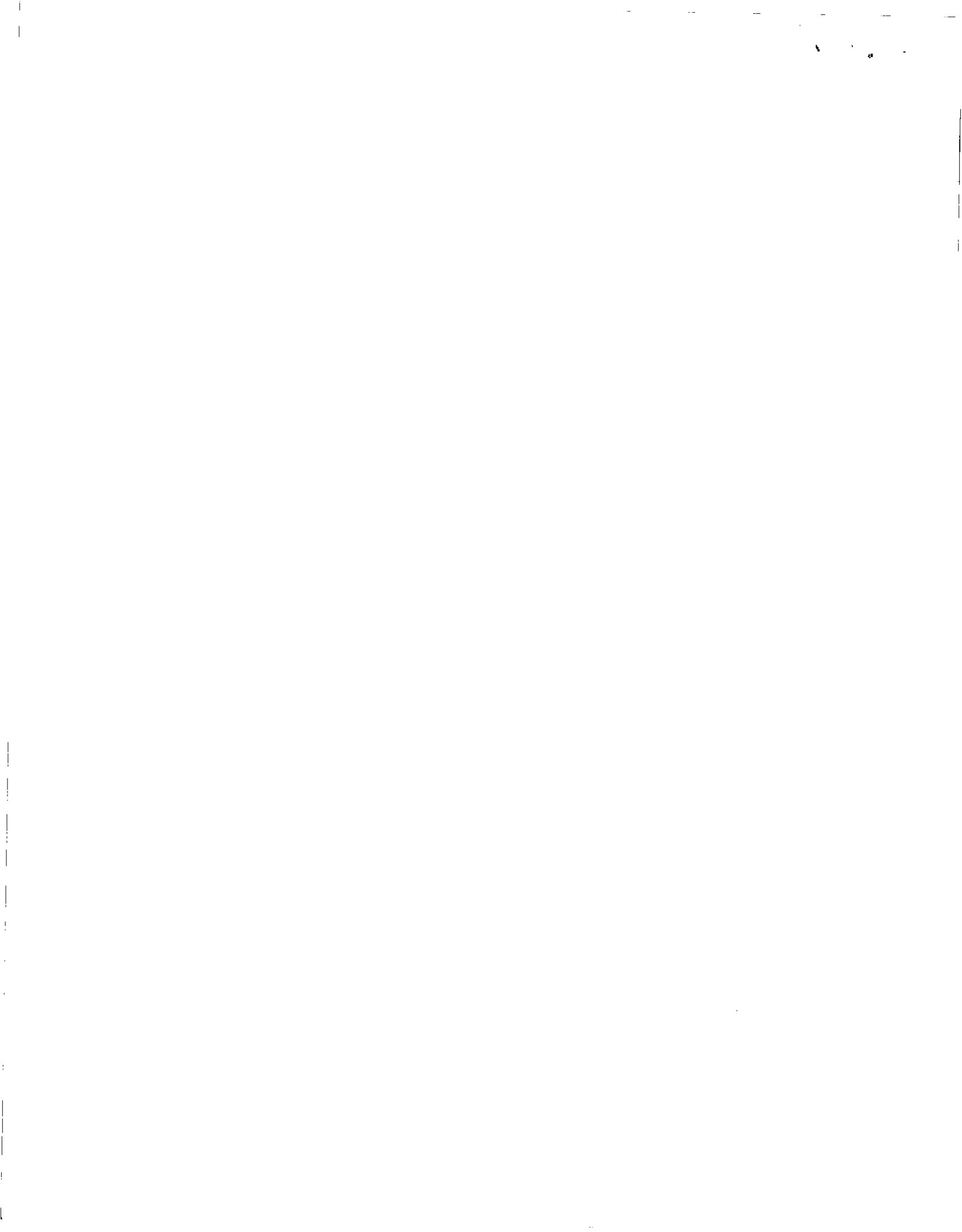




AN SAB REPORT: RECOMMENDATIONS ON THE 1993 SCIENTIFIC AND TECHNOLOGICAL ACHIEVEMENT AWARD NOMINATIONS

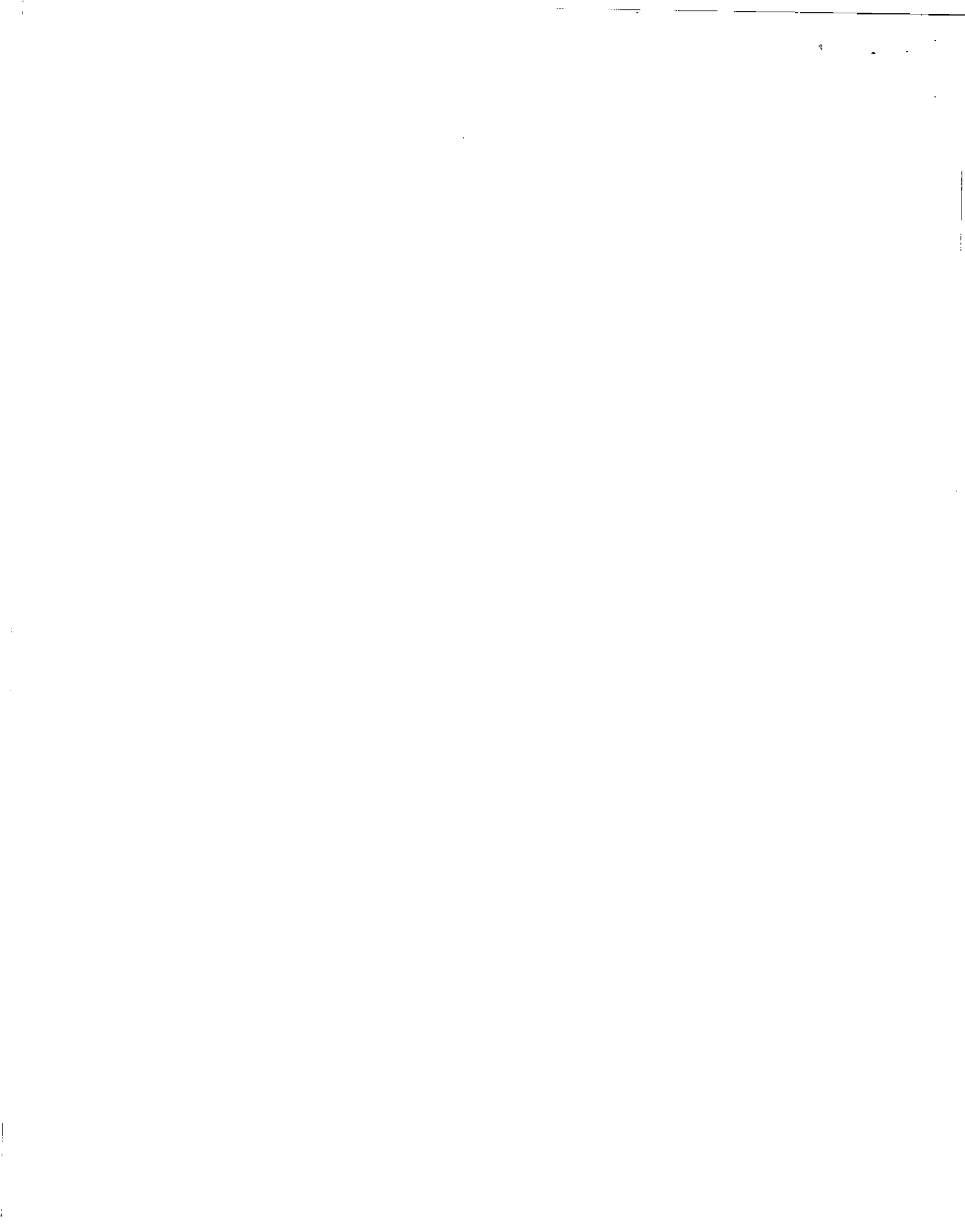
**PREPARED BY THE SCIENTIFIC
AND TECHNOLOGICAL
ACHIEVEMENT AWARDS
SUBCOMMITTEE OF THE
RESEARCH STRATEGIES
ADVISORY COMMITTEE**



U.S. ENVIRONMENTAL PROTECTION AGENCY

NOTICE

This report has been written as a part of the activities of the Science Advisory Board, a public advisory group providing extramural scientific information and advice to the Administrator and other officials of the Environmental Protection Agency. The Board is structured to provide balanced expert assessment of scientific matters related to problems faced by the Agency. This report has not been reviewed for approval by the Agency; and hence, the contents of this report do not necessarily represent the views and policies of the Environmental Protection Agency or other agencies in the Federal government. Mention of trade names or commercial products does not constitute a recommendation for use.



ABSTRACT

This report represents the conclusions and recommendations of the U.S. Environmental Protection Agency's Science Advisory Board regarding the 1992 EPA Scientific and Technological Achievement Awards (STAA) program. The STAA Subcommittee of the Science Advisory Board reviewed and evaluated the 131 papers nominated in eight scientific and technical categories for the 1992 STAA awards. The Subcommittee recommended 41 papers (32 percent of the nominations) for awards at three levels and also recommended to the Office of Research and Development (ORD) that additional papers be recognized with honorable mention. The Subcommittee recommended awards for papers from eleven EPA research laboratories, the Office of the Administrator, and two Environmental Services Divisions (Region VII and Region VIII). The Subcommittee encouraged the Agency to continue support for the STAA program as a mechanism for recognizing and promoting high quality research in support of the Agency's mission.

KEY WORDS: Awards, Scientific Achievements



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	A-1



1. EXECUTIVE SUMMARY

The Scientific and Technological Achievement Awards (STAA) Subcommittee of the Science Advisory Board (SAB) reviewed and evaluated the 1993 nominations for the STAA program. The Subcommittee evaluated 131 nominations of scientific and technical papers that were nominated by EPA research laboratory directors and program office division directors. The Subcommittee met in Washington, D.C., on March 2-3, 1994, to determine award recommendations.

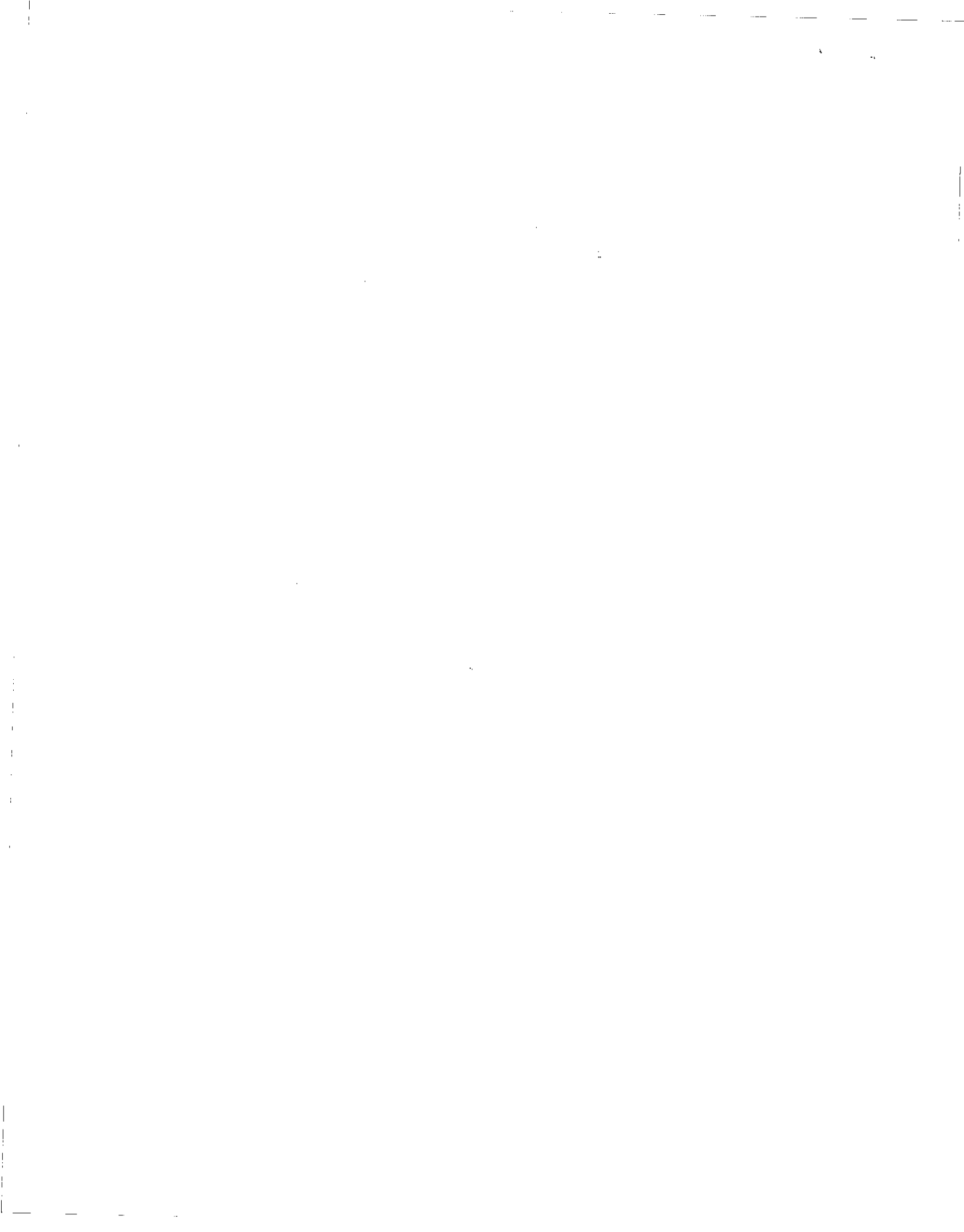
The Subcommittee recommended forty-one papers for awards and recommended that fourteen additional papers be recognized with honorable mention. The Subcommittee applied the evaluation criteria evenly across all nomination categories, without attempting to ensure equal numbers or percentages of awards in each category. However, the Subcommittee recommended awards for papers from eleven EPA research laboratories within the Office of Research and Development, the Office of the Administrator, and two Regional laboratories.

2. INTRODUCTION

2.1 Request and Charge for Science Advisory Board Review

At the request of the Office of Research and Development (ORD), the Science Advisory Board agreed to convene a subcommittee to review and evaluate scientific and technological papers published by EPA authors and nominated for the 1993 EPA Scientific and Technological Achievement Awards (STAA) program. The STAA Subcommittee was asked to evaluate nominated papers for awards based on the rules developed by ORD. In December 1993, the Office of Research Program Management (ORPM) in ORD provided the SAB with copies of 131 nominations, and the 1993 STAA Nomination Procedures and Guidelines, which describes the award levels and eligibility criteria. ORPM grouped the papers into seven categories of science and technology, and screened the papers for conformance with the nomination guidelines.

As described in the 1993 STAA Nomination Procedures and Guidelines, the SAB was asked to recommend papers for each of three Levels of Award. Level I awards are for authors who have accomplished an exceptionally high-quality research or technological effort with national significance. These awards recognize the initiation or general revision of scientific/technological principles or procedures, or highly significant improvement in the value of a device, activity, program, or service to the public. Level II awards are for authors who have accomplished a notably excellent research or technological effort. These awards are for research with timely consequences which contributes to an important achievement within its discipline or field of study. Level III awards are for authors who have



accomplished an unusually notable research or technological effort. Research for this award must relate to a mission or organizational component of the EPA, or significantly affect a relevant area of science/technology.

2.2 Subcommittee Review Procedures

Copies of all papers and the award program guidelines were provided to Subcommittee members in advance of the review meeting. Subcommittee members selected papers to review based on their expertise; as part of the evaluation, Subcommittee members were also asked to rank their own expertise in the field of science and technology addressed by each paper they selected to review. To ensure the credibility of the review process and broaden the base of expertise available to the Subcommittee, additional reviews were obtained from experts by mail. The Subcommittee would like to recognize the assistance of the following reviewers and past members of the Subcommittee:

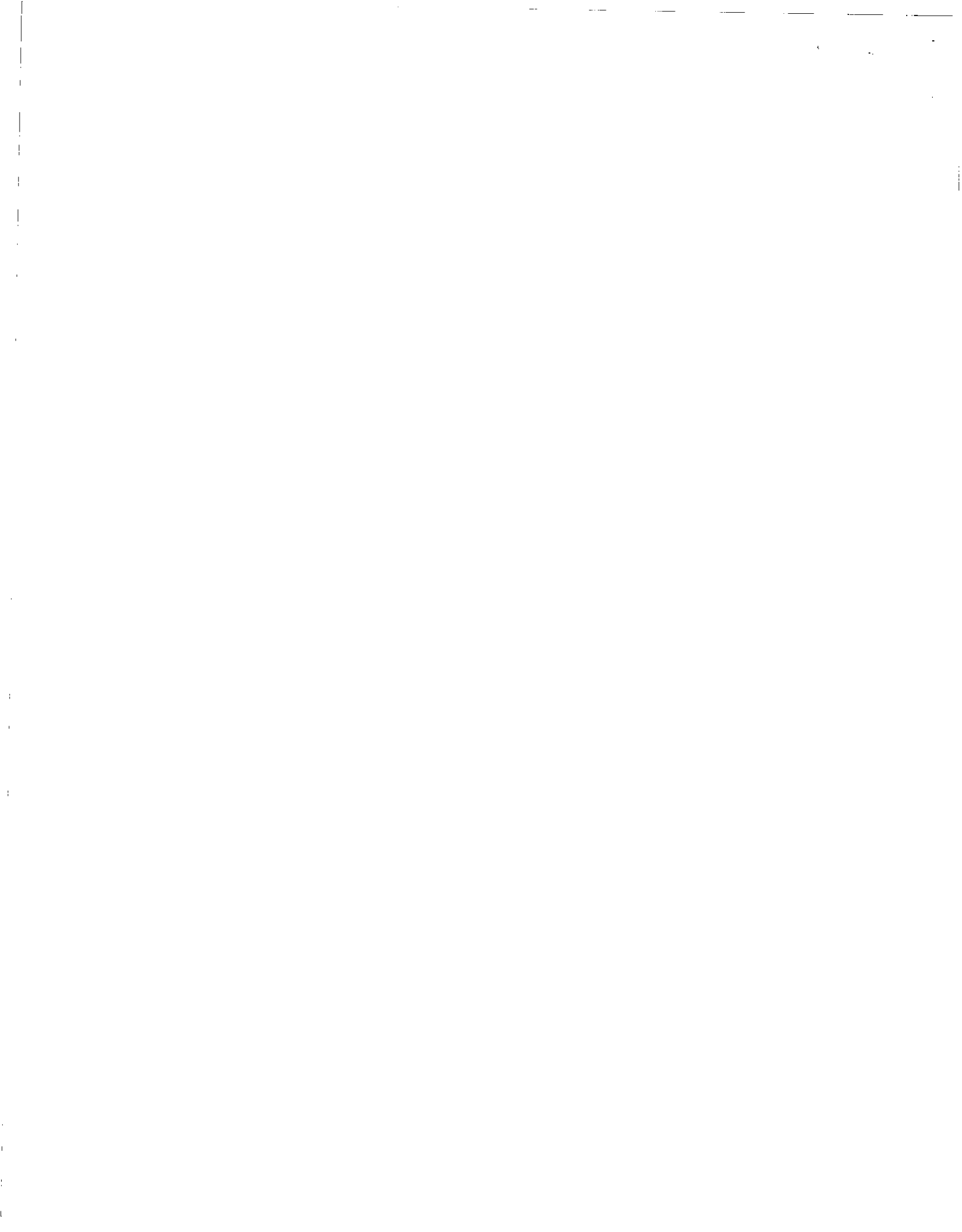
Dr. Roger Kasperson

Clark University

Dr. HansPeter Witschi

University of California, Davis

The Subcommittee met on March 2-3, 1994, in Washington, DC in a closed meeting. Consistent with the requirements of the Federal Advisory Committee Act, this closed meeting was announced in a Federal Register notice signed by the EPA Administrator. All Subcommittee members were present. The Subcommittee developed preliminary ratings for papers in each category, including discussion of each nominated paper. The Subcommittee made note of papers which had been incorrectly categorized, so that the final report recommendations would accurately reflect the subject areas of the nominated papers (see Appendix A). After completing all preliminary evaluations, the Subcommittee revisited the recommendations category by category to resolve any final issues, and ensure consistency in applying the award criteria across categories.



3. EVALUATION OF THE 1993 SCIENTIFIC AND TECHNOLOGICAL ACHIEVEMENT AWARDS NOMINATIONS

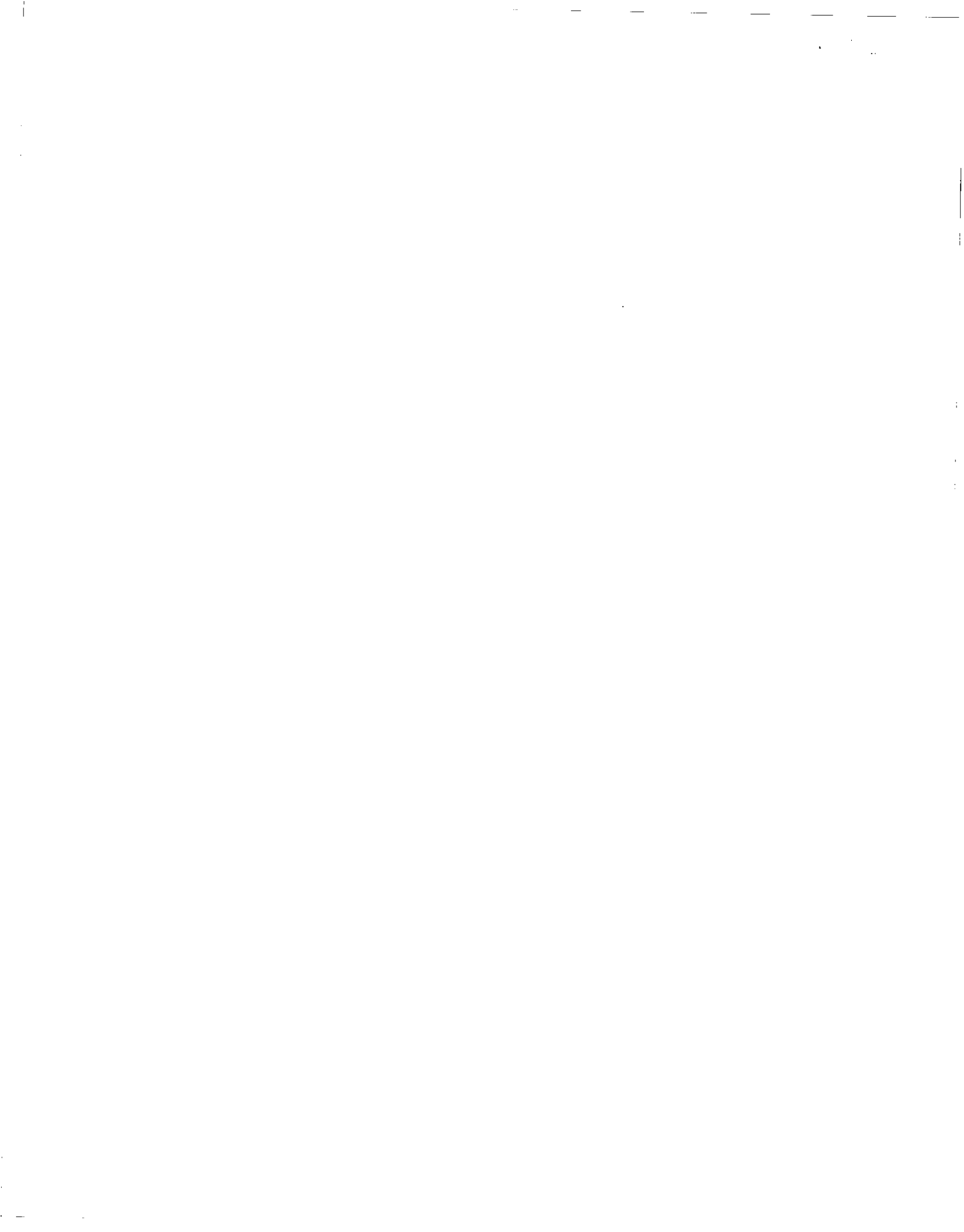
3.1 General Findings of the Subcommittee

The Subcommittee felt that there was a significant improvement in the overall quality of the papers nominated, continuing a trend from past years. The Agency should continue to focus on improving the quality of in-house research; the STAA program is an important mechanism for recognizing and promoting high quality, peer-reviewed work published in top scientific and technological journals. The authors recommended for awards this year are from the Office of Research and Development, the Office of the Administrator, Region VII and Region VIII. The Subcommittee encourages the Agency to continue to broaden the scope of nominated papers and to promote multi-disciplinary research.

In the interest of maintaining and improving the quality of the papers nominated for STAA awards, the Subcommittee urges greater involvement by EPA Laboratory and Office Directors in screening nominations for high scientific/technical merit and consistency with the eligibility criteria. The nomination statement is important in providing a context for the research, particularly where the paper is one in a series of published works. The Subcommittee found this information very helpful in evaluating the papers. While, the Subcommittee feels that nomination statements should not be written by the author(s), the statements should be verified for accuracy. In several instances, the justification provided for the EPA researcher who was not the lead author was not convincing. For example, the nomination T93-03 was an excellent study, but the contribution of the EPA author as the second author was not justified.

In order to evaluate papers which present incremental results in a series of published works, the Subcommittee recommends that the nomination guidelines explicitly require discussion of related research published previously by the lead author(s), including information on any STAA awards given. When possible, nominations should include all papers in a series, providing they are within the time limit. This would allow a series of incremental studies to be evaluated for an award as a package. Many of the papers recommended for Honorable mention appear to be part of a logical progression of research and testing. This year the Subcommittee has added citations for these papers which ORD may wish to include in any subsequent correspondence with these authors.

The 1993 STAA program included two categories of papers established at the recommendation of the STAA Subcommittee of the SAB: Emerging Research Issues and Innovative Approaches, and Risk Management and Policy Formulation. After two years of experience with these categories, the Subcommittee has found that the first category, Emerging Research Issues and Innovative Approaches, overlaps papers which belong in each of the existing categories and should be



dropped. The Subcommittee hopes to see more and higher quality peer reviewed papers nominated in the Risk Management and Policy Formulation category next year, as this is an important area of research for the Agency.

Finally, the Subcommittee feels that the process of converting Agency policy analysis and the technical foundations of its rule making into scientific articles for peer review is essential to maintain the quality in its science. This is also an important way to improve the Agency's reputation for scientific achievement. For example, nomination I93-04, "Container Study: Report to Congress" is an excellent study, but it is not eligible in its current form because the publication does not have a formal peer review. Laboratory Directors and program managers should encourage the authors to develop such an article for peer reviewed literature.



3.2 Award Recommendations

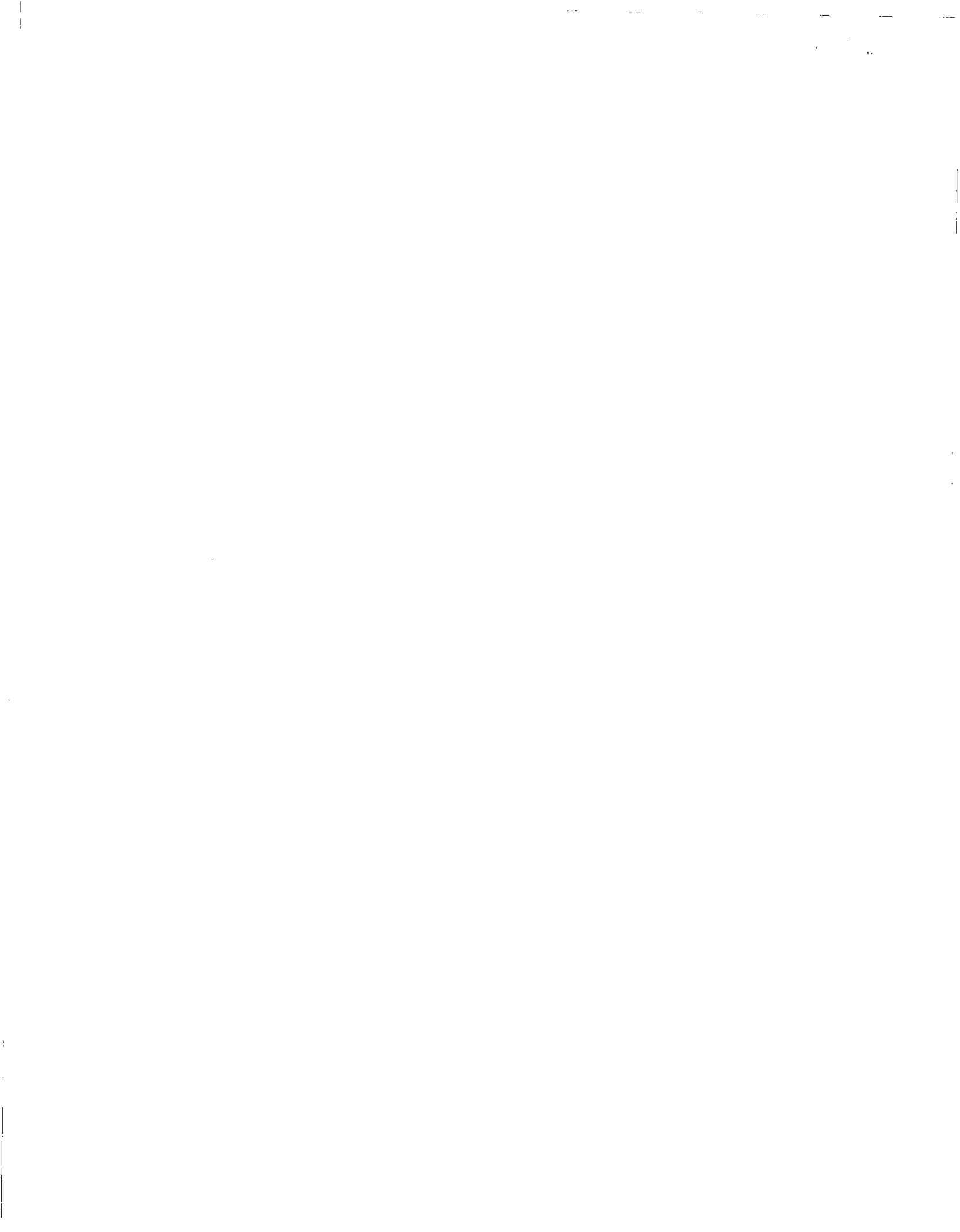
The EPA authors recommended for awards include scientists from EPA research laboratories, the Office of the Administrator, and two offices within ORD. Awards were recommended for each of the seven nomination categories. A total of 41 papers were recommended for awards. A summary of the distribution of award recommendations among categories is presented in Table 1.

Table 1: Summary of 1993 Award Recommendations

Nomination Categories	Number Nominated ¹	Award Levels			Total Awards	(Percent)
		III	II	I		
Control Systems & Technology	22	5	2	1	8	(36%)
Ecology	8	2	1	-	3	(38%)
Emerging Research Issues & Innovative Approaches	8	4	1	-	5	(68%)
Health Effects	25	5	2	-	7	(32%)
Monitoring & Measurement Methods	24	2	1	-	3	(13%)
Review Articles	19	3	2	1	6	(31%)
Risk Management & Policy Formulation	2	-	-	-	0	(0%)
Transport & Fate	23	7	2	1	10	(43%)
Totals	131	28	11	3	41	(32%)

¹Reflects papers as recategorized by the Subcommittee (see Appendix A)

The Subcommittee recommendations for awards are listed below for the eight categories defined by the STAA Program: Control Systems and Technology, Emerging Research Issues and Innovative Approaches, Ecology, Health Effects, Monitoring and Measurement Methods, Review Articles, Risk Management and Policy Formulation, and Transport and Fate.



3.2.1 Control Systems and Technology

Level I Award

C93-11 - Multiple Papers

Title: 1 Sorption of Toxic Organic Compounds on Wastewater Solids: Correlation with Fundamental Properties. *Environmental Science Technology* 23(9): 1092-1097, September 1989

Title: 2 Sorption of Toxic Organic Compounds on Wastewater Solids: Mechanism and Modeling. *Environmental Science Technology* 27(1): 152-158, January 1993

Nominating Organization: Risk Reduction Engineering Laboratory

EPA Author(s):
Dr. Richard A. Dobbs

Non-EPA Author(s):
Ms. Leping Wang
Dr. Rakesh Govind

Level II Award

C93-04

Title: Reaction Kinetics of Ca-Based Sorbents with HCl. *Industrial & Engineering Chemistry Research* 31: 2437-2446, 1992

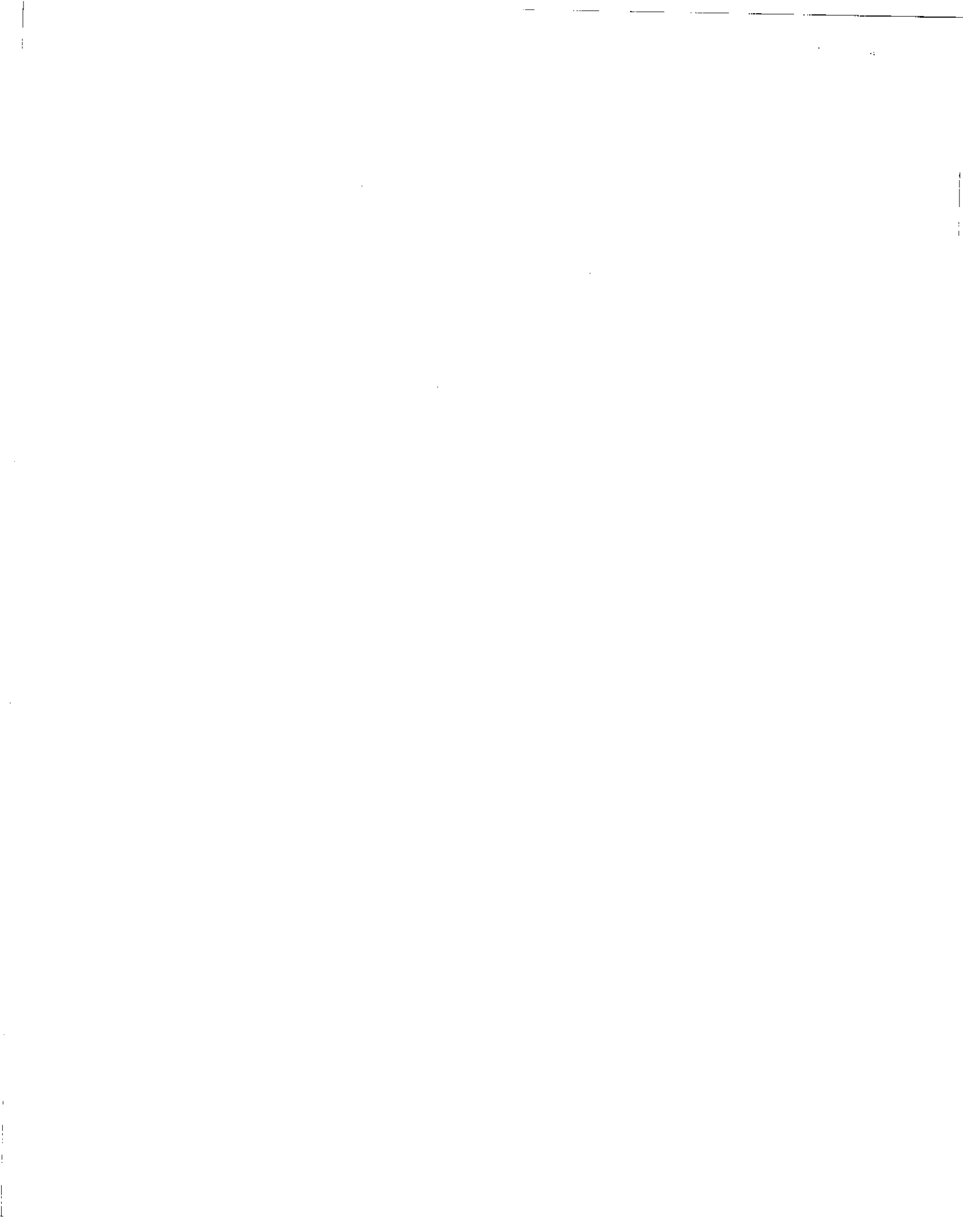
Nominating Organization: Air & Energy Engineering Research Laboratory

EPA Author(s):
Dr. Brian K. Gullett

Non-EPA Author(s):
Dr. Wojciech Jozewicz
Dr. Leonard Stefanski

C93-20 - Multiple Papers

Title: 1 Effect of the Distribution System on Drinking Water Quality
Journal of Water Supply Research and Technology-Aqua 42(1): 30-38, February 1993



Title: 2 Modeling Contaminant Propagation in Drinking-Water Distribution Systems. Journal of Environmental Engineering 119(2): 349-364, March/April 1992

Nominating Organization: Risk Reduction Engineering Laboratory

EPA Author(s):

Dr. Robert M. Clark
Dr. James A. Goodrich

Non-EPA Author(s):

Dr. Walter M. Grayman
Dr. Richard M. Males
Mr. A. F. Hess
Mr. L. J. Wymer

Level III Awards

C93-03

Title: New Approaches to Estimation of Solid-Waste Quantity and Composition. Journal of Environmental Engineering 119(2):1-14, March/April 1993

Nominating Organization:
Risk Reduction Engineering Laboratory

EPA Author(s):

Dr. Albert J. Klee

C93-05

Title: Effect of Sulfur Dioxide on the Formation Mechanism of Polychlorinated Dibenzodioxin and Dibenzofuran in Municipal Waste Combustors. Environmental Science & Technology 26(10): 1938-1943, October 1992

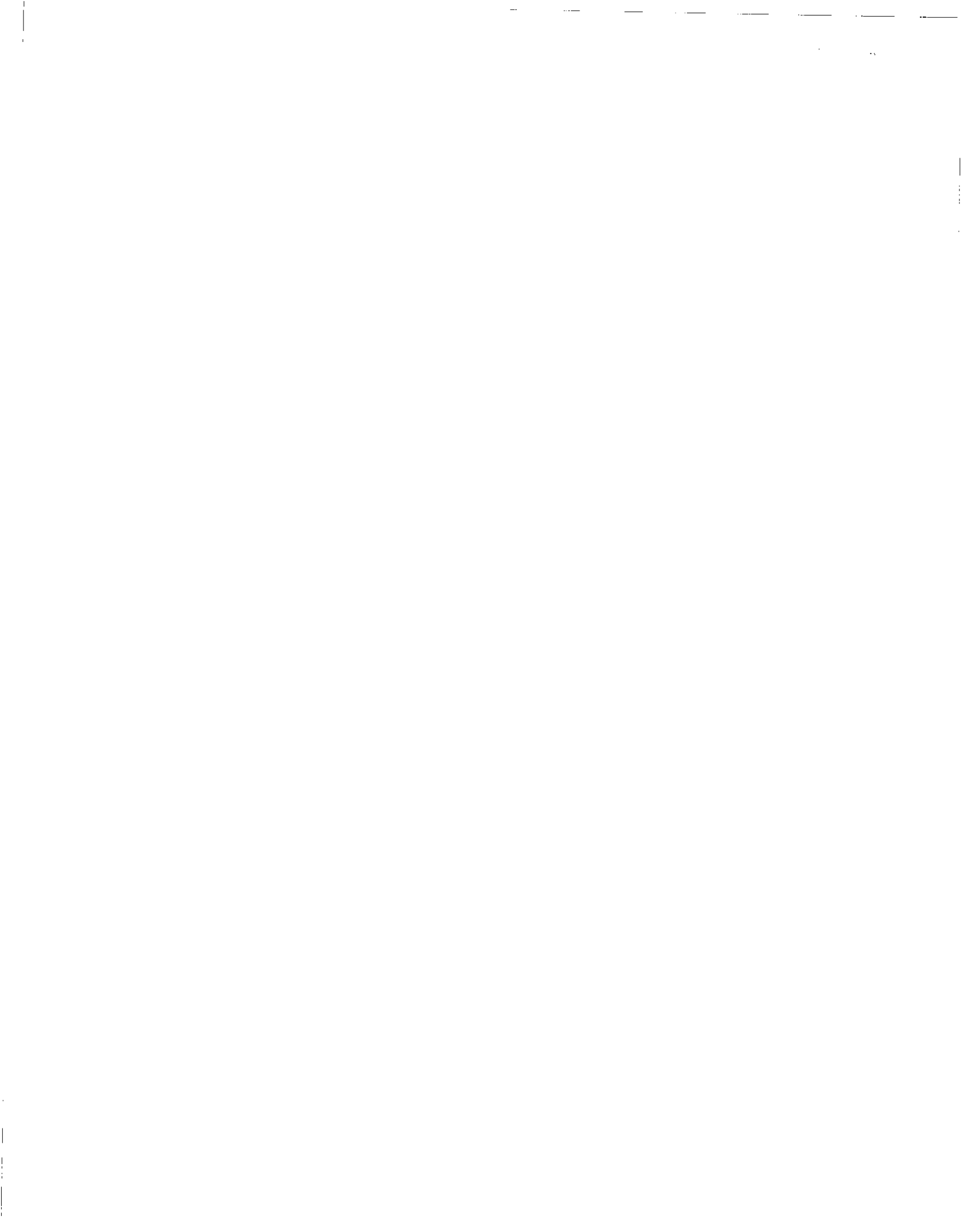
Nominating Organization:
Air & Energy Engineering Research Laboratory MD-4

EPA Author(s):

Dr. Brian K. Gullett

Non-EPA Author(s):

Mr. Kevin R. Bruce
Ms. Laura O. Beach



C93-17

Title: SITE Demonstration of the Basic Extractive Sludge Treatment Process
Journal of the Air and Waste Management Association 43(9): 1274-1279,
September 1993

Nominating Organization: Risk Reduction Engineering Laboratory

EPA Author(s):
Mr. Mark C. Meckes

Non-EPA Author(s):
Mr. Thomas J. Wagner
Mr. Joseph Tillman
Ms. Sharon Krietemeyer

C93-19

Title: Disinfection By-product Formation and Control by Ozonation and
Biotreatment. Journal of the American Water Works Association 84(11):
53-62, November 1992

Nominating Organization: Risk Reduction Engineering Laboratory

EPA Author(s):
Mr. Richard J. Miltner

Non-EPA Author(s):
Ms. Hiba M. Shukairy
Dr. R. Scott Summers

3.2.2 Ecology

Level II Awards

E93-05 - Multiple Papers

Title: 1 A field and laboratory investigation of acid effects on largemouth
bass, rock bass, black crappie, and yellow perch. Transactions of the American
Fisheries Society 121: 644-658, 1992

Title: 2 Osmoregulatory failure and death of first-year largemouth bass
(*Micropterus salmoides*) exposed to low pH and elevated aluminum, at low
temperatures in soft water. Canadian Journal of Fisheries and Aquatic Sciences
49(6): 1189-1197, 1992



Title: 3 Responses of juvenile largemouth bass to different pH and aluminum levels at overwintering temperatures: effects on gill morphology, electrolyte balance, scale calcium, liver glycogen, and depot fat. *Canadian Journal of Zoology* 71: 531-543, 1993

Nominating Organization: EPA, Environmental Research Lab., Duluth

EPA Author(s):

Mr. J. Howard McCormick
Mr. John G. Eaton

Non-EPA Author(s):

Dr. Richard L. Leino
Ms. Kathleen M. Jensen
Dr. William A. Swenson
Mr. Timothy D. Simonson

Level III Awards

E93-02

Title: Predicting branchial and cutaneous uptake of 2,2',5'5-tetrachlorobiphenyl in fathead minnows (*Pimephales promelas*) and Japanese medaka (*Oryzias latipes*): Rate limiting factors. *Aquatic Toxicology* 27(1,2): 15-32, 1993

Nominating Organization:

US, EPA, Envir. Research Laboratory-Duluth

EPA Author(s):

Mr. Gregory J. Lien
Dr. James M. Mckin, Sr.

E93-07

Title: Sublethal Narcosis and Population Persistence: A Modeling Study on Growth Effects. *Environmental Toxicology and Chemistry* 12: 947-954, 1993

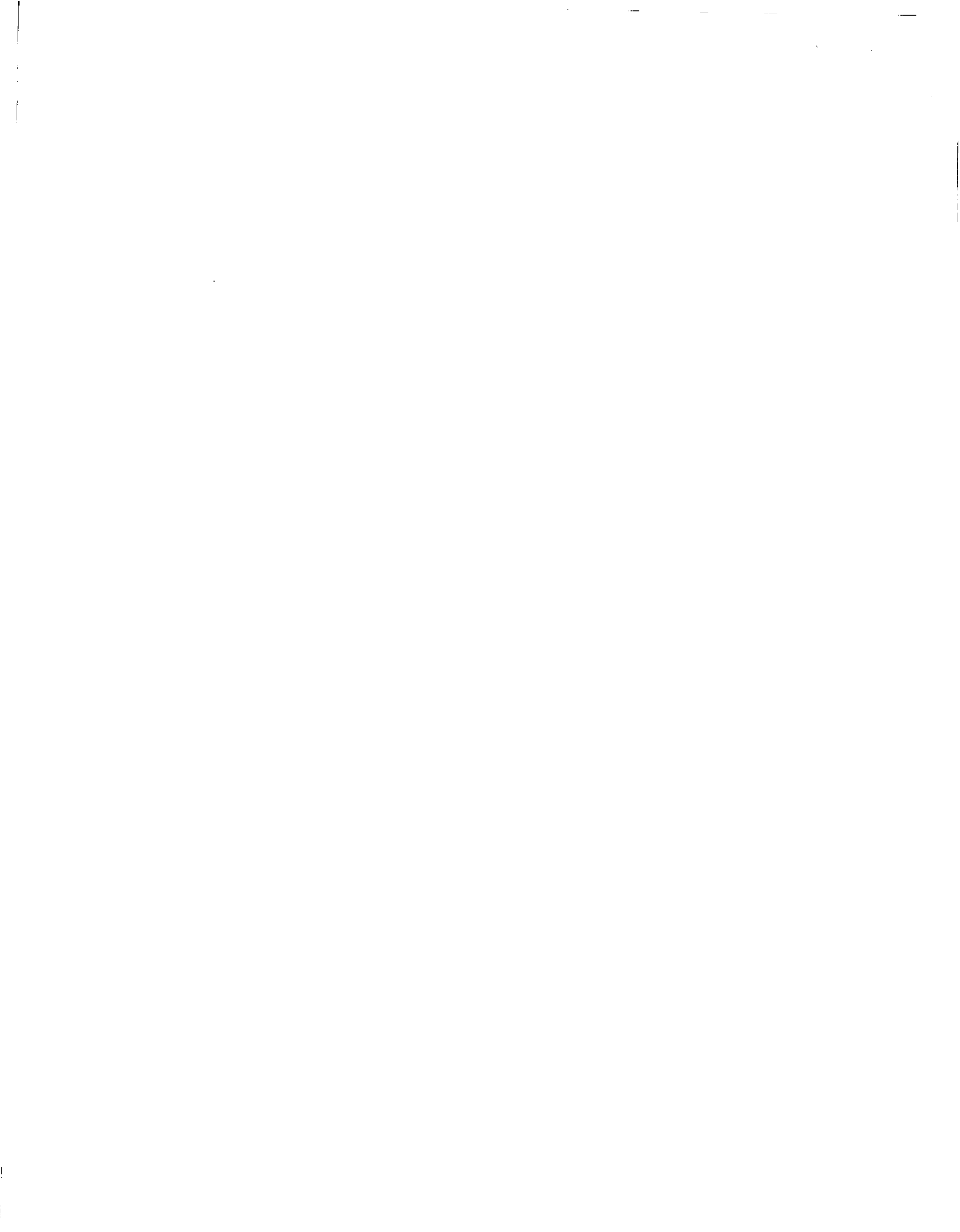
Nominating Organization: Athens Environmental Research Laboratory

EPA Author(s):

Dr. Ray R. Lassiter

Non-EPA Author(s):

Dr. Thomas G. Hallam
Ms. Graciela A. Canziai



3.2.3 Emerging Research Issues and Innovative Approaches

Level II Awards

I93-08

Title: Some Implications of Toxicology and Pharmacokinetics for Exposure Assessment. *Journal of Exposure Analysis and Environmental Epidemiology* Special Issue: Supplement 1 Pages: 189-207, 1992

Nominating Organization: Human Health Assessment Group (8602)

EPA Author(s):

Dr. Vincent Cogliano
Dr. Jean C. Parker

Level III Awards

I93-01 AND I93-02 COMBINED FOR ONE AWARD

I93-01 Title: Effects of Age, Species Difference, Antibiotics and Toxicants on Intestinal Enzyme Activity and Genotoxicity. *Environmental Toxicology and Chemistry* 12(8): 1339-1352, August 1993

Nominating Organization: EPA Environmental Research Center, HERL/GTD

EPA Author(s):

Dr. Robert W. Chadwick
Dr. S. Elizabeth George
Mr. Michael J. Kohan
Ms. Jocelyn C. Allison

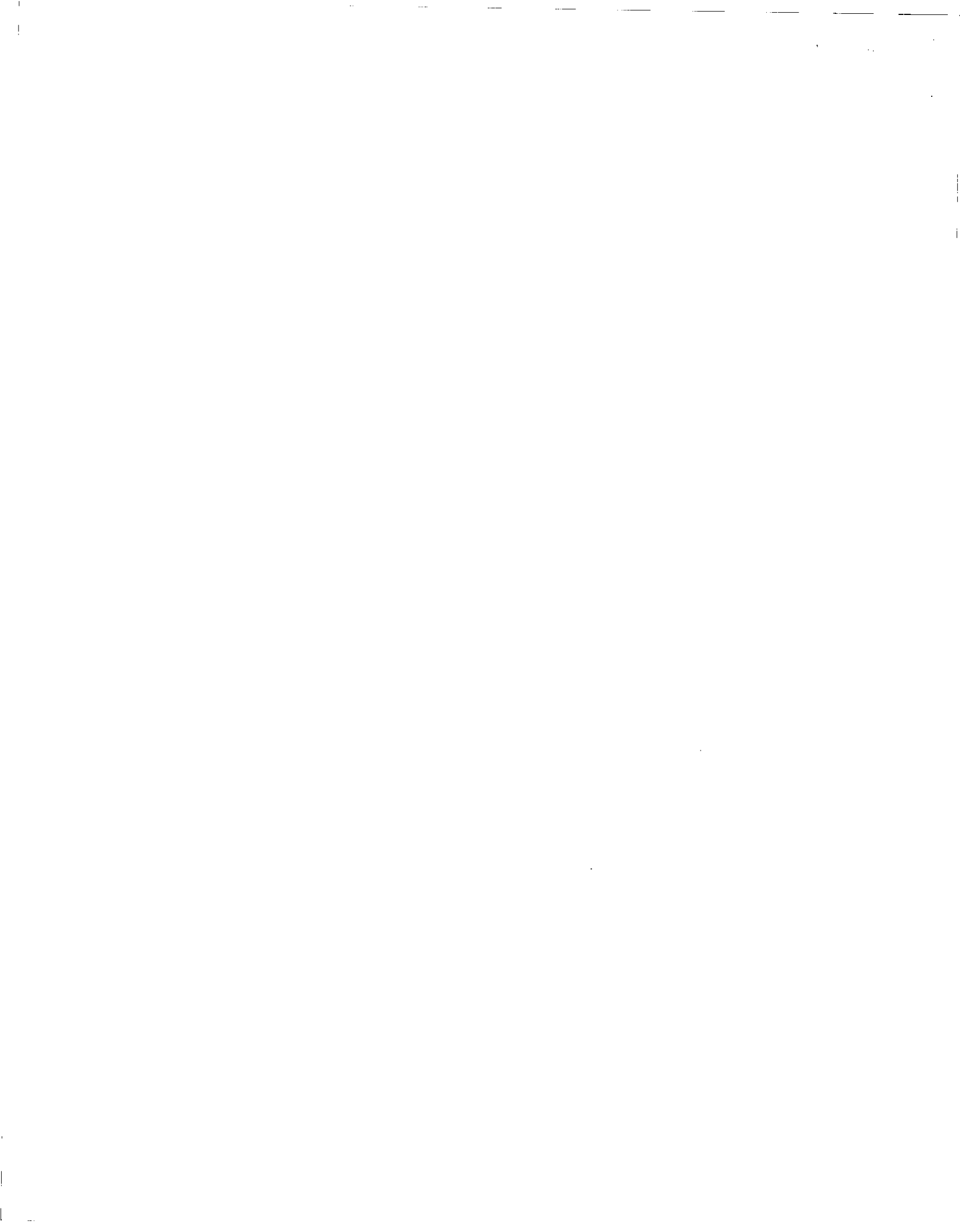
Non-EPA Author(s):

Dr. Jerjang Chang
Mr. James E. Long
Ms. Mary C. Duffy
Ms. Linda R. Forehand
Mr. John Dekker

AND

I93-02 Title: Potentiation of 2,6-dinitrotoluene genotoxicity in Fischer-344 rats by pretreatment with Aroclor 1254. *Toxicology* 80(2-3): 153-171, June 1993

Nominating Organization: EPA, HERL/GTD/CMB, MD-68



EPA Author(s):

Dr. Robert W. Chadwick
Dr. S. Elizabeth George
Mr. Michael J. Kohan
Ms. Jocelyn C. Allison

Non-EPA Author(s):

Dr. Jeriang Chang
Ms. Yuniko O. Hayes
Mr. Ron W. Williams

I93-07

Title: A proposal to develop a National Occupational Exposure Databank.
Applied Occupational and Environmental Hygiene 8(9): 768-774, September 1993

Nominating Organization: Office of the Administrator

EPA Author(s): Mr. Manuel Gomez

I93-09

Title: Microbiological Stabilization of Sludge by Aerobic Digestion and Storage
ASCE Journal of Environmental Engineering 119(3): 493-505, May/June 1993

Nominating Organization: Region 8, Kansas City, KS

EPA Author(s):

Dr. Rao Y. Surampalli

Non-EPA Author(s):

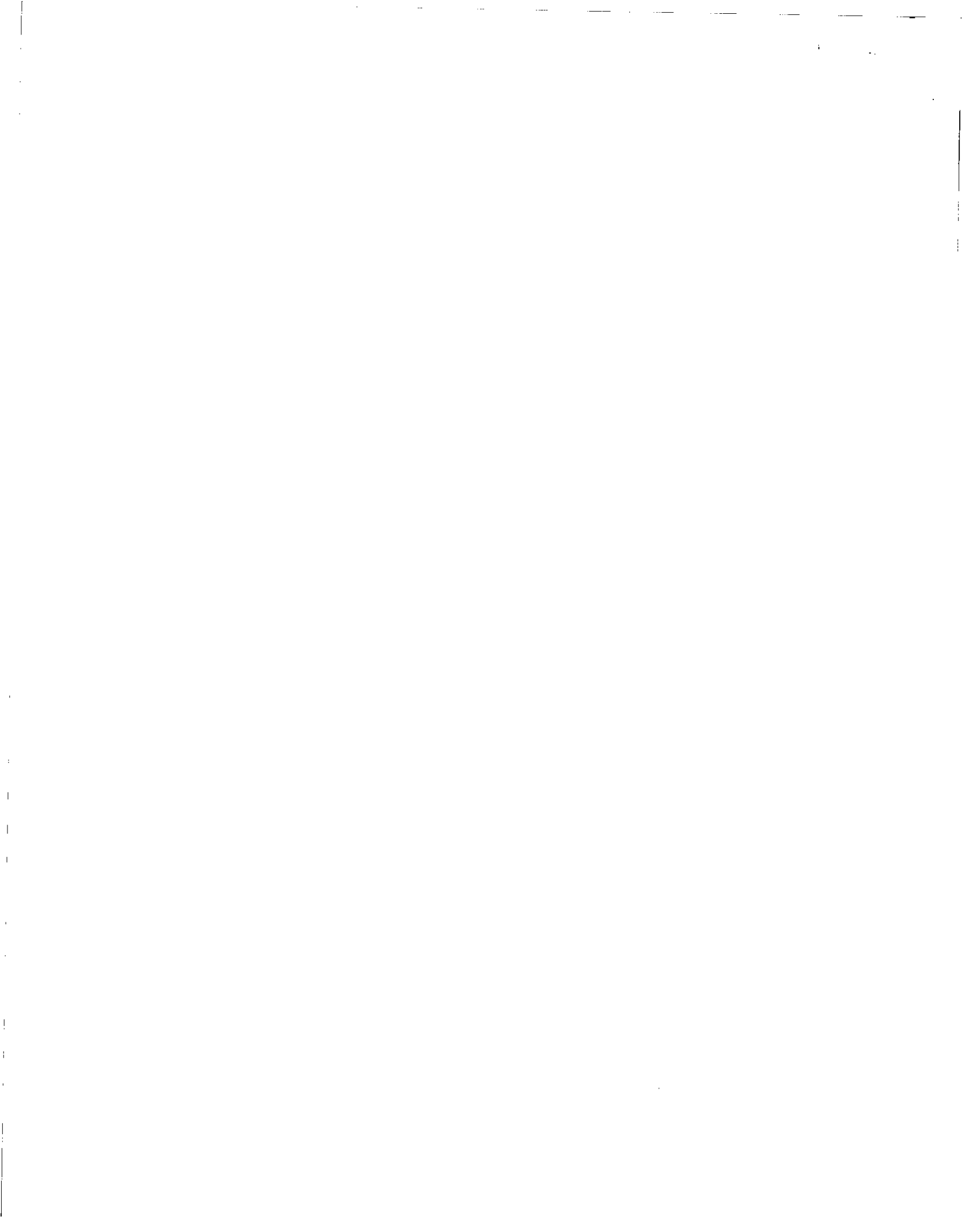
Dr. Shankha K. Banerji
Jeng C. Chen

I93-10

Title: Inactivation of Escherichia Coli by Titanium Dioxide Photocatalytic
Oxidation. Applied and Environmental Microbiology 59(5): 1668-1670, May 1993

Nominating Organization: Risk Reduction Engineering Laboratory

EPA Author(s):



Dr. John C. Ireland
Dr. Eugene W. Rice
Dr. Robert M. Clark

Non-EPA Author(s):
Ms. Petra Klostermann

I93-11

Title: Formation of Carbon Monoxide from the Photodegradation of Terrestrial Dissolved Organic Carbon in Natural Waters. *Environmental Science and Technology* 27(2): 409-412, 1993

Nominating Organization: Athens Environmental Research Laboratory

EPA Author(s):
Dr. Richard G. Zepp

Non-EPA Author(s):
Dr. Richard L. Valentine

3.2.4 Health Effects

Level II Awards

H93-04 - Multiple Papers

Title: 1 Extrapolation Modeling of Aerosol Deposition in Humans & Laboratory Rat Lungs. *Inhalation Toxicology* 4(1): 303-324, 1992

Title: 2 Interspecies Modeling of Inhaled Particle Deposition Patterns *Journal of Aerosol Science* 23(4): 389-406, February 1992

Title: 3 Simulation of Aerosol Deposition in Extrathoracic and Laryngeal Passages of the Laboratory Rat. *Journal of Aerosol Science* 24(1): 103-113, August 1992

Title: 4 Comments on recent data for particle deposition in human nasal passages. *Journal of Aerosol Science* 21(6): 667-674, August 1992

Nominating Organization:
Health Effects Research Laboratory, Env. Toxicology

EPA Author(s):
Dr. Ted B. Martonen



Non-EPA Author(s):
Dr. Yadong Yang
Dr. Z. Zhang

H93-06 - Multiple Papers

Title: 1 The Effects of Prenatal Administration of Azo Dyes on Testicular Development in the Mouse: A Structure Activity Profile of Dyes Derived from Benzidine, Dimethylbenzidine, or Dimethoxybenzidine. *Fundamental and Applied Toxicology* 20: 177-183, 1993

Title: 2 Gonadal Effects of Fetal Exposure to the Azo Dye Congo Red in Mice: Infertility in Female but Not Male Offspring. *Fundamental and Applied Toxicology* 19: 411-422, April 1992

Nominating Organization:
HERL, DTD, Reproductive Toxicology Branch (MD-72)

EPA Author(s):
Dr. Leon Earl Gray, Jr.
Mr. Joseph S. Ostby
Dr. Robert J. Kavlock

Non-EPA Author(s):
Ms. Renee Marshall

Level III Awards

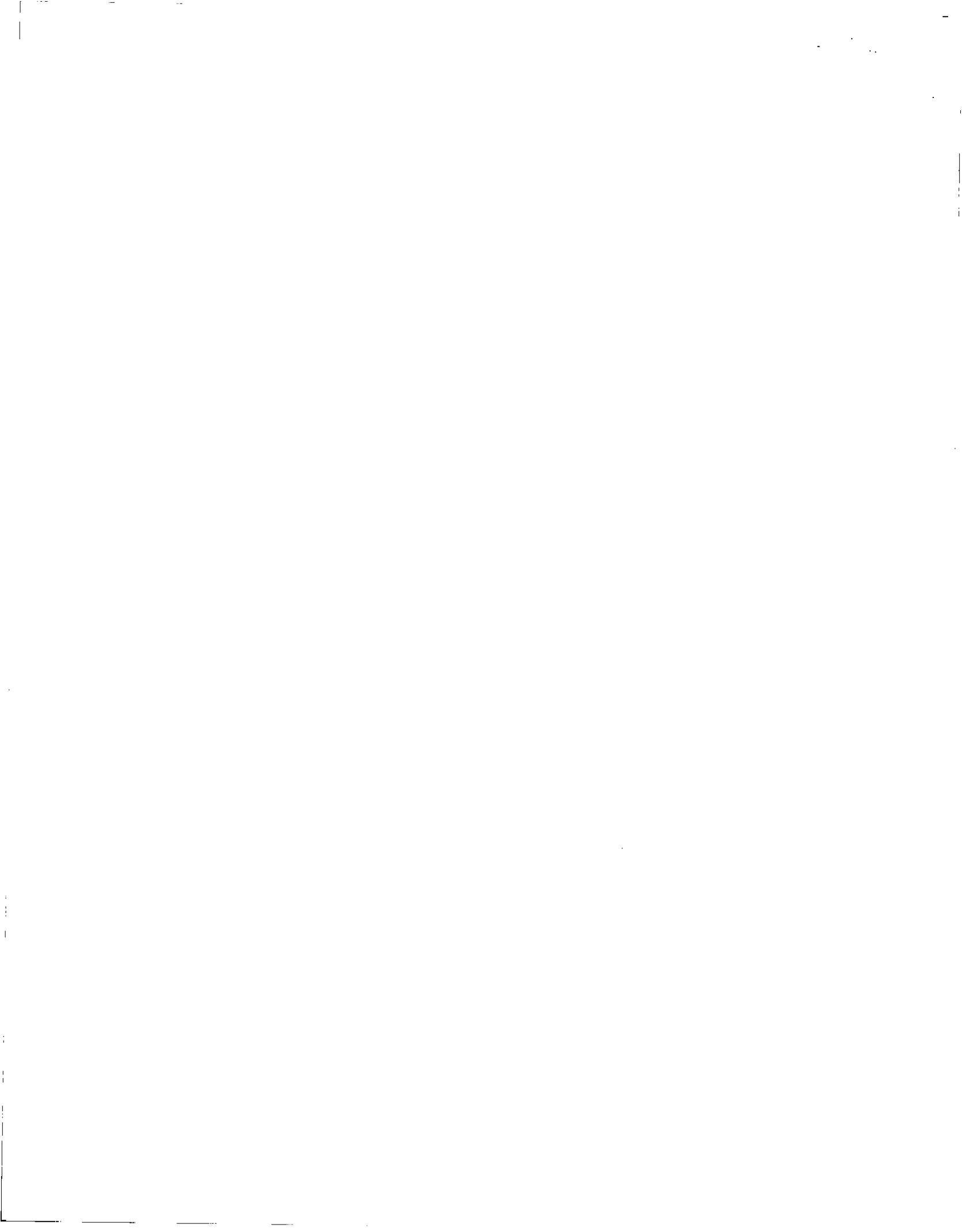
H93-01 - Multiple Papers

Title: 1 Effects of dose and routes of exposure on the disposition of 2,3,7,8-(3H)-tetrabromodibenzo-p-dioxin (TBDD) in the rat. *Toxicology and Applied Pharmacology* 120(2): 315-326, February 1993

Title: 2 Disposition and Excretion of Intravenous 2,3,7,8-tetrabromodibenzo-p-dioxin (TBDD) in rats. *Toxicology and Applied Pharmacology* 108(2): 397-406, January 1991

Title: 3 Disposition of 2,3,7,8-tetrabromodibenzo-p-dioxin and 2,3,7,8-tetrachloro-dibenzo-p-dioxin in the rat: biliary excretion and induction of cytochromes CYP1A1 and CYP1A2. *Toxicology and Applied Pharmacology* 111(1): 163-172, July 1991

Nominating Organization:
Health Effects Research Laboratory, Env. Toxicology



EPA Author(s):
Dr. Linda S. Birnbaum
Ms. Janet J. Diliberto

Non-EPA Author(s):
Dr. Lorrene Kedderis
Mr. Joe Jackson
Ms. Patricia Linko
Dr. Joyce Goldstein
Dr. Jeremy Mills
Dr. Melvin Andersen

H93-08

Title: Behavioral and Neurochemical Effects of Acute Chlorpyrifos in Rats: Tolerance to Prolonged Inhibition of Cholinesterase. *The Journal of Pharmacology and Experimental Therapeutics* 266(2): 1007-1017, April 1993

Nominating Organization:
Health Effects Research Laboratory (MD-74B)

EPA Author(s):
Dr. Phillip J. Bushnell
Dr. Stephanie Padilla

Non-EPA Author(s):
Dr. Carey N. Pope

H93-12 - Multiple Papers

Title: 1 The Developmental Toxicity of Inhaled Methanol in the CD-1 Mouse, with Quantitative Dose-Response Modeling for Estimation of Benchmark Doses.
Teratology 47(3): 175-188, March 1993

Title: 2 Developmental Toxicity of Methanol in Whole Embryo Culture: A Comparative Study with Mouse and Rat Embryos. *Toxicology*
Volume: 81 Number: 3 Pages: 205-215 , August 1993

Nominating Organization:
US EPA, Health Effects Research Lab. (ERC/DTD/PTB)

EPA Author(s):
Dr. John M. Rogers



Dr. M. Leonard Mole
Dr. Neil Chernoff
Ms. Brenda Barbee
Dr. Robert J. Kavlock
Dr. James E. Andrews
Ms. Marian Ebron-McCoy

Non-EPA Author(s):
Ms. Tina Logsdon
Ms. Christine Turner

H93-17

Title: Effects of Steady-State and Variable Ozone Concentration Profiles on Pulmonary Function. American Review of Respiratory Disease 146(6): 1487-1493, December 1992

Nominating Organization:
Clinical Research Branch, Human Studies Division

EPA Author(s):
Dr. Lawrence J. Folinsbee
Dr. Elston Seal

Non-EPA Author(s):
Dr. Milan J. Hazucha

3.2.5 Monitoring and Measurement Methods

Level II Award

M93-18 - Multiple Papers

Title: 1 Occurrence of Chlorate in Hypochlorite Solutions Used for Drinking Water Disinfection

Environmental Science and Technology
Volume: 26 Number: 8 Pages: 1663-1665, August 1993

Title: 2 Sources of Chlorate Ion in US Drinking Water.
Journal AWA 85(9): 81-88, September 1993

Nominating Organization: Region 8

EPA Author(s):
Ms. Michele Bolyard



Ms. Patricia Fair

Non-EPA Author(s):
Mr. Daniel Hautman

Level III Award

M93-07

Title: Determination of Organic Emissions from New Carpeting.
Applied Occupational Environmental Hygiene 5(10):693-699, October 1990

Nominating Organization: AREAL/MRDD/AMRB (MD-44)

EPA Author(s): Mr. Joachim D. Pleil

Non-EPA Author(s): Dr. Robert S. Whiton

M93-14 - Multiple Papers

Title: 1 Short and Long-Term Memory effects in Intensified Array Detectors:
Influence on Airborne Laser Fluorosensor Measurements. Applied Optics 28(3):
472-480, February 1989

Title: 2 Experimental investigation of memory effects in intensified
photodiode-array spectrograph detectors. Applied Optics 32(7):1065-1077, March
1993

Nominating Organization: Environmental Monitoring Sys. Lab

EPA Author(s):
Dr. Michael P. Bristow
Mr. Curtis M. Edmonds
Mr. Donald H. Bundy

Non-EPA Author(s):
Ms. Rudolpha M. Turner-Jorgensen
Mr. Rainer Zimmerman

3.2.6 Review Articles

Level I Awards

R93-16



Title: Structure-Reactivity Relationships in Dehydrohalogenation Reactions of Polychlorinated and Polybrominated Alkanes. Critical Reviews in Environmental Science and Technology 23(1): 1-39, 1993

Nominating Organization: Athens Environmental Research Laboratory

EPA Author(s):
Dr. N. Lee Wolfe

Non-EPA Author(s):
Dr. A. L. Roberts
Dr. P. M. Gschwend
Dr. P. M. Jeffers

Level II Awards

R93-03

Title: Chromatin Remodeling in Mammalian Zygotes. Mutation Research, Reviews in Genetic Toxicology 296(1-2): 43-55, December 1992

Nominating Organization: DTD, HERL, US EPA (MD-72)

EPA Author(s):
Dr. Sally D. Perreault

R93-11

Title: Toxic Metal Emissions from Incineration Mechanisms and Control Progress in Energy and Combustion Science 19:145-185, August 1993

Nominating Organization: Air & Energy Engineering Research Lab., MD-65

EPA Author(s): Dr. William P. Linak

Non-EPA Author(s): Dr. Jost O. L. Wendt

Level III Awards

R93-02

Title: A Review of the Literature on Potential Reproductive and Developmental Toxicity of Electric and Magnetic Fields. Toxicology 74(2): 91-126



, September 1992

Nominating Organization: Health Effects Rsrch Lab. (ERC/DTD/PTB) MD-67

EPA Author(s):

Dr. Neil Chernoff
Dr. John M. Rogers

Non-EPA Author(s):

Dr. Robert Kavet

R93-14

Title: Incineration of Hazardous Wastes: A Critical Review Update.
Journal of the Air & Waste Management Association 43: 25-72, January 1993

Nominating Organization: Risk Reduction Engineering Laboratory

EPA Author(s):

Mr. Clyde R. Dempsey
Mr. E. Timothy Oppelt

R93-15

Title: Observations on the State of Marine Disease Studies.
Review Chapter in Book: Advances in Fisheries Science Pathobiology of Marine
and Estuarine Organisms, CRC Press Pages: 511-530, January 1993

Nominating Organization: Gulf Breeze Environmental Research Laboratory

EPA Author(s):

Dr. John C. Couch

3.2.7 Risk Management and Policy Formulation

Level III Awards

3.2.8 Transport and Fate

Level I Awards

Level II Awards



Level III Awards

T93-02

Title: Laboratory Investigations of the Deposition of Oxidation Products of Hydrochloro-fluorocarbons (HCFCs) and Hydrofluorocarbons (HFCs) to Aqueous Solutions. Water, Air, and Soil Pollution 66:97-110, 1993

Nominating Organization: Atmospheric Research & Exposure Ass. Lab, MD-75

EPA Author(s):

Dr. E.O. Edney
Mr. D. J. Driscoll

T93-04

Title: Generation of Mutagenic Transformation Products during the Irradiation of Simulated Urban Atmospheres. Environmental Science and Technology 26(2): 320-329, February 1992

Nominating Organization: HERL-RTP

EPA Author(s):

Dr. Joseph J. Bufalini
Dr. Larry Cupitt
Dr. Larry Claxton

Non-EPA Author(s):

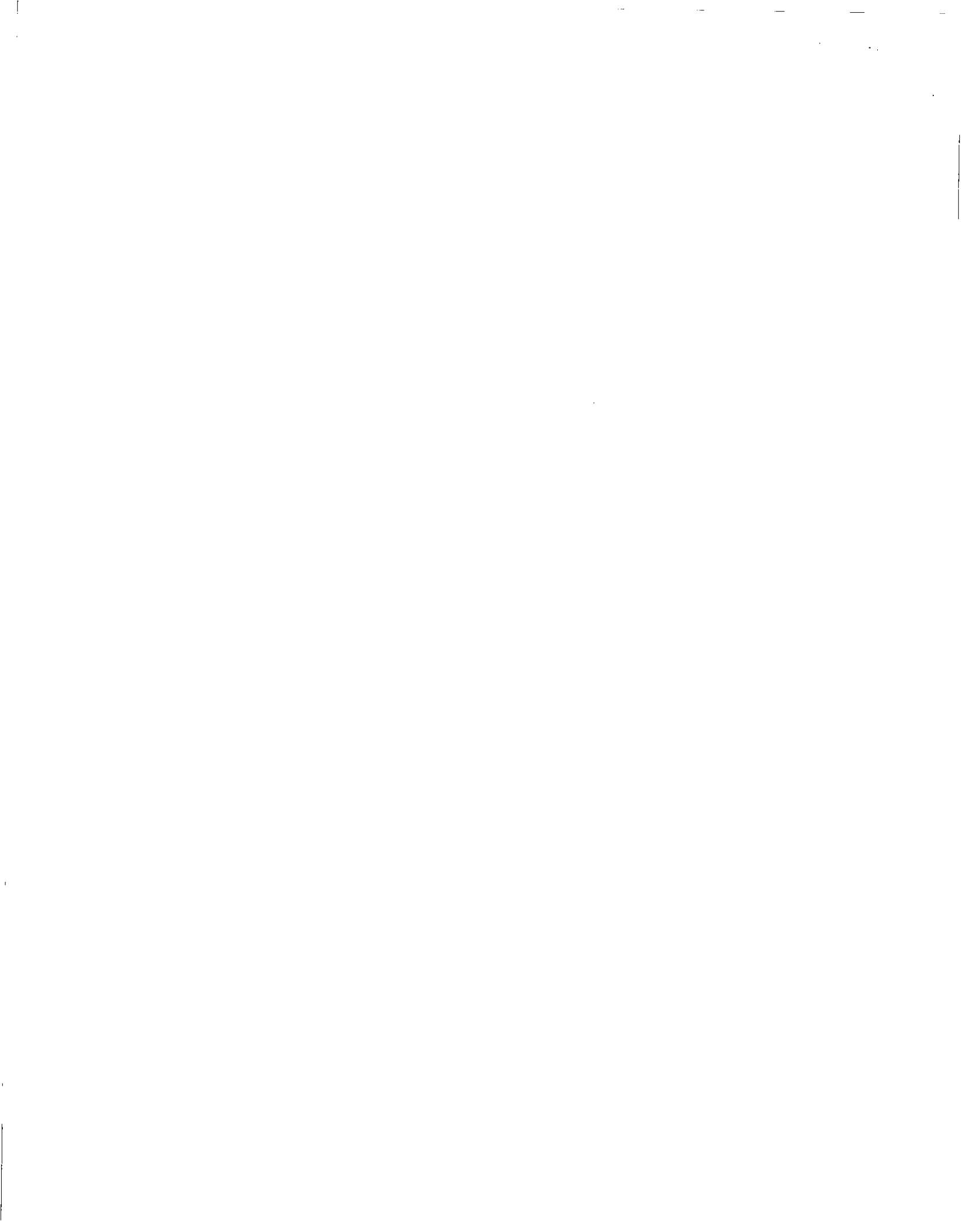
Dr. T. Kleindienst
Dr. D. Smith
Mr. E. Hudgens

T93-05 in Combination with T93-07 and T93-08 Multiple Papers

The Subcommittee feels that 07 and 08 are not eligible as independent papers because they do not have the same rigor of peer review as the journal article.

T93-05 Title: Prediction of Biodegradation Kinetics Using A Non-Linear Group Contribution Method. Environmental Toxicology and Chemistry 12(2): 251-260, February 1993

T93-07 Title: Determination and Prediction of Biodegradation Kinetics using Structure-Activity Relationship Models. Gas, Oil, and Environmental Biotechnology IV Book: Institute of Gas Technology, Chicago, IGT's Fourth International Symposium; Colorado Springs, CO - December 9-11, 1991 IV:



129-160, September 1993

T93-08 Title: Development of Non-linear Group Contribution Method for Prediction of Biodegradation Kinetics from Respirometrically Derived Kinetic Data. Book: 1991 ACS Symposium Series, "Emerging Technologies in Hazardous Waste Management III." Div. of Industrial and Engineering Chemistry, Inc., American Chemical Society III (518):160-190, January 1993

Nominating Organization: Risk Reduction Engineering Laboratory

EPA Author(s): Mr. Henry H. Tabak

Non-EPA Author(s): Dr. Rakesh Govind

T93-12

Title: Characterization of Air Pollutants Emitted from a Simulated Scrap Tire Fire. Journal of the Air and Waste Management Association 43: 1106-1115, August 1993

Nominating Organization: Air and Energy Engineering Research Lab., MD-65

EPA Author(s): Dr. Paul M. Lemieux

Non-EPA Author(s): Mr. Jeffrey V. Ryan

T93-18

Title: Nonpoint Source Pollution Impacts of Alternative Agricultural Management Practices in Illinois: A Simulation Study. Journal of Soil and Water Conservation 48(5): 449-457, September 1993

Nominating Organization: EPA Environmental Research Laboratory

EPA Author(s):
Dr. Donald L. Phillips

Non-EPA Author(s):
Mr. Paul D. Hardin
Dr. Verel W. Benson
Mr. Joseph V. Baglio

T93-20



Title: Transport of Inorganic Colloids through Natural Aquifer Material: Implications for Contaminant Transport. Environmental Science & Technology 26(3): 614-621, March 1992

Nominating Organization: Robert S. Kerr Environmental Research Laboratory

EPA Author(s): Dr. Robert W. Puls

Non-EPA Author(s): Dr. Robert M. Powell

T93-23

Title: A Watershed Nitrogen and Phosphorus Balance: The Upper Potomac River Basin. Estuaries 15(1):83-95, March 1992

Nominating Organization: ERL-Narragansett

EPA Author(s):

Dr. Norbert A. Jaworski

Dr. Jan C. Prager

Non-EPA Author(s):

Dr. Peter M. Groffman

Ms. Aimee Keller

3.3 Honorable Mention

The Subcommittee identified papers which, while not reaching award level, were deserving of honorable mention. In several cases, the Subcommittee wishes to highlight quality collaborative work between EPA and industry. The Subcommittee hopes that these authors will be recognized appropriately for their high quality of work.

1. C93-06 Title: 1 Evaluation of Filtration and Distillation Methods for Recycling Automotive Coolant, Journal of Air & Waste Management 43(4):463-468, April 1993

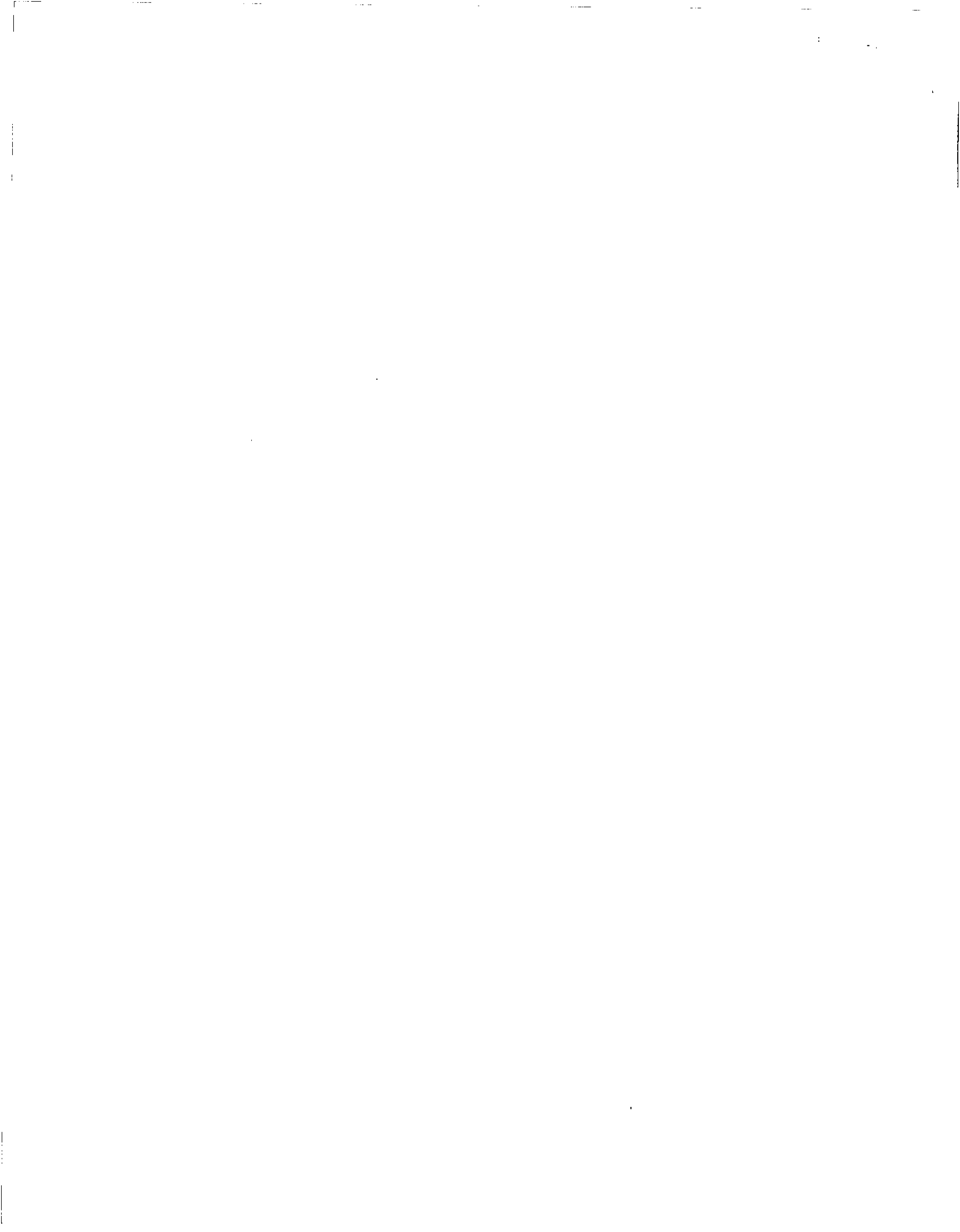
Nominating Organization: Risk Reduction Engineering Laboratory

EPA Author(s): Mr. Paul M. Randall

Non-EPA Author(s): Mr. Arun R. Gavaskar

The Subcommittee commends the authors initiative to explore both the Technologies and Costs of Recycling Automotive Coolants.

2. E93-01 (Should be moved to Monitoring and Measurement Methods)



Title: Chemical and Physical Properties of Emissions from Kuwaiti Oil Fires
Journal of Water Sciences and Technology 27(7-8):223-233, June 1993

Nominating Organization: AREAL/ORD MD-75

EPA Author(s): Mr. Robert K. Stevens and Dr. Joseph P. Pinto

Non-EPA Author(s): Y. Mamane, J. Ondor, W. Cofer, M. Abdulraheem, N. Al-Majed, M. Sadek, W. Ellenson, R. Kellogg

The Subcommittee notes this as a good attempt at difficult task of monitoring from a helicopter. The Ecological implications would also be interesting.

3. E93-03 Title: Blood and Water Flow Limitations on Gill Uptake of Organic Chemicals in the Rainbow Trout (*Onchorynchus mykiss*), Aquatic Toxicology 24:103-122, 1992

Nominating Organization: EPA Envir. Research Laboratory-Duluth

EPA Author(s): Ms. Patricia Schmieder

Non-EPA Author(s): Dr. Lavern J. Weber

The Subcommittee notes that this study was done very well.

4. E93-08 - Multiple Papers

Title: 1 Toxicokinetics and metabolism of aniline and 4-chloroaniline in medaka (*Oryzias latipes*)

Journal: Toxicology and Applied Pharmacology
Volume: 118 Number: Pages: 205-214 , 1993

Title: 2 Hepatic microsomal N-hydroxylation of aniline and 4-chloroaniline by rainbow trout (*Onchorhynchus mykiss*)

Journal: Xenobiotica
Volume: 21 Number: 12 Pages: 1605-1620, 1991

Nominating Organization: EPA, Environmental Research Lab-Duluth

EPA Author(s):

Dr. Steven P. Bradbury
Mr. Alex D. Hoffman
Mr. Dean Hammermeister
Dr. Russell J. Erickson

Ms. Diane L. Olson

Non-EPA Author(s):

Ms. Julia Dady
Ms. Michelle Voit
Mr. Patrick Fitzsimmons

The Subcommittee commends the authors for the development of this methodology.

5. E93-09 - Multiple Papers

Title: 1 Uptake of planar polychlorinated biphenyls and 2,3,7,8-substituted polychlorinated dibenzofurans and dibenzo-p-dioxins by birds nesting in the lower Fox River and Green Bay, Wisconsin, U.S.A

Journal: Archives of Environmental Contamination and Toxicology
Volume: 24 Number: 2 Pages: 332-344 , 1993

Title: 2 Measures of reproductive success and polychlorinated biphenyl residues in eggs and chicks of Forster's terns on Green Bay, Lake Michigan, Wisconsin - 1988

Journal: Archives of Environmental Contamination and Toxicology
Volume: 25 Number: 2 Pages: 304-314 , 1993

Nominating Organization: EPA, Environmental Research Lab-Duluth

EPA Author(s): Dr. Gerald T. Ankley

Non-EPA Author(s):

Dr. Gerald Niemi
Dr. Keith Lodge
Dr. Hallett Harris
Dr. Donald Beaver
Dr. Donald E. Tillitt
Dr. Ted Schwartz
Dr. John Giesy
Dr. Paul Jones
Ms. Cynthia Hagley
Mr. Thomas Erdman

This effort, although limited by sample size, is an important step in wildlife risk assessment.

6. I93-06 Title: Broad-Based Environmental Life Cycle Assessment



Environmental Science and Technology 27(3):430-436, March 1993

Nominating Organization: Risk Reduction Engineering Laboratory

EPA Author(s): Ms. Mary Ann Curran

The Subcommittee feels that this paper was a clear and succinct exposition of an approach which the Agency should be using in policy development.

7. H93-16 Title: Predictors of Individual Differences in Acute Response to Ozone Exposure. American Review of Respiratory Diseases 147(4):818-825, April 1993

Nominating Organization: Clinical Research Branch, Human Studies Div.

EPA Author(s): Dr. William F. McDonnell

Non-EPA Author(s):

Dr. Keith E. Muller
Dr. Philip A. Bromberg
Dr. Carl M. Shy

The Subcommittee commends the authors for the identification of subpopulations and their data analysis.

8. H93-19 Title: Vibrio cholerae 01 can assume a "rugose" form that resists killing by chlorine, yet retains virulence. International Journal of Environmental Health Research 3: 89-98, 1993

Nominating Organization: Risk Reduction Engineering Laboratory

EPA Author(s):

Mr. Kim R. Fox
Dr. Eugene W. Rice
Mr. Clifford H. Johnson
Dr. Robert M. Clark
Dr. Donald J. Reasoner

Non-EPA Author(s):

Dr. P. Panigrahi
Dr. J. A. Johnson
Dr. J. G. Morris, Jr.
Ms. M. E. Dunnigan

This paper contains an interesting observation which deserves further work and investigation.



9. M93-01 Title: A modified Spectrophotometric Method Appropriate for Measuring Cholinesterase Activity in Tissue from Carbaryl-Treated Animals *Fundamental and Applied Toxicology* 21:196-203, 1993

Nominating Organization: Health Effects Research Laboratory

EPA Author: Ms. Stephanie Padilla

Non-EPA Author(s): Ms. A. C. Nostrandt and Mr. J. A. Duncan

These results represent a potentially important methodological development but they need further work to realize its utility.

10. M93-04 Title: Evaluation of an Enclosure Method for Measuring Emissions of Volatile Organic Compounds from Quiescent Liquid Surfaces. *Environmental Science & Technology* 25(3): 519-524, 1991

Nominating Organization: Atmospheric Research & Exposure Assess., MD-75

EPA Author(s):

Dr. Joseph Knoll
Mr. M. Rodney Midgett

Non-EPA Author(s):

Mr. Alex R. Gholson
Mr. John R. Albritton
Dr. R. K. M. Jayanty

This paper provides useful advice for the calibration of instruments and the evaluation of analytical approaches.

11. M93-09 Title: Mass Transport and Calibration in Liquid Chromatography Particle Beam Mass Spectrometry. *Journal of the American Society for Mass Spectrometry* 3(6): 662-671, September 1992

Nominating Organization: Environmental Monitoring Systems Laboratory

EPA Author(s):

Dr. James S. Ho
Dr. Thomas D. Behymer
Dr. William L. Budde
Mr. Thomas A. Bellar

12. M93-23 Title: A Comparison of Methods for Collecting Interstitial Water for Trace Organic Compounds and Metals Analyses. *Water Research* 26(7): 989-995, 1992



Nominating Organization: EPA, ERL-Narragansett

EPA Author(s):

Dr. Donald W. Schultz

Dr. S. Ferraro

Dr. F. A. Roberts

Non-EPA Author(s):

Ms. Carolyn K. Poindexter

This important area should be continued to identify the best technique.

13. R93-12 Title: Effects of Chemical Contaminants on Blood Chemistry of Teleost Fish: A Bibliography and Synopsis of Selected Effects. Environmental Toxicology and Chemistry 12(2): 337-375, February 1993

Nominating Organization: Environmental Research Laboratory

EPA Author(s):

Dr. Leroy Folmar

This is a valuable reference document which should support further analysis of the data base.

14. R93-17 Title: Possible Influence of Hydrogen Concentration on Microbial Methane Stable Hydrogen Isotopic Composition. Chemosphere 26(1-4):55-67, 1993

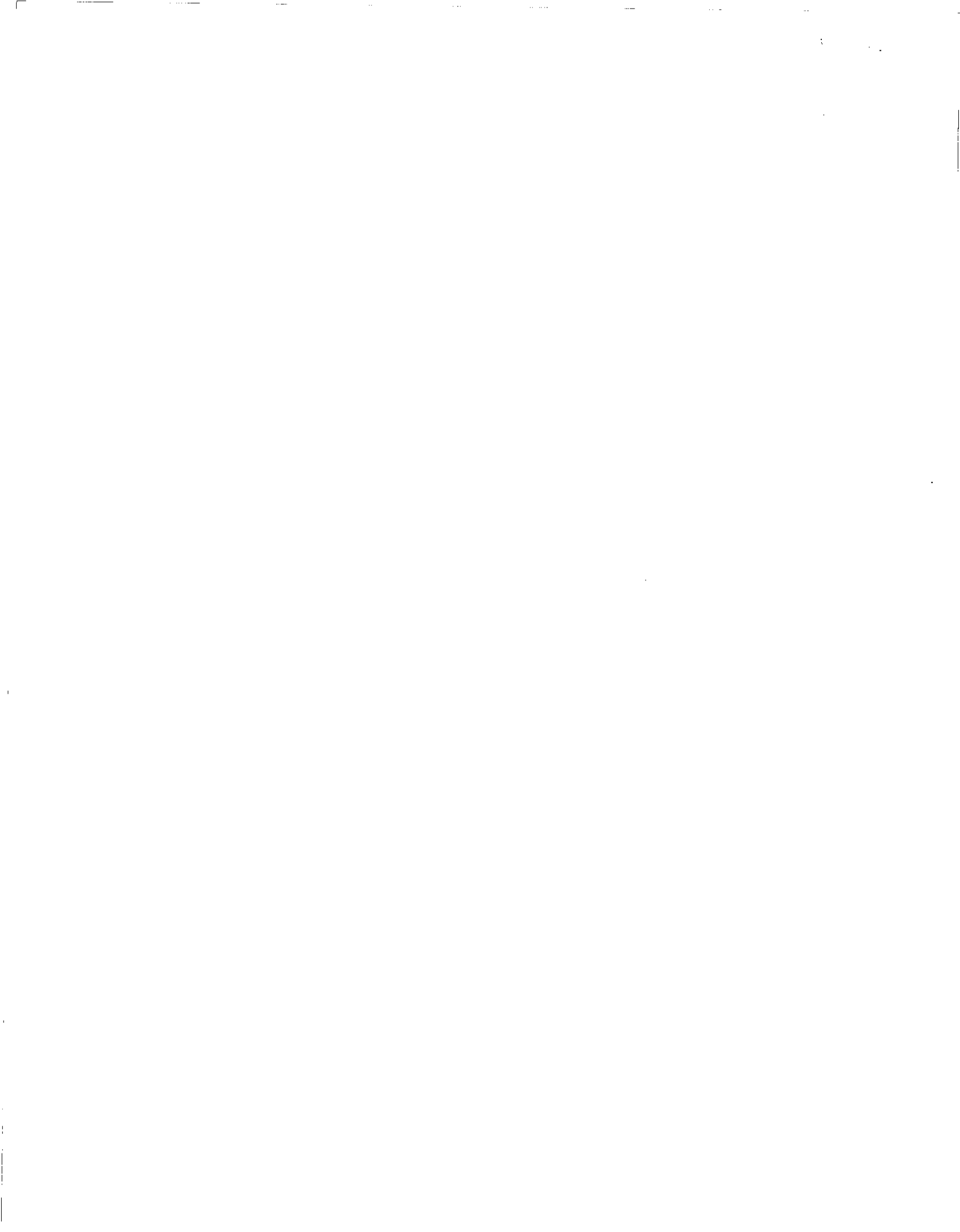
Nominating Organization:

Environmental Research Laboratory

EPA Author(s):

Dr. Roger A. Burke, Jr.

This work represents a contribution toward the identification of important sources of greenhouse gases.



APPENDIX A: PAPERS RECATEGORIZED BY THE SUBCOMMITTEE

Nominated Paper	New Category
E9201	Monitoring and Measurement Methods
I9301	Health Effects
I9302	Health Effects
I9303	Health Effects
I9309	Control Systems and Technology
H9310	Review Articles
H9311	Monitoring and Measurement Methods

