



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

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ENVIRONMENTAL

Valid To: December 31, 2013

Certificate Number: 0085.02

In recognition of the successful completion of the A2LA evaluation process (including an assessment of the laboratory's compliance with the 2009 NELAC Standard), accreditation is granted to this laboratory to perform recognized EPA methods using the following testing technologies and in the analyte categories identified below; and for the test methods applicable to Kentucky Underground Storage Tank Laboratory Accreditation Program:

Testing Technologies

Atomic Absorption/ICP-AES Spectrometry, Atomic Absorption/Cold Vapor, Discrete Analyzer, Gas Chromatography, Gas Chromatography/Mass Spectrometry, Gravimetry, Ion Chromatography, Methylene Blue Active Substances, Microbiology, Misc.- Electronic Probes (pH, O₂, Redox), Oxygen Demand, Hazardous Waste Characteristics Tests, Spectrophotometry (Visible), Titrimetry, Turbidity Field Sampling, Field Testing and Field Sampling at Lexington and Louisville, pH, Total Residual Chlorine and Dissolved Oxygen

<u>Parameter/Analyte</u>	<u>Nonpotable Water</u>	<u>Solid Hazardous Waste</u>
<u>Metals</u>		
Aluminum	EPA 200.7	EPA 6010C
Antimony	EPA 200.7	EPA 6010C
Arsenic	EPA 200.7	EPA 6010C
Barium	EPA 200.7	EPA 6010C
Beryllium	EPA 200.7	EPA 6010C
Boron	EPA 200.7	EPA 6010C
Cadmium	EPA 200.7	EPA 6010C
Calcium	EPA 200.7	EPA 6010C
Chromium	EPA 200.7	EPA 6010C
Cobalt	EPA 200.7	EPA 6010C
Copper	EPA 200.7	EPA 6010C
Iron	EPA 200.7	EPA 6010C
Lead	EPA 200.7	EPA 6010C
Magnesium	EPA 200.7	EPA 6010C
Manganese	EPA 200.7	EPA 6010C

<u>Parameter/Analyte</u>	<u>Nonpotable Water</u>	<u>Solid Hazardous Waste</u>
<u>Metals (cont.)</u>		
Mercury	EPA 200.7 EPA 245.1 EPA 245.5	EPA 6010C EPA 7470A EPA 7471B
Molybdenum	EPA 200.7	EPA 6010C
Nickel	EPA 200.7	EPA 6010C
Potassium	EPA 200.7	EPA 6010C
Selenium	EPA 200.7	EPA 6010C
Silver	EPA 200.7	EPA 6010C
Sodium	EPA 200.7	EPA 6010C
Thallium	EPA 200.7	EPA 6010C
Tin	EPA 200.7	EPA 6010C
Titanium	EPA 200.7	EPA 6010C
Vanadium	EPA 200.7	EPA 6010C
Zinc	EPA 200.7	EPA 6010C
<u>Nutrients</u>		
Ammonia (as N)	SM 4500 NH ₃ G	SM 4500 NH ₃ G
Kjeldahl nitrogen	SM 4500 NH ₃ G	SM 4500 NH ₃ G
Nitrate (as N)	EPA 300.0 EPA 353.2	EPA 9056
Nitrate-nitrite (as N)	EPA 300.0	EPA 9056
Nitrite (as N)	EPA 300.0 EPA 353.2	EPA 9056
Orthophosphate (as P)	EPA 300.0 EPA 365.1	EPA 9056
Total phosphorus	EPA 365.1	EPA 6010B EPA 365.1
<u>Demands</u>		
Biochemical Oxygen Demand	SM 5210B	SM 5210B
Carbonaceous BOD	SM 5210B	SM 5210B
Chemical Oxygen Demand	SM 5220D	SM 5220D
Total Organic Carbon	SM 5310C	-----
<u>Wet Chemistry</u>		
Acidity	SM 2310B	-----
Alkalinity	SM 2320B	-----
Bromide	EPA 300.0	EPA 9056
Chloride	EPA 300.0	EPA 9056
Chloride	SM 4500 Cl C	-----
Chlorine (residual)	SM 4500 Cl G	-----
Chromium, hexavalent	SM 3500 Cr B	SW-846 9050A
Color, ADMI	SM 2120C	-----

<u>Parameter/Analyte</u>	<u>Nonpotable Water</u>	<u>Solid Hazardous Waste</u>
<u>Wet Chemistry (cont)</u>		
	SM 2510B	SW 846 9050A
Conductivity		
Cyanide, Amenable	SM 4500 CN-C G	-----
Cyanide, Total	EPA 335.4	EPA 9010C
Cyanide, Total Free Weak Acid	Kelada-01	-----
Cyanide Weak Acid Dissociable	SM 4500-CN I	-----
Fluoride	EPA 300.0	EPA 9056
Hardness	SM 2340 B	SM 2340 B
pH	SM 4500-H ⁺ B	EPA 9040C
		EPA 9045 D
MBAS	SM 5540C	SM 5540C
Oil and Grease	EPA 1664A	EPA 1664A
		EPA 9071B
Oxygen Dissolved	SM 4500 O G	-----
Phenols	EPA 420.4	-----
Redox	SM 2580B	SM 2580B
Total residue	USGA 3750-85	-----
Filterable residue	USGS I-1750-85	-----
Nonfilterable residue	SM 2540C	-----
Settleable residue	SM 2540F	-----
Volatile Residue	USGA I-3753-85	-----
Specific conductance	SM 2510B	EPA 9050A
Sulfate	EPA 300.0	EPA 9056
Sulfide	SM 4500 S ² D	SM 4500 S ² D
Sulfite	SM 4500 SO ₃ ²⁻	SM 4500 SO ₃ ²⁻
Surfactants	SM 5540C	SM 5540C
Temperature	EPA 170.1	EPA 170.1
Turbidity	EPA 180.1	EPA 180.1
Volatile Acids as Acetic	SM 5560C	SM 5560C
<u>Microbiology</u>		
<i>Escherichia coli</i> by Colilert	SM 9223B	-----
Enterococci	ASTM D6503	-----
Fecal coliform	SM 9222D	SM 9222D
	Colilert 18	
Total coliform	SM 9223B	SM 9223B
Heterotrophic Plate Count (HPC)	SM 9215B	SM 9215B
<u>Purgeable Organics</u> <u>(Volatiles)</u>		
Acetone	EPA 624	EPA 8260B
Acrolein	EPA 624	EPA 8260B
Acrylonitrile	EPA 624	EPA 8260B
Benzene	EPA 624	EPA 8260B
Bromobenzene	EPA 624	EPA 8260B
Bromochloromethane	EPA 624	EPA 8260B

<u>Parameter/Analyte</u>	<u>Nonpotable Water</u>	<u>Solid Hazardous Waste</u>
<u>Purgeable Organics (cont.)</u>		
Bromodichloromethane	EPA 624	EPA 8260B
Bromoform	EPA 624	EPA 8260B
Bromomethane	EPA 624	EPA 8260B
2-Butanone	EPA 624	EPA 8260B
n-Butylbenzene	EPA 624	EPA 8260B
Sec-Butylbenzene	EPA 624	EPA 8260B
Tert-Butylbenzene	EPA 624	EPA 8260B
Carbon disulfide	EPA 624	EPA 8260B
Carbon tetrachloride	EPA 624	EPA 8260B
Chlorobenzene	EPA 624	EPA 8260B
Chloroethane	EPA 624	EPA 8260B
2-Chloroethyl vinyl ether	EPA 624	EPA 8260B
Chloroform	EPA 624	EPA 8260B
Chloromethane	EPA 624	EPA 8260B
2-Chlorotoluene	EPA 624	EPA 8260B
4-Chlorotoluene	EPA 624	EPA 8260B
Dibromochloromethane	EPA 624	EPA 8260B
1,2-Dibromo-3-chloropropane (DBCP)	EPA 624	EPA 8260B
Dibromomethane	EPA 624	EPA 8260B
1,2 Dibromomethane (EDB)	EPA 624	EPA 8260B
1,2-Dichlorobenzene	EPA 624	EPA 8260B
1,3-Dichlorobenzene	EPA 624	EPA 8260B
1,4-Dichlorobenzene	EPA 624	EPA 8260B
Dichlorodifluoromethane	EPA 624	EPA 8260B
1,1-Dichloroethane	EPA 624	EPA 8260B
1,2-Dichloroethane	EPA 624	EPA 8260B
1,1-Dichloroethene	EPA 624	EPA 8260B
cis-1,2-Dichloroethene	EPA 624	EPA 8260B
trans-1,2-Dichloroethene	EPA 624	EPA 8260B
1,2-Dichloropropane	EPA 624	EPA 8260B
1,3-Dichloropropane	EPA 624	EPA 8260B
2,2-Dichloropropane	EPA 624	EPA 8260B
1,1-Dichloropropene	EPA 624	EPA 8260B
cis-1,3-Dichloropropene	EPA 624	EPA 8260B
trans-1,3-Dichloropropene	EPA 624	EPA 8260B
Trans-1,4-Dichloro-2-butene	EPA 624	EPA 8260B
Ethyl benzene	EPA 624	EPA 8260B
2-Hexanone	EPA 624	EPA 8260B
Hexachlorobutadiene	EPA 624	EPA 8260B
Isopropylbenzene	EPA 624	EPA 8260B
p-Isopropyltoluene	EPA 624	EPA 8260B
Iodomethane	EPA 624	EPA 8260B
Methylene chloride	EPA 624	EPA 8260B
Methyl ethyl ketone (MEK)	EPA 624	EPA 8260B
Methyl isobutyl ketone	EPA 624	EPA 8260B

<u>Parameter/Analyte</u>	<u>Nonpotable Water</u>	<u>Solid Hazardous Waste</u>
<u>Purgeable Organics (cont.)</u>		
	EPA 624	EPA 8260B
Methyl-t-butylether (MTBE)		
4-Methyl-2-pentanone	EPA 624	EPA 8260B
Naphthalene	EPA 624	EPA 8260B
n-Propylbenzene	EPA 624	EPA 8260B
Styrene	EPA 624	EPA 8260B
1,1,1,2-Tetrachloroethane	EPA 624	EPA 8260B
1,1,2,2-Tetrachloroethane	EPA 624	EPA 8260B
Tetrachloroethene	EPA 624	EPA 8260B
Toluene	EPA 624	EPA 8260B
Total Petroleum Hydrocarbons (TPH)	EPA 1664A	EPA 1664A
1,1,1-Trichloroethane	EPA 624	EPA 8260B
1,1,2-Trichloroethane	EPA 624	EPA 8260B
1,2,3-Trichlorobenzene	EPA 624	EPA 8260B
1,2,4-Trichlorobenzene	EPA 624	EPA 8260B
1,3,5-Trichlorobenzene	EPA 624	EPA 8260B
Trichloroethene	EPA 624	EPA 8260B
Trichlorofluoromethane	EPA 624	EPA 8260B
1,2,4-Trimethylbenzene	EPA 624	EPA 8260B
1,3,5-Trimethylbenzene	EPA 624	EPA 8260B
Vinyl acetate	EPA 624	EPA 8260B
Vinyl chloride	EPA 624	EPA 8260B
Xylenes, total	EPA 624	EPA 8260B
1,2-Xylene	EPA 624	EPA 8260B
1,3-Xylene	EPA 624	EPA 8260B
1,4 Xylene	EPA 624	EPA 8260B
<u>Extractable Organics (semivolatiles)</u>		
Acenaphthene	EPA 625	EPA 8270C
Acenaphthylene	EPA 625	EPA 8270C
Anilene	EPA 625	EPA 8270C
Anthracene	EPA 625	EPA 8270C
Benzidine	EPA 625	EPA 8270C
Benzoic acid	EPA 625	EPA 8270C
Benzo (a) anthracene	EPA 625	EPA 8270C
Benzo (b) fluoranthene	EPA 625	EPA 8270C
Benzo (k) fluoranthene	EPA 625	EPA 8270C
Benzo (ghi) perylene	EPA 625	EPA 8270C
Benzo (a) pyrene	EPA 625	EPA 8270C
Benzyl alcohol	EPA 625	EPA 8270C
Bis (2-chloroethoxy) methane	EPA 625	EPA 8270C
Bis (2-chloroethoxy) ether	EPA 625	EPA 8270C
Bis (2-chloroisopropyl) ether	EPA 625	EPA 8270C
Bis (2-ethylhexyl) phthalate	EPA 625	EPA 8270C
4-Bromophenylphenyl phthalate	EPA 625	EPA 8270C
Butyl benzyl phthalate	EPA 625	EPA 8270C

<u>Parameter/Analyte</u>	<u>Nonpotable Water</u>	<u>Solid Hazardous Waste</u>
<u>Extractable Organics (semivolatiles)</u>		
<u>(cont.)</u>		
2-sec-Butyl-4,6-dinitrophenol	EPA 625	EPA 8270C
Carbazole	EPA 625	EPA 8270C
4-Chloroanilene	EPA 625	EPA 8270C
4-Chloro-3-methylphenol	EPA 625	EPA 8270C
1-Chloronaphthalene	EPA 625	EPA 8270C
2-Chloronaphthalene	EPA 625	EPA 8270C
2-Chlorophenol	EPA 625	EPA 8270C
4-Chlorophenyl phenyl ether	EPA 625	EPA 8270C
Chrysene	EPA 625	EPA 8270C
Cresols	EPA 625	EPA 8270C
Dibenzo (a,h) anthracene	EPA 625	EPA 8270C
Dibenzofuran	EPA 625	EPA 8270C
1,2-Dichlorobenzene	EPA 625	EPA 8270C
1,3-Dichlorobenzene	EPA 625	EPA 8270C
1,4-Dichlorobenzene	EPA 625	EPA 8270C
3,3'-Dichlorobenzidine	EPA 625	EPA 8270C
2,4-Dichlorophenol	EPA 625	EPA 8270C
Diethyl phthalate	EPA 625	EPA 8270C
2,4-Dimethylphenol	EPA 625	EPA 8270C
Dimethyl phthalate	EPA 625	EPA 8270C
Di-n-butyl phthalate	EPA 625	EPA 8270C
Di-n-octyl phthalate	EPA 625	EPA 8270C
2,4-Dinitrophenol	EPA 625	EPA 8270C
2,4-Dinitrotoluene	EPA 625	EPA 8270C
2,6-Dinitrotoluene	EPA 625	EPA 8270C
Fluoroanthene	EPA 625	EPA 8270C
Fluorene	EPA 625	EPA 8270C
Hexachlorobenzene	EPA 625	EPA 8270C
Hexachlorobutadiene	EPA 625	EPA 8270C
Hexachlorocyclohexane	EPA 625	EPA 8270C
Hexachlorocyclopentadiene	EPA 625	EPA 8270C
Hexachloroethane	EPA 625	EPA 8270C
Indeno (1,2,3-cd) pyrene	EPA 625	EPA 8270C
Isophorone	EPA 625	EPA 8270C
2-Methyl-4,6-Dinitrophenol	EPA 625	EPA 8270C
1-Methylnaphthalene	EPA 625	EPA 8270C
2-Methylphenol	EPA 625	EPA 8270C
4-Methylphenol	EPA 625	EPA 8270C
Naphthalene	EPA 625	EPA 8270C
2-Nitroaniline	EPA 625	EPA 8270C
3-Nitroaniline	EPA 625	EPA 8270C
4-Nitroaniline	EPA 625	EPA 8270C
Nitrobenzene	EPA 625	EPA 8270C
2-Nitrophenol	EPA 625	EPA 8270C
4-Nitrophenol	EPA 625	EPA 8270C

<u>Parameter/Analyte</u>	<u>Nonpotable Water</u>	<u>Solid Hazardous Waste</u>
<u>Extractable Organics (semivolatiles)</u>		
<u>(cont.)</u>		
N-Nitrosodi-n-propylamine	EPA 625	EPA 8270C
N-Nitrosodiphenylamine	EPA 625	EPA 8270C
Pentachlorophenol	EPA 625	EPA 8270C
Phenanthrene	EPA 625	EPA 8270C
Phenol	EPA 625	EPA 8270C
Pyridine	EPA 625	EPA 8270C
Pyrene	EPA 625	EPA 8270C
2,3,4,5-Tetrachlorophenol	EPA 625	EPA 8270C
2,4,5-Tribromophenol	EPA 625	EPA 8270C
2,4,5-Trichlorophenol	EPA 625	EPA 8270C
2,4,6-Trichlorophenol	EPA 625	EPA 8270C
<u>Pesticides/Herbicides/PCBs</u>		
Aldrin	EPA 608	EPA 8081B
alpha-BHC	EPA 608	EPA 8081B
beta-BHC	EPA 608	EPA 8081B
delta-BHC	EPA 608	EPA 8081B
gamma-BHC (lindane)	EPA 608	EPA 8081B
alpha-Chlorodane	EPA 608	EPA 8081B
gamma-Chlorodane	EPA 608	EPA 8081B
Chlordane (technical)	EPA 608	EPA 8081B
4,4'-DDD	EPA 608	EPA 8081B
4,4'-DDE	EPA 608	EPA 8081B
4,4',-DDT	EPA 608	EPA 8081B
Dieldrin	EPA 608	EPA 8081B
Endosulfan I	EPA 608	EPA 8081B
Endosulfan II	EPA 608	EPA 8081B
Endosulfan sulfate	EPA 608	EPA 8081B
Endrin	EPA 608	EPA 8081B
Endrin aldehyde	EPA 608	EPA 8081B
Endrin ketone	EPA 608	EPA 8081B
Heptachlor	EPA 608	EPA 8081B
Heptachlor epoxide	EPA 608	EPA 8081B
Methoxychlor	EPA 608	EPA 8081B
Toxaphene	EPA 608	EPA 8081B
PCB-1016 (Aroclor)	EPA 608	EPA 8082
PCB-1221	EPA 608	EPA 8082
PCB-1232	EPA 608	EPA 8082
PCB-1242	EPA 608	EPA 8082
PCB-1248	EPA 608	EPA 8082
PCB-1254	EPA 608	EPA 8082
PCB-1260	EPA 608	EPA 8082
PCB-1262	EPA 608	EPA 8082
PCB-1268	EPA 608	EPA 8082

<u>Parameter/Analyte</u>	<u>Nonpotable Water</u>	<u>Solid Hazardous Waste</u>
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Sample Preparation/Extraction Methods

Cyanide	SM 4500 CN-C	-----
Volatiles	EPA 5030B	EPA 5035
Semi-Volatiles/Pesticides/PCBs	EPA 3510C	EPA 3550C
Metals	EPA 3010A	EPA 3050B
	EPA 200.2	
Nutrients	SM 4500NH-B	-----

Hazardous Waste Characteristics

Corrosivity	-----	SW 846 Ch 7 EPA 9040B EPA 9045C
Oxidizer Screen	-----	ASTM D4981
Ignatibility	-----	EPA 1010
Synthetic Precipitation Leaching Procedure	-----	EPA 1312 ASTM D3987
Toxicity Characteristic Leaching Procedure	-----	EPA 1311
Paint Filter Liquids Test	-----	EPA 9095A
Reactivity	-----	SW 846 Ch 7

Kentucky UST Program

<u>Parameter/Analyte</u>	<u>Nonpotable Water</u>	<u>Solid Hazardous Waste</u>
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Metals

Cadmium	EPA 6010C	EPA 6010C
Chromium	EPA 6010C	EPA 6010C
Lead	EPA 6010C	EPA 6010C

Purgeable Organics (volatiles)

	EPA 8260B	EPA 8260B
Benzene		
Ethyl benzene	EPA 8260B	EPA 8260B
Methyl-t-butyl ether (MTBE)	EPA 8260B	EPA 8260B
Naphthalene	EPA 8260B	EPA 8260B
Toluene	EPA 8260B	EPA 8260B
Xylenes, total	EPA 8260B	EPA 8260B
1,2-Xylene	EPA 8260B	EPA 8260B
1,3-Xylene	EPA 8260B	EPA 8260B
1,4-Xylene	EPA 8260B	EPA 8260B

<u>Parameter/Analyte</u>	<u>Nonpotable Water</u>	<u>Solid Hazardous Waste</u>
<u>Extractable Organics (semivolatiles)</u>		
Acenaphthene	EPA 8270C	EPA 8270C
Acenaphthylene	EPA 8270C	EPA 8270C
Anthracene	EPA 8270C	EPA 8270C
Benzo (a) anthracene	EPA 8270C	EPA 8270C
Benzo (b) fluoranthene	EPA 8270C	EPA 8270C
<u>Sample Preparation/Extraction Methods</u>		
Benzo (k) fluoranthene	EPA 8270C	EPA 8270C
Benzo (ghi) perylene	EPA 8270C	EPA 8270C
Benzo (a) pyrene	EPA 8270C	EPA 8270C
Chrysene	EPA 8270C	EPA 8270C
Dibenzo (a,h) anthracene	EPA 8270C	EPA 8270C
Fluoroanthene	EPA 8270C	EPA 8270C
Fluorene	EPA 8270C	EPA 8270C
Indeno (1,2,3-cd) pyrene	EPA 8270C	EPA 8270C
Isophorone	EPA 8270C	EPA 8270C
Naphthalene	EPA 8270C	EPA 8270C
Phenanthrene	EPA 8270C	EPA 8270C
Pyrene	EPA 8270C	EPA 8270C



The American Association for Laboratory Accreditation

World Class Accreditation

Accredited Laboratory

A2LA has accredited

MICROBAC LABORATORIES, INC., KTL DIVISION

Louisville, KY

for technical competence in the field of

Environmental Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 *General Requirements for the Competence of Testing and Calibration Laboratories*. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (*refer to joint ISO-ILAC-IAF Communiqué dated 8 January 2009*).

Presented this 23rd day of February 2012.





President & CEO

For the Accreditation Council
Certificate Number 0085.02
Valid to December 31, 2013

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