

COMMONWEALTH OF KENTUCKY

Energy and Environment Cabinet

2021

Wastewater Laboratory Certification Program
In Accordance with KRS 224.10-670 and 401 KAR Chapter 5:320



THIS CERTIFIES THAT

Microbac Laboratories, Inc. - Louisville
3323 Gilmore Industrial Blvd
Louisville, KY 40213
Laboratory ID Number: KY00074



The above laboratory has complied with Kentucky Administrative Regulation 401 KAR 5:320, Wastewater Laboratory Certification Program, for the analyses of wastewater samples, as specified in 33 U.S.C. 1342, for the method-analyte pairs specified on the attached certification list.

Effective From: January 1, 2021

To: December 31, 2021

Kevin Stewart

Certification Program Manager

Signed by: Kevin Stewart

Microbac Laboratories, Inc. - Louisville
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Effective: May 18, 2021

KY Category	CAS #	Analyte	Status	Reference Method	Method Code for PT Reporting	MRL	MRL Units
Field	7782-50-5	Chlorine, Free Available	Certified	SM 4500-Cl G-2011	20081623	0.02	mg/L
Field	7782-50-5	Chlorine, Total Residual	Certified	HACH 8167	60003807	0.02	mg/L
Field		Oxygen, Dissolved	Certified	SM 4500-O G-2011	20121668	0.10	mg/L
Field		Specific Conductance	Certified	SM 2510 B-2011	20048617	10	umhos/cm
Field	14265-45-3	Sulfite (as SO ₃)	Certified	SM 4500-SO ₃ ⁻ B-2011	20130636	4	mg/L
Field		Temperature	Certified	SM 2550 B-2010	20053229		degrees Celsius
Field		Turbidity	Certified	SM 2130 B-2011	20048220	1	NTU
Field		pH	Certified	SM 4500-H+ B-2011	20105220	1	S.U.
Inorganic/General Chemistry		Acidity, Total (as CaCO ₃)	Certified	SM 2310 B-2011	20044615	5	mg/L
Inorganic/General Chemistry		Alkalinity, Total (as CaCO ₃)	Certified	SM 2320 B-2011	20045618	5	mg/L
Inorganic/General Chemistry	7664-41-7	Ammonia	Certified	SM 4500-NH ₃ G-2011	20111415	0.5	mg/L
Inorganic/General Chemistry		BOD, 5-day	Certified	SM 5210 B-2011	20135266	5	mg/L
Inorganic/General Chemistry	24959-67-9	Bromide	Certified	EPA 300.0 Rev 2.1 (1993)	10053006	0.5	mg/L
Inorganic/General Chemistry		Carbon, Total Organic	Interim	SM 5310 C-2011	20138823	0.5	mg/L
Inorganic/General Chemistry		Carbonaceous Biochemical Oxygen Demand (CBOD ₅)	Certified	SM 5210 B-2011	20135266	5	mg/L
Inorganic/General Chemistry		Chemical Oxygen Demand (COD)	Certified	SM 5220 D-2011	20136816	25	mg/L
Inorganic/General Chemistry	16887-00-6	Chloride	Certified	EPA 300.0 Rev 2.1 (1993)	10053006	0.50	mg/L
Inorganic/General Chemistry	16887-00-6	Chloride	Certified	SM 4500-Cl ⁻ E-2011	20086811	30	mg/L
Inorganic/General Chemistry		Chromium (VI)	Certified	SM 3500-Cr B-2011	20066266	0.01	mg/L
Inorganic/General Chemistry		Cyanide - Available	Interim	SM 4500-CN ⁻ G-2011	20097227	0.01	mg/L
Inorganic/General Chemistry	57-12-5	Cyanide, Total (as Cn)	Interim	SM 4500-CN ⁻ E-2011	20096428	0.01	mg/L



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Inorganic/General Chemistry	16984-48-8	Fluoride	Certified	EPA 300.0 Rev 2.1 (1993)	10053006	0.5	mg/L
Inorganic/General Chemistry		Hardness, Total (as CaCO ₃)	Certified	SM 2340 B-2011	20046611		mg/L
Inorganic/General Chemistry	84145-82-4	Nitrate	Certified	EPA 300.0 Rev 2.1 (1993)	10053006	0.2	mg/L
Inorganic/General Chemistry		Nitrate-Nitrite (as N)	Certified	EPA 300.0 Rev 2.1 (1993)	10053006	0.2	mg/L
Inorganic/General Chemistry	14797-65-0	Nitrite	Certified	EPA 300.0 Rev 2.1 (1993)	10053006	0.2	mg/L
Inorganic/General Chemistry		Nitrogen, Kjeldahl Total (TKN)	Interim	EPA 351.2 Rev. 2.0 (1993)	10065404	2	mg/L
Inorganic/General Chemistry		Nitrogen, Kjeldahl Total (TKN)	Certified	SM 4500-NH ₃ G-2011	20111415	0.8	mg/L
Inorganic/General Chemistry		Nitrogen, Organic Total (as N)	Certified	Calculation			mg/L
Inorganic/General Chemistry	7727-37-9	Nitrogen, Total	Certified	Calculation			mg/L
Inorganic/General Chemistry		Oil and Grease	Certified	EPA 1664 Rev. B	10261617	5	mg/L
Inorganic/General Chemistry	64743-03-9	Phenolics, Total	Interim	EPA 420.4 Rev. 1.0 (1993)	10080203	0.05	mg/L
Inorganic/General Chemistry	7723-14-0	Phosphorus, Total (as P)	Certified	EPA 200.7, Rev. 4.4 (1994)	10013806	0.09	mg/L
Inorganic/General Chemistry	7723-14-0	Phosphorus, Total (as P)	Certified	EPA 365.1 Rev. 2.0 (1993)	10070005	0.05	mg/L
Inorganic/General Chemistry		Solids, Settleable	Certified	SM 2540 F-2011	20052215	0.1	ml/l/hr
Inorganic/General Chemistry		Solids, Total	Certified	USGS B5, Ch A1 (1989) I-3750-85	40010808	20	mg/L
Inorganic/General Chemistry		Solids, Total Dissolved	Certified	SM 2540 C-2011	20050413	10	mg/L
Inorganic/General Chemistry		Solids, Total Suspended (TSS)	Certified	USGS I-3765-85 (1989)	40011209	5	mg/L
Inorganic/General Chemistry		Solids, Volatile (Residue, Volatile)	Certified	USGS B5, Ch A1 (1989) I-3753-85	40011005	20	mg/L
Inorganic/General Chemistry	14808-79-8	Sulfate, Total (as SO ₄)	Certified	EPA 300.0 Rev 2.1 (1993)	10053006	0.5	mg/L
Inorganic/General Chemistry	18496-25-8	Sulfide, Total (as S)	Certified	SM 4500-S ₂ ⁻ D-2011	20125864	0.04	mg/L
Inorganic/General Chemistry		Surfactants (MBAS)	Certified	SM 5540 C-2011	20145066	0.5	mg/L
Inorganic/General Chemistry	264888-19-9	o-Phosphate	Certified	EPA 300.0 Rev 2.1 (1993)	10053006	0.2	mg/L



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Inorganic/General Chemistry	264888-19-9	o-Phosphate	Certified	EPA 365.1 Rev. 2.0 (1993)	10070005	0.2	mg/L
Inorganic/Metals	7429-90-5	Aluminum, Total (as Al)	Certified	EPA 200.7, Rev. 4.4 (1994)	10013806	2	mg/L
Inorganic/Metals	7429-90-5	Aluminum, Total (as Al)	Certified	EPA 200.8, Rev. 5.4 (1994)	10014605	50	ug/L
Inorganic/Metals	7440-36-0	Antimony, Total (as Sb)	Certified	EPA 200.7, Rev. 4.4 (1994)	10013806	0.09	mg/L
Inorganic/Metals	7440-36-0	Antimony, Total (as Sb)	Certified	EPA 200.8, Rev. 5.4 (1994)	10014605	6	ug/L
Inorganic/Metals	7440-38-2	Arsenic, Total (as As)	Certified	EPA 200.7, Rev. 4.4 (1994)	10013806	0.1	mg/L
Inorganic/Metals	7440-38-2	Arsenic, Total (as As)	Certified	EPA 200.8, Rev. 5.4 (1994)	10014605	10	ug/L
Inorganic/Metals	7440-39-3	Barium, Total (as Ba)	Certified	EPA 200.7, Rev. 4.4 (1994)	10013806	0.02	mg/L
Inorganic/Metals	7440-39-3	Barium, Total (as Ba)	Certified	EPA 200.8, Rev. 5.4 (1994)	10014605	2	ug/L
Inorganic/Metals	7440-41-7	Beryllium, Total	Certified	EPA 200.7, Rev. 4.4 (1994)	10013806	0.004	mg/L
Inorganic/Metals	7440-41-7	Beryllium, Total	Certified	EPA 200.8, Rev. 5.4 (1994)	10014605	4	ug/L
Inorganic/Metals	7440-42-8	Boron	Certified	EPA 200.7, Rev. 4.4 (1994)	10013806	0.5	mg/L
Inorganic/Metals	7440-43-9	Cadmium, Total (as Cd)	Certified	EPA 200.7, Rev. 4.4 (1994)	10013806	0.01	mg/L
Inorganic/Metals	7440-43-9	Cadmium, Total (as Cd)	Certified	EPA 200.8, Rev. 5.4 (1994)	10014605	5	ug/L
Inorganic/Metals	7440-70-2	Calcium, total [as Ca]	Certified	EPA 200.7, Rev. 4.4 (1994)	10013806	0.5	mg/L
Inorganic/Metals	7440-47-3	Chromium, Total (as Cr)	Certified	EPA 200.7, Rev. 4.4 (1994)	10013806	0.007	mg/L
Inorganic/Metals	7440-47-3	Chromium, Total (as Cr)	Certified	EPA 200.8, Rev. 5.4 (1994)	10014605	100	ug/L
Inorganic/Metals	7440-48-4	Cobalt, Total	Certified	EPA 200.7, Rev. 4.4 (1994)	10013806	0.03	mg/L
Inorganic/Metals	7440-48-4	Cobalt, Total	Certified	EPA 200.8, Rev. 5.4 (1994)	10014605	4.7	ug/L
Inorganic/Metals	7440-50-8	Copper, Total	Certified	EPA 200.7, Rev. 4.4 (1994)	10013806	0.009	mg/L
Inorganic/Metals	7440-50-8	Copper, Total	Certified	EPA 200.8, Rev. 5.4 (1994)	10014605	25	ug/L
Inorganic/Metals	7439-89-6	Iron, Total (as Fe)	Certified	EPA 200.7, Rev. 4.4 (1994)	10013806	0.3	mg/L
Inorganic/Metals	7439-89-6	Iron, Total (as Fe)	Certified	EPA 200.8, Rev. 5.4 (1994)	10014605	100	ug/L



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Inorganic/Metals	7439-92-1	Lead, Total (as Pb)	Certified	EPA 200.7, Rev. 4.4 (1994)	10013806	0.1	mg/L
Inorganic/Metals	7439-92-1	Lead, Total (as Pb)	Certified	EPA 200.8, Rev. 5.4 (1994)	10014605	15	ug/L
Inorganic/Metals	7439-95-4	Magnesium, Total (as Mg)	Certified	EPA 200.7, Rev. 4.4 (1994)	10013806	0.6	mg/L
Inorganic/Metals	7439-96-5	Manganese, Total (as Mn)	Certified	EPA 200.7, Rev. 4.4 (1994)	10013806	0.03	mg/L
Inorganic/Metals	7439-96-5	Manganese, Total (as Mn)	Certified	EPA 200.8, Rev. 5.4 (1994)	10014605	50	ug/L
Inorganic/Metals	7439-98-7	Molybdenum, Total (as Mo)	Certified	EPA 200.7, Rev. 4.4 (1994)	10013806	0.1	mg/L
Inorganic/Metals	7439-98-7	Molybdenum, Total (as Mo)	Certified	EPA 200.8, Rev. 5.4 (1994)	10014605	78	ug/L
Inorganic/Metals	7440-02-0	Nickel, Total (as Ni)	Certified	EPA 200.7, Rev. 4.4 (1994)	10013806	0.04	mg/L
Inorganic/Metals	7440-02-0	Nickel, Total (as Ni)	Certified	EPA 200.8, Rev. 5.4 (1994)	10014605	100	ug/L
Inorganic/Metals	7440-09-7	Potassium, Total (as K)	Certified	EPA 200.7, Rev. 4.4 (1994)	10013806	2	mg/L
Inorganic/Metals	7782-49-2	Selenium, Total (as Se)	Certified	EPA 200.7, Rev. 4.4 (1994)	10013806	0.05	mg/L
Inorganic/Metals	7782-49-2	Selenium, Total (as Se)	Certified	EPA 200.8, Rev. 5.4 (1994)	10014605	1	ug/L
Inorganic/Metals	7440-22-4	Silver, Total (as Ag)	Certified	EPA 200.7, Rev. 4.4 (1994)	10013806	0.06	mg/L
Inorganic/Metals	7440-23-5	Sodium, Total (as Na)	Certified	EPA 200.7, Rev. 4.4 (1994)	10013806	0.5	mg/L
Inorganic/Metals	7440-28-0	Thallium, Total	Certified	EPA 200.7, Rev. 4.4 (1994)	10013806	0.06	mg/L
Inorganic/Metals	7440-28-0	Thallium, Total	Certified	EPA 200.8, Rev. 5.4 (1994)	10014605	2	ug/L
Inorganic/Metals	7440-31-5	Tin, Total	Certified	EPA 200.7, Rev. 4.4 (1994)	10013806	0.06	mg/L
Inorganic/Metals	7440-32-6	Titanium, Total (as Ti)	Certified	EPA 200.7, Rev. 4.4 (1994)	10013806	0.01	mg/L
Inorganic/Metals	7440-62-2	Vanadium, Total	Certified	EPA 200.7, Rev. 4.4 (1994)	10013806	0.02	mg/L
Inorganic/Metals	7440-62-2	Vanadium, Total	Certified	EPA 200.8, Rev. 5.4 (1994)	10014605	78	ug/L
Inorganic/Metals	7440-66-6	Zinc, Total (as Zn)	Certified	EPA 200.7, Rev. 4.4 (1994)	10013806	0.09	mg/L
Inorganic/Metals	7440-66-6	Zinc, Total (as Zn)	Certified	EPA 200.8, Rev. 5.4 (1994)	10014605	25	ug/L
Microbiology		Coliform, Fecal	Certified	Colilert-18 [®]	60002622	1	MPN/100mL



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Microbiology		E. Coli	Certified	Colilert ®	60002644	1	MPN/100mL
Microbiology		E. Coli	Certified	Colilert-18 ®	60002622	1	MPN/100mL
Microbiology		Enterococci	Certified	ASTM D6503-99	30032407	1	MPN/100mL
ORG/Volatiles	71-55-6	1,1,1-Trichloroethane	Interim	EPA 624.1	10298121	0.02	mg/L
ORG/Volatiles	79-34-5	1,1,2,2-Tetrachloroethane	Interim	EPA 624.1	10298121	0.01	mg/L
ORG/Volatiles	79-00-5	1,1,2-Trichloroethane	Interim	EPA 624.1	10298121	0.01	mg/L
ORG/Volatiles	75-34-3	1,1-Dichloroethane	Interim	EPA 624.1	10298121	0.02	mg/L
ORG/Volatiles	75-35-4	1,1-Dichloroethylene	Interim	EPA 624.1	10298121	0.01	mg/L
ORG/Volatiles	95-50-1	1,2-Dichlorobenzene	Interim	EPA 624.1	10298121	0.005	mg/L
ORG/Volatiles	107-06-2	1,2-Dichloroethane (EDC)	Interim	EPA 624.1	10298121	0.005	mg/L
ORG/Volatiles	78-87-5	1,2-Dichloropropane	Interim	EPA 624.1	10298121	0.01	mg/L
ORG/Volatiles	541-73-1	1,3-Dichlorobenzene	Interim	EPA 624.1	10298121	0.02	mg/L
ORG/Volatiles	106-46-7	1,4-Dichlorobenzene	Interim	EPA 624.1	10298121	0.01	mg/L
ORG/Volatiles	110-75-8	2-Chloroethyl Vinyl Ether	Interim	EPA 624.1	10298121	0.006	mg/L
ORG/Volatiles	107-02-8	Acrolein	Interim	EPA 624.1	10298121	0.05	mg/L
ORG/Volatiles	107-13-1	Acrylonitrile	Interim	EPA 624.1	10298121	0.02	mg/L
ORG/Volatiles	71-43-2	Benzene	Interim	EPA 624.1	10298121	0.02	mg/L
ORG/Volatiles	75-27-4	Bromodichloromethane	Interim	EPA 624.1	10298121	0.01	mg/L
ORG/Volatiles	74-83-9	Bromomethane (Methyl bromide)	Interim	EPA 624.1	10298121	0.02	mg/L
ORG/Volatiles	56-23-5	Carbon Tetrachloride	Interim	EPA 624.1	10298121	0.01	mg/L
ORG/Volatiles	108-90-7	Chlorobenzene	Interim	EPA 624.1	10298121	0.01	mg/L
ORG/Volatiles	124-48-1	Chlorodibromomethane	Interim	EPA 624.1	10298121	0.01	mg/L



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ORG/Volatiles	75-00-3	Chloroethane	Interim	EPA 624.1	10298121	0.02	mg/L
ORG/Volatiles	67-66-3	Chloroform	Interim	EPA 624.1	10298121	0.02	mg/L
ORG/Volatiles	75-09-2	Dichloromethane (Methylene chloride)	Interim	EPA 624.1	10298121	0.06	mg/L
ORG/Volatiles	100-41-4	Ethylbenzene	Interim	EPA 624.1	10298121	0.02	mg/L
ORG/Volatiles	74-87-3	Methyl chloride	Interim	EPA 624.1	10298121	0.06	mg/L
ORG/Volatiles	127-18-4	Tetrachloroethylene (PCE)	Interim	EPA 624.1	10298121	0.01	mg/L
ORG/Volatiles	108-88-3	Toluene	Interim	EPA 624.1	10298121	0.01	mg/L
ORG/Volatiles	75-25-2	Tribromomethane	Interim	EPA 624.1	10298121	0.01	mg/L
ORG/Volatiles	79-01-6	Trichloroethylene	Interim	EPA 624.1	10298121	0.01	mg/L
ORG/Volatiles	75-69-4	Trichlorofluoromethane	Interim	EPA 624.1	10298121	0.02	mg/L
ORG/Volatiles	75-01-4	Vinyl Chloride	Interim	EPA 624.1	10298121	0.01	mg/L
ORG/Volatiles	10061-01-5	cis-1,3-Dichloropropene	Interim	EPA 624.1	10298121	0.009	mg/L
ORG/Volatiles	156-60-5	trans-1,2-Dichloroethylene	Interim	EPA 624.1	10298121	0.02	mg/L
ORG/Volatiles	10061-02-6	trans-1,3-Dichloropropene	Interim	EPA 624.1	10298121	0.01	mg/L
Toxicity		Ceriodaphnia dubia	Interim	EPA 1002.0 (2002)	10215200	1	TUc
Toxicity		Ceriodaphnia dubia	Interim	EPA 2002.0 (2002)	10214901	1	TUa
Toxicity		Daphnia magna	Interim	EPA 2021.0 (2002)	10215391	1	TUa
Toxicity		Pimephales promelas	Interim	EPA 1000.0 (2002)	10214003	1	TUc
Toxicity		Pimephales promelas	Interim	EPA 2000.0 (2002)	10213419	1	TUa

