

Chevron–Texaco’s Science

From the Guest Editors:—In their letter, “Elevating the Level of Scientific Discourse,”¹ Rothman and Arellano claim that “it would be a misuse of science to use weak or flawed studies as a pretext to support the claim that the reason to preserve the Amazon environment is to avoid an adverse effect on cancer rates.” However, as those authors know, there is no such thing as perfect science. Weak or “flawed” studies can be useful in determining risk. On the other hand, as shown by Genaro et al.’s article in this issue, the petrochemical companies, including Texaco, manipulated studies to avoid liability and protective public health regulations. Obviously, manipulated studies should not serve as a basis for public health decisions. Such has been the case in the many studies produced by Texaco and Chevron that they claim show that their workers, exposed to many known carcinogens, are healthier than unexposed populations.^{2–6} This may in part be due to the healthy-worker effect, but the companies have also been known to use dubious methods to study their own workers’ disease, including counting exposed subcontractors as part of “unexposed” control groups.⁷ These companies often use studies to justify workplace and environmental exposures that are dangerous according to both common sense and scientific evidence.

Texaco has tried to use Rothman and Arellano’s work to discredit studies showing adverse health effects of its practices. Unfortunately, a magnifying glass taken to the Ecuador studies cannot make the risk disappear. This is something that Rothman knows well; he begins his chapter in his jointly edited book with a critical analysis

of Hill’s seminal work on epistemology,⁸ pp. 24–8 yet he does not criticize Hill’s statement that, “All scientific work is incomplete—whether it be observational or experimental. All scientific work is liable to be upset or modified by advancing knowledge. That does not confer upon us a freedom to ignore the knowledge we already have, or to postpone the action that it appears to demand at a given time.”⁹ p 300

Hill also advises us to consider several “points of view” in considering causal relationships.⁹ Laboratory findings can confirm or substantiate meager or equivocal results in humans or identify carcinogenic risks to humans without having any other information. In the absence of reliable chemical carcinogenesis data for humans, the prudent public health path to take is to rely on controlled and well-conducted long-term carcinogenesis bioassays using laboratory animals. Animal study findings have led to an international consensus that a number of the agents generated during oil production are toxic and/or carcinogenic, and with foresight may be deemed to have the potential for constituting serious public health hazards.

The evidence in this instance is that containment has been deficient and that widespread environmental damage has resulted.^{10–15} The responsible companies have either failed to conduct or have failed to publish the qualitative and quantitative environmental and biological monitoring that Rothman and Arellano deem valuable. Rothman and Arellano would appear more even-handed had they been as critical of their sponsors’ failures to contain hazards and conduct ade-

quate environmental monitoring as they were of the scientists who interpreted the only data that were available. “Weak and flawed” or not, as a consequence of their sponsor’s conduct these were the only data available to identify the public health impact of the exploitation of these natural resources.

Rothman and Arellano should not be shocked to discover that the company that solicited their review and personal appearance at a press conference (entitled “Experts Say Health Studies Promoted by Lawyers and Activists are Flawed, Biased, and Inconclusive”) was using them to influence public opinion, political leaders, and the courts in Ecuador. It remains to be seen whether these antics will help the oil company escape blame for the health and environmental damage in this part of the Amazon. During the more than two decades they operated in Ecuador, Texaco never reinjected wastewater from the drilling process, even though the company held patents on the most effective way to do so.^{16,17} Wastewater re-injection has been required since 1911 in Texas and by 1971 was described by industry as being “integral” to oil production in the United States.¹⁸ Reinjecting the wastewater in the Amazon would have cost Texaco only about \$1/barrel, according to conservative estimates.¹⁹ During most of the time Texaco was extracting oil from Ecuador, it was sold for US\$12–35 per barrel.²⁰ Surely the oil giant could have afforded to take the same precautions in Ecuador as it did in the United States.

Despite Rothman and Arellano’s claim, we do not wish to “contend that Chevron–Texaco would not be allowed to request an expert evalu-

ation of scientific work.” Instead, we urge that scientists truly interested in the public and environmental health be aware of the uses to which their work may be put. For Chevron–Texaco science is not a tool for pursuing truth or human happiness. Instead, it is a means to the corporation’s goal of maximizing profit. Profit maximization is not the aim of public health, and public health scientists should not be surprised if they are called to task for serving the interests of corporations with such self-interest.

We wish the oil company had spent its resources to implement 90-year-old hygiene practices that could have protected the environment and people. If they had done so, perhaps they could have avoided spending so much on hiring an army of lawyers, public relations specialists, scientific consultants, and expert witnesses, etc., to defend their indefensible conduct.

DAVID S. EGILMAN, MD, MPH
 SUSANNA RANKIN BOHME, AM
 8 North Main Street, Suite 404
 Attleboro, MA 02703

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