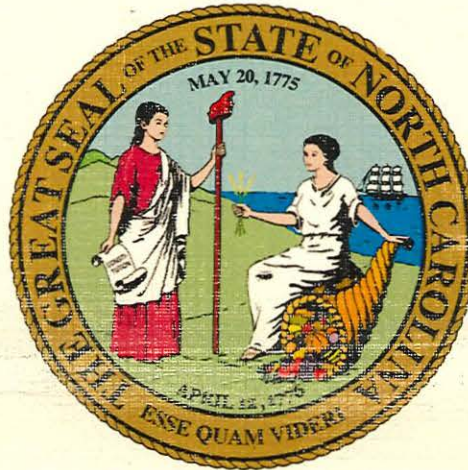


DIVISION OF WATER RESOURCES LABORATORY CERTIFICATION BRANCH

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: 2/28/2019

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

<p>INORGANIC</p> <p>ALKALINITY SM 2320 B-2011 (Aqueous)</p> <p>BROMIDE EPA 300.0, Rev. 2.1, 1993 (Aqueous)</p> <p>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)</p> <p>COD EPA 410.4, Rev. 2.0, 1993 (Aqueous) Hach 8000 (Aqueous)</p> <p>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)</p> <p>FLUORIDE EPA 300.0, Rev. 2.1, 1993 (Aqueous) SW-846 9056 A (Aqueous)</p> <p>HARDNESS TOTAL SM 2340 C-2011 (Aqueous)</p> <p>IGNITABILITY SW-846 1010 A (Pensky-Martens) (Aqueous)</p> <p>INORGANIC PHENOLS EPA 420.1, Rev. 1978 (Aqueous)</p> <p>LEACHATE PROCEDURE SW-846 1312 Metals (Aqueous) SW-846 1312 Metals (Non-Aqueous) SW-846 1312 Organics (Aqueous) SW-846 1312 Organics (Non-Aqueous) SW-846 1311 Metals (Aqueous)</p>	<p>SW-846 1311 Metals (Non-Aqueous)</p> <p>SW-846 1311 Organics (Aqueous) SW-846 1311 Organics (Non-Aqueous)</p> <p>NITROGEN, AMMONIA EPA 350.1, Rev. 2.0, 1993 (Aqueous)</p> <p>NITROGEN, NITRATE EPA 300.0, Rev. 2.1, 1993 (Aqueous) SW-846 9056 A (Aqueous)</p> <p>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)</p> <p>NITROGEN, NO₃ + NO₂ EPA 353.2, Rev. 2.0, 1993 (Aqueous)</p> <p>NITROGEN, TOTAL KJELDAHL EPA 351.2, Rev. 2.0, 1993 (Aqueous)</p> <p>OIL & GREASE EPA 1664 Rev. B (Aqueous)</p> <p>ORGANIC CARBON, TOTAL SM 5310 C-2011 (UV Oxidation) (Aqueous)</p> <p>PAINT FILTER LIQUIDS SW-846 9095B</p> <p>pH SM 4500 H+B-2011 (Aqueous) SW-846 9040 C (Aqueous) SW-846 9045 D (Non-Aqueous)</p> <p>PHOSPHATE, ORTHO SM 4500 P E-2011 (Aqueous)</p> <p>PHOSPHORUS, TOTAL EPA 365.4, 1974 (Aqueous)</p> <p>RESIDUE, DISSOLVED 180 C SM 2540 C-2011 (Aqueous)</p> <p>RESIDUE, SUSPENDED SM 2540 D-2011 (Aqueous)</p>
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This certification requires maintenance of an acceptable quality assurance program, use of approved methodology, and satisfactory performance on evaluation samples. Laboratories are subject to civil penalties and/or decertification for infractions as set forth in 15A NCAC 2H.0807.

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: 2/28/2019

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

SULFATE	SW-846 6010 D (Non-Aqueous)
EPA 300.0, Rev. 2.1, 1993 (Aqueous)	EPA 200.8, Rev. 5.4, 1994 (Aqueous)
EPA 300.0, Rev. 2.1, 1993 (Non-Aqueous)	EPA 200.8, Rev. 5.4, 1994 (Non-Aqueous)
SW-846 9056 A (Aqueous)	SW-846 6020 B (Aqueous)
SW-846 9056 A (Non-Aqueous)	SW-846 6020 B (Non-Aqueous)
SULFIDE	BERYLLIUM
SW-846 9034 (Non-Aqueous)	EPA 200.7, Rev. 4.4, 1994 (Aqueous)
METAL	EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)
ALUMINUM	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)	BORON
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)
ANTIMONY	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)	SW-846 6020 B (Aqueous)
SW-846 6010 D (Aqueous)	SW-846 6020 B (Non-Aqueous)
SW-846 6010 D (Non-Aqueous)	CADMIUM
EPA 200.8, Rev. 5.4, 1994 (Aqueous)	EPA 200.7, Rev. 4.4, 1994 (Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Non-Aqueous)	EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)
SW-846 6020 B (Aqueous)	SW-846 6010 D (Aqueous)
SW-846 6020 B (Non-Aqueous)	SW-846 6010 D (Non-Aqueous)
ARSENIC	EPA 200.8, Rev. 5.4, 1994 (Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Aqueous)	EPA 200.8, Rev. 5.4, 1994 (Non-Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)	SW-846 6020 B (Aqueous)
SW-846 6010 D (Aqueous)	SW-846 6020 B (Non-Aqueous)
SW-846 6010 D (Non-Aqueous)	CALCIUM
EPA 200.8, Rev. 5.4, 1994 (Aqueous)	EPA 200.7, Rev. 4.4, 1994 (Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Non-Aqueous)	EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)
SW-846 6020 B (Aqueous)	SW-846 6010 D (Aqueous)
SW-846 6020 B (Non-Aqueous)	SW-846 6010 D (Non-Aqueous)
BARIUM	CHROMIUM HEXAVALENT
EPA 200.7, Rev. 4.4, 1994 (Aqueous)	SM 3500-Cr-B-2011 (Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)	SW-846 7196 A (Aqueous)
SW-846 6010 D (Aqueous)	SW-846 7196 A (Non-Aqueous)

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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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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

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)

COBALT

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)

COPPER

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)

IRON

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)

LEAD

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)

MAGNESIUM

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)

MANGANESE

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)

MERCURY

EPA 245.1, Rev. 3.0, 1994 (Aqueous)
SW-846 7470 A (Aqueous)
SW-846 7471 B (Non-Aqueous)

MOLYBDENUM

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)

NICKEL

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)

North Carolina Wastewater/Groundwater Laboratory Certification

Certified Parameters Listing

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CERTIFIED PARAMETERS

EPA 200.8, Rev. 5.4, 1994 (Non-Aqueous)

SW-846 6020 B (Aqueous)

SW-846 6020 B (Non-Aqueous)

POTASSIUM

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)

SELENIUM

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)

SILVER

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)

SODIUM

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)

STRONTIUM

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)

THALLIUM

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)

TIN

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)

TITANIUM

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)

VANADIUM

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)

ZINC

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)

ORGANIC

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

BASE NEUTRAL/ACID, ORGANICS

- EPA 625.1 (Aqueous)
- SW-846 8270 E (Aqueous)
- SW-846 8270 E (Non-Aqueous)

CHLORINATED ACID HERBICIDES

- SW-846 8151 A (Aqueous)
- SW-846 8151 A (Non-Aqueous)

NITROAROMATICS & NITRAMINES

- SW-846 8330 A (Aqueous)
- 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)