



Accredited Laboratory

A2LA has accredited

EMSL ANALYTICAL, INC.

Cinnaminson, NJ

for technical competence in the field of

Environmental Testing

In recognition of the successful completion of the A2LA evaluation process that includes an assessment of the laboratory's compliance with ISO/IEC 17025:2017, the 2009 TNI Environmental Testing Laboratory Standard, and the requirements of the Department of Energy Consolidated Audit Program (DOECAP) as detailed in version 5.3 of the DoD Quality System Manual for Environmental Laboratories (QSM), accreditation is granted to this laboratory to perform recognized EPA methods as defined on the associated A2LA Environmental Scope of Accreditation. This accreditation demonstrates technical competence for this defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).



Presented this 24th day of May 2019.

A blue ink signature of a person, likely the Vice President of Accreditation Services, written over a horizontal line.

Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 2845.01
Valid to May 31, 2021

For the tests to which this accreditation applies, please refer to the laboratory's Environmental Scope of Accreditation.



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

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ENVIRONMENTAL

Valid To: May 31, 2021

Certificate Number: 2845.01

In recognition of the successful completion of the A2LA evaluation process, (including an assessment of the laboratory's compliance with ISO/IEC 17025:2017, the 2009 TNI Environmental Testing Laboratory Standard, the requirements of the Department of Energy Consolidated Audit Program (DOECAP) as detailed in version 5.3 of the DoD/DOE Quality Systems Manual for Environmental Laboratories) accreditation is granted to this laboratory to perform recognized methods using the following testing technologies in the analyte categories, and for the EPA test methods applicable to the National Environmental Lead Laboratory Accreditation Program (NLLAP) listed below;

| ENVIRONMENTAL LEAD | |
|--------------------------------|--|
| Test | Test Method(s) |
| Total Lead (Pb) in Dust Wipes | EMSL Analytical, Inc. LM-007C (Modified EPA 7000B - (FLAA), 3050 Hotblock Digestion) |
| Total Lead (Pb) in Paint Chips | EMSL Analytical, Inc. LM-007B (Modified EPA 7000B - (FLAA), 3050 Hotblock Digestion) |
| Total Lead (Pb) in Soil | EMSL Analytical, Inc. LM-007A (Modified EPA 7000B - (FLAA), 3050 Hotblock Digestion) |

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following tests in the analyte categories listed below:

| CHEMICAL AND PHYSICAL ANALYSIS: AIR MATRIX* | | |
|---|-----------------|--|
| Test | Test Method(s) | Parameter/Analyte |
| Acetic Acid | NIOSH 1603 mod. | Acetic Acid |
| Acid Mist | OSHA 165SG | Nitric acid Hydrochloric acid Sulfuric acid Hydrofluoric acid Hydrobromic acid |
| Alcohols I | NIOSH 1400 mod. | Isopropyl alcohol Ethanol Tert-butyl alcohol |
| Aldrin and Lindane | NIOSH 5502 mod. | Aldrin and Lindane |

| Test | Test Method(s) | Parameter/Analyte |
|--|-----------------|--|
| Aromatic Hydrocarbons | NIOSH 1501 mod. | Benzene p-tert-butyltoluene Cumene Ethylbenzene α -methylstyrene β -methylstyrene Toluene o-Xylene p-Xylene m-Xylene Styrene (vinylbenzene) |
| Chlordane | NIOSH 5510 mod. | Chlordane |
| Chlorine | NIOSH 6011 | Chlorine |
| Combustion-by-Products (black carbon/soot, char, and ash) | ASTM D6602 | Black Carbon/Soot Char Ash |
| Diesel Particulate Matter (As Elemental Carbon) | NIOSH 5040 | Organic and Elemental Carbon |
| Dipropylene Glycol Methyl Ether | OSHA 101 mod. | Dipropylene Glycol Methyl Ether |



| Test | Test Method(s) | Parameter/Analyte |
|--------------------------|--|---|
| Elements by ICP | NIOSH 7300, NIOSH 7300 mod., NIOSH 7303, NIOSH 7303 mod. | Aluminum (Al) Antimony (Sb) Arsenic (As) Barium (Ba) Beryllium (Be) Bismuth (Bi) Boron (B) Cadmium (Cd) Cerium (Ce) Chromium (Cr) Cobalt (Co) Copper (Cu) Iron (Fe) Lead (Pb) Lithium (Li) Magnesium (Mg) Manganese (Mn) Molybdenum Nickel (Ni) Phosphorous (P) Potassium (K) Selenium (Se) Silver (Ag) Sodium (Na) Strontium (Sr) Sulfide (S) Thallium (Tl) Tin (Sn) Titanium (Ti) Tungsten (W) Vanadium (V) Zinc (Zn) Zircon (Zr) |
| Formaldehyde | NIOSH 2016 mod. | Formaldehyde |
| Halogenated Hydrocarbons | NIOSH 1003 mod. | 1,2-dichlorobenzene 1,4-dichlorobenzene Chlorobenzene 1,1-dichloroethane 1,1-dichloroethene 1,2-dichloroethane 1,2-dichloropropane Carbon Tetrachloride Chloroform Tetrachloroethene |
| Hexavalent Chromium | OSHA 215 | Hexavalent Chromium |
| Hydrogen Cyanide | NIOSH 6010 mod. | Hydrogen Cyanide |

| Test | Test Method(s) | Parameter/Analyte |
|---|--------------------------------|--|
| Inorganic Acids | NIOSH 7903 | Flourine (F) Bromine (Br) Chlorine (Cl) Nitrate (NO3) Nitrite (NO2) Sulfate (SO4) Phosphate (PO4) |
| Inorganic Fibrous Particles by SEM method | German VDI 3492 | Fibrous glass Mineral wool Refractory ceramic fibers Asbestos |
| Inorganic Fibrous Particles by SEM method | ISO 14966 | Fibrous glass Mineral wool Refractory ceramic fibers Asbestos |
| Mercury | NIOSH 6009 mod., OSHA 140 mod. | Mercury |
| Metalworking Fluids (MWF) All Categories | NIOSH 5524 | Metal Working Fluids N.O.S. |
| Methamphetamine on Wipes | NIOSH 9111 | Methamphetamine |
| Methanol | NIOSH 2000 mod. | Methanol |
| Methylene Chloride | NIOSH 1005 | Methylene Chloride |
| Naphthas | NIOSH 1550 mod. | VMP Naphtha |
| Ozone | OSHA 214 | Ozone |
| Polychlorinated Biphenyls | NIOSH 5503 mod. | Aroclor-1016 Aroclor-1221 Aroclor-1232 Aroclor-1242 Aroclor-1248 Aroclor-1254 Aroclor-1260 Aroclor-1262 Aroclor-1268 |

| Test | Test Method(s) | Parameter/Analyte |
|---|---|--|
| Polynuclear Aromatic Hydrocarbons by HPLC | NIOSH 5506 mod. | Naphthalene Acenaphthylene Acenaphthene Fluorene Phenanthrene Anthracene Fluoranthene Pyrene Benzo(a)anthracene Chrysene Benzo(e)pyrene Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(a)pyrene Dibenzo(a,h)anthracene Benzo(g,h,i)perylene Indeno(1,2,3-c,d)pyrene |
| Silica, Crystalline | NIOSH 7500 mod., OSHA 142 | a-quartz, cristobalite, trydimite |
| Sulfur Dioxide | NIOSH 6004 mod. | Sulfur Dioxide |
| Total Lead (Pb) in Air | NIOSH 7082 - (FLAA) | Lead |
| Total Lead (Pb) in Air | NIOSH 7105 - (GFAA) | Lead |
| Total Metals in Air | EMSL Analytical, Inc. LM-003 (Modified NIOSH 7300 for ICP/ICP-MS) | Beryllium Oxide (BeO) Beryllium (Be) |
| Volatile Organic Compounds in Air | TO-15 | Acetaldehyde Acetone Acetonitrile Acetophenone Acrolein Acrylamide Acrylic acid Acrylonitrile Allyl chloride Aniline Benzene Benzyl chloride Bis (2-chloroethyl) ether Bis (chloromethyl) ether Bromodichloromethane Bromoform Bromomethane Butadiene (1,3-) Butadiene (2-chloro-1,3-) Carbon disulfide Carbon oxysulfide (Carbonyl sulfide) Carbon tetrachloride |

| Test | Test Method(s) | Parameter/Analyte |
|--|----------------|---|
| Volatile Organic Compounds in Air (cont) | TO-15 | Catechol Chloroacetic acid Chlorobenzene Chloroethane Chloroform Chloromethane Chloromethyl methyl ether Chlorotoluene (2-) Cresols/Cresylic acid Cyclohexane Diazomethane Dibromo-3-chloropropane (1,2-) Dibromochloromethane Dibromoethane (1,2-) (EDB) Dichlorobenzene (1,2-) Dichlorobenzene (1,3-) Dichlorobenzene (1,4-) Dichlorodifluoromethane Dichloroethane (1,1-) Dichloroethane (1,2-) Dichloroethene (1,1-) Dichloroethene (cis-1,2-) Dichloroethene (trans-1,2-) Dichlorofluoromethane Dichloropropane (1,2-) Dichloropropene (cis-1,3-) Dichloropropene (trans-1,3-) Dichlorotetrafluoroethane (1,2-) Diethyl sulfate Dimethyl formamide (N, N-) Dimethyl hydrazine (1,1-) Dimethyl sulfate Dimethylaniline (N, N-) Dimethylcarbamoyl chloride Dioxane (1,4-) Epichlorohydrin Epoxybutane (1,2-) Ethanol Ethyl acetate Ethyl acrylate Ethyl carbamate (Urethane) Ethylbenzene Ethylene Oxide Ethyleneimine Ethyltoluene (4-) Formaldehyde Heptane (n-) Hexachlorobutadiene (1,3-) Hexachloroethane |



| Test | Test Method(s) | Parameter/Analyte |
|--|----------------|--|
| Volatile Organic Compounds in Air (cont) | TO-15 | Hexane (n-) Hexanone (2-) Isophorone Isopropanol Isopropylbenzene Methyl alcohol (Methanol) Methyl ethyl ketone (MEK) Methyl iodide Methyl isobutyl ketone (MIBK) Methyl isocyanate Methyl methacrylate Methyl tert-butyl ether Methylene chloride (Dichloromethane) Methylhydrazine Methylphenol (2-) Naphthalene Nitrobenzene Nitropropane (2-) N-Nitrosodimethylamine N-Nitrosomorpholine N-Nitroso-N-methylurea Phenol Phosgene Propane sultone (1,3-) Propiolactone (beta-) Propionaldehyde Propylene Propylene oxide Propyleneimine (1,2-) Styrene Styrene oxide Tert-butyl alcohol Tetrachloroethane (1,1,2,2-) Tetrachloroethene Tetrahydrofuran Toluene Trichloro (1,1,2-) trifluoroethane (1,2,2-) Trichlorobenzene (1,2,4-) Trichloroethane (1,1,1-) Trichloroethane (1,1,2-) Trichloroethene Trichlorofluoromethane Triethylamine Trifluoromethane Trimethylbenzene (1,2,4-) Trimethylbenzene (1,3,5-) Trimethylpentane (2,2,4-) Vinyl acetate Vinyl bromide |



| Test | Test Method(s) | Parameter/Analyte |
|--|----------------|--|
| Volatile Organic Compounds in Air (cont) | TO-15 | Vinyl chloride Xylene (m-) Xylene (o-) Xylenes (total) Xylene (p-) |

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following tests in the analyte categories listed below:

| CHEMICAL AND PHYSICAL ANALYSIS: SOIL/SOLIDS/BULK MATRIX* | | |
|---|------------------------|--|
| Test | Test Method(s) | Parameter/Analyte |
| Combustion-by-Products (black carbon/soot, char and ash) | ASTM D6602 | Black Carbon/Soot Char Ash |
| Determination of Asbestos in Technical Products by SEM method | German VDI 3866 Part 5 | Asbestos |
| Microwave Sample Preparation | EPA 3546 | ----- |
| Polychlorinated Biphenyls (PCBs) | EPA 8082A | Aroclor-1016 Aroclor-1221 Aroclor-1232 Aroclor-1242 Aroclor-1248 Aroclor-1254 Aroclor-1260 Aroclor-1262 Aroclor-1268 |
| Silica Gel Cleanup | EPA 3630C | ----- |
| Soxhlet Sample Preparation | EPA 3540C | ----- |
| Sulfur Extract Cleanup | EPA 3660B | ----- |
| Sulfuric Acid Cleanup | EPA 3665A | ----- |
| Waste Dilution Sample Preparation | EPA 3580A | ----- |



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| ASBESTOS ANALYSIS* | | |
|---|-----------------------------|--|
| Test | Test Method(s) | Parameter/Analyte |
| Phase Contrast Microscopy | NIOSH 7400 | Asbestos: Chrysotile Asbestos: Amosite Asbestos: Crocidolite Asbestos: Anthophyllite Asbestos: Tremolite Asbestos: Actinolite Asbestos: Other non-regulated amphibole fibers |
| Polarized Light Microscopy | SAE J2975, EPA 600/R-93/116 | Asbestos: Chrysotile Asbestos: Amosite Asbestos: Crocidolite Asbestos: Anthophyllite Asbestos: Tremolite Asbestos: Actinolite Asbestos: Other non-regulated amphibole fibers |
| Sample Preparation by Drilling | SAE J2975 | Asbestos: Chrysotile Asbestos: Amosite Asbestos: Crocidolite Asbestos: Anthophyllite Asbestos: Tremolite Asbestos: Actinolite Asbestos: Other non-regulated amphibole fibers |
| Transmission Electron Microscopy – Air | ISO 10312 (direct method) | Asbestos: Chrysotile Asbestos: Amosite Asbestos: Crocidolite Asbestos: Anthophyllite Asbestos: Tremolite Asbestos: Actinolite Asbestos: Other non-regulated amphibole fibers |
| Transmission Electron Microscopy – Bulk | ISO 13794 (indirect method) | Asbestos: Chrysotile Asbestos: Amosite Asbestos: Crocidolite Asbestos: Anthophyllite Asbestos: Tremolite Asbestos: Actinolite Asbestos: Other non-regulated amphibole fibers |
| Transmission Electron Microscopy | EPA 100.2 | Asbestos: Chrysotile Asbestos: Amosite Asbestos: Crocidolite Asbestos: Anthophyllite Asbestos: Tremolite Asbestos: Actinolite Asbestos: Other non-regulated amphibole fibers |

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following tests in the analyte categories listed below:

| RADIOCHEMISTRY DRINKING WATER, NON_POTABLE, SOLID/CHEMICAL MATRIX | |
|---|---------------------------------|
| Parameter/Analyte | Test Method(s) |
| Alpha Spectroscopy (Pu-238, Pu-239/240, U-235, U-234/238, Am-241, Th-230/232) | EMSL RC-SOP-007, EPA 907.0 mod. |
| Alpha/Beta Scan | EMSL RC-SOP-003, EPA 900 mod. |
| Gamma Scan | EMSL RC-SOP-002, EPA 901.1 mod. |
| Gross Alpha/Beta | EPA 900, EPA 900 mod. |
| Nickel (Ni-63) | EMSL RC-SOP-200 |
| Radium (Ra-226) | EPA 903, EPA 903 mod. |
| Radium (Ra-228) | EPA 904, EPA 904 mod. |
| Strontium (Sr-89/-90) | EPA 905, EPA 905 mod. |
| Tritium | EPA 906, EPA 906 mod. |
| Uranium (Total) | EPA 908, EPA 908 mod. |

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following tests on Children's Products: ⁽¹⁾

| CHEMICAL | |
|---|--|
| Test | Test Method(s) |
| Lead in Paint and Surface Coatings | 16 CFR 1303 (using ASTM E1613 and E1645); CPSC-CH-E1003-09.1 |
| Test | Test Method(s) |
| Phthalates | CPSC-CH-C1001-09.4 (using EPA SW-846 8270) |
| Soluble Heavy Metals Content (As, Ba, Cd, Cr, Pb, Hg, Sb, Se) | ASTM F 963-17 Section 4.3.5.1 & Section 4.3.5.2 |
| Total Cadmium in Children's Metal Products Including Children's Metal Jewelry | EMSL Analytical, Inc. LM-016, (Modified CPSC-CH-E1001-08.1) |
| Total Cadmium in Children's Non-Metal Products | EMSL Analytical, Inc. LM-016, (Modified CPSC-CH-E1002-08) |
| Total Lead in Children's Metal Jewelry | CPSC-CH-E1001-08.1 |
| Total Lead in Children's Metal Products | CPSC-CH-E1001-08.1 |
| Total Lead in Children's Non-Metal Products | CPSC-CH-E1002-08 |

¹ The Consumer Product Safety Improvement Act (CPSIA) requires that every children's product subject to a federal consumer product safety requirement be tested by a Consumer Product Safety Commission (CPSC) accepted laboratory for compliance with the applicable federal children's product safety requirements. Accreditation by A2LA does not infer acceptance by the CPSC. Please verify this organization's acceptance status by using the CPSC's searchable database, located at <http://www.cpsc.gov/cgi-bin/labsearch/>.