



ENVIRONMENTAL MICROBIOLOGY LAB SERVICES

EMSL

EMSL Analytical, Inc. provides Microbiology Laboratory Services for testing related to the Environment, Indoor Air Quality, and Product Testing at our network of laboratories in key cities nationwide. Our qualified staff includes degreed (Ph.D. and M.Sc.) microbiologists, mycologists, and bacteriologists. Our bench analysts and/or technicians have a minimum of a B.S. degree and must complete a rigorous training program before reporting results independently. In addition to offering the traditional direct exams (spore traps and tape lifts) and culture methodologies, we also use state of the art equipment such as GC-FAME, MALDI-TOF, and PCR for identifying individual bacterial and fungal species.

Our key microbiology laboratories maintain accreditation under the American Industrial Hygiene Association (AIHA) or the American Association for Laboratory Accreditation (A2LA) microbiology accreditation programs. Additionally, we participate in the U.S. CDC Environmental *Legionella* Isolation Techniques Evaluation (ELITE) Program for *Legionella* analysis as well as state proficiency programs for bacteriological testing of drinking water, wastewater, and sewage sludge. We also offer customized special project design for non-routine analysis utilizing ASTM, USP, EPA, APHA, AATCC, ISO, JIS, NSF, OECD, MIL, ASM as well as other internationally developed test methodologies.

All Microbiology Labs maintain a five or six business day laboratory operation schedule. We have emergency response plans in place for off hours and/or weekend operating hours when needed. Turnaround times (TAT) are tracked by the number of business days from the time samples are received in the laboratory. Microbiology TATs for direct exams include same day (3 hr. and 6 hr.), 1 day, 2 day, 3 day, 4 day, 1 week, and 2 week. Culture analyses are provided with a 6-14 day turnaround based on the individual incubation period requirements. Costs/rates are weighted based on the TAT requested with our 2 week TAT rates the most economical for our customers.

Sample control/processing (log-in, results data-entry, reporting) is facilitated by our computer Laboratory Information Management System (LIMS) which tracks individual projects to meet our clients' specified due dates. Additionally, the LIMS includes security controls to ensure that information is controlled and locked once the data has been entered by our analysts. Since all of our laboratories utilize the same LIMS, all reports are standardized which allows for network support (intra-lab transfer) for sample overcapacity issues. We offer a variety of reporting formats for our most popular tests including our Expanded Fungal Report for total spore count and direct exam analyses. We can also design customized reporting options for long term and special projects. Reports are delivered depending upon client preference (email, LABConnect™, fax, or all). All clients have 24/7 real-time access to their reports, Chains-of-Custody (COC), and project invoices via our online account management system, LABConnect™. This is a security-enabled online portal that provides various search options so that our clients can find all project and invoicing information quickly and easily.



Key tests include* (but are not limited to) the following:

FUNGI (MOLD and YEAST)

- Spore Trap Analysis
- DNA Sequencing
- PCR
- ERMI
- ID and Enumeration of Culturable Fungi (Genus Level ID)
- ID and Enumeration of Culturable Fungi (Includes Species ID of *Penicillium*, *Aspergillus*, *Cladosporium* and *Stachybotrys*)
- Expanded Fungal Species ID Services
- ID of Fungal Structures via Direct Examination (Tape Lift, Bulk, Swab, Wipe)
- *Cryptococcus neoformans*
- *Histoplasma capsulatum*

WATER ANALYSIS

- Heterotrophic Plate Count (HPC)
- Total Coliform w/*E. coli* screen
- Fecal Coliform
- Fecal *Streptococcus*
- Enterococci
- *Pseudomonas aeruginosa*
- Microscopic Algae Screen

LEGIONELLA

- Standard ISO 10-14 Day Culture Test
- Rapid Legiolert 7 Day Culture Test
- Quantitative Polymerase Chain Reaction (qPCR) Test (identifies *L. pneumophila*, *L. pneumophila* serotype 1 and *Legionella* spp. in one qPCR test)
- Whole Genome Sequencing (WGS) (identifies *Legionella* strains for infections source tracking and outbreak investigations)

BACTERIA

- *Bacteroides* (sewage screen)
- DNA Sequencing

- PCR
- ID and Enumeration of Culturable Bacteria
- Nosocomial Pathogens (MRSA, *C. diff*)
- Sewage Contamination in Buildings
- Mycobacteria
- USP <797>
- Iron-Related Bacteria (IRB)
- Sulfate-Reducing Bacteria (SRB)
- Slime-Forming Bacteria (SLYME)
- Biofilm-Associated Bacteria (Group: IRB, SRB, SLYME)
- Denitrifying Bacteria (DN)
- Nitrifying Bacteria (N)
- Heterotrophic Aerobic Bacteria (HAB)
- Endotoxin Testing

AQUATIC MICROBIOLOGY

- Phytoplankton identification
- Chlorophyll a, b, c
- Algae Toxins
- *Cryptosporidium* and *Giardia* (EPA 1623.1)
- Microscopic Particle Analysis (MPA)

VIRUS AND PATHOGENS

- SARS-CoV-2 (COVID-19), N1 and N2 Markers

SPECIAL PROJECTS

- Antimicrobial Testing
- Product Resistance to Mold and Bacteria
- Time-kill Studies
- MIC/MLC Testing
- UV-kill Studies
- Disinfectant Effectiveness

HEALTHCARE-ASSOCIATED INFECTIONS (HAIS)