LabNotes *Fall/Winter 2006-07*

Program Staff Changes

The face of the Laboratory Certification Program will be changing as a result of some recent personnel moves.

Effective July 1, **Brenda Howald**, auditor for the South Central region accepted a Wastewater Specialist position at the South Central region.

In early September, Central Office audit chemist **Greg Pils** accepted a promotion to Section Chief for Administrative and Management Services within the Bureau of Science Services.

The first response to dealing with these changes is the relocation of **John Condron** to the South Central region headquarters in Fitchburg, where he will assume the position vacated by Brenda Howald. John's new territory will consist of labs located in Waushara, Marquette, Green Lake, Crawford, Richland, Sauk, Columbia, Grant, Iowa, Dane, Jefferson, Lafayette, Green, Rock, Walworth, Racine, and Kenosha counties.

John's new contact information is:

John Condron
Wisconsin DNR
3911 Fish Hatchery Road
Fitchburg, WI 53711
john.condron@wisconsin.gov
Phone: (608) 275-3328
Fax: (608) 275-3338

We wish Brenda and Greg the best in their new roles. Moving forward, the Program will begin the process to hire two additional audit staff:

- A regional auditor who will be physically located in Green Bay, and will have responsibility for labs in and around Green Bay and the Lake Michigan shore.
- An auditor of commercial and drinking water labs who will be located in the Central Office. ❄

Also in this Issue:

Exams, Meetings & Training Opportunities

Operator Certification Exams

DNR will hold Wastewater, Drinking Water, and Septage Operator Certification (OC) exams on May 2, 2007 (postmark deadline April 4, 2007) and November 7, 2006 (postmark deadline October 3, 2007) in DNR Regions around the state. Check the Operator Certification web site for details, as they become available. The DNR's Central Office in Madison will send an exam application 3 months prior to the upcoming exam date to those operators that have taken an exam(s) in the last 3 exam cycles.

www.dnr.state.wi.us/org/es/science/opcert ❄

Training for Lab Analysts

February 13-15, 2007

* Wastewater Lab-Intro *

Delafield (WWTP)

Wastewater Training Solutions (Dan Tomaro)

www.wastewatertrainingsolutions.com ❄

April 10-11, 2007

* Wastewater Lab-Advanced *

Appleton-Fox Valley Technical College

Wastewater Training Solutions (Dan Tomaro)

www.wastewatertrainingsolutions.com ❄

Check the DNR OC Training Calendar

www.dnr.state.wi.us/org/es/science/opcert/training.pdf ❄

LabNotes

Newsletter of the Laboratory Certification Program

LabNotes is published twice annually by the Wisconsin DNR Laboratory Certification and Registration Program. For information about distribution or to make suggestions for future articles, contact the editor.

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Bureau of Integrated Science Services
(608) 267-9753

David Webb, Chief
Environmental Science Services Section
(608) 266-0245

Rick Mealy
LabNotes Editor
(608) 264-6006

2007 Conferences & Meetings

MWAA Winter EXPO

The Midwest Water Analysts Association has scheduled its Winter EXPO 2006 for January 26, 2007 at the Bratstop Banquet Center in Kenosha. Contact Larry Dressel at (630) 369-5586 for info.

www.midwestwateranalysts.org

2nd Annual Midwest Water Industry Expo

Central States Water Environment Association & Wisconsin Water Association are jointly sponsoring the EXPO. It is being held at the Kalahari Water Park Resort and Conference Center in the Wisconsin Dells on February 14-15, 2007.

www.cswea.org or www.wih2oassoc.org

Government Affairs Seminar

The Government Affairs Seminar (jointly sponsored by Wisconsin DNR, the Wisconsin Section of the Central States WEA, Wisconsin Wastewater Operators Association, Municipal Environmental Group and Wisconsin League of Municipalities) will be held March 1, 2007 at the Marriott in Madison.

FET's Environment '07 Conference

The Federation of Environmental Technology's (FET) annual conference will be held March 12-14, 2007 at the Four Points Sheraton – Milwaukee Airport, in Milwaukee.

www.fetinc.org/

25th Annual Spring BioSolids Symposium

The Spring BioSolids Symposium will be held March 21, 2007 at the Country Springs & Convention Center (fka Holiday Inn) in Stevens Point. For more info contact: Greg Kester at (608) 267-7611.

Rural Water (WRWA) Association

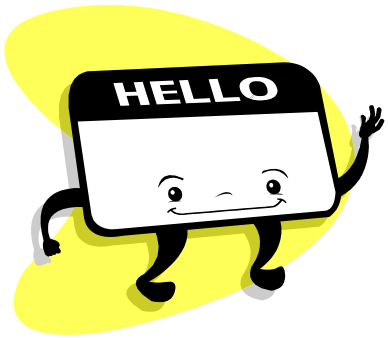
The Wisconsin Rural Water Association holds its 19th annual technical conference March 27 - 30, 2007 at the Green Bay Regency Suites and KI Convention Center complex. Call (715) 344-7778 or visit their web site for more information.

www.wrwa.org

Central States Water Environment Association

The Central States Water Environment Association's (CSWEA) 80th annual meeting is scheduled for May 22 through 25, 2007 at the Monona Terrace in Madison.

www.cswea.org



Wisconsin Water Association

The Wisconsin Water Association (formerly AWWA WS) 86th annual conference is scheduled for September 12 - 14, 2007. Contact Jack Albrechtson at (608) 831-6554 for more information.

www.wih2oassoc.org

Wastewater Operators Association (WWOA)

The 41th Wisconsin Wastewater Operators Association annual conference will be held October 23-26, 2007 at the La Crosse Civic Center & Radisson Hotel in LaCrosse. Check the WWOA web site for more details.

www.wwoa.org

Program Administration

Weird & Wacky Lab Practices

By Camille Johnson

A number of labs I have visited have at least one unique lab practice for which a solid reason [for doing so] could not be offered. Some of your unique practices may seem like good ideas but do not often turn out to be improvements. Such uniqueness may actually be causing you analytical problems. Creativity can be a great trait, but in analytical chemistry creativity must be carefully reviewed. You should take a look at method requirements, DNR guidance documents, and previous audit reports to assess your lab practices. Any practices that you cannot find in the method or associated guidance materials should be questioned. Odd practices are often the source of quality control (QC) problems. Labs should follow method requirements closely whenever possible (there are some methods that are outdated or incorrect so this is not always possible). If changes need to be made that differ from the method you should contact your auditor or another reliable source before proceeding.

… Any practice that you cannot find in the method or associated guidance materials should be questioned. Odd practices are often the source of quality control (QC) problems.

Below is just a small sampling of weird and wild lab practices I have encountered. If you recognize one, there may be some changes needed to your lab practices. Even if not, I encourage you to take some time and review your procedures when there is a slow spell at your lab. We all get into the rut of doing things a certain way, but we need to make sure we are doing things the best way, not just the way we have always done it. A random sampling of a few ill-advised practices that should not be followed:

- Using reagent strengths that differ significantly from the method.
- "Burning" TSS filters at 550 ºC before weighing (*103-105 ºC is appropriate*).
- Adding liquid phosphorus buffer to BOD dilution water in addition to HACH nutrient packets (*HACH nutrient packets already contain phosphorus buffer*).
- Excluding phosphorus standards that fail to color properly (*this is a QC problem that requires corrective action before proceeding to use the curve*).
- Using full strength industrial detergent (*lab-grade phosphorus-free detergent is best*). One lab even told me that his detergent took the color out of some colored glass bottles he washed! Detergent of industrial strength is not needed and can be detrimental in a laboratory setting.
- Blending influent samples in a blender prior to BOD, TSS and phosphorus analysis (*this simply isn't allowed*). ❄

What is the "Switchboard"?

Condensed from an article by Tom Aten

The Switchboard is a secure connection that allows you to pick the type of Department reporting to do for facilities that you work for. Switchboard is the "door" that allows access to all of your electronic Department reporting forms. In some ways this duplicates what the eDMR/eCMAR facility list screen does, but the Switchboard also provides additional features. It allows you to update your personal contact information and, if authorized, the contact information for the facility that you represent. It also keeps track of your log in session so you won't need to repeat it.

Everyone that is currently doing eDMR's or eCMAR's can log into the Switchboard to see how this works. The Switchboard site is available from the main DNR internet page at http://dnr.wi.gov/, then click on the Environmental Protection link, and then on the Environmental Business Switchboard link and you're there. The Log in to the Switchboard link uses your same Wisconsin User ID (WAMS) and Password as the eDMR or eCMAR systems. Wisconsin User ID's are used by other state agencies too.

Be sure to take the opportunity to learn about this Department electronic reporting connection and begin using it. If you have questions or suggestions about the Switchboard, feel free to visit the DNR website or give Tom Aten a call at (608) 267- 7638. ❄

Blank Guidance - Colorimetric Tests

By Camille Johnson

This is guidance for the use of blanks when performing colorimetric analyses. This may be different from what you have done in the past, but the Lab Certification staff has decided that this is the best procedure to follow in most situations. This is guidance and will not work for all circumstances. If there are questions with regards to your situation you should contact your auditor.

If you are not analyzing a calibration curve today

1. *Instrument Blank* - distilled water with all reagents except the color development reagent added. No color development reagent is added. This blank is used to zero the instrument.

2. *Method blank* – distilled water handled as if it were a sample. All reagents added to it and it is digested. Absorbance is measured to identify contamination. Must meet code requirements for blanks [NR 149.14(3)(d)] to be acceptable.

If you are analyzing a new calibration curve today

1. *Instrument Blank* - distilled water and all reagents except the color development reagent. No color development reagent is added. This blank is used to zero the instrument.

2. *Calibration blank* – distilled water with all reagents added. Color development reagent is added. This blank is treated the same as the calibration standards. Therefore, it is digested if the curve is digested, if the curve is not digested then this blank is not digested. Absorbance is measured and used as the zero point in the linear regression.

3. *Method blank* – distilled water handled as if it were a sample. All reagents added and digested. Absorbance measured to identify contamination. Must meet code requirements for blanks [NR 149.14(3)(d)] to be acceptable.

NR 149.14(3)(d)
The method blank results exceed control limits when results are higher than the highest of any of the following. 1. The limit of detection. 2. Five percent of the regulatory limit for that analyte. 3. Five percent of the measured concentration in the sample.

❄

Wanted: Exceptional Labs

By Camille Johnson

Another year has flown by and we are looking for nominees for the 2007 Lab of the Year Award. Do you know of a lab that meets all the code requirements and goes above and beyond in their lab efforts? If so, please consider submitting a nomination. The nomination process is very easy and could result in recognition for a deserving lab. Keep in mind that this award is only open to labs that are registered with the Lab Certification program. Labs that are certified with our program are able to do analysis for hire and therefore are not eligible for this award.

One award is presented in each of two categories: Small Registered Facility and Large Registered Facility. Small facilities include municipal wastewater treatment laboratories with a flow of less than 1 MGD, or labs that perform limited types of testing (e.g., BOD, nitrogen, phosphorus, and solids). Large facilities may include major municipal wastewater treatment laboratories with flows greater than 1 MGD, labs that perform tests of greater complexity (e.g., metals, PCBs, VOCs) or labs that process a large volume of samples annually. Nominees for the award must be registered facilities located in the State of Wisconsin.

There is no limit on the number of times that a laboratory may be nominated, and a laboratory may be nominated for (or receive) an award in consecutive years. In the event that insufficient nominations are received for either category, the Department reserves the right to not issue either award. Nominations are due by January 10, 2007. The awards are usually presented in March at a Natural Resources Board meeting in Madison.

These awards mean a great deal to the recipients and it is very important that we recognize the exceptional efforts that often go unnoticed. For a nomination form or more information please contact: Camille Johnson, Audit Chemist – 715-831-3272 or Camille.Johnson@wisconsin.gov.

❄

Lab Owner Convicted

Department of Justice News Release
October 5, 2006

ATTORNEY GENERAL PEG LAUTENSCHLAGER ANNOUNCES OSHKOSH MAN IS CONVICTED OF FILING FALSE REPORTS WITH THE DNR AND RECEIVES A $15,000 PENALTY.

MADISON – Attorney General Peg Lautenschlager announced today that Samuel Muinde, of Oshkosh, was convicted of two misdemeanor counts of filing false reports with the Department of Natural Resources (DNR), and was penalized with fines and costs totaling $15,000.

Muinde is the owner and operator of Muinde Laboratories and was also the operator in charge of the wastewater treatment plants at Ridgeway Country Club (Ridgeway), and Edison Estates Mobile Home Park (Edison Estates). His lab analyzed the wastewater at Ridgeway and Edison Estates for Biological Oxygen Demand, total suspended solids, and pH. He also completed all of the Discharge Monitoring Reports filed with the DNR for these clients.

The DNR investigated Mr. Muinde and his lab after being advised by former lab employees that they were instructed by Muinde to alter their testing techniques or the actual lab results so that their clients could report acceptable lab values to the DNR. The DNR found at least 28 instances where Muinde reported false information to the DNR on the forms that he filed for the two clients.

"The citizens of Wisconsin have the right to expect reports filed with the DNR be scrupulously honest, and the violations be enforced for the health and safety of the environment, and the people who live in it," Lautenschlager said.

The Honorable Scott C. Woldt, on October 4, 2006, accepted Mr. Muinde's plea to the charges and imposed fines and costs totally $15,000. The case was prosecuted by Assistant Attorney General Steven Tinker.

For More Information Contact:
Michael Bauer (608) 266-7876

Council Corner

By Randy Herwig, Council Chair

A new name on the byline! Council Chair, Representative of the Small Municipal Wastewater Plant labs, City of Lodi DPW, a lot of titles anyway.

I'm pleased and honored to be the Chair of the Lab Certification and Review Council. There is nothing really special about me as the Council Chair. As the saying goes, "we all put our pants on one leg at a time".

The commonality between you and I is water. We may test for a lot of compounds (or a few) in a variety of matrixes but the majority of them come back to the impact on water. Frankly, we are all fighting the same fight. That is, how can we preserve what we have so that it will last for future generations to use? It is a pretty amazing fight that we have. Is the water safe enough to drink? Is it safe enough for humans and animals to come into contact with? Is it void of contaminants that won't impact us in 10, 20, 50 years?

Having a career that has spanned almost three decades involving water, I have come to a much greater appreciation for water and the people that have jobs that require them to make it safe for the rest. So whatever your job is…supplying water, treating water, testing water, utilizing water in industry, take pride in the fact that you are responsible for all we have left of this commodity. We certainly can not make more than what we already have.

On behalf of the Lab Certification and Review Council, I would like to welcome Mr. David Kliber, S-F Analytical Laboratories, Ms. Susan Hill, Wisconsin State Lab of Hygiene, and Mr. Chris Groh, Wisconsin Rural Water Association to the Lab Certification and Review Council. We look forward to your input and participation. Thank you for volunteering for your respective representations.

An open invitation… Please feel free to join us at the Lab Certification and Review meetings. Meetings are held quarterly in February, May, August, and November. The meetings cover Lab audit status, and variance requests, along with Program and DNR

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updates, and relative topics like NR149 Revision, staffing changes, training, and Lab Program budgetary issues to name a few. Attendees are given the opportunity to voice concerns they have on topics pertinent to the Lab Certification Program. The Program can only improve with your input!

Current Council Members		
Representation	**Name**	**Phone# / e-mail**
Small Municipal Wastewater Plant	Randy Herwig *(Chair)*	(608) 592-3247 rherwig@wppisys.org
Large Municipal Wastewater Plant	Kurt Knuth *(Vice-Chair)*	(608)222-1201 x293 kurtk@madsewer.org
Public Water Utility	Katie Edgington *(Secretary)*	(608) 755-3115 edgingtonk@ci.janesville.wi.us
Demonstrated Interest in Lab Certification	Chris Groh	(715) 344-7778 cgroh@charter.net
State Laboratory of Hygiene	Susan Hill	(608) 224-6282 hill@mail.slh.wisc.edu
Industrial Laboratory	Steve Jossart	(920) 438-2898 steve.jossart@GAPAC.com
Commercial Laboratory	David Kliber	(414) 475-6700 david.kliber@sflabs.com

Introducing New Council Member: Chris Groh

Hello everyone. I have been asked to write a short introductory bio to introduce myself to you. I know many of you know me from both working with me and through Wisconsin Rural Water Association so here is the update.

First to begin with, I was very young when I was born. That aside, I left a small Northeast Wisconsin town for college where I eventually earned a Bachelors Degree in Biology/Physiology and a Masters Degree in Microbiology at the University of Wisconsin at Green Bay. After graduation I began a career in the commercial laboratory business as an analyst. Back then gas chromatography was done with large bore columns that we packed ourselves, ion chromatography was done with syringes, oil & grease was done by extracting with Freon that was available by the boatload, and BODs were…BODs.

As technology advanced I was forced to demonstrate to regulatory agencies how the work could be done using computers (remember 286s…I do), the new fangled 100 meter top hat columns worked better than the "hand packed" large bore columns, and metals could be analyzed by a plasma generated by passing high voltage through argon gas. I have been involved with analyses and reports to the DNR, Department of Defense, Department of Energy, Army Corps of Engineers, other state's agencies and more. My specialty was PCB/Pesticide analysis as well as volatile and semi-volatile mass spectrometry.

Through it all I have always trained others in laboratory work, and I have helped operators from small towns interpret and test their monitoring samples. This work with small town municipal operators led me to Wisconsin Rural Water Association. My work with Rural Water enables me to train people who are willing to learn how to do their work better. The biological engineering involved with making a wastewater treatment plant work properly is very fulfilling, especially when I can help an operator to bring a plant back to health.

I am humbled and proud to have been selected to the LabCert Council where I can help represent the over 600 small municipalities through Wisconsin Rural Water.

Chris Groh

Wisconsin Rural Water

Introducing New Council Member: Sue Hill

I graduated from the University of Wisconsin, Madison with a Bachelor of Science in Chemistry and a Master of Science in Water Chemistry.

I began my career at the State Laboratory of Hygiene in 1986 in the Environmental Inorganic Chemistry Department. My first duties were grinding soil samples for metals analyses. Over the years I have performed analytical testing of environmental samples using inductively coupled plasma atomic emission spectrophotometry, graphite furnace atomic absorption spectrophotometry, inductively coupled plasma-mass spectrometry, and cold vapor atomic fluorescence spectrometry. I have also been in charge of operating, maintaining, and managing the trace element clean room at the State Laboratory of Hygiene.

My current responsibilities are to help run the quality assurance program at the Hygiene Laboratory's Agriculture Drive facility. My main duties include performing internal audits, coordinating and managing quality control activities, managing

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proficiency testing samples, maintaining laboratory certification, working with outside certification auditors to assure compliance, maintaining training records, and maintaining methods and procedures in compliance with state and federal regulations.

As part of the University of Wisconsin- Madison, the State Laboratory of Hygiene often finds itself working on cutting edge techniques. Applying quality control measures to such new techniques is always interesting and sometimes quite challenging. As a result I have gained a broad perspective on quality assurance and quality control. I am honored to be appointed to the Council, and I am pleased to have the opportunity to share some of my experiences in quality assurance with other laboratories. I also look forward to learning new ideas about quality assurance and helping the state's environmental laboratory certification program be as good as it can be.

Susan D. Hill

Wisconsin State Laboratory of Hygiene ❄

Introducing New Council Member: David Kliber

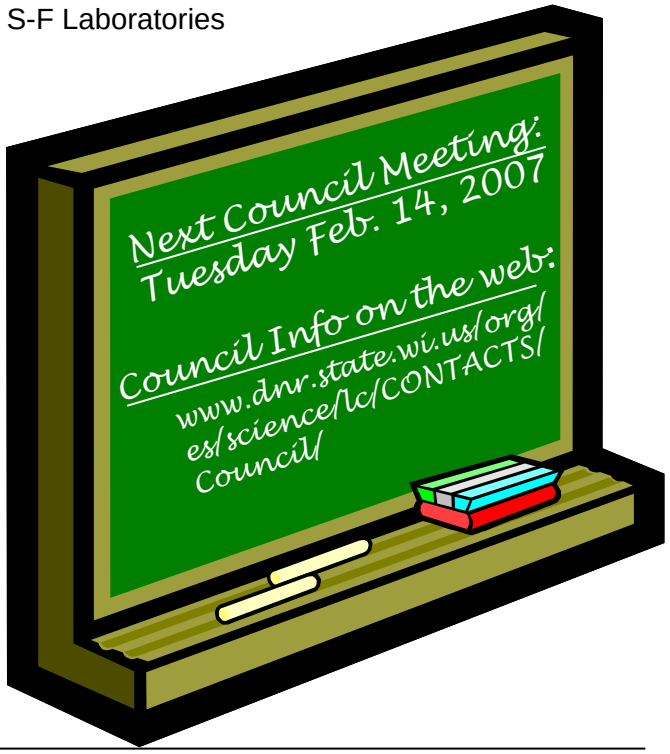
David has 33 years of experience in leading service businesses various industries. Most recently, using a company he formed in 2001 called Kliber & Associates, LLC, David acquired an established 106-year old business called S-F Analytical Laboratories, Inc., and is its President/CEO. It is the largest multi-disciplined lab in southeastern Wisconsin, performing analytical chemistry testing services for 2,000 customers in various industries in the areas of environmental, toxicity, agricultural, food, microbiology, forensic and R&D. He also invested in a start-up business called Sales Automation Support, Inc., a rapidly growing player in the CRM industry. Previously, Dave was past President/COO of Polacheck Property Management Corp. (PPMC), a company that he started in 1987 (as an outgrowth of the 50-year old Polacheck Company, Inc./CB Richard Ellis) growing it in 14 years to be lead its industry in Wisconsin.

Dave is active in community organizations such as Metropolitan Milwaukee Association of Commerce, serves on the COSBE (Council of Small Business Executives) Board of Directors, Rotary Club, Wisconsin Environmental Lab Association, American Council of Independent Laboratories (ACIL), Institute of Real Estate Management (past Milwaukee Chapter President, and a Certified Property Manager-CPM®), Commercial Association of Realtors (holds real estate and mortgage broker licenses), part of planning committee for 2002 American Red Cross emergency preparedness seminars, Scouting (an Eagle Scout, he served for 5 years as Cubmaster for a Cub Scout Pack), and attended Wisconsin Venture Network events. He occasionally speaks to groups such as ACIL and WWOA, and has written articles for Small Business Times magazine in Milwaukee.

David earned a BBA degree in finance from Western Michigan University, Kalamazoo, Michigan, where he graduated in 1973. He and his wife Mandy have two children, Stephanie (13) and Jason (11), and reside in Mequon, Wisconsin. Mandy is a pharmaceutical sales representative and a registered nurse, and is employed with Warner-Chilcott Co., Inc. Dave has lived in Milwaukee for 22 years, was born Detroit and raised in Grosse Pointe, Michigan. He served as a banker in Detroit in the 1970's, then moved into the real estate field in various capacities using his finance, operations, and marketing skills. This background served to prepare him for running businesses for others in the 1990's, and for his own investment in 2002.

David L. Kliber

S-F Laboratories ❄



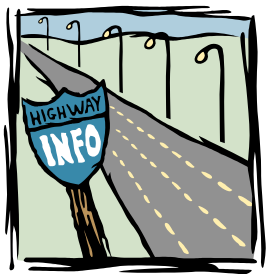
Proficiency Testing

Electronic Upload for PT Providers

Beginning January 2007, we will debut a web-based mechanism whereby PT providers can electronically transmit and upload PT results to our Lab Certification database.

We will be working with PT Providers who will use the DNR Switchboard to create a user ID which will then allow them access to a web-based application which will allow them to upload PT results, receive confirmation of the upload, and view past files that have been uploaded.

Stay tuned!



Reference Sample (PT) Update

By Diane Drinkman

Proficiency testing reporting is moving into the 21st century! This fall, WDNR started working with PT providers to develop a system to automatically upload proficiency testing scores into the program's database. We anticipate this system will "go live" in January, just in time for renewal PT submittals (hint, hint).

Success of the PT Reporting System requires cooperation from laboratories that purchase their PTs from Absolute, APG, ERA, NSI, RTC and Wibby. Results from WSLH PT studies have been uploaded electronically for several years already (if you use WSLH PTs, you can ignore the rest of this article).

Whether you submit results via fax or online, there are three pieces of information that are necessary for the system to work. The first of these is your lab's EPA ID number (WI01234 is an example) which differs from your WDNR FID or WPDES permit number. If you don't know your laboratory has an EPA ID, or even if it has one, contact Diane Drinkman at 608-264-8950, or, via e-mail at Diane.Drinkman@Wisconsin.gov.

The easiest way to explain the other pieces, method description and method code, is by example. Assume you are submitting PT results for BOD, and TSS (non-filterable residue), the method description and code are:

Test	Method Description	Method Code
BOD	Standard Methods 5210B	20027401
TSS	Standard Methods 2540D	20004802

If reporting via fax on provided forms, you would fill in the method description for BOD "Standard Methods 5210B" and the method code "20027401". For TSS, the description is "Standard Methods 2540D" and code is "20004802". A list of analytes, method descriptions and corresponding method codes for all available certifications currently requiring PTs will be posted to the Laboratory Certification and Registration website (URL) or a hard copy may be requested from Diane.

If you use an online reporting system, your provider's website will have fields to type in this information. Some sites have pull-down lists or the ability to select the method from a list after providing a reference (Standard Methods) or method (5210B). Alternatively, you can simply provide the description and codes provided by the program.

With your cooperation, we hope to make paper PT reports a thing of the past- for annual renewal and yes, even applications. This may eliminate errors in PT entry and allow the program to notify laboratories of PT needs well in advance of renewal each summer. If you have questions, or want specific details for your laboratory, please contact Diane Drinkman at Diane.Drinkman@Wisconsin.gov or 608-264-8950.

Wastewater

Clarification: Reporting Water Extractable Phosphorus (WEP) Results

There appears to be some confusion in that some are reporting WEP results as *percent of P per kg of biosolids*. It should be reported as a *percent of the **total** phosphorus*.

Here is an example:

Water extractable P should be expressed as a percent of the total P, after calculating the Standard WEP in the following way:

Standard WEP -- as mg of P per kg of biosolids or other P-source (dry weight).

Percent WEP -- %WEP = (WEP ÷ P_T) X 100.
[P_T = total P as mg of P per kg of biosolids or other P-source (dry weight) via acceptable method (e.g. EPA Digestion Method 3050 or 3051 and analytical Method 6010 or 6020, or Standard Method 4500-P; etc.] This equates to the amount of total phosphorus which is water extractable.

Example**:**

Standard WEP
= 1000 mg P/kg biosolids (dry weight)
= 0.1% dry weight

Total P
= 30000 mg P/kg biosolids (dry weight)
= 3.0% dry weight

%WEP
= (1000 ÷ 30000) x 100 = 3.3%

This means that 3.3% of the Total P is water extractable and this is the result that should be reported to the Department.

We have tried to clarify this by changing the units in the nutrient "picklist" to % of Tot P for the parameter Phosphorus, Water Extractable. Additional information will be included in the annual mailing that will be going out in early December

more information, please contact Greg Kester at 608-267-7611or Greg.Kester@Wisconsin.gov. ❄

Allowable Modifications for EPA Method 625

A November 1, 2006 Memo from Richard Reding, [Chief, Engineering & Analytical Support Branch (EAD, OST)] to all Quality Assurance Managers, NPDES Coordinators and ATP Coordinators recommended that the following modifications be allowed for sample analysis conducted in support of Clean Water Act :

1. **Combining Sample Extracts Before Analysis.** (as long as all analytes can be reliably identified and quantitated)

2. **Reverse Extraction Order (Allow Acid 1st)**

Other modifications allowed include:

- Smaller sample volume (to minimize matrix interferences)…as long as any matrix interferences are demonstrated and documented.
- Alternate surrogate and internal standard concentrations are allowable provided that method performance is not degraded.
- An alternate calibration curve and calibration check (than those specified in 625).
- A different solvent for calibration standards to match that of the final extract.

The memo references a 1985 limited ATP granted to EPA Regions 3's laboratory for these modifications in recognition of the industry-wide switch to capillary columns. As the memo indicates, this change provides formal endorsement of a practice that most labs have already incorporated. ❄

mColiBlue 24 method approved for E. coli in wastewater.

We've had several questions regarding the approval status of the mColiBlue method for analyzing e-coli in wastewater for use in Wisconsin.

Chapter NR 219 Wis. Adm. Code establishes and lists approved test methods "applicable to effluent limitations for discharges from point sources." M-Coli Blue 24hr & 18hr **are** listed in Chapter NR 219.04 Table A, which is the list of approved biological test methods in Wisconsin. Specific questions can be addressed to Toni Glymph, who can be reached at (608) 264-8954. ❄

On-Line BOD Resource Goes Live

By Rick Mealy and George Bowman

Despite its unfortunate relegation as a test for entry level analysts in most labs, BOD is one of the single most difficult tests performed in any environmental testing laboratory. This is underscored by the fact that the BOD method is one of only a select few methods which undergoes significant modification with each edition of Standard Methods for the Examination of Water and Wastewater.

Most tests are subject to only chemical interferences; with BOD, analysts have to be concerned with both chemical and biological issues, further complicating this test.

The DNR and State Laboratory of Hygiene have offered numerous BOD training seminars over the past 8 years, yet auditors continue to identify BOD concerns in many laboratories. In an effort to expand the availability of critical BOD information, we have combined all the training information we have put together for BOD into a single, web-based resource. This "Ultimate BOD Resource" will enable labs to obtain the most current information for a test which undergoes frequent modification.

The "Ultimate BOD Resource" can be accessed from the DNR Laboratory Certification website at: www.dnr.state.wi.us/org/es/science/lc/OUTREACH/BODresource/Index.html. (image below)

Please check it out. We welcome feedback, and we have incorporated a link on the site from which you can make comments, suggestions for improvement, or ask advice from the "experts". ❄

Drinking Water

Report on Improving Lab Data Integrity Available:

EPA Office of Inspector General has issued a report titled "Promising Techniques Identified to Improve Drinking Water Laboratory Integrity and Reduce Public Health Risks". At 77 pages it a thick read, but most certainly a vital resource.

The report can be accessed at:
www.epa.gov/oig/**report**s/**2006**/**2006**0921-**2006-P-00036**.pdf ❄

SDWA Cyanide Clarification

- Excerpted from EPA Region V correspondence

We were recently asked for clarification about the cyanide methods, specifically, what methods are approved for analysis of cyanide in drinking water and whether or not distillation is required. The 1994 *Technical Notes* (EPA600/R-94/173, October 1994) emphasizes that spectrophotometric measurements for cyanide in water **always** require a manual distillation of the sample to prepare the sample for measurement. EPA felt the Technical Note was needed because some laboratories seemed to be unaware of the requirement to distill samples.

Although free cyanide is regulated, the approved spectrophotometric methods are for total and amenable cyanide; ***therefore, distillation is required***.

> The "total" cyanide methods are used to screen samples for cyanide. If the "total" cyanide level is greater than the MCL (0.2 mg/L), then analysis for "free" (amenable) cyanide must be performed to see if the MCL has been exceeded. The "total" cyanide analysis is still recommended because it is cheaper than the amenable test.

All approved methods for cyanide are listed at 40 CFR 141.23(k)(1). The mandatory manual distillation procedure is described in Standard Method SM-4500–CN-C and ASTM D2036-91. The approved amenable, manual and automated spectrophotometric methods are shown below.

Manual Spectrophotometric, Amenable:
ASTM D2036-91B, Std Methods4500CN G
Manual Spectrophotometric, Total:
ASTM D2026-91A Std Methods 4500CN E
USGS I-3300-85
Semi-automated Spectrophotometric, Total:
EPA 335.4

Free cyanide can also be determined by one method approved for drinking water compliance monitoring analysis that does not require distillation, the specific ion electrode method, SM-4500-CN-F. When using this method, it is mandatory to maintain a constant ionic strength background for the electrode measurement, that is, samples and standards must contain the same concentration of sodium hydroxide. ❄

E. coli Certification & the LT2 Rule

- *Excerpted from EPA Region V correspondence*

The following EPA position paper was received from EPA Region V. For work under the LT2 drinking water rule, a lab must have demonstrated the capability to successfully enumerate E. coli.

Clarification - Approved laboratories for E. coli analysis under the LT2 Rule.

EPA is clarifying its intention that the following types of laboratories certified for enumeration of total coliform, fecal coliform, and/or E. coli analysis are acceptable for E. coli analysis under LT2 when the laboratory uses the same enumeration technique for E. coli for which it is certified:

1. Laboratories certified by EPA, NELAC or the State for total coliform, fecal coliform, and/or E. coli analysis under source water certification programs, such as those required under 40 CFR Sec. 141.74, and

2. Laboratories certified by EPA, NELAC or the State for total coliform, fecal coliform, and/or E. coli analysis under other drinking water certification programs, such as those required under 40 CFR Sec. 141.21 (Total Coliform Rule)

Continued on next page.

Continued from page 12.

Any such laboratory must have demonstrated that it is capable of enumeration of these organisms in a water sample.

This information is intended to clarify the laboratory certification requirements for E. coli analysis conducted for compliance with the requirements of the Long Term 2 Enhanced Surface Water Treatment Rule (LT2). EPA has received questions regarding these requirements.

The LT2 requirements for laboratories approved under the rule can be found in Sec.141.705. For E. coli analysis, the rule provides the following:

(b) E. coli. Any laboratory certified by the EPA, the National Environmental Laboratory Accreditation Conference or the State for total coliform or fecal coliform analysis under Sec. 141.74 is approved for E. coli analysis under this subpart when the laboratory uses the same technique for E. coli that the laboratory uses for Sec. 141.74.

Some have asked whether EPA intended to strictly limit approved laboratories to those approved under Sec. 141.74 (which applies to laboratories certified to conduct microbiological analysis of source water to determine continued compliance with filtration avoidance criteria). Others have asked whether a laboratory certified for presence/absence would be acceptable.

EPA did not intend to establish additional certification requirements for laboratories analyzing E. coli samples under LT2. The critical requirements are for 1) certification by EPA, NELAC or the State, and 2) enumeration, which is required for approval under Sec. 141.74. EPA will accept analytical results from any laboratory that meets both the condition for certification and for enumeration. This is consistent with EPA's intent as stated in the preamble to the LT2 rule (71 FR 727 (Jan. 5, 2006)):

- EPA believes that laboratories that are certified to conduct coliform analyses in drinking water have the expertise to conduct E. coli analyses under today's rule, provided they use the analytical technique for which they are certified.
- Two commenters suggested that laboratories should be certified specifically for quantitative analyses of total or fecal coliform in a source water matrix. However, the methods approved for source water E. coli analyses under today's rule are also approved under the drinking water certification program. EPA believes that analysts certified for these methods under the drinking water certification program have the capability to perform the same methods for a source water matrix, even though additional steps may be required (such as dilutions).

EPA is therefore clarifying its intention that the laboratories described in 1 and 2 above are acceptable for E. coli analysis under LT2 provided they are certified by EPA, NELAC, or any State, have demonstrated the ability to enumerate bacterial cells in a water sample, and use the analytical technique they are certified to use (e.g., membrane filtration, multiple-well, or multiple-tube).

Laboratories certified for presence/absence analyses only would not meet the requirements for approval under 141.74 and therefore are not acceptable to conduct E. coli analysis under LT2. ❄

Disinfection ByProducts (DBP) Changes effective April 1, 2007

In the Federal Register published January 4, 2006, changes were made to Disinfection Byproduct (DBP) testing which take effect April 1, 2007.

1. **PT Acceptance Limits:** Acceptance criteria for THMs will be ± 20% of the true value for each analyte. Acceptance criteria for Haloacetic acids (HAA) will be ± 40% of the true value for each analyte. Acceptance criteria for bromate and chlorite will be ± 30% of the true value for each analyte.

2. **Required Detection Capability:** Labs must be able to obtain LODs of 1.0 ppb for each THM and HAA analyte, except monochloracetic acid, which must be detectable to 2 ppb. The required LOD for chlorite will be 20 ppb. For bromate, labs must obtain an LOD of 2.0 ppb if using methods 317.0, 326,0, or 321.8. Otherwise the required LOD is 5.0 ppb.

3. **Calibration and MRL standard:** Calibration curves must cover the minimum reporting level (MRL) concentration (see *required detection capability*). Labs must verify accuracy at the MRL by analyzing an MRL check standard at a concentration of 100-110% of the MRL with each batch of samples. If any samples in the batch are less than 5×MRL, The MRL check standard must be within ±50% of the expected value. ❄

Region V: new SOC Triggers

In August we received correspondence from EPA Region V regarding new monitoring triggers for synthetic organic compounds (SOCs).

The issue of what constitutes SOC detection according to SDWA rules [40CFR Part 141.24 (h)(18)] has been a continuous struggle since the early 1990's as the EPA tries to balance health-related MCLs with the detection capability of laboratories performing the testing.

As technology and detection capability improve, it's only reasonable that triggers for increased monitoring should change to meet the goals of the Safe Drinking Water Act.

Shown below is the progression from Federal Register detection limits requirements to detection limit requirements specified in NR 149 and finally to the new triggers (column furthest to the right) outlined by EPA Region V. Those triggers which are lower than those specified in NR 149.21 appear in bold text.

Questions can be directed to Rick Mealy (608.264.6006) or Carol McCurry (608.267.2449). ❄

		Federal Register			NR 149.21 (8)	Region 5 New Trigger
Analyte	MCL ug/L	LOD ug/L	LOD-UCL ug/L	10% X MCL	Greater of FR/10% MCL	Aug. 2006
Alachlor	2	0.2	**0.44**	0.2	0.44	0.2
Atrazine	3	0.1	**0.22**	0.3	0.3	0.5
Benzo(a)pyrene	0.2	0.02	**0.044**	0.02	0.044	0.1
Carbofuran	40	0.9	**1.98**	4	4	0.9
Chlordane	2	0.2	**0.44**	0.2	0.44	0.2
Dalapon	200	1	**2.2**	20	20	5
Dibromochloropropane	0.2	0.02	**0.044**	0.02	0.044	0.02
Di(2-ethylhexl)adipate	400	0.6	**1.32**	40	40	0.6
Di(2-ethylhexl)phthalate	6	0.6	**1.32**	0.6	1.32	0.6
Dinoseb	7	0.2	**0.44**	0.7	0.7	1
Diquat	20	0.4	**0.88**	2	2	2
2,4-D	70	0.1	**0.22**	7	7	1
2,4,5-TP (Silvex)	50	0.2	0.44	5	5	1
Endothal	100	9	**19.8**	10	19.8	9
Endrin	2	0.01	**0.022**	0.2	0.2	0.1
Ethylene dibromide	0.05	0.01	**0.022**	0.005	0.022	0.01
Glyphosate	700	6	**13.2**	70	70	30
Heptachlor	0.4	0.04	**0.088**	0.04	0.088	0.2
Heptachlor epoxide	0.2	0.02	**0.044**	0.02	0.044	0.1
Hexachlorobenzene	1	0.1	**0.22**	0.1	0.22	0.1
Hexachlorocyclopentadiene	50	0.1	**0.22**	5	5	0.5
Lindane	0.2	0.02	**0.044**	0.02	0.044	0.1
Methoxychlor	40	0.1	**0.22**	4	4	0.1
Oxamyl (Vydate)	200	2	**4.4**	20	20	2
Pentachlorophenol	1	0.04	**0.088**	0.1	0.1	0.4
Picloram	500	0.1	**0.22**	50	50	1
PCBs (as decachlorobiphenyl)	0.5	0.1	**0.22**	0.05	0.22	0.1
Simazine	4	0.07	0.154	0.4	0.4	0.35
Toxaphene	3	1	2.2	0.3	2.2	1

General Interest

Coming to Grips with the Issue of Reporting Non-Target Compounds

By Rick Mealy

Your client submits a drinking water compliance sample for Benzo (a) pyrene. You perform a 525.2 GC/MS analysis. You don't find any **benzo(a)pyrene**, but your analyst does note a significant concentration of **bis(2-ethylhexyl) phthalate** that exceeds the MCL for that compound. As Dennis Hopper's character in the movie, Speed, asks Keanu Reeves, "**What do you do**?"

To report the phthalate or not to report the phthalate…that is the question. In a quandary, you go back to basics and list the pros and cons related to the decision. Under the column for "Report it", you list:

- *It's the right thing to do*
- *It's above the MCL*
- *Someone's health could be in danger*

And, under the column labeled "Don't Report It":

- *My client didn't request it*
- *If I DO report it, my client might not like it*
- *It might just be contamination*

Certainly the example above does not completely frame the issue. At the risk of over-simplifying the issue, the example at least gets to the point, and that is that, for drinking water analyses, Administrative Code is clear that detections, for any compounds for which monitoring may be required, must be reported.

The issue of reporting compounds not specifically requested by a laboratory's clientele understandably generates a lengthy list of questions including—but certainly not limited to--- the following:

- Does this mean that tentatively identified compounds (TICs) have to be reported for analyses performed using GC/MS?
- If a client requests only a few trace metals analyses and the lab performs an ICP (or ICP/MS) scan, does that mean ALL trace elements identified need to be reported?
- I'm concerned I may lose business as a result of reporting this information to my client, who may not want to "see" it, and will find another lab that will not report it.
- What about compounds identified above the detection limit that are associated with QC sample issues?
- What about compounds that are qualitatively identified but were not part of the calibration list?

An ethical dilemma?

From an environmental health standpoint, we have to —at least momentarily—turn a blind eye to the business aspect of environmental testing. As stewards of the environment and public health, if there is potentially a contaminant present that poses a risk to public or environmental health, we need to know about it.

All of us, whether regulators, public or private laboratories, or regulated entities, HAVE to be working towards the same goal: to protect the environment and the public at large. None of the stakeholders wants to intentionally do something that could potentially harm the environment or a person (or persons). This idea has to remain in the forefront as we move to answer the question at hand.

Working towards resolution

That being said, we now need to focus on how to consistently implement the requirement.

The only way to successfully navigate this issue will require efforts from all stakeholders: the DNR, testing laboratories, and the regulated facilities.

- Laboratories may have to make some changes to how they market testing,
- Regulated facilities will have to understand that this reporting is required of all laboratories.
- The DNR's regulatory programs may need to do some outreach and inform regulated facilities and laboratories alike of the requirements.
- The Laboratory Certification & Registration Program will need to work with the Drinking Water and Groundwater Program staff to clearly define "the rules" and develop consistent audit protocols to ensure that certified laboratories are held to the same standards.

So…we are not done…in fact we're just beginning the process. Stay tuned, and we'll keep you informed as we proceed towards a concrete resolution. ❄

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Action Items:

1. Check out the DNR Switchboard
2. Make sure you have an EPA Lab ID for PT results.
3. Check out the “Ultimate BOD Resource”