

## Highlights

- TCLP History, Progression & Problems
- ITLA Quarterly Meeting Notice
- Regulatory Update



# ITLA

*The Newsletter of  
Independent Testing  
Laboratories Association  
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## Message from the President

*By Jim Occhialini*

Greetings fellow ITLA members  
Well, it's springtime (?) and that means summer must be right around the corner. This is the busy season for our industry... here's to nice sampling weather and lots of incoming sample coolers.

We have a meeting coming up – June 1<sup>st</sup> at the Radisson Hotel in Milford, MA. There is a lot going on now from EDD requirements for MADEP Division of Water

Supply & the rollout of the finalized MCP Wave 2 regs to the data quality enhancement effort ongoing in Connecticut. We will provide updates & reports on everything we can. This leads me to the following – ITLA is your advocate for our industry but we can only address & report on issues we are aware of. If anyone has anything that affects our industry that you feel is important, please bring it to our attention and attend our meetings. There is strength in numbers.

Our featured speaker will be Ellen Berkland. She will present “The Archaeology of the Big Dig”. Given the magnitude & location of the project, this should be of great interest. Our featured vendor will be Tekmar and they will be showcasing their new HT3 Static/Dynamic Headspace system. This system looks like it has some great capabilities and definitely worth a look.

Also, we discussed a number of initiatives at our Executive Board meeting that our association could undertake. I look forward to your opinions when we present them.

So, hope to see you all in Milford

on June 1<sup>st</sup>. I'll have handouts from last weeks EPOC training session on the Connecticut data quality initiative – (Do you know the difference between Presumptive Certainty & Reasonable Confidence?). As always, if anyone has any issues they would like to have addressed or ways in which the ITLA can be more effective, please do not hesitate to contact me (jocchialini@alphalab.com/(508) 898-9220). We have a great meeting coming up & I look forward to seeing you all.

## Regulatory Update

By Bob Bentley, Reg. Affairs Chair

**eDEP** - DEP is moving ahead with the implementation of more forms for electronic submission. On the drinking water side, they are moving quickly and hope to have all forms on line by Nov. 21, 2005.

There were discussions in the past about the need for submitting them as XML files. That has changed & submission as flat files is the norm.

## Perchlorate

After the NRC study came out, the DEP's Office of Research & Standards performed a reassessment of the appropriateness of the initial

## Quarterly Meeting

Wednesday, June 1, 2005, Radisson Hotel, Milford, MA

**Feature Presentation:** "The Archaeology of the Big Dig" by Ellen Berkland, See page 5 for agenda

DEP recommended perchlorate levels. Based upon this review, DEP stayed at the recommended limit of 1.0 ppb in water. Noted that LCO will include perchlorate as a parameter requiring certification in their upcoming regulation revisions.

### **Coliform Testing**

While the Laboratory Certification Office continues to move ahead with changes to the confirmation procedures for positive membrane filter tests, they have run into some "issues." There seems to be some problem in terms of the ONPG test. Their lab continues to work on this. We will hear more at the next meeting.

## **MRWA Items**

By Mike Delaney, [mike.delaney@mwra.state.ma.us](mailto:mike.delaney@mwra.state.ma.us)

### **MWRA Training Session**

MWRA has been asked by ITLA to work on a training session for laboratories and consultants who work for industries with MWRA sewer use permits. The MWRA pretreatment program, called Toxic Reduction and Control (TRAC) issues permits to industries that discharge into the MWRA sewer system. Many of these permits require self-monitoring by the industries using certified laboratories and NPDES-approved methods. We hope to offer this training in the fall.

### **MWRA Switch to Ozone for Water Disinfection**

Final demonstration testing of the Walnut Hill Water Treatment Plant in Marlboro is in progress. Primary disinfection will switch from chlorine to ozone for MWRA's Greater Boston customers. This state-of-the-art plant will treat drinking water for 41 communities in Eastern Massachusetts served by the MWRA. The plant will treat 270 million gallons of water daily (up to 405 million gallons on a peak day). This treatment will improve drinking water quality and strengthen the region's ability to comply with the Safe Drinking Water Act. These changes, along with other improvements, mean that the MWRA will be able to drastically reduce the amount of chlorine used in the water treatment process.

### **Deer Island Sludge is Pumped to the Pelletizing Plant in Quincy**

Digested sludge from the Deer Island Treatment Plant

is now pumped to the Pelletizing Plant at the Fore River Shipyard in Quincy. The sludge pipeline is contained within the wastewater pipeline that brings wastewater to Deer Island from the south shore. This pipeline eliminates the need to barge sludge between the two facilities. This completes the last piece of the Deer Island Treatment Plant. The pelletized sludge is used as a slow-release fertilizer. While most of MWRA's fertilizer is marketed in bulk by New England Fertilizer Company, a small portion is packaged and distributed as Bay State Fertilizer. The product meets all state and federal standards for biosolids (sludge-derived) fertilizer, including the strictest limits on metals. Bay State Fertilizer benefits lawns and gardens in several ways. Like compost, Bay State Fertilizer adds organic matter to the soil, helping to improve its texture and moisture-holding capacity. Unlike compost, however, Bay State Fertilizer is a significant source of nutrients and can be easily applied to lawns using conventional spreaders. Bay State Fertilizer is purchased wholesale by golf courses and landscapers throughout New England and has been available locally through garden centers and nurseries since 1995. Many communities within the MWRA sewerage district use the fertilizer on their parks, athletic fields, and municipal landscaping.

### **Somerville Lab Will Move to Chelsea.**

The MWRA Water Quality Laboratory in Somerville is getting ready to move to Chelsea this summer. The Chelsea facility is now home to over 500 MWRA employees. This lab tests Total Coliform Rule samples for 29 cities & towns in the Greater Boston area.

### **Announce. of Upcoming Monitoring Contract**

In the summer of 2005 MWRA will release a Request for Qualification Statements/Proposals for professional services to monitor the effects of MWRA's wastewater discharge on Massachusetts Bay and the environmental quality of Boston Harbor. The requested services include measurements of water quality, sediment studies (including benthic infauna), & studies of contaminants in fish and shellfish, as described in the Outfall Ambient Monitoring Plan ([www.mwra.com/harbor/enquad/pdf/ms-092.pdf](http://www.mwra.com/harbor/enquad/pdf/ms-092.pdf)). Data analysis and interpretive reporting are also important components of the program. MWRA welcomes the opportunity to meet with marine monitoring organizations to

discuss and to answer your questions about the project and MWRA's procurement procedures. It is exciting and important work; documenting the effects of MWRA's massive Boston Harbor Project, as well as answering questions about the impacts of moving the treated sewage discharge 9 miles offshore. This high-profile program is regarded worldwide as a model example of how to design and implement pollution effects monitoring, & MWRA continually strives to gain more understanding of the ecosystem and to maximize efficiency. The results of the monitoring have engendered numerous scientific papers in the primary literature. If you have questions or would like to arrange a meeting, please feel free to call Andrea Rex at (617) 788-4708, or email: [web.enquad@mwra.state.ma.us](mailto:web.enquad@mwra.state.ma.us).

**“A Healthy Environment Starts at Home.”**

MWRA's guide to reducing our use of hazardous household products is now available online at [www.mwra.com](http://www.mwra.com) as a 25-page, downloadable “pdf” file. Publication of this booklet was required by MWRA's wastewater discharge permit from EPA & MA DEP.

**TRAC “eSMART”**

We continue to receive laboratory data electronically using the web-based “e-SMART” program. Labs access e-SMART using a PIN provided by MWRA. The program accepts either data files in a specific format, or on-line data entry. Chains of custody are scanned and submitted as PDF files. So far, over 20 labs are using e-SMART. To find out more about e-SMART contact Alice Chang at 617-305-5621 or [Alice.Chang@mwra.state.ma.us](mailto:Alice.Chang@mwra.state.ma.us).

Labs using e-SMART are reminded of the following: If the chain of custody form is missing, or is missing vital information, including the permit number, sample location number, or effluent flow information, TRAC will return the report for correction and resubmission.

**e-SMART File Format Specification:** To better assist labs that choose to use a LIMS system to submit data, TRAC modified the e-SMART File Format Specification that labs can access using the e-SMART Help function. The specifications include: a data file overview, formatting instructions, a sample file, instructions for checking the file format, and a dictionary of MWRA test codes and components.

**Visit our web page for more information**

Check us out at [www.mwra.com](http://www.mwra.com). We have a wealth of information for both the public and experts on our water and wastewater activities. This includes monthly updates on drinking water quality testing, information on lead, our most recent Consumer Confidence Report, and many technical reports associated with the Deer Island Treatment Plant and our extensive Harbor and Outfall Monitoring program.

**TCLP: History, Progression & Problems Associated with Hazardous Waste Characterization**

*By Les Orr, Environmental Express*

**History of TCLP**

- Started with the invention of electric power (DC) and the production of chemicals
- Love Canal inspiration for TCLP
  - Interesting note- Love Canal just removed from Superfund List as of Sept 30, 2004
- RCRA- Resource Conservation and Recovery Act implemented- tracks hazardous waste “Cradle to Grave”- Creation to Disposal

**What is TCLP?**

- TCLP- Toxicity Characteristic Leaching Proced.
- Started as EP TOX- EPA Method 1310
- Method 1311 takes acid rain into account
- What does it mean to the average citizen?
  - In a “worst case” scenario, if a liner breaks in a landfill, the substance is considered hazardous if it kills (not wounds or hurts) a person in 70 years. 69 1/2 years is ok, but 70 1/2 years is bad.

**EPTOX**

- EPA Method 1310
  - 14 Chemical Constituents
  - Regulatory action levels were based upon drinking water standards
  - Not capable of leaching volatile org. properly
  - Use of a 0.45 micron filter for filtration of leachate and/or liquid sample

**Organics Reporting and Action Limits**

Constituent	DL mg/L	TCLP mg/L
Benzene	0.005	0.5
Carbon Tetrachloride	0.005	0.5
Chlordane	0.0003	0.03

Chlorobenzene	1	100
Chloroform	0.006	6
Cresol	2	200
O-Cresol	2	200
M-Cresol	2	200
P-Cresol	2	200
2, 4-D	0.1	10
1,4-Dichlorobenzene	0.075	7.5
1,2-Dichloroethane	0.005	0.5
1,1 Dichloroethylene	0.007	0.7
2,4-Dinitrotoluene	0.0005	0.1
Endrin	0.0002	0.02
Heptachlor	0.00008	0.008
Hexachlorobenzene	0.0002	0.1
Hexachloroethane	0.005	0.5
Hexachloroethane	0.03	3
Lindane	0.004	0.04
Methoxychlor	0.1	10
Methyl Ethyl Ketone	2	200
Nitrobenzene	0.02	2
Pentachlorophenol	1	100
Pyridine	0.04	5
Tetrachloroethylene	0.007	0.7
Texaphene	0.005	0.5
Trichloroethylene	0.005	0.5
2,3,5-Trichlorophenol	4	400
2,4,6-Trichlorophenol	0.02	2
2,4,5-TP (Silvex)	0.01	1
Vinyl Chloride	0.002	0.2

#### Metals- Reporting and Action Limits

Constituent	DL mg/L	TCLP mg/L
Arsenic	0.05	5
Barium	1	100
Cadmium	0.01	1
Chromium	0.05	5
Lead	0.05	5
Mercury	0.002	0.2
Selenium	0.01	1
Silver	0.05	5

#### Sample Matrices

- Solid - <0.5% Liquids
- Liquid - <0.5% Solid
- Multi-Phased non-miscible must be extracted separately, anal. & results combined in proportions
- To determine sample type-filter through a weighed 0.7 micron glass fiber filter and dry

- Do not add preservatives

#### Total Constituent Analysis

- SOLIDS- Section 1.2 allows for a total constituent analysis of the sample provided the sample is 100 % Solid Material - convert the results to allow for the liquid that would have been added. Divide the result by 20.
- Question - "Why do labs not run totals first?"

#### Total Constituent- Filterable Liquids

If the sample has <100% Solids, each phase must be determined and calculated as follows

$$\frac{[A \times B] + [C \times D]}{B + [20 (L/kg) \times D]} = E$$

- A = Concentration of the analyte in liquid
- B = Volume of liquid in the sample (L)
- C = Concentration of the analyte in solid portion
- D = Weight of the solid portion of the sample
- E = Max. theoretical conc. in leachate (mg/L)

#### Extraction Fluids

- Analyze pH
- <5 use #1 Fluid
- >5 add HCL- reanalyze, if still >5 use #2 if <5 use #1
- Extraction Fluid
  - #1- Glacial Acetic Acid + Sodium Hydroxide + water (pH 4.93)
  - #2- Glacial Acetic Acid and water (pH 2.88)
- (acetate buffer fluid is used to simulate the effect of decomposing municipal waste)

#### Volatile Constituents

- Use of a ZHE is required
- 25 gm. of sample to 450 ml of buffered solution
- Eliminate as much air contact as possible
- Add fluid into vessel using a fluid metering pump

#### Agitation

- End over end
- 30 rms +/- 2
- Rotate bottles for metals & nonvolatile constituent
- 18 hours +/- 2

#### Filtration

- Binderless glass fiber filter -0.7 micron
- Use acid washed filter when analyzing metal const
- ZHE is pre-loaded with a filter, but if rupture is suspected use an inline filter additionally

- Entire contents must be filtered
- Pressure filtration required for all non-volatile ext.
- Analyze quickly or preserve as per method - note there is no pres. to original non-extracted sample
- Split samples must be combined appropriately after filtration. If non-miscible they must be analyzed separately and combined mathematically (volume-weighted average concentration)

**Concerns remain about TCLP**

- Is TCLP sufficiently accurate and precise?
- Does the test evaluate the impact of physical stabilization and monolithic wastes?
- The test presents operational difficulties with

some waste types (e.g. oily wastes)

- Is TCLP end-point (concentration in leachate to reg. threshold) appropriate, or should end-point reflect mass of constituents leached over time?
- Is the infinite source model of TCLP valid?

**What's next?**

- SPLP- EPA Method 1312
- Synthetic Precipitation Leaching Procedure
- More acidic extraction fluid to represent acid rain
- 3 Extraction fluids vs 2 in 1311
- Use of HNO3 simulates the acid rain
- Additional solution for leachability of cyanide and more volatiles

calendar

**June 1, 2005**

ITLA Quarterly Meeting  
Radisson Hotel, Milford, MA  
8:30 a.m. - 12:00 p.m.

**July 31 - August 2, 2005**

NY/PaAAEL Annual Convention  
Radisson Hotel, Valley Forge, PA

**August 3, 2005**

ITLA Executive Board Meeting  
DoubleTree Suites, Waltham, MA  
1:00 p.m. - 4:00 p.m.

**August 10, 2005**

Deadline for Newsletter Submissions

**September 7, 2005**

ITLA Quarterly Meeting  
Taunton, MA  
8:30 a.m. - 12:00 p.m.

**November 2, 2005**

ITLA Executive Board Meeting, Doubletree Guest Suites, Waltham, MA 1:00-4:00 p.m.

**November 9, 2005**

Deadline for Newsletter submissions

**December 7, 2005**

ITLA Quarterly Meeting,  
TBD  
8:30 a.m. - 12:00 p.m.

## ITLA Quarterly Meeting

**Wednesday, June 1, 2005**

**Radisson Hotel,  
Milford, MA**

**8:30 a.m. Registration**

**9:00 a.m. Committee Reports**

Secretary	Treasurer
Technical	Regulatory
Newsletter	By-laws
Lab Advisory	
Election	
Ethics	
Membership	

**9:30 a.m. Regulatory/Lab Advisory  
Committee Report**

**9:50 a.m. Break**

**10:00 a.m. Vendor Presentation**

*Tekmar*

**HT3 Static/Dynamic Headspace System**

**10:30 a.m. Break**

**10:40 a.m. Featured Speaker**

*Ms. Ellen Berkland*

**"The Archaeology of the Big Dig"**

**11:45 a.m. Meeting Adjourns**