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Summer Seminar Aug. 7 - 8

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Chair
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EPA Proposes New Toxicity Values for PCE

Potential Positive Impacts for Cleanup of Soil and Groundwater

By L. Loring Pitts, II, Ph.D.

The EPA is in the process of reevaluating the toxicity criteria for tetrachloroethylene (PCE), also known as tetrachloroethene. PCE is a chemical solvent that is widely used for dry-cleaning of fabrics, degreasing of metals and in the production of consumer products and other chemicals. In the United States, an estimated 27,000 dry cleaners currently use PCE. It has been detected in the ambient air around dry cleaning facilities and, in some cases, adjacent residences. Discharges of PCE from industrial facilities and dry cleaners can also contaminate groundwater, and PCE has been found in drinking water. It is also found in the soil of approximately one half of hazardous waste sites on the Superfund National Priority List.

In the June 26, 2008, *Federal Register Notice*, the EPA announced a 90-day public comment period for the draft document entitled "Toxicological Review of Tetrachloroethylene (Perchloroethylene; CAS No. 127-18-4): In Support of Summary Information on the Integrated Risk Information System (IRIS)." (Also see <http://cfpub.epa.gov/ncea> and select link to toxicity review.) The document was prepared by the National Center for Environmental Assessment (NCEA) within the EPA's Office of Research and Development.

In essence, the draft document proposes changes to the PCE toxicology numerical values (i.e., decreasing the toxicity) used in performing risk assessments and risk evaluations. The approval of the proposed changes will affect the current cleanup levels established through the risk-assessment process for PCE-impacted

soil and groundwater at sites undergoing remediation and, if implemented as proposed, would result in slightly higher cleanup concentrations than currently calculated levels. Thus, the ultimate result for risk assessment or risk evaluation could provide a somewhat improved time and cost for remediation for one or both media, depending upon the site.

As a potential application, goals for soil and groundwater cleanup on sites regulated under the Georgia Hazardous Substance Response Act (HSRA) are defined as Risk Reduction Standards (RRSs). Currently, default RRSs for PCE are typically used because there is little benefit to performing risk calculations to develop site-specific PCE cleanup levels. Potential changes associated with EPA's toxicological review may alter this approach and higher site-specific, versus default, cleanup goals could be calculated, thereby benefiting the cleanup process.

The draft document also includes a proposed and notable change in the classification of PCE to "likely human carcinogen" from its current status in a grey area between "possible" and "probable" carcinogen. However, risk assessments for soil and groundwater exposure have historically included carcinogenic effects for the ingestion and inhalation exposure of PCE. The change in classification may raise the level of concern in regard to human exposure to PCE. The dry-cleaning industry's initial reaction to this proposed change appears to echo the concerns over potential implications of this reclassification related to human health and worker protection (*American Drycleaner*, 07/15/2008).

The current toxicology values for PCE are provisional and have never been published in IRIS. However, all EPA regions and states have adopted the current provisional values and they are used in all risk assessments or evaluations. This policy of using provisional values is not uncommon. It will be interesting to see whether EPA and the states adopt the new PCE toxicology values prior to their inclusion into IRIS because the changes represent a decrease in toxicity while, on the other hand, also representing an increase in the cancer index classification of PCE.

Public Notice

As noted above, the new PCE toxicity values have been offered for public comment, which also includes a review by the National Academy of Science. In addition, the proposed toxicology values have been submitted to the Office of Management and Budget, which coordinates review of the toxicity values by federal agencies including the Department of Energy and the Department of Defense. The public comment period ends Sept. 28, 2008.

This overall review and approval process can take several months to complete. After the external review is complete, the EPA may or may not revise the values based on public comment and federal agency comment. If approved, it is anticipated that the new values will be incorporated into IRIS during the first quarter of 2009. Future use or application prior to the IRIS listing by the individual state environmental agencies is unknown.

Risk Assessment/Evaluation Process

Toxicity numerical values (factors) used in risk assessments to “quantify” allowable risk (i.e., establish cleanup goals) are (1) the Oral Reference Dose (RfD_{oral}) to evaluate the noncarcinogenic effects of ingesting a compound, (2) the Oral Cancer Slope Factor (SF_{oral}) to evaluate the carcinogenic effects of ingesting a compound, (3) the Reference Concentration (RfC) to evaluate the noncarcinogenic effects of inhaling a compound and (4) the Inhalation Unit Risk (IUR) to evaluate the carcinogenic effects of inhaling a compound. All of these factors are quantified in a risk assessment and the most sensitive risk factor is used to determine the cleanup goal for a compound. For PCE the most sensitive risk factors for calculating cleanup goals for soil and groundwater are the carcinogenic factors. Therefore, the following discussion addresses the proposed changes in the carcinogenic factors for PCE and the potential impacts that these proposed changes might have for risk-based cleanup standards at HSRA sites.

The current Oral Cancer Slope Factor for PCE is 0.54 (mg/kg-day)⁻¹, and the proposed Oral Cancer Slope Factor for PCE is 0.07 (mg/kg-day)⁻¹. The proposed change in the IUR is minimal and will not impact cleanup goals. The equations that calculate risk using the carcinogenic factors multiply values to determine risk; thus, a decrease in the SF_{oral} or IUR represents a reduction in risk, and ultimately a higher risk-based cleanup goal, because of the reduced risk associated with the reduction in the SF_{oral}. The magnitude of the increase in the cleanup goal will depend on site-specific conditions that affect exposure to PCE at a specific site.

The following paragraphs briefly look at the proposed toxicity changes for PCE and how these changes may impact

risk-evaluation calculations and risk-based cleanup goals. The focus is on HSRA sites, but potential impacts to other regulatory programs are also briefly discussed.

HSRA

The HSRA program is prescriptive, with specific instructions regarding risk screening levels and the determination of cleanup goals. First, the proposed regulatory changes resulting from the EPA’s PCE toxicology review are not expected to have an impact on HSRA screening levels (i.e., soil and/or groundwater concentrations that trigger agency notification of a PCE release), which are known as Notification Concentrations (NCs).

Second, with regard to establishing cleanup goals, the HSRA program does not allow risk assessments *per se*, but the program does provide for establishing cleanup goals known as Risk Reduction Standards (RRSs). These standards are based on the use of HSRA regulatory-provided pathways of exposure using specific formulas. There are five types of RRSs: Types 1 and 2 apply to residential properties, Types 3 and 4 apply to industrial properties, and Type 5 applies to specific situations where Types 1, 2, 3, and 4 are not appropriate.

Type 1 and Type 3 RRSs are default RRSs and are loosely based on risk considerations. Type 2 and Type 4 RRSs are site-specific and are based on the use of site-specific risk calculations based upon site data. When determining RRSs for a site, the higher of the Type 1 and Type 2 RRSs is used for residential properties, and the higher of the Type 3 and Type 4 RRSs is used for commercial or industrial properties. For PCE, the current practice is to use the Type 1 or Type 3 RRS because, historically, the use of these two default values provided consistently higher cleanup goals than the calculation of site-specific Type 2 or Type 4 cleanup values.

The following table provides an example of how the changes in toxicity values would affect the decision to use Type 3 or Type 4 RRSs for PCE.

Table 1. PCE RRSs
Calculated Using Proposed Toxicity Values

Media	Type 3 RRS	Type 4 RRS ¹
Soil ² (leaching to groundwater)	0.5 mg/kg	0.69 mg/kg
Groundwater (direct exposure)	0.005 mg/L	0.01 mg/L

1. The Type 4 RRS was calculated using the standard default-exposure parameters and the proposed PCE toxicity values.

2. The soil-leaching value was used because it normally drives the soil RRS selected for PCE.

Comparing the Type 3 and Type 4 RRSs shows that there is a marginal improvement in use of the Type 4 RRSs for PCE using the proposed PCE toxicity values. It is unlikely that site-specific conditions will change much for the groundwater RRSs, so the 0.01 mg/L RRS for PCE is unlikely to change much from site to site. However, site-specific conditions in regard to soil characteristics and hydrological characteristics are likely to be different from the default parameters, and Type 4 RRSs for soil leaching could vary from site to site; therefore, Type 4 RRSs should be calculated.

Other Regulatory Program Impacts

The proposed PCE toxicity changes will also affect the calculation of risk-based cleanup levels for some other programs. With regard to RCRA-regulated facilities, cleanup levels for soil and groundwater at post-closed RCRA units are not risk-based so there will be no effect. However, cleanup levels for Solid Waste Management Units at RCRA-regulated facilities are

determined through risk assessment, along with cleanup levels for CERCLA sites.

About the Author

Dr. Loring Pitts is a Sr. Vice President of Atlanta Environmental Management, Inc. (AEM) in Atlanta, Georgia, and has more than 30 years of experience with issues related to environmental chemistry, statistics, toxicology, and human health risk-assessment issues. Since joining AEM in 1996, Pitts has concentrated on risk assessments, statistical analyses, the analysis of complex chemical data sets, the preparation of Georgia HSRA Risk Reduction Standards, and evaluation of the fate and transport of contaminants in soil and groundwater. In addition, he is a Project Manager for many of AEM's most important clients. His work has been performed for industrial and private facilities and as part of RCRA, HSRA, CERCLA and Brownfield efforts. Pitts can be reached at AEM at 404-329-9006 or via e-mail at loring-pitts@aem-net.com.

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Georgia's "Green" Tax Incentives

By Mark D. Fishman, CPA, MST

April 15th is just around the corner, so now is a great time to take a closer look at some of the tax incentives related to the environment. Georgia has been a very aggressive state when it comes to tax incentives for "going green." The following is a brief summary of some of the green tax incentives available in Georgia.

Clean Energy Tax Credit

In May 2008, Georgia enacted legislation establishing personal and corporate tax credits for renewable energy equipment and certain energy-efficient equipment installed and placed into service, called the Clean Energy Tax Credit. For renewable energy property used for any purpose other than single-family residential purposes, the tax credit is equal to 35 percent of the cost of the system (including installation), \$0.60/square foot for lighting retrofit projects, and \$1.80/square foot for energy-efficient products installed during construction. The credit is subject to various ceilings depending on the type of renewable-energy system or project. The following credit limits for various technologies apply:

- A maximum of \$100,000 per installation for domestic solar water heating; maximum of \$500,000 per installation for photovoltaics (PV), solar thermal electric applications, active space heating, biomass equipment and wind energy systems;
- A maximum of \$100,000 per installation for Energy Star-certified geothermal heat pumps;
- A maximum of \$100,000 for lighting retrofit projects and
- A maximum of \$100,000 for energy-efficient products installed during construction.

Before claiming the credit, the taxpayer must submit an application to the Georgia tax commissioner for tentative approval, as the aggregate amount of tax credits taken -- both personal and corporate credits -- may not exceed \$2,500,000 in a given calendar year. Tax credits are granted on a first come, first served basis and may not exceed the taxpayer's liability for that taxable year. Excess credit may be carried forward for five years from the close of the taxable year in which the installment of the clean energy property occurred. If the amount of credits exceeds the taxpayer's liability in a taxable year, the excess may be taken as a credit against the taxpayer's quarterly or monthly payment.

The second part of the Clean Energy Tax Credit is the Wood Residuals credit. The Wood Residuals credit provides a tax credit for the delivery of wood residuals to renewable biomass qualified facilities. The value of the credit for transporting or diverting wood residuals is currently being determined by the Georgia Forestry Commission.

Manufacturers' Investment Tax Credit

In addition to the new Clean Energy Tax Credit, Georgia has several other credits available for the Green initiative. In

1994, Georgia enacted the Manufacturers' investment tax credit, which benefits businesses involved in manufacturing or telecommunications. If a company spends at least \$50,000 in a year and has been in business in Georgia for at least three years, there is a tax credit for the investment of either 1-5 percent of the cost of the assets. However, if the assets purchased are for recycling, pollution control and defense conversion the credit increases to 3-8 percent. The credit percent is determined by which county the assets are located in.

A tax credit is also allowed for research expenses for research conducted within Georgia for any business or headquarters of any such business engaged in manufacturing, warehousing and distribution, processing, telecommunications, tourism or research and development industries. The credit is 10 percent of the additional research expense over the "base amount," provided that the business enterprise for the same taxable year claims and is allowed a research credit under Section 41 of the Internal Revenue Code of 1986. The credit may be carried forward 10 years but may not exceed 50 percent of the business's Georgia net income tax liability after all other credits have been applied in any one year. Note that the base amount must contain positive Georgia taxable net income for all years.

Automobiles and Tax Credits

Georgia has two credits to encourage energy-efficient cars and to reduce traffic flow. The first is the Low Emission Vehicle Credit. This is a credit for the purchase or lease of a new low emission vehicle. The purchaser is entitled to 10 percent of the cost of the vehicle or \$2,500, whichever is less. There is also a credit for the conversion of a standard vehicle to a low-emission vehicle which is equal to 10 percent of the cost of conversion, not to exceed \$2,500 per converted vehicle. Certification approved by the Environmental Protection Division of the Department of Natural Resources must be included with the return for any credit claimed under this provision - a statement from the vehicle manufacturer is not acceptable.

The second is the Business Enterprise Vehicle Credit. This credit is for a business enterprise for the purchase of a motor vehicle used exclusively to provide transportation for employees. In order to qualify, a business enterprise must certify that each vehicle carries an average daily ridership of not less than four employees for an entire taxable year. This credit cannot be claimed if the low and zero emission vehicle credit was claimed at the time the vehicle was purchased.

Teleworking Credit

Last year the Governor enacted the Teleworking Credit. Employers who permit their employees to telework will be allowed an income tax credit for expenses incurred up to \$1,200 per participating employee. The percentage of the credit for allowed expenditures would range from 100 percent, 75 percent and 25

percent depending upon whether the business is located in a federal nonattainment area, for eligible expenses pursuant to a telework agreement and number of telework days claimed per month. In addition, the employer will also be allowed a credit for conducting a telework assessment in the year of implementation for 100 percent of the cost of preparing the assessment, up to a maximum of \$20,000 per employer. However, such costs shall not be eligible for the credit if the employer has already deducted such expenses from income in any tax year. The aggregate maximum that can be claimed for this credit is \$2 million in 2008 and \$2 million in 2009. This credit is only available for taxable years 2008 and 2009.

Land Conservation Credit

In May, the Governor extended the Land Conservation Credit. This provides for an income tax credit for the qualified donation of real property that qualifies as conservation land. See O.C.G.A. § 36-22-1 to 36-22-15 (2008). Taxpayers will be able to claim a credit against their state income tax liability not exceeding 25 percent of the fair market value of the donated property, up to a maximum credit of \$250,000 per individual and \$500,000 per corporation. The amount of the credit used in any one year may not exceed the taxpayer's income tax liability for that taxable year. Any unused portion of the credit may be carried forward for ten succeeding years. Fair market value will be established in the year in which the donation occurred. The Department of Natural Resources will certify that such donated property is suitable for conservation purposes.

In addition to the credit, the taxpayer will be able to deduct a Federal charitable donation and a Georgia charitable donation. The donations are not limited to the normal 30 percent adjusted gross income rules for individuals but are increased to 50 percent. Donations by a corporation are still limited to 10 percent of taxable income, unless they are of a qualified farmer.

Going Green Initiative

Georgia has two sales tax exemptions for companies that are related to the Going Green initiative. In April 2006, the Georgia legislature enacted legislation (HB 1018) amending O.G.C.A. § 48-8-3 creating an exemption for biomass materials from the state's sales and use taxes. According to the new legislation, the term "biomass material" is defined as:

organic matter, excluding fossil fuels, including agricultural crops, plants, trees, wood, wood wastes and residues, sawmill waste, sawdust, wood chips, bark chips, and forest thinning, harvesting or clearing residues; wood waste from pallets or other wood demolition debris; peanut shells; pecan shells; cotton plants; corn stalks; and plant matter, including aquatic plants, grasses, stalks, vegetation, and residues, including hulls, shells or cellulose containing fibers.

To qualify for the exemption, biomass material must be utilized in the production of energy, including the production of electricity, steam or both electricity and steam. Pellets and fuels derived from biomass are generally eligible.

In addition, sales of tangible personal property to, or used in or for the construction of, a new alternative-fuel facility primarily dedicated to the production and processing of ethanol, biodiesel, butanol or their by-products, when such fuels are derived from

biomass materials such as agricultural products, animal fats or the wastes of such products or fats. Any entity seeking the exemption must conduct at least a majority of its business with nonaffiliated entities. This exemption is enacted for five-years (July 1, 2007 – June 30, 2012), but will only apply to purchases up to the point an approved facility begins production and processing of alternative fuel.

About the Author

Mark D. Fishman is a CPA and has a Masters in Taxation with over 14 years of experience in public accounting. He joined Cain & David, a full-service accounting firm, in 2005 as a Partner. Mark's areas of practice include manufacturing, technology, telecommunications, distribution, entertainers and athletes and services companies. Mark can be reached at 770-499-7100 and mfishman@caindavid.com.

A Special Thanks
to the outgoing
officers for their
support of the
section:

Susan Hansen
07-08 Treasurer
&
Andrea Rimer
*07-08 Immediate
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Messages from the Outgoing and Incoming Chairs

Martin A. Shelton, 2008 Chair
Schulten, Ward & Turner, LLP

Here we are already in March of 2009 and I wonder where 2008 went? As I look back at the past year for the Environmental Law Section I think it has been a pretty good one despite the economic woes of the world that have transpired around us. The ELS Board works hard to provide exciting, informative and occasionally even fun events for section members throughout the year. We have made an effort in the last few years to expand the section's offerings beyond the occasional brown bag lunch and the Annual Summer Seminar and I hope we have been successful in expanding the scope of activities and the interest of section members in participating. I am sure these efforts will continue with next year's Board under the leadership of Bill Sapp from the Southern Environmental Law Center.

One example our expanded offerings was the Holiday Reception held on Dec. 17, 2008. During the reception we also presented our 1st Annual Environmental Law Section Award for Excellence in the Practice of Environmental Law or Service to the Environment. We were proud to present the award to Jim Stokes, whose accomplishments over the last 36 years of practicing law are too numerous to list here. For most of his career, Stokes practiced law at Alston & Bird LLP where he founded and led for almost 20 years the Environmental Practice Group. For the last four years he directed the Georgia Conservancy, overseeing it as it produced nine Blueprints for Successful Communities projects, expanded the Mothers & Others for Clean Air program and promoted increased water conservation measures for metro Atlanta and Georgia. Stokes has also been a very active member of the section and was the Chair of the ELS three times. Congratulations again, Jim!

In closing, I would like to say that it has been a pleasure to serve as your section chair for the past year and on the ELS Board for the last four years. Although it seems corny to say, it is true that you get back more from service to the Bar and the section than you put in. My experience serving on the ELS Board has been very fulfilling and I encourage each of you who have not participated in the past to think about it for the future. Frankly, I am not sure what I am going to do this spring with no summer CLE to plan and organize but I am sure I can find a pollution problem somewhere to sue over. . . . best wishes in 2009!

Bill Sapp, 2009 Chair
Southern Environmental Law Center

As the new Chair of the Environmental Section, the first thing I want to do is thank Martin for his service over the past year. His creativity and hard work led to many positive changes for the section, which the current board hopes to build upon in the coming year. For one, we want to get more of you involved in the work of the section. First, we would like to put together a five-person editorial board for this publication. If you are interested in being selected, please contact the Secretary, James Griffin. Second, we want to have more brown-bag lunches. If you would like to arrange and host such a lunch or if you know an environmental consultant that would like to, please give me a call. As for events, we have already held our Annual Meeting on Feb. 13 at Troutman Sanders. Chris Clark, the incoming DNR Chair, presented his plans for the future of DNR. Right now we are putting the agenda together for the 2009 Summer Seminar, which we are holding at the King & Prince Resort on St. Simons Island on Aug. 7 - 8. If you have suggestions on topics or speakers, please contact me pronto. And as always, if you have ideas on how to make the section more helpful to you, please let someone on the board know.

Save the Date

The Environmental Law Section Summer Seminar will be held at the King & Prince Resort on St. Simons Island from Aug. 7-8.

More information to follow.