



THE AMERICAN ASSOCIATION FOR  
LABORATORY ACCREDITATION

## ACCREDITED LABORATORY

A2LA has accredited

**MICROBAC LABORATORIES, INC., KTL**  
**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 18 June 2005*).



Presented this 24<sup>th</sup> day of January 2008.

A handwritten signature in black ink, appearing to read "Peter Abney".

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President  
For the Accreditation Council  
Certificate Number 0085.02  
Valid to December 31, 2009

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

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

MICROBAC LABORATORIES, INC. KTL DIVISION  
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ENVIRONMENTAL

Valid To: March 31, 2010

Certificate Number: 0085.02

In recognition of the successful completion of the A2LA evaluation process, 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 the 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, O<sub>2</sub>, Redox), Oxygen Demand, Hazardous Waste Characteristics Tests, Spectrophotometry (Visible), Titrimetry, Turbidity, Field Sampling

<u>Parameter/Analyte</u>	<u>Nonpotable Water</u>	<u>Solid Hazardous Waste</u>
<u>Metals</u>		
Aluminum	EPA 200.7	EPA 6010B
Antimony	EPA 200.7	EPA 6010B
Arsenic	EPA 200.7	EPA 6010B
Barium	EPA 200.7	EPA 6010B
Beryllium	EPA 200.7	EPA 6010B
Boron	EPA 200.7	EPA 6010B
Cadmium	EPA 200.7	EPA 6010B
Calcium	EPA 200.7	EPA 6010B
Chromium	EPA 200.7	EPA 6010B
Cobalt	EPA 200.7	EPA 6010B
Copper	EPA 200.7	EPA 6010B
Iron	EPA 200.7	EPA 6010B
Lead	EPA 200.7	EPA 6010B
Magnesium	EPA 200.7	EPA 6010B
Manganese	EPA 200.7	EPA 6010B
Mercury	EPA 200.7	EPA 6010B
	EPA 245.1	EPA 7470A
	EPA 245.5	EPA 7471A
Molybdenum	EPA 200.7	EPA 6010B
Nickel	EPA 200.7	EPA 6010B
Potassium	EPA 200.7	EPA 6010B

<u>Parameter/Analyte</u>	<u>Nonpotable Water</u>	<u>Solid Hazardous Waste</u>
<u>Metals</u>		
Selenium	EPA 200.7	EPA 6010B
Silver	EPA 200.7	EPA 6010B
Sodium	EPA 200.7	EPA 6010B
Thallium	EPA 200.7	EPA 6010B
Tin	EPA 200.7	EPA 6010B
Titanium	EPA 200.7	EPA 6010B
Vanadium	EPA 200.7	EPA 6010B
Zinc	EPA 200.7	EPA 6010B
<u>Nutrients</u>		
Ammonia (as N)	EPA 350.1	EPA 350.1
Kjeldahl nitrogen	SM 4500Norg	SM 4500Norg
Nitrate (as N)	EPA 300.0	EPA 9056
	EPA 353.2	
Nitrate-nitrite (as N)	EPA 300.0	EPA 9056
Nitrite (as N)	EPA 300.0	EPA 9056
	EPA 353.2	
Orthophosphate (as P)	EPA 300.0	EPA 9056
	EPA 365.1	
Total phosphorus	EPA 200.7	EPA 6010B
	EPA 365.1	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
<u>Wet Chemistry</u>		
Acidity	SM 2310B	SM 2310B
Alkalinity	SM 2320B	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	SW-846 3060A
		EPA 7196A
Color, ADMI	SM 2120C	-----
Conductivity	EPA 120.1	SW 846 9050A
	SM 2510B	
Cyanide	SM 4500 CN-C	EPA 9010B
	EPA 335.4	EPA 9014
Available Cyanide	SM 4500-CN-G	EPA 9010B
		EPA 9014
Weak Acid Dissociable Cyanide	SM 4500-CN-I	-----
Fluoride	EPA 300.0	EPA 9056
Hardness	SM 2340B	SM 2340B
pH	SM 4500-H <sup>+</sup> B	EPA9040C
		EPA9045D

<u>Parameter/Analyte</u>	<u>Nonpotable Water</u>	<u>Solid Hazardous Waste</u>
<u>Wet Chemistry</u>		
MBAS	SM5540C	-----
Oil and Grease	EPA 1664A	EPA 1664A EPA 9071B
Phenols	EPA 420.1	SM 5330C
Redox	SM 2580B	SM 2580B
Total residue	USGA 3750-85	USGA 3750-85
Filterable residue	USGS I-1750-85	USGS I-1750-85
Nonfilterable residue	USGS I-3765-85	USGS I-3765-85
Settleable residue	SM 2540F	EPA 160.5
Volatile Residue	USGA I-3753-85	USGA I-3753-85
Specific conductance		EPA 9050A
Sulfate	EPA 300.0	EPA 9056
	SM 4500 SO <sub>4</sub> E	SM 4500 SO <sub>4</sub> E
Sulfide	SM 4500 S <sup>2</sup> -DE	SM 4500 S <sup>2</sup> -DE
Surfactants	SM5540C	SM5540C
Temperature	EPA 170.1	EPA 170.1
Turbidity	EPA 180.1	EPA 180.1
Volatile Acids as Acetic	SM 5560C	SM5560C
<u>Microbiology</u>		
<i>E. coli</i>	EPA 1603	-----
Fecal coliform	SM 9222D	SM 9222D
Total coliform	SM 9222B	SM 9222B
	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
Bromodichloromethane	EPA 624	EPA 8260B
Bromoform	EPA 624	EPA 8260B
Bromomethane	EPA 624	EPA 8260B
2-Butanone	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
Dibromochloromethane	EPA 624	EPA 8260B
1,2-Dibromo-3-chloropropane (DBCP)	EPA 624	EPA 8260B
Dibromomethane	EPA 624	EPA 8260B

<u>Parameter/Analyte</u>	<u>Nonpotable Water</u>	<u>Solid Hazardous Waste</u>
<u>Purgeable Organics</u>		
<u>(Volatiles)</u>		
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
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
Methyl-t-butylether(MTBE)	EPA 624	EPA 8260B
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
TotalPetroleum Hydrocarbons (TPH)	EPA 1664A	EPA 1664A
1,1,1-Trichloroethane	EPA 624	EPA 8260B
1,1,2-Trichloroethane	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>Parameter/Analyte</u>	<u>Nonpotable Water</u>	<u>Solid Hazardous Waste</u>
<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
2-sec-Butyl-4,6-dinitrophenol	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

<u>Parameter/Analyte</u>	<u>Nonpotable Water</u>	<u>Solid Hazardous Waste</u>
<u>Extractable Organics (semivolatiles)</u>		
Isophorone	EPA 625	EPA 8270C
2-Methyl-4,6-Dinitrophenol	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
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
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>		
PCB-1016 (Arochlor)	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
<u>Hazardous Waste Characteristics</u>		
Corrosivity	-----	SW 846 Ch 7 EPA 9040B EPA 9045C
Oxidizer Scéen	-----	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	-----	EPA SW 846 Ch 7

<u>Parameter/Analyte</u>	<u>Kentucky UST Program</u> <u>Nonpotable Water</u>	<u>Solid Hazardous Waste</u>
<u>Metals</u>		
Cadmium	EPA 6010B	EPA 6010B
Chromium	EPA 6010B	EPA 6010B
Lead	EPA 6010B	EPA 6010B
<u>Purgeable Organics (volatiles)</u>		
Benzene	EPA 8260B	EPA 8260B
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
Acenaphthene	EPA 625	EPA 8270C
Acenaphthylene	EPA 625	EPA 8270C
Anthracene	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
Chrysene	EPA 625	EPA 8270C
Dibenzo (a,h) anthracene	EPA 625	EPA 8270C
Fluoroanthene	EPA 625	EPA 8270C
Fluorene	EPA 625	EPA 8270C
Indeno (1,2,3-cd) pyrene	EPA 625	EPA 8270C
Isophorone	EPA 625	EPA 8270C
Naphthalene	EPA 625	EPA 8270C
Phenanthrene	EPA 625	EPA 8270C
Pyrene	EPA 625	EPA 8270C