

Environmental NEWS

Spring 2014



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Lancaster Laboratories
Environmental

Eurofins Environment Testing US expands footprint with UL Water Lab & Calscience acquisitions & new Service Centers



Keith C. Wheatstone, Ph.D., President of Eurofins Environment Testing US

With the goal of delivering a broader range of comprehensive services to customers, Eurofins has been expanding its US environmental testing presence as part of its strategy to exceed EUR 2bn revenue objective worldwide by 2017 through 5% organic growth and an impressive acquisition schedule.

In May, Eurofins Eaton Analytical, Inc., (EEA) acquired the consumer and municipal water testing business of UL (Underwriters Laboratories) in South Bend, IN. Eurofins Eaton Analytical's lab in Monrovia, CA, is the largest potable water testing laboratory in the US with UL's South Bend lab a close second. Together they will provide an unparalleled resource for drinking water testing for clients from coast to coast.

UL's water testing laboratory is certified to perform drinking water analyses in all 50 states. The 70,000-square-foot, state-of-the-art laboratory employs over 70 scientists and support staff and generates revenues of over \$8m. The South Bend lab serves more than 7,000 state and local municipalities as well as bottlers, engineering firms, consultants and federal agen-

cies such as the EPA and the US Military and offers a comprehensive range of analytical testing services, including chemistry, microbiology, parasitology and radiochemistry.

Eurofins recognizes water quality to be critical for public health protection, whether in public water supplies or as a component of food and beverages. With the continued interest in emerging contaminants and the development of ever more stringent standards, this acquisition provides clients with a trusted laboratory partner that can respond to their routine drinking water compliance testing needs 24/7 as well as offer cutting edge capabilities for analyzing trace levels of emerging contaminants.

Also in May, Eurofins Environment Testing US Holdings, Inc. (EETUSH) announced that it was acquiring California-based Calscience Environmental Laboratories, Inc., the largest independent full-service environmental testing laboratory on the West Coast. The acquisition is expected to close at the beginning of June.

With nearly 30 years building a strong industry reputation for quality and customer focus, Calscience offers a comprehensive range of analytical methods with expertise encompassing all environmental matrices, including, air, groundwater, marine sediment, soil, solid waste and wastewater. Calscience serves a diverse range of clients, including Fortune 100 Companies; environmental engineering consultants; private industry; and federal, state, and local governments. Calscience holds accreditations including National Environmental Laboratory Accreditation Program (NELAP) and Environmental Laboratory Accreditation Program (ELAP), the US Department of Defense Environmental Laboratory Accreditation Program (DoD-ELAP), as well as state agencies throughout the United States.

Generating revenues of over \$20m and employing 180 staff, Calscience's 60,000-square-foot, state-of-the-art laboratory facility in Garden Grove, California, and its service centers in northern and central California and Texas augment Eurofins' US 'Centers of Excellence' philosophy by mirroring Eurofins Lancaster Laboratories Environmental's reputation for delivering stellar quality and customer service.

New Service Centers

Eurofins Environment Testing US has expanded its geographic reach by establishing two new Service Centers in Colorado (see article on page 4). These service centers along with our two new sister laboratories will complement our US environmental testing portfolio by expanding capacity and capabilities and ultimately enhancing clients' overall service experience.

The new Colorado service centers offer sample pickup and drop off, as well as sample kits and supplies.

The Denver (Lakewood) service center will serve drinking water clients in the greater Denver area, while the Fort Collins service center will be serving shale gas (also known as fracking) clients in the northern Colorado and southern Wyoming shale 'plays.'

Offering comprehensive networking to all Eurofins facilities, our service centers provide on-site Project Management collaboration at our facility or a client's site to discuss project planning, project logistics, review reports and other project-related communications.

These additions to our expanding US environmental 'Centers of Excellence' portfolio strengthen Eurofins' position as the industry's premier provider for environmental testing. By sharing best practices, clients receive an unparalleled spectrum of quality testing services, data access and capacity from coast to coast.

Eurofins Eaton Analytical & Eurofins Lancaster Laboratories Environmental team up to help the State of West Virginia

Andy Eaton, Ph.D., Eurofins Eaton Analytical

On January 9, 2014, Freedom Industries, a supplier to the coal industry, reported a major chemical spill (>10,000 gallons) of crude Methylcyclohexanemethanol (MCHM) and propylene glycol phenyl ether (PPH) from a storage tank on the Elk River, just outside of Charleston, WV. The Elk River flows into the Kanawha River, which is the only source of drinking water for more than 300,000 citizens of Charleston. This spill caused the West Virginia American Water Company (WVAW) to issue a “do not use” order to all of their customers, which lasted from five to 10 days, depending upon the location. Crude MCHM has a very strong licorice like odor and exposure to high concentrations during the early days of the spill and during flushing activities in households in Charleston led to rashes and nausea amongst residents.

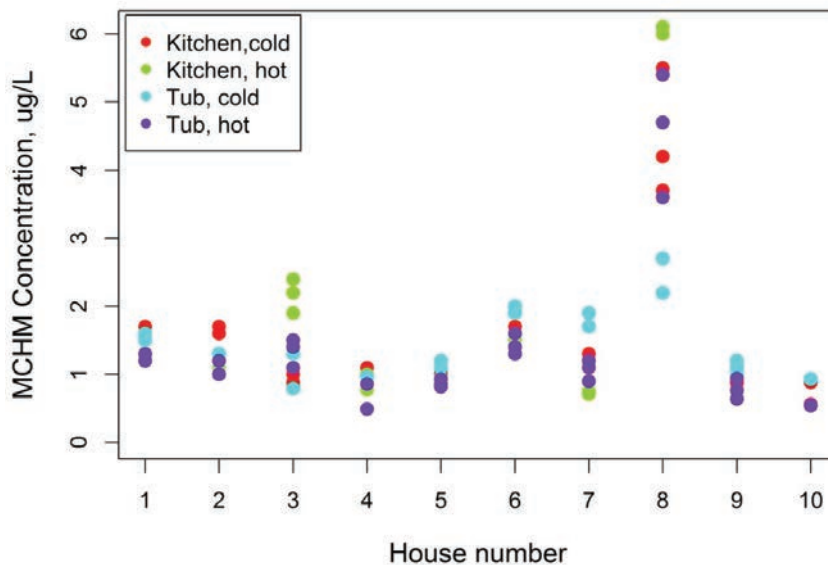
Immediately after the spill, Eurofins Eaton Analytical (EEA) and Eurofins Lancaster Laboratories Environmental (ELLE) collaborated on the MCHM issue and decided that ELLE should take the lead to develop and validate a method. ELLE chemists began working on developing and optimizing a sensitive method for MCHM and were able to demonstrate excellent precision and accuracy at the 1 ppb level, more than 10 times below the 10 ppb screening level established by the State of West Virginia for drinking water.

In early February, the State of West Virginia contracted with Corona Environmental, a consulting firm based out of Massachusetts, to provide an independent assessment of the spill and its impact on the drinking water. Corona established the West Virginia Testing Assessment Program (WVTAP) and contracted with multiple entities, including Eurofins, to help perform the evaluation. WVTAP was designed to address multiple facets of the spill, including a) an assessment of the odor threshold concentrations for crude MCHM and its breakdown products, b) an evaluation of the occurrence of MCHM and PPH at multiple locations within 10 households in the affected area more than 1 month after the spill to determine whether an addi-

tional large scale survey would be warranted, and if so how many samples and houses would be needed for good statistical assessment of occurrence, c) an evaluation of whether there were any byproducts of MCHM that might be present in the houses, and d) convening an expert panel of toxicologists and public health professionals to independently evaluate the Centers for Disease Control (CDC) and West Virginia proposed safety levels for the chemicals. Eurofins was intimately involved in all of the analytical related issues and briefings of state health officials, the governor and the public.

When EEA was contacted by Corona on a Sunday morning, February 9, to see if we could help with multiple tasks, the Eurofins team was ready to respond. EEA developed guidelines, posted on the WVTAP site, to assist the public with interpretation of results from testing. EEA and ELLE sent sample bottles by overnight service to Charleston for the household sampling (120 samples for TOC, MCHM and PPH, representing triplicate samples from four faucets within each house). Samples were sent back to both labs for analysis (EEA for TOC and ELLE for MCHM and PPH)

in addition to another independent lab, which had previously been reporting MCHM data related to the spill and that also claimed a low MDL for MCHM. But once results were reviewed by the WVTAP team, the Eurofins data for MCHM and also for TOC proved to be far more useful than the other lab's results (see figure 1 for MCHM results for the 10 houses).



Compound	Eurofins Lancaster Labs (ELLE)		Lab B	
	MDL	Minimum reporting Level (MRL)	MDL	Minimum reporting Level (MRL)
4-MCHM ppb	0.5	1.0	2.7	5.0

Figure 1: MCHM Results of Charleston, WV, household samples from ELLE. All samples were collected and analyzed in triplicate for each location within the house by both labs. All results reported by Lab B were “non-detect,” even though House 8 results exceeded the Lab B MRL.

Because the spill was crude MCHM and not the pure compound (which is only about 80% of the crude material), odor threshold concentration tests (OTC) were performed using the crude material by Dr. Michael McGuire in California and UCLA. ELLE obtained samples of the crude MCHM through the auspices of the National Guard and prepared dilutions of that crude material to concentrations below 0.1 ppb for shipment to the Odor Threshold Team.

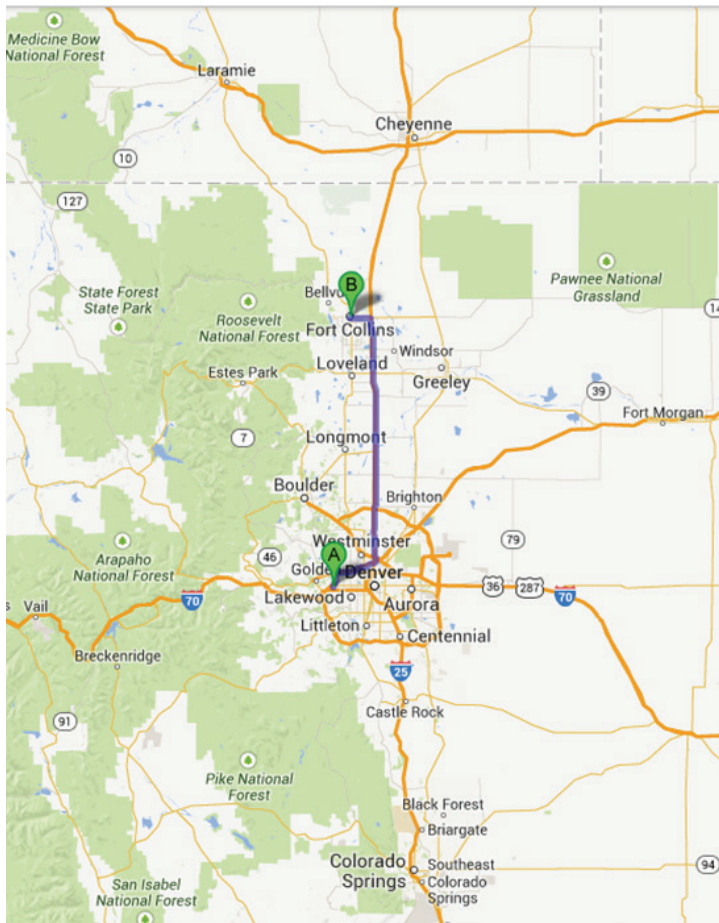
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New Service Centers in Colorado support sample pickup needs

Eurofins Eaton Analytical and Eurofins Lancaster Laboratories Environmental recently opened new service centers in Lakewood and Fort Collins, CO, to provide clients in Colorado with enhanced customer service. The Lakewood Service Center specializes in serving drinking water clients in the greater Denver area while the Fort Collins Service Center focuses on the Niobrara shale oil and natural gas play in northern Colorado and southern Wyoming. The new Colorado service centers offer sample pickup and drop off, as well as sample kits and supplies.

Both service centers stock sample containers, labels, chain-of-custody forms and custom sample kits for all sampling needs. Analytical Service Managers will process sample container orders in preparation for delivery to the desired site or for pick up at either the Lakewood or Fort Collins location. Then, a courier, trained in sample handling and chain-of-custody procedures, will pick up the samples for overnight delivery to the appropriate Eurofins laboratory.

Shea Greiner heads the new Denver Service Center as the Analytical Services Manager. Shea brings 25 years of experience and in-depth knowledge



A. Lakewood Colorado Service Center
B. Fort Collins Colorado Service Center

of Colorado drinking water issues to the Eurofins Eaton Analytical team. Shea Greiner can be contacted at 720-491-1749. Regular courier service is available during normal business hours. Cassandre Pelto heads up the new Fort Collins Service Center. Cassie brings six years of experience working in environmental labs and extensive field sampling experience. She can be contacted at 970-658-7330.

Our service centers provide complete networking to all Eurofins facilities, on-site Project Management, and opportunities for in person meetings at our facility or yours to discuss project planning, project logistics, review reports and other project-related communications.

Eurofins helps West Virginia

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Retained aliquots were analyzed to confirm concentrations and meaningful results were obtained even below the ELLE MDL of 0.5 ppb. Results of ELLE measurements helped to confirm that the odor threshold concentrations of MCHM for expert odor panelists was < 0.15 ppb, with odor objection levels (OOL) of < 5 ppb, both many times lower than the safe consumption concentrations determined by CDC and a WVTAP expert health effects panel.

Additionally, ELLE looked at the tentatively identified compounds showing up on the household samples to be able to determine whether there were any compounds of concern besides MCHM or PPH that might be present as a result of either breakdown of the MCHM or interaction of the compound with chlorine or permanganate from the WVAW treatment system. Through extensive evaluation of chromatograms and literature searches, ELLE was able to rule out the presence of any tentatively identified compounds in household samples beyond the MCHM itself, helping to focus the attention of the Health Effects Expert Panel on the MCHM and PPH. As part of this study of tentatively identified compounds, we requested additional samples of water from above and below the spill site and also from the effluent of the WVAW treatment plant. These samples proved important because with the sensitive methods being used, we determined that trace levels of MCHM (~0.6 ppb) were leaching from the treatment plant, likely from the carbon in the plant. Subsequently WVAW has replaced all their carbon filters, and ELLE has confirmed for them that there are no longer trace levels of MCHM coming from the plant.

The Eurofins team is proud to have been part of this project, helping the citizens of Charleston obtain an independent assessment of the impact of the spill. The response from the WVTAP program is a potential model for evaluating impacts of future chemical spills on drinking waters of the United States. All results from this study, including white papers, data and public presentations are available at <http://www.dhsem.wv.gov/wvtap/Pages/default.aspx>.

DoD Defines Sensitivity Measures

The last issue of *Environmental NEWS* included a status update on the Quality Systems Manual (QSM) published by the U.S. Department of Defense (DoD). Version 5.0 of the manual became effective in July 2013, bringing with it some significant changes in data reporting requirements for that program. The new document is based on Volume 1 of the TNI Standards Module and ISO 17025, but it also includes additional requirements for laboratories performing analytical testing for DoD and the Department of Energy (DOE).

In order to generate data that is useful to environmental project decision makers, it's important for laboratories to determine the sensitivity of the analytical methods they use. The DoD QSM defines sensitivity in terms of three parameters: Detection Limit (DL), Limit of Detection (LOD) and Limit of Quantitation (LOQ). Prior to the publishing of the most recent QSM, data reporting schemes typically used only one or two of the parameters described, but the new requirements include instructions for evaluating low-level results using all three of the limits. This means laboratories must determine each limit for every parameter in the analytical methods they perform.

The DL is defined as the smallest analyte concentration that can be demonstrated to be different from zero or a blank concentration at the 99% confidence level. This means that if a substance is detected at or above the DL, it can be reliably stated that the substance is present in the sample and that the chance of a false positive is only 1%. This is similar to the definition of Method Detection Limit studies that USEPA defines in 40 CFR Part 136.

The LOD is defined as the smallest amount or concentration of a substance that must be present in a sample in order to be detected at a 99% confidence limit. At this concentration, there is a 99% minimum probability of reporting a detection and only a 1% chance of reporting a false negative. Although the DL and LOD sound similar, the chances of a false negative result at the DL are 50%, much greater than at the LOD.

The LOD is determined by analyzing samples spiked at low levels in the matrix of interest. The spike level is based on the DL, and the LOD determination is acceptable if the signal to noise ratio on the instrument used is at least three. For measurements made with instruments that don't provide a noise level, the LOD is evaluated by comparison with the standard deviation of the blank concentration.

The LOQ is the lowest concentration of a substance that produces a quantitative result within specified limits of precision and bias. The LOQ is typically greater than the LOD, but may be equal to the LOD in certain cases. Quantitative results can only be achieved above the LOQ, and concentrations that fall between the DL and LOQ should be considered estimates.

A comparison of the three parameters looks like this: $DL < LOD < LOQ$

The DoD QSM requires that laboratories use an established procedure to verify the sensitivity of each test method in terms of LOD and LOQ at least quarterly. All three parameters must then be considered to report data and flag results. A fact sheet published by the DoD Environmental Data Quality Workgroup explains these concepts in more detail and defines how data should be reported and used based on the QSM requirements. The fact sheet is available at:

www.denix.osd.mil/edqw/upload/Final-DQ-Fact-Sheet-091409.pdf



Analyst Katlin Cataldi performs limit of detection studies by ICP-MS.

Although QSM 5.0 was finalized last year, there is a two-year implementation period during which data generated under either the previous or new version of the QSM will be acceptable. The program framework is complex and the recent update adds new requirements for the laboratories that support DoD projects. As an approved DoD laboratory, Eurofins Lancaster Laboratories Environmental (ELLE) has supported DoD projects for many years and is currently working to execute the new reporting procedures for DoD projects that require it. Implementation is planned to be in place before the next audit by A2LA, the accrediting body that reviews ELLE for compliance with environmental standards.

Future DoD projects are expected to focus on long-term remediation work and sites with high hazard, mixed waste, munitions and complex chemical contamination challenges because many of the more straight forward cleanups and remediation activities have already been completed. ELLE is well-suited to serve this market with their breadth of service offerings, experience, commitment to the business and capacity. For more information about testing to meet DoD requirements, contact Environmental Business Development at 717-656-2300.

Eurofins Frontier Global Sciences Offers EPA PS12B Mercury Emissions Monitoring

Robert C. Brunette, Executive Vice President, Eurofins Frontier Global Sciences

Starting April 16, 2015, coal-fired power plants and other “electric generating units” (EGU) across the United States will need to begin continuous mercury (Hg) emissions monitoring to comply with the Mercury Air Toxics Standard (MATS), the first National Emissions standard for mercury that requires both continuous Hg emissions monitoring and in three years, 90% mercury emissions reductions. As of April 15, 2014, a recent legal challenge to MATS was struck down, and many believe is here to stay.

Eurofins Frontier Global Sciences (Frontier), back in the early 1990s, was the architect of the mercury emissions sorbent trap method that utilized a chemically impregnated carbon trap that very efficiently captured mercury in coal-fired power plant emissions. This method was then used widely across the United States and in 2007 became the EPA mercury emission reference method.

Due to the challenge with the very complicated, expensive and difficult to operate Continuous Emissions Monitors (CEM), which are essentially mercury analytical instruments that are installed on emissions stacks, the EPA sought an alternative that was more accurate, simple and cost effective.

Frontier along with the EPA, Electric Power Research Institute and industry partners, developed an improved continuous Hg emissions method that captured the mercury from emissions onto a modified chemically impregnated carbon trap that in turn is analyzed specifically for mercury. This monitoring method greatly improved the accuracy of mercury emissions measurements both affording lower detection limits (using Frontier’s mercury analysis method), field quality assurance that requires for each sampling run a field duplicate (precision), measurement of breakthrough (trap capture performance) and a section with a NIST traceable spike (accuracy).

In 2003, Frontier, EPA and industry partners successfully tested this method on several power plants and found the method to work quite well. The method was inducted originally as EPA Method 324, however, in 2012 was upgraded to “EPA Performance Specification 12B – Specifications and Test Procedures for Monitoring Total Vapor Phase Mercury Emissions from Stationary Sources Using a Sorbent Trap Monitoring System.”

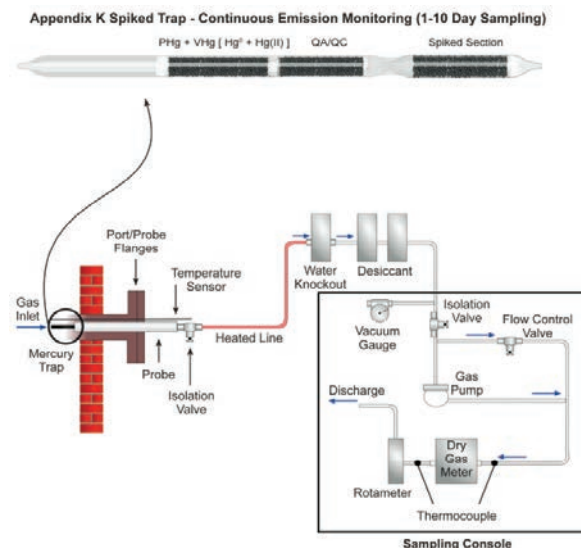
General Description of EPA PS12B (Courtesy EPA): Known volumes of flue gas are continuously extracted from a stack or duct through paired, in-stack, pre-spiked sorbent media traps at appropriate nominal flow rates. The sorbent traps in the sampling system are periodically exchanged with new ones, prepared for analysis as needed, and analyzed by any technique that can meet the performance criteria. For quality assurance purposes, a section of each sorbent trap is spiked with NIST traceable gaseous Hg₀ prior to sampling. Following sampling, this section is analyzed separately and a specified minimum percentage of the spike must be recovered. Paired train sampling is required to determine method precision.

Frontier both manufactures and analyzes EPA PS12B traps using a variation of the more sensitive, compliance-based Method EPA 1631 (CVAFS).

Overall, EPA PS12B offers a number of major advantages, including the following:

- Significant Cost Difference; some estimate that EPA PS12B is 20% of the cost of CMMs
- Easier to operate and support by power plant personnel and simple operation
- Simple Data Management, 7-day integrated = 8-10 data points per month
- Simple Data Validation/Reporting monthly average reported for MATS
- Method is reliable with the right field sampling equipment, traps, analysis, staff
- Method directly NIST traceable vs. CMMs complicated NIST traceability
- Very Low Detection Limits can quantify low emissions stack and demonstrate Hg reductions
- Samples can be analyzed and archived with Frontier’s analysis method
- Hg Signal captured directly on trap with no umbilical line (some applications pull gas through umbilical down to CEM Shelter where trap resides)
- Excellent Field QA/QC for each run, indicating very clearly if data is valid or not

Frontier expects a great increase in interest in this method through 2014 in anticipation to the start of the 2015 MATS program and has been working with several field sampling equipment manufacturers to ensure that the equipment needed to take the samples meets EPA PS12B specifications. To learn more about this method, please contact Robert Brunette (RobertBrunette@EurofinsUS.com).



3 Section Traps

- Section #1: 95+% Hg
 - Section #2: Breakthrough
 - Section #3: NIST Spiked
- ### Basic Principles
- Pull gas through trap
 - Run for 7 days
 - Control FR/Keep Dry
 - Integrated Hg On Trap
 - Traps Analyzed For Hg
 - Sample Volume

The challenge to developing methods for active pharmaceutical ingredients in environmental samples

The USEPA has recognized the presence of low levels of drugs and personal care products in U.S. waterways and is responding with strategies aimed at reducing their release. The sources of these pharmaceutical compounds in the environment are varied. Some of them result from the manufacturing process, while others originate from users in the form of unmetabolized drugs that pass through the body and are then excreted. And when unused medication is disposed of by flushing down the toilet, even more chemicals are added to the mix that can be found in waterways and impact aquatic life. Additional areas of concern for low-level pharmaceutical contamination include effluent and biosolids from treatment plants and landfills.

The USEPA is continuing to study this issue, but one of the obstacles to quantifying the problem is a lack of analytical methods that can be used to detect pharmaceuticals in water samples at trace levels. While pharmaceutical manufacturers are required to supply analytical methods for the active pharmaceutical ingredients (API) as part of the USFDA approval process for marketing drugs, those methods are intended to ensure that the concentrations are within accepted limits for the finished pharmaceuticals. Therefore, the methods do not usually have the sensitivity needed to detect trace levels in environmental samples. Although there is no requirement for low-level detection methods for APIs, some pharmaceutical manufacturers are investing in this development as part of their risk management program. Eurofins Lancaster Laboratories Environmental (ELLE), with their extensive knowledge of extraction and cleanup techniques and arsenal of high-tech instrumentation, can help to solve this analytical puzzle.

The Specialty Services Group at ELLE was recently presented with a request from a major pharmaceutical client to develop analytical methods for 12 APIs in water samples. Based on toxicological risk assessments, the required detection limits for some of the compounds were in the part per trillion (ppt) range. The



Analyst Meng Yu optimizes chromatography for a new client method using HPLC/MS/MS.

client was able to provide initial information about the chemistry and structure of the APIs, but the chromatographic methods available for the compounds were meant to be used on pharmaceutical products, not surface water samples. Analysts in the group studied the compounds involved and felt they were up to the challenge. The group successfully developed five extraction methods to isolate and concentrate all of the APIs of interest. They then refined the chromatography using their HPLC/MS/MS to separate and quantitate the compounds at the extremely low concentrations required for environmental samples.

Eurofins Eaton Analytical has been analyzing for trace levels of pharmaceuticals and hormones in drinking water for several years and between its two facilities (Monrovia and South Bend), offers analysis of nearly 150 different pharmaceuticals and personal care products.

Another project used a similar strategy to investigate the potential contamination of water for injection. The method developed for that project employed headspace analysis with GC/MS as the means for detection. Developed over a matter of days, the technique was able to determine that the contamination was

not present and allowed the water system to be put back into service.

Chuck Neslund, Specialty Services Technical Director, says that each method development project is unique. "It isn't a cookie cutter type of thing. We use our experience to determine if we can meet the clients' analytical requirements and continue to grow our expertise with each new challenge we get," he noted.

The chemistry of the analyte, the interferences presented by the matrix and the level of detection required are key considerations for each new method the group develops. In addition to the HPLC/MS/MS, the group also has other state-of-the-art instrumentation at their disposal. For example, they recently devised a method for a pesticide manufacturer using their GC/MS/MS to achieve detection levels in the sub-part per billion range. After the development, the group may continue to perform testing using the new procedure for the client, or the method can be transferred to the client for their own use.

For more information on API method development for environmental samples, call Chuck Neslund at 717-656-2300.

Dioxin testing propels Lab growth

Dioxins, along with chemically similar compounds like furans and certain dioxin-like polychlorinated biphenyls (dl-PCBs) are all highly toxic, environmentally persistent and notoriously difficult to analyze. The quantitative chemical analysis of dioxins requires sophisticated methods that are available only

in a limited number of laboratories around the world, according to the World Health Organization (WHO). The Specialty Services Group of Eurofins Lancaster Laboratories (ELLE) is one of those few laboratories with established expertise in a variety of chromatographic methods used to analyze

foods, feeds, waters, soils and other matrices for dioxins, furans, dl-PCBs and PCB congeners.

This select status has propelled continual growth over the years since the group was established to perform challenging analytical work that few other laboratories were equipped to accept. Instead of turning away requests for out-of-the-ordinary testing, the Specialty Services Group was established to solve analytical problems and achieve difficult method requirements. From the beginning, the laboratory was specially designed to provide an ultra-clean environment that would minimize potential interferences from background contamination. Today, the services offered there are so much in demand that the staff in the extraction laboratory has doubled and expanded into a second shift to provide addition-

al late day sample preparation, and ELLE also plans to double the space available for sample extraction.

The additional resources will help the group to continue to meet the tight deadlines required for some of their projects. Because more than 90% of human exposure to dioxins is through

notes the wide variety of matrices the group can handle, "While supporting substantial environmental projects involving dozens of soil and water samples daily, we are also doing food and feed testing as varied as fish, krill oil, poultry, eggs, dairy, meat and grains." In addition to dioxin and furan



ingestion, many countries are regulating dioxin levels in food supplies. Thus food and feed growers and manufacturers need rapid results for dioxin testing. An example of how quickly ELLE can process samples can be found in the case of a grain exporter who samples their cargo as the ship leaves the U.S. and needs the certificate of analysis before the ship is allowed to dock in Europe. Dioxin testing for this client is accomplished in as little as four days.

There are four cutting-edge, high-resolution gas chromatograph/high-resolution mass spectrometers available to analyze the samples after extraction. "The Lancaster location is recognized within the Eurofins organization as a Center of Excellence for high-resolution mass spectroscopy," according to Chuck Neslund, Technical Director of the Specialty Services Group. He also

analyses, the group performs tests for dioxin-like PCBs, the full list of 209 PCB congeners and the six PCB congeners that are considered indicators for the presence of Aroclors. Typical turnaround time for environmental samples is eight to 10 days.

For more information about dioxin, furan or PCB congener testing, contact Environmental Business Development at 717-656-2300.

Contact us

For information on services:
Environmental Business
Development, 717-656-2300
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For literature requests or
address changes: Susan Wike,
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slwike@lancasterlabs.com

Award competition promotes surpassing project goals and improving client satisfaction

It's been said that what gets measured gets done; what gets measured and fed back gets done well; and what gets rewarded gets repeated. Identifying, communicating and achieving key business priorities is a challenge facing every business, and gaining employee buy-in to those priorities is an important means for meeting and exceeding client requirements. At Eurofins Lancaster Laboratories Environmental (ELLE), a highly prized award named the "Triple Crown" incentivizes teams to monitor progress and achieve goals based on corporate and client needs.

The award name is based on the three measurements used to determine a winner: quality, schedule and budget. To achieve the Triple Crown, a department must be able to meet or exceed defined requirements in all three areas. If a department achieves the Triple Crown for three consecutive months, their status is elevated to winner of the Triple Triple, which allows them to display a coveted trophy in their laboratory, and the company treats the entire department to a celebration.

To meet the quality component of the award, all quality assurance metrics must be at 100% compliance. This measurement includes a wide variety of requirements to meet regulatory and internal needs. Method detection limits must be current, responses to audits and investigation reports must be on time, proficiency testing samples must be submitted, and responses to other quality assurance documents must be on schedule. These parameters are tracked by the ELLE Quality Assurance Group to ensure that data generated will meet client quality objectives. Including quality metrics in the award criteria has led to an increase in quality awareness because the metrics are reviewed at all staff meetings, and any quality concerns are quickly remedied.



Metals Analysis Group members and proud owners of the Triple Crown for over a year.

Delivering results on time is a key client requirement. ELLE uses its laboratory information management system (LIMS) to track and communicate turnaround time (TAT) requirements. Each analysis is entered with either a default or client-required date when verified results are required to be available in the LIMS. To be eligible for the Triple Crown, 95% of the tests run must meet the expected turnaround time. The award motivates department members to go the extra mile to keep TATs on track, even if it means working a few extra hours during the week or coming in for additional coverage on the weekend.

Finally, each department must also meet their revenue budgets in order to take home the prize. In addition to meeting budget, the award also fosters improvements in productivity and efficiency by adding motivation to evaluate and streamline processes using tools such as Lean Manufacturing and Practical Process Improvement. It encourages everyone to voice their ideas on better ways of doing things.

The Metals Analysis Group at ELLE

has been a consistent winner of the Triple Triple over the last several years, having taken home the prize for 10 consecutive months in 2013 and nine consecutive months in 2012. Bob Strocko, Manager of the group says that the award generates a lot of friendly competition within the company as each group focuses efforts on achieving their goals and capturing "the crown" from another group. "Pride is a big part of what this award creates. The trophy and the recognition that comes with it are tangible evidence of success. Striving to be the best is a win-win for ELLE and our customers," says Strocko. He believes that the award would not work without the complete support of management at all levels and attributes its success to activities such as group recognition at staff meetings and regular communication about progress toward goals. Strocko sends several emails a month to update his department members on their status. He adds that, "This emphasis and visibility helps achieve buy-in, adds to job satisfaction and leads to long-term commitments from everyone involved."

Passive sorbent techniques offer cost-effective, technical advantages

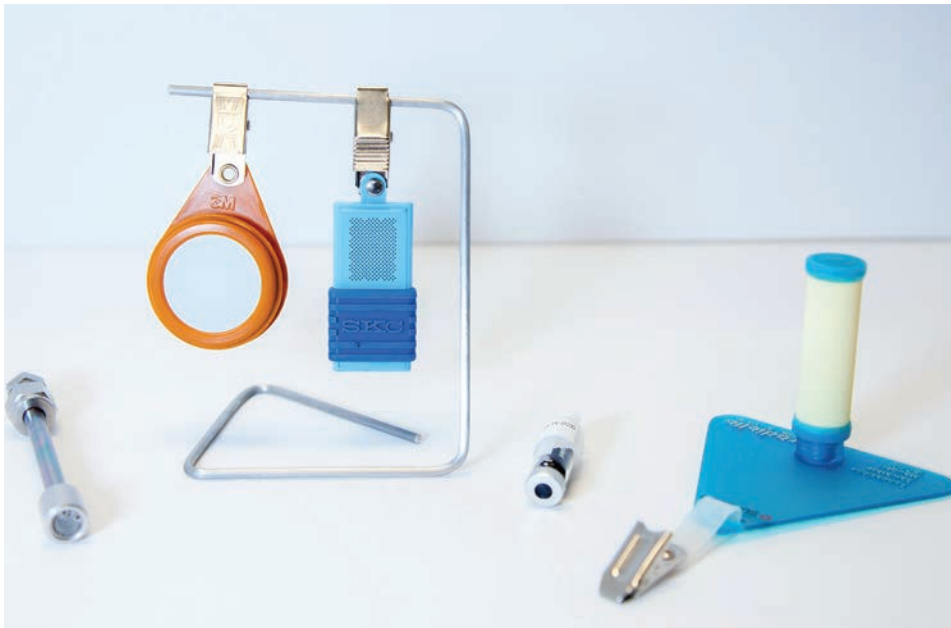
Heidi Hayes, Technical Director,
Eurofins Air Toxics

Once a common device used by industrial hygienists for measuring worker exposure, passive dosimeters have gained increased interest from vapor intrusion practitioners as a mechanism for measuring volatile organic compounds (VOCs) in indoor air.

rated on multiple EPA-funded projects designed to evaluate and compare passive technologies to standard methods. Additionally, Eurofins Air Toxics conducted the indoor air laboratory testing plan for the ESTCP¹ project ER-0830 (Development of More Cost-Effective Methods for Long-Term Monitoring of Soil Vapor Intrusion to Indoor

including Radiello® samplers, SKC Ultra III badges and the novel Waterloo Membrane Sampler (WMS™), as well as the standard tube-style sorbent cartridge. The experts at Eurofins Air Toxics can assist in selecting the optimal passive sorbent sampler to meet project objectives, supply sampling media, analyze field samples and provide technical support after delivery of the final report.

1. Environmental Security Technology Certification Program (DoD's Environmental technology demonstration and validation program).



To read more about Heidi Hayes' expertise, see her feature on opposite page.

Passive sorbent samplers provide both practical and technical advantages over conventional air sampling methods. Since passive samplers are small, easy to deploy and unobtrusive, they are an appealing, cost-effective solution for large-scale indoor air investigations. Also, given the potential temporal variability of VOC concentrations in homes impacted by vapor intrusion, the ability of passive sorbent samplers to collect long-term integrated samples is advantageous, providing more representative VOC measurements for health risk assessments.

Eurofins Air Toxics has been on the forefront of evaluating passive sorbent samplers for long-term VOC indoor air measurements. Over the past five years, the laboratory has collabo-

rated on multiple EPA-funded projects designed to evaluate and compare passive technologies to standard methods. Additionally, Eurofins Air Toxics conducted the indoor air laboratory testing plan for the ESTCP¹ project ER-0830 (Development of More Cost-Effective Methods for Long-Term Monitoring of Soil Vapor Intrusion to Indoor Air Using Quantitative Passive Diffusive-Adsorptive Sampling Techniques). For this project, various passive sorbent samplers were deployed in chambers and exposed to a controlled range of environmental conditions and VOC concentrations to evaluate their performance against conventional air sampling methods to determine their advantages and limitations.

Many types of passive sorbent samplers with a variety of performance characteristics are now available for indoor air monitoring. Successful implementation of passive sorbent technology largely relies on the proper selection of the passive sampler to ensure reliable results are generated. Eurofins Air Toxics has experience with many of the commercially available passive monitoring devices

About Eurofins Air Toxics

Founded in 1989 and based in Folsom, California, Air Toxics Inc. the leading US air testing laboratory, specializing in the analysis of air using a wide range of EPA, CARB, ASTM and NIOSH methods. Its capabilities range from parts per trillion volume (pptv) analysis of ambient air to identifying organics in high level sources, and from routine analysis to sophisticated special technical services.

A continuing commitment to data integrity, investment in advanced instrumentation and technologies and dedicated client service have made Air Toxics the premier test facility for the analysis of air samples.

Last year, Eurofins Air Toxics successfully achieved ISO 17025 accreditation for its new Environmental Chamber emissions testing facility in Folsom, CA.

Always Air. Always Accurate.

We believe that our people provide our strength. Their dedication to quality, professional competence and hard work are the key elements in the company's success. In this regular feature, we introduce you to some of the people who have helped make our lab an industry leader.

With Eurofins Air Toxics for 18 years, Heidi Hayes brings sage knowledge to her clients' air testing challenges. As the Vice President and Technical Director, Heidi describes serving as a technical resource to her clients and analysts and fielding a myriad of queries on the most relevant methodology and best course of action for testing the industry's ever-evolving chemicals and compounds as: "non-routine is routine."

"I also find our 'behind-the-scenes' project work for clients who may be in the news interesting," says Heidi. "The significance of helping clients figure out a sample plan and mitigation to improve air quality for our community is exciting to be a part of."

Heidi holds bachelor's and master's degrees in chemistry and has more than 20 years of industry experience. Read more on how Heidi helps our clients every day:

What does your current job entail?

In my role as Technical Director, I oversee the testing of new media, protocols and technology related to air phase analysis. I serve as a resource for our laboratory, supporting method and data questions. I work closely with sales and project managers as well as directly with our clients to develop sampling and analysis approaches for non-routine requests. In the world of air testing, "non-routine" is commonplace as many of the EPA air methods were not written to address today's environmental challenges faced by our clients. We often explore new technologies in order to meet the industry needs and have collaborated on several research projects to evaluate performance against conventional methods. This continual focus on innovation helps us to provide unique solutions to our clients.

People are the chemistry



Heidi Hayes

Why should clients trust us with their projects?

We bring 25 years of experience focused on the analysis of air, supporting a wide range of applications from trace level analysis to high level source testing. We work closely with our clients to understand their project objectives and have the flexibility and technical resources to set up methods to meet challenging requirements and the production capacity to handle large programs. The team at Eurofins Air Toxics is committed to customer service throughout the organization from the time we get the first call through final data delivery. We are also there for the clients after the project ends should any questions arise from the end user or regulator, fielding technical and quality questions related to the report.

How would you characterize your leadership style?

I would characterize my leadership style as collaborative. In my 18 years at the company, I have worn many hats, allowing me to see the challenges and importance of each area of the organization – operations, sales, project management, QA, R&D, IT, HR and finance. Keeping each area focused on the end goal – meeting the client need – is key to a successful organization. This means taking the time to connect staff to the clients and the bigger picture.

You've been here for 18 years and seen countless changes. Is there anything that hasn't changed during your tenure?

The questions I get from clients aren't getting any easier! On a daily basis, I am faced with new questions or challenges either from our clients or from our lab staff. There's never a dull moment, and it's energizing to collaborate with the team and clients to research and answer these questions, building on our experience daily. I will admit that I wouldn't mind a few "dull moments" here and there just to regroup from the "challenges."

How does your group's work impact/benefit society?

Our data is used to make critical decisions regarding human health. Oftentimes, measurements are collected to determine indoor air quality and associated health risk for the homeowners and their families. Providing accurate and timely measurements are critical in ensuring the proper decisions are made regarding mitigation.

And when you're not working?

I love to run and cycle the roads and trails here in northern California. I also like to travel, and I have had the opportunity to explore Wales, England, New Zealand, Peru, South Africa and Cyprus. However, my favorite trips are to my home state of Iowa, and I make several pilgrimages each year to visit my family and recharge my Midwestern batteries. I will admit that the Iowa trips are strategically scheduled to avoid certain seasonal climate conditions poorly suited to general human comfort.

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Look for Eurofins Environment Testing US at these conferences and industry events:

Event	Date	Location	Attending
DUG East	6/3-5/14	Pittsburgh, PA	Eurofins Lancaster Laboratories Environmental
AWWA ACE	6/8-12/14	Boston, MA	Eurofins Eaton Analytical (Dr. Eaton presenting)
SAME Camp Pendleton	7/18/14	Camp Pendleton, CA	Eurofins Lancaster Laboratories Environmental
NEMC	8/4-5/14	Washington, DC	Eurofins Eaton, Eurofins Lancaster Labs, Eurofins Air Toxics
DOD/EPRI/EPA MEGA	8/19-21/14	Baltimore, MD	Eurofins Frontier Global Sciences
Georgia Environmental	8/20-22/14	Jekyl Island, GA	Eurofins Lancaster Laboratories Environmental
A&WMA Vapor Intrusion	9/10-11/14	Cherry Hill, NJ	Eurofins Air Toxics, Eurofins Lancaster Labs Environmental
SGI 2014	9/23-25/14	Pittsburgh, PA	Eurofins Lancaster Laboratories Environmental
Supply Side Market Place	10/8-9/14	Las Vegas, NV	Eurofins Frontier Global Sciences
ASDWA	10/19-23/14	Albuquerque, NM	Eurofins Eaton Analytical
NADP	10/21-24/14	Indianapolis, IN	Eurofins Frontier Global Sciences
Greenbuild	10/22-24/14	New Orleans, LA	Eurofins Air Toxics
Railroad Environmental Conf.	10/28-29/14	Champaign, IL	Eurofins Lancaster Laboratories Environmental
AWWA WQTC	11/16-19/14	New Orleans, LA	Eurofins Eaton Analytical
Northwest Environmental Business Council	12/9-10/14	Portland, OR	Eurofins Lancaster Laboratories Environmental

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