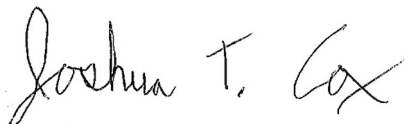


Report for:

Kerry Conner
Terracon: CO
10625 W I-70 Frontage Road N
Suite 3
Wheat Ridge, CO 80033

Regarding: Project: 25227071; City of Louisville, CO Limited SS
EML ID: 2868488

Approved by:



Operations Manager
Joshua Cox

Dates of Analysis:

Combustion By-Products ASTM D6602-13 (sub-contracted): 03-10-2022

All samples were received in acceptable condition unless noted in the Report Comments portion in the body of the report. Due to the nature of the analyses performed, field blank correction of results is not applied. The results relate only to the samples as received and tested.

Eurofins EMLab P&K ("the Company") shall have no liability to the client or the client's customer with respect to decisions or recommendations made, actions taken or courses of conduct implemented by either the client or the client's customer as a result of or based upon the Test Results. In no event shall the Company be liable to the client with respect to the Test Results except for the Company's own willful misconduct or gross negligence nor shall the Company be liable for incidental or consequential damages or lost profits or revenues to the fullest extent such liability may be disclaimed by law, even if the Company has been advised of the possibility of such damages, lost profits or lost revenues. In no event shall the Company's liability with respect to the Test Results exceed the amount paid to the Company by the client therefor.

LABORATORY REPORT

Combustion By-Products

Eurofins EMLab P&K North Phoenix
1501 W. Knudsen Drive
Phoenix, AZ 85027

Date Analyzed: 3/10/2022
Date Reported: 3/10/2022
ECEI Lab Code: F220373
Analyst: Tianbao Bai

Project: EMLab ID 2868488, 25227071

Method: ASTM D6602-13 (Mod.) Direct Microscopy

Client ID	ECEI Lab ID	Sample Location	Analyte	Debris Rating	Concentration %	Comments
GTGST01	F003593		Black Carbon (Soot)	3	ND	Opaque/Dark Particles appear to be mostly composed of Plant Material, Rubber, and Paint. (1)
			Carbonized Material (Ash)		1	
			Carbonized Material (Char)		30	
			Opaque/Dark Particles		3	
GTGST02	F003594		Black Carbon (Soot)	3	ND	Opaque/Dark Particles appear to be mostly composed of Plant Material. (1)
			Carbonized Material (Ash)		<1	
			Carbonized Material (Char)		30	
			Opaque/Dark Particles		10	
GTGST03	F003595		Black Carbon (Soot)	3	ND	Opaque/Dark Particles appear to be mostly composed of Plant Material. (1)
			Carbonized Material (Ash)		<1	
			Carbonized Material (Char)		30	
			Opaque/Dark Particles		10	
GTGST04	F003596		Black Carbon (Soot)	3	ND	Opaque/Dark Particles appear to be mostly composed of Plant Material. (1)
			Carbonized Material (Ash)		ND	
			Carbonized Material (Char)		35	
			Opaque/Dark Particles		10	
EPST01	F003597		Black Carbon (Soot)	2	ND	Opaque/Dark Particles appear to be mostly composed of Plant Material. (1)
			Carbonized Material (Ash)		ND	
			Carbonized Material (Char)		20	
			Opaque/Dark Particles		5	
HP2ST01	F003598		Black Carbon (Soot)	2	ND	Opaque/Dark Particles appear to be mostly composed of Plant Material. (1)
			Carbonized Material (Ash)		ND	
			Carbonized Material (Char)		3	
			Opaque/Dark Particles		3	
MPST01	F003599		Black Carbon (Soot)	3	ND	Opaque/Dark Particles appear to be mostly composed of Plant Material, and Rubber. (1)
			Carbonized Material (Ash)		<1	
			Carbonized Material (Char)		10	
			Opaque/Dark Particles		3	

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Date Reported: 3/10/2022
ECEI Lab Code: F220373
Analyst: Tianbao Bai

Project: EMLab ID 2868488, 25227071

Method: ASTM D6602-13 (Mod.) Direct Microscopy

Client ID	ECEI Lab ID	Sample Location	Analyte	Debris Rating	Concentration %	Comments
JCPST01	F003600		Black Carbon (Soot)	3	ND	Opaque/Dark Particles appear to be mostly composed of Plant Material, and Rubber. (1)
			Carbonized Material (Ash)		ND	
			Carbonized Material (Char)		3	
			Opaque/Dark Particles		5	
RCST01	F003601		Black Carbon (Soot)	3	ND	
			Carbonized Material (Ash)		15	
			Carbonized Material (Char)		15	
			Opaque/Dark Particles		ND	
PPST01	F003602		Black Carbon (Soot)	3	ND	Opaque/Dark Particles appear to be mostly composed of Plant Material. (1)
			Carbonized Material (Ash)		2	
			Carbonized Material (Char)		5	
			Opaque/Dark Particles		3	
CPST01	F003603		Black Carbon (Soot)	2	ND	Opaque/Dark Particles appear to be mostly composed of Plant Material. (1)
			Carbonized Material (Ash)		1	
			Carbonized Material (Char)		3	
			Opaque/Dark Particles		1	

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Note 1: Dark/Opaque particles require additional analysis by TEM with EDS in order to verify their identity as they lack characteristics typically associated with combustion by-products.

Note 2: A light or heavy debris loading on the sample will affect the analytical results.

* Black Carbon/Soot analysis is limited to presumptive analysis only due to the submicron size and aciniform morphology of the particles. **Confirmatory analysis by Transmission Electron Microscopy (TEM) with EDS is needed.**

Debris Rating Guide:

- 0 – None Detected. No debris observed.
- 1 – Trace. Field of view obscured <5%.
- 2 – Light. Field of view obscured 5% to 25%.
- 3 – Moderate. Field of view obscured 25% to 75%.
- 4 – Heavy. Field of view obscured 75% to 90%.
- 5 – Very Heavy. Field of view obscured >90%.

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DEFINITIONS:	Soot (Black Carbon)	= a submicron black powder generally produced as an unwanted by-product of combustion or pyrolysis. It consists of various quantities of carbonaceous and inorganic solids in conjunction with adsorbed and occluded organic tars and resins
	Char	= a particulate larger than 1 µm made by incomplete combustion
	Ash	= residue left from complete carbonization of a material. Wood ash typically consists of contains calcium carbonate, potash, phosphate and trace amounts of elements such as iron, manganese, zinc, copper and heavy metals.

METHOD: ASTM D6602-13 (Standard Practice for Sampling and Testing of Possible Carbon Black Fugitive Emissions or Other Environmental Particulate, or Both)(Mod); Polarized Light Microscopy (PLM), and epi-Reflected Light Microscopy (RLM).

LIMIT OF DETECTION: <1% by Semi-Quantitative Calibrated Visual Area Estimation.

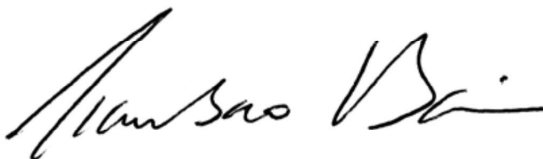
Samples were received in acceptable condition.

The quantitation (LOQ) limit using optical microscopy is 1%. The detection limits vary from analysis to analysis and from processing procedure to processing procedure. Contact us to determine your detection limits. Characterization of Combustion By-Products is currently not under AIHA accreditation.

The above results relate only to the items tested, and cannot be extrapolated to anything larger than their original intent. Also, these results cannot be interpreted without physical inspection and consideration for the building's characteristics and factors that may have led to its condition. Liability of Eurofins CEI is limited to the cost of analysis.

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APPROVED BY: _____



LABORATORY REPORT

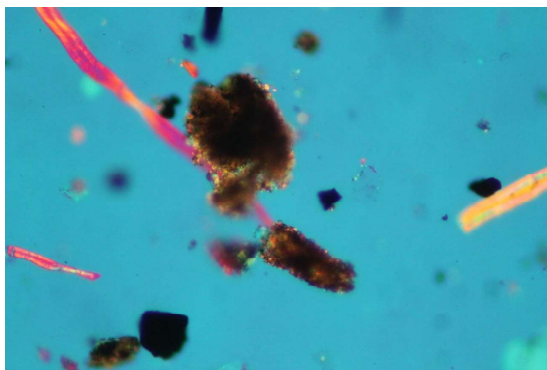
Combustion By-Products

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Annex: Micrographs of the analytes of interest in samples:



PLM image of ash in Sample F003601 (Magnification 200x)