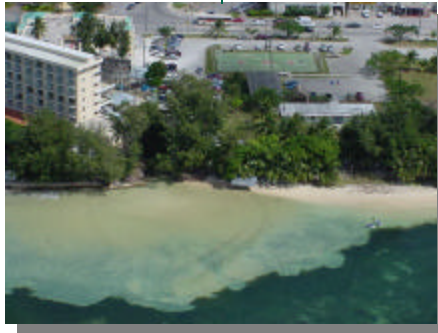




THE STANDARD

Potential Presence Of PCTs In Sediments Project Attracted Regulatory Attention

Although it is commonplace for polychlorinated biphenyl compounds (PCBs) to be among the target analytes (if not the primary target analytes) during sediment characterization studies, it is not common for polychlorinated terphenyls (PCTs) to be included on a sediment project target analyte list. For a recent long-term river sediment project, however, the state regulatory agency did inquire about the possible presence of PCTs in project sediments.



Swann Chemical Company (Swann) began commercial production of PCBs in the United States in 1929 and continued production until 1935 when the Monsanto Chemical Company (Monsanto) purchased Swann's assets. The manufacturing process for PCBs was fairly simple and involved exposing biphenyl to chlorine gas with the presence of an iron catalyst under heated conditions. The degree to which the chlorine "charged" the biphenyl as a function of time resulted in varying levels of chlorination.

Monsanto manufactured PCBs (under the trade name "Aroclor") for a variety of purposes, most of which involved Aroclor's use as a heat insulator in one form or another. The naming convention for PCB Aroclors was based on the nominal percent of chlorine present. For example, Aroclor-

1016 was comprised of approximately 16% chlorine and Aroclor-1260 was comprised of approximately 60% chlorine. Other Aroclor specialty formulations, such as Aroclor-5460, consisted of varying mixtures of PCBs and PCTs

and were manufactured for very specific purposes (e.g., enhancing the flexibility of the rubber used to coat high-temperature wire). During the execution of a large multi-year river sediment characterization project, records from the mid-1940s that

were located indicated that the Monsanto facility in Anniston, Alabama, had manufactured and shipped tens of thousands of gallons of a "specialty mixture" of PCBs and PCTs to the project site. This historical information prompted the state regulatory agency to request the Project Team to answer two PCT-related questions.

- Do any of the sediment characterization data generated during the last 6 years suggest the presence of PCTs?
- If PCTs are present in the sediment, do the reported concentrations of PCBs include the PCTs and at what levels are PCTs present in the sediment samples?

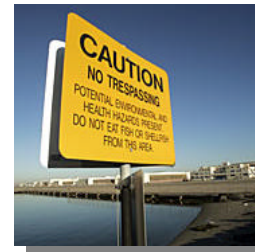
Environmental Standards chemists critically reviewed a significant number of sediment sample PCB chromatograms that were generated during 1998 and 1999. The intent of the evaluation was to determine if there

(Continued on page 2)

Superfund Turns 25

December marks the 25th anniversary of the Superfund Program, a program initiated by President Jimmy Carter's signing of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Since 1980, 936 sites have been cleaned up under Superfund and the US EPA has secured more than \$22 billion from polluters who have funded approximately 70% of the site cleanups; the remaining 30% is funded with federal Superfund monies.

The concept of a federal toxic substance and hazardous material



cleanup program stemmed from the discovery of extensive contamination in the Niagara Falls, New York, community of Love

Canal, a former municipal and chemical disposal site owned by Hooker Chemical during the 1950s. After the disposal site reached maximum capacity, Hooker Chemical covered the sur-

(Continued on page 4)

FEATURED TOPICS

TCEQ Rule Update	2
Perchlorate Monitoring ...	3
IAQ Issues	3
Data Validation Options ..	4
Acquisition News	4
Hurricane Katrina	5
SMWG Involvement	6
Chain-Of-Custody	6
Staff Increases	7
Out And About	7
Benzene NESHAP	7

Potential Presence of PCTs In Sediments Project Attracted Regulatory Attention

(Continued from page 1)

were non-PCB chromatographic peaks present where PCB peaks eluted (and, therefore, PCT peaks may have been reported as PCBs) or if there were any apparent non-PCB chromatographic peaks eluting much later (*i.e.*, long after Aroclor-1668) that could possibly represent the presence of PCTs.

The chromatogram evaluation strongly suggested that PCTs were, indeed, present in many of the sediment samples and that the reported PCB concentrations in these sediment samples did not include the PCT concentrations. Environmental Standards chemists subsequently applied techniques to quantitate the PCTs (separately) using three of the highest chlorinated Aroclor-1260 peaks from the laboratory-provided raw calibration data. Although arguably not defensibly quantitative, this semi-quantitative approach was applied to the data for several hundred sediment samples; these data indicated that PCTs were present in most samples (results ranged from “not-detected” (ND) to 30% of the reported PCB concentrations). Assess-

ment of the estimated PCT concentrations indicated that the previously selected remedy at the site based on PCB concentrations would not be affected. The Project Team decided to perform a more definitive characterization and quantitation of PCTs in sediment samples collected more recently at the site.

Environmental Standards chemists worked with the Project Team’s

Environmental Standards chemists worked with the Project Team commercial laboratory to develop a new low-resolution GC/MS method for the identification and accurate quantitation of PCTs.

commercial laboratory to develop a new low-resolution gas chromatography (GC)/mass spectrometry (MS) method for the identification and accurate quantitation of PCTs. GC/MS was selected over GC techniques because of the distinct possibility for late-eluting PCB

GC peaks to be misidentified as PCT peaks; essentially, the mass spectrometer can easily differentiate PCBs from PCTs at the molecular level.

The new GC/MS method included the use of SoxTherm® extractions and the addition of several Cl-37 isotope labeled surrogate compounds that spanned the range of chlorination. The calibration and use of internal standards as requirements for this method were similar to those in SW-846

Method 8270C. The reporting of PCTs was based on chlorination group (*mono* through *deca*) and each sample analysis yielded a total PCT concentration. Method detection limit studies and precision and accuracy studies were performed at the conclusion of method development.

Forty relatively recently collected sediment samples were selected and retrieved from archive for analysis. Analytical holding time was not considered a factor for the purpose of the investigation. The samples were selected on the basis of their locations (and depth) in the river, the varying PCB Aroclors previously reported, and the total PCB concentrations previously reported. The Project Team specifically included several sediment samples in which PCBs were “ND” but that might contain other contaminants.

It was acknowledged at the onset of the investigation that the archived sediment samples would be extracted substantially beyond holding time; the Environmental Standards chemists and the Project Team, however, determined that sample holding time relative to the presence of PCBs and PCTs in sediment samples was not particularly relevant for the purpose of the investigation.

Analysis of the archived sediment samples by the GC/MS method provided the following information.

- Several samples that contained PCBs in the low percent range did not contain PCTs at or above the MDL.
- PCTs were not detected in any samples in which PCBs were not detected.
- PCTs were identified and quantitated in 34 samples; none of the total PCT concentrations exceeded 20% of the associated total PCB concentrations.

A formal report to the state regulatory agency presented two conclusions: the phased analytical assessment confirmed the presence of PCTs in river sediment, and the additional contribution of PCTs would not affect the previously selected PCB remedy at the site.

Contact Rock J. Vitale, CEAC, CPC, for insight about potential regulatory interest in PCTs in the environment or for details about this interesting project. He can be reached at 610-935-5577, or via e-mail at rvitale@envstd.com.

TCEQ Announces Lab Accreditation Rule Update

The Texas Commission on Environmental Quality (TCEQ) has announced changes to environmental testing laboratory accreditation and certification requirements; these changes affect the laboratories from which the commission can accept analytical data for use in TCEQ decisions regarding matters under its jurisdiction.

The new rule allows acceptance of tests and analyses from unaccredited in-house or on-site laboratories under the following circumstances:

- If the laboratory is located in another state, as long as that labo-

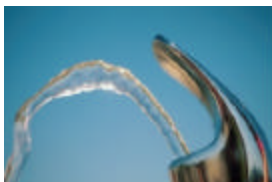
ratory is periodically inspected on accredited by that state.

- If the laboratory is performing the work for another company with a unit located on the same site.
- If the laboratory provides results without compensation for governmental agencies, as long as the laboratory is periodically inspected by the agency.

This new rule also updates references related to the National Environmental Testing Laboratory Accreditation Conference (NELAC) standards; however, accreditation remains voluntary.

Proposed Changes Published For Perchlorate Monitoring — UCMR 2

A notice proposing changes to the Unregulated Contaminant Monitoring Regulation (UCMR) under 40 CFR Part 141 for Public Water Systems was published in the *Federal Register* in August 2005. The proposed changes are associated with monitoring for perchlorate, a naturally occurring and man-made chemical historically used in the production of rocket propellant. Public water system operators must comply with the



new regulations (if promulgated) from 2007 until the next monitoring cycle (2010).

The Safe

Drinking Water Act of 1974 (amended in 1986 and 1996) required the US EPA to establish criteria for a program to monitor unregulated contaminants in public drinking water and to publish a list of contaminants to be monitored every 5 years. Perchlorate was on the UCMR 1 (took effect in 2001) contaminant list and is on the UCMR 2 list as well. The only analytical method for perchlorate that was available in 2001 was Method 314.0, which was capable of achieving a minimum reporting limit (MRL) of 4 µg/L at that time. Due to the recent development of new instrumentation, Method 314.0 is now capable of achieving an MRL of 0.57 µg/L; the US EPA refers to this as “Method 314.0 Enhanced.” Furthermore, recently developed Methods 314.1, 331.0, and 332.0 are capable of even lower MRLs.

Drinking Water Facts And Figures

- Water is the only substance naturally found on earth in three forms — solid, liquid, and gas.
- A person can live more than one month without food, but only about one week, depending on conditions, without water.
- A person must consume 2.5 quarts of water per day from all sources (drinking and eating) to maintain good health.

The availability of these methods with lower MRLs and additional information about perchlorate made available since 2001 (e.g., US EPA reports confirmed releases of perchlorate in 25 states) prompted the US EPA to propose the following changes for UCMR 2.

- The acceptable methods for perchlorate analysis are Method 314.0 (IC/Conductivity), Method 314.1 (IC/Conductivity), Method 331.0 (LC/MS or LC/MS/MS), and Method 332.0 (IC/MS or IC/MS/MS).
- The proposed perchlorate MRL is 0.57 µg/L.
- All positive results detected at or above the MRL of 0.57 µg/L using Method 314.0 or Method 314.1 must be confirmed by a second confirmation column (as detailed in Method 314.1) or by MS Methods 331.0 or 332.0.
- Analytical laboratories are required to analyze a daily MRL standard at or below the MRL of 0.57 µg/L to demonstrate their ability to see perchlorate at that concentration. The recovery limits are 50-150%. Perchlorate results associated with a failing daily check will be considered invalid.
- Samples collected for analysis by Method 314.0 must be preserved and must be filtered with a sterile syringe immediately after collection to remove any native microorganisms. Sample temperature must not exceed 10°C during sample shipment to the laboratory (within the first 48 hours after collection); samples must be maintained at ≤6°C. Analysis as soon as possible following laboratory receipt is recommended but the official holding time remains 28 days from sample collection.

The US EPA requested comments on these proposed changes with emphasis on the MRL of 0.57 µg/L and the level at which positive detections of perchlorate must be confirmed; the comment period ended last month (October 21, 2005). Environmental Standards chemists will continue to monitor the environmental, analytical, and regulatory developments associated with perchlorate.

Indoor Environmental Issues Are A Property Manager's Dilemma

Property managers generally want their tenants and owners to be satisfied with the property. There are numerous aspects to tenant satisfaction. One general category is satisfaction with the indoor environment of the property. The indoor environment encompasses a number of parameters including temperature, relative humidity, odors, dust, and appearance to name a few.

A property manager's dilemma is whether to be proactive or reactive to indoor environmental issues and complaints. There are advantages and disadvantages to both approaches. Being proactive, the property manager assesses and corrects an issue before the issue becomes a problem for the tenant. The proactive stance is a comfort to the tenant. There are a couple of downsides to being proactive – the cost associated with the on-going maintenance efforts and the potential liability attached to the discovery of an issue.

Being reactive has the advantage of addressing only issues that the tenant reports (i.e., no up-front costs). Some disadvantages



of being reactive are tenant dissatisfaction with conditions, the need for quick response, high cost of repairs, and legal liability associated with several issues.

A property manager can utilize aspects of both the proactive and reactive approaches to maximize tenant satisfaction without “breaking the bank.” Interaction with tenants, asking questions, and reacting to answers can short circuit some issues such as HVAC problems. To complement the interaction, a property manager should develop, document, and follow a decision tree for addressing tenant complaints. Developing and maintaining a list of vendors to address repair needs can be very beneficial.

If you are interested in learning more about developing a decision tree for reacting to tenant complaints or just learning more about your indoor environment, please contact Stephen Zeiner, CEAC, CPC, CRMI, at szeiner@envstd.com.

Buyer Beware: Purchase Electronic Data Verification Or Data Validation Or Both?

Data validation has traditionally been used to determine the usability of the reported analytical results for site characterization and site remediation. In the recent past, data validation was required to be performed on 100% of the data for federal and state-led project sites and litigious sites. There is a growing trend to use electronic data verification (EDV) to assess data usability. Although it is time-efficient and cost-effective to utilize the automated EDV process to evaluate project data, relying on EDV alone can result in increased costs based upon decisions made using incorrect or incomplete information. Utilizing data validation and EDV together has proven to be a very powerful combination in understanding site data. It should be noted that the use of data validation and EDV on projects demands effective communications among the project team and technical knowledge about the validation/verification processes.

Electronic data verification is an automated process by which the quality assurance/quality control (QA/QC) results supplied in an electronic data deliverable are utilized to assess the usability impact of select QA/QC information and to subsequently apply applicable data qualification codes to the associated investigative sample results. EDV generally evaluates only a subset of the QA/QC data evaluated during the data validation process. EDV assumes that the reported analytical results and associated QA/QC results are correct as reported by the laboratory. EDV is quicker and less expensive than data validation because EDV is an automated process.

Data validation, which must be performed by an experienced chemist, is a process by which the laboratory data

package deliverable is reviewed relative to the following areas: correctness of the reported analytical results; completeness of the hardcopy data package deliverables to substantiate the reported analytical results; compliance with the associated analytical method and/or site-specific project requirements; and usability of the analytical results. Data validation examines all aspects of the data from sample receipt through data reporting, inclusive of the raw data for investigative samples, QA/QC samples, and calibrations. Data validation does not make any assumptions relative to the correctness of the information provided in the hardcopy data package deliverable. Data validation requires more time and is more expensive than EDV due to the extensive labor involved.

Data validation and EDV have advantages and disadvantages. The application of combined data validation and EDV on a project allows for the advantages from EDV and data validation to be realized while the disadvantages are minimized. The dual data validation/EDV approach to projects can enhance the effectiveness of both processes. An educated buyer, however, needs to understand the differences between data validation and data verification and how to use the combination of the two assessment tools effectively. The educated buyer also needs to be aware that data validation is not performed in the same manner by all data validators despite the existence of state, regional, and national data validation guidelines. For more information on how you can use a combination of data validation and data verification for your project, contact Ruth Forman at 610-935-5577 or via e-mail at rforman@envstd.com.

Acquisition News — Environmental Business Transactions

Columbia Analytical Services, Inc. (CAS) has acquired **Transwest Geochem, Inc.** with its full-service environmental laboratory facilities in Phoenix and Tucson, Arizona. The employee-owned CAS network was founded in 1986 and includes laboratories in Arizona, California, Florida, Washington, and New York.

International consulting/engineering company **ARCADIS** announced on September 30, 2005, that the company had acquired 100% of the

shares of **Blasland, Bouck & Lee, Inc. (BBL)**. BBL, which is based in Syracuse, New York, is a provider of environmental and remediation services with offices nationwide.

O'Brien & Gere, also of Syracuse, New York, has acquired **Chasman & Associates LLC**, a civil and environmental consulting and engineering firm. Separately, O'Brien & Gere has sold its laboratory operation in East Syracuse to **Life Science Laboratories**.

Superfund Turns 25

(Continued from page 1)

face of the site with soil. Area residents complained of odors and unusual substances at that location for nearly 20 years. A consultant's report indicated the presence of toxic chemicals in the air, high levels of PCBs in the storm sewer system, and 50-gallon drums buried underground; however, no action was taken at that time to remedy the situation.

In 1978, the New York State Health Department finally began to study the neighborhoods surrounding the former disposal site and subsequently issued a public health hazard alert for the Love Canal community. President Carter declared Love Canal a federal emergency one week later.

Since that time, the US EPA has coordinated efforts to identify, analyze, and remediate hazardous and toxic waste sites. The latest statistics, gathered during fiscal year (FY) 2004 (ending September 30, 2004), show that the US EPA completed activities at 40 sites and spent \$507 million on cleanups conducted during FY 2004. As reported in the US EPA's FY 2004 Superfund Annual Report, the agency obtained approximately \$680 million in cleanup commitments from private parties.

There are currently more than 1,200 Superfund sites in various stages of cleanup. These sites include everything from former military bases and abandoned factories to gas stations with leaky underground storage tanks. During the next 30 years, the agency estimates that the United States may have to clean up as many as 350,000 Superfund sites at a cost of up to \$250 billion.

The question of where the funding will come from to cover cleanup costs has become an issue – the US EPA has a backlog of contaminated sites but not enough funding to begin remedial action. According to an internal review issued by the agency in 2004 called "The Superfund 120-Day Study," the shortfall is a direct result of the maturation of the program, with the number of Superfund sites increasing in both number and type. In addition, sites now tend to be larger, to require multiple remedies, and are more complex than those originally placed on the National Priorities List. A significant challenge for the US EPA and Congress going forward is how to best handle these increased funding needs for long-term cleanup.

Hurricane Katrina — A National Disaster From A Personal Perspective

Hurricane season in the Atlantic officially commences on June 1 and extends until November 30. The 2005 hurricane season, with one month remaining, is already documented as one of the severest on record. The following article, which was authored by Shaun Folkerts, a senior member of the Environmental Standards Logistics Auditing staff, presents a very personal account of his experience in Louisiana shortly after Hurricane Katrina made landfall this summer.

By now, we are well aware of the tremendous destruction and casualties

that resulted from Hurricane Katrina at the end of August. I happened to be conducting logistics service provider (LSP) audits in the Houston, Texas, area when the news of the severity of Katrina was initially broadcast. My concern on August 29 was the safety of my immediate family in the hurricane area; I received regular hurricane updates from employees of the companies being audited and maintained communication with Environmental Standards' Valley Forge headquarters. From Houston, our Audit Team was scheduled to continue on to southern Louisiana to conduct additional LSP audits in Baton Rouge and St. Gabriel, which is just south of Baton Rouge. Before leaving Houston, we were notified by each of the Louisiana LSPs scheduled to be audited that we would have to reschedule due to Hurricane Katrina.

I decided to drive from Houston to Louisiana for various reasons. I have had formal training and certification in search and rescue, first aid, emergency response, law enforcement, and related areas from a federally recognized academy. As an undergraduate, I was trained and certified as an emergency medical technician (EMT). During my career, I have worked numerous other national-level emergencies – from the 9/11 World Trade Center tragedy to the Capitol Hill Anthrax Attacks assessment, containment, and decontamination. Foremost in my thoughts, however, was my family in southern Louisiana.

I attempted several times each

hour on that long drive eastward to get through by cell phone to my brother, sister-in-law, and three-year-old nephew in Baton Rouge, but the phone networks were down or compromised and no calls would go through. It was not until I showed up on their doorstep in Baton Rouge with a big hug for each did I finally know that they had all survived unscathed. Katrina left a mess of trees and debris to clean up around their home but they were safe.

Knowing that my family was fine and with an opportunity to help the unfortunate victims of Katrina, I traveled

with my sister-in-law's brother Chris the next morning to the Red Cross office in Baton Rouge and we volunteered our services. The scene was one of utter mayhem. We were first assigned simple

tasks such as unloading trailers full of donated supplies that kept rolling in. Based on my background and unique training, the Red Cross suggested that we drive down to the FEMA staging area to volunteer where our services might be better used. FEMA initially asked me to help with coordinating the logistics required to set up a temporary field hospital at the airport in New Orleans, but persistent FEMA logistics difficulties eventually led me to a different assignment in the "devastated zone."

Chris and I followed the FEMA officer's road directions, traveled out to a small town near the Mississippi-Louisiana border, and eventually found our destination - the area high school. It was one of the few buildings that had not received major damage from the hurricane and had, thus, been converted to a makeshift triage hospital to service the victims in the area. Once at the high school, we were tasked with many different duties, ranging from moving heavy equipment and unloading trucks, to coordinating, preparing, and serving meals for the suffering, to direct care of the sick, and assisting the overworked doctors and nurses.

The scene was unforgettably sad and profoundly humbling. The sick and injured were crammed into the building, throughout the hallways of the

high school; and little space was unclaimed. Classrooms were full of families and nursing home evacuees needing shelter and care. The library had been turned into a "hospice" room for the dying - those for whom the medical facilities available at the facility could do no more. The gymnasium - basketball nets still suspended from the ceiling and pep rally banners still covering the walls from the last game - was filled to overflowing with cots. In each cot was a victim of Katrina's fury; these victims were of all ages, all colors, all religions, all levels of wealth and poverty. Katrina unified all of us in this building with a common goal: to simply get through it together. I was proud to be there to help the less fortunate of the Gulf Coast reach that goal.

If you have not done so already, please join us in doing whatever you can for the victims of this national tragedy. Donations can be made to the Red Cross at 1-800-HELP-NOW or at <https://give.redcross.org/>.

Rock Vitale Appointed To Two Technical Committees

Technical Director of Chemistry Rock J. Vitale, CEAC, CPC, has been elected to the ASTM Executive Subcommittee for Conformity Assessment (Committee E36). This technical committee is responsible for operation and recognition of accreditation bodies and conformity assessment entities for calibration and testing laboratories, inspection bodies, and certification and registration bodies. Serving as a member-at-large, Mr. Vitale will serve his term from January 1, 2006, to December 31, 2007.

In addition, the US EPA Officer of the Inspector General recently selected Mr. Vitale to serve on the Evaluation of Drinking Water Laboratory Procedures Expert Panel. The Official Notice of Selection Letter, dated October 7, 2005, recognized his experience and technical expertise in this area. This expert technical panel is tasked with providing the Inspector General with information pertaining to laboratory vulnerabilities, methods to protect against fraudulent laboratory procedures, and techniques to identify and address inappropriate and fraudulent laboratory practices.



Destruction discovered along the way to a location near the Mississippi-Louisiana border.

Environmental Standards Connects With



Environmental Standards has found that managing contaminated sediment sites frequently involves addressing unique and complex scientific and technical environmental issues. In an effort to enhance our hands-on experience with large sediment projects, we recently joined the Sediment Management Work Group (SMWG) Sponsor program.

The SMWG is an *ad hoc* group that is open to representatives from industry, state, and federal government entities with responsibility for the management of contaminated sediments. The organization's mission is to advance risk-based, scientifically sound approaches for the evaluation of sediment management decisions and to collect, develop, analyze, and share data on the effectiveness of sediment management technologies and approaches.

The Sponsor Program provides opportunities for collaboration between Fortune company members and environmental consultants, like Environmental Standards, with extensive experience in contaminated sediment remediation. One such collaborative event was the inaugural SMWG Sponsor Forum, held in conjunction with the Members' Fall Meeting in Green Bay, Wisconsin, last month. Environmental Standards representatives attended this meeting and benefited significantly from the knowledge base of the SWMG membership.

During the meeting, SMWG Coordinating Director Steven Nadeau outlined the following sediment-related activities currently pending or underway:

- Creation of a sediment stability guidance document.
- Establishment of a comparative net risk analysis, looking at pros and cons of each alternative with the overall goal of implementing a targeted national education program supporting a risk-based framework for sediment management decision-making.
- Writing technical bulletins covering such topics as natural recovery and ice scour guidance.
- The release of a National Academy of Science (NAS) Dredging Effectiveness Study.
- Providing detailed technical input to the NAS Special Committee Evaluating Remediation Options for Contaminated Sediments.

- Providing a forum for discussion of issues surrounding the PCB Disposal Rule.
- Reviewing the Great Lakes Legacy Act, which states, among other things, that PRPs (Primary Responsible Parties) are not eligible to participate.
- Discussions with the US EPA and other stakeholders recommending changes to the current national sediment management policy.

Environmental Standards has already amassed a great deal of experience with large sediment projects. To date, we have helped more than 15

Fortune companies with services that include Quality Assurance Project Plan development and field sampling challenges on the Upper Hudson, Lower Hudson, Delaware, Pasaic, Housatonic, and Fox Rivers and in Newark Bay, Lake Oswego, Lake Charles, and the Port of Seattle. Environmental Standards is currently the lead quality consultant for the largest sediment remediation project in the world.

Our professionals will be monitoring any new developments in this growing area of environmental concern so that both our present and future clients can be assured that our services are based on the most current information and the best technology available.

Chain-Of-Custody Review Made Easy

Improving the quality of project field and analytical data is accomplished by applying a sound Quality Assurance/Quality Control (QA/QC) Plan. One of the critical components of an effective QA/QC process is a thorough review of



the Chain-of-Custody (COC) document for completeness and accuracy of data (e.g., sample IDs, requested analyses, deliverable, number of containers, and preservatives added). More importantly, a COC is reviewed to determine if the document has been maintained properly, as indicated by custody transfer signatures, and dates of release and receipt.

Environmental Standards has successfully employed an Electronic COC for numerous projects to ensure that the COC and associated field data are complete and correct. The electronic chain option has a number of features that maintain data integrity and reduce time in preparing samples for delivery.

- "Pick lists" (option lists) of valid values to support the project QAPP and project nomenclature such as

location IDs, methods, preservatives, field matrix, and deliverable types.

- Checks for missing (required entries) or out-of-range data.
- Bottle label printing that supports the QAPP and prepares the label by directly referencing the COC (*i.e.*, client site, project, sample IDs, date/time, matrix, preservative, and requested analysis).
- Final hardcopy COC for signatures of release and receipt.
- Field data export to an Electronic Data Deliverable (EDD) that can be imported into the project data management system.
- Laboratory data are electronically verified for completeness and accuracy against the electronic COC field data. Laboratory errors and omissions identified by the verification process are listed on an error report that is forwarded to the laboratory for EDD resubmission.

An electronic COC format can be offered in two ways – as a centralized process utilizing a project database (e.g., Oracle, SQL, Access) with interactive forms that allow for COC data entry and verification, or as a distributed process utilizing Excel forms with imbedded macros and "pick lists." An electronic COC can be most beneficial for large-scale sampling projects and for those with well-defined sampling plans. Contact Dennis Callaghan or Meg Harnsberger at 610-935-5577 to learn more about electronic COC documentation.

Staff Numbers Continue To Increase

Three new environmental professionals bring extensive knowledge and hands-on experience to the staffs of the Environmental Standards Chemistry Quality Assurance and Geosciences Departments.

Patrick Conlon has joined our growing Chemistry Quality Assurance staff, offering his 25 years of experience in the areas of analytical technology, computer systems, quality systems, process management, and project planning within various nationally known laboratories. He has interfaced directly with federal, state, and client representatives with regard to the implementation and execution of laboratory analytical programs and quality assurance protocols. In addition, he is familiar with the development of the National Environmental Laboratory Accreditation Conference and its incorporation of ISO-17025 guidelines for analytical laboratory practices. Mr. Conlon earned an MBA from Rutgers University, a BS in Chemistry from Stockton State College, and a BA in education from Rutgers.

Adding to our Geosciences Department roster is **Christopher Hawk**, a staff geoscientist with a background in many aspects of environmental sciences. Mr. Hawk interned with the Adams County, Pennsylvania, GIS/Mapping Office, where he analyzed and edited map layers, aerial photos, and static maps in conjunction with land use and zoning issues. He also classified soil types and monitored streamflow and nutrient levels for geo-spatial correlation. He recently earned a BS in Geo-Environmental Studies from Shippensburg University.

Joining our Central Virginia office is Geoscientist **Tadd Wales**. Mr. Wales graduated earlier this year from the University of North Carolina at Wilmington, earning a BS in Geology. As a geology research assistant, he conducted data collection and analysis for a regional study, and prepared data tables for a GSA poster presentation and journal manuscript. He also participated in a university system-wide geology field course that involved extensive field mapping and data collection of sedimentary, igneous, and metamorphic rocks. While attending the university, he worked with a building performance specialist firm, conducting energy efficiency audits and designs for residential buildings.

Out And About

Environmental Standards Posts Conference Schedule

Environmental Standards personnel continue to span the country, gaining knowledge regarding new environmental developments and supporting organizations that play vital roles in the environmental community. Check the list below to see our schedule for the remainder of 2005.

Brownfields 2005, November 2-4, Denver, Colorado

This annual conference is the official US EPA and International City/County Management Association co-sponsored forum on brownfields cleanup, redevelopment, and reuse. Environmental Standards is a regular sponsor of this event.

PA Chamber of Business & Industry 2005 Fall Environmental Compliance Conference, November 3, Valley Forge, Pennsylvania

Topics for this conference include changes in the permit process and reporting requirements, the impact of recent court decisions, and pending litigation for regulatory compliance.

Assistance Provided To Fortune Clients In The Form Of Benzene NESHAP Auditing Services

Hazardous Air Pollutants (HAPs) are regulated under Title III of the Clean Air Act Amendments of 1990. The US EPA is required to establish specific requirements for all industries that emit one or more HAPs in significant quantities. Hazardous Air Pollutants and their National Emission Standards (NESHAP) are listed either by chemical, industry, or emission source in 40 CFR Part 61.

The regulations for benzene NESHAP are in Subpart FF of 40 CFR Part 61; the provisions of this subpart apply to owners and operators of chemical manufacturing plants, coke by-product recovery plants, and petroleum refineries as well as owners and operators of hazardous waste treatment, storage, and disposal facilities that treat, store, or dispose of hazardous waste generated. As part of ensuring compliance with 40 CFR Part 61, Subpart FF, companies are required to audit all laboratories that perform analytical testing services on benzene waste NESHAP samples every two years or prior to use of a new laboratory. For the past several years, Envi-

Society of Environmental Toxicology and Chemistry North America 26th Annual Meeting, November 13-17, Baltimore, Maryland

The theme of this year's meeting is "Environmental Science in a Global Society: SETAC's Role in the Next 25 Years."

Pennsylvania Resources Council (PRC) Annual Dinner, November 17, Conshohocken, Pennsylvania

The PRC is Pennsylvania's oldest citizen-action environmental organization and is recognized as a national leader in waste reduction and recycling. Environmental Standards is a Silver sponsor of this event.

Society of Women Environmental Professionals (SWEP) Greater Philadelphia Chapter 2005 Touchstone Reception and 10th Anniversary Celebration, December 5, Philadelphia, Pennsylvania

The SWEP Touchstone Awards recognize outstanding women who make significant contributions to the environmental field. Environmental Standards is a 5-year corporate SWEP sponsor.

ronmental Standards has assisted many of our Fortune clients by performing benzene waste NESHAP audits of their laboratories to ensure that proper analytical requirements and quality assurance /quality control are being followed. Environmental Standards has conducted approximately 50 benzene waste NESHAP audits nationwide since the promulgation of Subpart FF. For information about our how we can help with your benzene waste NESHAP laboratory compliance audits, please contact Rock J. Vitale at 610-935-5577 or via e-mail at rvitale@envstd.com.

Logistics Auditing

The winter edition of *The Standard* will feature an article about the expansion of our Logistics Auditing services. To find out more in advance, please contact Shaun Folkerts at 610-935-5577 or sfolkerts@envstd.com.



1140 Valley Forge Road
P.O. Box 810
Valley Forge, PA 19482-0810

Phone: 610-935-5577

Fax: 610-935-5583

www.envstd.com

E-mail: solutions@envstd.com

*Setting the Standards for
Innovative
Environmental Solutions*



THE STANDARD

Don't forget to visit us on the web!

www.envstd.com

Did you know?

- It takes, on average, 39,090 gallons of water to manufacture a new car and its four tires.
- One postage stamp on a letter the size of California and Oregon combined represents one part per quadrillion.
- The average large-scale wind turbine generates 1.5 MW of electricity, enough to power 450 homes for one year.
- American industrial facilities generate and dispose of approximately 7.6 billion tons of industrial solid waste each year.