



ANALYTICAL SERVICES, INC.

Laboratory Services and Capabilities

Analytical Services, Inc. (ASI) is an environmental laboratory focused on the chemical and biological analysis of aqueous and non-aqueous matrices.

Facts:

- Established 1979. Privately Held
- Main Laboratory: Norcross, GA \cong 39,000 ft² Facility
- Toxicity Laboratory: Greenville, SC \cong 1,900 ft² Facility
- Current number of Employees = 63
- Designated Small Business under SBA NAICS Code 541380
- Sample Receipt: Mon – Fri 08:00 to 18:00; Sat 09:00 to 12:00; Off Hours - On Request
- Standard Turnaround Time is 7-10 Business Days from Sample Receipt

Capabilities/Services:

- General Chemistry
- Microbiology/Whole Effluent Toxicity
- Metals (ICP-MS, ICP)
- Organics (GC, GC-MS, HPLC)
- TCLP/RCI
- Field Services: NPDES Monitoring, Groundwater Monitoring, Courier
- Electronic Deliverables: dBase IV (file format), ASCII, Adobe PDF, Microsoft Excel, GIS/Build, Monitor, EQUIS (modified), and ERPIMS

Principal Instrumentation:

- 2 x Inductively Coupled Plasma (ICP) Emission Spectrophotometer - Axial Plasma
- 1 x Inductively Coupled Plasma/Mass Spectrometer (ICP-MS)
- 7 x Gas Chromatograph/Mass Spectrometer (GC-MS)
- 7 x Gas Chromatograph (GC) with ECD, ELCD, FID, PID, and NPD
- 1 x High Performance Liquid Chromatograph (HPLC)

Certifications/Accreditations/Validations:

- National Environmental Laboratory Accreditation Program (NELAP)
- U.S. Department of Agriculture – Soil Import License
- FL, GA, LA, NC, SC, TX

ANALYTICAL CAPABILITIES

[General Chemistry](#)

[Individual Metals](#)

[Metals Regulatory Packages](#)

Organics

[Volatile Organics \(GC/MS\)](#)

[Volatile Organics \(GC\)](#)

[Semi-Volatile Organics \(GC/MS\)](#)

[Semi-Volatile Organics \(GC\)](#)

[Semi-Volatile Organics \(HPLC\)](#)

[Underground Storage Tank Removal](#)

Regulatory Packages

[Priority Pollutant Analyses](#)

[Total Toxic Organics](#)

[EPA Form 2C NPDES Permit Application Analyses](#)

[Appendix IX, Part 264 Federal](#)

[Appendix I and II, Subtitle D 40 CFR Part 258](#)

[Sludge-Land Application 40 CFR Part 503](#)

[Target Compound/Target Analyte List](#)

[Resource Conservation and Recovery Act \(RCRA\)](#)

[Toxicity Characteristic Leaching Procedure \(TCLP\)](#)

Drinking Water

[Primary Inorganics \(Non-Metallic\)](#)

[Secondary Inorganics \(Non-Metallic\)](#)

[Primary Metals](#)

[Secondary Metals](#)

Microbiology

[Water and Wastewater](#)

[Laboratory Water](#)

Biology

[Bioassay \(Toxicity\)](#)

GENERAL CHEMISTRY

Acidity
Total Alkalinity
Ash
Bicarbonate Alkalinity (Requires T.Alk)
Biochemical Oxygen Demand
Biochemical Oxygen Demand
(Carbonaceous)
British Thermal Units (BTU)
Bomb Calorimetry
- Halogen
- Sulfur
Carbon, Total
Carbon, Total Organic (TOC)
Carbon Dioxide (CO₂) (Requires T.Alk)
Carbonate Alkalinity
Chemical Oxygen Demand
Chloride
Chlorine, Residual
Chromium, Hexavalent
Color
Visual
Conductivity
Corrosivity (Langlier Index)
Cyanide, Amenable
Cyanide, Total
Density
Flashpoint
Fluoride
Halogens, Total (Parr Bomb)
Hardness, Total (Ca/Mg)
Moisture and Volatile Content
Nitrate (NO₃)
Nitrate-Nitrite
Nitrite (NO₂)
Nitrogen, Ammonia (NH₃)
Nitrogen, Total Kjeldahl (TKN)
Nitrogen, Total Organic (TON)
Nitrogen, Total (TN = TKN + NO₃/NO₂)
Odor
Oil and Grease
Ortho-Phosphate
Oxygen, Dissolved
Paint Filter Liquids Test
pH
Phenols, Total
Phosphorus, Acid-hydrolyzable
Phosphorus, Organic
Phosphorus, Total
Solids, Total
Solids, Total Dissolved
Solids, Total Suspended
Solids, Total Volatile
Solids, Total Volatile Suspended
Specific Gravity
Sulfate (SO₄)
Sulfide, Hydrogen
Sulfide
Sulfite (SO₃)
Sulfur, Total (Parr Bomb)
Surfactants: MBAS
Surfactants: CTAS
Total Halogens (Parr Bomb)
Total Organic Carbon (TOC)
Total Petroleum Hydrocarbons (TPH)
Turbidity
UV 254 (Organics Screening)
Volatile Organic Content
Water, Karl Fisher

All analyses will be performed according to approved methods (EPA, Standard Methods, SW-846, or ASTM).

METALS (INDIVIDUAL)

ELEMENT – ICP or ICP-MS

Aluminum (Al)	Mercury (Hg)*
Antimony (Sb)	Molybdenum (Mo)
Arsenic (As)	Nickel (Ni)
Barium (Ba)	Phosphorus (P)
Beryllium (Be)	Potassium (K)
Boron (B)	Selenium (Se)
Cadmium (Cd)	Silica (SiO ₂)
Calcium (Ca)	Silver (Ag)
Chromium (Cr)	Sodium (Na)
Cobalt (Co)	Strontium (Sr)
Copper (Cu)	Thallium (Tl)
Iron (Fe)	Tin (Sn)
Lead (Pb)	Titanium (Ti)
Magnesium (Mg)	Vanadium (V)
Manganese (Mn)	Zinc (Zn)

All analyses will be performed according to approved methods (EPA 200 series or SW-846 6000/7000 series).

ICP - Inductively Coupled Plasma

ICP-MS - Inductively Coupled Plasma/Mass Spectrometry

*CVAA - Cold Vapor Atomic Absorption (for Mercury analysis)

METALS (REGULATORY PACKAGES)

PACKAGE	ELEMENTS
ICP Scan (Full)	Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, P, K, Se, SiO ₂ , Ag, Na, Sr, Tl, Sn, Ti, V, Zn
Priority Pollutant Metals*	Sb, As, Be, Cd, Cr, Cu, Pb, Hg, Ni, Se, Ag, Tl, Zn
Primary Drinking Water Metals* (includes Turbidity)	Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mg, Hg, Ni, Se, Na, Tl
RCRA Metals	As, Ba, Cd, Cr, Pb, Hg, Se, Ag

PACKAGE	ELEMENTS
Target Analyte List (TAL) Metals	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn
BIF Metals	Sb, As, Ba, Be, Cd, Cr, Pb, Hg, Ag, Tl
Appendix IX, Part 264 Metals	Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Hg, Ni, Se, Ag, Tl, Sn, V, Zn
Subtitle D Appendix I Metals*	Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Ni, Se, Ag, Tl, V, Zn
Subtitle D Appendix II Metals*	Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Hg, Ni, Se, Ag, Tl, Sn, V, Zn
Land Application, Part 503 Metals	As, Cd, Cr, Cu, Pb, Hg, Mo, Ni, Se, Zn

*Reflects Georgia regulatory requirements. Please provide your site specific information/requirements regarding other states and regulatory agencies. All analyses will be performed according to approved methods (EPA 200 series or SW-846 6000/7000 series).

ORGANICS

VOLATILE ORGANICS – GC/MS
Volatile Organic Compounds (EPA 624)
Volatile Organic Compounds (EPA 8260B)
1-4 Compounds
Trihalomethanes (EPA 8260B)
Tentatively Identified Compounds (TICs)
10 Compound Identification
Terra Core Sampler (EPA 5035)

VOLATILE ORGANICS - GC
Gasoline Range Organics (GRO) (EPA 8015B)

SEMI-VOLATILE ORGANICS - GC/MS
Base Neutral/Acid Extractables (EPA 625)
Base Neutral/Acid Extractables (EPA 8270C)
Base Neutral Extractables (EPA 625/8270C)
Acid Extractables (EPA 625/8270C)
Polynuclear Aromatic Hydrocarbons (EPA 625/8270C)
Tentatively Identified Compounds (TICs)

SEMI-VOLATILE ORGANICS – GC
Organochlorine Pesticides (EPA 608/8081A)
Polychlorinated Biphenyls (PCBs)(EPA 608/8082)
Chlorophenoxy Acid Herbicides (SM 6440, EPA 8151A)
EDB and/or DBCP (EPA 504.1/8011)
Diesel Range Organics (DRO) (EPA 8015B)
Oxygenated Compounds (alcohols, glycols, etc.)

SEMI-VOLATILE ORGANICS - HPLC
Acrylamide, Acrylonitrile, and/or Acrolein (EPA 8316)
Formaldehyde (EPA 8315A)
Polynuclear Aromatic Hydrocarbons (EPA 8310)

UNDERGROUND STORAGE TANK REMOVAL
BTEX (Benzene/Toluene/Ethylbenzene/Xylenes) (EPA 8260B)
BTEX (EPA 8021B)
Gasoline Range Organics (GRO) (EPA 8015B/8260B)
Diesel Range Organics (DRO) (EPA 8015B)
BTEX/Gasoline Range Organics (EPA 8260B)
Polynuclear Aromatic Hydrocarbons (PAH/PNA) EPA 625/8270C (GC/MS) EPA 8310 (HPLC)
Total Petroleum Hydrocarbons in Water (EPA 1664)
Total Petroleum Hydrocarbons in Soil (EPA 9071B)

UNDERGROUND STORAGE TANK REMOVAL
Total Petroleum Hydrocarbons (FL PRO)
Hydrocarbon I.D
Terra Core Sampler (EPA 5035)

REGULATORY PACKAGES

PRIORITY POLLUTANT ANALYSES
Priority Pollutant List (Georgia 129)
Chlorinated Herbicides, Pesticides/PCBs
Priority Pollutant Metals (13) + Hexavalent
Chromium, Total Cyanide, Semi-Volatiles, Volatiles
Priority Pollutant List (Federal)
Pesticides/PCBs, Priority Pollutant Metals (13),
Total Cyanide, Total Phenols, Semi-Volatiles, Volatiles
Add Dioxins
Add Asbestos

TOTAL TOXIC ORGANICS
TTO Volatiles
TTO Base Neutral/Acid Extractables
TTO Pesticides/PCBs
TTO Dioxin
Full TTO

EPA FORM 2C NPDES PERMIT APPLICATION ANALYSES
Form 2C Part A (without field parameters)
Form 2C Part B (including Radiologicals)
Form 2C Part B (without Radiologicals)
Form 2C Part C (including Dioxin)
Form 2C Part C (without Dioxin)

APPENDIX IX ANALYSES
Appendix IX, Part 264 (Federal)(without Dioxins/Furans)
Metals
Volatile Organics
Base Neutral/Acid Extractable Organics
Pesticides/PCBs
Herbicides
Total Cyanide
Total Sulfide
Add Dioxins/Furans

SUBTITLE D 40 CFR PART 258
Appendix I*
Metals
Volatile Organics
Appendix II*
Metals
Volatile Organics
Base Neutral/Acid Extractable Organics
Pesticides/PCBs
Herbicides
Total Cyanide
Total Sulfide

*Reflects Georgia regulatory requirements. Please consult your Project Manager for additional information regarding other states and regulatory agencies.

SLUDGE-LAND APPLICATION 40 CFR PART 503
Fecal Coliform (MF/MPN)
Ammonia
Nitrate (NO ₃)
Total Nitrogen (TKN + NO ₃ /NO ₂)
Total Phosphorus

SLUDGE-LAND APPLICATION 40 CFR PART 503
pH
Total Solids*
Metals (As, Cd, Cr, Cu, Pb, Hg, Mo, Ni, Se, Zn)
Total Cost of Package

*Total solids must be reported to calculate results on a dry weight basis.

TARGET COMPOUND/TARGET ANALYTE LIST
Complete TCL/TAL
Complete TCL/TAL with CLP Data Package
TCL Volatiles
TCL Semi-Volatiles
TCL Pesticides
TAL Inorganics (Metals, CN)

RESOURCE CONSERVATION AND RECOVERY ACT (RCRA) 40 CFR PART 261 SUBPART C
Reactivity
Cyanide
Sulfide
Corrosivity (pH)
Ignitability
Reactivity, Corrosivity (pH), Ignitability
(RCI scan as a group with TCLP)
Paint Filter Liquids Test

TOXICITY CHARACTERISTIC LEACHING PROCEDURE (TCLP)
Extraction Procedure (ZHE)
Extraction Procedure (Non-Volatile)
TCLP Volatile Compounds
TCLP Base Neutral/Acid Extractables
TCLP Pesticides

TOXICITY CHARACTERISTIC LEACHING PROCEDURE (TCLP)
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TCLP Herbicides

TCLP Metals

Full TCLP (VOA/BNA/Pesticides/Herbicides/Metals)
--

DRINKING WATER

PRIMARY INORGANICS (NON-METALLIC)
--

Total Cyanide

Fluoride

Nitrate (NO ₃)

Nitrite (NO ₂)

SECONDARY INORGANICS (NON-METALLIC)
--

Chloride

Color (Visual)

Corrosivity (Langlier Index)

Fluoride

Foaming Agents (MBAS)

Odor

pH

Sulfate (SO ₄)

Total Dissolved Solids

PRIMARY METALS

Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mg, Hg, Ni, Se, Na, Tl
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SECONDARY METALS

Al, Cu, Fe, Mn, Ag, Zn

MICROBIOLOGY

WATER AND WASTEWATER
Anaerobic Plate Count, Total
Bacteria Identification
Coliform Bacteria, Total (MF)
Coliform Bacteria, Total (MPN)
Coliform Bacteria, Total (P/A)
Coliform Bacteria, Fecal (MF)
Coliform Bacteria, Fecal (MPN)
Coliform Bacteria, E. coli (P/A)
Heterotrophic Plate Count, Total
Fecal Streptococcus
Yeast and Mold Count

LABORATORY WATER
Suitability (Bacterial Growth Ratio)
Heavy Metals (Cd, Cr, Cu, Pb, Ni, Zn)
Inhibitory Residue

BIOASSAY (TOXICITY) – Ceriodaphnia dubia or Pimephales promelas
48-Hour Acute, Pass/Fail
48-Hour Acute, Definitive
7-Day Chronic, Pass/Fail
7-Day Chronic, Definitive
Daphnia pulex
Menidia beryllina
Mysidopsis bahia
Cyprinella leedsii

Other species available upon request