

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF PUERTO RICO

JUANITA SANCHEZ (ON BEHALF OF MINOR :
CHILD DEBORA RIVERA-SANCHEZ) *et al.*, :

Plaintiffs, :

VS. :

Case No. 3:09-cv-01260-SEC

UNITED STATES OF AMERICA, *et al.*, :

Defendants. :

AFFIDAVIT OF John Peter Wargo

STATE OF CONNECTICUT

COUNTY OF NEW HAVEN;

Before me, the undersigned Notary, personally came and appeared, who after being first duly sworn makes this statement:

My name is Dr. John Peter Wargo and I have personal knowledge of the matters contained within this Affidavit. I am a Professor of Risk Analysis and Environmental Policy at Yale University. I am expert in assessing human exposure to hazardous substances. I graduated from the University of Pennsylvania with a B.A. and from Yale University with a Masters degree (1982) and PhD degree in 1984.

I have spent two decades conducting research on women's and children's exposure to hazardous substances, including pesticides, metals, solvents, particulates, and plastics. I have published on children's exposure to carcinogens, neurotoxins, developmental toxins, and hormonally active compounds. I conducted the exposure

assessments for two separate National Academy of Sciences publications, *Regulating Pesticides in Food* (1987), and *Pesticides in the Diets of Infants and Children*. I have written three books, *Our Children's Toxic Legacy* (Yale University Press: 1998), *Ecosystems, Science and Management* (co-authored, Springer-Verlag: 1998), and *Green Intelligence* (Yale University Press: 2009). I have testified before the Senate and House committees on these topics, and been an ad-hoc member of EPA's Scientific Advisory Panel on Pesticides for five years. I have been an advisor to several EPA administrators, and the office of the Vice President on children's exposure to hazardous substances.

- 1) Between 1983 and 1998, Vieques was bombed, strafed, or targeted with naval gunfire an average of two hundred days a year. The U.S. Agency for Toxic Substances and Disease Registry has estimated that thirty-nine tons of high explosives were likely dropped on the live impact area on a single high-use day, and that 90 percent of these bombs probably did not detonate. The agency also estimated that hundreds of thousands of automatic weapon rounds were fired in nearby areas. In 2000, the Navy reported that it had dropped between 3 and 4 million pounds of ordnance on Vieques each year between 1983 and 1998. If one assumes this to be an average figure for the larger span of 1950 to 2000, this could amount to 200 million pounds of weaponry deposited on or near Vieques during the U.S. occupation.
- 2) I have visited Vieques on approximately 10 occasions between 2003 and the present to explore the history of the U.S. Navy's release of munitions,

environmental contaminants on and near the island, and the potential for human exposure via food, water, and air.

- 3) I am currently analyzing nearly 1,200 hair samples collected from those residing in Vieques to understand concentrations of elements such as lead, mercury, cadmium, arsenic, and chromium, all elements of munitions released by the Navy on Vieques. Although the analyses are not yet complete, the following findings are probable.
 - a. Preliminary results suggest that numerous samples contain concentrations of mercury more than twice as high as those found by the U.S. NHANES 2003-2006 study that surveyed elements in tissues among nearly 11,000 humans tested in the U.S.
 - b. Many individuals carry the burden of more than one contaminant. Nearly 619 individuals (50% of all those tested) demonstrated lead levels ≥ 1.0 ppm. Among these individuals, 60 also demonstrated mercury levels ≥ 1.0 ppm; 34 of these demonstrated arsenic levels ≥ 1.0 ; and 27 of these demonstrated cadmium levels ≥ 1.0 ppm.
- 4) A pilot food intake survey demonstrated that among some islanders, fish intake is substantially higher than that predicted by the U.S. Food and Drug Administration, and the U.S. Environmental Protection Agency. Some families consume fish every day of the week. Fish intake is a plausible explanation for the elevated levels of some elements described above, and known to be components of munitions released to the Vieques environment.

- 5) During 2004-2006, I prepared a large Geographic Information System at Yale University to overlay aerial photography, satellite imagery, and diverse government datasets to better understand changing patterns of ecological change induced by the Navy's bombing activity.
- 6) Given the diversity of well recognized toxic substances released by the Navy, and the magnitude of chemical release (more than 100 million pounds over 50 years), it is clear that the East End bombing range is severely contaminated.
- 7) Storm Jean was a tropical depression that deposited nearly 18 inches of rain on Vieques during 2004. I personally witnessed storm water from the bombing range over-washing the beach into Bahia Salina del Sur following a tropical depression. The fields of bomb craters on the East end of the island filled with water that inundated the bombing range. This is an obvious route of toxic chemical transport to the marine environment, where it is likely concentrating in sediments, plants and diverse marine life.
- 8) Some of Vieques's best fishing sites lie just off the shores of the bombing range. Within Bahia Salina del Sur, schools of damselfish, yellowtail snapper, grouper, angelfish, and parrotfish are often visible in a glance, and sea turtles, barracuda, and sharks are not uncommon. Seagrass beds within the bay are also rich with a favorite seafood of the Viequense: corrucho or conch.

FURTHER, AFFIANT SAYETH NOT.



John Peter Wargo

STATE OF Connecticut

COUNTY OF New Haven:

I, the undersigned Notary Public, in and for the said State and County, hereby certify that John Peter Wargo whose name is signed to the foregoing Affidavit, and who is known to me, acknowledge before me on this day that, being informed of the contents of said Affidavit, she executed same voluntary on the day the same bears date.

Given under my hand and seal this the 9 day of July, 2009.

Notary Public

My Commission Expires: _____

JOHNNY ORTIZ
NOTARY PUBLIC
MY COMMISSION EXPIRES MAY 31, 2013

Curriculum Vita
John Peter Wargo, Ph.D.

Professor of Risk Analysis and Environmental Policy
School of Forestry and Environmental Studies and
Department of Political Science
and
Chair, Environmental Studies Major
Yale College

124 Kroon Hall,
195 Prospect St., New Haven, Connecticut 06511
john.wargo@yale.edu

Position Summary: John Wargo is Professor of Environmental Policy, Political Science and Risk Analysis at Yale University's School of Forestry and Environmental Studies and the Department of Political Science. He is also the Chair of Yale College's Environmental Studies Program and Major. Following receipt of his doctorate, he taught for two years at Dartmouth College before joining Yale's faculty.

Research Interests: Professor Wargo has concentrated much of his career to understand the threat to human health posed by environmental hazards. He has especially focused on the susceptibility of children, and has conducted research to evaluate the effectiveness of law in reducing environmental threats to human health. He designed many of the risk assessments used by several National Academy of Sciences studies on risks from pesticides, including *Pesticides in the Diets of Infants and Children* (1993) and *The Delaney Paradox: Regulating Pesticides in Food* (1987). Professor Wargo wrote *Our Children's Toxic Legacy*, presenting a history of pesticide law and science, published by Yale University Press in 1998. The book won the American Publishers' Association Prize for the best Book in Political Science the year it was released. He has just finished a book, *Green Intelligence* also published by Yale University Press in September 2009. He was lead author of a variety of monographs on environmental threats to fetuses, infants, and children, on topics including plastics, pesticides, diesel emissions, air pollution, breast cancer, and soon to be completed, cell phone radiation. All of these studies have contributed to legal innovation at either the state or federal level of government.

Teaching Interests: Professor Wargo teaches doctoral, masters and undergraduate students in the area of risk/exposure assessment and environmental law. Topical areas of research include: agriculture, food safety, pesticides, air pollution, land use, and hazardous site restoration. Within these areas, Professor Wargo trains his students to understand variability in the magnitude and distribution of risk. Professor Wargo has supervised 15 doctoral student research on diverse domestic and international problems involving environmental health, chemical management, risk assessment and law.

Public Service: He has testified before U.S. Senate and House Committees recommending legal strategies to protect children from environmental hazards, and has been an advisor to the Senate Committee on Health as well as Vice President Gore, and several EPA administrators. He has been a member of EPA's Scientific Advisory Panel/Board on Pesticides, and has advised the U.N.'s World Health Organization and the Food and Agriculture Organization on malaria, food safety, and pesticide control.

Position History

2001-Present

Professor of Risk Analysis, Environmental Policy and Political Science (Tenured)
School of Forestry and Environmental Studies and
Department of Political Science
Yale University

1996-2000:

Associate Professor of Risk Analysis, Environmental Policy and Political Science (Tenured)
School of Forestry and Environmental Studies and
Department of Political Science
Yale University

1992-1996

Associate Professor of Risk Analysis and Environmental Policy (Untenured)
Associate Professor of Political Science
Yale University

1986-1992

Assistant Professor of Risk Analysis and Environmental Policy
Assistant Professor of Political Science

1985-86

Visiting Assistant Professor
Yale University

1983-85

Visiting Assistant Professor
Thayer School of Engineering
Dartmouth College

1974-1979

Environmental Analyst
Adirondack Park Agency
State of New York

Education

Doctor of Philosophy

Dissertation: "Ecosystem Preservation Policy"
Yale University, 1984

Master of Science and

Master of Philosophy
Yale University, 1982

Master of Landscape Architecture

School of Landscape Architecture and Regional Planning
University of Massachusetts
Amherst, Massachusetts 1972-1974

B.A. English, 1972

University of Pennsylvania
Philadelphia, Pennsylvania

Advisory and Public Service Activities

World Health Organization: Advisor on Children's Environmental Health, Vector Borne Disease, Food Safety, and School Environmental Health.

EPA. Science Advisory Board/Scientific Advisory Panel 1997-Present
Advisor on Pesticide Risk Assessment Methods and Regulatory Policy

EPA: Office of Research and Development: Indicators for Children's Environmental Health.

EPA Tolerance Reassessment Advisory Committee 1998-2000.

Connecticut Fund for the Environment, Science Advisory Board.

Environment and Human Health. (Non-Profit Research Organization). Board of Directors.

Yale New Haven Teachers Institute. 1997-2005.

Publications

Books:

Wargo, J.P. 2009. *Green Intelligence: Creating Environments that Protect Human Health*. Yale University Press. 400 pp.

Wargo, J.P. 1998. *Our Children's Toxic Legacy*. Second Edition. Yale University Press. 380 pp.

Vogt, K., J. Gordon, J. Wargo and D. Vogt. 1997. *Ecosystems: Balancing Science and Management*. Springer-Verlag. 470 pp.

National Research Council National Academy of Sciences. 1993. *Pesticides in the diets of infants and children*. National Academy Press. Contributor of six technical papers on childhood food intake, exposure and risk assessment.

Recent Monographs:

Wargo, J, Taylor, H, and Cullen, M. 2008. *Plastics that may be harmful to children and reproductive health*. Environment and Human Health Monograph. 80 pp.

Wargo, J, Wargo L, Alderman N. 2006. *The harmful effects of vehicle exhaust*. Environment and Human Health Monograph. 64 pp.

Boyd B, Cullen M., Wargo, J., Alderman, N. 2006. *Breast Cancer*. Environment and Human Health Monograph. 64 pp.

Wargo, J, and Wargo, L. 2003. *Risks from Lawn Care Chemicals*. Environment and Human Health, Monograph. 96 pp.

Wargo, J. and Brown, D. 2002. *Children's Exposure to Diesel Exhaust*. Environment and Human Health Monograph. 76 pp.

Wargo, J. 2002. *The Physical School Environment: An Essential Component of a Health-Promoting School*. World Health Organization. 51 pp.