



PERRY JOHNSON LABORATORY ACCREDITATION, INC.

Certificate of Accreditation

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

Materials and Chemistry Laboratory, Inc. (MCLinc)
161 Mitchell Road, Oak Ridge, TN 37830

(Hereinafter called the Organization) and hereby declares that Organization has met the requirements of ISO/IEC 17025:2017) General Requirements for the competence of Testing and Calibration Laboratories and the United States Department of Defense Environmental Laboratory Accreditation Program (DoD-ELAP) requirements identified within the DoD/DOE Quality Systems Manual (DoD/DOE QSM) Version 5.3 May 2019 and is accredited in accordance with the:

United States Department of Energy Consolidated Audit Program-Accreditation Program (DOECAP-AP)

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):

Industrial Hygiene and Environmental 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

<i>Initial Accreditation Date:</i>	<i>Issue Date:</i>	<i>Expiration Date:</i>
July 27, 2018	December 27, 2020	December 31, 2022

<i>Accreditation No.:</i>	<i>Certificate No.:</i>
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Perry Johnson Laboratory
Accreditation, Inc. (PJLA)
755 W. Big Beaver, Suite 1325
Troy, Michigan 48084

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.pjllabs.com



Certificate of Accreditation: Supplement

ISO/IEC 17025:2017 and DOECAP-AP

Materials and Chemistry Laboratory, Inc. (MCLinc)

161 Mitchell Road, Oak Ridge, TN 37830
Contact Name: Jack R. Hall Phone: 865-276-6910

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

Matrix	Standard/Method	Technology	Analyte
Air	NIOSH 0500 and 0600	Weighing	Airborne Particulate Material
Air	NIOSH 6014 Modified	Ion Chromatography	Nitrite
Air	NIOSH 7401	Titration	Alkalinity
Air	NIOSH 7906	Ion Chromatography	Fluoride
Air	NIOSH 7907	Ion Chromatography	Chloride, Nitrate
Air	NIOSH 7908	Ion Chromatography	Sulfate, Phosphate
Liquids	EPA 3620B, MCL-7740, EPA 8082	Florisil Cleanup	PCBs
Liquids	EPA 3665A, MCL-7740 and EPA 8082	Sulfuric Acid Cleanup	PCBs
Solids	Internal Published Method referenced in MCL-7738	Pyrolysis Apparatus	Anion Prep
Solids	SM 2450	Drying, filtering	Solids
Solids	UCOR Method	Radionuclides and Metals	Acid Leachates
Water	EPA 100.2; and *related ASTM methods	Transmission Electron Microscopy	Asbestos
Water	SM 4500-Cl modified for micro	Microtitrator	Total Residual Chlorine
Filters and Wipes	NIOSH 7902, MCL-7775 Appendix 29	Specific Ion Electrode	Fluorides
Liquids and Solids	ASTM C-1771; MCL-7768	ICP/MS of Hydrolyzed Uranium Hexafluoride	Boron Silica and Tc-99
Liquids and Solids	*Related ASTM methods, Client	Thermal Gravimetric Analysis (TGA)/MS	Weight Loss on heating Compound ID
Liquids and Solids	ASTM C-1267, MCL-7737, MCL7737A	Davies-Gray Titration	Total Uranium
Liquids and Solids	DOE Methods Compendium RP550 and MCL-7754	Liquid Scintillation Counting	Tc-99
Liquids and Solids	EPA 1311, MCL-7743	TCLP	Leachates
Liquids and Solids	EPA 6020M, MCL-7768 and *related ASTM methods	ICP/MS	Tc-99
Liquids and Solids	M -EPA 6020, MCL-7768	ICP/MS	Lithium Isotopic
Liquids and Solids	M-EPA 6020, MCL-7768	ICP/MS	Boron Isotopic
Water and Solids	SM 2310, 2320	pH meter	pH, titrations
Liquids, Filters, and Wipes	EPA 900, ASTM 2459, D7902, MCL-7734	Gas Proportional Counting	Gross Alpha/Beta
Solids, Filters, and Wipes	*Related ASTM methods, Client specified	Scanning Electron Microscopy/EDS	Elemental Analysis
Solids, Filters, and Wipes	NIOSH 7400, MCL-7721	Phase Contrast Microscopy	Asbestos
Solids, Filters, and Wipes	NIOSH 7402, MCL-7708	Transmission Electron Microscopy	Asbestos



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Solids, Filters, and Wipes	NIOSH 7500; and *related ASTM methods	X-Ray Diffraction	Silica
Water, Liquids, and Solids	MCL-7748, ASTM 412, D7042 and Instrument Manuals	Regular and Micro Kinematic Viscosity	Viscosity
Water, Liquids, and Solids	Modified EPA 1010; ASTM D3278, ASTM D3828	Micro Flashpoint, closed cup	Flashpoint
Water, Liquids, and Solids	Nicolet, *related ASTM methods	Fourier Transform Infrared (FTIR)	Organic Analysis
Liquids, Solids, Filters, and Wipes	EPA 6020 and EPA 6010, and *related ASTM methods	ICP/OES and ICP/MS	Metals Assay
Liquids, Solids, Filters, and Wipes	EPA 3050B, MCL-7746 and MCL-7752	Acid Digestion Hot Block	Metals Sample Preparation
Liquids, Solids, Filters, and Wipes	EPA 6010; ASTM D-1076, MCL-7751	Inductively Coupled Plasma - Optical Emission Spectroscopy	Metals
Liquids, Solids, Filters, and Wipes	EPA-8082; NIOSH 5503; ASTM 5175, MCL-7740	GC/EC	PCBs
Water, Solids, Filters, and Wipes	EPA 300; 9056; ASTM D-808; NIOSH 7903 and MCL-7739	Ion Chromatography	Anions
Water, Solids, Filters, and Wipes	EPA 6010, MCL-7751 OSHA ID-125G	Inductively Coupled Plasma - Optical Emission Spectroscopy	Beryllium Testing + BeO
Water, Solids, Filters and Wipes	EPA 6020, MCL-7768	Inductively Coupled Plasma - Mass Spectroscopy	Beryllium Testing + BeO
Water, Solids, Filters, and Wipes	EPA 6020, MCL-7768 NIOSH 7303	Inductively Coupled Plasma - Mass Spectroscopy	Metals
Water, Solids, Filters, and Wipes	NIOSH 6009, EPA and *related ASTM methods	Cold Vapor Atomic Absorption	Mercury
Water, Solids, Filters, and Wipes	NIOSH 7300, NIOSH 7301, NIOSH 7303, MCL-7751	Inductively Coupled Plasma - Optical Emission Spectroscopy	Metals
Water, Solids, Filters, and Wipes	NIOSH 9002, MCL-7720	Polarized Light Microscopy	Asbestos
Water, Solids, Filters, and Wipes	OSHA-215, ASTM 5267, EPA 7199, and MCL-7770	Ion Chromatography	Hexavalent Chromium
Water, Liquids, Solids, Filters and Wipes	EPA 6020, ASTM C-1345, C1474, MCL-7769	Inductively Coupled Plasma - Mass Spectrometry	Isotopic Uranium
Water, Liquids, Solids, Filters, and Wipes	MCL-7759, ASTM D7283, C1539, D4922, ANSI 42.15 and EPA 913	Liquid Scintillation Counting	Gross Alpha/Beta

- * "Accreditation is granted through a technology based flexible scope criteria. Additional methods other than listed above may fall under the accreditation of the laboratory. A complete listing of method capabilities can be derived from the laboratory upon request."