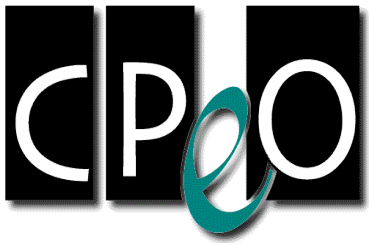

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Getting the Fox out of the Henhouse:
Restoring the Integrity of EPA's Process for Determining the Toxicity of Industrial and Military Chemicals

Testimony by Lenny Siegel
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before the
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Executive Summary

The Environmental Protection Agency's Integrated Risk Information System (IRIS) is the foundation of most of the federal, state, and tribal risk management decisions that determine the safety of the air we breathe, the water we drink, and soil under our feet. The quantitative judgments embedded in IRIS may read like a foreign language or quantum physics to most Americans, but they affect our health, our environment, and our property.

Unfortunately, over the past several years, the White House and federal agencies that are among the world's greatest polluters have hijacked EPA's authority to conduct human health risk assessments. EPA's April announcement of a new IRIS process simply institutionalizes an approach—used for perchlorate and trichloroethylene (TCE)—that unnecessarily puts Americans at risk. In lay terms, the fox is now managing the henhouse.

In my prepared testimony I tell the story of trichloroethylene. Federal agencies have delayed and perhaps prevented the establishment of more protective health standards for TCE, following a pattern that appears to be a precedent for the new IRIS process. In 2001 EPA issued a Draft Human Health Risk Assessment for TCE. Though its Science Advisory Board generally endorsed that study, EPA—under pressure from the White House and federal polluting agencies—withdrew the 2001 findings. It turned the issue of TCE toxicity over to the Interagency Working Group and sent it to the National Academies of Sciences for re-review. Meanwhile, EPA scientists significantly weakened the standards they were using to guide vapor intrusion investigations in my community of Mountain View, California. Though in July 2006 the Academies of Sciences told EPA and the other agencies to move quickly to promulgate a TCE standard, EPA has done little.

EPA risk findings make a difference. It's the difference between response and inaction in the bedroom of Jane's son in Mountain View, California. It's the difference between water treatment and inaction in Shirley's former home in Bayport, Minnesota. According to an Air Force scientist, it's a difference of $5 billion in the cost of groundwater treatment at 1400 Defense Department sites.

People impacted by TCE, perchlorate, and other toxic substances have called upon EPA to withdraw its recent IRIS changes and instead create a process based upon the three following principles:

1. All stakeholders, including the affected public, private polluters, and federal polluting agencies, should have the same access to the decision-making process for the assessment of hazardous substances.
2. Federally funded risk-relevant research should be managed by agencies that do not have conflicts of interest—that is, agencies that will incur significant costs or encumbrances associated with more protective health and environmental standards should not control these research activities.
3. The entire process of assessing hazardous substances should be carried out in the sunshine, with oversight by the public, the press, and by Congress.

The TCE Risk Assessment

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Today I am going to tell the story of trichloroethylene (TCE), the once-universal solvent that is one of the most common contaminants at both federal and private hazardous waste sites across the country. Federal agencies have delayed and perhaps prevented the establishment of more protective health standards for TCE, following a pattern that appears to be a precedent for the new IRIS process.

In August 2001 EPA issued a *Draft Human Health Risk Assessment for Trichloroethylene.* In considering the impact of the compound on young children, as well as cumulative exposures, it found that TCE was much more toxic than previously believed. In December 2002 EPA's Science Advisory Board peer review praised the "groundbreaking" assessment, finding:

> The Board advises the Agency to move ahead to revise and complete this important assessment. The assessment addresses a chemical, trichloroethylene (TCE), significant for being a nearly ubiquitous environmental contaminant in both air and water, being a common contaminant at Superfund sites, and because it is "listed" in many Federal statutes and regulations. The draft assessment is also important because it sets new precedents for risk assessment at EPA. We believe the draft assessment is a good starting point for completing the risk assessment of TCE. The Panel commends the Agency for its effort and advises it to proceed to revise and finalize the draft assessment as quickly as it can address the advice provided in this report.

Meanwhile, in November 2002 EPA issued tables along with its Draft Vapor Intrusion Guidance. Vapor intrusion is the migration of volatile compounds such as TCE from the subsurface into homes, schools, offices, and other structures. Those tables included target indoor air, soil gas, and groundwater concentrations for TCE based upon the 2001 draft Risk Assessment. That Draft Vapor Intrusion Guidance remains in limbo; EPA has no plans to finalize it.

In January 2003, EPA scientists convened a public meeting in my community of Mountain View, California to discuss the emerging pathway of vapor intrusion at a

number of local TCE cleanup sites. Over 400 people attended. EPA scientists explained that TCE was now considered 5 to 65 times as toxic as previously believed, and they introduced a screening level for TCE in indoor air, .017 micrograms per cubic meter ($\mu g/m^3$), corresponding to a one-in-a-million ("ten to the minus six") excess lifetime cancer risk. In fact, most EPA regions adopted that number as a provisional goal.

Mountain View, California Meeting, January 2003

EPA and the Mountain View responsible parties (polluters), including the Navy and NASA, continued their vapor intrusion investigations. Testing, using the provisional screening level, showed that most of the homes at an award-winning new housing development were safe after all. However, despite the Navy's misinterpretation of site data, we were eventually able to show that military families were being exposed to unsafe levels of intruding TCE vapors in the Army-run Orion Park Military Housing Area, formerly part of Moffett (Field) Naval Air Station.

In March 2004 I attended an EPA-sponsored workshop on vapor intrusion in San Diego. I was surprised to hear there, from a Navy friend, that I shouldn't worry about the vapor levels in Mountain View. EPA—the Navy had been assured—was going to withdraw the 2001 draft Risk Assessment. And indeed, that's what happened.

Back home in Mountain View, EPA adopted an interim action level of 1.0 $\mu g/m^3$ for TCE in indoor air. EPA explained the status of the health standard in its June 2004 *Draft First Five-Year Review Report for the Middlefield-Ellis-Whisman (MEW) Superfund Study Area, Mountain View, California*:

> EPA's ORD [Office of Research and Development] and OSWER [Office of Solid Waste and Emergency Response] have requested additional external peer review of the draft TCE Health Risk Assessment by the National Academy of Sciences. Consequently, review of the toxicity value for TCE may continue for a number of years. In the interim, because of the uncertainties associated with the draft TCE Health Risk Assessment, EPA Region 9 is considering both the draft TCE Health Risk Assessment toxicity values, as well as the California TCE toxicity value (similar to EPA's previously listed TCE toxicity value from 1987), in evaluating potential health risks from exposure, and in making protectiveness determinations.

That October a high EPA official told *U.S. Today* that the agency was "not forced to go to the National Academy of Sciences." I told the same reporter that EPA's action was like "voluntarily" jumping off the railroad tracks as a speeding train approached.

The National Academies Review

EPA actually moved the TCE issue to the same Interagency Working Group that weakened EPA's drinking water guideline for perchlorate—an essential component of solid rocket fuel—from an expected 1 ppb to 24.5 ppb. I actually learned that EPA, the White House, NASA, and the Departments of Energy and Defense were following the perchlorate gameplan for TCE over dinner at a perchlorate meeting in Las Vegas in September 2004. Making conversation with a gentleman sitting across the table, I found that he too had an interest in TCE. In fact, as a Department of Energy—not EPA—official, he was awarding the study contract to the National Academies of Sciences for its TCE review, just as he had done with perchlorate.

I had been at one of the Academy meetings about perchlorate, and I knew what a juggernaut of federal agencies and their contractors had weighed in calling for weaker perchlorate standards. So I encouraged people from TCE-impacted communities to attend Academy TCE Committee meetings and testify, and I was impressed by their response. For example, in March 2005 a carload of people from Endicott, New York took the day off work and drove down to DC on their own dime, and then drove back the same day, only to be caught in a Pennsylvania blizzard. In June, West Coast activists attended and spoke at the TCE Committee meeting in Irvine, California, displaying the photos of workers who died following exposure to TCE at the Viewmaster plant in Beaverton, Oregon. People from impacted communities did not pretend to have toxicological or epidemiological expertise. They simple reported that they and their neighbors of family members had been exposed to TCE. Many had contracted serious illnesses. And they wanted the experts on the Committee to think about them, not just the well-funded testimony of polluters, when it continued its deliberations.

It was at the first Academy TCE Committee meeting that the Interagency Working Group went public—at least about TCE. A White House official introduced a panel that not only included an EPA official, but also representatives of three federal polluting agencies: NASA, the Department of Energy, and the Department of Defense. What I had know for some time was finally out in the open: Federal agencies whose primary concern about TCE was the hundreds, maybe thousands of sites for which they

were responsible for cleanup were overseeing the government's efforts to update the health risk data that would be incorporated into IRIS. That is, the foxes had been given the keys to the henhouse.

In July 2006 the Academy TCE committee issued its report. It was long and complicated, and it provided detailed advice on how to conduct additional studies. But its overall conclusion was clear:

> The committee found that the evidence on carcinogenic risk and other health hazards from exposure to trichloroethylene has strengthened since 2001. Hundreds of waste sites in the United States are contaminated with trichloroethylene, and it is well documented that individuals in many communities are exposed to the chemical, with associated health risks. Thus, the committee recommends that federal agencies finalize their risk assessment with currently available data so that risk management decisions can be made expeditiously.

So what did EPA and the Interagency Working Group do? While in early 2005 they spent only a month implementing Academy recommendations for a weaker perchlorate standard, they moved slowly on TCE, even in the face of the strong Academy recommendation. They moved so slowly that one year later Senator Clinton, Senator Dole, and three other Senators introduced legislation designed to accelerate the development of new risk data and to create an interim vapor intrusion standard for TCE. Still EPA stalled, and EPA officials told Congress that the necessarily slow process could actually lead to a less protective standard.

Finally, in April 2008 EPA announced its new IRIS process, essentially institutionalizing the informal process that it had applied to TCE, as well as perchlorate. Activists from throughout the country responded by sending the attached "Grassroots Letter" to EPA, calling EPA's action "an attempt to cement a privileged position for federal polluting agencies, in which they would have recurring, generally secret ('deliberative') input into EPA's findings." Ironically, one key provision in the new process will not apply to TCE because it cannot be a "mission-critical chemical substance." In general, federal agencies no longer use TCE, though some contractors apparently do.

It Makes a Difference

The risk data for TCE is not just an abstract principle. It makes a difference in the real world.

- My neighbor Jane in Mountain View, California lives across Whisman Avenue from the birthplace of the American commercial semiconductor area, now known as the Middlefield-Ellis-Whisman (MEW) Superfund Study Area. Historically, official maps showed her home just outside the 5 parts per billion (ppb) contour line that defined the edge of the regional TCE groundwater plume. In March 2004, she finally got EPA and the MEW Responsible Parties to test the air in her house. They found

that TCE from the MEW plume was intruding into her home. TCE levels in her 11-year-old (at the time) son's bedroom was .8 $\mu g/m^3$, above the screening level EPA had originally presented to the community but below the interim action level. Only because levels in her basement were about 4 $\mu g/m^3$, above that action level, did EPA and the companies install a ventilation system.

Jane's House, Mountain View, California

- In Bayport, Minnesota, Shirley lived downgradient of a metal-plating shop that released enough TCE to place much of the town on the Superfund National Priorities List (NPL). Shirley's private drinking water well tested TCE at 2.5 ppb in 1988. In 1999, just before she moved, her well tested at 4 ppb of TCE. In 2002, she was diagnosed with cancer. In 2005 she died. Her family wants to know, "If Shirley's well never got over 4 ppb of TCE, and she died of cancer, why is the minimum for installing wellhead treatment systems 5 ppb?" I have no way of knowing whether the TCE in Shirley's well was a primary cause of her illness. The point is that the risk management decision is a function of the Maximum Contaminant Level (MCL), which in turn is based upon IRIS data.

- In April 2003, an Air Force scientist estimated that if EPA were to lower the MCL for TCE to 1 ppb (from 5 ppb), it would cost the Defense Department an additional $5 billion in current dollars to address groundwater contamination alone at its estimated 1400 TCE sites. I'm not convinced by the Air Force calculations, but it's clear that

> Defense environmental officials believed that the adoption and implementation of standards based upon EPA's 2001 draft Human Health Risk Assessment would be very costly.

Shirley's Former House, Bayport, Minnesota

Three Principles

Neither I nor the people with whom I work, people who have been exposed to significant levels of TCE and other toxic compounds, have the expertise to determine exactly what is safe. We count upon our government, directed by you, our elected officials, to establish a fair, open process to develop risk data. We ask you to direct EPA to reverse its recent IRIS pronouncements and instead to create a new process based upon the following three principles from the "Grassroots Letter."

> 1. All stakeholders, including the affected public, private polluters, and federal polluting agencies, should have the same access to the decision-making process for the assessment of hazardous substances.
>
> 2. Federally funded risk-relevant research should be managed by agencies that do not have conflicts of interest—that is, agencies that will incur significant costs or encumbrances associated with more protective health and environmental standards should not control these research activities.
>
> 3. The entire process of assessing hazardous substances should be carried out in the sunshine, with oversight by the public, the press, and by Congress.

To protect our health and the health of future generations, Congress must guarantee the integrity of the IRIS process.