

ENVIRONMENTAL
RESOURCE ANALYSTS,
INC.

SPECIAL
POINTS OF
INTEREST:

- New and improved website at www.eralab.com
- Learn how to properly collect a sample for VOC analysis.
- Learn why proper data archiving is important.
- Read about the contaminant of the month – lead.
- Have a question for us? Ask Molecule!

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ERA Newsletter

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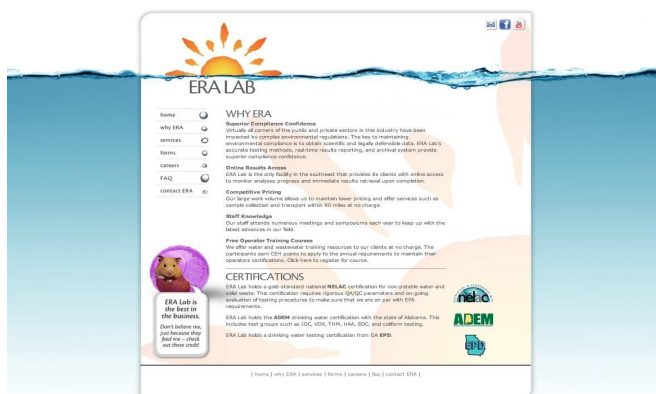
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ERALab.com

Have you noticed something different about www.eralab.com? We launched our new website in July. If you haven't already seen the changes, it is worth taking a look. The new website still contains all the same content as before, plus new useful information. Now you will find instructional videos, important forms, Q&A, and a list of our services. You will also get to meet Molecule, our lab hamster, who will show you around the website and fill you in on some pointers in our instructional videos. You can now also like us on Facebook at

www.facebook.com/eralab/

Along with the website and Facebook page, we are updating our client log-in system. We will soon be offering final report downloads online. Currently you can access preliminary data online, but this fall you will be able to view and print off the final reviewed results in the ERA reporting format directly from the client log-in page. Your final reports will also be stored online and can be printed off if needed at a later time. Look for the new client log-in this fall!



Contaminant of the Quarter: Lead

Lead, a common metal, has been used by humans since ancient times for a variety of purposes from sweetening wine and building the great aqueducts of ancient Rome, to paint additives and construction today. Even though lead is naturally found, it is considered a common environmental pollutant. Lead contamination is most commonly a result of industrial uses such as factories producing lead-acid batteries, wires, and pipes, or recycling plants. Lead is toxic to animals and humans and results in serious symptoms. Depending on type and duration of exposure, lead poisoning can result in symptoms

ranging from fatigue, insomnia, and abdominal pain to memory loss, seizures, and other neuropsychiatric effects. Human exposure to lead occurs in a number of different ways. Occupational exposure could occur if you work in a factory where lead containing products are being produced. Previously, lead was used as an additive in paint, however this practice was banned (with some exceptions) by the Consumer Product Safety Commission in the late 70's. However, some roads and homes may still have lead-containing paint and paint based exposure is still the leading cause of lead poisoning today. (continued on back page)

How to properly collect a VOC sample

VOC stands for Volatile Organic Compounds. These are compounds that have a high vapor pressure which causes them to easily come out of the liquid sample as a gas. For most sample analysis, just filling up the little plastic jug works just fine. However, when collecting a VOC sample there are specific instructions that you have to follow in order for the sample to be considered valid.

When collecting for a VOC analysis, you will be given two short glass vials containing a preservative. The preservative is used to ensure proper measurements of VOC concentrations at the time of sampling. Sodium thiosulfate is the preservative used for a chlorinated water sample. This preservative

eliminates the residual chlorine in the sample which could interact with organics during transport and storage to create a false positive result. Acid is the preservative used for a non-chlorinated water sample. Acid prevents bacterial growth during transport and storage which could degrade VOC compounds leading to a false negative result. It is important that you do not rinse these preservatives out so that your VOC analysis will yield accurate results.

When collecting your sample, open the vial and gently fill the vial up so that the water is overflowing. In order to minimize the loss of the compounds from the liquid, it is important when collecting to leave no head

space or air bubbles in the collection container. This prevents VOC compounds from evaporation out of the liquid into the trapped air bubble which can cause a false low result. Fill up both of the vials in this manner and seal tightly. It is important that the sample vial not be reopened once the sample is collected and the vial has been sealed. Samples have to be stored at a temperature of 2-6°C from the time of collection until arrival at the lab.

Proper Data Storage

The EPA requires that testing data be kept for a minimum of 5 years. If you are testing multiple analyses on a daily basis, and you have to save this data for 5 years, this can lead to a large amount of paperwork to keep up with. Not is it required to keep your analytical data, but also all the data needed to show that analytical data is valid. This supplemental data includes temperature logs, calibration logs, equipment logs, maintenance logs,

reagent logs, and other quality control records. It is recommended that you not only keep a copy of this data onsite, but also a copy of them at an off-site location for safe keeping.

As a client of ERA, you can be sure that all the data for your tests are being properly and securely stored. We keep data records both electronically and in paper format for the required 5 years period. As

part of our certification process, we routinely undergo NELAP audits in which our data recording and storage are rigorously reviewed and have been found to be acceptable. We are also updating our client data retrieval page to allow printing off of past and current analytical reports to make it easier for our clients to access and manage their data.

“As a client of ERA, you can be sure that all the data for your tests are being properly and securely stored.”

Ask Molecule!

We are introducing a new column to our quarterly newsletter called Ask Molecule! In this column Molecule, our lab pet, will answer questions submitted by you! We get questions every day from our clients about various things. Several of our commonly asked questions are answered in the Q&A section on our website, but answers to other questions can be found here! You can submit your questions by email, fax, or on our website! Just click the Ask Molecule link or email askmolecule@eralab.com!





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Environmental Resource Analysts (ERA) was founded in 1991 by Dr. Joseph Freda. The company's initial focus was ecological field studies, but expanded into the areas of aquatic toxicology and analytical chemistry. Our primary motivation for expansion has always been, and will continue to be, meeting the needs of our valued clients. This commitment to service has allowed us to obtain many diverse capabilities such as toxicology studies, bacteriological analysis, inorganic and organic testing, and hazardous waste identification.

We are on the Web!

www.eralab.com

Contaminant of the Quarter: Lead

“The EPA regulates lead in drinking water and has the maximum contaminant level goal at 0 ppm.”

In 2007 there was a large recall of imported toys that were made using lead paint. Since lead was commonly used in ceramic glaze, older cooking pots may contain lead based coverings and exposure can occur by ingesting food cooked in them. Lead exposure has also been implicated by consuming hunted animals shot with lead-containing bullets although substantial lead poisoning by this route has not been supported scientifically. Drinking water is also a source of lead exposure. Lead most commonly enters the drinking water by corroded lead pipes and solders. Although less common, contamination at the water source through environmental pollution has been reported. The concern over lead contamination in drinking water led to the prohibition of lead in plumbing materials in 1986, however, much of the older lead-containing infrastructure still remains. Even though older homes are more likely to contain lead plumbing, newer homes are also at risk. Pipes considered to be “lead-free” may contain trace amounts of lead and could cause significant amounts of lead leaching in the first few months. The EPA regulates lead in drinking water and has set the maximum contaminant level goal at 0ppm as they state “there is no safe level of exposure to lead”. Since lead in drinking water most commonly occurs as a result of client owned plumbing rather than source water contamination, the EPA promulgated the Lead and Copper Rule in 1991. This rule requires the water systems to control the corrosivity of the water as well as collect samples from taps served by the systems that might be likely to contain older lead plumbing. The regulation ensures that action be taken if greater than 10% of the samples surveyed contain lead at a level greater than 15ppb. Acidic water is corrosive and can aid in the leaching of lead from plumbing, therefore it is important to monitor the pH of the water. Lead in drinking water can be minimized by flushing your lines. Since warm water can increase the concentration of the lead, it is best to pull your consumable water from your cold lines only. Filtrations systems vary in their ability to remove lead. Brita advertises that it's faucet filtration system can remove lead. An Australian study showed that lead was successfully removed by household filters, but the efficiency varied based on several factors, including the concentration of other components in the water.

Sources:

1. *Basic Information about Lead in Drinking Water*, EPA Online Article
2. *Sources of Lead—Water*, CDC Online Article
3. *Consumer Factsheet on Lead in Drinking Water*—EPA Online Article
4. *Water on Tap—What you need to know*, EPA 2009
5. *The efficiency of removal of lead and other elements from domestic drinking waters using a bench-top water filter system*, Gulson, Brian et al., Science of the Total Environment 1997