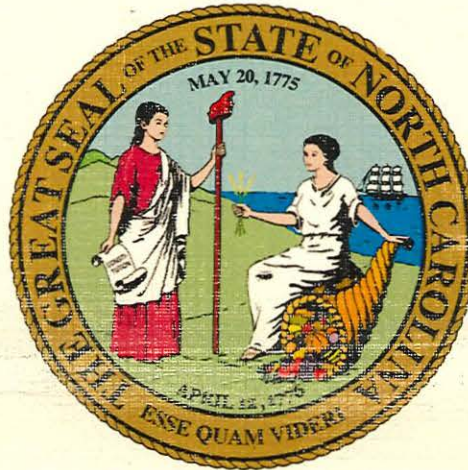


DIVISION OF WATER RESOURCES LABORATORY CERTIFICATION BRANCH

In accordance with the provisions of N.C.G.S. 143-215.3 (a) (1), 143-215.3 (a)(10) and NCAC 2H.0800:



2019

Microbac Laboratories Inc. Ohio Valley Division

Is hereby certified to perform environmental analysis as listed on Attachment I and report monitoring data to DEQ for compliance with NPDES effluent, surface water, groundwater, and pretreatment regulations.

By reference 15A NCAC 2H .0800 is made a part of this certificate.

This certificate does not guarantee validity of data generated, but indicates the methodology, equipment, quality control procedures, records, and proficiency of the laboratory have been examined and found to be acceptable.

This certificate shall be valid until 12/31/2019

Certificate No. 583

A handwritten signature in black ink, appearing to read "Dana B. Satterwhite", is written over a horizontal line.

Dana B. Satterwhite

North Carolina Wastewater/Groundwater Laboratory Certification

Certified Parameters Listing

Lab Name: Microbac Laboratories Inc. Ohio Valley Division
 Address: 158 Starlite Drive
 Marietta, OH 45750-

Certificate Number: 583
 Effective Date: 1/1/2019
 Expiration Date: 12/31/2019
 Date of Last Amendment: 7/1/2019

The above named laboratory, having duly met the requirements of 15A NCAC 2H.0800, is hereby certified for the measurement of the parameters listed below.

CERTIFIED PARAMETERS

INORGANIC

ALKALINITY

SM 2320 B-2011 (Aqueous)

BROMIDE

EPA 300.0, Rev. 2.1, 1993 (Aqueous)

CHLORIDE

SM 4500 Cl⁻ E-2011 (Aqueous)

EPA 300.0, Rev. 2.1, 1993 (Aqueous)

EPA 300.0, Rev. 2.1, 1993 (Non-Aqueous)

SW-846 9056 A (Aqueous)

SW-846 9056 A (Non-Aqueous)

COD

EPA 410.4, Rev. 2.0, 1993 (Aqueous)

Hach 8000 (Aqueous)

CYANIDE

SW-846 9014 (Amenable) (Colorimetric) (Aqueous)

SW-846 9014 (Amenable) (Colorimetric) (Non-Aqueous)

SW-846 9014 (Total) (Colorimetric) (Aqueous)

SW-846 9014 (Total) (Colorimetric) (Non-Aqueous)

SM 4500 CN⁻ E-2011 (Total) (Aqueous)

FLASH POINT

SW-846 1010 A (Pensky-Martens) (Aqueous)

FLUORIDE

EPA 300.0, Rev. 2.1, 1993 (Aqueous)

SW-846 9056 A (Aqueous)

HARDNESS TOTAL - WET CHEM

SM 2340 C-2011 (Aqueous)

INORGANIC PHENOLS

EPA 420.1, Rev. 1978 (Aqueous)

NITROGEN, AMMONIA

EPA 350.1, Rev. 2.0, 1993 (Aqueous)

NITROGEN, NITRATE

EPA 300.0, Rev. 2.1, 1993 (Aqueous)

SW-846 9056 A (Aqueous)

NITROGEN, NITRITE

EPA 300.0, Rev. 2.1, 1993 (Aqueous)

EPA 300.0, Rev. 2.1, 1993 (Non-Aqueous)

SW-846 9056 A (Aqueous)

SW-846 9056 A (Non-Aqueous)

NITROGEN, NO₃ + NO₂

EPA 353.2, Rev. 2.0, 1993 (Aqueous)

NITROGEN, TOTAL KJELDAHL

EPA 351.2, Rev. 2.0, 1993 (Aqueous)

OIL & GREASE

EPA 1664 Rev. B (Aqueous)

ORGANIC CARBON, TOTAL

SM 5310 C-2011 (UV Oxidation) (Aqueous)

PAINT FILTER LIQUIDS

SW-846 9095B

pH

SM 4500 H+B-2011 (Aqueous)

SW-846 9040 C (Aqueous)

SW-846 9045 D (Non-Aqueous)

PHOSPHATE, ORTHO

SM 4500 P E-2011 (Aqueous)

PHOSPHORUS, TOTAL

EPA 365.4, 1974 (Aqueous)

RESIDUE, DISSOLVED 180 C

SM 2540 C-2011 (Aqueous)

RESIDUE, SUSPENDED

SM 2540 D-2011 (Aqueous)

SULFATE

EPA 300.0, Rev. 2.1, 1993 (Aqueous)

EPA 300.0, Rev. 2.1, 1993 (Non-Aqueous)

SW-846 9056 A (Aqueous)

SW-846 9056 A (Non-Aqueous)

SULFIDE

SW-846 9034 (Non-Aqueous)

METAL

ALUMINUM

North Carolina Wastewater/Groundwater Laboratory Certification

Certified Parameters Listing

Lab Name: Microbac Laboratories Inc. Ohio Valley Division
Address: 158 Starlite Drive
Marietta, OH 45750-

Certificate Number: 583
Effective Date: 1/1/2019
Expiration Date: 12/31/2019
Date of Last Amendment: 7/1/2019

The above named laboratory, having duly met the requirements of 15A NCAC 2H.0800, is hereby certified for the measurement of the parameters listed below.

CERTIFIED PARAMETERS

EPA 200.7, Rev. 4.4, 1994 (Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)
SW-846 6010 D (Aqueous)
SW-846 6010 D (Non-Aqueous)

ANTIMONY

EPA 200.7, Rev. 4.4, 1994 (Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)
SW-846 6010 D (Aqueous)
SW-846 6010 D (Non-Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Non-Aqueous)
SW-846 6020 B (Aqueous)
SW-846 6020 B (Non-Aqueous)

ARSENIC

EPA 200.7, Rev. 4.4, 1994 (Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)
SW-846 6010 D (Aqueous)
SW-846 6010 D (Non-Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Non-Aqueous)
SW-846 6020 B (Aqueous)
SW-846 6020 B (Non-Aqueous)

BARIUM

EPA 200.7, Rev. 4.4, 1994 (Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)
SW-846 6010 D (Aqueous)
SW-846 6010 D (Non-Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Non-Aqueous)
SW-846 6020 B (Aqueous)
SW-846 6020 B (Non-Aqueous)

BERYLLIUM

EPA 200.7, Rev. 4.4, 1994 (Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)
SW-846 6010 D (Aqueous)

SW-846 6010 D (Non-Aqueous)

BORON

EPA 200.7, Rev. 4.4, 1994 (Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)
SW-846 6010 D (Aqueous)
SW-846 6010 D (Non-Aqueous)
SW-846 6020 B (Aqueous)
SW-846 6020 B (Non-Aqueous)

CADMIUM

EPA 200.7, Rev. 4.4, 1994 (Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)
SW-846 6010 D (Aqueous)
SW-846 6010 D (Non-Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Non-Aqueous)
SW-846 6020 B (Aqueous)
SW-846 6020 B (Non-Aqueous)

CALCIUM

EPA 200.7, Rev. 4.4, 1994 (Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)
SW-846 6010 D (Aqueous)
SW-846 6010 D (Non-Aqueous)

CHROMIUM HEXAVALENT

SM 3500-Cr-B-2011 (Aqueous)
SW-846 7196 A (Aqueous)
SW-846 7196 A (Non-Aqueous)

CHROMIUM TOTAL

EPA 200.7, Rev. 4.4, 1994 (Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)
SW-846 6010 D (Aqueous)
SW-846 6010 D (Non-Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Non-Aqueous)
SW-846 6020 B (Aqueous)
SW-846 6020 B (Non-Aqueous)

North Carolina Wastewater/Groundwater Laboratory Certification

Certified Parameters Listing

Lab Name: Microbac Laboratories Inc. Ohio Valley Division
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Marietta, OH 45750-

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CERTIFIED PARAMETERS

COBALT	SW-846 6010 D (Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Aqueous)	SW-846 6010 D (Non-Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)	MANGANESE
SW-846 6010 D (Aqueous)	EPA 200.7, Rev. 4.4, 1994 (Aqueous)
SW-846 6010 D (Non-Aqueous)	EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)	SW-846 6010 D (Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Non-Aqueous)	SW-846 6010 D (Non-Aqueous)
SW-846 6020 B (Aqueous)	EPA 200.8, Rev. 5.4, 1994 (Aqueous)
SW-846 6020 B (Non-Aqueous)	EPA 200.8, Rev. 5.4, 1994 (Non-Aqueous)
COPPER	SW-846 6020 B (Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Aqueous)	SW-846 6020 B (Non-Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)	MERCURY
SW-846 6010 D (Aqueous)	EPA 245.1, Rev. 3.0, 1994 (Aqueous)
SW-846 6010 D (Non-Aqueous)	SW-846 7470 A (Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)	SW-846 7471 B (Non-Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Non-Aqueous)	MOLYBDENUM
SW-846 6020 B (Aqueous)	EPA 200.7, Rev. 4.4, 1994 (Aqueous)
SW-846 6020 B (Non-Aqueous)	EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)
IRON	SW-846 6010 D (Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Aqueous)	SW-846 6010 D (Non-Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)	NICKEL
SW-846 6010 D (Aqueous)	EPA 200.7, Rev. 4.4, 1994 (Aqueous)
SW-846 6010 D (Non-Aqueous)	EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)
LEAD	SW-846 6010 D (Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Aqueous)	SW-846 6010 D (Non-Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)	EPA 200.8, Rev. 5.4, 1994 (Aqueous)
SW-846 6010 D (Aqueous)	EPA 200.8, Rev. 5.4, 1994 (Non-Aqueous)
SW-846 6010 D (Non-Aqueous)	SW-846 6020 B (Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)	SW-846 6020 B (Non-Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Non-Aqueous)	POTASSIUM
SW-846 6020 B (Aqueous)	EPA 200.7, Rev. 4.4, 1994 (Aqueous)
SW-846 6020 B (Non-Aqueous)	EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)
MAGNESIUM	SW-846 6010 D (Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Aqueous)	SW-846 6010 D (Non-Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)	SELENIUM

North Carolina Wastewater/Groundwater Laboratory Certification

Certified Parameters Listing

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CERTIFIED PARAMETERS

EPA 200.7, Rev. 4.4, 1994 (Aqueous)	SW-846 6020 B (Non-Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)	TIN
SW-846 6010 D (Aqueous)	EPA 200.7, Rev. 4.4, 1994 (Aqueous)
SW-846 6010 D (Non-Aqueous)	EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)	SW-846 6010 D (Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Non-Aqueous)	SW-846 6010 D (Non-Aqueous)
SW-846 6020 B (Aqueous)	TITANIUM
SW-846 6020 B (Non-Aqueous)	EPA 200.7, Rev. 4.4, 1994 (Aqueous)
SILVER	EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Aqueous)	SW-846 6010 D (Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)	SW-846 6010 D (Non-Aqueous)
SW-846 6010 D (Aqueous)	VANADIUM
SW-846 6010 D (Non-Aqueous)	EPA 200.7, Rev. 4.4, 1994 (Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)	EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Non-Aqueous)	SW-846 6010 D (Aqueous)
SW-846 6020 B (Aqueous)	SW-846 6010 D (Non-Aqueous)
SW-846 6020 B (Non-Aqueous)	ZINC
SODIUM	EPA 200.7, Rev. 4.4, 1994 (Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Aqueous)	EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)	SW-846 6010 D (Aqueous)
SW-846 6010 D (Aqueous)	SW-846 6010 D (Non-Aqueous)
SW-846 6010 D (Non-Aqueous)	EPA 200.8, Rev. 5.4, 1994 (Aqueous)
STRONTIUM	EPA 200.8, Rev. 5.4, 1994 (Non-Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Aqueous)	SW-846 6020 B (Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)	SW-846 6020 B (Non-Aqueous)
SW-846 6010 D (Aqueous)	ORGANIC
SW-846 6010 D (Non-Aqueous)	BASE NEUTRAL/ACID, ORGANICS
THALLIUM	EPA 625.1 (Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Aqueous)	SW-846 8270 E (Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)	SW-846 8270 E (Non-Aqueous)
SW-846 6010 D (Aqueous)	CHLORINATED ACID HERBICIDES
SW-846 6010 D (Non-Aqueous)	SW-846 8151 A (Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)	SW-846 8151 A (Non-Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Non-Aqueous)	NITROAROMATICS & NITRAMINES
SW-846 6020 B (Aqueous)	SW-846 8330 A (Aqueous)

North Carolina Wastewater/Groundwater Laboratory Certification

Certified Parameters Listing

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Marietta, OH 45750-

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CERTIFIED PARAMETERS

SW-846 8330 A (Non-Aqueous)

PESTICIDES, ORGANOCHLORINE

EPA 608.3 (Aqueous)

SW-846 8081 B (Aqueous)

SW-846 8081 B (Non-Aqueous)

POLYCHLORINATED BIPHENYLS (PCBs)

EPA 608.3 (Aqueous)

SW-846 8082 A (Aqueous)

SW-846 8082 A (Non-Aqueous)

SW-846 8082 A (Oil)

PURGEABLE, ORGANICS

EPA 624.1 (Aqueous)

SW-846 8260 D (Aqueous)

SW-846 8260 D (Non-Aqueous)

TPH DIESEL RANGE, ORGANICS

SW-846 8015 C (Aqueous)

SW-846 8015 C (Non-Aqueous)

TPH GASOLINE RANGE, ORGANICS

SW-846 8015 C (Aqueous)

SW-846 8015 C (Non-Aqueous)