

ATTACHMENT I

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

List of Certified Parameters
for

ALS ENVIRONMENTAL
MIDDLETOWN, PENNSYLVANIA

PARAMETERS CERTIFIED

NONPOTABLE WATER INORGANIC NONMETALS

<u>ANALYTE</u>	<u>METHOD</u>	<u>TECHNOLOGY</u>
Alkalinity	SM2320 B-11	Titrimetric
Ammonia	ASTM D6919-09	IC
Ammonia	SM4500-NH3 G-11	Spectrophotometric
Bromide	EPA300.0 Rev 2.1-1993	IC
Bromide	SW9056A	IC
Carbon, Total Organic (TOC)	SM5310 B-11	Combustion
Carbon, Total Organic (TOC)	SW9060A	Combustion
Chloride	EPA300.0 Rev 2.1-1993	IC
Chloride	SW9056A	IC
Chlorine, Residual	SM4500-Cl G-11	Spectrophotometric
Chromium VI, Dissolved	EPA218.6 Rev 3.3-1994	IC
Chromium VI, Dissolved	SM3500-Cr B-11	Spectrophotometric
Chromium VI, Dissolved	SW7196A	Spectrophotometric
Color	SM2120 B-11	Visual Comparison
Conductance, Specific	EPA120.1 Rev 1982	Probe
Conductance, Specific	SM2510 B-11	Probe
Conductance, Specific	SW9050A	Probe
Cyanide, Amenable to Chlorination	SM4500-CN G-11	Digestion
Cyanide, Total	EPA335.4 Rev 1.0-1993	Spectrophotometric
Cyanide, Total	SW9010C	Distillation
Cyanide, Total	SW9012B	Spectrophotometric
Cyanide, Weak Acid Dissociable	SM4500-CN I-11	Distillation
Fluoride	EPA300.0 Rev 2.1-1993	IC
Fluoride	SW9056A	IC
Hardness, Total	SM2340 B-11	Calculation
Hardness, Total	SM2340 C-11	Titrimetric
Nitrate	EPA300.0 Rev 2.1-1993	IC
Nitrate	SW9056A	IC
Nitrate-Nitrite	EPA300.0 Rev 2.1-1993	Calculation
Nitrate-Nitrite	EPA353.2 Rev 2.0-1993	Spectrophotometric
Nitrite	EPA300.0 Rev 2.1-1993	IC
Nitrite	SW9056A	IC
Nitrogen, Total Kjeldahl (TKN)	SM4500-NH3 G-11	Spectrophotometric

<u>ANALYTE</u>	<u>METHOD</u>	<u>TECHNOLOGY</u>
Nitrogen, Total Kjeldahl (TKN)	SM4500-Norg B-11	Digestion
Nitrogen, Total Kjeldahl (TKN)	SM4500-Norg C-11	Digestion
Oil & Grease	EPA1664 B	Gravimetric
Oxygen Demand, Biochemical (BOD)	SM5210 B-11	Probe
Oxygen Demand, Carbonaceous Biochemical (CBOD)	SM5210 B-11	Probe
Oxygen Demand, Chemical (COD)	EPA410.4 Rev 2.0-1993	Spectrophotometric
Oxygen Demand, Chemical (COD)	HACH 8000	Spectrophotometric
pH (Hydrogen Ion)	SM4500-H B-11	Electrode
pH (Hydrogen Ion)	SW9040C	Electrode
Phenolics, Total	EPA420.4 Rev 1.0-1993	Spectrophotometric
Phenolics, Total	SW9066	Spectrophotometric
Phosphorus, Ortho	SM4500-P E-11	Spectrophotometric
Phosphorus, Total	EPA365.1 Rev 2.0-1993	Spectrophotometric
Silica	SM4500-SiO2 C-11	Spectrophotometric
Solids, Dissolved	SM2540 C-11	Gravimetric
Solids, Settleable	SM2540 F-11	Imhoff
Solids, Suspended	SM2540 D-11	Gravimetric
Solids, Total	SM2540 B-11	Gravimetric
Solids, Volatile	SM2540 E-11	Gravimetric
Sulfate	EPA300.0 Rev 2.1-1993	IC
Sulfate	SW9056A	IC
Sulfide	SM4500-S F-11	Titrimetric
Surfactants (MBAS)	SM5540 C-11	Spectrophotometric
Temperature	SM2550 B-10	Thermometric
Turbidity	SM2130 B-11	Turbidimetric

NONPOTABLE WATER TRACE METALS

<u>METAL</u>	<u>METHOD</u>	<u>TECHNOLOGY</u>
Aluminum	EPA200.7 Rev 4.4-1994	ICP
Aluminum	EPA200.8 Rev 5.4-1994	ICP-MS
Aluminum	SW6010C	ICP
Aluminum	SW6020A	ICP-MS
Antimony	EPA200.7 Rev 4.4-1994	ICP
Antimony	EPA200.8 Rev 5.4-1994	ICP-MS
Antimony	SW6010C	ICP
Antimony	SW6020A	ICP-MS
Arsenic	EPA200.7 Rev 4.4-1994	ICP
Arsenic	EPA200.8 Rev 5.4-1994	ICP-MS
Arsenic	SW6010C	ICP
Arsenic	SW6020A	ICP-MS
Barium	EPA200.7 Rev 4.4-1994	ICP
Barium	EPA200.8 Rev 5.4-1994	ICP-MS
Barium	SW6010C	ICP
Barium	SW6020A	ICP-MS
Beryllium	EPA200.7 Rev 4.4-1994	ICP
Beryllium	EPA200.8 Rev 5.4-1994	ICP-MS
Beryllium	SW6010C	ICP
Beryllium	SW6020A	ICP-MS
Boron	EPA200.7 Rev 4.4-1994	ICP

<u>METAL</u>	<u>METHOD</u>	<u>TECHNOLOGY</u>
Boron	SW6010C	ICP
Cadmium	EPA200.7 Rev 4.4-1994	ICP
Cadmium	EPA200.8 Rev 5.4-1994	ICP-MS
Cadmium	SW6010C	ICP
Cadmium	SW6020A	ICP-MS
Calcium	EPA200.7 Rev 4.4-1994	ICP
Calcium	SW6010C	ICP
Calcium	SW6020A	ICP-MS
Chromium	EPA200.7 Rev 4.4-1994	ICP
Chromium	EPA200.8 Rev 5.4-1994	ICP-MS
Chromium	SW6010C	ICP
Chromium	SW6020A	ICP-MS
Cobalt	EPA200.7 Rev 4.4-1994	ICP
Cobalt	EPA200.8 Rev 5.4-1994	ICP-MS
Cobalt	SW6010C	ICP
Cobalt	SW6020A	ICP-MS
Copper	EPA200.7 Rev 4.4-1994	ICP
Copper	EPA200.8 Rev 5.4-1994	ICP-MS
Copper	SW6010C	ICP
Copper	SW6020A	ICP-MS
Iron	EPA200.7 Rev 4.4-1994	ICP
Iron	SW6010C	ICP
Iron	SW6020A	ICP-MS
Lead	EPA200.7 Rev 4.4-1994	ICP
Lead	EPA200.8 Rev 5.4-1994	ICP-MS
Lead	SW6010C	ICP
Lead	SW6020A	ICP-MS
Lithium	EPA200.7 Rev 4.4-1994	ICP
Lithium	SW6010C	ICP
Magnesium	EPA200.7 Rev 4.4-1994	ICP
Magnesium	SW6010C	ICP
Magnesium	SW6020A	ICP-MS
Manganese	EPA200.7 Rev 4.4-1994	ICP
Manganese	EPA200.8 Rev 5.4-1994	ICP-MS
Manganese	SW6010C	ICP
Manganese	SW6020A	ICP-MS
Mercury	EPA1631 E	CVAF
Mercury	EPA245.1 Rev 3.0-1994	CVAA
Mercury	SW6020A	ICP-MS
Mercury	SW7470A	CVAA
Metals	SW3015A	Digestion
Molybdenum	EPA200.7 Rev 4.4-1994	ICP
Molybdenum	EPA200.8 Rev 5.4-1994	ICP-MS
Molybdenum	SW6010C	ICP
Molybdenum	SW6020A	ICP-MS
Nickel	EPA200.7 Rev 4.4-1994	ICP
Nickel	EPA200.8 Rev 5.4-1994	ICP-MS
Nickel	SW6010C	ICP
Nickel	SW6020A	ICP-MS
Potassium	EPA200.7 Rev 4.4-1994	ICP
Potassium	SW6010C	ICP
Potassium	SW6020A	ICP-MS

<u>METAL</u>	<u>METHOD</u>	<u>TECHNOLOGY</u>
Selenium	EPA200.7 Rev 4.4-1994	ICP
Selenium	EPA200.8 Rev 5.4-1994	ICP-MS
Selenium	SW6010C	ICP
Selenium	SW6020A	ICP-MS
Silicon	SW6010C	ICP
Silver	EPA200.7 Rev 4.4-1994	ICP
Silver	EPA200.8 Rev 5.4-1994	ICP-MS
Silver	SW6010C	ICP
Silver	SW6020A	ICP-MS
Sodium	EPA200.7 Rev 4.4-1994	ICP
Sodium	SW6010C	ICP
Sodium	SW6020A	ICP-MS
Strontium	EPA200.7 Rev 4.4-1994	ICP
Strontium	SW6010C	ICP
Strontium	SW6020A	ICP-MS
Thallium	EPA200.8 Rev 5.4-1994	ICP-MS
Thallium	SW6010C	ICP
Thallium	SW6020A	ICP-MS
Tin	EPA200.7 Rev 4.4-1994	ICP
Tin	SW6010C	ICP
Tin	SW6020A	ICP-MS
Titanium	EPA200.7 Rev 4.4-1994	ICP
Titanium	SW6010C	ICP
Titanium	SW6020A	ICP-MS
Uranium	EPA200.8 Rev 5.4-1994	ICP-MS
Uranium	SW6010C	ICP
Uranium	SW6020A	ICP-MS
Vanadium	EPA200.7 Rev 4.4-1994	ICP
Vanadium	EPA200.8 Rev 5.4-1994	ICP-MS
Vanadium	SW6010C	ICP
Vanadium	SW6020A	ICP-MS
Zinc	EPA200.7 Rev 4.4-1994	ICP
Zinc	EPA200.8 Rev 5.4-1994	ICP-MS
Zinc	SW6010C	ICP
Zinc	SW6020A	ICP-MS

NONPOTABLE WATER MICROBIOLOGY

<u>GROUP</u>	<u>METHOD</u>	<u>TECHNOLOGY</u>
Coliform, Total (MPN)	Colilert 18	Multiple Well
Enterococci	SM9230 D-07	Multiple Well
Heterotrophic Plate Count (HPC)	SM9215 B-00	Pour Plate

NONPOTABLE WATER VOLATILE ORGANIC CHEMICALS

<u>GROUP</u>	<u>METHOD</u>	<u>TECHNOLOGY</u>
Dissolved Gases	ASTM D8028-17	GC
Purgables	EPA624.1	GC/MS
Total Petroleum Hydrocarbons (GRO)	SW8015D	GC/FID
Volatile Organic Compounds	SW8260B	GC/MS

<u>GROUP</u>	<u>METHOD</u>	<u>TECHNOLOGY</u>
Volatile Organic Compounds	SW8260C	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
Chlorinated Herbicides	SW8151A	GC
Florisil Cleanup	SW3620B	Cleanup
Nitroaromatics & Nitramines	SW8330B	HPLC
Organochlorine Pesticides	SW8081B	GC
Organochlorine Pesticides & PCBs	EPA608.3	GC
Organophosphorus Compounds	SW8141B	GC
Polychlorinated Biphenyls	SW8082A	GC
Semivolatile Organic Compounds	SW8270D	GC/MS
Semivolatile Organic Compounds	SW8270D	SIM
Separatory Funnel Liquid-Liquid	SW3510C	Extraction
Silica Gel Cleanup	SW3630C	Cleanup
Sulfur Cleanup	SW3660B	Cleanup
Sulfuric Acid/Permanganate Cleanup	SW3665A	Cleanup
Total Petroleum Hydrocarbons (DRO)	SW8015D	GC/FID
Total Petroleum Hydrocarbons (ORO)	SW8015D	GC/FID

HAZARDOUS WASTE CHARACTERISTICS

<u>PROCEDURE</u>	<u>METHOD</u>	<u>TECHNOLOGY</u>
Corrosivity	SW9045D	Electrode
Ignitability	SW1010A	Closed Cup
Ignitability (Solids)	SW1030	
Paint Filter Test	SW9095B	Gravimetric
TCLP- Metals	SW1311	Extraction
TCLP- Organics	SW1311	Extraction

SOLID AND CHEMICAL INORGANIC NONMETALS

<u>ANALYTE</u>	<u>METHOD</u>	<u>TECHNOLOGY</u>
Ammonia	SM4500-NH3 D-11	ISE
Bromide	SW9056A	IC
Carbon, Total Organic (TOC)	SW9060A	Combustion
Chloride	SW9056A	IC
Chromium VI, Dissolved	SW7196A	Spectrophotometric
Cyanide, Total	SW9012B	Spectrophotometric
Fluoride	SW9056A	IC
Nitrate	SW9056A	IC
Nitrate-Nitrite	SW9056A	Calculation
Nitrite	SW9056A	IC
Nitrogen, Total Kjeldahl (TKN)	SM4500-NH3 D-11	ISE
Nitrogen, Total Kjeldahl (TKN)	SM4500-NH3 G-11	Spectrophotometric
Oil & Grease	SW9071B	Gravimetric
pH (Hydrogen Ion)	SW9045D	Electrode

<u>ANALYTE</u>	<u>METHOD</u>	<u>TECHNOLOGY</u>
Phenolics, Total	SW9066	Colorimetric
Phosphorus, Total	EPA365.1 Rev 2.0-1993	Spectrophotometric
Solids, Total, Fixed, & Volatile	SM2540 G-11	Gravimetric
Sulfate	SW9056A	IC

SOLID AND CHEMICAL TRACE METALS

<u>METAL</u>	<u>METHOD</u>	<u>TECHNOLOGY</u>
Aluminum	SW6010C	ICP
Aluminum	SW6020A	ICP-MS
Antimony	SW6010C	ICP
Antimony	SW6020A	ICP-MS
Arsenic	SW6010C	ICP
Arsenic	SW6020A	ICP-MS
Barium	SW6010C	ICP
Barium	SW6020A	ICP-MS
Beryllium	SW6010C	ICP
Beryllium	SW6020A	ICP-MS
Boron	SW6010C	ICP
Cadmium	SW6010C	ICP
Cadmium	SW6020A	ICP-MS
Calcium	SW6010C	ICP
Calcium	SW6020A	ICP-MS
Chromium	SW6010C	ICP
Chromium	SW6020A	ICP-MS
Cobalt	SW6010C	ICP
Cobalt	SW6020A	ICP-MS
Copper	SW6010C	ICP
Copper	SW6020A	ICP-MS
Iron	SW6010C	ICP
Iron	SW6020A	ICP-MS
Lead	SW6010C	ICP
Lead	SW6020A	ICP-MS
Magnesium	SW6010C	ICP
Magnesium	SW6020A	ICP-MS
Manganese	SW6010C	ICP
Manganese	SW6020A	ICP-MS
Mercury	SW6020A	ICP-MS
Mercury	SW7471B	CVAA
Metals, Total	SW3050B	Digestion
Metals, Total	SW3051A	Digestion
Molybdenum	SW6010C	ICP
Molybdenum	SW6020A	ICP-MS
Nickel	SW6010C	ICP
Nickel	SW6020A	ICP-MS
Potassium	SW6010C	ICP
Potassium	SW6020A	ICP-MS
Selenium	SW6010C	ICP
Selenium	SW6020A	ICP-MS
Silver	SW6010C	ICP
Silver	SW6020A	ICP-MS

<u>METAL</u>	<u>METHOD</u>	<u>TECHNOLOGY</u>
Sodium	SW6010C	ICP
Sodium	SW6020A	ICP-MS
Strontium	SW6010C	ICP
Strontium	SW6020A	ICP-MS
Thallium	SW6010C	ICP
Thallium	SW6020A	ICP-MS
Tin	SW6010C	ICP
Tin	SW6020A	ICP-MS
Titanium	SW6010C	ICP
Titanium	SW6020A	ICP-MS
Uranium	SW6010C	ICP
Uranium	SW6020A	ICP-MS
Vanadium	SW6010C	ICP
Vanadium	SW6020A	ICP-MS
Zinc	SW6010C	ICP
Zinc	SW6020A	ICP-MS

SOLID AND CHEMICAL MICROBIOLOGY

<u>GROUP</u>	<u>METHOD</u>	<u>TECHNOLOGY</u>
Coliform, Fecal (MF)	SM9222 D-06	Membrane Filter

SOLID AND CHEMICAL VOLATILE ORGANIC CHEMICALS

<u>GROUP</u>	<u>METHOD</u>	<u>TECHNOLOGY</u>
Total Petroleum Hydrocarbons (GRO)	SW8015D	GC/FID
Volatile Organic Compounds	SW8260B	GC/MS
Volatile Organic Compounds	SW8260C	GC/MS

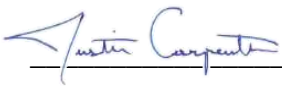
SOLID AND CHEMICAL EXTRACTABLE AND SEMI-VOLATILE ORGANIC CHEMICALS

<u>GROUP</u>	<u>METHOD</u>	<u>TECHNOLOGY</u>
Chlorinated Herbicides	SW8151A	GC/ECD
Florisil Cleanup	SW3620B	Cleanup
Microwave Extraction	SW3546	Extraction
Nitroaromatics & Nitramines	SW8330B	HPLC
Organochlorine Pesticides	SW8081B	GC
Organophosphorus Compounds	SW8141B	GC
Polychlorinated Biphenyls	SW8082A	GC
Semivolatile Organic Compounds	SW8270D	GC/MS
Semivolatile Organic Compounds	SW8270D	SIM
Silica Gel Cleanup	SW3630C	Cleanup
Sulfur Cleanup	SW3660B	Cleanup
Sulfuric Acid/Permanganate Cleanup	SW3665A	Cleanup
Total Petroleum Hydrocarbons (DRO)	SW8015D	GC/FID
Total Petroleum Hydrocarbons (ORO)	SW8015D	GC/FID
Ultrasonic	SW3550B	Extraction

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 September 30, 2019.

Certificate No 343



Issued on May 20, 2019

Justin Carpenter
QA Auditor

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