

ATTACHMENT I

WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
DIVISION OF WATER AND WASTE MANAGEMENT

List of Certified Parameters  
for

**MICROBAC LABORATORIES, INC. OHIO  
VALLEY DIVISION  
MARIETTA, OHIO**

PARAMETERS CERTIFIED

NONPOTABLE WATER INORGANIC NONMETALS

<u>ANALYTE</u>	<u>METHOD</u>	<u>TECHNOLOGY</u>
Alkalinity	EPA310.2 Rev 2.2-1974	Colorimetric
Ammonia	EPA350.1 Rev 2.0-1993	Spectrophotometric
Bromide	EPA300.0 Rev 2.1-1993	IC
Bromide	SW9056A	IC
Carbon, Total Organic (TOC)	SW9060A	Oxidation
Chloride	EPA300.0 Rev 2.1-1993	IC
Chloride	SW9056A	IC
Chromium VI, Dissolved	SW3060A	Digestion
Chromium VI, Dissolved	SW7196A	Spectrophotometric
Conductance, Specific	EPA120.1 Rev 1982	Probe
Cyanide, Total	SW9010C	Distillation
Cyanide, Total	SW9014	Spectrophotometric
Fluoride	EPA300.0 Rev 2.1-1993	IC
Fluoride	SW9056A	IC
Nitrate	EPA300.0 Rev 2.1-1993	IC
Nitrate	EPA353.2 Rev 2.0-1993	Calculation
Nitrate	SW9056A	IC
Nitrate-Nitrite	EPA353.2 Rev 2.0-1993	Spectrophotometric
Nitrite	EPA300.0 Rev 2.1-1993	IC
Nitrite	SW9056A	IC
Nitrogen, Total Kjeldahl (TKN)	EPA351.2 Rev 2.0-1993	Colorimetric
Oil & Grease	EPA1664 A	Gravimetric
Oxygen Demand, Chemical (COD)	HACH 8000	Spectrophotometric
Perchlorate	SW6850	HPLC/ESI/MS
pH (Hydrogen Ion)	SW9040C	Electrode
Phenolics, Total	EPA420.1 Rev 1978	Spectrophotometric
Phosphorus, Total	EPA365.4 Rev 1974	Spectrophotometric
Solids, Volatile	EPA160.4	Gravimetric
Sulfate	EPA300.0 Rev 2.1-1993	IC
Sulfate	SW9056A	IC

<u>ANALYTE</u>	<u>METHOD</u>	<u>TECHNOLOGY</u>
Sulfide	SW9034	Titrimetric
Turbidity	EPA180.1 Rev 2.0-1993	Turbidimetric

NONPOTABLE WATER TRACE METALS

<u>METAL</u>	<u>METHOD</u>	<u>TECHNOLOGY</u>
Aluminum	EPA200.7 Rev 4.4-1994	ICP
Aluminum	SW6010D	ICP
Antimony	EPA200.7 Rev 4.4-1994	ICP
Antimony	EPA200.8 Rev 5.4-1994	ICP-MS
Antimony	SW6010D	ICP
Antimony	SW6020B	ICP-MS
Arsenic	EPA200.7 Rev 4.4-1994	ICP
Arsenic	EPA200.8 Rev 5.4-1994	ICP-MS
Arsenic	SW6010D	ICP
Arsenic	SW6020B	ICP-MS
Barium	EPA200.7 Rev 4.4-1994	ICP
Barium	EPA200.8 Rev 5.4-1994	ICP-MS
Barium	SW6010D	ICP
Barium	SW6020B	ICP-MS
Beryllium	EPA200.7 Rev 4.4-1994	ICP
Beryllium	EPA200.8 Rev 5.4-1994	ICP-MS
Beryllium	SW6010D	ICP
Boron	EPA200.7 Rev 4.4-1994	ICP
Boron	SW6010D	ICP
Cadmium	EPA200.7 Rev 4.4-1994	ICP
Cadmium	EPA200.8 Rev 5.4-1994	ICP-MS
Cadmium	SW6010D	ICP
Calcium	EPA200.7 Rev 4.4-1994	ICP
Calcium	SW6010D	ICP
Chromium	EPA200.7 Rev 4.4-1994	ICP
Chromium	EPA200.8 Rev 5.4-1994	ICP-MS
Chromium	SW6010D	ICP
Chromium	SW6020B	ICP-MS
Cobalt	EPA200.7 Rev 4.4-1994	ICP
Cobalt	EPA200.8 Rev 5.4-1994	ICP-MS
Cobalt	SW6010D	ICP
Cobalt	SW6020B	ICP-MS
Copper	EPA200.7 Rev 4.4-1994	ICP
Copper	EPA200.8 Rev 5.4-1994	ICP-MS
Copper	SW6010D	ICP
Copper	SW6020B	ICP-MS
Iron	EPA200.7 Rev 4.4-1994	ICP
Iron	SW6010D	ICP
Lead	EPA200.7 Rev 4.4-1994	ICP
Lead	EPA200.8 Rev 5.4-1994	ICP-MS
Lead	SW6010D	ICP
Lead	SW6020B	ICP-MS
Lithium	SW6010D	ICP
Magnesium	EPA200.7 Rev 4.4-1994	ICP

<u>METAL</u>	<u>METHOD</u>	<u>TECHNOLOGY</u>
Magnesium	SW6010D	ICP
Manganese	EPA200.7 Rev 4.4-1994	ICP
Manganese	EPA200.8 Rev 5.4-1994	ICP-MS
Manganese	SW6010D	ICP
Manganese	SW6020B	ICP-MS
Mercury	EPA245.1 Rev 3.0-1994	CVAA
Mercury	SW7470A	CVAA
Metals	SW3015A	Digestion
Molybdenum	EPA200.7 Rev 4.4-1994	ICP
Nickel	EPA200.7 Rev 4.4-1994	ICP
Nickel	EPA200.8 Rev 5.4-1994	ICP-MS
Nickel	SW6010D	ICP
Nickel	SW6020B	ICP-MS
Phosphorus	EPA200.7 Rev 4.4-1994	ICP
Phosphorus	SW6010D	ICP
Potassium	EPA200.7 Rev 4.4-1994	ICP
Potassium	SW6010D	ICP
Selenium	EPA200.7 Rev 4.4-1994	ICP
Selenium	EPA200.8 Rev 5.4-1994	ICP-MS
Selenium	SW6010D	ICP
Selenium	SW6020B	ICP-MS
Silica	SW6010D	Calculation
Silicon	SW6010D	ICP
Silver	EPA200.7 Rev 4.4-1994	ICP
Silver	EPA200.8 Rev 5.4-1994	ICP-MS
Silver	SW6010D	ICP
Silver	SW6020B	ICP-MS
Sodium	EPA200.7 Rev 4.4-1994	ICP
Sodium	SW6010D	ICP
Strontium	SW6010D	ICP
Thallium	EPA200.7 Rev 4.4-1994	ICP
Thallium	EPA200.8 Rev 5.4-1994	ICP-MS
Thallium	SW6010D	ICP
Thallium	SW6020B	ICP-MS
Tin	EPA200.7 Rev 4.4-1994	ICP
Tin	SW6010D	ICP
Titanium	EPA200.7 Rev 4.4-1994	ICP
Titanium	SW6010D	ICP
Uranium	SW6020B	ICP-MS
Vanadium	EPA200.7 Rev 4.4-1994	ICP
Vanadium	EPA200.8 Rev 5.4-1994	ICP-MS
Vanadium	SW6010D	ICP
Vanadium	SW6020B	ICP-MS
Zinc	EPA200.7 Rev 4.4-1994	ICP
Zinc	EPA200.8 Rev 5.4-1994	ICP-MS
Zinc	SW6010D	ICP
Zinc	SW6020B	ICP-MS

## NONPOTABLE WATER MICROBIOLOGY

<u>GROUP</u>	<u>METHOD</u>	<u>TECHNOLOGY</u>
Coliform, Fecal (MPN)	Colilert 18	Multiple Well
Coliform, Total (MPN)	Colilert	Multiple Well
E. Coli (MF)	HACH 10029	Membrane Filter
E. Coli (MPN)	Colilert	Multiple Well

## NONPOTABLE WATER VOLATILE ORGANIC CHEMICALS

<u>GROUP</u>	<u>METHOD</u>	<u>TECHNOLOGY</u>
Closed System Purge & Trap	SW5035A	Extraction
Dissolved Gases	ASTM D8028-17	GC
Headspace, Equilibrium Analysis	SW5021	Extraction
Nonhalogenated Volatile Organics	SW8015C	GC/FID
Purge & Trap For Aqueous Samples	SW5030B	Extraction
Purgeables	EPA624.1	GC/MS
Total Petroleum Hydrocarbons (GRO)	SW8015B	GC/FID
Total Petroleum Hydrocarbons (GRO)	SW8015C	GC/FID
Total Petroleum Hydrocarbons (GRO)	SW8015D	GC/FID
Volatile Organic Compounds	SW8260D	GC/MS

## NONPOTABLE WATER EXTRACTABLE AND SEMI-VOLATILE ORGANIC CHEMICALS

<u>GROUP</u>	<u>METHOD</u>	<u>TECHNOLOGY</u>
Base/Neutrals & Acids	EPA625.1	GC/MS
Carbonyl Compounds	SW8315A	HPLC
Chlorinated Herbicides	SW8151A	GC
EDB & DBCP	SW8011	GC/ECD
Florisil Cleanup	SW3620C	Cleanup
Glycols	SW8015C	GC/FID
Glycols	SW8015D	GC/FID
Nitroaromatics & Nitramines	SW8330A	HPLC
Nitroaromatics & Nitramines	SW8330B	HPLC
Organic Extraction & Sample Preparation	SW3500C	Extraction
Organochlorine Pesticides	SW8081A	GC
Organochlorine Pesticides	SW8081B	GC
Organochlorine Pesticides & PCBs	EPA608.3	GC
Polychlorinated Biphenyls	SW8082A	GC
Polynuclear Aromatic Hydrocarbons	SW8270E	SIM
Semivolatile Organic Compounds	SW8270E	GC/MS
Separatory Funnel Liquid-Liquid	SW3510C	Extraction
Silica Gel Cleanup	SW3630C	Cleanup
Solid Phase Extraction	SW3535A	Extraction
Sulfur Cleanup	SW3660B	Cleanup
Sulfuric Acid/Permanganate Cleanup	SW3665A	Cleanup
Total Petroleum Hydrocarbons (DRO)	SW8015B	GC/FID
Total Petroleum Hydrocarbons (DRO)	SW8015C	GC/FID
Total Petroleum Hydrocarbons (DRO)	SW8015D	GC/FID

HAZARDOUS WASTE CHARACTERISTICS

<u>PROCEDURE</u>	<u>METHOD</u>	<u>TECHNOLOGY</u>
Corrosivity	SW9045D	Electrode
Ignitability	SW1010A	Closed Cup
Paint Filter Test	SW9095B	Gravimetric
SPLP- Metals & Organics	SW1312	Extraction
TCLP- Metals & Organics	SW1311	Extraction

SOLID AND CHEMICAL INORGANIC NONMETALS

<u>ANALYTE</u>	<u>METHOD</u>	<u>TECHNOLOGY</u>
Ammonia	EPA350.1 Rev 2.0-1993	Spectrophotometric
Bromide	SW9056A	IC
Chloride	SW9056A	IC
Fluoride	SW9056A	IC
Halides, Total	SW5050	Digestion
Nitrate	SW9056A	IC
Nitrite	SW9056A	IC
Percent Solids	ASTM D2216-10	Gravimetric
Perchlorate	SW6850	HPLC/ESI/MS
Sulfate	SW9056A	IC
Sulfide	SW9030B	Distillation
Sulfide	SW9034	Titrimetric

SOLID AND CHEMICAL TRACE METALS

<u>METAL</u>	<u>METHOD</u>	<u>TECHNOLOGY</u>
Aluminum	SW6010D	ICP
Antimony	SW6010D	ICP
Antimony	SW6020B	ICP-MS
Arsenic	SW6010D	ICP
Arsenic	SW6020B	ICP-MS
Barium	SW6010D	ICP
Barium	SW6020B	ICP-MS
Beryllium	SW6010D	ICP
Boron	SW6010D	ICP
Cadmium	SW6010D	ICP
Cadmium	SW6020B	ICP-MS
Calcium	SW6010D	ICP
Chromium	SW6010D	ICP
Chromium	SW6020B	ICP-MS
Cobalt	SW6010D	ICP
Cobalt	SW6020B	ICP-MS
Copper	SW6010D	ICP
Copper	SW6020B	ICP-MS
Iron	SW6010D	ICP
Lead	SW6010D	ICP
Lead	SW6020B	ICP-MS
Magnesium	SW6010D	ICP
Manganese	SW6010D	ICP

<u>METAL</u>	<u>METHOD</u>	<u>TECHNOLOGY</u>
Manganese	SW6020B	ICP-MS
Mercury	SW7471B	CVAA
Metals, Total	SW3051A	Digestion
Molybdenum	SW6010D	ICP
Nickel	SW6010D	ICP
Nickel	SW6020B	ICP-MS
Phosphorus	SW6010D	ICP
Potassium	SW6010D	ICP
Selenium	SW6010D	ICP
Selenium	SW6020B	ICP-MS
Silver	SW6010D	ICP
Silver	SW6020B	ICP-MS
Sodium	SW6010D	ICP
Strontium	SW6010D	ICP
Thallium	SW6010D	ICP
Thallium	SW6020B	ICP-MS
Tin	SW6010D	ICP
Titanium	SW6010D	ICP
Uranium	SW6020B	ICP-MS
Vanadium	SW6010D	ICP
Vanadium	SW6020B	ICP-MS
Zinc	SW6010D	ICP
Zinc	SW6020B	ICP-MS

#### SOLID AND CHEMICAL VOLATILE ORGANIC CHEMICALS

<u>GROUP</u>	<u>METHOD</u>	<u>TECHNOLOGY</u>
Closed System Purge & Trap	SW5035A	Extraction
Headspace, Equilibrium Analysis	SW5021	Extraction
Nonhalogenated Volatile Organics	SW8015C	GC/FID
Total Petroleum Hydrocarbons (GRO)	SW8015B	GC/FID
Total Petroleum Hydrocarbons (GRO)	SW8015C	GC/FID
Total Petroleum Hydrocarbons (GRO)	SW8015D	GC/FID
Volatile Organic Compounds	SW8260D	GC/MS

#### SOLID AND CHEMICAL EXTRACTABLE AND SEMI-VOLATILE ORGANIC CHEMICALS

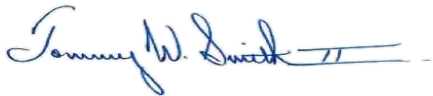
<u>GROUP</u>	<u>METHOD</u>	<u>TECHNOLOGY</u>
Chlorinated Herbicides	SW8151A	GC/ECD
Microwave Extraction	SW3546	Extraction
Nitroaromatics & Nitramines	SW8330A	HPLC
Nitroaromatics & Nitramines	SW8330B	HPLC
Nonhalogenated Semi-Volatile Organics	SW8015D	GC/FID
Organochlorine Pesticides	SW8081A	GC
Organochlorine Pesticides	SW8081B	GC
Polychlorinated Biphenyls	SW8082A	GC
Semivolatile Organic Compounds	SW8270E	GC/MS
Silica Gel Cleanup	SW3630C	Cleanup
Total Petroleum Hydrocarbons (DRO)	SW8015B	GC/FID

<u>GROUP</u>	<u>METHOD</u>	<u>TECHNOLOGY</u>
Total Petroleum Hydrocarbons (DRO)	SW8015C	GC/FID
Total Petroleum Hydrocarbons (DRO)	SW8015D	GC/FID
Ultrasonic	SW3550C	Extraction
Waste Dilution	SW3580A	Dilution

This laboratory may test **ONLY** for those environmental parameters listed above for compliance reporting purposes. All testing must be by the test method cited in the current application for certification.

This Certification Expires June 30, 2021.

Certificate No 361



Issued on July 01, 2020

Tommy W. Smith II  
Quality Assurance Officer

*This certified parameter list supersedes all previously issued parameter lists for this certificate number.*