,6	73,8	69,8	69,8	18,3585				-9		258,2	39,7	56,8
		15		0,10	0,94	125,4	73,6	70,2	70,2	18,4675				-9		256,7	40,8	51,8
		16		0,10	0,93	125,9	73,5	70,4	70,4	18,5780				-9		259,2	41,6	53,3
		17		0,09	0,84	125,5	73,4	70,5	70,5	18,6830				-9,5		254,7	42,6	55,4
19h29		18	↓	0,09	0,84	126,4	73,1	71,1	71,1	18,7900				-9,5		259,4	43,2	55

TDF Initial Débit (pi ³ /min):	—	Pression (inHg):	—	Volume ini (pi ³):	—	Volume fin (pi ³):	—	Fuite Pitot (ΔP):	OK
TDF Final Débit (pi ³ /min):	< 90005	Pression (inHg):	-12	Volume ini (pi ³):	18,7915	Volume fin (pi ³):	18,7985	Volume (pi ³):	90070
REMARQUES	O ₂ /CO ₂ - Utiliser le formulaire de gaz en continu pour calibration des appareils.								

* Moduie en m³

TECHNICIEN: EV - JFG

Usine : AEMI	Date : 18 déc 2019	P. Bar (po Hg): 39,0	# Cold box : OK-1
Ville : Meliadine		P. Stat. (po H ₂ O): -9,15	
ID point d'émission : Incinerateur	Sonde N° : 03-08 May V.	Module N° : MAR-02	K : 15,71
Diamètre : 32,52	Cp : 0,802	Kc : 1,001	
Distance avant : 50	Buse N° : 02-03-01	Ko : 1,000	Niveau du manomètre : ✓
Distance après : 20	Coef : 0,4325	Distance P-T°-B : ✓	Zéro du manomètre : ✓

[illegible]

TDF Initial Débit (pi^3/min): 0,0005		Pression (inhg): -15		Volume ini (pi^3): 20,1000		Volume fin (pi^3): 20,1179		Volume (pi^3): —		Fuite Pitot (ΔP): OK	
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.									
19h20 - 23: Test sur pause, problème de vide. # Module en m3											
TECHNICIEN:		EV. - JFG									

[illegible]

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

Compagnie: AEML	Projet: 19-6012
Source: Incinerator	Essai: 4 # Cold Box: ME-4
Échantillonnée le: 19 dec 2019	Date de l'assemblage: 18 dec 2019 Heure: 11h15

DÉCONTAMINATION AVANT ESSAI DE LA BUSE ET DE LA SONDE

Item	Remarques	Brosser acétone	Rincer 3x HNO ₃ 10%	Rincer 3x H ₂ O 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 H ₂ O démin.	Rincer 3x Acétone
du by-pass au barboteur 6					
Vérification du train d'échantillonnage à conserver :				OUI	NON

Remarques :

VOLUME D'EAU RECUEILLI (g)

ITEM #	PIÈCES	CONTENU	POIDS		
			APRÈS	AVANT	TOTAL
1	Barboteur 1 - GS mod	VIDE (optionnel) OU CMM H ₂ O déminéralisée (100 ml)	671,20	680,85	
2	Barboteur 2 - GS mod	HNO ₃ 5% / H ₂ O ₂ 10% (100 ml)	766,14	695,74	
3	Barboteur 3 - GS	HNO ₃ 5% / H ₂ O ₂ 10% (100 ml)	750,53	718,31	
4	Barboteur 4 - GS mod	VIDE	543,69	532,94	
5	Barboteur 5 - GS mod	KMnO ₄ 4% / H ₂ SO ₄ 10% (100 ml) recouvert d'aluminium	637,26	631,13	
6	Barboteur 6 - GS mod	KMnO ₄ 4% / H ₂ SO ₄ 10% (100 ml) recouvert d'aluminium	642,15	641,07	
7	Contenant de dessicant	GEL DE SILICE	1897,71	1788,94	1873,4
TOTAL					

PARTICULES TOTALES (g)

# FILTRE QUARTZ	POIDS (g)	REMARQUES

LOTS DES PRODUITS UTILISÉS

Produits	# LOT
Acétone ACS	194715
Solution d'acide nitrique (HNO ₃) 10%	A-148
Solution d'acide nitrique (HNO ₃) 0.1 N	A-148
Solution d'acide sulfurique (H ₂ SO ₄) 10%	3110100
Solution d'acide chlorhydrique (HCl) 8N	A-095
Permanganate de potassium (KMnO ₄)	H 0 218
Solution H ₂ O ₂ 10% / HNO ₃ 5%	A-148 / R-387

Remarques:

 Technicien : **Edvarolo Nogueira**

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

Compagnie: <u>Agua Eagle Mine LTD</u>	Projet: <u>19-6012</u>
Source: <u>Incinerator</u>	Essai: <u>3</u> # Cold Box: <u>ME-3</u>
Échantillonnée le: <u>18 déc 2019</u>	Date de l'assemblage: <u>17 déc 2019</u> Heure: <u>11h00</u>

DÉCONTAMINATION AVANT ESSAI DE LA BUSE ET DE LA SONDE

Item	Remarques	Brosser acétone	Rincer 3x HNO ₃ 10%	Rincer 3x H ₂ O démin.	Rincer 3x Acétone
Buse et liner de verre		☒	☒	☒	☒
Vérification de la buse et sondes d'échantillonnage à conserver :				OUI	<u>NON</u>

DÉCONTAMINATION AVANT ESSAI DU TRAIN

Item	Remarques	Brosser acétone (si nécessaire)	Rincer 3x HNO ₃ 10%	Rincer 3x H ₂ O démin.	Rincer 3x Acétone
du by-pass au barboteur 6		☒	☒	☒	☒
Vérification du train d'échantillonnage à conserver :				OUI	<u>NON</u>

Remarques :
VOLUME D'EAU RECUEILLI (g)

ITEM #	PIÈCES	CONTENU	POIDS		
			APRÈS	AVANT	TOTAL
1	Barboteur 1 - GS mod	VIDE (optionnel) OU CMM H ₂ O déminéralisée (100 ml)	<u>737,95</u>	<u>667,61</u>	
2	Barboteur 2 - GS mod	HNO ₃ 5% / H ₂ O ₂ 10% (100 ml)	<u>699,85</u>	<u>648,07</u>	
3	Barboteur 3 - GS	HNO ₃ 5% / H ₂ O ₂ 10% (100 ml)	<u>645,35</u>	<u>631,21</u>	
4	Barboteur 4 - GS mod	VIDE	<u>535,61</u>	<u>533,00</u>	
5	Barboteur 5 - GS mod	KMnO ₄ 4% / H ₂ SO ₄ 10% (100 ml) recouvert d'aluminium	<u>722,63</u>	<u>723,75</u>	
6	Barboteur 6 - GS mod	KMnO ₄ 4% / H ₂ SO ₄ 10% (100 ml) recouvert d'aluminium	<u>739,75</u>	<u>743,54</u>	
7	Contenant de dessicant	GEL DE SILICE	<u>1824,55</u>	<u>1991,32</u>	
TOTAL					<u>16629g</u>

PARTICULES TOTALES (g)

# FILTRE QUARTZ	POIDS (g)	REMARQUES

LOTS DES PRODUITS UTILISÉS

Produits	# LOT
Acétone ACS	<u>194715</u>
Solution d'acide nitrique (HNO ₃) 10%	<u>A-148</u>
Solution d'acide nitrique (HNO ₃) 0.1 N	<u>A-148</u>
Solution d'acide sulfurique (H ₂ SO ₄) 10%	<u>3110100</u>
Solution d'acide chlorhydrique (HCl) 8N	<u>A-095</u>
Permanganate de potassium (KMnO ₄)	<u>H O 218</u>
Solution H ₂ O ₂ 10% / HNO ₃ 5%	<u>A-148 / R-387</u>

Remarques:

Technicien : Eduardo Varga

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

Compagnie: <u>Agnico Eagle Mines LTD.</u>	Projet: <u>19-6012</u>
Source: <u>Incinerator</u>	Essai: <u>L</u> # Cold Box: <u>ME-4</u>
Échantillonnée le: <u>15 déc 2019</u>	Date de l'assemblage: <u>14-12-2019</u> Heure: <u>9h00</u>

DÉCONTAMINATION AVANT ESSAI DE LA BUSE ET DE LA SONDE

Item	Remarques	Brosser acétone	Rincer 3x HNO ₃ 10%	Rincer 3x H ₂ O démin.	Rincer 3x Acétone
Buse et liner de verre	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>
Vérification de la buse et sondes d'échantillonnage à conserver :				OUI	<u>NON</u>

DÉCONTAMINATION AVANT ESSAI DU TRAIN

Item	Remarques	Brosser acétone (si nécessaire)	Rincer 3x HNO ₃ 10%	Rincer 3x H ₂ O démin.	Rincer 3x Acétone
du by-pass au barboteur 6	<u>Fait au laboratoire</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>
Vérification du train d'échantillonnage à conserver :				OUI	<u>NON</u>

Remarques :

VOLUME D'EAU RECUEILLI (g)

ITEM #	PIÈCES	CONTENU	POIDS		
			APRÈS	AVANT	TOTAL
1	Barboteur 1 - GS mod	<u>VIDE (optionnel) OU</u> <u>CMM H₂O déminéralisée (100 ml)</u>	<u>682,82</u>	<u>672,05</u>	
2	Barboteur 2 - GS mod	HNO ₃ 5% / H ₂ O ₂ 10% (100 ml)	<u>705,74</u>	<u>643,82</u>	
3	Barboteur 3 - GS	HNO ₃ 5% / H ₂ O ₂ 10% (100 ml)	<u>653,90</u>	<u>632,11</u>	
4	Barboteur 4 - GS mod	VIDE	<u>539,14</u>	<u>532,10</u>	
5	Barboteur 5 - GS mod	KMnO ₄ 4% / H ₂ SO ₄ 10% (100 ml) recouvert d'aluminium	<u>726,99</u>	<u>724,03</u>	
6	Barboteur 6 - GS mod	KMnO ₄ 4% / H ₂ SO ₄ 10% (100 ml) recouvert d'aluminium	<u>741,04</u>	<u>743,01</u>	
7	Contenant de dessicant	GEL DE SILICE	<u>1787,11</u>	<u>1762,15</u>	
TOTAL					<u>127,47g</u>

PARTICULES TOTALES (g)

# FILTRE QUARTZ	POIDS (g)	REMARQUES

LOTS DES PRODUITS UTILISÉS

Produits	# LOT
Acétone ACS	<u>194715</u>
Solution d'acide nitrique (HNO ₃) 10%	<u>A-148</u>
Solution d'acide nitrique (HNO ₃) 0.1 N	<u>A-148</u>
Solution d'acide sulfurique (H ₂ SO ₄) 10%	<u>3110100</u>
Solution d'acide chlorhydrique (HCl) 8N	<u>A-095</u>
Permanganate de potassium (KMnO ₄)	<u>H0218</u>
Solution H ₂ O ₂ 10% / HNO ₃ 5%	<u>A-148 / R-387</u>

Remarques:

 Technicien : Eduardo Vargas

Compagnie: Agnico Eagle Mines LTD		Projet: 19-G012	
Source: Incinerator		Essai: 2	# Cold Box: ME-3
Échantillonnée le: 1		Date de l'assemblage: 16 déc 2019	Heure: 9h30

Item	Remarques	Brosser acétone	Rincer 3x HNO ₃ 10%	Rincer 3x H ₂ O démin.	Rincer 3x Acétone
Buse et liner de verre					
Vérification de la buse et sondes d'échantillonnage à conserver :				OUI	NON

Item	Remarques	Brosser acétone (si nécessaire)	Rincer 3x HNO ₃ 10%	Rincer 3x H ₂ O démín.	Rincer 3x Acétone
du by-pass au barboteur 6	<i>Fait au laboratoire</i>				
Vérification du train d'échantillonnage à conserver :				OUI	

ITEM #	PIÈCES	CONTENU	POIDS		
			APRÈS	AVANT	TOTAL
1	Barboteur 1 - GS mod	VIDE (optionnel) OU CMM H ₂ O déminéralisée (100 ml)		678,72	
2	Barboteur 2 - GS mod	HNO ₃ 5% / H ₂ O ₂ 10% (100 ml)		698,62	
3	Barboteur 3 - GS	HNO ₃ 5% / H ₂ O ₂ 10% (100 ml)		724,20	
4	Barboteur 4 - GS mod	VIDE		531,56	
5	Barboteur 5 - GS mod	KMnO ₄ 4% / H ₂ SO ₄ 10% (100 ml) recouvert d'aluminium		631,45	
6	Barboteur 6 - GS mod	KMnO ₄ 4% / H ₂ SO ₄ 10% (100 ml) recouvert d'aluminium		640,06	
7	Contenant de dessicant	GEL DE SILICE		1786,52	
TOTAL					

# FILTRE QUARTZ	POIDS (g)	REMARQUES

Produits	# LOT
Acétone ACS	194715
Solution d'acide nitrique (HNO ₃) 10%	A-148
Solution d'acide nitrique (HNO ₃) 0.1 N	A-148
Solution d'acide sulfurique (H ₂ SO ₄) 10%	3110100
Solution d'acide chlorhydrique (HCl) 8N	A-095
Permanganate de potassium (KMnO ₄)	H0218
Solution H ₂ O ₂ 10% / HNO ₃ 5%	A-148 / R-387

Technicien : Eduardo Lamas

CONSULAIR

FEUILLE DE VÉRIFICATIONS ET DE DONNÉES DE PRÉLEVEMENT MANUEL

Formulaire: F_09_V6

Code d'essai: 19-6002 - INC-COSU-E4 (1/2) mai-2019

Usine : AEML

Ville: Melandine

ID point d'émission : Incineration

Diamètre : 32,52

Distance avant : 5D

Distance après : 2D

Date : 18 et 19 dec 2019

Sonde N° : 03-08 moy V

Cp : 0,802

Buse N° : 02-03-02

Coef : 0,4340

P. Bar (po Hg) : 39,0

P. Stat. (po H2O) : -9,15

Module N° : MAR-01 C 1 NO

Kc : 1,024

Ko : 1,000

Distance P-T°-B : ✓

Cold box : 9R-C

K : 15,93

Niveau du manomètre: 1

Zéro du manomètre: 1

Heure	Trav.	Point	Temps prélév. (min)	ΔP (po H2O)	ΔH (po H2O)	Températures (°F)			Volume Prélevé (pi³)	Masse molaire			Vaccum po. Hg	Température			
						Cheminée	Compteur Entrée	Sortie		Orifice	O2 (%v)	CO2 (%v)		CO (ppmv)	Sonde (°F)	Filtre (°F)	Sortie (°F)
22h36	1	1	15	0,13	0,60	1336	57	60	26,1275	14,0	3,7	2	-9,5	280	268	34	46
22h41-49	2	2		0,15	0,68	1363	55	60	26,3060				-9,5		267	33	46
	3	3		0,13	0,59	1377	50	53	26,3880				-9,5		269	33	36
	4	4		0,13	0,29	1326	50	53	26,4645				-9,5		269	33	36
	5	5		0,13	0,59	1326	50	53	26,5530				-9,5		268	34	33
	6	6		0,11	0,50	1377	50	53	26,6320				-9,5		260	45	49
	7	7		0,12	0,54	1330	51	50	26,7140				-9,5		262	44	41
	8	8		0,12	0,54	1331	50	49	26,7995				-9,5		250	45	40
	9	9		0,12	0,54	1337	50	49	26,8795				-9,5		250	45	45
	10	10		0,12	0,55	1374	55	52	26,9610				-9,5		250	45	45
	11	11		0,12	0,55	1314	55	52	27,0395				-9,5		250	45	45
	12	12		0,12	0,55	1321	55	52	27,1180				-9,5		250	45	45
	13	13		0,12	0,55	1321	55	52	27,1950				-9,5		250	45	45
	14	14		0,11	0,50	1320	55	52	27,2745				-9,5		251	47	46
	15	15		0,11	0,50	1324	54	52	27,3520				-9,5		251	47	46
	16	16		0,11	0,50	1324	54	52	27,4320				-9,5		251	47	46
	17	17		0,11	0,50	1323	57	54	27,5110				-9,5		250	46	51
	18	18		0,11	0,51	1320	57	54	27,5875				-9,5		249	46	52

TDF Initial Débit (pi³/min): 0,9905

Pression (inhg): -15

Volume ini (pi³): 26,1210

Volume fin (pi³): 26,1275

Volume (pi³): 0,0065

Fuite Pitot (ΔP):

TDF Final Débit (pi³/min):

Pression (inhg):

Volume ini (pi³):

Volume fin (pi³):

Volume (pi³):

REMARQUES

O2/CO2 - Utiliser le formulaire de gaz en continu pour calibration des appareils.

22h41-49: pause du test, probleme de vide.

Module en m3

TECHNICIEN : EU - JF6

Usine : AEML	Date : 18 et 19 oct 2019	P. Bar (po Hg): 34.9	# Cold box : 02-6
Ville : Melledine		P. Stat. (po H ₂ O): -9.15	
ID point d'émission : Incinerator	Sonde N° : 03-08 moy ✓	Module N° : MAR-01 C / NC	K : 15.93
Diamètre : 34.52	Cp : 9.802	Kc : 1.924	
Distance avant : 50	Buse N° : 02-03-02	Ko : 1.000	Niveau du manomètre : ✓
Distance après : 20	Coef : 0.4340	Distance P-T-B : ✓	Zéro du manomètre : ✓

Heure	Trav.	Point	Temps prélév. (min)	ΔP (po H ₂ O)	ΔH (po H ₂ O)	Températures (°F)			Volume Prélevé (pi ³)	Masse molaire			Vaccum		Température			
						Cheminée	Compteur			Orifice	O ₂ (%)	CO ₂ (%)	CO (ppmv)	po. Hg	Sonde (°F)	Filtre (°F)	Sortie (°F)	Trappe/Filtre (°F)
	1	1	5	0,11	0,51	1305	57	54	54	23,5875	14,9	5,3	2	-3,5	250	249	46	31
		2		0,11	0,51	1305	57	54	54	23,7400				-3,5		249	46	32
		3		0,11	0,51	1305	57	54	54	23,875/23,9055				-4		249	45	31
20h43/19h03		4		0,13	0,63	1243	63	54	54	23,0305				-5		259	45	35
		5		0,08	0,35	1314	72	33	33	23,0817				-1		263	34	33
		6		0,08	0,36	1314	72	36	36	23,1417						266		33
		7		0,08	0,36	1318	74	37	37	23,2070						262		34
		8		0,09	0,39	1359	74	39	39	23,2730						259		34
		9		0,10	0,44	1356	76	41	41	23,3400						259		34
		10		0,10	0,44	1360	72	42	42	23,4101						258		33
		11		0,10	0,44	1362	54	43	43	23,4800						262		35
		12		0,10	0,44	1360	56	45	45	23,5540						265		36
		13		0,13	0,57	1379	58	49	49	23,6740						263		
		14		0,13	0,58	1371	60	51	51	23,7150						264		
		15		0,13	0,58	1357	61	57	57	23,7460						262		
		16		0,12	0,54	1360	62	53	53	23,8720						259		
		17		0,12	0,54	1364	63	54	54	23,9504						257		
20h13		18		0,12	0,54	1351	64	54	54	24,0310						258		

TTDF Initial Débit (pi ³ /min):	Pression (inhg):	Volume ini (pi ³):	Volume fin (pi ³):	Volume (pi ³):	Fuite Pitot (ΔP):
TTDF 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.				

* Module in m^3

✶ Test mis sur pause. Problème de débit. le 4^{ème} test sera fini lors du prochain cycle du procédé.

TECHNICIEN :

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

Compagnie: AEM MEL	Projet: 19-6012	# Ensemble de verrerie : 4
Source: Laboratoire MEL	Essai: 1	# Hot Box : Eau-mar-2
Date : 2019-12-15	Heure :	

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	168.7	153.2	
3	Trappe à condensat	VIDE	380.8	268.8	
4	Barboteur Greenburg-Smith	ETHYLENE GLYCOL (100-150 mL)	733.4	712.1	
5	Barboteur modifié	VIDE	427.3	429.3	
6	Contenant de dessicant	GEL DE SILICE	1850.8	1836.7	
TOTAL					160,93

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

REMARQUES :

4 - LOTS DES SOLVANTS UTILISÉS

SOLVANTS	# LOT
Dichlorométhane (grade optima)	23075
Hexane (grade optima)	183763
Acétone (grade optima)	176179
Éthylène glycol	142823 / 153714
Eau HPLC	135150
Résine XAD-2	
Vérifié par: JEF	Date: 19-12-15
	Endroit: MEL

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

Compagnie: <i>AEM MEL</i>	Projet: <i>19-0012</i>	# Ensemble de verrerie : <i>7</i>
Source: <i>Incinérateur MEL</i>	Essai: <i>2</i>	# Hot Box : <i>Four-mar-2</i>
Date : <i>2019-12-16</i>		Heure :

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		<i>120.2</i>	
3	Trappe à condensat	VIDE		<i>307.6</i>	
4	Barboteur Greenburg-Smith	ETHYLENE GLYCOL (100-150 mL)		<i>629.6</i>	
5	Barboteur modifié	VIDE		<i>634.4</i>	
6	Contenant de dessicant	GEL DE SILICE		<i>1850.8</i>	
				TOTAL	

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

REMARQUES :

*essai avant après 1h puisque problème rencontré
et qu'il était déjà 21h*

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:

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

Compagnie: AEM MEL	Projet: 19-0012	# Ensemble de verrerie : 10
Source: incinérateur MEL	Essai: 3	# Hot Box : Four-Mar-02
Date : 2019-12-18		Heure :

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	149.1	+17.9	133.2
3	Trappe à condensat	VIDE	521.9	373.4	
4	Barboteur Greenburg-Smith	ETHYLENE GLYCOL (100-150 mL)	741.2	722.0	
5	Barboteur modifié	VIDE	427.5	428.4	
6	Contenant de dessicant	GEL DE SILICE	1873.4	1858.8	
TOTAL					197,33

* : Recouvrir de papier d'aluminium après la pré-pesée, 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:

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

Compagnie: AEM, MEL	Projet: 19-6017	# Ensemble de verrerie : 1
Source: ind-ventar ME	Essai: 4	# Hot Box : Four-mar-03
Date : 2019-12-18/19		Heure :

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	127.8	112.2	
3	Trappe à condensat	VIDE	405.0	304.1	
4	Barboteur Greenburg-Smith	ETHYLENE GLYCOL (100-150 mL)	730.0	717.9	
5	Barboteur modifié	VIDE	609.9	612.1	
6	Contenant de dessicant	GEL DE SILICE	1830.5	1520.0	1873.4

TOTAL 136,9 g
bonne valeur

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

REMARQUES :

4 - LOTS DES SOLVANTS UTILISÉS

SOLVANTS	# LOT
Dichlorométhane (grade optima)	
Hexane (grade optima)	150700
Acétone (grade optima)	
Éthylène glycol	
Eau HPLC	
Résine XAD-2	
Vérifié par: JFC	Date: Endroit:

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

Compagnie: AEN MEL	Projet: 19-602	# Ensemble de verrerie : 14
Source: Industrie MEL	Essai: blanc	# Hot Box : Fair - max - 02
Date : 2019-12-10	Heure :	

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		117.9	
3	Trappe à condensat	VIDE		224.9	
4	Barboteur Greenburg-Smith	ETHYLENE GLYCOL (100-150 mL)		527.9	
5	Barboteur modifié	VIDE		606.7	
6	Contenant de dessicant	GEL DE SILICE			
TOTAL					

* : Recouvrir de papier d'aluminium après la pré-pesée, 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:

Compagnie:		Projet:	
Échantillonné le:		Récupéré par:	
Source:	Essai:	Date:	Heure:

CAISSE # 4

Décontamination			Sol. RBS	Eau + Savon	Eau démin.	DHA	HA
Item (dans l'ordre)	#	Nom de la pièce	Ok				
By pass	OR-4-BP	By pass	✓	✓	✓	✓	✓
Cloche femelle	OR-4-CF	Cloche femelle	✓	✓	✓	✓	✓
Support à filtre en téflon	OR-4-S	Support à filtre en téflon	✓	✓	✓	✓	✓
Cloche mâle	OR-4-CM	Cloche mâle	✓	✓	✓	✓	✓
Réfrigérant	OR-4-R	Réfrigérant	✓	✓	✓	✓	✓
Trappe de résine		Trappe de résine					
Trappe à condensat	OR-4-TC	Trappe à condensat	✓	✓	✓	✓	✓
Grand L	OR-4-L	Grand L	✓	✓	✓	✓	✓
Barboteur Greenberg Smith	OR-4-BBGS	Barboteur Greenberg Smith	✓	✓	✓	✓	✓
Coude	OR-4-C	Coude	✓	✓	✓	✓	✓
Barboteur Std	OR-4-BB	Barboteur Std	✓	✓	✓	✓	✓
Bouteille de verre ambrée (5) Garnitures (Téflon + Aluminium)		Bouteille de verre ambrée	✓	✓	✓		✓
Nombre total de pièces	10	# Unique	498				

Décontaminé par: <i>Vincent L.</i>	Date: <i>31-10-2019</i>	Endroit: <i>QC</i>
Code de décontamination (pot): <i>19-6012 // COSV 4 // 31-10-2019 // 1168</i>		
# Lot Des Solvants:	Dichlorométhane: <i>186808</i> Hexane: <i>192413</i> Acétone: <i>190479</i>	

Commentaires

Compagnie:		Projet:	
Échantillonné le:		Récupéré par:	
Source:	Essai:	Date:	Heure:

CAISSE # 7

Décontamination			Sol. RBS	Eau + Savon	Eau démin.	DHA	HA
Item (dans l'ordre)	#	Nom de la pièce	Ok				
By pass	OR-7-BP	By pass	✓	✓	✓	✓	✓
Cloche femelle	OR-7-CF	Cloche femelle	✓	✓	✓	✓	✓
Support à filtre en téflon	OR-7-S	Support à filtre en téflon	✓	✓	✓	✓	✓
Cloche mâle	OR-7-CM	Cloche mâle	✓	✓	✓	✓	✓
Réfrigérant	OR-7-R-2	Réfrigérant	✓	✓	✓	✓	✓
Trappe de résine		Trappe de résine					
Trappe à condensat	OR-7-TC-1	Trappe à condensat	✓	✓	✓	✓	✓
	OR-7-TC-2	✓					
Grand L	OR-17-L	Grand L	✓	✓	✓	✓	✓
Barboteur Greenberg Smith	OR-7-BBGS	Barboteur Greenberg Smith	✓	✓	✓	✓	✓
Coude	OR-7-C	Coude	✓	✓	✓	✓	✓
Barboteur Std	OR-7-BB	Barboteur Std	✓	✓	✓	✓	✓
		<i>Petri</i>	✓	✓	✓	✓	✓
Bouteille de verre ambrée		Bouteille de verre ambrée	✓	✓	✓		✓
Garnitures (Téflon + Aluminium)							
Nombre total de pièces	11	# Unique	985				

Décontaminé par: <i>Vincent L.</i>	Date: <i>16-10-2019</i>	Endroit: Québec
Code de décontamination (pot): <i>19-5721, 16-10-2019, Bac #7, 101.</i>		
# Lot Des Solvants:	Dichlorométhane: <i>187552</i>	
	Hexane: <i>192413</i>	
	Acétone: <i>190479</i>	

Commentaires

Complété avec trappe OR-16
 Complété avec barboteur OR-19-BB
 By pass non gravée
 Trappe courte

Compagnie:		Projet:	
Échantillonné le:		Récupéré par:	
Source:	Essai:	Date:	Heure:

CAISSE # 16

Décontamination			Sol. RBS	Eau + Savon	Eau démin.	DHA	HA
Item (dans l'ordre)	#	Nom de la pièce	Ok				
By pass	OR-16-BP	By pass	✓	✓	✓	✓	✓
Cloche femelle	OR-16-CF	Cloche femelle	✓	✓	✓	✓	✓
Support à filtre en téflon	OR-16-S	Support à filtre en téflon	✓	✓	✓	✓	✓
Cloche mâle	OR-16-CM	Cloche mâle	✓	✓	✓	✓	✓
Réfrigérant	OR-16-R	Réfrigérant	✓	✓	✓	✓	✓
		Rallonge de Réfrigérant	✓	✓	✓	✓	✓
Trappe de résine	OR-16-TC	Trappe de résine	✓	✓	✓	✓	✓
Trappe à condensat		Trappe à condensat	✓	✓	✓	✓	✓
Grand L	OR-16-L	Grand L	✓	✓	✓	✓	✓
Barboteur Greenberg Smith	OR-16-BBGS	Barboteur Greenberg Smith	✓	✓	✓	✓	✓
Coude	OR-16-C	Coude	✓	✓	✓	✓	✓
Barboteur Std	OR-16-BB	Barboteur Std	✓	✓	✓	✓	✓
Bouteille de verre ambrée (5)		Bouteille de verre ambrée	✓	✓	✓		✓
Garnitures (Téflon + Aluminium)							
Nombre total de pièces	10	# Unique	994				

Décontaminé par: Vincent C.	Date: 30-10-2019	Endroit: QC
Code de décontamination (pot):		
# Lot Des Solvants:	Dichlorométhane: 186805	
	Hexane: 192113	
	Acétone: 190479	

Commentaires

Réfrigérant non identifié
Cloches Dépolis, pas sales

Compagnie:		Projet:	
Échantillonné le:		Récupéré par:	
Source:	Essai:	Date:	Heure:

CAISSE # 1

Décontamination			Sol. RBS	Eau + Savon	Eau démin.	DHA	HA
Item (dans l'ordre)	#	Nom de la pièce	Ok				
By pass		By pass	/	/	/	/	/
Cloche femelle		Cloche femelle	/	/	/	/	/
Support à filtre en téflon		Support à filtre en téflon	/	/	/	/	/
Cloche mâle		Cloche mâle	/	/	/	/	/
Réfrigérant		Réfrigérant	/	/	/	/	/
Trappe de résine		Trappe de résine	/	/	/	/	/
Trappe à condensat		Trappe à condensat	/	/	/	/	/
Grand L		Tige MM	/	/	/	/	/
		Tige MF	/	/	/	/	/
		Coude 4 po.	/	/	/	/	/
Barboteur Greenberg Smith		Barboteur Greenberg Smith	/	/	/	/	/
Coude		Coude	/	/	/	/	/
Barboteur Std		Barboteur Std	/	/	/	/	/
Pot pour le proofing		Pot	/	/	/	/	/
Bouteille de verre ambrée (5)		Bouteille de verre ambrée	/	/	/	/	/
Garnitures (Téflon + Aluminium)		Pot	/	/	/	/	/
Nombre total de pièces		# Unique	495				

Décontaminé par: <i>JD</i>	Date: <i>26/09/2014</i>	Endroit: Québec
Code de décontamination (pot): <i>JD-26/09/2014</i>		
# Lot des Solvants:	Dichlorométhane: <i>187552</i> Hexane: <i>192413</i> Acétone: <i>192471</i>	

Commentaires

Compagnie:		Projet:	
Échantillonné le:		Récupéré par:	
Source:	Essai:	Date:	Heure:

CAISSE # 14

Décontamination			Sol. RBS	Eau + Savon	Eau démin.	DHA	HA
Item (dans l'ordre)	#	Nom de la pièce	Ok				
By pass	OR-14-BP	By pass	✓	✓	✓	✓	✓
Cloche femelle	OR-14-CF	Cloche femelle	✓	✓	✓	✓	✓
Support à filtre en téflon	OR-14-S	Support à filtre en téflon	✓	✓	✓	✓	✓
Cloche mâle	OR-14-CM	Cloche mâle	✓	✓	✓	✓	✓
Réfrigérant	OR-14-R	Réfrigérant	✓	✓	✓	✓	✓
		Coude 90° FF					
Trappe de résine		Trappe de résine					
Trappe à condensat	OR-14-TC	Trappe à condensat	✓	✓	✓	✓	✓
Grand L	OR-14-L	Grand L	✓	✓	✓	✓	✓
Barboteur Greenberg Smith	OR-14-BBGS	Barboteur Greenberg Smith	✓	✓	✓	✓	✓
Coude	OR-14-C	Coude	✓	✓	✓	✓	✓
Barboteur Std	OR-14-BB	Barboteur Std	✓	✓	✓	✓	✓
Bouteille de verre ambrée (5)		Bouteille de verre ambrée	✓	✓	✓		✓
Garnitures (Téflon + Aluminium)							
Nombre total de pièces	10	# Unique	992				

Décontaminé par: <i>Vincent L.</i>	Date: <i>30-10-2019</i>	Endroit: <i>Q.</i>
Code de décontamination (pot): <i>6012 // COSV 14 // 30-10-2019 // 18</i>		
# Lot Des Solvants:	Dichlorométhane: <i>187552</i>	
	Hexane: <i>192413</i>	
	Acétone: <i>190479</i>	

Commentaires

Laboratoire - Décontamination initiale des ensembles de verrerie - MÉTAUX USEPA 29

Compagnie: _____ Projet: _____ # du Cold box : _____
 Source: _____ Essai: _____ # du filtre : _____
 Échantillonnée le: _____ Date décontamination: 29-10-2019 Heure: 7.45

Identification des pièces seulement si nécessaire.

Décontamination		Rinçage Eau	Eau + Savon	Eau	Rincer H ₂ O démin.	Tremper HNO ₃ 10%	Rincer H ₂ O démin.	Rincer Acétone
Item (dans l'ordre)	#	Remarques	1 x	1 x	3 x	4 hrs	3 x	3 x
By pass								
Cyclone (si applicable)								
Erlenmeyer (si applicable)								
Cloche femelle		x3 Ok						
Support à filtre en téflon		x3 "						
Cloche mâle		x3 "						
Coude (bas cloche - barb.)								
Barboteur 1								
Barboteur 2								
Barboteur 3								
Barboteur 4 (si applicable)								
Barboteur 5 (si Hg)								
Barboteur 6 (si Hg)								
Coudes (5 ou ...)								
Liner de verre						Rincer		+ Brosse

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

Buse de verre _____ + Brosse

Vérification initiale de la buse, conserver le dernier rinçage à l'acétone si nécessaire.

N.B. Joint d'étanchéité en téflon

Commentaires: 788

#lot Acetone: 194715

#Cloche: 3-86-2

Décontaminé par: Vincent L.

Date: 29-10-2019

Endroit: QLC

RÉSUMÉ D'ÉTALONNAGE DES MODULES HAUT DÉBIT 2019

LPEE

MODULE	DATE ÉTALONNAGE	GAMMA (Kc)	ORIFICE (Ko)		UNITÉS
			(Ko)		
1	25-févr-19	1.024	1.039		(pi3/min) (g/mol)0.5 (po Hg)0.5 /(po H2O)0.5/(oR)0.5
			0.01442		(m3/min) (g/mol)0.5 (kPa)0.5 /(mm H2O)0.5/(oK)0.5
			0.1457		(m3/min) (g/mol)0.5 (kPa)0.5 /(kPa)0.5/(oK)0.5
2	26-févr-19	1.021	1.032		(pi3/min) (g/mol)0.5 (po Hg)0.5 /(po H2O)0.5/(oR)0.5
			0.01432		(m3/min) (g/mol)0.5 (kPa)0.5 /(mm H2O)0.5/(oK)0.5
			0.1447		(m3/min) (g/mol)0.5 (kPa)0.5 /(kPa)0.5/(oK)0.5

Calibration faite par:

CONSULAIR
GESTION GLOBALE AIR ET ENVIRONNEMENT

Effectué par:

Vérifié par:

Date:

Jérémy Martin

Eric Trépanier

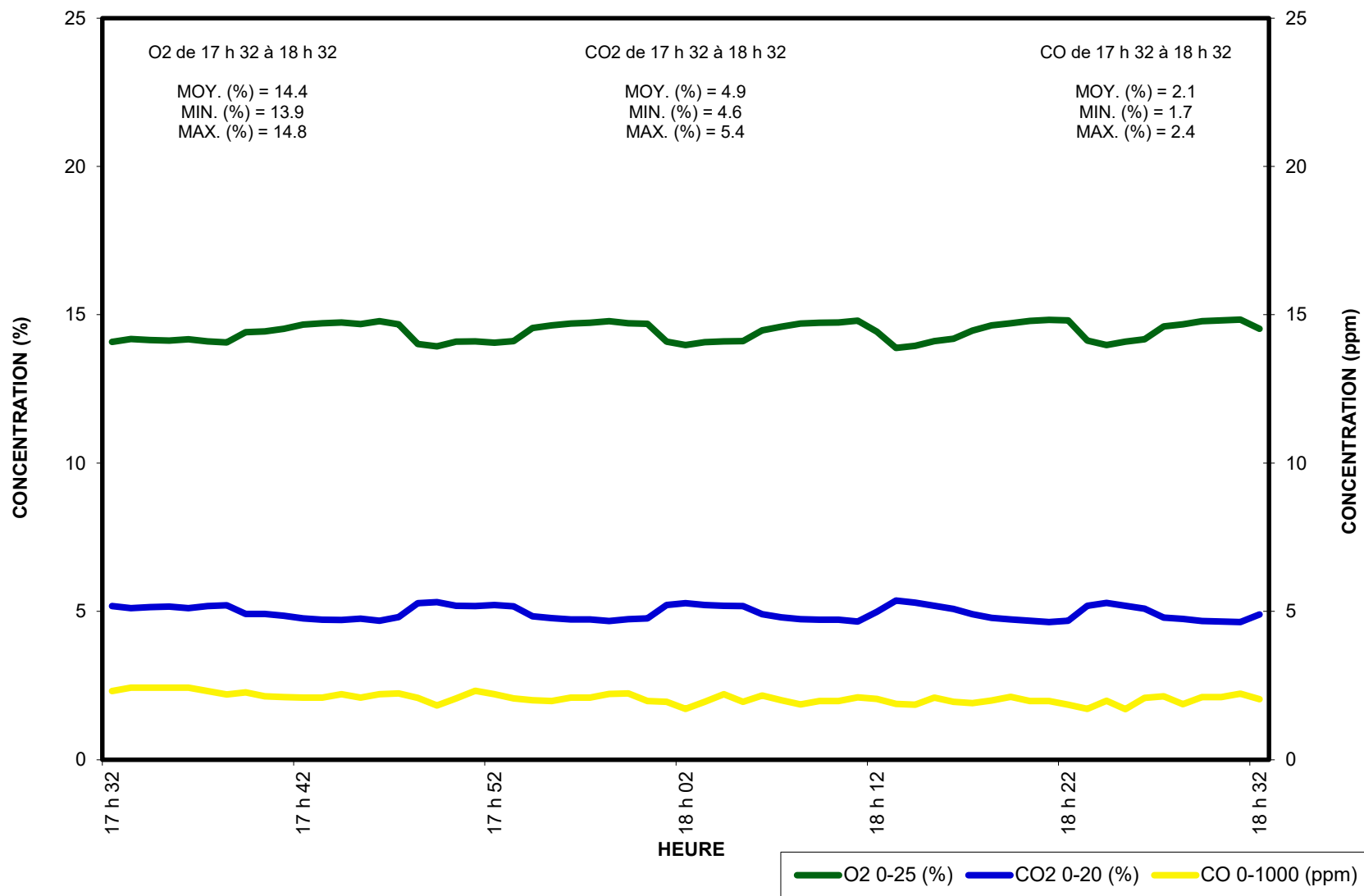
20 mars 2019

APPENDIX 5

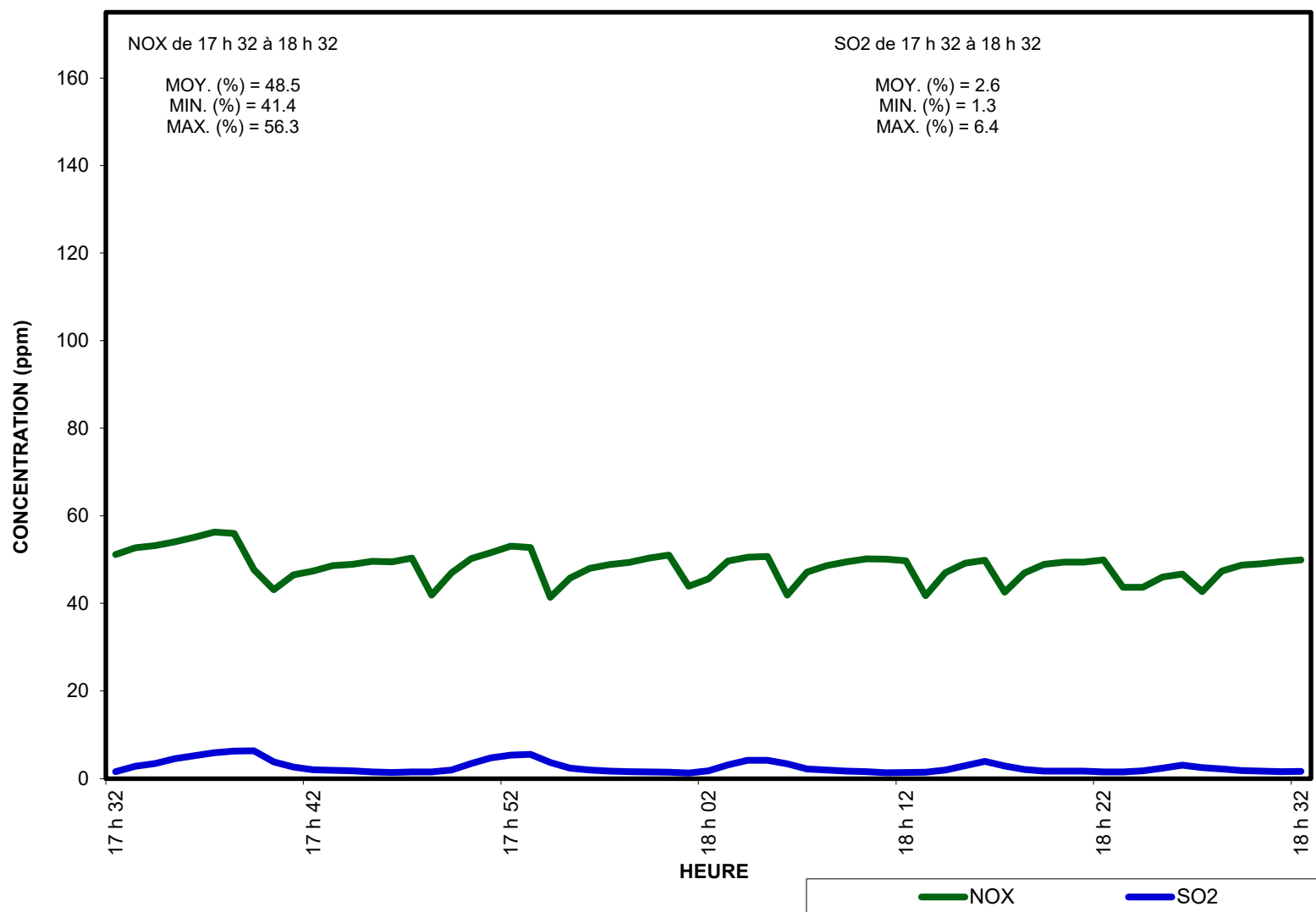
CEMS GRAPHS



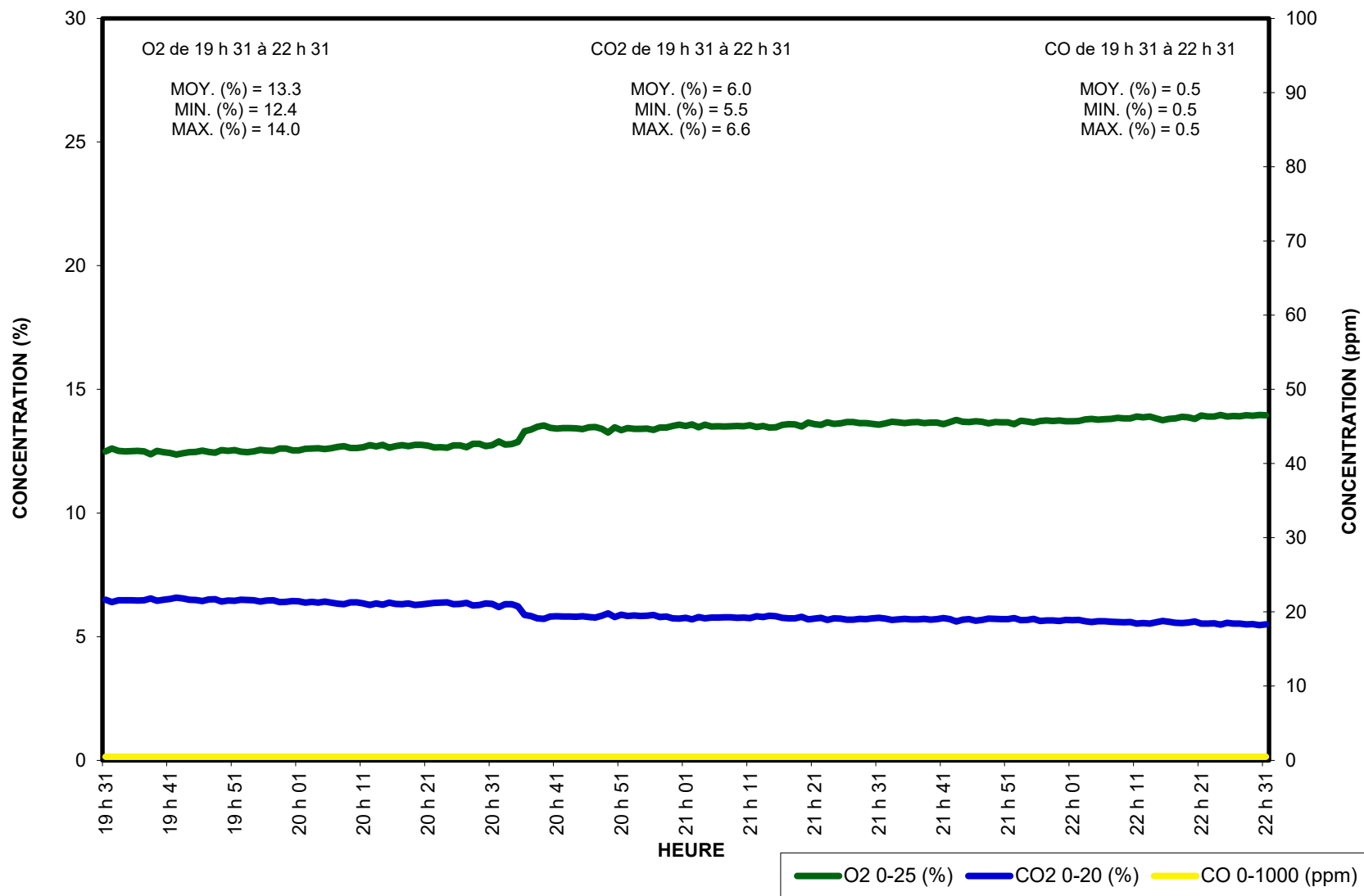
INCINERATOR - MESURES D'OXYGÈNE, DE DIOXYDE DE CARBONE ET DE MONOXYDE DE CARBONE - 15 DÉCEMBRE 2019 - ESSAI INC-GASES-E1



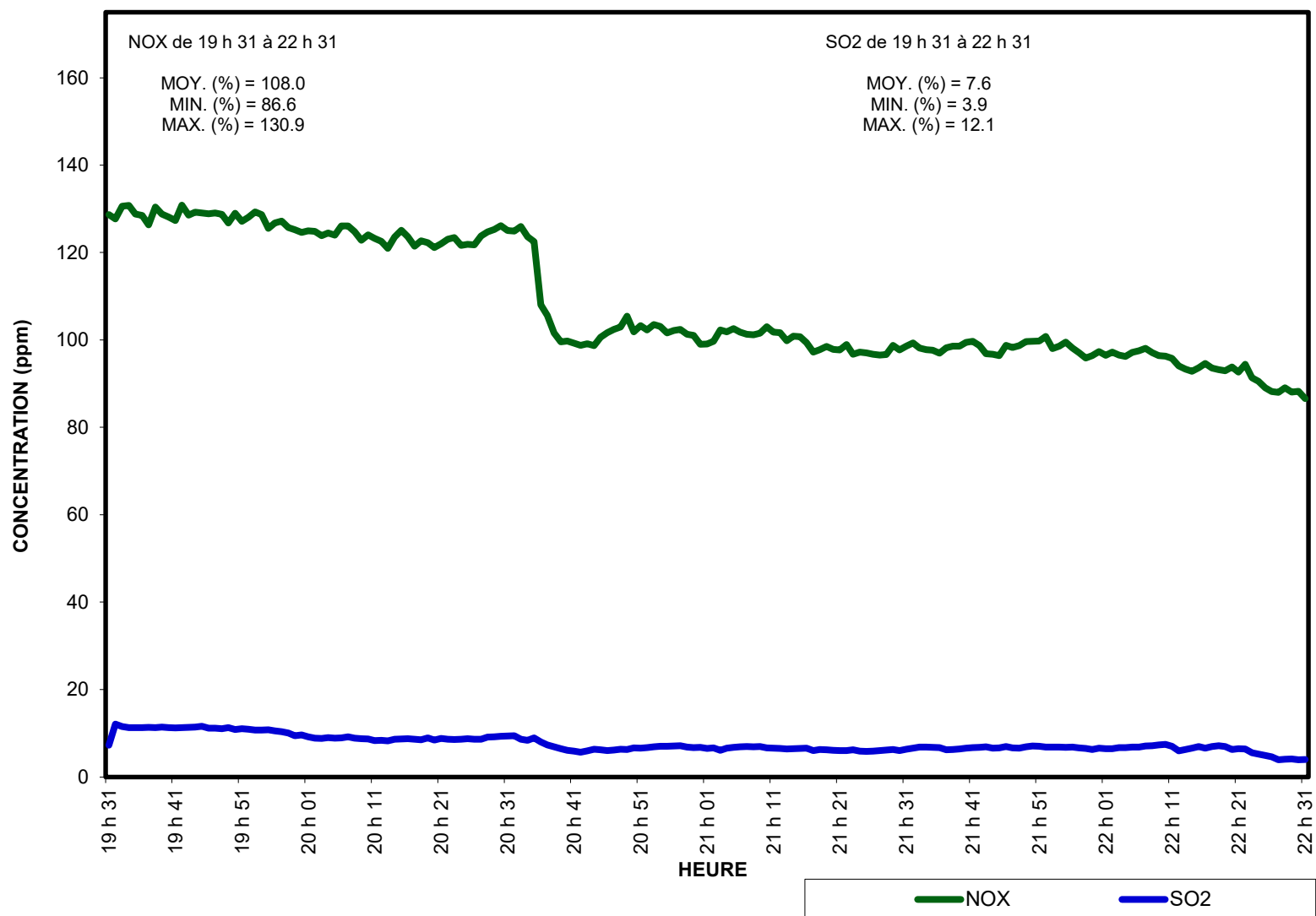
**INCINERATOR - MESURES DES OXYDES D'AZOTE ET DE DIOXYDE DE SOUFRE - 15
DÉCEMBRE 2019 - ESSAI INC-GASES-E1**



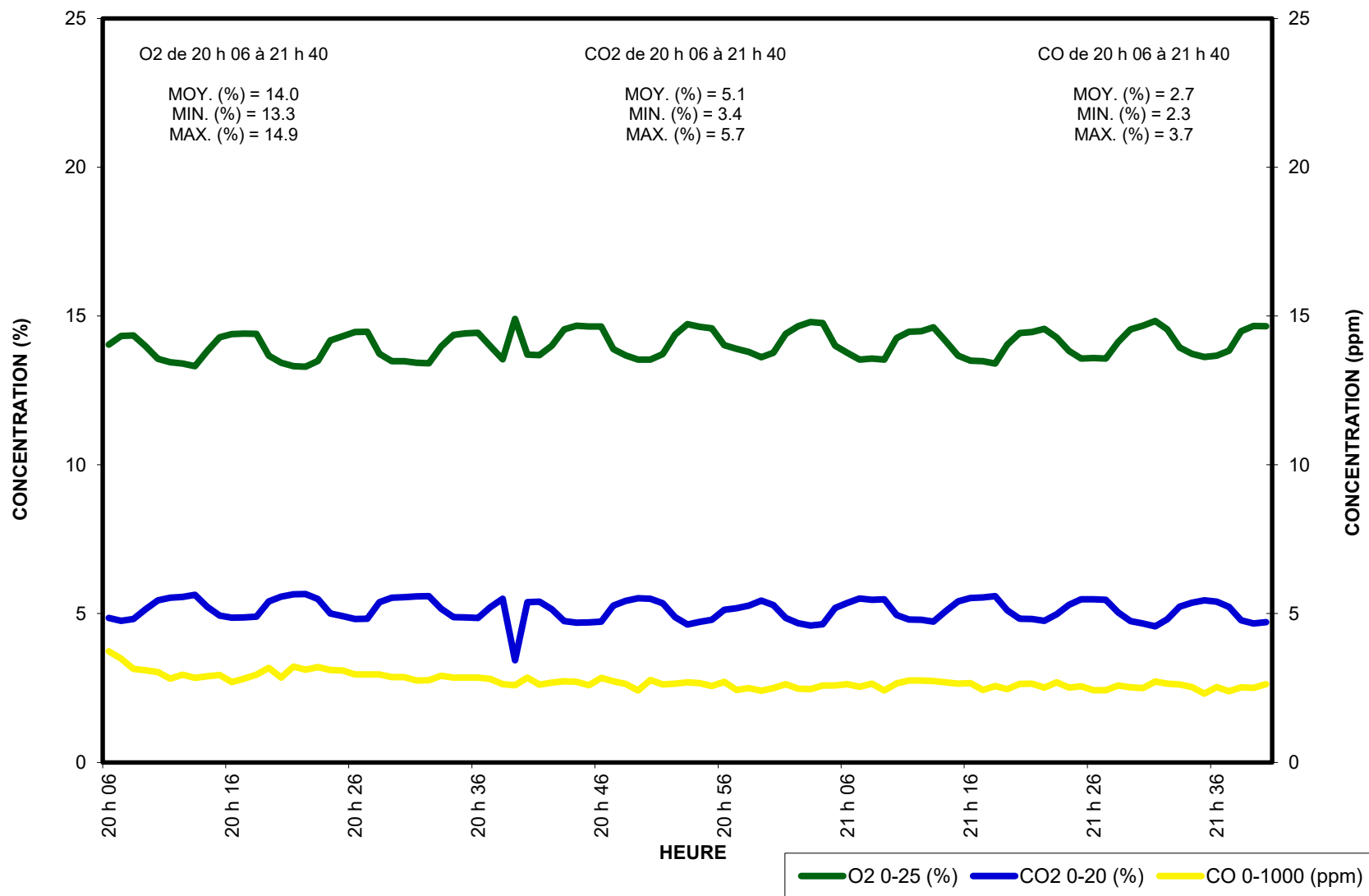
INCINERATOR - MESURES D'OXYGÈNE, DE DIOXYDE DE CARBONE ET DE MONOXYDE DE CARBONE - 18 DÉCEMBRE 2019 - ESSAI INC-GASES-E3



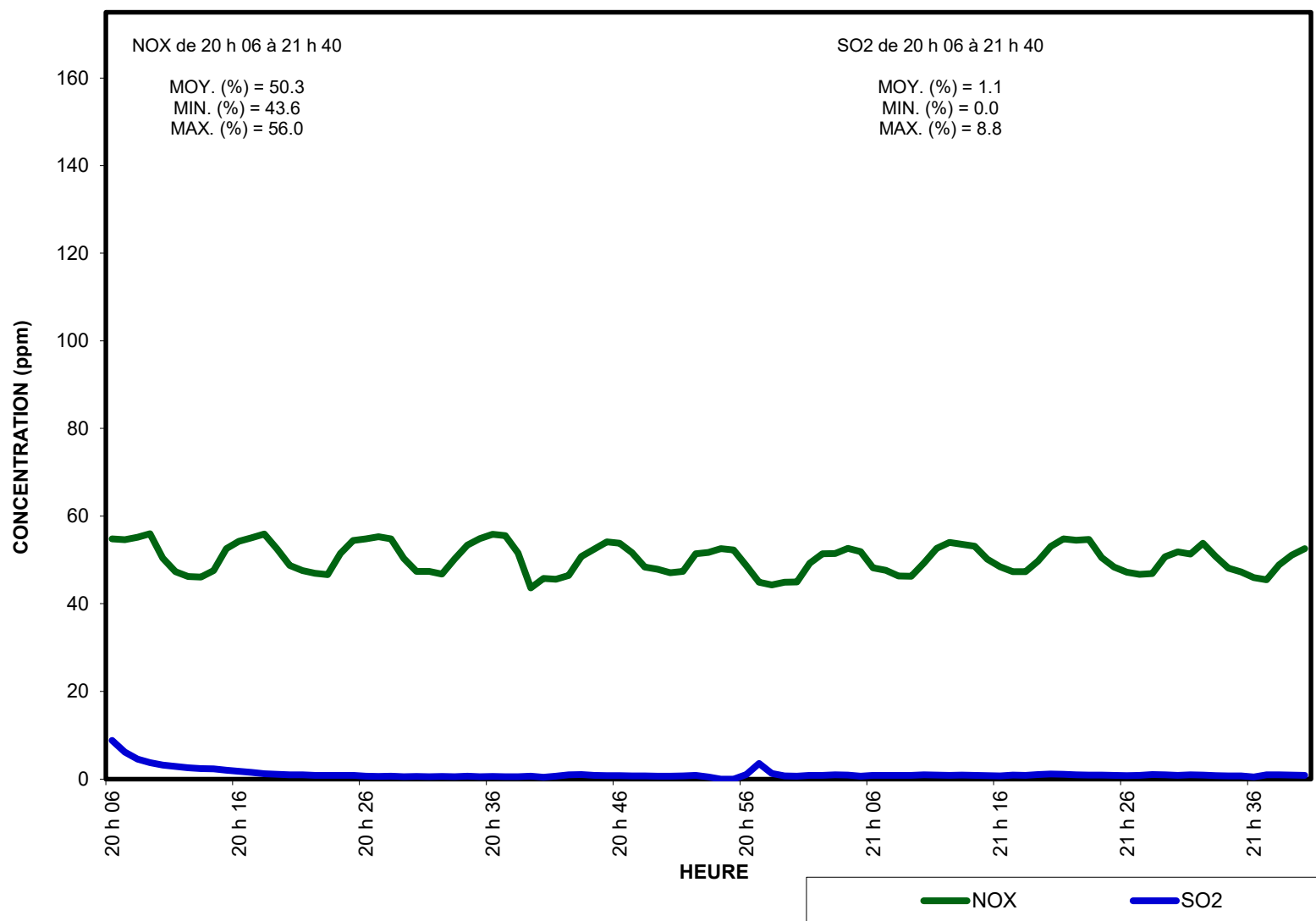
**INCINERATOR - MESURES DES OXYDES D'AZOTE ET DE DIOXYDE DE SOUFRE - 18
DÉCEMBRE 2019 - ESSAI INC-GASES-E3**



INCINERATOR - MESURES D'OXYGÈNE, DE DIOXYDE DE CARBONE ET DE MONOXYDE DE CARBONE - 19 DÉCEMBRE 2019 - ESSAI INC-GASES-E4



INCINERATOR - MESURES DES OXYDES D'AZOTE ET DE DIOXYDE DE SOUFRE - 19
DÉCEMBRE 2019 - ESSAI INC-GASES-E4



APPENDIX 6

QA/QC DATA



QA/QC – Project 19-6012 – INCINERATOR – AGNICO EAGLE MINES LTD. – Metals and particles

INFORMATION ON SAMPLING SITE – EPS 1/RM/8 METHOD A				
RUN NUMBER	NC-Me/HCl/PM-E:NC-Me/HCl/PM-E:NC-Me/HCl/PM-E:			CRITERIA
CYCLONIC FLOW ANGLE (°)		0		≤ 15°
INVERSE FLOW		NO		NO
STACK DIAMETER (m)		0.826		≥ 0.3
A _D		2.0		≥ 0.5
B _D		5.0		≥ 2.0
NUMBER OF SAMPLING POINTS	36	32	32	≥ 20
GAS VELOCITY (m/s)	9.4	11.5	9.0	3.0 ≤ V ≤ 30
PARTICULATES SAMPLING CRITERIA – EPS 1/RM/8 METHOD E				
SAMPLING DURATION (min)	180	160	160	≥ 60
SAMPLING VOLUME (m ³ R)	2.89	2.98	3.25	≥ 1.5
AVERAGE ISOKINETISM (%)	104	103	101	90 ≤ ISO ≤ 110
ISOKINETIC CRITERIA (% points)	100	100	100	≥ 90
PROBE TEMPERATURE (°F)	OK	OK	OK	223 ≤ T _p ≤ 273
FILTRE TEMPERATURE (°F)	OK	OK	OK	223 ≤ T _f ≤ 273
EXIT TEMPERATURE (°F)	OK	OK	OK	32 ≤ T _{out} ≤ 68
4% D _{avg} (ft ³ /min)	0.022	0.025	0.028	
LEAK TEST BEFORE AT -15 inHg (ft ³ /min)	< 0.02	< 0.02	< 0.02	≤ 0.02 or 4% D _{avg}
LEAK TEST AFTER (ft ³ /min)	< 0.02	< 0.02	< 0.02	≤ 0.02 or 4% D _{avg}
ACETONE RESIDUAL (%)		0.1449%		≤ 0.001%
SAMPLING CRITERIA OF METALS – USEPA METHOD 29				
MAX PUMPING RATE (pi ³ /min)	0.61	0.69	0.88	≤ 1.0
SAMPLING VOLUME (m ³ R)	2.9	3.0	3.3	≥ 2.8
SAMPLING DURATION (min)	180	160	160	≥ 120
METAL RESIDUE IN H ₂ O (ng/mL)		OK		≤ 1.0
METAL RESIDUE IN HNO ₃ /H ₂ O ₂ (ng/mL)		OK		≤ 2.0
METAL RESIDU IN KMnO ₄ (ng/mL)		OK		≤ 2.0
METAL RESIDU IN HNO ₃ 0.1N (ng/mL)		OK		≤ 2.0
METAL RESIDU IN HCl 8N (ng/mL)		OK		≤ 2.0
EQUIPMENT INFORMATION				
SAMPLING CONSOLE NUMBER	Mar 01	Mar 01	Mar 02	
DRY GAS METER COEFFICIENT K _c	1.024	1.024	1.021	0.95 < K _c < 1.05
ORIFICE COEFFICIENT K _o	1.000	1.000	1.000	
GAS METER COMPENSATED TO 60°F	NO	NO	NO	
Δh@	#N/A	#N/A	#N/A	
ID PITOT	05-06 Moy. V	05-06 Moy. V	05-06 Moy. V	
PITOT TUBE COEFFICIENT	0.798	0.798	0.798	
NOZZLE REFERENCE No.	QZ-05-04	QZ-05-04	QZ-05-03	
NOZZLE DIAMETER (in)	0.4320	0.4320	0.5095	

QA/QC – Project 19-6012 – AGNICO EAGLE MINES LTD. – INCINERATOR – SVOC

INFORMATION ON SAMPLING SITE – EPS 1/RM/8 METHOD A				
RUN NUMBER	INC-COSV-E1	INC-COSV-E3	INC-COSV-E4	CRITERIA
CYCLONIC FLOW ANGLE (°)		0		$\leq 15^\circ$
INVERSE FLOW		NO		NO
STACK DIAMETER (m)		0.826		≥ 0.3
A _D		2.0		≥ 0.5
B _D		5.0		≥ 2.0
NUMBER OF SAMPLING POINTS	36	36	36	≥ 20
GAS VELOCITY (m/s)	8.9	12.2	10.2	$3.0 \leq V \leq 30$
GENERAL SAMPLING CRITERIA – EPS 1/RM/8 METHOD E				
SAMPLING DURATION (min)	180	180	180	≥ 60
SAMPLING VOLUME (m ³ R)	3.70	3.52	3.01	≥ 1.5
AVERAGE ISOKINETISM (%)	101	102	102	$90 \leq \text{ISO} \leq 110$
ISOKINETIC CRITERIA (% points)	100	100	100	≥ 90
PROBE TEMPERATURE (°F)	OK	OK	OK	$223 \leq T_p \leq 273$
FILTRE TEMPERATURE (°F)	OK	OK	OK	$223 \leq T_f \leq 273$
EXIT TEMPERATURE (°F)	OK	OK	OK	$32 \leq T_{\text{out}} \leq 68$
4% D _{avg} (ft ³ /min)	0.001	0.001	0.001	
LEAK TEST BEFORE AT -15 inHg (ft ³ /min)	0.000	0.000	0.000	≤ 0.02 or 4% D _{avg}
LEAK TEST AFTER (ft ³ /min)	0.000	0.000	0.000	≤ 0.02 or 4% D _{avg}
SVOC SAMPLING CRITERIA – SPE 1/RM/2				
TRAP TEMPERATURE	OK	OK	OK	$32 \leq T_{\text{trap}} \leq 68$
MAXIMUM PUMPING RATE (ft ³ /min)	0.023	0.021	0.018	≤ 1.0
SAMPLING VOLUME (m ³ R)	3.696	3.515	3.009	≥ 3.0
SAMLING DURATION (min)	180.000	180.000	180.000	≥ 180
HEXANE/ACETONE BLANK	OK	OK	OK	OK
H ₂ O HPLC BLANK	OK	OK	OK	OK
RESIN BLANK	OK	OK	OK	OK
FIELD BLANK	OK	OK	OK	OK
EQUIPMENT INFORMATION				
SAMPLING CONSOLE NUMBER	0	0	0	
DRY GAS METER COEFFICIENT K _c	1.021	1.021	1.024	$0.95 < K_c < 1.05$
ORIFICE COEFFICIENT K _o	1.000	1.000	1.000	
GAS METER COMPENSATED TO 60°F	NO	NO	NO	
Δh@	#N/A	#N/A	#N/A	
ID PITOT	05-04 Moy. V	03-08 Moy. V	03-08 Moy. V	
PITOT TUBE COEFFICIENT	0.805	0.802	0.802	
NOZZLE REFERENCE No.	QZ-05-02	QZ-03-01	QZ-03-02	
NOZZLE DIAMETER (in)	0.5090	0.4325	0.4340	