



PERRY JOHNSON LABORATORY ACCREDITATION, INC.

Certificate of Accreditation

Perry Johnson Laboratory Accreditation, Inc. has assessed the Laboratory of:

Mineral Labs, Inc.
480 Parkway Drive, Salyersville, KY 41465

(Hereinafter called the Organization) and hereby declares that Organization is accredited in accordance with the recognized International Standard:

ISO/IEC 17025:2017

This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (as outlined by the joint ISO-ILAC-IAF Communiqué dated April 2017):

Chemical and Mechanical Testing
(As detailed in the supplement)

Accreditation claims for such testing and/or calibration services shall only be made from addresses referenced within this certificate. This Accreditation is granted subject to the system rules governing the Accreditation referred to above, and the Organization hereby covenants with the Accreditation body's duty to observe and comply with the said rules.

For PJLA:

Tracy Szerszen
President

Perry Johnson Laboratory
Accreditation, Inc. (PJLA)
755 W. Big Beaver, Suite 1325
Troy, Michigan 48084

Initial Accreditation Date:

February 23, 2018

Issue Date:

February 01, 2023

Expiration Date:

February 28, 2025

Accreditation No.:

96073

Certificate No.:

L23-81

The validity of this certificate is maintained through ongoing assessments based on a continuous accreditation cycle. The validity of this certificate should be confirmed through the PJLA website: www.pjilabs.com



Certificate of Accreditation: Supplement

Mineral Labs, Inc.

480 Parkway Drive, Salyersville, KY 41465
 Contact Name: Joseph Duchnowski (606)-207-5123

Accreditation is granted to the facility to perform the following testing:

FIELD OF TEST	ITEMS, MATERIALS OR PRODUCTS TESTED	SPECIFIC TESTS OR PROPERTIES MEASURED	SPECIFICATION, STANDARD METHOD OR TECHNIQUE USED	RANGE (WHERE APPROPRIATE) AND DETECTION LIMIT
Chemical ^F	Coal, Coke, Biomass, Soil Water	Moisture	ASTM D2961, Thermo/Gravimetric	D.L. = 0.05 %
			ASTM D3173 Thermo/Gravimetric	D.L. = 0.05 %
			ASTM D3302 Thermo/Gravimetric	D.L. = 0.05 %
		Ash	ASTM D3174 Thermo Gravimetric	D.L. = 0.15 %
		Volatile Matter	ASTM D3175 Volatilization Gravimetric	D.L. = 0.75 %
		Sulfur	ASTM D4239 Combustion, Infrared Detection	D.L. = 0.03 %
		Gross Calorific Value	ASTM D5865 Combustion Thermometric	D.L. = 15 BTU/lb
		Oxidation	ASTM D5263 Precipitation Gravimetry, Transmission Spectrophotometry	D.L. = 1 %
		Metals	ASTM D6357 Inductively Coupled Plasma Mass OES	Antimony: D.L = 0.07 ug/g Arsenic: D.L = 0.05 ug/g Beryllium: D.L = 0.000 5 ug/g Cadmium: D.L = 0.004 ug/g Cobalt: D.L = 0.008 ug/g Copper: D.L = 0.005 ug/g Lead: D.L = 0.05 ug/g Manganese: D.L = 0.05 ug/g Molybdenum: D.L = 0.008 ug/g Nickel: D.L. = 0.02 ug/g Tin: D.L = 0.05 ug/g Vanadium: D.L = 0.01 ug/g Zinc: D.L = 0.005 ug/g
		Mercury	ASTM D6722 Combustion, Absorption Spectrophotometry	D.L.= 0.01 ug/g
	Coal	Chlorine	ASTM D8247	MDL: = 1 mg/kg
Fluorine		Combustion, Ion Chromatography Detection	MDL: = 5 mg/kg	
Bromine				



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Chemical ^F	Coal, Coke, Biomass, Soil Water	Carbon, Nitrogen, and Hydrogen	ASTM D5373 Vertical Tube Furnace Combustion, Infrared Detection	Carbon D.L. = 2 % Hydrogen D.L. = 0.5% Nitrogen D.L. = 0.2%
		Ash mineral analysis	ASTM D6349/ASTM D4326 Inductively Coupled Plasma Atomic Emission Spectrometry XRF	SiO ₂ D.L. = 1 % Al ₂ O ₃ D.L. = 0.3 % TiO ₂ D.L. = 0.02 % Fe ₂ O ₃ D.L. = 0.13 % MgO D.L. = 0.02 % CaO D.L. = 0.11 % K ₂ O D.L. = 0.06 % MnO ₂ D.L. = 0.16 % P ₂ O ₅ D.L. = 0.01 %
Mechanical ^F	Coal, Coke	Size Consist	ASTM D293 Gravimetric	D.L. = 0 .05%
		Free Swelling Index	ASTM D720 ASTM D720M Volatilization Gravimetric	D.L. = 0.5 index
		Grindability-Hardgrove	ASTM D409 ASTM D409M Gravimetric, Mechanical sieving, Grindability Machine	D.L. = 25 index
		Geiseler Plasticity	ASTM D2639 ASTM D2639M Thermo gravimetric	N/A
	Arnu Dilatation	ASTM D5515 Thermo gravimetric	N/A	
	Coal	Preparation of Coal Samples for Analysis	ASTM D2013 ASTM D2013M Thermo gravimetric	N/A

1. The presence of a superscript F means that the laboratory performs testing of the indicated parameter at its fixed location. Example: Outside Micrometer^F would mean that the laboratory performs this testing at its fixed location.
2. 1 µg/g = 1 ppm
3. Detection limit is limited to the limit of quantization
4. Water Detection Limits are expressed in µg/L. Solid Materials are expressed in µg/g.